Augean SOUTH LTD

NON TECHNICAL SUMMARY

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

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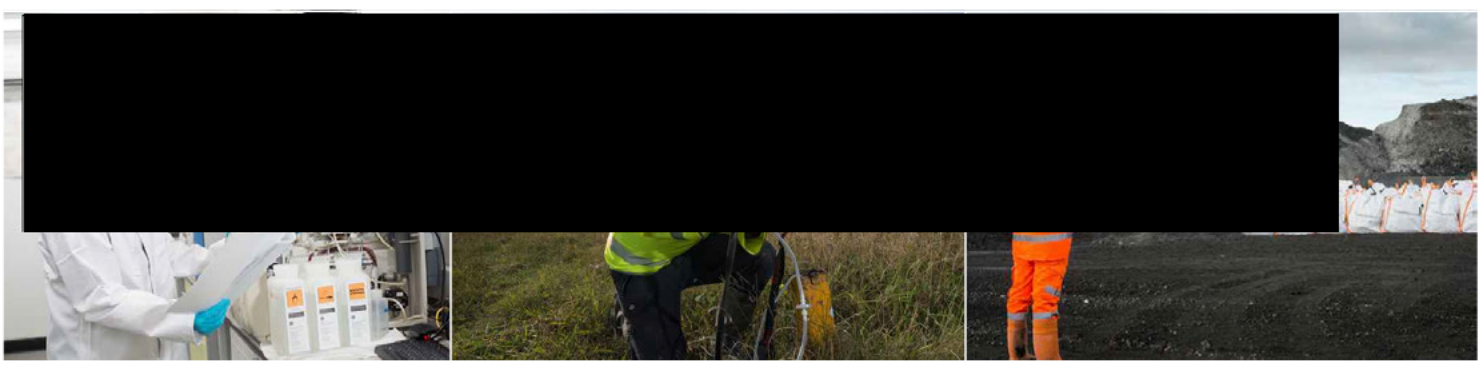


1. Introduction

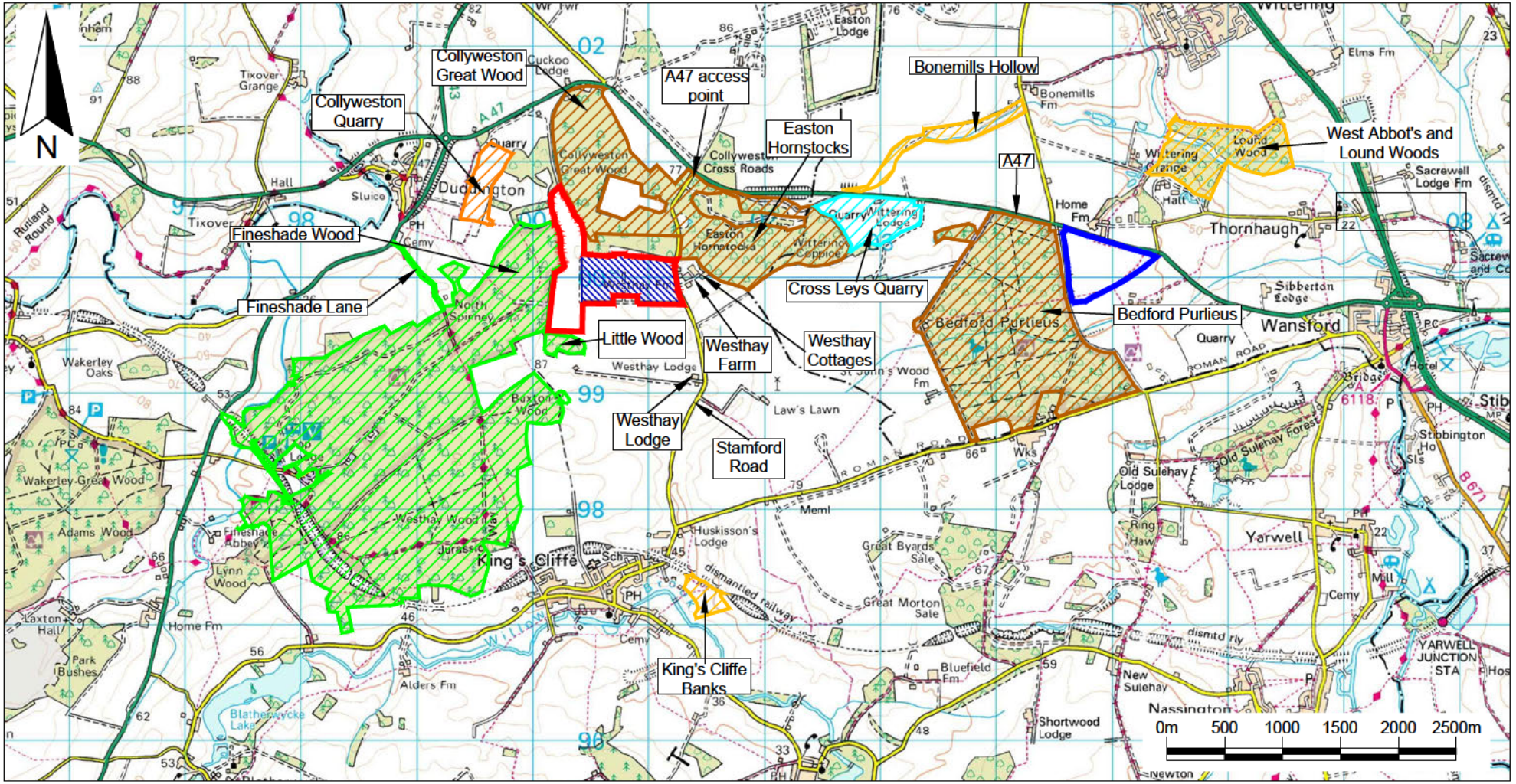
1.1 Augean South Ltd (Augean) operates the integrated East Northants Resource Management Facility (ENRMF) in Northamptonshire. The site application boundary is shown on Figure NTS1 and lies approximately 1.1km east south east of Duddington village and approximately 2km north north west of Kings Cliffe village at its closest points. The site is accessed from Stamford Road which runs north to the A47.

1.2 Augean provides specialist services in the treatment and disposal of our more difficult to manage wastes including hazardous waste and low level radioactive waste. The company is a market leader in investment in new technology and modernisation of the sector.

1.3 The currently consented facilities at ENRMF are an acknowledged part of the nationally significant infrastructure for the management of hazardous waste and low level radioactive waste (LLW) and as such the site serves more than just a local need.

1.4 The site has a long history of mineral extraction and landfilling. Clay extraction has taken place at the site since 1957, landfill disposal commenced in 2000, the landfill site has accepted only hazardous waste since 2004, the treatment plant was granted planning permission in January 2008 and LLW first was accepted at the site in December 2011. The existing ENRMF was granted a Development Consent Order in 2013. The site operations are currently permitted until 2026. The need for specialist facilities in this general location of the country will continue beyond the duration of the current consent which extends to the end of 2026.

1.5 The site is the subject of three Environmental Permits which are regulated by the Environment Agency. One permit is for the hazardous waste landfill site (existing landfill facility), one is for the waste treatment and recovery facility (existing waste treatment and recovery facility) and one is for the landfill disposal of LLW.



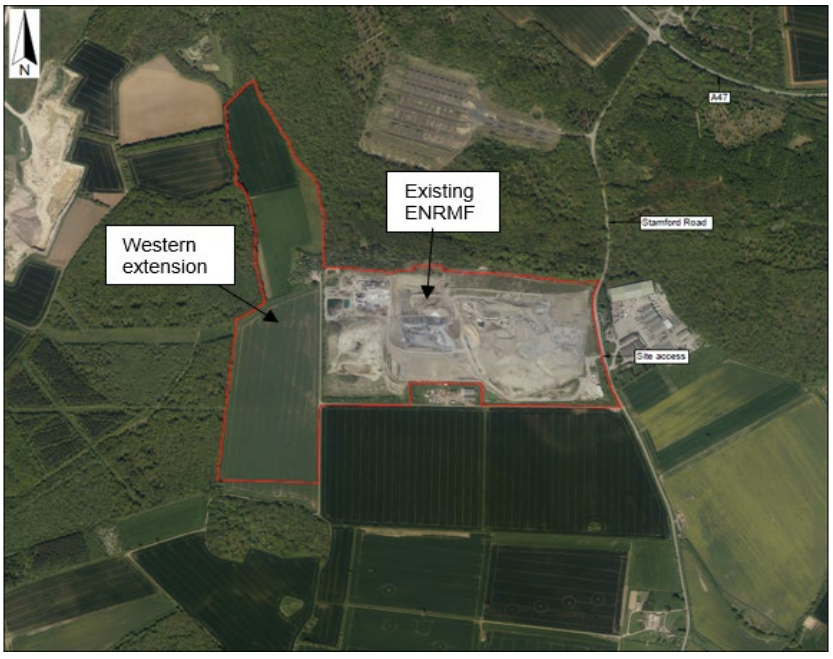
Key / Notes

- Approximate boundary of the area the subject of the application for the Development Consent Order
- Area of the existing East Northants Resource Management Facility
- Approximate location of a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR)
- Approximate location of a Regionally Important Geological Site
- Boundary of Thornhaugh Landfill Site
- Approximate location of a Site of Special Scientific Interest (SSS)
- Approximate location of a Local Wildlife Site
- Approximate location of a Local Geological site

Figure NTS 1: The site location and designated sites in the vicinity of ENRMF

1.6 The existing ENRMF site is shown in the eastern area of the application boundary in the aerial photograph (Photograph NTS 1). The existing waste treatment and recovery facility is located in the north western corner of the existing ENRMF site and provides a range of specialist waste management treatment processes for the recovery or pre-treatment prior to disposal of primarily industrial wastes comprising predominantly hazardous waste. The residues from the treatment processes that are not suitable for recovery are deposited in the adjacent hazardous waste landfill site or the nearby Augean Thornhaugh non-hazardous waste landfill site (Figure NTS 1).

1.7 In order to secure continuity of its operations beyond 2026, Augean is applying for a new Development Consent Order (DCO) for an extension in the area of the landfill site to the west of the existing site (proposed western extension) and to extend the timescale for the operation of the extended site. The proposals comprise an increase in the throughput of the waste treatment and recovery facility and an extension in the area of the facility within the overall landfill footprint, a western extension to the existing ENRMF landfill site and an extension in the duration of the operations to 2046.



Photograph NTS 1: Aerial photo of the site and the surrounding area in 2019 showing the proposed application boundary. Copyright RGB aerial photography

1.8 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) require that an environmental impact assessment (EIA) must be undertaken for this type of development. The results of the EIA are reported in an Environmental Statement (ES). This document summarises in non technical language the information presented in the ES which accompanies the DCO which has been submitted to the Planning Inspectorate. The Environmental Statement is available on the National Infrastructure Planning website together with the other application documents. A link to the web site is provided at the end of this document.

1.9 Community consultation regarding the proposals has been undertaken and the details are provided in the Consultation Report which is submitted as part of the DCO application. Formal pre-application consultation was undertaken between October 2020 and December 2020 and the consultation response period was extended to February 2021. Further consultation and discussions have taken place between February 2021 and July 2021. In response to comments received during the consultation process amendments were made to the structure of the Environmental Statement, the red line boundary, the proposed restoration scheme and the timescales for the provision of certain habitats following the restoration works.

2. Site location and description

2.1 The application site covers an area of approximately 58.5 hectares and includes the existing ENRMF site. The existing ENRMF site is approximately 31.8 hectares and the proposed western extension covers an area of approximately 26.8 hectares. The setting is generally rural with the majority of the land surrounding the site comprising open farmland or woodland as shown on Photograph NTS 1.

2.2 The existing ENRMF site comprises the existing waste treatment and recovery facility and the existing landfill facility, which receives hazardous waste and low level radioactive waste (LLW) and includes restored and partially restored landfill areas together with material stockpiles. The LLW which is disposed of at the existing ENRMF is limited to that which is at the lower end of the activity range and typically will have a level of radioactivity of typically up to 200 Bq/g. A consented area for a gas management and surface water management compound including a flare stack is located in the north western corner of the existing ENRMF. Site infrastructure including the site access, weighbridge and waste reception facilities, car parking areas, site offices, welfare facilities, storage areas, laboratories and wheel and vehicle body washing facilities (Photograph NTS2) are in place in the south eastern area of the site. The site infrastructure will be retained for continued use as part of the proposed development. The existing ENRMF is bordered by a dense continuous thorn hedge and/or 1.8m high chain link fencing on all boundaries. There are gates at the site entrance which are locked outside operating hours.

Photograph NTS 2: Wheel and vehicle body washing facilities at ENRMF

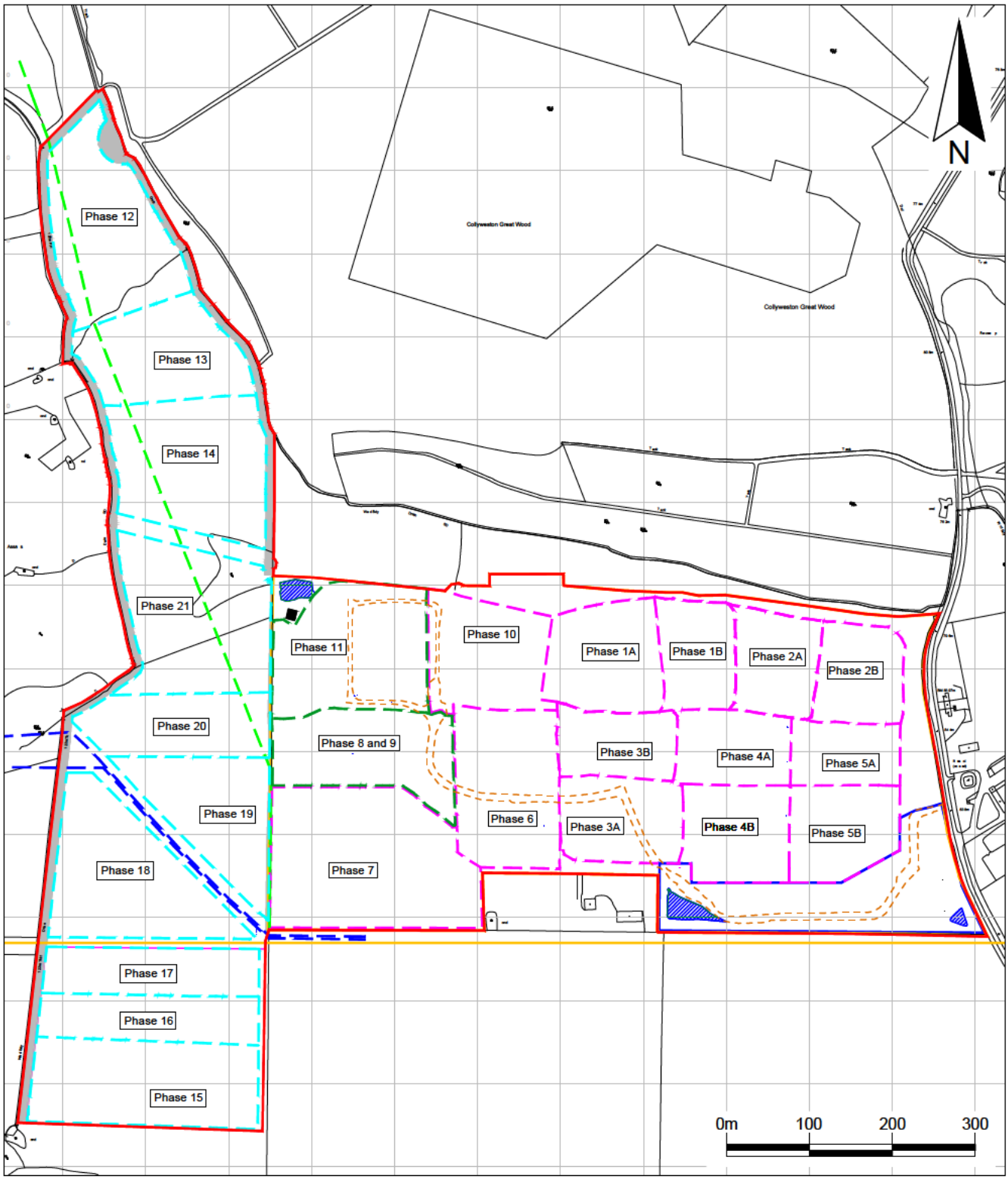
2.3 The existing highway access to the existing ENRMF is from Stamford Road which runs adjacent to the eastern boundary of the site and joins the A47 to the north. Waste delivery and collection vehicles using the site access are not permitted to travel to the south of the site access on Stamford Road towards the village of Kings Cliffe unless they are delivering or collecting materials locally. The access road enters the reception area adjacent to and south east of the landfill. Consented improvements to widen the site access and improve drainage in this location are being implemented currently. The existing highway access to ENRMF will continue to be used for the proposed development.

2.4 The existing landfill facility comprises 11 phases of landfilling which are being progressively extracted, engineered, filled, capped and restored. (Figure NTS 2). The existing waste treatment and recovery facility (Photograph NTS 3) is located in the north western corner of the existing ENRMF and will be removed from the site prior to the final phase of landfilling. The waste treatment plant comprises modular units including silos, material feed hoppers, transfer conveyors and closed mixing vessels as well as storage areas for wastes awaiting treatment and treated wastes awaiting removal.

Photograph NTS 3: The waste treatment and recovery facility

2.5 The proposed western extension currently comprises two areas of arable land with grassy margins. A hedgerow forms the boundary between the two areas. There is an area of young scrubby woodland in the south eastern corner of the northern area. The topography of the proposed western extension generally is gently sloping down towards the central boundary between the two areas. The proposed western extension is bordered by woodland and arable fields.

2.6 There are scattered properties within 1km of the application boundary. The closest properties to the application boundary are the properties at Westhay



Key / Notes

- Boundary of the area the subject of the application for the Development Consent Order
- Approximate phase boundaries for the existing ENRMF already constructed
- Approximate phase boundaries for the existing ENRMF to be constructed
- Approximate phase boundaries to be constructed in the proposed western extension
- Approximate route of water pipelines
- Approximate route of overhead electricity cable (to be diverted)
- Approximate location of a high pressure gas pipeline
- Constructed surface water management ponds
- Ecological stand off area during the operational stage
- Site access/main haul road
- Gas flare

Figure NTS 2: Current and proposed phasing and site operations

Cottages located approximately 25m to the east of the application boundary and approximately 815m to the east of the proposed western extension. Westhay Farm is located approximately 75m east of the application boundary and approximately 865m to the east of the proposed western extension and is operated as a haulage yard and a farm with associated agricultural and commercial buildings.

2.7 To the south of the application boundary is open agricultural land. The area of agricultural land to the south of the proposed western extension is bordered to the south by woodland known as Little Wood (Figure NTS 1). To the west of the majority of the application boundary is woodland known as Fineshade Wood part of which is known as The Assarts and which is a Local Wildlife Site. A short length of the western boundary of the northern section of the northern area abuts agricultural fields. The northern boundary of the proposed western extension is formed of woodland with a field with a number of lagoons created in a fenced area beyond. The eastern boundary of the northern section of the proposed western extension is adjacent to Collyweston Great Wood. To the east and north east of the application boundary beyond Collyweston Great Wood and east of Stamford Road is an area of woodland known as Easton Hornstocks. Parts of the Collyweston Great Wood and Easton Hornstocks comprise a Site of Special Scientific Interest (SSSI) and a National Nature Reserve (NNR).

2.8 A swallow hole is located close to the north western corner of the existing landfill facility and further limestone solution features (known as dolines) may be present in the vicinity of the swallow hole. The swallow hole provides a significant drainage feature for surface water from a wide catchment area including parts of the proposed western extension area. The site is located in Flood Zone 1 which is an area defined as land having a less than 1 in 1,000 (i.e. low) annual probability of river or sea flooding.

2.9 No public rights of way cross the site. There are rights of way in proximity to the proposed western extension which run through The Assarts woodland

(part of Fineshade Wood). The closest right of way is Footpath MX15 which is approximately 100m to the west of the boundary of the site at its closest point (Figure NTS 1). Footpath MX15 runs in a north westerly and south westerly direction and connects into the wider public rights of way network. The Jurassic Way bridleway (NE12) is located approximately 845m to the west of the site at its closest point.

2.10 There are services which cross the proposed western extension area and which are in the vicinity of the site. The services at and in the vicinity of the site are shown on Figure NTS 2. A mains gas pipeline runs parallel to the southern boundary of the existing ENRMF and crosses the southern section of the proposed western extension in an east to west direction. Overhead power lines run along the western boundary of the existing ENRMF before turning in a north westerly direction across the northern section of the proposed western extension. Two water pipelines cross the northern part of the southern section of the proposed western extension. A short section of redundant, closed out pipeline owned by the MOD is present at the northern point of the proposed western extension. An oil pipeline is located in Collyweston Great Wood to the east of the eastern boundary of the northern section of the proposed western extension.

3. The proposals

3.1 The main elements of the proposed development are summarised below:

- The construction of new landfill void with an additional capacity of approximately 2.5 million cubic metres for the continued disposal of the same range of hazardous wastes and LLW deposited at the site currently.
- A proposal for a coherent landform for the restoration of the existing landfill facility and the proposed western extension.
- The winning and working of minerals at the existing ENRMF and in the proposed western extension in order to create the new landfill void and provide extracted materials for use on site as well as the exportation of clay and overburden for use in engineering, restoration and general fill at other sites.
- The temporary stockpiling of clay, overburden and soils for use in the construction of the engineered containment system at the site and restoration of the site.
- The direct input of waste into the landfill will continue at a rate of up to 150,000 tonnes per annum (tpa).
- An increase to the waste throughput of the existing waste treatment and recovery facility to 250,000tpa which comprises an increase of 50,000tpa compared with the currently consented rate and the extension of the treatment area to the south while remaining within the landfill footprint.
- A combined total waste importation rate limit to the site for both the waste treatment and recovery facility and the landfill of 300,000tpa which is an increase of 50,000tpa compared with the currently consented total input rate.

- The LLW which will continue to be disposed of at the ENRMF will be limited to that which is at the lower end of the activity range and typically has a level of radioactivity of up to 200 Bq/g.

- The diversion of the overhead electricity cable that crosses the proposed western extension to a trench which follows the route of the water pipes across the proposed western extension area and then follows the western margin of the site to the northern corner.

- The operational hours of the site will not change from those already permitted.

- Restoration of the whole site to generally domed profiles to create a coherent restoration landform.

- Restoration of the site to improved biodiversity and nature conservation interest using the soils available at the site as well as suitable imported materials. The site will be restored to a mosaic structure of woodland with shrubby edges, flower meadow grassland, scattered trees, hedgerows and waterbodies.

- Completion of the landfilling and restoration operations by December 2046.

- Retention of infrastructure until 2046 and the retention of long term management infrastructure beyond this date.

Restoration

3.2 The restoration scheme principles follow those agreed for the existing ENRMF which were designed in discussion with the Northants Wildlife Trust in order to match their requirements for adoption as a Local Wildlife Site and to meet several of the Northamptonshire Biodiversity Action Plan habitat creation targets. Discussions were held regarding the proposed restoration scheme with Natural England, Forest England, Butterfly Conservation/Back from the Brink (Roots of Rockingham), the Bedfordshire, Cambridgeshire and

Northamptonshire Wildlife Trust, the North Northamptonshire Council Ecologist and Friends of Fineshade.

3.3 The proposed restoration for the site is shown on Figure NTS 3 and will comprise a mosaic structure of woodland with shrubby edges, flower meadow grassland (Photograph NTS 4), scattered trees, hedgerows and waterbodies. The design generally incorporates neutral/calcareous wildflower grassland interspersed with areas of scrub and trees. The woodland planting with shrubby edges together with the scrubby areas will establish and spread to form naturally regenerated woodland with glades and rides. The developing habitat is designed to complement and provide a substantive link between habitats, particularly the between the woodlands to the west and east of the northern area of the proposed western extension by extending woodland across the site between Collyweston Great Wood and Fineshade Wood. Development of these habitats will directly benefit wildlife such as amphibians, reptiles, invertebrates including butterflies, and mammals and will provide connectivity between the woodlands for these fauna.

Photograph NTS 4: Bee orchid in a flower meadow in a restored section of ENRMF

Figure NTS 3: Restoration concept scheme

3.4 The tree and shrub planting will provide future potential for roosting bats, nesting birds and insects which feed of decaying wood and hopefully, in time, dormice (Photograph NTS 5). A culverted drainage route from the west to the swallow hole in the east of the central area of the site will be opened to form a watercourse along the central section of the site which will provide a continuing surface water route with small ponds created to develop as wet woodland. Waterbodies will be incorporated into the design at locations at the base of the restored landfill areas as shown on Figure NTS 3.

Photograph NTS 5: A dormouse

3.5 The restoration scheme also incorporates a maintenance track along which a new permissive footpath would extend. Other permissive footpath routes will be created to form circular walks around the restored site and provide the opportunity to link with other public rights of way in the local area. A small car park area to the south of the existing site access on Stamford Road will be retained for footpath users as part of the restored site.

4. Need and alternatives

Need

4.1 The site is only one of 9 hazardous waste landfills in the UK which accept a wide range of wastes and the only one in the south east of the country hence its national and regional importance. The site lies in the south eastern corner of the East Midlands region and is geographically close to the West Midlands, East of England, Greater London and South Eastern regions. Over 80% of the waste accepted at the waste treatment plant and approximately 98% of the waste accepted at the site for landfill disposal over the last five years originates from these five regions. The majority of the waste deposited in the landfill comprises residues from the on site treatment plant.

4.2 No new hazardous waste landfill facilities have been developed in the south of the country since the proposals for the currently consented activities were authorised. Based on the data on waste arisings there is a continuing need for the provision of a waste management facility for the treatment and disposal of hazardous waste able to serve the wastes arising in the West Midlands, East Midlands, East of England, South East and Greater London.

4.3 The ENRMF has a further significant role as one of only three landfill sites in the UK accepting LLW and the only one which is able to accept LLW with a wide range of hazardous properties. The LLW disposal services at the site were developed to conserve the capacity of the highly specialised facility in the north west of the country which is designed to accept much higher activity LLW than that accepted at ENRMF. Whilst serving the whole of the UK ENRMF is particularly well placed for wastes arising at the locations of the major LLW waste producers in the south and east of the country. The location of the site is well placed to serve the producers of LLW from the nuclear and non-nuclear industries. ENRMF will continue to provide a closer and more convenient alternative for the disposal arisings than the more distant alternative facilities in the north west. There is a need for a fit-for-purpose site for the landfill disposal of LLW from both the nuclear and non-nuclear

industries in a central location that will contribute to the national need for capacity to address the identified shortfall.

4.4 There is a clear need also for the provision of continuity of waste treatment and recovery facilities to serve the West Midlands, East Midlands, East of England, South East and Greater London.

4.5 The continuing implementation of the hierarchy of waste management options means that the need for capacity for the treatment of hazardous and non-hazardous waste increases over time while the need for capacity for the direct landfill of waste is likely to decrease although the need for the landfill of residues will remain. The 2010 Strategy for Hazardous Waste Management and the National Policy Statement for Hazardous Waste recognise that for waste where there is no better recovery or treatment option landfill is the final end point.

4.6 The Government LLW policy recognises that for wastes that cannot be prevented, further minimised, diverted for recycling or re-used, final disposal is the end point for all LLW. The disposal of LLW is therefore the last option available to LLW producers where no other options are viable. There is a continuing need for LLW wastes which cannot be managed at a point higher in the waste hierarchy to be consigned for landfill disposal.

Alternatives

4.7 Alternative options to the proposed development were considered. The alternative options included consideration of whether there was a continuing need for a facility in the central area of the country, alternative waste management methods, alternative options for the location of the treatment facility, the development of alternative locations for the future waste management activities including the landfill and the effects of constraints on alternative designs. Of the options considered, it was determined that as the proposed western extension provides an extension to an existing site with infrastructure in place it is supported by policy, as the extension area is in an

environmentally suitable location and as the area is available to Augean it was identified as the preferred option. While the field to the south was suggested as an alternative to the extension to the west, this option is not viable as the field is not available for purchase.

5. Environmental issues

5.1 An Environmental Impact Assessment (EIA) of the effects of the development on people and the environment was carried out by technical specialists. The scope of the EIA was agreed with the Planning Inspectorate and where necessary the scope of the assessments were discussed further and agreed with other parties. The results of the assessments are reported in the Environmental Statement and a summary of the findings is presented in this document.

5.2 The existing operations are authorised and regulated by Environmental Permits. The Environmental Permits will be extended to include the operations in the proposed western extension and the applications to vary the permits for the extended landfill site and the changes to the waste treatment and recovery plant were submitted to the Environment Agency in May 2021. The extensive protective measures which form an integral part of the operation of the activities authorised by the Environmental Permits are designed to provide protection to people and the environment. Accordingly the activities at the site with the greatest potential for impacts on health and the environment are protected through the pollution control regime and regulated by the Environment Agency.

5.3 The embedded mitigation measures comprise the construction, operation, management and monitoring of the treatment facility and the landfill site in accordance with specifications and procedures controlled through the Environmental Permits. The mitigation measures include regular monitoring of emissions from the site in accordance with the Environmental Permits and submission of the results to the Environment Agency.

5.4 The Environment Agency is the regulator with responsibility for pollution control and for ensuring the safety of the public and the environment as a result of the proposed development, the Health and Safety Executive is responsible for overseeing the safety of the site workers and the Department for Transport is responsible for safety during transportation.

Potential impacts on human health

5.5 The potential for direct effects on the health of people living and working around the site as a result of the emission of contaminants or radioactivity from the site were assessed. The control of emissions from the site is controlled under the Environmental Permits by the Environment Agency.

5.6 The nature of the activities and the wastes accepted at the site will not change significantly and, while they will take place over a larger area overall, the active area and intensity of operations at any one time will not be significantly different to the currently consented activities.

5.7 The potential impacts of hazardous waste and radiological effects on people and the environment were assessed as part of the process for granting the current DCO and Environmental Permits for the existing landfill facility and the existing waste treatment and recovery facility. The acceptability of the impacts associated with the non-radiological and radiological effects of the current activities at the current locations has been confirmed by the granting of these consents. The detailed risk assessments for the extended site will be scrutinised robustly by the Environment Agency as part of the determination of the applications for variations to the Environmental Permits to include the proposed western extension area and the proposed changes to the activities. Environmental Permits will not be issued unless the Environment Agency is satisfied that the site can be operated safely and that the health of those living and working at or near the site is protected.

5.8 The principles of the design of the engineered containment and the leachate and gas management infrastructure of the existing landfill facility will remain and will be extended to the proposed western extension area. The principles of the phasing of the landfilling and restoration activities will remain and will be extended to the proposed western extension area. The methods of operation and control of the waste treatment and recovery facility will remain the same.

5.9 There are three essential elements to assessing risk associated with emissions:

- a contaminant source which has the potential to cause harm to human health or the environment;
- a receptor which in general terms is something that could be affected adversely by the contaminant such as people, a water body or an ecological system; and
- a pathway or route by which a receptor can be exposed to and affected by the contaminant.

5.10 Each of the elements can exist independently but a risk can be present only where they are linked together so that a contaminant can affect a receptor by a pathway. The identification of risk in this way is referred to as the source-pathway-receptor methodology and the linked combination of contaminant-pathway-receptor is referred to as a pollutant linkage or exposure pathway. In order to understand and assess the potential risks associated with a proposed development it is necessary to identify the potential exposure pathways associated with emissions from the facility and to assess the effects that may result from the identified exposures.

5.11 The credible pathways which might have the potential to expose people to contaminants which might affect their health were identified and are assessed through risk assessments including for routine as well as unexpected events (accidents). The risk assessments demonstrate that the potential exposure pathways can be controlled such that emissions remain below threshold limits that are set for the protection of people and the environment.

5.12 The potential impacts associated with the continuation of the operation of the consented and extended landfill and waste treatment and recovery facility to 2046 are similar to those for the current site operations but will be present over a longer time.

5.13 The site will continue to be monitored and regulated through Environmental Permits to confirm that it is operating in compliance with all appropriate standards which are set to be protective of health and the environment hence will not result in a significant impact. The results of the monitoring will continue to be made available on the company web site to provide confidence that the site is being managed effectively.

Ecology and biodiversity

5.14 Extensive ecological surveys were undertaken at the site and an ecological impact assessment for the proposed development was prepared. Surveys were undertaken for a range of species such as amphibians, reptiles, badgers, bats, birds, invertebrates and dormice. A tree survey was also undertaken. A detailed survey was undertaken to determine the extent of habitats on the site.

5.15 The following aspects of the proposed western extension were identified as being ecologically important features:

- The habitats and plant communities particularly in the adjacent sites and the margins of the proposed western extension that provide habitat for important species including amphibians, reptiles, badgers and invertebrates.
- The amphibian and reptile populations.
- Bats, particularly in the adjacent woodlands.
- Badgers.
- The invertebrate populations particularly species using the interface between the site and the woodland at the site margins.

5.16 The design of the proposed western extension incorporates substantial measures to protect sensitive animals and habitats. The ecological baseline survey has identified that the margins of the woodlands are used by a variety of species and they should be enhanced and maintained throughout the

operation of the proposed development. Enhancement and planting of hedges at locations which will provide maximum habitat benefit will be carried out at the commencement of works in the proposed western extension. Fauna will be protected by the installation of animal exclusion fencing at the limit of the workings. The limit of the workings were determined to protect the woodland margins and the roots of the trees in adjacent areas notably the woodland to the east (Collyweston Great Wood) and west (Fineshade Wood/The Assarts). Where margins currently are agricultural the opportunity will be taken to develop species rich grassland. The standoff distances and fencing details are controlled through the proposed DCO. Following restoration of each landfill phase the fences will be removed and these margins will connect with the restored site progressively.

5.17 The site has been designed to achieve the earliest possible completion and restoration of the northern part of the proposed western extension to allow the early development of habitats on the restored part of the site which are designed to link and provide habitat continuity between the woodlands either side. The current projection is that the first, northernmost, area (Phase 12 shown on Figure NTS 2) will be restored in around five to seven years from the start of the commencement of cell excavation work in that phase.

5.18 The majority of the proposed western extension is agricultural land which typically has a low level of biodiversity. Habitat creation and enhancement is incorporated in the site design which will prevent negative effects in the short term. With the planned avoidance, protection and mitigation measures in place it is concluded that there will be no significant adverse impacts on biodiversity throughout the operational stage of the proposed development. The planned avoidance, protection and mitigation measures are controlled through the proposed DCO. The proposed phasing, landscape and restoration plan are controlled by a Requirement in the DCO. In the long term there will be significant biodiversity gain at the site.

The design for the restoration of the proposed development has been driven by the aspiration to create new habitats and enhance biodiversity at the site. As the project has progressed the draft Environment Bill has progressed through the House of Commons and is currently at the report stage in the House of Lords. In the latest version of the Environment Bill dated 14 July 2021 there is a requirement for Nationally Significant Infrastructure Projects to provide 10% net gain hence a biodiversity net gain assessment has been produced and is presented at Appendix ES13.2. The biodiversity net gain for the development arises from the establishment of lowland meadows, lowland calcareous grassland, mixed scrub, lowland mixed deciduous woodland, ponds, hedgerows and the watercourse (Swallow Brook). The proposals will provide over 110% net gain in habitats and over 550% net gain in hedgerows.

Photograph NTS 6: A common lizard

Photograph NTS 7: A hairy dragonfly

Landscape and visual effects

5.19 A landscape and visual impact assessment was carried out. The existing visibility of the site was determined and the effects on landscape features, landscape character and visual receptors at different stages of the proposed development were assessed.

5.20 Whilst the extension in time of the operations at the existing ENRMF will not cause significant adverse effects on landscape features or character in the existing site context, the topography in the proposed western extension area would be permanently changed as a result of the proposed development and there would be significant effects on the landscape character of the northern part of the proposed western extension. The effects on the wider landscape character area will be limited and are not considered significant. There would be minor to minor moderate adverse effects during the operational period. It is determined that the retention of the waste treatment and recovery facility up to 2046 will not cause significant effects on landscape receptors. The restoration of the site will result in significant net gains in grassland, woodland/scrub planting and hedgerows together with attenuation basins. The rural landscape character of the surrounding area will be maintained and enhanced as the restored site integrates into the surroundings.

5.21 The site is visually well contained so there are limited viewpoints from which the site can be seen. The extension in time of the existing ENRMF landfill will have minor moderate adverse effects on the residents in the properties to the south of the site due to the extended duration of disturbance. The extended duration of the works of the existing ENRMF will have no or negligible effects on the vast majority of visual receptors with only partial views or glimpses of the site from the surrounding area. During the operation of the proposed western extension area the residents to the south of the existing ENRMF would experience moderate adverse effects during soil stripping and initial extraction operations. When the operations are taking place below ground the visual effects would reduce. Users of a short length of Footpath MX15 where

there is no tree screening due to a pipeline corridor will have significant partial temporary transitory views of the proposed western extension together with the existing ENRMF including the waste treatment and recovery facility during stockpiling on and landfilling of Phases 19-21. During the landfilling of the southern part of the proposed western extension there would be temporary major adverse effects on the residents of the properties to the south of the existing site. There would be significant visual disturbance on users of a short length of Footpath MX15 during the landfilling of the southern part of the proposed western extension. There will be limited visual effects of a negligible minor significant on all other visual receptors as a result of the landfilling operations due to the surrounding woodlands and existing landfill. The restored site will be visible from a number of locations in the surrounding area and it is considered that the restored proposed western extension will visually integrate with the surrounding landscape once the restoration works have been completed.

Photograph NTS 8: The northern wildflower slope at ENRMF

Soil resources and agricultural land classification

5.22 An assessment of the impacts on soil resources and agricultural land has been undertaken. There are limited soil resources on the existing ENRMF and the soils that are present on the site are contained within the existing stockpiles. An agricultural land classification survey was undertaken to establish the quality of the soils in the proposed western extension. The soils in the main part of the proposed western extension are classified as Grade 3b whilst the soils in the northern part of the proposed western extension are classified as Grade 3a which is considered as best and most versatile agricultural land.

5.23 There will be a permanent loss of 25.8 hectares of agricultural land 5.9 hectares of which is best and most versatile agricultural land which would result in a moderate adverse impact on agricultural land. The loss of agricultural land in the proposed western extension is offset by the biodiversity benefits which will result from the proposed restoration scheme at the site. All soils from the site will be used in the restoration hence there are negligible residual impacts on soil resources once restoration is completed.

Archaeology and cultural heritage

5.24 An assessment of archaeological potential and the potential impacts on the setting of cultural heritage assets was undertaken. There are no designated heritage assets within the application boundary. The nearest Scheduled Monument is Duddington Bridge which is situated to the west of the village approximately 1.6km west north west of the site. One other Scheduled Monument sits on the limit of the 2km search area north north west of the site in Collyweston and is the site of a manor house and gardens. There are two Grade II* listed buildings and structures and 32 Grade II listed buildings within 2km of the site. The closest are located within Duddington where there are 27 listed buildings located within a conservation area at a distance of over 1.2km west of the site. There are no views of the application site from the locations of the scheduled monuments or the listed buildings. The scheduled monuments, listed buildings and structures are separated from the application

site by distance and there is a lack of visibility due to topography and woodland. Their settings cannot be affected by the proposed development.

5.25 There is no surviving archaeology within the existing ENRMF as all areas of the site have been disturbed and were subject to previous investigation and recording. A geophysical survey of the proposed western extension was undertaken in November 2019 and May 2020. The geophysical survey found little that can be described as of archaeological interest with any certainty. Excavation of a series of trial trenches took place across the proposed western extension in October and November 2020 to verify the findings of the geophysical survey and identify any features of archaeological interest which may be present below ground. The trial trenching identified low levels of activity at the site from the Roman period onwards. Where present, archaeological preservation levels were high and the remains did not appear to have been significantly affected by the modern activities at the site such as ploughing. The majority of the finds were located within the northern half of the northern field and the north eastern extent of the southern field in the proposed western extension. Soil stripping in these areas will be undertaken under the direction of an archaeologist. A watching brief will be undertaken by an archaeologist in the service corridors where the ground is to be disturbed. The archaeological mitigation measures are controlled by a Requirement in the DCO.

5.26 The archaeological investigation at the site identified only two areas of archaeological interest and then only of a local value. The findings of the geophysical survey were confirmed by the trial trenching carried out in the proposed western extension. It is considered that the proposed development would not have a significant effect on archaeology and cultural heritage.

Water resources

5.27 An assessment of potential impacts associated with the site geology, hydrogeology and hydrology was carried out. A detailed site investigation was carried out with the drilling of numerous site investigation and monitoring

boreholes to establish the geology and hydrogeology of the proposed western extension. A swallow hole is present to the north west of the existing ENRMF landfill site and there is evidence of other solution features in the limestone geology (dolines). The area of the dolines was investigated using geophysical surveys. Subject to further investigations into these areas following the grant of the DCO, the extent of the proposed landfill will be adjusted to make sure that the engineered base and sides of the containment landfill will be suitably stable and that the containment system will provide suitable protection to the quality of the groundwater underlying the site. Consistent with the principles of the current site design and the Environmental Permit, at least 2m of natural low permeability strata will be left in place below the base of the engineered landfill and above the limestone strata underlying the site.

5.28 Based on the proposed measures for the design of the containment engineering and the control measures that will be incorporated into the design, it is demonstrated through full detailed risk assessment that there will be no significant impact on groundwater quality or flow beneath the site or at receptors nearby as a consequence of the extraction and construction of the proposed western extension. The quality of the groundwater will be monitored routinely to confirm that the landfill is functioning as predicted by the risk assessments which were carried out as part of the Environmental Permit application.

5.29 Surface water from areas around the site will be collected in and channelled away from and around the landfill areas in a series of ditches. During the operational period all water on site which is in contact with wastes and which has the potential to be contaminated is retained on site. Collected site surface water is used for dust suppression, in wheel washes and in the waste treatment and recovery facility in place of mains water.

5.30 Following restoration of the site the clean surface water runoff from the filled, capped and restored areas will be integrated with the surrounding ditches and additional ponds will be provided in accordance with a surface water

management plan. The surface water management plan is controlled through the proposed DCO. An open watercourse will be created to replace the current surface water drainage culvert which crosses the central part of the proposed western extension in order to continue to direct runoff from parts of the western area of the site and from water catchments to the west of the site boundary towards the swallow hole drainage feature.

Flood risk

5.31 A flood risk assessment was undertaken for the proposed development. The site is in Flood Zone 1 which is defined as land assessed as having less than a 1 in 1000 (i.e. low) annual probability of river flooding. The surface water management plan for the site includes the necessary provisions for climate change in particular the predicted increase in frequency and intensity of rainfall storm events and a number of storm water attenuation basins are incorporated into the restoration concept scheme (Figure NTS 3) which ensures that the rate of discharge from the site does not result in a flood risk downstream. It is considered that based on the implementation of the surface water management plan the proposed development can be undertaken with no significant risk of surface water flooding to the proposed development or of an increase in flooding off site.

Transport and traffic

5.32 The waste importation rate to the site will increase to 300,000tpa which is an increase of 50,000tpa as a result of the proposed development. The majority of the total Heavy Goods Vehicle (HGV) traffic numbers at the site are created by the importation of waste, the removal of treated wastes for recovery or disposal elsewhere and by the export of clay and overburden. The traffic numbers associated with the proposed development will not increase significantly compared with the traffic levels associated with the current operations at the existing ENRMF. Based on the calculations used in the 2012 assessment, the assessment of HGV movements associated with the proposed changes in vehicle numbers as a result of the proposed

development and the review of the detailed vehicle logs from 2019 it is estimated that the maximum number of movements associated with the proposed development is 232 per day which is an increase of 36 HGV vehicle movements per day (a visit from one HGV counts as two movements, one movement in and one movement out). This equates to an hourly increase of 4 vehicle movements over the daily operating period.

5.33 A transport assessment for the proposed development was undertaken. In consultation with the Highways Authority and Highways England it was agreed during that due to the limited increase in traffic numbers associated with the proposed development it was not necessary to carry out junction capacity assessments. The information regarding the safety and capacity of Stamford Road and the A47 in the vicinity of the site was assessed.

5.34 There have been no recorded personal injury accidents on Stamford Road, including at its junctions with the site access and the A47 in the last five years although Augean attended as first responders to two damage only accidents on Stamford Road between the site access and the A47 in that time. Augean make an annual contribution to the local authority for highways maintenance on Stamford Road. Surface improvement works were carried out by the local authority in the vicinity of the site access in late 2020 and Augean are implementing improvement works to widen the site access and improve drainage. Augean has provided a commitment to continue to provide an annual fund for highways maintenance. Augean have also agreed to fund the additional highways signage to the north of the site on the approach to bends in the road even though the signage is not needed as a result of the operations at the site, and the local authority have agreed to provide the signs.

5.35 It is considered that the proposed development will result in a negligible change in the number of HGV trips which is not expected to result in an impact on road safety on Stamford Road or the A47.

Noise and vibration

5.36 A noise and vibration impact assessment was undertaken for the proposed development. Background noise monitoring was undertaken at locations which were agreed with East Northamptonshire District Council (now part of North Northamptonshire Council) which demonstrates that the noise climate in the vicinity of the site is influenced by road traffic noise, bird song, operations at ENRMF and the haulage yard and agricultural operations.

5.37 The site has not been the subject of compliant associated with noise. An acoustic survey was undertaken of the existing site which shows that under typical operating conditions the noise levels are within accepted thresholds.

5.38 Based on standardised calculations taking into account background noise it has been determined that with the implementation of the standard noise mitigation measures the proposed development is not likely to result in adverse or significant adverse impacts. The noise mitigation measures are controlled by a Requirement in the DCO.

5.39 An assessment was undertaken for the potential of noise and vibration from traffic associated with the proposed development and vibration associated with the construction operations. Noise and vibration have not been the subject of complaint in respect of the current operations. The increase in traffic is insufficient to result in perceptible changes in noise or vibration hence it is unlikely that there will be significant adverse effects. The potential noise and vibration levels associated with the activities including the construction phase of the development (which is the progressive construction of the engineered landfill cells) are likely to remain within the recommended threshold values and the proposed western extension is a substantial distance from any sensitive receptor hence the impacts are not considered to be significant.

Air quality

5.40 An assessment of the potential impacts of the proposed development on local air quality which have the potential to affect human health was undertaken

together with potential impacts associated with odour. The site is not located in an air quality management area which means that national air quality objectives are being met.

5.41 The monitoring of air quality and gas in the ground at the site is undertaken routinely in accordance with the Environmental Permit which shows that the site operates within the specified limits and that there are no significant adverse impacts. This will continue for the proposed western extension.

5.42 Based on monitoring results and the continued application of the current control measures it is considered that the generation of fine airborne particulates as a result of the proposals will have a negligible impact on air quality at the site.

5.43 The wastes that are accepted at the site for landfill and treatment have a low level of organic carbon which means they have a limited potential for biodegradation hence a limited potential for the generation of gases or vapours. Waste acceptance procedures are in place to ensure that significantly odorous wastes are not accepted. Odour is not the subject of complaint at the site. Based on the proposed continuation of the current controls including those that will be specified and implemented through the Environmental Permits, and based on the nature of the current and proposed wastes accepted at the site it is considered that there will be no significant impacts on air quality including impacts associated with odour as a result of the site activities.

Amenity

5.44 The potential effects on amenity of dust, mud on the road and lighting were assessed. If no dust control measures were implemented there would be the potential for a negligible to moderate adverse effects associated with impacts from dust on nearby receptors. However dust generation and emissions will continue to be controlled effectively as part of the proposed development using a range of control measures as confirmed by the results of monitoring.

The dust emission control measures are controlled by a Requirement in the DCO. Based on the continued application of the current dust control measures it is unlikely that the dust generated at the site will result in a significant amenity impact.

5.45 Based on the wheel cleaning facilities and the proposed cleaning and maintenance regime on the site and the adjacent Stamford Road, the risk of nuisance from the proposed development associated with mud and debris on the local road network is low. The wheel cleaning facilities are controlled by a Requirement in the DCO. The proposed drainage improvements at the site access will reduce the potential for site runoff to accumulate at the site entrance and be tracked onto the road.

5.46 The lighting at the site is located in key areas at the main reception and office areas as well as the treatment facility for both security and health and safety considerations. Mobile lighting is used on the operational landfill area when needed. With the exception of security lighting the lighting will only be used during periods of low light and darkness when the site is operational and all lighting will be directed downwards to minimise the impact. The lighting mitigation measures are controlled by a Requirement in the DCO. Lighting has not historically been the subject of compliant in relation to the site. It is considered that there will not be an unacceptable impact on amenity as a result of the continued use of lighting as part of the proposed development.

Socio economic impacts

5.47 An assessment of the socio economic impacts of the proposed development was carried out.

5.48 The proposed development provides the continued opportunity for a significant national and regional socio economic benefit by supporting the need of businesses and other activities for the safe treatment of wastes and the safe disposal of hazardous wastes and LLW. The increase in the throughput of the treatment facilities reflects the increasing need for waste

treatment prior to recovery or disposal in preference to direct landfill disposal. The increased landfill void created will provide a hazardous waste disposal facility available for use by local, regional and national businesses for an additional 20 years. The continued provision of this hazardous waste treatment and disposal facility underpins the economy of the wider business community in supporting their activities and the goods and services that they supply which rely upon the availability of hazardous waste treatment and disposal facilities which are readily accessible.

5.49 In addition the continuation of activities at the site will result in a further significant positive contribution to the local economy and provide substantial support to the function of the local villages and to local community and educational activities. The proposed development will help secure the continued employment of the staff who currently work at ENRMF most of whom live within a ten mile radius of the site. The site will continue to use a range of local services contributing significantly to the local economy. In the period January 2020 to December 2020 the existing ENRMF site spent approximately £787,000 on local services within Northamptonshire and/or a 15 mile radius of the site.

5.50 Since 2004 Augean has invested more than £4.5 million into the local community through the Landfill Tax Credit scheme from the ENRMF and Thornhaugh Landfill Sites. The Landfill Tax Credit scheme allows Augean to give to the local community a proportion of its landfill tax obligation which was £432,000 in 2020. Since 2011 the LLW community fund has produced over £197,000. In 2020, 21 projects were given grants for between £4,000 and £50,000 and included upgrades to halls, churches and sports facilities and recreation ground improvements. In addition Augean has directly funded a number of projects including improvements to the Kings Cliffe Sports Club House, and improvements to Oundle Rugby Club, improvements to All Saints and St James' church and contributions to the Kings Cliffe and Area Community Sports Project.

5.51 Based on the absence of evidence of adverse socio economic impacts including the absence of any evidence that local businesses or developments are affected by the presence of the existing ENRMF, and the evident beneficial impacts of the existing operations at ENRMF it is concluded that the proposed development will not give rise to any adverse socio economic impacts on the local community.

5.52 The continued provision of safe, sustainable and cost effective waste management facilities will provide a beneficial socio economic impact to local, regional and national businesses. The presence of the site and the Augean business will continue to support and make contributions to the local community.

Climate change and natural disasters

5.53 Of the potential predicted impacts as a result of climate change it is considered that the proposed development will be vulnerable to changing patterns in weather specifically changes in rainfall. The potential effects on the operations as a result of the predicted effects of climate change on rainfall are taken into account in the design of the surface water management plan for the site. It is considered that the proposed development is not vulnerable to any other impacts as a result of climate change. The restoration of the site will create a biodiversity net gain through the creation and enhancement of habitats including vegetated areas and areas of ponds and wetland which will contribute to the mitigation of the impacts of climate change.

5.54 The risks and potential impacts resulting from possible events and accidents associated with the manmade and natural environments at and around the site are included in the health impact assessments. The site location is not considered vulnerable to severe earthquakes, tsunamis, avalanches or natural events such as flooding and sea level rises.

Overall direct and indirect effects on health and wellbeing

5.55 An assessment of the overall potential effects of the proposed development on health and wellbeing was carried out taking into account the wider definition of health which is '*a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity*'.

5.56 The assessment includes a review of the potential impacts on the tranquillity of the area, particularly the users of the nearest length of footpath (MX15). As the site operations are designed to minimise noise and light and the visual and traffic impacts of the development and as the site activities are visible only for an approximately 50m stretch of a long woodland walk (approximately a 50m length of a 1.5km walk for footpath MX15 in Fineshade Wood) through a gap within the woodland it is considered that there will be no significant effect on the overall tranquillity experienced by users of the footpath and the wider woodland area.

5.57 It is recognised that perceptions about the proposed scheme may increase the risk of anxiety as a result of perceived health effects. The proposals for community engagement including the long term continued plans for engagement through the Kings Cliffe Liaison Group and, when Covid-19 related restrictions allow, through the resumption of regular site open days including during engineering works to show how engineering of the site is undertaken, the provision of newsletters and maintenance of a register of stakeholders who are kept informed of site activities and new developments. In order to provide regular reassurance that the site is operating as anticipated, Augean will continue to make available through publicly accessible media such as the company website site monitoring data in a simplified and accessible form. Augean will also continue to make public data from passive dosimeters worn by site workers at the site to reassure the local community that the recorded radiation on site is within permitted levels.

5.58 It is considered that the restored site will bring significant benefits to the public through the provision of green infrastructure and areas of ponds and a new

watercourse which is developed to maximise diversity and to be open to the public.

5.59 It is concluded that the impacts from the proposed development on the wider determinants of public health will not result in any significant negative impacts and will result in long term significant positive impacts as the site is restored.

Conclusions

5.60 Extensive technical studies were undertaken to define the environmental conditions at the site and the surrounding area on which to base robust assessments of the potential environmental impacts of the proposed development. These detailed assessments are included in the documents submitted with the Development Consent Order application.

5.61 Based on the assessments carried out it is concluded that there will be no unacceptable adverse effects on human health or the environment in the short, medium or long term as a result of the proposed development. The restoration of the site in the long term will provide informal recreation and significant overall biodiversity net gain.

5.62 Copies of the documents, plans and maps are available to view online on the Augean web site at https://www.augeanplc.com/enrmf-planning/ as well as on the Planning Inspectorate project specific web site where there is also information on the next stages of the application process and how you are able to take part in the process including submitting any comments:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/east-northants-resource-management-facility-western-extension/?ipcsection=overview

5.63 If you need any assistance in accessing the documentation please contact us by email at ENRMF@augeanconsultation.co.uk or call the telephone helpline 01904 654989.