

Unit 15
Melbourne Business Park
Model Farm Road
Cork



T: 021 434 5366
E: info@ocallaghanmoran.com
www.ocallaghanmoran.com

ENVIRONMENTAL IMPACT ASSESSMENT REPORT
ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD

CAPPINCUR

TULLAMORE

COUNTY OFFALY

Prepared For: -

Advanced Environmental Solutions (Ireland) Ltd,
Bogtown,
Cappincur,
County Offaly.

Prepared By: -

O' Callaghan Moran & Associates,
Unit 15,
Melbourne Business Park,
Model Farm Road,
Cork.

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CW-AEST-12

Site Layout

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NON-TECHNICAL SUMMARY

1.0 Introduction

1.1 The Applicant

Advanced Environmental Solutions (Ireland) Ltd (AES) is one of the largest waste management companies in the country providing household and commercial waste services. It is part of the Bord na Móna group and operates waste management facilities at Lusk, Navan, Tullamore, Portlaoise, Nenagh and Rosslare.

1.2 Facility Overview

The facility is located in the Cappincur Industrial Estate approximately 2 km east of Tullamore Town. It covers 1.16 hectares (ha) and is occupied by a Weighbridge, Process Building, Office, Welfare Building, Wheel Wash and paved open yards.

1.2.1 Site History

The site was initially developed as a waste management facility in 1994. In 2002 AES acquired the site following which improvement works were carried out. In 2004, the first Waste Licence was granted by the Environmental Protection Agency (EPA). In 2009 a revised Waste Licence was granted for changes to the boundary and the upgrade of the drainage and wastewater treatment system, and these works were carried out in 2012.

In 2013 planning permission was granted for an increase in the annual waste acceptance rate to 60,000 tonnes and the current Waste Licence was issued in February 2014. In December 2015, the EPA amended the Licence to bring it into conformity with the requirements of the EU Industrial Emissions Directive.

1.2.2 Waste Activities

The facility accepts residual household (black bin) waste, construction and demolition waste and mixed dry recyclable materials (paper, cardboard, plastic etc). All the wastes are handled inside the Process Building and baled dry recyclables are stored in the open yard before being sent to recycling facilities.

1.3 Proposed Development

The current planning permission and Waste Licence authorise the acceptance of 60,000 tonnes annually. It is proposed to increase the amount of non-hazardous waste accepted annually to 80,000 tonnes.

2.0 Planning and Waste Management Policy

2.1 Planning Policy

The Offaly County Development Plan (2014-2020) sets out the policies and objectives for the sustainable future growth of the county. In relation to waste management, it is policy to comply with the requirements of the European Union (EU) Waste Hierarchy and to meet the county's needs under the current and any subsequent Waste Management Plan.

The Plan recognises there is a continuing need to avoid the production of waste at source and to try and divert as much as possible from landfill through the provision of facilities and services that include a bring-bank network, civic amenity sites, biological treatment plants, kerbside recycling, and the introduction of a separate organic waste collection.

In relation to waste management, it is policy to ensure the provision of quality, cost effective waste infrastructure and services that reflect and meet the needs of the community and to ensure that the 'polluter pays principle' is achieved in all waste management activities.

2.2.1 Tullamore Town and Environs Development Plan 2010-2016 (extended to 2020)

The facility is in the Tullamore Environs Area. In relation to waste management, it is policy to implement the current Waste Management Plan for the Midlands Region (now replaced by the Eastern-Midlands Region Waste Plan), which takes account of both national and EU waste management policy.

2.2 Waste Management Policy

The foundation policy statement on waste management "*Changing Our Ways*" bases national policy on the EU Waste Management Hierarchy, which in descending order is:

- Prevention;
- Preparing for Reuse;
- Recycling;
- Other Recovery (including energy recovery);and
- Disposal

The most recent Policy Statement '*A Resource Opportunity Waste Management Policy In Ireland 2012*' is also based on the EU Waste Management Hierarchy and sets out how the higher tiers can reduce Ireland's reliance on finite resources, virtually eliminate reliance on

landfill, and minimise the impact of waste management on the environment. It is a policy objective that when waste is generated, the maximum value must be extracted from it by ensuring that it is reused, recycled, or recovered.

2.2.1 Waste Management Plan for the Eastern-Midland Region

The underlying strategic approach of the Plan is to improve the quality of waste along the entire treatment supply chain. Pre-treatment capacities are typically the first destination for waste and are vital in extracting and generating high-quality outputs for onward treatment.

2.2.3 Compliance with Policy Objectives

The proposed development is consistent with the current planning objectives and national and regional waste policy objectives, as it will increase the pre-treatment capacity to get the maximum value from the waste and will contribute to the achievement and maintenance of national and regional recycling and recovery targets.

2.3 Need for the Development

The Tullamore facility is the only AES Materials Recovery Facility (MRF) in the Eastern-Midlands Region and the only large scale recovery facility in Tullamore Town. The waste acceptance limits set in the current planning permission and EPA Licence prevent AES from competing for increased market share in its catchment area.

3. Alternatives Examined

The facility is specifically designed and has established use for waste activities and it has the capacity to accommodate the proposed increase in the amount of waste accepted. The only alternative would be to construct a new waste management facility at a different location. This offers no environmental advantage.

3.1 The Do Nothing Alternative

If the development does not proceed the facility will continue to operate in its current configuration and AES will not be able to expand its waste collection service.

4. Site Description

4.1 Site Location

The site is in the west of the Cappincur Industrial Estate. The Tullamore-Daingean Road runs along the northern site boundary and the County Council Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west is the N52 National Secondary Route. The closest private house is approximately 125m to the north-west.

4.2 Waste Activities

The operational hours are 6am to midnight Monday to Saturday and 7am to 11pm on Sundays. All waste processing is carried out inside the Process Building. The black bin waste is bulked up and transferred to other sites for further treatment. The construction and demolition waste is sorted to remove large items and the materials are then sent to other sites for further treatment/recovery. The mixed dry recyclables are manually and mechanically separated, then baled. The bales are stored in the open yard.

4.3 Site Services and Materials Storage

Water is obtained from the local Group Water Scheme and electricity is supplied by a utility company. Diesel for the waste collection trucks and the forklifts used to handle the waste is stored in above ground tanks located at the southern boundary. Diesel for the on-site electricity generator is stored in an internal tank.

Sanitary wastewater is treated in an on-site treatment plant and the treated effluent is stored in an above ground holding tank before being sent for further treatment at the Irish Water sewage treatment plant. Floor wash water in the Process Building is collected in an underground sump inside the building and pumped to the wastewater holding tank, from where it is sent to the Irish Water treatment plant. Firewater is stored in two above ground tanks outside the southern boundary, which service the Industrial Estate.

4.4 Drainage

Rain water run-off from the hardstanding areas and buildings is collected and some is used on-site, with the surplus passing through a series of oils interceptors before being discharged to a drain at the southern boundary.

4.5 Environmental Emissions & Monitoring

The EPA Licence specifies emission limit values for the rain water run-off, dust and noise and requires regular surface water, groundwater, dust and noise monitoring to confirm compliance with the emission limit values and if they are exceeded to ensure corrective actions are carried out.

4.6 Environmental Liability Risk Assessment

The EPA Licence requires AES to prepare an Environmental Liability Risk Assessment that identifies all the potential incidents and accidents that might occur at the site; assess the associated environmental liabilities, including impacts on soil, groundwater, surface water, and the local population; detail a risk management plan to prevent or minimise the risk, and quantify the scale and cost of the appropriate incident response and post incident clean-up measures. AES has completed the assessment and this has been approved by the EPA.

4.7 Proposed Changes

It is proposed to increase the amount of waste that can be accepted from 60,000 tonnes per year to 80,000 tonnes. There will be no changes to the types of waste accepted and the

proposed increase will not require either the construction of new buildings, or the provision of new equipment.

5 Climate

5.1 Receiving Environment

The climate in the area is mild and wet, with the prevailing wind direction from the south and south-west.

5.2 Impacts

The additional wastes will result in an increase in energy (diesel and electricity) consumption associated with their transport and processing, with a consequent increase in greenhouse gas emissions.

5.3 Do Nothing

If the development does not proceed there will be no increase in greenhouse gas emissions.

5.4 Prevention & Mitigation Measures

The mitigation measures include the use of energy efficient equipment, energy audits and the implementation of an energy management plan.

5.5 Assessment of Impacts

The proposed development will result in increased energy use, with a consequent increase in greenhouse gas emissions. All new greenhouse gas emissions contribute to a cumulative negative environmental effect, unless offset by mitigation or compensatory measures.

5.6 Residual Impacts

The proposed development will, in conjunction with current operations have an on-going, imperceptible, negative impact on climate.

6 Traffic

6.1 Receiving Environment

The site is immediately south of the Tullamore to Daingean Road (L2025). The L2025 intersects the N52 approximately 80 m west of the site entrance at the Cappincur Roundabout. The designated speed limit on the N52 is 100km/h and it has a two-way single carriageway. The L2025 is a two-way single carriageway and has a designated speed limit of 50 km/h on the Tullamore side of the Roundabout and a 60 km/h designation on the site access side.

Vehicles arrive and depart from the site entrance (Junction 1) from the west via the Cappincur Roundabout and east along the L-2025. Junction 1's minor arm, has a dual access function, servicing the AES facility and the Dog Pound.

The Cappincur Roundabout (Junction 2), is a 4 arm junction. The major arm (N52) links to the M6 to the north and the N80 to the south. The L-2025 east leads towards the site and on to Ballinagar, with the L-2025 west leading to Tullamore Town Centre.

The traffic movements vary for both light vehicles and heavy vehicles. The morning peak hour light vehicle movements at Junction 2 are higher in September than in June. At Junction 1, the heavy vehicle movements are higher in June.

6.2 Impacts

To assess the impacts on the road network in the vicinity of the site, Junctions 1 and 2 were assessed using computer models for traffic associated with the existing operation (60,000 tonnes / annum) and the proposed operation (80,000 tonnes / annum).

The parameters examined were the Ratio of Flow to Capacity (RFC) Value, the maximum queue length on any approach to the junctions, and the average delay for each vehicle passing through the junction. The performance of the junctions in the critical morning and evening peak hours was assessed for the current year, 2017, and the design years (2022 and 2032), which are 5 and 15 years after the expected opening/operation.

At both Junctions, the traffic in the 2022 and 2032 design years will be below the maximum desired RFC value of 0.85 and also below capacity in both the morning and evening peak hours.

A Road Safety Audit at the site access confirmed that the visibility splays are suitable, but that the existing signs on the palisade fencing should be removed. Measures are also required to clarify vehicle priority between the site access and that of the Dog Pound.

6.3 Do Nothing Scenario

If the development does not proceed there will be no change in the volumes of traffic associated with the facility.

6.4 Prevention & Mitigation Measures

The visibility splays at the existing site access will be maintained and kept free of obstacles that could obstruct the view. The existing signs on the palisade fencing will be removed. Stop and Yield signs and associated road markings will be erected to clarify priority access.

6.5 Assessment of Impacts

At Junction 1, the predicted traffic for all design years will be below the maximum desired RFC (0.85) and within capacity for both the morning and evening peaks. The maximum queue length will occur on the minor arm, with traffic exiting the site onto the L-2025 in the design year 2032 in the morning peak.

At Junction 2 the predicted traffic for all design years will be below the maximum desired RFC of 0.85 and within capacity for both the AM and PM peaks. The maximum queue length will occur on the northbound approach to the junction along the N52, in the design year 2032 in the morning peak.

The maximum queue length on the westbound approach to Junction 2, passing the site access, will be 1.4 vehicles, or 8.05m back from the Yield line at the Roundabout. As the distance between the yield line at Junction 2 and the site access is approximately 80m, the queue at the Roundabout will not impact site access traffic movements.

6.6 Residual Impacts

The development will result in extra traffic movements, but the local road network and junctions have the capacity to accommodate the increase. The development will have an on-going, slight, negative impact on the road network.

7. Soils and Geology

7.1 Receiving Environment

The site is entirely covered by buildings and concrete paving. The subsoils in the locality are glacial tills that are more than 9m thick. The underlying bedrock is a dark limestone and shale.

7.2 Impacts

The proposed change does not require either the construction of any new buildings, or any ground disturbance. There are not and will not be any direct or indirect emissions to ground. There is the potential for leaks from the above ground oil and wastewater storage tanks, the underground sump in the Process Building and leaks from the foul sewer. The potential pathways to the soil and bedrock for contaminants released at the ground surface are infiltration in areas where the paving has been damaged, and leaks from the surface water drains.

7.3 Do Nothing Scenario

If the proposed increase in the amounts of waste accepted does not proceed the facility will continue to operate as a waste management facility, with no change to the potential impacts on the soil and geology.

7.4 Prevention & Mitigation Measures

The current mitigation measures include the provision of impermeable paving across the operational areas; the inspection and repair of the paved areas; the provision and maintenance of spill containment for the above ground oil storage and wastewater holding tanks; the routine inspection and survey of the surface water and foul water drains; the adoption of an emergency response procedure, and staff training on appropriate spill response actions.

7.5 Assessment of Impacts

The entire site is and will remain either paved with concrete, or occupied by buildings that prevent infiltration to ground. The proposed development will not involve any ground disturbance.

7.6 Residual Impacts

The proposed development will, in conjunction with the current operations, have no residual impact on the soils and geology.

8. Water

8.1 Receiving Environment

The facility is in the catchment of the Tullamore River, which is a tributary of the River Brosna. Rain water from the site enters a man-made drain at the southern site boundary that joins the Tullamore River approximately 750 m to the south of the site. The bedrock beneath the site is classified as a Locally Important Aquifer (Lm), being generally moderately productive. The aquifer vulnerability to pollution from sources at the ground surface is Moderate.

The site is entirely covered with buildings and paving, which effectively prevents groundwater recharge. The direction of groundwater flow is expected to be to the south, towards the Tullamore River.

8.2 Impacts

The proposed change does not require any excavations, construction works or alteration to the existing foul and surface water drainage, and will not result in any change to the quality or quantity of the rainwater run-off to the drainage ditch and ultimately the Tullamore River. There are no current direct or indirect emissions to ground and the proposed development will not result in any new emissions.

There is the potential for leaks from the above ground oil and wastewater storage tanks, the underground sump in the Process Building and leaks from the foul sewer. The potential pathways to off-site water courses is the surface water drainage system. The pathways to groundwater for contaminants released at the ground surface are infiltration through damaged paving and leaks from the storm water drains.

8.3 Do Nothing Scenario

If the development does not proceed the facility will continue to operate as a waste management facility, with no change to the potential impacts on water.

8.4 Prevention & Mitigation Measures

The current mitigation measures include the provision of a series of oil interceptors on the surface water drains; the inspection and repair of the paved areas; impermeable paving across the operational areas; the provision and maintenance of spill containment for the above

ground oil storage and wastewater holding tanks; the routine inspection and survey of the surface water and foul water drains; the adoption of an emergency response procedure, and staff training on appropriate spill response actions.

8.5 Assessment of Impacts

The routine surface water quality monitoring carried out by AES has established that the quality of the run-off to the drain is good and does not present a risk to the Tullamore River. The groundwater monitoring indicates that the groundwater beneath the site is not being impacted by the site operations.

The proposed development will not result in any changes to the current emissions to the drain and, will not give rise to any new emission to ground and ground water, and will have no discernible impact on surface water and groundwater.

8.6 Residual Impacts

The proposed changes will, in conjunction with the current operation, have no impact on the water quality in Tullamore River and will have no impact on groundwater.

9 Ecology

9.1 Receiving Environment

There are no habitats of ecological importance within the site boundary and the site is not in or close to a Special Area of Conservation (SAC), Special Protected Areas (SPA) or National Heritage Areas (NHA). The closest protected area is the Charleville Wood SAC, which is 3 km south-west of the site. The Tullamore River is a tributary of the River Brosna that flows through Charleville Wood.

9.2 Impacts

The proposed development does not require any construction works and will not result in any loss of habitats either within, or outside the site boundary. It will not result in any new or additional emissions to the drain/Tullamore River and will not require any changes to the current operational hours.

9.3 Do Nothing Scenario

If the development does not proceed the site will continue to operate as a waste management facility, with no change to the potential impacts on habitats, flora and fauna.

9.5 Prevention & Mitigation Measures

The current mitigation measures include the provision of a series of oil interceptors on the storm drains; the provision and maintenance of spill containment for the above ground oil storage and wastewater holding tanks; the routine inspection and survey of the surface water

and foul water drains; the adoption of an emergency response procedure and staff training on appropriate spill response actions.

9.6 Assessment of Impacts

The routine monitoring carried out by AES has established that the quality of the run-off to the drain is good does not present a risk to the Tullamore River and the River Brosna, which flows through the Charleville Wood SAC. The proposed development will not result in any changes to the current emissions to surface water and will have no discernible impact on surface water.

9.7 Residual Impacts

The increase in the waste acceptance rate will have no impact on the ecosystems within the site boundary and will not give rise to disturbance in the habitats outside the boundary.

10. Air

10.1 Receiving Environment

The facility is in the west of the Cappincur Industrial Estate. The Tullamore-Daingean Road runs along the northern site boundary and the Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west is the N52 National Secondary Route. The closest private house is approximately 125m to the north-west. The EPA ambient air quality databases indicate the air quality in the vicinity of the site is good.

10.2 Impacts

The impacts on air quality associated with the operation of waste management sites that accept and process biodegradable waste in general include odours, particulates (dust) and exhaust gases from vehicles.

10.3 Do Nothing Scenario

If the proposed development does not proceed, the current operation will continue with no change to the potential impacts on air quality.

10.4 Prevention & Mitigation Measures

The mitigation measures currently applied include handling the waste inside the Process Building; regular inspection and cleaning of waste handling areas; provision of a misting system inside the building and dust curtains at the entrances; provision of an active dust extraction system over the picking line; cleaning yards using a road sweeper and damping them down in dry weather, and a 20km/h speed limit on all vehicle movements inside the site boundary.

Furthermore the EPA Licence makes provision for the installation of an odour control system comprising the extraction and treatment of air from the Process Building, if this is considered necessary.

10.6 Assessment of Impacts

The facility accepts black bin waste that contains odorous materials. In the past five years the facility has not received any complaints from neighbours concerning odours and dusts. Compliance inspections conducted by the EPA have never identified any concerns that odours/dusts could give rise to nuisance outside the facility boundary. The EPA has not required AES to install an odour control system. The proposed change does not involve taking in any new potentially odorous waste types or introducing any new processes that would be an additional source of dust emissions.

10.7 Residual Impacts

The proposed development, in conjunction with the current operations, will have an on-going slight, negative impact on air quality associated with increase in vehicle exhaust gases.

11 Noise

11.1 Receiving Environment

The facility is in the west of the Cappincur Industrial Estate. The Tullamore-Daingean Road runs along the northern site boundary and to the west is the N52 National Secondary Route. The closest private house is approximately 125m to the north-west.

11.2 Impacts

The sources of noise are the waste transport vehicles, picking line operation and baling, vehicles moving the bales and loading of the waste transport trucks.

11.3 Do Nothing Scenario

If the development does not proceed the current activities will continue, with no change to the noise emission levels.

11.4 Prevention & Mitigation Measures

All waste processing is carried out inside the Process Building. Site staff are instructed to avoid unnecessary revving of machinery, turn off equipment / plant when not in use, and limit the hours of activities that are likely to give high noise level emissions.

11.5 Assessment of Impacts

The current activities are not a source of either noise nuisance, or impairment of amenity outside the site boundary. There will be no change to either the sources of noise, or the noise emission levels from those associated with current activities.

11.6 Residual Impacts

The proposed development will, in conjunction with the current operations, have an on-going, imperceptible, negative impact.

12 Landscape & Visual Impact

12.1 Receiving Environment

County Offaly predominantly comprises a flat landscape, typified by extensive peatlands. The Slieve Bloom Mountains in the south-west of the county is the only substantial upland area. The Shannon River in the west forms a landscape of local, national and international importance. The Grand Canal forms the 'Grand Canal Corridor' which has the potential to increase tourism in the area and to add to the aesthetic value and recreational appeal of the landscape.

The facility is an area classed as being of Low Sensitivity, which largely encompasses the county's main urban and farming areas. The 'Grand Canal Corridor', which is classed as being of High Sensitivity, is approximately 350m to the north.

The site is a relatively moderately scaled waste management facility and has an industrial appearance. It is visible from the Tullamore-Daingean Road frontage, but the other buildings in the Cappincur Estate screen it from view from further east along the road. It is visible from approaches to the Cappincur Roundabout and from the access road to the Dog Pound.

12.2 Impacts

The proposed development does not involve any construction works or material changes to the existing buildings and external operations.

12.3 Do Nothing Scenario

If the development does not proceed there will be no change to the external appearance of the site.

12.4 Prevention & Mitigation Measures

Existing mitigation measures include the provision of net screens on the palisade fencing that surrounds the site and planning along the eastern boundary.

12.5 Assessment of Impacts

The proposed development will not result in any material change to the appearance of the facility.

12.6 Residual Impacts

The development will, in conjunction with current operations, have a neutral impact on the existing landscape character and visual amenity.

13 Human Beings

13.1 Receiving Environment

The facility is in an area zoned for industrial use. The Tullamore-Daingean Road runs along the northern site boundary, and the Councils' Dog Pound is directly to the south. The lands to the north and south are in agricultural use. To the west of the access road to the Dog Pound is the N52. The closest residential dwellings are approximately 125m to the north-west, a private dwelling 145m to the north-east and a small residential estate ca 300m to the west.

13.2 Impacts

Waste management facilities that handle biodegradable wastes are a source of odours with the potential to extend outside the site boundaries. While odours do not present a direct risk to health, they can be a significant nuisance and cause of discomfort that can indirectly affect human health. Waste management facilities are also potential sources of other nuisance including, dust, noise, vermin and pests. Traffic associated with the facilities can, depending on the size, location and capacity of the local road network, be a cause of congestion that affects local residents.

13.3 Do Nothing Scenario

If the proposed development does not proceed the current operations will continue and there will be no change to the potential for impacts on human beings.

13.4 Prevention & Mitigation Measures

The mitigation measures currently applied include handling the waste inside the Process Building; regular inspection and cleaning of waste handling areas; provision of a misting system inside the building and dust curtains at the entrances; provision of an active dust extraction system over the picking line; cleaning yards using a road sweeper and damping them down in dry weather and a 20km/h speed limit on all vehicle movements inside the site boundary. Furthermore the EPA Licence makes provision for the installation of an odour control system comprising the extraction and treatment of air from the Process Building, if this is considered necessary.

13.5 Assessment of Impact

In the past five years the facility has not received any complaints from neighbours concerning odours and dusts. Compliance inspections conducted by the EPA have never identified any concerns that odours/dusts could give rise to nuisance outside the facility boundaries and the EPA has not required AES to provide an odour control system.

The current activities are not a source of odour/dust nuisance and the proposed change does not involve taking in any new potentially odorous waste types, or any new processes that would be an additional source of dust emissions. The Traffic and Transport Assessment has established that the local road network has the capacity to accommodate the increased traffic movements and they will not give rise to congestion.

13.6 Residual Impacts

The proposed development, will in conjunction with current operations, have an on-going imperceptible, negative impact on human beings associated with noise emissions and traffic movements.

14 Archaeology, Architecture and Cultural Heritage

14.1 Receiving Environment

There is no record of any archaeological feature, protected structure, or cultural heritage feature within the site boundary and it is not in a designated Architectural Conservation Area.

14.2 Impacts

The development does not require any excavation or ground disturbance works and there is no risk of any impacts on any unidentified archaeological features.

14.3 Do Nothing Scenario

If the development does not proceed the facility will continue to operate in its current configuration and the potential for impacts on the archaeology, architecture and cultural heritage will remain unchanged.

14.4 Prevention & Mitigation Measures

As the proposed development will not have any impact on any archaeological, architectural or cultural feature, mitigation measures are not required.

14.5 Assessment of Impact

The development will not have any impact on any archaeological, architectural or cultural feature.

14.6 Residual Impacts

The development will not have any impact on any archaeological, architectural or cultural heritage features.

15 Material Assets & Resource Consumption

15.1 Receiving Environment

The facility is in an area zoned for industrial use. The Tullamore-Daingean Road runs along the northern site boundary, and the Council's Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west of the access road for the Dog Pound is the N52. The nearest listed amenity area is the Grand Canal, which is approximately 320 m to the north of the site.

15.2 Impacts

The development will not result in any loss impairment of amenity value or agricultural use. There will be an increase in fuel and electricity consumption associated with the transport and processing of the additional wastes. The development will increase AES's recycling rate, which will have a socio-economic benefit. It will also contribute to maintaining employment levels, with a consequent economic benefit to the local economy.

15.3 Do Nothing Scenario

If the proposed development does not proceed there will be no socio-economic benefit from the increased collection rate for recyclable materials, but there will be no increase in natural resource consumption.

15.4 Prevention & Mitigation Measures

AES implements the nuisance control measures specified in the EPA Licence and also applies resource consumption control measures to minimise usage.

15.5 Impact Assessment

The current operation is not a source of adverse environmental nuisance and impairment of amenities outside the site boundary and has not adversely affected the existing economic activities in the surrounding area. The local road network has the capacity to deal with the additional traffic associated with the development.

15.6 Residual Impact

The development will not have any adverse impact on amenity values and socio-economic activities in the locality. It will have a slight negative impact in relation to the consumption of fossil fuels. It will have an on-going slight positive socio-economic and economic benefit associated with increasing recycling rates and maintaining local employment levels.

16 Interaction of the Foregoing

There are actual and potential direct, indirect and cumulative effects of the changes due to interaction between relevant receptors, which are Human Beings, Air, Noise, Traffic, Climate, Ecology and Water.

16.2 Human Beings / Air / Noise

The current operation has the potential to impact on human beings as a result of noise, dust, vehicle exhaust emissions and odour. The location, design and method of operation have taken account of these emissions and effective mitigation measures, which comply with the requirements of the EPA Licence, have been identified and applied. The proposed change will result in additional vehicle exhaust gas emissions to air.

16.3 Human Beings/Traffic

The proposed change will result in an increase in traffic; however the facility is located in an industrial estate and the access routes do not pass through residential areas. The local road network and junctions have the capacity to accommodate the additional traffic movement and will not give rise to congestion.

16.4 Climate/Traffic

The development will result in an increase in greenhouse gas emissions associated with the additional traffic movements.

16.5 Surface Water / Ecology

Rainwater run-off from the site discharges to the Tullamore River which is a tributary of the River Brosna that flows through the Charleville Wood SAC. The quality of the run-off is good and the proposed change will not result in any deterioration in water quality that might affect the SAC.

16.6 Cumulative Effects

The assessment of the impacts of the proposed change took into consideration the impacts of the existing operation. The noise, dust, surface water and groundwater monitoring events were conducted during typical operational hours and the predictive assessments include the impacts of both the existing emissions and those associated with the proposed change.

PREAMBLE

This Environmental Impact Assessment Report (EIAR) examines the potential impacts and significant effects on the environment of the proposed increase in the amount of waste accepted at the AES Ltd Materials Recovery Facility at Cappincur Industrial Estate, Tullamore, County Offaly.

The facility operates under a planning permission granted by Offaly County Council (the Council) and an Industrial Emissions Licence (IEL) (Reg No. W0140-03) issued by the Environmental Protection Agency (EPA).

The information contained in the EIAR complies with the requirements of Article 5 (1)(a) to (e), Article 3(1)(a) to (e), and Annex IV of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive).

The EIAR follows a grouped format structure where each relevant topic is dealt with in a separate chapter, which describes the existing (receiving) environment, the direct and indirect significant effects associated with the activity, and the measures to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment, and assesses the impacts and the residual impacts.

The impacts are assessed in terms of the likely natural or physical changes to the environment resulting either directly, or indirectly from the proposed development, taking into consideration a 'do nothing scenario' and the cumulative effects.

The significance of an effect was determined by a combination of objective (scientific) and subjective (social) concerns and the potential for the development to either cause significant effect on an aspect of the environment that has been formally or systematically designated as being of importance, or to significantly alter the existing character of some aspects of the environment. The following objective criteria were used to determine the significance of an effect:

- The magnitude and spatial extent of the impact
- The nature of the impact
- The intensity and complexity of the impact.
- The probability of the impact.
- The expected onset, duration, frequency and reversibility of the impact.
- The cumulation of the impact, with the impact of other existing and or/approved projects.

- The possibility of effectively reducing the impact.

Impacts are, where possible, described in terms of quality, significance and duration.

Quality: Positive, Neutral, Negative.

Significance: Imperceptible; Slight; Moderate; Significant; Profound.

Duration: Temporary <1 year; Short-term 1-7 years; Medium Term 7-15 years; Long Term 15-60 year; Permanent >60 years.

Public Consultation

AES notified the Council of its intention to apply for planning permission. AES also informed its neighbours of the proposed development and that this would require planning permission.

Project Team

O'Callaghan Moran & Associates (OCM) were the prime consultants and unless otherwise referenced, were responsible for completing the baseline surveys and assessment of impacts. OCM has twenty years' experience in the completion of environmental impact assessments for large scale waste management and industrial developments and has particular expertise in geology, hydrogeology, hydrology, and environmental risk assessment.

The Traffic and Transport Assessment was completed by Tobin Consulting Engineers, one of Ireland's leading engineering consultancies. The environmental surveys were carried out by Bord na Móna Environmental, which is one of the leading environmental monitoring companies in Ireland.

O'Callaghan Moran & Associates – Prime Consultants

Address: Unit 15,
Melbourne Business Park,
Model Farm Road,
Cork
Telephone: 021 – 4345366
e-mail: info@ocallaghanmoran.com

Tobins Consulting Engineer–Traffic and Transport Assessment

Address: Fairgreen House
Fairgreen Road
Galway
HB1 AXK8
Telephone: 091 565211

Bord na Mona Environmental – Surface Water, Groundwater, Noise and Dust Surveys

Address Main Street
 Newbridge
 County Kildare
Telephone 045 431201

Difficulties in Compiling the Required Information

OCM did not encounter any particular difficulties in compiling the required information.

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1 INTRODUCTION

1.1 The Applicant

Advanced Environmental Solutions (Ireland) Ltd (AES) is one of the largest waste management companies in the Eastern Midlands and Southern Waste Regions. It is part of the Bord na Mona group and operates waste management facilities at Lusk, Navan, Tullamore, Portlaoise, Nenagh and Rosslare.

1.2 Facility Overview

The facility, which covers 1.16 hectares (ha), is in the townland of Bogtown, approximately 2 km east of Tullamore. It is in the western edge of the Cappincur Industrial Estate, which is occupied by a mix of commercial and industrial operations.

The facility operates under planning permission granted by Offaly County Council and an Industrial Emissions Licence (Reg. No 104-03) (EPA Licence) issued by the Environmental Protection Agency (EPA) both of which authorise the acceptance of 60,000 tonnes of non-hazardous waste annually.

The facility is not subject to regulation under Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC (Seveso Directive).

1.2.1 Site History

The site was originally developed as a waste management facility by Rentabin Ltd in 1994. In 2002, AES acquired Rentabin Ltd, following which improvement works including the construction of an extension to the waste handling building, upgrading of the drainage system, and the installation of a new on-site waste water treatment system were carried out.

In March 2004, the first EPA Licence (W0104-01) was granted which authorised the acceptance of 24,000 tonnes of waste. In 2009, a revised Licence (W0104-02) was granted for the revision of the site boundary, expansion of the office, upgrade of the drainage and wastewater treatment system, an increase in the annual waste inputs from 24,000 tonnes to 50,000 tonnes, and the amendment of the opening hours. The upgrade works were carried out in 2012.

In 2013 planning permission was granted for an increase in the annual waste acceptance rate to 60,000 tonnes and a revised Licence (W0104-03) which approved the acceptance of 60,000 tonnes per annum was issued in February 2014. In December 2015, the EPA amended the Licence to bring it into conformity with the requirements of the EU Industrial Emissions

Directive. In June 2016 the EPA amended the Licence to insert conditions regarding the preparation of a site specific waste management plan.

1.3 Proposed Development

It is proposed to increase the amount of waste accepted at the facility to 80,000 tonnes. This is to facilitate the expansion of AES's waste recycling and recovery capacity in its existing customer catchment area.

The existing infrastructure has the capacity to accommodate the proposed increase and there will be no change to the facility boundary, existing buildings, plant and equipment and drainage systems.

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2 PLANNING & WASTE MANAGEMENT POLICY

2.1 Introduction

This Chapter presents an overview of the relevant planning policy objectives, national and regional waste policies and demonstrates how the proposed development is consistent with these. It is based on the Offaly County Development Plan 2014 -2020; the Tullamore Town and Environs Development Plan 2010-2016 (Extended to 2020), National Waste Policy Statements and the Waste Management Plan for the Eastern-Midlands Region 2015-2021.

2.2 Planning

2.2.1 *Offaly County Development Plan 2014-2020*

The Plan sets out the development strategy (policies and objectives) for the sustainable future growth of the County. Section 4.19.4, which addresses waste management, recognises that there is a continuing need to avoid the production of waste at source and to try and divert as much as possible from landfill through the provision of facilities and services that include a bring-bank network, civic amenity sites, biological treatment plants, kerbside recycling, and the introduction of a separate organic waste collection service.

In relation to waste management, it is Council policy(EnvP-08) to ensure the provision of quality, cost effective waste infrastructure and services, which reflect and meet the needs of the community, and to ensure that the 'polluter pays principle' is observed in all waste management activities.

It is a specific objective (EnvO-13) to implement the provisions of the European Union (EU) Waste Management Hierarchy and the current Waste Management Plan for the Region. As a result, developments in the county will be expected to take account of the provisions of the Waste Management Plan for the relevant Region and observe those elements of it that relate to waste prevention and minimisation, waste recycling facilities, and the capacity for source segregation.

2.2.2 *Tullamore Town and Environs Development Plan 2010-2016 (Extended to 2020)*

The facility is located in the Tullamore Environs Area. In relation to waste management, it is policy to implement the current Waste Management Plan for the Midlands Region (now replaced by the Eastern-Midlands Region Waste Plan), which takes account of both national and EU policy.

It is policy to encourage the provision of recycling infrastructure where it is considered necessary and the Councils will assess requirements for recycling facilities on a case by case basis.

2.3 Site Planning History

The site has been used for waste recovery activities for more than twenty years. In 1994, planning permission (PL94/503) was granted for a building where waste paper was to be baled and recycled. In 2002, permission (PL2/01/1282) was granted for the retention of a weighbridge, weighbridge cabin and alterations to existing buildings.

In 2003 permission (PL/02/1200) was granted for the alteration and extension to an existing building, new amenities building, a new septic tank and associated site development. In 2003, permission (PL/03/222) for a civic amenity area with public recycling facilities was granted.

In 2009, permission (PL2/08/852) was granted for the revision of the site boundary, expansion of the office, upgrade of the drainage and wastewater treatment systems, an increase in the annual waste inputs from 24,000 tonnes to 50,000 tonnes and the amendment of the opening hours. In 2013 permission (PL2/12/264) was granted for an increase in the annual waste inputs from 50,000 tonnes to 60,000 tonnes.

2.4 Waste Management Policy

2.4.1 National Waste Management Policy

The foundation policy statement on waste management “*Changing Our Ways*” was published by the Department of the Environment and Local Government in September 1998. This statement firmly bases national policy on the EU Waste Management Hierarchy. In descending order, the current preference is: -

- Prevention;
- Preparing for Reuse;
- Recycling;
- Other Recovery (including energy recovery);and
- Disposal

The 2002 policy statement ‘*Preventing and Recycling Waste - Delivering Change*’ identified initiatives to achieve progress at the top of the Waste Hierarchy to prevent waste arising and increase recycling rates.

In ‘*Waste Management – Taking Stock and Moving Forward*’ 2004, the significant improvement in recycling rates achieved since 1998 were recognised, but the need for further expansion was emphasised. The statement confirmed that Ireland’s national policy approach remained ‘*grounded in the concept of integrated waste management, based on the internationally recognised waste hierarchy, designed to achieve, by 2013, the ambitious targets set out in Changing Our Ways*’.

In 2006, the National Biodegradable Waste Strategy was published. Its primary focus was to achieve the targets set for the quantity of biodegradable municipal waste that can be landfilled under the Landfill Directive (1999/31/EC). A key element was the collection of source separated household and commercial food waste or “brown bin” material and its treatment, primarily biological treatment.

In 2008, the Government initiated a review of waste policy, to identify possible changes to policy at national level that would assist Ireland to move towards a sustainable resource and waste policy, including minimising the creation of waste and self-sufficiency in the reuse and recycling of materials. The review also addressed the application of alternative technologies for waste management.

The EU Waste Framework Directive 2008/98/EC was introduced to co-ordinate waste management in Member States, with the objective of limiting the generation of waste and optimising the organisation of waste treatment and disposal. The Directive, which also established the first EU wide recycling targets, was transposed into Irish Law by the European Communities (Waste Directive) Regulations 2011 (S. I. No.126 of 2011).

In response, the Government initiated a further review of national waste policy, one of whose objectives was to provide the necessary measures to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Directive. A consultation document issued by the Department stated that classification of a treatment process as a recovery activity depends on the level of success in recovering material or producing heat and/or power.

The most recent Policy Statement '*A Resource Opportunity Waste Management Policy In Ireland 2012*' is also based on the EU Waste Management Hierarchy and encompasses a range of measures across all tiers namely, prevention and minimisation, reuse, recycling, recovery and disposal.

The Statement sets out how the higher tiers can reduce Ireland's reliance on finite resources, virtually eliminate reliance on landfill and minimise the impact of waste management on the environment. It is a policy objective that when waste is generated the maximum value must be extracted from it by ensuring that it is reused, recycled or recovered.

2.4.2 Waste Management Plan for the Eastern-Midland Region

The Waste Management Plan for the Midlands Region 2005-2010, which is referenced in the Offaly County Development Plan, was replaced by the Waste Management Plan for the Eastern- Midland Region 2015-2021 in May 2015.

The region appears to have significant available capacity for the pre-treatment of Municipal Solid Waste (MSW) and Construction and Demolition (C&D) wastes. However, significant capacity is authorised in the region that is not either currently built, or available at the level authorised. The issuing of future authorisations must take account of the existing scale of supply of authorised and available capacity, as well as the needs of the market.

A fundamental principle of the strategic approach over the duration of the Plan is opportunity and growth for existing industry operators, social enterprises, secondary material enterprises and start-up companies.

Policy E1. Future authorisations by the local authorities, the EPA and An Bord Pleanála of pre-treatment capacity in the region must take account of the authorised and available capacity in the market, while being satisfied the type of processing activity being proposed meets the requirements of Policy E2.

Policy E2. The future authorisation of pre-treatment activities by local authorities over the plan period will be contingent on the operator demonstrating that the treatment is necessary and the proposed activities will improve the quality and add value to the output materials generated at the site.

The underlying strategic approach of the Plan aims to improve the quality of waste along the entire treatment supply chain. Pre-treatment capacities are typically the first destination for waste and are vital in extracting and generating high-quality outputs for onward treatment.

Consideration of pre-treatment authorised and available capacity at existing sites in the region prior to authorisation of future pre-treatment activities may have a positive effect on the environment in terms of potentially reducing the scale of development of new greenfield sites.

The Plan does not identify specific technologies and/or locations for future waste related activities. Rather it highlights capacity need and so guidance on proper siting of future waste-related activities (including expansion of existing facilities) is the most appropriate method of the planning hierarchy to address the potential for impact on the environment.

The role of the waste industry in achieving the Plan's objectives is discussed in Section 17.2.8, which in particular is to;

- Cooperate with designated lead authorities and local authorities to implement the objectives, policies, actions and targets contained in the plan
- Provide sustainable waste management infrastructure/technology in keeping with the waste hierarchy and the principle of self sufficiency
- Comply with waste collection permit conditions
- Comply with permit/Licence conditions
- Promote high standards of health and safety in the industry
- Communicate with the public to encourage better waste management behaviours and better quality recycling
- Participate in relevant forums and consultations with the EPA, Government Departments and the local authorities
- Share expertise in the form of organising and participating in waste sector workshops, seminars and conferences

2.4.3 Compliance with Policy Objectives

The proposed change is consistent with objectives of the County Development Plan, Tullamore Town and Environs Plan and current national and regional waste policy objectives, as it will increase the pre-treatment capacity for municipal solid waste to get the maximum value from the waste and will contribute to the achievement and maintenance of national and regional recycling and recovery targets.

2.5 Energy Policy

EU Directive 2001/77/EC sets Ireland a national target of sourcing 16% of all energy consumption from renewables by 2020. Potential energy sources, such as non-recyclable combustible waste, can be processed to produce alternatives to fossil fuels and assist in achieving the target.

2.6 Climate Change

The National Climate Change Strategy charts the way to achieve and maintain reductions in greenhouse gas emissions under the Kyoto Protocol. In 2009, the EU Commission agreed a package of proposals to deliver on the EU's commitments to fight climate change and promote renewable energy up to 2020 and beyond.

The package seeks to achieve a 20% reduction in total EU greenhouse gas emissions by 2020 (relative to 1990 levels) and at the same time, to increase to 20% the amount of renewables in energy consumption.

To meet the 2020 target, it is essential that greenhouse gases emissions are reduced at a national level and the waste sector must contribute to this reduction. The diversion of biodegradable waste from landfill reduces methane emissions, while fuel manufactured from non-recyclable wastes replaces fossil fuels.

2.7 Need for the Development

The existing facility is a key element of the AES waste management infrastructure in the Eastern-Midlands Region and the waste acceptance limits set in the current planning permission and EPA Licence prevents AES from expanding its waste recovery and recycling capacity in its customer catchment area.

3 ALTERNATIVES EXAMINED

3.1 Introduction

This Chapter describes the reasonable alternatives to the proposed development that were considered, including site location, treatment plant technologies and configurations, and a 'Do Nothing' scenario.

3.2 Alternatives

The facility is specifically designed and has established use for waste activities and it has the capacity to accommodate the proposed increase in annual waste inputs. The features that render it suitable for the proposed development are:

- Existing authorisations to accept and process solid non-hazardous waste;
- Readily accessible location for AES's existing and target customer base;
- Accommodate the proposed increase in wastes without the need for any additional buildings, alterations to the existing infrastructure, or the provision of additional waste treatment equipment.
- Existing ground conditions (soil type/geology/hydrology) and distances from sensitive environmental receptors minimise the risk of unexpected emissions give rise to pollution.

The only alternative to the proposed development is to construct a new waste management facility at a different location. This would require the acquisition of land, the construction of new waste processing buildings and supporting infrastructure (offices, maintenance workshops, weighbridge) and the provision of new site services (surface water, foul water, power, water supply and security).

The development of a new facility offers no environmental advantages compared to the proposed expansion of waste acceptance rates at the existing facility, which has an established commercial/industrial use.

3.3 The Do Nothing Alternative

Without the implementation of the project the facility will continue to operate in its current configuration and AES will not be able to expand its waste collection, recovery and recycling capacity.

4 SITE DESCRIPTION

4.1 Introduction

This Chapter presents an overview of the existing facility location, layout and method of operation and the proposed development. More information on the absorption capacity of the natural environment is presented in Chapters 5 to 16, which also assess the impacts associated with the existing operations and the proposed change.

4.2 Site Location

The facility is located in the Cappincur Industrial Estate, approximately 2 km east of Tullamore Town (Figure 4.1).

4.3 Site Layout

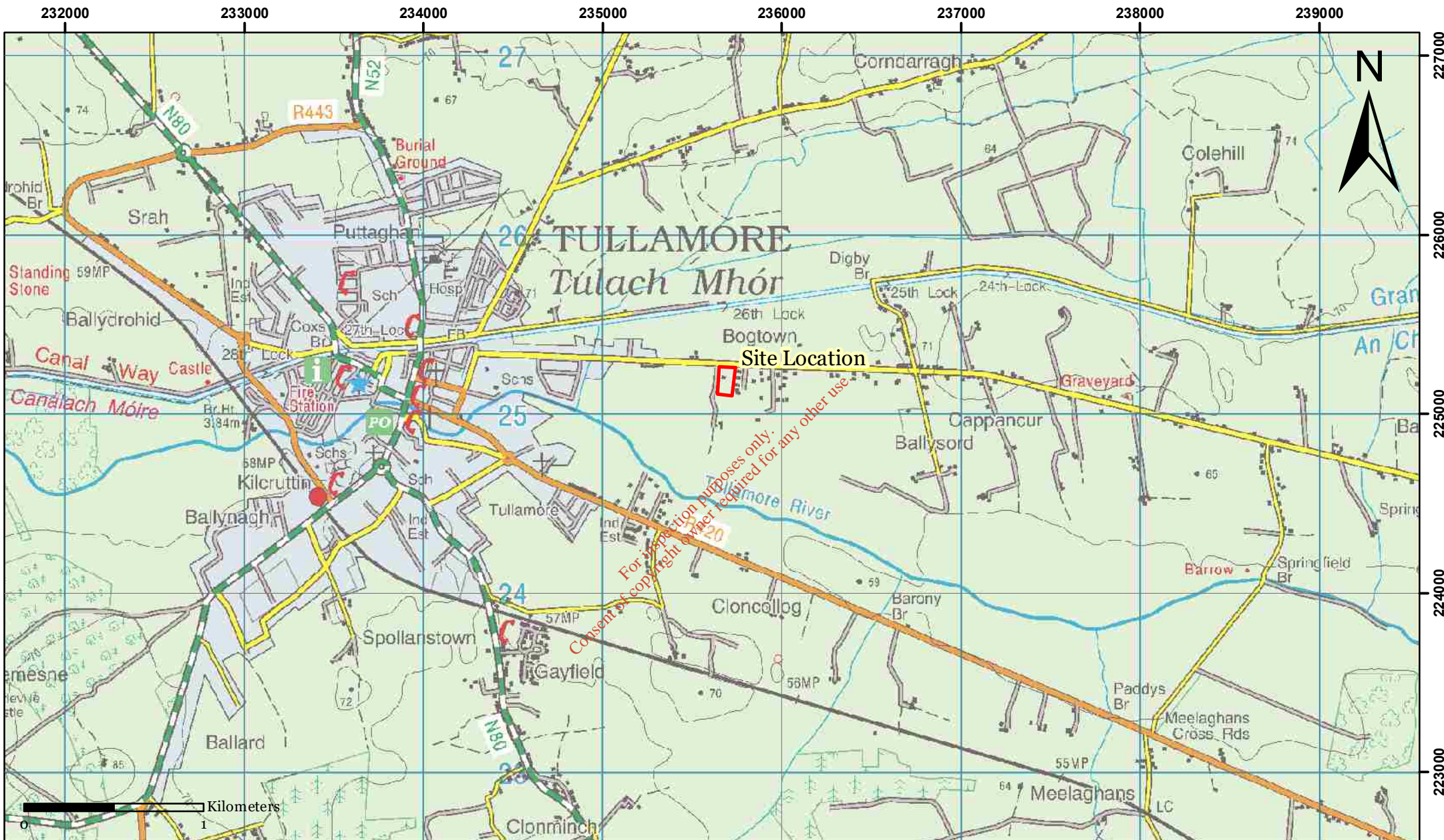
The facility encompasses 1.16 hectares and is accessed from the local Daingean Road via a gate at the north-west corner of the site. It comprises a Process Building (3,160m²), Welfare Building (80m²) a Site Office (244m²) and open yards (8,182m²), as shown on Drawing No. CW-AEST-12. The open yards are entirely paved and there is a perimeter kerb along the eastern site boundary.

4.4 Site Security

The entrance is secured by a steel roller gate, a 3m high concrete wall and palisade fencing, which extends around the entire boundary. A closed circuit television (CCTV) is used to monitor the site perimeter and yards.

4.5 Surrounding Land Use

The site is in the western edge of the Cappincur Industrial Estate. The land use in the vicinity is shown on Figure 4.2. The Offaly County Council Dog Pound is directly to the south and is accessed via a roadway that forms the western boundary. The lands to the north and south are in agricultural use. To the west of the access road to the Dog Pound is the N52 National Secondary Route. The closest residential dwellings are individual houses to the north-east of the site, north of the Daingean Road and a small residential estate ca 300m to the west.



O'Callaghan Moran & Associates,
 Unit 15 Melbourne Business Park,
 Model Farm Road, Cork.
 Tel. (021) 4345366
 email: info@ocallaghanmoran.com

CLIENT

AES

Details:

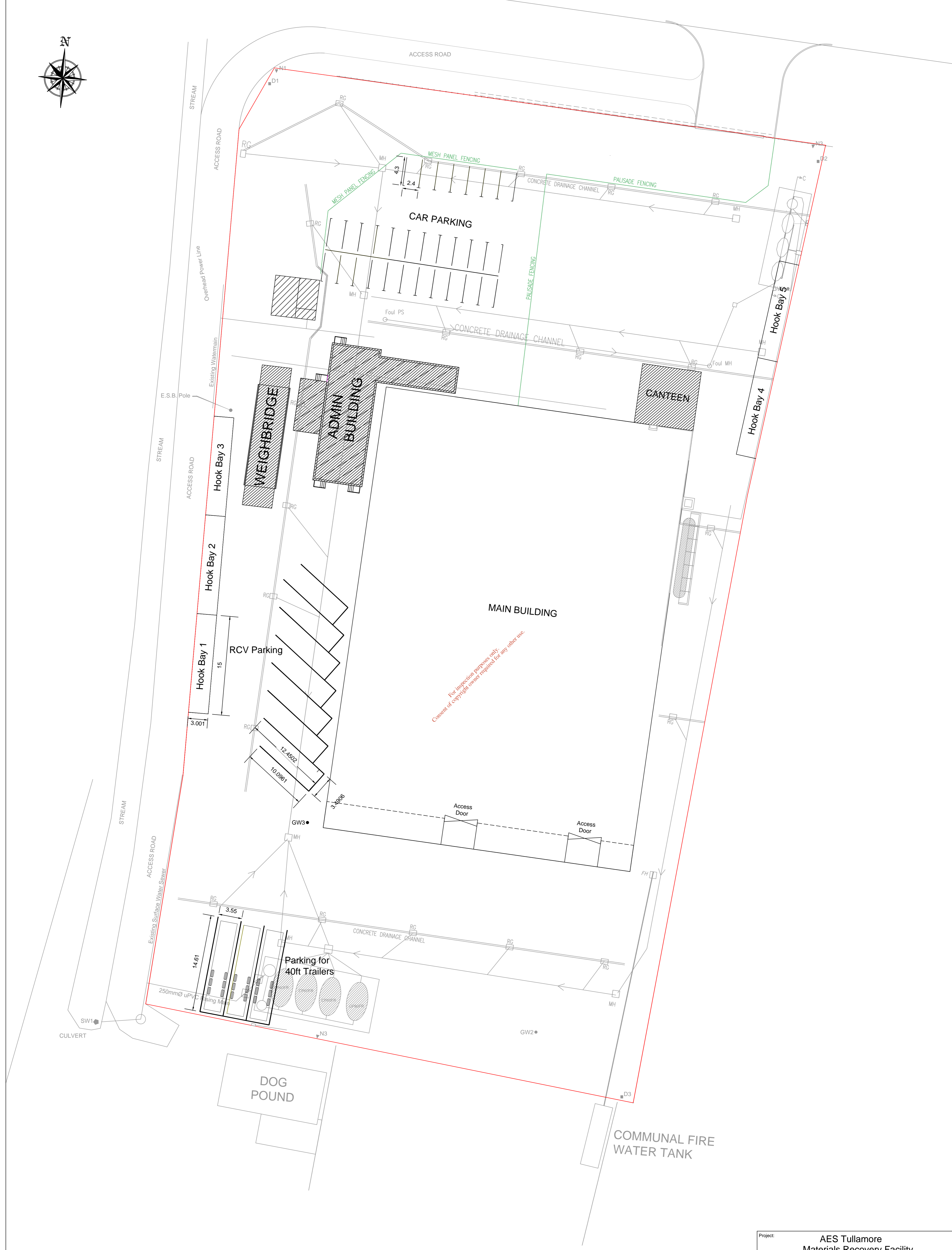
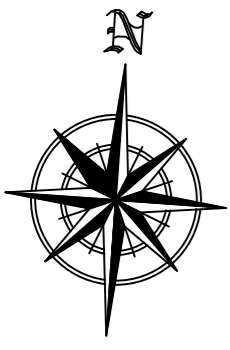
 Site Location

TITLE

Tullamore
 Site Location

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Figure 4.1



- NOTES**
1. All levels refer to Ordnance Survey Datum, Malin Head.
 2. All dimensions in millimeters unless noted otherwise.
 3. Dimensions are not to be scaled off drawings

- LEGEND**
- Surface Water Monitoring Location
 - Ground Water Monitoring Location
 - Dust Monitoring Location
 - ▲ Noise Monitoring Location

REVISION	By	Date	Chkd

Project: **AES Tullamore Materials Recovery Facility**

Title: **Parking Area Locations**




Dimensions in: mm
Scale: 1:250

Drawn By: M.G. 23/05/14

Checked By:
Approved By:
Drawing No. CW-AEST-12 Revision: A Sheet 1 of 1

BORD NA MÓNA
BORD NA MÓNA ENERGY LIMITED
LEABEG, TULLAMORE CO. OFFALY
Tel. 057 9345900. Fax. 057 9345160



 <p>O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	CLIENT	AES	Details:  1km Radius  Site Location
	TITLE	Tullamore Surrounding Land Use	

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Figure 4.2

4.6 Services

The electricity supply is a 38 kV line with a pole mounted transformer located in the south-west corner of the site. A diesel fuelled generator is used to power air compressors used in the sorting line inside the Process Building. The water supply is provided by a 1/2" water main from the Ballinagar Group Water Scheme.

Sanitary wastewater from the Welfare Building is treated on-site in a Moving Bed Biological reactor (MBBR) wastewater treatment system. The treated effluent is pumped to a chamber (27m³) in an above ground holding tank located at the north-east side of the Process Building. A sump inside the Process Building collects floor wash water and the contents are pumped to a second chamber (3m³) in the holding tank.

The tank is fitted with a high level alarm and the contents are sent for treatment at the Irish Water wastewater treatment plant serving Tullamore. The wastewater is subject to regular testing to confirm it is suitable for treatment in the Irish Water plant.

Fire water is stored in two above ground tanks outside the south-west corner of the site, and which serve as communal tanks for the Industrial Estate. Each tank has a capacity of 53m³ and there is a gravity feed to a fire hydrant at the south-eastern corner of the Process Building.

4.7 Facility Management & Staffing

Employee numbers vary seasonally from between thirty and seventy, including management, administration, general operatives, drivers and maintenance staff. The Facility Manager has overall responsibility for operations, with designated responsibilities for performance and compliance support assigned to an Environmental Officer.

AES has a NSAI accredited Integrated Management System incorporating Environmental (ISO 14001:2004), Health & Safety (OHSAS 18001) and Quality (ISO9001:2007). These management systems are audited annually.

The key elements of the Environmental Management System comprise identifying environmental aspects associated with site activities; the determination of suitable operational controls (engineering and administrative); the identification of pertinent legal requirements; definition and implementation of objectives and targets; ongoing monitoring of performance and compliance; emergency planning, and regular management review of performance.

4.8 Waste Types & Quantities

The current planning permission and EPA Licence authorise the acceptance of 60,000 tonnes of waste annually comprising:

- Municipal Solid Waste 27,200 tonnes,
- Commercial and Industrial 28,000 tonnes,
- Construction & Demolition (C&D) 4,800 tonnes.

4.9 Waste Activities

The operational hours are 06:00 to 00:00 Monday to Saturday and 07.00 to 23:00 on Sundays. AES accepts mixed dry recyclables, residual household and commercial waste, and construction and demolition waste.

The EPA Licence requires the facility to comply with the Best Available Techniques (BAT) for the waste management sector.

All incoming waste is subject to documented waste acceptance procedures that have been approved by the EPA. Only waste delivered by haulers that have up to date Waste Collection Permits is accepted. When a delivery vehicle arrives it is weighed at the weighbridge, the vehicle registration number recorded and a weight docket is printed.

After weighing, the vehicles drive to the Process Building where the waste is off-loaded and visually inspected. Unsuitable wastes are moved to a designated Quarantine Area where it is stored before being sent to appropriately licensed disposal/recovery facilities.

The residual waste is typically delivered in rear end loaders. It is off-loaded onto the building floor and then re-loaded into articulated trailers and sent off-site for treatment. The construction and demolition wastes are typically delivered in skips. These are tipped on the floor and the waste is then segregated to remove wood and metal from the rubble, with the segregated materials sent off-site for further treatment.

The mixed dry recyclables, including newspapers, plastics, cardboard, etc. are deposited on the floor of building and then loaded onto a conveyor that feeds a picking line where the different types are separated and then baled. The bales are stored in the yard to the west and south-west of the Process Building pending consignment to recycling plants. Wheelie bins of various sizes and empty skips are also stored in the yards.

4.10 Plant and Equipment

The following mobile and stationary processing plant and equipment are used:

- 1 No. Cherry Picker
- 1 No. Road Sweeper
- 2 No. Bobcats
- 3 No. Forktrucks

1 No. Baler

1 No. Shredder (Paper)

1 No. Shunter

1 No. Processing Line comprising conveyors, manual picking line, magnets and eddy current separators.

1 No. Generator

2 No. Compressors

1 No. Wheelwash

4.11 Oil / Chemical Storage

Operations involve the storage and handling of diesel, hydraulic and lubricating oils. Diesel for the waste collection vehicles is stored in a 44,000 litre above ground double skinned steel tank. The associated dispensing unit is fitted with a spill collection tray. Diesel for the site plant is stored in a double skinned above ground plastic tank (2,500 litres) located beside the 44,000 litre tank.

Diesel for the on-site generator, which is located to the rear of the offices at the western side of the Process Building, is stored in an integral 1000 litre tank. Ad Blu for the road vehicles is stored in a double skinned above ground plastic tank (2,500 litres) located beside the site plant diesel tank.

The storage tanks were installed in 2012 are subject to regular integrity assessments and the most recent, which were completed in 2016, confirmed they are fit for purposes.

4.12 Storm Water Drainage

Rainwater run-off from the building roofs is harvested for use on site, with the surplus entering the facility's surface water drains. Rainwater run-off from the yards is collected in surface channels that have a series of gullies that connect to underground sewer lines (150mm diameter). These sewers connect to 4 No. Class 1 Full retention oil interceptors located near the southern site boundary.

Each interceptor has a working capacity of 20.5m³. After passing through the interceptors, the water enters a pump sump fitted with a sonic level detector and is pumped to a man-made drain at the south-east site boundary. The drain joins the Tullamore River approximately 750 km south of the facility.

4.13 Resource Consumption and Energy Efficiency.

Site operations involve the consumption of electricity and fossil fuels. The resource usage in 2015 and 2016 is in Table 4.1.

Table 4.1 Estimates of Resources Used (2015-2016)

Resources	2015	2016
Light fuel oil	535,560 l	526,380l
Electricity	305.43 MWh	413.38 MWh

The increase in electricity usage was due to additional metering drum and infeed conveyor installed during mid-2015 and operation of evening shift ran for the duration of 2016.

4.14 Waste Generation

Waste generated includes office and canteen waste, waste oils and spent batteries. AES implements waste prevention, minimisation and segregation procedures to minimise the amounts of wastes arising and ensure that as much as possible is recycled and recovered. Waste oils and spent batteries are sent for treatment at authorised facilities.

4.15 Nuisance Control

AES implements the nuisance control measures specified in the EPA Licence to mitigate the impacts of noise, dust, litter and odours so as to minimise the risk of site activities being a source of nuisance to neighbours and members of the general public.

The Licence requires the establishment and maintenance of an odour management system for the Process Building and, if considered necessary by the EPA, the installation of an appropriate negative air pressure system and odour abatement system. The EPA has not required the installation of this system.

AES has contracted a specialist vermin control company to carry out pest control at the facility. The contractor provides and maintains external bait boxes and also carries out insect control measures as required. Site staff carry out daily nuisance and litter inspections and daily litter picks.

4.16 Incidents and Complaints

There have been no incidents at the site that have given rise to surface water, soil or groundwater pollution. In 2016 there were three minor environmental incidents, which related to an exceedance of the surface water emission limits; however these did not result in pollution in the drain.

AES has a documented complaints procedure to ensure that any complaints received from neighbours and the general public are fully investigated and addressed. No complaints were received in 2016.

4.17 Safety and Hazard Control

AES has prepared an Accident Prevention Policy (APP) and Emergency Response Procedure (ERP) and copies are in Appendix 1. The APP specified the measures in place to minimise the risk of accidents and the ERP specifies response actions to deal quickly and efficiently with all foreseeable major incidents.

All facility personnel and visitors are obliged to comply with AES's safety guidelines regarding access to and from the facility and on-site traffic movement. All site personnel are provided with and are obliged to wear, personal protective equipment (PPE) appropriate for their particular functions. PPE includes facemasks, gloves, safety glasses, steel-toed footwear, overalls, reflective jackets and helmets.

4.17.1 Fire Control

A Fire Prevention strategy has been prepared and adopted and a copy is in Appendix 2. Fires are prevented by operating best practice including:

- Inspection of loads at the weighbridge
- Control of loads to ensure no burning or smouldering loads enter the facility
- Designation of smoking/non-smoking areas

There are flame and carbon monoxide detectors inside the Process Building that are connected to a fire panel in the Site Office. There is fire hydrant located outside the south-eastern corner of the Process Building, which is connected to the communal fire water tank that serve the Industrial Estate. Hose reels are located inside the building and, in addition, portable fire extinguishers are located at various points throughout the facility.

4.18 Environmental Liability Risk Assessment

The IEL requires AES to prepare an Environmental Liability Risk Assessment (ELRA) that identifies all the potential incidents and accidents that might occur at the site; assess the associated environmental liabilities, including impacts on soil, groundwater, surface water, and the local population; detail a risk management plan to prevent or minimise the risk, and quantify the scale and cost of the appropriate incident response and post incident clean-up measures. AES has prepared the ELRA and this has been approved by the EPA.

4.19 Emissions

Potential and actual emissions associated with the waste activities include, rainwater run-off, sanitary and process wastewater, contaminated run-off, dust, noise and odours. As referred to above, rainwater run-off from the building roof is harvested for use on site, with the

remaining run-off discharged to a drain at the south-west corner of the site via a series of oil interceptors.

Sanitary wastewater is treated in the on-site wastewater treatment system and the treated effluent is pumped to the holding tank, from where it is removed for treatment at the Irish Water wastewater treatment plant. Wash water from the floor of the Process Building is also stored in the holding tank are pumped to the holding tank.

The noise sources include waste offloading, waste sorting, baling and vehicle loading. The waste acceptance and processing are potential sources of odours, and vehicle movements are potential sources of dust.

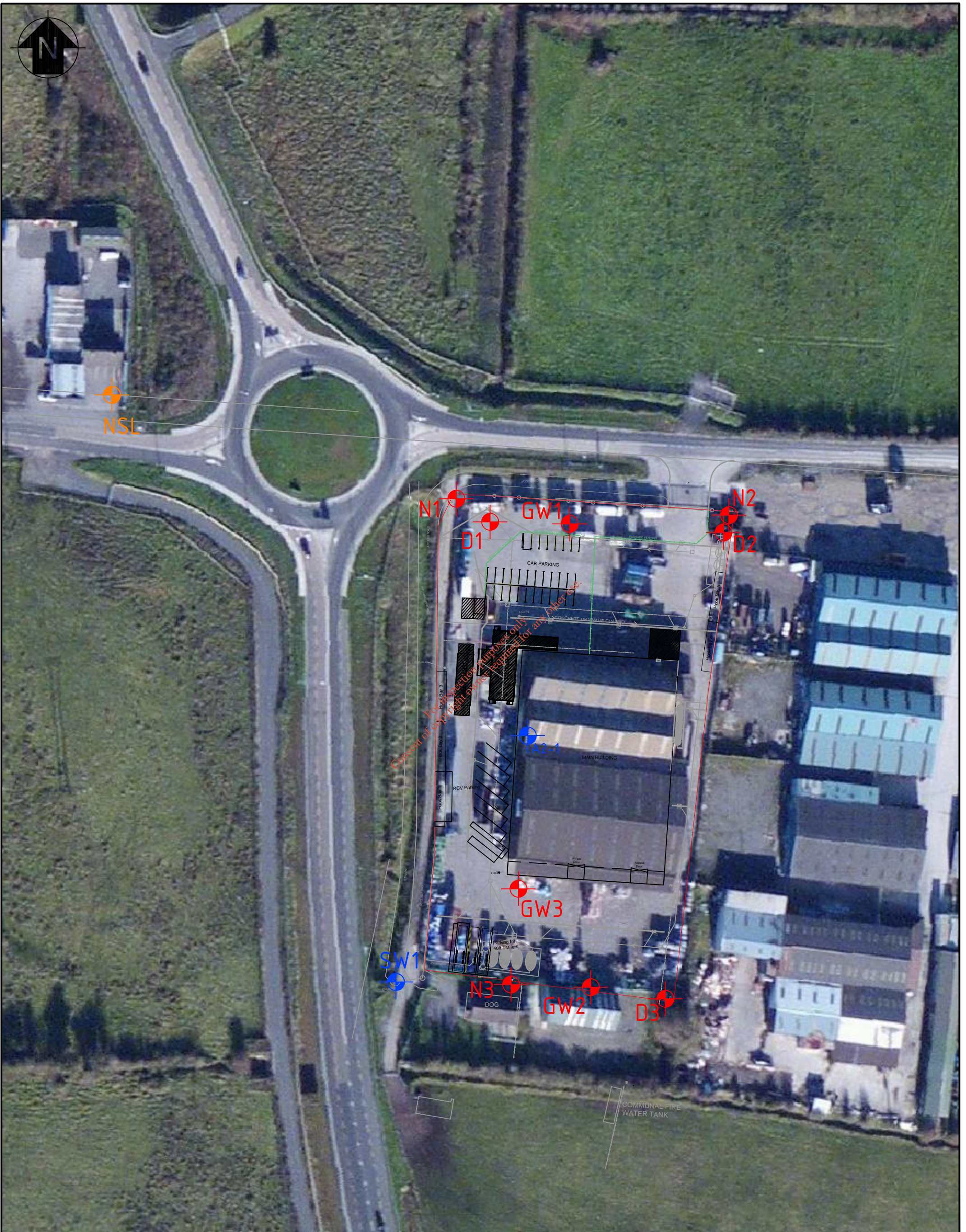
Environmental monitoring is carried out in accordance with Condition 6 and Schedule C of the EPA Licence, which requires the following:


- Noise Quarterly
- Dust Deposition Three times per year
- Storm Water Weekly (Visual Inspection) & Quarterly (Monitoring)
- Tankered effluent Quarterly
- Groundwater Quarterly and Annually (for additional parameters)

The monitoring locations are shown on Figure 4.3. The results of the monitoring and the assessment of the impacts are discussed in the following Chapters.

4.20 Proposed Development

It is proposed to increase the amount of waste that can be accepted from 60,000 tonnes / annum to 80,000 tonnes. There will be no changes to the types of waste accepted and the proposed increase does not require either any additional infrastructural work, or the provision of new plant and equipment.



 <p>O' Callaghan Moran & Associates. Unit 15 Melbourne Business Park Model Farm Road, Cork, Ireland. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	CLIENT	Bord na Mona	FIGURE No. 4.3
	TITLE	Monitoring Points	SCALE NTS

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5 CLIMATE

5.1 Introduction

This Chapter describes the climate at the facility and the effects the proposed development will have on it, including a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual impacts.

5.2 Methodology

The assessment was based on meteorological data in the original EIS prepared in 2008, data obtained from Met Eireann Birr Meteorological Station, which is 36 km to the south-south-west and the EPA's 2016 report on climate change.

5.3 Receiving Environment

The annual average rainfall, temperature, humidity and wind speed and direction for the Birr Weather Station is presented in Table 5.1. The climate in the area is mild and wet, with the prevailing wind direction from the south and south-west.

Table 5.1 Meteorological Data: (1961-1990)

Rainfall – Annual average Average maximum month (December) Average minimum month (April)	804.2 mm 78.6 mm 52.5 mm
Temperature Mean Daily Mean Monthly Maximum (July) Mean Monthly Minimum (January & February)	9.3°C 19.2°C 1.8°C
Relative Humidity Mean at 0900UTC Mean at 1500UTC	85% 73%
Wind Prevailing direction	South and South West

5.4 Impacts

It is now internationally accepted that there is a link between greenhouse gases (GHG) and climate change. Direct GHG emissions are associated with on-site processing and the off-site electricity power generation stations, while indirect emissions are linked to heavy goods vehicle movements transferring the wastes to and from the site.

The increased waste inputs and the associated additional processing will result in an increase in electricity consumption, with a consequent increase in direct GHG emissions, which in this case will predominantly comprise carbon dioxide (CO₂). There will also be an increase in indirect emissions associated with the additional traffic movements.

The predicted energy usage when the facility is operating at full capacity is in Table 5.2, which also includes estimates of the associated carbon dioxide emissions calculated using conversion factors published by the Sustainable Energy Authority of Ireland and the US Environmental Protection Agency.

Table 5.2 Predicted Energy Use Per Annum

Resource	Quantity	Estimated CO ₂ Tonnes/annum
Electricity	305.17 MWh	150
Diesel	669,450 litres	1,546

Under the EU Effort Sharing Decision (Decision No. 406/2009/EC) for 2013-2020, Ireland's 2020 target is to achieve a 20% reduction of non-Emissions Trading Scheme (ETS) sector emissions (i.e. agriculture, transport, residential, commercial, non-energy intensive industry and waste) compared to 2005 levels, with annual binding limits set for each year over the period.

In 2016 the EPA, which is the responsible authority for reporting on climate change, projected that between 2013-2020 Ireland will cumulatively exceed its compliance obligations by 12 million tonnes of CO₂ equivalent under the 'With Measures' scenario and 3 million tonnes under the 'With Additional Measures' scenario.

Emissions from agriculture and transport are key determinands in meeting the targets, and emissions from both sectors are projected to increase up to 2020. However, emissions from the waste sector are projected to decrease by 46% by 2020, primarily due to the reduction in the volumes disposed to landfill and an increase in energy recovery.

5.5 Do Nothing Scenario

If the development does not proceed there will be no change in the GHG emissions from the existing operations, but AES will not be able to avail of the opportunity to increase its collection, recovery and recycling capacity.

5.6 Prevention & Mitigation Measures

Waste processing requires significant energy inputs and energy costs are a significant element of the business overheads. In 2009 AES conducted an energy audit of the site and the

recommendations were implemented. AES is currently rolling out ISO 5001 Energy Management thorough out the Business Unit.

Diesel fuelled plant engines are only turned on when wastes are being processed and AES has a policy of not allowing engine idling. This also applies to heavy goods vehicles accessing the facility.

5.7 Assessment of Impacts

All GHG emissions, regardless of the source, contribute to a cumulative negative environmental effect, unless offset by mitigation or compensatory measures. The proposed development will result in increased energy consumption, with a consequent increase in GHG emissions.

AES has incorporated mitigation measures into the design (energy efficient equipment) and operation (energy audits) of the existing operations and these measures will continue to apply.

5.8 Residual Impacts

The proposed change, will have an on-going, imperceptible, negative, impact on climate.

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6 TRAFFIC & TRANSPORT

6.1 Introduction

This Chapter describes existing road traffic conditions and the impacts the proposed development will have on the receiving environment (local and regional road network), including a 'do nothing' scenario. It identifies the mitigation measures that will be implemented to reduce the significance of the impacts and assesses the residual impacts.

6.2 Methodology

The assessment of impacts is based on the Traffic and Transport Assessment (TTA) and Road Safety Audit (RSA) prepared by Tobin Consulting Engineers (Tobins). The full TTA and RSA reports, which describe the methodologies applied, are in Appendix 3 and the findings are summarised herein. A detailed assessment of the traffic impacts should be based on the TTA and RSA reports.

Tobins conducted a scoping exercise with Offaly County Council that identified the following junctions for assessment; the existing site access (Junction 1) and the Cappincur Roundabout (Junction 2). The assessment years include the traffic survey year 2016, the operating year 2017 and the design years 2022 and 2032 for both the morning (AM) and afternoon (PM) peak hours.

Manual classified traffic surveys were carried out to determine the existing traffic flows on 20/06/2016 at Junction 1, and 29/09/2016 at Junction 2. The surveys covered turning movements at the junctions and distinguished between cars, light good vehicles, buses and heavy good vehicles.

6.3 Receiving Environment

6.3.1 Surrounding Land Use

The land use within 1000m of the site is shown on Figure 4.2. The facility is at the western end of the Cappincur Industrial Estate. The Offaly County Council Dog Pound adjoins the southern boundary and is accessed by a local road that runs along the western site boundary.

6.3.2 Regional and Local Road Network

The site is to the south of and accessed off the L2025, which runs east-west. The L2025 intersects the N52 running north-south, approximately 80 m to the west of the site entrance at the Cappincur Roundabout (Junction 2). The designated speed limit on the N52 is 100km/h.

It has a two-way single carriageway with hard shoulders, grass verges and safety barriers and flares to facilitate two lanes approaching the Roundabout.

The L2025 is a two-way single carriageway flaring to facilitate two approaching traffic lanes at the Roundabout. The L2025 east leads towards the site and on to Ballinagar, with the L2025 west leading to Tullamore Town Centre. The L2025 has a designated speed limit of 50 km/h on the Tullamore side of the Roundabout and a 60 km/h designation on the site access side.

6.3.3 Site Access (Junction 1)

Vehicles arrive and leave from the west via the Cappincur Roundabout and east along the L-2025. Junction 1's minor arm has a dual access function, servicing the AES facility by a straight through movement and with a right turn onto the local access road to the Dog Pound. The site access has a 12.4m wide gate located 15.0m from the carriageway edge of the L2025. The access road to the Dog Pound has a carriageway width of 3.8m.

The L-2025 is the major arm of Junction 1, distributing traffic to the east towards Ballinagar and west towards Junction 2. In the vicinity of Junction 1, the carriageway is 6.0m wide with 3.0m wide lanes, with grass verge on both sides of the carriageway to the west and hard shoulder / grass verge to the east.

6.3.4 Cappincur Roundabout (Junction 2)

Junction 2, is a 4 arm roundabout junction. The major arm flows north / south through the junction via the N52 linking to the M6 to the north and the N80 to the south. The L-2025 forms the minor arms of the junction, with the two-way single carriageway flaring before the Yield lines on the approaches.

6.3.5 Trip Generation and Distribution

Seasonal Adjustment

The traffic count information from the surveys conducted in June and September was compared to the annual average daily traffic (AADT) for the previous year. Traffic on the day of the survey in June was lower than the yearly average, which indicated a maximum seasonal adjustment factor of 1.002 was needed, while the traffic in September was higher than the AADT, and did not require seasonal adjustment.

Baseflow Traffic

A review of the traffic count data for the AM and PM peak hours at a midpoint between the two junctions identified that the traffic varies for both light vehicles (LV) and heavy vehicles (HV). The AM peak hour LV movements are higher in September (Junction 2) than in June. The HV movements are higher in June (Junction 1). The PM peak hour traffic counts show higher movements eastbound from Junction 2 and higher movements westbound from Junction 1 at the midpoint.

On the dates of the surveys, the AES facility was operational and the associated traffic movements were captured by the surveys. Between June 2015 and May 2016 the facility accepted 57,247 tonnes of waste. The variation in traffic counts corresponds with the AES weighbridge records for June. This indicates that the use of the actual highest movement flow low is more robust than seasonal adjustment.

Opening, Operational and Design Years

The capacity assessment is based on the existing traffic conditions and the forecasts for the operating year in 2017, the design year 2022 (+5 years) and design year 2032 (+ 15 years).

6.4 Trip Generation

A detailed assessment of the trip generation associated with the existing and proposed development is in Section 5.4.1.2 and Section 5.4.1.3 of the TTA. The trip generation for the proposed development is based on the facility weighbridge records and a pro rata increase in waste acceptance from 60,000 tonnes/annum to 80,000 tonnes.

6.5 Impacts

6.5.1 Junction Analysis

Junction 1 was modelled using JUNCTION 9 ARCADY and Junction 2 using JUNCTION 9 ARCADY for traffic generation for the existing and proposed development.

In both the AM and PM peak hours Junction 1 will operate below the maximum desired Ratio to Flow Capacity (RFC) of 0.85, and will be below capacity for all assessment years both for the existing and proposed operations. Junction 2, in both the AM and PM peak hours, will also operate below the maximum desired RFC of 0.85 and will be below capacity for all assessment years for both scenarios.

At the scoping stage, Offaly County Council raised concerns over queuing at the Cappincur Roundabout impacting on the site access. The queue length at Arm B of the Roundabout, L-2025 westbound towards the roundabout junction, in the worst case scenario (i.e. proposed development operations in the AM peak design year of 2032), will be 1.4 vehicles, corresponding to a queue length of 8.05m, assuming a vehicle length of 5.75m. As the distance between the Yield line on the L-2025 at the Roundabout and the site access is 80m, this queue length will not impact on movements entering / exiting the site access.

6.5.2 Link Capacity

The L-2025 can be classified as road type UAP3, 'variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings, more than 2 with side roads per km'. The recommended one-way hourly capacity for this road type is 900 vehicles for a 6.0m carriageway. The predicted maximum hourly one-way flow on the road in the design year of 2032 is 451 vehicles westbound from Junction 1 to Junction 2 during the AM peak. Therefore the road will operate with 50% spare capacity.

The N52 can be classified as road type UAP1, 'high standard single / dual carriageway road carrying predominantly through traffic with limited accesses'. The recommended one-way hourly capacity for this road type is 1,590 vehicles for 2 lanes and carriageway width of 7.3m. The predicted maximum hourly one-way flow on the N52 in the design year of 2032 is 885 vehicles southbound to junction 2 during the PM peak. Therefore the N52 will operate with 44% spare capacity.

6.5.3 Road Safety

A Road Safety Audit at the site access was undertaken, as requested by Offaly County Council. A copy of the audit report is in Appendix 4. The recommended visibility splays of 2.4 x 65 metres (DMURS) for a road with a 60km/h designated speed limit are provided at the site access junction.

The audit identified measures required to clarify vehicle priority at the site access, which include the provision of road signs and road markings in accordance with the Traffic Signs Manual. In addition, the existing signage on the palisade fencing should be removed from the inter-visibility splay.

6.6 Do Nothing Scenario

If the development does not proceed there will be no change in the volumes of traffic associated with the facility.

6.7 Prevention and Mitigation Measures

The visibility splays at the existing site access junction will be maintained and kept free of all obstacles that may cause a visual obstruction. The existing signs on the palisade fencing will be removed to improve visibility.

Stop and Yield signs and associated road markings will be erected at the existing site access and local access road to the Dog Pound to clarify priority.

6.8 Assessment of Impacts

At Junction 1 the predicted traffic for all design years will be below the maximum desired RFC of 0.85 and within capacity for both the AM and PM peaks. The maximum queue length of 0.1 vehicles and maximum delay of 14.34 seconds will occur on the minor arm, with traffic exiting the site onto the L-2025 Daingean Road in the design year 2032 in the AM peak.

At Junction 2 the predicted traffic for all design years will be below the maximum desired RFC of 0.85 and within capacity for both the AM and PM peaks. The maximum queue length of 5.0 vehicles and maximum delay of 20.62 seconds will occur on the northbound approach to the junction along the N52, in the design year 2032 in the AM peak.

The maximum queue length on the westbound approach to Junction 2, passing the site access, will be 1.4 vehicles or 8.05m back from the yield line at the Roundabout. As the distance between the yield line at Junction 2 and the site access is approximately 80m, the queue at the Roundabout will not impact on the site access traffic movements.

6.9 Residual Impacts

The development will result in an increase in traffic movements, but the local road network and junctions have the capacity to accommodate the increase. The development will have an on-going, slight, negative, impact on the road network.

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7 SOILS & GEOLOGY

7.1 Introduction

This Chapter describes the soils and bedrock conditions at the facility and the impacts the proposed change will have on the receiving environment within the site boundary, including a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual impacts.

7.2 Methodology

The assessment took into consideration the Institute of Geologists of Ireland (IGI) 'Guidelines for the Preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013) and the EPA guidelines described in the Introduction. As the proposed development does not involve any ground disturbance a site investigation was not required. A desk study was based on a review of databases maintained by the Geological Survey of Ireland (GSI) and Teagasc.

7.3 Receiving Environment

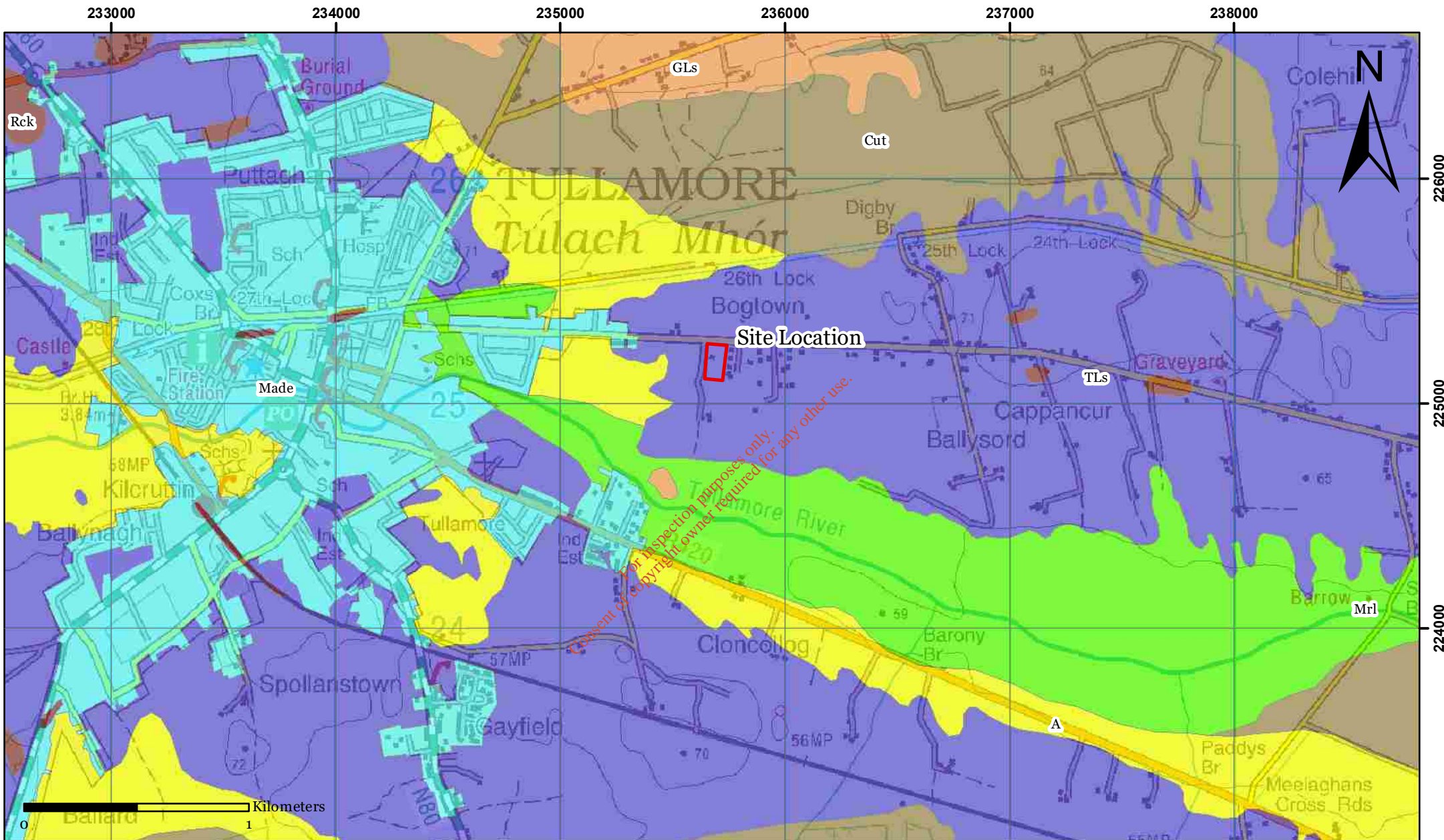
The site encompasses 1.16 ha and is entirely covered by buildings and paved yards.

7.3.1 Soils

The soil distribution is shown on Figure 7.1. The soils are a groundwater gley derived from a moderately coarse to medium textured calcareous drift. The subsoils are a limestone till. Boreholes installed at the site as part of previous investigations confirmed a subsoil depth of between 7 and 9 metres.

7.3.2 Bedrock

The GSI bedrock map (Figure 7.2) indicates the bedrock beneath the site comprises dark limestone and shale of the Lucan Formation.



O'Callaghan Moran & Associates,
 Unit 15 Melbourne Business Park,
 Model Farm Road, Cork.
 Tel. (021) 4345366
 email: info@ocallaghanmoran.com

CLIENT

AES

TITLE

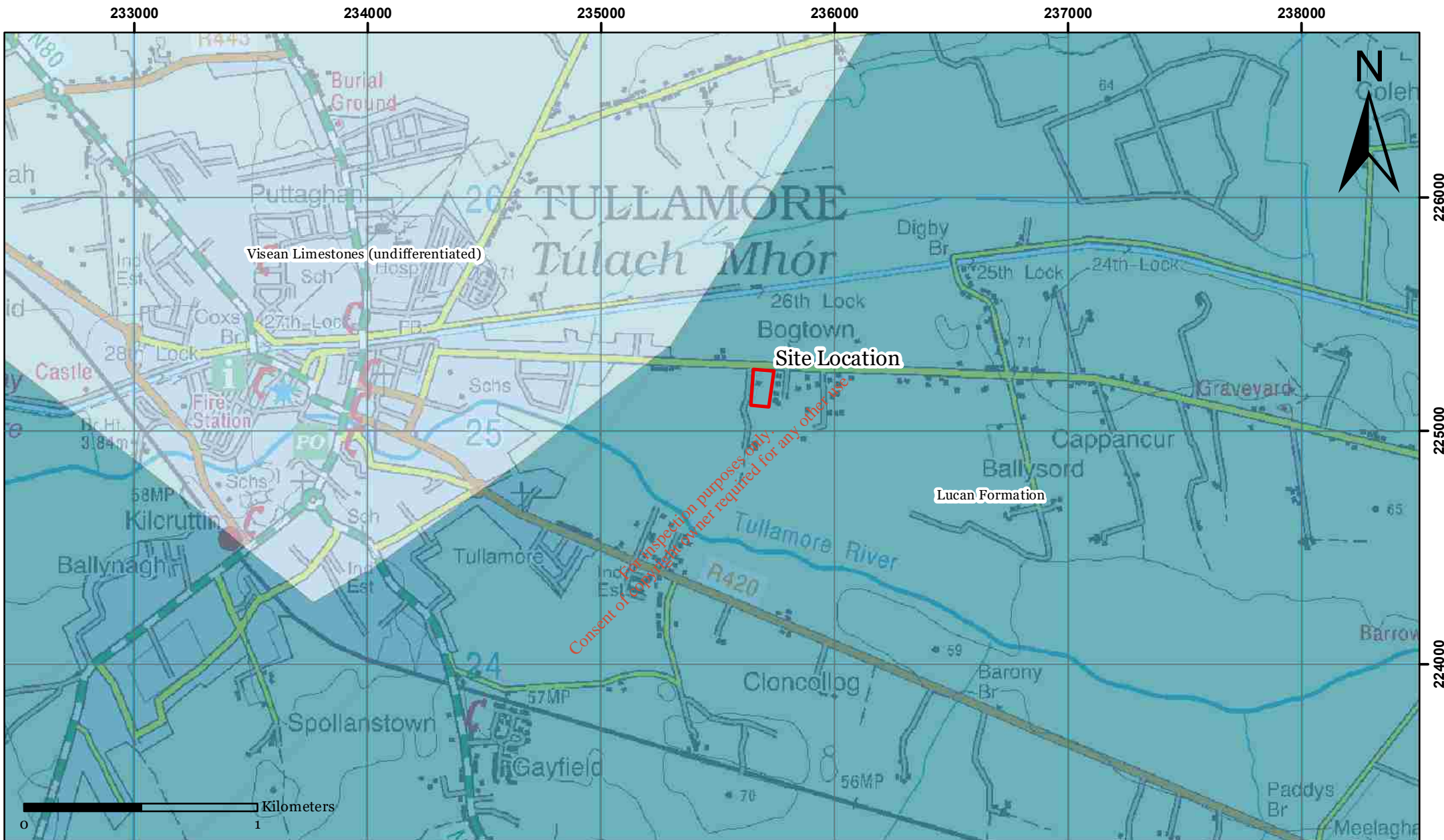
Tullamore
 Subsoils





Details:

- Site Location
- A - Alluvium undifferentiated
- Cut - Cutover Peat
- GLs - Limestone sands and gravels (Carboniferous)
- L - Lake sediments undifferentiated
- Made - Made Ground
- Mrl - Marl (Shell)
- Rck - Bedrock at surface
- TLs - Limestone till (Carboniferous)

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Figure 7.1



 <p>O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	CLIENT	AES	Details:  Site Location  Lucan Formation - Dark limestone & shale (calp)  Visean Limestones (undifferentiated)
	TITLE	Tullamore Bedrock Geology	

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Figure 7.2

7.4 Impacts

The proposed development does not require either any excavation, or construction works that would disturb/remove any subsoils. There are no current direct or indirect emissions to ground and the proposed change will not result in any new emissions.

There is the potential for leaks/spills to occur to ground during the delivery and handling of oil, leaks from the above ground oil storage tanks, leaks from the foul sewer and the above ground wastewater holding tank. The potential pathways to the subsoil and bedrock for contaminants released at the ground surface are infiltration in areas where the paving has been damaged and leaks from the surface water drains.

7.5 Do Nothing Scenario

If the proposed development does not occur the facility will continue to operate as a waste management facility, with no change to the impacts on soil and geology.

7.6 Prevention and Mitigation Measures

The current prevention and mitigation measures include the provision of impermeable paving across the operational areas; inspection and repair as required of the paved areas; the provision and maintenance and integrity assessment of spill containment for the above ground oil and wastewater storage tanks; the routine inspection and survey of the surface water and foul water drainage systems; the adoption of an emergency response procedure, and staff training on appropriate spill response actions.

7.7 Assessment of Impacts

The entire site is and will remain either paved with concrete, or occupied by buildings that prevent infiltration to the subsoil. The proposed change does not involve any ground disturbance. At present there are no direct or indirect emissions to ground and the proposed change will not give rise to any new discharges. The proposed development will have no impact on the soils and geology.

7.8 Residual Impacts

The proposed development, in conjunction with current operations, will have no residual impact on the soils and geology.

8 WATER

This Chapter describes the surface water and the groundwater conditions at the site and the impacts that the proposed development may have on the receiving environment within and outside the site boundary, including a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts, and assesses the residual impacts.

8.1 Methodology

The assessment took into consideration the IGI 'Guidelines for the Preparation of Soils Geology and Hydrogeology Chapters of Environmental Impact Statements' (2013) and the EPA guidelines described in the Introduction.

The assessment of surface waters is based on a review of the South Eastern River Basin District (SERBD) Management Plan and databases maintained by the EPA, the National Parks and Wildlife Service (NPWS), and the Office of Public Works (OPW). The assessment of groundwater is based on a review of SERBD Plan and databases maintained by the GSI, Teagasc, and the EPA.

8.2 Receiving Environment-Surface Water

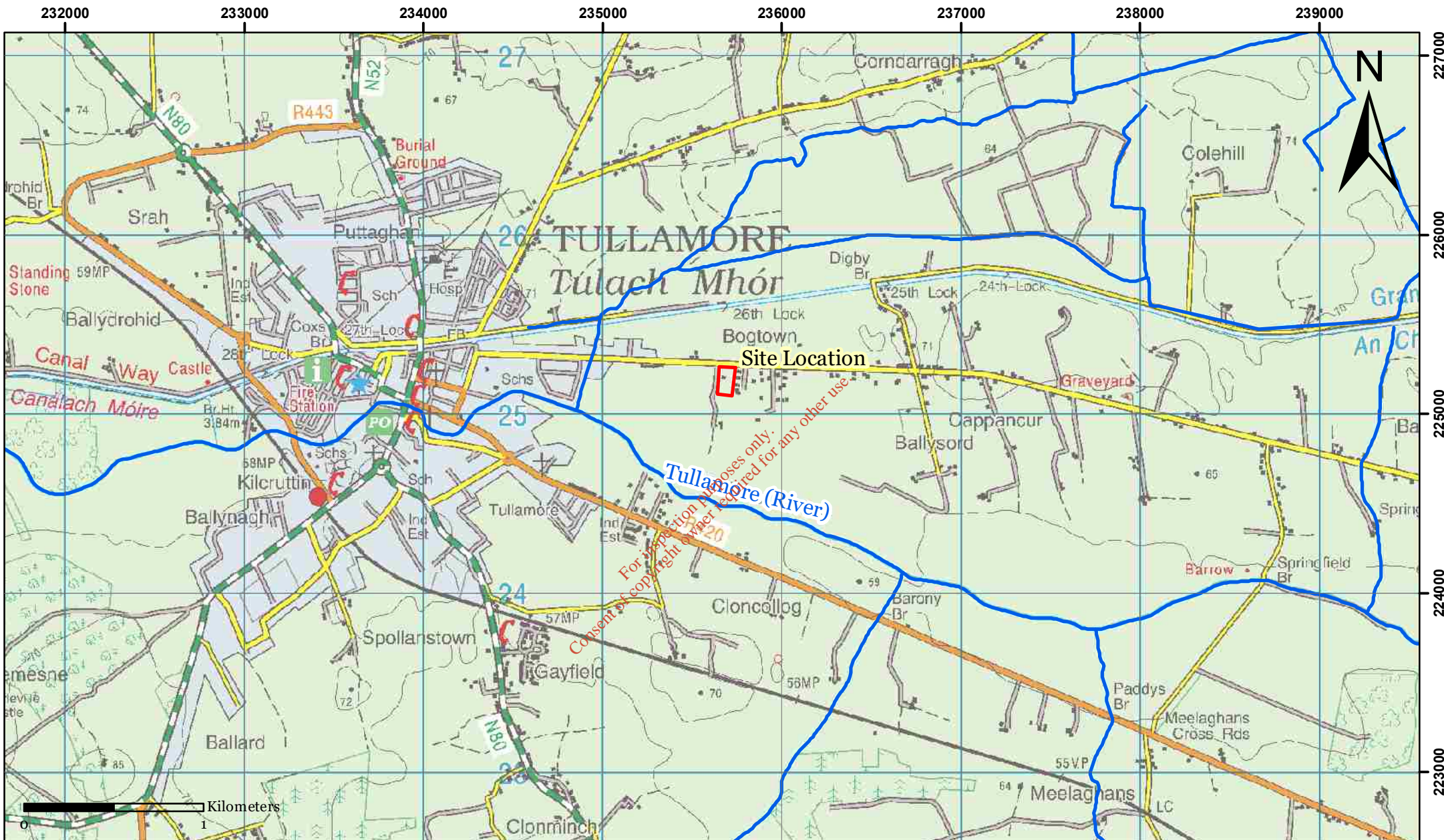
8.2.1 Regional Surface Water Catchment


The regional drainage pattern is shown on Figure 8.1. The site is in the catchment of the Tullamore River which is a tributary of the River Brosna. The Tullamore River is in IE_SH_25_549 Water Management Unit (WMU) designated in the SERBD plan and is part of the 'Tullamore Tributary of Brosna' Water Body.

The SERBD Plan contains reports on the 'Status' of each Water Body. Status means the condition of the water in a watercourse and is defined by its ecological and chemical status, whichever is worse. Waters are ranked in one of five status classes, High, Good, Moderate, Poor and Bad.

The EU Water Framework Directive (WFD) requires measures to ensure waters achieve at least 'Good Status' by 2021, and that their current status does not deteriorate. Where necessary, for example in heavily impacted or modified watercourses, extended deadlines (2027) have been set for achieving the following objectives:-

- Prevent Deterioration
- Restore Good Status
- Reduce Chemical Pollution
- Achieve Protected Areas Objectives



 <p>O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	<p>CLIENT</p> <p style="text-align: center;">AES</p>	<p>Details:</p> <p> Site Location</p> <p> Rivers</p>
<p>This drawing is the property of O'Callaghan Moran & Associates and shall not be used, produced or disclosed to anyone without the prior written permission at O'Callaghan Moran & Associates and shall be returned upon request</p>	<p>TITLE</p> <p style="text-align: center;">Tullamore Hydrology</p>	<p style="text-align: right; border: 1px solid black; padding: 5px;">Figure 8.1</p>

The objectives for particular watercourses are based on 'Pressure and Impact Assessments' of point and diffuse emissions, land use (e.g. peat harvesting, quarrying, industrial and residential use) and morphological conditions (e.g. river depth and width, structure and substrate of river bed) to identify those Water Bodies that are 'At Risk' of failing to meet the WFD objectives.

'At Risk' does not necessarily mean that the Water Bodies have already been adversely impacted, but that there is a likelihood that one will fail to meet its objectives unless appropriate management action is taken.

The 'Tullamore Tributary of Brosna' Water Body is ranked as being of 'Poor' Status based on Macroinvertebrate and Overall ecological status. The General physio-chemical status of the water body is 'Good'. A copy of the Water Body Status Report is in Appendix 2.

8.2.2 Local Drainage Systems

Surface water runoff from the facility discharges via a series of Class 1 full retention interceptors to an open man-made drain at the south-west boundary. The drain joins the Tullamore River approximately 750 m to the south of the facility.

8.2.3 Surface Water Quality

The EPA Licence requires quarterly monitoring in the drain that receives the rainwater run-off from the site. The parameters analysed include pH, electrical conductivity, Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), ammonia, chloride, suspended solids, and mineral oils.

The results of the monitoring carried out in the previous 12 months are in Table 8.1, which includes for comparative purposes the warning and action trigger levels that have been approved by the EPA. The objective of the triggers is to identify any deterioration in water quality and allow corrective action to be taken.

Table 8. 1 Surface Water Monitoring Results – 2016 & 2017

Parameter	Units	Mar-16	Jun-16	Jul-16	Nov-16	Jan-17	Warning Limit	Action Limits
BOD	mg/l	11	<2	<2	<2	<2	2.6	3.72
COD	mg/l	36	14	20	14	24	40	50
Suspended Solids	mg/l	16	7	8	10	<5	25	35
Ammonia	mg/l	2.2	2.6	0.17	0.30	0.11	0.14	0.9
Chloride	mg/l	30	32	29	25	43	40	50
DRO	mg/l	<0.01	<10	<10	<0.01	<10	-	-
Mineral Oil	mg/l	<0.01	<10	<10	<0.01	<10	0.1	0.01
pH	pH Units	7.34	7.70	7.18	7.68	7.29	>6.5-<9.5	>6.5-<9.5
Temperature	°C	3.8	13.1	12.9	9.6	7.9	-	-
Electrical Conductivity	µs/cm	733	737	629	528	727	900	1000

Generally the water quality is good, but ammonia levels have exceeded the warning, and on occasion, the action trigger levels.

8.3 Receiving Environment-Groundwater

8.3.1 Aquifer Classification

The bedrock aquifer beneath the site is classified by the GSI as a locally important aquifer, which is only moderately productive in local zones (Lm) (Figure 8.2).

8.3.2 Aquifer Vulnerability

Aquifer vulnerability is defined by the GSI as the intrinsic geological and hydrogeological characteristics that determine the ease with which groundwater may be contaminated by human activities. Vulnerability categories range from Extreme to High to Moderate to Low and are dependent on the nature and thickness of subsoils above the water table. The GSI Vulnerability Map (Figure 8.3) indicates the vulnerability rating is Moderate.

8.3.3 Groundwater Recharge

The main hydrogeological controls on groundwater recharge are subsoil permeability, subsoil thickness, saturated soils, and the ability of the underlying aquifer to accept percolating waters. The effective rainfall is 431 mm/yr and the GSI database indicates an average groundwater recharge of 22.5% (97 mm/yr) in the vicinity of the site.

8.3.4 Groundwater Flow Direction

The direction of groundwater flow is expected to be to the south, towards the Tullamore River.

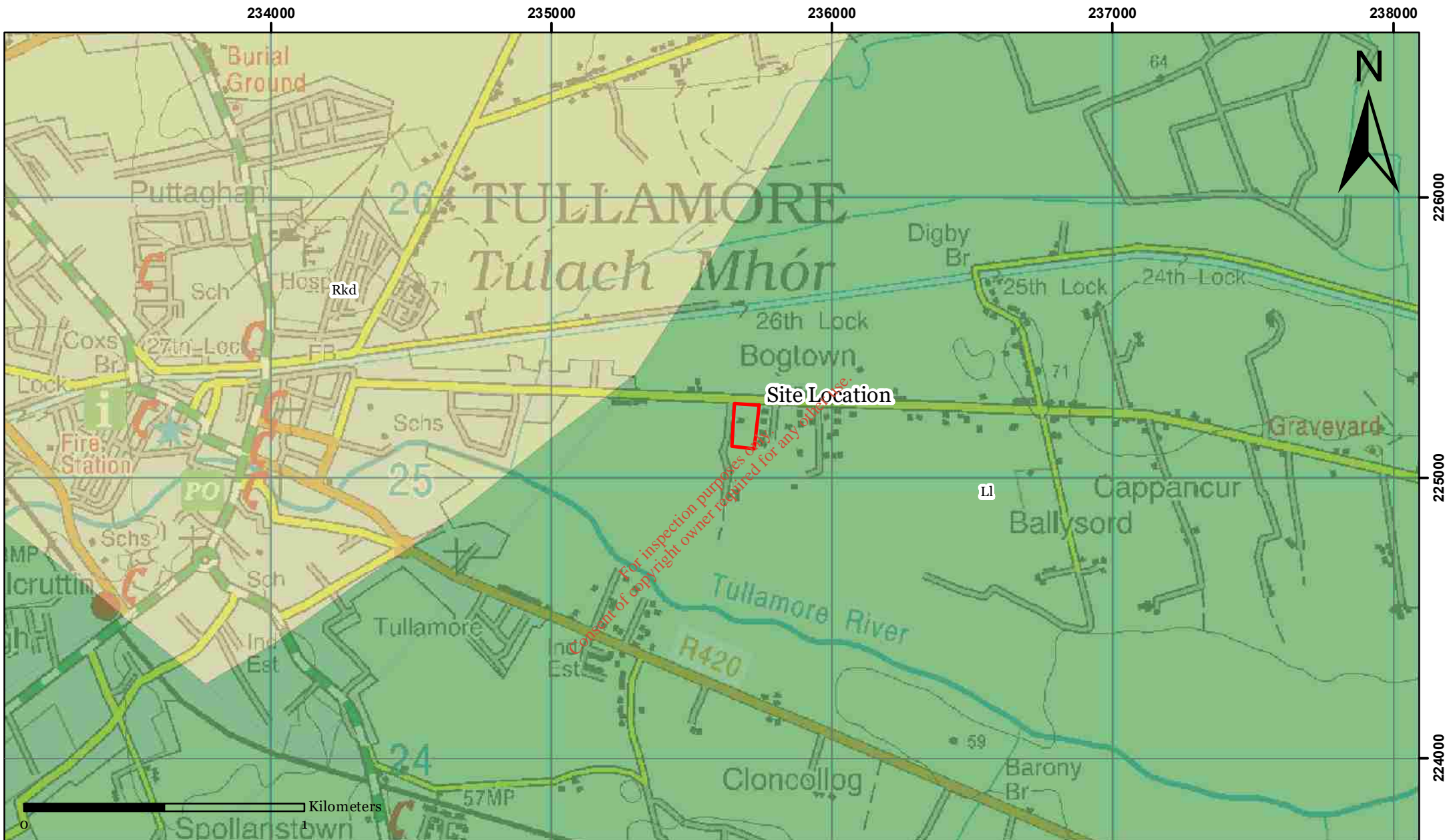
8.3.5 Groundwater Abstraction Wells

A search of the GSI groundwater abstraction well database (Figure 8.4) identified 25 wells within 3 km of the site. The accuracy of the locations is poor (i.e. 500m – 1 km), and there is little information on well use and yield. Where information is available, the wells in the vicinity of the site are described as being for domestic use only and had “Poor” to “Good” yields of 9.8 m³/day to 164 m³/day respectively. The closest well used for potable public supply is 5.4 km to the south-east of the site at Killeigh / Meelaghans.

8.3.6 Groundwater Quality

The groundwater body (GWB) beneath the site is part of the Geashill Groundwater Body (IE_SH_G_103). The GWB Report, which is in Appendix 5, indicates the status of the water body is ‘Good’, with the overall objective to ‘Protect’ the status.




The EPA Licence requires quarterly monitoring of groundwater quality in three on-site monitoring wells (GW-1A, GW-2 and GW-3). GW-1A is at the northern site boundary, GW-2 is at the north east corner and GW-3 is to the south-west beside the loading bay.

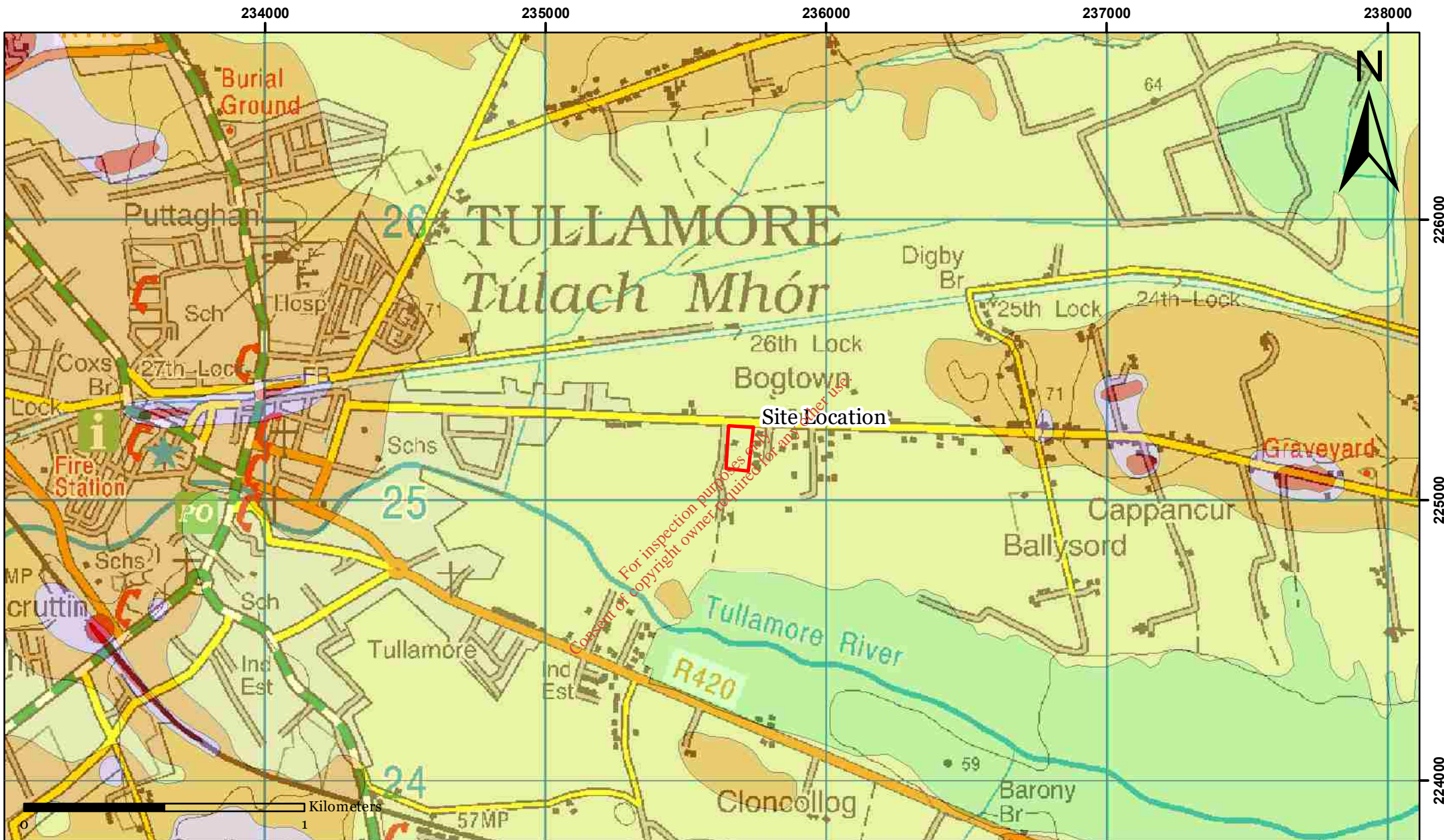



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 Model Farm Road, Cork.
 Tel. (021) 4345366
 email: info@ocallaghanmoran.com
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CLIENT	AES
TITLE	Tullamore Aquifer Classification

Details:  Site Location  LI - Locally Important Aquifer. Mod. Productive only in Local Zones  Rkd - Regionally Important Aquifer. Karstified Bedrock dominated by diffuse flow	Figure 8.2
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CLIENT	AES
TITLE	Tullamore Groundwater Vulnerability







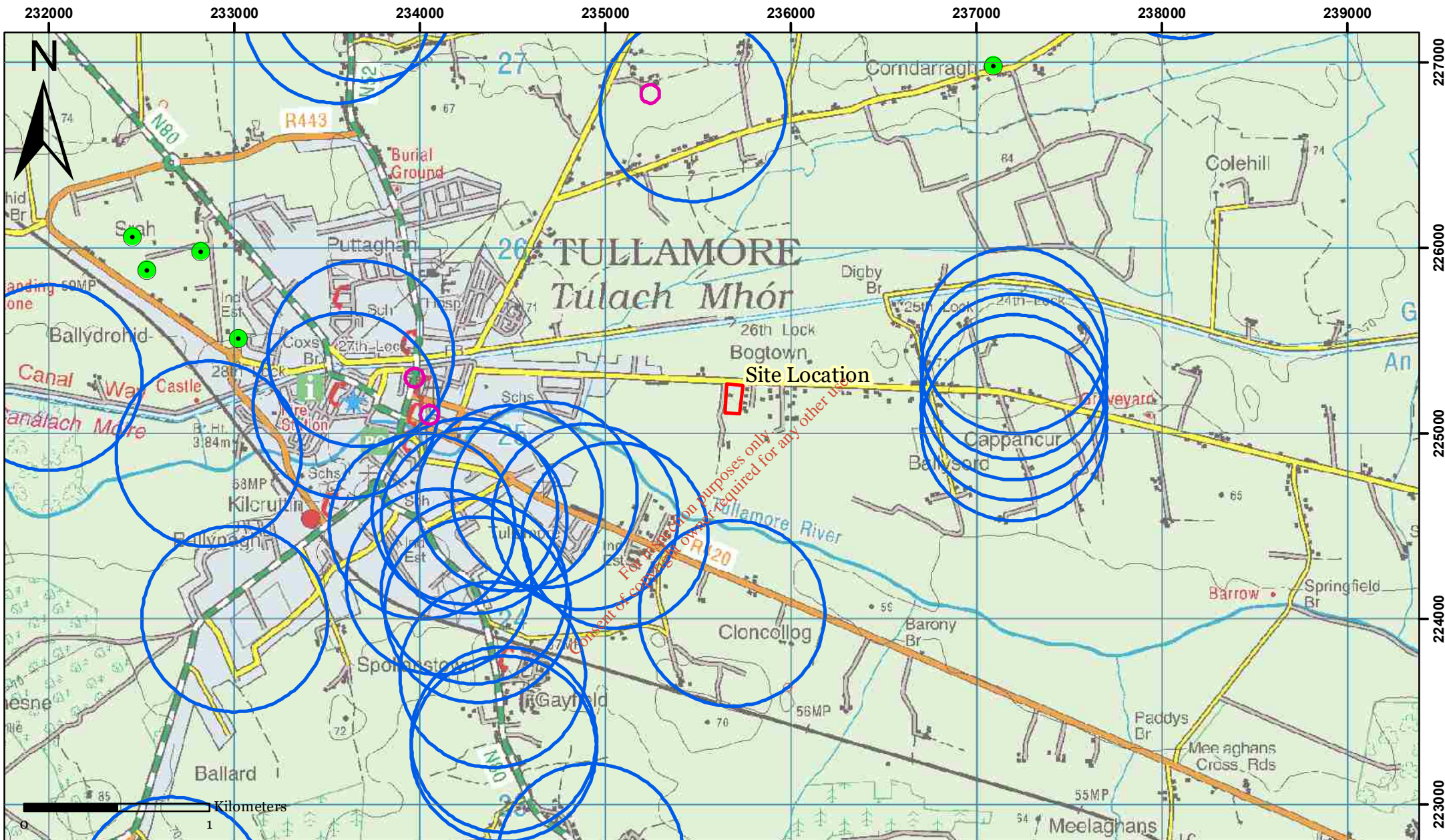
Details:	 Site Location  Bedrock near Surface  Extreme  High  Moderate  Low
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Figure 8.3



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 Model Farm Road, Cork.
 Tel. (021) 4345366
 email: info@ocallaghanmoran.com

CLIENT

AES

TITLE

Tullamore
 GSI Well Location Data

Details:

Unfortunately many of the borehole logs in the GSI database do not contain accurate location information. The size of the circles shown above is inversely proportional to the accuracy of the well location (i.e. small circles represent high accuracy, where relatively larger circles represent lower accuracy).

Site Location

Well Accuracy: 10-50m

Well Accuracy: 50-100m

Well Accuracy: 500m-1km

Figure 8.4

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pH, conductivity, total ammonia and diesel range organics are monitored quarterly, while COD, nitrate total nitrogen chloride, fluoride, arsenic mercury, sulphate, total organic carbon (TOC), faecal coliforms, total coliforms and organic compounds are monitored annually.

The results of the most recent quarterly and annual monitoring are presented in Tables 8.2 and 8.3. The Tables include, for comparison purposes, the Interim Guideline Values (IGV) on groundwater quality published by the EPA and the Threshold Values (TV) set out in the European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010).

The IGVs are not statutory, but were developed to assist in the assessment of impacts on groundwater quality. The IGVs are based on, but are more conservative than the Drinking Water quality standards. GTVs have not been established for all of the parameters monitored.

Table 8.2 Quarterly Groundwater Monitoring Results 2016

Well No.	Parameter	Units	March 2016	May 2016	July 2017	Nov 2018	Jan 2017	IGV	GTV
GW-1A	pH	pH Units	7.34	7.47	7.57	7.01	7.8	>6.5- <9.5	>6.5- <9.5
	Conductivity	µS/cm	489	504	544	451	552	1000	800- 1875
	Ammonium	mg/l	0.04	0.06	<0.01	0.05	0.04	0.15	0.175
	DRO	mg/l	<0.01	<0.01	<10	<0.01	<0.01	0.01	0.01?
GW-2	pH	pH Units	7.19	7.40	7.53	7.30	7.6	>6.5- <9.5	>6.5- <9.5
	Conductivity	µS/cm	525	528	554	508	581	1000	800- 1875
	Ammonium	mg/l	0.08	0.13	<0.01	0.18	0.17	0.15	0.065- 0.175
	DRO	mg/l	<0.01	<0.01	<10	<0.01	<0.01	0.01	NE
GW-3	pH	pH Units	7.11	7.53	7.72	7.35	7.7	>6.5- <9.5	>6.5- <9.5
	Conductivity	µS/cm	526	461	534	521	554	1000	800- 1875
	Ammonium	mg/l	0	0.03	<0.01	0.06	0.03	0.15	0.175
	DRO	mg/l	<0.01	<0.01	<10	<0.01	<0.01	0.01	NE

Table 8.3 Annual Groundwater Monitoring Results – July 2016

Parameter	Units	GW-1A	GW-2	GW-3	IGV	GTV
Ammonia as N	mg/l	<0.02	<0.02	<0.02	-	
Mineral oil	mg/l	<10	<10	<10	-	
Nitrate as NO ₃	mg/l	<0.05	<0.05	<0.05	25	37.5
Total Nitrogen	mg/l	<1.00	<1.00	<1.00	-	
Chloride	mg/l	16	13	13	30	24-187.5
Fluoride	mg/l	0.2	0.21	0.19	1	
Arsenic	mg/l	0.00141	0.00769	0.00605	0.01	7.5
Mercury	mg/l	<0.00001	<0.00001	<0.00001	0.00001	0.75
Sulphate	mg/l	11	11	10	200	187.5
COD	mg/l	39	<10	<10	-	
TOC	mg/l	<5	<5	<5	-	
Pesticides Suite	µg/l	<0.01	<0.01	<0.01	0.5	0.375
VOC Dichloromethane	mg/l	<0.003	<0.003	<0.003	0.04	-
VOC's	mg/l	<0.001	<0.001	<0.001	0.01	-
SVOC's Bis(2-ethylhexyl)phthalate	mg/l	<0.002	<0.002	<0.002	-	-
All other SVOC's	mg/l	<0.001	<0.001	<0.001	-	-
Total coliforms	Cfu/100ml	42	50	18	-	-
Faecal Coliforms	Cfu/100ml	0	5	0	-	-

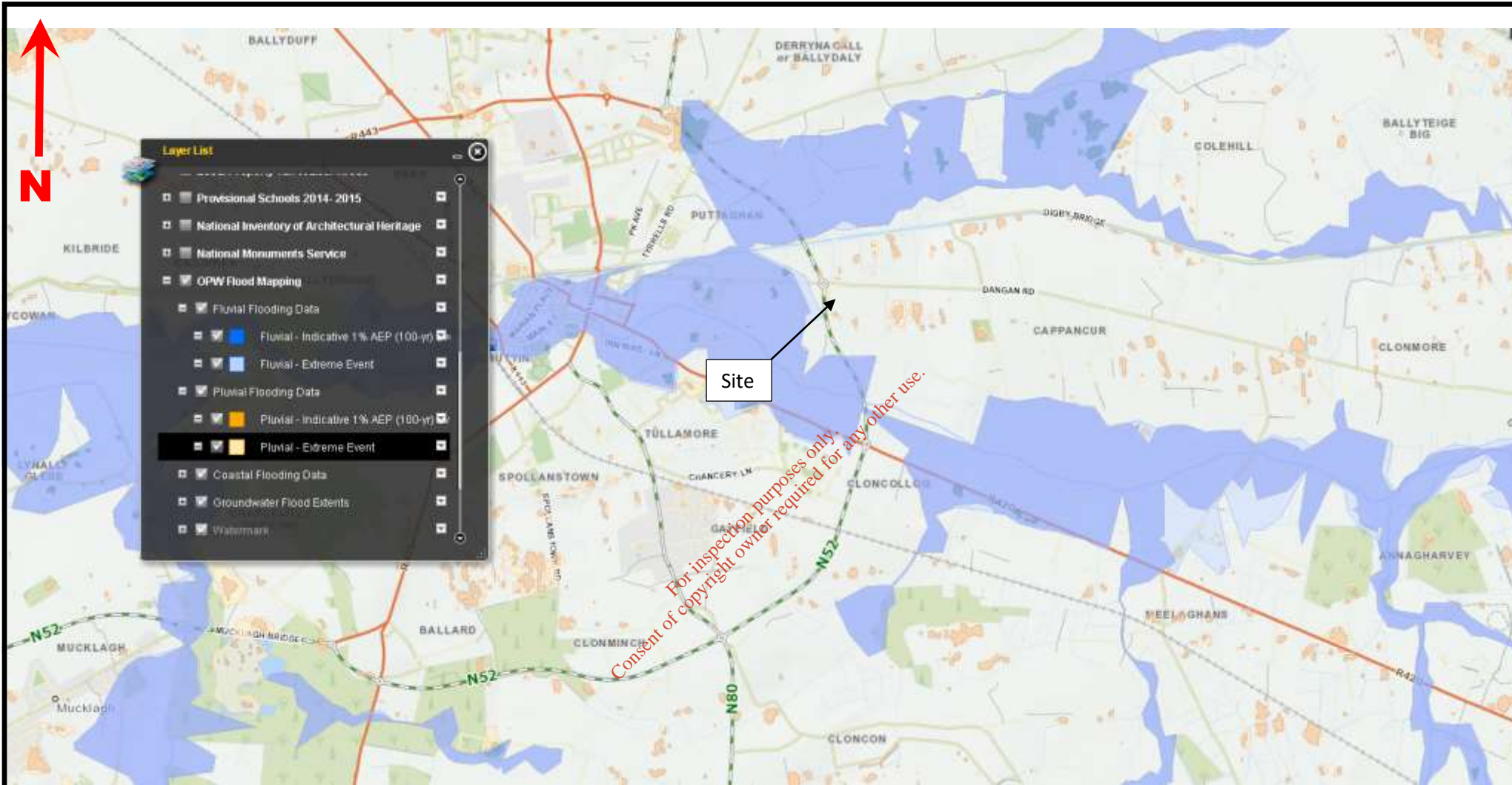
The groundwater quality is good, with no evidence of any impact associated with the operation of the facility.

8.3.7 Flood Risk

The site is not included in the National Preliminary Flood Risk Assessment (PFRA) and Catchment Flood Risk Assessment and Management (CFRAM) databases. The OPW has produced flood risk maps that identify areas susceptible to pluvial, fluvial and coastal flooding events. The OPW map (Figure 8.5) indicates that areas in the vicinity of the site are not at risk from flooding.

8.4 Impacts

The proposed development does not require any excavation or construction works, alteration to the existing foul and surface water drainage, and will not result in any change to the quality or quantity of the discharge to the drain and ultimately the Tullamore River. There are no current direct or indirect emissions to groundwater and the proposed development will not result in any new emissions.



O'Callaghan Moran & Associates,
 Unit 15 Melbourne Business Park,
 Model Farm Road, Cork, Ireland.
 Tel. (021) 4345366
 Email: info@ocallaghanmoran.com

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**OPW Flood Risk Map
 Tullamore, Co. Offaly**



Figure:

Figure 8.5

Client:

AES

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There is the potential for leaks/spills to occur to ground during the delivery and handling of oil, leaks from the above ground oil and wastewater storage tanks, and leaks from the on-site wastewater treatment system. The potential pathways to surface waters is the surface water drainage system. The pathways to groundwater are infiltration through damaged paving and leaks from the storm and foul water drains.

8.5 Do Nothing Scenario.

If the proposed development does not proceed there will be no change to the existing drainage systems. Surplus rainfall run-off from the yards and surplus run-off from the building roofs, will continue to discharge to the drain / Tullamore River.

8.6 Prevention & Mitigation Measures

8.6.1 Surface Water

There is no direct or indirect discharge of sanitary and process wastewater to the surface water drainage system. The sanitary wastewater is treated on-site and the treated effluent is stored in an above ground wastewater holding tank, pending removal off-site for treatment in the Irish Water municipal wastewater treatment plant.

Floor wash water generated inside the Process Building is collected in a sump and pumped to the wastewater holding tank for storage before being tankered to the Irish Water plant. The holding tank is fitted with a high level alarm to prevent overflow.

Surface water run-off from the yards and buildings is collected within the drainage channels that are located across the site and enters gullies that connect to underground sewer lines. The lines connect to a series of Class I oil interceptors.

All waste processing is carried out inside the Process Building. Materials with the potential to adversely affect surface and groundwater quality, for example oil, are stored and handled in a manner that minimises the risk of accidental spills or leaks. The design and construction of the diesel storage tank comply with the EPA's requirements, which are that all such structures/areas are impervious to the materials stored and that there is adequate retention capacity to contain any accidental spills or leaks.

AES has site specific procedures to deal with spills and any emergencies that may arise to ensure that the appropriate response actions are taken by trained staff to minimise any associated environmental impacts. Appropriate spill containment and clean-up equipment is provided at the facility, as required by the EPA Licence.

AES has prepared a firewater retention assessment as required by the EPA Licence. The purpose is to assess the existing capacity to retain firewater generated during the suppression of a fire within the site boundary. The assessment concluded there is currently insufficient retention capacity and recommended extending the retaining kerb on the eastern boundary to the entire site. A copy of the assessment report is in Appendix 6.

8.6.2 Groundwater

The concrete floor inside the Process Building, and in paved operational yards comply with design specified in the EPA Licence. The oil and wastewater storage tanks and underground drains are subject to routine inspection and integrity assessment to confirm they remain fit for purpose.

8.7 Assessment of Impacts

There is the potential for rainwater run-off from the open yards to be slightly contaminated by minor oil leaks from the mobile plant and vehicles. For this reason, the run-off from this area is passed through a series of oil interceptors.

The routine monitoring carried out by AES has established that the quality of the run-off to the drain is good and does not present a risk to the water quality in the Tullamore River. The groundwater monitoring indicates that the groundwater quality beneath the site is good and has not been impacted by site operations.

The proposed development will not result in any changes to the current emissions to surface water and will not give rise to any new discharge to ground and ground water and will have no discernible impact on surface water and groundwater.

8.8 Residual Impacts

The proposed development, in conjunction with the current operation, will have no impact on the water quality of the Tullamore River and will have no impact on the quantitative and qualitative status of the bedrock aquifer.

9 BIODIVERSITY

9.1 Introduction

This Chapter describes the biodiversity of the site and the impacts the proposed changes will have on the receiving environment within and outside the site boundary, including a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual impacts.

9.2 Methodology

The Convention on Biological Diversity (CBD) defines 'biological diversity' or biodiversity as 'the variability among living organisms from all sources, including, 'inter alia', terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems'. In this context the assessment took into consideration ecosystems (habitats and organisms) inside and outside the facility boundary.

The site is completely covered by concrete paving and buildings and the biodiversity value is low. The current condition of the site and the nature of the proposed development, which does not involve the disturbance of any on or off-site ecosystems, meant that an ecological survey was not required.

The assessment was based on a walk over survey and a review of the databases maintained by the National Parks and Wildlife Service (NPWS) and a review of the National Biodiversity Plan – Actions for Biodiversity 2011–2016.

Habitats were classified using the descriptions and codes in the Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000) and 'Best Practice Guidance for Habitat Survey and Mapping' (2011).

OCM carried out a screening of the significance of the effects, if any, of the proposed changes on Natura 2000 sites within 10 km of the site to inform a decision on the need for an Appropriate Assessment. The screening concluded that the development would not have any likely significant effects on any Natura 2000 Site and therefore a Natura Impact Statement was not required. The report on the Screening is in Appendix 7.

9.3 Receiving Environment

The site encompasses 1.16 ha and is occupied by a Weighbridge, Processing Building (2,250m²), Welfare Building, Office, paved yard, staff and customer car parking, and above ground oil storage tanks and wastewater storage tank.

9.3.1 *Ecosystems Within the Site Boundary*

The habitats are shown on Figure 9.1. The buildings and operational yards are classified as **BL3 Buildings and artificial surfaces**.

BL3 includes all buildings (domestic, agricultural, industrial and community) other than derelict stone buildings and ruins. It also includes areas of land that are covered with artificial surfaces (e.g. roads, car parks, pavements, runways, yards, and some tracks, paths, driveways and sports grounds. These habitats are typically not species diverse.

9.3.2 *Ecosystems Outside the Site Boundary*

The site is located in the western edge of the Cappincur Industrial Estate that contains a mix of commercial and industrial operations and are classified as **BL3 Buildings and artificial surfaces**. The Offaly County Council Dog Pound, which is directly south of the facility, and the N52 to the west are also classified as **BL3 Buildings and artificial surfaces**. The lands to the north and south are in agricultural use and are classified as **GA 1 Improved Grassland**.

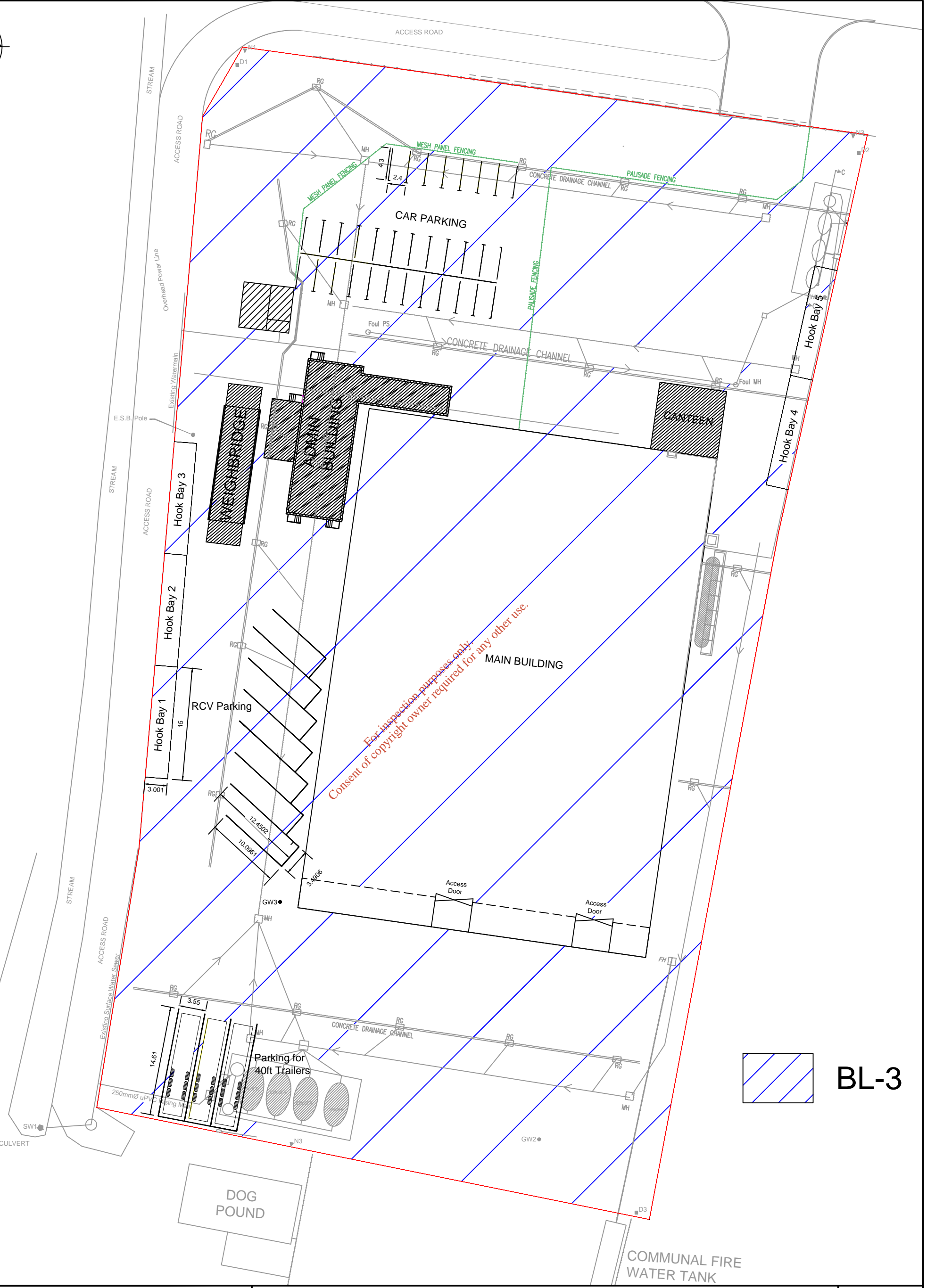
Improved grassland makes up a large proportion of Ireland's productive farmland. Much of it is reseeded, fertilised or heavily grazed with the result that species diversity is low.

9.4 **Natura 2000 Sites**

The site is not in a Special Area of Conservation (SAC) or Special Protected Area (SPA). The designated SAC and SPA (Natura 2000 Sites) within 15 km of the facility are listed in Table 9.1 and the locations shown on Figure 9.2. The qualifying interests and the potential for effects from the proposed development are also included in Table 9.1.

9.5 **Impacts**

The proposed development does not require any construction works and will not result in any loss of habitats either within, or outside the site boundary. It will not result in any new or additional discharge to the Tullamore River and will not require any changes to the current operational hours.



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BL-3



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CLIENT **AES**

FIGURE No.
9.1

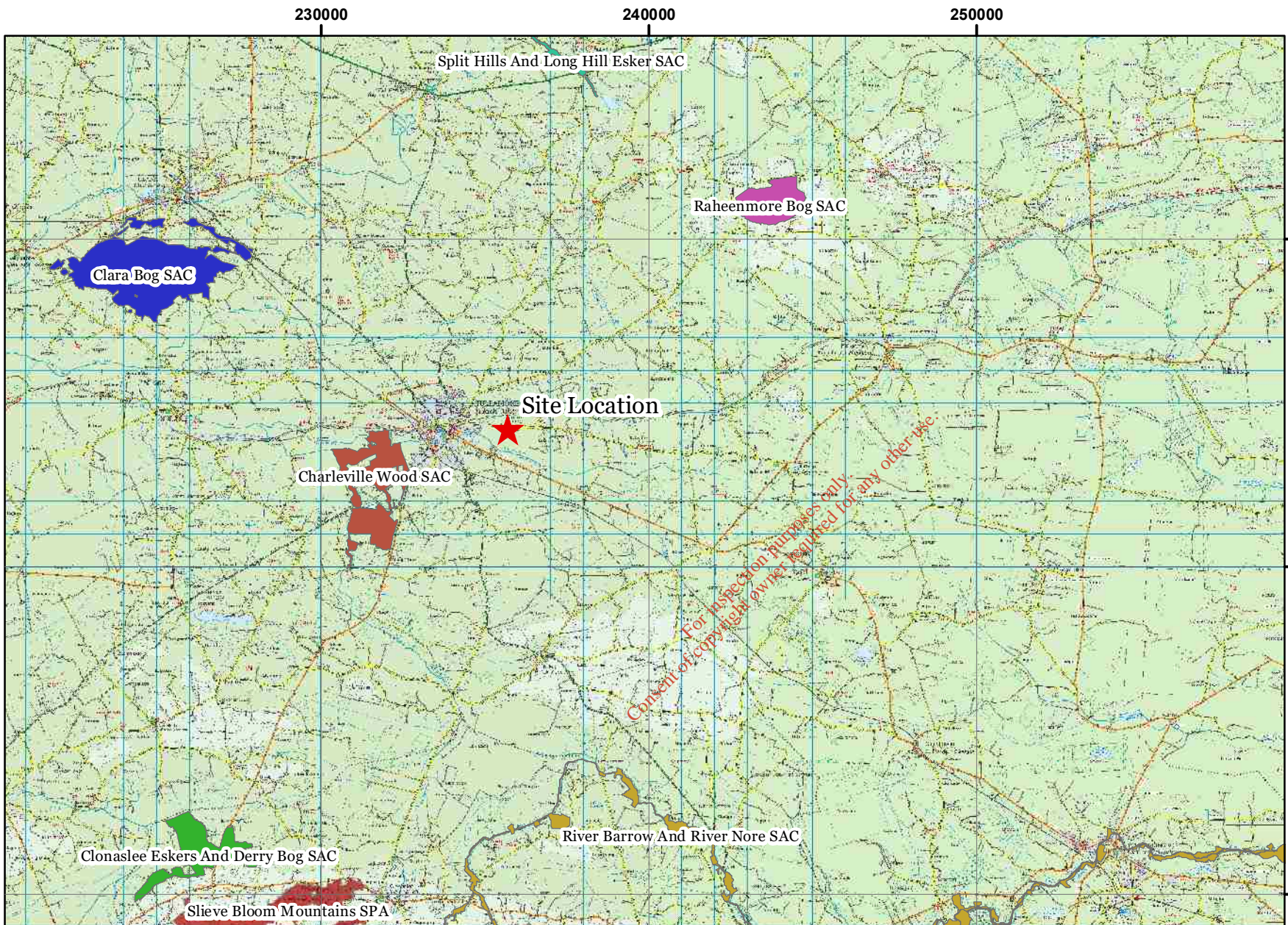
TITLE **Habitats**

SCALE
NTS

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Table 9.1 Designated Sites

Designated Site	Distance (km)	Qualifying Interests	Assessment of Potential Effects
Charleville Wood SAC	3 km South West	Old Oak Woodlands, Desmoulin's Whorl Snail	No perceptible effect
Clara Bog SAC	10 km North West	Orchid-rich Calcareous Grassland, Raised Bog, Degraded Raised Bog, Rhynchosporion Vegetation, Bog Woodland, Marsh Fritillary	No perceptible effect
Clonaslee Eskers And Derry Bog SAC	12 km South West	Alkaline Fens, Geyer's Whorl Snail	No perceptible effect
Raheenmore Bog SAC	12km North East	Raised Bog, Degraded Raised Bog, Rhynchosporion Vegetation	No perceptible effect
River Barrow And River Nore SAC	10.5 km South	Estuaries, Tidal Mudflats and Sandflats, Mud, Atlantic Salt Meadows, Mediterranean Salt Meadows, floating River Vegetation, Dry Heath, Hydrophilous Tall Herb Communities, Petrifying Springs, Old Oak Woodlands, Alluvial Forests, Desmoulin's Whorl Snail, Freshwater Pearl Mussel, White-clawed Crayfish, Sea Lamprey, Brook Lamprey, River Lamprey, Twaite Shad, Atlantic Salmon, Otter, Killarney Fern, Nore Freshwater Pearl Mussel.	No perceptible effect
Split Hills And Long Hill Esker SAC	11 km North	Orchid-rich Calcareous Grassland	No perceptible effect
Slieve Bloom Mountains SPA	15 km South	Hen Harrier	No perceptible effect



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 Unit 15 Melbourne Business Park,
 Model Farm Road, Cork.
 Tel. (021) 4345366
 email: info@ocallaghanmoran.com

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TITLE
**Tullamore
 Natura 2000 Sites**

- ★ Site Location
- Charleville Wood SAC
- Clara Bog SAC
- Clonaslee Eskers And Derry Bog SAC

- Ferbane Bog SAC
- Raheenmore Bog SAC
- River Barrow And River Nore SAC
- Split Hills And Long Hill Esker SAC
- Slieve Bloom Mountains SPA

Figure 9.2

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The Tullamore River is 750m south of the site and, as it flows west to join the River Brosna, it passes through the northern section of the Charleville Wood SAC. This is the only Natura 2000 Site for which there is a pathway (i.e. Tullamore River) from the facility.

The Conservation Objectives for Charleville Wood SAC are:

To maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

- [1016] *Vertigo moulinsiana* (Snail)
- [91A0] Old sessile oak woods with *Ilex*(Holly) and *Blechnum* (Fern)

These animal and plant species are non-aquatic and do not inhabit the Tullamore River.

9.6 Do Nothing Scenario

If the proposed development does not proceed, the current activities will continue with no change to the risk presented to habitats, flora and fauna.

9.7 Prevention & Mitigation Measures

The primary prevention measure is that there are no direct or indirect discharge of sanitary and process wastewater to the surface water drainage system. Treated sanitary wastewater and untreated process waste water is stored in an above ground holding tank from where it is tankered off-site.

The mitigation measures include the provision of a series of oil interceptors on the surface water drainage system, processing all wastes inside the Process Building, and the provision and regular assessment of storage tanks for the oil and wastewater.

9.8 Assessment of Impacts

The key pressures on Ireland's habitats and species include direct habitat damage from peat cutting, wetland drainage/reclamation, over- and under-grazing, water pollution, unsustainable exploitation (e.g. over-fishing), invasive alien species and recreational pressures.¹

The routine monitoring carried out by AES has established that the quality of the run-off from the site does not present a risk to the water quality in the Tullamore River.

The proposed development will not result in any changes to the current emissions to surface water and will have no discernible impact on surface water.

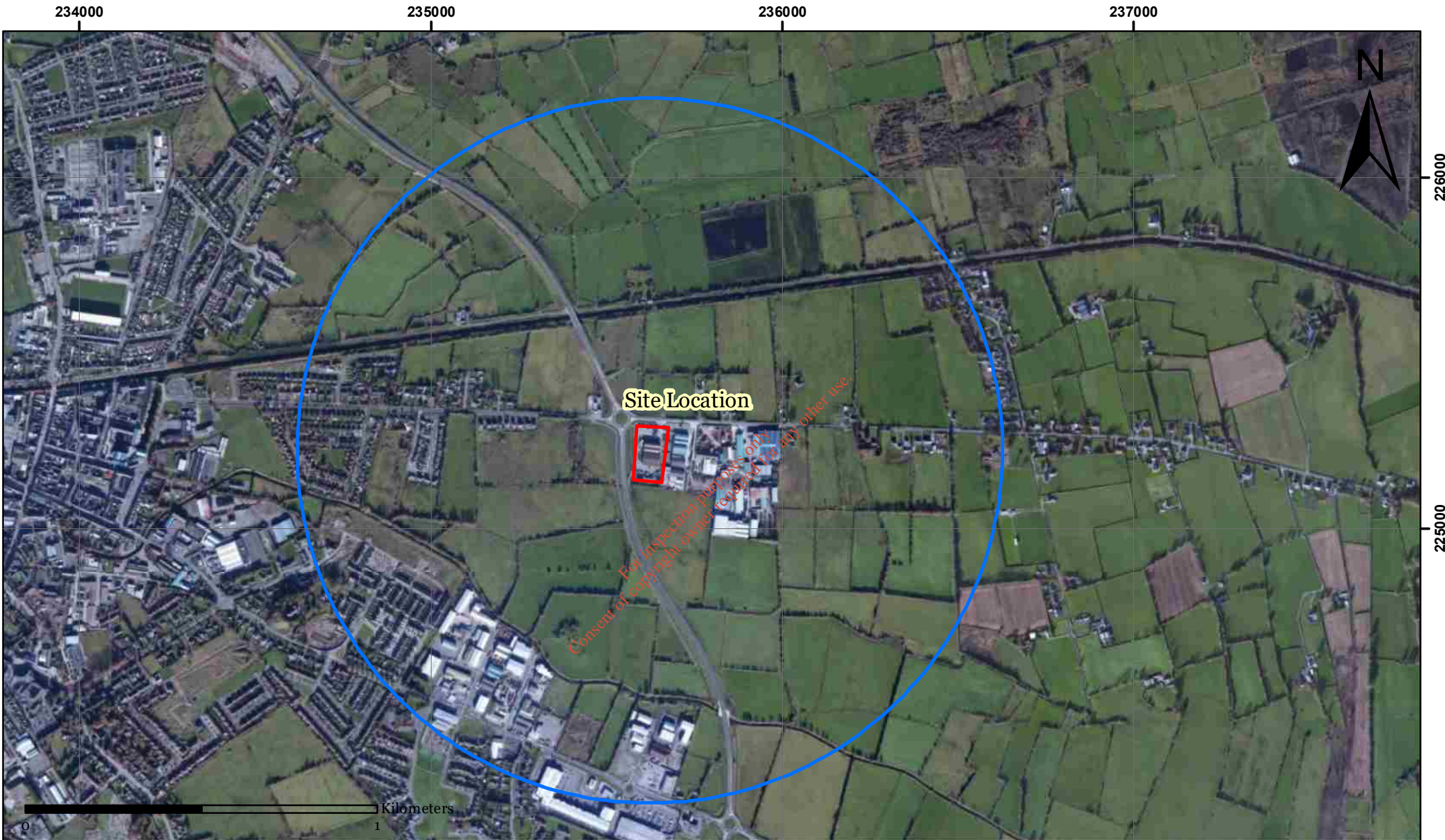
¹ Ireland 'Environment An Assessment 2016 (EPA)




The increase in the annual waste acceptance rate will have no impacts on the habitats either within, or outside the site and will have no effect on the Charleville Woods SAC.

9.9 Residual Impacts

The increase in the waste acceptance rates will have no impact on the ecosystems within the site boundary and will not give rise to any impacts on the habitats outside the boundary.

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	TITLE	Tullamore Surrounding Land Use	

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Figure 10.1

The EPA Licence requires AES to carry out dust deposition monitoring at four locations within the site boundary three times annually (Refer to Figure 4.3). The results of the monitoring carried out in 2016 and 2017 are presented in Table 10.1, which also includes the dust deposition limit (350 mg/m²/day) specified in the Licence. The deposition limit was not exceeded.

Table 10.1 Dust Monitoring Results 2016 & 2017

Dust Emission (mg/m ² /day)	Round 2 2016	Round 1 2016	Round 1 2017	Deposition Limit
Sample Location	30 Days	30 days	30 days	(mg/m ² /day)
D1	111	125	123	350
D2	304	166	154	350
D3	132	196	92	350
D4	142	338	191	350

10.4 Impacts

Emissions from waste storage operations with potential to adversely impact on air quality include odours, dust and vehicle exhaust gases. The residual household and commercial waste, which is a potential source of odour, will continue to be off loaded and processed inside the Process Building. The extra traffic will result in additional vehicle exhaust gas emissions and are a potential contributor to dust emissions associated with movements over the paved areas during dry weather.

10.5 Do Nothing Scenario

If the development does not proceed there will be no change to the existing site operations and the associated emissions to air.

10.6 Prevention & Mitigation Measures

10.6.1 Odours

The following techniques are currently implemented at the site to minimise odour emissions:

- All unloading, processing and loading of wastes occur within the Process Building;
- Regular inspection and cleaning of waste handling areas;
- All putrescible waste for disposal is removed from site within forty-eight hours of its arrival;

In addition the EPA Licence makes provision for the installation of an odour control system comprising the extraction and treatment of air from the Process Building, if this is considered necessary.

10.6.2 Dusts

The following techniques are currently applied to minimise dust emissions:

- Provision of dust curtains on the three main entrances to the Process Building;
- All open yards are paved and are routinely cleaned using a road sweeper and damped down with water in extended periods of dry weather;
- A 20km/h speed limit on all vehicle movements within the site boundary;

10.6.3 Vehicle Exhausts

The heavy goods vehicles accessing the facility are fitted with Selective Catalytic Reduction (SCR) systems. A diesel exhaust fuel (AdBlue) is used in the SCR to reduce the nitrous oxide levels in the exhaust gases. It is AES's policy to ensure that engine idling is not permitted.

10.7 Assessment of Impacts

10.7.1 Odours

The effectiveness of the odour control techniques applied at the facility is demonstrated by the lack of odour complaints, which is the yardstick against which odour nuisance at a waste management facility is measured. In the past five years the facility has not received any complaints from neighbours concerning odours.

Furthermore, compliance inspections conducted by the EPA have never identified any concerns that odours could give rise to any nuisance or impairment outside the facility boundaries. The EPA has not required the installation of an odour control system. The current activities are not a source of odour nuisance and the proposed development does not involve taking in any new potentially odorous waste types.

10.7.2 Dust

Dust is not currently a significant issue at the facility. The proposed development will not give rise to any new sources of dust emissions.

10.7.3 Vehicle Exhausts

The proposed increase in the amount of waste processed at the site will result in an increase in the waste transport vehicles. The increase in vehicle numbers will result in additional exhaust gases, which will have a slight negative impact on air quality for the duration of the activity.

10.8 Residual Impacts

The proposed development, in conjunction with the current operations, will have a slight, negative impact on air quality due to the increase in vehicle movements.

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11 NOISE

11.1 Introduction

This Chapter describes the existing noise sources and the impacts the proposed development may have on the receiving environment within and outside the facility boundary, including a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts and assesses the residual impacts.

11.2 Methodology

The assessment is based on the findings of an ambient noise survey carried out at the facility. The report on the noise monitoring carried out in 2016 by Bord ná Mona Environmental, which include details of the methodology applied, the weather conditions at the time of the survey and the full set of monitoring results, is in Appendix 8.

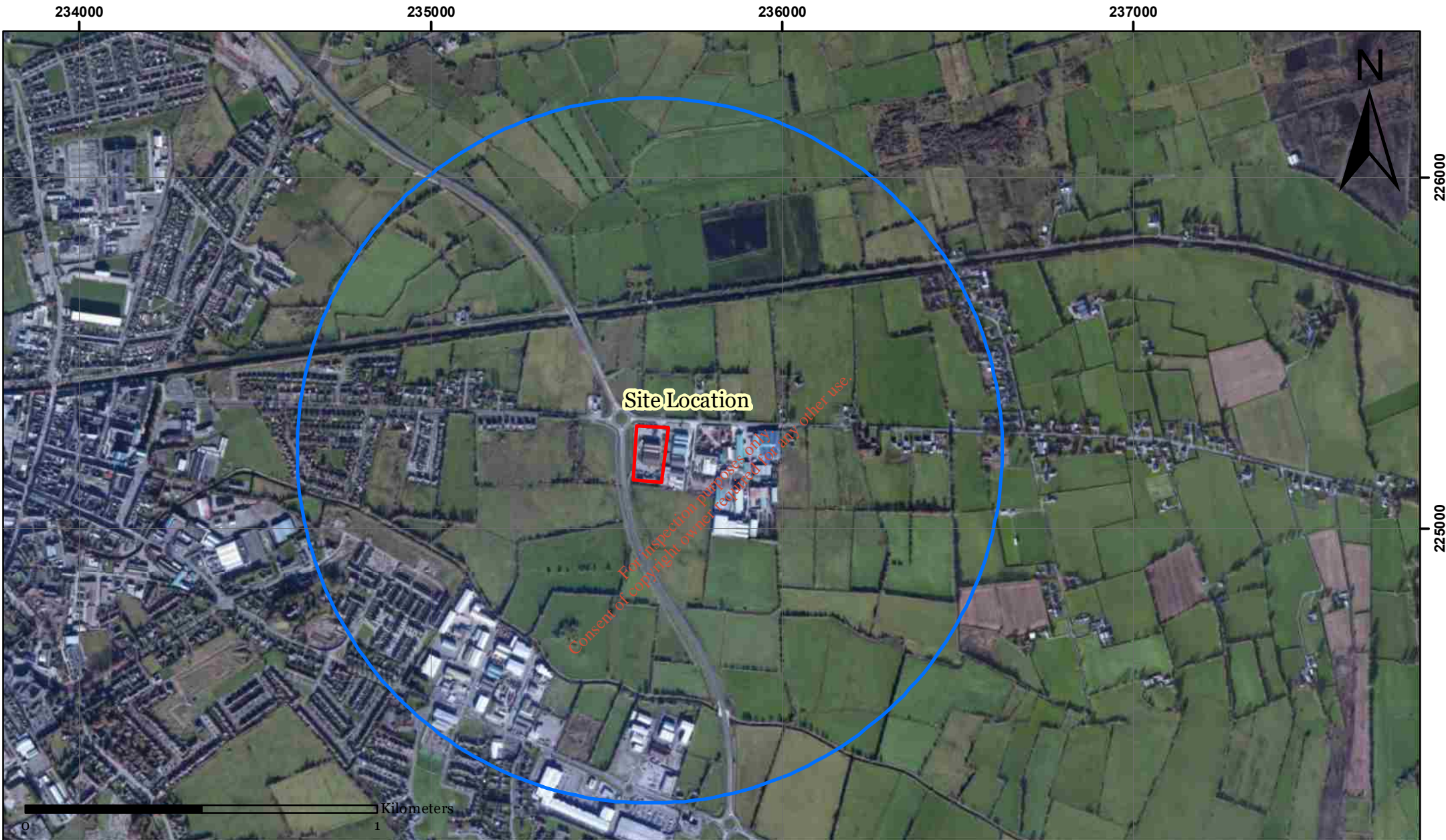
11.3 Receiving Environment




The land use in the vicinity of the facility is shown on Figure 11.1. The facility is in the west of the Cappincur Industrial Estate. The Tullamore-Daingean Road runs along the northern site boundary. The Offaly County Council Dog Pound is directly south of the facility. The lands to the north and south are in agricultural use. To the west of the access road for the Dog Pound is the N52. The closest residential dwellings are a house adjoining a service station approximately 125m to the north-west of the site, a private dwelling 145m to the north-east and a small residential estate ca 300m to the west.

11.4 Impacts

The sources of noise emissions are the staff vehicles, waste transport vehicles, the mobile plant (forklifts, grabs), the sorting line, the generator for the compressors, the baler, and the wheel wash unit. Noise emissions only occur during the waste acceptance and operational periods. At other times the site is not a source of noise.

The EPA Licence sets daytime (55 dB $L_{A(T)}$), evening (50 dB $L_{A(T)}$) and night time (45dB $L_{A(T)}$) emission limits and requires an annual noise survey to be carried out at five (5) locations, as shown on Figure 4.3. N1 is the north-west corner of the facility, beside the main entrance and main road; N2 is in the north-east corner, also beside the main road; N3 is in the south-east of the site at the rear of the Process Building and N4 is in the south west of the facility, beside skip storage area. Monitoring is also carried out at one noise sensitive location (NSL) which is a private dwelling approximately 300m from the site. The results of the most recent monitoring event are presented in Table 11.1.



 <p>O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	CLIENT	AES	Details:  1km Radius  Site Location
	TITLE	Tullamore Surrounding Land Use	

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Figure 11.1

Table 11.1 Noise Monitoring Results June 2016

Station	Date	Duration (min)	Start Time	L _{Aeq} dB	L _{AF10 30 min} dB	L _{AF90 30 min} dB	L _{AFMaxdB(A)}	Tonal or Impulsive Noise	Tonal Penalty(5dB) Applied	Noise audible
N1 North West Corner	20/04/2016	30	12:45	63	67	57	79	X	-	<p>Site: Vehicles entering/exiting site (mainly trucks) close to monitoring location (5-10m). Vehicle reversing alarms sounding on occasion and engines left idle at weighbridge. Movement of heavy machinery in front yard, cars entering/exiting carpark, workers shouting, unloading of container adjacent to weighbridge and truck air pressure release from breaks.</p> <p>Background – Continuous passing traffic on Tullamore Bypass (25m) and heavy traffic on the Tullamore Daingean Rd. (15m) - dominant.</p>
	20/04/2016	30	15:48	62	63	55	83	X	-	
	21/04/2016	30	09:19	64	67	55	84	X	-	
N2 North East Corner	20/04/2016	30	14:52	63	66	54	84	X	-	<p>Site – Vehicles entering/exiting site (mainly trucks) and passing close to monitoring position (15m). Wheel wash in operation during event 3. Vehicle reversing alarms, engines left idle outside reception shed. Activity within main recycling shed (60m) continuous. JCB in operation around the site.</p> <p>Background – Bird singing and Crows overhead, Continuous passing traffic on Tullamore Bypass (100m) and heavy traffic on the Tullamore Daingean Rd. (10m) - dominant.</p>
	21/04/2016	30	08:07	66	70	58	80	X	-	
	21/04/2016	30	11:09	66	71	55	81	X	-	
N3 South East Corner	20/04/2016	30	13:50	62	65	55	80	X	-	<p>Site – Traffic entering/exiting rear of site (10-50m). Activities within reception shed continuous and dominant. Trommel activity audible. Truck reversing tones, pressure release from breaks and horns sounding on occasion. Continuous forklift movement about site. Wheel wash in operation.</p> <p>Background – Heavy road traffic the Tullamore Bypass (80m) was clearly audible. Dogs barking within nearby pound (30m).</p>
	20/04/2016	30	16:54	66	69	50	93	X	-	
	21/04/2016	30	10:34	66	69	58	91	X	-	
N4 South West Corner	20/04/2016	30	13:18	63	63	52	83	X	-	<p>Site – Traffic entering/exiting rear of site (15m) LAFmax. Trucks idle adjacent to reception shed (15m), associated reversing tones and horns sounding. Activity in reception shed continuous (faint at times). Forklift in operation on occasion. Unloading of containers in yard.</p> <p>Background – Heavy road traffic on the Tullamore Bypass (20m) was clearly audible and dominant. Dog barking within nearby pound (25m).</p>
	20/04/2016	30	16:22	59	52	52	74	X	-	
	21/04/2016	30	09:54	62	83	59	74	X	-	
NSL Beside Petrol Station	20/04/2016	30	15:15	64	67	57	79	✓	69	<p>Site – Heavy machinery faintly audible during periods of low traffic</p> <p>Background – Traffic on the Tullamore bypass dominant. Occasional passing traffic on the Daingean Rd, traffic in petrol station, engines revving and people talking, car wash in operation and car doors closing. Car wash in progress at the petrol station. Birds singing and crows overhead.</p>
	20/04/2016	30	08:40	67	70	59	85	✓	-	
	21/04/2016	30	11:44	63	67	56	79	X	-	

*

The day-time site boundary LAeq levels ranged between 59 dB (A) to 67 dB (A), all of which exceeded the daytime ELV (55 dB (A)); however the exceedance was due to the heavy off-site road traffic and not site operations. The day-time LAeq levels at the NSL were 63-67dB (A) and were also attributed to road traffic. Tonal noise was not detected at any of the site boundary monitoring locations.

Complaints about noise from waste recovery facilities are not uncommon. AES has a documented complaints procedure to ensure that all complaints received from neighbours and the general public are fully investigated and addressed. In 2016, no complaints were received.

The current operations are not a source of noise nuisance at off-site noise sensitive locations. The proposed development will not require the provision of any new plant and equipment and will not result in any new or additional noise emission sources.

11.5 Do Nothing Scenario

If the proposed development does not proceed there will no change to the existing noise emissions.

11.6 Prevention & Mitigation Measures

All waste processing is carried out inside the Process Building. Site staff are instructed to avoid unnecessary revving of machinery, turn off equipment / plant when not in use and limit the hours of activities that are likely to give high noise level emissions.

11.7 Assessment of Impacts

The noise emissions associated with the proposed development will be consistent with those from the current activities and will not give rise to nuisance or impairment of amenities at off-noise sensitive locations.

11.8 Residual Impacts

The development, in conjunction with the current operations, will have an on-going, imperceptible negative impact.

12 LANDSCAPE & VISUAL IMPACT

12.1 Introduction

This Chapter describes the landscape and provides an assessment of the visual impacts of the proposed development on the landscape and visual amenity, which includes a 'do nothing' scenario. It identifies the mitigation measures that are and will be implemented to reduce the significance of the impacts and assess the residual impacts.

12.2 Methodology

The assessment was carried out in accordance with the guidelines in the document '*Landscape and Landscape Assessment, Consultation Draft of Guidelines for Planning Authorities*' published by the Department of the Environment and Local Government (June 2000). It took into consideration the policies and objectives relating to landscape in the Offaly County Development Plan (2014-2020) and the Tullamore and Environs Development Plan (2010-2016 extended to 2020).

The objective was to determine the magnitude and significance of the changes to the landscape character and visual setting. Significance depends on the sensitivity of the affected landscape or visual receptor and the magnitude of change that is judged to have resulted from the proposed development. In considering the magnitude and significance of any change the following were taken into account:

- The sensitivity of the view taking into account both the public accessibility of the land where views are possible and the likely sensitivity of that view given the distance, travelling speed, intervening vegetation and land usage;
- The quality and value of the existing landscape;
- The degree to which the proposal will be visible within the surrounding area; and
- Any other changes in the existing landscape e.g. new road junctions.

The study area was defined by the visibility of the site and an analysis of public viewpoints. The choice of viewpoint was influenced by the presence of private residences, key vantage points and the visibility of the existing structures.

12.3 Receiving Environment

County Offaly predominantly comprises a flat landscape, particularly typified by extensive peatlands, but it contains an esker landscape that merits protection given its unique importance in providing scientific, recreational and amenity value. The Slieve Bloom Mountains in the south-west of the county is the only substantial upland area.

The Shannon River flows along the western boundary of the county and, in conjunction with its 'callows', forms a landscape of local, national and international importance. The Grand Canal forms the Grand Canal Corridor is a proposed National Heritage Area (pNHA) and is identified as having the potential to increase tourism in the area and to add to the aesthetic value and recreational appeal of the landscape

The County Development Plan defines the sensitivity of a landscape as being a measure of its ability to accommodate change or intervention without suffering unacceptable effects to its character and values. In County Offaly, the sensitivity of the landscape varies and falls into three broad classifications; Low Sensitivity, Moderate Sensitivity and High Sensitivity.


The site is an area of Low Sensitivity which class largely encompasses the county's main urban and farming areas. These areas comprise natural enclosing features (e.g. topography, vegetation) that have the capacity to absorb a range of new development. The Grand Canal Corridor, which is classed as being of High Sensitivity, is approximately 350m to the north.

12.3.1 Existing Site

The existing site layout is shown on Figure 12.1. The facility is a relatively moderately scaled waste management facility, with one main building aligned south to north, portacabin type office and welfare facilities at the north-western and north-eastern sides of the building respectively.

The transfer building is a portal frame constructed of block and mass concrete walls to 2.5 m, which are metal clad, and above which are metal clad side walls and a metal clad roof. There are portacabin type offices at the Northern elevation. (Photograph 1) There are three vehicle entrances two on the southern and one on the northern elevation.



 <p>O'Callaghan Moran & Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	<p>CLIENT</p> <p style="text-align: center;">AES</p>	<p>Details:</p> <p> Site Boundary</p>
	<p>TITLE</p> <p style="text-align: center;">Tullamore Site Layout</p>	<div style="border: 1px solid black; padding: 5px; text-align: right;"> <p>Figure 12.1</p> </div>

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Photograph 1 Northern Elevation of Process Building and Offices

The site is entirely covered by buildings and concrete paving. There is a staff and visitor car park in the north-west of the site and a weighbridge to the west of the office. The remainder of the open yards are used for vehicle manoeuvring and parking, storage skips, baled recyclables, wooden pallets and wheelie bins (Photographs 2 and 3).



Photograph 2 North-Eastern Yard



Photograph 3 South-Western Yard

12.3.2 Landscape Sensitivity

In general, the sensitivity of a landscape is a measure of its ability to accommodate intervention without suffering an unacceptable or detrimental loss or alteration of landscape character type. On a site specific level, the facility buildings and operations are consistent with other commercial and industrial buildings in the industrial estate (Photograph 4).



Photograph 4 Cappincur Industrial Estate East of the Site

12.3.3 Visibility

The facility has an industrial appearance, given the layout, building design and the colour and nature of the materials used in the building fabric.

The site is visible from the Tullamore-Daingean Road frontage, (Photograph 5) but the other buildings in the Cappincur Estate screen the site from view further east along the road. It is visible from approaches to the Cappincur Roundabout (Photograph 6) and from the access road to the Dog Pound (Photograph 7).



Photograph 5: View from L-2025 Road Frontage



Photograph 6 Car Park and Northerly Approach to Cappincur Roundabout



Photograph 7 View from Dog Pound

12.4 Impacts

The proposed development does not involve either construction works, or material changes to the existing buildings and operations.

12.5 Do Nothing Scenario

If the development does not proceed, the facility will continue to operate in its current condition.

12.6 Prevention & Mitigation Measures

Existing mitigation measures include the provision of net screens on the palisade fencing that surrounds the site and planting along the western boundary.

12.7 Assessment of Impacts

The proposed development will not result in any material change to the existing buildings.

12.8 Residual Impacts

The development will, in conjunction with the current operation, have a neutral impact on the existing landscape character and visual amenity.

13 HUMAN BEINGS

13.1 Introduction

This Chapter describes the socio-economic activity and land uses in the vicinity of the facility and assesses the impacts of the proposed development on the local population. The assessment considered a 'do nothing' scenario and the impact and residual impacts the development will have on human beings.

13.2 Methodology

The assessment was based on the planning zoning status, the land use in the vicinity of the facility, population density and employment sectors. The information was derived from data bases maintained by the Central Statistics Office (CSO), the Offaly County Council Development Plan 2014-2020 and the Tullamore and Environs Development Plan 2010-2016 (extended to 2020).

13.3 Receiving Environment

13.3.1 Land Use

The site is in the west of the Cappincur Industrial Estate, in an area zoned industrial use. The Tullamore-Daingean Road runs along the northern site boundary. The Offaly County Council Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west of the access road for the Dog Pound is the N52. The closest residential dwellings are a house adjoining a service station approximately 125m to the north-west of the site, a private dwelling 145m to the north-east and a small residential estate ca 300m to the west.

13.3.2 Population and Labour Force

The site is in the environs of Tullamore Town. In the 2011 census, which is the most recent one for which detailed information is available, Tullamore Town had a population of 10,900. The numbers of people aged 0 – 14 years was 3,243, aged 15 – 24 years was 1,746, aged 25 – 44 years was 4,868, aged 45 – 64 years was 2,978 and aged 65 years and older was 1,526.

There were 35,857 persons aged 15 years and over in the labour force in County Offaly and of these, 76.8 % cent (27,536) were at work. The unemployment rate for the County was 23.2 % compared with a national average of 19.0 %.

13.4 Impacts

13.4.1 Human Health

Waste management facilities that handle biodegradable waste are a source of odours with the potential to extend outside the site boundaries. While odours do not present a direct risk to health, they can be a significant nuisance and cause of discomfort, which can indirectly affect human health.

13.4.2 Environmental Nuisance

Waste management facilities that accept and process wastes are potential sources of nuisance (litter, dust, noise, vermin, insects and birds) that can significantly adversely impair the environment outside the site boundaries if they are not properly designed and operated.

13.4.3 Traffic

Traffic movement to and from waste management facilities can, depending on the size, location and capacity of the local road network, be a cause of congestion that affects local residents and businesses.

13.5 Do Nothing Scenario

If the proposed development does not proceed, the current operations will continue and there will be no change to the potential for impacts on human beings.

13.6 Prevention & Mitigation Measures

13.6.1 Human Health

All waste processing is carried out inside the Process Building to minimise the impacts of potential nuisances such as noise, dust and odours. The three entrances to the building are provided with doors and dust curtains. Only baled dry recyclables are stored in the open yards. The EPA licence includes provision for the installation of an odour control system, if this is considered necessary.

13.6.2 Environmental Nuisances

The only source of dust emissions are waste processing inside the building and vehicle movements on the yards. The waste transport vehicles do not travel across any unpaved areas and the wheels do not have any debris that can be a source of dust in dry weather. A road sweeper is used to clean the yards as required.

Daily site inspections are carried out to check for vermin and pests. AES has contracted a specialist vermin control company that provides and maintains external bait boxes and also

carries out insect control measures as required. Daily odour and litter inspections are carried out by site-staff.

Site staff are instructed to avoid unnecessary revving of machinery, turn off equipment / plant when not in use and limit the hours of site activities that are likely to result in high noise level emissions.

13.6.3 Traffic

The increase in the amount of waste accepted at the site will result in additional traffic. A detailed Traffic and Transport Assessment (Ref to Chapter 6) has determined that the local road network has the capacity to accommodate the increased traffic movements; however in order to improve road safety, the signage at the site entrance will be removed and new signage clarifying priority access to the site and Council Dog Pound will be erected.

13.7 Assessment of Impact

The mitigation measures that are currently implemented are designed to control odours, dusts, noise and pests and are proven to be effective, with no complaints received from the general public between 2011 and 2016.

13.8 Residual Impacts

The development, in conjunction with the current operations, will have an on-going imperceptible negative impact on human beings associated with noise emissions and traffic movements.

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14 ARCHAEOLOGY, ARCHITECTURE & CULTURAL HERITAGE

14.1 Introduction

This Chapter describes the archaeological, architectural and cultural heritage significance of the facility and its environs and assesses the impact of the proposed development including a 'do nothing' scenario and the residual impacts.

14.2 Methodology

As the proposed development does not require any ground disturbance or the construction of any new buildings an archaeological field survey was not required. The assessment was based on information derived from the Records of Monuments and Places published by the Department of Arts, Heritage & Gaeltacht and information contained in the Offaly County Development Plan (2014-2020), the Tullamore and Environs Development Plan (2010-2016 as extended to 2020), and the EIS prepared in 2008.

14.3 Receiving Environment

The site is located on the western edge of the Cappincur Industrial Estate, which has been extensively developed and is occupied by a range of buildings and hardstanding.

14.3.1 *Archaeological and Historical Background*

The Sites and Monuments Records Map and the Registered Monuments Manual do not contain any record of any archaeological feature within the site and there are no listed monuments within 1 km of the site. The site is not in or adjacent to a Zone of Archaeological Potential (ZAP) listed in the Tullamore and Environs Development Plan.

14.3.2 *Architectural Heritage – Protected Structures*

There is no record of any protected structure (e.g. medieval structure, church) within the site boundary.

14.3.3 *Cultural Heritage*

There is no record of any ritual and religious associations, riverine and estuarine sites, find spots of archaeological or heritage objects, designed landscapes, natural landscapes with cultural heritage associations, relic landscapes and folklore associations within the site boundary.

14.4 Impacts

There is no record of any archaeological feature, protected structure or cultural heritage feature on the site. The proposed development does not require any excavation or ground disturbance works and there is no risk of any impacts on any unidentified archaeological features.

14.5 Do Nothing Scenario

If the development does not proceed the facility will continue to operate in its current configuration and the potential for impacts on the archaeology, architecture and cultural heritage will remain unchanged.

14.6 Prevention and Mitigation Measures

As the proposed development will not have any impact on any archaeological, architectural or cultural feature, prevention and mitigation measures are not required.

14.7 Assessment of Impact

The proposed development will not have any impact on any archaeological, architectural or cultural feature.

14.8 Residual Impacts

The development will not have any residual impact on any archaeological, architectural or cultural heritage features.

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15 MATERIAL ASSETS / NATURAL RESOURCES

15.1 Introduction

This Chapter describes the material assets on and in the environs of the site. It identifies the potential impacts, describes the proposed mitigation measures and assesses the impacts, including residual impacts. It also addresses a 'do nothing' scenario.

15.2 Methodology

The assessment is based on information derived from the current Offaly County Development Plan 2014-2020, the Tullamore and Environs Development Plan (2010-2016 extended to 2020) and the CSO.

15.3 Receiving Environment

15.3.1 *Surrounding Land Use and Amenity Value*

The site is in the west of the Cappincur Industrial Estate, in an area zoned for industrial use. The Tullamore-Daingean Road runs along the northern site boundary. The Offaly County Council Dog Pound is directly south. The lands to the north and south are in agricultural use. To the west of the access road for the Dog Pound is the N52.

The closest residential dwellings are a house adjoining a service station approximately 125m to the north-west of the site, a private dwelling 145m to the north-east and a small residential estate ca 300m to the west.

The nearest listed amenity area is the Grand Canal, which runs in a west-east direction, approximately 320 m to the north of the site. There are no other listed amenity areas within 500 m of the facility.

15.3.2 *Infrastructure*

The local and regional road network and the impact of the proposed development is described in Chapter 6. Water is obtained from the Ballingar Group Scheme. There is no connection to the municipal foul sewer.

15.3.3 *Socio-Economic Activity*

Businesses located within the Cappincur Industrial Estate include car dismantlers, metal recycling, furniture sales, road transport and fuel merchants. There are a number of other

industrial estates in the Tullamore area including, the Cloncollig Industrial Estate and Srah Business Park.

Tullamore is identified in the County Development Plan as a 'Linked Gateway' for the midland region and as a 'driver' for balanced development both within the county and the region.

AES currently employs thirty staff, but seasonally numbers can increase to seventy, thereby significantly contributing to employment in the locality and the overall economy of Tullamore. Maintaining waste activities at the site will ensure the continuation of support for local goods and services provided by AES.

The facility accepts household, and commercial and construction and demolition waste material from Tullamore Town and environs. This benefits local economy, as it minimise waste management costs and benefits the community socially and environmentally by promoting sustainable development, reducing the need for landfills and preventing pollution.

15.3.4 Natural Resource Consumption

Table 15.1 lists the resources used on-site in 2015 and 2016.

Table 15.1 Estimates of Resources Used On-Site 2015 & 2016

Resources	Quantities 2015	Quantities 2016
Vehicle Diesel	535,560 litres	526,380 litres
Electricity	305.43 MWhrs	413.38 MWh

15.4 Impacts

The development will not result in any loss impairment of either amenity value, or agricultural use. There will be an increase in fuel and electricity consumption associated with the transport and processing of the additional wastes. It will increase AES's recovery and recycling rates, which will have a socio-economic benefit and will contribute to maintaining employment levels.

15.5 Do Nothing Scenario

If the proposed development does not proceed, there will be no socio-economic benefit from the increased waste recovery and recycling rates, but there will be no increase in natural resource consumption.

15.6 Prevention & Mitigation Measures

AES implements the nuisance control measures specified in the EPA Licence and also applies resource consumption control measures to minimise usage. These are described in Chapter 4 Site Description, Chapter 10 Air and Chapter 11 Noise.

15.7 Assessment of Impacts

The current operations are not a source of adverse environmental nuisance or impairment of amenities outside the site boundary and the local road network has the capacity to deal with the increase in traffic.

AES is a significant local employer and its operations have not adversely affected the existing economic activities in the surrounding area, nor has it reduced the potential for the future expansion of such activities. The proposed development will have a slight socio-economic benefit associated with increased recovery and recycling rates, and maintaining local employment levels.

15.8 Residual Impact

The proposed development will not have any adverse impact on amenity values and socio-economic activities in the locality. It will have a slight negative impact in relation to the consumption of fossil fuels, but the facility will have a slight positive local economic benefit.

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16 INTERACTION OF THE FOREGOING

16.1 Introduction

Earlier Chapters describe the impacts associated with the proposed development and the proposed mitigation measures. This Chapter discusses the significance of the actual and potential direct, indirect and cumulative effects of the changes due to interaction between relevant receptors, which are Human Beings, Air, Noise, Traffic, Biodiversity and Water. It is based on the physical and environmental impacts of the existing facility and the proposed development on the receiving environment.

16.2 Human Beings / Air / Noise

The proposed development has the potential to impact on human beings from noise, dust, vehicle exhaust emissions and odour. The proposed method of operation has taken account of these emissions and effective mitigation measures, which comply with the requirements of the EPA Licence, have been identified and applied. These measures are described in detail in Chapters 10, 11 and 13.

16.3 Human Beings / Traffic

The proposed change will result in an increase in traffic. However the facility is located in an industrial estate and the access routes do not pass through residential areas. The local road network and junctions have the capacity to accommodate the additional traffic movements, and they will not give rise to congestion.

16.4 Climate / Traffic

The development will result in an increase in greenhouse gas emissions associated with the additional traffic movements.

16.5 Surface Water / Biodiversity

Rainwater run-off that is not used on site discharges to a drain that joins the Tullamore River which is a tributary of the River Brosna that flows through the Charleville Wood SAC, which is 3km to the south-west of the site.

The quality of the surface water emission from the site is good and the proposed development does not require any construction works and will not in any new or additional discharge to the Tullamore River.

16.6 Cumulative Effects

The assessment of the impacts of the proposed development took into consideration the impacts of the existing facility. The noise, dust, surface water and groundwater surveys were conducted during typical operational hours and the predictive assessments include the impacts of both the existing emissions and those associated with the proposed development.

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Table 16.1 Interaction of Impacts

	Climate	Traffic	Soils & Geology	Water	Ecology	Air	Noise	Landscape	Human Beings	Heritage	Material Assets
Climate		√									
Traffic						√			√		
Soils & Geology											
Water					√						
Ecology											
Air									√		
Noise									√		
Landscape											
Human Beings											
Heritage											
Material Assets											

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