AN APPLICATION TO VARY ENVIRONMENTAL PERMIT NO. RP3133PP FOR THE THORNHAUGH LANDFILL SITE OPERATED BY AUGEAN SOUTH LIMITED TO CHANGE THE RESTORATION PROFILE OF THE EXISTING PERMITTED SITE

APPLICATION REPORT

Report reference: AU/TH/LRM/5784/01/AR
July 2025

Technical advisers on environmental issues

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APPENDICES

1. Introduction

1.1 MJCA is commissioned by Augean South Limited (Augean) to prepare an application (the Application) to vary Environmental Permit reference EPR/RP3133PP (the Permit) to change the restoration profile for the Thornhaugh Landfill Site (the site), Thornhaugh, Peterborough, PE8 6NS. The site is operated by Augean and is permitted for the deposition of non-hazardous commercial and industrial waste, gypsum and other high sulphate bearing wastes, stable non-reactive hazardous waste (SNRHW) and asbestos waste. The site is centred approximately at National Grid Reference (NGR) TF 04876 00139. The site location is shown on Figure 1 and the Environmental Permit boundary for the site is shown on Figure 2. There are no proposals to change the permit boundary or the boundary of the landfill area as part of this variation application.

1.2 The Permit for the site was issued to Augean as a Pollution Prevention Control (PPC) permit in 2005 to authorise the landfill of non-hazardous waste together with the deposition of SNRHW and asbestos wastes in monocells, in Landfill Directive compliant phases at the installation comprising the current Phases 3 to 7. The most recent variation to the Permit comprises Variation notice number EPR/RP3133PP/V007 that was issued on 10 July 2024 for the addition of 5 hazardous waste codes for deposit in the SNRHW Cell. The permitted waste types specified in Schedule 3 to the Permit and the annual waste input limits specified in Table S1.5 of the Permit will not change as a result of this variation application.

1.3 This variation application is made in order to incorporate the changes to the consented restoration profile for the site as a result of the integration of the restoration proposals for the site with the former mineral extraction site at Cooks Hole Quarry immediately to the south of the site. As a result of the changes to the restoration profile, an additional depth of waste will be placed over some of the landfill area compared with that currently consented.

2. Proposed changes

2.1 The following changes are proposed in respect of the operation of the landfill site and are the subject of this variation application:

- An increase in depth of waste over some areas of the landfill as consented by the revised restoration contours in the planning permission reference 24/00210/MMFUL granted on 26 September 2024.
- The removal of Pre-Operational Measure PO5 which is included in Table S1.4 of the current version of the permit comprising a requirement for cap infiltration testing.
- To implement the recommendation from the Hydrogeological Risk Assessment (HRA) Review submitted to the Environment Agency in December 2024 and from the 2025 HRA review addendum to amend aspects of Table S3.4 of the Permit 'Groundwater - emissions limits and monitoring requirements'.

2.2 There are no changes to the types of wastes received at the site, the general principles of the site containment design, the principles of the site operations including leachate and landfill gas management and site monitoring. There are no changes to the boundary of the site. The variation will not add any additional activities to Table S1.1 of the Permit.

2.3 This application to vary the permit has been prepared with reference to relevant guidance provided by the Environment Agency on the gov.uk website. The application comprises completed Parts A, C2, C3 and F1 of the Environmental Permitting Application Forms which are presented at Appendix A to this report. A non-technical summary of the application is presented at Appendix B to this report.

2.4 The proposed variation will facilitate the implementation of a revised restoration profile at the site which is described in detail in the Environmental Setting and Installation Design (ESID) report presented at Appendix C to this report. The amended restoration profile is shown on figures and drawings which are included in the ESID report.

2.5 The application is supported by a qualitative Environmental Risk Assessment (ERA) for accidents, odour, noise and fugitive emissions presented at Appendix D to this report. The ERA presents an assessment of the potential impacts on the surrounding environment from the proposed changes to the waste depth in some areas of the landfill. In the ERA it is concluded that the operation of the facility with the implemented controls has a low or very low risk of adverse impact on amenity or the surrounding environment including sites of heritage or nature conservation interest. Based on the assessment presented in the ERA it is unnecessary to provide odour, noise or dust management plans with this variation application.

2.6 The results of the Landfill Gas Risk Assessment (LFGRA) are presented at Appendix E to this report. The results of the LFGRA demonstrate that there is no risk of the migration of significant quantities of landfill gas from the site.

2.7 In order to assess the potential risk to water quality as a result of the greater depth of waste over part of the landfill area the previous HRA and reviews for the site have been reviewed and updated as necessary. The HRA review addendum is presented at Appendix F to this report and the findings are summarised in the ESID.

2.8 The landfill is operated on the principle of containment and the increased landfill void created by the amended restoration profile will be operated as a continuation of the current landfill based on the same principle of containment. The existing and the new landfill void has been and will continue to be lined with an engineered low permeability barrier designed to retain contaminants within the engineered landfill. The landfill will continue to be operated in a series of phases which are filled and restored progressively. To complete the containment structure, to separate the restoration materials from the wastes and to minimise the infiltration of rainfall into the waste following achievement of final waste levels, the landfill is and will continue to be capped with a low permeability layer keyed in to the low permeability side liner system. The restoration materials will be placed above the low permeability cap.

2.9 In order to assess the stability of the amended profile of the restoration contours over part of the landfill area, the previous Stability Risk Assessment (SRA) for the site has been reviewed and updated as necessary. The SRA update is presented at Appendix G to this report and the findings are summarised in the ESID.

2.10 This variation application includes a request for the removal of Pre-Operational Measure PO5 which is included in Table S1.4 of the current version of the permit. The justification for the removal of PO5 is explained in the ESID.

2.11 In the HRA review addendum report presented at Appendix F to this report, a few changes are requested to Table S3.4 'Groundwater - emissions limits and monitoring requirements' to reflect updated parameters and thresholds identified in the 2024 HRA Review and the addendum to that review which accompanies this application. The changes are summarised in the ESID.

2.12 Augean has in place a management system to support the operation of the installation under the Environmental Permit. The site will continue to be operated under an Environmental Management System (EMS) that is certified to ISO14001 and which forms part of the Augean integrated environmental, quality and health and safety management system. The management system identifies roles and responsibilities relevant to the operation of the installation and provides procedures that must be followed under normal operating conditions and specific procedures to deal with abnormal operating conditions or in the event of an incident. The management system has been developed with reference to relevant guidance produced by the Environment Agency to support the operation of this type of regulated facility under an Environmental Permit. As this variation application does not include any proposals to add new waste activities at the site, based on the EA guidance it is not necessary to provide a summary of the EMS with the application. However, a summary of the management system is included for reference at Appendix H to this report together with a copy of the accreditation certification.

Augean is committed to training its staff so that they are technically competent to undertake the waste operations and uses the formal Chartered Institution of Wastes Management/Waste Management Industry Training and Advisory Board (CIWM/WAMITAB) scheme for these purposes. The training standards set out in the CIWM/WAMITAB scheme, as applicable to the operation of hazardous waste landfill, are adopted for training purposes. The associated Certificates of Technical Competence (CoTC) and Continuing Competence Certificates (CCC) of the relevant persons are included at Appendix I to this report.

3. Additional information to support the Application Forms

Application form Part A – Appendix 1 – Date of birth information

3.1 It is stated in the Appendix that the date of birth information is necessary only for '*applications for a new permit or transferring a permit and variations to a waste activity*' only. Accordingly Appendix 1 has not been completed.

Application form Part C2 – Section 3

3.2 The site will continue to be managed in accordance with an environmental management system (EMS) pursuant to Condition 1.1.1(a) of the permit using sufficient competent persons and resources pursuant to Condition 1.1.1(b) of the permit. A summary of the EMS is presented at Appendix H and the Certificate of Technical Competence (COTC) and Certificate of Continuing Competence (CCC) for the technically competent site manager are presented at Appendix I.

Part C3 Table 1a – Types of activities

3.3 The Schedule 1 activities that are consented at the site are specified in Table S1.1 of the permit and comprise activities under Schedule 1, Section 5.2 part A(1)(a), the disposal of non-hazardous waste and SNRHW waste in a landfill:

- D5 –Specially engineered landfill, and
- R10 – Land treatment resulting in benefit to agriculture or ecology

3.4 The net void for waste which will be available as a result of the changes to the restoration profile in the landfill area will depend on a number of variables. These include the volume of waste remaining to be excavated principally from Phases 1 and 2 which need to be redeposited in engineered landfill cells and the volume of wastes such as construction and demolition and mineral wastes which are suitable for recovery and use off site. Based on information available from site investigations and the design of the site restoration, the currently consented void remaining at Thornhaugh Landfill Site (at early 2024) is approximately 1,310,000m³ and the maximum additional waste void created at Thornhaugh as a result of the recently consented development is approximately 920,000m³. This provides a total remaining waste void of approximately 2,230,000m³.

3.5 The limit on the quantity of wastes deposited at the site will be determined by the achievement of the restoration profile consented in 2024, as explained in the ESID report (Appendix C). There will be no changes to the waste throughput to the landfill for disposal as set out in Table S1.5 of the Permit.

3.6 The waste operations that are consented at the site and are summarised in the table below. This information has been reproduced below as the information does not fit into the boxes provided in application form Part C3. There are no proposed changes to the waste operations, throughput or capacity.

Activity Reference	Name of waste operation	Description of specified activity
A9	R5 Recycling/reclamation of inorganic substances	Physical treatment including sorting, separation, screening, crushing, or other physical grading of non-hazardous waste prior to re-use on site or export from the site for re-use for the purpose of recovery. No more than 250,000 tonnes of waste shall be treated per year
A10	R13 Storage of waste pending any of the operations numbered R1 to R12	No more than 75,000 tonnes of waste shall be stored at any one time.

3.7 The Directly Associated Activities (DAAs) that may be undertaken at the installation are specified in Table S1.1 of the Permit and summarised in the table below. This information has been reproduced below as the information does not fit into the boxes provided in application form Part C3. There are no proposed changes to the DAAs.

Activity Reference	Name of DAA	Description of specified activity
A3	Landfill gas management	Landfill gas extraction and flaring of landfill gas for disposal in an appliance.
A4	Leachate management	Leachate extraction and removal off site.
A5	Water discharge to controlled waters	Discharges of site drainage from the landfill area
A6	Fuel storage	Storage of fuel for operation of plant and equipment
A7	Drum acceptance and handling	Storage and handling of drums prior to disposal

Activity Reference	Name of DAA	Description of specified activity
A8	Temporary waste storage	Temporary storage and handling of excavated waste and non-waste material.

Part C3 Question 1 – Types of waste accepted

3.8 The types of waste to be accepted at the installation under the variation will be as set out in Schedule 3 to the Permit. No changes are proposed to Schedule 3 as part of this application.

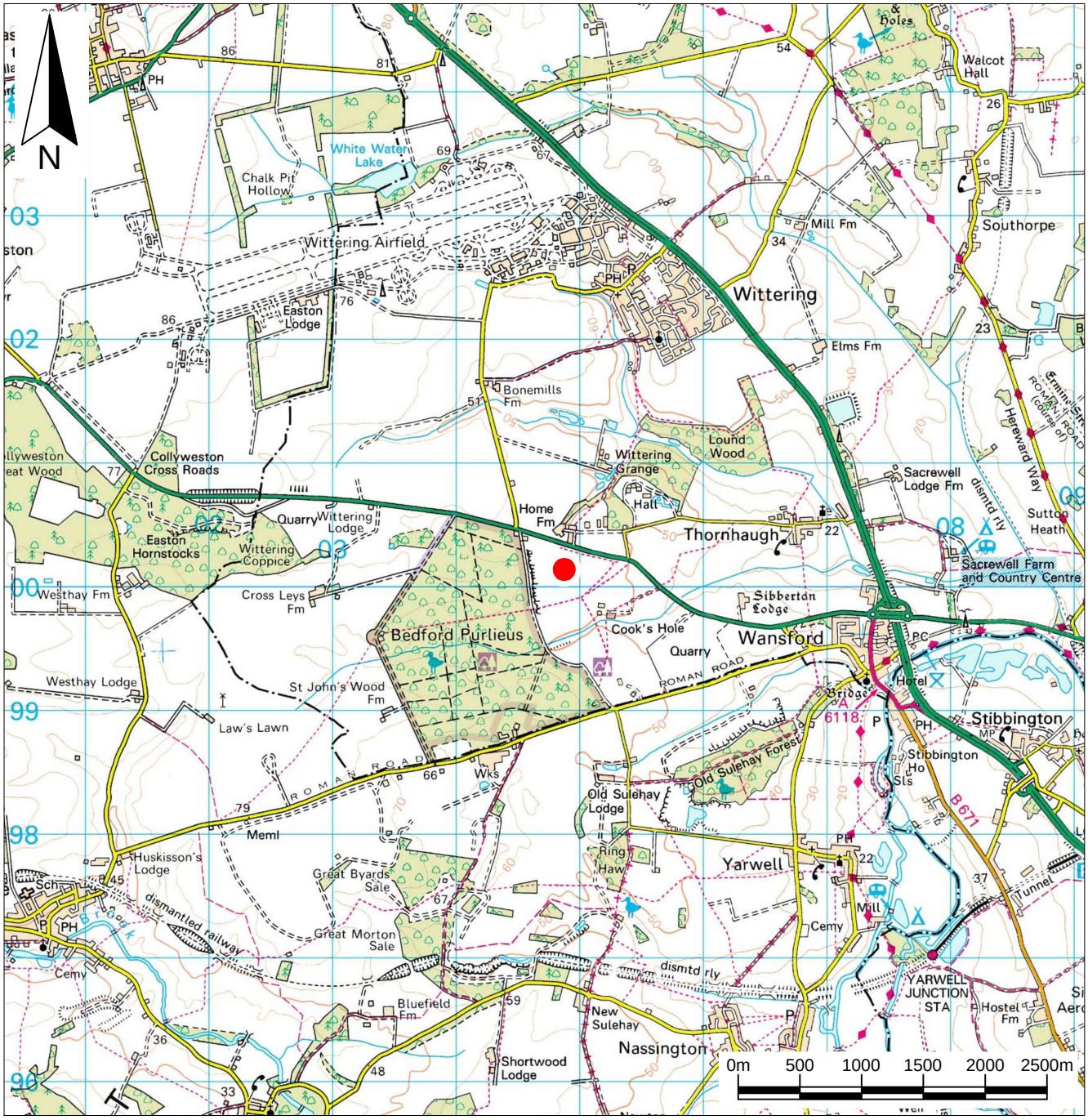
Part C3 Table 2 – Emissions

3.9 The point source emissions from the installation under the variation will continue as set out in Schedule 3, Tables S3.2 and S3.3 to the Permit.

Part C3 Question 4 – Monitoring

3.10 Monitoring of point source emissions from the installation under the variation will continue as set out in Schedule 4 to the Permit.

FIGURES



Key / Notes

Site location

Rev	Status	Drn	App	Chk	Date
	Final	KR	LRM	LH	09/07/25

Site: Thornhaugh Landfill Site

Client: Augean

Title: The site location

Figure 1

Scale: 1:50,000@A4

Drawing Ref: AU/TH/06-25/25001

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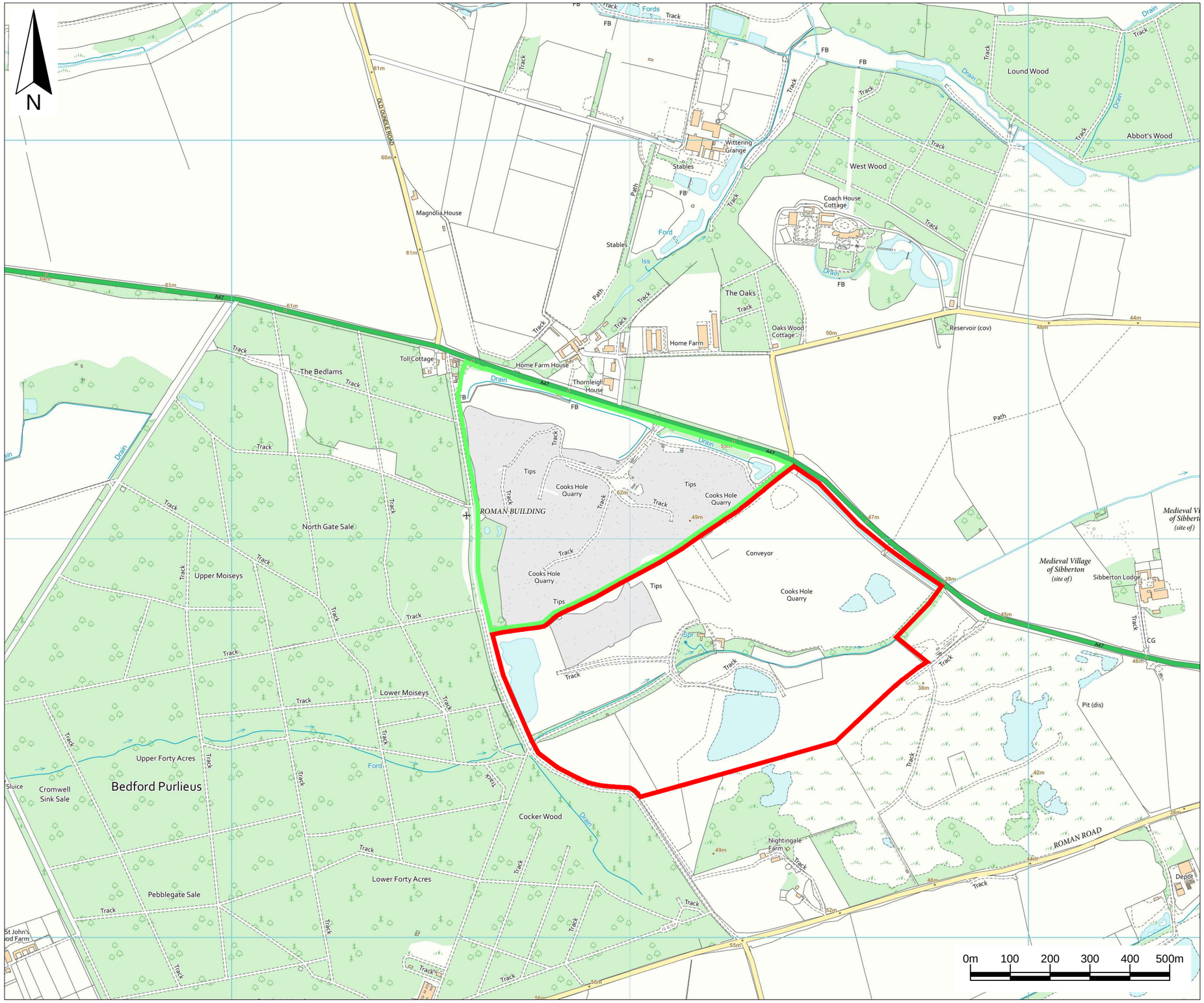

Key / Notes

Environmental Permit boundary for Thornhaugh Landfill Site

Boundary of Cooks Hole Quarry

Note:
The details shown on the Ordnance Survey base plan for the ground in Thornhaugh Landfill Site and Cooks Hole Quarry is out of date and does not reflect the current ground conditions.

	Final	KR	LRM	LH	09/07/25
Rev	Status	Drn	App	Chk	Date

Site
Thornhaugh Landfill Site

Client
Augean

Title
Environmental Permit Boundary

Figure 2

Scale
1:50,000@A4

Drawing Ref
AU/TH/06-25/25002

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APPENDICES

APPENDIX A

ENVIRONMENTAL PERMIT APPLICATION FORMS

APPENDIX B

NON TECHNICAL SUMMARY (NTS)

APPENDIX C

ENVIRONMENTAL SETTING AND INSTALLATION DESIGN REPORT (ESID)

APPENDIX D

ENVIRONMENTAL RISK ASSESSMENT (ERA)

APPENDIX E

LANDFILL GAS RISK ASSESSMENT (LFGRA)

APPENDIX F

HYDROGEOLOGICAL RISK ASSESSMENT REVIEW ADDENDUM (HRA)

APPENDIX G

STABILITY RISK ASSESSMENT UPDATE (SRA)

APPENDIX H

ENVIRONMENTAL MANAGEMENT SYSTEM SUMMARY (EMS)

APPENDIX I

CERTIFICATES OF TECHNICAL COMPETENCE (COTC) AND CONTINUING COMPETENCE (CCC)