



Hendy Quarry Landfill

Annual Report

Permit Reference BT1088ID

01 January 2019 to 31 December 2019

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1.0 Introduction

1.1 Background

This report has been compiled in compliance with condition 4.2.1 of the Environmental Permit EPR/BT1088ID for Hendy Quarry Landfill.

The Permit was originally issued to Tarmac on 17 September 2002. The EP was varied by Tarmac in December 2005 in order to remove a daily limit for the importation of waste. A further variation reference XP3933MR was issued on 22 June 2007 by the Environment Agency to introduce the standard Permit template and conditions for landfills, combine the separate discharge consent into the single permit, introduce trigger levels for groundwater and increase the monitoring frequency.

As a result of changes to the conditions of the new EP, Tarmac submitted an application to vary the Permit further to revise the groundwater trigger levels, and also to increase the annual permitted tonnage from 200,000t to 450,000t. Before the trigger levels could be amended, Tarmac installed a further 8 perimeter monitoring boreholes at the request of the Environment Agency. The monitoring frequency of groundwater at the site was increased to obtain enough data for a detailed review of the hydrogeology to be undertaken. The independent hydrogeological assessment identified contaminants in the groundwater which were arising from an up-stream source. As a result of this contamination in the locality, the site could not comply with groundwater trigger levels, even in up-stream boreholes. This was accepted by the Environment Agency following extensive investigation and sampling and a varied EP establishing revised site trigger levels was issued on 09 October 2009, reference PP3738XM. The varied Permit contained a number of Improvement Conditions which have been discharged.

A further variation was accepted in May 2019, to increase the surface water discharge limits, and change the waste types to be accepted.

Section 4.2.1 of the Permit, requires that a report on the performance of the activities over the previous year shall be submitted to the Environment Agency (now Natural Resources Wales) by 31 January.

The report shall include as a minimum:

- a) A review of the monitoring and assessment carried out in accordance with the Permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application;
- b) Where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;
- c) The energy consumed at the Site, reported in the format set out in Schedule 5 Table S5.3;
- d) The water consumed at the Site, reported in the format set out in Schedule 5 Table S5.3;
- e) The annual production/treatment set out in Schedule 5 Table S5.2;
- f) Details of any contamination or decontamination of the site which has occurred;
- g) The topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;

- h) The volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographical survey i.e. the additional volume of the landfill void that is occupied by waste;
- i) An assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and previous annual topographical survey for the areas of the landfill which did not receive waste between the surveys;
- j) A calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey;
- k) The compliance testing undertaken in the period.

The review period consists of 12 months of monitoring, from 1 January to 31 December 2019.

1.2 Site Location and Surrounding Land-use

Hendy Quarry Landfill is located at Grid Reference ST 05423 81045.

The site is located to the east of Miskin in Rhondda Cynon Taf, Wales. To the east of the site is the A4119 road. To the south of the site is Glyn Park, which comprises of the Miskin Wood and Mill Wood. The B4264 (School Road) is situated to the north of the site.

2.0 Landfill Gas

2.1 Introduction

Landfill gas (LFG) monitoring was performed quarterly during the review period. Methane, carbon dioxide, oxygen, atmospheric pressure and relative pressure were recorded during the monitoring visits. The Permit requires monitoring for landfill gas at “All Landfill Gas Monitoring points”.

HY1/08, HY2/08, HY3/08, HY4/08, HY5/08, HY6/08, HY7/08 and HY8/08 (also referred to as PZ1-08 – PZ8-08) denote perimeter gas monitoring boreholes. HY1/08 is situated north of the landfill, HY2/08 and HY3/08 to the east, HY5/08 and HY6/08 on the southern boundary, while HY7/08 and HY8/08 are located to the west of the site. BH-B, BH-E, BH-H, BH-X and BH-Y are also perimeter monitoring locations.

In-waste gas monitoring boreholes are denoted as BH01 – BH12, and are also monitored quarterly.

Gas monitoring borehole locations are shown on the Monitoring Plan in Appendix A. Landfill gas data is presented in Appendix B.

The following monitoring locations could not be sampled throughout the entire study period, either because of unsafe access or being lost/destroyed: PZ04/08, BH0E, BH01, BH03, BH04, BH06, BH10, BH11 and BH12.

Further, sample points, BH02, BH0X, BH0Y, BH08 and BH09 were not able to be monitored on at least one occasion during the study period.

Compliance limits are set for both in-waste and perimeter wells as per Table S4.3 of the Permit; these are reproduced in Table 1.

Table 1: EP Limits for Landfill Gas in external and internal wells

LFG parameter	EP Limit
Methane (CH ₄)	1.0 % v/v
Carbon dioxide (CO ₂)	1.5 % v/v

2.2 Landfill Gas Data

The following general points can be made with regard to the gas data from the gas wells over the review period:

In Waste Boreholes

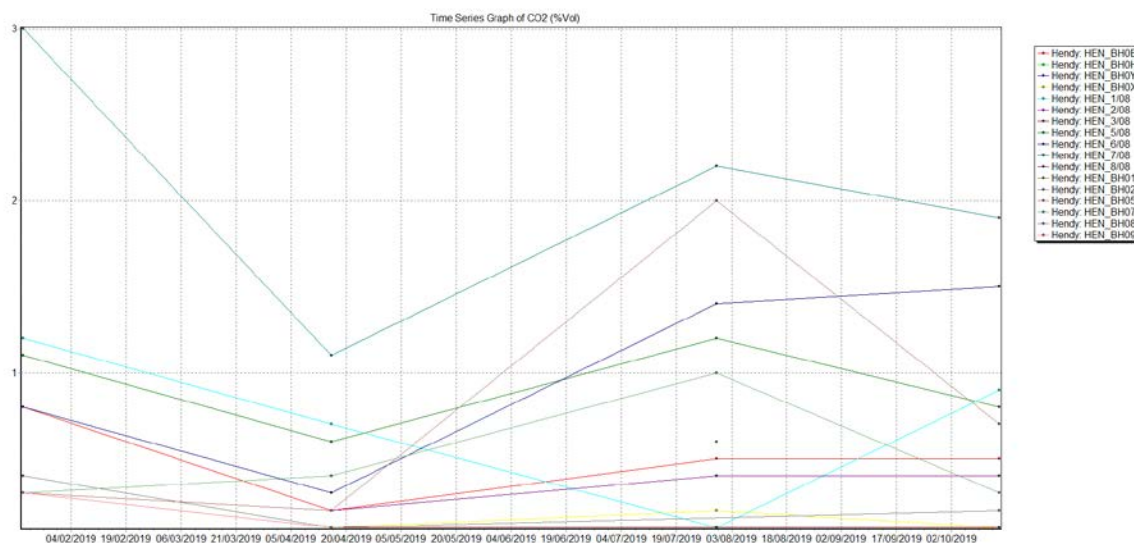
Zero methane concentrations were detected in the in-waste monitoring boreholes during the review period.

Carbon dioxide concentrations ranged from zero to a maximum of 3% v/v in the in-waste boreholes. The compliance limit was exceeded on three occasions all at PZ07/08.

Perimeter Boreholes

Zero to negligible methane was recorded in any of the perimeter monitoring locations during the review period.

Carbon dioxide concentrations ranged from zero to a maximum of 2% v/v in BH05. This was the only breach of the compliance limit at in-waste locations.



3.0 Groundwater

Four boreholes are specified in Table S4.4 of the Permit as requiring sampling on a quarterly basis these are PZ2/08 and PZ3/08 which are considered to be up gradient locations and PZ07/08 and PZ08/08 which are considered down gradient and as such have quality compliance limits as presented in Table S4.2 of the Permit. These limits have been reviewed in the 2018 HRA review¹ and the compliance limit for Nickel reduced; limits are presented in Table 1, and groundwater quality during the study period is reviewed on this basis.

¹ 3145-CAU-XX-XX-RP-O-0301: HENDY LANDFILL SITE HYDROGEOLOGICAL RISK ASSESSMENT REVIEW 2017. CAULMERT LTD 12 JANUARY 2018.

Table 2: Groundwater Compliance Limits (PZ07/08 & PZ08/08)

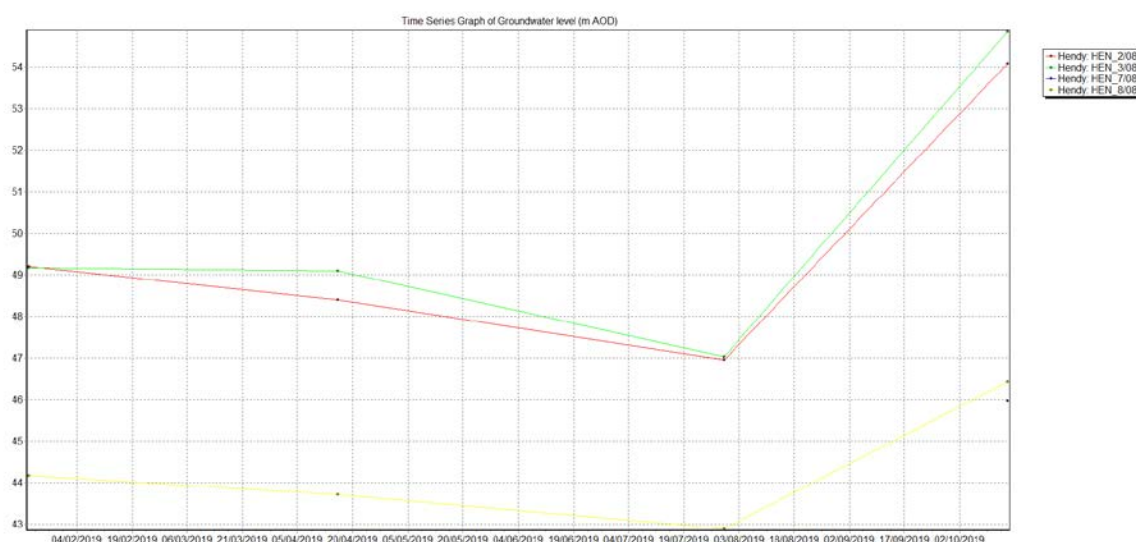
Parameter	Permit Limits	HRA Review Limits
Chloride (mg/l)	150	150
Ammoniacal Nitrogen (mg/l)	0.5	0.5
Cadmium (ug/l)	1	1
Nickel (mg/l)	0.2	0.034
Sulphate (mg/l)	200	200
Napthalene (ug/l)	10	10

The locations of the boreholes are shown on the Monitoring Plan in Appendix A.

Tables of groundwater levels and water quality, in addition to time-series graphs are presented in Appendix C.

3.1 Groundwater Levels

Groundwater levels ranged from 42.89mAOD in PZ08/08 to 54.86mAOD recorded in PZ03/08. Groundwater levels displayed a slight seasonal variation with lower levels during the summer months as would be expected.



3.2 Groundwater Quality

Up-gradient

Up-gradient locations PZ2/08 and PZ3/08 recorded low concentrations of ammoniacal nitrogen with a maximum of 0.44 mg/l recorded at PZ2/08 in April 2019.

Chloride concentrations ranged from 20mg/l to 41mg/l in PZ2/08 and 74mg/l to 100mg/l in PZ3/08.

Sulphate concentrations ranged from 7.8mg/l to 12mg/l in PZ2/08 and 11mg/l to 13mg/l in PZ3/08.

Cadmium concentrations were below the laboratory LOD of <0.02ug/l in PZ2/08 on all occasions and ranged from 0.34ug/l to 0.52ug/l in PZ3/08.

Concentrations of other metals were low; nickel concentrations were between <1ug/l and 1ug/l in the up-gradient boreholes.

Lead concentrations ranged from below detection limits in PZ02/08 to 0.0029 mg/l in PZ03/08.

PAHs were all reported at below the limit of detection with the exception of during January when a maximum of 0.53ug/l was recorded.

Concentrations of total petroleum hydrocarbons (TPH in the range C10 to C40) were recorded, ranging between <0.02 and 0.29mg/l in the up-gradient locations.

Down gradient

Down-gradient borehole PZ07/08 was dry for the entire reporting period. Down-gradient borehole PZ08/08 was sampled during the first half of 2019, but it was not possible to obtain a sample in the final six months due to borehole deformation. During 2020, replacement boreholes are planned to be re-drilled at these locations

Ammoniacal nitrogen concentrations in PZ08/08 ranged between <0.05mg/l and 0.92mg/l, with the April 2019 level above the 0.5mg/l compliance limit. A re-test in May 2019, gave a result of 0.3mg/l, so below the compliance limit.

Chloride concentrations were low ranging from 41mg/l to 47mg/l and were below the trigger level of 150mg/l.

Sulphate concentrations ranged from 28mg/l to 96mg/l and were below the trigger level of 200mg/l.

Cadmium concentrations ranged from <0.00002mg/l to 0.00004mg/l and therefore recorded below the trigger level of background concentration + 0.001mg/l.

Nickel concentrations were low, recording 1ug/l; on each occasions and so below the trigger level of 34ug/l.

Naphthalene was detected above the laboratory limit of detection on one occasion at 0.81ug/l and so was below the trigger level of 10ug/l.

Concentrations of metals detected at PZ07/08 and PZ8/08 remained low throughout the review period.

PAHs were all reported at below the limit of detection with the exception of during January when a maximum of 2ug/l was recorded.

Concentrations of TPH were low within the down gradient locations with a maximum of 0.19mg/l detected at PZ8/08.

4.0 Surface Water

The permit requires the collection of samples quarterly from the discharge to determine the quality of point source emissions to soak-away from the site. The discharge is to be analysed for: pH, suspended solids, and mineral oil. In addition, there are limits on discharge volumes and rates. Surface water limits are set out in table 4 below.

Table 4: Point Source emissions to water; emission limits and monitoring requirements

Monitoring point	Parameter	Limit	Monitoring frequency
Discharge to soakaway at NGR ST 0538 8136	Volume	5,000 m ³ /day	Daily
	Rate of discharge	58 l/s	Weekly
	Suspended solids	100mg/l	Quarterly
	Mineral Oil	5 mg/l	Quarterly
	pH	6-9	Quarterly

There was no discharge during the monitoring visits, and as such no samples were obtained. The site meter is not able to monitor discharge rate. Daily readings are presented in Table 5 where available.

Table 5 Discharge volumes (m³)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	775	734	0	0	0	0	0	0	0	NR
2	0	0	0	1036	0	0	0	0	0	0	0	NR
3	999	0	0	1005	0	0	0	0	0	0	0	NR
4	806	3421	1458	1066	0	154	0	0	0	0	0	NR
5	0	460	682	1139	0	599	0	0	0	0	0	NR
6	0	669	540	200	882	0	0	0	0	0	0	NR
7	1591	443	0	0	409	0	0	0	0	0	0	NR
8	707	686	412	0	1311	0	0	0	0	0	0	NR
9	1010	0	0	0	822	0	0	0	0	0	0	NR
10	812	0	0	0	1398	491	0	0	0	0	0	NR
11	700	3120	638	0	0	0	0	0	0	0	0	NR
12	0	708	329	0	0	27	0	0	0	0	0	NR
13	0	662	0	0	2673	0	0	0	0	0	0	NR
14	750	711	0	0	1505	0	0	0	0	0	0	NR
15	608	712	413	0	1400	0	0	0	0	0	0	NR
16	792	0	217	1127	800	0	0	0	0	0	0	NR
17	716	0	0	600	922	0	0	0	0	0	0	NR
18	645	3111	0	70	0	0	0	0	0	0	0	NR
19	0	742	282	11	0	0	0	0	0	0	0	NR
20	0	1258	0	0	0	0	0	0	0	0	0	NR
21	701	679	0	0	0	0	0	0	0	0	0	NR
22	698	722	0	789	0	0	0	0	0	0	0	NR
23	681	0	0	1943	0	0	0	0	0	0	0	NR
24	754	0	0	314	0	0	0	0	0	0	0	NR
25	706	700	0	624	0	0	0	0	0	0	0	NR
26	0	743	416	627	0	0	0	0	0	0	0	NR
27	0	590	354	0	0	0	0	0	0	0	0	NR
28	683	710	319	0	0	0	0	0	0	0	0	NR
29	689		337	599	0	0	0	0	0	0	0	NR
30	710		0	898	0	0	0	0	0	0	0	NR
31	707		0		0		0	0		0		NR
Total	16465	20847	7172	12782	12122	1271	0	0	0	0	0	146689
Daily avg	531	745	231	426	391	42	0	0	0	0	0	4732

There was no pumping between 13/06/2019 and 30/11/2019. Daily reading were not taken during December 2019, however, from final meter readings it is evident that the average daily volume for the month was 4732m³. Assuming that the pump was running full time, the compliance limit of 5000m³/day was not exceeded.

5.0 Annual Performance Data

Annual production/treatment at Hendy Quarry Landfill during the period 01 January to December 2019 is reported in accordance with the Permit for the site. Information required by Table S5.2 and 5.3 of the Permit is presented as Table 6 below.

Table 6: Annual Production/Treatment and performance parameters

Surface water and/or groundwater	Cubic metres/year
Disposed of off site:	217,348
Disposed of to any onsite effluent treatment plant:	0
Parameter	Annual total
Total Energy Consumption:	71.332 MWh

6.0 Management improvements

The following management improvements are required in 2020:

1. Replace down gradient monitoring boreholes.
2. Monitor flow rate from the discharge on a weekly basis.
3. Take daily discharge readings.
4. Maintain access to all permit monitoring points.

7.0 Annual Topographical Surveys and Waste Volumes.

7.1 Annual Topographical Survey

The annual topographical survey was completed on 04 June 2019 and is presented in Appendix A, drawing reference H074 HENDY 2019-06-04 LF_A1L (H074-00066).

7.2 Annual Waste Volume

The calculated void consumed at the site between the topographical surveys of June 2018 and June 2019 is 961m³.

7.3 Settlement Behaviour

A settlement survey was undertaken in June 2019, and is presented in Appendix A as: H074 HENDY 2019-06-04 QU SETTLEMENT_A3L. No significant settlement is evident.

7.4 Remaining Void Capacity

The calculated remaining void from the survey undertaken in June 2018 is 1,300,054m³.

8.0 Compliance Testing

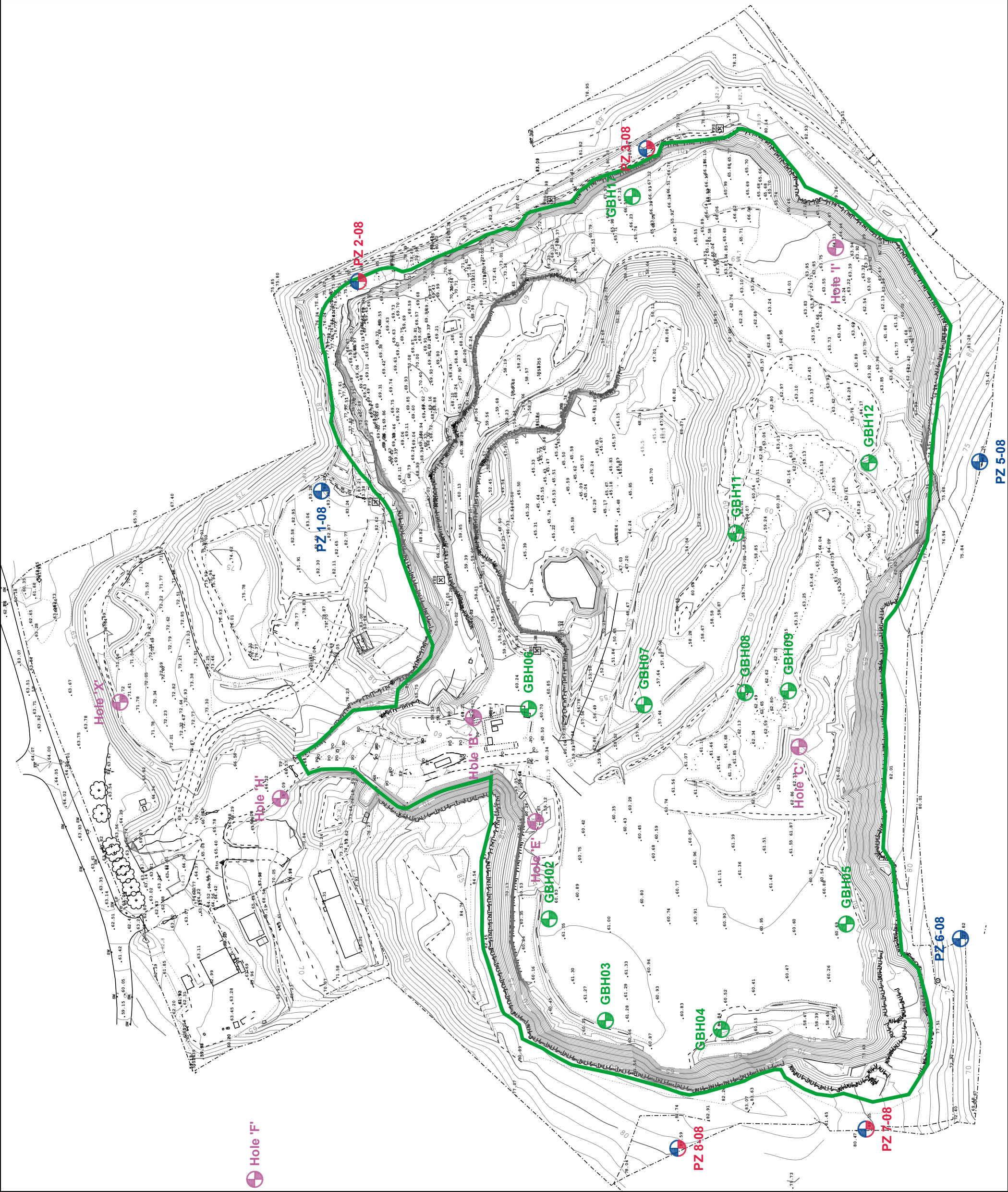
Compliance testing has not been undertaken in the reporting period.

Appendix A

Monitoring Plan (CE/HNDY/08)

H074 HENDY 2019-06-04 QU SETTLEMENT_A3L

H074 HENDY 2019-06-04 LF_A1L (H074-00066)



Legend:



Environmental Permit area



Groundwater monitoring boreholes to be included within the Permit



Internal landfill gas monitoring boreholes



Landfill gas monitoring boreholes external to the body of waste



Existing/former boreholes at the site

Final revision:	Date:	Description:
-	-	-
-	-	-

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Site: **HENDY QUARRY LANDFILL**

Drawing Title:

MONITORING PLAN

Drawn By: PSW	Date: 4th June '09	Scale: 1:2,000	Page Size: A3
Status: FINAL	Final Revision: -	Drawing No: CE/HNDY/08	



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H074 - HENDY

AREA OF LANDFILL
4th JUNE 2019

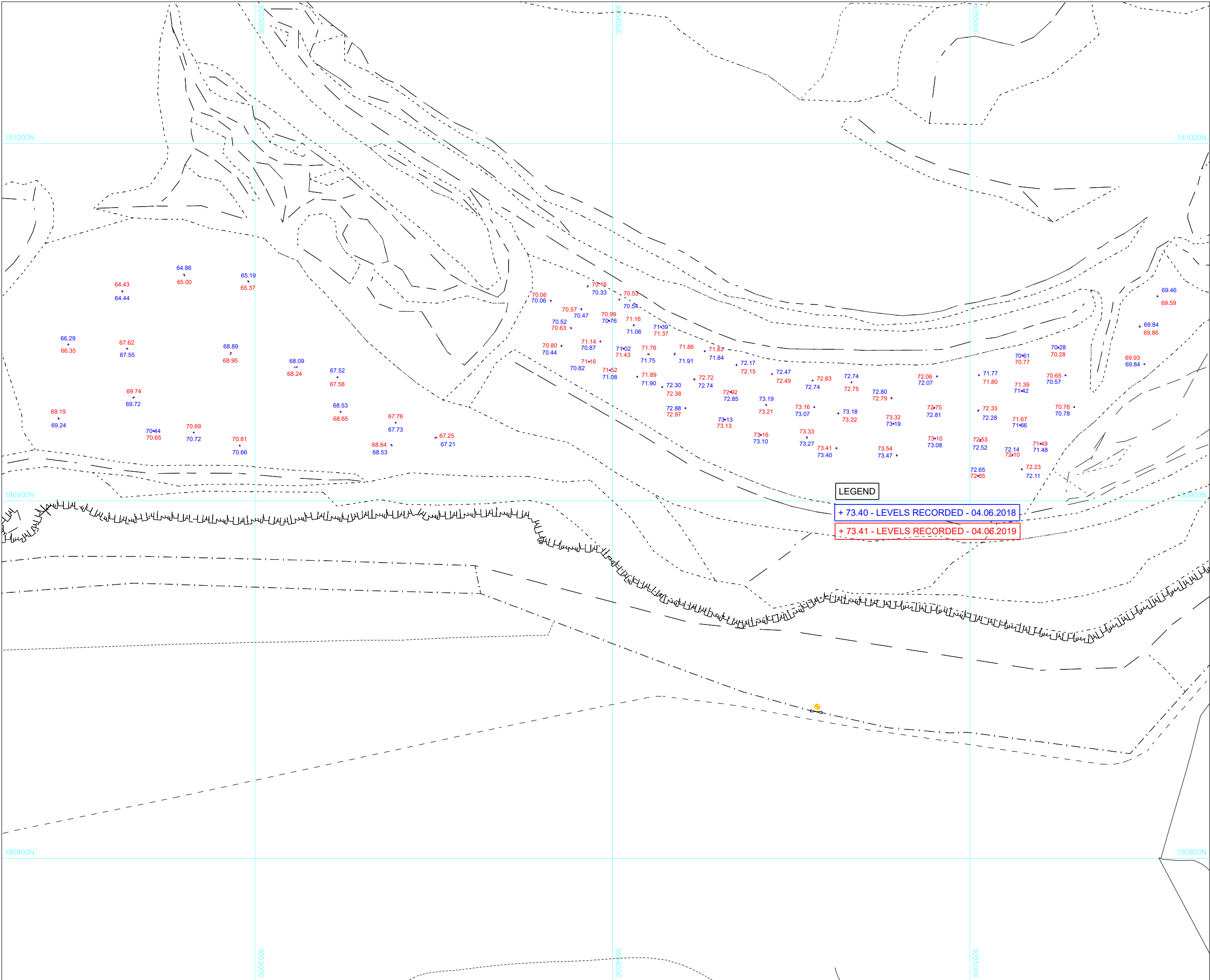
LSS Models Used To Create Plot
H074 HENDY 2019-06-04 QU

Drawn By
SJB

Scale
1 : 1250

LIS Drawing Number
H074-00066

Drawing Name
H074 2019-06-04 LF_A1L.pdf



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H074 HENDY

SETTLEMENT SURVEY
4th JUNE 2019

LSS Models Used To Create Plot
H074 HENDY 2019-06-04 QU

Drawn By
JJH

Date
JANUARY 2020

Scale
1 : 1000

Drawing No.
H074 SETTLEMENT 2019-06

Appendix B

Landfill Gas Data

Sample Point	Date	%Vol	%Vol	%Vol	mb	mb	Data Comments
		CH4	CO2	O2	AtmPress	Rel Pressure	
HEN_BH01	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH02	22/01/2019	0	0.4	20.8	995	-1.21	
	16/04/2019	0	0.1	20.7	1007	-0.39	
	30/07/2019				994		
	15/10/2019	0	0.2	20.7	997	-1.64	
HEN_BH03	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH04	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH05	22/01/2019	0	0.3	21	995	-0.81	
	16/04/2019	0	0.2	20.1	1007	-0.21	
	30/07/2019	0	2	15.4	994		
	15/10/2019	0	0.7	18.9	997	0.19	
HEN_BH06	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH07	22/01/2019	0	0.3	21.2	995	-0.71	
	16/04/2019	0	0.4	19.5	1007	-0.72	
	30/07/2019	0	1	18.4	994		
	15/10/2019	0	0.3	20.7	997	-1.49	
HEN_BH08	22/01/2019	0	0.3	21.3	995	-0.4	
	16/04/2019	0	0.1	20.8	1007	-0.19	
	30/07/2019				994		not located
	15/10/2019				997		unable to locate
HEN_BH09	22/01/2019	0	0.3	20.9	997	-0.36	
	16/04/2019	0	0.1	20.8	1007	-0.21	
	30/07/2019				994		unsafe access
	15/10/2019				997		unsafe access
HEN_BH0B	22/01/2019	0	0.8	20	995	-0.43	
	16/04/2019	0	0.2	20.3	1007	-0.24	
	30/07/2019	0	0.5	19.4	994		
	15/10/2019	0	0.5	19.4	997	0.2	
HEN_BH0E	22/01/2019				995		unsafe access - danger of falling rocks
	16/04/2019				1007		unsafe access - danger of falling rocks
	30/07/2019				994		unsafe access - danger of falling rocks
	15/10/2019				997		unsafe access - danger of falling rocks
HEN_BH0H	22/01/2019	0	0.3	20.9	995	-0.41	
	16/04/2019	0	0.1	21.2	1007	-0.21	
	30/07/2019	0	0.1	20.9	994		

Sample Point	Date	%Vol	%Vol	%Vol	mb	mb	Data Comments
		CH4	CO2	O2	AtmPress	Rel Pressure	
	15/10/2019	0	0.1	20.9	997	0.09	
HEN_BH0X	22/01/2019				995		gas readings not saved ?!!
	16/04/2019	0	0.1	21.1	1007	-0.34	
	30/07/2019	0	0.2	18.8	994		
	15/10/2019	0	0.1	18.9	997	0.34	
HEN_BH0Y	22/01/2019				995		unable to access-new padlock fitted to gate
	16/04/2019	0	0.1	20.9	1007	-0.33	
	30/07/2019				994		unable to access compound
	15/10/2019				997		unable to access (gate locked)
HEN_BH10	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH11	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_BH12	22/01/2019				995		destroyed
	16/04/2019				1007		destroyed
	30/07/2019				994		destroyed
	15/10/2019				997		destroyed
HEN_PZ01/08	22/01/2019	0	1.2	20.4	994	-0.4	
	16/04/2019	0	0.7	20.7	1007	-0.27	
	30/07/2019	0	0.1	21.1	994		
	15/10/2019	0	0.9	20.1	997	0.32	
HEN_PZ02/08	22/01/2019	0	0.3	21.2	994	-0.33	
	16/04/2019	0	0.1	21.1	1007	-0.22	
	30/07/2019	0	0.1	20.9	994		
	15/10/2019	0	0.1	20.8	997	0.31	
HEN_PZ03/08	22/01/2019	0	0.4	21.1	993	-0.46	
	16/04/2019	0	0.1	20.9	1007	-0.27	
	30/07/2019	0	0.1	20.9	994		
	15/10/2019	0	0.1	20.8	997	0.15	
HEN_PZ04/08	22/01/2019				995		lost
	16/04/2019				1007		lost
	30/07/2019				994		lost
	15/10/2019				997		lost
HEN_PZ05/08	22/01/2019	0	1.1	18.8	992	-0.46	
	16/04/2019	0	0.6	18.9	1007	-0.24	
	30/07/2019	0	1.2	18.2	994		
	15/10/2019	0	0.8	19.2	997	0.2	
HEN_PZ06/08	22/01/2019	0	0.8	20.3	992	-0.22	
	16/04/2019	0	0.3	20.6	1007	-0.24	
	30/07/2019	0	1.4	19.5	994		
	15/10/2019	0	1.5	19.5	997	0.44	
HEN_PZ07/08	22/01/2019	0	3	18.2	991	-0.59	
	16/04/2019	0	1.1	20.1	1007	-0.36	
	30/07/2019	0	2.2	18.1	994		
	15/10/2019	0	1.9	18.1	997	0.29	

Sample Point	Date	%Vol	%Vol	%Vol	mb	mb	Data Comments
		CH4	CO2	O2	AtmPress	Rel Pressure	
HEN_PZ08/08	22/01/2019	0	0.3	21.1	990	-0.59	
	16/04/2019	0	0.2	20.4	1007	-0.36	
	30/07/2019	0	0.4	19.4	994		
	15/10/2019	0	0.4	19.8	997	0.15	
Min		0	0.1	15.4	990	-1.64	
Max		0	3.0	21.3	1007	0.44	
Mean		0	0.6	20.1	998	-0.29	

Appendix C

Groundwater Data

Sample Point	Date	mg/l	mg/l	mg/l	mg/l	mg/l	UG/L	mAOD		us/cm	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	Data Comments	
		Cl	NH4-N	SO4	Ni	Cd	Naphthalene	Water level	pH	EC	DO	Alkalinity	TOC	TON	Na	K	Ca	Mg	Fe	Mn	Cr	Cu	Pb	Zn	TPH		PAH
HEN_PZ02/08	22/01/2019	34	<0.05	7.8	<0.001	<0.00002	0.45	49.20	8.17	420	8.3	160	8	0.3	20	0.75	54	8.9	0.01	0.013	<0.001	<0.0005	<0.003	<0.002	0.27	0.51	sampled
	16/04/2019	20	0.44	8.1	<0.001	<0.00002	<0.03	48.40	8.11	340	8.7	140	10	0.1	8.6	0.42	44	7.5	0.014	0.002	0.001	<0.0005	<0.003	0.002	0.02	<0.03	sampled
	30/07/2019	41	<0.05	11	<0.001	<0.00002	<0.01	46.96	7.93	450	8	160	2	0.9	26	1.1	47	9.6	0.047	0.024	<0.001	0.0006	<0.003	0.003	0.11	<0.01	sampled
	15/10/2019	39	<0.01	12	<0.001	<0.00002	< 0.01	54.08	7.7	448	9.7	151	<0.2	1.2	22	<1	62	12	0.14	<0.002	0.001	<0.001	<0.001	0.002	0.02	< 0.16	sampled
HEN_PZ03/08	22/01/2019	74	<0.05	11	<0.001	0.0004	0.5	49.18	8.01	860	7.6	330	8	0.9	55	2.3	91	31	<0.005	0.001	<0.001	0.0009	0.0018	0.068	0.29	0.53	sampled
	16/04/2019	90	0.31	11	<0.001	0.00039	<0.03	49.10	7.95	900	7.4	320	8	1	49	2.3	88	27	<0.005	0.001	<0.001	0.0013	0.0029	0.084	<0.02	<0.03	sampled
	30/07/2019	90	<0.05	12	0.001	0.00034	<0.01	47.03	7.85	930	6.5	340	3	1.5	63	2.5	84	28	0.031	0.028	<0.001	0.0014	0.0029	0.064	<0.02	<0.01	sampled
	15/10/2019	100	0.01	13	<0.001	0.00052	< 0.01	54.86	7.8	929	9.7	316	0.34	1.5	61	2	105	33	0.21	<0.002	<0.001	0.001	0.006	0.105	0.011	< 0.16	sampled
HEN_PZ07/08	22/01/2019																										dry
	16/04/2019																										dry
	30/07/2019																										dry
	15/10/2019							45.98																			dry
HEN_PZ08/08	22/01/2019	47	<0.05	28	0.001	<0.00002	0.81	44.16	8.03	760	9.1	310	10	0.7	27	1.7	96	29	<0.005	0.06	<0.001	0.0007	0.0006	0.007	<0.02	2	sampled
	16/04/2019	46	0.92	38	0.001	<0.00002	<0.03	43.71	8.01	790	6.5	310	8	1.1	24	2.3	95	28	<0.005	0.28	<0.001	0.0005	0.0005	0.004	0.04	<0.03	sampled
	09/05/2019	41	0.3	96	0.001	0.00004	<0.01		7.81	900	6.8	340	5	1.4	29	3.7	110	34	0.019	0.045	<0.001	0.0011	0.0006	0.006	0.19	<0.01	sampled
	30/07/2019							42.89																			unable to sample
	15/10/2019							46.42																			unable to sample
	Max	100	0.92	96	0.001	0.00052	0.81	54.855	8.17	930	9.7	340	10	1.5	63	3.7	110	34	0.21	0.28	0.001	0.0014	0.006	0.105	0.29	2	
	Min	20	<0.01	7.8	<0.001	<0.00002	<0.01	42.893	7.7	340	6.5	140	<0.2	0.1	8.6	0.42	44	7.5	<0.005	0.001	<0.001	<0.0005	<0.003	<0.002	0.011	<0.01	
Compliance Limit		150	0.5	200	0.2	0.001*	10																				
* Compliance level is 1ug/l (0.001mg/l) above background																											

