

Natural Resources Wales  
 Waste and Industry Regulation Team  
 Maes Y Fynnon  
 Bangor  
 LL57 2DW

Wednesday, 18 December 2024

Ask for:  
 Connall Darlington;Michelle Moran  
 Document ref: ECL.10022.R03.003

Dear Mr Roberts,

### Penhesgyn Gors Landfill Site: Q4 2024 Monitoring Report

This report accompanies the factual monitoring data that was collected during the Q4 2024 (October - December) review period. The scope of the data reflects the monitoring requirements included within Schedule 3 and reporting requirements in Schedule 4, of the Environmental Permit (reference EPR/KP3994FG) for the site.

1. Schedule 3, Table S3.1 Leachate Levels. The leachate level data are enclosed with this letter. Any relevant Schedule 5 notifications were issued to NRW within the appropriate time.
2. Schedule 3, Table S3.2 Point source emissions to air. Annual engine and flare data will be included in the annual report.
3. Schedule 3, Table S3.3 Point source emission to water (other than sewer). Testing is to be completed 6-monthly on samples taken from surface water monitoring points SW9 and SW10. This testing was carried out and submitted in Quarter 1 for both, and Quarter 3 for SW10. The results for SW9 are enclosed within this report.
4. Schedule 3, Table S3.4 Point source emissions to sewer, effluent treatment plant or by tankering. There are no relevant monitoring requirements for this parameter.
5. Schedule 3, Table S3.5 Trigger levels for emissions into groundwater. Annual testing for chloride and ammoniacal nitrogen is required for downgradient boreholes BH2/88 and BH96B. This testing was carried out and previously submitted in Quarter 2 and therefore not included in this report.

Egniol Consulting Limited, Llys Onnen, Ffordd y Llyn, Parc Menai, Bangor, Gwynedd, LL57 4DF  
 Tel: 01248 355996 Email: info@egniol.com



6. Schedule 3, Table S3.6 Landfill gas in external monitoring boreholes. All landfill gas monitoring boreholes are tested quarterly for gas quality. Methane and carbon dioxide levels are limited by the permit, and a summary of the gas quality exceedances can be found in Table 1 (methane) and Table 2 (carbon dioxide). Schedule 5 notifications were issued to NRW within the appropriate time.

**Table 1. Summary of methane elevations Q4 2024**

Borehole reference	Monitoring completed by	Compliance limit	Time and date	Methane level recorded
PENBH14	Egniol	1% v/v	29/10/2024 14:55	15.4% v/v
PENBH28	Egniol	1% v/v	29/10/2024 15:03	8.3% v/v

**Table 2. Summary of carbon dioxide elevations Q4 2024**

Borehole reference	Monitoring completed by	Compliance limit	Time and date	Carbon dioxide level recorded
PENBH06	Egniol	2.8% v/v	29/10/2024 14:12	6.2% v/v
PENBH12	Egniol	4.2% v/v	29/10/2024 13:39	8.1% v/v

7. Schedule 3, Table S3.7 Landfill gas – other monitoring requirements. The monitoring of gas quality in the gas collection system and at the input to the LFG Utilisation Compound is required every 4 weeks. This is undertaken by YLEM Energy Ltd. The data will be included within this report.
8. Schedule 3, Table S3.8 Leachate – other monitoring requirements. The monitoring of leachate quality is required annually for Area 2 wells, 6-monthly/annually for Area 3 wells, and quarterly dips are required for Area 3. Additionally, list 1 substances testing is required for Area 3 annually, this was completed and submitted in Quarter 3. The results for the quarterly dips and the 6-monthly analysis are included in this report.
9. Schedule 3, Table S3.9 Surface water – other monitoring requirements. Water quality analysis is to be completed annually on samples taken from surface water monitoring points SW1 to SW10. Testing was completed and previously submitted in Quarters 1 and 2 with SW5 completed in Quarter 3 and therefore no results are included in this report.

10. Schedule 3, Table S3.10 Groundwater – other monitoring requirements. Groundwater levels and quality are to be monitored and tested annually for all groundwater wells, 6-monthly for downgradient locations, and List 1 substances annually. This testing was carried out and submitted across the previous 3 quarters except for the 6-monthly testing at BH2/88 and BH96B, which are included in this report.

If you wish to discuss the submitted monitoring results, please do not hesitate to contact us.

Yours faithfully,

Reviewed by,



Connall Darlington  
**BSc (Hons), FGS**  
**Graduate Geoenvironmental Consultant**



Michelle Moran  
**BSc (Hons), MSc, MCIWM**  
**Associate Environmental Scientist**

for Egniol Consulting Ltd.

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## Data

Table S3.1 10022 Penhesgyn Q4 Egniol Leachate Dip Levels  
Table S3.6 10022 Penhesgyn Q4 Egniol Raw Perimeter Gas Data  
Table S3.9 10022 Penhesgyn Q4 Egniol Surface Water Monitoring  
Table S3.10 10022 Penhesgyn Q4 Egniol Groundwater Dip Levels

Table S3.7 10022 Penhesgyn Q4 YLEM Gas Balancing Data

Tables S3.3, S3.8, and S3.10 10022 Penhesgyn Q4 i2Analytical Laboratory Test Data

## Drawings

Egniol 5379.SURV.D03(D) Monitoring Locations  
Firth Consultants fc37224 Figure 2 Monitoring Locations