VALIDATION REPORT FOR REMEDIATION FOR A PROPOSED RESIDENTIAL DEVELOPMENT, COTES ROAD, BURBAGE, LEICESTERSHIRE

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VALIDATION REPORT FOR REMEDIATION FOR A PROPOSED RESIDENTIAL DEVELOPMENT, COTES ROAD, BURBAGE, LEICESTERSHIRE

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1. INTRODUCTION

1.1 This Validation Report for contamination remediation at the above site has been prepared on the instructions of Haydn Evans of Evans Heritage Developments Limited, Units 1-4 Brunel Road, Hinckley, Leicestershire LE10 0AA.

1.2 It is proposed to construct houses with gardens at the site. The site layout is shown on Figure 1, Appendix A.

1.3 The following reports and documents relate to the site:

- Murray Rix Geotechnical, Report on a Desk Study for a Proposed Residential Development, Cotes Road, Burbage, Leicestershire, GEOJOB/10-296R, dated July 2010.
- Murray Rix Geotechnical, Report on a Ground Investigation and Preliminary Contamination Risk Assessment for a Proposed Residential Development, Cotes Road, Burbage. Leicestershire, GEOJOB/10-296R(A), dated July 2010.
- Murray Rix Geotechnical, Method Statement for Further Investigation and Remediation of Contamination for a Proposed Residential Development, Cotes Road, Burbage, Leicestershire, GEOJOB/10-296R(B), dated February 2011.

1.4 Based on the ground investigation, for the purpose of the Method Statement (see section 1.3), the Fill and Natural Materials were divided into the following:

- Materials 1 – Natural materials deemed uncontaminated.
- Materials 2 – Granular fill materials (sub-base, brick rubble and similar) deemed uncontaminated and suitable for re-use on site as construction base materials.
- Materials 3 – Fill materials (clay, ash, clinker, shale etc) not suitable for re-use on site as construction base materials and unsuitable to remain in garden areas.
- Materials 4 – Fill and Natural Materials from around positions SS1, SS2 and the waste oil tank and other materials identified during the further investigation, and during site development, as significantly contaminated.

1.5 The objectives of the further investigation and remediation in accordance with the documents of section 1.3 were to examine and remove as necessary the following (investigation positions and locations to which reference is made are shown on Figure 1, Appendix A):

(i) The hydrocarbon and VOC contamination in the surface fill around SS1 (loading bay) and SS2 (stored drums) the extent and depth of which should be established (Materials 4).

(ii) The metal contamination (elevated nickel and arsenic) in the fill materials which exceed the critical concentrations for garden areas (Materials 3).

(iii) Further investigation of the significance of possible contamination around and below the waste oil tank, probably hydrocarbon contamination (Materials 4).

(iv) Investigation of the areas covered by the factory and not previously investigated.

(v) Testing of the groundwater if deemed necessary during the further investigation (would require the establishment of monitoring and sampling points).

(vi) Investigate the area of previous remediation (by others) along the north and north-west boundary of the site to ensure no residual contamination remains that could be troublesome to the development and that any backfill materials are suitable for purpose.

(vii) Investigate the extent and nature of the deep fill materials encountered in WS3 and the significance of the concrete encountered at the base of the fill.

(viii) As necessary, WAC testing needs to be undertaken for materials to be removed from site to tip.

1.6 The purpose of this Validation Report is to set down the following;

- The sequence of operations undertaken in investigation and remediation of the site including the methodology.
- Records of inspections undertaken.
- The materials removed from site and the Conveyance Notes.
- The disposal site and the Delivery Notes for materials removed from site.
- The sampling and laboratory testing carried out.
- A photographic record.
- Notes on areas remediated.
- The results of testing of any imported materials including topsoil.
- Details of all other matters that come to light during the works.
- A statement as to the suitability of the site for end use and that the remediation has been carried out to the desired standard.
- The sequence of operations undertaken in remediation of the site.

1.7 A methodology for achieving the requirements of section 1.5 was detailed in the Remediation Method Statement of section 1.3. However, site logistics in terms of ongoing development of the site (construction of foundations, services etc), crushing and stockpiling of demolition materials and the restricted site area meant that adjustments to the initial proposals had to be adopted. In particular -

- The developer decided to remove all the fill materials possibly containing elevated metal contamination (elevated nickel and arsenic - (Materials 3) rather than attempt to segregate the deposits. It was not feasible to remove this other than in a piecemeal manner as development proceeded as they were in part covered by stockpiled crushed materials.
- A thickness of imported soil of approximately 1.00m is to be placed in garden areas though this may very a little across the site. This would be considered adequate as the contaminants in the surface fill will have been removed and the

contaminants in the underlying soils cleaned up in accordance with this validation report. The removal of the surface fill of concern to an average depth of around 0.60m and raising levels across the site by around 0.40m to achieve the finished levels shown on the drawing of DCB Partnership Limited, 'Drainage Layout', Project reference 10/1316, DRG. No. 01, Rev C, dated 22 October, 2010 should ensure the proposed cover thickness of around 1.00m is achieved.

- Materials exposed below the footprint of the original building were investigated as areas were cleared of stockpiled materials.
- The demolition operations and construction requirements did not allow the foundations around suspect areas to be left in place prior to remediation.

2. ACCEPTANCE CRITERIA, SAMPLING PROCEEDURE AND TESTING

2.1 The following outlines the Critical Concentrations (Cc) and Generic Assessment Criteria (GAC) based on the ground investigation report of section 1.3. For each compound, reasonably worst case conditions have been adopted. For metals, worst case calculations are normally associated with an organic matter content of 6%, as oral pathways are more critical. Whereas for organic contaminants, where the inhalation pathways predominate, worst case is often associated with an organic matter content of 1%. The original investigation indicated organic matter contents down to 1%.

Table 1 Metals (based on 6% SOM which represents a reasonable worst case for metals)

Contaminant	**Critical Concentration Cc (mg/kg)**
Arsenic	32
Cadmium	10
Chromium	130
Mercury	170
Lead	450
Selenium	350
Copper	2330
Nickel	130
Zinc	3750
Boron	291

Table 2 Total Petroleum Hydrocarbons (based on 1% SOM which represents a reasonable worst case for TPH)

Determinand	**GAC (mg/kg)**
TPH Aromatic EC6-7	65
TPH Aromatic EC7-8	120
TPH Aromatic EC8-10	27

TPH Aromatic EC10-12	69
TPH Aromatic EC12-16	140
TPH Aromatic EC16-21	250
TPH Aromatic EC21-35	890
TPH Aliphatic EC5-6	30
TPH Aliphatic EC6-8	73
TPH Aliphatic EC8-10	19
TPH Aliphatic EC10-12	93
TPH Aliphatic EC12-16	740
TPH Aliphatic EC16-21	450000
TPH Aliphatic EC21-34	450000

Table 3 Volatile Organic Compounds (VOCs) (selected VOCs of concern based on 1% SOM which represents a reasonable worst case for VOCs)

Determinand	**GAC (mg/kg)**
Volatile Organic Compounds (VOCs):	
1,1,1-Trichloroethane	6.2 (used as VOC marker)
1,1,2-Trichloroethane	-
1,1,2-Trichloroethylene (Trichloroethene TCE)	0.11 (used as VOC marker)
1,1-Dichloroethane	-
Cis-1,2-Dichloroethylene	-
m/p ethyl toluene	-
BTEX	
M/P Xylene	420 (SSAC, Appendix G)
Toluene	120 (SSAC, Appendix G)
C8-10 Aromatic Hydrocarbons (includes the following)	27
n-Butylbenzene	
n-Propylbenzene	
p-Isopropyltoluene	
S-Butylbenzene	
1,2,4-Trimethylbenzene	
1,3,5-Trimethylbenzene	
Ethyl-2-Methylbenzene	

2.2 All testing (Appendix D) has been carried out at a UKAS and MCERTS accredited laboratory (Scientific Analysis Laboratories of 3 Crittall Drive, Springwood Industrial Estate, Braintree, Essex CM7 2RT).

2.3 All samples recovered form site were placed in amber glass jars. Samples were put in cool boxes on site and transported to the laboratory as quickly as possible.

3. DETAILS OF FURTHER INVESTIGATION AND REMEDIATION OPERATIONS

3.1 Not all matters requiring attention have been dealt with at this juncture. Those remaining are –

- Final confirmation that all potentially contaminated materials have been removed from garden area (this will also require additional Conveyance and Delivery Information);
- Confirmation on the depth of soil cover;
- Imported topsoil will require a certificate showing it to be acceptable.;

These matters may take several months to be finalised and the current report deals with all other matters referred to in the foregoing.

3.2 Four site visits have been made to date by Dr Edward Murray to investigate, sample the soils, inspect and record remediation operations. The dates of the visits were 9, 10, 12 and 25 May, 2011. Selected photographs taken during the visits are presented in Appendix C and detailed plans (with notes) of remediated areas are presented in Appendix B.

3.3 While the criteria of section 2.1 along with the results of in-situ PID testing were used to gauge the levels of contamination in areas requiring remediation, the final clean up in each area resulted in only very low levels, generally close to the detection limit, of contaminants being detected in laboratory tests on samples recovered.

3.4 ***Site Visit 9 May, 2011 –***

- **AREA 1** defined as the investigation area around original investigation position SS1 (loading bay with elevated hydrocarbon and VOC contamination – Figure A, Appendix B).
  ***Findings and Notes*:** Surface fill removed from garden areas locally and put into Stockpile 1 (see location plan Figure 1, Appendix A). Area approximately 5.0m by 4.3m dug to 0.15m with excavated materials put in 'Stockpile 2' (Contaminated Stockpile with polythene below materials - see Figure 1, Appendix A). Five samples taken in excavation in natural soils (J1A, J2A, J3A, J4A and J5A) for headspace testing. Elevated results readings were obtained in J2A, J3A and J5A. No groundwater encountered. Excavation fenced off.
  Results of Laboratory Testing: No laboratory testing.
  Conclusions: Some concern over head space results. Need to excavate below and around suspect points, sample and re-test and carry out laboratory VOC and TPH analyses.

- **AREA 2** defined as the investigation area around the waste oil tank – Figure B, Appendix B - probable hydrocarbon contamination).

***Findings and Notes*:** Area between 5.0m and 8.5m wide and 9.0m long dug to 1.2 to 1.6m depth. Materials deemed uncontaminated placed in Stockpile 1, materials with obvious hydrocarbon contamination placed in Stockpile 2. Olfactory and visual evidence suggests contaminated materials primarily restricted to a layer in natural soils typically around 0.10m thick at around 1.0 to 1.5m depth extending south and east from waste oil tank. Evidence to suggest that not all contamination may be from the waste oil tank as the area of contaminated materials extends east below building footprint. Materials chased back to remove bulk of contaminated soils. Samples taken from natural soil J1, J1B, J2, J2B, J3, J3B, J4, J4B, J5, J5B, J6, J7. Headspace testing recorded slightly elevated readings in J5B. No groundwater encountered. Excavation backfilled with crushed brick and concrete rubble.

Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011 and 238368-1 dated 2 June, 2011): Results discussed with those for samples recovered 10 May, 2011.

Conclusions: See discussion for results of tests on samples recovered on 9 and 10 May, 2011.

3.5 ***Site Visit 10 May, 2011***

- **AREA 1**

***Findings and Notes*:** Excavation extended to approximately 5.0m by 5.5m and to a depth up to 0.25m to remove materials in area where elevated readings were encountered in headspace testing J2A, J3A and J5A. Materials removed to Stockpile 2. Samples taken from natural soils J1, J2, J3, J4, J5, J6A, J7A, J8A. Elevated head space results obtained in J6A, J7A and J8A. No groundwater encountered. Excavation fenced off.

Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): TPH and VOC analysis carried out. Slight TPH contamination but below GACs of Table 2. Some elevated VOC's notably 1,1,2-Trichloroethylene (TCE) in areas of J1 and J2. Other VOCs deemed satisfactory.

Conclusions: Further excavation around and below positions J1 and J2, sample and re-test. The Contractor wishes to progress with foundation construction for adjoining Plot 7. Investigate, sample and test in this area for TPHs and VOCs.

- **AREA 2**

***Findings and Notes*:** Excavation extended to west to a total width between 5.0 and 8.5m and length of 13m. Extended area 0.90 to 1.50m deep. Materials deemed uncontaminated placed in Stockpile 1, materials with obvious hydrocarbon contamination placed in Stockpile 2. Samples of natural soil J8, J9, J9B recovered. No elevated head space test results. No groundwater encountered. Backfilled with crushed brick and concrete rubble.

Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011 and Laboratory Report 238368-1 dated 2 June, 2011): TPH and VOC analysis carried out. The TPH results of sample J7 (not divided into aromatic and

aliphatic components) were elevated above the GACs of Table 2. Further testing was carried out on this specimen and the results are included in Laboratory Report 238368-1. The results indicate low levels of TPH contamination. The results indicate that TPH within the aliphatic C10-C12 is above the GAC of Table 2. This area is below the proposed access road and the results are not considered problematic. However, it is considered appropriate to check further in this area.
Conclusions: Further investigation, sampling and testing for TPHs is required to the south of position J7.

- **AREA 5** excavation to find deep fill around original investigation position WS3 and the significance of the concrete encountered at the base of the fill.

  ***Findings and Notes*:** Unable to find deep fill despite extended excavation area. No groundwater encountered. Possible backfilled well?

  Conclusions: Conclusion that the deep fill must be very localized. Developer instructed that if deep fill exposed in foundation excavations that Murray Rix Geotechnical is to be informed immediately to investigate further.

- **Waste Acceptance Criteria (WAC)** from Stockpile 2

  ***Findings and Notes*:** Samples for testing (WAC1-3) recovered from Stockpile 2.
  ***Results of Laboratory Testing (Laboratory Report No. 237068-1 dated 27 May, 2011)*:** Included in Appendix D.
  Conclusions: Results to be forwarded to suitable waste disposal site.

- **Trial Pit 1** below factory footprint

  ***Findings and Notes*:** Excavated to 0.20m. Sample of natural soil J1. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for TPHs but none detected.
  Conclusions: No further action.

- **Trial Pit 2** below factory footprint

  ***Findings and Notes*:** Excavated to 0.20m. Sample of old topsoil layer J1. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for TPHs but none detected.
  Conclusions: No further action.

- **Trial Pit 3** to investigate area along the north and north-west boundary of the site previous remediation (by others)

  ***Findings and Notes*:** To depth of 0.30m. Samples of natural soil J1, J1A. No groundwater encountered.

Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for TPHs and VOCs. None detected other than very low 1,1,2-Trochloroethylene well below GAC of Table 3.
Conclusions: No further action required.

- **Trial Pit 4** to investigate area along the north and north-west boundary of the site previous remediation (by others).

  ***Findings and Notes*:** To 0.60m depth. Samples of old topsoil layer J1, J1A. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for TPHs and VOCs. None detected other than very low M/P Xylene at the detection limit.
  Conclusions: No further action required.

- **Trial Pit 5** below factory footprint

  ***Findings and Notes*:** Excavated to 0.20m. Samples below surface covering of demolition rubble J1, J1A. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for metals, TPHs and VOCs. No contamination detected.
  Conclusions: No further action required.

- **Trial Pit 6** below factory footprint

  ***Findings and Notes*:** Excavated to 0.10m. Samples below surface covering of demolition rubble J1, J1A. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070--1 dated 23 May, 2011): Tested for metals, TPHs and VOCs. No contamination detected.
  Conclusions: No further action required.

- **Trial Pit 7** below factory footprint

  ***Findings and Notes*:** Excavated to 0.30m. Samples below surface covering of demolition rubble J1, J1A. No groundwater encountered.

  Results of Laboratory Testing (Laboratory Report No. 237070-1 dated 23 May, 2011): Tested for metals, TPHs and VOCs. Elevated 1,1,2-Trichloroethylene (TCE) above GAC value of Table 3.
  Conclusions: Further investigation, sampling and testing for VOCs required in this area. This is designated Area 4 in the following.

3.6 *Site Visit 12 May, 2011*

- **AREA 1** (below Plot 7)

***Findings and Notes*:** Excavation extended below footprint of Plot 7, a further area of 7.40m by 9.00m (to 0.30-0.45m depth and locally to 1.40m where old sump internal to the factory footprint was uncovered), as well as clearing all surface fill between this and site boundary to west (0.15m depth). Samples recovered from natural soils below Plot 7: J9, J9A, J10, J10A, J11, J11A, J12, J12A, J13, J13A. Slightly elevated headspace test results from J9A, J11A, J13A. Excavated materials to Stockpile 2. No groundwater encountered. Excavation fenced off.

Results of Laboratory Testing (Laboratory Report No. 237434-1 dated 23 May, 2011): Tests for VOCs and TPHs carried out. Slightly elevated Total Petroleum Hydrocarbon results (aliphatic C10-12 and 12-16) in samples J11 location. Other results area below GACs of Table 2. Raft foundation had been constructed prior to test results becoming available. Hinckley and Bosworth B.C. contacted. It was agreed that provided a suitable hydrocarbon membrane was incorporated in the structure and this was validated that construction could proceed. This was done. Details of the membrane and validation are included in Appendix F.
Conclusions: Plot 7 satisfactory but worth investigating adjacent to area outside plot close to position J11 where elevated TPH encountered. Also it is still necessary to investigate further around and below positions J1 and J2 where elevated VOCs encountered.

- **AREA 3**

Findings and Notes: defined as the investigation area around original investigation position SS2 (area of stored drums with hydrocarbon and VOC contamination - Figure C, Appendix B). Excavation area 3.1 by 2.0m to 0.40m depth. Excavated materials to Stockpile 2. Samples recovered from natural soils: J1, J1A, J2, J2A. Slightly elevated headspace test results from J2A. No groundwater encountered. Excavation backfilled with crushed brick and concrete rubble.

Results of Laboratory Testing (Laboratory Report No. 237434-1 dated 23 May, 2011): Tested for TPHs and VOCs. None detected.
Conclusions: No further action required. Area deemed remediated.

3.7 *Site Visit 25 May, 2011*

- **AREA 1**

***Findings and Notes*:** Extended excavations around existing excavations to check on extent of contamination and to remove materials identified as contaminated. Samples recovered from area 1.5m by 2.0m to a depth 0.3-0.6m J14, J14A, J15, J15A, J16, J16A, J17, J17A. Excavated materials taken to Stockpile 2. Dig out and around positions J1, J1A and J2, J2A to depth 0.5-0.55m and sample J18, J18A, J19, J19A, J20, J20A, J21, J21A, J22, J22A. Natural soils sampled. No groundwater encountered. Fenced off.

Results of Laboratory Testing (Laboratory Report No. 238855-1 dated 6 June, 2011): Tests for VOCs and TPHs carried out. Only results above detection limit were slight VOCs (1,1,1-Trichloroethane and 1,1,2-Trichloroethylene) in positions of J14 and J18 but these are well below GACs of Table 3.

Conclusions: Area deemed remediated

- **AREA 2**

***Findings and Notes*:** Area extended to south by 5m by 7m to a depth of 1.50-1.90m. Materials deemed uncontaminated placed in Stockpile 1, materials with obvious hydrocarbon contamination placed in Stockpile 2. Olfactory and visual evidence suggests contaminated materials primarily restricted to a layer in natural soils typically around 0.10m thick at around 1.2 to 1.4m depth. Samples of natural soil J10, J10A, J11, J11A, J12, J12A, J13, J13A were recovered. Contaminated layer chased back and excavated out. No groundwater encountered. Excavation backfilled with crushed brick and concrete rubble.

Results of Laboratory Testing (Laboratory Report No. 238855-1 dated 6 June, 2011): Tests for TPHs carried out but none detected.

Conclusions: Area deemed remediated.

- **AREA 4** in area of Trial Pit 7 where contamination encountered.

***Findings and Notes*:** Area 2.8m by 2.m dug out to 0.65m depth. Samples J1, J1A, J2, J2A, J3, J3A recovered from natural soils. Excavated materials taken to Stockpile 2. No groundwater encountered.

Results of Laboratory Testing (Laboratory Report No. 238855-1 dated 6 June, 2011): Tested for VOCs. None detected other than very low 1,1,2-Trichloroethylene (TCE) well below GAC of Table 3.
Conclusions: No further action required. Area deemed remediated.

- **Trial Pit 8**

***Findings and Notes*:** Below factory footprint excavated to 0.25m. Samples of natural soil below surface covering of demolition rubble J1, J1A. No groundwater encountered.

Results of Laboratory Testing (Laboratory Report No. 238855-1 dated 6 June, 2011): Tested for TPHs and VOCs. None detected.
Conclusions: No further action required.

3.8 Conclusions on Remediation

AREA 1 contaminated with VOCs and TPHs. Materials chased back (4 occasions) until no TPHs detected and VOCs not detected or well below GACs of Table 3 other than in one location below Plot 7. Hinckley and Bosworth B.C.

contacted and agreed that a suitable hydrocarbon membrane in raft foundation would be adequate. Area deemed remediated.

AREA 2 tested for TPHs and VOCs. Contaminated with TPHs. Materials chased back (3 occasions) until no TPH detected other than slight TPH contamination below road locally. Area deemed remediated.

AREA 3 tested for TPHs and VOCs. None detected. No further action required.

AREA 4 (area of TP7) tested initially for TPHs and VOCs. Elevated VOCs detected. Chased back (2 occasions) until no further VOCs detected.

AREA 5 excavation to find deep fill around original investigation position WS3. Not found. Conclusion that deep fill must be very localized. Developer instructed that if deep fill exposed in foundation excavations that Murray Rix Geotechnical is to be informed immediately to investigate further.

Trial Pits 1, 2, 5, 6, 7 and 8 excavated below factory footprint and tested for metals, VOCs and TPHs. (Trial Pit 7 treated as AREA 4 above). No contaminants detected in other locations. No further action required.

Trial Pits 3 and 4 tested for TPHs and VOCs. None detected other than very low 1,1,2-Trochloroethylene in TP3 and very low M/P Xylene in TP4 well below GACs of Table 3. No further action required.

Groundwater sampling and testing has not been carried out. No groundwater seepage was encountered in the remediation operations. The soils have been remediated so that only residual levels of contamination are likely to remain from which the groundwater should not be at risk.

4. REMOVAL OF EXCAVATED MATERIALS FROM SITE

The following details the materials removed from site in clearance and remediation operations.

- Crushed materials from demolition operations were stockpiled on site in a number of separate mounds and were gradually removed as demand and sale of the materials developed.
- Stockpile 1 comprising clean materials and Materials 3 of section 1.4 comprising fill materials (clay, ash, clinker, shale etc) not suitable for re-use on site as construction base materials and unsuitable to remain in garden areas because of

elevated nickel and arsenic. 72 loads on 8 wheeled trucks (around 1500 tonnes) were taken to various landfills (Mallory Park, Bubbenhall, Slip Inn) by Central Construction Services Limited of Vulcan Way, Hermitage Industrial Estate, Coalville LE67 3AP, Chris Kirkland Haulage Limited of the Barnhouse, Soar Mill Lane, Coventry Road, Broughton Astley LE9 6QB, MAC Contracting Limited of Pool Road, Pool Road Industrial Estate, Nuneaton, CV10 9AE and Midland Rock (Leicester) Limited of 77 Kilby Road, Fleckney, LE8 8BP. The Conveyance and Delivery Notes can be viewed on request.

- Stockpile 2 comprising materials with detectable elevated levels of VOCs and TPHs. Waste Acceptance Criterion (WAC) testing was carried out on these materials which were stockpiled on a layer of polythene. Nine loads on 8 wheeled trucks (180 tonnes) were taken to Cemex, Slip Inn Quarry, Leicester Road, Lutterworth by Central Construction Services Limited of Vulcan Way, Hermitage Industrial Estate, Coalville LE67 3AP. The Conveyance and Delivery Notes are included in Appendix E.

5. CONCLUSIONS

5.1 Other than the outstanding matters outlined in section 3.2, the inspections and laboratory testing indicate that the site has been remediated in accordance with the remediation objectives and should be suitable for purpose.

E.J. Murray BSc, PhD, CEng, FICE, CGeol, FGS, MaPS

APPENDIX A

Figure 1: Remediation Location Plan

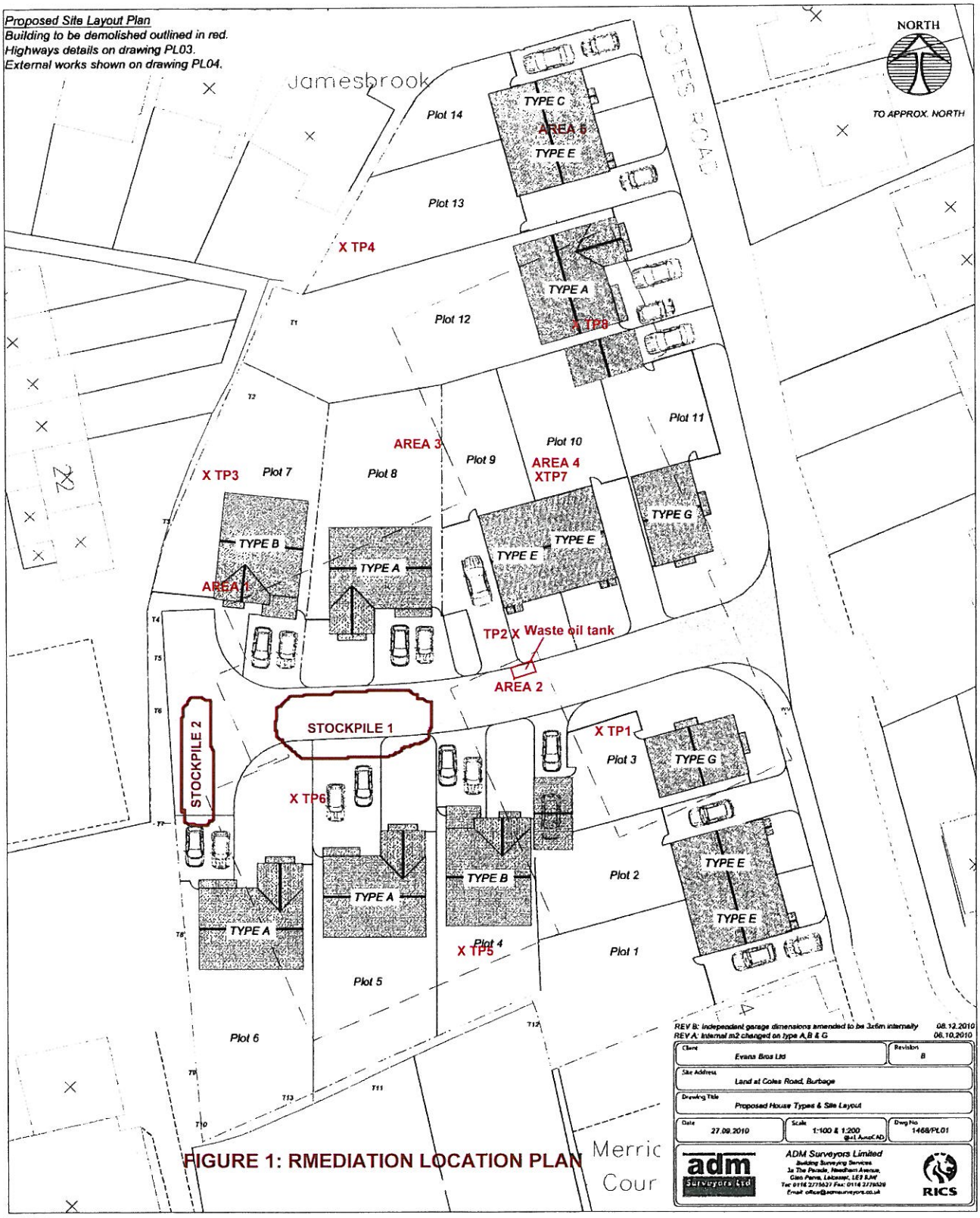


FIGURE 1: RMEDIATION LOCATION PLAN

APPENDIX B

Figures A, B and C detailing remediation operations and sampling points

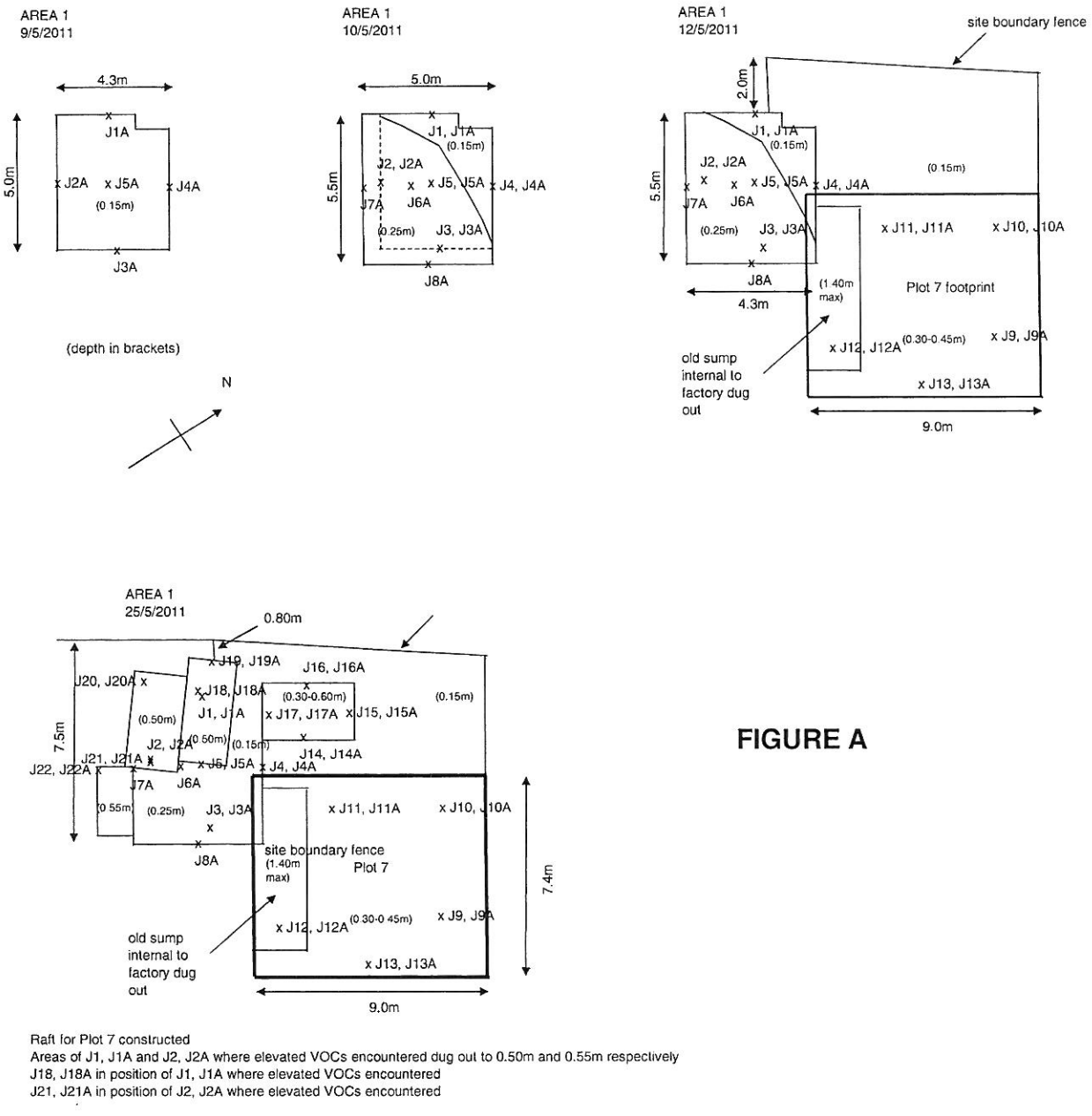
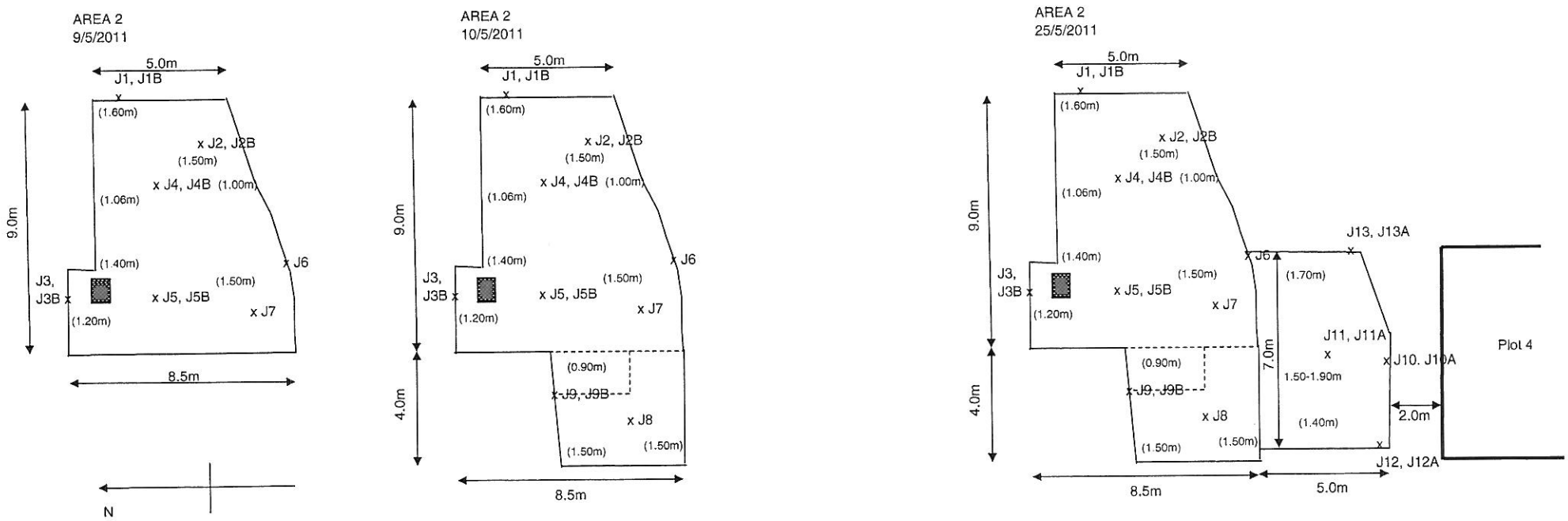


FIGURE A

Raft for Plot 7 constructed
Areas of J1, J1A and J2, J2A where elevated VOCs encountered dug out to 0.50m and 0.55m respectively
J18, J18A in position of J1, J1A where elevated VOCs encountered
J21, J21A in position of J2, J2A where elevated VOCs encountered



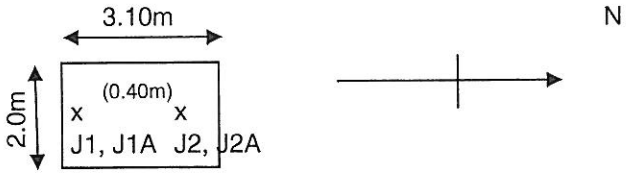
(Depth in brackets)
Excavations taken down through surface fill into natural deposits of gravelly clays and sands
Visual and olfactory areas of contamiantion along with PID testing used to identify areas of contamination
Areas of contamination chased back to leave only residual levels of contamination
It is thought that some contamination is not directly from waste oil tank

Approx. location of waste oil tank

Raft for Plot 4 constructed.
Further investigation because of elevated TPH in J7, J7B. Hydrocarbon stained band at 1.20 to 1.40m depth chased back to leave only residual evidence of contamination.

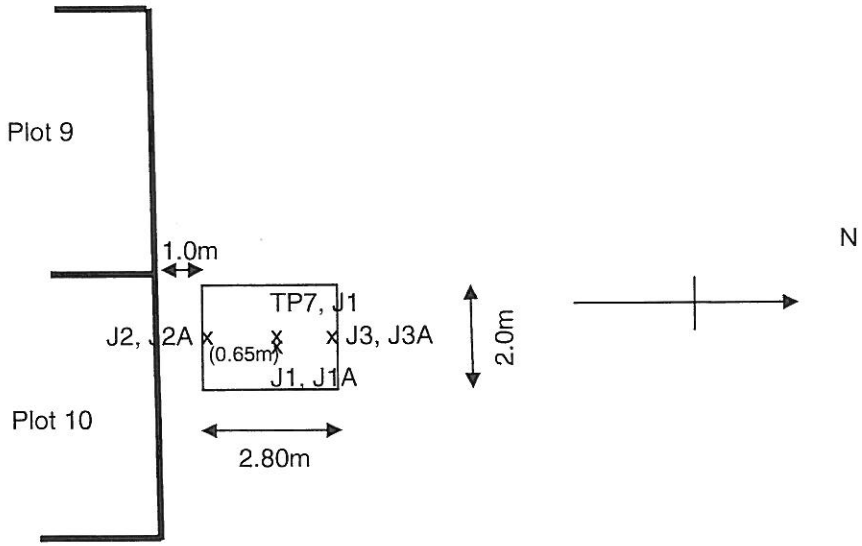
FIGURE B

AREA 3
12/5/2011



(depth in brackets)

AREA 4
25/5/2011



Raft for Plots 9 and 10 under construction.
AREA 4 excavated in area of TP7 J1, J1A where elevated VOCs encountered.
Excavated to 0.65m depth. J1, J1A samples in position of original J1, J1A in TP7.

FIGURE C

APPENDIX C

Selected Photographs taken at Time of Site Visits



AREA 1 AND STOCKPILE 1



AREA 1 AND STOCKPILE 1



AREA 1



STOCKPILE 2



AREA2



AREA 2



AREA 2



AREA 2



AREA 2



AREA 2 AND STOCKPILE 1



AREA 2



AREA 2



AREA 2



AREA 2



AREA 2



AREA 2



STOCKPILE 2



CRUSHED MATERIALS



CRUSHED MATERIALS AND AREA TP 4P



AREA 2 BACKFILLED



AREA 1 (PLOT 7)



AREA 1 AND STOCKPILE 2



AREA 3



AREA 3



AREA 1 AND PLOT 7



STOCKPILE 2



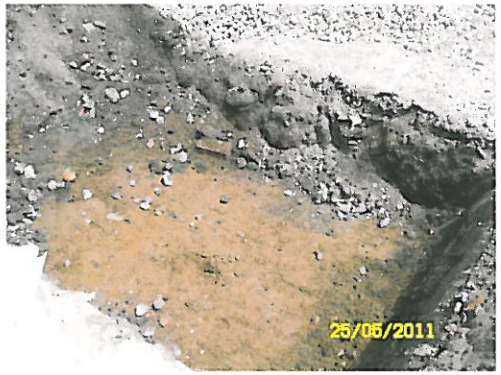
AREA 1



AREA 1



AREA 1



AREA 1



AREA 1



AREA 2



AREA 2

APPENDIX D

Laboratory Test Results

Scientific Analysis Laboratories is a limited company registered in England and Wales (No 2514788) whose address is at Hadfield House, Hadfield Street, Manchester M16 9FE

Scientific Analysis Laboratories

Certificate of Analysis

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Report Number: 237070-1 supliment-1

Date of Report: 23-May-2011

Customer: Murray Rix Geotechnical Ltd
13 Willow Park
Upton Lane
Stoke Golding
Warwickshire
CV13 6EU

Customer Contact: Mr Ted Murray

Customer Job Reference: GEOJOB/11-296
Customer Site Reference: Cotes Road, Burbage
Date Job Received at SAL: 12-May-2011
Date Analysis Started: 13-May-2011
Date Analysis Completed: 20-May-2011

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs

UKAS TESTING
1650

Report checked and authorised by :
Mr David Smith
Laboratory Manager

Issued by :
Mr David Smith
Laboratory Manager

Validity unknown
Digitally signed by Dave Smith
Date: 2011.05.23 16:30:04 BST
Reason: Issue
Location: SAL

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SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
Metals (SE)

				SAL Reference	237070 022	237070 023	237070 024
				Customer Sample Reference	TP5 J1 @ 0.20m, TP5 J1A @ 0.20m - Combined	TP6 J1 @ 0.10m, TP6 J1A @ 0.10m - Combined	TP7 J1 @ 0.30m, TP7 J1A @ 0.30m - Combined
				Date Sampled	10-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	Method	Test Sample	LOD	Units			
Arsenic	T257	A40	2.0	mg/kg	6.9	9.3	14
Boron (water-soluble)	T82	A40	1	mg/kg	<1	3	1
Cadmium	T257	A40	0.1	mg/kg	<0.1	0.1	0.4
Chromium	T245	A40	0.5	mg/kg	10	13	17
Copper	T245	A40	1.0	mg/kg	8.9	14	32
Lead	T257	A40	0.5	mg/kg	15	39	90
Mercury	T245	A40	1.0	mg/kg	<1.0	<1.0	<1.0
Nickel	T257	A40	0.5	mg/kg	7.2	11	20
Selenium	T257	A40	3	mg/kg	<3	<3	<3
Zinc	T257	A40	0.5	mg/kg	30	55	150

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
Total Petroleum Hydrocarbons (C10-C35) Banded

				SAL Reference	237070 014	237070 015	237070 016	237070 018	237070 019
				Customer Sample Reference	AREA 2 J6 @ 0.95m	AREA 2 J7 @ 1.50m	AREA 2 J8 @ 1.50m	TP1 J1 @ 0.20m	TP2 J1 @ 0.20m
				Date Sampled	09-MAY-2011	09-MAY-2011	10-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	Method	Test Sample	LOD	Units					
TPH (C10-C12)	T219	AR	2	mg/kg	<2	160	<2	<2	<2
TPH (C12-C16)	T219	AR	2	mg/kg	<2	570	16	<2	<2
TPH (C16-C21)	T219	AR	2	mg/kg	<2	460	97	<2	<2
TPH (C21-C35)	T219	AR	2	mg/kg	<2	120	430	<2	<2
TPH (C35-C40)	T219	AR	2	mg/kg	<2	<2	<2	<2	<2

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
TPH (CWG)

	SAL Reference	237070 001	237070 002	237070 003	237070 004	237070 005
	Customer Sample Reference	AREA 1 J1 @ 0.10m, AREA 1 J1A @ 0.10m - Combined	AREA 1 J2 @ 0.10m, AREA 1 J2A @ 0.10m - Combined	AREA 1 J3 @ 0.10m, AREA 1 J3A @ 0.10m - Combined	AREA 1 J4 @ 0.10m, AREA 1 J4A @ 0.05m - Combined	AREA 1 J5 @ 0.25m, AREA 1 J5A @ 0.15m - Combined
	Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011
Determinand	Method / Test Sample / LOD / Units					
Benzene	T54 AR 0.001 mg/kg	(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001
Toluene	T54 AR 0.001 mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
EthylBenzene	T54 AR 0.001 mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
M/P Xylene	T54 AR 0.001 mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
O Xylene	T54 AR 0.001 mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl tert-Butyl Ether	T54 AR 0.001 mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
TPH (C5-C6 aliphatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	**0.017**	<0.010
TPH (C7-C8 aromatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	**0.21**	**0.95**
TPH (C8-C10 aromatic)	T54 AR 0.010 mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8 AR 1 mg/kg	<1	<1	<1	<1	**63**
TPH (C10-C12 aromatic)	T8 AR 1 mg/kg	<1	<1	<1	<1	<1
TPH (C12-C16 aliphatic)	T8 AR 1 mg/kg	<1	<1	<1	**90**	**290**
TPH (C12-C16 aromatic)	T8 AR 1 mg/kg	<1	<1	<1	**3**	**9**
TPH (C16-C21 aliphatic)	T8 AR 1 mg/kg	<1	<1	<1	**220**	**510**
TPH (C16-C21 aromatic)	T8 AR 1 mg/kg	**12**	<1	<1	**39**	**65**
TPH (C21-C35 aliphatic)	T8 AR 1 mg/kg	<1	<1	<1	**270**	**1300**
TPH (C21-C35 aromatic)	T8 AR 1 mg/kg	**9**	<1	<1	**53**	**89**

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
TPH (CWG)

					SAL Reference	237070 009	237070 010	237070 011	237070 012	237070 013
					Customer Sample Reference	AREA 2 J1 @ 1.00m, AREA 2 J1B @ 1.00m - Combined	AREA 2 J2 @ 1.00m, AREA 2 J2B @ 0.80m - Combined	AREA 2 J3 @ 0.60m, AREA 2 J3A @ 0.80m - Combined	AREA 2 J4 @ 1.60m, AREA 2 J4B @ 1.60m - Combined	AREA 2 J5 @ 1.50m, AREA 2 J5B @ 1.50m - Combined
					Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**						
Benzene	T54	AR	0.001	mg/kg		(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001
Toluene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	**0.001**
EthylBenzene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
M/P Xylene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	**0.004**
O Xylene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	**0.49**	**2.7**
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	**0.031**	**1.4**
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg		<1	<1	<1	**3**	**2**
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg		<1	<1	<1	**30**	**110**
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	**4**	**22**
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg		<1	<1	<1	**39**	**310**
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	**9**	**98**
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg		<1	<1	<1	**4**	**63**
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	<1	**24**

SAL Reference: 237070
Project Site: Coles Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
TPH (CWG)

					SAL Reference	237070 017	237070 020	237070 021	237070 022	237070 023
					Customer Sample Reference	AREA 2 J9 @ 0.60m, AREA 2 J9B @ 0.60m - Combined	TP3 J1 @ 0.30m, TP3 J1A @ 0.30m - Combined	TP4 J1 @ 0.60m, TP4 J1A @ 0.60m - Combined	TP5 J1 @ 0.20m, TP5 J1A @ 0.20m - Combined	TP6 J1 @ 0.10m, TP6 J1A @ 0.10m - Combined
					Date Sampled	10-MAY-2011	10-MAY-2011	10-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	Method	Test Sample	LOD	Units						
Benzene	T54	AR	0.001	mg/kg		(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001	(13) <0.001
Toluene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
EthylBenzene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
M/P Xylene	T54	AR	0.001	mg/kg		<0.001	<0.001	0.001	<0.001	<0.001
O Xylene	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg		<1	<1	<1	<1	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg		6	<1	<1	<1	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg		<1	<1	<1	<1	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg		220	<1	<1	<1	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg		16	<1	<1	<1	<1
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg		220	<1	<1	<1	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg		23	<1	<1	<1	<1

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
TPH (CWG)

SAL Reference	**237070 024**
Customer Sample Reference	**TP7 J1 @ 0.30m, TP7 J1A @ 0.30m - Combined**
Date Sampled	**10-MAY-2011**

Determinand	Method	Test Sample	LOD	Units	
Benzene	T54	AR	0.001	mg/kg	(13) <0.001
Toluene	T54	AR	0.001	mg/kg	**0.001**
EthylBenzene	T54	AR	0.001	mg/kg	<0.001
M/P Xylene	T54	AR	0.001	mg/kg	**0.002**
O Xylene	T54	AR	0.001	mg/kg	<0.001
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	<0.001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	**7**
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	**9**

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

	SAL Reference	237070 001	237070 002	237070 003	237070 004	237070 005
	Customer Sample Reference	AREA 1 J1 @ 0.10m, AREA 1 J1A @ 0.10m - Combined	AREA 1 J2 @ 0.10m, AREA 1 J2A @ 0.10m - Combined	AREA 1 J3 @ 0.10m, AREA 1 J3A @ 0.10m - Combined	AREA 1 J4 @ 0.10m, AREA 1 J4A @ 0.05m - Combined	AREA 1 J5 @ 0.25m, AREA 1 J5A @ 0.15m - Combined
	Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011

Determinand	Method	Test Sample	LOD	Units					
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg	23	150	14	6	32
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg	<5	48	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	300	440	53	<5	10
1,1-Dichloroethane	T54	AR	5	µg/kg	5	7	<5	16	5
1,1-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	<10	<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	33	12	9	7	47
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
M/P Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg	<10	<10	<10	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Styrene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

					SAL Reference	237070 001	237070 002	237070 003	237070 004	237070 005
					Customer Sample Reference	AREA 1 J1 @ 0.10m, AREA 1 J1A @ 0.10m - Combined	AREA 1 J2 @ 0.10m, AREA 1 J2A @ 0.10m - Combined	AREA 1 J3 @ 0.10m, AREA 1 J3A @ 0.10m - Combined	AREA 1 J4 @ 0.10m, AREA 1 J4A @ 0.05m - Combined	AREA 1 J5 @ 0.25m, AREA 1 J5A @ 0.15m - Combined
					Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011	09-MAY-2011
Determinand	Method	Test Sample	LOD	Units						
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Vinyl chloride	T54	AR	5	µg/kg		<5	<5	<5	<5	<5

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

	SAL Reference	237070 009	237070 012	237070 013	237070 017	237070 020
	Customer Sample Reference	AREA 2 J1 @ 1.00m, AREA 2 J1B @ 1.00m - Combined	AREA 2 J4 @ 1.60m, AREA 2 J4B @ 1.60m - Combined	AREA 2 J5 @ 1.50m, AREA 2 J5B @ 1.50m - Combined	AREA 2 J9 @ 0.60m, AREA 2 J9B @ 0.60m - Combined	TP3 J1 @ 0.30m, TP3 J1A @ 0.30m - Combined
	Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	10-MAY-2011	10-MAY-2011

Determinand	Method	Test Sample	LOD	Units					
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	8
1,1-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	140	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	<10	<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	55	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	<5	<5	204	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg	<5	<5	84	<5	<5
M/P Xylene	T54	AR	1	µg/kg	<1	<1	4	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg	<10	17	350	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg	<5	<5	38	<5	<5
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg	<5	<5	120	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg	<5	14	<5	<5	<5
Styrene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg	<1	<1	1	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

	SAL Reference	237070 009	237070 012	237070 013	237070 017	237070 020
	Customer Sample Reference	AREA 2 J1 @ 1.00m, AREA 2 J1B @ 1.00m - Combined	AREA 2 J4 @ 1.60m, AREA 2 J4B @ 1.60m - Combined	AREA 2 J5 @ 1.50m, AREA 2 J5B @ 1.50m - Combined	AREA 2 J9 @ 0.60m, AREA 2 J9B @ 0.60m - Combined	TP3 J1 @ 0.30m, TP3 J1A @ 0.30m - Combined
	Date Sampled	09-MAY-2011	09-MAY-2011	09-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	Method / Test Sample / LOD / Units					
Trans-1,3-Dichloropropene	T54 / AR / 5 / µg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	T54 / AR / 5 / µg/kg	<5	<5	<5	<5	<5
Vinyl chloride	T54 / AR / 5 / µg/kg	<5	<5	<5	<5	<5

SAL Reference: 237070
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

					SAL Reference	237070 021	237070 022	237070 023	237070 024
					Customer Sample Reference	TP4 J1 @ 0.60m, TP4 J1A @ 0.60m - Combined	TP5 J1 @ 0.20m, TP5 J1A @ 0.20m - Combined	TP6 J1 @ 0.10m, TP6 J1A @ 0.10m - Combined	TP7 J1 @ 0.30m, TP7 J1A @ 0.30m - Combined
					Date Sampled	10-MAY-2011	10-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	**380**
1,1-Dichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg		<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg		<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg		<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg		(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg		<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg		<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg		<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	**30**
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg		<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg		<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg		<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg		<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg		<5	<5	<5	<5
M/P Xylene	T54	AR	1	µg/kg		**1**	<1	<1	**2**
Methyl tert-Butyl Ether	T54	AR	1	µg/kg		<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg		<10	<10	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
O Xylene	T54	AR	1	µg/kg		<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg		<5	<5	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
Styrene	T54	AR	5	µg/kg		<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg		<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg		<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg		<1	<1	<1	**1**
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg		<5	<5	<5	<5

SAL Reference: 237070
Project Site: Coles Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
VOC (SE)

				SAL Reference	237070 021	237070 022	237070 023	237070 024
				Customer Sample Reference	TP4 J1 @ 0.60m, TP4 J1A @ 0.60m - Combined	TP5 J1 @ 0.20m, TP5 J1A @ 0.20m - Combined	TP6 J1 @ 0.10m, TP6 J1A @ 0.10m - Combined	TP7 J1 @ 0.30m, TP7 J1A @ 0.30m - Combined
				Date Sampled	10-MAY-2011	10-MAY-2011	10-MAY-2011	10-MAY-2011
Determinand	Method	Test Sample	LOD	Units				
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5
Vinyl chloride	T54	AR	5	µg/kg	<5	<5	<5	<5

Index to symbols used in 237070-1 supliment-1

Value	Description
A40	Assisted dried < 40C
AR	As Received
13	Results have been blank corrected.
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

Supplement-1 issued to correct VOC results in sample-024

Method Index

Value	Description
T257	ICP/OES (SIM) (Aqua Regia Extraction)
T8	GC/FID
T54	GC/MS (Headspace)
T245	ICP/OES(Aqua Regia Extraction)
T82	ICP/OES (Sim)
T219	GC/FID (SE)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Arsenic	T257	A40	2.0	mg/kg	U	022-024
Boron (water-soluble)	T82	A40	1	mg/kg	N	022-024
Cadmium	T257	A40	0.1	mg/kg	U	022-024
Chromium	T245	A40	0.5	mg/kg	U	022-024
Copper	T245	A40	1.0	mg/kg	U	022-024
Lead	T257	A40	0.5	mg/kg	U	022-024
Mercury	T245	A40	1.0	mg/kg	U	022-024
Nickel	T257	A40	0.5	mg/kg	U	022-024
Selenium	T257	A40	3	mg/kg	U	022-024
Zinc	T257	A40	0.5	mg/kg	U	022-024
TPH (C10-C12)	T219	AR	2	mg/kg	U	014-016,018-019
TPH (C12-C16)	T219	AR	2	mg/kg	U	014-016,018-019
TPH (C16-C21)	T219	AR	2	mg/kg	U	014-016,018-019
TPH (C21-C35)	T219	AR	2	mg/kg	U	014-016,018-019
TPH (C35-C40)	T219	AR	2	mg/kg	N	014-016,018-019
Benzene	T54	AR	0.001	mg/kg	U	001-005,009-013,017,020
M/P Xylene	T54	AR	0.001	mg/kg	U	001-005,009-013,017,020
Methyl tert-Butyl Ether	T54	AR	0.001	mg/kg	U	001-005,009-013,017,020
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	001-005,009-013,017,020-024

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	N	001-005,009-013,017,020-024
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1,1-Trichloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1,2-Trichloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1-Dichloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1-Dichloroethylene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,1-Dichloropropene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2,3-Trichloropropane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	U	001-005,009,012-013,017,020-024
1,2-dibromoethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2-Dichlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2-Dichloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,2-Dichloropropane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,3-Dichlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,3-Dichloropropane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
1,4-Dichlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
2,2-Dichloropropane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
2-Chlorotoluene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
4-Chlorotoluene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Bromobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Bromochloromethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Bromodichloromethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Bromoform	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Bromomethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Carbon tetrachloride	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Chlorobenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Chlorodibromomethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Chloroethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Chloroform	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Chloromethane	T54	AR	5	µg/kg	N	001-005,009,012-013,017,020-024
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Dibromomethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Dichlorodifluoromethane	T54	AR	5	µg/kg	N	001-005,009,012-013,017,020-024
EthylBenzene	T54	AR	1	µg/kg	U	001-005,009-013,017,020
Hexachlorobutadiene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Isopropyl benzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
m/p ethyl toluene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
n-Butylbenzene	T54	AR	10	µg/kg	U	001-005,009,012-013,017,020-024
n-Propylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
O Xylene	T54	AR	1	µg/kg	U	001-005,009-013,017,020
p-Isopropyltoluene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
S-Butylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Styrene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
T-Butylbenzene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Tertiary amyl methyl ether	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Tetrachloroethene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Toluene	T54	AR	1	µg/kg	U	001-005,009-013,017,020
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Trichlorofluoromethane	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024
Vinyl chloride	T54	AR	5	µg/kg	U	001-005,009,012-013,017,020-024

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Scientific Analysis Laboratories

Certificate of Analysis

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Report Number: 237434-1

Date of Report: 23-May-2011

Customer: Murray Rix Geotechnical Ltd
13 Willow Park
Upton Lane
Stoke Golding
Warwickshire
CV13 6EU

Customer Contact: Mr Ted Murray

Customer Job Reference: GEOJOB/11-296
Customer Site Reference: Cotes Road, Burbage
Date Job Received at SAL: 16-May-2011
Date Analysis Started: 17-May-2011
Date Analysis Completed: 23-May-2011

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
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Tests covered by this certificate were conducted in accordance with SAL SOPs

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Report checked
and authorised by :
Miss Claire Brown
Project Manager

Issued by :
Miss Claire Brown
Project Manager

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SAL Reference: 237434
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
TPH (CWG)

					SAL Reference	237434 001	237434 002	237434 003	237434 004	237434 005
					Customer Sample Reference	AREA 1 J9 @ 0.30m, AREA 1 J9A @ 0.30m - Combined	AREA 1 J10 @ 0.45m, AREA 1 J10A @ 0.45m - Combined	AREA 1 J11 @ 0.30m, AREA 1 J11A @ 0.30m - Combined	AREA 1 J12 @ 0.60m, AREA 1 J12A @ 0.60m - Combined	AREA 1 J13 @ 0.30m, AREA 1 J13A @ 0.30m - Combined
					Date Sampled	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011
Determinand	Method	Test Sample	LOD	Units						
Benzene	T54	AR	1	µg/kg		(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
EthylBenzene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
Toluene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	**2.2**	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010	**0.026**	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg		<1	<1	**250**	<1	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg		<1	<1	**4**	<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg		<1	<1	**930**	<1	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg		<1	<1	**75**	<1	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg		<1	<1	**1100**	<1	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg		<1	<1	**100**	<1	<1
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg		<1	<1	**3800**	<1	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg		<1	<1	**120**	<1	<1

SAL Reference: 237434
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
TPH (CWG)

					SAL Reference	237434 006	237434 007
					Customer Sample Reference	AREA 3 J1 @ 0.40m, AREA 3 J1A @ 0.40m - Combined	AREA 3 J2 @ 0.40m, AREA 3 J2A @ 0.40m - Combined
					Date Sampled	12-MAY-2011	12-MAY-2011
Determinand	Method	Test Sample	LOD	Units			
Benzene	T54	AR	1	µg/kg		(13) <1	(13) <1
EthylBenzene	T54	AR	1	µg/kg		<1	<1
M/P Xylene	T54	AR	1	µg/kg		<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg		<1	<1
O Xylene	T54	AR	1	µg/kg		<1	<1
Toluene	T54	AR	1	µg/kg		<1	<1
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg		<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg		<1	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg		<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg		<1	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg		<1	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg		<1	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg		<1	<1
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg		<1	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg		<1	<1

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SAL Reference: 237434
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

	SAL Reference	237434 001	237434 002	237434 003	237434 004	237434 005
	Customer Sample Reference	AREA 1 J9 @ 0.30m, AREA 1 J9A @ 0.30m - Combined	AREA 1 J10 @ 0.45m, AREA 1 J10A @ 0.45m - Combined	AREA 1 J11 @ 0.30m, AREA 1 J11A @ 0.30m - Combined	AREA 1 J12 @ 0.60m, AREA 1 J12A @ 0.60m - Combined	AREA 1 J13 @ 0.30m, AREA 1 J13A @ 0.30m - Combined
	Date Sampled	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011
Determinand	Method / Test Sample / LOD / Units					
1,1,1,2-Tetrachloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethylene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethylene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,1-Dichloropropene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54 AR 10 µg/kg	<10	<10	<10	<10	<10
1,2-dibromoethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2-Dichloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,2-Dichloropropane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,3-Dichloropropane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
2,2-Dichloropropane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
2-Chlorotoluene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
4-Chlorotoluene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Benzene	T54 AR 1 µg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Bromochloromethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Bromodichloromethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Bromoform	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Bromomethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Carbon tetrachloride	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Chlorobenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Chlorodibromomethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Chloroethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Chloroform	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Chloromethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Cis-1,3-Dichloropropene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Dibromomethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Dichlorodifluoromethane	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
EthylBenzene	T54 AR 1 µg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Isopropyl benzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
m/p ethyl toluene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
M/P Xylene	T54 AR 1 µg/kg	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54 AR 1 µg/kg	<1	<1	<1	<1	<1
n-Butylbenzene	T54 AR 10 µg/kg	<10	<10	26	<10	<10
n-Propylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
O Xylene	T54 AR 1 µg/kg	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
S-Butylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Styrene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
T-Butylbenzene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Tertiary amyl methyl ether	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Tetrachloroethene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5
Toluene	T54 AR 1 µg/kg	<1	<1	<1	<1	<1
Trans-1,2-Dichloroethene	T54 AR 5 µg/kg	<5	<5	<5	<5	<5

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SAL Reference: 237434
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

				SAL Reference	237434 001	237434 002	237434 003	237434 004	237434 005
				Customer Sample Reference	AREA 1 J9 @ 0.30m, AREA 1 J9A @ 0.30m - Combined	AREA 1 J10 @ 0.45m, AREA 1 J10A @ 0.45m - Combined	AREA 1 J11 @ 0.30m, AREA 1 J11A @ 0.30m - Combined	AREA 1 J12 @ 0.60m, AREA 1 J12A @ 0.60m - Combined	AREA 1 J13 @ 0.30m, AREA 1 J13A @ 0.30m - Combined
				Date Sampled	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011	12-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Vinyl chloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

SAL Reference: 237434
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

	SAL Reference	237434 006	237434 007
	Customer Sample Reference	AREA 3 J1 @ 0.40m, AREA 3 J1A @ 0.40m - Combined	AREA 3 J2 @ 0.40m, AREA 3 J2A @ 0.40m - Combined
	Date Sampled	12-MAY-2011	12-MAY-2011

Determinand	Method	Test Sample	LOD	Units		
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	<5	<5
1,1-Dichloroethane	T54	AR	5	µg/kg	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg	<5	<5
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg	<5	<5
Bromochloromethane	T54	AR	5	µg/kg	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg	<5	<5
Bromoform	T54	AR	5	µg/kg	<5	<5
Bromomethane	T54	AR	5	µg/kg	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg	<5	<5
Chlorobenzene	T54	AR	5	µg/kg	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg	<5	<5
Chloroethane	T54	AR	5	µg/kg	<5	<5
Chloroform	T54	AR	5	µg/kg	<5	<5
Chloromethane	T54	AR	5	µg/kg	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	<5	<5
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5
Dibromomethane	T54	AR	5	µg/kg	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg	<5	<5
EthylBenzene	T54	AR	1	µg/kg	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg	<5	<5
M/P Xylene	T54	AR	1	µg/kg	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg	<5	<5
O Xylene	T54	AR	1	µg/kg	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg	<5	<5
Styrene	T54	AR	5	µg/kg	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg	<5	<5
Toluene	T54	AR	1	µg/kg	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	<5	<5

SAL Reference:	237434
Project Site:	Cotes Road, Burbage
Customer Reference:	GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

SAL Reference	**237434 006**	**237434 007**
Customer Sample Reference	**AREA 3 J1 @ 0.40m, AREA 3 J1A @ 0.40m - Combined**	**AREA 3 J2 @ 0.40m, AREA 3 J2A @ 0.40m - Combined**
Date Sampled	**12-MAY-2011**	**12-MAY-2011**

Determinand	Method	Test Sample	LOD	Units		
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg	<5	<5
Vinyl chloride	T54	AR	5	µg/kg	<5	<5

Index to symbols used in 237434-1

Value	Description
AR	As Received
13	Results have been blank corrected
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Method Index

Value	Description
T54	GC/MS (Headspace)
T8	GC/FID

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
EthylBenzene	T54	AR	1	µg/kg	U	001
M/P Xylene	T54	AR	1	µg/kg	U	001
O Xylene	T54	AR	1	µg/kg	U	001
Toluene	T54	AR	1	µg/kg	U	001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	001-007
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	N	001-007
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	N	001-007
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	N	001-007
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	N	001-007
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	N	001-007
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	N	001-007
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	N	001-007
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	N	001-007
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001-007
1,1,1-Trichloroethane	T54	AR	5	µg/kg	U	001-007
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001-007
1,1,2-Trichloroethane	T54	AR	5	µg/kg	U	001-007
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	U	001-007
1,1-Dichloroethane	T54	AR	5	µg/kg	U	001-007
1,1-Dichloroethylene	T54	AR	5	µg/kg	U	001-007
1,1-Dichloropropene	T54	AR	5	µg/kg	U	001-007
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	U	001-007
1,2,3-Trichloropropane	T54	AR	5	µg/kg	U	001-007
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	U	001-007
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	U	001-007
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	U	001-007
1,2-dibromoethane	T54	AR	5	µg/kg	U	001-007
1,2-Dichlorobenzene	T54	AR	5	µg/kg	U	001-007
1,2-Dichloroethane	T54	AR	5	µg/kg	U	001-007

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
1,2-Dichloropropane	T54	AR	5	µg/kg	U	001-007
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	U	001-007
1,3-Dichlorobenzene	T54	AR	5	µg/kg	U	001-007
1,3-Dichloropropane	T54	AR	5	µg/kg	U	001-007
1,4-Dichlorobenzene	T54	AR	5	µg/kg	U	001-007
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	U	001-007
2,2-Dichloropropane	T54	AR	5	µg/kg	U	001-007
2-Chlorotoluene	T54	AR	5	µg/kg	U	001-007
4-Chlorotoluene	T54	AR	5	µg/kg	U	001-007
Benzene	T54	AR	1	µg/kg	U	001
Bromobenzene	T54	AR	5	µg/kg	U	001-007
Bromochloromethane	T54	AR	5	µg/kg	U	001-007
Bromodichloromethane	T54	AR	5	µg/kg	U	001-007
Bromoform	T54	AR	5	µg/kg	U	001-007
Bromomethane	T54	AR	5	µg/kg	U	001-007
Carbon tetrachloride	T54	AR	5	µg/kg	U	001-007
Chlorobenzene	T54	AR	5	µg/kg	U	001-007
Chlorodibromomethane	T54	AR	5	µg/kg	U	001-007
Chloroethane	T54	AR	5	µg/kg	U	001-007
Chloroform	T54	AR	5	µg/kg	U	001-007
Chloromethane	T54	AR	5	µg/kg	N	001-007
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	U	001-007
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001-007
Dibromomethane	T54	AR	5	µg/kg	U	001-007
Dichlorodifluoromethane	T54	AR	5	µg/kg	N	001-007
Hexachlorobutadiene	T54	AR	5	µg/kg	U	001-007
Isopropyl benzene	T54	AR	5	µg/kg	U	001-007
m/p ethyl toluene	T54	AR	5	µg/kg	U	001-007
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	U	001
n-Butylbenzene	T54	AR	10	µg/kg	U	001-007
n-Propylbenzene	T54	AR	5	µg/kg	U	001-007
p-Isopropyltoluene	T54	AR	5	µg/kg	U	001-007
S-Butylbenzene	T54	AR	5	µg/kg	U	001-007
Styrene	T54	AR	5	µg/kg	U	001-007
T-Butylbenzene	T54	AR	5	µg/kg	U	001-007
Tertiary amyl methyl ether	T54	AR	5	µg/kg	U	001-007
Tetrachloroethene	T54	AR	5	µg/kg	U	001-007
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	U	001-007
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001-007
Trichlorofluoromethane	T54	AR	5	µg/kg	U	001-007
Vinyl chloride	T54	AR	5	µg/kg	U	001-007

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Scientific Analysis Laboratories

Certificate of Analysis

Report Number: 237068-1

Date of Report: 27-May-2011

Customer: Murray Rix Geotechnical Ltd
13 Willow Park
Upton Lane
Stoke Golding
Warwickshire
CV13 6EU

Customer Contact: Mr Ted Murray

Customer Job Reference: GEOJOB/11-296
Customer Site Reference: Cotes Road, Burbage
Date Job Received at SAL: 12-May-2011
Date Analysis Started: 13-May-2011
Date Analysis Completed: 27-May-2011

The results reported relate to samples received in the laboratory
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Tests covered by this certificate were conducted in accordance with SAL SOPs

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Report checked and authorised by :
Miss Claire Brown
Project Manager

Issued by :

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Waste Acceptance Criteria

Customer Sample Reference : WAC 1, WAC2, WAC3 - Combined
SAL Sample Reference : 237068 001
SAL Reference : 237068
Project Site : Cotes Road, Burbage
Customer Reference : GEOJOB/11-296
Test Portion Mass (g) : 175
Date Sampled : 10-MAY-2011

Soil Summary					Result	Inert waste landfill	Stable non-reactive	Hazardous waste landfill
Determinand	**Technique**	**LOD**	**Units**	**Symbol**				
pH	Probe	0.0		U	7.5		>6.0	
Loss on Ignition @450C	Ign 450C/Grav	0.1	%	U	4.3			10.0
Total Organic Carbon	OX/IR	0.1	%	WN	1.0	3.0	5.0	6.0
Acid Neutralising Capacity (pH 7)	Titration	2.0	Mol/kg	N	<2.0			
BTEX (Sum)	Calc	0.0040	mg/kg	U	<0.0040	6.0		
PAH (Sum)	Calc	1.6	mg/kg	N	1.7	100.0		
PCB EC7 (Sum)	Calc	0.00035	mg/kg	WU	0.00040	1.0		
TPH (C10-C40)	GC/FID (SE)	10	mg/kg	U	3500	**500.0**		

10:1 Leachate					Result	Inert waste landfill	Stable non-reactive	Hazardous waste landfill
Determinand	**Technique**	**LOD**	**Units**	**Symbol**				
Antimony	Calc / ICP/OES(Sim)(PreconcB)	0.020	mg/kg	N	<0.020	0.06	0.7	5.0
Arsenic	Calc / ICP/OES(Sim)(PreconcB)	0.020	mg/kg	N	0.043	0.5	2.0	25.0
Barium	Calc / ICP/OES(Sim)(PreconcB)	0.10	mg/kg	N	0.48	20.0	100.0	300.0
Cadmium	Calc / ICP/OES(Sim)(PreconcB)	0.010	mg/kg	N	<0.010	0.04	1.0	5.0
Chloride	Calc / IC (D)	1.0	mg/kg	N	20	800.0	15000.0	25000.0
Chromium	Calc / ICP/OES(Sim)(PreconcB)	0.020	mg/kg	N	<0.020	0.5	10.0	70.0
Copper	Calc / ICP/OES(Sim)(PreconcB)	0.10	mg/kg	N	<0.10	2.0	50.0	100.0
Dissolved Organic Carbon	Calc / OX/IR	10	mg/kg	N	60	500.0	800.0	1000.0
Fluoride	Calc / IC (D)	0.50	mg/kg	N	3.4	10.0	150.0	500.0
Lead	Calc / ICP/OES(Sim)(PreconcB)	0.020	mg/kg	N	<0.020	0.5	10.0	50.0
Mercury	Calc / AAS (CV)	0.0020	mg/kg	N	<0.0020	0.01	0.2	2.0
Molybdenum	Calc / ICP/OES(Sim)(PreconcB)	0.050	mg/kg	N	0.10	0.5	10.0	30.0
Nickel	Calc / ICP/OES(Sim)(PreconcB)	0.020	mg/kg	N	0.026	0.4	10.0	40.0
Phenols(Mono)	Calc / Colorimetry (CE)	0.050	mg/kg	N	0.100	1.0		
Selenium	Calc / ICP/OES(Sim)(PreconcB)	0.050	mg/kg	N	<0.050	0.1	0.5	7.0
SO4--	Calc / IC (D)	1.0	mg/kg	N	480	1000.0	20000.0	50000.0
Total Dissolved Solids	Calc	100	mg/kg	N	1500	4000.0	60000.0	100000.0
Zinc	Calc / ICP/OES(Sim)(PreconcB)	0.050	mg/kg	N	0.23	4.0	50.0	200.0

From: EC Directive 99/31/EC and Landfill Regulations 2002 (as ammended)

Note:- Sample failed to produce sufficient eluate within the specified time after vacuum filtration for 1 hour and centrifugation for 30 minutes. Therefore, the exact application of the two-step leaching test is precluded on technical grounds. (ref: Section 5.2.4 BS EN 12457-3:2002) Results are derived from a single step leaching at L/S 10/1 as prescribed by the EA guidance. (Ref Section C4.1.1 Guidance on Sampling and Testing of Wastes to meet Landfill Waste Acceptance Procedures Version 1 April 2005, Environment Agency)

Notes:- Cumulative release at L/S=10 (mg/kg of dry matter) in accordance with BS EN 12457. Soil leaching procedure is not covered by our UKAS accreditation

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SAL Reference: 237068
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
PCBs EC7 congeners(28,52,101,118,138,153,180)

SAL Reference	237068 001
Customer Sample Reference	WAC 1, WAC2, WAC3 - Combined
Test Sample	AR
Date Sampled	10-MAY-2011

Determinand	Method	LOD	Units	Symbol	
Polychlorinated biphenyl BZ#101	GC/MS (HR)	0.05	µg/kg	WU	**0.10**
Polychlorinated biphenyl BZ#118	GC/MS (HR)	0.05	µg/kg	WU	<0.05
Polychlorinated biphenyl BZ#138	GC/MS (HR)	0.05	µg/kg	WU	**0.16**
Polychlorinated biphenyl BZ#153	GC/MS (HR)	0.05	µg/kg	WU	**0.07**
Polychlorinated biphenyl BZ#180	GC/MS (HR)	0.05	µg/kg	WU	**0.07**
Polychlorinated biphenyl BZ#28	GC/MS (HR)	0.05	µg/kg	WU	<0.05
Polychlorinated biphenyl BZ#52	GC/MS (HR)	0.05	µg/kg	WU	<0.05

SAL Reference: 237068
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
Total and Speciated USEPA16 PAH (SE)

SAL Reference	237068 001
Customer Sample Reference	WAC 1, WAC2, WAC3 - Combined
Test Sample	AR
Date Sampled	10-MAY-2011

Determinand	Method	LOD	Units	Symbol	
Naphthalene	GC/MS	0.1	mg/kg	U	<0.1
Acenaphthylene	GC/MS	0.1	mg/kg	U	<0.1
Acenaphthene	GC/MS	0.1	mg/kg	U	**0.1**
Fluorene	GC/MS	0.1	mg/kg	U	**0.3**
Phenanthrene	GC/MS	0.1	mg/kg	U	**0.4**
Anthracene	GC/MS	0.1	mg/kg	U	**0.2**
Fluoranthene	GC/MS	0.1	mg/kg	N	**0.2**
Pyrene	GC/MS	0.1	mg/kg	N	**0.3**
Benzo(a)Anthracene	GC/MS	0.1	mg/kg	U	<0.1
Chrysene	GC/MS	0.1	mg/kg	U	**0.2**
Benzo(b/k)Fluoranthene	GC/MS	0.1	mg/kg	U	<0.1
Benzo(a)Pyrene	GC/MS	0.1	mg/kg	U	<0.1
Indeno(123-cd)Pyrene	GC/MS	0.1	mg/kg	U	<0.1
Dibenzo(ah)Anthracene	GC/MS	0.1	mg/kg	U	<0.1
Benzo(ghi)Perylene	GC/MS	0.1	mg/kg	U	<0.1
Polyaromatic Hydrocarbons (Total)	GC/MS	0.1	mg/kg	U	**1.7**

SAL Reference: 237068
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
BTEX

SAL Reference	237068 001
Customer Sample Reference	WAC 1, WAC2, WAC3 - Combined
Test Sample	AR
Date Sampled	10-MAY-2011

Determinand	Method	LOD	Units	Symbol	
Benzene	GC/MS (Headspace)	1	µg/kg	U	(13) <1
EthylBenzene	GC/MS (Headspace)	1	µg/kg	U	<1
Meta/Para-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1
Ortho-Xylene	GC/MS (Headspace)	1	µg/kg	U	<1
Toluene	GC/MS (Headspace)	1	µg/kg	U	<1

Index to symbols used in 237068-1

Value	Description
AR	As Received
8:1	Leachate to BS EN 12457-3 (8:1)
A40	Assisted dried < 40C
2:1	Leachate to BS EN 12457-3 (2:1)
13	Results have been blank corrected
W	Analysis was performed at another SAL laboratory
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Notes

pH, LOI & TOC were performed on assisted dried samples (<40 degree centigrade). All other results relate to samples as received.

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Certificate of Analysis

3 Crittall Drive
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CM7 2RT
Tel : 01376 328646
Fax : 01376 552923

Report Number: 238368-1

Date of Report: 02-Jun-2011

Customer: Murray Rix Geotechnical Ltd
13 Willow Park
Upton Lane
Stoke Golding
Warwickshire
CV13 6EU

Customer Contact: Mr Ted Murray

Customer Job Reference:
Customer Site Reference: Cotes Road, Burbage
Date Job Received at SAL: 24-May-2011
Date Analysis Started: 25-May-2011
Date Analysis Completed: 01-Jun-2011

The results reported relate to samples received in the laboratory
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Report checked
and authorised by :
Miss Claire Brown
Project Manager

Issued by :
Miss Claire Brown
Project Manager

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SAL Reference: 238368
Project Site: Cotes Road, Burbage
Customer Reference:

Soil — Analysed as Soil
TPH (CWG)

SAL Reference	238368 001
Customer Sample Reference	Area 2, J7 @ 1.50m
Date Sampled	09-MAY-2011

Determinand	Method	Test Sample	LOD	Units	
Benzene	T54	AR	1	µg/kg	(13) <1
EthylBenzene	T54	AR	1	µg/kg	<1
M/P Xylene	T54	AR	1	µg/kg	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1
O Xylene	T54	AR	1	µg/kg	<1
Toluene	T54	AR	1	µg/kg	1
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	2.0
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	0.63
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	140
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	15
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	410
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	120
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	380
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	140
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	93
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	8

Index to symbols used in 238368-1

Value	Description
AR	As Received
13	Results have been blank corrected
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Method Index

Value	Description
T8	GC/FID
T54	GC/MS (Headspace)

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Benzene	T54	AR	1	µg/kg	U	001
EthylBenzene	T54	AR	1	µg/kg	U	001
M/P Xylene	T54	AR	1	µg/kg	U	001
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	U	001
O Xylene	T54	AR	1	µg/kg	U	001
Toluene	T54	AR	1	µg/kg	U	001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	001
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	001
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	N	001
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	001
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	001
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	001
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	N	001
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	N	001
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	N	001
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	N	001
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	N	001

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Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	N	001
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	N	001
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	N	001

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Certificate of Analysis

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CM7 2RT
Tel : 01376 328646
Fax : 01376 552923

Report Number: 238855-1

Date of Report: 06-Jun-2011

Customer: Murray Rix Geotechnical Ltd
13 Willow Park
Upton Lane
Stoke Golding
Warwickshire
CV13 6EU

Customer Contact: Mr Ted Murray

Customer Job Reference: GEOJOB/11-296
Customer Site Reference: Cotes Road, Burbage
Date Job Received at SAL: 31-May-2011
Date Analysis Started: 31-May-2011
Date Analysis Completed: 06-Jun-2011

The results reported relate to samples received in the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
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Report checked
and authorised by :
Miss Claire Brown
Project Manager

Issued by :
Miss Claire Brown
Project Manager

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SAL Reference: 238855
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
TPH (CWG)

				SAL Reference	238855 001	238855 002	238855 003	238855 004	238855 010
				Customer Sample Reference	Area 1, J14 @ 0.50m	Area 1, J15 @ 0.40m	Area 1, J16 @ 0.30m	Area 1, J17 @ 0.40m	Area 2, J10 @ 0.90m
				Date Sampled	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Toluene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1	<1

SAL Reference: 238855
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
TPH (CWG)

				SAL Reference	238855 011	238855 012	238855 013	238855 017
				Customer Sample Reference	Area 2, J11 @ 1.52m	Area 2, J12 @ 1.40m	Area 2, J13 @ 1.10m	Tp8, J1A @ 0.25m
				Date Sampled	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**				
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1
M/P Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1
Toluene	T54	AR	1	µg/kg	<1	<1	<1	<1
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	<1	<1	<1	<1
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	<1	<1	<1	<1

SAL Reference: 238855
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

					SAL Reference	238855 001	238855 005	238855 006	238855 007	238855 008
					Customer Sample Reference	Area 1, J14 @ 0.50m	Area 1, J18 @ 0.50m	Area 1, J19 @ 0.40m	Area 1, J20 @ 0.35m	Area 1, J21 @ 0.55m
					Date Sampled	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**						
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg	**64**	**8**	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	**14**	**5**	<5	<5	<5
1,1-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	<10	<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg	(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
M/P Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg	<10	<10	<10	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
O Xylene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Styrene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg	<1	<1	<1	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

SAL Reference: 238855
Project Site: Coles Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

				SAL Reference	**238855 001**	**238855 005**	**238855 006**	**238855 007**	**238855 008**
				Customer Sample Reference	**Area 1, J14 @ 0.50m**	**Area 1, J18 @ 0.50m**	**Area 1, J19 @ 0.40m**	**Area 1, J20 @ 0.35m**	**Area 1, J21 @ 0.55m**
				Date Sampled	**25-MAY-2011**	**25-MAY-2011**	**25-MAY-2011**	**25-MAY-2011**	**25-MAY-2011**
Determinand	**Method**	**Test Sample**	**LOD**	**Units**					
Vinyl chloride	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

SAL Reference: 238855
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil Analysed as Soil
VOC (SE)

					SAL Reference	238855 009	238855 014	238855 015	238855 016	238855 017
					Customer Sample Reference	Area 1, J22 @ 0.45m	Area 4, J1 @ 0.65m	Area 4, J2 @ 0.40m	Area 4, J3 @ 0.30m	Tp8, J1A @ 0.25m
					Date Sampled	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011
Determinand	**Method**	**Test Sample**	**LOD**	**Units**						
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1,1-Trichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1,2-Trichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1,2-Trichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	8	<5
1,1-Dichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1-Dichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,1-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2,3-Trichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg		<10	<10	<10	<10	<10
1,2-dibromoethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2-Dichloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,2-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,3-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,3-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
1,4-Dichlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
2,2-Dichloropropane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
2-Chlorotoluene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
4-Chlorotoluene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Benzene	T54	AR	1	µg/kg		(13) <1	(13) <1	(13) <1	(13) <1	(13) <1
Bromobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Bromochloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Bromodichloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Bromoform	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Bromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Carbon tetrachloride	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Chlorobenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Chlorodibromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Chloroethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Chloroform	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Chloromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Dibromomethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Dichlorodifluoromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
EthylBenzene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
Hexachlorobutadiene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Isopropyl benzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
m/p ethyl toluene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
M/P Xylene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
Methyl tert-Butyl Ether	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
n-Butylbenzene	T54	AR	10	µg/kg		<10	<10	<10	<10	<10
n-Propylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
O Xylene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
p-Isopropyltoluene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
S-Butylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Styrene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
T-Butylbenzene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Tertiary amyl methyl ether	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Tetrachloroethene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Toluene	T54	AR	1	µg/kg		<1	<1	<1	<1	<1
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg		<5	<5	<5	<5	<5
Trichlorofluoromethane	T54	AR	5	µg/kg		<5	<5	<5	<5	<5

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SAL Reference: 238855
Project Site: Cotes Road, Burbage
Customer Reference: GEOJOB/11-296

Soil — Analysed as Soil
VOC (SE)

				SAL Reference	238855 009	238855 014	238855 015	238855 016	238855 017
				Customer Sample Reference	Area 1, J22 @ 0.45m	Area 4, J1 @ 0.65m	Area 4, J2 @ 0.40m	Area 4, J3 @ 0.30m	Tp8, J1A @ 0.25m
				Date Sampled	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011	25-MAY-2011
Determinand	Method	Test Sample	LOD	Units					
Vinyl chlonde	T54	AR	5	µg/kg	<5	<5	<5	<5	<5

Index to symbols used in 238855-1

Value	Description
AR	As Received
13	Results have been blank corrected.
U	Analysis is UKAS accredited
N	Analysis is not UKAS accredited

Method Index

Value	Description
T54	GC/MS (Headspace)
T8	GC/FID

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
Benzene	T54	AR	1	µg/kg	U	001
EthylBenzene	T54	AR	1	µg/kg	U	001
Methyl tert-Butyl Ether	T54	AR	1	µg/kg	U	001
O Xylene	T54	AR	1	µg/kg	U	001
Toluene	T54	AR	1	µg/kg	U	001
TPH (C5-C6 aliphatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C6-C7 aromatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C6-C8 aliphatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C7-C8 aromatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C8-C10 aliphatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C8-C10 aromatic)	T54	AR	0.010	mg/kg	N	001-004,010-013,017
TPH (C10-C12 aliphatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C10-C12 aromatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C12-C16 aliphatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C12-C16 aromatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C16-C21 aliphatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C16-C21 aromatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C21-C35 aliphatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
TPH (C21-C35 aromatic)	T8	AR	1	mg/kg	N	001-004,010-013,017
1,1,1,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1,1-Trichloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1,2,2-Tetrachloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1,2-Trichloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1,2-Trichloroethylene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1-Dichloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1-Dichloroethylene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,1-Dichloropropene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2,3-Trichlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2,3-Trichloropropane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2,4-Trichlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2,4-Trimethylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2-Dibromo-3-Chloropropane	T54	AR	10	µg/kg	U	001,005-009,014-017
1,2-dibromoethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2-Dichlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2-Dichloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,2-Dichloropropane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,3,5-Trimethylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017

Determinand	Method	Test Sample	LOD	Units	Symbol	SAL References
1,3-Dichlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
1,3-Dichloropropane	T54	AR	5	µg/kg	U	001,005-009,014-017
1,4-Dichlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
Ethyl-2-Methylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
2,2-Dichloropropane	T54	AR	5	µg/kg	U	001,005-009,014-017
2-Chlorotoluene	T54	AR	5	µg/kg	U	001,005-009,014-017
4-Chlorotoluene	T54	AR	5	µg/kg	U	001,005-009,014-017
Bromobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
Bromochloromethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Bromodichloromethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Bromoform	T54	AR	5	µg/kg	U	001,005-009,014-017
Bromomethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Carbon tetrachloride	T54	AR	5	µg/kg	U	001,005-009,014-017
Chlorobenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
Chlorodibromomethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Chloroethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Chloroform	T54	AR	5	µg/kg	U	001,005-009,014-017
Chloromethane	T54	AR	5	µg/kg	N	001,005-009,014-017
Cis-1,2-Dichloroethylene	T54	AR	5	µg/kg	U	001,005-009,014-017
Cis-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001,005-009,014-017
Dibromomethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Dichlorodifluoromethane	T54	AR	5	µg/kg	N	001,005-009,014-017
Hexachlorobutadiene	T54	AR	5	µg/kg	U	001,005-009,014-017
Isopropyl benzene	T54	AR	5	µg/kg	U	001,005-009,014-017
m/p ethyl toluene	T54	AR	5	µg/kg	U	001,005-009,014-017
M/P Xylene	T54	AR	1	µg/kg	U	001
n-Butylbenzene	T54	AR	10	µg/kg	U	001,005-009,014-017
n-Propylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
p-Isopropyltoluene	T54	AR	5	µg/kg	U	001,005-009,014-017
S-Butylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
Styrene	T54	AR	5	µg/kg	U	001,005-009,014-017
T-Butylbenzene	T54	AR	5	µg/kg	U	001,005-009,014-017
Tertiary amyl methyl ether	T54	AR	5	µg/kg	U	001,005-009,014-017
Tetrachloroethene	T54	AR	5	µg/kg	U	001,005-009,014-017
Trans-1,2-Dichloroethene	T54	AR	5	µg/kg	U	001,005-009,014-017
Trans-1,3-Dichloropropene	T54	AR	5	µg/kg	U	001,005-009,014-017
Trichlorofluoromethane	T54	AR	5	µg/kg	U	001,005-009,014-017
Vinyl chloride	T54	AR	5	µg/kg	U	001,005-009,014-017

APPENDIX E

Waste Transfer and Delivery Notes for Stockpile 2 Materials

WASTE TRANSFER NOTE

www. Central .uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

W/ SLP0526

Ticket No. A12969

CENTRAL JOB NO. 147144	**ACCOUNT CODE**
CUSTOMER *(producer of waste)* A.R DEMOLITION	**DATE** 9-6-11
SITE ADDRESS *(transfer collection point)* HAYDN EVANS COTES RD BURBAGE	**VEHICLE REGISTRATION NO** FJ07 AHL 8 WHEEL ✓ | 6 WHEEL | 4 WHEEL
	HAULIER OWN
DESCRIPTION OF WASTE: SUB SOIL / CONCRETE / CLAY ETC BROWN SOIL & STONE	**TIME ON SITE** | **TIME OFF SITE** **WAITING TIME**
SIC CODE 45.11 | **OTHER**	**CUSTOMER ORDER NO.**
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 *tonne*	ONE	*Our a/c* / *Cust a/c*

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C C [illegible]	PRINT NAME

NAME OF DISPOSAL FACILITY CEMEX

ADDRESS SLIP INN

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www. Central .uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

SLP 0526 Ticket No. A12967

CENTRAL JOB NO. 147144	ACCOUNT CODE
CUSTOMER *(producer of waste)* A.R. DEMOLITION	DATE 9-6-11
SITE ADDRESS *(transfer collection point)* HAYDEN EVANS COTES RD BURBAGE	VEHICLE REGISTRATION NO FJ07 AHL 8 WHEEL ✓ | 6 WHEEL | 4 WHEEL
	HAULIER OWN
DESCRIPTION OF WASTE: SUB SOIL / CONCRETE / CLAY ETC BROWN SOIL & STONE	TIME ON SITE | TIME OFF SITE WAITING TIME
SIC CODE 45.11 | OTHER	CUSTOMER ORDER NO.
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 *tonne*	ONE	*Our a/c* / *Cust a/c*

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C C [illegible]	PRINT NAME

NAME OF DISPOSAL FACILITY CEMEX

ADDRESS SLIP END

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www.Central.uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

Ticket No. A14562

CENTRAL JOB NO. 147144	ACCOUNT CODE
CUSTOMER *(producer of waste)* AR DEMOLITION	DATE 9.6.11
SITE ADDRESS *(transfer collection point)* C/O HAYDEN EVANS, COTES RD, BURBAGE.	VEHICLE REGISTRATION NO FJ57 HBB. (8 WHEEL) / 6 WHEEL / 4 WHEEL
	HAULIER CENTRAL
DESCRIPTION OF WASTE: (SUB SOIL) / CONCRETE / (CLAY) ETC BROWN SOIL / BRICK / STONE / CLAY	TIME ON SITE / TIME OFF SITE
	WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO.
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504 ✓	170904	191205	200202	OTHER

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 *tonne*	1	~~TIPPING DETAILS~~ (Our a/c) / *Cust a/c*

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME	PRINT NAME SCOTT COTES.

NAME OF DISPOSAL FACILITY CEMEX – SILP INN QUARRY,
ADDRESS LEICESTER RD, CLIFTER MOOR
SP0526.

RECEIVED BY: [signature] PRINT NAME: O. KING

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www. Central .uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

Ticket No. A 14561

CENTRAL JOB NO. 147144.	ACCOUNT CODE
CUSTOMER *(producer of waste)* AR DEMOLITION	DATE 9.6.11
SITE ADDRESS *(transfer collection point)* C/O HAYLEEN EVANS, COTES RD BARROW.	VEHICLE REGISTRATION NO FJ57 HBB (8 WHEEL) / 6 WHEEL / 4 WHEEL HAULIER CENTRAL
~~DESCRIPTION~~ OF WASTE: (SUB SOIL) / CONCRETE (CLAY) ETC BROWN SOIL/BRICK/STONE	TIME ON SITE / TIME OFF SITE WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO. / WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 *tonne*	(1)	~~TIPPING~~ (Our a/c) / Cust a/c

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C.C. Cunnett	PRINT NAME Scott Bates.

NAME OF DISPOSAL FACILITY CEMEX - SWANN QUARRY

ADDRESS LEICESTER RD, CUTTERWORTH SU0526.

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www.Central.uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No. 806 615 927

Ticket No. A12382

CENTRAL JOB NO. 147 144	ACCOUNT CODE
CUSTOMER *(producer of waste)* A R DEMO	DATE 9-6-11
SITE ADDRESS *(transfer collection point)* H EVANS COTES ROAD BURBAGE	VEHICLE REGISTRATION NO FJ07 AHP 8 WHEEL / 6 WHEEL / 4 WHEEL HAULIER
DESCRIPTION OF WASTE: CART & TIP SUB ~~SOIL~~ / CONCRETE / CLAY ETC Brown Clay Soil Stone Brick.	TIME ON SITE / TIME OFF SITE WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO.
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS *Our a/c / Cust a/c*
20 *tonne*	1	

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME G C Caudle	PRINT NAME

NAME OF DISPOSAL FACILITY Cemex Tip. Slip inn

ADDRESS Lutterworth. Road Lutterworth. SLP 0526

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www Central .uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

Ticket No. A12381

CENTRAL JOB NO. 147 144	ACCOUNT CODE
CUSTOMER *(producer of waste)* AR DEMO	DATE 9-6-11
SITE ADDRESS *(transfer collection point)* c/o H EVANS COTES ROAD BURBAGE	VEHICLE REGISTRATION NO FJ 07 AHP 8 WHEEL / 6 WHEEL / 4 WHEEL HAULIER
DESCRIPTION OF WASTE: CART & TIP SUB SOIL / CONCRETE / CLAY ETC BLOWN CLAY SOIL BRICK STONE	TIME ON SITE / TIME OFF SITE WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO.
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 tonne	1	Our a/c / Cust a/c

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C Clewett.	PRINT NAME [illegible]

NAME OF DISPOSAL FACILITY CEMEX TIP. LUTTERWORTH.

ADDRESS SLIP INN LUTTERWORTH RD, LUTTERWORTH. SLP 0526.

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www.Central.uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

Ticket No. A14563

CENTRAL JOB NO. 147144	ACCOUNT CODE
CUSTOMER *(producer of waste)* AR DEMOLITION	DATE 9.6.11
SITE ADDRESS *(transfer collection point)* C/O HAYDEN EVANS, COATES RD, BURBAGE	VEHICLE REGISTRATION NO FJ57 HBB (8 WHEEL) / 6 WHEEL / 4 WHEEL
	HAULIER CENTRAL
DESCRIPTION OF WASTE: (SUB SOIL) / CONCRETE (CLAY) ETC BROWN SOIL/BRICK/STONE/CLAY	TIME ON SITE / TIME OFF SITE WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO. / WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504 ✓	170904	191205	200202	OTHER

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 *tonne*	(1)	*(Our a/c)* / *Cust a/c*

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C C Cowell	PRINT NAME SCOTT BATES

NAME OF DISPOSAL FACILITY CEMEX - SUP INN QUARRY, LEICESTER RD LUTTERWORTH

ADDRESS SUP0526

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www.Central.uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

SLP 0526

Ticket No. A 12968

CENTRAL JOB NO.	ACCOUNT CODE
147144	
CUSTOMER *(producer of waste)* A.R. DEMOLITION	DATE 9-6-11
SITE ADDRESS *(transfer collection point)* HAYDN EVANS COTES RD BURBAGE	VEHICLE REGISTRATION NO FJ07 AHL 8 WHEEL / 6 WHEEL / 4 WHEEL HAULIER OWN
DESCRIPTION OF WASTE: SUB SOIL / CONCRETE / CLAY ETC BROWN SOIL & STONE	TIME ON SITE / TIME OFF SITE WAITING TIME

SIC CODE 45.11	OTHER	CUSTOMER ORDER NO.	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 tonne	ONE	(Our a/c) / Cust a/c

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME C Clement	PRINT NAME

NAME OF DISPOSAL FACILITY CEMEX

ADDRESS SLIP INN

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

WASTE TRANSFER NOTE

www.Central.uk.net

Construction Materials - Plant Hire - Transport

Central Construction Services Ltd. • Vulcan Way • Hermitage Industrial Estate • Coalville • Leics. LE67 3AP
Sales: (01530) 275555 • Fax: (01530) 837996
Email: sales@central.uk.net www.central.uk.net
VAT No: 806 615 927

Ticket No. A12383

CENTRAL JOB NO. 147144	ACCOUNT CODE
CUSTOMER *(producer of waste)* AR DEMO	DATE 9-6-11
SITE ADDRESS *(transfer collection point)* c/o H EVANS COTES ROAD BURBAGE	VEHICLE REGISTRATION NO FJ 07 AHP
	8 WHEEL / 6 WHEEL / 4 WHEEL
	HAULIER
DESCRIPTION OF WASTE: CART & TIP SUB SOIL / CONCRETE / CLAY ETC Mixed Clay Soil Stone Bricks.	TIME ON SITE / TIME OFF SITE
	WAITING TIME
SIC CODE 45.11 / OTHER	CUSTOMER ORDER NO.
	WAITING TIME SIGNATURE:

EWC CODE	101103	150107	170101	170102	170103	170107	170202	170504	170904	191205	200202	OTHER
								✓				

WEIGHT CARRIED	NO. OF LOADS TIPPED	TIPPING DETAILS
20 tonne	1	*Our a/c / Cust a/c*

SIGNED ON BEHALF OF WASTE PRODUCER	SIGNED ON BEHALF OF CARRIER
PRINT NAME G C Cornish.	PRINT NAME

NAME OF DISPOSAL FACILITY CEMEX TIP SLIP INN

ADDRESS LUTTER WORTH Roads
LUTTER WORTH SLP 0526.

RECEIVED BY: _____ PRINT NAME: _____

WASTE CARRIER REGISTRATION No. BLT/659438/CB

PML Print Ref: PML03

APPENDIX F

Details of Hydrocarbon Membrane installed in raft of Plot 7 and validation

Ted Muray

From: "Giles Rawdon" <Giles.Rawdon@hinckley-bosworth.gov.uk>
To: "Ted Muray" <ted@murrayrix.co.uk>
Sent: 25 May 2011 08:52
Subject: RE: Cotes Road, Burbage

Ted,

Thanks for the info, that should be fine. Will you send through a spec for the barrier, installation etc and validation once it is done.

Regards

Giles

From: Ted Muray [mailto:ted@murrayrix.co.uk]
Sent: 23 May 2011 14:58
To: Giles Rawdon
Cc: Haydn Evans
Subject: Cotes Road, Burbage

Hi Giles,
We are currently carrying out remediation of the site in accordance with the Method Statement previously sent. We have results from the remediation carried out to date which suggests that some further minor work is required. However, I have a query for Plot 7. The developer insisted that the foundation raft construction was carried out before laboratory test results were available. We stripped the area of the plot down to what appeared to be a clean base and this included a small sump which appeared to have been within the cartilage of the original building. Samples were taken at formation level in 5 locations below the plot and tests carried out for TPH and VOCs. One set of results for TPH is slightly elevated suggesting some localised hydrocarbon contamination though none was evident from visual or olfactory means of detection. The Developer has said that he will install a proprietary vapour barrier with the raft. I feel that this would be sufficient to remove any risks based on the localised nature of the contaminants and their levels but thought it best to run it past you for your comments.

Attached are the following:
(i) A plan of the housing layout of the site with Plot 7 comprising part of Area 1 (remediation in area of old loading bay).
(ii) Figure showing a plan of Areas 1, 2 and 3 and their development on 9/5/11, 10/5/11 and 12/5/11. The area of concern (Plot 7) was sampled in locations J9-J13 (including J9A-J13A).
(iii) Results for J9-J13 (including J9A-J13A) with elevated results marked.

Ted Murray

Rated an Excellent Council by the Audit Commission

Murray Rix

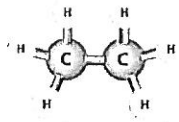
From: "Haydn Evans" <haydn@evans-heritage.co.uk>
To: <ted@murrayrix.co.uk>
Cc: <dale@evans-heritage.co.uk>
Sent: 21 June 2011 20:53
Attach: Hydrocarbon Membrane Plot 7.pdf; wac tested 9 loads.pdf
Subject: Cotes Rd, Burbage.

Ted,
See attached
1) Spec sheet for the hydrocarbon membrane installed to plot 7, note : installation inspected & approved by NHBC & Salus Improved Inspectors
2) Conveyance notes for the 9 loads contaminated hydrocarbon material removed from site.
regards
Haydn

technical datasheet

corden™
environmental protection systems

Corden EPS Hydrocarbon Membrane (CH)

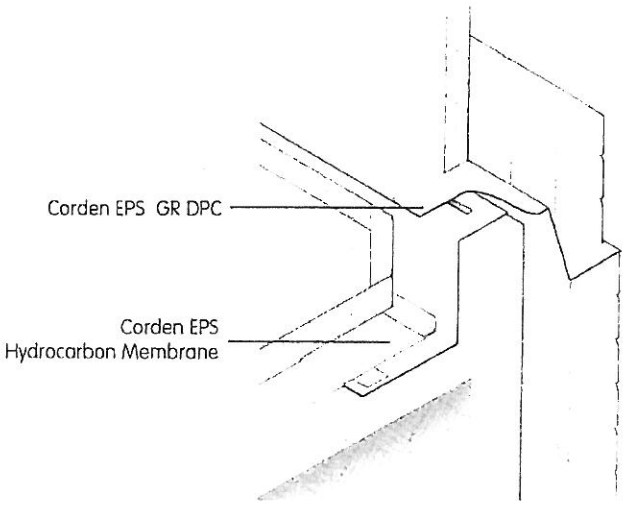


Hydrocarbons are colourless gases formed as a by-product of decomposing organic matter.

It is crucial that when gas protection is required, the site conditions, design and application are all taken into consideration to provide an impermeable membrane capable of surviving installation and subsequent traffic, to protect the most valuable asset "the building" against harmful gases that can cause future problems.

The Corden EPS Hydrocarbon Membrane is a high quality, high density polyethylene (HDPE) produced from specially formulated, proprietary virgin polyethylene resin designed specifically for flexible geomembrane applications.

The Corden EPS Hydrocarbon Membrane has outstanding chemical resistance, mechanical properties, environmental stress crack resistance, dimensional stability and thermal ageing characteristics. The Corden EPS Hydrocarbon Membrane also has excellent resistance to UV radiation and is suitable for exposed conditions.



Product Specification

Physical Description	Test method	Value/Units
Thickness	ASTM D 5199	1mm
Density	ASTM D 792/1505 A	0.94g/cm³(min)
Colour		Black
Standard roll width		5.9/2.95m
Technical Performance		
Elongation at break	G.L.(50mm)	700%
Puncture resistance	ASTM D 4833	320N
Tear Resistance	ASTM D 1004	125N
Hydrocarbon permeability		2.0×10^{-6}ml/cm³.s

The Corden EPS Hydrocarbon membrane is available in standard roll sizes of 5.9m x 50m or 2.95m x 50m. Several denominations of these sizes are available.

Advantages

- Suitable for use on hydrocarbon contaminated sites
- Excellent weld characteristics
- Very high resistance to puncture and tear
- Available 5.9m wide
- Compatible with vented systems
- Excellent resistance to chemicals and UV radiation
- Can be taped (Consult technical department)
- Low permeability to hydrocarbon gases (Consult separate data sheet)
- All sundries available

Installation Details

Corden EPS HM is designed to exhibit superior welding properties, therefore, we recommend factory welding or on-site welding methods of jointing when the membrane is to be installed below a ground floor construction.

Placing

Although the Corden EPS Hydrocarbon Membrane is a very robust material, it is advised that it should be laid on a blinded or smooth surface allowing adequate overlap for jointing between the sheets and avoiding bridging i.e. areas of unsupported membrane. A final floor covering should be installed above it and care should be taken to ensure the membrane is not damaged prior to this.

Inspect for damage and repair tears/holes with a piece of membrane sealed down with double sided tape and secured down with lap tape. Seal onto Corden EPS GR DPC to maintain integrity.

In certain applications, where the membrane is to be installed above a suspended in-situ concrete slab or block and beam suspended floor, the sealing of laps can be achieved using the EPS Jointing Tape system. In these instances, Corden EPS Jointing Tape should be applied approximately 50mm from the edge. The next width of Corden EPS HM should then be overlapped. For effective protection, all laps must be a minimum of 150mm and the joint should be secured with Corden EPS Girth Jointing Tape, a single sided tape which provides added security against any potential leakage paths. Always ensure that the membrane is clean, dust free and dry at the time of jointing.

Corden EPS HM and ancillary components must be installed in accordance with the recommendations of Building Research establishment BRE 414 "Protective measures for housing on gas contaminated land", Ciria Report 149 "Protecting development from methane", together with codes of practice CP102 and BUS 8102.

To avoid slip or shear planes, it is not recommended to take membranes through the wall. In order to provide a continuous barrier across the cavity, Corden EPS DPC should be sealed to the membrane, taken through the blockwork, up the wall and incorporated below the damp proof course on the outer leaf.

Corden EPS DPC should be installed in accordance with BUS 8215: 1991, BUS 8000: Part 3, 1989 and BUS 5628: Part 3: 1985. All horizontal DPC's must be bedded on both sides with fresh mortar. All DPC's must project through the full width of the wall, including any externally applied rendering and project 5mm beyond the finished external face.

Ancillary Products

- Corden EPS Geovent
- Corden EPS Geovent Connectors
- Corden EPS Pervients
- Corden EPS Gas Collector Pipe
- Corden EPS Gas Tape
- Corden EPS Lap Tape
- Corden EPS Top Hats
- Corden EPS GR DPC
- Corden EPS Vent Boxes
- Corden EPS Vent Stack and Cowl
- Corden EPS GRM and Prime

Separate data sheets available on request for all the above ancillary products.

leach way, burma road, blidworth industrial estate, blidworth, nottinghamshire ng21 0ru
tel 0115 965 6111 fax 0115 965 5151 email sales@cordengroup.co.uk web www.cordengroup.co.uk

'Corden EPS' branded products are guaranteed by Corden Group Ltd against defective materials and manufacture. We cannot however accept any liability arising from the application or use of our products because we have no direct or continuous control over where and how our products are used. All products are sold subject to our conditions of sale, copies of which may be obtained on request

technical datasheet

corden

environmental protection systems

Corden EPS Hydrocarbon Membrane (cont)

Polythene Geomembranes

Polyethylene has proved to be the most popular geomembrane lining material. This popularity is due to polyethylene's high UV and chemical resistance in addition to its flexibility. Through developments in resin technology, today's polyethylene geomembranes exhibit outstanding resistance to stress cracking and thermal aging.

Crude oil is the primary source for a wide range of intermediate organic products including gases and liquid mixtures. One of the products obtained from the refinement of crude oil is ethylene. The ethylene molecule is two carbon atoms bonded with a double bond and two hydrogen atoms attached to each carbon.

Ethylene molecules are able to participate in a chemical reaction called "polymerisation". polymerisation is the process by which small molecules are combined to form large molecules called polymers. The polymerisation of ethylene molecules occurs in a stepwise fashion. First, two ethylene molecules are bonded together, then another is added and so on until the reaction terminates. In this way, long molecules that fold, bend and intermingle are formed.

The reaction occurs in large reactors that can be pressurised and heated. A catalyst is typically required and a comonomer is often employed. Selection of pressure, temperature, catalyst and comonomer determine the particular grade of polyethylene that is produced. Pressure and elevated temperatures force the gaseous ethylene molecules together in close proximity. A comonomer can be used to further control the molecular structure of the finished product.

A comonomer is commonly added in small amounts during polymerisation to control or alter the molecular structure, in particular the branching, and performance of the polymer. With the great number of variations and combinations, there can be a great number of unique types of polyethylene materials.

The finished product is characterised primarily by: molecular weight, molecular weight distribution and degree of branching. Molecular weight is a quantitative measure of a single molecule's mass. polymerisation reactions do not result in molecules that all demonstrate the same molecular weight. As a result, the finished product contains a range of molecular weights; that is quantified by the molecular weight distribution. Since the molecules exist as discrete chains, the way those chains are ordered is important. The degree of crystallinity is closely related to density and has an effect on the material's stress crack resistance. Variations of these polymer characteristics may have a significant effect on both the processing characteristics and the life expectancy of the finished product.
There are two primary types of extrusion processes used to manufacture polyethylene into sheet goods, those with a round die and those with a flat die. Each method requires the polyethylene resin used to exhibit some range of properties. The world's polyethylene geomembrane manufacturers are charged with the responsibility of bridging the gap between resin processing characteristics and long term survivability as a containment liner.

Consideralions for environmental projects include resistance to chemical, UV and thermal degradation. Polyethylene's stress crack resistance is not always a concern to resin suppliers since they supply so many different markets. This is in strong contrast to the environmental market where long term performance is of the utmost importance. As a result, polyethylene geomembrane manufacturers must work closely with their resin supplier(s) to achieve the longest life span of the material. Since the finished product is only as good as the raw material, special relationships between the resin supplier and the geomembrane manufacturer must be established and maintained.

Permeability for Geomembranes

Due to its chemical structure, polyethylene is an (essentially) impermeable substance. The material is made up of very long molecules. There does exist, however, molecular voids (sometimes referred to as "free space") among the individual polyethylene chains. The existence of these spaces is recognised when we say polyethylene is essentially impermeable. Permeation may exist when, for instance, the pressure behind the permeant is very high or the permeant's molecular size is very small. However, the degree of permeation exhibited is difficult to determine using currently available test procedures. As a result, test results frequently reflect the inaccuracy of the procedure rather than the permeation of the material. Testing of Corden EPS HDPE performed by an independent laboratory produced the following results.

Test	ASTM Method	Results
Methane Permeability	D 1434	2.0x10-6 mL/cm2·s
Water Vapour Permeability	E 96	1.7x 10-9 mL/cm2·s

It must be emphasised that different chemicals will permeate at different rates due to differences in molecular shape, polarity and phase (gas or liquid). For example, the relatively small water molecule (atomic weight 18) will more easily permeate the polyethy ene matrix as compared to a large molecule such as cyclohexanol (atomic weight 94).

The molecules' polarity must also be considered (recall the adage "like dissolves like"). Polyethylene is a non-polar molecule, therefore other non-polar molecules will permeate the matrix better. Examples of these molecules are hydrocarbons - especially those such as octane, pentane and hexene. The permeation of these are therefore greater than for polar molecules such as water.

A sometimes overlooked factor when reviewing permeation data is that most permeameters apply pressure to encourage permeation. In geotechnical and environmental applications, geomembranes are not subjected to the high pressures of potential permeants as they are in a permeation laboratory test. The lack of a driving force greatly diminishes actual permeation since the gaseous molecules find an easier path to follow than through the polyethylene liner. Also, because of the high pressures required to force permeants through polyethylene, failure of the permeameter is common. This is commonly in the form of a test apparatus leak. Such leaks can result in erroneous results.

Venting

Open voids beneath the ground floor with cross ventilation through the external walls will normally be required. Corden EPS Geocomposite void formers or block & beam suspended floors supported on load bearing walls will dilute and disperse gases. Please contact the Corden Technical Support Team for more information.

Technical Support

Due to the wide variety of hydrocarbon contaminants found, we strongly recommend the use of the Corden EPS Building Products Technical Support Team at an early design stage so that the most appropriate detailing and material specification are adopted.

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APPENDIX G

Determination of SSAC for M/P Xylene and Toluene (with 1% SOM)

CLEA Software Version 1.06

Report generated	29-Jun-11
Report title	Coles Road, Burbage
Created by	Rachel Jones at Murray Rix Limited

Environment Agency

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?	
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal
1	Toluene	1.47E+02	6.26E+02	1.19E+02	0.81	0.19	1.00	8.69E+02 (vap)	No	No
2	Xylene, m-	2.02E+02	5.56E+01	4.36E+01	0.22	0.78	1.00	6.25E+02 (vap)	No	No
3	Xylene, p-	1.91E+02	5.34E+01	4.17E+01	0.22	0.78	1.00	5.76E+02 (sol)	No	No
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	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?	
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal
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Environment Agency

		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	Toluene	80.2	18.5	1.3	100.0	1.19E+02	9.29E+03	5.96E+01	5.07E-08	0.00E+00	2.82E-01	4.52E-04	0.00E+00	1.91E+02	3.24E+02	8.53E+01	0.00E+00	0.00E+00	1.91E+02
2	Xylene, m-	90.7	8.7	0.6	100.0	4.36E+01	1.56E+03	2.18E+01	1.86E-08	0.00E+00	4.37E-02	1.07E-04	0.00E+00	5.09E+01	7.58E+01	1.91E+01	0.00E+00	0.00E+00	2.78E+01
3	Xylene, p-	89.9	9.5	0.6	100.0	4.17E+01	1.55E+03	2.09E+01	1.78E-08	0.00E+00	4.35E-02	1.04E-04	0.00E+00	5.07E+01	7.64E+01	1.96E+01	0.00E+00	0.00E+00	2.97E+01
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	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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Environment Agency

		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	Toluene	8.84E-04	1.79E-01	4.54E-04	2.80E-06	2.61E-01	5.63E-04	3.15E-02	0.19	37.81	0.10	0.00	55.11	0.00	0.12	6.67
2	Xylene, m-	3.23E-04	3.81E-02	1.66E-04	1.03E-06	4.04E-02	6.19E-04	8.49E-03	0.37	43.27	0.19	0.00	45.84	0.01	0.70	9.63
3	Xylene, p-	3.10E-04	3.88E-02	1.59E-04	9.82E-07	4.02E-02	6.19E-04	8.49E-03	0.35	43.81	0.18	0.00	45.39	0.00	0.70	9.57
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Environment Agency

	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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Environment Agency

		Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	Toluene	TDI	223	TDI	1400	10	520	1.15E-01	7.78E-06	5.88E-10	2.31	2.73	0.1	0.5	10	1	1
2	Xylene, m-	TDI	180	TDI	60	11	140	1.12E-01	7.03E-06	5.31E-10	2.69	3.2	0.1	0.5	10	1	1
3	Xylene, p-	TDI	180	TDI	60	11	140	1.07E-01	7.04E-06	5.31E-10	2.65	3.15	0.1	0.5	10	1	1
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Environment Agency

	Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$)		Oral Mean Daily Intake ($\mu g\ day^{-1}$)	Inhalation Mean Daily Intake ($\mu g\ day^{-1}$)	Air-water partition coefficient (K_{aw}) ($cm^3\ cm^{-3}$)	Coefficient of Diffusion in Air ($m^2\ s^{-1}$)	Coefficient of Diffusion in Water ($m^2\ s^{-1}$)	log K_{oc} ($cm^3\ g^{-1}$)	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor ($g\ g^{-1}$ DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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Environment Agency

		Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg L^{-1}$)	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
1	Toluene	1.18E+00	1.73E+03	5.90E+02	model	model	model	0.00E+00	0.00E+00	model
2	Xylene, m-	2.84E+00	4.95E+02	2.00E+02	model	model	model	0.00E+00	0.00E+00	model
3	Xylene, p-	2.59E+00	4.75E+02	2.00E+02	model	model	model	0.00E+00	0.00E+00	model
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Environment Agency

	Soil-to-water partition coefficient ($cm^3\ g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg\ L^{-1}$)	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
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