

	EPR Compliance Assessment Report	Report ID: 5865
This form will report compliance with your permit as determined by an NRW officer		
Site	Cwm Rhyd y Ceirw (CRC) Landfill	Permit Ref TP3835LV
Operator/ Permit holder	SI Green UK Limited	
Date	02/04/15	Time in Out
What parts of the permit were assessed	Monitoring, reporting, management Systems and Operating techniques	
Assessment	Choose an item.	EPR Activity: Installation ☒ X Waste Op ☐ Water Discharge ☐
Recipient's name/position	Antonio Montinaro, - Site Manager. Guy Titman – MJCA Consultant	
Officer's name	Ffion Thomas	Date issued 17/04/15

Section 1 - Compliance Assessment Summary			
This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.			
Permit Conditions and Compliance Summary			Condition(s) breached
a) Permitted activities	1. Specified by permit	N	
b) Infrastructure	1. Engineering for prevention & control of pollution	N	
	2. Closure & decommissioning	N	
	3. Site drainage engineering (clean & foul)	N	
	4. Containment of stored materials	N	
	5. Plant and equipment	N	
c) General management	1. Staff competency/ training	N	
	2. Management system & operating procedures	A	
	3. Materials acceptance	N	
	4. Storage handling, labelling, segregation	N	
d) Incident management	1. Site security	N	
	2. Accident, emergency & incident planning	N	
e) Emissions	1. Air	N	
	2. Land & Groundwater	N	
	3. Surface water	N	
	4. Sewer	N	
	5. Waste	N	
f) Amenity	1. Odour	N	
	2. Noise	N	
	3. Dust/fibres/particulates	N	
	4. Pests, birds & scavengers	N	
	5. Deposits on road	N	
g) Monitoring and records, maintenance and reporting	1. Monitoring of emissions & environment	A	
	2. Records of activity, site diary, journal & events	N	
	3. Maintenance records	N	
	4. Reporting & notification	A	
h) Resource efficiency	1. Efficient use of raw materials	N	
	2. Energy	N	
KEY: C1, C2, C3, C4 = CCS breach category (* suspended scores are marked with an asterisk), A = Assessed or assessed in part (no evidence of non-compliance), N = Not assessed, NA = Not Applicable			

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This Compliance Assessment Report (CAR) has been completed as part of the follow up work required to progress review of development plans for the site. This CAR addresses 3 main areas of compliance matters; review of the annual reporting submission, review emissions monitoring data, provide comment on the gas risk assessment that was included in the preliminary closure report, request a response to the further information request previously made to assist in reviewing the updated HRA also included as part of the preliminary closure report.

CAR form agenda:

1. Introduction/update on development plans
2. Request for further information related to the HRA
3. Comments related to the Gas Risk Assessment (GRA)
4. Response to annual report submission
5. Response to emissions monitoring review

Introduction/update on development plans

SI Green UK Ltd are exploring development options for the site due to the commercial waste market changes meaning that it is not envisaged to provide sufficient inputs to restore/fill the permitted facility. A developer working with SI Green has sought planning permission for an alternative use of a housing development and public open space at the site.

SI Green had submitted a preliminary closure report to NRW to start the closure process in line with the planning application. A review by NRW of this preliminary closure report highlighted the need to amend the current risk assessments at the site as these were based on relocating the historic waste at the site. The new development plans are now to leave this historic waste in situ and pump groundwater, including from beneath the historic waste deposit, in perpetuity.

A new HRA has been produced based on leaving the historic waste in situ. This new HRA was submitted to support and start the closure process for the site. A review of the HRA has indicated that further information is required and requests for this information was discussed at a meeting of the 6th February 2015.

NRW have been consulted on the development planning application submitted to the City and County of Swansea. Our initial consultation comments have highlighted that the site has an active EPR permit for a landfill installation that needs to be fully considered along with gas risk assessments and how the pumping of groundwater in perpetuity will be managed.

A meeting was held on the 6th February 2015 between NRW, SI Green and their consultants MJCA along with the developers Edenstones. A meeting note has been produced that captures the discussions held. The meeting clarified the process that needs to be followed in order to facilitate any potential future housing developments at the site, subject to planning permission. The main items requiring progression are moving the landfill into closure by updating risk assessments to reflect leaving the waste in situ, updating incident and emergency contingency management plans, including how pumping of ground water will be managed. The EPR permit also needs to be reviewed and varied to reflect the proposed changes, along with providing enforceable conditions that would prohibit any housing and associated development within the site boundary.

SI Green's consultants have provided a written response dated 24 March to NRW regarding the above permit condition matter, making suggestions as to the wording of such a condition and suggestions of conditions to also be included within any planning permissions. NRW are consulting internally and with the planning department of City and County of Swansea on these proposed conditions and a response will be forwarded separately.

Request for further information related to the HRA

An updated HRA report, based on leaving the historic waste in situ was received on the 29th September 2015. Following review of the HRA by NRW a response letter, which requested further information, was forwarded to SI Green and their consultants on the 30 January 2015 by email.

The content of the letter of the 30th January formed the base of the meeting of the 6th February. SI Green's consultants provided reassurance that the additional information requested could be supplied. **The submission of this information is an outstanding action.** Please forward the requested information highlighted in the HRA response letter of the 30th January as further discussed in the meeting of the 6th February.

Comments related to the Gas Risk Assessment (GRA)

A revised Gas Risk Assessment was submitted as part of the preliminary closure report and a revised GasSim model was also forwarded on the 10th February 2015 following a request made in the meeting of the 6th February. An initial review of this information has been undertaken to facilitate the progression of the proposed site development, pending planning permission, and permit variation.

Following review and interrogation of the GasSim model the modelled predictions generally remain consistent in terms of predicted gas volumes. This is not unexpected due to the age of the waste which would now be degraded meaning the gas generated would be low.

The GRA assumptions appear generally reasonable, however they are based on a limited dataset and the general assessment that the risk of lateral gas migration being negligible is not agreed with. Whilst we do agree the risk is indeed low, there remains uncertainty due to the variable nature of landfill gas migration and the incomplete perimeter gas monitoring network, particularly on the Northern and Eastern flanks, leading to a limited monitoring data. It should be noted that this is the area which is identified as fractured sandstone which could provide preferential pathways.

Additional wells need to be installed on the Northern and Western Flank, as outlined in the original permit application. Currently there is a gap of 180m between the two Northern wells and 140m between the western wells. (The numbers will be dependent on whether houses are built closer to the existing landfill) During the meeting of the 6th February it was noted that SI Green and their consultants agreed that there was a need to increase the monitoring network and showed commitment to undertake this work.

A further dataset issue arises as there was a temporary agreement to reduce the gas monitoring frequency. This agreement was limited up until March 2015. Comment is provided under heading item 5 to revert this monitoring frequency back to monthly monitoring immediately.

Occasional identification of elevated methane on the eastern side has been noted but SI Green have been unable to investigate this further as they have not since been detected. A reduction in the monitoring frequency will have reduced the opportunities of detection as gas emissions can change rapidly and even monthly monitoring can sometimes fail to pick up changes. Whilst we believe the assertion that the effected wells are probably influenced by coal measure gas are true, reporting of further investigations are required to confirm this for certain. It is noted that SI Green and their consultants agreed to this point during the meeting of the 6th February and committed to undertaking and reporting this investigation.

Irrespective of the source, be it within the quarry basin adjacent to the landfill or on the quarry perimeter/flanks, the risk of methane will need to be considered and addressed for any proposed housing development by planning. Gas comments have already been provided in the NRW planning consultation response, but following review of this GRA further comments will be made to suggest planners require the developer to carefully assess and investigate ground gases in the area due for development (BS8485 provides a framework) and if identified as being required allow for houses to be designed with appropriate gas protection measures. It is noted this has already been suggested by the operator and developer.

GRA review actions

Current status:

- Landfill gas monitoring frequency of perimeter wells needs to be reinstated to monthly monitoring.
- Elevated methane levels on eastern flanks need investigation and assessment of source with findings reported to NRW.
- Additional wells to complete the monitoring network need to be installed.

Definitive closure:

Before the site can enter definitive closure the following needs to be addressed:

- See comments above
- Review monitoring schedules and if required revise methane emission levels for certain wells (subject to findings of investigations into elevated methane and assuming it is a coal measure source)

Response to annual report submission

On the 27th January SI Green's consultants emailed NRW information with respect to condition 4.2.1 of the EPR permit. The condition states that "A report or reports on the performance of the activities over the previous years shall be submitted to the Agency (natural resources Wales) by 31 January (or other date agreed in writing by the Agency) each year."

The condition is subdivided into 9 areas of reference (a) to (i) a response has been provided under each heading and has been copied below for ease of reference. Comment have been provided in response.

- (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 in relation to this installation and any agreed amendments thereto;*

The risk assessments submitted with the application for the Permit were in respect of the proposed landfill which has yet to be constructed at the site. The design of the proposed landfill has been revised in respect of the northern sidewall lining system and the proposed phasing. The revised design was the subject of an application to vary Environmental Permit reference EPR/TP3835LV. Environmental Permit variation reference EPR/TP3835LV/V002 was issued by the Environment Agency on 24 December 2010. The application for the Environmental Permit variation included as necessary reviews of the risk assessments. As the proposed landfill has not yet been constructed it is not possible to carry out the review the subject of the condition.

- I recognise that the landfill has not yet been constructed but I would like to suggest that as emissions monitoring is being undertaken at the site that a short review of this data is undertaken. This analysis will have been undertaken as part of the updated HRA that has been submitted in 2014 and so I do not feel that there is need to retrospectively provide a review of results for the year 2014, however I would expect an annual review of future monitoring to be undertaken and submitted.

- (b) *where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets;*

There are no improvement targets against which to summarise progress.

- Agreed.

- (c) *the energy consumed at the site, reported in the format set out in schedule 5 table S5.3*

The landfill currently is not operational hence the energy consumed at the site is minimal. The only mains powered activity at the site is the groundwater pump associated with the groundwater sump. The energy usage at the site for the calendar year 2014 is 42,446 kWh.

- Accepted.

- (d) *the annual production/treatment set out in schedule 5 table S5.2;*

The volume of leachate discharged to sewer in the period January 2014 to December 2014 inclusive was 303m³. The volume of water discharged to sewer during the period January 2014 to December 2014 inclusive was 79,021m³.

- Accepted.

- (e) *details of any contamination or decontamination of the site which has occurred;*

There has been no contamination or decontamination of the site undertaken during the reporting period.

- Accepted

- (f) *the topographical surveys required by condition 3.6.3 other than those submitted as part of a CQA validation report;*

Topographical surveys of different areas of the site have been carried out previously and reported to the Environment Agency. As the landfill currently is not operational no additional topographic surveys have been undertaken with respect to Condition 3.6.3.

- Accepted

- (g) *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;*

As the landfill site is not operational no waste has been deposited at the site during 2014 hence no additional volume of the landfill is occupied by waste.

- Accepted

- (h) *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;*

As no waste has been deposited at the site since the permit was issued in 2008 and no additional topographical surveys have been carried out no assessment of the settlement behaviour of the waste at the site has been carried out.

- Accepted

- (i) *a calculation of the remaining capacity (reported in cubic metres) derived from the pre-settlement contours and the most recent topographical survey.*

No waste has been deposited at the site since the permit was issued in 2008. Following the redesign of the site as approved by the Environment Agency in permit variation notice EPR/TP3835LV/V002 the void available at the site for imported waste is approximately 800,000 m³.

- Accepted

Response to emissions monitoring review

Following submission of the annual report above and review of the Q4 monitoring returns I emailed SI Green on the 4/2/15 to request all of the monitoring data for the site to be produced in an excel or CSV format, ideally with the permitted limits and where appropriate control levels so as to better understand and review the monitoring data.

SI Green submitted this information during the meeting of the 6th February.

A review of this data highlighted that a previous agreement had been made which gave temporary agreement to a reduction in the monitoring frequency of gas emissions monitoring and ground water emissions monitoring to monthly until March 2015 (email from Jeremy Walters dated 4/3/14)

At the time of this agreement there were no plans (planning applications) to develop the site and the site remained in a no operational phase. As there are now plans to develop the site for housing a fuller dataset is required, as discussed under the GRA comments above. Gathering monitoring data is an important element of developing, and reviewing, the site conceptual model (comments following the review of the HRA report included the need for an update to the site conceptual model)

Gathering a robust monitoring dataset also allows other sources of methane and carbon dioxide to be identified such as coal measure gas (again this aspect of identifying other sources of gas at CRC has been discussed in the GRA comments above)

The frequency of monitoring should also be sufficient to enable the characterisation of seasonal and other environmental influences. The landfill directive regulations require monitoring during the operational and aftercare phase of a landfill until the regulator deems the landfill no longer likely to cause a hazard to the environment. The typical minimum frequency for monitoring boreholes external and internal to a landfill site is monthly.

As the previously agreed timeframe for reducing monitoring frequency until march 2015 has now passed, and given the proposed, pending planning permission, housing development requiring a more robust dataset and monitoring network **NRW require SI Green to undertake monthly monitoring of gas emissions and reporting of this monitoring with immediate effect from the 1st April 2014.**

ACTIONS Summary:

HRA review actions

Respond to HRA comments requesting additional information (including discussions held on 6th February to provide justification of the Conceptual model)

GRA review actions

Current status:

- Landfill gas monitoring frequency of perimeter wells needs to be reinstated to monthly monitoring.
- Elevated methane levels on eastern flanks need investigation and assessment of source.
- Additional wells to complete the monitoring network need to be installed.

Definitive closure:

Before the site can enter definitive closure the following needs to be addressed:

- See comments above
- Review monitoring schedules and if required revise methane emission levels for certain wells (subject to findings of investigations into elevated methane and assuming it is a coal measure source)

Emissions monitoring actions

Return to monthly monitoring for gas emissions.

END

	EPR Compliance Assessment Report	Report ID: 5865	
This form will report non-compliance with your permit as determined by an NRW officer			
Site	Cwm Rhyd y Ceirw	Permit	TP3835LV
Operator/ Permit	SI Green Ltd	Date	17/4/15

Section 3- Enforcement Response		Only one of the boxes below should be ticked
You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.		
Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.		NA
In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.		NA
We will now consider what enforcement action is appropriate and notify you, referencing this form.		NA

Section 4- Action(s)			
Where a non - compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.			
Criteria Ref.	CCS Category	Action Required/Advised	Due Date
See Section 1 above			
		No Enforcement actions	

Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

● We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.

● Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General Information

Data protection notice

The information on this form will be processed by Natural Resources Wales (NRW) to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). NRW may also use and/or disclose it in connection with:

- offering/providing you with its literature/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 and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within twenty working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official **Complaints** and Commendations procedure, phone our general enquiry number **0300 065 3000** (Mon to Fri **08.00–18.00**) and ask for the **Customer Contact team** or send an email to enquiries@naturalresourceswales.gov.uk If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on **(0845) 601 0987**.