

AMGEN CYMRU	
Report Ref	AC2025/01
Document	Annual Report for Bryn Pica Landfill Site EP DP3732SQ
Date	10/02/2025
Prepare by	[REDACTED]
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1. Overview

- 1.1 Amgen Cymru has carried out a review of the results of environmental monitoring activities undertaken at the Bryn Pica landfill site, during 2024. The submission to Natural Resources Wales (NRW) of a periodic review of environmental monitoring results is required under Section 4.2 of the sites Environmental Permit.
- 1.2 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

2. Leachate Monitoring

- 2.1 Throughout the period Jan 24 – Dec 24 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 90 leachate samples were collected from Bryn Pica and subject to third party laboratory analysis. A summary of results is provided and have been assessed to be consistent with the previous observations at the site and published UK averages for non-hazardous municipal landfill sites.
- 2.2 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.

3. Groundwater Monitoring

- 3.1 Throughout the period Jan 24 – Dec 24 Amgen Cymru carried out groundwater monitoring at 4 fixed points; 1 location up-gradient of the landfill and 3 down-gradient.

- 3.2 During the reporting period, a total of 43 groundwater samples were collected from Bryn Pica and subject to third party laboratory analysis. A visual summary of results is provided within the report.

Analysis of Compliance Thresholds

AMMONIA (NH₄ AS N)

- 3.3 In respect of Ammonia (NH₄ as N), monitoring results indicate there **no occasions** when samples returned levels **in excess of the permitted compliance threshold** of 1.5mg/l. The following table provides a summary of NH₄ (as N) concentrations reported in downgradient groundwater samples taken through the period Jan 24 – Dec 24.

Monitoring Location	Date	NH ₄ as N Value Reported (Groundwater) 2024
GW 5	Count	9
	Max	0.8 mg/l
	Average	0.18 mg/l
GW 6	Count	12
	Max	0.2 mg/l
	Average	<0.05 mg/l
GW 7	Count	10
	Max	1.4 mg/l
	Average	0.17 mg/l

CHLORIDE

- 3.4 In respect of Chloride, monitoring results indicate there **no occasions** when samples returned levels **in excess of the permitted compliance threshold** of 37 mg/l. The following table provides a summary of Chloride concentrations reported in downgradient groundwater samples taken through the period Jan 24 – Dec 24.

Monitoring Location	Date	Chloride Values Reported (Groundwater) 2024
GW 5	Count	1
	Max	0.004 mg/l
	Average	N/A
GW 6	Count	4
	Max	0.017 mg/l
	Average	0.043 mg/l
GW 7	Count	3
	Max	0.354mg/l
	Average	0.125 mg/l

ZINC

- 3.5 Analysis of the 15 groundwater samples analysed for Zinc concentrations, indicated a **single, marginal exceedance of the permitted compliance threshold** of 32 mg/l. A value of 0.35 mg/l was reported for samples taken at GW 7 in October 2024. The following table provides a summary of Zinc concentrations reported in downgradient groundwater samples taken through the period Jan 24 – Dec 24.

Monitoring Location	Date	Zinc Values Reported (Groundwater)
GW 5	Count	1
	Max	0.004 mg/l
	Average	N/A
GW 6	Count	4
	Max	0.017 mg/l
	Average	0.0043
GW 7	Count	3
	Max	0.354
	Average	0.125

CADMIUM, MERCURY, MECROPROP AND NAPHTHALENE

- 3.6 Of the 8 groundwater samples analysed for Cadmium, there was no detection above the minimum reporting value of 0.0002 mg/l.
- 3.7 Of the 8 groundwater samples analysed for Mercury, there was no detection above the minimum reporting value of 0.00001 mg/l.
- 3.8 Of the 8 groundwater samples analysed for Mecroprop, there was no detection above the minimum reporting value of 0.00002 mg/l.
- 3.9 Of the 8 groundwater samples analysed for Napthalene, 3 returned positive values of 0.0006 mg/l. These were detected at all three down-gradient groundwater monitoring points in October 2024 and are above the compliance threshold of 0.0001 mg/l.

4. SURFACE WATER

- 4.1 Throughout the period Jan 24 – Dec 24 Amgen Cymru carried out surface water monitoring at 7 fixed points; 2 location up-stream of the landfill and 5 down-stream. During the reporting period a total of 70 surface water samples were collected from Bryn Pica and subject to third party laboratory analysis.
- 4.2 The quality of surface water observed on and around the site is of a good standard. Throughout 2024 there was no record of an exceedance of any permitted threshold and no indication of impact from the landfill.

5. LANDFILL GAS MONITORING

- 5.1 Throughout the period Jan 24 – Dec 24 Amgen Cymru carried out subsurface landfill gas monitoring at 15 fixed ground gas monitoring boreholes. In total, 178 samples were measured using the handheld gas analyser GA5000.
- 5.2 It has previously been noted that the Bryn Pica Landfill has two areas of subsurface landfill gas migration. A small degree of migration is noted on the southwestern margin of the phase 1 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 2024 analysis of gas monitoring location GMBH06-06 indicated the presence of Methane in the range 0.2 – 37.5 % CH₄ by Vol.
- 5.3 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 difference 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.

Provided in SECTIONS 3 – 5 (above).

Bryn Pica Environmental Monitoring Annual Report
Landfill Leachate Monitoring
Jan-24 to Dec-24

Overview			
Total Number over samples	90	Comments	Slight increase in the number of samples obtained during 2023 reporting period (90 for 2024, versus 88 in 2023).

Key Chemical Determinands						
		Units	Count	Maximum	Minimum	Average
pH	P1L1		12	8	7.7	7.9
	P2AL1		12	8	7.7	7.8
	P2CL1		11	8.6	8.2	8.5
	LD1		11	8.3	7.8	8.1
	P3BSWR		7	8	7.7	7.8
	P4AL2		12	8	7.7	7.8
	P4BSWR		12	7.8	7.1	7.5
	P5A		12	7.7	7.3	7.5
Ammonia (NH4 as N)	P1L1	mg/l	12	967	778	872
	P2AL1		12	901	1	609
	P2CL1		11	1640	1180	1429
	LD1		12	626	105	344
	P3BSWR		7	1790	101	1413
	P4AL2		12	1730	610	1272
	P4BSWR		12	757	310	544
	P5A		12	705	351	512

Key Chemical Determinands						
		Units	Count	Maximum	Minimum	Average
Electrical Conductivity	P1L1	$\mu\text{S}/\text{cm}^3$	12	11,480	11	9,134
	P2AL1		12	10,750	2,425	7,975
	P2CL1		11	19,800	16,470	18,070
	LD1		12	10,710	2,830	5,733
	P3BSWR		7	20,100	17,130	18,579
	P4AL2		12	19,350	16,450	17,892
	P4BSWR		12	9,021	2,340	7,417
	P5A		12	10,280	5,640	7,748
Zinc	P1L1	ug/l	4	43	N/D	11
	P2AL1		4	72	20	42
	P2CL1		4	217	86	153
	LD1		4	35	N/D	14
	P3BSWR		3	918	39	348
	P4AL2		4	223	31	89
	P4BSWR		4	57	15	38
	P4B		4	233	N/D	77
Cadmium	P1L1	mg/l	4	N/D	N/D	N/A
	P2AL1		4	N/D	N/D	N/A
	P2CL1		4	N/D	N/D	N/A
	LD1		4	N/D	N/D	N/A
	P3BSWR		3	N/D	N/D	N/A
	P4AL2		4	N/D	N/D	N/A
	P4BSWR		4	N/D	N/D	N/A
	P5A		4	N/D	N/D	N/A

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-24 to Dec-24

Overview			
Total Number of samples	43	Comments	Minor increase (2%) in the total number of groundwater samples obtained and tested, compared to 2023.

		Monitoring ID	Count	Max	Min	Average	Trigger Level	No. of times Exceeded
Ammoniacal Nitrogen (NH4 as N) mg/l	Upgradient	GMBH07 05	12	8.0	N/D	0.7	N/A	N/A
	Downgradient	GW 5	9	0.8	N/D	0.18	1.5	0
		GW 6	12	0.2	N/D	0.02	1.5	0
		GW 7	10	1.4	N/D	0.17	1.5	0
Chloride mg/l	Upgradient	GMBH07 05	12	17.0	11.0	14.3	N/A	N/A
	Downgradient	GW 5	9	8.0	5.0	7.2	37.0	0
		GW 6	12	8.0	4.0	5.9	37.0	0
		GW 7	10	13.0	7.0	11.2	37.0	0
Zinc ug/l	Upgradient	GMBH07 05	4	24	5	13	N/A	N/A
	Downgradient	GW 5	1	4	4	N/A	320	0
		GW 6	1	17	N/D	4	320	0
		GW 7	3	354	10	125	320	1
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	0.1	0
		GW 6	4	N/D	N/D	N/D	0.1	0
		GW 7	3	N/D	N/D	N/D	0.1	0
Mercury 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	0.01	0
		GW 6	4	N/D	N/D	N/D	0.01	0
		GW 7	3	N/D	N/D	N/D	0.01	0

		Monitoring ID	Count	Max	Min	Average	Trigger Level	Number of Times Exceeded
Mecroprop mg/l	Upgradient	GMBH07 05	2	N/D	N/D	N/D	N/A	N/A
	Downgradient	GW 5	1	N/D	N/D	N/D	0.04	0
		GW 6	4	N/D	N/D	N/D	0.04	0
		GW 7	2	N/D	N/D	N/D	0.04	0
Naphthalene mg/l	Upgradient	GMBH07 05	4	N/D	N/D	N/D	N/A	N/A
	Downgradient	GW 5	1	6	N/D	N/A	0.1	1
		GW 6	4	6	N/D	N/A	0.1	1
		GW 7	3	6	N/D	N/A	0.1	1

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

Comments:	No breaches of Ammonia (NH4 as N) trigger level across all 3 downgradient monitoring points (GW 5, GW 6 and GW 7). Average values for 2024 below the threshold of 1.5mg. Elevated levels noted in upgradient monitoring borehole GW07BH5 (maximum - 8.0 mg/l, annual average 0.7 mg/l), consistent with observations from 2023.
	A single exceedance of Zinc compliance threshold at GW 7 in Oct 2024. This is noted to be in the absence of any other landfill indicators (i.e. ammonia, chloride etc.). It is noted that the sample point for GW 7 is located within a large industrial installation manufacturing cables.
	Of the 12 samples analysed for Naphthalene, 3 samples taken in Oct 2024 returned positive values of 0.006 mg/l. These were above the compliance threshold of 0.0001 mg/l. It is noted that there is an absence of any other indicators of landfill leachate contamination within the samples. These results are expected to be some form of contamination of samples within the laboratory or an erroneous feature of the analytic methodology.

Bryn Pica Environmental Monitoring Annual Report

Surface Water Monitoring

Jan-24 to Dec-24

Overview			
Total number of samples.	70	Comments	9% increase in sample yield compared to previous reporting period 2023. Samples obtained from 7 monitoring points. SW 11 remained predominantly dry throughout that reporting period.

Key Chemical Determinands		Units	Count	Maximum	Minimum	Average	Non-Compliance
pH	Upstream		22	8	6.1	7.3	N/A
	Downstream		48	8.4	6.8	7.7	0
Conductivity @20C	Upstream	mg/l	22	260	55	120	N/A
	Downstream		48	1277	67	638	0
Chemical Oxygen Demand	Upstream	mg/l	22	74	N/D	6.1	N/A
	Downstream		48	534	N/D	16	0
Ammoniacal Nitrogen (NH4 as N)	Upstream	µS/cm^3	22	0.97	N/D	0.06	N/A
	Downstream		48	1.56	N/D	0.1	0
Chloride	Upstream	mg/l	22	6	3	4.2	N/A
	Downstream		48	39	1	9.6	0
Suspended Solids	Upstream	mg/l	22	36	N/D	2.7	N/A
	Downstream		48	238	N/D	6.3	0

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

Table: Summary of Sub-Surface Landfill Gas Monitoring (Outside Waste) carried out at Bryn Pica Landfill Site Jan 24 - Dec 24.

Determinant	GMBH 7			GMBH 10			GMBH06-01			GMBH06-02		
	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
CH4 (% by Vol)	0.2	0.0	0.1				0.2	0.0	0.1	10.0	0.0	2.8
CO2 (% by Vol)	0.8	0.1	0.3				1.2	0.1	0.4	6.7	0.1	2.0
O2 (% by Vol)	22.1	19.8	21.0				22.1	17.3	20.7	21.0	0.2	9.8
CO (ppm)	1	0	0				1	0	0	1	0	0
H2S (ppm)	0	0	0				0	0	0	0	0	0
Pressure (mbar)	0.7	-0.1	0.1				0.6	-0.1	0.2	3.1	-0.1	0.3
Determinant	GMBH06-03			GMBH06-05			GMBH06-06			GMBH06-07		
	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
CH4 (% by Vol)	13.5	0.1	3.4	0.2	0.2	0.1	0.2	0.2	22.3	0.6	0.0	0.1
CO2 (% by Vol)	8.7	0.2	3.6	3.8	0.1	1.5	20.5	0.1	12.4	2.1	0.1	0.9
O2 (% by Vol)	20.7	1.6	10.5	21.1	16.5	19.7	21.5	0.4	6.7	21.5	1.8	14.9
CO (ppm)	1	0	0	1	0	0	1	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Pressure (mbar)	0.2	-0.1	0.0	0.2	-0.2	0.0	0.1	-0.1	0.0	0.1	-0.1	0.0
Determinant	GMBH06-08			GMBH06-09			GMBH06-10			GMBH06-11		
	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
CH4 (% by Vol)	0.2	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.1
CO2 (% by Vol)	2.8	0.1	0.9	2.8	0.1	2.0	2.0	0.1	0.9	5.0	0.1	1.2
O2 (% by Vol)	21.7	14.0	19.5	21.9	16.8	18.9	21.8	18.7	20.5	21.8	18.7	20.6
CO (ppm)	1	0	0	1	0	0	1	0	0	0	0	0
H2S (ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Pressure (mbar)	0.6	-0.2	0.0	0.1	-0.2	0.0	0.1	-0.1	0.0	0.1	-0.5	0.0
Determinant	GMBH08-01			GMBH07-04			GMBH09-01			GMBH12-01		
	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave	Max	Min	Ave
CH4 (% by Vol)	40.7	24.4	33.0	0.2	0.0	0.1	0.2	0.0	0.1	0.2	0.0	0.1
CO2 (% by Vol)	16.6	13.9	15.3	1.9	0.1	0.6	6.3	-0.1	1.4	0.3	0.1	0.1
O2 (% by Vol)	2.5	0.3	1.3	21.2	18.6	20.5	22.3	-8.4	19.1	22.3	17.7	21.0
CO (ppm)	1	0	0	1	0	0	1	0	0	1	0	0
H2S (ppm)	4	0	2	0	0	0	0	0	0	0	0	0
Pressure (mbar)	-0.1	-28.7	-14.4	0.1	-0.1	0.0	0.4	-0.3	0.0	1.3	-0.5	0.2

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 2024. 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 2024			
Parameter	Frequency of Assessment	Annual Total	Unit
Potable water use	Annually	N/R	Cubic meters
Energy used	Annually	333.94	MW of electricity
Non potable water use	Annually	0	Cubic meters

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

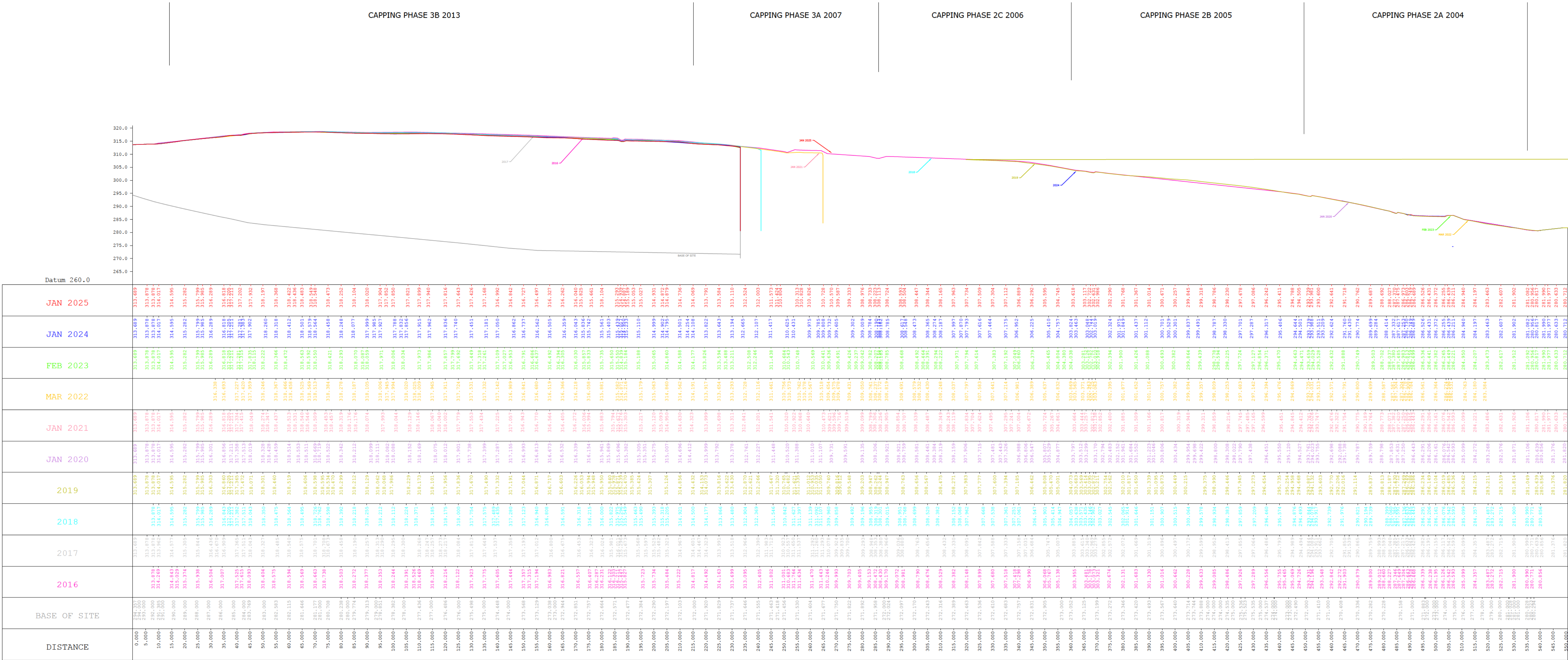
Table S5.2: Annual (2024) Production / Treatment	
Leachate:	Cubic meters/year
Disposed of off-site;	43,337
Disposed of to any onsite effluent treatment plant;	0
Recirculated into the waste mass;	0
Surface water and / or groundwater:	Cubic meters/year
Disposed of off-site;	n/r
Disposed of to any onsite effluent treatment plant;	0
Landfill Gas:	Normalised cubic meters/year
Combustion in flares (estimated)	TBC
Combustion in gas engines (estimated)	TBC
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.



Client:

AMGEN Cymru Ltd

Job Title:

BRYN PICA WASTE MANAGEMENT FACILITY
ANNUAL REPORT 2024

Drawing Title:

TYPICAL SECTION THROUGH PHASES 2A, 2B,
2C, 3A, 3B & 4A SHOWING SETTLEMENT
CHARACTERISTICS

Drawing No.:
AC2025/ENV/03/002

Revision:
-

Scale:
1 : 750

Sheet size:
A1

Rev.

Description

Date

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Drawn by:
Date:

APW
31 01 2025

Checked by:
Date:

APW
31 01 2025

Notes:

AMGEN Cymru Ltd

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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 2024 and Jan 2025 gives a fill volume during that period of **19,750 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.AC2025/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 **2,765,440 cubic meters**.

Settlement Behaviour Table

		Restored Waste Cell Areas					
		Phase 4A	Phase 3B	Phase 3A	Phase 2C	Phase 2B	Phase 2A
2025	Average Waste Level	N/A	315.994	311.17	306.952	299.199	286.13
	Average Waste Thickness		45.282	39.38	34.187	25.40	11.411
	Percentage Difference		0.3	-0.2	0.2	0.3	0.1
2024	Average Waste Level	N/A	316.049	311.133	306.983	299.248	286.137
	Average Waste Thickness		45.337	39.34	34.218	25.45	11.418
	Percentage Difference		0.2	-0.3	0.2	0.2	0.0
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	-1.27	-1.582	-1.849	-3.040	-3.518
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 list of tests undertaken during 2024 is provided below along with results issued by third party laboratory.

Amgen Cymru - Results of compliance testing undertaken on 'lower rate' material disposed of within the Bryn Pica Landfill during the period 01.01.2024 to 31.12.2024.

<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>
29/01/2024	98644	TPGF290124ML2	30/01/24	24/00953	13/02/24	4.0	Pass
20/03/2024	102632	TPGF200324ML2	21/03/24	24/03007	08/04/24	3.6	Pass
15/05/2024	106859	TPGF150524ML2	16/05/24	24/04929	31/05/24	4.5	Pass

Envirolab Job Number: 24/00953
Client: Amgen Cymru
Client Project Name: Bryn Pica
Client Project Ref: TP Glass Fines

Lab Sample ID					24/00953/1
Client Sample No					
Client Sample ID					TPGF29012
Depth to Top					4 ML2
Depth to Bottom					
Date Sampled					45320
Sample Type					Soil
Sample Matrix Code	Units	Limit of Detection	Method		4AE
HMRC Loss on Ignition					
% Group 1&2 material >20mm	% w/w	0.1	Gravimetry-HMRC	21.7	
Loss on ignition HMRC (440°C)	% w/w	0.6	Gravimetry-HMRC	4	

Envirolab Job Number: 24/03007

Client: Amgen Cymru

Client Project Name: Bryn Pica

Client Project Ref: TP Glass Fines

Lab Sample ID		24/03007/1		
Client Sample No				
Client Sample ID		TPGF20032		
Depth to Top		4 ML2		
Depth to Bottom				
Date Sampled		45371		
Sample Type		Soil		
Sample Matrix Code		6ACE		
		Units	Limit of Detection	Method
% Stones >10mm		% w/w	0.1	A-T-044
HMRC Loss on Ignition				
% Group 1&2 material >20mm		% w/w	0.1	Gravimetry-HMRC
Loss on ignition HMRC (440°C)		% w/w	0.6	Gravimetry-HMRC

Envirolab Job Number: 24/04929

Client: Amgen Cymru

Client Project Name: Bryn Pica

Client Project Ref: TP Glass Fines

Lab Sample ID				24/04929/1
Client Sample No				
Client Sample ID				TPGF15052
Depth to Top				4 ML2
Depth to Bottom				
Date Sampled				45427
Sample Type				Solid
Sample Matrix Code				7
% Stones >10mm	% w/w	0.1	A-1-044	<0.1
HMRC Loss on Ignition				
% Group 1&2 material >20mm	% w/w	0.1	Gravimetry-HMRC	<0.1
Loss on ignition HMRC (440°C)	% w/w	0.6	Gravimetry-HMRC	4.5