Our Ref: 4046-G-LR016 Rev A

Date: 14th February 2021

Mr Craig Kerr
Story Homes
Story House
Lords Way
Kingmoor Business Park
Carlisle
CA6 4SL

iD GeoEnvironmental Limited

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Dear Mr Kerr,

Environment Agency Correspondence Reference NO/2020/113153/01-L01 in Respect of Reserved Matters - Outline Planning Application 4/13/2235/0/O1 – Wilson Pit Road/High Road, Whitehaven

We have reviewed the above Environment Agency consultation received by Copeland Borough Council and are pleased to present our comments in the order presented in the Agencies correspondence. A copy of the correspondence is provided in Appendix A to this letter.

Commission & Brief

1.4; We were not appointed to undertake a quantitative controlled waters risk assessment – previous reports by Integra Consulting which relate to the subject site have been submitted to the regulator and, on the basis of their conceptual site model, have not necessitated a quantitative controlled waters risk assessment prior to approval of the previous phases of development. However, we note that we did not present a summary of Integra's PCM, nor did we provide a detailed qualitative discussion of the site's groundwater regime indicated by our exploration findings. In light of the revised conceptual model, we shall be presenting a revised report which provides fuller discussion of the site's groundwater regime and influence of contamination sources.

Site Description & General Development Proposals

2.2.4 & 3.2.8; Acknowledged – further discussion regarding anhydrite waste stockpile is provided below.
4.4.2; Acknowledged, although we note that we incorrectly referenced NX91 NE405 as BH01. It was NX91 NE303.

Preliminary Conceptual Site Model

6.1.4: As stated in IDG Report 4046-G-R019, remediation (delineation and excavation) of the transformer fluids was supervised by Integra Consulting and is presented in Report Post Remediation Validation Report for the Site at the Former TDG Tanker Depot, High Road, Whitehaven Cumbria for Story Land reference 2074 dated June 2010. It is understood that the spillage had accumulated in a 0.2m thick granular made ground directly over natural boulder clay. Approximately 50m3 of material was removed, stockpiled and sampled. Further detail is presented in the copy of Integra's validation report presented in Appendix B.
6.1-6.13-15 & 6.2: Acknowledged – Further assessment of risks to surface water and groundwater presented in 4046-G-R019 Rev B.
7.1.3: Integra's validation report demonstrates that all of the spilled PCBs were removed. In the absence of any further source we do not consider further analysis to be necessary.

Contaminant Sources

13.2.2: Acknowledged.

Made Ground/Hydrocarbon Contamination

13.2.7/ 13.2.10: Any further risk to the secondary aquifer will be undertaken during assessment of the made ground exposed following the concrete slab removal works within the former TDG Depot.

Groundwater

13.2.11: Acknowledged – the groundwater regime is re-assessed in the revised report reference 4046-G-R019 Rev B.

We note that the anhydrite stockpile was granted temporary storage under a Waste Regulations Exemption and that this has now been exceeded. We are carrying out further geotechnical, chemical and mineralogical testing as part of ongoing remediation options appraisal. We have also advised our Client placement of the anhydrite beneath 300mm of soil cover (or anywhere else within the site) should be subject to waste permitting regulations.

Pollutant Linkages

13.3.2: Acknowledged. Further assessment of the anhydrite stockpile is ongoing to determine an appropriate means of re-use or deposition.

Potential Remedial Options

13.5.2/13.5.3/13.5.6/13.5.9 – The correspondence indicates that Waste Permitting or DOWCOP (CL:AIRE Definition of Waste Code of Practice) procedures may apply to relocation of contaminated materials which are regarded as Controlled Waste (i.e. the Anhydrite Stockpile). IDG have corresponded with the Environment Agency (email 20-1-21) and the Environment Agency have confirmed that they will not object to re-use on site in accordance with DoWCoP provided an appropriate Remediation Strategy is provided which fully complies with DoWCoP. A copy of the Environment Agencies response dated 10th February 2021 is presented in Appendix C to this letter.

13.5.4: Acknowledged, see above email comments received from the Environment Agency.

13.5.8: Further investigation to establish the chemistry, mineralogy, potential for gypsification (letter Report 4046-G-LR015) and leachability of the Anhydrite is ongoing to establish the most appropriate means of retention of the Anhydrite within the site.

13.5.11: Acknowledged.

13.5.12: Acknowledged. Further assessment of the potential for mobile/leachable contaminants beneath the TDG Depot will be required during site remediation and preparatory works.

17.7: Acknowledged. Clarification of the requirements for dewatering excavations will be presented in the Remediation Strategy Report.

Further Works

17.10.2/17.10.3/17.10.4: Acknowledged. Confirmation of the satisfactory remediation at the site of the former transformer spillage is provided in Appendix B to this letter.

We trust that that the above clarifications are appropriate. Please do not hesitate to contact us if you have any questions.

Yours sincerely,

Nick Ward BSc (Hons), FGS
for and on behalf of
iD GEOENVIRONMENTAL LIMITED

Appendix A: Environment Agency Correspondence NO/2020/113153/01-L01
Appendix B: Integra Validation Report Reference 2074 Rev SS (2010)
Appendix C : Environment Agency Correspondence dated 10th February 2021

Appendix A

Our ref: NO/2020/113153/01-L01
Your ref: 4/20/2474/0R1

Date: 22 December 2020

Copeland Borough Council
Development Control
The Copeland Centre Catherine Street
Whitehaven
Cumbria
CA28 7SJ

Dear Sir/Madam

RESERVED MATTERS APPLICATION (ACCESS, APPEARANCE, LANDSCAPING, LAYOUT AND SCALE) FOR ERECTION OF 335 DWELLINGS INCLUDING ASSOCIATED INFRASTRUCTURE PURSUANT TO OUTLINE PLANNING APPROVAL 4/13/2235/0O1
LAND BOUND BY WOODHOUSE TO NORTH & HIGH ROAD / WILSON PIT ROAD TO WEST & SOUTH, WHITEHAVEN

Thank you for consulting us on the above application, which we received 2 December 2020.

Environment Agency position
We have no specific comments to make regarding the Reserved Matters application for access, appearance, landscaping, layout or scale.

We have reviewed the supplementary Geoenvironmental Appraisal –Phase 3 Edgehill park, Whitehaven report 4046 –G-RO19 November 2020. We would like to make the following comments and observations, prior to any submission to discharge the contaminated land conditions (Condition 27) for Phase 3.

The comments below relate to the specified sections of the report.

The commission and Brief
1.14 – The agreed scope of works does not appear to include a quantitative risk assessment for Controlled Waters – has this been undertaken?

Site Description and general development proposals
2.2.4 - The 17,000 m3of stockpiled material from the carpark was determined as waste at the time. It was granted temporary storage for a year under the Waste Regulations Exemption, but this has now been exceeded. See 3.4.10
3.2.8 –Integra's proposal to place the geotechnically unsuitable material 300mm below

POS should comply with waste permitting Regulations.
4.2.2 Importantly one BGS borehole NX91 NE 405 in the tanker depot shows slag infill directly over bedrock, with protective cover of clay.

Preliminary Conceptual Site Model
6.1.4 – potential contamination- There is no detail regarding the remediation of the loss of PCB contaminated oil when the transformer was removed. Further detail is required concerning the excavation of, volume removed and verification/validation of that material.
6.1.13-15 The proximity of the spring discharge (20m) and the limited natural till cover over the aquifer are sufficient evidence to require the revision of the risk to Controlled Waters to 'moderate' sensitivity.
6.2 The conceptual site model has omitted the risk to Surface water and groundwater in the table and should be revised accordingly.
7.1.3 PCB compounds should be included in the list of potential contaminants.

Contaminant Sources
13.2.2 – The re-use of the clay should comply with Waste Regulations or DOWCOP.

Made ground / Hydrocarbon contamination
13.2.7 / 13.2.10– whilst the more recent soil testing did not show any evidence of significant contamination, The EA support the need for further testing following removal of the concrete slab and testing for the presence of anhydrite/gypsum material and hydrocarbons. The thin clay, or lack of clay (see BGS borehole) suggests there is a higher degree of risk of contamination to the underlying aquifer.

Groundwater
13.2.11 – 'No significant groundwater contamination was encountered..' this wording should be revised to reflect the groundwater monitoring that was undertaken, and should specifically address the status of contamination in the different groundwater systems.

Pollutant Linkages
13.3.2 The table for actions beneath the former tanker depot should be revised to reflect the need for further investigation for risk to Controlled Waters. Also the removal of the stockpiles is a necessity for breach of its temporary storage under the Waste Regulations. The fact that the material is geotechnically unsuitable supports the need for its removal. 13.5.11 addresses EA concerns

Potential Remedial options
13.5.2 /13.5.3/ 13.5.6 / 13.5.9 – Waste Permitting or DOWCOP may apply for relocation of contaminated materials which are regarded as a Controlled Waste
13.5.4 – The 2 year timescale to allow weathering of the Anhydrite stockpile is at odds with Waste Regulations for temporary storage of waste.
13.5.8 Retention of contaminants in the clay cell forming the reservoir needs further understanding and environmental assessment from a water quality perspective. The proposal of permeable topsoils and /or subsoils to form the 600mm cap over the reservoir, will need to address impact on the isolated groundwater body within the reservoir and the possible consequence of total saturation /overspill .The benefits of a low permeability cap should be considered.
13.5.11 – EA support this recommendation
13.5.12- covering is acceptable for non/low-soluble organic contaminants. Proposed mitigation is required in the event of free product and soluble contaminants in soils and groundwater.

Cont/d..

17.7 – A contingency plan is required for removal of groundwater from excavations. Most dewatering requires permitting, but under Regulation 5 of water Abstraction and impoundment (exemptions) Regs 2017 there are exemptions if abstraction<6 months and it either discharges to soakaway or <100m3/day (or <50m3/day or less than 500m from a designated site)

Further works
17.10.2 – agree. But this needs to include assessment of hydrocarbon contaminants and mitigation proposals for remediation of mobile contaminants of concern.
17.10.3 – trial pit investigations should undertake total and leachable tests to determine solubility and assess risk.
17.10.4 – agree
Detail of oil remediation in the former transformer should be reviewed and if necessary, further investigative work undertaken

FOR INFORMATION

All surplus contaminated material should be regarded as waste and assessed for disposal under the terms of waste regulatory controls. Re-use of material (in the absence of waste permit or exemption) is acceptable if it complies with requirements CL:AIRE Definition of Waste Code of Practice (DOWCOP) for waste management. Relocation and burial of arsenic contaminated materials under roads for example will need to be compliant with DOWCOP providing geotechnical and geoenvironmental assessments for suitability are acceptable.

The CL:AIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/or land development works is waste or has ceased to be waste. Under the Code of Practice:

- excavated materials that are recovered via a treatment operation can be reused on-site providing they are treated to a standard such that they are fit for purpose and unlikely to cause pollution
- treated materials can be transferred between sites as part of a hub and cluster project
- some naturally occurring clean material can be transferred directly between sites

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

We recommend that developers should refer to:
the position statement on the Definition of Waste: Development Industry Code of Practice
The waste management page on GOV.UK

Waste to be taken off-site
Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016

Cont/d..

- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.
If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on GOV.UK for more information.

Consultation regarding COMAH regulations
This planning permission consultation has also been received by HSE, and passed to the Environment Agency for comment regarding any implications under the COMAH regulations. We have no comment to make concerning this regime.

Yours faithfully

Mrs Liz Locke
Sustainable Places Officer

e-mail clplanning@environment-agency.gov.uk

End

Appendix B

SL000105. 20.2.

POST REMEDIATION VALIDATION REPORT FOR THE SITE AT THE FORMER TDG TANKER DEPOT, HIGH ROAD, WHITEHAVEN, CUMBRIA FOR STORY LAND

Integra Consulting Engineers
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Ref: 2074
Rev: SS

Date: June 2010

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APPENDIX 7	TRIAL PIT LOGS

1.0 EXECUTIVE SUMMARY

1.1 Integra Consulting Engineers Ltd was instructed by Story Land to undertake a Post Remediation Validation Report at the site of the former TDG Tanker Depot, High Road, Whitehaven, CA28 9QJ. The validation exercise was undertaken following an unauthorised release of transformer insulating oil resulting from the theft of a copper component during October 2007. The Ordnance Survey National Grid reference of the transformer location is approximately Easting: 297030 and Northing: 515580.

1.2 The main objective of this report was to validate the remedial works undertaken on site to remove hydrocarbon impacted soils from beneath the former electrical transformer and associated surrounding impacted soils displaying visual or olfactory evidence of hydrocarbon contamination.

1.3 The tanker depot is bounded by High Road to the west and arable farmland to the north, east and south. The site is generally flat at an approximate elevation of 90m AOD and is concrete hardstanding. The electrical transformer was located to the rear of the tanker washing shed.

1.4 The British Geological Survey indicates that the depot is underlain by Quaternary glacial boulder clay which in turn overlies the Carboniferous Pennine Middle Coal Measures classed as a secondary aquifer with soils of a high leaching potential by the Environment Agency. The nearest surface water feature is situated approximately 260 metres east of the tanker depot and is a small unnamed brook flowing from north to south.

1.5 Historically, the tanker washing facility was utilised by the former adjacent Marchon chemical works, prior to its closure in 2005, to provide a washing and refuelling facility for associated road tankers. The depot is currently derelict and has been subject to extensive vandalism.

1.6 Remediation at the site has involved the removal and disposal of the defunct electrical transformer and surplus oil by S.J. McGuckin Ltd during April 2010. Integra Consulting Ltd were instructed by Story Land to supervise the removal any impacted soils from beneath the former transformer and the surrounding area which recorded visual or olfactory evidence of hydrocarbon contamination. The hydrocarbon impacted soils were removed from the excavation, stockpiled on impermeable Visqueen sheeting and sampled for testing of relevant chemical contaminants at an MCERTS laboratory. For validation purposes, the envelope of the remaining excavation was also sampled at an MCERTS laboratory for an appropriate chemical testing suite.

1.7 MCERTS laboratory chemical test results on samples taken from within the remaining excavation envelope recorded concentrations below allowable Soil Guideline Values and relevant LQM / CIEH Generic Assessment Criteria concentrations for the determinands tested.

1.8 The hydrocarbon impacted soils (approximately $50m^{3)}$ removed from the excavation and stockpiled on the impermeable Visqueen sheets were sampled and chemically analysed for relevant organic contaminants at an MCERTS laboratory. As a result, 1 No. sample (S5) recorded a slightly elevated concentration of Aliphatics > C12 – C16 and Aromatics > EC12 – EC16 and 2 No. samples (S1 and S5) recorded elevated concentrations of Aromatics > EC16 – EC 21. This material should either be disposed of at an appropriately licensed landfill site or remediated insitu.

1.9 4 No. trial pits were excavated in close proximity to the former transformer in order to determine the lateral extent of the hydrocarbon contamination beneath the site. MCERTS laboratory analysis chemical test results on samples taken from the trial pits recorded below allowable Soil Guideline Values and relevant LQM / CIEH Generic Assessment Criteria concentrations for all applicable tested determinands. Consequently, it is concluded that the hydrocarbon impacted soils do not appear to have extended laterally beyond these trial pits.

1.10 The removal of the impacted soils beneath the location of the former transformer has been successfully completed on the basis that clay samples taken from the base of the excavation did not indicate concentrations above relevant Soil Guideline Values and / or relevant LQM / CIEH Generic Assessment Criteria.

1.11 Further remediation of this area of the TDG Depot will ultimately be required on the basis that the intrusive works undertaken indicate that a hydrocarbon contamination plume may extend beneath this entire raised bunded area of the depot (approximately 400m^2), possibly originating from more than one hydrocarbon source. It is therefore recommended that this entire area is excavated and the hydrocarbon impacted soils removed prior to the excavation being backfilled with inert, acceptable material.

2.0 INTRODUCTION

2.1 General

A post remediation validation exercise has been undertaken at the site of the former TDG Tanker Depot, High Road, Whitehaven, CA28 9QJ following the removal of a defunct electrical transformer which was vandalised during October 2007 resulting in the spillage of an unknown quantity of viscous insulating oil.

2.2 Previous Investigations

URS – Technical Memorandum dated 30th October 2007

URS were instructed by Rhodia UK Limited to conduct a site walkover and preliminary environmental assessment of the TDG Depot following the unauthorised release of transformer insulating oil during October 2007. The spillage of the insulating oil occurred during the theft of the copper component of the electrical transformer which is located to the rear of the tanker washing shed. It was stated that the transformer could hold a maximum volume of 690kg of oil and that it was probably full prior to the incident occurring.

URS report that the oil spillage was evident on the gravel surrounding the transformer (a 3m by 2m area) and staining of the concrete hardstanding was also noted although the extent of the staining was not indicated.

URS concluded that the majority of the spilt oil was likely to have migrated vertically through the gravel into the underlying strata as the transformer area was not bunded below ground.

Integra Consulting Engineers Limited - Phase 2 Environmental Ground Investigation dated June 2009

Integra Consulting Engineers Limited was appointed by Story Land to undertake a Phase 2 Intrusive Site Investigation at the above site in June 2009.

5 No. trial pits were excavated in the vicinity of the transformer within the bunded concrete apron. The trial pits typically indicated a reinforced concrete slab overlying made ground consisting of gravel, sand and stones which in turn overlies natural boulder clay deposits. A relatively thin 0.2m thick layer of coarse gravel / stones coated in a black viscous substance with a strong hydrocarbon odour was noted at depths of between 1.0m and 1.4m below ground level in all the trial pits.

A total of 17 No. solid chemical samples taken from the trial pits including 2 No. samples of the gravel taken from directly beneath the leaking oil tap were tested for hydrocarbon contamination. A sample taken from the trial pit directly opposite the transformer at 1.5m below ground level together with the 2 No. gravel samples indicated elevated concentrations of aliphatic fractions C12 – C35 and aromatic fractions EC12 – EC35. This Phase 2 report recommended that further intrusive work were undertaken in the vicinity of the transformer in order to establish the extent of the contamination.

3.0 BRIEF

The brief was to supervise and direct remedial works associated with the removal of hydrocarbon impacted soils from beneath / local to the former electrical transformer which was removed from the site during April 2010 by S.J. McGuckin.

The brief was to include the following:

a) Excavate any hydrocarbon impacted soils from beneath the transformer and the surrounding area on the basis of visual / olfactory evidence.

b) Collection of samples from within the excavation and undertaking appropriate chemical testing in accordance with the latest legal framework to identify the extent of any remaining elevated levels of soil contamination.

c) Sample the impacted stockpiled material and undertake suitable chemical laboratory MCERTS testing in order to classify the material for off site removal to an appropriately licensed tip.

d) Excavate 4 No. additional trial pits to delineate extent of contamination to the north and east of the electrical transformer.

4.0 LIMITATIONS OF INVESTIGATIVE WORK AND REPORT

The findings from the sample points relate specifically to the sample point locations and there is no absolute guarantee of the ground conditions and extent of contamination between these locations.

The extent of contaminated soil testing carried out on samples obtained from the excavation has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or local natural water resources. The extent of testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing is a minute fraction of the total volume of soils present within the excavation. Therefore there is a residual risk that pockets of contamination may be present within the excavation envelope situated between testing locations that have not been detected.

This report does not cover the geotechnical characteristics of the site which are provided in a separate Geotechnical Ground Investigation report undertaken by Integra Consulting Engineers Limited during June 2009

5.0 THIRD PARTIES

This report has been prepared for the sole use of Story Land. The report must not be copied or passed onto any third party or used for any purpose other than which it was prepared without the permission of the author. This report is copyright.

6.0 SITE SUMMARY

6.1 Objective

During October 2007 an unknown volume of transformer insulating oil was uncontrollably discharged during the vandalism of the copper components of an electrical transformer located to the rear of the former tanker washing shed. Consequently, during April 2010 S.J McGuckin Ltd was appointed by Story Land to remove the defunct electrical transformer, its surplus oil and transport it to an appropriately licensed waste facility.

S.J McGuckin Ltd's method statement for the removal of the transformer is contained in Appendix 5.

Integra Consulting Ltd was instructed by Story Land, following the removal of the transformer, to delineate the extent of transformer oil in the underlying area of the former electrical transformer. The remedial objectives were to excavate any hydrocarbon impacted soil from beneath the former location of the electrical transformer and the surrounding area which displayed evidence of visual or olfactory hydrocarbon contamination.

The impacted soils associated with the transformer were placed on and covered by impermeable Visqueen sheets in preparation for MCERTS testing and subsequent off site removal to an appropriately licensed landfill.

6.2 Site Location and Description

The electrical transformer was located within the former TDG Tanker depot, off High Road, Whitehaven. The Ordnance Survey national grid reference for the approximate position of the transformer is Easting: 297030 and Northing: 515580. The tanker depot is bounded by High Road to the west and arable farmland to the north, east and south. The site is generally flat at approximate elevation of 90m AOD and is covered by concrete hardstanding. The site plans are contained in Appendix 1.

The tanker washing facility was utilised by the former adjacent Marchon chemical works prior to its closure in 2005 to provide a washing and refuelling facility for associated road tankers. In 1991, Tankfreight Ltd were sub-contracted by Albright and Wilson to provide road tanker transport for the chemical works. The activities of the tanker company included taking delivery of raw products including sulphuric acid, phosphorus acid, oils/organics and the outward delivery of finished products such as soap powders and detergents. After each journey, the tankers were thoroughly washed to remove any residues left by the materials which were being transported. The waste water arising from the chemical tanker washing facility was collected in an underground drainage interceptor where the light non-aqueous phase liquids were skimmed off the surface. The remaining waste water was disposed of via a drain beneath the facility which was connected directly to the general drainage infrastructure. The road tanker facility is currently derelict.

The depot comprises a large steel framed corrugated aluminium clad washing shed which is currently in a poor condition with large sections of the external cladding no longer present. The controls room is located to the rear of the washing shed and is situated on a raised rectangular bunded area covered by reinforced concrete hardstanding which is

approximately 400m^2 in area (approximate dimensions of 25m x 16m). The electrical transformer was positioned on the raised bunded area adjacent to the control rooms and was contained within a security fenced enclosure.

It was noted that the general condition of the tanker depot was poor due in part to vandalism and related damage although the infrastructure of the main washing shed did appear to be in relatively good condition.

During remediation works it was noted that 2 No. circular rust stained profiles with an approximate diameter of 2.0m were present on the raised concrete area. The circular profiles, directly adjacent to the transformer, were contained within a 0.5m high blockwork bund. It is considered that these profiles have resulted from the former presence of large tanks which may have contained oil for either heating or refuelling purposes. The aerial photograph contained in Appendix 1 indicates that a further 3 No. large cylindrical tanks were also present in the southern section of the raised bunded area. These were probably utilised for water storage.

A plan of the TDG Tanker Depot indicating the location of the defunct electrical transformer is contained in Appendix 1.

7.0 REMEDIATION STRATEGY

Integra Consulting Engineers Ltd was instructed by Story Land to supervise and direct the removal of any impacted soils from beneath the transformer and the surrounding area. The strata underlying the transformer was excavated to a depth of approximately 1.5m as, at this depth, there was no visual or olfactory evidence of contamination. The dimensions of the excavation were approximately 5.0m by 6.0m. The base / sides of the excavation and the resulting stockpile of material removed from the excavation were sampled and laboratory tested for any potential residual contamination.

This methodology was used in order to ensure the full removal of the contaminated soils associated with the transformer leak which could otherwise provide a potential contamination pathway for future site users.

Photographs of the remediation works and excavation are collated in Appendix 6.

Solid samples were taken from the excavation base and sides, stockpile and trial pits for MCERTS laboratory analyses to further confirm that the contamination source beneath the transformer area had been removed.

7.1 Excavation Envelope

The excavation of the soil from beneath the transformer and surrounding area was undertaken using a JCB 3CX on 11th May 2010. All soils demonstrating visual and / or olfactory evidence of hydrocarbons relating to the transformer spillage were removed from the excavation. It was noted during the excavation that the electrical transformer was positioned on a 0.5m thick rectangular concrete slab approximately 0.5m wide by 1.0m long and the concrete slab was not significantly stained with hydrocarbons. The area surrounding the transformer (approximately 2.0m by 3.0m) was covered by loose coarse gravel and stones. A leaking oil tap was located on the east side of the transformer and the area of gravel directly beneath the leaking oil tap was significantly stained with oil.

During the excavation, a 0.2m thick layer consisting of gravel / stones coated in a black viscous substance with a strong hydrocarbon odour was encountered at a depth of approximately 1.1m below ground level, directly over the natural boulder clay. It is not known whether the electrical transformer is the only source of this hydrocarbon contaminated layer as it was noted in the earlier Integra Consulting Phase 2 Environmental Ground Investigation dated June 2009 that the hydrocarbon impacted soils extended beneath the majority of the raised bunded area. It is also likely that oil storage tanks were present on this area and may be a potential source of hydrocarbon contamination.

A total of 5 No. samples were taken at a range of depths over the full extent of the excavation area (5m x 6m x 1.5m).

7.2 Stockpile Material

The impacted soils excavated from beneath the transformer were stored on impermeable Visqueen sheets and chemically sampled to determine their chemical content prior to potential removal to an appropriately licensed tip.

A total of 5 No. samples were taken from a stockpile of approximately $50m^3$ of hydrocarbon impacted soils.

7.3 Trial Pits

4 No. trial pits were excavated to the north and east of the electrical transformer in order to delineate the extent of the contamination.

A total of 8 No. samples were taken at depths of 0.5m and 1.5m below ground level in each trial pit for chemical analysis.

The location of the trial pits is shown in the plan contained in Appendix 2 and the trial pit logs are contained in Appendix 7.

7.4 Chemical Contamination Laboratory Tests

During the excavation works, soil samples were collected into sterile sealed containers to allow MCERTS chemical laboratory testing of potential contaminants in the samples. The samples were collected in the following appropriate containers:

- 400g sealed plastic container ALE214 used to analyse inorganic contaminants in soils.
- 250g sealed glass container ALE210 used to analyse PAHs (Polynuclear Aromatic Hydrocarbons) and extractable hydrocarbons in soils.
- 60g sealed glass container ALE215 used to analyse VOCs (Volatile Organic Compounds) and extractable hydrocarbons in soils.

The following suite of environmental testing was undertaken on the solid samples taken from the excavation envelope, the stockpile and the trial pits:

CLEA metals (arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium. vanadium, water soluble boron and zinc), speciated Polynuclear Aromatic Hydrocarbons (PAH), total and free cyanide, pH, water soluble sulphate, nitrate, Soil Organic Matter (SOM), asbestos, Volatile Organic Compounds (VOC) target list, UK-Criteria Working Group (CWG) C5-C44 Aliphatic / Aromatic split with CWG banding, speciated phenol and poly-chlorinated biphenyl (PCB).

8.0 CHEMICAL TEST RESULTS

Solid samples taken from the stockpile, excavation and trial pits were analysed at an MCERTS accredited laboratory for a range of contaminants and compared to their relevant Soil Guideline Values (SGV) or LQM/CIEH Generic Assessment Criteria (LQM/CIEH GAC). The subsequent test results are summarised below.

8.1 Stockpile

The material removed from the excavation was tested to appropriately classify the material for off site disposal or insitu / exsitu remediation.

Metals, Semi-Metals and Inorganics

All samples taken from the stockpile were analysed in accordance with the CLEA metal testing suite. None of the samples were elevated above their relevant SGV or LQM/CIEH GAC. Free and total cyanide was recorded at concentrations below detection limit in all of the samples.

Polynuclear Aromatic Hydrocarbons (PAH)

All samples taken from the stockpile were tested for speciated PAH and were found to be below the relevant LQM/CIEH GAC.

Total Petroleum Hydrocarbons

All samples taken from within the stockpile were tested using speciated UK-CWG analysis and compared to the relevant LQM/CIEH GAC.

1 No. sample (S5) recorded a slightly elevated concentration of aliphatics > C12 – C16 and aromatics > EC12 – EC16. 2 No. samples (S1 and S5) recorded elevated concentrations of aromatics > EC16 – EC 21.

Phenols Monohydric

All of the samples taken from the stockpiled material were analysed for speciated phenols and all recorded below detection limit concentrations.

Poly-chlorinated biphenyl (PCB)

All samples recorded below detection limit concentrations for all PCBs with the exception of PCB congener 28 which recorded an above detection limit concentration of 45µg/kg in a single stockpile sample.

pH

pH values were recorded between 8.03 and 10.5

Soil Organic Matter (SOM)

SOM was recorded in the range of between <0.35% and 2.41% with an average of 1.52%

8.2 Excavation

Metals, Semi-Metals and Inorganics

All samples taken from within the excavation were analysed in accordance with the CLEA metal testing suite. None of the samples were found to be elevated above their relevant SGV or LQM/CIEH GAC.

Free and total cyanide concentrations were recorded below detection limit in all of the samples.

Polynuclear Aromatic Hydrocarbons

All samples taken from within the excavation were tested for speciated PAH and were found to be below the relevant LQM/CIEH GAC.

Total Petroleum Hydrocarbons

All samples taken from within the excavation envelope were tested using speciated UK-CWG analyses and found to be below the relevant LQM/ CIEH GAC.

Phenols Monohydric

All samples taken from within the excavation were analysed for speciated phenols and were all recorded as having below detection limit concentrations.

Poly-chlorinated biphenyl (PCB)

All samples recorded below detection limit concentrations for all PCBs.

pH

pH values were recorded between 7.31 and 8.01

Soil Organic Matter (SOM)

SOM was recorded in the range of between 1.67% and 2.91% with an average of 2.33%.

8.3 Trial Pits

Metals, Semi-Metals and Inorganics

A sample taken at 1.5m below ground level in TPA recorded a slightly elevated lead concentration of 555mg/kg. The remaining contaminants were not elevated above their relevant SGV or LQM/CIEH GAC.

Free and total cyanide concentrations were recorded below detection limit in all of the samples.

Polynuclear Aromatic Hydrocarbons

All samples taken from the trial pits were tested for speciated PAH and were found to be below the relevant LQM/CIEH GAC.

Total Petroleum Hydrocarbons

All samples taken from the trial pits were tested using speciated UK-CWG analyses and found to be below the relevant LQM/CIEH GAC.

Phenol Monohydric

All of the samples taken from the trial pits were analysed for speciated phenols and were all recorded as having below detection limit concentrations.

Poly-chlorinated biphenyl (PCB)

All samples recorded below detection limit concentrations for all PCBs with the exception of TPD at 1.0m depth which recorded marginally above detection limit concentrations of PCB congener 138 at 6.78µg/kg, PCB congener 153 at 4.25µg/kg and PCB congener 180 at 4.11µg/kg.

pH

pH values were recorded between 7.45 and 11.9

Soil Organic Matter (SOM)

SOM was recorded in the range of between <0.35% and 3.26% with an average of 1.17%.

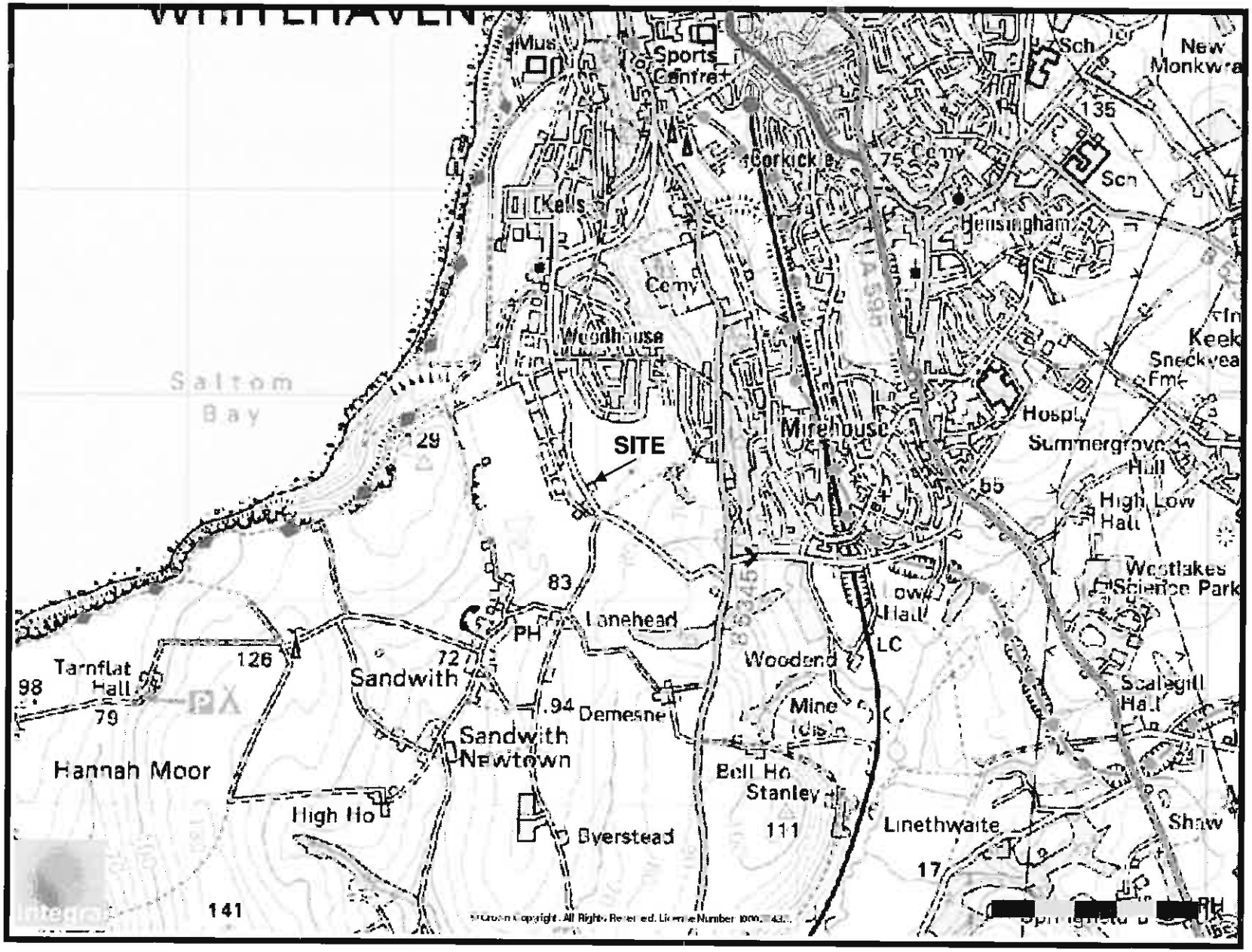
Summary tables of the chemical results for the stockpile, excavation and trial pits are contained in Appendix 3 and MCERTS laboratory results are contained in Appendix 4.

9.0 CONCLUSION

The remediation works undertaken included the removal of hydrocarbon impacted soils from beneath the former electrical transformer and associated surrounding areas which was deemed necessary in order for the site to be developed for its intended use as a residential housing estate. The extent of impacted soils has been verified through MCERTS laboratory analyses demonstrating that remaining soils beneath the area where the transformer was located to be uncontaminated and therefore posing no further risk to either human health or waters.

It should however be noted that further intrusive works and possible remediation may be required in this area of the TDG Depot due to the presence of possible hydrocarbon contaminated soils at a depth of approximately 1.1m below ground level covering an area of upto 400m^2. It should be noted that this hydrocarbon contamination may have resulted from a number of sources other than the transformer leakage.

APPENDIX 1
SITE LOCATION PLANS AND AERIAL PHOTOGRAPH


WHITEHAVEN
Sports Centre
Sch
New Monkwr
135
Corkickle
Cem
Scn
Kells
Hensingham
Cem
Woodhouse
Keek
Sneckyea
Fm
Saltom Bay
29
SITE
Mirehouse
Hospl
Summergrove Hall
High Low Hall
Westlakes Science Park
83
Lonehead
PH
Tarnflat Hall
126
72
Sandwith
98
79
94
Demesne
Woodend
LC
Scalegill Hall
Mine
Sandwith Newtown
Hannah Moor
Bell Ho
Stanley
High Ho
Byerstead
111
Linethwaite
Shaw
17
141
PH

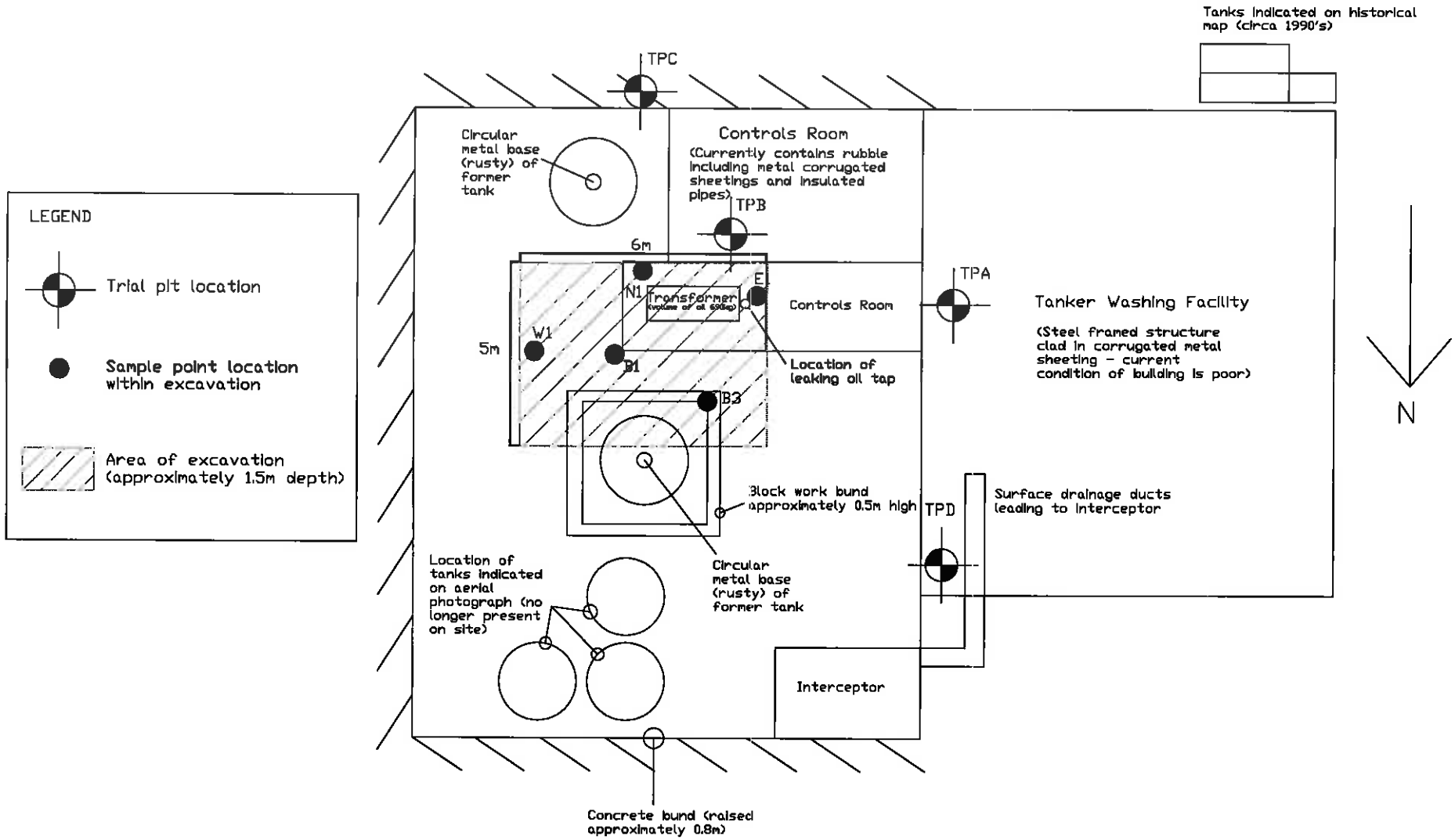
TOWN PLAN


Works
SITE LOCATION
GREENBANK

AERIAL PHOTOGRAPH

APPENDIX 2

SITE PLAN SHOWING LOCATION OF EXCAVATION AND TRIAL PITS



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Scale	Drawn	Checked	Approved	Drawing No	Date	Rev
NTS	SS			VR/02	June 2010	

Contract
Area B Whitehaven Story Homes

Title
Site Plan Showing Location of Excavation and Trial Pits

APPENDIX 3
SUMMARY TABLES OF TEST RESULTS

Solid Contamination Results - Excavation					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Arsenic	5	8.3 – 18.7	12.4	32[1]	
Barium	5	138 – 264	227	-	
Beryllium	5	2.09 – 2.77	2.39	51[3]	
Cadmium	5	<0.02 – 0.218	0.121	10[1]	
Chromium	5	17 – 21.6	18.62	125[2]	
Copper	5	25.5 – 37.4	30.5	2330[3]	
Lead	5	14 – 28.6	21.26	450[2]	
Mercury	5	<0.14	<0.14	1[1]	
Nickel	5	22 – 32.3	28.4	130[1]	
Selenium	5	<1 – 1.41	1.082	350[1]	
Vanadium	5	18.2 – 24.3	20	75[3]	
Zinc	5	60.1 – 90.7	73.8	3750[3]	
Boron Water Soluble	5	<1	<1	291[3]	
Phenol	5	<0.01	<0.01	420[1]	
Cresols	5	<0.01	<0.01	-	
Xylenols	5	<0.015	<0.015	-	
2, 3, 5-Trimethylphenol	5	<0.1	<0.1	-	
2-Isopropylphenol	5	<0.015	<0.015	-	
Total Cyanide	5	<1	<1	-	
Free Cyanide	5	<1	<1	-	
Water Soluble Sulphate (g/l)	5	0.0329 – 0.0785	0.0486	-	
Nitrate (NO3)	5	<1	<1	-	
pH	5	7.31 – 8.01	7.71	-	
Soil Organic Matter (%)	5	1.67 – 2.91	2.33	-	
Asbestos Screen	5	No ACM Detected	-	-	
PCB congener 28	5	<0.003	<0.003	-	
PCB congener 52	5	<0.003	<0.003	-	
PCB congener 101	5	<0.003	<0.003	-	
PCB congener 118	5	<0.003	<0.003	-	
PCB congener 138	5	<0.003	<0.003	-	
PCB congener 153	5	<0.003	<0.003	-	
PCB congener 180	5	<0.003	<0.003	-	
PCBs Total ICES 7	5	<0.003	<0.003	-	
Naphthalene	5	<0.009	<0.009	1.5[3]	
Acenaphthylene	5	<0.012	<0.012	170[3]	
Acenaphthene	5	<0.008	<0.008	210[3]	
Fluorene	5	<0.01	<0.01	160[3]	
Phenanthrene	5	0.0311 – 0.145	0.0912	92[3]	
Anthracene	5	<0.016 – 0.084	0.0296	2300[3]	
Fluoranthene	5	<0.017 – 0.0426	0.0251	260[3]	
Pyrene	5	0.0181 – 0.0499	0.039	560[3]	
Benz(a)anthracene	5	<0.014 – 0.0352	0.0215	3.1[3]	
Chrysene	5	<0.01 – 0.0371	0.0229	6.0[3]	
Benzo(b)fluoranthene	5	<0.015 – 0.0407	0.0282	5.6[3]	
Benzo(k)fluoranthene	5	<0.014	<0.014	8.5[3]	
Benzo(a)pyrene	5	<0.015 – 0.0182	0.0156	0.83[3]	
Indeno(123cd)pyrene	5	<0.018	<0.018	3.2[3]	
Dibenzo(ah)anthracene	5	<0.023	<0.023	0.76[3]	
Benzo(ghi)perylene	5	<0.024	<0.024	44[3]	
PAH 16 EPA Total	5	0.137 – 0.288	0.234	-	

Solid Contamination Results - Excavation					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
GRO > C5 – C12	5	<0.044	<0.044	-	
Benzene	5	<0.01	<0.01	0.33[1]	
Ethylbenzene	5	<0.003	<0.003	350[1]	
Toluene	5	<0.002	<0.002	610[1]	
m, p-Xylene	5	<0.006	<0.006	-	
o-Xylene	5	<0.003	<0.003	250[1]	
m, p, o-Xylene	5	<0.01	<0.01	-	
BTEX total	5	<0.01	<0.01	-	
Methyl tertiary butyl ether (MTBE)	5	<0.005	<0.005	-	
Aliphatics > C5 – C6	5	<0.01	<0.01	30[3]	
Aliphatics > C6 – C8	5	<0.01	<0.01	73[3]	
Aliphatics > C8 – C10	5	<0.01	<0.01	19[3]	
Aliphatics > C10 – C12	5	<0.01	<0.01	93[3]	
Total Aliphatics > C5 – C12	5	<0.01	<0.01	-	
Aliphatics > C12 – C16	5	7 – 20.1	15	740[3]	
Aliphatics > C16 – C21	5	7.9 – 132	50.5	-	
Aliphatics > C16 – C35	5	17.9 – 227	88.7	45000[3]	
Aliphatics > C21 – C35	5	9.94 – 95.5	38.3	-	
Aliphatics > C35 – C44	5	<0.1 – 4.58	0.936	45000[3]	
Total Aliphatics > C12 – C44	5	34.3 – 252	104.8	-	
Total Aliphatics > C5 - 35	5	28.5 – 247	103.76	-	
Total Aliphatics > C5 - C44	5	28.5 – 252	104.76	-	
Aromatics > C6 – C7	5	<0.01	<0.01	-	
Aromatics > C7 – C8	5	<0.01	<0.01	120[3]	
Aromatics > EC8 – EC10	5	<0.01	<0.01	27[3]	
Aromatics > EC10 – EC12	5	<0.01	<0.01	69[3]	
Total Aromatics > C6 – C12	5	<0.01	<0.01	-	
Aromatics > EC12 – EC16	5	5.68 – 30.7	11.66	140[3]	
Aromatics > EC16 – EC21	5	<0.1 – 28.8	12.18	250[3]	
Aromatics > EC21 – EC35	5	15.3 – 27.8	20.48	890[3]	
Aromatics > EC35 – EC44	5	5.02 – 8.57	6.33	890[3]	
Aromatics > EC40 – EC44	5	1.43 – 3.41	2.26	-	
Total Aromatics > EC12 – EC44	5	35.8 – 71.5	50.62	-	
Total Aromatics > C5 - 35	5	30.8 – 63.3	44.3	-	
Total Aromatics > C6 – C44	5	35.8 – 71.5	50.62	-	
Total Aliphatics & Aromatics > C5 – 35	5	61 – 311	148	-	
Total Aliphatics & Aromatics > C5 – C44	5	66 – 323	155.2	-	

Solid Contamination Results - Excavation					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Dichlorodifluoromethane	5	<0.013	<0.013	-	
Chloromethane	5	<0.012	<0.012	0.0083[4]	
Vinyl Chloride	5	<0.01	<0.01	0.00047[3]	
Bromemethane	5	<0.009	<0.009	-	
Chloroethane	5	<0.012	<0.012	8.3[4]	
Trichlorofluoromethane	5	<0.007	<0.007	-	
1.1-Dichloroethene	5	<0.009	<0.009	2.4[4]	
Carbon Disulphide	5	<0.009	<0.009	0.10[3]	
Dichloromethane	5	<0.01	<0.01	0.58[4]	
Methyl Tertiary Butyl Ether	5	<0.009	<0.009	49[4]	
trans-1-2-Dichloroethene	5	<0.012	<0.012	-	
1.1-Dichloroethane	5	<0.008	<0.008	2.4[4]	
cis-1-2-Dichloroethene	5	<0.009	<0.009	0.11[4]	
2.2-Dichloropropane	5	<0.01	<0.01	-	
Bromochloromethane	5	<0.01	<0.01	-	
Chloroform	5	<0.01	<0.01	0.75[3]	
1.1.1-Trichloroethane	5	<0.012	<0.012	6.2[3]	
1.1-Dichloropropene	5	<0.013	<0.013	-	
Carbontetrachloride	5	<0.011	<0.011	-	
1.2-Dichloroethane	5	<0.01	<0.01	0.0054[3]	
Benzene	5	<0.009	<0.009	-	
Trichloroethene	5	<0.009	<0.009	0.11[3]	
1.2-Dichloropropane	5	<0.01	<0.01	0.024[4]	
Dibromomethane	5	<0.012	<0.012	-	
Bromodichloromethane	5	<0.011	<0.011	0.016[4]	
cis-1-3-Dichloropropene	5	<0.025	<0.025	-	
Toluene	5	<0.006	<0.006	610[1]	
trans-1-2-Dichloropropene	5	<0.027	<0.027	-	
1.1.2-Trichloroethane	5	<0.009	<0.009	0.6[4]	
1.3-Dichloropropane	5	<0.007	<0.007	-	
Tetrachloroethene	5	<0.009	<0.009	0.94[3]	
Dibromochloromethane	5	<0.009	<0.009	-	
1.2-Dibromoethane	5	<0.014	<0.014	-	
Chorobenzene	5	<0.007	<0.007	0.33[3]	
1.1.1.2-Tetrachloroethane	5	<0.011	<0.011	0.90[3]	
Ethylbenzene	5	<0.009	<0.009	350[1]	
p/m-Xylene	5	<0.013	<0.013	-	
o-Xylene	5	<0.011	<0.011	250[1]	

VOC's continued					
Styrene	5	<0.011	<0.011	8.1[4]	
Bromoform	5	<0.012	<0.012	2.8[4]	
Isopropylbenzene	5	<0.009	<0.009	11[4]	
1.1.2.2-Tetrachloroethane	5	<0.015	<0.015	1.4[3]	
1.2.3-Trichloropropane	5	<0.013	<0.013	-	
Bromobenzene	5	<0.014	<0.014	0.87[4]	
Propylbenzene	5	<0.006	<0.006	34[4]	
2-Chlorotoluene	5	<0.014	<0.014	-	
1.3.5-Trimethylbenzene	5	<0.008	<0.008	-	
4-Chlorotoluene	5	<0.009	<0.009	-	
tert-Butylbenzene	5	<0.012	<0.012	-	
1.2.4-Trimethylbenzene	5	<0.01	<0.01	0.35[4]	
sec-Butylbenzene	5	<0.008	<0.008	-	
4-Isopropyltoluene	5	<0.008	<0.008	-	
1.3-Dichlorobenzene	5	<0.008	<0.008	0.29[3]	
1.4-Dichlorobenzene	5	<0.011	<0.011	30[3]	
n-Butylbenzene	5	<0.007	<0.007	-	
1.2-Dichlorobenzene	5	<0.008	<0.008	16[3]	
1.2-Dibromo-3-chloropropane	5	<0.011	<0.011	-	
tert-amyl methyl ether	5	<0.007	<0.007	-	
1.2.4-Trichlorobenzene	5	<0.009	<0.009	1.8[3]	
Hexachlorobutadiene	5	<0.015	<0.015	0.21[3]	
Naphthalene	5	<0.007	<0.007	1.5[3]	
1.2.3-Trichlorobenzene	5	<0.012	<0.012	1.0[3]	

- Generic Assessment Criteria (GAC):
  - [1] Soil Guideline Value (SGV) Environment Agency (Post-March 2009) 6% SOM
  - [2] Soil Guideline Value (SGV) Environment Agency (Pre-March 2009)
  - [3] LQM / CIEH (2nd Edition) Generic Assessment Criteria (2009) 1% SOM
  - [4] CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (January 2010) 1% SOM
- All units in mg/kg unless otherwise stated.

Solid Contamination Results – Trial pits					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Arsenic	8	<6 – 16.3	7	32[1]	
Barium	8	18.1 – 180	96.8	-	
Beryllium	8	0.402 – 5.52	1.9	51[3]	
Cadmium	8	<0.2 – 2.42	0.4751	10[1]	
Chromium	8	2.85 – 57.8	16.6	125[2]	
Copper	8	2.97 – 175	33.62	2330[3]	
Lead	8	4.53 – 555	82.8	450[2]	**TPA (1.5m)**
Mercury	8	<0.14 – 0.34	0.186	1[1]	
Nickel	8	2.59 – 18.9	10.88	130[1]	
Selenium	8	<1 – 1	1	350[1]	
Vanadium	8	3.6 – 48.9	17.7	75[3]	
Zinc	8	4.43 – 109	36.7	3750[3]	
Boron Water Soluble	8	<1	<1	291[3]	
Phenol	8	<0.01	<0.01	420[1]	
Cresols	8	<0.01	<0.01	-	
Xylenols	8	<0.015	<0.015	-	
2, 3, 5-Trimethylphenol	8	<0.1	<0.1	-	
2-Isopropylphenol	8	<0.015	<0.015	-	
Total Cyanide	8	<1	<1	-	
Free Cyanide	8	<1	<1	-	
Water Soluble Sulphate (g/l)	8	0.0312 – 0.162	0.0766	-	
Nitrate (NO3)	8	<1 – 5.19	1.63	-	
pH	8	7.45 – 11.9	9.54	-	
Soil Organic Matter (%)	8	<0.35 – 3.26	1.17	-	
Asbestos Screen	8	No ACM Detected	-	-	
PCB congener 28	8	<0.003	<0.003	-	
PCB congener 52	8	<0.003	<0.003	-	
PCB congener 101	8	<0.003	<0.003	-	
PCB congener 118	8	<0.003	<0.003	-	
PCB congener 138	8	<0.003 – 0.00678	0.00347	-	
PCB congener 153	8	<0.003 – 0.00425	0.00316	-	
PCB congener 180	8	<0.003 – 0.00411	0.00314	-	
PCBs Total ICES 7	8	<0.003 – 0.0151	0.00451	-	
Naphthalene	8	<0.009 – 0.135	0.0457	1.5[3]	
Acenaphthylene	8	<0.012 – 0.0146	0.0123	170[3]	
Acenaphthene	8	<0.008 – 0.0448	0.0164	210[3]	
Fluorene	8	<0.010 – 0.0838	0.023	160[3]	
Phenanthrene	8	<0.015 – 0.395	0.113	92[3]	
Anthracene	8	<0.016 – 0.083	0.0256	2300[3]	
Fluoranthene	8	<0.017 – 0.560	0.118	260[3]	
Pyrene	8	<0.015 – 0.473	0.101	560[3]	
Benz(a)anthracene	8	<0.014 – 0.272	0.0659	3.1[3]	
Chrysene	8	<0.010 – 0.219	0.0578	6.0[3]	
Benzo(b)fluoranthene	8	<0.015 – 0.273	0.0672	5.6[3]	
Benzo(k)fluoranthene	8	<0.014 – 0.104	0.0296	8.5[3]	
Benzo(a)pyrene	8	<0.015 – 0.187	0.0467	0.83[3]	
Indeno(123cd)pyrene	8	<0.018 – 0.0941	0.0326	3.2[3]	
Dibenzo(ah)anthracene	8	<0.023 – 0.0291	0.0238	0.76[3]	
Benzo(ghi)perylene	8	<0.024 – 0.125	0.0461	44[3]	
PAH 16 EPA Total	8	<0.118 – 3.08	0.734	-	

Solid Contamination Results – Trial Pits					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
GRO > C5 – C12	8	<0.044 – 0.902	0.257	-	
Benzene	8	<0.01 - <0.020	0.0112	0.33[1]	
Ethylbenzene	8	<0.003 – 0.0116	0.00445	350[1]	
Toluene	8	<0.002 – 0.0316	0.00595	610[1]	
m, p-Xylene	8	<0.006 – 0.0264	0.0093	-	
o-Xylene	8	<0.003 - <0.006	0.00338	250[1]	
m, p, o-Xylene	8	<0.01 – 0.0264	0.0133	-	
BTEX total	8	<0.01 – 0.0696	0.0187	-	
Methyl tertiary butyl ether (MTBE)	8	<0.005 – 0.0105	0.00631	-	
Aliphatics > C5 – C6	8	<0.01 – 0.0117	0.0115	30[3]	
Aliphatics > C6 – C8	8	<0.01 – 0.110	0.0238	73[3]	
Aliphatics > C8 – C10	8	<0.01 – 0.108	0.0326	19[3]	
Aliphatics > C10 – C12	8	<0.01 – 0.220	0.0632	93[3]	
Total Aliphatics > C5 – C12	8	<0.01 – 0.402	0.1022	-	
Aliphatics > C12 – C16	8	<0.1 – 52.7	12.0	740[3]	
Aliphatics > C16 – C21	8	<0.1 – 186	43	-	
Aliphatics > C16 – C35	8	9.36 – 314	84.23	45000[3]	
Aliphatics > C21 – C35	8	<0.1 – 130	41.25	-	
Aliphatics > C35 – C44	8	<0.1 – 12.7	1.675	45000[3]	
Total Aliphatics > C12 – C44	8	15.3 – 380	97.83	-	
Total Aliphatics > C5 - 35	8	15.3 – 367	96.29	-	
Total Aliphatics > C5 - C44	8	15.3 – 380	97.91	-	
Aromatics > C6 – C7	8	<0.01	<0.01	-	
Aromatics > C7 – C8	8	<0.01 – 0.0316	0.0127	120[3]	
Aromatics > EC8 – EC10	8	<0.01 – 0.162	0.0479	27[3]	
Aromatics > EC10 – EC12	8	<0.01 – 0.330	0.0898	69[3]	
Total Aromatics > C6 – C12	8	<0.01 – 0.492	0.134	-	
Aromatics > EC12 – EC16	8	<0.01 – 11.7	4.39	140[3]	
Aromatics > EC16 – EC21	8	<0.01 – 38.5	11.68	250[3]	
Aromatics > EC21 – EC35	8	<0.01 – 56.6	19.49	890[3]	
Aromatics > EC35 – EC44	8	<0.01 – 15.2	6.99	890[3]	
Aromatics > EC40 – EC44	8	<0.01 – 5.7	2.77	-	
Total Aromatics > EC12 – EC44	8	<0.01 - 122	42.5	-	
Total Aromatics > C5 - 35	8	<0.1 – 107	35.68	-	
Total Aromatics > C6 – C44	8	<0.1 – 122	42.63	-	
Total Aliphatics & Aromatics > C5 – 35	8	15.3 – 474	131.91	-	
Total Aliphatics & Aromatics > C5 – C44	8	15.3 – 502	140.51	-	

Solid Contamination Results – Trial Pits					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Dichlorodifluoromethane	8	<0.013	<0.013	-	
Chloromethane	8	<0.012	<0.012	0.0083[4]	
Vinyl Chloride	8	<0.01	<0.01	0.00047[3]	
Bromemethane	8	<0.009	<0.009	-	
Chloroethane	8	<0.012	<0.012	8.3[4]	
Trichlorofluoromethane	8	<0.007	<0.007	-	
1.1-Dichloroethene	8	<0.009	<0.009	2.4[4]	
Carbon Disulphide	8	<0.009 – 0.0195	0.0105	0.10[3]	
Dichloromethane	8	<0.01	<0.01	0.58[4]	
Methyl Tertiary Butyl Ether	8	<0.009	<0.009	49[4]	
trans-1-2-Dichloroethene	8	<0.012	<0.012	-	
1.1-Dichloroethane	8	<0.008	<0.008	2.4[4]	
cis-1-2-Dichloroethene	8	<0.009	<0.009	0.11[4]	
2.2-Dichloropropane	8	<0.01	<0.01	-	
Bromochloromethane	8	<0.01	<0.01	-	
Chloroform	8	<0.01	<0.01	0.75[3]	
1.1.1-Trichloroethane	8	<0.012	<0.012	6.2[3]	
1.1-Dichloropropene	8	<0.013	<0.013	-	
Carbontetrachloride	8	<0.011	<0.011	-	
1.2-Dichloroethane	8	<0.01	<0.01	0.0054[3]	
Benzene	8	<0.009	<0.009	-	
Trichloroethene	8	<0.009	<0.009	0.11[3]	
1.2-Dichloropropane	8	<0.01	<0.01	0.024[4]	
Dibromomethane	8	<0.012	<0.012	-	
Bromodichloromethane	8	<0.011	<0.011	0.016[4]	
cis-1-3-Dichloropropene	8	<0.025	<0.025	-	
Toluene	8	<0.006 -0.0456	0.0123	610[1]	
trans-1-2-Dichloropropene	8	<0.027	<0.027	-	
1.1.2-Trichloroethane	8	<0.009	<0.009	0.6[4]	
1.3-Dichloropropane	8	<0.007	<0.007	-	
Tetrachloroethene	8	<0.009	<0.009	0.94[3]	
Dibromochloromethane	8	<0.009	<0.009	-	
1.2-Dibromoethane	8	<0.014	<0.014	-	
Chlorobenzene	8	<0.007	<0.007	0.33[3]	
1.1.1.2-Tetrachloroethane	8	<0.011	<0.011	0.90[3]	
Ethylbenzene	8	<0.009 – 0.01	0.0091	350[1]	
p/m-Xylene	8	<0.013 – 0.0293	0.015	-	
o-Xylene	8	<0.011	<0.011	250[1]	

VOC's continued					
Styrene	8	<0.011	<0.011	8.1[4]	
Bromoform	8	<0.012	<0.012	2.8[4]	
Isopropylbenzene	8	<0.009	<0.009	11[4]	
1.1.2.2-Tetrachloroethane	8	<0.015	<0.015	1.4[3]	
1.2.3-Trichloropropane	8	<0.013	<0.013	-	
Bromobenzene	8	<0.014	<0.014	0.87[4]	
Propylbenzene	8	<0.006 – 0.01	0.0065	34[4]	
2-Chlorotoluene	8	<0.014	<0.014	-	
1.3.5-Trimethylbenzene	8	<0.008 – 0.0127	0.0086	-	
4-Chlorotoluene	8	<0.009	<0.009	-	
tert-Butylbenzene	8	<0.012	<0.012	-	
1.2.4-Trimethylbenzene	8	<0.01 – 0.0344	0.013	0.35[4]	
sec-Butylbenzene	8	<0.008	<0.008	-	
4-Isopropyltoluene	8	<0.008	<0.008	-	
1.3-Dichlorobenzene	8	<0.008	<0.008	0.29[3]	
1.4-Dichlorobenzene	8	<0.011	<0.011	30[3]	
n-Butylbenzene	8	<0.007	<0.007	-	
1.2-Dichlorobenzene	8	<0.008	<0.008	16[3]	
1.2-Dibromo-3-chloropropane	8	<0.011	<0.011	-	
tert-amyl methyl ether	8	<0.007	<0.007	-	
1.2.4-Trichlorobenzene	8	<0.009	<0.009	1.8[3]	
Hexachlorobutadiene	8	<0.015	<0.015	0.21[3]	
Naphthalene	8	<0.007 – 0.0471	0.012	1.5[3]	
1.2.3-Trichlorobenzene	8	<0.012	<0.012	1.0[3]	

- Generic Assessment Criteria (GAC):
  - [1] Soil Guideline Value (SGV) Environment Agency (Post-March 2009) 6% SOM
  - [2] Soil Guideline Value (SGV) Environment Agency (Pre-March 2009)
  - [3] LQM / CIEH (2nd Edition) Generic Assessment Criteria (2009) 1% SOM
  - [4] CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (January 2010) 1% SOM
- All units in mg/kg unless otherwise stated.

Solid Contamination Results - Stockpile					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Arsenic	5	2.04 – 9.87	5.9	32[1]	
Barium	5	31.7 – 264	152.14	-	
Beryllium	5	0.628 – 2.62	1.48	51[3]	
Cadmium	5	0.242 – 1.51	0.864	10[1]	
Chromium	5	3.66 – 48.7	28.31	125[2]	
Copper	5	2.9 – 23.6	13.66	2330[3]	
Lead	5	3.49 – 17.8	9.17	450[2]	
Mercury	5	<0.14 - 0.277	0.181	1[1]	
Nickel	5	3.52 – 24.8	13.57	130[1]	
Selenium	5	<1		350[1]	
Vanadium	5	5.22 – 41.2	22.68	75[3]	
Zinc	5	4.39 – 146	84.26	3750[3]	
Boron Water Soluble	5	<1		291[3]	
Phenol	5	<0.01	<0.01	420[1]	
Cresols	5	<0.01	<0.01	-	
Xylenols	5	<0.015	<0.015	-	
2, 3, 5-Trimethylphenol	5	<0.1	<0.1	-	
2-Isopropylphenol	5	<0.015	<0.015	-	
Total Cyanide	5	<1	<1	-	
Free Cyanide	5	<1	<1	-	
Water Soluble Sulphate (g/l)	5	0.0171 – 0.119	0.0613	-	
Nitrate (NO3)	5	<1 – 1.56	1.112	-	
pH	5	8.03 – 10.5	8.76	-	
Soil Organic Matter (%)	5	<0.35 – 2.41	1.52	-	
Asbestos Screen	5	No ACM Detected	-	-	
PCB congener 28	5	<0.003 – 0.045	0.0114	-	
PCB congener 52	5	<0.003	<0.003	-	
PCB congener 101	5	<0.003	<0.003	-	
PCB congener 118	5	<0.003	<0.003	-	
PCB congener 138	5	<0.003	<0.003	-	
PCB congener 153	5	<0.003	<0.003	-	
PCB congener 180	5	<0.003	<0.003	-	
PCBs Total ICES 7	5	<0.003 – 0.045	0.0114	-	
Naphthalene	5	0.0181 – 0.305	0.0967	1.5[3]	
Acenaphthylene	5	<0.012 – 0.206	0.0521	170[3]	
Acenaphthene	5	<0.008 – 0.130	0.0405	210[3]	
Fluorene	5	<0.0109 – 0.454	0.126	160[3]	
Phenanthrene	5	0.103 – 0.736	0.294	92[3]	
Anthracene	5	<0.016 – 0.437	0.118	2300[3]	
Fluoranthene	5	0.0217 – 0.156	0.0841	260[3]	
Pyrene	5	0.0554 – 0.461	0.166	560[3]	
Benz(a)anthracene	5	0.0247 – 0.115	0.0611	3.1[3]	
Chrysene	5	0.0241 – 0.0987	0.0621	6.0[3]	
Benzo(b)fluoranthene	5	0.0274 – 0.142	0.0758	5.6[3]	
Benzo(k)fluoranthene	5	<0.014 – 0.0502	0.0254	8.5[3]	
Benzo(a)pyrene	5	<0.015 – 0.108	0.0453	0.83[3]	
Indeno(123cd)pyrene	5	<0.018 – 0.0611	0.0311	3.2[3]	
Dibenzo(ah)anthracene	5	<0.023		0.76[3]	
Benzo(ghi)perylene	5	<0.024 – 0.0788	0.0425	44[3]	
PAH 16 EPA Total	5	0.426 – 3.38	1.27	-	

Solid Contamination Results - Stockpile					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
GRO > C5 – C12	5	<0.044 – 15.1	4.963	-	
Benzene	5	<0.01	-	0.33[1]	
Ethylbenzene	5	<0.003 – 0.0174	0.0075	350[1]	
Toluene	5	<0.002	-	610[1]	
m, p-Xylene	5	<0.006	-	-	
o-Xylene	5	<0.003 – 0.0197	0.00634	250[1]	
m, p, o-Xylene	5	<0.01 – 0.0197	0.0119	-	
BTEX total	5	<0.01 – 0.0371	0.0156	-	
Methyl tertiary butyl ether (MTBE)	5	<0.005	<0.005	-	
Aliphatics > C5 – C6	5	<0.01	<0.01	30[3]	
Aliphatics > C6 – C8	5	<0.01 – 0.0648	0.02096	73[3]	
Aliphatics > C8 – C10	5	<0.01 – 1.36	0.366	19[3]	
Aliphatics > C10 – C12	5	<0.01 – 4.66	1.61	93[3]	
Total Aliphatics > C5 – C12	5	<0.01 – 6.09	1.99	-	
Aliphatics > C12 – C16	5	6.62 – 839	300.7	740[3]	**S5**
Aliphatics > C16 – C21	5	57.2 – 2800	1196	-	
Aliphatics > C16 – C35	5	101 – 5140	2093	45000[3]	
Aliphatics > C21 – C35	5	43.6 – 2340	896	-	
Aliphatics > C35 – C44	5	<0.1 – 132	42.1	45000[3]	
Total Aliphatics > C12 – C44	5	107 - 6110	2435	-	
Total Aliphatics > C5 - 35	5	107 – 5990	2396	-	
Total Aliphatics > C5 - C44	5	107 – 6120	2439	-	
Aromatics > C6 – C7	5	<0.01	<0.01	-	
Aromatics > C7 – C8	5	<0.01	<0.01	120[3]	
Aromatics > EC8 – EC10	5	<0.01 – 2.04	0.554	27[3]	
Aromatics > EC10 – EC12	5	<0.01 – 6.99	2.42	69[3]	
Total Aromatics > C6 – C12	5	<0.01 – 9.03	2.97	-	
Aromatics > EC12 – EC16	5	7.6 – 160	63.3	140[3]	**S5**
Aromatics > EC16 – EC21	5	24.1 – 648	270	250[3]	**S1, S5**
Aromatics > EC21 – EC35	5	27.1 – 602	235	890[3]	
Aromatics > EC35 – EC44	5	7.34 – 54	22.97	890[3]	
Aromatics > EC40 – EC44	5	2.66 – 17.5	7.45	-	
Total Aromatics > EC12 – EC44	5	66.2 – 1460	590.6	-	
Total Aromatics > C5 - 35	5	58.8 – 1420	571.6	-	
Total Aromatics > C6 – C44	5	66.2 – 1470	593.8	-	
Total Aliphatics & Aromatics > C5 – 35	5	166 – 7400	2966	-	
Total Aliphatics & Aromatics > C5 – C44	5	174 – 7590	3033	-	

Solid Contamination Results – Stockpile					
Contaminant	No. of samples	Range of results	Mean	GAC	No. exceeded
Dichlorodifluoromethane	5	<0.013	<0.013	-	
Chloromethane	5	<0.012	<0.012	0.0083[4]	
Vinyl Chloride	5	<0.01	<0.01	0.00047[3]	
Bromemethane	5	<0.009	<0.009	-	
Chloroethane	5	<0.012	<0.012	8.3[4]	
Trichlorofluoromethane	5	<0.007	<0.007	-	
1.1-Dichloroethene	5	<0.009	<0.009	2.4[4]	
Carbon Disulphide	5	<0.009 – 0.0532	0.02134	0.10[3]	
Dichloromethane	5	<0.01	<0.01	0.58[4]	
Methyl Tertiary Butyl Ether	5	<0.009	<0.009	49[4]	
trans-1-2-Dichloroethene	5	<0.012	<0.012	-	
1.1-Dichloroethane	5	<0.008	<0.008	2.4[4]	
cis-1-2-Dichloroethene	5	<0.009	<0.009	0.11[4]	
2.2-Dichloropropane	5	<0.01	<0.01	-	
Bromochloromethane	5	<0.01	<0.01	-	
Chloroform	5	<0.01	<0.01	0.75[3]	
1.1.1-Trichloroethane	5	<0.012	<0.012	6.2[3]	
1.1-Dichloropropene	5	<0.013	<0.013	-	
Carbontetrachloride	5	<0.011	<0.011	-	
1.2-Dichloroethane	5	<0.01	<0.01	0.0054[3]	
Benzene	5	<0.009	<0.009	-	
Trichloroethene	5	<0.009	<0.009	0.11[3]	
1.2-Dichloropropane	5	<0.01	<0.01	0.024[4]	
Dibromomethane	5	<0.012	<0.012	-	
Bromodichloromethane	5	<0.011	<0.011	0.016[4]	
cis-1-3-Dichloropropene	5	<0.025	<0.025	-	
Toluene	5	<0.006 -0.008	0.0068	610[1]	
trans-1-2-Dichloropropene	5	<0.027	<0.027	-	
1.1.2-Trichloroethane	5	<0.009	<0.009	0.6[4]	
1.3-Dichloropropane	5	<0.007	<0.007	-	
Tetrachloroethene	5	<0.009	<0.009	0.94[3]	
Dibromochloromethane	5	<0.009	<0.009	-	
1.2-Dibromoethane	5	<0.014	<0.014	-	
Chorobenzene	5	<0.007	<0.007	0.33[3]	
1.1.1.2-Tetrachloroethane	5	<0.011	<0.011	0.90[3]	
Ethylbenzene	5	<0.009	<0.009	350[1]	
p/m-Xylene	5	<0.013	<0.013	-	
o-Xylene	5	<0.011	<0.011	250[1]	

VOC's continued					
Styrene		<0.011	<0.011	8.1[4]	
Bromoform		<0.012	<0.012	2.8[4]	
Isopropylbenzene		<0.009	<0.009	11[4]	
1.1.2.2-Tetrachloroethane		<0.015	<0.015	1.4[3]	
1.2.3-Trichloropropane		<0.013	<0.013	-	
Bromobenzene		<0.014	<0.014	0.87[4]	
Propylbenzene		<0.006	<0.006	34[4]	
2-Chlorotoluene		<0.014	<0.014	-	
1.3.5-Trimethylbenzene		<0.008	<0.008	-	
4-Chlorotoluene		<0.009	<0.009	-	
tert-Butylbenzene		<0.012	<0.012	-	
1.2.4-Trimethylbenzene		<0.01 – 0.0227	0.0125	0.35[4]	
sec-Butylbenzene		<0.008 – 0.012	0.0088	-	
4-Isopropyltoluene		<0.008	<0.008	-	
1.3-Dichlorobenzene		<0.008	<0.008	0.29[3]	
1.4-Dichlorobenzene		<0.011	<0.011	30[3]	
n-Butylbenzene		<0.007	<0.007	-	
1.2-Dichlorobenzene		<0.008	<0.008	16[3]	
1.2-Dibromo-3-chloropropane		<0.011	<0.011	-	
tert-amyl methyl ether		<0.007	<0.007	-	
1.2.4-Trichlorobenzene		<0.009	<0.009	1.8[3]	
Hexachlorobutadiene		<0.015	<0.015	0.21[3]	
Naphthalene		<0.007	<0.007	1.5[3]	
1.2.3-Trichlorobenzene		<0.012	<0.012	1.0[3]	

- Generic Assessment Criteria (GAC):
  - [1] Soil Guideline Value (SGV) Environment Agency (Post-March 2009) 6% SOM
  - [2] Soil Guideline Value (SGV) Environment Agency (Pre-March 2009)
  - [3] LQM / CIEH (2nd Edition) Generic Assessment Criteria (2009) 1% SOM
  - [4] CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (January 2010) 1% SOM
- All units in mg/kg unless otherwise stated.

APPENDIX 4
LABORATORY TEST RESULTS

ALcontrol Laboratories

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
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Tel: (01244) 528700
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Website: www.alcontrol.com

Integra Consulting
Fountain House
Second Floor
Fountain Street
Manchester
Lancashire
M2 2EE

Attention: Sabine Sargeant

CERTIFICATE OF ANALYSIS

Date:	02 June 2010		
Customer:	H_INTEGCON_MAN-11		
Sample Delivery Group (SDG):	100514-102	**Report No.:**	85707
Your Reference:	2074		
Location:	Whitehaven		

We received 18 samples on Friday May 14, 2010 and 18 of these samples were scheduled for analysis which was completed on Wednesday June 02, 2010. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Iain Swinton

Operations Director - Land UK & Ireland

MCERTS
UKAS TESTING
1291
GROUP

Validated

ALcontrol Laboratories Analytical Services

SDG:	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Sampled Date
1552644	B1	1.50 - 1.50	
1552645	B3	1.50 - 1.50	
1552646	E1	1.50 - 1.50	
1552647	N1	1.50 - 1.50	
1547834	S1		
1547618	S2		
1547865	S3		
1547848	S4		
1547812	S5		
1547878	TPA	0.50 - 0.50	
1547892	TPA	1.50 - 1.50	
1547824	TPB	0.50 - 0.50	
1547902	TPB	1.00 - 1.00	
1547908	TPC	0.50 - 0.50	
1547692	TPC	1.00 - 1.00	
1547646	TPD	0.50 - 0.50	
1547634	TPD	1.00 - 1.00	
1552648	W1	1.50 - 1.50	

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

ALcontrol Laboratories Analytical Services

SDG:	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

SOLID

Results Legend

X Test

N No Determination Possible

Lab Sample No(s)		1547618	1547634	1547646	1547692	1547812	1547824	1547834	1547848	1547865	1547878	1547892	1547902	1547908	1552644	1552645	1552646	1552647	1552648	Total
Customer Sample Ref.		S2	TPD	TPD	TPC	S5	TPB	S1	S4	S3	TPA	TPA	TPB	TPC	B1	B3	E1	N1	W1	
Depth (m)			1.00 - 1.00	0.50 - 0.50	1.00 - 1.00		0.50 - 0.50				0.50 - 0.50	1.50 - 1.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	
Container		250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	250g amber jar	
Asbestos Presence Screen	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
Boron Water Soluble	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
Cyanide Comp/Free/Total/Thiocyanate	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
EPH CWG (Aliphatic) GC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
EPH CWG (Aromatic) GC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
GRO BTEX MTBE GC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
Metals by ICap-OES (Soil)	Arsenic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Barium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Beryllium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Cadmium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Chromium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Copper	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Lead	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Mercury	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Nickel	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Selenium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Vanadium	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
	Zinc	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
NO3, NO2 and TON by KONE (s)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
PAH by GCMS	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
PCBs by GCMS	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
pH	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 18
Phenols by HPLC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 / 16

Validated

ALcontrol Laboratories Analytical Services

SDG:	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

		1547618	1547634	1547646	1547692	1547812	1547824	1547834	1547848	1547865	1547878	1547892	1547902	1547908	1552644	1552645	1552646	1552647	1552648	Total
		S2	TPD	TPD	TPC	S5	TPB	S1	S4	S3	TPA	TPA	TPB	TPC	B1	B3	E1	N1	W1	
			1.00 - 1.00	0.50 - 0.50	1.00 - 1.00		0.50 - 0.50				0.50 - 0.50	1.50 - 1.50	1.00 - 1.00	0.50 - 0.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	
Sample description	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 18
Total Organic Carbon	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 18
TPH CWG GC (S)	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 18
VOC MS (S)	All		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 18
Water Soluble Sulphate 2:1	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0 18

Validated

ALcontrol Laboratories Analytical Services

SDG:	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

Sample Descriptions

Grain Sizes:
<0.063mm very fine,
0.063mm - 0.1mm fine,
0.1mm - 2mm medium,
2mm - 10mm coarse,
>10mm very coarse

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions
1547618	S2		Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547634	TPD	1.00 - 1.00	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547646	TPD	0.50 - 0.50	Light Brown	Sand	0.1 - 2 mm	Stones
1547692	TPC	1.00 - 1.00	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547812	S5		Light Brown	Sandy Loam	0.1 - 2 mm	Stones
1547824	TPB	0.50 - 0.50	Light Brown	Sand	0.1 - 2 mm	Stones
1547834	S1		Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547848	S4		Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547865	S3		Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547878	TPA	0.50 - 0.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547892	TPA	1.50 - 1.50	Light Brown	Sand	0.1 - 2 mm	Stones
1547902	TPB	1.00 - 1.00	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1547908	TPC	0.50 - 0.50	Light Brown	Sand	0.1 - 2 mm	Stones
1552644	B1	1.50 - 1.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1552645	B3	1.50 - 1.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1552646	E1	1.50 - 1.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1552647	N1	1.50 - 1.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones
1552648	W1	1.50 - 1.50	Light Brown	Sandy Clay	0.1 - 2 mm	Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

ALcontrol Laboratories Analytical Services

SDG:	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

Test Completion dates

SDG reference: 100514-102

Lab Sample No(s)	1547618	1547634	1547646	1547652	1547612	1547624	1547634	1547642	1547655	1547678	1547682	1547702
Customer Sample Ref.	S2	TP9	TP9	TP6	S5	TP8	S1	S4	S3	TP4	TP4	TP8
Depth		1.00 - 1.00	0.50 - 0.50	1.00 - 1.00		0.50 - 0.50				0.50 - 0.50	1.50 - 1.50	1.00 - 1.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos Presence Screen	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010
Boron Water Soluble	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
Cyanide Comp/Free/Total/Thiocyanate	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
EPH CWG (Aliphatic) GC (S)	20/05/2010	20/05/2010	20/05/2010	20/05/2010	21/05/2010	20/05/2010	21/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
EPH CWG (Aromatic) GC (S)	20/05/2010	20/05/2010	20/05/2010	20/05/2010	21/05/2010	20/05/2010	21/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
GRO BTEX MTBE GC (S)	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010
Metals by iCap-OES (Soil)	21/05/2010	19/05/2010	19/05/2010	19/05/2010	20/05/2010	19/05/2010	21/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
NO3, NO2 and TON by KONE (s)	20/05/2010	20/05/2010	25/05/2010	25/05/2010	25/05/2010	25/05/2010	25/05/2010	20/05/2010	20/05/2010	25/05/2010	20/05/2010	25/05/2010
PAH by GCMS	23/05/2010	24/05/2010	24/05/2010	23/05/2010	23/05/2010	23/05/2010	23/05/2010	23/05/2010	23/05/2010	23/05/2010	23/05/2010	24/05/2010
PCBs by GCMS	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	21/05/2010
pH	18/05/2010	18/05/2010	18/05/2010	18/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010
Phenols by HPLC (S)	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	19/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
Sample description	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010
Total Organic Carbon	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
TPH CWG GC (S)	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010
VOC MS (S)	28/05/2010	30/05/2010	28/05/2010	30/05/2010	28/05/2010	28/05/2010	28/05/2010	30/05/2010	30/05/2010	28/05/2010	30/05/2010	30/05/2010
Water Soluble Sulphate 2:1	20/05/2010	20/05/2010	21/05/2010	21/05/2010	21/05/2010	21/05/2010	21/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010

1547900	1552644	1552645	1552646	1552647	1552648
TPC	B1	B3	E1	N1	W1
0.50 - 0.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50
SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010
20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
20/05/2010	19/05/2010	19/05/2010	20/05/2010	19/05/2010	20/05/2010
20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010
20/05/2010	20/05/2010	20/05/2010	19/05/2010	19/05/2010	20/05/2010
25/05/2010	25/05/2010	25/05/2010	25/05/2010	25/05/2010	25/05/2010
23/05/2010	23/05/2010	24/05/2010	23/05/2010	23/05/2010	23/05/2010
21/05/2010	20/05/2010	20/05/2010	21/05/2010	20/05/2010	21/05/2010
19/05/2010	18/05/2010	18/05/2010	19/05/2010	18/05/2010	19/05/2010
20/05/2010	19/05/2010	19/05/2010	20/05/2010	19/05/2010	19/05/2010
18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010	18/05/2010
20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010	20/05/2010
24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010	24/05/2010
30/05/2010	28/05/2010	28/05/2010	28/05/2010	28/05/2010	30/05/2010
20/05/2010	21/05/2010	21/05/2010	20/05/2010	21/05/2010	20/05/2010

Validated

ALcontrol Laboratories Analytical Services

SDG 100514-102
Job: H_INTEGCON_MAN-11
Client Reference: 2074
Location: Whitehaven

Customer: Integra Consulting
Attention: Sabine Sargeant
Order No.:
Report No: 85707

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Customer Sample Ref.	B1	B3	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref	1552644	1552645	1552646	1552647	1547834	1547618
Lab Sample No.(s)						

Component	LOD/Units	Method											
Asbestos, Presence screen	-	TM001	No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Sulphate, 2:1 water soluble	<0.003 g/l	TM098	0.0517	M	0.0329	M	0.0338	M	0.046	M	0.0406	M	0.061	M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM102	<1	#	<1	#	<1	#	<1	#	<1	#	<1	#
Soil Organic Matter (SOM)	<0.35 %	TM132	2.74	#	2.17	#	2.14	#	1.67	#	0.517	#	2.02	#
pH	1 pH Units	TM133	7.62	M	7.81	M	8.01	M	7.31	M	8.67	M	8.45	M
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M
Cyanide, Free	<1 mg/kg	TM153	<1		<1		<1		<1		<1		<1	
PCB congener 28	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 52	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 101	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 118	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 138	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 153	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 180	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCBs, Total ICES 7	<3 µg/kg	TM168	<3		<3		<3		<3		<3		<3	
Arsenic	<0.6 mg/kg	TM181	15.3	M	11.2	M	18.7	M	8.56	M	3.82	M	9.87	M
Barium	<0.6 mg/kg	TM181	246	#	249	#	138	#	264	#	56	#	264	#
Beryllium	<0.01 mg/kg	TM181	2.24	M	2.77	M	2.71	M	2.09	M	0.808	M	2.62	M
Cadmium	<0.02 mg/kg	TM181	0.033	M	<0.02	M	0.214	M	0.118	M	1.12	M	1.51	M
Chromium	<0.9 mg/kg	TM181	17	M	21.6	M	19.1	M	17.9	M	32.1	M	48.7	M
Copper	<1.4 mg/kg	TM181	28.8	M	37.4	M	33	M	25.5	M	9.99	M	22.8	M
Lead	<0.7 mg/kg	TM181	19.9	M	21.6	M	28.6	M	14	M	3.49	M	13.1	M
Mercury	<0.14 mg/kg	TM181	<0.14	M	<0.14	M	<0.14	M	<0.14	M	0.277	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	32.3	M	31.6	M	22	M	25.5	M	7.44	M	23	M
Selenium	<1 mg/kg	TM181	1.41	#	<1	#	<1	#	<1	#	<1	#	<1	#
Vanadium	<0.2 mg/kg	TM181	18.2	#	24.3	#	19.2	#	19.3	#	21.4	#	41.2	#
Zinc	<1.9 mg/kg	TM181	81.5	M	75.7	M	60.1	M	61.1	M	92.8	M	90.1	M
Boron, water soluble	<1 mg/kg	TM222	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aliphatic) GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Customer Sample Ref.	B1	B3	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1552644	1552645	1552646	1552647	1547834	1547618

Component	LOD/Units	Method					
Aliphatics >C12-C16	<100 µg/kg	TM173	10600	7000	20100	17900	337000	272000
Aliphatics >C16-C21	<100 µg/kg	TM173	7970	14600	132000	34600	2120000	812000
Aliphatics >C16-C35	<100 µg/kg	TM173	17900	27300	227000	64100	3270000	1600000
Aliphatics >C21-C35	<100 µg/kg	TM173	9940	12700	95500	29500	1150000	784000
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	4580	<100	21100	44600
Total Aliphatics >C12-C44	<100 µg/kg	TM173	28500	34300	252000	82000	3630000	1910000

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aromatic) GC (S)

#	ISO17025 accredited
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	B1	B2	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1552644	1552645	1552646	1552647	1547834	1547618

Component	LOD/Units	Method					
Aromatics >EC12-EC16	<100 µg/kg	TM173	7410	5680	7670	6820	44700	83100
Aromatics >EC16-EC21	<100 µg/kg	TM173	9650	9760	28800	12600	349000	251000
Aromatics >EC21-EC35	<100 µg/kg	TM173	15400	15300	26900	17000	238000	227000
Aromatics >EC35-EC44	<100 µg/kg	TM173	5020	5040	8160	4850	16100	22600
Aromatics >EC40-EC44	<100 µg/kg	TM173	1430	1550	3410	1520	5620	6580
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	37500	35800	71500	41200	647000	584000

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

GRO BTEX MTBE GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	B1	B3	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref						
Lab Sample No.(s)	1552644	1552645	1552646	1552647	1547834	1547618

Component	LOD/Units	Method											
GRO Surrogate % recovery**	%	TM089	94		87		79		91		42	58	
GRO >C5-C12	<44 µg/kg	TM089	<44	#	<44	#	<44	#	<44	#	<44 #	9200	#
Benzene	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<10	M	<10 M	<10	M
Ethylbenzene	<3 µg/kg	TM089	<3	M	<3	M	<3	M	<3	M	<3 M	17.4	M
Toluene	<2 µg/kg	TM089	<2	M	<2	M	<2	M	<2	M	<2 M	<2	M
m p-Xylene	<6 µg/kg	TM089	<6	M	<6	M	<6	M	<6	M	<6 M	<6	M
o-Xylene	<3 µg/kg	TM089	<3	M	<3	M	<3	M	<3	M	<3 M	19.7	M
m,p o-Xylene	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<10	M	<10 M	19.7	M
BTEX Total	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<10	M	<10 M	37.1	M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#	<5	#	<5	#	<5	#	<5 #	<5	#
Aliphatics >C5-C6	<10 µg/kg	TM089	<10		<10		<10		<10		<10	<10	
Aliphatics >C6-C8	<10 µg/kg	TM089	<10		<10		<10		<10		<10	<10	
Aliphatics >C8-C10	<10 µg/kg	TM089	<10		<10		<10		<10		<10	443	
Aliphatics >C10-C12	<10 µg/kg	TM089	<10		<10		<10		<10		<10	3220	
Aromatics >C6-C7	<10 µg/kg	TM089	<10		<10		<10		<10		<10	<10	
Aromatics >C7-C8	<10 µg/kg	TM089	<10		<10		<10		<10		<10	<10	
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10		<10		<10		<10		<10	702	
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10		<10		<10		<10		<10	4830	
Total Aliphatics >C5-C12	<10 µg/kg	TM089	<10		<10		<10		<10		<10	3660	
Total Aromatics >C6-C12	<10 µg/kg	TM089	<10		<10		<10		<10		<10	5530	

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

PAH by GCMS

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	B1	B2	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref	1552644	1552645	1552646	1552647	1547634	1547618
Lab Sample No.(s)						

Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	98.6		85.4		89		93		97.9		94.7	
Acenaphthene-d10 % recovery**	%	TM218	96.4		81.8		87		91.3		105		96.8	
Phenanthrene-d10 % recovery**	%	TM218	93		78.4		84.9		88.7		105		95.6	
Chrysene-d12 % recovery**	%	TM218	81.8		72		78.9		77.6		107		92.5	
Perylene-d12 % recovery**	%	TM218	73.4		70.4		75.3		73.7		104		90.8	
Naphthalene	<9 µg/kg	TM218	<9	M	<9	M	<9	M	<9	M	30.4	M	69.7	M
Acenaphthylene	<12 µg/kg	TM218	<12	M	<12	M	<12	M	<12	M	17.5	M	13.2	M
Acenaphthene	<8 µg/kg	TM218	<8	M	<8	M	<8	M	<8	M	18.3	M	38	M
Fluorene	<10 µg/kg	TM218	<10	M	<10	M	<10	M	<10	M	19.3	M	129	M
Phenanthrene	<15 µg/kg	TM218	145	M	64.1	M	31.1	M	81.9	M	103	M	280	M
Anthracene	<16 µg/kg	TM218	<16	M	<16	M	<16	M	84	M	58.1	M	63.2	M
Fluoranthene	<17 µg/kg	TM218	20.6	M	42.6	M	<17	M	<17	M	21.7	M	46	M
Pyrene	<15 µg/kg	TM218	18.1	M	49.9	M	47.3	M	42.9	M	55.4	M	80.9	M
Benz(a)anthracene	<14 µg/kg	TM218	16	M	35.2	M	21.4	M	<14	M	25.4	M	24.7	M
Chrysene	<10 µg/kg	TM218	25.8	M	37.1	M	13.6	M	<10	M	24.1	M	34	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	24.1	M	40.7	M	23.8	M	<15	M	27.4	M	34.8	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M	<14	M	<14	M	<14	M	<14	M	<14	M
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M	18.2	M	<15	M	<15	M	24.8	M	<15	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M	<18	M	<18	M	<18	M	<18	M	<18	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M	<23	M	<23	M	<23	M	<23	M	<23	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M	<24	M	<24	M	<24	M	<24	M	<24	M
Polyaromatic hydrocarbons Total USEPA 16	<118 µg/kg	TM218	250	M	288	M	137	M	209	M	426	M	814	M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

TPH CWG GC (S)

Results Legend		Customer Sample Ref.	B1	B3	E1	N1	S1	S2
#	ISO17025 accredited.	Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
diss.filt	Dissolved / filtered sample.	Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
tot.unfilt	Total / unfiltered sample.	SDG Ref	1552644	1552645	1552646	1552647	1547834	1547618
*	subcontracted test.	Lab Sample No.(s)						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery							

Component	LOD/Units	Method						
Total Aliphatics >C5-35	<100 µg/kg	TM173	28500	34300	247000	82000	3610000	1870000
Total Aliphatics >C5-C44	<100 µg/kg	TM173	28500	34300	252000	82000	3630000	1920000
Total Aromatics >C5-35	<100 µg/kg	TM173	32500	30800	63300	36400	631000	567000
Total Aromatics >C6-C44	<100 µg/kg	TM173	37500	35800	71500	41200	647000	590000
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	61000	65000	311000	118000	4240000	2440000
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	66000	70100	323000	123000	4280000	2510000

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

Report Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample
tot.unfilt	Total / unfiltered sample
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Customer Sample Ref.	B1	B3	E1	N1	S1	S2
Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref	1552644	1552645	1552646	1552647	1547634	1547618
Lab Sample No.(s)						

Component	LOD/Units	Method											
Dibromofluoromethane**	%	TM116	101		100		98.7		101		88		93.4	
Toluene-d8**	%	TM116	95.8		98.2		97.7		97.8		75.9		95.5	
4-Bromofluorobenzene**	%	TM116	109		106		107		110		161		125	
Dichlorodifluoromethane	<13 µg/kg	TM116	<13	#	<13	#	<13	#	<13	#	<13	#	<13	#
Chloromethane	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#
Vinyl Chloride	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
Bromomethane	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
Chloroethane	<12 µg/kg	TM116	<12		<12		<12		<12		<12		<12	
Trichlorofluoromethane	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	<7	#	<7	#
1,1-Dichloroethene	<9 µg/kg	TM116	<9	M	<9	M	<9	M	<9	M	<9	M	<9	M
Carbon Disulphide	<9 µg/kg	TM116	<9	M	<9	M	<9	M	<9	M	11.7	M	23.8	M
Dichloromethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
Methyl Tertiary Butyl Ether	<9 µg/kg	TM116	<9		<9		<9		<9		<9		<9	
trans-1-2-Dichloroethene	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#
1,1-Dichloroethane	<8 µg/kg	TM116	<8	M	<8	M	<8	M	<8	M	<8	M	<8	M
cis-1-2-Dichloroethene	<9 µg/kg	TM116	<9	M	<9	M	<9	M	<9	M	<9	M	<9	M
2,2-Dichloropropane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
Bromochloromethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
Chloroform	<10 µg/kg	TM116	<10	M	<10	M	<10	M	<10	M	<10	M	<10	M
1,1,1-Trichloroethane	<12 µg/kg	TM116	<12	M	<12	M	<12	M	<12	M	<12	M	<12	M
1,1-Dichloropropene	<13 µg/kg	TM116	<13	M	<13	M	<13	M	<13	M	<13	M	<13	M
Carbontetrachloride	<11 µg/kg	TM116	<11	M	<11	M	<11	M	<11	M	<11	M	<11	M
1,2-Dichloroethene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
Benzene	<9 µg/kg	TM116	<9	M	<9	M	<9	M	<9	M	<9	M	<9	M
Trichloroethene	<9 µg/kg	TM116	<9	M	<9	M	<9	M	<9	M	<9	M	<9	M
1,2-Dichloropropane	<10 µg/kg	TM116	<10	M	<10	M	<10	M	<10	M	<10	M	<10	M
Dibromomethane	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#
Bromodichloromethane	<11 µg/kg	TM116	<11	M	<11	M	<11	M	<11	M	<11	M	<11	M
cis-1-3-Dichloropropene	<25 µg/kg	TM116	<25		<25		<25		<25		<25		<25	
Toluene	<6 µg/kg	TM116	<6	M	<6	M	<6	M	<6	M	<6	M	8	M
trans-1-3-Dichloropropene	<27 µg/kg	TM116	<27		<27		<27		<27		<27		<27	
1,1,2-Trichloroethane	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
1,3-Dichloropropane	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	<7	#	<7	#
Tetrachloroethene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
Dibromochloromethane	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
1,2-Dibromoethane	<14 µg/kg	TM116	<14	#	<14	#	<14	#	<14	#	<14	#	<14	#
Chorobenzene	<7 µg/kg	TM116	<7	M	<7	M	<7	M	<7	M	<7	M	<7	M
1,1,1,2-Tetrachloroethane	<11 µg/kg	TM116	<11	M	<11	M	<11	M	<11	M	<11	M	<11	M
Ethylbenzene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

Results Legend		Customer Sample Ref.	B1	B3	E1	N1	S1	S2
#	ISO17025 accredited.	Depth (m)	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50	1.50 - 1.50		
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
diss / filt	Dissolved / filtered sample.	Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
tot.unfilt	Total / unfiltered sample.	SDG Ref	1552644	1552645	1552646	1552647	1547834	1547618
*	subcontracted test	Lab Sample No.(s)						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery							

Component	LOD/Units	Method						
p/m-Xylene	<13 µg/kg	TM116	<13 #	<13 #	<13 #	<13 #	<13 #	<13 #
o-Xylene	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Styrene	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Bromoform	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Isopropylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 1 2 2-Tetrachloroethene	<15 µg/kg	TM116	<15 #	<15 #	<15 #	<15 #	<15 #	<15 #
1 2 3-Trichloropropane	<13 µg/kg	TM116	<13 #	<13 #	<13 #	<13 #	<13 #	<13 #
Bromobenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
Propylbenzene	<6 µg/kg	TM116	<6 #	<6 #	<6 #	<6 #	<6 #	<6 #
2-Chlorotoluene	<14 µg/kg	TM116	<14 #	<14 #	<14 #	<14 #	<14 #	<14 #
1 3 5-Trimethylbenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
4-Chlorotoluene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
1 2 4-Trimethylbenzene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	22.7 #
sec-Butylbenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	12 #
4-Isopropyltoluene	<6 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
1 3-Dichlorobenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
1 4-Dichlorobenzene	<11 µg/kg	TM116	<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
n-Butylbenzene	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 2-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
1 2-Dibromo-3-chloropropane	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Tert-amyl methyl ether	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 2 4-Trichlorobenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Hexachlorobutadiene	<15 µg/kg	TM116	<15 #	<15 #	<15 #	<15 #	<15 #	<15 #
Naphthalene	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 2 3-Trichlorobenzene	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Component	LOD/Units	Method	Customer Sample Ref. / Depth (m) / Sample Type / Date Sampled / Date Received / SDG Ref / Lab Sample No.(s)					
			S3 Soil/Solid 14/05/2010 100514-102 1547865	S4 Soil/Solid 14/05/2010 100514-102 1547846	S5 Soil/Solid 14/05/2010 100514-102 1547812	TPA 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547878	TPA 1.50 - 1.50 Soil/Solid 14/05/2010 100514-102 1547892	TPB 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547824
Asbestos, Presence screen	-	TM001	No ACM Detected	No ACM Detected	No ACM Detected	No ACM Detected	No ACM Detected	No ACM Detected
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Sulphate 2:1 water soluble	<0.003 g/l	TM098	0.069 M	0.0171 M	0.119 M	0.0796 M	0.0783 M	0.0559 M
Nitrate as NO3, 2:1 water soluble	<1 mg/kg	TM102	<1 #	1.56 #	<1 #	<1 #	5.19 #	<1 #
Soil Organic Matter (SOM)	<0.35 %	TM132	2.29 #	<0.35 #	2.41 #	<0.35 #	<0.35 #	<0.35 #
pH	1 pH Units	TM133	8.17 M	10.5 M	8.03 M	11 M	9.7 M	11.3 M
Cyanide, Total	<1 mg/kg	TM153	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1	<1	<1	<1
PCB congener 28	<3 µg/kg	TM168	<3 M	<3 M	45 M	<3 M	<3 M	<3 M
PCB congener 52	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 101	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 118	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 138	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 153	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 180	<3 µg/kg	TM168	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
PCBs, Total ICES 7	<3 µg/kg	TM168	<3	<3	45	<3	<3	<3
Arsenic	<0.6 mg/kg	TM181	9.81 M	2.04 M	3.98 M	2.79 M	3.19 M	4.85 M
Barium	<0.6 mg/kg	TM181	194 #	31.7 #	215 #	92.3 #	180 #	108 #
Beryllium	<0.01 mg/kg	TM181	2.13 M	0.628 M	1.22 M	0.824 M	0.71 M	0.744 M
Cadmium	<0.02 mg/kg	TM181	0.561 M	0.242 M	0.888 M	0.283 M	0.293 M	0.211 M
Chromium	<0.9 mg/kg	TM181	22.4 M	3.66 M	34.7 M	5.37 M	5.48 M	3.46 M
Copper	<1.4 mg/kg	TM181	23.6 M	2.9 M	8.97 M	5.16 M	4.51 M	4.78 M
Lead	<0.7 mg/kg	TM181	17.8 M	5.59 M	5.86 M	12.3 M	555 M	5.38 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	0.207 M	<0.14 M	<0.14 M	0.331 M
Nickel	<0.2 mg/kg	TM181	24.8 M	3.52 M	9.07 M	6.29 M	5.48 M	7.35 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	22.2 #	5.22 #	23.4 #	7.33 #	6.3 #	5.39 #
Zinc	<1.8 mg/kg	TM181	88 M	4.39 M	146 M	11.8 M	22.3 M	4.43 M
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 M	<1 M	<1 M	<1 M	<1 M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aliphatic) GC (S)

Results Legend		Customer Sample Ref.	S3	S4	S5	TPA	TPA	TPB
#	ISO17025 accredited.	Depth (m)				0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
diss filt	Dissolved / filtered sample.	Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
tot.unfilt	Total / unfiltered sample.	SDG Ref	1547865	1547848	1547812	1547878	1547892	1547824
*	subcontracted test.	Lab Sample No.(s)						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery							

Component	LOD/Units	Method						
Aliphatics >C12-C16	<100 µg/kg	TM173	48900	6620	839000	3130	866	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	192000	57200	2800000	11400	12100	<100
Aliphatics >C16-C35	<100 µg/kg	TM173	355000	101000	5140000	31400	33000	17300
Aliphatics >C21-C35	<100 µg/kg	TM173	163000	43600	2340000	20100	20800	17300
Aliphatics >C35-C44	<100 µg/kg	TM173	13100	<100	132000	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	417000	107000	6110000	34600	33800	17300

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aromatic) GC (S)

#	ISO17025 accredited
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample
tot.unfilt	Total / unfiltered sample.
*	subcontracted test
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Component	LOD/Units	Method	Customer Sample Ref. / Depth (m) / Sample Type / Date Sampled / Date Received / SDG Ref / Lab Sample No.(s)					
			S3 Soil/Solid 14/05/2010 100514-102 1547865	S4 Soil/Solid 14/05/2010 100514-102 1547848	S5 Soil/Solid 14/05/2010 100514-102 1547812	TPA 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547878	TPA 1.50 - 1.50 Soil/Solid 14/05/2010 100514-102 1547892	TPB 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547824
Aromatics >EC12-EC16	<100 µg/kg	TM173	21200	7600	160000	1440	5900	4150
Aromatics >EC16-EC21	<100 µg/kg	TM173	77400	24100	648000	12000	9530	4900
Aromatics >EC21-EC35	<100 µg/kg	TM173	82300	27100	602000	17000	17700	8810
Aromatics >EC35-EC44	<100 µg/kg	TM173	14800	7340	54000	7550	6480	3930
Aromatics >EC40-EC44	<100 µg/kg	TM173	4890	2660	17500	2710	2390	1280
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	196000	66200	1460000	38000	39600	21800

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

GRO BTEX MTBE GC (S)

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Component	LOD/Units	Method	Customer Sample Ref. / Depth (m) / Sample Type / Date Sampled / Date Received / SDG Ref / Lab Sample No.(s)					
			S3 Soil/Solid 14/05/2010 100514-102 1547865	S4 Soil/Solid 14/05/2010 100514-102 1547848	S5 Soil/Solid 14/05/2010 100514-102 1547912	TPA 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547878	TPA 1.50 - 1.50 Soil/Solid 14/05/2010 100514-102 1547892	TPB 0.50 - 0.50 Soil/Solid 14/05/2010 100514-102 1547924
GRO Surrogate % recovery**	%	TM089	97	91	53	100	99	105
GRO >C5-C12	<44 µg/kg	TM089	428 #	<44 #	15100 #	902 #	820 #	<44 #
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Ethylbenzene	<3 µg/kg	TM089	<3 M	11.1 M	<3 M	11.6 M	<3 M	<3 M
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2 M	31.6 M	<2 M	<2 M
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6 M	<6 M	26.4 M	<6 M	<6 M
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3 M	<3 M	<3 M	<3 M
m,p,o-Xylene	<10 µg/kg	TM089	<10 M	<10 M	<10 M	26.4 M	<10 M	<10 M
BTEX Total	<10 µg/kg	TM089	<10 M	11.1 M	<10 M	69.6 M	<10 M	<10 M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 #	<5 #	<5 #	10.5 #	<5 #	<5 #
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	11.7	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	64.8	110	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	1360	82.4	108	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	171	<10	4660	198	220	<10
Aromatics >C6-C7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >C7-C8	<10 µg/kg	TM089	<10	<10	<10	31.6	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	2040	161	162	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	257	<10	6990	297	330	<10
Total Aliphatics >C5-C12	<10 µg/kg	TM089	171	<10	6090	402	328	<10
Total Aromatics >C6-C12	<10 µg/kg	TM089	257	<10	9030	490	492	<10

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

PAH by GCMS

Results Legend		Customer Sample Ref.	S3	S4	S5	TPA	TPA	TPB
#	ISO17025 accredited.	Depth (m)				0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
M	mCERTS accredited.	Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.	Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
diss.filt	Dissolved / filtered sample.	Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
tot.unfilt	Total / unfiltered sample.	SDG Ref	1547865	1547848	1547812	1547878	1547892	1547824
*	subcontracted test.	Lab Sample No.(s)						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery							

Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	94.9	99.1	94.1	97.5	99	97.6
Acenaphthene-d10 % recovery**	%	TM218	96.9	101	103	97.7	101	97.9
Phenanthrene-d10 % recovery**	%	TM218	95.4	99.6	104	96.8	99.9	95.5
Chrysene-d12 % recovery**	%	TM218	92.9	98.1	107	92.1	97.3	92.5
Perylene-d12 % recovery**	%	TM218	90.8	96.5	104	90.2	94.2	95.6
Naphthalene	<9 µg/kg	TM218	18.1 M	60.5 M	305 M	135 M	125 M	18.3 M
Acenaphthylene	<12 µg/kg	TM218	<12 M	<12 M	206 M	<12 M	14.6 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<8 M	<8 M	130 M	26 M	44.8 M	<8 M
Fluorene	<10 µg/kg	TM218	14.9 M	10.9 M	454 M	39.9 M	83.8 M	<10 M
Phenanthrene	<15 µg/kg	TM218	226 M	123 M	736 M	247 M	395 M	27.8 M
Anthracene	<16 µg/kg	TM218	<16 M	<16 M	437 M	25.7 M	83 M	<16 M
Fluoranthene	<17 µg/kg	TM218	57.8 M	139 M	156 M	183 M	560 M	<17 M
Pyrene	<15 µg/kg	TM218	86.3 M	148 M	461 M	157 M	473 M	<15 M
Benz(a)anthracene	<14 µg/kg	TM218	42.9 M	115 M	97.4 M	104 M	272 M	<14 M
Chrysene	<10 µg/kg	TM218	55.6 M	97.9 M	98.7 M	92.2 M	219 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	75.4 M	142 M	99.4 M	90.5 M	273 M	<15 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14 M	50.2 M	34.6 M	38 M	104 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218	<15 M	108 M	63.8 M	62.2 M	187 M	<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18 M	61.1 M	40.3 M	34.7 M	94.1 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23 M	<23 M	<23 M	<23 M	29.1 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	28.3 M	78.8 M	57.2 M	47.3 M	125 M	<24 M
Polyaromatic hydrocarbons Total USEPA 16	<118 µg/kg	TM218	605 M	1130 M	3380 M	1280 M	3080 M	<118 M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

TPH CWG GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Component	LOD/Units	Method	Customer Sample Ref.	S3	S4	S5	TPA	TPA	TPB
			Depth (m)				0 50 - 0 30	1 50 - 1 50	0 50 - 0 50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
			Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
			SDG Ref	1547865	1547848	1547812	1547878	1547892	1547824
			Lab Sample No.(s)						
Total Aliphatics >C5-35	<100 µg/kg	TM173		404000	107000	5990000	35000	34100	17300
Total Aliphatics >C5-C44	<100 µg/kg	TM173		417000	107000	6120000	35000	34100	17300
Total Aromatics >C5-35	<100 µg/kg	TM173		181000	58800	1420000	30900	33600	17900
Total Aromatics >C6-C44	<100 µg/kg	TM173		196000	66200	1470000	38500	40100	21800
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173		585000	166000	7400000	65900	67700	35200
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173		613000	174000	7590000	73400	74200	39100

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss filt	Dissolved / filtered sample.
tot/unfilt	Total / unfiltered sample
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	S3	S4	S5	TP4	TP4	TP8
Depth (m)				0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1547865	1547848	1547812	1547878	1547892	1547824

Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	95.9	81.9	89	59.7	73.8	71.5
Toluene-d8**	%	TM116	92.3	97.6	61.8	99.2	96.1	98.7
4-Bromofluorobenzene**	%	TM116	117	102	177	108	87.2	103
Dichlorodifluoromethane	<13 µg/kg	TM116	<13 #	<13 #	<13 #	<13 #	<13 #	<13 #
Chloromethane	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Vinyl Chloride	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Bromomethane	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Chloroethane	<12 µg/kg	TM116	<12	<12	<12	<12	<12	<12
Trichlorofluoromethane	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 1 Dichloroethene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Carbon Disulphide	<9 µg/kg	TM116	<9 M	<9 M	53.2 M	10.6 M	19.5 M	<9 M
Dichloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Methyl Tertiary Butyl Ether	<9 µg/kg	TM116	<9	<9	<9	<9	<9	<9
trans-1-2-Dichloroethene	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
1 1-Dichloroethane	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
cis-1-2-Dichloroethene	<9 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
2 2-Dichloropropane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Bromochloromethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Chloroform	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1 1 1-Trichloroethane	<12 µg/kg	TM116	<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
1 1-Dichloropropene	<13 µg/kg	TM116	<13 M	<13 M	<13 M	<13 M	<13 M	<13 M
Carbontetrachloride	<11 µg/kg	TM116	<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
1 2-Dichloroethane	<10 µg/kg	TM116	<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Benzene	<8 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Trichloroethene	<8 µg/kg	TM116	<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
1 2-Dichloropropane	<10 µg/kg	TM116	<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Dibromomethane	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Bromodichloromethane	<11 µg/kg	TM116	<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
cis-1 3-Dichloropropene	<25 µg/kg	TM116	<25	<25	<25	<25	<25	<25
Toluene	<6 µg/kg	TM116	<6 M	6.53 M	7.47 M	45.6 M	7.31 M	8.64 M
trans-1-3-Dichloropropene	<27 µg/kg	TM116	<27	<27	<27	<27	<27	<27
1 1 2-Trichloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 3-Dichloropropane	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Tetrachloroethene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Dibromochloromethane	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 2-Dibromoethane	<14 µg/kg	TM116	<14 #	<14 #	<14 #	<14 #	<14 #	<14 #
Chorobenzene	<7 µg/kg	TM116	<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
1 1 1 2-Tetrachloroethane	<11 µg/kg	TM116	<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
Ethylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	10.1 #	<9 #	<9 #

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	S3	S4	S5	TPA	TPA	TPB
Depth (m)				0.50 - 0.50	1.50 - 1.50	0.50 - 0.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref	1547865	1547848	1547812	1547878	1547892	1547824
Lab Sample No.(s)						

Component	LOD/Units	Method						
p/m-Xylene	<13 µg/kg	TM116	<13 #	<13 #	<13 #	29.3 #	<13 #	<13 #
o-Xylene	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Styrene	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Bromoform	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Isopropylbenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 1 2 2-Tetrachloroethane	<15 µg/kg	TM116	<15 #	<15 #	<15 #	<15 #	<15 #	<15 #
1 2 3-Trichloropropane	<13 µg/kg	TM116	<13 #	<13 #	<13 #	<13 #	<13 #	<13 #
Bromobenzene	<14 µg/kg	TM116	<14 M	<14 M	<14 M	<14 M	<14 M	<14 M
Propylbenzene	<6 µg/kg	TM116	<6 #	<6 #	<6 #	10 #	<6 #	<6 #
2-Chlorotoluene	<14 µg/kg	TM116	<14 #	<14 #	<14 #	<14 #	<14 #	<14 #
1 3 5-Trimethylbenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	12.7 #	<8 #	<8 #
4-Chlorotoluene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
tert-Butylbenzene	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
1 2 4-Trimethylbenzene	<10 µg/kg	TM116	<10 #	<10 #	<10 #	34.4 #	<10 #	<10 #
sec-Butylbenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
4-Isopropyltoluene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
1 3-Dichlorobenzene	<8 µg/kg	TM116	<8 #	<8 #	<8 #	<8 #	<8 #	<8 #
1 4-Dichlorobenzene	<11 µg/kg	TM116	<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
n-Butylbenzene	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 2-Dichlorobenzene	<8 µg/kg	TM116	<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
1 2-Dibromo-3-chloropropane	<11 µg/kg	TM116	<11 #	<11 #	<11 #	<11 #	<11 #	<11 #
Tert-amyl methyl ether	<7 µg/kg	TM116	<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 2 4-Trichlorobenzene	<9 µg/kg	TM116	<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Hexachlorobutadiene	<15 µg/kg	TM116	<15 #	<15 #	<15 #	<15 #	<15 #	<15 #
Naphthalene	<7 µg/kg	TM116	<7 #	<7 #	<7 #	47.1 #	<7 #	<7 #
1 2 3-Trichlorobenzene	<12 µg/kg	TM116	<12 #	<12 #	<12 #	<12 #	<12 #	<12 #

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

Symbols Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1547902	1547906	1547692	1547646	1547634	1552648

Component	LOD/Units	Method											
Asbestos, Presence screen	-	TM001	No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected		No ACM Detected	
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
2,3,5-Trimethylphenol	<0.01 mg/kg	TM062 (S)	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M	<0.01	M
2-Isopropylphenol	<0.015 mg/kg	TM062 (S)	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M	<0.015	M
Sulphate 2:1 water soluble	<0.003 g/l	TM098	0.0694	M	0.0982	M	0.0385	M	0.0312	M	0.162	M	0.0785	M
Nitrate as NO3 2:1 water soluble	<1 mg/kg	TM102	<1	#	1.43	#	<1	#	1.41	#	<1	#	<1	#
Soil Organic Matter (SOM)	<0.35 %	TM132	1.39	#	3.26	#	1.29	#	<0.35	#	2.03	#	2.91	#
pH	1 pH Units	TM133	8.42	M	8.53	M	8.03	M	11.9	M	7.45	M	7.8	M
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M
Cyanide, Free	<1 mg/kg	TM153	<1		<1		<1		<1		<1		<1	
PCB congener 28	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 52	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 101	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 118	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	<3	M	<3	M
PCB congener 138	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	6.78	M	<3	M
PCB congener 153	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	4.25	M	<3	M
PCB congener 180	<3 µg/kg	TM168	<3	M	<3	M	<3	M	<3	M	4.11	M	<3	M
PCBs, Total ICES 7	<3 µg/kg	TM168	<3		<3		<3		<3		15.1		<3	
Arsenic	<0.8 mg/kg	TM181	10.3	M	11.6	M	<6	M	0.992	M	16.3	M	8.3	M
Barium	<0.6 mg/kg	TM181	58.1	#	172	#	74.7	#	18.1	#	70.9	#	241	#
Beryllium	<0.01 mg/kg	TM181	2.94	M	1.94	M	5.52	M	0.402	M	2.13	M	2.16	M
Cadmium	<0.02 mg/kg	TM181	0.134	M	2.42	M	<0.2	M	0.193	M	0.0668	M	0.218	M
Chromium	<0.9 mg/kg	TM181	19.5	M	57.8	M	17.1	M	2.85	M	21.1	M	17.5	M
Copper	<1.4 mg/kg	TM181	26.5	M	24.1	M	175	M	2.97	M	25.9	M	27.8	M
Lead	<0.7 mg/kg	TM181	16.8	M	35.6	M	12.3	M	4.53	M	20.2	M	22.2	M
Mercury	<0.14 mg/kg	TM181	<0.14	M	<0.14	M	<0.14	M	0.34	M	<0.14	M	<0.14	M
Nickel	<0.2 mg/kg	TM181	14.2	M	18.4	M	18.9	M	2.59	M	13.9	M	30.4	M
Selenium	<1 mg/kg	TM181	<1	#	1	#	<10	#	<1	#	<1	#	<1	#
Vanadium	<0.2 mg/kg	TM181	21.1	#	48.9	#	24.7	#	3.6	#	24.9	#	19.1	#
Zinc	<1.9 mg/kg	TM181	37	M	109	M	65.5	M	15.7	M	27.9	M	90.7	M
Boron, water soluble	<1 mg/kg	TM222	<1	M	<1	M	<1	M	<1	M	<1	M	<1	M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aliphatic) GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Component	LOD/Units	Method	Customer Sample Ref.	TP8	TPC	TPC	TPD	TPD	W1
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled						
			Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
			SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
			Lab Sample No.(s)	1547902	1547908	1547692	1547646	1547634	1552646
Aliphatics >C12-C16	<100 µg/kg	TM173		5910	52700	11000	14600	7820	19700
Aliphatics >C16-C21	<100 µg/kg	TM173		9360	186000	17300	93800	13900	63400
Aliphatics >C16-C35	<100 µg/kg	TM173		9360	314000	17300	224000	27500	107000
Aliphatics >C21-C35	<100 µg/kg	TM173		<100	128000	<100	130000	13600	43800
Aliphatics >C35-C44	<100 µg/kg	TM173		<100	12700	<100	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173		15300	380000	28300	238000	35300	127000

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

EPH CWG (Aromatic) GC (S)

Results Legend
ISO17025 accredited.
M mCERTS accredited.
aq Aqueous / settled sample.
diss.filt Dissolved / filtered sample.
tot.unfilt Total / unfiltered sample.
* subcontracted test.
** % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Component	LOD/Units	Method	Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled						
			Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
			SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
			Lab Sample No.(s)	1547902	1547908	1547692	1547646	1547634	1552848
Aromatics >EC12-EC16	<100 µg/kg	TM173		<100	11700	5970	5280	593	30700
Aromatics >EC16-EC21	<100 µg/kg	TM173		<100	38500	7360	17600	3410	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173		<100	56600	10800	32400	12500	27800
Aromatics >EC35-EC44	<100 µg/kg	TM173		<100	15200	6230	8710	7730	8570
Aromatics >EC40-EC44	<100 µg/kg	TM173		<100	5700	2500	3090	4420	3400
Total Aromatics >EC12-EC44	<100 µg/kg	TM173		<100	122000	30300	64000	24200	67100

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

GRO BTEX MTBE GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
SDG Ref	1547902	1547908	1547692	1547646	1547634	1552648
Lab Sample No.(s)						

Component	LOD/Units	Method											
GRO Surrogate % recovery**	%	TM089	92		98		83		100		119		113	
GRO >C5-C12	<44 µg/kg	TM089	<44	#	69	#	<44	#	<88	#	<44	#	<44	#
Benzene	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<20	M	<10	M	<10	M
Ethylbenzene	<3 µg/kg	TM089	<3	M	<3	M	<3	M	<6	M	<3	M	<3	M
Toluene	<2 µg/kg	TM089	<2	M	<2	M	<2	M	<4	M	<2	M	<2	M
m,p-Xylene	<6 µg/kg	TM089	<6	M	<6	M	<6	M	<12	M	<6	M	<6	M
o-Xylene	<3 µg/kg	TM089	<3	M	<3	M	<3	M	<6	M	<3	M	<3	M
m,p,o-Xylene	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<20	M	<10	M	<10	M
BTEX, Total	<10 µg/kg	TM089	<10	M	<10	M	<10	M	<20	M	<10	M	<10	M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#	<5	#	<5	#	<10	#	<5	#	<5	#
Aliphatics >C5-C6	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aliphatics >C6-C8	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aliphatics >C8-C10	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aliphatics >C10-C12	<10 µg/kg	TM089	<10		27.6		<10		<20		<10		<10	
Aromatics >C6-C7	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aromatics >C7-C8	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10		<10		<10		<20		<10		<10	
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10		41.4		<10		<20		<10		<10	
Total Aliphatics >C5-C12	<10 µg/kg	TM089	<10		27.6		<10		<20		<10		<10	
Total Aromatics >C6-C12	<10 µg/kg	TM089	<10		41.4		<10		<20		<10		<10	

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

PAH by GCMS

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1547902	1547908	1547692	1547646	1547654	1552648

Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	85.3		96.4		91		98.1		91.7		93.6	
Acenaphthene-d10 % recovery**	%	TM218	82.1		96.3		87.9		98.2		92.2		95.1	
Phenanthrene-d10 % recovery**	%	TM218	80.3		93.9		84.4		97.2		92.2		94.6	
Chrysene-d12 % recovery**	%	TM218	73.9		87.3		74.1		95.8		87.4		91.6	
Perylene-d12 % recovery**	%	TM218	72.1		85.1		71		94.7		86.7		90.8	
Naphthalene	<9 µg/kg	TM218	<9	M	45.3	M	<9	M	11.5	M	12.5	M	<9	M
Acenaphthylene	<12 µg/kg	TM218	<12	M	<12	M	<12	M	<12	M	<12	M	<12	M
Acenaphthene	<8 µg/kg	TM218	<8	M	<8	M	<8	M	20.5	M	<8	M	<8	M
Fluorene	<10 µg/kg	TM218	<10	M	<10	M	<10	M	<10	M	<10	M	<10	M
Phenanthrene	<15 µg/kg	TM218	<15	M	130	M	24.6	M	29.6	M	35.9	M	134	M
Anthracene	<16 µg/kg	TM218	<16	M	<16	M	<16	M	<16	M	<16	M	<16	M
Fluoranthene	<17 µg/kg	TM218	<17	M	97	M	<17	M	34	M	<17	M	28.1	M
Pyrene	<15 µg/kg	TM218	<15	M	82.3	M	<15	M	32.2	M	19.6	M	36.8	M
Benz(a)anthracene	<14 µg/kg	TM218	<14	M	53.4	M	<14	M	36.2	M	19.2	M	20.8	M
Chrysene	<10 µg/kg	TM218	16	M	65.4	M	<10	M	24.5	M	24.9	M	27.9	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	21.7	M	69.6	M	<15	M	27.2	M	25.6	M	37.3	M
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	M	23.9	M	<14	M	14.5	M	<14	M	<14	M
Benzo(a)pyrene	<15 µg/kg	TM218	<15	M	40.1	M	<15	M	24.2	M	<15	M	<15	M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	M	23.8	M	<18	M	36.4	M	<18	M	<18	M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M	<23	M	<23	M	<23	M	<23	M	<23	M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<24	M	37.5	M	<24	M	62.6	M	<24	M	<24	M
Polyaromatic hydrocarbons Total USEPA 16	<118 µg/kg	TM218	<118	M	668	M	<118	M	354	M	138	M	285	M

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

TPH CWG GC (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Component	LOD/Units	Method	Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled						
			Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
			SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
			Lab Sample No.(s)	1547902	1547908	1547692	1547646	1547634	1552648
Total Aliphatics >C5-35	<100 µg/kg	TM173		15300	367000	28300	238000	35300	127000
Total Aliphatics >C5-C44	<100 µg/kg	TM173		15300	380000	28300	238000	35300	127000
Total Aromatics >C5-35	<100 µg/kg	TM173		<100	107000	24100	55300	16500	58500
Total Aromatics >C6-C44	<100 µg/kg	TM173		<100	122000	30300	64000	24200	67100
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173		15300	474000	52400	293000	51800	185000
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173		15300	502000	58600	302000	59500	194000

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

Results Legend	
#	ISO17025 accredited
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.

Component	LOD/Units	Method	Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
			Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
			Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
			Date Sampled	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
			Date Received	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
			SDG Ref	1547902	1547908	1547692	1547646	1547634	1552648
			Lab Sample No.(s)						
Dibromofluoromethane**	%	TM116		96.7	99.4	97.8	86.9	95.7	95
Toluene-d8**	%	TM116		100	86.9	115	99.4	112	78.2
4-Bromofluorobenzene**	%	TM116		80.4	145	108	102	116	107
Dichlorodifluoromethane	<13 µg/kg	TM116		<13 #	<13 #	<13 #	<13 #	<13 #	<13 #
Chloromethane	<12 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Vinyl Chloride	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Bromomethane	<9 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Chloroethane	<12 µg/kg	TM116		<12	<12	<12	<12	<12	<12
Trichlorofluoromethane	<7 µg/kg	TM116		<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
1 1-Dichloroethene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Carbon Disulphide	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Dichloromethane	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Methyl Tertiary Butyl Ether	<9 µg/kg	TM116		<9	<9	<9	<9	<9	<9
trans-1-2-Dichloroethene	<12 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
1 1-Dichloroethane	<8 µg/kg	TM116		<8 M	<8 M	<8 M	<8 M	<8 M	<8 M
cis-1 2-Dichloroethene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
2 2-Dichloropropane	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Bromochloromethane	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Chloroform	<10 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
1 1 1-Trichloroethene	<12 µg/kg	TM116		<12 M	<12 M	<12 M	<12 M	<12 M	<12 M
1 1-Dichloropropene	<13 µg/kg	TM116		<13 M	<13 M	<13 M	<13 M	<13 M	<13 M
Carbontetrachloride	<11 µg/kg	TM116		<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
1 2-Dichloroethane	<10 µg/kg	TM116		<10 #	<10 #	<10 #	<10 #	<10 #	<10 #
Benzene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
Trichloroethene	<9 µg/kg	TM116		<9 M	<9 M	<9 M	<9 M	<9 M	<9 M
1 2-Dichloropropane	<10 µg/kg	TM116		<10 M	<10 M	<10 M	<10 M	<10 M	<10 M
Dibromomethane	<12 µg/kg	TM116		<12 #	<12 #	<12 #	<12 #	<12 #	<12 #
Bromodichloromethane	<11 µg/kg	TM116		<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
cis-1-3-Dichloropropene	<25 µg/kg	TM116		<25	<25	<25	<25	<25	<25
Toluene	<6 µg/kg	TM116		<6 M	<6 M	<6 M	6.85 M	<6 M	<6 M
trans-1-3-Dichloropropene	<27 µg/kg	TM116		<27	<27	<27	<27	<27	<27
1 1 2-Trichloroethane	<9 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 3-Dichloropropane	<7 µg/kg	TM116		<7 #	<7 #	<7 #	<7 #	<7 #	<7 #
Tetrachloroethene	<9 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
Dibromochloromethane	<9 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #	<9 #	<9 #
1 2-Dibromoethane	<14 µg/kg	TM116		<14 #	<14 #	<14 #	<14 #	<14 #	<14 #
Chlorobenzene	<7 µg/kg	TM116		<7 M	<7 M	<7 M	<7 M	<7 M	<7 M
1 1 1 2-Tetrachloroethane	<11 µg/kg	TM116		<11 M	<11 M	<11 M	<11 M	<11 M	<11 M
Ethylbenzene	<9 µg/kg	TM116		<9 #	<9 #	<9 #	<9 #	<9 #	<9 #

Validated

ALcontrol Laboratories Analytical Services

SDG	100514-102	**Customer:**	Integra Consulting
Job:	H_INTEGCON_MAN-11	**Attention:**	Sabine Sargeant
Client Reference:	2074	**Order No.:**	
Location:	Whitehaven	**Report No:**	85707

VOC MS (S)

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	subcontracted test.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery

Customer Sample Ref.	TPB	TPC	TPC	TPD	TPD	W1
Depth (m)	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	0.50 - 0.50	1.00 - 1.00	1.50 - 1.50
Sample Type	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
Date Sampled						
Date Received	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010	14/05/2010
SDG Ref	100514-102	100514-102	100514-102	100514-102	100514-102	100514-102
Lab Sample No.(s)	1547902	1547908	1547692	1547646	1547634	1552648

Component	LOD/Units	Method											
p/m-Xylene	<13 µg/kg	TM116	<13	#	<13	#	<13	#	<13	#	<13	#	<13	#
o-Xylene	<11 µg/kg	TM116	<11	#	<11	#	<11	#	<11	#	<11	#	<11	#
Styrene	<11 µg/kg	TM116	<11	#	<11	#	<11	#	<11	#	<11	#	<11	#
Bromoform	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#
Isopropylbenzene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
1 1 2 2-Tetrachloroethane	<15 µg/kg	TM116	<15	#	<15	#	<15	#	<15	#	<15	#	<15	#
1 2 3-Trichloropropane	<13 µg/kg	TM116	<13	#	<13	#	<13	#	<13	#	<13	#	<13	#
Bromobenzene	<14 µg/kg	TM116	<14	M	<14	M	<14	M	<14	M	<14	M	<14	M
Propylbenzene	<6 µg/kg	TM116	<6	#	<6	#	<6	#	<6	#	<6	#	<6	#
2-Chlorotoluene	<14 µg/kg	TM116	<14	#	<14	#	<14	#	<14	#	<14	#	<14	#
1 3 5-Trimethylbenzene	<8 µg/kg	TM116	<8	#	<8	#	<8	#	<8	#	<8	#	<8	#
4-Chlorotoluene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
tert-Butylbenzene	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#
1 2 4-Trimethylbenzene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	#	<10	#	<10	#
sec-Butylbenzene	<8 µg/kg	TM116	<8	#	<8	#	<8	#	<8	#	<8	#	<8	#
4-Isopropyltoluene	<8 µg/kg	TM116	<8	#	<8	#	<8	#	<8	#	<8	#	<8	#
1 3-Dichlorobenzene	<8 µg/kg	TM116	<8	#	<8	#	<8	#	<8	#	<8	#	<8	#
1 4-Dichlorobenzene	<11 µg/kg	TM116	<11	M	<11	M	<11	M	<11	M	<11	M	<11	M
n-Butylbenzene	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	<7	#	<7	#
1 2-Dichlorobenzene	<8 µg/kg	TM116	<8	M	<8	M	<8	M	<8	M	<8	M	<8	M
1 2-Dibromo-3-chloropropane	<11 µg/kg	TM116	<11	#	<11	#	<11	#	<11	#	<11	#	<11	#
Tert-amyl methyl ether	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	<7	#	<7	#
1 2 4-Trichlorobenzene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9	#	<9	#	<9	#
Hexachlorobutadiene	<15 µg/kg	TM116	<15	#	<15	#	<15	#	<15	#	<15	#	<15	#
Naphthalene	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	<7	#	<7	#
1 2 3-Trichlorobenzene	<12 µg/kg	TM116	<12	#	<12	#	<12	#	<12	#	<12	#	<12	#

Table of Results - Appendix

SDG Number : 100514-102 **Client :** Integra Consulting **Client Ref :** 2074

REPORT KEY

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10-7

NDP	No Determination Possible	#	ISO 17025 Accredited	*	Subcontracted Test	M	MCERTS Accredited
NFD	No Fibres Detected	PFD	Possible Fibres Detected	a	Result previously reported (incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control

Method No	Reference	Description	Wet/Dry Sample [1]
PM001		Preparation of Samples for Metals Analysis	Dry
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material	Wet
TM001	In - house Method	Determination of asbestos containing material by screening on solids	
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC	Wet
TM089	Modified US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	Dry
TM102	Method 4500H, AWWA/APHA, 20th Ed., 1999	Determination of Total Oxidised Nitrogen using the Kone Analyser	Dry
TM116	Modified US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS	
TM132	In - house Method	ELTRA CS800 Operators Guide	Dry
TM133	BS 1377 Part 3 1990,BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter	Wet
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser	Wet
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils	Dry
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID	Dry
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES	Dry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers	Dry
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546	Wet
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IPIS Emission Spectrometer	Dry

[1] Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. Results relate only to the items tested
13. **Surrogate recoveries** – Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 – 130 %.
14. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).
16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Last updated 1 April 2010

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

APPENDIX 5

REMEDIATION METHOD STATEMENT BY S.J. McGUCKIN

Alex Thomson

From: Shaun Stephens
Sent: 21 April 2010 10:43
To: Alex Thomson
Subject: FW: Method Statement for removal of Transformer from site

From: Steve Mcguckin [mailto:sjmcguckin@yahoo.co.uk]
Sent: 21 April 2010 10:43
To: Shaun Stephens
Subject: Method Statement for removal of Transformer from site

F.A.O.Alex Thomson 20/04/10

Story Construction

Burgh Road Industrial Estate

Carlisle

Cumbria CA2 7NA

Method Statement for Planned removal of defunct Transformer located at the new Story site at Magellan Park Whitehaven ,Cumbria.

The Transformer is now dead with no live current passing either through it or to it.

Work to begin at 09:00am Friday 23/04/10.

Person in Charge of Operation:- Mr.Stephen McGuckin (S. J. McGuckin Ltd)

Objective:-To safely remove Transformer from site and dispose of same including any surplus Oil .

The immediate area surrounding the Transformer will be cordoned off for the duration of the removal and all safety precautions taken to ensure that there is no Oil spillage and that a safe and orderly lift is carried out .

Throughout the operation all S.J. MC Guckin employees will wear P.P.E. appropriate to the need of the job in hand.

Any surplus Oil from within the Transformer will be drained off prior to the lift and disposed by the using of 45 Gallon drums, these being filled , and taken to a Licensed disposal site by Stephen McGuckin.

The Transformer will then be dismantled as necessary from its base, and lifted by HIAB on to a suitable vehicle, the vehicle operator being experienced and competent . The load will be properly secured by means of either chains or strops and slingsthroughout the lift.

Upon Completion of the task the Transformer will be removed from site, and the immediate site will be made good if necessary.

APPENDIX 6
PHOTOGRAPHS OF REMEDIAL WORKS

Plate 1: Breaking out concrete beneath location of former electrical transformer

Plate 2: Removing concrete slab from beneath transformer

Plate 3: Stained gravel on concrete slab

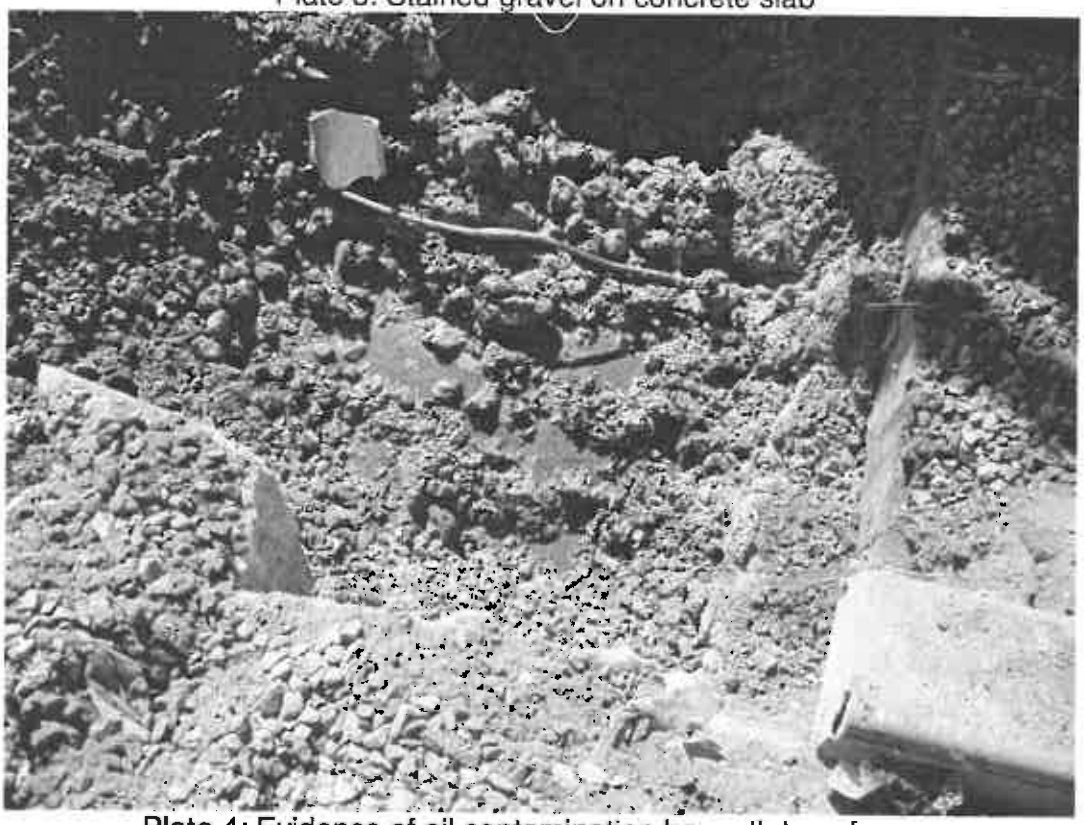

Plate 4: Evidence of oil contamination beneath transformer

Plate 5: Excavation (water standing in base from existing drainage)

Plate 6: Stockpile

APPENDIX 7
TRIAL PIT LOGS

integra consulting
Civil & Structural Engineers

Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE

Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

Project: Whitehaven
Cumbria

Weather Today: Bright and dry
Recently: Dry

Job No. 2074
Date: 12/05/2010

Level: 92.3m AOD

Trial Pit No: A

Depth	Description	Water	Samples Ref	Details	Depth
0	MADE GROUND: reinforced concrete underlain by blue plastic liner				
	MADE GROUND: granular hardcore		S	2kg	0.5
1000			S	2kg	1.0
	Firm, brown, sandy CLAY with gravel, cobbles and rock fragments		S	2kg	1.5
2000	▽				
3000					
4000					
5000					

Key :

Water strike

Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5m, 1.0m and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

integra consulting
Civil & Structural Engineers
Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE
Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

Project: Whitehaven
Cumbria

Weather Today: Bright and dry
Recently: Dry

Job No. 2074
Date: 12/05/2010

Level: 92.5m AOD

Trial Pit No: B

Depth	Description	Water	Samples Ref	Details	Depth
0	MADE GROUND: reinforced concrete underlain by blue plastic liner				
	MADE GROUND: granular hardcore		S	2kg	0.5
1000	Firm, brown, sandy CLAY with gravel, cobbles and rock fragments		S	2kg	1.0
			S	2kg	1.5
2000		▽			
3000					
4000					
5000					

Key :

▽ Water strike

▽ Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5m, 1.0m and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

integra consulting
Civil & Structural Engineers

Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE

Tel : 0161 237 3400
Fax : 0161 237 3635
Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

Project: Whitehaven Cumbria	Weather Today: Bright and dry Recently: Dry	Job No. 2074 Date: 12/05/2010

Level: 94.6m AOD

Trial Pit No: C

Depth	Description	Water	Samples Ref	Details	Depth
	MADE GROUND: reinforced concrete underlain by blue plastic liner				
	MADE GROUND: granular hardcore		S	2kg	0.5
1000	Firm, brown, sandy CLAY with gravel, cobbles and rock fragments		S	2kg	1.0
			S	2kg	1.5
2000		▽			
3000					
4000					
5000					

Key :

▽ Water strike

▽ Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5m, 1.0m and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

integra consulting
Civil & Structural Engineers
Second Floor
Fountain House
Fountain Street
Manchester
M2 2EE
Tel : 0161 237 3400
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Email : manchester@integraconsulting.co.uk
Web : www.integraconsulting.co.uk

Trial Pit Log.

Project: Whitehaven
Cumbria

Weather Today: Bright and dry
Recently: Dry

Job No. 2074
Date: 12/05/2010

Level: 92.5m AOD

Trial Pit No: D

Depth	Description	Water	Samples Ref	Samples Details	Samples Depth
0	MADE GROUND: reinforced concrete underlain by blue plastic liner				
	MADE GROUND: granular hardcore/ sandstone fill		S	2kg	0.5
1000	Firm, brown, sandy CLAY with gravel, cobbles and rock fragments		S	2kg	1.0
			S	2kg	1.5
2000		▽			
3000					
4000					
5000					

Key :

▽ Water strike

▽ Hole terminated

S – Solid (weight in Kg)
W – Water (Volume in Litres)

Ground Water: YES ☐ NO ☒ Level: _____ Rate: _____

Soil Sample: YES ☒ NO ☐ Level: 0.5m, 1.0m and 1.5m below ground level

Excavation Stable: YES ☒ NO ☐

Comments:

Story have until 11/9/10 to comply with escrow legals obligation.

2074 / AJE

14 June 2010

integra consulting

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Alex Thomson Esq.
Story Land
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA

Dear Alex

TDG DEPOT, AREA B, WHITEHAVEN

I am pleased to enclose a single copy of the Integra Consulting Post Remediation Validation Report for the above site.

If you have any queries in relation to the enclosed report, please call me.

Yours sincerely

Andrew Edwards MSc AIEMA
Geo-Environmental Engineer

Enc.

Alex

Appendix C

Nick Ward

From: Drewery, Sarah <sarah.drewery@environment-agency.gov.uk>
Sent: 10 February 2021 13:51
To: Nick Ward
Cc: McFarlin, Matthew; Bardsley, Peter; Locke, Liz
Subject: Anhydrite stockpile - Correspondence reference NO/2020/113153/01-LO1

Hi Nick,

As discussed earlier, as the original plan was for re-use on site under DoWCoP and the stockpiled material is site-derived we will not object to the use of DoWCoP on this occasion provided we agree with your amended remediation strategy and provided you comply fully with DoWCoP. It is unfortunate that it has been stockpiled for so long but re-use on site under an MMP would clearly be the best environmental option for the material.

Regards,

Sarah

Sarah Drewery | Senior Environment Officer, Cumbria & Lancashire Area
Environment Agency | Lutra House, Dodd Way, Walton Summit, Preston PR5 8BX
Direct Tel: 02030231420 Internal: 31420

INCIDENT HOTLINE (24 hrs) - 0800 80 70 60
GENERAL ENQUIRIES (Mon-Fri, 8am-6pm) - 03708 506 506
FLOODLINE (24 hrs) - 0345 988 1188
WEBSITE - www.gov.uk/environment-agency

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