

Compliance Assessment Report CAR_NRW0041891

Permit being assessed: DP3030ZC.

For: PB Gelatins EPR/DP3030ZC, held by PB Gelatins UK Limited

At: Unit A6 Severn Road , Treforest Industrial Estate, Pontypridd, Rhondda Cynon Taf, CF37 5SQ.

Type of assessment carried out: Report/Data Review, Reason: Routine.

On 26/05/2023.

Parts of permit assessed: 3.1.3

NRW Lead Officer: Dale Padfield.

Report sent to: Simon Hughes, Health, Safety and Environment Manager on 26/05/2023.

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
A1 - Specified by permit	Action only (X)	

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

Criteria	Action needed	Complete by
A1	Please see Action 1 in main body of report.	31/12/2023

Action criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecution and/or suspension or revocation of your permit.

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

PB Gelatins

Permit EPR/DP3030ZC

This Compliance assessment report (CAR) details the site condition report (SCR) submitted by PB Gelatins to satisfy permit condition 3.1.3 whereby, periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination. Additionally, the operator was asked to expand the scope of the investigation to assess if contamination of groundwater or soil had occurred due the failure of the subsurface effluent drainage system that occurred in June 2022. This included additional sampling points located outside of the PB Gelatins permit boundary, in and around the areas of the failed effluent pipeline. This report summarises the investigation and provides a brief overview of the findings.

The purpose of a SCR is to describe and record the condition of the land and groundwater at a site at particular points in time. This will allow the operator to demonstrate that they have protected the land and groundwater during the lifetime of the permit, ensuring the land is maintained at a satisfactory state until the permit is surrendered. PB Gelatins choose not to conduct intrusive sampling during the permit application in 2013. Instead, a baseline report which undertook a desktop study – compromising stages 1 to 6 of the guidance for producing a site condition report as specified within article 22 of the industrial emissions directive (IED) was submitted. A further desktop study was conducted in 2020 after which PB decided to conduct intrusive investigations of the site, the timeframe of which was brought forward to coincide with the effluent draining impact investigating.

PB Gelatins commissioned Environmental Compliance Limited (ECL) to conduct the site intrusive investigation, which was undertaken on the 3rd 4th and 5th of October 2022, with the SCR report (PBGE.01.06.SCR) received on the 28th of November 2022. The investigation was conducted within both the main operational areas as well as additional off-site locations. Sampling included a total of three rotary cored boreholes which were progressed to depths between 12.6 and 13.4 meters below ground level (mgbl), for the purpose of obtaining samples from the water table. A further eleven window sampling (dynamic sampling) boreholes were made for the purpose of soil sampling, with a total of 29 samples taken and a further 4 samples taken for leachate testing.

Summary Of Findings from Groundwater Analysis

Three rotary cored boreholes (BH) were progressed to depths between 12.6 and 13.4 mgbl to obtain groundwater samples from the water table. Borehole 1 (BH1) was situated near the southwestern perimeter of the A21 production building. Groundwater flow was assessed to be flowing in a north / north-easterly direction, towards the river Taff. As such the samples obtained from BH1 were intended to provide an insight to groundwater conditions before any potential impact on their quality by the PB Gelatins site operations, including the failure of the effluent drainage system.

Borehole 2 (BH2) and borehole 3 (BH3) were located at the A18 site location and positioned centrally and at the northern perimeter respectfully. Given the anticipated hydraulic gradient, groundwater samples from BH2 and BH3 were positioned with the aim to identify if site operations, including the forementioned incident have had any impact groundwater quality.

Several parameters were recorded to be in breach of the relevant environmental quality standard (EQS) threshold values. These are detailed in table 1 below.

Table 1 – summary of parameters that exceeded the relevant EQS standards (exceedances highlighted in yellow)

Analytical Parameter	Units	BH1	BH2	BH3	EQS (µg/l)
Ammoniacal Nitrogen as NH4	µg/l	1300	450	20	200
Nitrite as N	µg/l	2.2	110	3.8	50
Naphthalene	µg/l	2.92	<0.01	<0.01	2
Anthracene	µg/l	0.26	<0.01	<0.01	0.1
Flouranthene	µg/l	0.75	<0.01	<0.01	0.12
Benzo(b)fluoranthene	µg/l	0.79	<0.01	<0.01	0.1
Benzo(k)fluoranthene	µg/l	0.22	<0.01	<0.01	0.1
Benzo(a)pyrene	µg/l	0.28	<0.01	<0.01	0.01
Aluminium	µg/l	208	13.4	21.4	200
Manganese	µg/l	170	610	78	50
TPH-CWG - Aliphatic (C5 - C35)	µg/l	4100	<10	<10	10
TPH-CWG - Aromatic (C5 - C35)	µg/l	790	<10	<10	10

The table above indicates that the majority of the EQS breaches were recorded at the BH1 sample location. With most of the results showing decreased concentrations, or concentrations below the limit of detection (LOD) at BH2 and BH3. This indicates that the elevated parameters likely originated beyond the PB Gelatins site boundary and are likely not a result of operations conducted by PB.

There are two parameters that do not follow this trend, nitrite as N and Manganese. Manganese breached the relevant EQS at all three borehole locations, with the highest concentration recorded at BH2, as noted in the ECL report, heavy metal concentrations may be attributed to historical contamination of the site, a result of the metal alloy works that was once situated at this location. High nitrite appears to be isolated at BH2, with significantly lower concentrations seen at upgradient BH1 and down gradient BH3.

Consideration should be given to sodium hydroxide spill incident that occurred within the Veolia permit boundary in 2020. Given the ability of sodium hydroxide to leach and mobilise certain compounds from soil, it may be cause of the elevated ammoniacal nitrogen and manganese detected at BH1, given the spill occurred within a relatively close proximity to this borehole. These pollutants are likely to migrate with the groundwater and may explain the elevated levels of these compounds detected at downgradient boreholes BH1 and BH2. The results obtained from BH1 may not be providing a true representation of un-impacted groundwater quality, given the high potential that ground water at this location may be experiencing ongoing impacts by the sodium hydroxide spill on the adjacent facility.

Summary of findings from Soil (made ground) analysis

Thirteen samples of made ground were taken (the ground that underlays the site), these samples were collected from ground level to 2.5 mgb.

Asbestos identified within 4 samples

No exceedances of the commercial site screening values (SSV's) were found within the made ground materials, however, the report notes that metals such as aluminium, chromium, iron and manganese were elevated, again potentially a result of historic land use.

Calcium and phosphate were noted to be elevated, which may correlate with raw product utilised on site.

Summary of findings from Soil (natural ground) analysis

Eleven samples of natural ground were taken and sent for geo-chemical analysis. No exceedances of the commercial site screening values (SSV's) were detected within these samples. As with the made ground samples, elevated concentrations of various metals were detected, likely a result of historic land use.

Soil analysis (controlled waters) – leachability

ECL were unable to obtain groundwater samples from sample points WS3, WS4 and WS6, as no shallow perched ground water was encountered, likely a result of low ground water levels following the drought during the second half of 2022. In the absence of these samples, ECL sent three samples, one from each of the above-named sample points for soil leachability analysis, to provide indicative results of groundwater quality.

Exceedances were recorded for iron and aluminium, which follows similar relatively high concentrations seen within the other samples and is appreciated that these are potentially a result of historic use of the site as a metal alloy works.

Potential impact of failed effluent drainage

As indicated within the SCR report, there appears to be no definitive trend within the data to suggest potential site effluent impact on soil or groundwater quality. The analytical results suggest that the environmental quality standards have been met for the majority of the specific pollutants of concern. With the exception of several determinands including heavy metal compounds, which is likely a result of pre-existing contamination from historical land use.

However, elevated levels of calcium were detected within several of the samples. The effluent generated by the gelatine manufacturing process is likely to contain high levels of calcium due to the use of hydrated lime in the treatment process. As stated within the SCR, calcium could potentially be used as an indicator of the presence of process effluent within the soil and groundwater.

SCR report section 1.3.18 notes that the presence of process materials (i.e., the presence of process effluent) may be determined through the relative concentrations of phosphate and calcium, given these are some of the main constituents contained within bones. The report notes that the highest concentrations of calcium detected do not correspond with the most elevated phosphate concentrations and suggest that if calcium and

phosphate correspond to the presence of process materials it would be expected that these determinands correspond in each sample, which they do not.

However, it's NRW's understanding that the raw material received and processed by PB Gelatins is ossein, which is bone that has undergone a demineralization process, removing calcium and phosphate from the material. Calcium and phosphate content within the effluent is likely to arise from the use of hydrated lime and phosphoric acid within the process. Any correlation or lack of correlation of these two determinands is unlikely to provide any meaningful indication of the presence or absence of process materials.

Section 1.3.25 notes that the calcium concentrations within the natural ground materials are significantly lower than those recorded in the made ground materials. The made ground materials predominantly contained limestone which is likely contributing to the higher concentrations of calcium. Section 1.3.26 notes that should calcium be used as a marker for contamination related to the process effluent, it would suggest that the impact is limited to the made ground and not the deeper natural geology. It is also noted that in sections 1.3.19 to 1.3.21 that sampling conducted in 2020 recorded calcium concentrations between 4,100 mg/kg and 49,000 mg/kg, with a near surface sample recording a concentration of 260,000 mg/kg, with results from this round of sampling falling within the ranges previously recorded. It's also noted that the calcium concentration from the sampling points located in the closest proximity of the drainage failure are lower than those both up and down gradient of this location. However, groundwater analysis from the borehole samples does show an increased calcium concentration at both boreholes down gradient to the failed effluent drainage, with BH2, the borehole in closest proximity to the failed effluent drainage recording the highest calcium concentration. The calcium concentrations recorded at BH2 and BH3 ~ 58,000 µg/l and 42,000 µg/l respectively are significantly higher than the 19,000 µg/l recorded at BH1.

As stated, there does not appear to be any clear trend or impact of the failed effluent drainage infrastructure on soil or groundwater quality. As advised in section 7.1.3, 7.1.5 and 1.3.21 further sampling would be required to determine any trends and establish any ongoing impact.

NRW request that PB Gelatins undertake further sampling as suggested within section 7.1.5 of the SCR, to determine any trends and establish any ongoing impact. Annual sampling for five years is suggested within the SCR, however, NRW request that annual borehole sampling at BH1, BH2 and BH3 is conducted for a further two years, at which point the need for further investigation will be evaluated.

Action 1: 26th of May 2023 - PB Gelatins. PB Gelatins to conduct ground water monitoring in 2023 and 2024 to establish any trends and to confirm there is no on-going or long-term impact caused by the effluent drainage failure. **Due before end of year 2023 and again in 2024.**

Summary

The majority of the determinands have been identified to be within the relevant EQS. Those that breached the EQS appear to either be related to historical land use, such as the presence of various heavy metals, given that these compounds are not utilised at the PB Gelatins facility. Borehole samples suggest that some EQS breaches may be related to off-site activity such as the relatively high concentrations of mineral oil and elevated levels of polycyclic aromatic hydrocarbons (PAH's) only detected at BH1. The ammoniacal nitrogen detected at both BH1 and BH2, and the high manganese concentrations detected at all three boreholes may be related to the sodium hydroxide incident occurring within the Veolia permit boundary, with the

contaminants being leached from the soil and migrating within the ground water.

There doesn't appear to be any significant impact on soil or groundwater quality in terms of substances with relevant environmental quality standards in relation to the effluent drainage failure, however, further investigation is required to establish any trends and to determine that there is no long-term environmental impact.

END.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator

Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

What are suspended scores?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

Full list of Industry and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.