

AMGEN CYMRU	
Report Ref	AC2023/01
Document	Annual Report for Bryn Pica Landfill Site EP DP3732SQ
Date	10.02.23
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Overview

Amgen Cymru has carried out a review of the results of environmental monitoring activities undertaken at the Bryn Pica landfill site, during 2022. The submission to the Natural Resources Wales (NRW) of a periodic review of environmental monitoring results is required under Section 4.2 of the sites Environmental Permit.

This report constitutes Amgen's submission under 4.2 (a) of the Environmental Permit for the Bryn Pica Landfill Site and includes analysis of results of the following monitoring tasks:

- Leachate Monitoring
- Surface Water Quality Monitoring
- Groundwater Quality Monitoring
- Landfill Gas Monitoring

Leachate Monitoring

Throughout the period Jan 22 – Dec 22 Amgen Cymru carried out leachate monitoring at 7 fixed points, representing various aspects of leachate generation at Bryn Pica. During the current reporting period a total of 52 leachate samples were collected from Bryn Pica and subject to third party laboratory analysis. A summary of results is provided and have assessed to be consistent with publish UK averages for non-hazardous municipal landfill site.

Amgen Cymru staff have continued to undertake monthly dip measurement of the leachate level residing within the landfill containment cells at the Bryn Pica Landfill. The results show that the leachate levels within the landfill site continue to be maintained within the 1m (above the basal liner) required by the Environmental Permit for the site.

Groundwater Monitoring

Throughout the period Jan 22 – Dec 22 Amgen Cymru carried out groundwater monitoring at 3 fixed points; 1 location up-gradient of the landfill and 2 down-

gradient. A fourth point (GW 7) was not sampled during the period due to access restrictions placed on Amgen by the landowner. During the reporting period a total of 31 groundwater samples were collected from Bryn Pica and subject to third party laboratory analysis. A summary of results is provided within the report. There has been no exceedance of any limit specified within the Environmental Permit for the site and no detection of any impact from landfill operations.

Surface Water Monitoring

Throughout the period Jan 22 – Dec 22 Amgen Cymru carried out surface water monitoring at 7 fixed points; 2 locations up-stream of the landfill and 5 down-stream. During the reporting period a total of 44 surface water samples were collected from Bryn Pica and subject to third party laboratory analysis.

The quality of surface water observed on and around the site is of a good standard. Throughout 2022 there was no record of an exceedance of any permitted threshold and no indication of impact from the landfill.

Landfill Gas Monitoring

Throughout the period Jan 22 – Dec 22 Amgen Cymru carried out subsurface landfill gas monitoring at 15 fixed ground gas monitoring boreholes. In total, 178 samples were measured using the hand held gas analyser GA5000.

Landfill gas migration is noted on the south western margin of the phase 1 (unlined) landfill, near to the location of gas wells BYPP1203 and 1204. This is reasonably limited in nature and due to the lack of any potential receptors near to this locality it is not considered to be of concern. During 2022 analysis of gas monitoring location GMBH06-06 indicated the presence of Methane in the range 0.1 – 33.9 % CH₄ by Vol.

The landfill gas risk assessment for the Bryn Pica Landfill Site has not indicated any potential receptors to landfill gas migration in a westerly direction from the location of gas monitoring borehole GMBH06-06 (not identified with 750m). Furthermore, a significant height different exists between the site and the nearest receptor and in this respect the potential risk associated with the subsurface landfill gas migration in this direction is considered to be very low.

a) A review of the results of the monitoring and assessment carried out in accordance with this permit against the relevant assumptions, parameters and results in the risk assessments submitted with the Application.

Bryn Pica Environmental Monitoring Annual Report
Landfill Leachate Monitoring
Jan-22 to Dec-22

Overview			
Total Number of samples	52	Comments	Restricted acces to some of the leachate sample points due to location of tipping operations.

Key Chemical Determinands		Units	Count	Maximum	Minimum	Average
pH	P1L1		12	7.96	7.79	7.88
	P2AL1		8	8.29	7.63	7.88
	P2CL1		2	7.97	7.74	7.86
	LD1		12	8.32	7.69	8.06
	P3BSWR		12	8.14	7.58	7.79
	P4AL2		12	8.06	7.43	7.76
	P5A		6	7.75	7.33	7.53
Ammonia (NH4 as N)	P1L1	mg/l	12	1,080	571	953
	P2AL1		8	953	263	756
	P2CL1		2	1,570	1,180	1,375
	LD1		12	810	136	394
	P3BSWR		12	1,980.0	1,320.0	1,622.0
	P4AL2		12	1,640	1,060	1,433
	P5A		6	760.0	<50	497.0

Key Chemical Determinands						
		Units	Count	Maximum	Minimum	Average
Electrical Conductivity	P1L1	$\mu\text{S}/\text{cm}^3$	12	15,350	12,200	12,843
	P2AL1		8	12,140	3,440	9,214
	P2CL1		2	23,810	18,320	21,065
	LD1		11	9,983	2,842	5,727
	P3BSWR		12	21,070	17,070	19,478
	P4AL2		12	20,450	17,880	18,887
	P5A		6	11,140	7,800	9,423
Chemical Oxygen Demand (COD)	P1L1	mg/l	12	1,890	1,570	1,795
	P2AL1		8	1,940	433	1,248
	P2CL1		2	3,010	2,940	2,975
	LD1		12	1,850	283	857
	P3BSWR		12	3,660	2,320	2,980
	P4AL2		12	20,450	17,880	9,423
	P4B		6	11,140	7,800	9,423
Cadmium	P1L1	mg/l	4	N/D	N/D	N/D
	P2AL1		2	N/D	N/D	N/D
	P2CL1		0	N/R	N/R	N/R
	LD1		4	N/D	N/D	N/D
	P3BSWR		4	N/D	N/D	N/D
	P4AL2		4	N/D	N/D	N/D
	P5A		2	N/D	N/D	N/D

General Comments:	1. Leachate contamination comparable to previous years and typical of landfill leachate from non-hazardous municipal waste landfill.
	2. No non-compliance with any threshold stated within the Environmental Permit.

Bryn Pica Environmental Monitoring Annual Report
Groundwater Monitoring
Jan-22 to Dec-22

Overview			
Total Number of samples	31	Comments	Number of samples reduced due to restricted access GW7 - precluded by landholder. Reduced number of samples at GW5. Very dry summer resulting in absence of groundwater at this location.

		Monitoring ID	Count	Max	Min	Average	Trigger Level	No. of times Exceeded
Ammoniacal Nitrogen (NH4 as N) mg/l	Upgradient	GMBH07 05	12	0.4	N/D	0.1	N/A	N/A
	Downgradient	GW 5	7	0.1	N/D	0.03	1.5	0
		GW 6	12	0.4	N/D	0.06	1.5	0
		GW 7	N/R	N/R	N/D	N/R	1.5	N/R
Chloride mg/l	Upgradient	GMBH07 05	12	16.0	11.0	13.5	N/A	N/A
	Downgradient	GW 5	7	10.0	7.0	8.9	37.0	0
		GW 6	12	11.0	8.0	9.2	37.0	0
		GW 7	N/R	N/R	N/R	N/R	37.0	N/R
Zinc ug/l	Upgradient	GMBH07 05	4	0.008	0.002	0.005	N/A	N/A
	Downgradient	GW 5	1	0.004	0.004	N/A	0.32	0
		GW 6	4	0.007	0.003	0.003	0.32	0
		GW 7	N/R	N/R	N/R	N/R	0.32	N/R
Cadmium ug/l	Upgradient	GMBH07 05	4	N/D	N/D	N/D	N/A	N/A
	Downgradient	GW 5	1	N/D	N/D	N/D	0.0001	0
		GW 6	4	N/D	N/D	N/D	0.0001	0
		GW 7	N/R	N/R	N/R	N/R	0.0001	N/R
Mercury mg/l	Upgradient	GMBH07 05	1	N/D	N/D	N/D	N/A	
	Downgradient	GW 5	N/R	N/D	N/D	N/D	0.00001	N/R
		GW 6	1	N/D	N/D	N/D	0.00001	0
		GW 7	N/R	N/R	N/R	N/R	0.00001	N/R

		Monitoring ID	Count	Max	Min	Average	Trigger Level	Number of Times Exceeded
Mecroprop mg/l	Upgradient	GMBH07 05	N/R	N/R	N/R	N/R	N/A	N/A
	Downgradient	GW 5	N/R	N/R	N/R	N/R	0.00004	N/R
		GW 6	N/R	N/R	N/R	N/R	0.00004	N/R
		GW 7	N/R	N/R	N/R	N/R	0.00004	N/R
Naphthalene mg/l	Upgradient	GMBH07 05	3	N/D	N/D	N/D	N/A	N/A
	Downgradient	GW 5	1	N/D	N/D	N/D	0.0001	0
		GW 6	3	N/D	N/D	N/D	0.0001	0
		GW 7	N/R	N/R	N/R	N/R	0.0001	N/R

Notes	N/D - Not Detected
	N/A - Not Applicable
	N/R - No Record

Comments:	No identification of non-compliance with limits specified within site's Environmental Permit.
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Bryn Pica Environmental Monitoring Annual Report
Surface Water Monitoring
Jan-22 to Dec-22

Overview			
Total Number of samples	44	Comments	Dry conditions through Jan-Oct 22 resulted in many sampling locations being dry. Reduced number of samples compared to 2021 as a result.

Key Chemical Determinands		Units	Count	Maximum	Minimum	Average	Non-Compliance
pH	Upstream		10	9.13	6.93	7.5	N/A
	Downstream		34	8.68	6.98	7.7	0
Conductivity @20C	Upstream	mg/l	10	6950	68	803	N/A
	Downstream		34	1432	56	725	N/A
Chemical Oxygen Demand	Upstream	mg/l	10	51	N/D	13.2	N/A
	Downstream		34	55	N/D	5.7	0
Ammoniacal Nitrogen (NH4 as N)	Upstream	$\mu\text{S}/\text{cm}^3$	10	0.34	0	0.05	N/A
	Downstream		34	2.69	N/D	0.14	0
Chloride	Upstream	mg/l	10	18	4	7.3	N/A
	Downstream		34	24	8	12.1	0
Suspended Solids	Upstream	mg/l	10	11	0	1.1	N/A
	Downstream		34	33	0	2.5	0

General Comments:	1. Water quality reported in samples taken upgradient comparative with downgradient, indicating no discernable impact from waste management operation at Bryn Pica.
	2. No breach of any emissions limit specified in site's environmental permit.

b) Where the Operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets.

No improvement targets set for 2022. No update to report.

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 S5.2.

S5.3 Performance Parameters 2022			
Parameter	Frequency of Assessment	Annual Total	Unit
Potable water use	Annually	N/R	Cubic meters
Energy used	Annually	291	MW of electricity
Non potable water use	Annually	0	Cubic meters

e) The annual production / treatment set out in Schedule 5 Table S5.2.

Table S5.2: Annual (2022) Production / Treatment	
Leachate:	Cubic meters/year
Disposed of off-site;	43,915
Disposed of to any onsite effluent treatment plant;	0
Recirculated into the waste mass;	0
Surface water and / or groundwater:	Cubic meters/year
Disposed of off-site;	n/r
Disposed of to any onsite effluent treatment plant;	0
Landfill Gas:	Normalised cubic meters/year
Combustion in flares (estimated)	185,875
Combustion in gas engines (estimated)	3,763,861
Other methods of gas utilisation;	0

f) The annual production / treatment set out in Schedule 5 Table S5.2.

There has been no evidence of contamination at the site during the reporting period and there have been no decontamination activities to report.

g) The topographical survey required by condition 3.6.3 other than those submitted as part of a CQA validation report.

Provided below.



Notes:

- Legend
- Settlement Section Line
 - Phase 2A Capped & Restored Area
 - Phase 2B Capped & Restored Area
 - Phase 2C Capped & Restored Area
 - Phase 3A Capped & Restored Area
 - Phase 3B Capped & Restored Area
 - Phase 4A Capped & Restored Area
 - Phase 4B Active Cell Area

Client:
AMGEN Cymru Ltd

Job
Title: Bryn Pica Waste Management Facility
Annual Report 2022

Drawing
Title: Annual Settlement Survey 2022

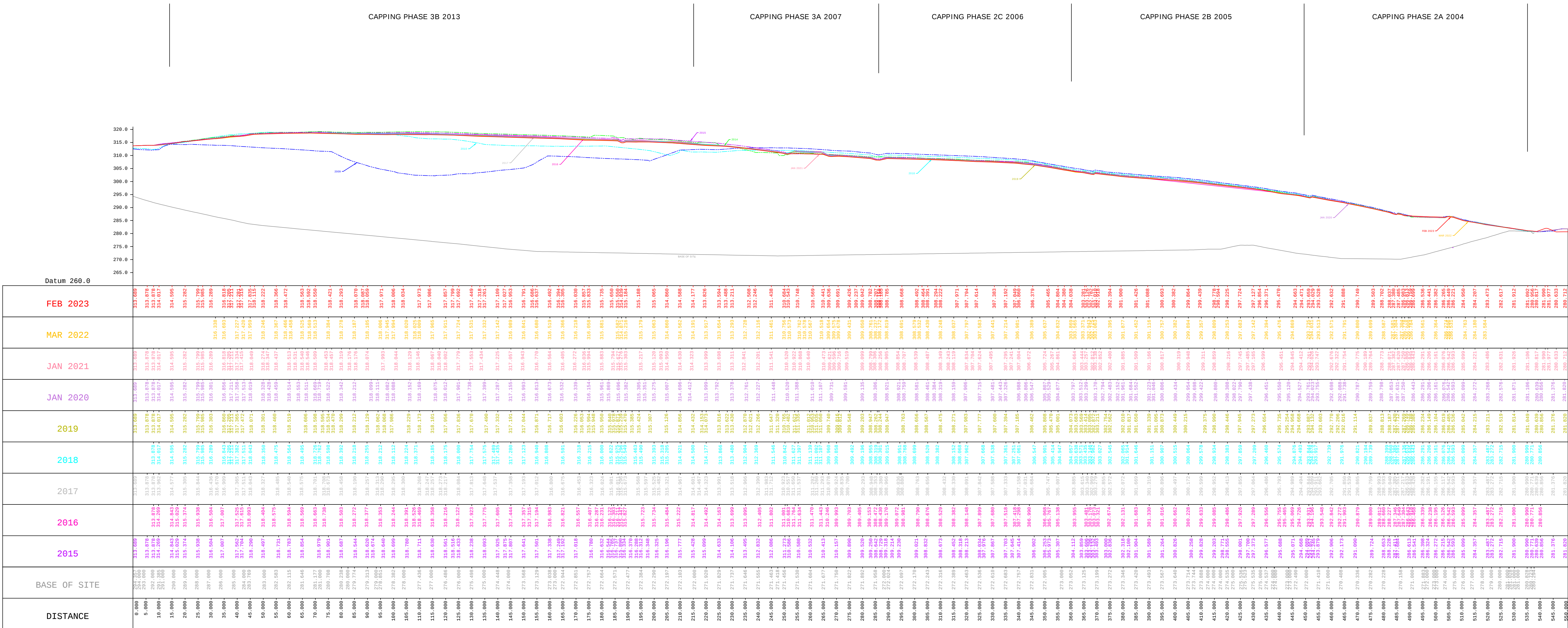
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Rev.	Description	Date
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Drawn
by: APW
Date: 10.02.2023
Checked
by: LF
Date: 10.02.2023

AMGEN Cymru Ltd.
Bryn Pica
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AMGEN
Cymru
The Welsh Pharmaceutical



<u>Client:</u> AMGEN Cymru Ltd <u>Job Title:</u> BRYN PICA WASTE MANAGEMENT FACILITY ANNUAL REPORT 2022 <u>Drawing Title:</u> TYPICAL SECTION THROUGH PHASES 2A, 2B, 2C, 3A, 3B & 4A SHOWING SETTLEMENT CHARACTERISTICS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Rev.</th> <th style="width: 33%;">Description</th> <th style="width: 33%;">Date</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Rev.	Description	Date																			 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"> <u>Drawn by:</u> APW </td> <td style="width: 33%;"> <u>Checked by:</u> APW </td> <td style="width: 33%;"></td> </tr> <tr> <td> <u>Date:</u> 10 02 2023 </td> <td> <u>Date:</u> 10 02 2023 </td> <td></td> </tr> </table> <u>Notes:</u>	<u>Drawn by:</u> APW	<u>Checked by:</u> APW		<u>Date:</u> 10 02 2023	<u>Date:</u> 10 02 2023	
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- h) The volumetric difference (reported in cubic meters) between the most recent topographical survey and the previous annual topographical survey.*
- i) An assessment of the settlement behaviour of the landfill body based on the difference between the most recent topographical survey and the 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 meters) derived from the pre-settlement contours and the most recent topographical survey.*

Please see following void-space report.

Introduction

This document provides information required under items (h), (i) and (j) of Section 4.2 of the Bryn Pica Landfill Site PPC Permit (No. DP3732SQ), which states:

A report or reports on the performance of the Activities over the previous year shall be submitted to the Agency by the 31st January (or other date agreed in writing by the Agency) each year. The reports shall include as a minimum:

- (h) the volumetric difference (reported in cubic metres) between the most recent topographical survey and the previous annual topographic 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 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.

Item h – Volumetric Difference

The volumetric difference calculated between the topographical surveys taken at Bryn Pica in Jan 2022 and Dec 2022 gives a fill volume during that period of **26,650 cubic meters**.

Item i – Settlement Behaviour

The table on the next page is an assessment of the settlement behaviour of the landfill body based on the difference between annual topographical surveys. Also please find Drawing No.AC2023/ENG/03/002 (included in settlement Behaviour Table attached) to demonstrate the settlement behaviour.

Item j – Calculation of the Remaining Void Space

The remaining capacity of the landfill is based on the December 2022 Phase 5A void survey, and the proposed basal design as submitted in the PPC, compared with the agreed Pre settlement Waste Contours prepared for the PPC.

The remaining void calculated for the Bryn Pica Landfill Site is **2,797,510 cubic meters**.

Settlement Behaviour Table

		Restored Waste Cell Areas					
		Phase 4A	Phase 3B	Phase 3A	Phase 2C	Phase 2B	Phase 2A
2023	Average Waste Level	N/A	316.131	311.107	307.036	299.264	286.141
	Average Waste Thickness		45.419	39.31	34.271	25.47	11.422
	Percentage Difference		0.1	-0.2	0.1	0.1	0.0
2022	Average Waste Level	N/A	316.159	311.024	307.058	299.294	286.137
	Average Waste Thickness		45.447	39.23	34.293	25.50	11.418
	Percentage Difference		0.0	0.2	0.0	0.0	0.2
2021	Average Waste Level	316.94	316.18	311.095	307.071	299.294	286.156
	Average Waste Thickness	44.56	45.468	39.30	34.306	25.50	11.437
	Percentage Difference	0.5	0.0	0.1	0.1	0.1	0.1
2020	Average Waste Level	317.145	316.196	311.125	307.109	299.328	286.162
	Average Waste Thickness	44.76	45.484	39.33	34.344	25.53	11.443
	Percentage Difference	0.8	0.2	-0.4	0.1	0.2	0.0
2019	Average Waste Level	317.262	316.227	311.018	307.165	299.398	286.189
	Average Waste Thickness	44.881	45.515	39.225	34.400	25.601	11.470
	Percentage Difference	0.5	0.1	-0.1	-0.1	-0.1	-0.3
2018	Average Waste Level	317.493	316.284	310.985	307.145	299.376	286.158
	Average Waste Thickness	45.112	45.572	39.192	34.380	25.579	11.439
	Percentage Difference	0.4	0.1	0.1	0.2	0.2	0.1
2017	Average Waste Level	317.672	316.331	311.022	307.214	299.419	286.169
	Average Waste Thickness	45.29	45.62	39.23	34.45	25.62	11.45
	Percentage Difference	0.5	0.2	0.3	0.2	0.3	0.4
2016	Average Waste Level	317.89	316.43	311.13	307.28	299.49	286.21
	Average Waste Thickness	45.51	45.72	39.33	34.52	25.70	11.49
	Percentage Difference	0.5	0.5	-2.3	0.3	0.4	0.2
Feb-15	Average Waste Level	317.89	316.67	310.26	307.39	299.61	286.23
	Average Waste Thickness	45.51	45.96	38.46	34.62	25.81	11.52
	Percentage Difference	1.2	0.5	-0.9	0.2	0.1	-0.3
Mar-14	Average Waste Level	318.46	316.89	309.90	307.46	299.64	286.20
	Average Waste Thickness	46.08	46.18	38.11	34.70	25.84	11.48
	Percentage Difference		0.8	0.0	0.4	0.4	0.6
Mar-13	Average Waste Level		317.27	309.91	307.60	299.74	286.27
	Average Waste Thickness		46.55	38.12	34.83	25.95	11.55
	Percentage Difference			2.0	0.3	0.4	0.2
Feb-12	Average Waste Level			310.69	307.71	299.84	286.30
	Average Waste Thickness			38.89	34.94	26.04	11.58
	Percentage Difference			1.0	0.4	0.2	-0.6
Jan-11	Average Waste Level			311.06	307.86	299.90	286.23
	Average Waste Thickness			39.27	35.10	26.10	11.51
	Percentage Difference			0.9	0.4	0.1	0.5
Jan-10	Average Waste Level			311.43	307.99	299.92	286.29
	Average Waste Thickness			39.64	35.23	26.13	11.57
	Percentage Difference			1.5	1.0	1.3	0.8

Dec-09	Average Waste Level			312.02	308.36	300.26	286.38
	Average Waste Thickness			40.23	35.59	26.47	11.67
	Percentage Difference			1.8	-3.3	0.2	21.0
Jan-08	Average Waste Level			312.75	307.22	300.32	289.48
	Average Waste Thickness			40.96	34.46	26.52	14.76
	Percentage Difference				4.4	1.4	-1.3
Jan-07	Average Waste Level				308.80	300.69	289.29
	Average Waste Thickness				36.04	26.89	14.58
	Percentage Difference					3.1	-0.4
Jan-06	Average Waste Level					301.55	289.23
	Average Waste Thickness					27.75	14.51
	Percentage Difference					2.4	2.8
Jan-05	Average Waste Level					302.24	289.65
	Average Waste Thickness					28.44	14.93
	Percentage Difference					-9.1	-12.3
Feb-04	Average Waste Level					299.86	288.02
	Average Waste Thickness					26.1	13.3
Overall Difference		-1.52	-1.14	-1.645	-1.765	-2.975	-3.507
Assumed Difference (Average Base Level)		272.381	270.712	271.793	272.765	273.797	274.719



Restoration soils removed to expose tie-in edge.

Average level influenced by haulage road on capped area.

Level prior to restoration.

Restored level.

k) The compliance testing undertaken in the period.

The non-hazardous commercial municipal waste accepted at Bryn Pica over the previous 12 months is not suitable for compliance testing and in this respect, none has been carried out.

Compliance testing was undertaken on waste glass fines accepted at the landfill during the period. This was limited to Loss on Ignition for the purpose of landfill tax. Results were reported to the Welsh Revenue Authority and adjustment made to landfill tax. A summary of tests undertaken during 2022 is provided below.

<u>Date</u>	<u>Ticket No</u>	<u>Sample Ref</u>	<u>Date Sent</u>	<u>Lab Ref</u>	<u>Date Returned</u>	<u>Result %</u>	<u>Comment</u>
20/01/2022	40514	TPGF200122ALF	24/01/22	22/00607	28/01/22	7.3	Pass
21/01/2022	40526	TPGF210122ACD	24/01/22	22/00607	28/01/22	7.8	Pass
22/01/2022	40629	TPGF210122BCD	24/01/22	22/00607	28/01/22	7.1	Pass
09/03/2022	44384	TPGF090322ACD	09/03/22	22/02260	17/03/22	3.4	Pass
09/03/2022	44453	TPGF090322CD2	11/03/22	22/02387	18/03/22	8	Pass
10/03/2022	44491	TPGF100322CD1	11/03/22	22/02387	18/03/22	6.9	Pass
10/03/2022	44556	TPGF100322CD2	11/03/22	22/02387	18/03/22	7	Pass
11/03/2022	44609	TPGF110322CD1	11/03/22	22/02387	18/03/22	5.9	Pass
11/03/2022	44643	TPGF110322CD2	16/03/22	22/02540	24/03/22	8.1	Pass
14/03/2022	44750	TPGF140322CD1	16/03/22	22/02540	24/03/22	9.8	Pass
15/03/2022	44900	TPGF150322CD1	16/03/22	22/02540	24/03/22	10.7	Failure - WRA Notified - PreQ Reviewed
15/03/2022	44972	TPGF150322CD2	16/03/22	22/02540	24/03/22	9.6	Pass
16/03/2022	45004	TPGF160322CD1	18/03/22	22/02662	24/03/22	8.2	Pass
16/03/2022	45090	TPGF160322CD2	18/03/22	22/02662	24/03/22	7.4	Pass
17/03/2022	45117	TPGF170322CD1	18/03/22	22/02662	24/03/22	8.6	Pass
17/03/2022	45147	TPGF170322CD2	18/03/22	22/02662	24/03/22	10.6	Failure - WRA Notified - PreQ Reviewed
18/03/2022	45208	TPGF180322CD1	18/03/22	22/02662	24/03/22	10.7	Failure - WRA Notified - PreQ Reviewed
18/03/2022	45274	TPGF180322CD2	23/03/22	22/02802	29/03/22	8.3	Pass
21/03/2022	45328	TPGF210322CD1	23/03/22	22/02802	29/03/22	7.5	Pass
21/03/2022	45443	TPGF210322CD2	23/03/22	22/02802	29/03/22	7.8	Pass
22/03/2022	45451	TPGF220322CD1	23/03/22	22/02802	29/03/22	7.6	Pass
22/03/2022	45551	TPGF220322CD2	23/03/22	22/02802	29/03/22	4.7	Pass
23/03/2022	45585	TPGF230322CD1	25/03/22	22/02945	31/03/22	5.5	Pass
23/03/2022	45640	TPGF230322CD2	25/03/22	22/02945	31/03/22	6.3	Pass
24/03/2022	45661	TPGF240322CD1	25/03/22	22/02945	31/03/22	7.2	Pass
24/03/2022	45756	TPGF240322CD2	25/03/22	22/02945	31/03/22	5.8	Pass
25/03/2022	45782	TPGF250322CD1	25/03/22	22/02945	31/03/22	8.6	Pass
28/03/2022	45867	TPGF280322CD1	30/03/22	22/03081	07/04/22	7.1	Pass
28/03/2022	45967	TPGF280322CD2	30/03/22	22/03081	07/04/22	7.4	Pass
29/03/2022	45999	TPGF290322CD1	30/03/22	22/03081	07/04/22	8.3	Pass
29/03/2022	46143	TPGF290322CD2	30/03/22	22/03081	07/04/22	5.5	Pass
30/03/2022	46153	TPGF300322CD1	30/03/22	22/03081	07/04/22	6.1	Pass
30/03/2022	46202	TPGF300322CD2	01/04/22	22/03215	13/04/22	4.8	Pass

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31/03/2022	46259	TPGF310322CD1	01/04/22	22/03215	13/04/22	9.8	Pass

31/03/2022	46358	TPGF310322CD2	01/04/22	22/03215	13/04/22	8.7	Pass
01/04/2022	46402	TPGF010422CD1	06/04/22	22/03360	13/04/22	6.1	Pass
01/04/2022	46466	TPGF010422CD2	06/04/22	22/03360	13/04/22	7.1	Pass
04/04/2022	46536	TPGF040422CD1	06/04/22	22/03360	13/04/22	7.3	Pass
04/04/2022	46568	TPGF040422CD2	06/04/22	22/03360	13/04/22	5.3	Pass
05/04/2022	46667	TPGF050422CD1	06/04/22	22/03360	13/04/22	6.5	Pass
05/04/2022	46732	TPGF050422CD2	06/04/22	22/03360	13/04/22	4.8	Pass
06/04/2022	46761	TPGF060422CD1	08/04/22	22/03567	21/04/22	7.1	Pass
06/04/2022	46833	TPGF060422CD2	08/04/22	22/03567	21/04/22	6.0	Initial "A" Failure - "B Sample" Pass on Retest
07/04/2022	46863	TPGF070422CD1	08/04/22	22/03567	21/04/22	5.3	Pass
07/04/2022	46896	TPGF070422CD2	08/04/22	22/03567	21/04/22	5.3	Pass
08/04/2022	46957	TPGF080422CD1	08/04/22	22/03567	21/04/22	6.8	Pass
08/04/2022	47032	TPGF080422CD2	13/04/22	22/03658	26/04/22	3.8	Pass
11/04/2022	47094	TPGF110422CD1	13/04/22	22/03658	26/04/22	4.8	Pass
11/04/2022	47133	TPGF110422CD2	13/04/22	22/03658	26/04/22	3.7	Pass
12/04/2022	47236	TPGF120422CD1	13/04/22	22/03658	26/04/22	3.6	Pass
12/04/2022	47266	TPGF120422CD2	13/04/22	22/03658	26/04/22	6.1	Pass
13/04/2022	47322	TPGF130422CD1	13/04/22	22/03658	26/04/22	7.3	Pass
06/05/2022	49328	TPGF060522CD1	12/05/22	22/04703	26/05/22	4.3	Pass
09/05/2022	49430	TPGF090522CD1	12/05/22	22/04703	26/05/22	4.8	Pass
09/05/2022	49463	TPGF090522CD2	12/05/22	22/04703	26/05/22	8.2	Pass
10/05/2022	49570	TPGF100522CD1	12/05/22	22/04703	26/05/22	10.7	Failure - WRA Notified - PreQ Reviewed
10/05/2022	49640	TPGF100522CD2	12/05/22	22/04703	26/05/22	9.1	Pass
11/05/2022	49725	TPGF110522CD1	12/05/22	22/04703	26/05/22	11.5	Failure - WRA Notified - PreQ Reviewed
11/05/2022	49790	TPGF110522CD2	12/05/22	22/04703	26/05/22	0.8	Pass
12/05/2022	49844	TPGF120522CE1	18/05/22	22/04906	27/05/22	7.4	Pass
13/05/2022	49966	TPGF130522CD1	18/05/22	22/04906	27/05/22	6.3	Pass
13/05/2022	50061	TPGF130522CD2	18/05/22	22/04906	27/05/22	5.9	Pass
16/05/2022	50143	TPGF160522CE1	18/05/22	22/04906	27/05/22	5.1	Pass
16/05/2022	50198	TPGF160522CE2	18/05/22	22/04906	27/05/22	7.7	Pass
17/05/2022	50382	TPGF170522CE1	18/05/22	22/04906	27/05/22	7.1	Pass

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18/05/2022	50408	TPGF180522CE1	23/05/22	22/05031	06/06/22	6.9	Pass
18/05/2022	50485	TPGF180522CE2	23/05/22	22/05031	06/06/22	10.2	Initial "A" Failure - "B Sample" Failure on Retest
19/05/2022	50515	TPGF190522CE1	23/05/22	22/05031	06/06/22	9	Pass
19/05/2022	50600	TPGF190522CE2	23/05/22	22/05031	06/06/22	10.3	Initial "A" Failure - "B Sample" Failure on Retest
20/05/2022	50620	TPGF200522CE1	23/05/22	22/05031	06/06/22	6.9	Pass

23/05/2022	50735	TPGF230522CD1	25/05/22	22/05184	08/06/22	8.9	Pass
23/05/2022	50820	TPGF230522CD2	25/05/22	22/05184	08/06/22	9.7	Pass
24/05/2022	50878	TPGF240522CD1	25/05/22	22/05184	08/06/22	8.0	Initial "A" Failure - "B Sample" Pass on Retest
24/05/2022	50961	TPGF240522CD2	25/05/22	22/05184	08/06/22	6.7	Pass
25/05/2022	51025	TPGF250522CD1	25/05/22	22/05184	08/06/22	14	Failure - WRA Notified - PreQ Reviewed
26/05/2022	51122	TPGF260522CD1	30/05/22	22/05368	13/06/22	7.1	Pass
26/05/2022	51123	TPGF260522CD2	30/05/22	22/05368	13/06/22	5.7	Pass
26/05/2022	51185	TPGF260522CD3	30/05/22	22/05368	13/06/22	4.7	Pass
27/05/2022	51227	TPGF270522CD1	30/05/22	22/05368	13/06/22	5.1	Pass
27/05/2022	51307	TPGF270522CD2	30/05/22	22/05368	13/06/22	11.8	Failure - WRA Notified - PreQ Reviewed
01/06/2022	51608	TPGF010622CD1	08/06/22	22/05633	21/06/22	13	Failure - WRA Notified - PreQ Reviewed
06/06/2022	51955	TPGF060622CD1	08/06/22	22/05633	21/06/22	6.7	
06/06/2022	52008	TPGF060622CD2	08/06/22	22/05633	21/06/22	9	
07/06/2022	52071	TPGF070622CD1	08/06/22	22/05633	21/06/22	11.1	Failure - WRA Notified - PreQ Reviewed
07/06/2022	52180	TPGF070622CD2	08/06/22	22/05633	21/06/22	12.9	Failure - WRA Notified - PreQ Reviewed
08/06/2022	52201	TPGF080622CD1	08/06/22	22/05633	21/06/22	13.1	Failure - WRA Notified - PreQ Reviewed
08/06/2022	52283	TPGF080622CD2	13/06/22	22/05787	21/06/22	9.4	Pass
09/06/2022	52325	TPGF090622CD1	13/06/22	22/05787	21/06/22	9.2	Pass
09/06/2022	52395	TPGF090622CD2	13/06/22	22/05787	21/06/22	7.3	Pass
10/06/2022	52438	TPGF100622CD1	13/06/22	22/05787	21/06/22	7.5	Pass
10/06/2022	52509	TPGF100622CD2	13/06/22	22/05787	21/06/22	7.4	Pass
13/06/2022	52578	TPGF130622CD1	13/06/22	22/05787	21/06/22	8.8	Pass
13/06/2022	52692	TPGF130622CD2	16/06/22	22/06014	24/06/22	5.5	Pass
6/14/2022	52715	TPGF140622CD1	16/06/22	22/06014	24/06/22	8.5	Pass
6/14/2022	52794	TPGF140622CD2	16/06/22	22/06014	24/06/22	5.2	Pass
6/15/2022	52838	TPGF150622CD1	16/06/22	22/06014	24/06/22	6.4	Pass
6/15/2022	52868	TPGF150622CD2	16/06/22	22/06014	24/06/22	6.5	Pass

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6/16/2022	52970	TPGF160622CD1	16/06/22	22/06014	24/06/22	7.5	Pass
7/5/2022	54551	TPGF050722CD1	07/07/22	22/06697	27/07/22	6.9	Pass
7/5/2022	54553	TPGF050722CD2	07/07/22	22/06697	27/07/22	8.4	Pass
7/6/2022	54578	TPGF060722CD1	07/07/22	22/06697	27/07/22	8.3	Pass
7/6/2022	54662	TPGF060722CD2	07/07/22	22/06697	27/07/22	5.9	Pass
07/07/2022	54697	TPGF070722CE1	07/07/22	22/06697	27/07/22	7.5	Pass
08/07/2022	54785	TPGF080722CE1	14/07/22	22/06944	01/08/22	6.3	Pass
08/07/2022	54878	TPGF080722CE2	14/07/22	22/06944	01/08/22	5.8	Pass
11/07/2022	54947	TPGF110722CE1	14/07/22	22/06944	01/08/22	5.6	Pass

11/07/2022	54978	TPGF110722CE2	14/07/22	22/06944	01/08/22	4.2	Pass
12/07/2022	55056	TPGF120722CE1	14/07/22	22/06944	01/08/22	5.2	Pass
12/07/2022	55105	TPGF120722CE2	14/07/22	22/06944	01/08/22	4.3	Pass
13/07/2022	55212	TPGF130722CE1	14/07/22	22/06944	01/08/22	6.9	Pass
13/07/2022	55253	TPGF130722CE2	14/07/22	22/06944	01/08/22	7.8	Pass
07/12/2022	66860	TPGF071222CD1	08/12/22	22/12168	15/12/22	6.1	Pass
07/12/2022	66895	TPGF071222CD2	08/12/22	22/12168	15/12/22	4.8	Pass
08/12/2022	66958	TPGF081222CD1	08/12/22	22/12168	15/12/22	4.2	Pass
08/12/2022	67039	TPGF081222CD2	14/12/22	22/12305	03/01/23	6.8	Pass
09/12/2022	67049	TPGF091222CD1	14/12/22	22/12305	03/01/23	6.8	Pass
09/12/2022	67135	TPGF091222CD2	14/12/22	22/12305	03/01/23	1	Pass
12/12/2022	67200	TPGF121222CD1	14/12/22	22/12305	03/01/23	6.5	Pass
12/12/2022	67257	TPGF121222CD2	14/12/22	22/12305	03/01/23	5.2	Pass
13/12/2022	67289	TPGF131222CD1	14/12/22	22/12305	03/01/23	6.6	Pass
13/12/2022	67344	TPGF131222CD2	14/12/22	22/12305	03/01/23	6	Pass
14/12/2022	67396	TPGF141222CD1	16/12/22	22/12455	10/01/23	7.6	Pass
14/12/2022	67439	TPGF141222CD2	16/12/22	22/12455	10/01/23	4.6	Pass
15/12/2022	67497	TPGF151222CD1	16/12/22	22/12455	10/01/23	5.6	Pass
15/12/2022	67559	TPGF151222CD2	16/12/22	22/12455	10/01/23	5.2	Pass
16/12/2022	67607	TPGF161222CD1	16/12/22	22/12455	10/01/23	5.1	Pass
16/12/2022	67664	TPGF161222CD2	16/12/22	22/12455	10/01/23	4.9	Pass