



**Royal
HaskoningDHV**
Enhancing Society Together

**Section 6 Appendix 6.1
Land Quality Investigation
Meeting Note**

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Note

To : Mick Gent
From : Darren Banner-Perry
Date : 20 May 2014
Copy : James Barrie (York Potash Ltd), Matt Simpson,
Rachel Brown, Declan Fives (Royal HaskoningDHV)
Our reference : Post meeting note to Mick Gent_140520_Rev 0

Subject : Proposed strategy for delivering the land quality ES
chapter for the proposed Bran Sands harbour facility

1. Introduction

York Potash Ltd (YPL) proposes to develop a harbour facility on Teesside for the export of polyhalite bulk fertiliser. Royal HaskoningDHV (RHDHV) has been commissioned by YPL as EIA lead and author for a number of technical disciplines, including land quality.

RHDHV requested a meeting with Redcar and Cleveland Borough Council (RCBC) to discuss RHDHV's assessment approach for the land quality chapter with the objective of obtaining agreement from RCBC on the proposed approach. It was agreed at the meeting that RHDHV would produce a note summarising the meeting and forward this to RCBC, which would then formally acknowledge agreement to the assessment approach.

2. Site Sensitivity

The site is located in an area which has been/is dominated by commercial/industrial operations. The ground conditions at the site/in the vicinity of the site comprise Made Ground (incorporating asphalt, slag, clinker, sub-base etc) overlying Tidal Flat Deposits (incorporating low permeability clay with some sands and silts) and low permeability Mudstone. The Tidal Flat Deposits are designated as a Secondary Undifferentiated Aquifer, and the mudstone is designated as a Secondary B Aquifer. Historical ground investigations indicate that perched groundwater is present in the Made Ground/Tidal Flat Deposits and is likely to be discontinuous. There are no licensed groundwater abstractions within the vicinity of the site and the site is not located within a Source Protection Zone. Given the industrial history of the site and environs, it is anticipated that groundwater will be of relatively poor quality and in addition, given the low permeability of the aquifer, it is considered unlikely to be developed as a future water resource.

RHDHV requested a meeting with the Environment Agency (EA) to discuss the assessment approach. However, the EA explained that they had carried out a screening exercise and concluded that the site is not considered a high priority because the site is not located in a sensitive area (Principal Aquifer). The EA did not wish to meet with us but confirmed RCBC could consult with them if they so wished.

The site is adjacent to a number of surface water features including the Tees Estuary, Dabholm Gut, Fleet Beck and Bran Sands Lagoon. The Tees Estuary exhibits elevated concentrations of Tributyltin (TBT) and dissolved organic nitrogen (DON) (pers. comms. with John Collins at the

Environment Agency). The Dabholm Gut, which is tidally influenced, and the Fleet Beck both drain the local area which comprises a range of industrial/commercial operations. The Bran Sands lagoon is located to the east of the proposed quay. This water body is adjacent to the Bran Sands landfill, but it does not comprise an area of previous landfilling. The lagoon is tidally influenced and there is an inlet (which will be maintained following development) connecting the lagoon to the Tees Estuary. Bran Sands Lagoon is known and accepted to be of importance in supporting bird life. These surface water features are also considered to be of low sensitivity given the current and historic site use and surrounding land use.

3. Port Development

YPL propose to develop a harbour facility on Teesside for the export of polyhalite bulk fertilizer. The proposed harbour facility would comprise the following elements:

- marine terminal on the southern bank of the Tees estuary
- dredging for a section of the approach channel and to create a berth pocket
- conveyor system between the marine terminal and the MHF at Wilton
- product storage facilities (2 silos) adjacent to the quay

The development will be located to the west of Bran Sands lagoon and landfill. It may be necessary to improve access to the quay along the utilities corridor adjacent to the southern edge of the lagoon. This will be achieved through localised infilling along the southern edge using clean materials. RHDHV are currently liaising with the EA regarding permitting implications.

Two options are being considered for the quay construction – an open quay structure and a solid quay structure.

The quay would be positioned as far out into the river as possible to take advantage of the deeper water near to the river channel in order to reduce dredging requirements or, in the case of the solid quay structure, to balance the dredge and reclamation quantities.

4. Existing Data

A number of studies have been undertaken at/in the vicinity of the proposed development site. These documents will be used to progress the ES chapter. A summary of the reports is presented below:

Contaminated Land Preliminary Risk Assessment Report

RHDHV was commissioned by YPL to progress a desk based assessment of the Port site. To support this assessment RHDHV procured an Envirocheck Report comprising historical maps, information on site setting (geology, hydrogeology, hydrology etc) and regulatory information (permitting, pollution events etc).

Landfill Stability Report

A stability risk assessment was undertaken for the Bran Sands Landfill site in 2003 and forms part of the IPPC application for the landfill. The document provides information on site history,

geology, historical and recent ground investigation findings (ground conditions) for the site and immediate surroundings.

Landfill Monitoring Reports

These reports present the monitoring undertaken for a twelve month period as required by the Environmental permit. RHDHV have been provided with the monitoring reports for 2007 to 2012 inclusive.

The reports include *inter alia* data for groundwater and gas at specific monitoring locations around the site, including some monitoring wells which are located within the proposed Port development site.

Pipeline Investigations

Two ground investigations were undertaken for a proposed onshore gas pipeline from the Breagh Field. The two reports provide information on the ground conditions and contain contamination testing data for the two sites. One of the investigations advanced four boreholes at the southern extent of the existing embankment, southwest of the Bran Sands Lagoon. The other investigation advanced seven boreholes and four machine excavated trial pits, along a utilities corridor south of the Bran Sands Landfill. A total of thirty-five soil samples were submitted for laboratory analysis of a range of potential determinands. Leachability testing was also undertaken and four groundwater samples were also obtained.

Due Diligence Report

This report was produced to assist York Potash Ltd to identify potential environmental liabilities associated with the proposed purchase, commercial development and operation of the Akzo Nobel landholding at Bran Sands. The report includes information on site history, geology, hydrogeology, hydrology, pollution control, waste management etc.

5. Proposed Strategy

Having considered the information currently available, the nature of the proposed development and the environmental setting we consider that a robust ES chapter can be progressed without the need for further supporting information from additional intrusive ground investigations. This statement is based on the following rationale:

- There is an extensive 'library' of existing information on the ground conditions (soils and groundwater)
- The site is considered to be of low sensitivity
- The proposed end use is considered to be of low sensitivity – commercial end use
- Groundwater is perched and likely to be of poor quality and discontinuous within discreet bands of higher permeability soils
- Appropriate risk management techniques will be adopted during the construction/operation of the harbour facilities (i.e. appropriate working practices/PPE, completion of a Piling Risk Assessment, incorporation of cover layers, etc.)

On completion of the ES chapter, should we consider that further intrusive investigation would be prudent, for example to corroborate existing data, this will either be combined with future geotechnical investigations which are to be progressed in due course to support the detailed design, or as a standalone investigation post DCO submission/consent.

6. Key Meeting Conclusions

- RCBC agreed with our approach to the assessment (see below) and agreed that the site is of low sensitivity
- RCBC requested to see the land quality chapter ahead of the DCO submission. RHDHV confirmed they would pass on this request to YPL for agreement, but agreed that in principle this was a good suggestion (and the same applies for the land quality chapter for the MHF/MTS at Wilton)