



Comhairle Contae an Chabháin
Cavan County Council



Environmental Protection Agency
PO Box 3000
Johnstown Castle Estate
County Wexford
09th March 2020

**Re: Cootehill Landfill Reg. No. H0020-01
Appeal of Conditions of Proposed Decision**

In relation to the proposed decision issued by the Agency pertaining to a Certificate of Authorisation for Cootehill Historical Landfill, Cavan County Council hereby request an appeal of the following conditions:

1.0 Condition 2.3 Environmental Liabilities - *The local authority shall put in place and maintain a financial provision for costs of likely events or accidents/ incidents related to the closed landfill and associated works.*

Cavan County Council feel that this condition is unnecessary given that substantial expenditure was already made on this site in a bid to remove the S-P-R linkage. In this instance the linkage was broken by the removal of all waste deposited at the site. Therefore, it should no longer be deemed an environmental liability and hence a financial provision should not be warranted.

2.0 Condition 3.1 Site Notice Board (b) (iv) - *the contact telephone in relation to the remediation works;*

The remediation works have already been completed at this site and therefore this condition is not applicable. Cavan County Council requests that the Agency removes this condition.

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3.0 Condition 3.3 *The local authority shall, within three months of the date of grant of this certificate of authorisation, install four gas monitoring wells within the footprint of the previously deposited waste body, unless otherwise agreed by the Agency.*

It is noted that section 3 of the inspector's report states that gas was detected on this site after removal of the waste mass. This statement is incorrect. The validation report makes the following statements in relation to Landfill Gas, post remediation;

"Regular odour monitoring was carried out by Enviroguide Consulting during the excavation phase of the project. At no time was offsite odour detected"

"A Laser Methane Mini was used daily during the excavation phase to test for fugitive Methane but none was detected"

Following the completion of works a full site walkover using the LMM analyser was carried out on 19th November 2015 and 14th December 2015. No methane readings above 100ppm (The Limit of Detection) were detected"

"Landfill gas monitoring was carried out following the works. There was no evidence of landfill gas on site"

Additionally, a subsequent examination of the site using a Laser Methane Mini conducted on the 09th March 2020 also concluded that there was no evidence of Landfill Gas at this site.

Cavan County Council have already incurred vast expenditure at this site by removal of the waste material in its entirety. This site is now confirmed to be low risk with no existing S-P-R linkage. As such, the proposed installation of gas monitoring wells is deemed unnecessary and excessive. Cavan County Council requests that the Agency removes this condition.

4.0 Condition 3.4 - *The local authority shall compile a Validation report in accordance with the requirements of the Code of Practice. Unless otherwise agreed, the validation report shall be submitted to the Agency within 30 months of the date of grant of this Certificate of Authorisation.*

The validation report has already been completed and submitted to the EPA and therefore this condition is not applicable. Cavan County Council requests that the Agency removes this condition.

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5.0 Condition 3.5 – The Local Authority shall assess the results of all monitoring carried out to confirm whether the closed landfill continues to achieve the objectives set for it in the risk assessment or in this Certificate of Authorisation.

As previously outlined, this site no longer contains waste. The conditions on this site are now akin to those of a green field site. There was no evidence of environmental emissions after the remediation and as such Environmental Monitoring is not deemed necessary. Cavan County Council therefore request that this condition be removed.

6.0 Condition 3.7 (b) -The local authority shall biannually, or as otherwise prescribed by the Agency, conduct and record:

(b) *monitoring for leachate (sample, analyse, characterise, and measure the (level of leachate) in all leachate monitoring boreholes;*

Due to the extensive remediation of this site and removal of the entire waste mass, there is no leachate generated. Therefore, the installation of leachate monitoring infrastructure is deemed unnecessary and Cavan County Council requests the removal of this condition.

6.0 Condition 3.7 (c) Monitoring on a quarterly basis to detect the presence and concentration of landfill gas in four on-site monitoring wells;

Please refer to comments outlined under point 3.0

7.0 Condition 3.7 (d)- Monitoring (sample, analyse and characterise) of water quality in the Pottleboy Stream both upstream and downstream of the closed landfill;

Prior to the waste been removed off site a S-P-R linkage to surface water was not identified as a risk. The removal of waste off-site has further ensured no S-P-R linkage. Therefore, the rationale for monitoring the Pottleboy Stream is unclear particularly as the EPA inspector's report acknowledges the break in the S-P-R linkage. – "the removal of waste recommended as the remediation measure in Tier 3 Report resulted in the identified S-P-R linkages being broken"

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8.0 Condition 3.7 (e) - Monitoring (sample, analyse and characterise) of groundwater from at least three groundwater monitoring boreholes, two of which shall be downgradient of the closed landfill;

Prior to the waste been removed off site, a S-P-R linkage to groundwater was not identified as a risk. The removal of waste off-site has further ensured no S-P-R linkage remains. Therefore, the rationale for the requirement to install at least three groundwater monitoring boreholes and their subsequent monitoring is unclear, particularly as the EPA inspector's report acknowledges the break in the S-P-R linkage. – *"The removal of waste recommended as the remediation measure in Tier 3 Report resulted in the identified S-P-R linkages being broken"*

9.0 Condition 3.9 (c) Soil and stone imported for use in remedial, corrective or otherwise engineering works at the closed landfill shall be greenfield soil or stone or soil and stone of equivalent nature and character in terms of chemical and physical contamination.

This site has already undergone complete remediation. As part of this remediation, greenfield soil and stone was already been imported as outlined in the following excerpt from the validation report. No further works are proposed for this site and as such this condition is deemed unnecessary.

"Following the excavation additional soil was imported on to the site from a local greenfield site for the purposes of site remediation. This material was analysed for suitability and deemed suitable"

10.0 Condition 3.12. Well and Borehole Installation

Please refer to comments in point 8.0.

11.0 Condition 3.13- The Local authority shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off site points as required by the risk assessment or this certificate of Authorisation. The requirement with regard to off-site points is subject to the prior agreement of the landowners concerned.

There are no on or off-site monitoring points to which the local authority must provide access as environmental monitoring of a remediated site with no S-P-R linkage was not deemed necessary. Cavan County Council requests that this condition be removed

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11.0 Condition 3.15 (ii) Communications Programme

The communications programme shall inform members of the public what they can and should do to protect their property and health.

Excavation of the waste from the site has resulted in the complete removal of the S-P-R linkage and therefore the landfill is no longer considered a risk to any surrounding receptors. Cavan County Council request the removal of this condition.

Enclosed please find a copy of the validation report outlining the completed remediation works.

Yours sincerely,

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Bróna Keating
Executive Engineer
Cavan County Council

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CAVAN COUNTY COUNCIL



COOTEHILL HISTORICAL LANDFILL RESTORATION PROJECT

VALIDATION REPORT

DECEMBER 2016

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1. INTRODUCTION:

Cavan County Council have applied to the Environmental Protection Agency for a Certificate of Authorisation in respect of Cotehill Historical Landfill, Pottleboy, Cotehill, Co. Cavan under the Waste Management (Certification of historic unlicensed waste disposal and recovery activity) Regulations 2008. This has been given the reference H0020-01 by the Agency.

The site itself is located on Pottleboy, Cotehill, Co.Cavan.



Figure 1 Site Location

The adjacent land use is a local roadway, a housing estate to the north of the site, a small cluster of housing to the south of the site and agricultural land to the west of the site and to the east of the site.

Cavan County Council and Traynor Environmental Ltd carried out a Tier 1 and Tier 2 Environmental Risk Assessment in early 2014. Following on from these a full Tier 3 Risk Assessment was undertaken in December 2014. This Tier 3 Assessment in addition to the earlier reports form the basis on which the remediation works were carried out.

Work commenced in July 2015 on the remediation of the Cotehill Historical Landfill Co. Cavan. This report details how this work was carried out in compliance with the recommendations of the Tier 3 Assessment. It should be read in conjunction with the Tier 3 Traynor report document.

2. SITE PREPARATION:

The initial preparation of the site comprised of securing the access points as a construction site. Safety fencing was erected where required and both on-site and off-site safety signage was erected. A full risk assessment was carried out by the contractor EMCA Ltd. and a safety file prepared and retained on site.

Further site clearance works included clearing bushes and shrubs from the site and preparing a safe access point at the south east corner of the site.

3. REMEDIATION WORKS:

The Traynor Tier 3 report recommends the following remediation measure:

Following consideration of the positive and negative effects from the complete removal of the waste material, the Waste Management Section of Cavan County Council in conjunction with Traynor Environmental Ltd would recommend the complete dig out and removal of waste from Cootehill historic landfill. The site specific characteristics of Cootehill landfill and monitoring results from the tier 2 and tier 3 risk assessments indicate that, the small site area (0.18 ha), estimated volume of waste encountered, very low levels of landfill gas recorded, would justify the complete removal of the waste material from the site. This is considered to be the most appropriate remediation technique being mindful of cost considerations and environmental impact.

Based on a logistical programme, cost considerations and landfill gas levels/and concentrations, the removal of all of the historic waste, presents the most viable remedial option for the site.

The regrading of the site is vital to the overall remediation of the site and the potential re-use of the site by the local community. This re-grading will take place after remediation option 3.3.5 Removal of the Waste Material has been complete. The final contour plan for the site, prior to re-grading of the landform will be agreed with the Environmental Protection Agency (EPA)/Local Authority.

Subject to remediation measures being carried out, the risk rating for Cootehill Historic Landfill would be reduced from a Moderate Risk to a **Low Risk** site as all of the SPR linkages would have been broken. The SPR linkage diagrams for each option have been detailed under each section.

Taking into consideration the future costs of monitoring, maintenance and venting of landfill gas the removal of waste from the site represents a complete and comprehensive remediation option for the site.

The Traynor report has identified the nature and extent of the waste as follows:

Waste was encountered in 19 of the 25 trial holes excavated TH1, TH2, TH3, TH5, TH6, TH7, TH8, TH9, TH10, TH11, TH12, TH13, TH14, TH15, TH22, TH23, TH24, and TH25 as per drawing no. 14.248.115 trial Hole Locations in Appendix F of the Tier 2 Risk Assessment. There was no waste encountered in Trial Holes TH16, TH17, TH18, TH19, TH20, and TH21. The main body of waste is located at the centre of the Cavan County Council site which is elevated and sloping towards all the boundaries. The waste extends from the westerly boundary (TH1 & TH2) to the top of the slope (TH14 and TH15) in an easterly direction. Negligible quantities of waste were found outside this area. From soil sample results analysis it has been determined that trace amounts of hazardous

waste in the form of asbestos were found in TH10. The hazardous waste was deemed to be Chrysotile (white asbestos), a trace amount of 1 – 2 fibres.

The lateral extent of the waste is shown in Figure No 8 (repeated below) and covers an area of approximately 1700 m². From analysis of the vertical and lateral extent of the waste, using an average of 2.2 m of waste and a conversion factor of 1.0 it has been estimated that approximately 3740 tonnes of waste intermixed with clay, is deposited on the site. This area is hatched in red where the majority of waste is encountered. All areas hatched in green contained no historical waste.

From the trial hole investigation carried out it has been established that the waste material was intermixed with clay. The waste to clay ratio in the trial holes which contained waste, ranged from 15:85 in TH 6 to 95:5 in TH8.

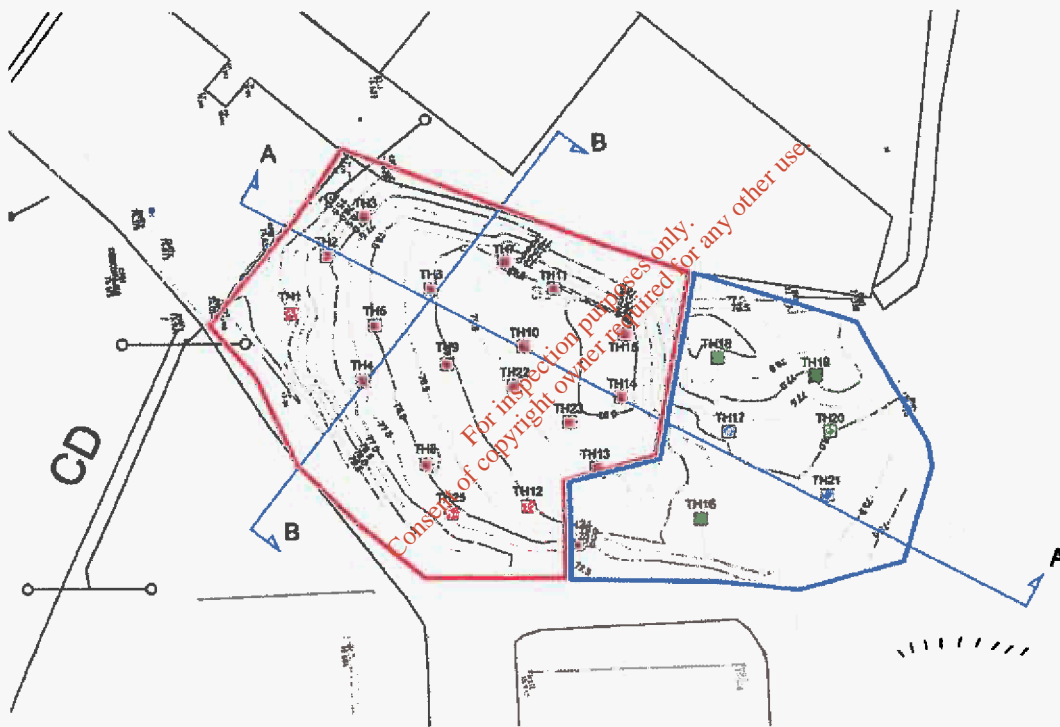


Figure 2. Trial Hole Locations.

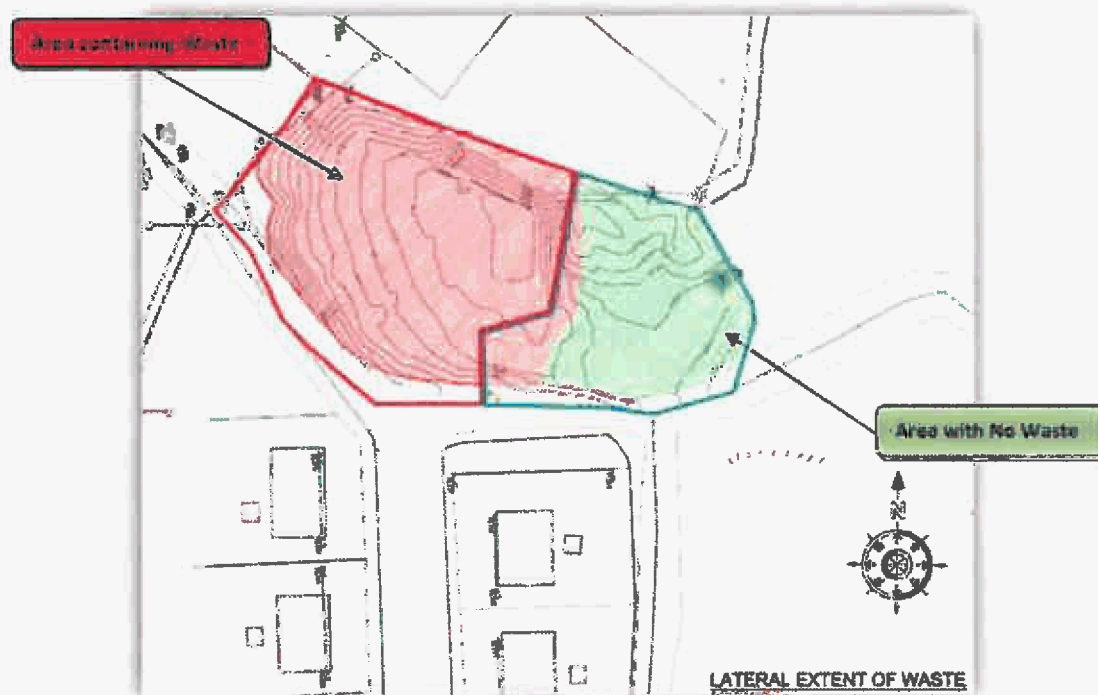


Figure 3 Extent of the Waste:

Based on the lateral extent of the waste detailed in the above drawing it was determined that the extent was 1700 m² with an average depth of 2.2 m of waste. Using a conversion factor of 1.0 the Traynor Report estimated that there was approximately 3740 tonnes of waste intermixed with clay deposited at the site.

Following a discussion of the remediation options it was decided by Cavan County Council to proceed with the preferred option as set out in the Traynor Report namely the complete dig out and removal of the waste. All excavated material would be screened and the recovered soil used as remediation material at Corranure Landfill EPA Licence W077-04 while any waste materials would be disposed of at Scotch Corner landfill Co. Monaghan EPA Licence W0020-02.

4. WORKS:

Phase 1 works comprised the securing of the site and the establishment of a grading and profiling of the site to ensure suitability for lining works. As per the Tier 3 Traynor report the contractor submitted a project (Construction Environmental Management Plan (CEMP) which addressed the issues such as wheel wash, refuelling, oil storage and waste management. Enviroguide Consulting carried out spot checks to ensure that the CEMP was being adhered to at all times.

A Powerscreen Trommel with 30mm mesh was located on site and all material excavated from the site was screened using this machine. The soil material was stockpiled for sampling and the waste was loaded into a closed contained (20 cubic yard skip) for transport to Scotch Corner landfill.

There were three stockpiles of soil on site following the bulk of the excavation and these were sampled and analysed for suitability to send to Corranure Landfill for remediation works. The Waste Acceptance Criteria (WAC) testing of this soil confirmed that it was suitable for this purpose.

Following the excavation additional soil was imported on to the site from a local greenfield site for the purposes of site remediation. This material was analysed for suitability and deemed suitable.



Photograph 1 Screening equipment used on site

Excavation works commenced in early August 2015 and were completed by mid-September 2015.

As previously stated all excavated material was screened and waste, metal and plastic material removed. The remaining material (soil) was classified following a visual inspection and Waste Acceptance Criteria (WAC) test as 17 05 04 – soil and stones and deemed acceptable to send to Corranure Landfill for remediation works.

The following quantities of materials were excavated from the site in total:

Soil and stones 17 05 04 - sent to Corranure Landfill (W077-04) 5821.17 tonnes.

Mixed Waste 20 03 01– sent to Scotch Corner Landfill (W022-02) 92.06 tonnes

Mixed Metals 20 01 40 – sent to Wilton Waste Recycling (WFP-CN-10-005-01) 90 tonnes.

This gives a total tonnage excavated from the site of 6003.23 tonnes.

This is in excess of the quantity estimated in the Traynor Report however this is due to the nature of the material which was considerably more soil than was originally estimated. If the factor of 1.5 (for clean soil) rather than 1.0 is applied to the 1700 square metres at 2.3 metres depth (slightly deeper than recommended by the Traynor report) then a total estimated tonnage of 5865 is obtained. This is very close in quantity to what was actually excavated from the site.

Once the material was excavated to the depth below that recommended by the Traynor Report namely 2.5 metres, the resulting excavation was backfilled in accordance with the recommendations of the report. A 400 mm layer of subsoil was placed and this was capped with a minimum 300mm of topsoil. In total the following quantities of soils were imported – 350 tonnes subsoil and 450 tonnes of topsoil. In addition approximately 150 tonnes of 3" down stone was used for drainage.

Grass planting was carried out following the completion of the filling works.

Following completion of site works a security fence was constructed around the perimeter of the site.



Photograph 2 Completed site viewed from Cootehill



Photograph 3: Completed site looking towards Cootehill



Photograph 4 Completed site showing grass, slope of land and fence.

5. MONITORING:

Environmental monitoring was carried out throughout this project. This included odour assessments, landfill gas monitoring using laser methane mini recorder (LMM), soil testing on site and analysis of incoming soil for backfilling.

Odour: Regular odour monitoring was carried out by Enviroguide Consulting during the excavation phase of the project. At no time was offsite odour detected. A Laser Methane Mini was used daily during the excavation phase to test for fugitive methane but none was detected. Following the completion of works a full site walkover using the LMM analyser was carried out on 19th November 2015 and 14th December 2015. No methane readings above 100ppm were detected.

Soil Testing: Soil testing was carried out on the recovered soil to ensure suitability for Corranure. In addition topsoil and subsoil from a local source were tested prior to acceptance onto the site for backfilling. The material was deemed to be of good quality and entirely suitable for this purpose. The analysis of this material is attached in Appendix 1.

6. VALIDATION:

Validation is based on the following (as proposed in the Tier 3 Assessment report):

Landfill gas monitoring was carried out following the works. There was no evidence of landfill gas on site.

Waste management and disposal documents are appended in Appendix 2

Imported soil has been tested and deemed acceptable for use in the remediation works. The analyses were carried out by an approved Laboratory with a Quality Management System that has been designed to meet the requirements of BS EN ISO/IEC 17025 and MCERTS (Soil). The results are appended in Appendix 1

Photographic records are included as part of this report and an archive of additional photographs is maintained.

All works on site were overseen by Enviroguide Consulting who confirm that the works were carried out as proposed in the Tier 3 Assessment.

A final topographical survey will be carried out in due course.

7. SUMMARY:

Remediation works on the Cootehill Historic Landfill at Pottleboy, Co. Cavan were carried out in 2015. These works were carried out in compliance with the recommendations of the Tier 3 Risk Assessment carried out by Traynor Environmental and Cavan County Council. Records in the form of photographs, soil analysis and waste management are presented in this report.

APPENDIX 1

Analysis of excavated soil and imported soil

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APPENDIX 2

Weighbridge Records Scotch Corner Landfill and Corranure Landfill.

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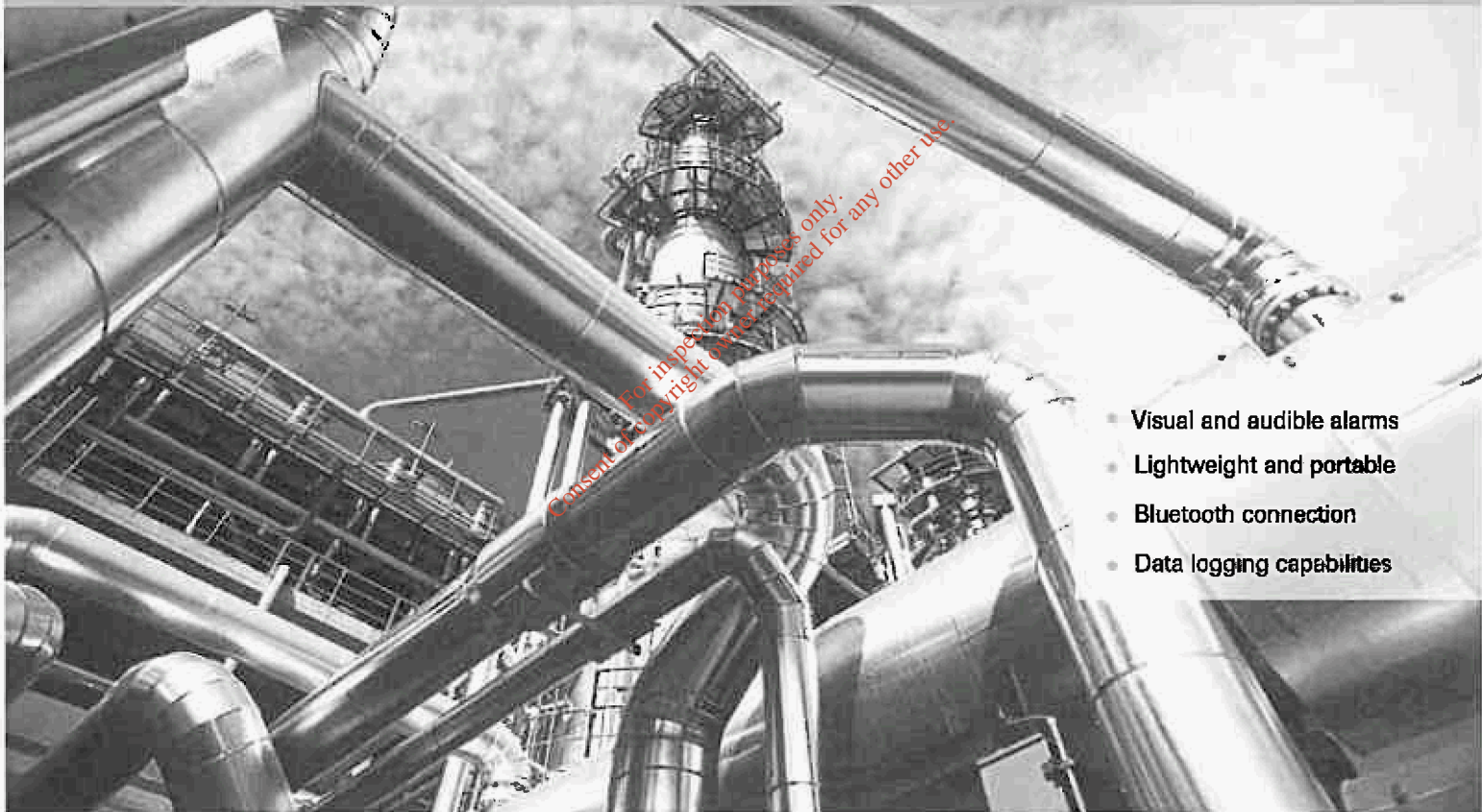
APPENDIX 3

Laser Methane Mini

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Laser Methane Mini

Methane Detection at a Distance



- Visual and audible alarms
- Lightweight and portable
- Bluetooth connection
- Data logging capabilities



Laser Methane Mini

Remote Methane Gas Detection

When lives and property are at risk and you need gas detection equipment that is totally reliable, you need Crowcon. For over 40 years Crowcon has been developing and manufacturing high quality products with a reputation for reliability and technical innovation.

Crowcon provides both single gas and multigas monitors for personal and portable safety applications providing protection against a wide range of industrial gas hazards.



Choosing a portable gas detector for your needs

Laser Methane mini (LMm) is a compact handheld detector that can detect methane gas from a safe distance. Utilising laser technology, methane leaks can be quickly confirmed by pointing the laser beam towards the suspected leak, or along the survey line. This revolutionary technology removes the need to access elevated places, under floor or other hard to reach areas. It is also ideal for surveying large open spaces e.g. landfills or along pipelines.

NEW! LMm is now available with a green laser guide light, which is more visible especially under strong sunlight. The Laser Methane Mini-Green (LMm-G) combines the benefit of LMm with additional data storage functions and comes with Bluetooth capability, which can be connected to any android device (through the Gasviewer app) for a variety of data storage functions. Important data like location, gas levels and time can also be saved or emailed to a central point.

LMm and LMm-G are easy to operate and require little maintenance. An automatic self check and calibration ensures consistent performance and reliability every time the units are turned on.

User friendly

| | |
|--|---|
| Point and shoot technology | Requires little or no training and is easy to use |
| Compact and lightweight | Truly portable |
| Green/Red guide laser light | Clear visibility of where you are surveying |
| Wide organic electroluminescence display | Clear and bright readout on screen |

Reliability

| | |
|---|--------------------------------------|
| No moving parts | Little maintenance required |
| Self-check and automatic calibration start up | Ensure accurate and reliable reading |

Records

| | |
|-----------------------------------|--|
| Data storage | Full data logging capabilities |
| Bluetooth and Gasviewer app | Connectivity to android devices |
| Location service in Gasviewer app | Display and save value as well as location and time on map |



LMm



LMm-G



Gasviewer App

Measurement principles:

Methane absorbs a specific wavelength of infrared rays. The laser diode emits infrared laser, receives the diffused light back and measures the absorption of the light. A reflective surface is required for proper measurement of methane gas. The laser beam from LMm can penetrate opaque surfaces, for example, glass or perspex.

The LMm and LMm-G measure the average methane gas density between the detector and target readings are reported in ppm-m as it is the product of concentration of methane cloud (ppm) and path length (m).

LMm:

LMm-G:

| | | |
|--------------------------------------|---|---|
| Size | 70 x 179 x 42mm, (2.8 x 7 x 1.6 inches) WxDxH | 70 x 179 x 42mm, (2.8 x 7 x 1.6 inches) WxDxH |
| Weight | 600g (including Ni-MH battery pack) | 530g (including Ni-MH battery pack) |
| Operating time | Approx. 8 hours | Approx. 4.5 hours |
| Operating temperature range | -17 - +50°C | -10 - +50°C |
| Target gas | Methane (CH ₄) and methane-containing gases | Methane (CH ₄) and methane-containing gases |
| Detection limits | 1-50,000 ppm-m (%LEL or % Vol available) | 1-50,000 ppm-m (%LEL or % Vol available) |
| Accuracy of detection | ±10% | ±10% |
| Detection distance (standard) | 0.5m - 30m | 0.5m - 100m (using an optional reflect sheet) |
| Ingress protection | IP65 | IP65 |
| Guide laser light colour | Red | Green |
| Certificate | Class 2: 1mW CE (ATEX & EMC) | Class 3R: 5mW CE (R&TTE) |
| Best Application | Hazardous areas | Outdoors under strong sunshine |

Applications:

- Industrial and commercial property surveys
- Emergency call out
- Gas plants
- Landfill gas monitoring
- Road surface survey
- Pipeline survey



New products available within the fixed and portable range are:



Crowcon F-Gas Detector
Refrigerant Gas and SF₆ Detector



Gasmaster
1-4 channel
control system



Detective+ and Detective Net
Transportable wireless area
gas monitor



Gas-Pro PID
5 gas VOC monitor

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Crowcon reserves the right to change the design or specification of the product without notice.
Check www.crowcon.com for updates

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 **CROWCON**
Detecting Gas Saving Lives

Report : Transaction Listing by Waste Account

06/01/2017 12:16:27

Waste Account : 116

CAVAN CO CO

| Date | Txn No | Dkt No | Waste Haulier | Waste Type | Charge (inc VAT) | Levy Amt (inc VAT) | VAT Total (Included) | VAT % | Nett Kg | |
|----------------------------|--------|--------|---------------|----------------------|----------------------------|-----------------------|-------------------------|---------------|---------|-----------------|
| 01/10/2015 | 110081 | 109542 | 235 | JOE BRADY CONTRACTOR | 200301MMWCMW COOTEHILL CCC | 483.96 | 0.00 | 57.56 | 13.50% | 10660 kg |
| 01/10/2015 | 110088 | 109550 | 235 | JOE BRADY CONTRACTOR | 200301MMWCMW COOTEHILL CCC | 1,091.42 | 0.00 | 129.82 | 13.50% | 24040 kg |
| 01/10/2015 | 110107 | 109570 | 235 | JOE BRADY CONTRACTOR | 200301MMWCMW COOTEHILL CCC | 1,020.59 | 0.00 | 121.39 | 13.50% | 22480 kg |
| 01/10/2015 | 110112 | 109571 | 235 | JOE BRADY CONTRACTOR | 200301MMWCMW COOTEHILL CCC | 1,583.55 | 0.00 | 188.35 | 13.50% | 34880 kg |
| Waste Account : 116 | | | | | Totals : | 4,179.52 | 0.00 | 497.12 | | 92060 kg |

Total Transactions : 4

End of Report

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Customer Source Location Report

Date Range - from :01 Apr 2015 00:00 untill 01 Nov 2015 00:00

| Customer | Source | Date | Ticket Vehicle | Product | Nett |
|--------------------------|--------|-----------------|-----------------------|-------------------------------|-------------|
| CCC CAVAN COUNTY COUNCIL | | | | | |
| CCC CAVAN COUNTY COUNCIL | | | | | |
| | | Date | Ticket Vehicle | Product | Nett |
| | | 12-Sep-15 8:31 | 7,459 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 20,360 |
| | | 11-Sep-15 9:34 | 7,420 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 21,080 |
| | | 11-Sep-15 10:43 | 7,432 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 21,120 |
| | | 11-Sep-15 8:43 | 7,415 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 21,620 |
| | | 12-Sep-15 9:21 | 7,467 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 22,880 |
| | | 11-Sep-15 13:05 | 7,442 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 24,440 |
| | | 11-Sep-15 15:52 | 7,454 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 25,940 |
| | | 12-Sep-15 10:25 | 7,473 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 25,940 |
| | | 14-Sep-15 9:47 | 7,493 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,220 |
| | | 14-Sep-15 8:51 | 7,486 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,640 |
| | | 11-Sep-15 14:48 | 7,449 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 30,240 |
| | | 12-Sep-15 9:03 | 7,464 06CN2712 | 36 SOIL & STONES EWC 17 05 04 | 14,160 |
| | | 11-Sep-15 15:50 | 7,453 06CN2712 | 36 SOIL & STONES EWC 17 05 04 | 14,720 |
| | | 12-Sep-15 11:47 | 7,479 06CN2712 | 36 SOIL & STONES EWC 17 05 04 | 14,860 |
| | | 11-Sep-15 11:30 | 7,434 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,680 |
| | | 11-Sep-15 8:57 | 7,418 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,200 |
| | | 11-Sep-15 10:19 | 7,430 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,200 |
| | | 11-Sep-15 12:57 | 7,440 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,240 |
| | | 14-Sep-15 10:11 | 7,496 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,680 |
| | | 12-Sep-15 8:49 | 7,462 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,360 |
| | | 11-Sep-15 15:12 | 7,452 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,920 |
| | | 11-Sep-15 16:32 | 7,456 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,940 |
| | | 14-Sep-15 8:53 | 7,487 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,200 |
| | | 12-Sep-15 12:33 | 7,484 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,720 |

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| 12-Sep-15 11:11 | 7,476 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 17,020 |
| 12-Sep-15 9:57 | 7,468 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 18,040 |
| 14-Sep-15 9:06 | 7,491 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 15,140 |
| 11-Sep-15 10:15 | 7,429 08CN1176 | 36 SOIL & STONES EWC 17 05 04 | 16,180 |
| 11-Sep-15 8:49 | 7,417 08CN1176 | 36 SOIL & STONES EWC 17 05 04 | 16,560 |
| 14-Sep-15 9:09 | 7,489 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,380 |
| 12-Sep-15 8:54 | 7,463 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,220 |
| 12-Sep-15 12:39 | 7,485 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 17,620 |
| 12-Sep-15 11:15 | 7,478 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 18,800 |
| 12-Sep-15 10:04 | 7,470 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 18,900 |
| 11-Sep-15 12:04 | 7,436 08MN2565 | 36 SOIL & STONES EWC 17 05 04 | 23,280 |
| 12-Sep-15 10:21 | 7,472 08CN2712 | 36 SOIL & STONES EWC 17 05 04 | 14,120 |
| 10-Sep-15 11:32 | 7,398 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 27,430 |
| 10-Sep-15 11:34 | 7,399 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 27,520 |
| 11-Sep-15 10:50 | 7,433 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 28,500 |
| 10-Sep-15 12:32 | 7,402 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 28,600 |
| 10-Sep-15 11:36 | 7,400 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 28,680 |
| 12-Sep-15 8:25 | 7,458 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 29,220 |
| 10-Sep-15 14:52 | 7,409 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 29,260 |
| 11-Sep-15 8:31 | 7,416 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 29,520 |
| 11-Sep-15 14:51 | 7,450 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,040 |
| 12-Sep-15 9:18 | 7,466 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,160 |
| 14-Sep-15 8:31 | 7,483 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,560 |
| 11-Sep-15 11:53 | 7,435 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,680 |
| 10-Sep-15 16:02 | 7,412 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,700 |
| 11-Sep-15 9:55 | 7,426 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,080 |
| 14-Sep-15 9:28 | 7,492 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,200 |
| 11-Sep-15 12:58 | 7,441 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,360 |
| 11-Sep-15 16:00 | 7,455 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,420 |
| 10-Sep-15 13:34 | 7,405 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,980 |
| 12-Sep-15 11:13 | 7,477 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 32,560 |
| 12-Sep-15 12:09 | 7,481 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 35,060 |
| 12-Sep-15 10:11 | 7,471 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 35,560 |
| 15-Sep-15 9:56 | 7,545 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 26,060 |
| 17-Sep-15 16:26 | 7,699 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 26,980 |
| 16-Sep-15 14:16 | 7,629 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,160 |
| 16-Sep-15 12:36 | 7,620 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,220 |
| 15-Sep-15 13:48 | 7,565 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,280 |
| 15-Sep-15 16:29 | 7,585 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,320 |
| 17-Sep-15 12:28 | 7,674 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,780 |
| 17-Sep-15 11:36 | 7,668 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,980 |
| 17-Sep-15 14:30 | 7,682 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,180 |

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| 15-Sep-15 12:05 | 7,560 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,240 |
| 14-Sep-15 10:47 | 7,502 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,420 |
| 16-Sep-15 10:26 | 7,607 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,700 |
| 14-Sep-15 12:44 | 7,516 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,720 |
| 18-Sep-15 8:48 | 7,708 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,720 |
| 16-Sep-15 9:31 | 7,598 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 28,980 |
| 14-Sep-15 11:49 | 7,507 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,000 |
| 15-Sep-15 15:38 | 7,581 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,040 |
| 17-Sep-15 8:28 | 7,646 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,120 |
| 16-Sep-15 15:34 | 7,639 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,140 |
| 14-Sep-15 14:40 | 7,523 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,240 |
| 15-Sep-15 8:52 | 7,542 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,300 |
| 15-Sep-15 14:38 | 7,573 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,300 |
| 16-Sep-15 16:28 | 7,643 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,380 |
| 17-Sep-15 15:26 | 7,691 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,440 |
| 15-Sep-15 10:59 | 7,556 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,880 |
| 17-Sep-15 9:32 | 7,651 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 30,220 |
| 16-Sep-15 8:28 | 7,588 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 30,360 |
| 17-Sep-15 10:29 | 7,663 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 30,520 |
| 18-Sep-15 9:43 | 7,714 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 31,320 |
| 16-Sep-15 11:45 | 7,614 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 31,880 |
| 14-Sep-15 15:46 | 7,532 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 32,340 |
| 29-Sep-15 8:47 | 7,875 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 35,480 |
| 17-Sep-15 9:37 | 7,652 06CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,160 |
| 16-Sep-15 10:12 | 7,603 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,040 |
| 15-Sep-15 16:26 | 7,584 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,620 |
| 17-Sep-15 15:13 | 7,685 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,780 |
| 17-Sep-15 16:28 | 7,700 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,780 |
| 17-Sep-15 12:05 | 7,672 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,880 |
| 18-Sep-15 8:59 | 7,710 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,880 |
| 16-Sep-15 13:48 | 7,624 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,000 |
| 17-Sep-15 8:54 | 7,648 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,020 |
| 18-Sep-15 16:13 | 7,749 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,100 |
| 14-Sep-15 14:57 | 7,524 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,160 |
| 14-Sep-15 12:40 | 7,514 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,640 |
| 15-Sep-15 8:57 | 7,543 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,700 |
| 14-Sep-15 16:14 | 7,534 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,780 |
| 15-Sep-15 12:01 | 7,559 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,820 |
| 15-Sep-15 15:11 | 7,576 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,100 |
| 15-Sep-15 10:50 | 7,554 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,140 |
| 15-Sep-15 14:01 | 7,568 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,380 |
| 16-Sep-15 11:29 | 7,611 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,560 |

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| 14-Sep-15 11:24 | 7,505 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,620 |
| 16-Sep-15 8:48 | 7,590 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,780 |
| 18-Sep-15 14:39 | 7,737 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,780 |
| 29-Sep-15 9:02 | 7,877 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,220 |
| 16-Sep-15 15:16 | 7,636 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,620 |
| 17-Sep-15 10:26 | 7,661 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,700 |
| 29-Sep-15 8:55 | 7,876 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 28,320 |
| 16-Sep-15 15:22 | 7,638 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 28,560 |
| 16-Sep-15 9:24 | 7,596 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 28,740 |
| 16-Sep-15 16:22 | 7,641 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 28,760 |
| 18-Sep-15 9:26 | 7,713 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 29,100 |
| 17-Sep-15 8:24 | 7,645 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 29,180 |
| 17-Sep-15 11:46 | 7,670 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 29,900 |
| 18-Sep-15 11:49 | 7,728 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,080 |
| 18-Sep-15 11:01 | 7,723 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,120 |
| 17-Sep-15 16:34 | 7,702 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,880 |
| 16-Sep-15 11:26 | 7,610 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,000 |
| 17-Sep-15 10:43 | 7,664 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,240 |
| 16-Sep-15 10:19 | 7,605 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,440 |
| 17-Sep-15 12:33 | 7,676 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,620 |
| 17-Sep-15 14:31 | 7,683 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,680 |
| 18-Sep-15 8:26 | 7,705 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,720 |
| 16-Sep-15 14:13 | 7,628 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 31,900 |
| 17-Sep-15 15:43 | 7,694 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 32,100 |
| 18-Sep-15 16:11 | 7,748 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 32,580 |
| 16-Sep-15 12:19 | 7,618 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 33,020 |
| 18-Sep-15 15:03 | 7,738 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 33,320 |
| 18-Sep-15 13:34 | 7,731 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 35,040 |
| 15-Sep-15 12:10 | 7,561 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,060 |
| 18-Sep-15 10:45 | 7,719 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,140 |
| 15-Sep-15 15:31 | 7,580 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,540 |
| 14-Sep-15 14:59 | 7,525 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,560 |
| 15-Sep-15 10:53 | 7,552 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,780 |
| 14-Sep-15 11:32 | 7,506 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,940 |
| 14-Sep-15 12:42 | 7,515 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 14,260 |
| 15-Sep-15 8:44 | 7,540 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 14,420 |
| 14-Sep-15 10:50 | 7,503 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 14,860 |
| 15-Sep-15 14:17 | 7,571 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 14,860 |
| 14-Sep-15 16:27 | 7,537 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 15,280 |
| 17-Sep-15 15:47 | 7,695 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 15,340 |
| 17-Sep-15 14:20 | 7,679 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,180 |
| 17-Sep-15 9:05 | 7,650 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,640 |

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| 18-Sep-15 16:17 | 7,750 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,640 |
| 18-Sep-15 9:03 | 7,711 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,820 |
| 18-Sep-15 13:31 | 7,730 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,880 |
| 16-Sep-15 11:57 | 7,615 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 18,640 |
| 17-Sep-15 11:35 | 7,667 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 18,860 |
| 16-Sep-15 9:02 | 7,594 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 19,060 |
| 16-Sep-15 10:24 | 7,606 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 19,460 |
| 16-Sep-15 15:19 | 7,637 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 19,800 |
| 29-Sep-15 9:04 | 7,878 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 20,460 |
| 16-Sep-15 16:24 | 7,642 08CN2238 | 36 SOIL & STONES EWC 17 05 04 | 18,200 |
| 16-Sep-15 10:15 | 7,604 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 14,400 |
| 15-Sep-15 16:11 | 7,582 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 14,600 |
| 17-Sep-15 14:58 | 7,684 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 14,900 |
| 14-Sep-15 12:53 | 7,517 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 14,960 |
| 15-Sep-15 8:48 | 7,541 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,040 |
| 16-Sep-15 14:48 | 7,630 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,080 |
| 16-Sep-15 13:43 | 7,623 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,380 |
| 15-Sep-15 13:51 | 7,566 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,500 |
| 14-Sep-15 11:51 | 7,508 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,600 |
| 18-Sep-15 15:39 | 7,743 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,600 |
| 15-Sep-15 11:50 | 7,558 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,780 |
| 17-Sep-15 11:57 | 7,671 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,980 |
| 18-Sep-15 13:44 | 7,733 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,980 |
| 14-Sep-15 15:10 | 7,528 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,100 |
| 17-Sep-15 16:16 | 7,697 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,140 |
| 18-Sep-15 9:54 | 7,715 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,260 |
| 16-Sep-15 8:51 | 7,591 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,280 |
| 16-Sep-15 11:37 | 7,612 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,360 |
| 15-Sep-15 10:53 | 7,555 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,620 |
| 14-Sep-15 16:16 | 7,535 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,660 |
| 18-Sep-15 8:40 | 7,707 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 16,740 |
| 17-Sep-15 10:17 | 7,658 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 17,220 |
| 18-Sep-15 11:12 | 7,725 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 17,260 |
| 14-Sep-15 10:27 | 7,499 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 17,280 |
| 17-Sep-15 8:48 | 7,647 08CN2239 | 36 SOIL & STONES EWC 17 05 04 | 17,460 |
| 14-Sep-15 11:19 | 7,504 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,080 |
| 15-Sep-15 11:34 | 7,557 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,740 |
| 15-Sep-15 14:20 | 7,572 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,940 |
| 15-Sep-15 8:29 | 7,539 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,000 |
| 15-Sep-15 15:25 | 7,579 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,180 |
| 14-Sep-15 12:22 | 7,511 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,500 |
| 14-Sep-15 10:25 | 7,498 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,520 |

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| 15-Sep-15 16:20 | 7,583 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 32,080 |
| 14-Sep-15 14:09 | 7,519 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 32,240 |
| 15-Sep-15 10:39 | 7,549 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 32,760 |
| 14-Sep-15 16:05 | 7,533 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 32,940 |
| 15-Sep-15 12:30 | 7,563 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,560 |
| 15-Sep-15 9:25 | 7,544 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 34,100 |
| 14-Sep-15 15:01 | 7,526 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 34,360 |
| 29-Sep-15 8:42 | 7,874 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 39,700 |
| 15-Sep-15 15:02 | 7,574 09CN2239 | 36 SOIL & STONES EWC 17 05 04 | 15,720 |
| 30-Sep-15 14:42 | 7,980 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 27,180 |
| 29-Sep-15 15:52 | 7,939 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,080 |
| 29-Sep-15 12:49 | 7,914 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 29,700 |
| 29-Sep-15 14:56 | 7,925 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 31,400 |
| 29-Sep-15 11:53 | 7,904 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 31,640 |
| 29-Sep-15 12:24 | 7,910 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 32,040 |
| 30-Sep-15 13:46 | 7,975 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 32,200 |
| 30-Sep-15 12:55 | 7,973 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 32,720 |
| 29-Sep-15 9:41 | 7,881 05MN2565 | 36 SOIL & STONES EWC 17 05 04 | 34,220 |
| 30-Sep-15 14:46 | 7,981 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 13,960 |
| 29-Sep-15 12:07 | 7,906 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,240 |
| 30-Sep-15 8:46 | 7,949 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 14,520 |
| 30-Sep-15 10:07 | 7,954 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,400 |
| 30-Sep-15 12:41 | 7,972 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 15,420 |
| 29-Sep-15 15:25 | 7,932 07CN2142 | 36 SOIL & STONES EWC 17 05 04 | 16,280 |
| 29-Sep-15 15:50 | 7,938 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 23,740 |
| 29-Sep-15 12:52 | 7,915 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 24,060 |
| 30-Sep-15 14:53 | 7,982 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 25,040 |
| 29-Sep-15 14:53 | 7,924 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 25,140 |
| 29-Sep-15 11:55 | 7,905 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 25,440 |
| 30-Sep-15 8:40 | 7,947 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 25,480 |
| 30-Sep-15 12:59 | 7,974 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 26,060 |
| 30-Sep-15 9:38 | 7,950 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 26,280 |
| 29-Sep-15 12:28 | 7,911 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 26,760 |
| 29-Sep-15 9:51 | 7,882 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 27,540 |
| 30-Sep-15 13:54 | 7,976 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,640 |
| 30-Sep-15 11:05 | 7,965 07CN2600 | 36 SOIL & STONES EWC 17 05 04 | 30,760 |
| 29-Sep-15 16:12 | 7,943 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 13,820 |
| 30-Sep-15 14:28 | 7,977 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 15,340 |
| 30-Sep-15 8:34 | 7,946 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 16,640 |
| 29-Sep-15 13:22 | 7,918 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,160 |
| 29-Sep-15 12:10 | 7,907 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,200 |
| 29-Sep-15 14:50 | 7,922 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,320 |

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| | | | |
|-----------------|-----------------|-------------------------------|--------|
| 30-Sep-15 12:37 | 7,971 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 17,900 |
| 30-Sep-15 9:55 | 7,953 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 18,280 |
| 29-Sep-15 11:06 | 7,894 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 19,380 |
| 29-Sep-15 11:13 | 7,897 07CN2791 | 36 SOIL & STONES EWC 17 05 04 | 19,380 |
| 29-Sep-15 12:17 | 7,909 07CCN2142 | 36 SOIL & STONES EWC 17 05 04 | 17,140 |
| 30-Sep-15 11:11 | 7,968 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 30,860 |
| 29-Sep-15 12:57 | 7,916 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,280 |
| 30-Sep-15 15:22 | 7,988 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 31,660 |
| 30-Sep-15 8:44 | 7,948 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,060 |
| 29-Sep-15 16:07 | 7,942 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,440 |
| 29-Sep-15 14:49 | 7,921 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,600 |
| 29-Sep-15 11:04 | 7,893 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,700 |
| 29-Sep-15 12:39 | 7,913 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 33,980 |
| 29-Sep-15 11:51 | 7,903 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 36,380 |
| 30-Sep-15 9:40 | 7,951 09CN229 | 36 SOIL & STONES EWC 17 05 04 | 36,460 |

Total from Source: CAVAN COUNTY COUNCIL for this customer

€5,821,170.00

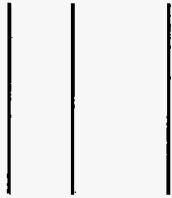
Total for Customer: CAVAN COUNTY COUNCIL:

€5,821,170.00 249 load

5821.170Tonne

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Boylan Engineering
Main St
Mullagh
Co. Cavan

Attention: Brona Keating

CERTIFICATE OF ANALYSIS

| | |
|------------------------------------|-----------------|
| Date: | 15 October 2015 |
| Customer: | D_BOYLAN_CAV |
| Sample Delivery Group(SDG): | 151026-47 |
| Your Reference: | Not Specified |
| Location: | Not Specified |
| Report No: | 285827 |

We received 2 samples on Tuesday October 6, 2015 and 2 of these samples were scheduled for analysis which was completed on Tuesday October 15, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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Approved By:

Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

| | | | |
|--|-------------------------------------|------------------------------|--|
| SDG: 151026-47 | Location: Not Specified | Order Number: | |
| Job: D_BOYLAN_CAV-2 | Customer: Boylan Engineering | Report Number: 285827 | |
| Client Reference: Not Specified | Attention: Brona Keating | Superseded Report: | |

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 8238183 | Sample 1 | | 0.00 | 04/10/2015 |
| 8238185 | Sample 2 | | 0.00 | 04/10/2015 |

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

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SDG: 151026-47
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 285927
Superseded Report:

| SOLID Results Legend <input checked="" type="checkbox"/> Test <input type="checkbox"/> No Determination Possible | Lab Sample No(s) | | 8238183 | 8238185 |
|---|---------------------------|---------------------|-----------------------------|--|
| | Customer Sample Reference | | Sample 1 | Sample 2 |
| | AGS Reference | | | |
| | Depth (m) | | 0.00 | 0.00 |
| | Container | | 250g Amber Jar (AL) 1kg TUB | 60g VOC (ALE215) 250g Amber Jar (AL) 1kg TUB |
| ANC at pH4 and ANC at pH 8 | All | NDPs: 0 Tests: 2 | X | X |
| Anions by Kone (w) | All | NDPs: 0 Tests: 2 | X | X |
| CEN 2:1 Readings | All | NDPs: 0 Tests: 2 | X | X |
| CEN 8:1 Readings | All | NDPs: 0 Tests: 2 | X | X |
| Dissolved Metals by ICP-MS | All | NDPs: 0 Tests: 2 | X | X |
| Dissolved Organic/Inorganic Carbon | All | NDPs: 0 Tests: 2 | X | X |
| Fluoride | All | NDPs: 0 Tests: 2 | X | X |
| GRO by GC-FID (S) | All | NDPs: 0 Tests: 2 | X | X |
| Loss on Ignition in soils | All | NDPs: 0 Tests: 2 | X | X |
| Mercury Dissolved | All | NDPs: 0 Tests: 2 | X | X |
| Mineral Oil | All | NDPs: 0 Tests: 2 | X | X |
| PAH Value of soil | All | NDPs: 0 Tests: 2 | X | X |
| PCBs by GCMS | All | NDPs: 0 Tests: 2 | X | X |
| pH | All | NDPs: 0 Tests: 2 | X | X |
| Phenols by HPLC (W) | All | NDPs: 0 Tests: 2 | X | X |

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SDG: 151026-47
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 285827
Superseded Report:

| SOLID | | Lab Sample No(s) | | 8238183 | 8238185 |
|---|----------------------------------|-------------------|---|---|---|
| Results Legend <input checked="" type="checkbox"/> Test <input type="checkbox"/> No Determination Possible | Customer Sample Reference | | Sample 1 | Sample 2 | |
| | AGS Reference | | | | |
| | Depth (m) | | 0.00 | 0.00 | |
| | Container | | 60g VOC (ALE215) 250g Amber Jar (AL 1kg TUB | 60g VOC (ALE215) 250g Amber Jar (AL 1kg TUB | 60g VOC (ALE215) 250g Amber Jar (AL 1kg TUB |
| | Sample description | All | NDPs 0 Tests 2 | X | X |
| Total Dissolved Solids | All | NDPs 0 Tests 2 | X | X | |
| Total Organic Carbon | All | NDPs 0 Tests 2 | X | X | |

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CERTIFICATE OF ANALYSIS

SDG: 151028-47
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 285827
Superseded Report:

Sample Descriptions

Grain Sizes

Grain size classification bar with categories: very fine (<0.063mm), fine (0.063mm - 0.1mm), medium (0.1mm - 2mm), coarse (2mm - 10mm), very coarse (>10mm)

Table with 8 columns: Lab Sample No(s), Customer Sample Ref., Depth (m), Colour, Description, Grain size, Inclusions, Inclusions 2. Contains two rows of sample data.

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

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

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

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CERTIFICATE OF ANALYSIS

Validated

SDG: 151027-49
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 285827
Superseded Report:

Table with columns: Component, LOD/Units, Method, Sample 1, Sample 2. Rows include: Loss on ignition, Mineral oil >C10-C40, Organic Carbon, Total, pH, PCB congeners (28, 52, 101, 118, 138, 153, 180), Sum of detected PCB 7 Congeners, ANC @ pH 4, ANC @ pH 6, Polyaromatic hydrocarbons, Total 17.

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SDG: 151027-47
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 285827
Superseded Report:

GRO by GC-FID(S)

Table with columns: Component, LOD/Units, Method, Sample 1, Sample 2. Rows include GRO Surrogate % recovery, Methyl tertiary butyl ether (MTBE), Benzene, Toluene, Ethylbenzene, m,p-Xylene, o-Xylene, sum of detected mpo xylene by GC, sum of detected BTEX by GC.

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SDG: 151026-47
 Job: D_BOYLAN_CAV-2
 Client Reference: Not Specified

Location: Not Specified
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 285827
 Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

Client Reference: Not Specified
 Mass Sample taken (kg): 0.237
 Mass of dry sample (kg): 0.175
 Particle Size <4mm: >95%

Site Location: Not Specified
 Moisture Content Ratio (%): 35.6
 Dry Matter Content Ratio (%): 73.7

Case: 151026-47
 SDG: 151026-47
 Lab Sample Number(s): 238183
 Sampled Date: 04-Oct-2015
 Customer Sample Ref.: Sample 1
 Depth (m): 0.00

Landfill Waste Acceptance Criteria Limits

| Inert Waste Landfill | Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill | Hazardous Waste Landfill |
|----------------------|---|--------------------------|
| 3 | 50 | 5 |
| 6 | - | 10 |
| 1 | - | - |
| 500 | - | - |
| 100 | - | - |
| - | <6 or >9 | - |

Solid Waste Analysis

| | |
|--------------------------|--------|
| Total Organic Carbon (%) | 1.84 |
| Loss on Ignition (%) | 7.07 |
| Sum of BTEX (mg/kg) | <0.024 |
| Sum of 7 PCBs (mg/kg) | <0.021 |
| Mineral Oil (mg/kg) | 22.7 |
| PAH Sum of 17 (mg/kg) | <10 |
| pH (pH Units) | 7.48 |
| ANC to pH 6 (mol/kg) | <0.03 |
| ANC to pH 4 (mol/kg) | 0.0881 |

| Eluate Analysis | C2 | C8 | A2 | A2-10 |
|------------------------------|---------------------------------|---------------------------------|-------------------------------|--------------------------------------|
| | Conc ^a In 2:1 eluate | Conc ^a In 8:1 eluate | 2:1 conc ^a leached | Cumulative conc ^a leached |
| | mg/l | | mg/kg | |
| Arsenic | 0.00116 | 0.00131 | 0.00233 | 0.0129 |
| Barium | 0.0148 | 0.00876 | 0.0296 | 0.0949 |
| Cadmium | <0.0001 | <0.0001 | <0.0002 | <0.001 |
| Chromium | 0.00318 | 0.00237 | 0.00637 | 0.0247 |
| Copper | 0.0126 | 0.00616 | 0.0252 | 0.0694 |
| Mercury Dissolved (CVAF) | 0.0000106 | 0.000034 | 0.0000212 | 0.000136 |
| Molybdenum | 0.00141 | 0.00136 | 0.00282 | 0.0136 |
| Nickel | 0.00149 | 0.00094 | 0.00299 | 0.0101 |
| Lead | 0.000311 | 0.000853 | 0.000623 | 0.00788 |
| Antimony | 0.00054 | 0.00217 | 0.00108 | 0.0198 |
| Selenium | 0.00103 | 0.000581 | 0.00207 | 0.00635 |
| Zinc | 0.00188 | 0.00147 | 0.00376 | 0.0152 |
| Chloride | 2.4 | <2 | 4.8 | <20 |
| Fluoride | <0.5 | <0.5 | <1 | <5 |
| Sulphate (soluble) | <2 | <2 | <4 | <20 |
| Total Dissolved Solids | 143 | 68.7 | 287 | 776 |
| Total Monohydric Phenols (W) | <0.016 | <0.016 | <0.032 | <0.16 |
| Dissolved Organic Carbon | 20.9 | 8.67 | 41.8 | 101 |

Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg

Leach Test Information

| | 2:1 | 8:1 |
|-------------------------------|-------------|-------------|
| Date Prepared | 09-Oct-2015 | 10-Oct-2015 |
| pH (pH Units) | 8.163 | 8.014 |
| Conductivity (µS/cm) | 166.40 | 75.30 |
| Temperature (°C) | 20.60 | 19.10 |
| Volume Leachant (Litres) | 0.288 | 1.400 |
| Volume of Eluate VE1 (Litres) | 0.210 | |

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Merts Certification does not apply to leachates

15/10/2013 14:42:26

14:42:19 15/10/2015

SDG: 151028-47
 Job: D_BOYLAN_CAV-2
 Client Reference: Not Specified

Location: Not Specified
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 285927
 Superseded Report:

CEN 10:1 CUMULATIVE TWO STAGE BATCH TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/3

| | | | |
|--------------------------------|-------|-------------------------------------|---------------|
| Client Reference | | Site Location | Not Specified |
| Mass Sample taken (kg) | 0.224 | Molsture Content Ratio (%) | 27.9 |
| Mass of dry sample (kg) | 0.175 | Dry Matter Content Ratio (%) | 78.2 |
| Particle Size <4mm | >95% | | |

Case
 SDG 131009-42
 Lab Sample Number(s) 238185
 Sampled Date 04-Oct-2015
 Customer Sample Ref. Sample 2
 Depth (m) 0.00

Landfill Waste Acceptance Criteria Limits

| Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
|----------------------|---|--------------------------|
| 3 | 5 | 5 |
| - | - | 10 |
| 6 | - | - |
| 1 | - | - |
| 500 | - | - |
| 100 | - | - |
| - | <6 or >9 | - |
| - | - | - |
| - | - | - |

Solid Waste Analysis

| | |
|--------------------------|--------|
| Total Organic Carbon (%) | 0.585 |
| Loss on Ignition (%) | 2.98 |
| Sum of BTEX (mg/kg) | <0.024 |
| Sum of 7 PCBs (mg/kg) | <0.021 |
| Mineral Oil (mg/kg) | 15.8 |
| PAH Sum of 17 (mg/kg) | <10 |
| pH (pH Units) | 7.54 |
| ANC to pH 6 (mol/kg) | <0.03 |
| ANC to pH 4 (mol/kg) | 0.0463 |

Eluate Analysis

| | C2 | C8 | A2 | A2-10 | Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg | | |
|------------------------------|---------------------------------|---------------------------------|-------------------------------|--------------------------------------|--|---|--------------------------|
| | Conc ^a in 2:1 eluate | Conc ^a in 8:1 eluate | 2:1 conc ^a leached | Cumulative conc ^a leached | Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
| | mg/l | | mg/kg | | | | |
| Arsenic | 0.00051 | 0.000381 | 0.00102 | 0.00396 | 0.5 | 2 | 25 |
| Barium | 0.0358 | 0.00579 | 0.0716 | 0.0922 | 20 | 100 | 300 |
| Cadmium | <0.0001 | <0.0001 | <0.0002 | <0.001 | 0.04 | 1 | 5 |
| Chromium | 0.00228 | 0.00129 | 0.00456 | 0.0141 | 0.5 | 10 | 70 |
| Copper | 0.00586 | 0.00233 | 0.0117 | 0.0277 | 2 | 50 | 100 |
| Mercury Dissolved (CVAF) | <0.00001 | 0.0000132 | <0.00002 | 0.000117 | 0.01 | 0.2 | 2 |
| Molybdenum | 0.000749 | 0.000712 | 0.0015 | 0.00716 | 0.5 | 10 | 30 |
| Nickel | 0.00126 | 0.000679 | 0.00251 | 0.00745 | 0.4 | 10 | 40 |
| Lead | 0.00175 | 0.000212 | 0.00035 | 0.00208 | 0.5 | 10 | 50 |
| Antimony | 0.00064 | 0.000712 | 0.00128 | 0.00704 | 0.06 | 0.7 | 5 |
| Selenium | <0.00039 | <0.00039 | <0.00078 | <0.0039 | 0.1 | 0.5 | 7 |
| Zinc | 0.00125 | 0.00281 | 0.0025 | 0.0245 | 4 | 50 | 200 |
| Chloride | 2.1 | <2 | 4.2 | <20 | 800 | 15000 | 25000 |
| Fluoride | <0.5 | <0.5 | <1 | <5 | 10 | 150 | 500 |
| Sulphate (soluble) | <2 | <2 | <4 | <20 | 1000 | 20000 | 50000 |
| Total Dissolved Solids | 116 | 38.6 | 232 | 474 | 4000 | 60000 | 100000 |
| Total Monohydric Phenols (W) | <0.016 | <0.016 | <0.032 | <0.16 | 1 | - | - |
| Dissolved Organic Carbon | 12.4 | 4.75 | 24.9 | 56.3 | 500 | 800 | 1000 |

Leach Test Information

| | 2:1 | 8:1 |
|-------------------------------|-------------|-------------|
| Date Prepared | 09-Oct-2015 | 10-Oct-2015 |
| pH (pH Units) | 8.129 | 7.888 |
| Conductivity (µS/cm) | 118.90 | 27.20 |
| Temperature (°C) | 20.20 | 19.10 |
| Volume Leachant (Litres) | 0.301 | 1.400 |
| Volume of Eluate VE1 (Litres) | 0.200 | |

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Meats Certification does not apply to leachates

15/10/2013 14:42:26

14:42:19 15/10/2015



SDG: 151026-47
 Job: D_BOYLAN_CAV-2
 Client Reference: Not Specified

Location: Not Specified
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 285827
 Superseded Report:

Table of Results - Appendix

| Method No | Reference | Description | Wet/Dry Sample | Surrogate Corrected |
|-----------|---|--|----------------|---------------------|
| PM024 | Modified BS 1377 | Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material | | |
| PM114 | | Leaching Procedure for CEN Two Stage Batch Test 2:1/8:1 Cumulative | | |
| TM018 | BS 1377: Part 3 1990 | Determination of Loss on Ignition | | |
| TM061 | Method for the Determination of EPH, Massachusetts Dept of EP, 1998 | Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40) | | |
| TM089 | Modified: US EPA Methods 8020 & 602 | Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12) | | |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water | | |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser | | |
| TM123 | BS 2690: Part 121:1981 | The Determination of Total Dissolved Solids in Water | | |
| TM132 | In - house Method | ELTRA CS800 Operators Guide | | |
| TM133 | BS 1377: Part 3 1990; BS 6068-2.5 | Determination of pH in Soil and Water using the GLpH pH Meter | | |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS | | |
| TM168 | EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils | | |
| TM182 | CEN/TC 292 - WI 292046-characterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test | Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils | | |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry | | |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analyser | | |
| TM213 | In-house Method | Rapid Determination of PAHs by GC-FID | | |
| TM259 | by HPLC | Determination of Phenols in Waters and Leachates by HPLC | | |

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

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SDG: 151026-47
Job: D_BOYLAN_CAV-2
Client Reference: Not Specified

Location: Not Specified
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 265827
Superseded Report:

Test Completion Dates

| Lab Sample No(s) Customer Sample Ref. | 238183 | 238185 |
|--|-------------|-------------|
| | Sample 1 | Sample 2 |
| AGS Ref. | | |
| Depth | 0.00 | 0.00 |
| Type | SOLID | SOLID |
| ANC at pH4 and ANC at pH 6 | 14-Oct-2015 | 14-Oct-2015 |
| Anions by Kone (w) | 14-Oct-2015 | 14-Oct-2015 |
| CEN 2:1 Leachate (2 Stage) | 09-Oct-2015 | 09-Oct-2015 |
| CEN 2:1 Readings | 11-Oct-2015 | 11-Oct-2015 |
| CEN 8:1 Leachate (2 Stage) | 11-Oct-2015 | 11-Oct-2015 |
| CEN 8:1 Readings | 11-Oct-2015 | 11-Oct-2015 |
| Dissolved Metals by ICP-MS | 15-Oct-2015 | 15-Oct-2015 |
| Dissolved Organic/Inorganic Carbon | 14-Oct-2015 | 14-Oct-2015 |
| Fluoride | 14-Oct-2015 | 14-Oct-2015 |
| GRO by GC-FID (S) | 11-Oct-2015 | 11-Oct-2015 |
| Loss on Ignition in soils | 14-Oct-2015 | 14-Oct-2015 |
| Mercury Dissolved | 15-Oct-2015 | 15-Oct-2015 |
| Mineral Oil | 15-Oct-2015 | 15-Oct-2015 |
| PAH Value of soil | 14-Oct-2015 | 14-Oct-2015 |
| PCBs by GCMS | 13-Oct-2015 | 13-Oct-2015 |
| pH | 14-Oct-2015 | 14-Oct-2015 |
| Phenols by HPLC (W) | 15-Oct-2015 | 15-Oct-2015 |
| Sample description | 09-Oct-2015 | 09-Oct-2015 |
| Total Dissolved Solids | 14-Oct-2015 | 14-Oct-2015 |
| Total Organic Carbon | 15-Oct-2015 | 15-Oct-2015 |

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SDG: 151026-47
 Job: D_BOYLAN_CAV-2
 Client Reference: Not Specified

Location: Not Specified
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 285827
 Superseded Report:

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 2 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TMO48 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unusable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, D/N, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

| | |
|---|--|
| 1 | Container with Headspace provided for volatiles analysis |
| 2 | Incorrect container received |
| 3 | Deviation from method |
| 4 | Holding time exceeded before sample received |
| 5 | Sampled on date not provided |
| 6 | Sample holding time exceeded in laboratory |
| 7 | Sample holding time exceeded due to sampled on date |
| 8 | Sample Holding Time exceeded - Late arrival of instructions. |

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
 - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

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



Boylan Engineering
Main St
Mullagh
Co. Cavan
Attention: Brona Keating

CERTIFICATE OF ANALYSIS

Date: 29 August 2015
Customer: D_BOYLAN_CAV
Sample Delivery Group (SDG): 150820-94
Your Reference:
Location: Cootehill Landfill
Report No: 327511

We received 3 samples on Wednesday August 19, 2015 and 3 of these samples were scheduled for analysis which was completed on Saturday August 29, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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Approved By:

Sonia McWhan
Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 150820-94
Job: D_BOYLAN_CAV-4
Client Reference:

Location: Cootehill Landfill
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 327511
Superseded Report:

Received Sample Overview

| Lab Sample No(s) | Customer Sample Ref. | AGS Ref. | Depth (m) | Sampled Date |
|------------------|----------------------|----------|-----------|--------------|
| 11931809 | CHL/WAC/001 | | | 18/08/2015 |
| 11931810 | CHL/WAC/002 | | | 18/08/2015 |
| 11931811 | CHL/WAC/003 | | | 18/08/2015 |

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

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SDG: 150820-84
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootahill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

| SOLID Results Legend <input checked="" type="checkbox"/> Test <input type="checkbox"/> No Determination Possible | Lab Sample No(s) | | | 11931809 | 11931810 | 11931811 |
|---|---------------------------|---------------------|---|--|--|--|
| | Customer Sample Reference | | | CHLWAC/001 | CHLWAC/002 | CHLWAC/003 |
| | AGS Reference | | | | | |
| | Depth (m) | | | | | |
| | Container | | | 600 VOC (ALE215) 2500 Amber Jar (AL 1kg TUB) | 600 VOC (ALE215) 2500 Amber Jar (AL 1kg TUB) | 600 VOC (ALE215) 2500 Amber Jar (AL 1kg TUB) |
| ANC at pH4 and ANC at pH 6 | All | NDPs: 0 Tests: 3 | X | X | X | |
| Anions by Kone (w) | All | NDPs: 0 Tests: 3 | X | X | X | |
| CEN Readings | All | NDPs: 0 Tests: 3 | X | X | X | |
| Dissolved Metals by ICP-MS | All | NDPs: 0 Tests: 3 | X | X | X | |
| Dissolved Organic/Inorganic Carbon | All | NDPs: 0 Tests: 3 | X | X | X | |
| Fluoride | All | NDPs: 0 Tests: 3 | X | X | X | |
| GRO by GC-FID (S) | All | NDPs: 0 Tests: 3 | | X | X | |
| Loss on Ignition in soils | All | NDPs: 0 Tests: 3 | X | X | X | |
| Mercury Dissolved | All | NDPs: 0 Tests: 3 | X | X | X | |
| Mineral Oil | All | NDPs: 0 Tests: 3 | X | X | X | |
| PAH Value of soil | All | NDPs: 0 Tests: 3 | X | X | X | |
| PCBs by GCMS | All | NDPs: 0 Tests: 3 | X | X | X | |
| pH | All | NDPs: 0 Tests: 3 | X | X | X | |
| Phenols by HPLC (W) | All | NDPs: 0 Tests: 3 | X | X | X | |
| Sample description | All | NDPs: 0 Tests: 3 | X | X | X | |

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CERTIFICATE OF ANALYSIS

Validated

SDG: 150820-94
Job: D_BOYLAN_CAV-4
Client Reference:

Location: Cootehill Landfill
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 327511
Superseded Report:

| SOLID Results Legend <input checked="" type="checkbox"/> Test <input type="checkbox"/> No Determination Possible | Lab Sample No(s) | 11931809 | 11931810 | 11931811 | |
|---|---------------------------|---|-------------------------------------|-------------------------------------|-------------------------------------|
| | Customer Sample Reference | CHLWAC/001 | CHLWAC/002 | CHLWAC/003 | |
| | AGS Reference | | | | |
| | Depth (m) | | | | |
| | Container | 250g VOC (ALE215) 1kg Amber Jar (AL 1kg TUB) | 60g VOC (ALE215) 1kg TUB | 250g Amber Jar (AL 1kg TUB) | 60g VOC (ALE215) 1kg TUB |
| Total Dissolved Solids | All | NDPs 0 Tests 3 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Total Organic Carbon | All | NDPs 0 Tests 3 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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SDG: 150820-04
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

Sample Descriptions

Grain Sizes

| | | | | | | | | | |
|------------|----------|-------|-----------------|---------|-------------|---------|------------|--------------|-------|
| very fine: | <0.063mm | fine: | 0.063mm - 0.1mm | medium: | 0.1mm - 2mm | coarse: | 2mm - 10mm | very coarse: | >10mm |
|------------|----------|-------|-----------------|---------|-------------|---------|------------|--------------|-------|

| Lab Sample No(s) | Customer Sample Ref. | Depth (m) | Colour | Description | Grain size | Inclusions | Inclusions 2 |
|------------------|----------------------|-----------|------------|-------------|------------|------------|--------------|
| 11931809 | CHLWAC/001 | | Dark Brown | Sandy Loam | 0.1 - 2 mm | Vegetation | Stones |
| 11931810 | CHLWAC/002 | | Dark Brown | Sandy Loam | 0.1 - 2 mm | Stones | Vegetation |
| 11931811 | CHLWAC/003 | | Dark Brown | Sandy Loam | 0.1 - 2 mm | Stones | Vegetation |

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

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

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

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CERTIFICATE OF ANALYSIS

Validated

SDG: 150820-94
Job: D_BOYLAN_CAV-4
Client Reference:

Location: Cootehill Landfill
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 327511
Superseded Report:

Table with columns: Component, LOD/Units, Method, CHLWAC/001, CHLWAC/002, CHLWAC/003. Rows include Moisture Content Ratio, Loss on ignition, Mineral oil, pH, PCB congeners, etc.

CERTIFICATE OF ANALYSIS

| | | | |
|----------------------------|-------------------------------------|---------------------------|--------|
| SDG: 150820-84 | Location: Cootehill Landfill | Order Number: | |
| Job: D_BOYLAN_CAV-4 | Customer: Boylan Engineering | Report Number: | 327511 |
| Client Reference: | Attention: Brona Keating | Superseded Report: | |

GRO by GC-FID (S)

| RESULTS | | | CHL/WAC/001 | CHL/WAC/002 | CHL/WAC/003 | | | |
|---|-----------|--------|-------------|-------------|-------------|--|--|--|
| Component | LOD/Units | Method | | | | | | |
| <div style="display: flex; justify-content: space-between; border-bottom: 1px solid black; padding-bottom: 5px;"> <div style="width: 20%;"> <p>1-36-10a # 10017028 approved, M mCERTS accredited, AQ Aqueous / settled sample, Dis.M Dispersed / filtered sample, Tot.M Total / unfiltered sample, Substr. Subsoil / substrate, * % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery</p> </div> <div style="width: 20%; border-left: 1px solid black; padding-left: 5px;"> <p>Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference</p> </div> <div style="width: 20%; border-left: 1px solid black; padding-left: 5px;"> <p>Soil/Solid 18/08/2015 18/08/2015 150820-84 11831809</p> </div> <div style="width: 20%; border-left: 1px solid black; padding-left: 5px;"> <p>Soil/Solid 18/08/2015 18/08/2015 150820-84 11831810</p> </div> <div style="width: 20%; border-left: 1px solid black; padding-left: 5px;"> <p>Soil/Solid 18/08/2015 18/08/2015 150820-84 11831811</p> </div> </div> | | | | | | | | |
| Methyl tertiary butyl ether (MTBE) | <5 µg/kg | TM089 | <5 M | <5 M | <5 M | | | |
| Benzene | <10 µg/kg | TM089 | <10 M | <10 M | <10 M | | | |
| Toluene | <2 µg/kg | TM089 | <2 M | <2 M | <2 M | | | |
| Ethylbenzene | <3 µg/kg | TM089 | <3 M | <3 M | <3 M | | | |
| m,p-Xylene | <6 µg/kg | TM089 | <6 M | <6 M | <6 M | | | |
| o-Xylene | <3 µg/kg | TM089 | <3 M | <3 M | <3 M | | | |
| sum of detected mpo xylene by GC | <9 µg/kg | TM089 | <9 | <9 | <9 | | | |
| sum of detected BTEX by GC | <24 µg/kg | TM089 | <24 | <24 | <24 | | | |
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SDG: 150820-94
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

| | | | |
|--------------------------------|-------|-------------------------------------|--------------------|
| Client Reference | | Site Location | Cootehill Landfill |
| Mass Sample taken (kg) | 0.114 | Natural Moisture Content (%) | 26.6 |
| Mass of dry sample (kg) | 0.175 | Dry Matter Content (%) | 79 |
| Particle Size <4mm | >95% | | |

Case
 SDG 150820-94
 Lab Sample Number(s) 11931809
 Sampled Date 18-Aug-2015
 Customer Sample Ref. CHL/WAC/001
 Depth (m)

Landfill Waste Acceptance Criteria Limits

| Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
|----------------------|---|--------------------------|
| 3 | 5 | 5 |
| - | - | 10 |
| 6 | - | - |
| 1 | - | - |
| 500 | - | - |
| 100 | - | - |
| - | <6 or >9 | - |
| - | - | - |
| - | - | - |

| Solid Waste Analysis | Result |
|--------------------------|--------|
| Total Organic Carbon (%) | 1.3 |
| Loss on Ignition (%) | 5.54 |
| Sum of BTEX (mg/kg) | <0.024 |
| Sum of 7 PCBs (mg/kg) | <0.021 |
| Mineral Oil (mg/kg) | 19.9 |
| PAH Sum of 17 (mg/kg) | <10 |
| pH (pH Units) | 7.43 |
| ANC to pH 6 (mol/kg) | 0.0382 |
| ANC to pH 4 (mol/kg) | 0.0751 |

| Eluate Analysis | C2 Conc ⁿ in 10:1 eluate (mg/l) | | A2 10:1 conc ⁿ leached (mg/kg) | | Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg | | |
|------------------------------|--|--------------------|---|--------------------|--|-------|--------|
| | Result | Limit of Detection | Result | Limit of Detection | | | |
| Arsenic | 0.000681 | <0.00012 | 0.00681 | <0.0012 | 0.5 | 2 | 25 |
| Barium | 0.00921 | <0.00003 | 0.0921 | <0.0003 | 20 | 100 | 200 |
| Cadmium | <0.0001 | <0.0001 | <0.001 | <0.001 | 0.04 | 1 | 5 |
| Chromium | 0.00196 | <0.0002 | 0.0196 | <0.0022 | 0.5 | 10 | 10 |
| Copper | 0.00483 | <0.00085 | 0.0483 | <0.0085 | 2 | 50 | 100 |
| Mercury Dissolved (CVAF) | <0.00001 | <0.00001 | <0.0001 | <0.0001 | 0.01 | 0.2 | 2 |
| Molybdenum | 0.00105 | <0.00024 | 0.0105 | <0.0024 | 0.5 | 10 | 30 |
| Nickel | 0.00132 | <0.00015 | 0.0132 | <0.0015 | 0.4 | 10 | 40 |
| Lead | 0.00147 | <0.00002 | 0.0147 | <0.0002 | 0.5 | 10 | 50 |
| Antimony | 0.000973 | <0.00016 | 0.00973 | <0.0016 | 0.06 | 0.7 | 5 |
| Selenium | 0.000482 | <0.00039 | 0.00482 | <0.0039 | 0.1 | 0.5 | 2 |
| Zinc | 0.00233 | <0.00041 | 0.0233 | <0.0041 | 4 | 50 | 200 |
| Chloride | <2 | <2 | <20 | <20 | 800 | 15000 | 25000 |
| Fluoride | <0.5 | <0.5 | <5 | <5 | 10 | 150 | 800 |
| Sulphate (soluble) | <2 | <2 | <20 | <20 | 1000 | 20000 | 50000 |
| Total Dissolved Solids | 49.1 | <5 | 491 | <50 | 4000 | 60000 | 100000 |
| Total Monohydric Phenols (W) | <0.016 | <0.016 | <0.16 | <0.16 | 1 | - | - |
| Dissolved Organic Carbon | 5.02 | <3 | 50.2 | <30 | 500 | 800 | 1000 |

Leach Test Information

Date Prepared 21-Aug-2015
 pH (pH Units) 7.44
 Conductivity (µS/cm) 54.50
 Temperature (°C) 16.80
 Volume Leachant (Litres) 0.875

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Mcerts Certification does not apply to leachates
 29/08/2015 09:02:29
 09:02:22 29/08/2015

SDG: 150820-84
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

| | | | |
|--------------------------------|-------|-------------------------------------|--------------------|
| Client Reference | | Site Location | Cootehill Landfill |
| Mass Sample taken (kg) | 0.114 | Natural Moisture Content (%) | 26.6 |
| Mass of dry sample (kg) | 0.175 | Dry Matter Content (%) | 79 |
| Particle Size <4mm | >95% | | |

Case
 SDG 150820-94
 Lab Sample Number(s) 11931810
 Sampled Date 18-Aug-2015
 Customer Sample Ref. CHL/WAC/002
 Depth (m)

Landfill Waste Acceptance Criteria Limits

| Inert Waste Landfill | Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill | Hazardous Waste Landfill |
|----------------------|---|--------------------------|
| 3 | 5 | 5 |
| - | - | 10 |
| 6 | - | - |
| 1 | - | - |
| 500 | - | - |
| 100 | - | - |
| - | <6 or >8 | - |
| - | - | - |
| - | - | - |

| Solid Waste Analysis | Result |
|--------------------------|--------|
| Total Organic Carbon (%) | 1.1 |
| Loss on Ignition (%) | 4.88 |
| Sum of BTEX (mg/kg) | <0.024 |
| Sum of 7 PCBs (mg/kg) | <0.021 |
| Mineral Oil (mg/kg) | 10.9 |
| PAH Sum of 17 (mg/kg) | <10 |
| pH (pH Units) | 7.54 |
| ANC to pH 6 (mol/kg) | 0.0352 |
| ANC to pH 4 (mol/kg) | 0.0642 |

| Eluate Analysis | C2 Conc ⁿ In 10:1 eluate (mg/l) | | A2 10:1 conc ⁿ leached (mg/kg) | | Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg | | |
|------------------------------|--|--------------------|---|--------------------|--|-------|--------|
| | Result | Limit of Detection | Result | Limit of Detection | | | |
| Arsenic | 0.00068 | <0.00012 | 0.0068 | <0.0012 | 0.5 | 2 | 25 |
| Barium | 0.00828 | <0.00003 | 0.0828 | <0.0003 | 20 | 100 | 300 |
| Cadmium | <0.0001 | <0.0001 | <0.001 | <0.001 | 0.04 | 1 | 5 |
| Chromium | 0.00197 | <0.00022 | 0.0197 | <0.0022 | 0.5 | 10 | 70 |
| Copper | 0.0044 | <0.00085 | 0.044 | <0.0085 | 2 | 50 | 100 |
| Mercury Dissolved (CVAF) | 0.0000108 | <0.00001 | 0.000108 | <0.0001 | 0.01 | 0.2 | 2 |
| Molybdenum | 0.00141 | <0.00024 | 0.0141 | <0.0024 | 0.5 | 10 | 30 |
| Nickel | 0.0014 | <0.00015 | 0.014 | <0.0015 | 0.4 | 10 | 40 |
| Lead | 0.00136 | <0.00002 | 0.0136 | <0.0002 | 0.5 | 10 | 50 |
| Antimony | 0.0014 | <0.00016 | 0.014 | <0.0016 | 0.06 | 0.7 | 5 |
| Selenium | 0.000581 | <0.00039 | 0.00581 | <0.0039 | 0.1 | 0.5 | 7 |
| Zinc | 0.0139 | <0.00041 | 0.139 | <0.0041 | 4 | 50 | 200 |
| Chloride | <2 | <2 | <20 | <20 | 800 | 15000 | 25000 |
| Fluoride | <0.5 | <0.5 | <5 | <5 | 10 | 150 | 500 |
| Sulphate (soluble) | <2 | <2 | <20 | <20 | 1000 | 20000 | 50000 |
| Total Dissolved Solids | 45.5 | <5 | 455 | <50 | 4000 | 60000 | 100000 |
| Total Monohydric Phenols (W) | <0.016 | <0.016 | <0.16 | <0.16 | 1 | - | - |
| Dissolved Organic Carbon | 4.61 | <3 | 46.1 | <30 | 500 | 800 | 1000 |

Leach Test Information

Date Prepared 21-Aug-2015
 pH (pH Units) 7.44
 Conductivity (µS/cm) 54.50
 Temperature (°C) 19.70
 Volume Leachant (Litres) 0.876

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Mcerts Certification does not apply to leachates
 29/08/2015 09:32:29
 09:02:22 29/08/2015



SDG: 150820-94
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

REF : BS EN 12457/2

| | | | |
|--------------------------------|-------|-------------------------------------|--------------------|
| Client Reference | | Site Location | Cootehill Landfill |
| Mass Sample taken (kg) | 0.106 | Natural Moisture Content (%) | 17.7 |
| Mass of dry sample (kg) | 0.175 | Dry Matter Content (%) | 85 |
| Particle Size <4mm | >95% | | |

Case
 SDG 150820-94
 Lab Sample Number(s) 11931811
 Sampled Date 18-Aug-2015
 Customer Sample Ref. CHL/WAC/003
 Depth (m)

Landfill Waste Acceptance Criteria Limits

| Inert Waste Landfill | Stable Non-reactive Hazardous Waste In Non-Hazardous Landfill | Hazardous Waste Landfill |
|----------------------|---|--------------------------|
| 3 | 5 | 5 |
| - | - | 10 |
| 6 | - | - |
| 1 | - | - |
| 500 | - | - |
| 100 | - | - |
| - | <6 or >9 | - |
| - | - | - |
| - | - | - |

| Solid Waste Analysis | Result |
|--------------------------|--------|
| Total Organic Carbon (%) | 1.81 |
| Loss on Ignition (%) | 6.28 |
| Sum of BTEX (mg/kg) | <0.024 |
| Sum of 7 PCBs (mg/kg) | <0.021 |
| Mineral Oil (mg/kg) | 8.46 |
| PAH Sum of 17 (mg/kg) | <10 |
| pH (pH Units) | 7.73 |
| ANC to pH 6 (mol/kg) | 0.0528 |
| ANC to pH 4 (mol/kg) | 0.106 |

| Eluate Analysis | C2 Conc ⁿ in 10:1 eluate (mg/l) | | A2 10:1 conc ⁿ leached (mg/kg) | | Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg | | |
|------------------------------|--|--------------------|---|--------------------|--|-------|--------|
| | Result | Limit of Detection | Result | Limit of Detection | | | |
| Arsenic | 0.000933 | <0.00012 | 0.00933 | <0.0012 | 0.5 | 2 | 25 |
| Barium | 0.0133 | <0.00003 | 0.133 | <0.0003 | 20 | 100 | 300 |
| Cadmium | <0.0001 | <0.0001 | <0.001 | <0.001 | 0.04 | 1 | 5 |
| Chromium | 0.00107 | <0.00022 | 0.0107 | <0.0022 | 0.5 | 10 | 70 |
| Copper | 0.00621 | <0.00085 | 0.0621 | <0.0085 | 2 | 50 | 100 |
| Mercury Dissolved (CVAF) | 0.0000253 | <0.00001 | 0.000253 | <0.0001 | 0.01 | 0.2 | 2 |
| Molybdenum | 0.00681 | <0.00024 | 0.0681 | <0.0024 | 0.5 | 10 | 30 |
| Nickel | 0.00115 | <0.00015 | 0.0115 | <0.0015 | 0.4 | 10 | 40 |
| Lead | 0.000955 | <0.00002 | 0.00955 | <0.0002 | 0.5 | 10 | 50 |
| Antimony | 0.00471 | <0.00016 | 0.0471 | <0.0016 | 0.06 | 0.7 | 3 |
| Selenium | 0.000771 | <0.00039 | 0.00771 | <0.0039 | 0.1 | 0.5 | 7 |
| Zinc | 0.000847 | <0.00041 | 0.00847 | <0.0041 | 4 | 50 | 200 |
| Chloride | <2 | <2 | <20 | <20 | 800 | 15000 | 25000 |
| Fluoride | <0.5 | <0.5 | <5 | <5 | 10 | 150 | 300 |
| Sulphate (soluble) | 22.6 | <2 | 226 | <20 | 1000 | 20000 | 50000 |
| Total Dissolved Solids | 80.1 | <5 | 801 | <50 | 4000 | 60000 | 100000 |
| Total Monohydric Phenols (W) | <0.016 | <0.016 | <0.16 | <0.16 | 1 | - | - |
| Dissolved Organic Carbon | 9.26 | <3 | 92.6 | <30 | 500 | 800 | 1000 |

Leach Test Information

Date Prepared 21-Aug-2015
 pH (pH Units) 7.53
 Conductivity (µS/cm) 94.80
 Temperature (°C) 20.10
 Volume Leachant (Litres) 0.864

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Mcerts Certification does not apply to leachates
 29/08/2015 09:02:29
 09:02:22 29/08/2015



SDG: 150820-84
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

Table of Results - Appendix

| Method No. | Reference | Description | Wet/Dry Sample | Surrogate Corrected |
|------------|---|--|----------------|---------------------|
| PM024 | Modified BS 1377 | Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material | | |
| PM115 | | Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step | | |
| TM018 | BS 1377: Part 3 1990 | Determination of Loss on Ignition | | |
| TM061 | Method for the Determination of EPH, Massachusetts Dept of EP, 1998 | Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40) | | |
| TM089 | Modified: US EPA Methods 8020 & 802 | Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12) | | |
| TM090 | Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 8060 | Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water | | |
| TM104 | Method 4500F, AWWA/APHA, 20th Ed., 1999 | Determination of Fluoride using the Kone Analyser | | |
| TM123 | BS 2690: Part 121:1981 | The Determination of Total Dissolved Solids in Water | | |
| TM132 | In - house Method | ELTRA CS800 Operators Guide | | |
| TM133 | BS 1377: Part 3 1990; BS 6068-2.5 | Determination of pH in Soil and Water using the GLpH pH Meter | | |
| TM152 | Method 3125B, AWWA/APHA, 20th Ed., 1999 | Analysis of Aqueous Samples by ICP-MS | | |
| TM168 | EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography | Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils | | |
| TM182 | CEN/TC 282 - WI 292046-characterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test | Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils | | |
| TM183 | BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3 | Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry | | |
| TM184 | EPA Methods 325.1 & 325.2, | The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers | | |
| TM213 | In-house Method | Rapid Determination of PAHs by GC-FID | | |
| TM259 | by HPLC | Determination of Phenols in Waters and Leachates by HPLC | | |

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

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SDG: 150820-94
Job: D_BOYLAN_CAV-4
Client Reference:

Location: Cootehill Landfill
Customer: Boylan Engineering
Attention: Brona Keating

Order Number:
Report Number: 327511
Superseded Report:

Test Completion Dates

| Lab Sample No(s) Customer Sample Ref. | 11931809 | 11931810 | 11931811 |
|--|-------------|-------------|-------------|
| | CHLWAC001 | CHLWAC002 | CHLWAC003 |
| AGS Ref. | | | |
| Depth | | | |
| Type | SOLID | SOLID | SOLID |
| ANC at pH4 and ANC at pH 6 | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| Anions by Kone (w) | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| CEN 10 1 Leachate (1 Stage) | 21-Aug-2015 | 21-Aug-2015 | 21-Aug-2015 |
| CEN Readings | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| Dissolved Metals by ICP-MS | 29-Aug-2015 | 29-Aug-2015 | 29-Aug-2015 |
| Dissolved Organic/Inorganic Carbon | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| Fluoride | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| GRO by GC-FID (S) | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| Loss on Ignition in soils | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| Mercury Dissolved | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| Mineral Oil | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| PAH Value of soil | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| PCBs by GCMS | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| pH | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| Phenols by HPLC (W) | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |
| Sample description | 21-Aug-2015 | 21-Aug-2015 | 21-Aug-2015 |
| Total Dissolved Solids | 24-Aug-2015 | 24-Aug-2015 | 24-Aug-2015 |
| Total Organic Carbon | 25-Aug-2015 | 25-Aug-2015 | 25-Aug-2015 |

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SDG: 150820-04
 Job: D_BOYLAN_CAV-4
 Client Reference:

Location: Cootehill Landfill
 Customer: Boylan Engineering
 Attention: Brona Keating

Order Number:
 Report Number: 327511
 Superseded Report:

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERES Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERES Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

| |
|---|
| Container with Headspace provided for volatiles analysis |
| Incorrect container received |
| Deviation from method |
| Holding time exceeded before sample received |
| Samples exceeded holding time before preservation was performed |
| Sampled on date not provided |
| Sample holding time exceeded in laboratory |
| Sample holding time exceeded due to sampled on date |
| Sample Holding Time exceeded - Late arrival of instructions. |

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

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

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