Pen-Y-Bont Landfill Site
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Mr S Ross,
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6th May 2016

Via email to: stuart.ross@cyfoethnaturiolcymru.gov.uk

Our ref: GNF/NRWL060516

Dear Stuart,

Pen-Y-Bont GP3830BG. Response to site inspection CAR form dated 4th March 2016.

I am writing in response to your CAR form dated 4th March 2016 (received 23rd March) which required actions to be implemented following a site inspection which incorporated a review of the gas compound and gas field infrastructure;

Permit Non-Compliance

Action – Confirm that gas wells **GW87**, **CHIR116** and **CHIR43** have been reconnected within 7 days of receipt of this report. Avoid the disconnection of wells (where it is likely that fugitive emissions will result) or implement alternative measures, eg buried pipework/sacrificial wells.
Due to the nature of tipping operations there are times when the disconnection of gas collection pipework is unavoidable, however we will endeavour to keep these connections to a minimum and where possible either bury pipework or reconnect with temporary pipework overnight.
These wells were all reconnected by the 8th March as advised by Infinis.
We would point out that there were only 3 gas wells from a total of circa 83 wells on site that were disconnected and that we have not received or are currently receiving any odour complaints.

Further Audit Actions

Perimeter Boreholes – Small laboratory style borehole bungs require replacing to ensure reliable gas tight seal. Expansion bungs require inspection and readjustment where appropriate to ensure an effective seal.
All of the perimeter boreholes (including the ones in the area where NRW carried out gas monitoring during the audit) were checked in the week following the audit and were noted to have good air/gas tight seals, including the laboratory style bungs. However, we will replace these small lab bungs with expandable bungs complete with tefens which we are in the process of sourcing.
The majority of the perimeter gas boreholes are fitted with expandable bungs with tefen valves.
Bungs in all boreholes are checked during the monthly monitoring round as part of the technicians maintenance procedure. Any discrepancies with the effectiveness of the gas tight seals are noted on the technicians Non-Conformance report following the monitoring visit which is emailed to the site manager.

Gas Compound – Discrepancy between the SCADA reading and the gas reading at the inlet. Ensure the SCADA reading is recalibrated to reflect the actual readings more accurately. Bulk H2S is high efforts should be made to ensure that the extraction system remains under negative pressure to reduce the risk of gas leaks with high H2S levels.
This issue is being addressed on Fri 6th May by Infinis Controls & Instrumentation department.

CHIR81 - This well had very high positive pressure and off the scale H_2S. This could be a health and safety issue and some form of suction must be established on this well as soon as possible. Proposed de-commissioning must be carefully assessed as the level of positive pressure and high H_2S indicate it is capturing gas not captured by the re-drill. Please dip this well and check for blinding of perforations with leachate.

Gas well GW81 now has a 10mm bleed line installed to prevent the well becoming positive and also has an H2S hazard warning sticker affixed to it (see photo attached) – this will be applied across the site for any wells exhibiting similar characteristics.
Well dip; DTL 6.1m DTB 11.7m – to be decommissioned, replacement CHIR81R already drilled.

Canoflex - Please ensure Canoflex attachments (at well head or collection pipework) are regularly checked for air leaks.
These are checked as part of the Infinis technician's weekly maintenance routine.

CHIR4AR: Check this well for high perched leachate levels when not being pumped and consider options to control positive pressure – **see below CHIR4Ar is the Infinis nomenclature for leachate well LM4b**, see below.

LWM4B - Check the latest dip results for this well. Insert pump if required.
With the actively pumped leachate well LC4b in close proximity to well LM4b, the leachate level was low in this well with a 1.86m head recorded. The pump was reinstalled in LM4b the following Tuesday (8th March) with a 0.89m dip level reported with the March data. We will endeavour to keep pump downtime as a low as possible when carrying out pump repairs.
A by-pass line has been fitted to the well to combat positive pressure build up during any periods of pump downtime. The same by-pass system has been applied to the other deep leachate wells on site.

2AR2, CHIR39, LC1 - Please re-connect all wells as soon as possible and once this has been achieved re-record flow and quality results and forward to NRW within 7 days of receipt of this report. Dip all wells to check for levels of available perforations in this part of the site.
Flow & quality at GUP;
04/03/16 – 51.7% CH4, 0,5% O2, 1058m3/h Flow
22/03/16 – 50.3% CH4, 0.6% O2, 1018m3/h Flow
Dip levels to liquid (DTL) & Base (DTB);
Gas well 2AR2 dips DTL 15.0m DTB 19.85m
Gas well CHIR39 dips DTL 13.20m DTB 21.10m
Collapsed leachate well LC1 dip – DTL 4.27m, DTB 19.36m

CHIR43 - This well should be re-connected to the extraction system immediately. The high H_2S levels should be considered a risk when such a well is under positive pressure. As such it is vital that such wells are kept under negative pressure at all times. If a well with high H_2S readings shows positive pressures then site staff and visitors should be made aware of this before they approach such wells. This will enable a dynamic risk assessment to be conducted at any particular time.
This well was reconnected later in the day following the gas audit and is now at -50mb suction with good gas quality.

Check dips for wells with high emissions or positive pressure, including wells that crash quickly after exhibiting good gas quality. **Dip levels to liquid & base.**
Gas well GW87 – DTL 6.20m, DTB 13.45m
Gas well CHIR116 – DTL 2.74m DTB 12.87m – candidate for pump
Gas well CHIR21 – DTL 3.7m, DTB 47.73 – obvious candidate for a pump (liquid level to be checked using anti-foam dipmeter)
Gas well CHIR122 – DTL 3.19m DTB 47.73m - obvious candidate for a pump (liquid level to be checked using anti-foam dipmeter)
Gas well CHIR43 – DTL 13.47m, DTB 43.70m

Dip wells with high emissions around the base (see above) and ensure that a plan is submitted to reduce or eliminate these emissions. This may be de-watering or pin well installation if the gas is deemed to be arising from the upper layers of waste and not influenced by the well in question,

Pumping of gas wells is currently being assessed dependant on accessibility of the wells and whether pumps can be installed without obstruction down the wells. Pump installations will occur as soon as this can be arranged with FCCs in-house pump team.
The FCC pump team has mostly been performing pneumatic pump works around Cheshire but they have recently expanded into North Wales to look after the air pumping systems at Rossett and Pen-Y-Bont.

If you have any queries regarding the above please do not hesitate to contact me.

Yours sincerely

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