

PROPOSED VARIATIONS TO ENVIRONMENTAL PERMIT AND WASTE OPERATIONS – SUPPORTING INFORMATION DOCUMENT

Environmental Permit Variation Application

Reclamation of the former British Sugar Refinery Site, York

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1 Introduction

Arcadis UK Ltd (Arcadis) has prepared this document to support the proposed variation of the Environmental Permit (EP) in relation to the Former British Sugar Factory, Millfield Lane, York, YO26 6AY (the 'Site'). A site location plan is presented as Figure 1.

The documents have been prepared in accordance with current Environment agency (EA) and Department for Environment, Food and Rural Affairs (DEFRA) guidance on how to 'Change, transfer or cancel your environmental permit', (published online, last updated June 2020) (EA/DEFRA, 2020).

1.1 Summary of Proposed EP Variations

The site is currently subject to an EP (EPR/QP3593NF) which has been in a state of Definitive Closure since October 2009 until EP variation consolidation in October 2015, when the period of aftercare monitoring & maintenance was commenced. On-going management has included monitoring of groundwater, ground gas and slope stability on a monthly basis under periods of definitive closure monitoring (2009 to 2015) and aftercare monitoring (2015-present).

The Site layout and current EP boundary is shown on Figure 2.

The EP for the site (EPR/QP3593NF) previously permitted the activity of (D1) depositing aqueous solutions of soil and sludge in lagoons for precipitation and dewatering and other controlled wastes, with deposited soils originating from agricultural land supplying sugar beet to the site. Settled soils from the lagoons were principally sold commercially as topsoil. The EP variation (EPR/QP3593NF/V002, October 2015) removed the condition allowing deposit of waste and added R3, R5 and R13 recovery and storage activities to facilitate remediation and reclamation.

British Sugar now wish to vary the EP in order to fully enable waste recovery and remediation activities required to create a development platform for a residential development for which planning permission has been granted. A summary of the proposed EP variation is provided below.

1. **Adding land** to the current EP by extending (and including) the current EP boundary. The current and proposed EP boundaries are shown on Figure 2;
2. **Addition of a Bespoke Waste Operation** – specifically a Deposit for Recovery (DfR) waste operation to enable recovery of waste material present within the current EP boundary followed by reuse / deposit of recovered waste across the proposed extended EP boundary as fill to create the development platform;
3. **Adding a R11 recovery code** activity to the permit to allow the 'use of wastes obtained from any of the operations numbered R1 to R10', in this case as fill to create the development platform; and
4. **Changing the Operating Techniques (Table S1.2)** such that aspects of the EP Working Plan (URS, 2015) that were previously excluded and not agreed by the Environment Agency (covering monitoring and permit surrender) are superseded by the testing, monitoring, verification and remediation criteria associated with the waste recovery operation (remediation) and can be agreed.

Additional details of the proposed changes is provided in the subsequent sections with further specific information also provided in the documents provided in support of the proposed DfR waste operation (listed in Section 2.4).

The current EP is not a Standard Rules Permit and, in accordance current guidance (EA/DEFRA, 2020), as the proposed waste recovery operation involves the recovery and deposit of >60,000m³ of waste, the proposed variation to the EP will be via a **bespoke** waste operation permit application.

2 Supporting Information

2.1 Type of Variation

British Sugar wish to vary the EP in order to fully enable waste recovery and remediation activities required to create a development platform for a residential development for which planning permission has been granted. This is considered a '**normal variation**' as it includes a change to the permit area but is not envisaged to require significant technical input or public consultation.

2.2 Adding Land to Current EP Boundary

The current and proposed EP boundaries are shown on Figure 2.

The current EP boundary is proposed to be extended to enable waste that is currently located within the current EP boundary (which is to be recovered) to be permanently deposited across the larger, proposed EP boundary area which is required to create the development platform in accordance with the conditions of planning permissions granted in relation to the Site (e.g. 14/02798/FULM).

The Approved Plan named 'Proposed Contours -DR-CE-00602 P5' and associated cross sections (14/02798/FULM) defines the elevations associated with the proposed development which enables suitable access to surrounding land as well as providing a suitable elevation and gradient for sustainable urban drainage and gravity drained surface water drainage network.

The total quantity of the waste located within the existing EP boundary requiring excavation and recovery has been estimated at 746,800m³. The volume of material required to construct the development platform within the EP boundary is estimated to be 513,500m³. Therefore, the remaining 233,300m³ of recovered waste is proposed to be permanently deposited over the wider, proposed EP boundary.

The extent of the proposed EP Boundary has been selected to include areas of green space within the proposed development to be constructed using recovered waste from the current EP boundary, some of which has high organic matter content and is thus suited to this purpose.

Made Ground soils originating from outside the current EP boundary are proposed to be reused under the CL:AIRE DoWCOP framework as construction fill. Non-waste materials that are currently located outside the EP boundary but will be located within the proposed, extended EP boundary are considered to remain a Made Ground (non-waste) and following remediation will be reused via DoWCoP as construction fill within a designated area outside the proposed EP boundary termed the DoWCoP Zone, which is also shown on Figure 2. The DoWCoP Zone allows for continued separation of waste (recovered) and non-waste material.

2.3 Adding a Bespoke Waste Operation

A Waste Recovery Plan (WRP) has been submitted to the Environment Agency (EA) as part of this application to vary the existing EP in order to add a bespoke 'Deposit for Recovery' waste operation. The recovery of >60,000m³ waste within the EP boundary is required as part of a reclamation process for the purpose of enabling residential development in accordance with the conditions of planning permissions granted in relation to the Site.

The waste recovery activities proposed within this WRP are to be undertaken in accordance with the Remediation and Reclamation Strategy (RRS) (URS, February 2015) which has been reviewed and accepted by the EA Groundwater and Land Contamination (GWCL) Team and is an Approved Plan within the full planning permission granted in relation to the construction of the development platform. An addendum to the 2015 RRS has been produced by Arcadis to incorporate the latest site data (Remediation and Reclamation Strategy Addendum (RRSA), 2020) which has also now been accepted in support of the planned development.

The WRP and associated documentation are provided in support of Part C4 Varying a Bespoke Waste Operation with document references listed below for ease of reference.

- **Waste Recovery Plan** (10024487-AUK-XX-XX-RP-GE-0034-P6-Waste Recovery Plan);
- **Environmental Sensitivity & Site Design Report** (10024487-AUK-XX-XX-RP-GE-0058-03, September 2022);
- **Waste Acceptance Procedures** (10024487-AUK-XX-XX-RP-GE-0059-03, September 2022);
- **Hydrogeological Risk Assessment (HRA)** (10024487-AUK-XX-XX-RP-GE-0020-01, January 2020);
- **Outline Engineering Plan** (10024487-AUK-XX-XX-RP-GE-0063-03, September 2022);
- **Stability Risk Assessment** (10024487-AUK-XX-XX-RP-GE-0074-03, September 2022);
- **Monitoring Plan** (10024487-AUK-XX-XX-RP-GE-0060-03, September 2022).

2.4 Adding a R11 Waste Recovery Code

The EP for the site (EPR/QP3593NF) previously permitted the activity of (D1) depositing aqueous solutions of soil and sludge in lagoons for precipitation and dewatering. The EP variation (EPR/QP3593NF/V002, October 2015) removed the condition allowing deposit of waste and added R3, R5 and R13 recovery and storage activities to facilitate remediation and reclamation (as per Schedule 1 Table S1.1 of the current permit).

British Sugar now wish to vary the EP in order to add a bespoke waste recovery operation (DfR) required to create a development platform for a residential development. It is considered that an R11 code may also be required to enable use (permanent deposit) of recovered waste. If the EA consider that the granting of a DfR waste operation supersedes the requirement for an R11 code then variation to include an R11 code is not required.

Assuming an R11 code is required, the proposed permitted activities to be undertaken within the extended permit boundary will be:

Description of specified activity and WFD Annex I and II operations	Limits of activities
<p>D1: Deposit into or on to land (to deposit aqueous solutions of soil and sludge in lagoons for precipitation and dewatering and other controlled wastes)</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)</p> <p>R5: Recycling/reclamation of other inorganic materials</p> <p>R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)</p> <p>R11: Use of wastes obtained from any of the operations numbered R1 to R10</p>	<p>No waste shall be accepted for disposal at the site.</p> <p>No waste shall be accepted for recovery at the site unless previously excavated from it.</p>

2.5 Changes to the Operating Techniques

Table S1.2 of the current EP variation (EPR/QP3593NF/V002, October 2015) listed a number of elements contained with the EP Working Plan (URS, 2015) that were excluded and not agreed by the EA at that time. These are shown below.

Description	Parts	Date Received
	How to comply with your environmental permit and additional guidance for Landfill 5.02	
Application	Working Plan August 2015 with the following exclusions that are not agreed to by the Environment Agency: <ul style="list-style-type: none"> Section 2.4.3 – noise and vibration Section 3.0 – monitoring and sampling post completion Section 4.0 – surrender objectives Table 4.2 – gas monitoring boreholes outside the permit boundary Table 4.3 – other proposed new gas monitoring boreholes in the 	20/02/2015

Description	Parts	Date Received
	development platform. <ul style="list-style-type: none"> Table 4.4 – perimeter gas monitoring boreholes in natural superficial deposits Table 7.2 – surrender objectives for ground gas in perimeter boreholes GNSO1-GNSO6 in natural deposits Table 6.2 – boreholes located within the Environmental Permit Boundary Table 6.3 – boreholes located down hydraulic gradient from the Environmental Permit Boundary 	

The scope of works within the RRS (URS, 2015) and RRSA (Arcadis, 2020) is summarised in the WRP and includes measures to address noise and vibration, monitoring and sampling post completion as well as borehole location plans. Additional documentation required by the DfR permit application (listed in 2.1.2.2) also provide details on these items.

It is considered that these items supersede the information within the EP Working Plan (URS 2015) that were excluded and it is now hoped to gain agreement from the EA regarding these items, in particular EP surrender, as part of the proposed EP variation.

As the proposed EP variation will include a DfR operation which will recover (remediate) the entire waste volume, it is proposed that the EP surrender objectives are aligned (and equivalent) to the successful completion of the waste recovery operation.

2.5.1 Waste Recovery Operation – Verification Strategy

In the case of a waste recovery operation, Section 5 of RGN9 indicates that for this site which holds a bespoke permit, the EA will require a report at the conclusion of the recovery process which confirms that the recovered and deposited waste is in a satisfactory state; i.e. it will not cause an unacceptable risk of pollution or harm to human health or the environment. Section 5.3b of RGN9 provides for a report which confirms that the recovered waste meets risk based completion criteria developed for the site.

Risk based criteria protective of human health and the environment have been developed for soils, soil pore water, ground gas, groundwater and earthworks performance informed by the HRA. The verification strategy defined to demonstrate effective removal and treatment of soil contamination, effective treatment of ground gas and assessment of groundwater quality post remediation is defined within Section 7 of the RRSA (Arcadis 2021) and summarised in the WRP.

Measures to protect human health and the environment during the works, including potential nuisance issues, is also provided which reference the groundwater Control Levels set out in the current EP (updating to include more recent data were appropriate).

2.5.2 Proposed EP Surrender Objectives

It is proposed that the EP surrender objectives are aligned (equivalent to) the waste recovery objectives and the verification strategy designed to demonstrate successful recovery. In this manner, once waste recovery works are agreed to have been successfully completed, the EP would be effectively surrendered.

The waste recovery (remediation) criteria, monitoring and verification works have been designed to tie in as far as practicable with the provisions of the EP Variation (EPR/QP3593NF/V002) and the updated EP Variation Working Plan (URS, October 2015) whilst also outlining a clear route to permit surrender, based on waste recovery, which can hopefully now be agreed.

Separate surrender objectives for permit surrender and waste recovery would cause unnecessary complication and potentially result in successful waste recovery leaving a site not suitable / acceptable for permit surrender.

The EA guidance document 'Landfill (EPR 5.02) and other Permanent Deposits of Waste' (Version 2, 2012) primarily considers a surrender situation where deposited wastes are left permanently in situ and not, as in this case, where the deposited wastes are to be completely excavated and remediated to risk based criteria. However, Arcadis consider that the requirements of EPR 5.02 regarding a standard surrender route can be met using a best practice, risk-based approach demonstrating that re-deposited (remediated) material does not present a significant risk to human health or the environment.

The permitted site has no engineered lining system and no infrastructure to collect samples of leachate and thus monitoring of groundwater is proposed to demonstrate emissions from the site are not causing a breach of agreed criteria in accordance with the section 5.2.1 of the EPR 5.02 guidance.

It is noted that previous risk assessments undertaken in relation to the site, including the most recent HRA (Arcadis 2020) concluded measured concentrations of contaminants in groundwater were not considered to represent a significant risk to water resources and, therefore, no active remediation of groundwater is considered required. Therefore, the objective of the works in relation to groundwater will be to minimise any temporary adverse effects to groundwater during the works, ensure there is no significant deterioration in groundwater quality following remediation, and to reduce ammoniacal nitrogen leachability to the groundwater.

Under a standard surrender route where completion criteria are being assessed using groundwater data, the EPR 5.02 guidance also requires that 'sufficient data has been collected to show that a reasonable time has elapsed and suitable conditions have been reached to allow for the substantial degradation of the wastes'. Beet processing at the British Sugar site ceased in 2007 and from 2001 no wastes were permanently deposited on site, thus deposited wastes have been naturally degrading for over 20 years and we would consider that the remediation processes constitutes further degradation of the wastes.

As detailed within the RRSA (Arcadis 2020), a post remediation (aftercare) period for ground gas and groundwater of 24 months, comprising monthly monitoring, has been accepted as part of the planning permissions supporting redevelopment. Furthermore, should 12 consecutive monthly monitoring visits, post remediation, indicate groundwater or ground gas criteria have been met then it is proposed that this will be accepted by the EA and no further monitoring required.

A Site Condition Report is not considered required as part of the proposed Waste Recovery (Deposit for Recovery) operation, however, parts 1-3 of the SCR have been prepared for additional land proposed to be added to the EP (10024487-AUK-XX-XX-RP-GE-0072-P2-Site Condition Report, September 2022). In accordance with the SCR guidance (EA/DEFRA 2020), alongside application to surrender the permit, Sections 8 to 10 of this SCR will be completed (in relation to the Additional Land)

FIGURES

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