



Cyfoeth Naturiol Cymru Natural Resources Wales

Dr Richard Mitchener
Principal Hydrologist, Water and Environment
Atkins
The Axis
10 Holiday Street
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Ein cyf/Our ref: EPR/AP3990LR

Eich cyf/Your ref:

Dyddiad/Date: 25 September 2013

Dear Dr Mitchener

Interim Comments on Hydrogeological Risk Assessment

Following receipt of the Hydrogeological Risk Assessment (HRA) in accordance with Improvement Programme 1 of Table S1.3 Improvement programme requirements, please find our comments below. These comments are based on the information that has been provided in the HRA and Environmental Settings and Installation Design Report (ESID).

1. It would be beneficial that the naming of the boreholes across the site was standardised with one map with all the locations referenced within the report produced. Currently there is reference to boreholes that are not marked on any maps provided, e.g. MSMW157. Please could all of the borehole logs be provided.
2. From our understanding of the wider Coed Darcy site we note that groundwater flow is towards the Crymlyn Bog (SAC) and generally following topography. However, in drawing ESID 13 it is drawn as being west to south west, perpendicular to the wider site groundwater flow direction. Further to this in ESID section 3.5.2 it is stated that the dominant groundwater flow is to the east, towards Crymlyn Bog. Please could clarification be provided on whether this is a typographical error and should read groundwater flow is to the west, towards Crymlyn Bog.
3. In 3.5.2 of the ESID and Drawing 11, reference is made to radial flow. Is this due to the pumping within the landfill or are the boreholes monitoring a different horizon? Further to this, what time of year do the groundwater contour lines represent in ESID Drawing 11? The contour plots should consider the whole year and any variation e.g. due to the seasons.

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4. Groundwater quality data is not included within the two reports for all of the sampled locations (ESID section 3.5.3 mentions 8 locations, but only gives three borehole names).
5. The sampling suite should be suitable for the contamination of concern present in the waste mass, but should also include general landfill determinants, e.g. ammoniacal nitrogen and chloride. Vanadium was deposited in areas of the landfill and subsequently should be sampled and analysed. A suite of metals, total and dissolved, should also be included in the sampling suite.
6. The HRA submission has based on sampling from 2008 to 2010. Has any recent sampling been completed? We agree that further water quality and water level monitoring should be completed to help derive the control levels and compliance limits. We would recommend at least 12 months of monthly monitoring data to help support this assessment.
7. Please could the area of the containment ash bund and the extent of the marine ply board that runs adjacent to the northern boundary of the site be marked on a relevant plan.
8. What remediation activities have and are being carried out with the containment area and previously landfilled area? Are these activities having an effect on the waste mass and groundwater beneath the containment and previously landfilled area?
9. We understand that this site will form a wildlife area as part of the wider site Master Plan with the intention to return to nature. We note therefore that a simple cap design might be the way forward. However, the cap design mentioned under ESID section 2.3.1 may not be sufficient to help reduce the generation of leachate and subsequent leachate plume from the landfilled area.

Please also find below some further general comments in relation to the content of the HRA and ESID.

- There are two ESID 9 Drawings for different plans and the plans do not appear in order.
- Update reference to guidance and regulations to latest versions. Groundwater Regulation 1998 and Landfill Regulation 2002 are now part of Environmental Permitting Regulation 2010. Guidance H1 Annex I and J3 should be used for landfills, not the 2003 documents reference in ESID section 4.2.
- Threshold values (under WFD Direction 2010) should only be used for river basin

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planning. EQS and DWS should be used for setting of Environmental Assessment Levels.

- Compliance limit has replace trigger level terminology and should not be used – control level remains the same.

In light of the above comments written approval cannot be granted for the Hydrogeological Risk Assessment in accordance with IP1 of Table S1.3 Improvement programme requirements.

If you have any questions or wish to discuss any of the points raised above, then please do not hesitate to contact me via the details below.

Yours sincerely



Gareth M Davies

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