



**AN APPLICATION TO VARY ENVIRONMENTAL
PERMIT NUMBER EPR/CB3738AC FOR THE DEPOSIT
OF WASTE ON LAND AS A RECOVERY ACTIVITY TO
DEVELOP THE HARESHILL FARM SITE FOR HIGHWAY
AND EMPLOYMENT USE AS PART OF THE WIDER
SOUTH HEYWOOD DEVELOPMENT, ROCHDALE**

**HYDROGEOLOGICAL RISK ASSESSMENT REPORT
(HRA)**

Report reference: PCE/HA/AKM/5640/01 HRA
June 2021



Technical advisers on environmental issues

Baddesley Colliery Offices, Main Road, Baxterley, Atherstone, Warwickshire, CV9 2LE
Tel. (01827) 717891 Fax. (01827) 718507

CONTENTS

1.	Introduction	1
2.	Hydrogeological risk assessment	5
3.	Requisite surveillance	7
4.	Conclusion	9

This report has been prepared by MJCA with all reasonable skill, care and diligence, and taking account of the Services and the Terms agreed between MJCA and the Client. This report is confidential to the client and MJCA accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known, unless formally agreed by MJCA beforehand. Any such party relies upon the report at their own risk.

PCE/HA/AKM/5640/01 HRA

June 2021



1. Introduction

- 1.1 MJCA is commissioned by P Casey Enviro Limited (PCE) to prepare and submit an application to vary Environmental Permit number EPR/CB3738AC (the permit) for the deposit of waste on land as a recovery activity to develop the Hareshill Farm Site for highway and employment use as part of the wider South Heywood development in Rochdale, Lancashire.
- 1.2 The permit was issued to PCE on 8 March 2012 for the creation of a platform for the construction of an equestrian facility. Prior to the issue of the permit the site was the subject of exemptions from the need for an Environmental Permit which were in place at the time. It is understood that the deposition of waste at the site commenced in 2009 and had substantially ceased by mid-2015.
- 1.3 On 31 March 2020 planning permission reference 16/01399/HYBR¹ (the planning permission) was granted by Rochdale Borough Council for inter alia:-

‘...the development of land at South Heywood...for the construction of a new link road between Junction 19 of the M62 and Pilsworth Road...a major mixed-use development comprising... employment uses...together with associated landscaping...drainage...cycleway and footpath linkages, infrastructure and other works ancillary thereto...’

- 1.4 To facilitate the construction of the components of the development the subject of the planning permission within the boundary of the site it is necessary to vary the permit to provide for the revisions to the ground levels compared with those currently the subject of the permit. It is also necessary to increase the permit boundary to provide for the deposit of waste materials in the areas of the site to the north west and south east of the area currently the subject of the permit. These areas are referred to as the north west and south east repositories. The waste which will be deposited in the north west and south east repositories will be placed on top of waste which was deposited historically under the exemptions from the need for an Environmental Permit. Whilst it is necessary to vary the permit to include the north west and south

¹ Planning permission reference 16/01399/HYBR is the subject of a non-material amendment reference 20/00454/ANM which was issued by Rochdale Borough Council on 27 July 2020. Both the planning permission and the non-material amendment are presented at Appendix ESSD A to the ESSD report.

east repositories it is proposed only to permit the newly deposited waste and not the underlying waste. It is estimated that it will be necessary to deposit approximately 195,600m³ of inert waste materials in the repositories.

- 1.5** As explained in the Application Report the ground levels in the areas currently the subject of the permit exceed those the subject of the permit and generally exceed the proposed ground levels which will be developed pursuant to the planning permission² and some of the waste materials deposited are inconsistent with the waste types which were authorised for deposit. Extensive site investigation works have been carried out at the site and remedial measures have been proposed. In the area of the new link road where it encroaches on the eastern part of the existing permit area the waste materials have been excavated and removed from site consistent with an Operational Management Plan³ which was agreed with the Environment Agency (EA). An application will be submitted to partially surrender the permit for the area of the link road.
- 1.6** The implementation of the remedial measures for the remaining waste in the area of the site which is the subject of the permit will be the subject of Action Plans and subsequent Operational Management Plans which will be agreed with the EA. In addition to delivering ground levels pursuant to the development at the site the subject of the planning permission, the remedial measures which will be the subject of the Action Plans are designed to remediate the waste which will remain at the site such that it is consistent with the definition of inert waste specified in Section 2.1.2 of the Annex to the Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC⁴. The remediation of the waste at the site will be the subject of a mobile plant Environmental Permit. It is anticipated that it will not be feasible to remediate all of the waste to the appropriate standard and some waste will be removed from site for management at a suitably authorised facility without being treated under the mobile plant Environmental Permit.

² Note that the general cut and fill balance at the site is cut within the area the subject of the current permit and fill within the repositories outside the current permit. There are areas of the site where this is not the case to ensure the delivery of the development platform levels. In these areas the cut and fill balance is the opposite.

³ Operational Management Plan for the Excavation and Export off Site of excavated waste material from within the Link Road Area. Final rev2 19 March 2021. Approved by the Environment Agency on 22 March 2021.

⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003D0033&from=EN>

- 1.7** It is proposed that the materials which will be deposited in the north west and south east repositories will comprise waste materials excavated from elsewhere on site. The waste materials will be subject to rigorous Waste Deposition Procedures (WDP) to ensure that only inert waste materials are deposited. The waste materials have, in effect, already been accepted at the site although they will be subject, as necessary, to remediation such that they are inert. Accordingly, no changes to the waste codes listed in Schedule 2, Table 2.1 of the permit are proposed. In the unlikely event that it is necessary to import additional waste materials to the repositories or the currently permitted site to facilitate construction of the development platform the imported wastes will also comprise inert waste materials only and will be subject to the WDP.
- 1.8** This document comprises the Hydrogeological Risk Assessment (HRA) relevant to the waste which will be deposited in the currently permitted area post-remediation and the waste which will be deposited within the north west and south east repositories. As explained above the waste which will be deposited in the north west and south east repositories will be placed on top of waste which was deposited historically under the exemptions from the need for an Environmental Permit. In addition to the waste which will be deposited in the currently permitted area post-remediation, this risk assessment is relevant only to the waste which is newly deposited as part of the development within the 3D permit boundary of the north west and south east repositories and is not relevant to the waste underlying the repositories which will lie outside the permit boundary.
- 1.9** The HRA is based on the conceptual model presented in the Environmental Setting and Site Design Report (ESSD) which is presented at Appendix B to the Application Report. Details of the environmental setting of the site, the development design, the history of the site, potential contamination migration pathways and receptors are also described in the ESSD. The geology and hydrogeology of the site and surrounding area are provided in the report on the summary of the ground conditions at the site presented at Appendix E to the ESSD.
- 1.10** Although recently withdrawn, the structure of the HRA is based on a template produced by the EA for proposed landfill sites entitled "Hydrogeological Risk Assessment Report" Version 1 dated March 2010. As inert waste materials only will be present at the site post remediation and as the site comprises a deposit for

recovery site there are sections of the template report which are not relevant although the general structure has been followed.

2. Hydrogeological risk assessment

2.1 The hydrogeological risk assessment has been undertaken based on the relevant guidance presented on the GOV.UK website⁵. The information on the geology, hydrology and hydrogeology of the site is presented in the ESSD. The information is used in the ESSD to identify the relationships between the source, pathways and the identified potential receptors.

2.2 As explained above the waste materials deposited within the currently permitted area will be remediated in accordance with Action Plans such that the waste which will remain within the currently permitted area comprises inert waste. The materials which will be deposited within the repositories will also comprise inert waste. Detailed WDP will be in place to minimise the risk that unacceptable waste materials will be deposited within the site. The principle that inert waste materials may be deposited at the site has been accepted as demonstrated by the registration of exemptions from the need for an Environmental Permit and the issue of the permit.

2.3 Based on the definition specified in Council Directive 1999/31/EC⁴ the term inert waste means:

'...waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm to health.'

2.4 As the materials deposited after remediation in the currently permitted area and within the repositories will comprise inert waste only there will be no significant concentrations of hazardous substances and no significant concentrations of non-hazardous pollutants in water that has percolated through the waste mass. Rigorous WDP will be in place to minimise the risk that unacceptable waste materials will be deposited within the site. The revisions to the ground levels compared with those currently the subject of the permit and the deposit of inert waste materials in the north west and south east repositories is consistent with the principles of the deposition of

⁵www.gov.uk/government/publications/deposit-for-recovery-operators-environmental-permits/waste-recovery-plans-and-deposit-for-recovery-permits

waste materials at the site pursuant to the registration of exemptions from the need for an Environmental Permit and the issue of the permit for the site. The registration of exemptions and the issue of the permit for the site demonstrates the established and accepted risk of the deposit of inert waste at the site.

- 2.5** The development at the site in accordance with the planning permission, both in the currently permitted area and the repositories, will generally comprise buildings and hardstanding. Consequently there will be no significant infiltration to the ground on completion of the development. It is likely that the inert waste which will be deposited in the currently permitted area after remediation and the inert waste which will be deposited in the north west and south east repositories will comprise mainly gravelly clay and sandy gravelly clay deposits which generally have a low hydraulic conductivity. The waste will be compacted as necessary using site plant to meet the earthworks specification for the construction development works which will further reduce the hydraulic conductivity of the materials and further limit the potential for the percolation of water through the waste.
- 2.6** Based on this hydrogeological risk assessment it is considered that there is no significant increased risk to groundwater or surface water associated with the revisions to the ground levels after remediation compared with those currently the subject of the permit and the deposit of inert waste materials in the north west and south east repositories. The deposit of inert waste in the currently permitted area and in the north west and south east repositories is consistent with the principles of the deposition of waste materials at the site pursuant to the registration of exemptions from the need for an Environmental Permit and the issue of the permit for the site.

3. Requisite surveillance

- 3.1** Although not specified in the permit, groundwater and surface water monitoring is currently carried out at the site on a quarterly basis as detailed in Table ESSD 1 of the ESSD. The monitoring locations are shown on Figure ESSD 7⁶ which is provided in the ESSD.
- 3.2** Groundwater monitoring will continue in accordance with Table ESSD 1 during the remediation of the site for as long as the monitoring boreholes remain in place prior to their removal as part of the construction of the development the subject of the planning permission. The removal and decommissioning of boreholes will, as necessary, be the subject of CQA which will be agreed with the EA through the submission of a CQA Plan(s) and CQA Verification Report(s).
- 3.3** Surface water monitoring will continue in accordance with Table ESSD 1 during the remediation of the site. The surface water monitoring regime will be amended as necessary during the remediation based on any changes to the surface water regime at the site as the development progresses. Any changes will be agreed with the EA and will be based on the principle that both upstream and downstream surface water monitoring will be carried out.
- 3.4** It is proposed that a programme of confirmatory groundwater and surface water monitoring is carried out in respect of the currently permitted area following the completion of the remediation of the waste and the closure of the site. The groundwater and surface water monitoring will be carried out to confirm the effectiveness of the remediation works and to provide data for use in a subsequent application to surrender the permit for this area of the site. The proposed programme of post-closure groundwater and surface water monitoring is presented in Table ESSD 2 and the proposed groundwater and surface water monitoring locations are shown on Figure ESSD 7. As shown on Figure ESSD 7 it is proposed that an additional up hydraulic gradient groundwater monitoring borehole will be installed within 3 months of the issue of the variation notice in respect of the permit. The installation of the borehole will be the subject of CQA which will be agreed with the EA through the submission of a CQA Plan and a CQA Verification Report.

⁶ Monitoring is no longer carried out and will not be carried out in the area of the link road as the waste has been excavated and removed.

Groundwater monitoring boreholes MW01A and MW02 are located down hydraulic gradient of the site. It is intended to retain these boreholes or where the boreholes need to be removed to facilitate development of the site to reinstate or relocate the groundwater monitoring boreholes where feasible. If it is necessary to reinstate or relocate the boreholes then the works will be the subject of CQA.

- 3.5** As explained above, the surface water monitoring regime will be amended as necessary during the remediation based on any changes to the surface water regime at the site. Any changes will be agreed with the EA and will be based on the principle that both upstream and downstream surface water monitoring will be carried out. The changes will be incorporated into the post-closure monitoring as necessary.
- 3.6** The post-closure monitoring will be discussed with the EA prior to the closure of the site as part of pre-application discussions with the EA regarding the application(s) to partially surrender/surrender the permit. If appropriate and with the agreement of the EA consideration will be given to increasing the monitoring carried out. The objective of increasing the monitoring carried out at the site will be to shorten the timescale over which data is collected for use in application(s) to partially surrender/surrender the permit.
- 3.7** In respect of the north west and south east repositories negligible amounts of biodegradable waste materials which could result in the generation of leachate will be deposited in the repositories. On this basis it is considered that groundwater and surface water monitoring specifically related to the repositories is unnecessary. It is anticipated that application(s) to partially surrender/surrender the permit for the north west and south east repositories will be based on the records of the waste inputs which will be used to demonstrate that inert waste materials only have been deposited in the repositories.

4. Conclusion

- 4.1 Based on the nature of the inert restoration materials which will be deposited in the currently permitted area after remediation and in the north west and south east repositories it is considered that there will be no discernible discharge of hazardous substances to the groundwater or surface water and no significant pollution of groundwater or surface water by non-hazardous substances from water that has percolated through the waste mass. Accordingly there are no significant risks to human health from exposure or to the environment.
- 4.2 Based on this hydrogeological risk assessment it is considered that there is no significant increased risk to groundwater or surface water associated with the revisions to the ground levels after remediation compared with those currently the subject of the permit and the deposit of inert waste materials in the north west and south east repositories. The deposit of inert waste in the currently permitted area and in the north west and south east repositories is consistent with the principles of the deposition of waste materials at the site pursuant to the registration of exemptions from the need for an Environmental Permit and the issue of the permit for the site.