STATEMENT OF COMMONALITY V1

FOR THE DEVELOPMENT CONSENT ORDER APPLICATION FOR THE ALTERATION AND CONSTRUCTION OF HAZARDOUS WASTE AND LOW LEVEL RADIOACTIVE WASTE FACILITIES AT THE EAST NORTHANTS RESOURCE MANAGEMENT FACILITY, STAMFORD ROAD, NORTHAMPTONSHIRE

PINS project reference: WS010005

PINS document reference: 9.3

March 2022

Technical advisers on environmental issues

Baddesley Colliery Offices, Main Road, Baxterley, Atherstone,
Warwickshire, CV9 2LE.
Telephone : 01827 717891, Fax : 01827 718507

Statement of Commonality

Introduction

1.1 This Statement of Commonality has been prepared by to assist during the Examination of the DCO application for the proposed western extension to the East Northants Resource Management Facility (ENRMF) in Northamptonshire.

1.2 This document has been prepared to provide the Examining Authority with the evolving position on the Statements of Common Ground (SoCG) that were requested to be prepared between the Applicant and certain Interested Parties as set out at Annex E of the Rule 6 letter (PD-005). The table will be updated at each Deadline during the Examination to reflect the position of the SoCGs at the time of each Deadline.

Table 1

Position of the Statements of Common Ground

Document Reference	Party (or Parties)	Position at Deadline 2	Position at Deadline 3	Position at Deadline 4	Position at Deadline 5	Position at Deadline 6	Position at Deadline 7
7.1	**National Grid Gas**	A first draft of the SoCG is provided at Appendix A.	No change since Deadline 2. No document appended.				
7.2	**North Northamptonshire Council**	A first draft of the SoCG is provided at Appendix B.	No change since Deadline 2. No document appended.				
7.3	**Environment Agency**	A first draft of the SoCG is provided at Appendix C.	No change since Deadline 2. No document appended.				
7.4	**Natural England**	A first draft of the SoCG is provided at Appendix D.	No change since Deadline 2. No document appended.				
7.5	**Western Power Distribution (East Midlands) PLC**	A first draft of the SoCG is provided at Appendix E.	No change since Deadline 2. No document appended.				
7.6	**Cecil Estate Family Trust**	Discussions are ongoing between the Applicant and the legal advisors for the Trust to establish the content of the SoCG. We have prepared a response to their Relevant Representation and we propose to discuss this with them to identify potential areas of common ground and areas of remaining disagreement before preparing the SoCG.	No change since Deadline 2. No document appended.				
7.7	**Defence Infrastructure Organisation**	A draft SoCG has been provided to the Defence Infrastructure Organisation. Discussions are ongoing between the Applicant and the DIO to seek to reach agreement on the BHMP and restoration planting restrictions as well as the SoCG.	No change since Deadline 2. No document appended.				
7.8	**Northants Police and Northants Fire and Rescue**	A signed agreed version of the SoCG is provided at Appendix F.	No change since Deadline 2. No document appended.				
7.9	**Butterfly Conservation**	A first draft of the SoCG is provided at Appendix G.	No change since Deadline 2. No document appended.				
7.10	**Anglian Water Services Limited**	A draft SoCG has been provided to Anglian Water. The applicant and Anglian Water are currently holding discussions with respect to the progression of the SoCG and protective provisions.	No change since Deadline 2. No document appended.				

7.11	**NW Fiennes**	A draft SoCG has been provided to NW Fiennes. No comments on the draft SoCG have yet been received.	A signed agreed version of the SoCG is provided at Appendix H.				

APPENDICES

APPENDIX H

SOCG BETWEEN AUGEAN SOUTH LIMITED AND NW FIENNES

EAST NORTHANTS RESOURCE MANAGEMENT FACILITY, STAMFORD ROAD, NORTHAMPTONSHIRE

STATEMENT OF COMMON GROUND BETWEEN AUGEAN SOUTH LIMITED AND N W FIENNES

Report reference: WS010005/SOCG/NWF
March 2022

PINS document reference: 7.11

Technical advisers on environmental issues

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

CONTENTS

APPENDICES

1. Introduction

1.1 This is a Statement of Common Ground between N W Fiennes and Augean South Ltd (Augean). N W Fiennes are represented by Berrys, 42 Headlands, Kettering, NN15 7HR. The document has been prepared to assist the Examining Authority to identify the areas of agreement and any material differences between the parties.

1.2 N W Fiennes own land adjacent to the north west of the boundary of the Development Consent Order application boundary. The land is registered title NN313490 listed in Part 2, Table 2 of the Book of Reference (PINS document reference 3.4) (APP-020) as owned by the trustees of the A F Goddard-Jackson (Duddington 1983 Settlement).

1.3 On behalf of N W Fiennes Berrys has made the following representation to the Planning Inspectorate in respect of the application for a Development Consent Order by Augean South Ltd:

> *We act for Mr Fiennes who owns the adjoining farmland The representation is that the designated authority in determining this application is satisfactory must ensure that there is no pathway onto our clients adjoining land either Under surface or over surface. The land adjoining this is due for quarrying and the restraint against the neighbouring boundaries and the barrier of protection by load or travel of pollutants under or over surface must take this in to account.*

1.4 Augean and Berrys discussed the issues of concern to N W Fiennes relating to the development on the 28th October 2021. It was explained how the matters of concern are addressed in the proposals and the matters discussed were confirmed in an email from Augean to Berrys dated the 9th November 2021. A copy of the correspondence is provided at Appendix A. It is agreed that the information relates in particular to how containment and stability of the landfill and the excavations is assured through design, monitoring and regulation. It is acknowledged that these aspects of the proposed development are regulated by the Environment Agency through the pollution control regime.

2. Areas on which there is agreement

2.1 Based on the information provided by Augean to Berrys on the 9th November 2021 (Appendix A) the following is agreed common ground between Augean and N W Fiennes:

- That the pathways on to the N W Fiennes landownership for contaminants under surface or over surface will be appropriately controlled.

- That the excavation of ground within the development site and construction of the landfill will not compromise the stability of the land under the ownership of N W Fiennes nor rely on the N W Fiennes land for stability.

- The matters of pollution control and stability of the land and landfill are regulated by the Environment Agency through the Environmental Permits.

3. Areas on which there is disagreement

3.1 There are no areas of disagreement

4. Agreement

4.1 This statement has been agreed between Augean South Limited and N W Fiennes.

Signed:

On behalf of Augean South Limited

AS DULY AUTHORISED AGENT FOR AND

Date: 15th March 2022

On behalf of Berrys representing N W Fiennes

APPENDIX A

CORRESPONDENCE BETWEEN AUGEAN AND BERRYS IN NOVEMBER 2021

From: [redacted]
To: [redacted]errys.uk.com
Cc: [redacted]
Subject: FW: ENRMF Western Extension
Date: 02 November 2021 12:35:07
Attachments: 5.3.8.1 Figure ES8.1 Current monitoring and site investigation borehole locations.pdf
Figure SRA 7 - aukcw22131.pdf
Figure HRA 3 - aukcw22196.pdf
AU_KCW Borehole logs K26.pdf
AU_KCW Borehole logs KCW1_19.pdf
AU_KCW Borehole logs K26.pdf

Dear [redacted]

Thank you for contacting us about the DCO application for the western extension to our operations at ENRMF. Further to our conversation on 28 October 2021 we are pleased to provide further information in response to the matters that you raised with respect to the engineering design of the proposed development, and in particular the containment and stability aspects of the design. We understand that your main area of interest is the western boundary of the northern area of the proposed western extension which is adjacent to your clients' land holding.

All the documents we refer to below are available on the PINS project web site https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/east-northants-resource-management-facility-western-extension/?ipcsection=docs under the section 'Developer's Application' or via the 'Further reading' section of the Augean consultation web site https://www.augeanconsultation.co.uk/#furtherreadingsection.

The existing operations at the site are the subject of Environmental Permits regulated by the Environment Agency and the Environmental Permits would be extended to cover the operations in the proposed western extension. The current landfill is designed, constructed and operated on the principle of containment and the new landfill void will be based on the same principle of containment. The extension will be constructed and operated in a series of phases. The northern area of the proposed western extension (Phase 12 as shown on Figure ES5.1 in the Environmental Statement (PINS document reference 5.3.5.1)) will be the first to be filled and restored if the DCO is granted. The current projection is that the northernmost area (Phase 12) will be restored in around 5 years from the start of the commencement of cell excavation work in that phase.

Following ecological preparatory work, the construction of surface water drains at the boundary of the operational area and the stripping and storage of soil, the overburden and clay will be excavated to form a void. Some of the excavated clay is retained for use in the engineering of the low permeability barriers and restoration at the site and at the nearby Augean Thornhaugh Landfill Site with the remainder exported for use elsewhere. The landfill void will be lined with an engineered low permeability barrier designed to retain contaminants within the engineered landfill. 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 the final waste levels, the landfill will be capped with a low permeability layer keyed into the low permeability side liner system. The restoration materials will be placed above the low permeability cap. Please find attached for your information conceptual cross sections showing the engineering design principles (drawing reference AU/KCW/12-20/22131) and a schematic conceptual site model (AU/KCW/01-21/22196) for the proposed western extension which illustrate how the landfill will be constructed in the western extension area. We hope that these cross sections are helpful.

Stability risk assessments are carried out for the excavated and constructed slopes for each of the elements of the landfill design and a hydrogeological risk assessment is carried out to assess the potential impacts on water quality. Risk assessment is also undertaken for gas generation but as the waste accepted at the site has less than 6% organic content gas generation is minimal. The risk assessments and the design of the landfill and the low permeability liner specification are agreed with the Environment Agency through the Environmental Permit. Construction Quality Assurance (CQA) Plans are also agreed with the Environment Agency for each area of engineering. CQA inspectors monitor the construction of the engineered landfill phases and provide a Verification Report to the regulator. Waste cannot be accepted in any cell until the Environment Agency approve the CQA

records and Verification Report. This provides significant oversight to the process and confidence in the standards that will be applied to the works.

The Environmental Statement (PINS document reference 5.2) that accompanies the application is presented in Volume 5 of the application. Information on the design and operation and the associated controls for the landfill are presented in Section 5 of the Environmental Statement. Further detail on the regulation of the operations and on-site monitoring is provided at Section 8 of the Environmental Statement. The proposed controls and a summary of the assessment of the potential impacts on water resources are presented at Section 17 of the Environmental Statement, air quality is addressed at Section 21 of the Environmental Statement and the assessment of impacts on amenity is presented at Section 22 of the Environmental Statement.

The proposed operations for the western extension will be undertaken within land under the control of Augean. No material will be placed within 10m of the western site boundary adjacent to your client's land. Monitoring will be undertaken under the Environmental Permit in order to confirm that the site operations are not having a significant impact on the environment and do not represent an unacceptable risk to human health. The monitoring will include groundwater and gas monitoring in boreholes installed on the western site boundary.

As promised, please find attached the borehole logs for the boreholes drilled along the northern section of the western boundary of the proposed extension (boreholes KCW 1/19 and K26, the locations of which are shown on the attached Figure ES8.1 taken from the Environmental Statement). I hope that these are of assistance to you.

We hope that the information is helpful but please get in touch if you need any further details.

Regards

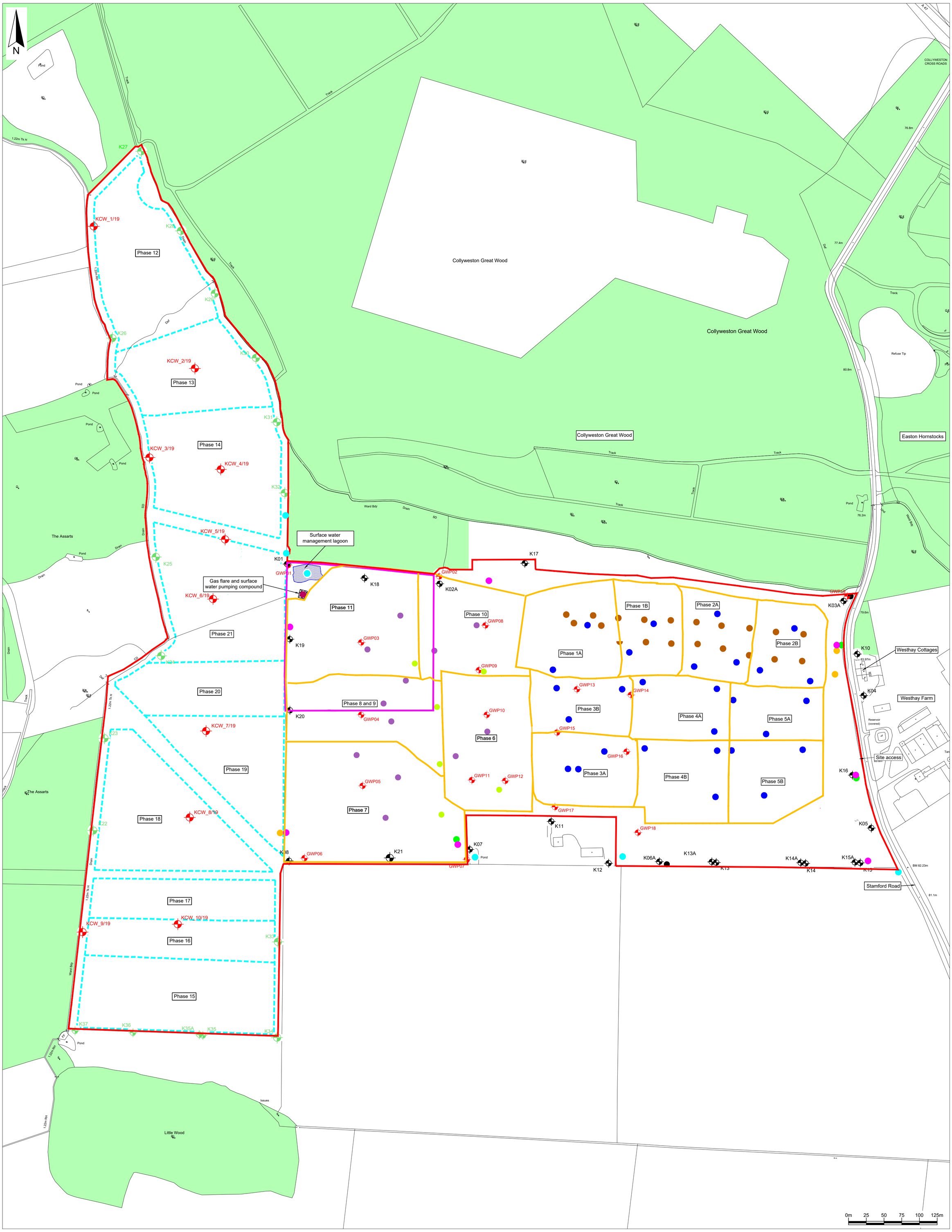
[redacted]

15th March 2022

Gene Wilson
Director of Environmental Planning

Augean PLC
East Northants Resource Management Facility
Stamford Road
Kings Cliffe
PE8 6XX

[redacted]



Key / Notes

- Development Consent Order application boundary
- Approximate phase boundaries for the existing ENRMF
- Approximate phase boundaries to be constructed in the proposed western extension
- Woodland
- Existing gas flare compound
- The approximate area of the proposed extended waste treatment and recovery facility
- Approximate location of a gas flare monitoring point
- Approximate location of a combined groundwater and landfill gas monitoring point
- Approximate location of an asbestos monitoring point
- Approximate location of a dust and particulate matter monitoring point
- Approximate location of a VOC and hydrogen sulphide monitoring point
- Approximate location of a surface water monitoring point
- Approximate location of a combined leachate and gas monitoring point
- Approximate location of a gas well
- Approximate location of a proposed leachate sump and in waste landfill gas monitoring location
- Approximate location of a proposed leachate monitoring location and in waste landfill gas monitoring location
- K01 — Location of a monitoring borehole
- KCW_7/19 — Location of a site investigation borehole
- K22 — Location of a new groundwater and landfill gas monitoring borehole

Rev	Status	Drn	App	Chk	Date
	Final	KR	SPS	LH	26/07/21

Site: EAST NORTHANTS RESOURCE MANAGEMENT FACILITY

Client: Augean SOUTH LTD

Title: Current monitoring and site investigation borehole locations

PINS document reference 5.3.8.1

Figure ES8.1 | Scale 1:2,500@A1

Drawing Ref AU/KCW/07-21/22676

MJCA Technical advisers on environmental issues
Baddesley Colliery Offices, Main Road, Baxterley, Atherstone, Warwickshire, CV9 2LE.
Telephone : 01827 717891
Fax : 01827 718507

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	1 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thick-ness)	STRATA DESCRIPTION	Legend	Water	Instrument/ Backfill
						87.83	0.40	Soft brown gravelly clay TOPSOIL.			
1						87.03	(0.80) 1.20	Light brown weathered LIMESTONE.			
						86.53	(0.50) 1.70	Very hard light grey coarsely crystalline LIMESTONE. Non-intact recovered as cobbles and gravel.			
2						86.10	2.13	Weak brown and grey brown sandy coarsely crystalline LIMESTONE. Non-intact recovered as cobbles and gravel between 1.7m and 2.05m.			
						85.94	2.29	Firm brown grey CLAY.			
						85.66	2.57	Stiff light bluish grey CLAY with carbonaceous rootlets.			
	1.20-2.70	83	59			85.53	2.70	Very stiff light bluish grey sandy CLAY with carbonaceous rootlets.			
3						85.00	(0.53) 3.23	Very stiff dark grey CLAY.			
						84.41	(0.59) 3.82	Very stiff bluish grey CLAY with carbonaceous debris and shelly material.			
4	2.70-4.00	104	104			84.23	4.00	Stiff bluish grey CLAY.			
						84.06	4.17	Firm to soft grey SILT.			
						83.77	4.46	Very stiff to stiff very dark grey CLAY.			
						83.37	4.86	Very stiff to stiff dark grey CLAY.			
5						82.92	(0.45) 5.31	Very stiff greenish grey and grey CLAY with frequent shelly laminae.			
	4.00-5.50	101	101			82.73	5.50	Weak grey bioturbated SILTSTONE with abundant shelly material.			
6						81.69	(1.04) 6.54	Weak grey SILTSTONE and subordinate very stiff SILT. Bioturbated and shelly.			
						81.43	6.80	Very stiff bluish grey CLAY.			
	5.50-7.00	93	83			81.23	7.00	Weak greenish grey SILTSTONE.			

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: P18
Crew: [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	2 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thick-ness)	STRATA DESCRIPTION	Legend	Water	Instrument/ Backfill
						80.89	7.34	Very stiff dark grey brown CLAY with carbonaceous rootlets.			
						80.35	(0.54) 7.88	Very stiff bluish grey CLAY with mud-filled and carbonaceous roots and shelly material towards the base.			
8						79.73	(0.62) 8.50	Very stiff bluish grey and grey CLAY with frequent shelly laminae and mud-filled and carbonaceous roots.			
	7.00-8.50	97	97			79.38	8.85	Weak bluish grey MUDSTONE with mud-filled and carbonaceous roots.			
9						78.70	(0.68) 9.53	Very stiff bluish grey locally sandy CLAY displaying soft sediment deformation and inclined bedding highlighted by sandy and shelly laminae with mud-filled rootlets towards the top.			
						78.46	9.77	Very stiff grey and bluish grey bioturbated sandy CLAY.			
10	8.50-10.00	98	94			78.23	10.00	Weak dark grey laminated to bioturbated MUDSTONE and subordinate CLAY.			
						78.01	10.22	Very stiff brown bioturbated CLAY.			
						77.68	10.55	Very stiff brown sandy CLAY with soft sediment deformation and carbonaceous roots.			
11						76.73	(0.95) 11.50	Very stiff brown CLAY. Bioturbated with carbonaceous roots and rootlets.			
	10.00-11.50	101	101								
12						75.23	(1.50) 13.00	Stiff to very stiff bluish grey CLAY with carbonaceous roots and rootlets.			
13	11.50-13.00	101	101			74.33	(0.90) 13.90	Very stiff grey SILT with mud-filled and carbonaceous roots and rootlets.			

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: P18
Crew: [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	3 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thickness)	DESCRIPTION	Legend	Water	Instrument/ Backfill
						73.92	14.31	Very stiff light grey SILT. *(continued)*			
	13.00-14.50	108	108			73.73	14.50	Very stiff orange brown sandy SILT.			
						73.56	14.67	Very stiff orange brown sandy CLAY.			
	14.50-14.95	NA	NA	NA	NA	73.28	14.95	Weak red brown, grey and orange brown sideritic unit in which foliated siderite cement nodules occur as clasts (up to cobble size) in a sandy CLAY matrix.			
15						73.10	15.13	Weak orange brown LIMESTONE. Subhorizontal undulating smooth open fracture.			
							(0.87)	Medium strong light orange brown oolitic LIMESTONE. Very close to closely spaced fractures between 15.35 to 15.62m. Fractures are subhorizontal undulating rough and open to tight.			
	14.50-16.00	103	101	NA	NA	72.23	16.00				
16	14.95-16.00	NA	NA	92	2			Very strong light brown grey sandy oolitic LIMESTONE. Medium spaced subhorizontal undulating and planar rough open to moderately wide fractures are cross-cut by a large subvertical undulating rough moderately wide fracture. Between 16.80 and 17.10 subhorizontal fractures are very closely spaced and tight. Also observed are undulating subvertical calcite-filled or very tight fractures.			
							(1.10)				
17						71.13	17.10				
	16.00-17.50	95	95	92	7			Very strong light brown grey sandy oolitic LIMESTONE. Medium spaced subhorizontal planar and undulating rough open to moderately wide fractures.			
18							(1.90)				
	17.50-19.00	95	95	95	3	69.23	19.00				
19							(0.58)	Very strong light brown grey fine grained variably oolitic bioturbated SANDSTONE. Medium spaced subhorizontal undulating rough open to moderately wide fractures.			
						68.65	19.58				
	19.00-19.90	NA	NA	100	3	68.33	19.90	Very strong light brown very fine grained bioturbated SANDSTONE.			
20							(0.60)	Very strong light brown grey fine grained variably oolitic bioturbated SANDSTONE. Very closely spaced subhorizontal and low angle undulating rough tight to moderately wide fractures cross cut by a large subvertical undulating rough moderately wide fracture.			
	19.00-20.50	93	86	NA	NA	67.73	20.50				
	19.90-20.50	NA	NA	40	11						
							(0.66)				

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: [redacted]
Crew: [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	4 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thick-ness)	STRATA DESCRIPTION	Legend	Water	Instrument/ Backfill
	20.50-21.16	NA	NA	100	2	67.07	21.16	Very strong light brown grey fine grained variably oolitic bioturbated SANDSTONE. Closely spaced subhorizontal undulating rough open to moderately wide fractures at 20.73 to 20.80m. *(continued)*			
							(0.84)	Medium strong light brown and light brown grey mainly very fine grained bioturbated SANDSTONE with nodular cements and oolitic fine grained bioturbated SANDSTONE. Very close to closely spaced subhorizontal planar undulating rough open to moderately wide fractures and two subvertical undulating rough moderately wide fractures. Non-intact recovered as gravel where nodular cements are observed.			
22	20.50-22.00	95	91	NA	NA	66.23	22.00				
	21.16-22.00	NA	NA	32	9	66.03	22.20				
								Medium strong light brown very fine grained bioturbated SANDSTONE with irregular and inclined burrow fills of soft sand.			
23								Strong brown and light brown grey fine grained bioturbated and variably oolitic SANDSTONE and subordinate oolitic LIMESTONE. Close to locally medium spaced subhorizontal planar and undulating rough open to moderately wide fractures.			
	22.00-23.50	100	100	71	11		(2.40)	Subvertical undulating rough fracture from 22.86 to 23.36m.			
24											
						63.63	24.60				
								Medium strong to weak light brown and light grey brown very fine grained and fine grained locally oolitic, shelly and bioturbated SANDSTONE displaying prominent nodular cements. Drilling induced fracturing where nodular cements are observed.			
25	23.50-25.00	101	87	66	7	63.23	25.00				
						63.03	25.20				
								Medium strong light brown and light grey brown fine grained bioturbated shelly SANDSTONE. Non-intact recovered as cobbles and gravel.			
								Very strong light brown grey oolitic LIMESTONE. Displays diffuse cross-stratification with local bioturbated intervals. Medium to closely spaced low angle planar fractures.			
26							(1.30)				
	25.00-26.50	85	69	58	5	61.73	26.50				
								Strong light brown, light orange brown oolitic LIMESTONE. Mainly bioturbated with diffuse cross-stratification. Close to very closely spaced subhorizontal and low angle undulating and planar rough open to moderately wide fractures. Subvertical undulating rough moderately wide fracture from 26.85 to 27.55m.			
27							(1.08)				
						60.65	27.58				
								Medium strong light brown grey, brown and grey brown sandy oolitic LIMESTONE displaying diffuse cross-stratification and bioturbation with highly subordinate fine and very fine grained			
	26.50-28.00	90	82	33	13	60.23	28.00				

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: P18
Crew [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	5 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thick-ness)	STRATA DESCRIPTION	Legend	Water	Instrument/ Backfill
							(1.00)	ripple cross-laminated and bioturbated silty very thinly bedded SANDSTONE. Non-intact from 27.58 to 27.70m recovered as gravel. Closely spaced subhorizontal undulating rough moderately wide fractures.			
29	28.00-28.97	NA	NA	93	3	59.23	29.00	Very strong grey and light brown grey cross-stratified oolitic LIMESTONE with occasional fine gravel-grade mudstone clasts. Silty drapes between 28.49m and 28.51m. Very to extremely close subhorizontal undulating rough moderately wide fractures at 28.49 to 28.55m.			
							(0.45)				
	28.00-29.50	97	97	NA	NA	58.78	29.45	Strong grey and dark grey very fine grained silty SANDSTONE and local fine grained oolitic SANDSTONE. Very fine sandstones are variably bioturbated and ripple cross-laminated with thin silt laminae. Closely spaced subhorizontal undulating irregular rough and smooth open to moderately wide fractures.			
	28.97-29.50	NA	NA	47	6	58.51	29.72				
30								Very strong grey and light brown fine grained variably oolitic and shelly bioturbated slightly silty SANDSTONE.			
							(1.28)	No recovery. Probably due to the wash out of orange sand/soft sandstone.			
31	29.50-31.00	15	15	10	1	57.23	31.00				
	31.00-31.14	NA	NA	0	1	57.09	31.14	Medium strong orange brown and light brown very fine grained slightly silty and ripple cross-laminated SANDSTONE. Single subhorizontal planar smooth fracture (may be drilling induced).			
						56.95	31.28	Very stiff to stiff very dark grey CLAY.			
						56.58	31.65	Stiff grey and grey brown sandy SILT with mud-filled and carbonaceous roots and rootlets.			
						56.30	31.93				
32	31.14-31.98	NA	NA	NA	NA	56.13	32.10	Very stiff dark grey CLAY with carbonaceous rootlets.			
	31.00-32.50	98	91	NA	NA	55.73	32.50	Weak dark orange brown fine grained clayey SANDSTONE. Extremely closely spaced subhorizontal undulating rough tight to open fractures. Non-intact and recovered as gravel with drilling induced fractures.			
	31.98-32.50	NA	NA	58	7						
	32.50-32.92	NA	NA	38	5			Very strong greenish grey brown fine grained slightly silty bioturbated SANDSTONE. Closely spaced subhorizontal planar to low angle undulating rough moderately wide fractures and irregular wispy calcite filled fractures/voids.			
33							(1.38)	Strong and locally medium strong brown and grey brown fine grained SANDSTONE. Slightly silty towards top. Diffuse cross-stratification and local bioturbation. Between 32.50 and 32.92m close to medium spaced subhorizontal fractures are cross-cut by a subvertical branched and reconnecting fracture. Fractures appear tight to moderately wide. Between 33.10 and 33.17m core is non-intact and recovered as gravel possibly associated with very closely spaced subhorizontal fractures. Between 33.65 to 33.88 fractures are closely spaced subhorizontal to low angle undulating rough and open with a subvertical branched and reconnecting tight to open fracture.			
						54.35	33.88				
34	32.50-34.00	93	88	NA	NA						
	32.92-34.00	NA	NA	85	5		(0.68)				
	34.00-34.46	NA	NA	91	1	53.67	34.56				
							(0.63)	Strong grey fine grained mainly very silty bioturbated SANDSTONE. Medium spaced subhorizontal to low angle planar			

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: P18
Crew [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road,
Baxterley, Atherstone,
Warwickshire, CV9 2LE
Telephone: 01827 717891
Facsimile: 01827 718507

BOREHOLE LOG

Project	Client	Date Completed
ENRMF Potential landfill extension site investigation	Augean	28/01/2020

Project No.	Ground Level (mAOD)	Co-ordinates ()	Borehole No.
AU/KCW/JRC/2936/01	88.23	E 500 207.24 N 300 526.01	K26

Contractor	Location	Sheet
Geotechnical Engineering Limited	East Northants Resource Management Facility	6 of 6

Scale	CORE Depth	TCR	SCR	RQD	FI	Reduced Level	Depth (Thickness)	STRATA DESCRIPTION	Legend	Water	Instrument/ Backfill
						53.04	35.19	rough open fractures.			
	34.00-35.50	93	93	NA	NA			Weak to locally medium strong dark grey and grey thinly bedded SILTSTONE and fine grained very silty SANDSTONE. Bioturbated throughout. Close to very closely spaced subhorizontal undulating and branching /reconnecting rough open to tight fractures and high angle branching/reconnecting rough open fracture. *(continued)*			
	34.46-35.50	NA	NA	46	9						
36							(1.56)	Strong to medium strong and locally weak medium and thinly bedded bioturbated SILTSTONE and sandy SILTSTONE. Very close, close and locally medium spaced subhorizontal undulating rough moderately wide fractures.			
						51.48	36.75				
37	35.50-37.00	83	83	57	9		(0.60)	Strong grey bioturbated SILTSTONE with medium gravel to cobble grade rounded mudstone clasts at base. Single subhorizontal undulating rough moderately wide fracture.			
						50.88	37.35				
							(0.85)	Very stiff dark grey bioturbated CLAY tending towards weak MUDSTONE.			
38	37.00-38.20	123	123	114	1	50.03	38.20				
								END OF BOREHOLE			
39											
40											
41											

GROUNDWATER

Date	Depth of hole	Depth of casing	Depth to water	Depth struck	Depth after 20 mins	Depth sealed
22/01/20	16.00	2.70	15.72			
24/01/20	32.50	2.70	16.12			
28/01/20	38.20	2.70	17.64			
11/03/20	37.25		15.69			

REMARKS / INSTALLATIONS

Unrecovered cuttings fill borehole from 38.2 to 37.25 mbgl. Plain HDPE pipe installed between 37.25 and 36.85 mbgl. Slotted HDPE pipe with a filter geotextile sock installed between 36.85 and 15.0 mbgl. Plain HDPE pipe installed from 15.0 mbgl to above ground level. Borehole annulus backfilled with gravel to 14.0 mbgl, benonite pellets to 13.5 mbgl and grout and bentonite pellets to ground level. Pipe fitted with end cap and removable gas tight cap with gas tap. The monitoring standpipe is protected by raised headworks.

LOGGED BY [redacted]

DRILLING

Plant: P18
Crew: [redacted]

Type and Diameter	Depth
Rotary coring 150mm	38.2m

Geotechnical Engineering Limited

BOREHOLE LOG

KCW 1/19

CLIENT MJCA

SITE EAST NORTHANTS RESOURCE MANAGEMENT FACILITY, PETERBOROUGH Sheet 1 of 2

Start Date 9 December 2019 Easting 500181.1 Scale 1 : 50

End Date 11 December 2019 Northing 300683.4 Ground level 89.64mOD Depth 16.10 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
09/12/19 1520hrs								Soft dark brownish grey CLAY (topsoil).	0.40	89.24	
09/12/19 1610hrs 0.80m								Firm dark brown CLAY.			
10/12/19 0905hrs 0.90m	1C	1.10 - 2.60	Nil		99 70 0	NI 30 90		Strong light grey crystalline LIMESTONE with frequent shell debris.	1.20	88.44	
								Medium strong light brown and light grey LIMESTONE with abundant shell debris. Fractures are subhorizontal very closely and closely spaced undulating rough.	1.53	88.11	
						NA		Firm light brown and bluish grey slightly sandy CLAY. Rare rootlets.	2.30	87.34	
	2C	2.60 - 2.90	2.60		98			Very stiff dark greenish grey sandy CLAY with abundant rootlets and shell debris.	2.60	87.04	
	3C	2.90 - 4.10	2.60		98			Stiff light grey slightly gravelly slightly sandy silty CLAY. Gravel is subangular to subrounded fine and medium grained.	2.95	86.69	
	4C	4.10 - 5.60	2.60		71			Stiff bluish grey and grey silty CLAY. 4.60 - 4.80m: Soft black clay.	4.10	85.54	
	5C	5.60 - 7.10	2.60		100 86 86	550		Strong light grey SILTSTONE thinly interbedded with stiff dark grey silty clay. Frequent shell debris. 6.30m: Subhorizontal planar rough fracture.	5.55	84.09	
						NA		Firm greenish grey slightly sandy silty CLAY.	6.85	82.79	
	6C	7.10 - 8.60	2.60		100			Stiff dark grey silty CLAY with rare rootlets. 7.27m: Subhorizontal planar smooth fissure.	7.05	82.59	
								Stiff dark grey CLAY. Continued Next Page	7.80 {8.00}	81.84	

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-2.60m Waterflush rotary core drilled (146mm) 2.60-16.10m

CASING: 168mm to 2.70m.

BACKFILL: On completion, hole backfilled with bentonite 16.10-15.20m, cement:bentonite grout 15.20-0.50m and arisings 0.50-0.00m.

EXPLORATORY HOLE LOGS SHOULD BE READ IN CONJUNCTION WITH KEY SHEETS

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
0.75				Seepage, in inspection pit.

AGS

CONTRACT	CHECKED
35673	EC

Geotechnical Engineering Limited

BOREHOLE LOG

KCW 1/19

CLIENT MJCA

SITE EAST NORTHANTS RESOURCE MANAGEMENT FACILITY, PETERBOROUGH — Sheet 2 of 2

Start Date 9 December 2019 — Easting 500181.1 — Scale 1 : 50

End Date 11 December 2019 — Northing 300683.4 — Ground level 89.64mOD — Depth 16.10 m

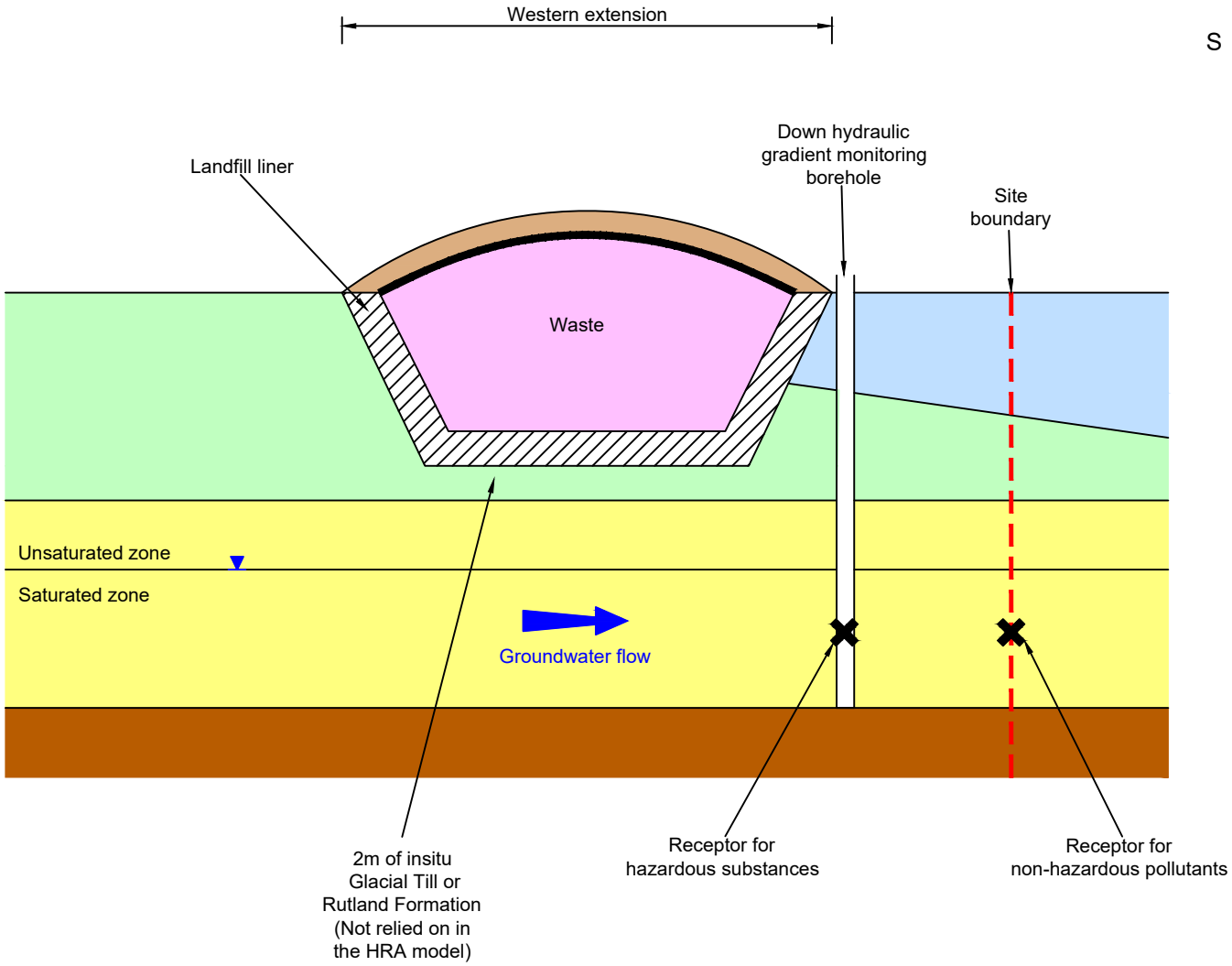
progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
										8.31	81.33	
									Stiff dark grey silty CLAY with abundant shell debris.	8.60	81.04	
	7C	8.60	10.10	2.60		86			Stiff dark grey silty CLAY with frequent rootlets.			
									9.10 - 9.85m: Very stiff dark grey clay with abundant rootlets.			
									9.75 - 9.85m: Very stiff dark grey clayey silt.	9.85	79.79	
	8C	10.10	11.60	2.60		100 2 0			Soft dark grey CLAY.	10.25	79.39	
									Very stiff greenish dark grey silty CLAY. Frequent bands of shell debris.	10.70	78.94	
									Stiff dark grey slightly sandy silty CLAY. Frequent rootlets.	11.35	78.29	
									Stiff dark grey clayey SILT.	11.55	78.09	
	9C	11.60	13.10	2.60		100 23 23	300		Weak light grey SILTSTONE. Single subvertical fracture planar smooth with orange staining.	11.95	77.69	
							NA		Stiff dark grey sandy CLAY.			
10/12/19 1630hrs 3.00m												
11/12/19 0715hrs 0.60m	10C	13.10	14.60	2.60		96			Very stiff dark grey slightly sandy silty CLAY. Rare rootlets.	13.15	76.49	
									Very stiff light grey clayey SILT.	13.55	76.09	
									Very stiff light grey silty SAND. Sand is fine.	13.90	75.74	
									Friable light grey sandy SILT. Sand is fine.	14.15	75.49	
	11C	14.60	16.10	2.60		97			Soft light yellowish brown CLAY.	14.70	74.94	
									Soft yellowish brown CLAY with nodular cemented siderite.	14.90	74.74	
									Light brown clayey fine SAND. 15.10 - 15.40m: Very closely spaced subparallel subvertical to 70° undulating rough fissures with siderite infill.	15.10	74.54	
11/12/20 0915hrs 2.00m									Light brown fine SAND.	15.80	73.84	
									Borehole completed at 16.10m.	16.10	73.54	
										{18.00}		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

AGS

CONTRACT 35673

CHECKED EC



Key / Notes

GEOLOGY

- Glacial Till
- Rutland Formation
- Lincolnshire LimestoneFormation, Grantham Formation and Northampton Sand Formation
- Whitby Mudstone Formation

LANDFILL

- Landfill cap with a drainage layer and cover soils
- Composite HDPE flexible membrane liner and a 1m thick compacted clay liner

Rev	Status	Drn	App	Chk	Date
	Final	KR	JRC	LH	23/04/21

Site
EAST NORTHANTS RESOURCE MANAGEMENT FACILITY

Client
Augean SOUTH LTD

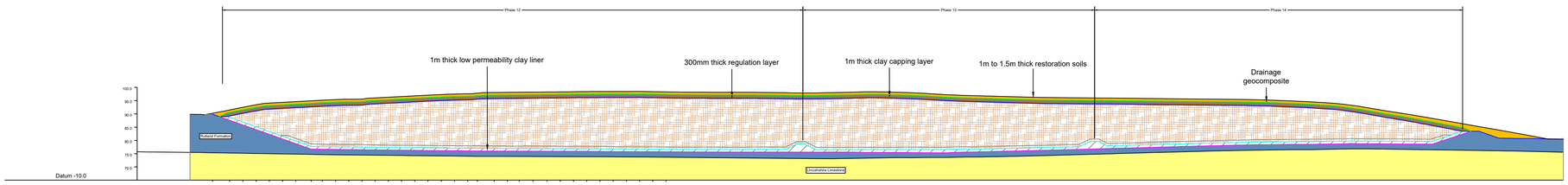
Title
Conceptual site model - western extension

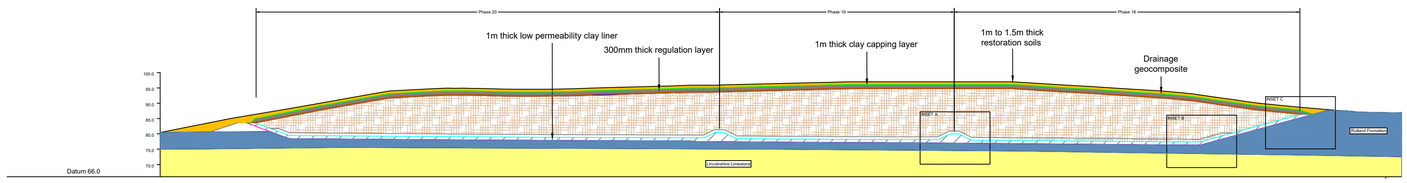
Figure HRA 3

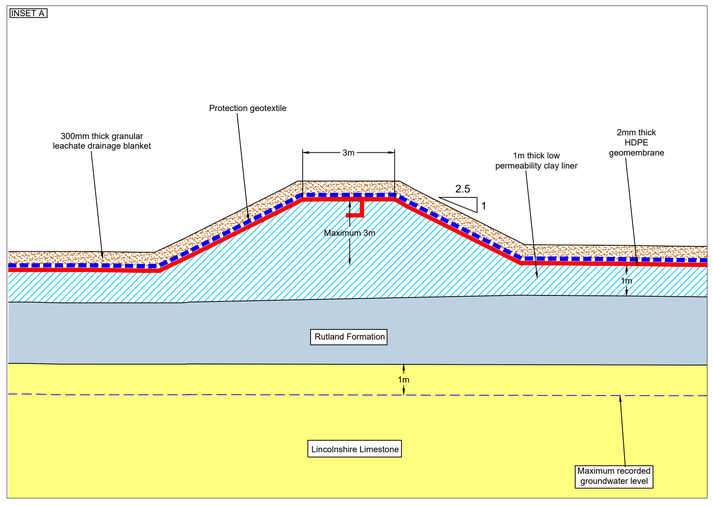
Scale
Not to scale

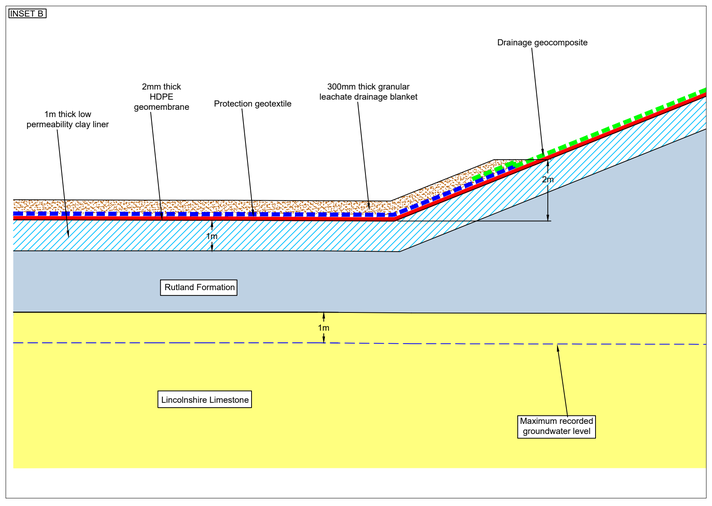
Drawing Ref
AU/KCW/01-21/22196

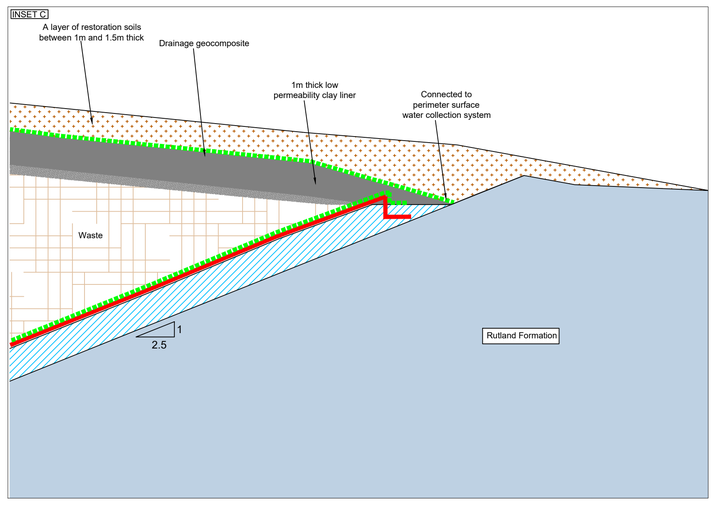
MJCA
Technical advisers on environmental issues
Baddesley Colliery Offices,
Main Road, Baxterley, Atherstone,
Warwickshire, CV9 2LE.
Telephone : 01827 717891
Fax : 01827 718507











Key / Notes

- 300mm thick regulation layer
- 1m thick clay capping layer
- 1m thick restoration soils
- 1m thick low permeability clay liner
- Drainage geocomposite

Sections lines shown on Figures SRA5 drawing reference AU/KCW/12-20/22129

Rev	Status	Drn	App	Chk	Date
	Final	KR	HL	DFR	30/04/21

Site: EAST NORTHANTS RESOURCE MANAGEMENT FACILITY

Client: Augean South Ltd

Title: Conceptual cross sections

Figure SRA 7 | Scale 1:1,000@A1

Drawing Ref: AU/KCW/12-20/22131

MJCA Technical advisers on environmental issues
Baddesley Colliery Offices, Main Road, Baxterley, Atherstone, Warwickshire, CV9 2LE
Telephone : 01827 717891
Fax : 01827 718507