



Hertfordshire County Council Planning Committee Meeting

Comment on 1

Boreholes on the application site up and down hydraulic gradient show the bromate plume doesn't flow under the site. Low concentrations, close to the laboratory limits of detection, have been sporadically detected in monitoring boreholes around the site across a number of years but bromate is not consistently present. The boreholes on the application site are located for the purposes of site characterisation as well as long-term monitoring. A borehole located within the dig site would not be suitable for long-term monitoring.

A measured concentration of bromide greater than 125 µg/l is not an indicator of the presence of bromate. Bromide occurs naturally at variable concentrations, unlike bromate. There are other potential sources of bromide in groundwater, for example road grit salt. In 2007, the Planning Inspector arbitrarily defined the boundary of the bromide plume as 125 µg/l based on existing monitoring data. There is no UK Drinking Water Standard for bromide. A target concentration of 500 µg/l was established during the 2007 public inquiry to be applied to public water supply groundwater abstractions to protect them from bromate formation during water treatment by ozonation in the presence of chlorine.

Comment on 2

The water in the ponds on Cemex site are used in their mineral processing. The pond by the entrance is licensed for abstraction from the lower mineral aquifer, those ponds in the centre of the site are used for settling out silt and for discharging mineral processing water back into the lower mineral aquifer. These ponds are not in the restoration phase. Cemex have applied for an extension of their quarry to the north of Hatfield Garden Village and their application includes using the existing infrastructure for mineral processing. This information is available in the Cemex abstraction licence.

The context of the comment made in the meeting was that we do not agree with Dr M Rivetts groundwater flow lines. The flow lines presented do not take into account the presence of the current and historic workings immediately up-hydraulic gradient of the proposed quarry including the existing abstraction, discharge and landfill mass. Any groundwater flow variations caused by the presence of these things has not resulted in the plume diverting southwards towards Roestock and Tyttenhanger. Therefore, there is no reasonable expectation that the application in question would cause a southwards diversion in groundwater flow either.

Please see attached map showing the historic and permitted landfills near Hatfield.

Comment on 3

The monitoring locations we were referring to between the application site and the Public Water Supply of Roestock and Tyttenhanger are in Smallford and Sleepshyde. Please see attached graphs of the monitoring locations in Smallford (BH by Block 3 (Northernmost) Glinwells Nursery) and Sleepshyde (M10, Sleepshyde OBH).

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The graph of monitoring results at the Smallford location shows bromate concentrations are consistently at or below the laboratory limit of detection (the detection limit and sampling frequency have changed slightly over time). The only exceptions are 3 samples taken on 26/09/2001, 05/12/2001 and 26/02/2002, which are also all below the UK Drinking Water Standard of 10 µg/l. Again, the bromide concentrations at this location fluctuate significantly, illustrating the earlier point that the presence of bromide does not indicate or correlate with the presence of bromate.

The graph of monitoring results at the Sleafshyde location shows bromate concentrations are consistently at or below the laboratory limit of detection (the detection limit and sampling frequency have changed slightly over time). The only exceptions are 2 samples taken on 01/03/2002 and 26/03/2002, which are both below the UK Drinking Water Standard of 10 µg/l. The bromide concentrations at this location fluctuate significantly, illustrating the earlier point that the presence of bromide does not indicate or correlate with the presence of bromate.

The map shown in your letter is misleading in that it conflates many years' worth of monitoring to suggest that bromate is omnipresent. This is not the case. Low concentrations, close to the laboratory limits of detection, have been sporadically detected in monitoring boreholes around the site across a number of years but bromate is not consistently present and the monitoring indicates that bromate does not flow beneath the site.

Clarification of bromate concentration standards:

- The UK Drinking Water Standard for bromate is 10 micrograms per litre (µg/l).
- The bromate concentration currently used as the Remedial End-Point in relation to the regulation of the pollution under Part 2A is 5 µg/l.
- For practical regulation purposes, the trigger level applying to the adjacent Hatfield Quarry is 2 µg/l. This is mentioned in our letter to HCC referenced NE/2016/124652/05-L01.

Comment on 4

The lower mineral aquifer up-gradient of the application site has already been disturbed by the aforementioned groundwater abstraction, discharges and landfilling activities (see Comment 2 above). Any groundwater flow variations caused by the presence of these things has not resulted in the plume diverting southwards towards Roestock and Tyttenhanger. Therefore, there is no reasonable expectation that the application in question would cause a southwards diversion in groundwater flow either.

We are confident that the safeguard measures presented in the submitted Water Management Plan will satisfactorily manage any residual low risk.

Comment on 5

The quotation has been misinterpreted. We did not say that the contamination is only deep within the chalk but that the spread of the contamination extends downwards into the chalk. Groundwater flow within the chalk is via fissures. The vast majority of flow is abstracted at depth from within the Chalk by Hatfield Scavenge Pumping. The boreholes used for scavenge pumping are approximately 100 metres deep and the datum elevation is 102

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metres Above Ordnance Datum (mAOD), meaning the base of the boreholes is around 2 m AOD. They are linked by adits at 82m below ground level (20 m AOD) to enhance groundwater capture from within the chalk. The comparatively shallow depths of the quarry and landfill will not interfere with the chalk groundwater flow.

Further, the 2019 average abstraction of Hatfield scavenge pumping was 4.34 megalitres (million litres) per day (Ml/d); this abstraction rate is orders of magnitude above the intermittent dewatering of the lower mineral aquifer proposed in the quarry application.

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On behalf of the Environment Agency

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