Upton House
Market Street
Charlbury
Oxfordshire, OX7 3PJ
United Kingdom
tel +44 (0)1608 810374
fax +44 (0)1608 810093
e-mail info@gwp.uk.com
www.gwp.uk.com

SHELLINGFORD QUARRY LANDFILL ENVIRONMENTAL SETTING AND SITE DESIGN TO SUPPORT ENVIRONMENTAL PERMIT VARIATION APPLICATION EPR/BP3095EU/V006

For

MULTI-AGG LIMITED

January 2026

GWP Consultants LLP
Registered No. OC326183
Registered Office: Upton House, Market Street, Charlbury, Oxfordshire, OX7 3PJ, UK

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CONTENTS

1. INTRODUCTION 1
1.1 Report Context 1
1.1.1 Operator of the proposed development 1
1.1.2 Agent who completed this report 1
1.1.3 Outline of the proposed development 1
1.2 Development Details 1
1.2.1 Site location 1
1.2.2 Landfill and Deposit for Recovery classification 2
1.2.3 Application boundary and site security 2
1.2.4 Historical landfilling 2
1.2.5 Site context 2
2. SOURCE TERM CHARACTERISATION 5
2.1 The Development of the Site 5
2.1.1 Historical Development 5
2.1.2 Proposed Development 6
2.2 Installation Engineering 8
2.2.1 Groundwater Management System 8
2.2.2 Basal Lining System 9
2.2.3 Side Slope Lining System 9
2.2.4 Capping System 9
2.2.5 Restoration and Aftercare 9
2.3 Leachate Management and Monitoring Infrastructure 10
2.3.1 Leachate Generation 10
2.3.2 Leachate Management and Monitoring Infrastructure 10
2.4 Landfill Gas Management and Monitoring Infrastructure 10
2.5 Surface Water Management System 11
2.6 Post Closure Controls 11
3. PATHWAY AND RECEPTOR TERM CHARACTERISATION 11
3.1 Conceptual Hydrogeological Model 11
3.2 Climate 11
3.3 Geology 12
3.4 Man-made Subsurface Pathways 12
3.5 Hydrology 12
3.5.1 Surface Water Features 12
3.5.2 Description of local water courses 12
3.5.3 Waterbodies 12
3.5.4 Springs 13
3.5.5 Flows within local water courses 13
3.5.6 Flood Risk and the presence of indicative flood plains 13
3.5.7 Surface water abstractions 13
3.5.8 Consented discharges 13
3.5.9 Surface water quality 14
3.5.10 Ecological importance 14
3.5.11 Summary 14
3.6 Hydrogeology 14
3.6.1 Aquifer Characteristics 14
3.6.2 Groundwater Flow 15
3.6.3 Groundwater Quality 16
3.7 Landfill Gas Monitoring 16
3.8 Receptors and Compliance Points 17

3.8.1 Groundwater 17
3.8.2 Surface Water 17
3.8.3 Landfill Gas 18
3.8.4 Amenity and Habitats 18

4. SITE CONDITION REPORT 18

5. CONCLUSIONS 19

TABLES

Table 1 Potential land use receptors
Table 2 Potential historic receptors
Table 3 Potential statutory and habitat receptors
Table 4 Waste types

DRAWINGS

Drawing Number	Drawing Title	Version
SHELLQMA2508-1	Site location	a
SHELLQMA2508-2	Shellingford Quarry site location context plan	a
SHELLQMA2508-3	Site plan	a
SHELLQMA2508-4	Potential land use receptors	a
SHELLQMA2508-5	Potential cultural and heritage receptors	a
SHELLQMA2508-6	Potential statutory and habitat receptors	a
SHELLQMA2508-7	Excavation and infilling phasing	a
SHELLQMA2508-8	Restoration contours	a
SHELLQMA2508-9	Geological setting	a
SHELLQMA2508-10	Hydrological setting	a
SHELLQMA2508-11	Institute of Geological sciences hydrogeological map	a
SHELLQMA2508-12	Environment Agency fluvial flood risk	a
SHELLQMA2508-13	Environment Agency pluvial flood risk	a
SHELLQMA2508-14	Groundwater and surface water monitoring locations	a
SHELLQMA2508-15	Gas monitoring locations	a

APPENDICES

Appendix 1 Groundsure Enviro Insight report
Appendix 2 Drawing Nos. 1971/001A, 1971/002B and 2459-5-2 DR-0001
Appendix 3 Stanford R02 rainfall January 1994 to December 2023
Appendix 4 Surface water quality monitoring data
Appendix 5 Groundwater level monitoring data – Stanford Quarry OBH
Appendix 6 Groundwater level monitoring data – Shellingford Quarry
Appendix 7 Groundwater quality monitoring data

SHELLINGFORD QUARRY LANDFILL ENVIRONMENTAL SETTING AND SITE DESIGN TO SUPPORT ENVIRONMENTAL PERMIT VARIATION APPLICATION EPR/BP3095EU/V006

1. INTRODUCTION

1.1 Report Context

Shellingford Quarry Landfill currently operates under Environmental Permitting Regulations (EPR) Permit EPR/BP3095EU which provides for the landfilling with imported inert waste of the quarry excavation in accordance with extant Planning Permissions STA/SHE/8554/12-CM (MW.0020/11) and STA/SHE/8554/11-CM (MW.0021/11).

Planning Permission P18/V2610/CM (MW.0104/18) was granted in September 2020 and provides for the extraction of sand and limestone from a western extension to Shellingford Quarry and restoration of the excavation to original ground levels using imported inert waste material and indigenous soils.

An EPR Permit application is being submitted to vary the existing EPR Permit EPR/BP3095EU to add a deposit for recovery activity to accommodate infilling within the adjacent western quarry excavation area with imported inert waste.

This report presents an Environmental Setting and Site Design (ESSD) and has been prepared to support the EPR Permit application to vary the existing EPR Permit to accommodate infilling with imported inert waste in the western quarry extension area as a deposit for recovery activity.

1.1.1 Operator of the proposed development

Multi-Agg Limited, The Upper Lime Kiln Works, Bytham Road, Ogbourne St. George, Marlborough, Wiltshire, SN8 1TD.

1.1.2 Agent who completed this report

GWP Consultants LLP, Upton House, Market Street, Charlbury, Oxfordshire, OX7 3PJ.

1.1.3 Outline of the proposed development

The EPR Permit application is to vary the existing EPR Permit EPR/BP3095EU to add a deposit for recovery activity to accommodate infilling within the adjacent western quarry excavation area with imported inert waste. The inert fill capacity associated with the deposit for recovery activity is *c.* 1.60Mm^3 which equates to a tonnage of *c.* 2.88Mt (using a conversion factor of 1.8t/m^3).

The additional deposit for recovery activity associated with the Permit variation will be limited to the western quarry excavation area that is adjacent to the inert landfilling area covered by the existing EPR Permit. This means the current Permit boundary will need to be extended to the west and south to allow for the additional deposit for recovery activity.

1.2 Development Details

1.2.1 Site location

The application site is located at Shellingford Quarry, Stanford Road, Stanford in the Vale, Faringdon, Oxfordshire, SN7 8HE (National Grid Reference SU 32700 93600).

Shellingford Quarry is located to the north of the White Horse Business Park between the villages of Shellingford *c.* 0.25km to the west and Stanford in the Vale *c.* 0.50km to the east. The town of Faringdon is located *c.* 3.0km to the west of the quarry.

Original ground levels within the western quarry extension area range from *c.* 90mAOD in the north to *c.* 74mAOD in the south, north of the Holywell Brook (also known as the Hollywell Brook).

The quarry is excavated in Upper Jurassic strata belonging to the Corallian Group and comprising principally the Highworth Grit Member (sand) and underlying Highworth Limestone Member (limestone) of the Kingston Formation.

Drawing No. SHELLQMA2508-1 shows the site location.

Drawing No. SHELLQMA2508-2 shows the EPR Permit variation application area within the context of the existing EPR Permit area, highlighting where the deposit for recovery activity in the western extension area will take place.

Drawing No. SHELLQMA2508-3 is the site plan which shows the total extent of the varied EPR Permit area being applied for.

Access to the site is currently from the A417 (Faringdon Road) and will remain unchanged.

An Enviro Insight report obtained in January 2022 for Shellingford Quarry is presented in Appendix 1.

1.2.2 Landfill and Deposit for Recovery classification

The existing inert landfill area operated under extant EPR Environmental Permit EPR/BP3095EU will continue to receive inert waste only.

The site will receive inert waste as part of the deposit for recovery activity within the western extension area.

1.2.3 Application boundary and site security

Drawing No. SHELLQMA2508-3 shows the total extent of the varied EPR Permit area being applied for. The existing EPR Permit area is *c.* 39.9ha and the adjacent additional western area, where the deposit for recovery activity will take place, is *c.* 28.0ha, giving a total area of the varied EPR Permit of *c.* 67.9ha.

Site security consists of perimeter fencing with access gates secured with padlocks.

1.2.4 Historical landfilling

Historical landfilling within the vicinity of the site is detailed (with location plans) in Section 3 of the Enviro Insight report presented in Appendix 1.

The restored Shellingford Crossroads Quarry is located to the north of the existing permitted site (immediately to the north of the A417) and is located a minimum distance of *c.* 200m to the northeast of the western extension area. With the exception of the most western part (which was been left as an excavation void to revegetate naturally) the Shellingford Crossroads Quarry was restored using imported domestic and commercial waste (and accepted 'difficult' wastes) and the landfill was operated as 'dilute and disperse'.

British Geological Survey (BGS), Local Authority and Environment Agency (EA) historical landfill records also exist for areas just to the north of Faringdon Road located adjacent to the northern boundary of the existing site area. These records indicate that inert, industrial, commercial, household, special and liquid sludge wastes were accepted at these sites. The Stanford Waste Recycling and Reception Centre now operates at this location.

No other historical landfill sites are located within 1km of the site.

1.2.5 Site context

This EPR Permit application is to vary the existing EPR Permit to add a deposit for recovery activity to accommodate infilling within the adjacent western quarry excavation area with imported inert waste, approved by Planning Permission P18/V2610/CM (MW.0104/18).

Drawing No. SHELLQMA2508-1 shows the site location.

Drawing No. SHELLQMA2508-2 shows the EPR Permit variation application area within the context of the existing EPR Permit area, highlighting where the deposit for recovery activity in the western extension area will take place.

Drawing No. SHELLQMA2508-3 is the site plan which shows the total extent of the varied EPR Permit area being applied for.

Potential environmental receptors located within the vicinity of the site are detailed (with location plans) in Sections 10, 11 and 13 of the Enviro Insight report presented in Appendix 1.

The following distances from the Environmental Permit application boundary have been used to identify rural designations/potential receptors:

- 1km radius – European ecological important sites including RAMSAR sites, Special Areas of Conservation, Local Wildlife Sites and Special Protection Areas;
- 1km radius – potentially sensitive receptors of ecological importance and sites of cultural and natural heritage. These include National Nature Reserves, Local Nature Reserves, Sites of Special Scientific Interest and Scheduled Monuments;
- 500m radius – all other potentially sensitive receptors e.g. residential, commercial, industrial, agricultural and surface water receptors.

Rural designations/potential receptors are detailed within the tables below.

Potential land use receptors within 500m of the site are detailed in Table 1 and are shown on Drawing No. SHELLQMA2508-4.

Table 1 – Potential land use receptors

Receptor name	Receptor type	Receptor direction from site	Approximate distance from application boundary
Church Farm	Industrial/Commercial	West	Adjacent
White Horse Business Park (various businesses)	Industrial/Commercial	South/East	5m (east)
Stanford Waste Recycling Centre	Industrial/Commercial	North	30m
Foxtail Garage	Industrial/Commercial	Southeast	350m
J Godfrey & Son Funeral Services	Industrial/Commercial	Southeast	390m
Timpson Engineering	Industrial/Commercial	Southeast	370m
The Light Car Company	Industrial/Commercial	Southeast	300m
Shellingford Sewage Treatment Works	Industrial/Commercial	West	290m
St. Faith's Church	Religious building	West	230m
Shellingford Church of England Voluntary Aided Primary School	Educational	West	230m
Busy Bees at Shellingford Nursery	Educational	West	280m
Quarry Cottage	Residential property	Northwest	150m
Laburnum Cottage	Residential property	North	220m
Properties within Shellingford village	Residential properties	West	250m (closest)
Properties within Stanford in the Vale	Residential properties	East	220m (closest)
New properties built at River Meadow (off Faringdon Road/Ware Road)	Residential properties	Southeast	100m

A417	Local Transport Network	North	Adjacent
B4508	Local Transport Network	North	160m
Stanford in the Vale road network	Local Transport Network	East	270m (closest)
Ware Road	Local Transport Network	South	150m
Church Street/Dogkennel Lane	Local Transport Network	West	270m
Holywell Brook	Surface water feature	South/West	100m (South), 200m (West)
Waterbody at Shellingford Crossroads Quarry	Surface water feature	North	70m
Settlement lagoon/balancing pond system	Surface water feature	On-site	-
Ponds and drain within Fishpond Copse	Surface water feature	West	260m
Drain adjacent to A417	Surface water feature	East	Adjacent
Pond	Surface water feature	South	300m
Pond	Surface water feature	South	400m
Pond	Surface water feature	South	650m
Pond associated with new properties built at River Meadow	Surface water feature	Southeast	240m
Pond associated with new properties built at River Meadow	Surface water feature	Southeast	370m
Agricultural land	Open ground	Patches North, South, East and West	Adjacent
Stanford in the Vale Football Club and park	Open ground/Public space	East	280m
Allotment	Allotment	East	390m

Potential historic cultural and heritage receptors within 1km of the site are detailed in Table 2 and are shown on Drawing No. SHELLQMA2508-5.

Table 2 – Potential historic receptors

Receptor name	Receptor type	Receptor direction from site	Approximate distance from application boundary
Monument to Alicia Clayton approximately 3 metres south of chancel of Church of St. Faith	Listed building	West	250m (closest)
Shellingford	Historical Conservation Area	West	200m
Stanford in the Vale	Historical Conservation Area	East	740m
Hatford	Historical Conservation Area	Northeast	940m

Potential natural statutory and habitat receptors within 1km of the site are detailed in Table 3 and are shown on Drawing No. SHELLQMA2508-6.

Table 3 – Potential statutory and habitat receptors

Receptor name	Receptor type	Receptor direction from site	Approximate distance from application boundary
Priority Habitat Inventory – Deciduous Woodland	Protected Woodland	South	Adjacent (closest)
Priority Habitat Inventory – Traditional Orchards	Protected Woodland	East	750m (closest)
Ancient and Semi-Natural Woodland	Protected Woodland	West	215m (closest)
Chaslins Copse	Local Wildlife Site	West	600m
Shellingford Crossroads Quarry	Site of Special Scientific Interest	North	175m

2. SOURCE TERM CHARACTERISATION

2.1 The Development of the Site

2.1.1 Historical Development

The site of Shellingford Quarry was operated as a Royal Air Force/United States Air Force station between 1931 and 1957. Before and after this period the site was in agricultural use.

Quarrying at the site commenced in 1986. An EPR Permit for landfilling with imported inert waste was issued in 2004 and was most recently varied in 2012 to accommodate additional landfilling with imported inert waste in an eastern quarry extension area.

The site continues to operate as a quarry producing a range of crushed and graded aggregates. In addition to the inert landfill EPR Permit the site also has an EPR Permit for the treatment of waste to produce soil, soil substitutes and aggregates (Environmental Permit EPR/EB3839AA).

Monitoring of the existing inert landfill is undertaken in accordance with the requirements of EPR Permit EPR/BP3095EU.

2.1.2 Proposed Development

This EPR Permit application is to vary the existing EPR Permit to accommodate a deposit for recovery activity to infill the western quarry extension excavation area with suitable imported inert waste.

Drawing No. SHELLQMA2508-2 shows the EPR Permit variation application area within the context of the existing EPR Permit area, highlighting where the deposit for recovery activity in the western extension area will take place.

Drawing No. SHELLQMA2508-3 is the site plan which shows the total extent of the varied EPR Permit area being applied for.

Drawing No. SHELLQMA2508-7 illustrates the phasing of the excavation and infilling of the western quarry extension, approved by P18/V2610/CM (MW.0104/18).

The EPR Permit area currently receives, and will continue to receive, inert waste only.

The site will receive inert waste as part of the deposit for recovery activity within the western extension area.

The inert fill capacity associated with the deposit for recovery activity, which is the subject of the EPR Permit variation application, is *c.* 1.60Mm^3 which equates to a tonnage of *c.* 2.88Mt (using a conversion factor of 1.8t/m^3).

The maximum rate of inert waste importation will remain as currently provided for by the existing EPR Permit *i.e.* 200,000t/year.

Waste Types

The waste types provided for by the EPR Permit variation application will remain unchanged from the existing EPR Permit and are listed below in Table 4.

Table 4 – Waste types

Waste types	
Exclusions **Wastes having any of the following characteristics shall not be accepted:** **Consisting solely or mainly of dusts, powders or loose fibres** **Hazardous wastes** **Wastes in liquid form**	
Waste Code	**Description**
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 01	**concrete, bricks, tiles and ceramics**
17 01 01	concrete (2)
17 01 02	bricks (2)
17 01 03	tiles and ceramics (2)
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06 (2)
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**
17 05 04	soil and stones (excluding topsoil and peat) other than those mentioned in 17 05 03 (1)
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 09	minerals (for example sand, stones) from the treatment of waste aggregates that are otherwise naturally occurring minerals – excludes fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard (2)
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 02	**garden and park wastes (including cemetery waste)**
20 02 02	soil and stones (excluding topsoil and peat) (1)
(1) For the purposes of waste acceptance, soil includes naturally occurring sands and clays (2) Selected construction and demolition waste (C & D waste): with low contents of other types of materials (like metals, plastic, organics, wood, rubber, etc). No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production processes in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted. No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts. If it is unsure whether the waste fulfils the definition of inert waste, or is uncontaminated, then testing of the waste must be undertaken to confirm compliance with the criteria for inert waste as specified in The Landfill (England and Wales) Regulations 2002 as amended. The origin of all waste must be known.	

The waste will be Landfill Directive inert Waste Acceptance Criteria (WAC) compliant *i.e.* the waste will comply with the leaching values for waste acceptable at landfills for inert waste set out in Section 2.1.2 of *'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/EC'*.

The variation application is submitted on the basis that the recovered waste placed within the western extension area will be suitable for its intended use and that the approved scheme is a deposit for recovery activity and not a waste disposal activity.

Leachate characteristics

EPR Environmental Permit EPR/BP3095EU allows for inert landfilling within the existing Permit area. Inert landfill falls outside the scope of the Groundwater (England and Wales) Regulations since, by definition, the total leachability and pollutant content of the wastes and the ecotoxicity of any leachate will be insignificant and in particular will not endanger the quality of groundwater.

The waste placed within the western extension area under the deposit for recovery activity will be Landfill Directive inert WAC compliant *i.e.* the waste will comply with the leaching values for waste acceptable at landfills for inert waste set out in Section 2.1.2 of *'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/EC'. The waste placed within the existing permitted inert landfill area will continue to be inert WAC compliant.

Hydrogeological risk screening

Given the inert nature of the waste and strict waste acceptance procedures and protocols that are already employed at the site, it is considered that the quantity and concentration of any hazardous substances or non-hazardous pollutants within any leachate (defined here as water coming into contact with the waste) will be minimal, hence the site falls outside the scope of the Groundwater (England and Wales) Regulations.

The Hydrogeological Risk Assessment (HRA) report prepared by GWP Consultants LLP (GWP) (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv) undertakes a full hydrogeological risk screening process for this development. Following this risk screening a Tier 2 Generic Quantitative Risk Assessment (GQRA), including a rogue load assessment, has been undertaken by Hafren Water (hydrogeological consultant).

The risk assessment demonstrates that under normal operational and post-operational phases of inert waste placement, including through the addition of the deposit for recovery activity in the western extension area, hazardous substances will not be present at discernible concentrations within groundwater beneath the site. Non-hazardous pollutants will not be present in concentrations such that pollution of groundwater is caused. It is considered therefore that the site is, and will continue to be, compliant with respect to the Groundwater (England and Wales) Regulations.

Restoration and afteruse

The restoration and afteruse schemes for Shellingford Quarry approved by Planning Permissions STA/SHE/8554/12-CM (MW.0020/11), STA/SHE/8554/11-CM (MW.0021/11) and P18/V2610/CM (MW.0104/18) are shown on Drawing Nos. 1971/001A, 1971/002B and 2459-5-2 DR-0001 presented in Appendix 2.

Restoration surface contours are shown on Drawing No. SHELLQMA2508-8.

2.2 Installation Engineering

2.2.1 Groundwater Management System

Shellingford Quarry, including the western quarry extension area, is excavated Upper Jurassic strata belonging to the Corallian Group and comprising principally the Highworth Grit Member (sand) and underlying Highworth Limestone Member (limestone) of the Kingston Formation.

The site does not have a natural geological barrier and therefore an engineered artificial geological barrier (AGB) appropriate for an inert landfill is constructed on a phased basis within the existing permitted area in accordance with Annex 1 Section 3.2 of the Landfill Directive as referenced by the Environmental Permitting (England and Wales) Regulations.

A basal and side slopes engineered AGB will be constructed within the western extension area in accordance with Annex 1 Section 3.2 of the Landfill Directive as referenced by the Environmental Permitting (England and Wales) Regulations, to accommodate the deposit for recovery activity in this part of the site.

Groundwater is present in the Highworth Limestone Member and the underlying Lower Calcareous Grit Formation and the existing quarry is dewatered to allow mineral excavation, AGB construction and restoration infilling to be undertaken in dry conditions. The quarry, including the western quarry extension area, will continue to be operated in the same manner.

Groundwater flow is to the south and southeast and groundwater-fed discharge into the Holywell Brook is inferred. Inferred representative high groundwater contours, based on groundwater monitoring point data from December 2024, are shown on Drawing 3810/HRA/04 within the Hafren Water Hydrogeological Risk Assessment report. The Hafren Water HRA report is provided as Appendix 7 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

The depth of quarry working is limited by the extant Planning Permissions to the base of the Highworth Limestone Member *i.e.* no excavation into the underlying Lower Calcareous Grit Formation.

This working depth limitation is to preserve an aquifer unit (the Lower Calcareous Grit Formation) beneath the site and, in doing so, to allow continued groundwater flow during quarry development and following restoration to support local water features.

The western quarry extension will continue to be operated in the same manner.

2.2.2 Basal Lining System

A basal AGB will be constructed on a phased basis across the floor of the western excavation area, as has been constructed within the currently permitted existing inert landfill area. The AGB will comprise a compacted layer of suitable indigenous quarry material (overburden material and processing fines) and/or suitable selected imported inert waste material and will have a minimum thickness of 1m and a permeability no greater than 1 x 10^{-7}m/s.

The basal AGB will be constructed in accordance with the approved original Construction Quality Assurance (CQA) Plan (PGW&A Report reference SQL/CQA Plan/1) and the Addendum CQA Plan (GWP Report No. 190508) approved by the EA.

The site will only accept inert waste and, as discussed in Section 2.1.2, there will be no leachate generation. Accordingly, there is no requirement for any leachate management system to be incorporated into the basal AGB.

Components of the deposit for recovery development within the western extension area, including the basal AGB, are shown on Drawing 3810/HRA/03 within the Hafren Water Hydrogeological Risk Assessment report. The Hafren Water HRA report is provided as Appendix 7 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

2.2.3 Side Slope Lining System

A side slopes AGB will be formed on a phased basis within the western excavation area using suitable indigenous quarry material (overburden material and processing fines) and/or suitable selected imported inert waste, as has been constructed within the currently permitted existing inert landfill area.

The side slopes AGB will have a minimum thickness of 1m and a permeability no greater than 1 x 10-^{7}m/s.

The side slopes AGB will be constructed in accordance with the approved original Construction Quality Assurance (CQA) Plan (PGW&A Report reference SQL/CQA Plan/1) and the Addendum CQA Plan (GWP Report No. 190508) approved by the EA.

Components of the deposit for recovery development within the western extension area, including the side slopes AGB, are shown on Drawing 3810/HRA/03 within the Hafren Water Hydrogeological Risk Assessment report. The Hafren Water HRA report is provided as Appendix 7 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

2.2.4 Capping System

There is no requirement in the Environmental Permitting (England and Wales) Regulations for a capping system on an inert landfill site as there will be no generation of gas or leachate. For the same reasons, no capping system will be required for the deposit for recovery activity within the western extension area.

Given that there is no requirement for a capping system, there is no requirement for a gas management system to be incorporated into the capping. Surface drainage measures will be installed as necessary, consistent with the approved afteruse requirements of extant Planning Permissions STA/SHE/8554/12-CM (MW.0020/11) and STA/SHE/8554/11-CM (MW.0021/11) for the existing site, and P18/V2610/CM (MW.0104/18) for the western extension area.

2.2.5 Restoration and Aftercare

The restoration and afteruse schemes for Shellingford Quarry approved by Planning Permissions STA/SHE/8554/12-CM (MW.0020/11), STA/SHE/8554/11-CM (MW.0021/11) and P18/V2610/CM (MW.0104/18) are shown on Drawing Nos. 1971/001A, 1971/002B and 2459-5-2 DR-0001 presented in Appendix 2.

Restoration surface contours are shown on Drawing No. SHELLQMA2508-8.

Restoration and aftercare of the whole site will be in accordance with the requirements of approved Planning Permissions STA/SHE/8554/12-CM (MW.0020/11), STA/SHE/8554/11-CM (MW.0021/11) and P18/V2610/CM (MW.0104/18).

2.3 Leachate Management and Monitoring Infrastructure

2.3.1 Leachate Generation

As described in Section 2.1.2 above, given the inert nature of the waste and strict waste acceptance procedures and protocols that are already employed at the site, it is considered that the quantity and concentration of any hazardous substances or non-hazardous pollutants within any leachate (defined here as water coming into contact with the waste) will be minimal.

Due to the inert nature of the existing waste placed in the inert landfill and the inert nature of future waste that will be placed within the western extension area under the deposit for recovery activity, any water coming into contact with it will not incorporate within it measurable concentrations of pollutants. It is therefore considered that hazardous substances will not be discernible and non-hazardous pollutants, if present, will be at low or insignificant concentrations. Therefore, potentially polluting leachate will not be generated.

2.3.2 Leachate Management and Monitoring Infrastructure

Given the inert nature of the waste material that will be placed within the western extension area under the deposit for recovery activity, no leachate will be generated. Therefore, no leachate management or monitoring infrastructure is required or proposed.

A basal and side slopes AGB will be constructed on a phased basis within the western excavation area to provide sufficient attenuation between the deposit for recovery waste source and any potential groundwater receptor. The AGB will be constructed to achieve a minimum thickness of 1m and maximum permeability of 1 x 10^{-7}m/s. The basal and side slopes AGB will be constructed in accordance with the approved original Construction Quality Assurance (CQA) Plan (PGW&A Report reference SQL/CQA Plan/1) and the Addendum CQA Plan (GWP Report No. 190508) approved by the EA.

Groundwater monitoring of the existing permitted inert landfill is undertaken in accordance with the requirements of EPR Permit EPR/BP3095EU.

Groundwater and surface water monitoring is discussed further in Sections 5.1.3 and 5.1.4 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv).

2.4 Landfill Gas Management and Monitoring Infrastructure

For ease of reference, the term 'landfill gas' within this ESSD report applies to the entire site: the existing permitted inert landfill and the western extension area. This is despite the purpose of the Permit variation application being to add a deposit for recovery activity within the western extension area as opposed to extending the inert landfilling activity to the western extension area.

Given the inert nature of the waste and the strict waste acceptance procedures and protocols that are already employed at the site, there is no potential source of any significant quantities of landfill gas from the existing inert landfill or the additional infilling with imported inert waste in the western extension area under the deposit for recovery activity.

However, it is proposed that proportionate monitoring is undertaken to confirm that the site continues to pose a negligible risk from landfill gas throughout the continued operational phase and the post closure phase of site development.

Landfill gas monitoring of the existing inert landfill in external monitoring boreholes is undertaken in accordance with the requirements of EPR Permit EPR/BP3095EU.

A scheme for in-waste gas monitoring of the existing inert landfill area has been submitted to, and approved by, the EA in accordance with the requirements of Improvement Programme Requirement 3 of the EPR Permit EPR/BP3095EU.

Landfill gas monitoring is discussed further in Section 3.2 of the Landfill Gas Risk Assessment (LGRA) report (GWP Report No. 250213) which accompanies the EPR Permit variation application (Appendix Hv).

2.5 Surface Water Management System

All surface water associated with the existing inert waste landfill, and the deposit for recovery scheme within the western extension area, will be managed within the EPR Permit application area.

The site is situated within fluvial Flood Zone 1.

The site has small standalone areas at risk of pluvial (surface water) flooding, but no areas that contribute to off-site receptors.

The existing inert landfill and the western extension are not located in areas that are liable to flood.

Any rainfall on the site infiltrating through the inert waste mass within the existing inert landfill, or the deposit for recovery area within the western extension area, will be attenuated by the underlying AGB and will permeate into the underlying geology.

If during construction heavy rainfall and associated surface water runoff temporarily ponds on the basal AGB, this will be diverted beyond the extent of the basal AGB and will be allowed to infiltrate into the underlying geology or drain to the quarry sump, or operations will be adjusted to avoid areas of ponding. These measures will ensure that tipping may continue without interruption.

Surface drainage measures will be installed as necessary, consistent with the approved after use requirements of Planning Permissions STA/SHE/8554/12-CM (MW.0020/11), STA/SHE/8554/11-CM (MW.0021/11) and P18/V2610/CM (MW.0104/18).

A Surface Water Management Plan (GWP Report No. 250314) accompanies the EPR Permit variation application (Appendix Hvii).

2.6 Post Closure Controls

At 6 months prior to completion of the site, a Post Closure Management Plan will be submitted to the EA detailing the proposed post closure monitoring programme. Following the approval of this Post Closure Management Plan, completion of the site and completion of immediate post closure monitoring (2 years), providing there have been no indications of groundwater contamination or landfill gas generation, then the EPR Permit will be surrendered. The Post Closure Management Plan will also detail the procedures to be adopted should compliance limits for groundwater chemistry or landfill gas be exceeded.

Post-closure monitoring will be required to demonstrate that the landfill, and western extension deposit for recovery area, is performing as designed. The site will be considered to no longer pose a risk when compliance criteria have been met at the site for at least 2 years based on the EA Guidance (Landfill and deposit for recovery: aftercare and permit surrender).

Minor differential settlement within the waste is to be anticipated under self-loading, however the magnitude will be minimal and will not impact on the long-term stability/security of the restored surface. Minor restoration surface depressions that may form as a result of waste settlement will be filled as necessary with restoration soils.

3. PATHWAY AND RECEPTOR TERM CHARACTERISATION

3.1 Conceptual Hydrogeological Model

The conceptual hydrogeological site model is discussed in detail within the Hafren Water Hydrogeological Risk Assessment report. The Hafren Water HRA report is provided as Appendix 7 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

A conceptual model plan and schematic conceptual cross sections are provided as respective Drawings 3810/HRA/02 and 3810/HRA/03 within the Hafren Water HRA report.

3.2 Climate

Daily rainfall data for the period January 1994 to December 2023 has been obtained from the Department for Environment Food & Rural Affairs (DEFRA) Hydrology Data Explorer for the Stanford R02 rain gauge (station number: 260221TP). The data acquisition for the rain gauge has been temporarily suspended and so no data since December 2023 has been analysed. The average annual rainfall during this period, for years with complete datasets, is estimated to be 603mm/year. The rainfall data is shown in Appendix 3.

The direction of the prevailing wind is from the southwest (national prevailing wind direction).

3.3 Geology

The geological setting of the site has been determined based on a review of published information, site investigation information and observations made in the existing quarry excavation.

The general geological setting of the site is shown on Drawing No. SHELLQMA2508-9.

Strata represented in the existing quarry and the western quarry extension area belong to the Stanford Formation and the underlying Kingston Formation which form part of the Corallian Group (Upper Jurassic).

More specifically, the strata comprise:

- Calne Member (Stanford Formation) – rubbly oolitic and clayey limestones (0.0m to *c.* 1.5m thick locally); overlying
- Highworth Grit Member (Kingston Formation) – fine and medium grained sands, rippled and cross bedded with thin limestone bands and clay lenses, increasingly silty to the base (*c.* 2.0m to *c.* 11m thick locally); overlying
- Highworth Clay Member (Kingston Formation) – grey sandy and silty clay, often thin or absent (0.0m to *c.* 3m thick locally); overlying
- Highworth Limestone Member (Kingston Formation) – oolitic and bioclastic limestones with thin sandy clay bands, becoming a sandy limestone to the base (*c.* 2.5m to *c.* 10m thick locally); overlying
- Lower Calcareous Grit Formation (Corallian Group) – silty and clayey fine to medium sands (*c.* 5.5m to *c.* 10m thick locally – not worked); overlying
- Oxford Clay Formation (Ancholme Group) – clay (greater than 30m thick – not worked).

The strata within and near the site generally dip to the south and southeast at variable gradients of between *c.* 1v : 40h (vertical : horizontal) and *c.* 1v : 100h. However, variations in strata dip and dip direction occur as a result of lateral variations in strata character and thickness.

Consistent with the requirements of the extant Planning Permissions the quarry is not currently, and will not be, excavated below the base of the Highworth Limestone Member *i.e.* no excavation into the underlying Lower Calcareous Grit Formation.

3.4 Man-made Subsurface Pathways

The site comprises an active quarry including the western quarry extension area.

The development area is not underlain by underground mine workings or buried services.

3.5 Hydrology

3.5.1 Surface Water Features

Surface water features are shown on Drawing No. SHELLQMA2508-10.

3.5.2 Description of local water courses

The site is located within the catchment area of the Holywell Brook (a tributary of the River Ock) which flows in a southerly direction along the eastern side of Shellingford (*c.* 200m west of the western extension area) and then in an easterly direction (*c.* 100m south of the current site and western extension area) towards its confluence with the River Ock near Manor Farm *c.* 1.1km southeast of the site.

The Frogmore Brook is located *c.* 750m northeast of the site at its closest approach and flows in a south-easterly direction where it meets the River Ock *c.* 1.6km east of the site.

The Flood Estimation Handbook (FEH) Web Service indicates that the catchment area of the Holywell Brook upstream of the southern part of the western extension area is *c.* 8.5km^2 and that the catchment area associated with the reach upstream of Shellingford is *c.* 5.9km^2.

3.5.3 Waterbodies

There are a number of surface waterbodies located within and surrounding the existing quarry area.

Within the existing quarry site there are a series of settlement lagoons used for clarification of mineral processing wash water. A small lagoon is located on the southern boundary of the site from which water from the existing quarry is discharged to the Holywell Brook under an extant discharge consent (NPSWQD002821).

The closest external waterbody to the site is located in the western part of the restored Shellingford Crossroads Quarry *c.* 70m to the north of the existing quarry and *c.* 260m to the northeast of the western extension area. The waterbody is not groundwater fed and Google Earth aerial images show that the waterbody has largely dried out since 2012.

A pond is located *c.* 300m south of the site, within the footprint of the White Horse Business Park. A pond is also located *c.* 400m south of the site and another pond is situated *c.* 650m south of the site along the northern edge of the Holywell Brook.

Two attenuation ponds associated with the new housing development built at River Meadow (off Faringdon Road/Ware Road) are situated 240m and 370m to the southeast of the site, respectively.

3.5.4 Springs

The Institute of Geological Sciences (IGS) Hydrogeological Map of the South West Chilterns and the Berkshire and Marlborough Downs (IGS, 1978) shows a spring issue located immediately north of Shellingford village, which appears to contribute to, but not to be the sole source of, flow in the Holywell Brook (see Drawing No. SHELLQMA2508-11). There are no other identified springs located within 1km of the site.

3.5.5 Flows within local water courses

The Holywell Brook (the closest water course to the site), is not routinely monitored by the EA.

A visual inspection by GWP of the reach of the Holywell Brook between Shellingford and Stanford in the Vale on 12th July 2018 (*i.e.* during an extended dry period) estimated flows of *c.* 5 l/s to 10 l/s including a flow of *c.* 5 l/s in the channel flowing along the eastern side of Shellingford.

The channel of the Holywell Brook is generally heavily vegetated, except where it has recently been cleared, and the water flow south of the copse located to the south of Shellingford shows evidence of high nutrient loading. It is considered that the high nutrient loading is due to the Shellingford sewage treatment works which discharges into the Holywell Brook at the southern end of the village.

Flows within the Holywell Brook are unaffected by the existing landfill and will remain unaffected by the additional infilling with imported inert waste associated with the deposit for recovery activity within the western quarry extension area.

Accordingly, it is considered that an assessment of flows in the Holywell Brook is not required for the purposes of the EPR Permit variation application.

3.5.6 Flood Risk and the presence of indicative flood plains

The site is located within fluvial flood risk Flood Zone 1 (annual exceedance probability for river flooding is equal to or less than 0.1% (*i.e.* less than 1 in 1000 years)) (see Drawing No. SHELLQMA2508-12).

The site is located mostly within a very low pluvial (surface water) flood risk zone (see Drawing No. SHELLQMA2508-13). The site has small standalone areas at risk of pluvial (surface water) flooding, but no areas that contribute to off-site receptors.

Flood risk maps are provided in Sections 7, 8 and 9 of the Enviro Insight report presented in Appendix 1.

The site does not lie within an area which is at risk of flooding.

3.5.7 Surface water abstractions

Only 1 No. licensed surface water abstraction is located within *c.* 1km of the site. Details of this surface water abstraction, located *c.* 830m to the west of the site, are given in Section 5.7 of the Enviro Insight Report presented in Appendix 1.

3.5.8 Consented discharges

2 No. current consented discharges are located within *c.* 1km of the site, as detailed within Section 4.13 of the Enviro Insight Report presented in Appendix 1.

The first is the discharge from the existing quarry site settlement lagoon/balancing pond system (reference: NPSWQD002821), *via* a discharge pipe into the Holywell Brook.

The other consented discharge is held by the Shellingford Sewage Treatment Works (STW), located *c.* 320m west of the site, which discharges treated effluent to the Holywell Brook.

3.5.9 Surface water quality

The River Ock (to Cherbury Brook) was given a 'Moderate' ecological status for 2022 by the EA.

The Holywell Brook is not routinely monitored by the EA.

The treated effluent discharged into the Holywell Brook from the Shellingford STW to the west of the site has been monitored routinely since 2000 for Biochemical Oxygen Demand (BOD) and suspended solids, with additional determinands monitored for between 2000 and 2006.

Given the inert nature of the waste and the strict waste acceptance procedures and protocols that are already employed at the site, it is considered that no hydrological risk is posed to the Holywell Brook or any surface water dependent sites of ecological sensitivity from the landfilling with imported inert waste in the existing landfill or the inert waste infilling within the western extension area under the deposit for recovery activity.

Since 2013 the quality of water discharged from the existing quarry into the Holywell Brook has been routinely monitored together with the quality of water upstream and downstream of the discharge point consistent with the requirements of the existing EPR Permit EPR/BP3095EU.

The 3 No. surface water monitoring locations (SW1, SW2 and SW3) are shown on Drawing No. SHELLQMA2508-14. Surface water quality monitoring data is provided in Appendix 4.

The surface water monitoring data shows no evidence that the existing landfill is having a significant or measurable detrimental impact on the hydrological setting of the site and surrounding area (see the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

This surface water monitoring will continue following variation of the Permit to accommodate the deposit for recovery activity within the western extension area.

Given that the continued acceptance of imported inert waste at the site will be strictly controlled using robust waste acceptance criteria and protocols, it is considered that the continued operation of the site, including infilling with imported inert waste in the western extension area under a deposit for recovery scheme, will not result in any significant or measurable detrimental impact on the hydrological setting of the site and surrounding area.

Surface water monitoring is discussed further in Section 5.1.4 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv).

3.5.10 Ecological importance

Given the inert nature of the waste and the strict waste acceptance procedures and protocols that are already employed at the site, it is considered that no hydrological risk is posed to the Holywell Brook or any surface water dependent sites of ecological sensitivity from the landfilling with imported inert waste in the existing landfill or the inert waste infilling within the western extension area under the proposed deposit for recovery activity.

3.5.11 Summary

It is considered that continued inert landfilling within the existing permitted inert landfill area at the site, and inert waste infilling within the western extension area under the additional deposit for recovery activity, will have no significant or measurable detrimental impact on the hydrological setting of the site and the surrounding area.

3.6 Hydrogeology

3.6.1 Aquifer Characteristics

Aquifer characteristics and maps are provided in Section 5 of the Enviro Insight report presented in Appendix 1.

The Corallian Group strata which underlies the site and the surrounding area is classified by the EA as a 'Secondary A' aquifer, defined as 'permeable layers capable of supporting water supplies at a

local rather than strategic scale, and in some cases forming an important source of baseflow to rivers'.

The BGS[1] (Baseline Report Series 14. The Corallian of Oxfordshire and Wiltshire. Ref: NC/99/74/14. 2004) describes the Corallian Group strata as a 'sequence of minor aquifers' rather than a single uniform aquifer due to the heterogeneous character of the strata which can have very variable hydraulic properties.

Groundwater flow within the Corallian Group strata is a combination of fissure flow (predominant in the limestones) and intergranular flow (predominant in the sands).

Based on the results of tests undertaken within this aquifer, the BGS (2004) reports that the porosity of the Corallian Group across the region varies from 6% to 39% with a mean of 24%.

The site is not located within a groundwater source protection zone.

Details of licensed abstractions are provided Section 5.6 of the Enviro Insight report presented in Appendix 1.

3.6.2 Groundwater Flow

The Institute of Geological Sciences Hydrogeological Map of the South West Chilterns and the Berkshire and Marlborough Downs[2] shows groundwater levels in the Corallian Group in the vicinity of the site of *c.* 80mAOD (see Drawing No. SHELLQMA2508-11). The groundwater flow direction is shown to be to the south/southeast. A hydraulic gradient of *c.* 4.4 x 10^{-3} is indicated in the vicinity of the site.

Groundwater levels and flows within the vicinity of the site have been investigated based on available groundwater level monitoring data for the Corallian Group strata, comprising:

- data from the EA Stanford Quarry observation borehole (April 2001 to June 2015);
- data from 17 No. monitoring boreholes installed at the site, including 3 groundwater monitoring boreholes installed around the perimeter of the western extension area in 2021 (BH01/21, BH02/21, BH03/21).

Borehole locations are shown on Drawing No. SHELLQMA2508-14. Groundwater level monitoring data from the EA Stanford Quarry observation borehole is provided in Appendix 5. Groundwater level monitoring data from the site boreholes is provided in Appendix 6.

Groundwater is present in the Highworth Limestone Member and the underlying Lower Calcareous Grit Formation (Corallian Group) and the existing quarry is dewatered to allow mineral excavation, AGB construction and restoration infilling to be undertaken in dry conditions. The quarry, including the western quarry excavation area, will continue to be operated in the same manner.

Groundwater flow is to the south and southeast and groundwater discharge into the Holywell Brook is inferred. Inferred representative high groundwater contours, based on groundwater monitoring point data from December 2024, are shown on Drawing 3810/HRA/04 within the Hafren Water Hydrogeological Risk Assessment report. The Hafren Water HRA report is provided as Appendix 7 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

Based on a review of groundwater level and flow information, it is considered that a proportion of groundwater flow in the vicinity of the site discharges into the Holywell Brook *i.e.* a groundwater fed baseflow in this watercourse is inferred.

The extension area will be worked to a maximum depth of *c.* 15m and, consistent with the quarry depth limitation imposed by Condition 17 of Planning Permission P18/V2610/CM (MW.0104/18), the western quarry extension will not be worked below the base of the Highworth Limestone Member *i.e.* no excavation into the underlying Lower Calcareous Grit Formation. This working depth limitation is to preserve an aquifer unit (the Lower Calcareous Grit Formation) beneath the site and, in doing

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1 British Geological Survey BGS. 2004. Baseline Report Series 14. The Corallian of Oxfordshire and Wiltshire. Ref: NC/99/74/14.

2 Hydrogeological Map of the South West Chilterns and the Berkshire and Marlborough Downs including parts of hydrometric areas 39, 42, 43 and 53. 1978. Institute of Geological Sciences.

so, to allow continued groundwater flow during quarry development and following the completion of site restoration infilling.

It is considered that continued inert landfilling within the existing permitted inert landfill area at the site, and inert waste infilling within the western extension area under the additional deposit for recovery activity, will have no significant or measurable detrimental impact on the hydrogeological setting of the site and the surrounding area.

3.6.3 Groundwater Quality

Groundwater chemistry has been monitored at the site since 2005 and monitoring continues in accordance with the requirements of the existing EPR Permit.

Groundwater monitoring locations are shown on Drawing No. SHELLQMA2508-14. Groundwater quality monitoring data for boreholes monitoring up-gradient and down-gradient of the existing permitted inert landfill area, and the proposed additional Permit area for the deposit for recovery activity within the western extension area, is provided in Appendix 7.

The groundwater monitoring data shows no evidence that the existing landfill is having a significant or measurable detrimental impact on the hydrogeological setting of the site and surrounding area (see the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv)).

Groundwater quality monitoring will continue to be undertaken in accordance with the existing EPR Permit. Details of the monitoring scheme and compliance limits for groundwater monitoring boreholes are provided in Sections 5.1.3 and 5.2 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv).

Given that the continued acceptance of imported inert waste at the site will be strictly controlled using robust waste acceptance criteria and protocols, it is considered that the continued operation of the site, including infilling with imported inert waste in the western extension area under a deposit for recovery scheme, will not result in any significant or measurable detrimental impact on the hydrogeological setting of the site and surrounding area.

3.7 Landfill Gas Monitoring

Landfill gas monitoring of the existing inert landfill in external monitoring boreholes is undertaken in accordance with the requirements of EPR Permit EPR/BP3095EU.

A scheme for in-waste gas monitoring of the existing landfill has been submitted to, and approved by, the EA in accordance with the requirements of Improvement Programme Requirement 3 of the EPR Permit EPR/BP3095EU. In-waste landfill gas monitoring boreholes will be retro-drilled on a phased basis as soon as it is operationally practicable to do so once the landfill has reached final level. No in-waste landfill gas monitoring boreholes have yet been installed. 3 No. additional in-waste gas monitoring boreholes are proposed for the western extension area.

It is considered that the continued monitoring of the existing external monitoring locations, and the future monitoring of the in-waste landfill gas monitoring boreholes (to be installed in accordance with the Improvement Condition IC3 submission and the 3 No. additional in-waste gas monitoring boreholes proposed for the western extension area) will be adequate for the purposes of monitoring the landfilling with imported inert waste within the existing permitted area, and the deposit for recovery activity in the western extension area.

In-waste landfill gas monitoring locations (approved and proposed) are shown on Drawing No. SHELLQMA2508-15.

External landfill gas monitoring locations are also shown on Drawing No. SHELLQMA2508-15.

Compliance levels for in-waste gas monitoring boreholes will be set in accordance with the requirements of Improvement Condition IC3 of the existing EPR Permit.

Given that the continued acceptance of imported inert waste at the site will be strictly controlled using robust waste acceptance criteria and protocols, it is considered that the continued operation of the site, including infilling with imported inert waste in the western extension area, will not result in any significant or measurable levels of landfill gas being produced.

Landfill gas monitoring is discussed further in Section 3.2 of the LGRA report (GWP Report No. 250213) which accompanies the EPR Permit variation application (Appendix Hv).

3.8 Receptors and Compliance Points

3.8.1 Groundwater

For hazardous substances, the compliance point is the point at which the substance will enter the groundwater below the site. For non-hazardous pollutants, the primary compliance point is the downstream boundary of the site.

No hazardous substances or non-hazardous pollutants will be expected to enter the groundwater at discernible concentrations given the inert nature of the waste that will be placed within the western extension area under the deposit for recovery activity and the strict waste acceptance criteria and protocols adopted. Groundwater monitoring will continue in the existing monitoring boreholes in accordance with the requirements of the existing EPR Permit, with updated groundwater compliance limits for boreholes located down-gradient of the existing inert landfill area and the western extension area where the deposit for recovery activity will take place. Details of the monitoring scheme and compliance limits are provided in Sections 5.1.3 and 5.2 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv).

Other potential receptors, *e.g.* the Holywell Brook, are located beyond the compliance points to be adopted for the purposes of the EPR Permit and will not be impacted upon by the continued operation of the site, including infilling with imported inert waste in the western quarry extension area under a deposit for recovery activity.

3.8.2 Surface Water

A Surface Water Management Plan (GWP Report No. 250314) accompanies the EPR Permit variation application (Appendix Hvii).

All surface water associated with the existing inert landfill is managed within the current EPR Permit area. Surface water associated with the extended EPR Permit area, to accommodate the deposit for recovery activity within the western extension area, will be managed in the same way.

The existing inert landfill and the western extension are not located in areas that are liable to flood.

Any rainfall on the site infiltrating through the inert waste mass will be attenuated by the underlying AGB and will permeate into the underlying geology.

If during construction heavy rainfall temporarily ponds on the basal AGB, this will be diverted beyond the extent of the basal AGB and will be allowed to infiltrate into the underlying geology or drain to the quarry sump or operations will be adjusted to avoid areas of ponding. These measures will ensure that tipping may continue without interruption.

Where surface water runoff within the western extension area does not enter the excavation void, it currently drains from higher ground in the northeast (*c.* 89mAOD) to lower ground in the south (*c.* 73mAOD) and then into the Holywell Brook further south.

The western extension area does not receive surface water runoff from the surrounding land. Runoff generated to the north of the site is intercepted by a drainage ditch which drains to the west. Runoff generated to the east drains into, and is managed within, the existing site. Land to the west drains to the southwest and the area to the south drains southwards.

Restoration infilling within the western extension area under the deposit for recovery activity will be to a final restoration platform level of between *c.* 73mAOD in the southeast and *c.* 89mAOD in the north, in accordance with the approved restoration scheme for Shellingford Quarry as part of Planning Permission P18/V2610/CM (MW.0104/18) (see Drawing No. 2459-5-2 DR-0001 presented in Appendix 2).

Surface water drainage measures will be installed as necessary consistent with the afteruse requirements of Planning Permissions STA/SHE/8554/12-CM (MW.0020/11), STA/SHE/8554/11-CM (MW.0021/11) and P18/V2610/CM (MW.0104/18).

Flows within the Holywell Brook are unaffected by the existing landfill and will remain unaffected by the infilling with imported inert waste under the deposit for recovery activity associated with the western quarry extension area. Accordingly, it is considered that an assessment of flows in the Holywell Brook is not required for the purposes of the EPR Permit variation application.

The quality of water discharged from the existing quarry into the Holywell Brook is routinely monitored together with the quality of water upstream and downstream of the quarry discharge point

consistent with the requirements of the existing EPR Permit EPR/BP3095EU. This monitoring will continue following variation of the Permit.

Surface water monitoring is discussed further in Section 5.1.4 of the HRA report (GWP Report No. 250716) which accompanies the EPR Permit variation application (Appendix Hiv).

3.8.3 Landfill Gas

Potential receptors for landfill gas include:

- site operatives, visitors and passers-by;
- on-site offices;
- residential properties;
- crops in adjacent fields;
- global atmosphere.

The compliance point for landfill gas is deemed to be the site boundary.

Landfill gas monitoring is discussed further in Section 3.2 of the LGRA report (GWP Report No. 250213) which accompanies the EPR Permit variation application (Appendix Hv).

3.8.4 Amenity and Habitats

Amenity and habitats risk assessments are included under separate cover as part of the EPR Permit application (see Appendix Hi of the EPR Permit variation application).

Potential environmental receptors located within the vicinity of the site are detailed (with location plans) in Sections 10, 11 and 13 of the Enviro Insight report presented in Appendix 1.

Shellingford Crossroads Quarry Site of Special Scientific Interest (SSSI) is located *c.* 175m to the north of the site. The SSSI site has been designated due to the exposure of an extensive section of Corallian Group strata. The SSSI site is not water dependent and therefore hydrological/hydrogeological impact from site operations is not possible.

A Landscape and Ecological Management Plan (Including Biodiversity Management and Monitoring) Report by Malford Environmental Consulting (report dated November 2020) detailing appropriate management of the site during and after site completion to ensure a fully-functioning landscape that protects and enhances landscape features and biodiversity has been submitted and approved in accordance with the requirements of Planning Permission P18/V2610/CM (MW.0104/18).

Further details regarding risks to amenity and habitats are included under separate cover as part of the EPR Permit variation application (see Appendix Hi of the EPR Permit application).

Given that:

- the permitted imported waste is, and will continue to be, strictly inert;
- the imported inert waste is, and will continue to be, accepted using robust waste acceptance criteria and protocols;
- the infilling with imported inert waste within the western extension area under the deposit for recovery activity, being applied for by the EPR Permit variation application, will be located entirely within the existing active quarry excavation area;
- the site will continue to be operated in accordance with a comprehensive Environmental Management System (see Appendix G of the EPR Permit application);

and having regard to the findings of the risk assessments completed (see Appendix H of the EPR Permit variation application), it is considered that the continued operation of the site, including infilling with imported inert waste in the western quarry excavation area under a deposit for recovery activity, will not have a significant or measurable detrimental impact on the environment of the site and the surrounding area.

4. SITE CONDITION REPORT

A Site Condition Report is presented in Appendix I of the EPR Environmental Permit application.

5. CONCLUSIONS

It is considered that the there is no evidence from available groundwater, surface water and landfill gas monitoring data that site activities to date have had, or are having, a significant or measurable detrimental impact on the environment of the site and the surrounding area.

Given that the continued acceptance of imported inert waste at the site will be strictly controlled using robust waste acceptance criteria and protocols, it is considered that the Permit variation involving the deposit for recovery activity to accommodate infilling within the adjacent western quarry excavation area with imported inert waste at the Shellingford Quarry site to achieve the approved restoration landform will not have a significant detrimental impact on the environmental setting of the site and surrounding area.

GWP CONSULTANTS
JANUARY 2026

APPENDIX 1

Groundsure Enviro Insight report

APPENDIX 2

Drawing Nos. 1971/001A, 1971/002B and 2459-5-2 DR-0001

APPENDIX 3

Stanford R02 rainfall January 1994 to December 2023

APPENDIX 4

Surface water quality monitoring data

APPENDIX 5

Groundwater level monitoring data – Stanford Quarry OBH

APPENDIX 6

Groundwater level monitoring data – Shellingford Quarry

APPENDIX 7

Groundwater quality monitoring data