

Aled Zachary
Natural Resources Wales

Our ref: 2601.2.POT.SDB.JDM.A0
17th August 2016

Dear Aled

Re: Bryn Posteg Landfill Site, Permit Number BU7766IC (Variation Notice Number EPR/BU7766IC/V004) – Quarterly Monitoring Review (April - June 2016)

In respect of Permit condition 4.2.2, a report of the monitoring and assessment carried out between the 1st April to the 30th of June 2016 is enclosed.

The monitoring data required by permit conditions 3.6.1, for leachate in tables S4.1 and S4.9, point source emissions specified in tables S4.2, S4.3 and S4.4, groundwater specified in tables S4.5 and S4.11, landfill gas specified in tables S4.6, S4.7 and S4.8 and particulate matter in table S4.10 is submitted. This data comprises:

- Daily data for treated leachate discharge;
- Weekly data for landfill gas in peripheral monitoring boreholes and groundwater levels;
- Monthly data for landfill gas in collection wells, groundwater quality, leachate levels, leachate quality, leachate discharge quality and surface water;
- Quarterly data for groundwater quality and particulate matter.

Please do not hesitate to contact me should you require any further information.

Yours sincerely,



Jim McClymont
Principal Environmental Scientist
On behalf of Caulmert Ltd



Certificate Number 9113
ISO 9001, ISO 14001

Caulmert Limited

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Company Registered in Cardiff



CAULMERT LIMITED

Engineering, Environmental & Planning
Consultancy Services

Bryn Posteg Landfill Site

Potters Waste Management

Quarterly Monitoring Review

April – June 2016

Prepared by:

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Doc ref: 2601.2.POT.SDB.JDM.A0

August 2016

APPROVAL RECORD

Site: Bryn Posteg Landfill
Client: Potters Waste Management
Document Title: Quarterly Monitoring Review, April – June 2016
Document Ref: 2601.2.POT.SDB.JDM
Report Status: A0
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Approved	Jim McClymont	Date	17.08.2016

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1451.EMP.01 Environmental Monitoring Plan

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 This report has been compiled in compliance with the Environmental Permit (EP) BU7766, Variation Notice Number EPR/BU7766IC/V004 for Bryn Posteg Landfill Site, which requires that the monitoring data collected at the site is reviewed quarterly. The data reviewed by this report was collected between the 1st of April to the 30th of June 2016.
- 1.1.2 This report records and reviews monitoring data for landfill gas, leachate, groundwater and surface water and discusses this data in relation to emission limits set in the latest EP variation. The data will also be included in an Annual Monitoring Review, as required by the EP.

1.2 Site Location and Surrounding Land-use

- 1.2.1 Bryn Posteg Landfill Site is located approximately 3 km south east of Llanidloes in Powys and is centered at National Grid Reference SN 971 822.
- 1.2.2 The landfill site was developed from the surface void of a former lead mine. Controlled land filling has taken place since 1982.
- 1.2.3 The site is accessed via the B4518, Llanidloes to Tylwch road. The B4518 runs parallel with the western site boundary.
- 1.2.4 Bryn Posteg is situated amongst predominantly agricultural land. There are four residential receptors located within approximately 325 m of the waste mass, these are:
- Valley View, 200 m to the north west;
 - Rhoswen, 250 m to the east;
 - Pant, 260 m to the east; and
 - Penbryn Du, 325 m to the north.

2.0 LANDFILL GAS

2.1 Summary of Monitoring Results

- 2.1.1 Routine landfill gas (LFG) monitoring is required to be carried out on a weekly basis at 36 boreholes situated around the site perimeter. All boreholes have the prefix 'G' in the monitoring data. Concentrations of methane (CH₄) and carbon dioxide (CO₂) are measured alongside oxygen (O₂), relative pressure and atmospheric pressure on each visit.
- 2.1.2 CH₄ concentrations exceeded the trigger level value of 1.0 %¹ on at least one occasion at 15 monitoring locations – G01, 12, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 36, 38 and 40. The maximum concentration was 84.8 %, detected at G25.
- 2.1.3 CO₂ concentrations exceeded the trigger level value of 1.5 % on at least one occasion at 25 monitoring locations – G01, 07, 10, 11, 12, 14, 15, 19, 20, 21, 22, 23, 24, 25, 26, 30, 31, 33, 36, 37, 38, 39, 40, 41 and 42. The maximum detected concentration was 38.9 % in G20.
- 2.1.4 Summary tables displaying all CH₄, CO₂ and O₂ monitoring data collected during this period are included in Appendix 1.

2.2 Gas Collection Compound Data

- 2.2.1 Daily gas collection data is included in Appendix 1.

¹ All gas concentrations are expressed as % v/v

3.0 GROUNDWATER

3.1 Summary of Monitoring Results

- 3.1.1 Groundwater is sampled at locations W1 – W11. W10 cannot currently be sampled and location W11 was dry throughout the review period. Samples were tested for a monthly suite of parameters and once, in June, for a larger quarterly suite. All monitoring data is included in Appendix 2.
- 3.1.2 Concentrations of all monthly parameters were below their respective trigger levels, except chloride at location W1 only. The maximum chloride concentration in W1 was 348 mg/l, which is lower than the maximum found in W1 during the last review period, which was 513 mg/l.
- 3.1.3 A full quarterly suite was undertaken in June 2016. Two of the quarterly parameter trigger limits were exceeded. 2,4-D was detected in W1 (0.19 µg/l) and W5 (0.23 µg/l), exceeding the trigger limit of 0.1 µg/l. Mecoprop was detected in W5 only, at a concentration of 0.23 µg/l, thereby exceeding the trigger limit of 0.1 µg/l.
- 3.1.4 No SVOCs or VOCs were detected in the groundwater as part of the 6-monthly suite.

3.2 Groundwater Levels

- 3.2.1 Groundwater levels were recorded weekly. The results indicated that groundwater elevation remained relatively stable over the review period.

4.0 LEACHATE

4.1 Summary of Monitoring Results

Monitoring of leachate sumps

- 4.1.1 Leachate levels are measured monthly in Sump 1, Sump 2, Sump 4, Sump 5, Sump 9c and Sump 9d. Sump 3, RLMP9A and RLMP9B are sealed to improve the gas management on site. The EP limit for the liquid level within the sumps is 1 m above base. All monitoring data can be found in Appendix 3.
- 4.1.2 Leachate levels remained below the 1 m trigger level in Sumps 1, 2, 4 and 5.
- 4.1.3 The leachate level in Sumps 9C and 9D exceeded the trigger level during the review period.
- 4.1.4 Leachate samples were analysed in April, May and June for pH and ammoniacal nitrogen.
- 4.1.5 pH remained neutral to slightly alkaline throughout the review period, ranging between 7.1 and 9.3 while ammoniacal nitrogen ranged between 227 mg/l in LC4 and 1710 mg/l in LC2.

Treated leachate

- 4.1.6 Treated leachate (final discharge) was tested monthly for pH, ammoniacal nitrogen, suspended solids, COD, Total Petroleum Hydrocarbons (C6 – C40), sulphate and dissolved methane.
- 4.1.7 Sulphate concentration remained below the EP limit throughout the review period. pH remained within the trigger range of 6 – 10.
- 4.1.8 Ammoniacal nitrogen concentration exceeded the 150 mg/l trigger level in April at 582 mg/l. Concentrations in May and June were 37 mg/l and 54 mg/l respectively.
- 4.1.9 Suspended solids concentration exceeded the 500 mg/l trigger level during April and May with concentrations of 644 mg/l and 632 mg/l respectively. The concentration in June was below the trigger level at 486 mg/l.
- 4.1.10 COD concentration was above the 1000 mg/l trigger level throughout the review period, with concentrations in April, May and June of 1400 mg/l, 2950 mg/l and 2340 mg/l respectively.
- 4.1.11 TPH concentrations exceeded the trigger level of 'nil' in April, May and June at 1400 µg/l, 2950 µg/l and 2340 µg/l respectively.
- 4.1.12 Low concentrations of dissolved methane were detected in April, May and June, at 0.10 mg/l, 0.02 mg/l and 0.01 mg/l respectively.

- 4.1.13 Potters Waste Management also undertakes daily in-situ testing of treated leachate in order to assess its suitability for discharge. Daily discharge volumes for this review period are included in Appendix 3. A total of 4769 m³ of treated leachate was discharged between the 1st of April and the 30th of June 2016.
- 4.1.14 Additionally, 8091 m³ leachate was removed from site by tanker for offsite treatment during this quarter.

5.0 SURFACE WATER

5.1 Summary of Monitoring Results

- 5.1.1 The permit requires monthly monitoring at monitoring points P1, P2 and SW3.
- 5.1.2 SW3 is the discharge point for the proposed reed bed which has not yet been commissioned, hence monitoring has not commenced.
- 5.1.3 Surface water samples were collected at SW1 (P1) and SW2 (P2) during the review period. A summary table displaying surface water monitoring data is enclosed in Appendix 4.
- 5.1.4 Ammoniacal nitrogen remained below the 0.25 mg/l trigger level in SW1 during this review period. The ammoniacal nitrogen concentration in SW2 remained above the trigger level throughout, at 5.44 mg/l, 12.8 mg/l and 0.54 mg/l in April, May and June respectively.
- 5.1.5 Suspended solids concentration remained below the 50 mg/l trigger level at SW1 throughout the review period. Suspended solid concentration in SW2 was above the trigger level in April, May and June at 80 mg/l, 82 mg/l and 66 mg/l respectively.
- 5.1.6 pH ranged between 7.2 and 7.5 in SW1, and 8.0 and 8.3 in SW2.
- 5.1.7 Electrical conductivity ranged between 97 µS/cm and 103 µS/cm in SW1, and between 902 µS/cm and 2060 µS/cm in SW2.
- 5.1.8 Chloride concentrations ranged between 7.9 mg/l and 11.9 mg/l in SW1, and between 82.9 mg/l and 236.0 mg/l in SW2.
- 5.1.9 BOD ranged between <1 mg/l and 2 mg/l in SW1, and between 5 mg/l and 10 mg/l in SW2.
- 5.1.10 Petroleum hydrocarbons were detected in SW1 in April and June with total petroleum hydrocarbon (EH >C6-C40) concentrations of 12 µg/l and 25 µg/l respectively. Petroleum hydrocarbons were also detected in SW2 in April, May and June, with total petroleum hydrocarbons (EH >C6-C40) concentrations of 219 µg/l, 743 µg/l and 100 µg/l respectively.

6.0 DUST

6.1 Monitoring Results

- 6.1.1 Dust monitoring was undertaken between the 20th of May and the 23rd of June 2016 at locations BP1, BP2 and BP3. The dust monitoring results, as supplied by the subcontracted laboratory, are summarised in Table 2 below. A Certificate of Analysis is enclosed in Appendix 5.

Table 2: Dust Monitoring Results

Period	20/05/2016 – 23/06/2016		
Location	Mass of Undissolved Solids Mg	Result mg/m ² /day	Trigger Level mg/m ² /day
BP 1	139.5	110	200
BP 2	65.0	49	200
BP 3	19.6	15	200

- 6.1.2 Dust concentrations remained below the trigger level at all locations during this review period.

7.0 SUMMARY

7.1 Landfill gas

- 7.1.1 The CH₄ trigger level was exceeded at 15 locations and the CO₂ trigger level was exceeded at 25 locations on a number of occasions during the monitoring period.

7.2 Groundwater

- 7.2.1 Groundwater levels remained relatively stable over the review period.
- 7.2.2 The concentrations of all parameters were below their respective trigger levels, except chloride in W1, 2,4-D in W1 and W5 and Mecoprop in W5 only.

7.3 Leachate

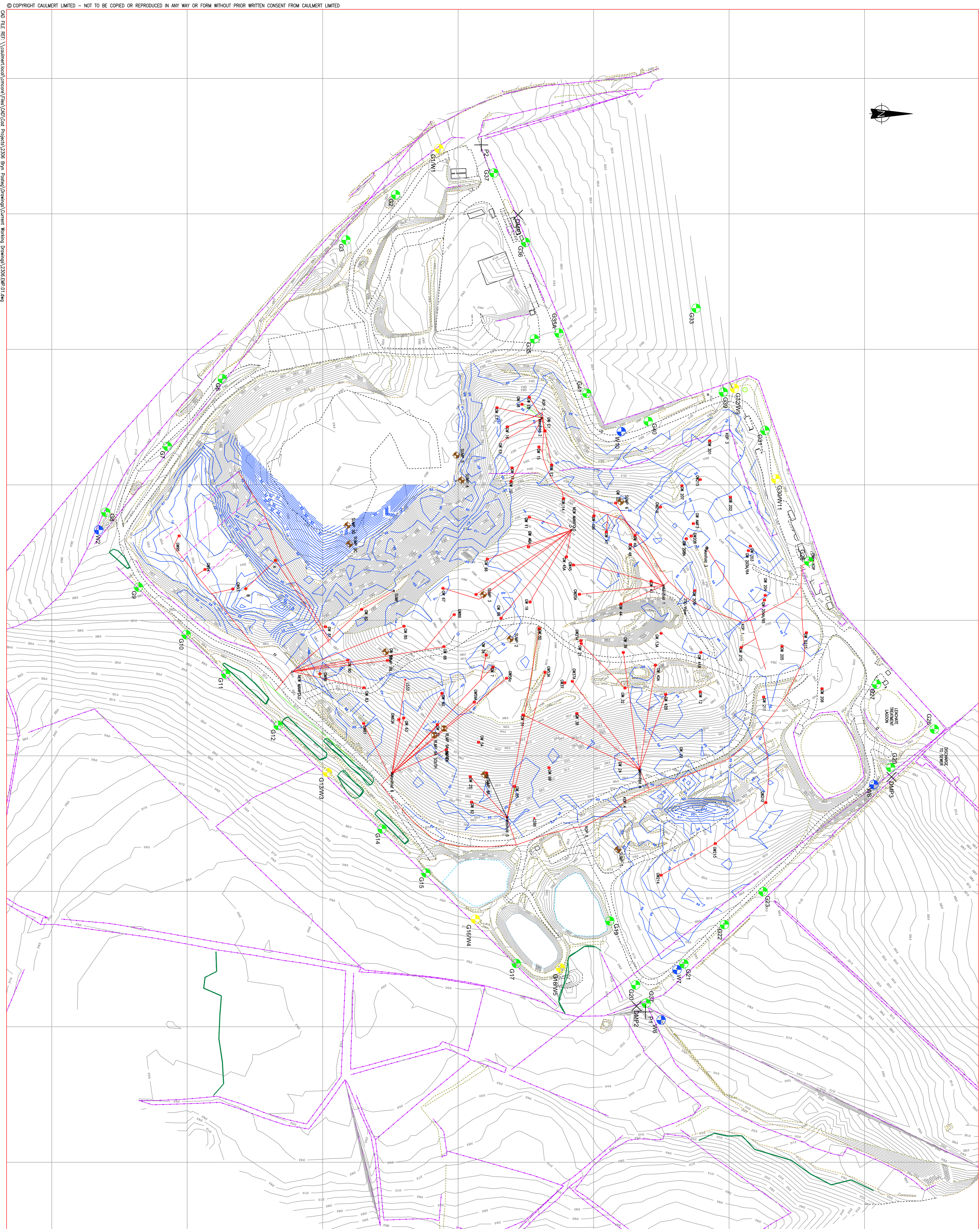
- 7.3.1 Leachate levels were below the trigger limit of 1.0 m in Sumps 1, 2, 4 and 5 throughout the review period. The trigger limit was exceeded in Sumps 9c and 9d during this review period.
- 7.3.2 In the final discharge (treated leachate) quality data, exceedances of the trigger levels for ammoniacal nitrogen, suspended solids, COD and TPH were recorded.
- 7.3.3 Potters are working with Severn Trent regarding COD concentrations, and have purchased an on-site COD measuring device.

7.4 Surface Water

- 7.4.1 Surface water samples were collected at SW1 and SW2 during the review period. Trigger level exceedances were recorded for ammoniacal nitrogen and suspended solids in SW2 only.

7.5 Dust

- 7.5.1 Dust concentrations remained below the 200 mg/m²/day trigger level at all locations during this review period.



- NOTES
1. SURVEY INFORMATION PROVIDED BY POTTERS WASTE MANAGEMENT. SURVEY DATED 12.01.2016
 2. ALL LEVELS IN METRES ABOVE ORDNANCE DATUM.
 3. DO NOT SCALE FROM THIS DRAWING

LEGEND

- IN WASTE GAS WELL
- GAS MONITORING BOREHOLE
- GROUNDWATER MONITORING BOREHOLE
- GAS MONITORING BOREHOLE WITH GROUNDWATER MONITORING BOREHOLE
- EXISTING LEACHATE COLLECTION POINT
- IN WASTE GAS WELL
- APPROXIMATE POSITION OF SURFACE WATER MONITORING POINT
- APPROXIMATE POSITION OF DUST MONITORING POINT
- SURFACE WATER MONITORING POINTS
- P1 NAN-Y-BROUANT
- P2 ACON DULAS
- DMP1 VALLEY VIEW
- DMP2 RHOSWEN AND PANT
- DMP3 PENBENNODU

REV	MODIFICATIONS	BY	FE	AP	DATE

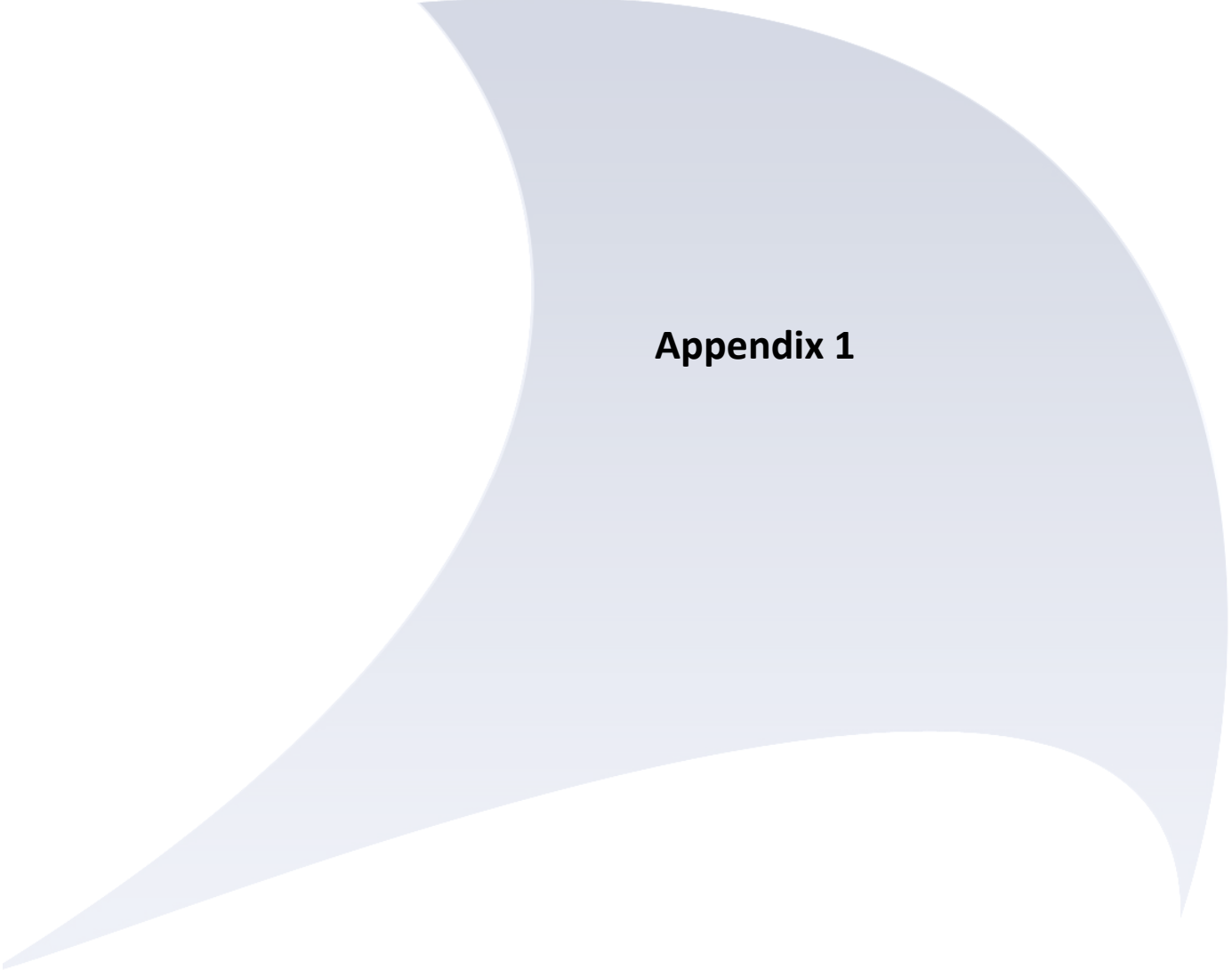
POTTERS WASTE MANAGEMENT

BRYN POSTEG LANDFILL SITE

ENVIRONMENTAL MONITORING PLAN

DRAWN BY	DATE	
FWG	12.02.2016	
REVIEWED BY	SCALE @ A1	
JMC	1:1250	
AUTHORISED BY	ISSUE	REVISION
JMC	P	P1
DRAWING NUMBER	2601.EMP.01	

Mendi, Bangor, Gwynedd, LL57 4FG Company R



Appendix 1

APPENDIX 1 – LANDFILL GAS**Table 1: Landfill Gas Monitoring Data (exceedances highlighted yellow)**

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G01	14/04/2016	0.7	0.0	20.7
	22/04/2016	0.7	0.8	19.7
	06/05/2016	0.0	1.2	19.0
	13/05/2016	0.5	1.4	17.2
	19/05/2016	7.0	1.8	12.4
	02/06/2016	0.0	0.8	20.0
	16/06/2016	5.2	1.3	16.5
	23/06/2016	0.4	0.3	19.3
G02	14/04/2016	0.7	0.0	20.7
	22/04/2016	0.7	0.0	20.7
	06/05/2016	0.0	0.1	21.3
	13/05/2016	0.0	0.1	20.9
	19/05/2016	0.0	0.1	20.8
	02/06/2016	0.0	0.0	21.5
	16/06/2016	0.2	0.1	20.9
	23/06/2016	0.4	0.0	19.8
G03	14/04/2016	0.3	0.7	0.0
	22/04/2016	0.3	0.7	0.9
	06/05/2016	0.3	0.0	1.0
	13/05/2016	0.4	0.0	1.1
	19/05/2016	0.6	0.0	0.8
	02/06/2016	0.3	0.0	1.5
	16/06/2016	0.3	0.2	1.9
	23/06/2016	0.5	0.4	1.5
G07	14/04/2016	0.7	0.0	20.8
	22/04/2016	0.7	1.9	20.2
	06/05/2016	0.0	1.6	20.2
	13/05/2016	0.0	1.5	20.0
	19/05/2016	0.0	1.2	20.2
	02/06/2016	0.0	2.3	20.3
	16/06/2016	0.2	1.6	20.1
	23/06/2016	0.4	2.2	18.5

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G08	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.0	21.1
	06/05/2016	0.0	0.1	21.3
	13/05/2016	0.0	0.1	21.1
	19/05/2016	0.0	0.1	21.1
	02/06/2016	0.0	0.0	22.0
	16/06/2016	0.2	0.0	21.0
	23/06/2016	0.4	0.0	20.2
G09	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.0	21.2
	06/05/2016	0.0	0.1	21.3
	13/05/2016	0.0	0.1	21.2
	19/05/2016	0.0	0.0	21.4
	02/06/2016	0.0	0.0	22.1
	16/06/2016	0.2	0.0	21.1
	23/06/2016	0.4	0.0	20.3
G10	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	4.6	15.0
	06/05/2016	0.0	4.4	14.8
	13/05/2016	0.0	3.6	16.0
	19/05/2016	0.0	3.4	17.7
	02/06/2016	0.0	4.5	15.2
	16/06/2016	0.2	3.0	18.7
	23/06/2016	0.4	3.2	16.6
G11	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.3	21.2
	13/05/2016	0.0	0.4	21.0
	19/05/2016	0.0	0.6	21.0
	02/06/2016	0.0	1.6	20.7
	16/06/2016	0.2	0.5	19.8
	23/06/2016	0.4	0.1	20.1

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G12	14/04/2016	73.9	4.2	4.5
	22/04/2016	77.4	4.3	2.8
	06/05/2016	57.6	3.1	5.5
	13/05/2016	62.5	3.3	4.4
	19/05/2016	53.2	2.9	6.6
	02/06/2016	44.3	3.2	8.1
	16/06/2016	50.4	3.1	7.1
	23/06/2016	84.3	4.2	0.3
G13	14/04/2016	0.7	0.4	20.7
	22/04/2016	0.7	0.1	21.3
	06/05/2016	0.0	0.1	21.4
	13/05/2016	0.0	0.1	21.2
	19/05/2016	0.0	0.1	21.5
	02/06/2016	0.0	0.0	22.2
	16/06/2016	0.2	0.1	21.1
	23/06/2016	0.4	0.0	20.3
G14	14/04/2016	0.7	3.3	16.9
	22/04/2016	0.7	3.5	17.5
	06/05/2016	0.0	2.7	17.8
	13/05/2016	0.0	2.1	18.3
	19/05/2016	0.0	2.5	17.8
	02/06/2016	0.0	3.4	17.7
	16/06/2016	0.2	3.2	17.1
	23/06/2016	0.4	2.8	16.3
G15	14/04/2016	0.7	2.8	14.9
	22/04/2016	0.7	2.7	15.3
	06/05/2016	0.0	1.5	17.8
	13/05/2016	0.0	1.7	17.3
	19/05/2016	0.0	1.2	18.8
	02/06/2016	0.0	1.6	19.1
	16/06/2016	0.2	1.3	18.6
	23/06/2016	0.4	1.1	18.2

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G16	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.0	21.5
	06/05/2016	0.0	0.1	21.4
	13/05/2016	0.0	0.1	21.2
	19/05/2016	0.0	0.0	22.0
	02/06/2016	0.0	0.0	22.2
	16/06/2016	0.2	0.0	21.2
	23/06/2016	0.4	0.0	20.4
G17	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.0	21.5
	06/05/2016	0.0	0.1	21.5
	13/05/2016	0.0	0.2	21.2
	19/05/2016	0.0	0.1	21.7
	02/06/2016	0.0	0.0	22.3
	16/06/2016	0.2	0.0	21.2
	23/06/2016	0.4	0.2	20.3
G18	14/04/2016	0.7	0.0	20.9
	22/04/2016	0.7	0.1	21.5
	06/05/2016	0.0	0.1	21.5
	13/05/2016	0.0	0.1	21.3
	19/05/2016	0.0	0.1	21.9
	02/06/2016	0.0	0.1	22.3
	16/06/2016	0.2	0.0	21.2
	23/06/2016	0.4	0.0	20.7
G19	14/04/2016	79.3	31.3	0.2
	22/04/2016	79.4	30.6	1.0
	06/05/2016	68.3	30.3	0.3
	13/05/2016	65.0	32.3	0.4
	19/05/2016	65.7	32.9	0.3
	02/06/2016	67.7	36.5	0.2
	16/06/2016	68.7	37.1	0.3
	23/06/2016	71.7	34.1	0.2

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G20	14/04/2016	65.1	30.2	2.5
	22/04/2016	71.5	31.5	0.6
	06/05/2016	67.3	30.9	0.2
	13/05/2016	65.5	31.3	0.4
	19/05/2016	64.8	31.7	0.5
	02/06/2016	66.8	37.0	0.2
	16/06/2016	67.2	38.9	0.4
	23/06/2016	69.3	36.6	0.2
G21	14/04/2016	27.8	11.3	0.7
	22/04/2016	55.9	17.0	0.7
	06/05/2016	55.0	17.7	0.2
	13/05/2016	47.6	16.5	3.2
	19/05/2016	37.6	15.6	5.0
	02/06/2016	56.1	22.3	0.6
	16/06/2016	40.4	16.0	4.1
	23/06/2016	62.6	14.3	0.2
G22	14/04/2016	37.6	18.9	1.4
	22/04/2016	56.7	18.6	0.4
	06/05/2016	67.7	16.3	0.3
	13/05/2016	70.6	17.4	0.9
	19/05/2016	72.9	17.8	0.4
	02/06/2016	75.1	20.8	0.1
	16/06/2016	76.8	22.9	0.1
	23/06/2016	78.9	20.0	0.1
G23	14/04/2016	3.7	8.4	1.0
	22/04/2016	8.2	9.4	0.7
	06/05/2016	2.8	8.9	0.7
	13/05/2016	2.1	10.2	0.3
	19/05/2016	0.0	10.4	2.9
	02/06/2016	14.4	11.1	0.2
	16/06/2016	59.6	7.4	0.3
	23/06/2016	40.9	9.2	0.3

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G24	14/04/2016	0.7	1.4	20.4
	22/04/2016	0.7	1.5	20.9
	06/05/2016	0.0	0.5	21.2
	13/05/2016	0.0	1.0	20.8
	19/05/2016	0.0	2.0	20.6
	02/06/2016	60.8	31.4	2.2
	16/06/2016	61.7	35.7	1.7
	23/06/2016	36.3	15.9	9.6
G25	14/04/2016	38.5	12.8	4.1
	22/04/2016	37.6	12.3	0.5
	06/05/2016	36.5	9.7	0.3
	13/05/2016	73.0	6.4	0.3
	19/05/2016	78.0	6.3	0.3
	02/06/2016	82.6	6.1	0.2
	16/06/2016	84.3	7.2	0.3
	23/06/2016	84.8	7.4	0.4
G26	14/04/2016	0.7	1.8	18.6
	22/04/2016	0.7	2.1	19.2
	06/05/2016	0.0	1.9	19.8
	13/05/2016	0.0	0.9	20.5
	19/05/2016	0.0	1.8	19.3
	02/06/2016	0.0	1.9	20.8
	16/06/2016	0.2	0.9	20.4
	23/06/2016	0.4	1.3	19.3
G27	13/05/2016	0.0	0.1	21.6
	19/05/2016	0.0	0.3	21.9
	02/06/2016	0.0	0.0	22.2
	16/06/2016	0.2	0.1	21.2
	23/06/2016	0.4	0.0	20.8

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G29	14/04/2016	0.8	0.2	20.4
	22/04/2016	0.7	0.4	21.3
	06/05/2016	0.0	0.1	21.5
	13/05/2016	0.0	1.0	19.9
	19/05/2016	0.0	0.7	20.9
	02/06/2016	0.0	0.3	21.0
	16/06/2016	0.2	0.9	20.0
	23/06/2016	0.4	0.3	20.3
G30	14/04/2016	16.0	4.1	11.7
	22/04/2016	7.9	3.6	15.5
	06/05/2016	5.1	3.2	13.7
	13/05/2016	9.0	2.1	14.7
	19/05/2016	6.4	2.8	14.3
	02/06/2016	0.8	1.0	20.6
	23/06/2016	0.5	0.0	20.8
	14/04/2016	0.7	2.9	17.2
	22/04/2016	0.7	2.4	18.9
G31	06/05/2016	0.0	2.0	18.0
	13/05/2016	0.0	0.7	20.4
	19/05/2016	0.0	3.1	16.9
	02/06/2016	0.0	4.0	14.1
	16/06/2016	0.2	5.2	11.2
	23/06/2016	0.4	5.0	15.1
	14/04/2016	0.7	0.1	21.0
G32	22/04/2016	0.7	0.3	21.4
	06/05/2016	0.0	0.1	21.6
	13/05/2016	0.0	0.1	21.6
	19/05/2016	0.0	0.1	22.1
	02/06/2016	0.0	0.1	22.1
	16/06/2016	0.2	0.1	21.1
	23/06/2016	0.4	0.0	20.8

APPENDIX 1 – LANDFILL GAS

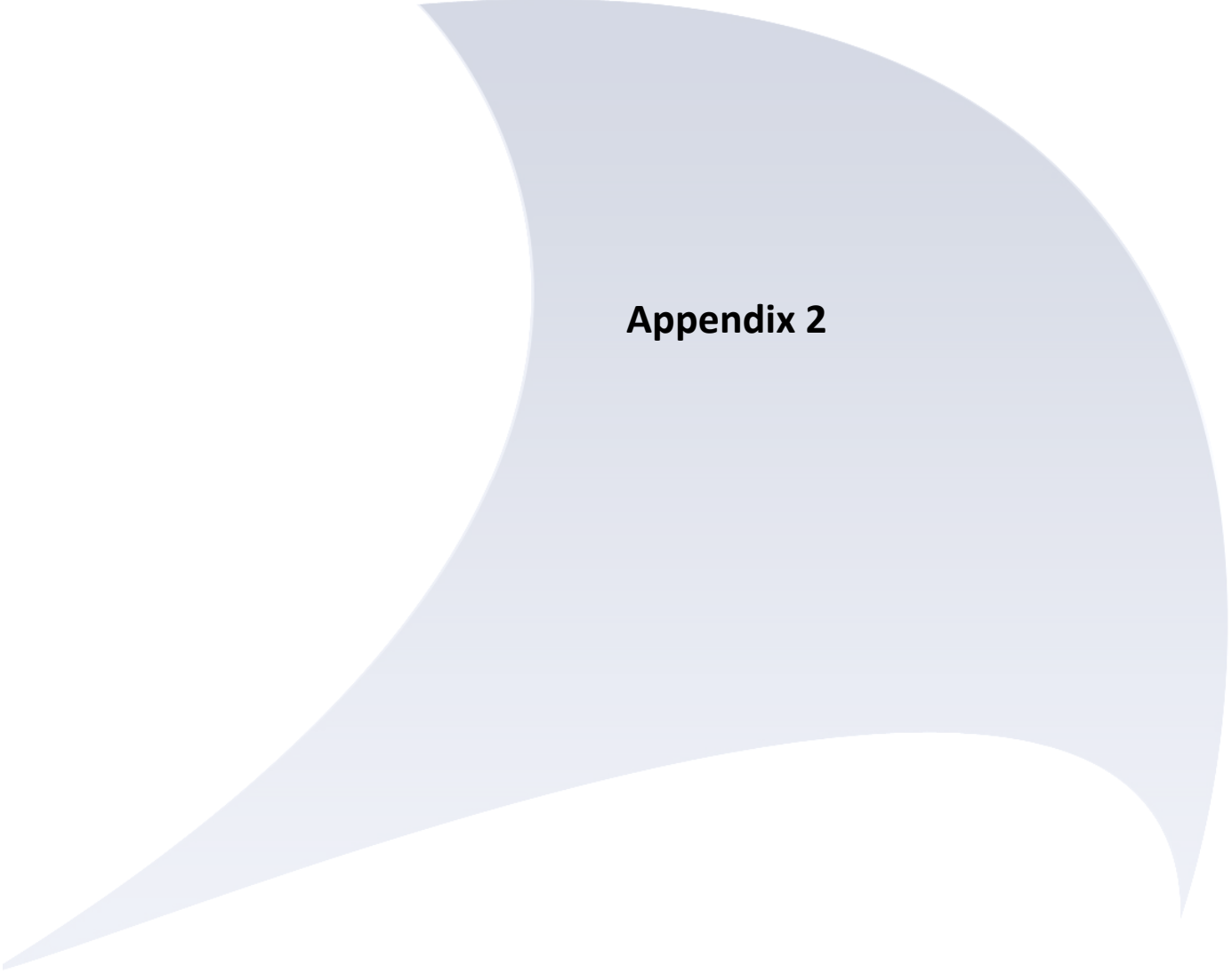
Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G33	14/04/2016	62.0	31.6	0.5
	22/04/2016	48.8	29.8	0.9
	06/05/2016	50.2	27.8	0.2
	13/05/2016	0.0	0.1	21.4
	19/05/2016	0.7	0.8	20.8
	23/06/2016	67.6	34.7	0.3
G36	14/04/2016	4.2	3.0	17.4
	22/04/2016	0.7	0.4	20.6
	06/05/2016	5.1	4.9	12.9
	13/05/2016	3.2	2.7	17.1
	19/05/2016	5.8	3.7	15.3
	02/06/2016	1.3	2.0	19.0
	16/06/2016	11.5	5.2	12.4
	23/06/2016	6.3	3.4	15.0
G37	14/04/2016	0.7	2.6	19.7
	22/04/2016	0.7	2.5	20.2
	06/05/2016	0.0	1.1	20.7
	13/05/2016	0.0	0.8	21.0
	19/05/2016	0.0	0.7	21.6
	02/06/2016	0.0	0.7	21.8
	16/06/2016	0.2	1.9	20.0
	23/06/2016	0.4	1.4	19.8
G38	14/04/2016	35.5	15.0	1.0
	22/04/2016	68.4	26.0	1.1
	06/05/2016	53.0	24.5	0.3
	13/05/2016	63.9	27.6	0.4
	19/05/2016	64.3	30.0	0.3
	02/06/2016	56.2	34.8	0.1
	16/06/2016	67.2	37.5	0.1
	23/06/2016	69.0	32.5	0.3

APPENDIX 1 – LANDFILL GAS

Borehole	Date	Methane	Carbon Dioxide	Oxygen
		% v/v	% v/v	% v/v
		Trigger - 1.0	Trigger - 1.5	N/A
G39	14/04/2016	0.7	2.0	18.0
	22/04/2016	0.7	1.9	20.2
	06/05/2016	0.0	1.2	18.3
	13/05/2016	0.0	1.3	20.1
	19/05/2016	0.0	0.9	20.5
	02/06/2016	0.0	2.5	19.3
	16/06/2016	0.2	2.7	17.8
	23/06/2016	0.4	1.8	18.9
G40	14/04/2016	58.0	23.7	1.1
	22/04/2016	71.6	25.5	1.8
	06/05/2016	30.1	18.5	2.5
	13/05/2016	32.2	18.9	2.2
	19/05/2016	9.2	17.2	0.9
	02/06/2016	41.2	25.5	0.2
	16/06/2016	36.7	22.8	2.9
	23/06/2016	9.3	8.9	12.0
G41	14/04/2016	0.7	3.1	13.7
	22/04/2016	0.7	3.3	16.4
	06/05/2016	0.0	1.0	10.7
	13/05/2016	0.0	2.3	13.5
	19/05/2016	0.0	2.5	17.3
	02/06/2016	0.5	5.4	13.7
	16/06/2016	0.2	3.7	12.1
	23/06/2016	0.4	2.9	16.4
G42	14/04/2016	0.8	0.2	20.9
	22/04/2016	0.7	0.1	21.3
	06/05/2016	0.0	0.2	21.4
	13/05/2016	0.0	1.0	20.5
	19/05/2016	0.0	0.8	21.2
	02/06/2016	0.0	4.4	13.7
	16/06/2016	0.2	0.2	21.1
	23/06/2016	0.4	0.1	20.7

APPENDIX 1 – LANDFILL GAS**Table 2: Daily gas collection monitoring data**

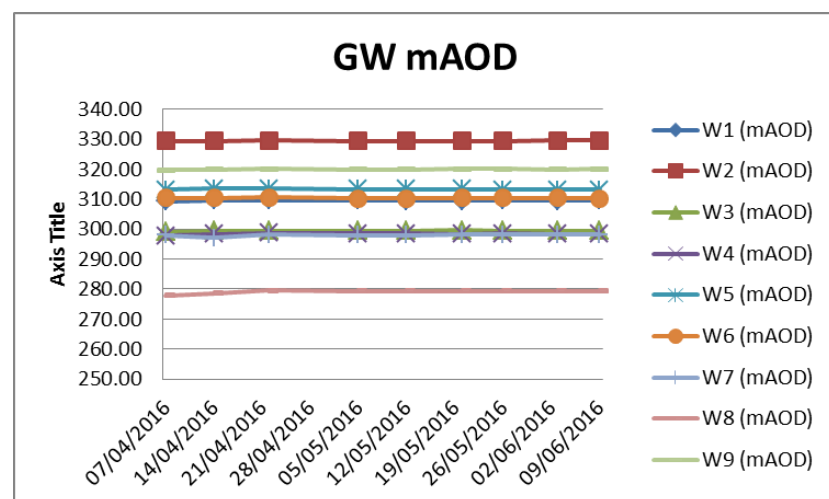
	HRS RUN	TEMP	CUBIC MTS	CH4=	O2=
01-Apr-16	24184	287	770	49.6%	1.78%
04-Apr-16	24256	298	750	49.4%	1.66%
05-Apr-16	24280	294	740	50.3%	1.66%
06-Apr-16	24308	274	740	51.1%	1.24%
08-Apr-16	24352	329	870	50.9%	1.50%
11-Apr-16	24424	357	750	50.4%	1.44%
12-Apr-16	24448	321	730	50.4%	1.35%
14-Apr-16	24496	349	740	49.6%	1.50%
15-Apr-16	24520	355	720	51.3%	1.24%
18-Apr-16	24588	401	1001	48.9%	1.61%
19-Apr-16	24612	239	780	47.8%	1.65%
21-Apr-16	24660	325	780	47.6%	1.63%
22-Apr-16	24684	325	780	47.2%	1.63%
25-Apr-16	24756	353	780	47.4%	1.52%
26-Apr-16	24780	117	640	48.4%	1.59%
28-Apr-16	24828	131	640	49.4%	1.29%
29-Apr-16	24644	338	660	47.7%	1.68%
02-May-16	24924	230	740	48.4%	1.38%
03-May-16	24948	186	730	47.9%	1.58%
04-May-16	24972	158	740	47.6%	1.43%
05-May-16	24996	151	600	52.7%	0.81%
06-May-16	25020	117	630	52.2%	0.94%
09-May-16	25092	119	600	53.7%	0.79%
10-May-16	25116	190	730	52.6%	0.84%
11-May-16	25140	218	600	55.1%	0.56%
12-May-16	25164	332	750	52.8%	0.56%
13-May-16	25188	187	590	54.8%	0.51%
16-May-16	25260	397	790	47.8%	1.80%
17-May-16	25284	262	640	50.5%	1.29%
18-May-16	25308	509	640	52.2%	1.02%
19-May-16	25332	204	590	52.6%	1.16%
20-May-16	25356	177	570	54.7%	0.99%
23-May-16	25500	134	550	51.4%	0.79%
25-May-16	25478	215	570	53.9%	1.35%
26-May-16	25500	224	570	55.1%	0.98%
31-May-16	25620	297	0	60.0%	0.00%
01-Jun-16	25643	408	670	54.4%	0.97%
02-Jun-16	25667	299	590	56.1%	0.63%
03-Jun-16	25691	307	610	54.9%	0.77%
13-Jun-16	25920	975	790	51.6%	0.80%
14-Jun-16	25942	470	710	52.5%	0.71%
15-Jun-16	25967	504	670	53.5%	0.59%
16-Jun-16	25988	526	650	55.4%	0.55%
17-Jun-16	26012	538	670	54.2%	0.62%
20-Jun-16	26085	484	660	54.1%	0.51%
21-Jun-16	26108	479	670	53.9%	0.63%
22-Jun-16	26133	464	660	53.3%	0.59%
23-Jun-16	26157	479	660	53.5%	0.54%
24-Jun-16	26181	418	640	53.9%	0.56%
27-Jun-16	26045	497	650	53.9%	0.57%
28-Jun-16	26276	463	670	54.5%	0.58%
29-Jun-16	26300	424	810	50.8%	0.86%
30-Jun-16	26324	474	750	50.6%	0.87%



Appendix 2

APPENDIX 2 – GROUNDWATER**Table 1: Weekly level data (measured as metres above ordinance datum)**

Date	W1 (mAOD)	W2 (mAOD)	W3 (mAOD)	W4 (mAOD)	W5 (mAOD)	W6 (mAOD)	W7 (mAOD)	W8 (mAOD)	W9 (mAOD)
07/04/2016	309.27	329.39	299.10	297.78	313.18	310.31	297.89	277.88	319.72
14/04/2016	309.63	329.37	299.35	298.26	313.44	310.46	297.05	278.64	319.96
22/04/2016	309.69	329.54	299.48	298.70	313.51	310.52	298.18	279.45	320.06
05/05/2016	309.61	329.46	299.41	298.50	313.34	310.26	297.89	279.32	319.97
12/05/2016	309.54	329.40	299.37	298.48	313.29	310.24	298.03	279.39	319.97
20/05/2016	309.53	329.43	299.56	298.33	313.23	310.36	298.14	279.44	320.00
26/05/2016	309.59	329.46	299.48	298.45	313.09	310.38	298.09	279.36	320.03
03/06/2016	309.56	329.53	299.39	298.39	313.14	310.31	298.07	279.27	319.94
09/06/2016	309.60	329.50	299.43	298.42	313.12	310.23	298.11	279.32	319.99
16/06/2016	309.63	329.52	299.42	298.40	313.10	310.26	298.11	279.30	319.98
22/06/2016	309.55	329.46	299.46	298.43	313.16	310.24	298.12	279.28	320.02
30/06/2016	309.60	329.43	299.41	298.43	313.14	310.30	298.13	279.33	319.99



APPENDIX 2 – GROUNDWATER**Table 2: Groundwater Monthly monitoring data**

Parameter	Trigger Limit	Date	W 1	W 2	W 3	W 4	W 5	W 6	W 7	W 8	W 9
Ammoniacal Nitrogen (mg/l)	2	27/04/2016	<0.41	<0.41	<0.41	1.01	<0.41	<0.41	<0.41	<0.41	<0.41
		25/05/2016	<0.41	<0.41	<0.41	1.17	<0.41	<0.41	<0.41	0.85	0.43
		23/06/2016	<0.41	<0.41	<0.41	1.22	<0.41	<0.41	<0.41	<0.41	<0.41
Chloride (mg/l)	69	27/04/2016	339.0	45.9	14.0	21.2	20.3	15.6	17.4	19.0	21.2
		25/05/2016	348.0	31.5	12.0	18.3	20.3	17.6	13.2	20.0	15.6
		23/06/2016	282.0	31.3	13.6	23.4	32.6	19.7	16.5	16.2	17.2
Electrical Conductivity (µS/cm)	-	27/04/2016	1090	202	268	309	189	133	310	272	160
		25/05/2016	1090	179	321	321	214	162	320	325	154
		23/06/2016	864	174	327	324	266	164	315	272	170
Cyanide (mg/l)	-	27/04/2016	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
		25/05/2016	<0.009	<0.009	<0.009	<0.009	<0.009	0.018	<0.009	<0.009	<0.009
		23/06/2016	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
pH	-	27/04/2016	6.9	7.8	8.2	7.7	6.4	7.3	8.2	7.8	7.1
		25/05/2016	6.3	7.7	7.6	7.0	5.9	6.5	7.6	7.0	6.7
		23/06/2016	6.4	7.6	7.9	7.3	6.1	6.7	7.9	7.5	7.1
Sulphate (mg/l)	-	27/04/2016	17.3	<4.4	7.6	37.0	48.8	5.1	29.9	24.2	28.4
		25/05/2016	17.8	<4.4	36.3	37.2	53.4	10.5	31.6	24.7	24.7
		23/06/2016	19.4	<4.4	<4.4	34.1	66.5	11.2	30.6	23.2	24.6

Key:  Above Permit Limit

APPENDIX 2 – GROUNDWATER**Table 3: Groundwater Quarterly monitoring data**

Reference	Unit	Trigger	W1	W2	W3	W4	W5	W6	W7	W8	W9
Ammoniacal Nitrogen	mg/l	2	<0.41	<0.41	<0.41	1.22	<0.41	<0.41	<0.41	<0.41	<0.41
Cadmium , Total as Cd	mg/l	0.0056	0.0022	<0.0006	0.0010	<0.0006	0.0006	0.0008	<0.0006	0.0008	0.0006
Nickel , Total as Ni	mg/l	0.12	0.020	<0.003	0.013	0.008	0.027	0.008	<0.003	0.013	<0.003
Toluene	µg/l	4	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Xylenes	µg/l	3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Zinc, Total as Zn	mg/l	0.85	0.102	<0.018	0.040	<0.018	0.126	<0.018	<0.018	<0.018	0.030
Ethyl Benzene	µg/l	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Mecoprop	µg/l	0.1	<0.04	<0.04	<0.04	0.08	0.23	<0.04	<0.04	<0.04	<0.04
2,4 - D	µg/l	0.1	0.19	<0.05	0.06	0.09	0.23	<0.05	<0.05	<0.05	<0.05

APPENDIX 2 – GROUNDWATER**Table 4: Groundwater Quarterly & 6-Monthly monitoring data (no EP trigger levels)**

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8	W9
2,3,6 - TBA	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
2,4 - DB	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
2,4,5 - T	ug/l	0.1	<0.05	<0.05	0.05	0.13	<0.05	<0.05	<0.05	-
Acenaphthene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Alkalinity as CaCO3	mg/l	23.8	43.2	177	109	30.2	50.6	122	104	31
Anthracene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Antimony Ultra Low Total as Sb	mg/l	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Arsenic, Ultra Low Total as As	mg/l	0.027	0.0013	0.036	0.018	0.0021	0.03	0.0028	0.0025	<0.0010
Benzene	ug/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo (a) anthracene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (a) pyrene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (b) fluoranthene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (g,h,i) perylene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo (k) fluoranthene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Bicarbonate Alkalinity	mg/l	23.8	43.2	177	109	30.2	50.6	122	104	31
BOD + ATU (5 day)	mg/l	8	5	4	3	6	2	3	4	-
Bromoxynil	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Calcium , Total as Ca	mg/l	11.3	9.79	48.7	42.3	19.6	15.3	40	36.4	14.3
Chromium , Total as Cr	mg/l	0.005	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	0.002	<0.002
Chrysene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
COD (Total)	mg/l	173	16	46	33	44	24	12	15	-
Copper, Total as Cu	mg/l	0.027	<0.009	0.036	<0.009	0.038	<0.009	<0.009	<0.009	<0.009
Dibenz (a,h) anthracene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Dicamba	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Dichlorprop	ug/l	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05	-
Dissolved Oxygen, Fixed	mg/l	2	<0.5	2.5	2.2	<0.5	-	1.8	1.8	<0.5
EH >C10 - C16	ug/l	<40	<10	<10	<20	<10	<10	<10	<10	-
EH >C16 - C24	ug/l	<40	12	<10	<20	<10	<10	<10	<10	-
EH >C24 - C40	ug/l	<40	72	60	<20	10	<10	44	15	-
EH >C6 - C40	ug/l	<40	84	60	<20	10	<10	44	15	-

APPENDIX 2 – GROUNDWATER

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8	W9
EH >C6 - C8	ug/l	<40	<10	<10	<20	<10	<10	<10	<10	-
EH >C8 - C10	ug/l	<40	<10	<10	<20	<10	<10	<10	<10	-
Fluoranthene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Fluorene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno (1,2,3) cd pyrene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Ioxynil	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Iron , Total as Fe	mg/l	5.49	<0.23	6.15	7.34	0.76	13.1	0.82	1.12	<0.23
Lead , Total as Pb	mg/l	0.018	<0.006	0.4	<0.006	<0.006	<0.006	0.031	<0.006	<0.006
m&p Xylene	ug/l	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Magnesium, Total as Mg	mg/l	3.8	1.1	10.2	9.4	5.2	3.4	6.2	8.7	3.3
Manganese , Total as Mn	mg/l	1.02	0.009	2.34	3.89	2.75	2.79	0.222	0.855	0.148
MCPA	ug/l	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
MCPB	ug/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Mercury, Total as Hg	mg/l	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Naphthalene	ug/l	<0.04	0.011	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate as N	mg/l	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
o-Xylene	ug/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
PAH, Total	ug/l	<0.04	0.011	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Phenols Mono (Phenol Index)	mg/l	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Potassium , Total as K	mg/l	1.53	2.09	2.04	1.98	2.31	0.72	2.73	1.22	1.01
Pyrene	ug/l	<0.04	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01
Selenium Ultra Low Total as Se	mg/l	<0.0008	<0.0008	0.004	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Silver , Total as Ag	mg/l	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
Sodium , Total as Na	mg/l	141	21.9	9.78	10.3	14.4	8.07	20.9	8.6	11.7
Total Suspended Solids	mg/l	342	15	118	30	58	37	11	42	-

APPENDIX 2 – GROUNDWATER

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8
Phenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bis(2-chloroethyl)ether	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylphenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
3&4-Methylphenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenzofuran	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bis(2-chloroisopropyl)ether	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Nitrosodi-n-propylamine	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachloroethane	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nitrobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isophorone	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dimethylphenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bis(2-chloroethoxy)methane	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dichlorophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	ug/l	<4.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Hexachlorobutadiene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Chloro-3-methylphenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylnaphthalene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,6-Trichlorophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4,5-Trichlorophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chloronaphthalene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dimethylphthalate	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,6-Dinitrotoluene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX 2 – GROUNDWATER

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8
Acenaphthylene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,4-Dinitrotoluene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Diethylphthalate	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Nitrophenol	ug/l	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Chlorophenyl phenyl ether	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Diphenylamine	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Bromophenyl Phenyl Ether	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Hexachlorobenzene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pentachlorophenol	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
di-n-Butylphthalate	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzyl Butyl Phthalate	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bis(2-ethylhexyl)phthalate	ug/l	<10.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Di-n-octylphthalate	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Indeno(1,2,3-c,d)pyrene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	ug/l	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX 2 – GROUNDWATER

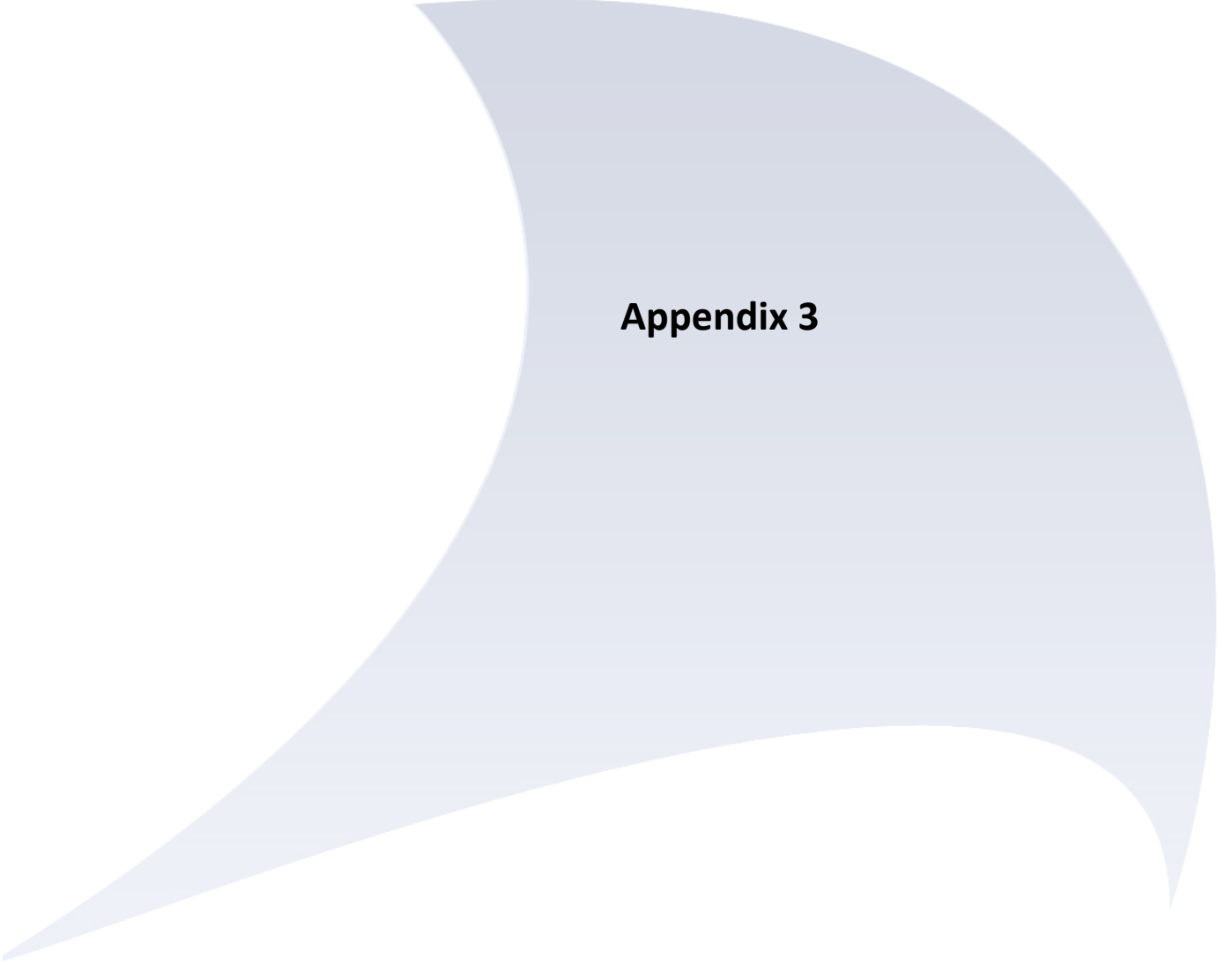
Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8
Dichlorodifluoromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2,2-Dichloropropane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloropropene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromomethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	ug/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX 2 – GROUNDWATER

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8
Dibromochloromethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromoethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethyl Benzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m&p-Xylene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
o-Xylene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Styrene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Propylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Chlorotoluene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
4-Chlorotoluene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
sec-Butylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
p-Isopropyltoluene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butylbenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	ug/l	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,2,4-Trichlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

APPENDIX 2 – GROUNDWATER

Reference	Unit	W1	W2	W3	W4	W5	W6	W7	W8
Hexachlorobutadiene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MTBE	ug/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0



Appendix 3

APPENDIX 3 – LEACHATE**Table 1: Monthly leachate level data**

Location	Sump 1			Sump 2			Sump 4			Sump 5		
	Cover Level (mAOD)		318.9	Cover Level (mAOD)		350	Cover Level (mAOD)		324.91	Cover Level (mAOD)		321.9
	Base (mAOD)		313.4	Base (mAOD)		310.9	Base (mAOD)		310.75	Base (mAOD)		310.75
Date	Dip (mBGL)	Level (mAOD)	Leachate Head (m)	Dip (mBGL)	Level (mAOD)	Leachate Head (m)	Dip (mBGL)	Level (mAOD)	Leachate Head (m)	Dip (mBGL)	Level (mAOD)	Leachate Head (m)
28/04/2016	4.60	314.26	0.9	DRY	-	0.0	16.23	311.1	0.4	13.56	311.0	0.3
26/05/2016	4.60	314.26	0.9	DRY	-	0.0	16.20	311.2	0.4	13.48	311.1	0.4
30/06/2016	4.64	314.22	0.8	DRY	-	0.0	15.98	311.4	0.6	13.52	311.1	0.3
EP Limit	1			1			1			1		

Location	Sump 9C			Sump 9D		
	Cover Level (mAOD)		-	Cover Level (mAOD)		-
	Base (mAOD)		307	Base (mAOD)		307
Date	Dip (mBGL)	Level (mAOD)	Leachate Head (m)	Dip (mBGL)	Level (mAOD)	Leachate Head (m)
28/04/2016	-	-	-	-	-	-
26/05/2016	-	-	-	-	-	-
30/06/2016	-	-	-	-	-	-
EP Limit	1			1		

APPENDIX 3 – LEACHATE**Table 2: Monthly leachate monitoring data**

LOCATION	DATE	pH	Ammoniacal Nitrogen as N
		pH units	mg/l
Leachate 1	27/04/2016	7.7	877
	25/05/2016	7.6	621
	23/06/2016	7.5	317
Leachate 2	27/04/2016	9.0	1470
	25/05/2016	9.3	1710
	23/06/2016	8.8	1470
Leachate 4	27/04/2016	7.2	227
	25/05/2016	7.3	698
	23/06/2016	7.6	1060
Leachate 5	27/04/2016	7.1	504
	25/05/2016	7.7	1090
	23/06/2016	7.5	1090

APPENDIX 3 – LEACHATE**Table 3: Final discharge monthly monitoring data (EP exceedances highlighted)**

LOCATION	DATE	pH	Ammoniacal Nitrogen as N	Suspended Solids	COD (1 hr settled)	Total TPH (EH>C6 - C40)	Sulphate as SO4	Dissolved Methane
		pH units	mg/l	mg/l	mg/l	µg/l	mg/l	mg/l
Trigger Levels		6 - 10	150	500	1000	nil	1000	N/A
Treated Leachate	27/04/2016	8.4	582	644	1400	395	119	0.10
	25/05/2016	7.5	37	632	2950	2730	89	0.02
	23/06/2016	7.3	54	486	2340	781	89	0.01

APPENDIX 3 – LEACHATE**Table 4: Final discharge 6-monthly monitoring data**

Parameter	Units	Treated Leachate
Cadmium , Total as Cd	mg/l	0.0007
Chromium , Total as Cr	mg/l	0.276
Copper, Total as Cu	mg/l	0.133
Lead , Total as Pb	mg/l	0.039
Mercury, Total as Hg	mg/l	<0.00010
Nickel, Total as Ni	mg/l	0.149
Zinc, Total as Zn	mg/l	0.651
BOD + ATU (20 day)	mg/l	916
Cyanide, Total as CN	mg/l	0.88
Hexachlorobenzene	ng/l	<16
Fenthion	ug/l	<0.020
2,3,6 - TBA	ug/l	<5.00
2,4 - D	ug/l	<5.00
2,4 - DB	ug/l	<5.00
2,4,5 - T	ug/l	<5.00
Bromoxynil	ug/l	<5.00
Dicamba	ug/l	<5.00
Dichlorprop	ug/l	9.08
Ioxynil	ug/l	<5.00
MCPA	ug/l	<5.00
MCPB	ug/l	<5.00
Mecoprop	ug/l	48.6
EH >C6 - C8	ug/l	<100
EH >C8 - C10	ug/l	<100
EH >C16 - C24	ug/l	171
EH >C24 - C40	ug/l	240
EH >C10 - C16	ug/l	370
Phenol	ug/l	49.4
Bis(2-chloroethyl)ether	ug/l	<20.0
2-Chlorophenol	ug/l	<20.0
1,3-Dichlorobenzene	ug/l	<20.0
1,4-Dichlorobenzene	ug/l	<20.0
2-Methylphenol	ug/l	<20.0
3&4-Methylphenol	ug/l	<20.0
Dibenzofuran	ug/l	<20.0
1,2-Dichlorobenzene	ug/l	<20.0
Bis(2-chloroisopropyl)ether	ug/l	<20.0
n-Nitrosodi-n-propylamine	ug/l	<20.0
Hexachloroethane	ug/l	<20.0
Nitrobenzene	ug/l	<20.0
Isophorone	ug/l	<20.0

APPENDIX 3 – LEACHATE

Parameter	Units	Treated Leachate
2,4-Dimethylphenol	ug/l	<20.0
2-Nitrophenol	ug/l	<20.0
Bis(2-chloroethoxy)methane	ug/l	<20.0
2,4-Dichlorophenol	ug/l	<20.0
1,2,4-Trichlorobenzene	ug/l	<20.0
Naphthalene	ug/l	<40.0
Hexachlorobutadiene	ug/l	<20.0
4-Chloro-3-methylphenol	ug/l	<20.0
2-Methylnaphthalene	ug/l	<20.0
2,4,6-Trichlorophenol	ug/l	<20.0
2,4,5-Trichlorophenol	ug/l	<20.0
2-Chloronaphthalene	ug/l	<20.0
Dimethylphthalate	ug/l	<20.0
2,6-Dinitrotoluene	ug/l	<20.0
Acenaphthylene	ug/l	<20.0
Acenaphthene	ug/l	<20.0
2,4-Dinitrotoluene	ug/l	<20.0
Diethylphthalate	ug/l	<20.0
4-Nitrophenol	ug/l	<100
4-Chlorophenyl phenyl ether	ug/l	<20.0
Fluorene	ug/l	<20.0
Diphenylamine	ug/l	<20.0
4-Bromophenyl Phenyl Ether	ug/l	<20.0
Hexachlorobenzene	ug/l	<20.0
Pentachlorophenol	ug/l	<20.0
Phenanthrene	ug/l	<20.0
Anthracene	ug/l	<20.0
di-n-Butylphthalate	ug/l	<20.0
Fluoranthene	ug/l	<20.0
Pyrene	ug/l	<20.0
Benzyl Butyl Phthalate	ug/l	<20.0
Benzo(a)anthracene	ug/l	<20.0
Chrysene	ug/l	<20.0
Bis(2-ethylhexyl)phthalate	ug/l	<100
Di-n-octylphthalate	ug/l	<20.0
Benzo(b)fluoranthene	ug/l	<20.0
Benzo(k)fluoranthene	ug/l	<20.0
Benzo(a)pyrene	ug/l	<20.0
Indeno(1,2,3-c,d)pyrene	ug/l	<20.0
Dibenz(a,h)anthracene	ug/l	<20.0
Benzo(g,h,i)perylene	ug/l	<20.0
Dichlorodifluoromethane	ug/l	<20.0
Chloromethane	ug/l	35.8

APPENDIX 3 – LEACHATE

Parameter	Units	Treated Leachate
Chloroethane	ug/l	<20.0
Bromomethane	ug/l	20
Trichlorofluoromethane	ug/l	<20.0
1,1-Dichloroethene	ug/l	<20.0
Dichloromethane	ug/l	<20.0
1,1-Dichloroethane	ug/l	<20.0
cis-1,2-Dichloroethene	ug/l	<20.0
2,2-Dichloropropane	ug/l	<20.0
Chloroform	ug/l	<20.0
Bromochloromethane	ug/l	<20.0
1,1,1-Trichloroethane	ug/l	<20.0
1,1-Dichloropropene	ug/l	<20.0
1,2-Dichloroethane	ug/l	<20.0
Benzene	ug/l	<20.0
1,2-Dichloropropane	ug/l	<20.0
Trichloroethene	ug/l	<20.0
Bromodichloromethane	ug/l	<20.0
Dibromomethane	ug/l	<20.0
cis-1,3-Dichloropropene	ug/l	<20.0
Toluene	ug/l	<20.0
trans-1,3-Dichloropropene	ug/l	<20.0
1,1,2-Trichloroethane	ug/l	<20.0
Carbon Tetrachloride	ug/l	<20.0
Vinyl Chloride	ug/l	<10.0
1,3-Dichloropropane	ug/l	<20.0
Tetrachloroethene	ug/l	<20.0
Dibromochloromethane	ug/l	<20.0
1,2-Dibromoethane	ug/l	<20.0
Chlorobenzene	ug/l	<20.0
1,1,1,2-Tetrachloroethane	ug/l	<20.0
Ethyl Benzene	ug/l	<20.0
m&p-Xylene	ug/l	<20.0
o-Xylene	ug/l	<20.0
Styrene	ug/l	<20.0
Bromoform	ug/l	<20.0
Isopropylbenzene	ug/l	<20.0
trans-1,2-Dichloroethene	ug/l	<20.0
1,1,2,2-Tetrachloroethane	ug/l	<20.0
1,2,3-Trichloropropane	ug/l	<20.0
n-Propylbenzene	ug/l	<20.0
Bromobenzene	ug/l	<20.0
2-Chlorotoluene	ug/l	<20.0
1,3,5-Trimethylbenzene	ug/l	<20.0

APPENDIX 3 – LEACHATE

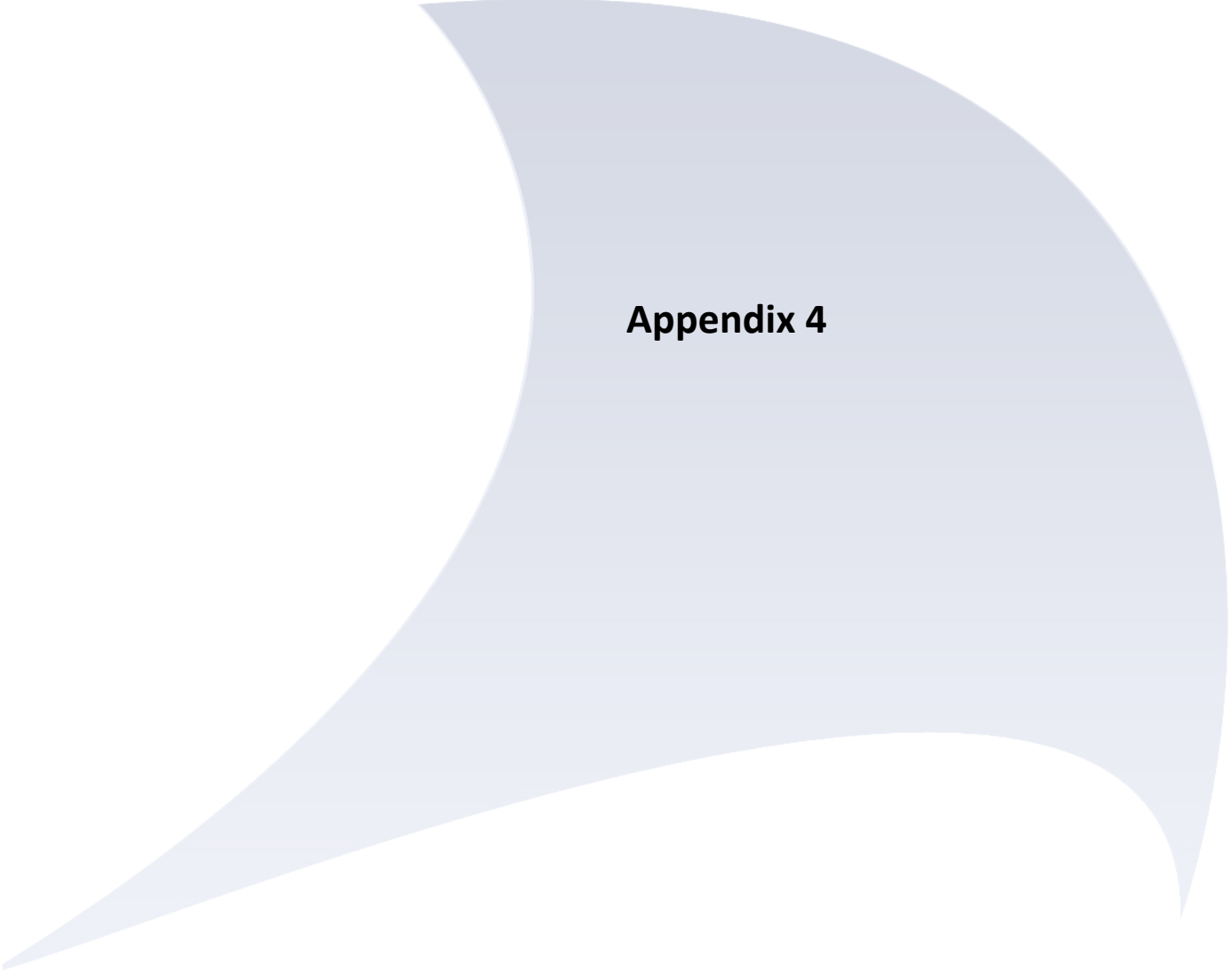
Parameter	Units	Treated Leachate
4-Chlorotoluene	ug/l	<20.0
tert-Butylbenzene	ug/l	<20.0
1,2,4-Trimethylbenzene	ug/l	<20.0
sec-Butylbenzene	ug/l	<20.0
p-Isopropyltoluene	ug/l	<20.0
1,3-Dichlorobenzene	ug/l	<20.0
1,4-Dichlorobenzene	ug/l	<20.0
n-Butylbenzene	ug/l	<20.0
1,2-Dichlorobenzene	ug/l	<20.0
1,2-Dibromo-3-chloropropane	ug/l	<40.0
1,2,4-Trichlorobenzene	ug/l	<20.0
Hexachlorobutadiene	ug/l	<20.0
Naphthalene	ug/l	<20.0
1,2,3-Trichlorobenzene	ug/l	<20.0
MTBE	ug/l	<20.0

APPENDIX 3 – LEACHATE**Table 5: Final discharge daily discharge data**

DATE	Actual Discharge (m3)
01-Apr-16	0
04-Apr-16	0
05-Apr-16	0
06-Apr-16	0
08-Apr-16	0
11-Apr-16	0
12-Apr-16	0
14-Apr-16	0
15-Apr-16	0
18-Apr-16	0
19-Apr-16	0
21-Apr-16	0
22-Apr-16	0
25-Apr-16	0
26-Apr-16	0
28-Apr-16	0
29-Apr-16	0
02-May-16	0
03-May-16	0
04-May-16	0
05-May-16	16
06-May-16	82
09-May-16	29
10-May-16	80
11-May-16	83
12-May-16	120
13-May-16	84
16-May-16	118
17-May-16	123
18-May-16	127
19-May-16	130
20-May-16	115
23-May-16	119
24-May-16	168
25-May-16	163
26-May-16	51
27-May-16	0
28-May-16	24
01-Jun-16	46
02-Jun-16	117
03-Jun-16	157
06-Jun-16	48
07-Jun-16	179
08-Jun-16	163
09-Jun-16	134
10-Jun-16	183
13-Jun-16	100
14-Jun-16	85
15-Jun-16	84
16-Jun-16	111
17-Jun-16	101
20-Jun-16	108
21-Jun-16	224
22-Jun-16	175
23-Jun-16	221

APPENDIX 3 – LEACHATE

24-Jun-16	188
27-Jun-16	96
28-Jun-16	195
29-Jun-16	197
30-Jun-16	225
Total	4769



Appendix 4

APPENDIX 4 – SURFACE WATER**Table 1: Monthly monitoring data**

LOCATION	DATE	pH	Conductivity- Electrical 20C	Ammoniacal Nitrogen as N (LL)	Chloride as Cl	Total Suspended Solids	BOD + ATU (5 day)	EH >C6 - C40	EH >C6 - C8	EH >C8 - C10	EH >C16 - C24	EH >C24 - C40	EH >C10 - C16
		pH units	µS/cm	mg/l	mg/l	mg/l	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
Trigger Level		6 - 9	N/A	0.25	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SW 1	27/04/2016	7.4	103	<0.06	11.9	1	<1	12	<10	<10	<10	12	<10
	25/05/2016	7.2	97	<0.06	7.9	2	2	<10	<10	<10	<10	<10	<10
	23/06/2016	7.5	101	<0.06	9.0	1	1	25	<10	<10	<10	25	<10
SW 2	27/04/2016	8.3	1080	5.44	82.9	80	7	219	<10	<10	81	138	<10
	25/05/2016	8.0	2060	12.8	236.0	82	10	743	<10	<10	421	200	122
	23/06/2016	8.1	902	0.54	88.9	66	5	100	<10	<10	28	61	11

APPENDIX 4 – SURFACE WATER

Table 2: Monthly monitoring data

Parameters	Units	SW1	SW2
2,3,6 - TBA	ug/l	<0.05	<0.05
2,4 - D	ug/l	0.15	0.11
2,4 - DB	ug/l	<0.05	<0.05
2,4,5 - T	ug/l	0.1	<0.05
Bromoxynil	ug/l	<0.05	<0.05
Cadmium , Total as Cd	mg/l	<0.0006	<0.0006
COD (Total)	mg/l	36	63
Cyanide, Total as CN	mg/l	<0.009	<0.009
Dicamba	ug/l	<0.05	<0.05
Dichlorprop	ug/l	<0.05	<1.00
Dissolved Oxygen, Fixed	mg/l	7.7	4.4
Ioxynil	ug/l	<0.05	<0.05
MCPA	ug/l	<0.05	<0.05
MCPB	ug/l	<0.05	<0.05
Mecoprop	ug/l	<0.04	0.18

APPENDIX 4 – SURFACE WATER**Table 3: 6-monthly monitoring data**

Parameters	Units	SW1	SW2
2,3,6 - TBA	ug/l	<0.05	<0.05
2,4 - D	ug/l	0.15	0.11
2,4 - DB	ug/l	<0.05	<0.05
2,4,5 - T	ug/l	0.1	<0.05
Bromoxynil	ug/l	<0.05	<0.05
Cadmium , Total as Cd	mg/l	<0.0006	<0.0006
COD (Total)	mg/l	36	63
Cyanide, Total as CN	mg/l	<0.009	<0.009
Dicamba	ug/l	<0.05	<0.05
Dichlorprop	ug/l	<0.05	<1.00
Dissolved Oxygen, Fixed	mg/l	7.7	4.4
Ioxynil	ug/l	<0.05	<0.05
MCPA	ug/l	<0.05	<0.05
MCPB	ug/l	<0.05	<0.05
Mecoprop	ug/l	<0.04	0.18
Phenol	ug/l	<2.0	<1.0
Bis(2-chloroethyl)ether	ug/l	<2.0	<1.0
2-Chlorophenol	ug/l	<2.0	<1.0
1,3-Dichlorobenzene	ug/l	<2.0	<1.0
1,4-Dichlorobenzene	ug/l	<2.0	<1.0
2-Methylphenol	ug/l	<2.0	<1.0
3&4-Methylphenol	ug/l	<2.0	<1.0
Dibenzofuran	ug/l	<2.0	<1.0
1,2-Dichlorobenzene	ug/l	<2.0	<1.0
Bis(2-chloroisopropyl)ether	ug/l	<2.0	<1.0
n-Nitrosodi-n-propylamine	ug/l	<2.0	<1.0
Hexachloroethane	ug/l	<2.0	<1.0
Nitrobenzene	ug/l	<2.0	<1.0
Isophorone	ug/l	<2.0	<1.0
2,4-Dimethylphenol	ug/l	<2.0	<1.0
2-Nitrophenol	ug/l	<2.0	<1.0
Bis(2-chloroethoxy)methane	ug/l	<2.0	<1.0
2,4-Dichlorophenol	ug/l	<2.0	<1.0
1,2,4-Trichlorobenzene	ug/l	<2.0	<1.0
Naphthalene	ug/l	<4.0	<2.0
Hexachlorobutadiene	ug/l	<2.0	<1.0
4-Chloro-3-methylphenol	ug/l	<2.0	<1.0
2-Methylnaphthalene	ug/l	<2.0	<1.0
2,4,6-Trichlorophenol	ug/l	<2.0	<1.0
2,4,5-Trichlorophenol	ug/l	<2.0	<1.0

APPENDIX 4 – SURFACE WATER

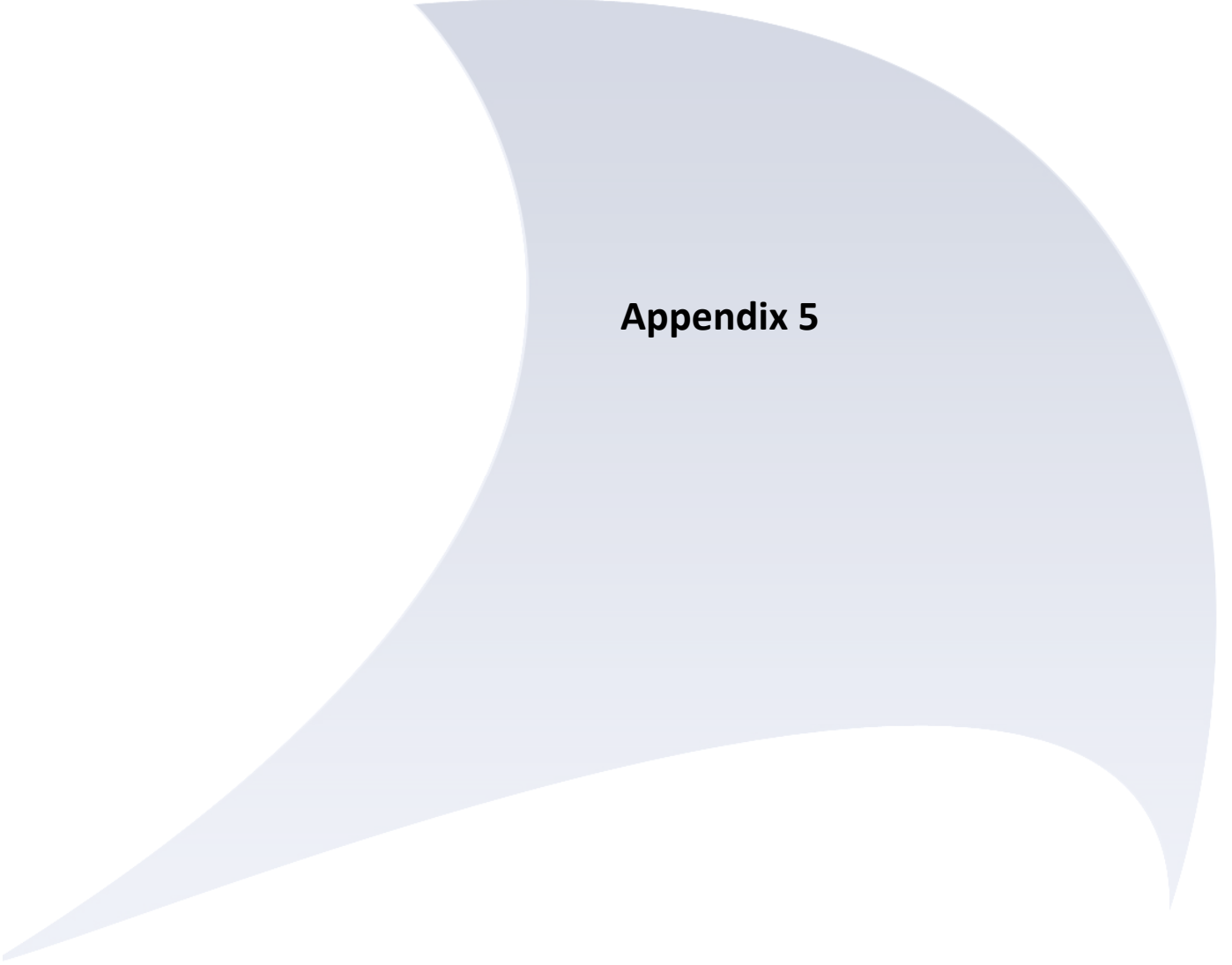
Parameters	Units	SW1	SW2
2-Chloronaphthalene	ug/l	<2.0	<1.0
Dimethylphthalate	ug/l	<2.0	<1.0
2,6-Dinitrotoluene	ug/l	<2.0	<1.0
Acenaphthylene	ug/l	<2.0	<1.0
Acenaphthene	ug/l	<2.0	<1.0
2,4-Dinitrotoluene	ug/l	<2.0	<1.0
Diethylphthalate	ug/l	<2.0	<1.0
4-Nitrophenol	ug/l	<10.0	<5.0
4-Chlorophenyl phenyl ether	ug/l	<2.0	<1.0
Fluorene	ug/l	<2.0	<1.0
Diphenylamine	ug/l	<2.0	<1.0
4-Bromophenyl Phenyl Ether	ug/l	<2.0	<1.0
Hexachlorobenzene	ug/l	<2.0	<1.0
Pentachlorophenol	ug/l	<2.0	<1.0
Phenanthrene	ug/l	<2.0	<1.0
Anthracene	ug/l	<2.0	<1.0
di-n-Butylphthalate	ug/l	<2.0	<1.0
Fluoranthene	ug/l	<2.0	<1.0
Pyrene	ug/l	<2.0	<1.0
Benzyl Butyl Phthalate	ug/l	<2.0	<1.0
Benzo(a)anthracene	ug/l	<2.0	<1.0
Chrysene	ug/l	<2.0	<1.0
Bis(2-ethylhexyl)phthalate	ug/l	<10.0	<5.0
Di-n-octylphthalate	ug/l	<2.0	<1.0
Benzo(b)fluoranthene	ug/l	<2.0	<1.0
Benzo(k)fluoranthene	ug/l	<2.0	<1.0
Benzo(a)pyrene	ug/l	<2.0	<1.0
Indeno(1,2,3-c,d)pyrene	ug/l	<2.0	<1.0
Dibenz(a,h)anthracene	ug/l	<2.0	<1.0
Benzo(g,h,i)perylene	ug/l	<2.0	<1.0
Dichlorodifluoromethane	ug/l	<1.0	<1.0
Chloromethane	ug/l	<1.0	<1.0
Chloroethane	ug/l	<1.0	<1.0
Bromomethane	ug/l	<1.0	<1.0
Trichlorofluoromethane	ug/l	<1.0	<1.0
1,1-Dichloroethene	ug/l	<1.0	<1.0
Dichloromethane	ug/l	<1.0	<1.0
1,1-Dichloroethane	ug/l	<1.0	<1.0
cis-1,2-Dichloroethene	ug/l	<1.0	<1.0
2,2-Dichloropropane	ug/l	<1.0	<1.0
Chloroform	ug/l	<1.0	<1.0
Bromochloromethane	ug/l	<1.0	<1.0
1,1,1-Trichloroethane	ug/l	<1.0	<1.0

APPENDIX 4 – SURFACE WATER

Parameters	Units	SW1	SW2
1,1-Dichloropropene	ug/l	<1.0	<1.0
1,2-Dichloroethane	ug/l	<1.0	<1.0
Benzene	ug/l	<1.0	<1.0
1,2-Dichloropropane	ug/l	<1.0	<1.0
Trichloroethene	ug/l	<1.0	<1.0
Bromodichloromethane	ug/l	<1.0	<1.0
Dibromomethane	ug/l	<1.0	<1.0
cis-1,3-Dichloropropene	ug/l	<1.0	<1.0
Toluene	ug/l	<1.0	<1.0
trans-1,3-Dichloropropene	ug/l	<1.0	<1.0
1,1,2-Trichloroethane	ug/l	<1.0	<1.0
Carbon Tetrachloride	ug/l	<1.0	<1.0
Vinyl Chloride	ug/l	<0.5	<0.5
1,3-Dichloropropane	ug/l	<1.0	<1.0
Tetrachloroethene	ug/l	<1.0	<1.0
Dibromochloromethane	ug/l	<1.0	<1.0
1,2-Dibromoethane	ug/l	<1.0	<1.0
Chlorobenzene	ug/l	<1.0	<1.0
1,1,1,2-Tetrachloroethane	ug/l	<1.0	<1.0
Ethyl Benzene	ug/l	<1.0	<1.0
m&p-Xylene	ug/l	<1.0	<1.0
o-Xylene	ug/l	<1.0	<1.0
Styrene	ug/l	<1.0	<1.0
Bromoform	ug/l	<1.0	<1.0
Isopropylbenzene	ug/l	<1.0	<1.0
trans-1,2-Dichloroethene	ug/l	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/l	<1.0	<1.0
1,2,3-Trichloropropane	ug/l	<1.0	<1.0
n-Propylbenzene	ug/l	<1.0	<1.0
Bromobenzene	ug/l	<1.0	<1.0
2-Chlorotoluene	ug/l	<1.0	<1.0
1,3,5-Trimethylbenzene	ug/l	<1.0	<1.0
4-Chlorotoluene	ug/l	<1.0	<1.0
tert-Butylbenzene	ug/l	<1.0	<1.0
1,2,4-Trimethylbenzene	ug/l	<1.0	<1.0
sec-Butylbenzene	ug/l	<1.0	<1.0
p-Isopropyltoluene	ug/l	<1.0	<1.0
1,3-Dichlorobenzene	ug/l	<1.0	<1.0
1,4-Dichlorobenzene	ug/l	<1.0	<1.0
n-Butylbenzene	ug/l	<1.0	<1.0
1,2-Dichlorobenzene	ug/l	<1.0	<1.0
1,2-Dibromo-3-chloropropane	ug/l	<2.0	<2.0
1,2,4-Trichlorobenzene	ug/l	<1.0	<1.0

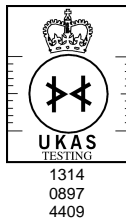
APPENDIX 4 – SURFACE WATER

Parameters	Units	SW1	SW2
Hexachlorobutadiene	ug/l	<1.0	<1.0
Naphthalene	ug/l	<1.0	<1.0
1,2,3-Trichlorobenzene	ug/l	<1.0	<1.0
MTBE	ug/l	<1.0	<1.0



Appendix 5

Certificate of Analysis



Report Number: **COV/1293207/2016**

Issue **2**

Laboratory Number: **15379762**

Sample **24** of **26**

Sample Source: **Potters Waste Management**

Sample Point Description: **Potters Waste**

Sample Description: **1**

Sample Matrix: **Dust**

Sample Date/Time: **23 June 2016**

Sample Received: **24 June 2016**

Analysis Complete: **27 July 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Dust	Analyst Com	Text	08/07/2016	N Cov	74
Date In	23/06/2016	dd/mm/yy	06/07/2016	N Cov	74
Date Out	20/05/2016	dd/mm/yy	06/07/2016	N Cov	74
Number of Days Exposed	34		06/07/2016	N Cov	74/77
Mass of Undissolved Solids	139.5	mg	08/07/2016	N Cov	74
Deposited Dust, Total, Calc.	110	mg/m2/day	08/07/2016	N Cov	74
Frisbee Diameter	223	mm	06/07/2016	N Cov	74

Analyst Comments for 15379762:

{/*}.

heavy deposition, dark green, algae present.{*/}

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **C. Law**

Date: **29 July 2016**

Title: **Inorganics Operations Manager**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Certificate of Analysis



Report Number: **COV/1293207/2016**

Issue **2**

Laboratory Number: **15379763**

Sample **25** of **26**

Sample Source: **Potters Waste Management**

Sample Point Description: **Potters Waste**

Sample Description: **2**

Sample Matrix: **Dust**

Sample Date/Time: **23 June 2016**

Sample Received: **24 June 2016**

Analysis Complete: **27 July 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Dust	Analyst Com	Text	06/07/2016	N Cov	74
Date In	23/06/2016	dd/mm/yy	06/07/2016	N Cov	74
Date Out	20/05/2016	dd/mm/yy	06/07/2016	N Cov	74
Number of Days Exposed	34		06/07/2016	N Cov	74/77
Mass of Undissolved Solids	65.0	mg	06/07/2016	N Cov	74
Deposited Dust, Total, Calc.	49	mg/m2/day	06/07/2016	N Cov	74
Frisbee Diameter	223	mm	06/07/2016	N Cov	74

Analyst Comments for 15379763:

{/*}heavy deposition, dark green, algae present.{/*}

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **C. Law**

Date: **29 July 2016**

Title: **Inorganics Operations Manager**

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Report Number: **COV/1293207/2016**

Issue **2**

Laboratory Number: **15379764**

Sample **26** of **26**

Sample Source: **Potters Waste Management**

Sample Point Description: **Potters Waste**

Sample Description: **3**

Sample Matrix: **Dust**

Sample Date/Time: **23 June 2016**

Sample Received: **24 June 2016**

Analysis Complete: **27 July 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Dust	Analyst Com	Text	06/07/2016	N Cov	74
Date In	23/06/2016	dd/mm/yy	06/07/2016	N Cov	74
Date Out	20/05/2016	dd/mm/yy	06/07/2016	N Cov	74
Number of Days Exposed	34		06/07/2016	N Cov	74/77
Mass of Undissolved Solids	19.6	mg	06/07/2016	N Cov	74
Deposited Dust, Total, Calc.	15	mg/m2/day	06/07/2016	N Cov	74
Frisbee Diameter	223	mm	06/07/2016	N Cov	74

Analyst Comments for 15379764:

{/*}heavy deposition, green, algae present{*/}

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **C. Law**

Date: **29 July 2016**

Title: **Inorganics Operations Manager**

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