Environmental Consultants

ENVIRONMENTAL IMPACT STATEMENT

MAIN TEXT

FOR

A PLANNING APPLICATION FOR KMK METALS RECYCLING LTD

AT

CAPPINCUR IND. ESTATE, TULLAMORE, CO. OFFALY

SEPTEMBER 2012

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF CHARTS

LIST OF PLATES

LIST OF APPENDICES

1.0 Introduction

1.1 THE PURPOSE AND SCOPE OF THE ENVIRONMENTAL IMPACT STATEMENT

An Environmental Impact Statement (EIS) is a systematic integrated evaluation of both negative and positive impacts of a project on the natural environment. The aim of the approach is to identify and predict any impact or consequence due to a proposed development; to describe the means and the extent, by which impacts can be reduced, and to interpret and communicate information about the impacts to the general public.

1.2 SCOPING OF THE ENVIRONMENTAL IMPACT STATEMENT

As part of the Environmental Impact Assessment (EIA) a scoping exercise was conducted to establish the range and aspects of the environment to be considered within the assessment. The scoping process examined the significant issues and environmental considerations for the project and alternatives through consideration of and consultation with the following:

The scoping exercise was achieved by:

- ❖ The Nature, size and location of the Project
- ❖ Site visits and Local investigation
- ❖ The Requirements of the Planning Authorities and Environmental Impact Assessment Regulations
- ❖ The circulation of scoping letters with details of the proposed waste facility to the following bodies and agencies:
  - Planning Section of Offaly County Council
  - Environment Section of Offaly County Council
  - Inland Fisheries Ireland (IFI)
  - Office of Public Works
  - An Taisce
  - The Heritage Council
  - National Parks and Wildlife
  - Department of Environment, Heritage and Local Government
  - Waterways Ireland

Copies of the scoping letters sent and responses received are included in Appendix 1 of this EIS.

1.3 ENVIRONMENTAL IMPACT STATEMENT FORMAT AND REQUIREMENT

Environmental Impact Statements require assimilation, co-ordination and presentation of a wide range of relevant information in order to allow for an overall assessment of a proposed development. A systematic structure is proposed for the main body of this EIS to allow for ease of presentation and consistency when considering the various elements of the environment.

Each impact identified is considered in terms of:

- The existing environment
- Characteristics of the proposed development
- Potential or likely impacts
- Mitigation proposals for impacts identified
- Monitoring

This Environmental Impact Statement (EIS) has been prepared on behalf of KMK Meals Recycling Ltd, Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly by ENVIROCO Management Ltd. Bow House, O'Moore Street, Tullamore, Co Offaly to accompany a planning application to Offaly County Council, as per Schedule 5 of the Planning and Development Regulations 2001.

1.4 KMK METAL RECYCLING LTD (TO BE REFERRED TO AS KMK HENCE FORTH)

The KMK facility operates as a Hazardous and Non-Hazardous metals waste transfer station specialising in metallic and Waste Electronic and Electrical (WEEE) materials, subject to regulation from the EPA (Waste Licence W0113-03) and Offaly County Council as the planning authority.

KMK is a registered company (reference number: 67176) and has been involved in the metals recycling business at its facility in Tullamore since 1985 under the regulation of Offaly County Council. With the introduction of the Waste Management Act 1996 and associated Waste Licensing Regulations thereafter, KMK applied to the EPA for a waste licence and this was granted in late December 2001 (ref: WL113-01) for a hazardous and non hazardous metallic wastes transfer facility. KMK was awarded ISO 14001 certification (environmental management system standard) by the National Standards Authority of Ireland (NSAI) on 24th October 2001. Due to company foresight and strategic forward planning, KMK observed the Ozone Depleting Substance (ODS) Regulations 2000 which provided for statutory obligation to recover all fridges at landfill and civic amenity sites through Ireland for appropriate management. KMK was awarded the national contract in 2003-2004 to effectively collect and manage these fridges and this introduced KMK to the specialised area of Waste Electrical and Electronic Equipment (WEEE) management.

The WEEE Directive 2002 and subsequent Regulations provided for a national legal framework to manage WEEE. Further to this, KMK established two distinct trade names i.e. WEEE Recycle ® registered on the 27th November 2002 and Accumulator registered on 16th April 2007 both ahead of their respective Irish Regulations.

The Irish Government implemented the WEEE Directive 2002/96/EC in August 2005. From 13 August 2005, all retailers of Electrical & Electronic Equipment (EEE) must comply with the WEEE Regulations 2005. Producers of EEE must register with the WEEE Register Society and where they are producing household consumer EEE, they can join a compliance scheme such as WEEE Ireland or the European Recycling Platform (ERP) to help meet their collection, recycling and reporting requirements as specified in the Regulations. To examine Ireland's progress on WEEE recycling, it is necessary to review the EPA National Waste Reports publications. These are detailed as follows;

1) EPA publication 'National Waste Report 2007' it is reported that 50,626 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected both in business to business (B2B) and business to consumer (B2C) in 2007, and of that, 40,629 tonnes was sent for recovery within the ROI (80% was pre-treated in Ireland and 20% i.e. fridges was exported to other EU countries).

2) EPA publication 'National Waste Report 2008' it is reported that 51,964 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected both in business to business (B2B) and business to consumer (B2C) in 2008. There was an increase from 2007 of WEEE sent directly abroad for treatment at just over 50% in 2008. This reflects a decrease in Ireland's capacity to recover WEEE. This issue is being addressed by KMK by means of their facility at Tullamore.

3) The EPA publication 'National Waste Report 2009', reports that 45,327 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected in 2009, which was a decrease of 13% from 2008. The decrease was explained by less turnover of heavy WEEE products by consumers due to a decrease in consumer spending. In addition, there was an increase in EEE reuse and therefore not being classified as waste. Nearly 50% of WEEE collected in Ireland in 2009 was exported abroad for treatment.

4) The most recent EPA publication 'National Waste Report 2010', reports that 45,012 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected in 2010, which is very similar to the 2009 figure. Similar to 2009, there was a decrease in heavy WEEE products by consumers due to a decrease in consumer spending. This was also affected by an increase in EEE reuse

(mostly limited to mobile phones and computers) and therefore not being classified as waste. Slightly less than 50% of WEEE collected in Ireland in 2010 was exported abroad for treatment.

KMK is the principal contractor of WEEE Ireland compliance scheme and also provides service to the ERP compliance scheme. KMK is responsible for managing over 45% of Ireland's total WEEE. Therefore KMK has an overall national positive impact by the implementation of the WEEE Directive and a provision of recovery of WEEE within Ireland, thereby reducing the need to export WEEE for treatment.

Future developments of the WEEE Directive will involve a 'recast' of the Directive including establishing new collection rate targets (currently set at 4kg/person) though in Ireland there is increased success and an average of 9kg /person is achieved (reported in EPA National Waste Report 2009).

KMK is constantly aware of future developments in legislation and committed to be a strong leader in sustainable metals and WEEE waste management. Further to this, KMK has found it necessary to; 1) expand their existing site which is subject to a waste license review with the EPA at present, 2) propose to increase their permitted annual tonnage of waste acceptance from 20,000 tonnes to a maximum of 35,000 tonnes and 3) install various WEEE recycling plant and equipment using Best Available Technologies (BAT) into the facility.

The proposed KMK expansion is in the interests of proper and sustainable development as described in the Offaly County Development Plan 2009-2015. The KMK facility is classed as existing industrial land within Cappincur Industrial Estate. The proposed increase in waste acceptance capacity will help meet local and national targets with regard to waste management and recycling, in line with the WEEE Directive and Waste Management Regulations.

The proposed expansion in activity does not include any alteration of waste types accepted at the site. However, in order to achieve a more sustainable waste management strategy, the installation of a new robust WEEE recycling plant will greatly increase recovery fractions of wastes accepted on-site and allow KMK to compete with similar European waste processors in the market place.

This document is submitted in accordance with EU Directives 85/337/EC and 97/11/EC; the Planning and Development Regulations, 2001 (S.I. No. 600 of 2001); the European Communities Environmental Impact Assessment Regulations, 1989 to 1999; the Environmental Impact Assessment (Amendment) Regulations, 1994, as amended; the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999; the European Communities (Environmental Impact Assessment) (Amendment)

Regulations, 2000, and by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 2001.

Guidelines on the information to be contained in an Environmental Impact Statement issued by the Environmental Protection Agency (2002) were also consulted in preparing this EIS.

1.4 HISTORY OF DEVELOPMENT AT THE SITE AND FUTURE PROPOSALS

The KMK Metal's site in Cappincur Industrial Estate, Tullamore, Co Offaly has a long history of industrial development. The details of the planning history are thus given below in chronological order:

Table 1.4.1: KMK History of Planning at Cappincur

Planning Ref	Applicant	Description	Decision
87/367	KMK Metals Recycling Limited	Construction of septic tank and extension of industrial buildings	Granted on 18th January 1988
90/267	KMK Metals Recycling Limited	Extension to warehouse, construct offices / staff facilities, s/tank and percolation area, use for drying metal cakes etc and storage / process of metal scrap	Granted on 16th January 1991 subject to 23 condition
97/393	KMK Metals Recycling Limited	Construction of warehouse, open storage area, office, staff facilities, proprietary waste water treatment system and ancillary site works.	Granted on 16th September 1997 subject to 11 no. conditions
97/782	Irish Metal Refineries Limited	Construction of storage facilities, office and ancillary developments.	Granted on 31st March 1998 subject to 8 no. conditions
99/1296	KMK Metals Recycling Limited	Retention of offices / staff utilities	Granted on 29th April 2004 subject to 1 no. condition
07/63	KMK Metals Recycling Limited	Construction of car park comprising 40 spaces and a surface mounted movable truck weighbridge, within a total site area 1720 square meters, with associated site works	Incomplete / invalid

Planning Ref	Applicant	Description	Decision
07/132	KMK Metals Recycling Limited	Construction of car park comprising 40 spaces and a surface mounted movable weighbridge, within a total site area 1720 square meters, with associated site works. Granted EPA waste licence no. 113-2 is submitted with this application	Granted on 26th April 2007 subject to 5 no. conditions
07/78	KMK Metals Recycling Limited	Construction of (a) a roof over the existing trucking yard in 2 separate areas with a total convered area of 1379 sqm. and a maximum height of 11.13m (b) construction of a 2 storey portacabin type office and canteen with a total floor area of 157 sqm. and an overall height of 6.50m, together with associated site works on their premises	Granted on 11th June 2007 subject to 7 no. conditions
08/718	KMK Metals Recycling Limited	Construction of a roof over the existing trucking yard with a total covered area of 880 sqm. and a maximum height of 11.015m together with all associated site works	Refused planning permission of 1 no. reason on 17th September 2008
09/311	KMK Metals Recycling Limited	Construction of 2 new roof's over the existing trucking yard's, with one roof covering 212 sqm. total coverage 532 sqm. and a maximum	Granted on 8th October 2009 subject to 6 no. conditions

Planning Ref	**Applicant**	**Description**	**Decision**
10/46	KMK Metals Recycling Limited	Construction of a new skip storage building with a total gross floor area of 1120 square meters and a maximum height of 8.55m, together with a new surface mounted truck weighbridge and provide 24 no. new car parking spaces and associated site works in an existing open yard with a total site area of 4686 square meters.	Granted on 21st September 2010 subject to 12 no. conditions
10/85	KMK Metals Recycling Limited	Demolition of an existing 1506 sqm. ware house and the construction of a new 1760 sqm. warehouse with a maximum height of 11.530m and all associated site works	Incomplete / invalid
10/101	KMK Metals Recycling Limited	Demolition of an existing 1506 sqm. warehouse and the construction of a new 1760 sqm warehouse with a maximum height of 11.530 sqm. and all associated site works	Granted on 18th November 2010 subject to 11 no. conditions

Planning Ref	Applicant	Description	Decision
11/306	KMK Metals Recycling Limited	Retention of new ESB substation, switch rooms and ancillary accommodation at ground floor (72.4 sqm.) and new open plan offices at first floor (82.2 sqm.) (total floor area being retained = 154.6 sqm.) and associated site works, in existing skip storage building 'e' previously granted planning permission (ref no. 10/46) with an original total floor area of 1120 sqm. and a maximum height of 8.55m at middle yard.	Incomplete / invalid

As can be seen from above, KMK has always engaged with the Planning Authority for authorisation prior to any site developments and construction projects.

In terms of the Waste Licensing, KMK was granted their first Waste Licence (ref: W0113-01) from the Environmental Protection Agency (EPA) on the 20th December 2001. This waste licence was for a Transfer Station for the acceptance of up to 5,000 tonnes per annum of hazardous and non hazardous metallic wastes (combined tonnage) and the activities permitted were;

- *the sorting and processing of metallic wastes for recovery, and*
- *the storage of metallic wastes for recovery*

KMK initiated a review of this waste licence due to a requirement for an increase in business and successes in waste management national contracts. Therefore the second Waste Licence (ref: W0113-02) was granted by the EPA on the 29th August 2005. This waste licence was for a Transfer Station for the acceptance of up to 10,000 tonnes per annum of hazardous and non hazardous wastes (combined tonnage) and the activities permitted were;

- *the sorting and processing of metallic wastes and waste electrical and electronic equipment (WEEE) wastes for recovery, and*
- *the storage of liquid and metallic waste sludge for recovery*

Similarly, KMK initiated a review of this waste licence due to a significant increase in business and continued successes in waste management national contracts and in particular WEEE contracts. Therefore the third Waste Licence (ref: W0113-03) was granted by the EPA on the 9th April 2008. This waste licence was for a Transfer Station for the acceptance of up to 20,000 tonnes per annum of hazardous and non hazardous wastes (combined tonnage) and the activities permitted remained the same. This Waste Licence is in force at present at the site.

KMK submitted a waste licence review application to the EPA on the 20th October 2009. The principal reason for review was the proposed increase in annual waste intake from 20,000 to 35,000 tonnes, again due to continued successes in national waste management contracts and demand for business. Prior to submission, correspondence was made to Offaly County Council planning section in March 2009 in relation to the application to the EPA. Offaly County Council confirmed by letter that in accordance with Schedule 5 of the Planning and Development Regulations 2001 (with particular reference to item 11 (b) of Part 2 and item 13 (a) (ii)) an Environmental Impact Statement (EIS) is required to accompany the application to the EPA at that time.

Upon receipt of the waste licence review application accompanied by an EIS, the EPA forwarded copies of the EIS to both the planning section and sanitary division of Offaly County Council (correspondence letters dated 22-10-2009).

KMK received a letter dated 12th January 2012 from the EPA licensing section seeking further information on the waste licence review requesting clarification of various planning related details/matters and in particular the following was requested;

State whether planning permission is in place or is required for all proposed developments and activities that are currently before the Agency – for example, but not limited to:

I. *Proposed increase in waste acceptance to 35,000 tonnes per annum; and*
II. *Installation of new WEEE processing equipment and associated dust emission point.*

This question was put to the Planning Authority, and a letter was received on the 20th February 2012 from the Planning Authority (copy below). The letter states that a planning application together with an Environmental Impact Statement (EIS) is required for the proposal detailed in I and II above.

Comhairle Chontae Uibh Fhaili
Tel: 057 9346800 • Fax: 057 9346868
Website: www.offaly.ie
email: secretar@offalycoco.ie

Offaly County Council
Áras an Chontae,
Charleville Road,
Tullamore,
Co. Offaly.

KMK Metals Recycling Ltd.,
C/o Niall Nally
Enviroco
Bow House
O'Moore Street
Tullamore
Co. Offaly.

17/2/2012

Re: KMK Metals Recycling and Environmental Impact Assessment (EIA)

Dear Sir/Madam,

I refer to your letter dated 10/2/2012 and wish to advise in relation to query 12 of the E.P.A.'s request for further information that, as the proposed development (subject of Waste Licence review WO113-04 and correspondence dated 12/1/2012 from the E.P.A.) involves increasing waste received past thresholds for an EIS, a planning application with an EIS is required.

Please note that as Offaly County Council was only a referral body in relation to the Waste Licence review application in October 2009, no Environmental Impact Assessment (EIA) would have been carried out by Offaly County Council.

Yours faithfully,

Administrative Officer,
Planning Section.

Therefore, the future proposal to increase the waste intake to 35,000 tonnes per annum at the KMK site requires this EIS together with a planning application. This clarifies the reasoning for this EIS preparation.

1.5 THE NEED FOR THIS DEVELOPMENT

KMK have been in operation since 1985 at their Tullamore site. The facility operates as a hazardous and non hazardous metal Waste Electrical and Electronic Equipment (WEEE) transfer facility in accordance with their existing waste licence (ref: W0113-03). As previously stated, KMK has found it necessary to;
1) incorporate additional land into their existing waste license site which is under review for authorisation with the EPA at present ref: W0113-04,
2) propose to increase their permitted annual tonnage of waste acceptance from 20,000 tonnes to a maximum of 35,000 tonnes and
3) install various WEEE recycling plant and equipment using Best Available Technologies (BAT) into the facility.

These measures are required so that KMK can function as a national leader in metals and WEEE management and also compete directly with similar European waste processors in the market place.

This EIS is being submitted as part of a Planning Application to Offaly County Council whereby it is proposed to increase waste acceptance to 35,000 tonnes per annum at the site. In addition, other items will be assessed namely; the installation and operation of necessary WEEE processing equipment.

1.6 WASTE MANAGEMENT AND PLANNING

1.6.1 The WEEE Directive 2002/96/EC

Council Directive 2002/96/EC on WEEE aims to prevent the generation of WEEE and facilitate the achievement of targets for the collection, treatment, recovery and disposal of WEEE in an environmentally sound manner. The Waste Management (Electrical and Electronic Equipment) Regulations, 2005 (S.I. No. 290 of 2005) and Waste Management (Electrical and Electronic Equipment) Regulations, 2005 (S.I. No. 340 of 2005 as amended by S.I. No. 375 of 2008) transpose the WEEE Directive into Irish law, and obligations under the WEEE Regulations came into effect on 13th August 2005.

The Waste Electronic and Electrical Equipment (WEEE) Directive 2002/96/EC is founded on the principal of Producer Responsibility. General objectives of the WEEE Directive are to:

- Prevent WEEE and promote the reuse, recycling and recovery of such wastes
- Improve the environmental performance of all operators involved in the life cycle of Electronic and Electrical Equipment (EEE) e.g. producers, distributors and consumers, and in particular those operators directly involved in the treatment of WEEE

The Irish Government implemented the WEEE Directive 2002/96/EC in August 2005. From 13 August 2005, all retailers of EEE must comply with the WEEE Regulations 2005. Producers of EEE must register with the WEEE Register Society and where they are producing household consumer WEEE, they can join a compliance scheme such as WEEE Ireland or ERP to help meet their collection, recycling and reporting requirements as specified in the Regulations. KMK is the principal contractor of WEEE Ireland and also provides service to ERP. WEEE Ireland is a not for profit organisation founded by producers of EEE in order to comply with the legal obligations imposed by the WEEE Directive 2002/96/EC. KMK is responsible for managing over 45% of Ireland's total WEEE. Therefore KMK has an overall positive impact on the implementation of the WEEE Directive.

1.6.2 National Waste Report 2010

The most recent EPA publication 'National Waste Report 2010', reports that 45,012 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected in 2010, which is very similar to the 2009 figure. Similar to 2009, there was a decrease in heavy WEEE products by consumers due to a decrease in consumer spending. This was also affected by an increase in EEE reuse (mostly limited to mobile phones and computers) and therefore not being classified as waste. Slightly less than 50% of WEEE collected in Ireland in 2010 was exported abroad for treatment.

In terms of WEEE collection, on average, nearly 9kg of household WEEE was collected from each person in Ireland in 2009 which is more than double the target of 4kg specified in the WEEE Directive. Therefore WEEE collection in Ireland is strong and well organised.

The report shows that there is a considerable need for WEEE to be recycled in Ireland. The EPA considers that producers and their compliance schemes should strive to ensure that this occurs. There are a number of benefits of an indigenous recycling industry, including:

- Provision of a secure outlet for WEEE for which producers are responsible
- Provision of some cushion against volatile commodity prices
- Demonstration of the relative ease of achieving WEEE Recycling Rates
- Avoidance of intact WEEE being exported to third countries illegally, thereby damaging Irelands recycling effort
- Creation of employment and investment in Ireland, particularly during challenging economic times, to the benefit of Irish society and commerce as a whole.

This issue is being addressed by KMK by means of the existing facility at Tullamore whereby a modern WEEE waste management business is established and prepared for future requirements.

1.6.3 Waste Management Plan for the Midlands Region 2005-2010

The aim of the Plan is to set out a framework for the sustainable management of waste within the five Local Authority areas of the Midlands Region. The Plan proposes an integrated approach to waste management based upon the following:

- Reducing dependence on landfill
- Reducing waste growth
- Greatly increasing recycling
- Introducing waste to energy with energy recovery

In accordance with the EU Directive on WEEE and DEHLG guidance, the Midlands Region must adopt appropriate measures in order to minimise the disposal of WEEE as unsorted municipal waste and to achieve a high level of separate collection of WEEE; the policy with regard to WEEE as outlined in the Plan is that Local Authorities maximise the collection, reuse and recycling opportunities for all WEEE in the Region over the Plan period. An increase in capacity at the KMK facility, where all WEEE is for recycling and recovery would help meet the policies of the Waste Management Plan for the Midlands.

1.6.4 National Development Plan 2007 – 2013

The objective of the National Development Plan 2007 – 2013 (NDP) is to deliver a better quality of life for all within a strong and vibrant economy that maintains and promotes regional development, social justice and environmental sustainability.

The NDP recognises that waste poses a serious economic and environmental challenge for Ireland: *"Across the EU, waste generation has continued to grow at a pace that equals and sometimes surpasses economic growth. A sustainable approach to dealing with this requires the integration of a number of elements - reducing the extent of waste generation through waste prevention strategies, maximising the recycling and recovery of waste and minimising the environmental impacts of the final disposal of waste, particularly through reducing the reliance on landfill."*

The KMK site is a fully functioning waste management facility engaged in WEEE and metals recover in Ireland. KMK accepted 18,977.44 tonnes in 2008; 23,255 tonnes in 2009, 23,027 tonnes in 2010 and 21,378 tonnes in 2011. On average, approximately 85% all waste accepted to the site is WEEE and the remaining 15% is metals and metallic based materials. KMK have applied to the EPA for a Waste licence Review application to allow for a new permitted waste acceptance of 35,000 tonnes per year. This proposed increase in capacity

would enable KMK to meet present and future demand and thus contribute to national WEEE recycling targets and assist in meeting the objectives of the National Development Plan.

1.6.5 A Resource Opportunity – Waste Management Policy in Ireland, July 2012

This policy document, published in July 2012, sets out a number of measures '*through which Ireland will make the further progress necessary to become a recycling society, with a clear focus on resource efficiency and the virtual elimination of landfilling of municipal waste'* (as stated in the Dept of the Environment, Community and Local Government, a Resource Opportunity, Waste Management Policy in Ireland, July 2012).

There are 9 main sections to the document; Planning for the future, The Regulation of Household Waste Collection, Compliance and Enforcement, Prevention, Reuse, Recycling, Recovery, Disposal and Implementation.

The sections considered to be most relevant to the subject proposal are Recovery and Implementation.

Section 9.0 of the document relates to Recovery, the definition for which is provided as follows:

'***Recovery*** *is defined in the Waste Framework Directive as any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.'*

A number of specific policy measures and actions are listed in relation to Recovery, including the following, which are considered to be relevant to the subject proposal:

- Measures to encourage the attainment of more ambitious EU recovery targets in specific waste streams will be finalised in light of the findings of the Review of Producer Responsibility Initiatives.
- Government will ensure that the relevant Departments and agencies pursue a co-ordinated approach in support of the development of recovery infrastructure.

Section 11 relates to implementation. It is stated that:

'Recommendations for dealing with any policy failures will be made and a particular focus will be placed on:

- *Compliance with the waste management hierarchy – moving up the hierarchy by reducing landfilling* ***and increasing recovery / recycling***
- *Application of economic instruments to support waste management according to the waste hierarchy*
- *Provision of an adequate network of waste management infrastructure to support the drive to become self sufficient in such facilities*
- *Achievement of diversion targets for biodegradable waste from landfills*
- *Meeting all other waste legislation targets, including specific waste stream targets across the producer responsibility initiative sectors*
- *Ensuring Ireland's overall compliance with EU waste legislation'*

1.6.6 Offaly County Development Plan 2009-2015

The Offaly County Development Plan outlines an overall strategy for the proper planning and sustainable development of County Offaly over the period 2009-2015. The Plan defines proper development as "the right development or land use in the right place at the right time" and sustainable use (from the 1997 'Bruntland Report') as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs".

The proposed KMK expansion is in the interests of proper and sustainable development. Proposed land to be incorporated into the KMK facility is located adjacent to the existing facility and within Cappincur Industrial Estate. The proposed increase in capacity will help meet local and national targets with regard to waste management and recycling, in line with the WEEE Directive and the Waste Management (Electrical and Electronic Equipment) Regulations 2005 (S.I. No. 290 and 340 of 2005, as amended by S.I. No. 375 of 2008).

The Offaly County Development Plan 2009-2015 considers the National Spatial Strategy (NSS) (2002) which runs to 2020. The NSS is a planning framework designed to achieve a better balance of social, economic, physical development and population growth between regions, with ambitious targets for the Midlands Region, and to inform as to where development should occur. Core messages of the NSS are effective planning, better quality of life and a wider range of work opportunities.

The Council has subscribed to the principals of the NSS by adopting the Midlands Regional Planning Guidelines (MRPGs) (2004) which are consistent with the NSS. The MRPGs planned for an increase in population within the Region from 225,000 in 2002 to 325,000 in 2020 and a considerable strengthening of the larger urban centres, including Tullamore, to attract economic development and sustain this increased population which otherwise could gravitate elsewhere. Population growth in Tullamore is targeted to grow to a population from 13,000 min 2006 to approximately 30,000 by 2020.

Offaly County Council is committed to implementing the current Waste Management Plan for the Midlands Region 2005-2010, taking into account both national and EU policy in waste and waste management. The Council also has regard to the National Biodegradable Waste Strategy 2006, with objectives for preferred options including prevention, minimisation and recycling.

Proposed expansion of the existing KMK facility is in line with the objectives and key messages of the NSS, appropriate with regard to Midlands Region development, to the forecast population growths of the MRPGs and associated focus on economic development, sustainability, and avoiding 'leakage' (of population, economy and services) to other areas.

1.7 PRE-SUBMISSION CONSULTATION

ENVIROCO Management Ltd. project managed the compilation and preparation of this EIS. Scoping and preparation of the various sections of this EIS was carried out in consultation with the organisations and sources listed in Table 1.7.1.

Table 1.7.1: List of Organisations and Information Sources

No.	Organisation	Address	Information / Service
1	KMK Metals Recycling Ltd.	Cappincur Ind. Estate, Daingean Road, Tullamore, Co. Offaly.	Client
2	Offaly County Council	Aras an Chontae, Charleville Road, Tullamore, Co. Offaly	Scoping letter: Environment Section & Planning Section
3	Clarke O'Donnell & Associates (CODA).	The Well, Patrick Street, Mullingar, Co Westmeath	Planning Permission consultancy and application report.
4	Malachi Cullen Consulting Engineers Ltd	Old Bridge House, Strand Street, Athlone, Co Westmeath.	Planning application drawings and associated engineering report.

No.	Organisation	Address	Information / Service
5	Molloy Precast Products Ltd	Clara Road, Tullamore, Co Offaly	Waste Water Treatment System up-grade proposals and advice.
6	TrafficWise Ltd.	Suit No 5, Gowna Plaza, Bracetown Business Park, Clonee, Co. Meath	Traffic assessment
7	National Parks & Wildlife Service	7 Ely Place, Dublin 2	Scoping Letter; Protected Sites, Ecology, Archaeology
8	Office of Public Works	Newtown, Trim, Co. Meath	Scoping
9	Inland Fisheries Ireland	Ashbourne Business Park, Dock Road, Co. Limerick	Scoping
10	An Taisce The National Trust for Ireland	Tailors Hall, Backlane, Dublin 8	Scoping
11	Department of the Environment, Heritage & Local Government (DoEHLG)	Development Applications Unit, 4th Floor, Harcourt Lane, Dublin 2	Scoping; EIS Regulations, Ecology, Desk Studies
12	The Heritage Council	Aras na Oidreachta, Church Lane, Kilkenny, Co. Kilkenny	Scoping
13	Waterways Ireland	Operations Unit, 2-7 Belmore Street, Enniskillen, Co. Fermanagh	Scoping
14	Environmental Protection Agency	Johnstown Castle, Wexford	EIS Guidelines, Advice Notes, Research Waste licence review application
15	Geological Survey of Ireland	Beggars Bush, Haddington Rd, Dublin	Geological Maps, Quaternary Studies, Desk Studies
16	Central Statistics Office Ireland	Ardee Road, Rathmines, Dublin 6	Census data
17	Met Éireann	Glasnevin Hill, Dublin 9	Climate Data

1.8 CONSIDERATION OF ALTERNATIVES

The Environmental Protection Agency document 'Guidelines on the Information to be contained in Environmental Impact Statements' (2002) states that '*..it is important, from the outset, to acknowledge the existence of difficulties and limitations when considering alternatives'.* These include hierarchy, non-environmental factors and site-specific issues.

In relation to hierarchy, the EPA guidelines state that in some instances neither the applicant nor the competent authority can be realistically expected to examine options that have already been previously determined by a higher authority, such as a national plan or regional programme of infrastructure. The issue of hierarchy does not apply in the case of the KMK application. Nevertheless, non-environmental factors and site-specific issues are applicable and are discussed below.

In relation to non-environmental factors, the same EPA guidelines state:

"EIA is confined to the environmental effects which influence consideration of alternatives. It is important to acknowledge that other non-environmental factors may have equal or overriding importance to the developer, e.g. project economics, land availability, engineering feasibility, planning considerations."

A full consideration of the alternatives in terms of the combination of project economies, land availability, engineering feasibility and planning considerations are explained below;

- Project economies – the existing site has all necessary infrastructure in place, with planning permissions and operational for the proposed increase in waste acceptance i.e. scale of development. These include all buildings, weighbridges, waste processing plant and machinery, site entrance roads, perimeter walls and fences, gates, hardstanding areas, extensive concrete surfaces, water management infrastructure (attenuation tanks and interceptor units), welfare facilities and offices. No additional land space is required in or around the site as the present footprint is adequate for the proposal. This makes the site, the best economic viability for KMK.
- Land availability – the existing site is an operational waste management site and all existing buildings were built to planning permissions. The applicant has no other land or sites available for this activity.
- Engineering feasibility – the applicant site is appraised in terms of engineering and scientific reports addressing surface water run-off, dust impact, noise impact, traffic and roads assessment, visual impact, flood risk and ecological effects. All assessments conclude that the site is suitable for the proposed waste increase from 20,000 to 35,000 tonnes per annum once all recommended environmental mitigation measures are put in place. The site has been

designed, developed and engineered from the outset as a fully functioning metals and WEEE management site using Best Available Technologies.

- Planning and Regulatory considerations – the KMK site has existing planning permissions in place for all existing buildings and ancillary services. It is important to acknowledge that this existing site has an industrial history of authorised planned development and KMK merely seeks to continue with this development albeit with a proposed increase of authorised waste acceptance from the current 20,000 tonnes to up to 35,000 tonnes per annum. Similarly, the existing activity is fully authorised in waste management by virtue of the Waste Licence (ref: W0113-03) from the Environmental Protection Agency (EPA). A waste licence review application is presently being determined by the EPA for the proposed increase in waste acceptance also (ref: W0113-04). Therefore this site also has a history of authorised waste management and so it is reasonable and appropriate to consider the proposed increase in waste acceptance activity at the site on condition of all best available environmental controls to ensure no adverse impacts to local residents and the environment. It is therefore considered by KMK that the existing site is suitable in terms of a planning permission application.

The aforementioned criteria identified the existing Cappincur site as the only viable site available to KMK for this planning application to increase the waste intake from 20,000 to 35,000 tonnes per annum with all associate plant and infrastructure.

A full consideration was made to alternatives to the existing site by use of an analysis matrix. The alternatives criteria explored included alternative locations, alternative designs and alternative processes as referred to in the Environmental Protection Agency document 'Advice notes on current practice (in the preparation of Environmental Impact Statements) 2003'. KMK now wishes to expand on these alternatives, the details of which are thus presented below;

1.8.1 Alternative Locations.

Alternative locations are explored in the matrix table below.

Table 1.8.1: Existing and alternative locations to the proposed site - planning and environmental constraints scoring matrix.

Option	Possible locations	Planning constraints	
		Positive criteria	**Negative criteria**
1	Existing site at Cappincur Industrial Estate, Tullamore.	All infrastructural development is complete with industrial buildings and ancillary services in place on-site. All existing buildings have the benefit of planning authorisation. Existing site is zoned industrial and within an established industrial estate. No destruction of greenfield spaces or other undeveloped land spaces is required. Engineering and scientific assessments in relation to surface water run-off, dust impact, noise impact, traffic and roads assessment, visual impact and ecological effects all conclude site suitability. Site is not within or adjacent to any SACs or ecologically protected/sensitive areas.	Site is limited in terms of existing entrance to the Daingean road. No alternative routes are available. Site is located less than 250m from the nearest residential properties. Possible cumulative effects of this development when reviewed with other waste companies nearby.

		Environmental constraints continued….	
		Positive criteria	**Negative criteria**
		Development of an existing brown field site thereby re-using existing buildings and site infrastructure within the industrial estate. Limited burden of resources e.g. all buildings are constructed and ancillary services near to completion. Limited visual intrusion as no new buildings or significant structures required. Existing site has waste authorisation with EPA (W0113-03) and review application initiated (W0113-04). Site location in Tullamore is central to all major waste sources throughout Ireland.	Projected traffic impact – proposed increase in waste acceptance tonnages at site Limited operational noise, water run-off, dust and traffic impacts. These will be minimal by virtue of the robust control measures proposed throughout the EIS.
	Score:	11 positives	5 negatives

Option	**Possible locations**	**Planning constraints**	
		Positive criteria	**Negative criteria**
2	Development of alternative new site e.g. within industrial estate serviced area of	Industrial estate may be zoned correctly for such a development – this is the case with Cappincur at present. No destruction of greenfield spaces or other undeveloped land spaces.	Conversely, the industrial estate may not be zoned for such a development. Negative perception and feeling for local residents where possible and local businesses close by a proposed new site,

	large urban centre in the County i.e. Tullamore town.	Existing services such as foul sewer and water main supply available to development. Industrial site may be further away from residential and environmental receptors.	possibly leading to a requirement for an Environmental Impact Assessment and/or other justification requirements. Industrial site may not have adequate land availability for the proposed development and may be too restrictive in relation to access routes and location of infrastructure (underground services may also be obstructive in places etc) Large scale construction operations for site development. Impacts of noise (site clearance, rock breaking, piling etc), traffic management plan during construction phase of site for importation of construction materials. Large burden on resources usage e.g. metric tonnes of aggregates, steel, fuel and energy resources. Excessive financial burden of site procurement and development by developer. Excessive time constraints in terms of site selection, procurement, planning authorisation and construction.
	Score:	4 positives	7 negatives

Therefore on consideration of the above reasoned alternatives, the option 1, to apply for planning permission at the existing site at is justified in terms of less potential negative criteria and its overall suitability.

1.8.2 Alternative Designs.

The option to explore alternative designs within the scope of this EIS is annulled by virtue of the site design being established at present and also constructed as designed (with previous planning authorisations).

There was much thought and consideration inputted during the site design stage prior to planning applications for the existing site buildings and ancillary services. The finished site is therefore designed as a fully modern, robust WEEE and metals recovery facility using the Best Available Technologies (BAT).

1.8.3 Alternative Processes.

Similarly to above (alternative designs) the option to explore alternative processes within the scope of this EIS is annulled by virtue of the site processes being established at present and fully operational (with planning and waste authorisations).

The process plant complies with BAT (best available technology) and involves a combination of manual sorting and mechanical treatment of small household appliances (SHA), IT and Telecommunications equipment and other suitable small electrical and electronic equipment. The process is both effective and appropriate to the volume of material available in Ireland. There has been much research conducted by both KMK and other appointed professionals (design engineers, waste management consultants, electrical and software systems providers) in the decision process of the WEEE treatment machinery and plant. Extensive site visits have taken place by KMK management to existing sites across Europe where these systems are currently operational at similar facilities and are accepted as the most optimum processes for WEEE treatment.
Therefore after considering this system and other alternatives, it was decided to proceed with the 'KM Smasher' WEEE treatment process.

Therefore taking into consideration the three critical alternatives (location, design and process) and assessment of these by virtue of the matrix tables above, it is now fully reasoned that the existing waste management operation at the Cappincur site is the correct and justified option in terms of low impacts on the environment and the proposed planning application to increase the annual waste acceptance to 35,000 tonnes and to obtain full authorisation for all necessary infrastructure on-site.

KMK has an established history of planned and sustainable development at Cappincur Industrial Estate. Therefore, the option of relocation to an alternative site within Tullamore or its Environs was determined not viable both environmentally and economically as this would require KMK to close its facility for its relocation and to develop a possible Greenfield site which would result in an environmental burden of resource usage, site clearance, ecological depletion and site appraisal. With regard to appropriate planning, land at and surrounding the site is zoned for industrial development, as is illustrated in the Environs Development Plan 2010-2015 Land Zoning Map (main EIS Figure 2.1.2). Therefore it is considered that the most environmentally responsible option is for development of the existing KMK facility site (within an industrial estate and with mixed use occupants including waste management businesses).

1.9 DIFFICULTIES ENCOUNTERED

The EIA regulations require that difficulties encountered in compiling specified information for the Environmental Impact Statement be described.

No difficulties were encountered during site surveys, research and the final compilation of this Environmental Impact Statement.

2.0 Site Location and Description

2.1 LOCATION

KMK is located in the Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly, Figure 2.1.1 below, towards the east of Tullamore town (National Grid Reference E635890 N725043).

The Cappincur Industrial Estate is populated by industrial units, warehousing, retail, commercial couriers and waste management businesses.

Land surrounding the site is zoned for industrial development, as illustrated in the Tullamore Town and Environs Development Plan 2010-2016 Land Use Zoning Map (Figure 2.1.2).

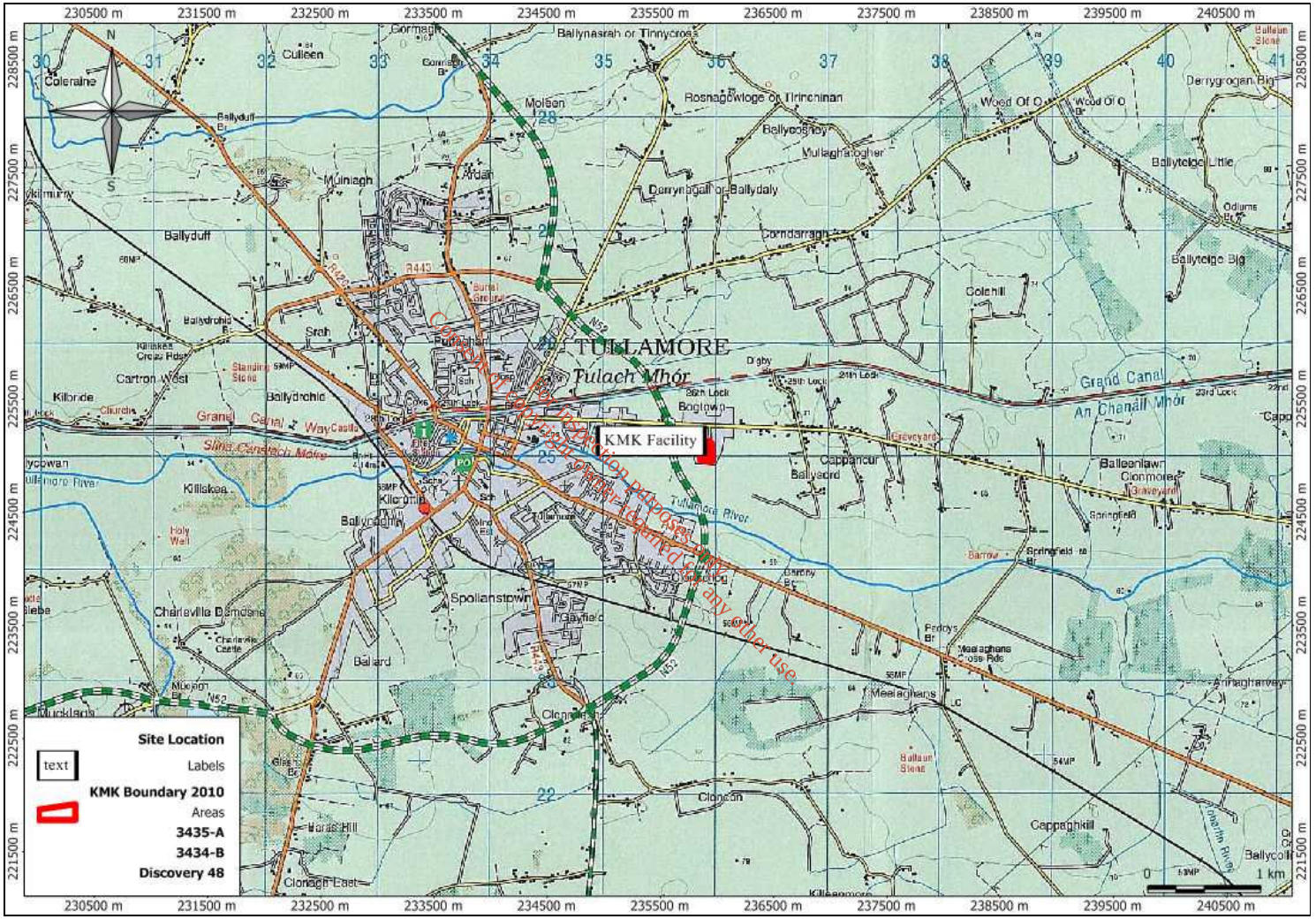

Figure 2.1.1: General Location Map of KMK Recycling Ltd

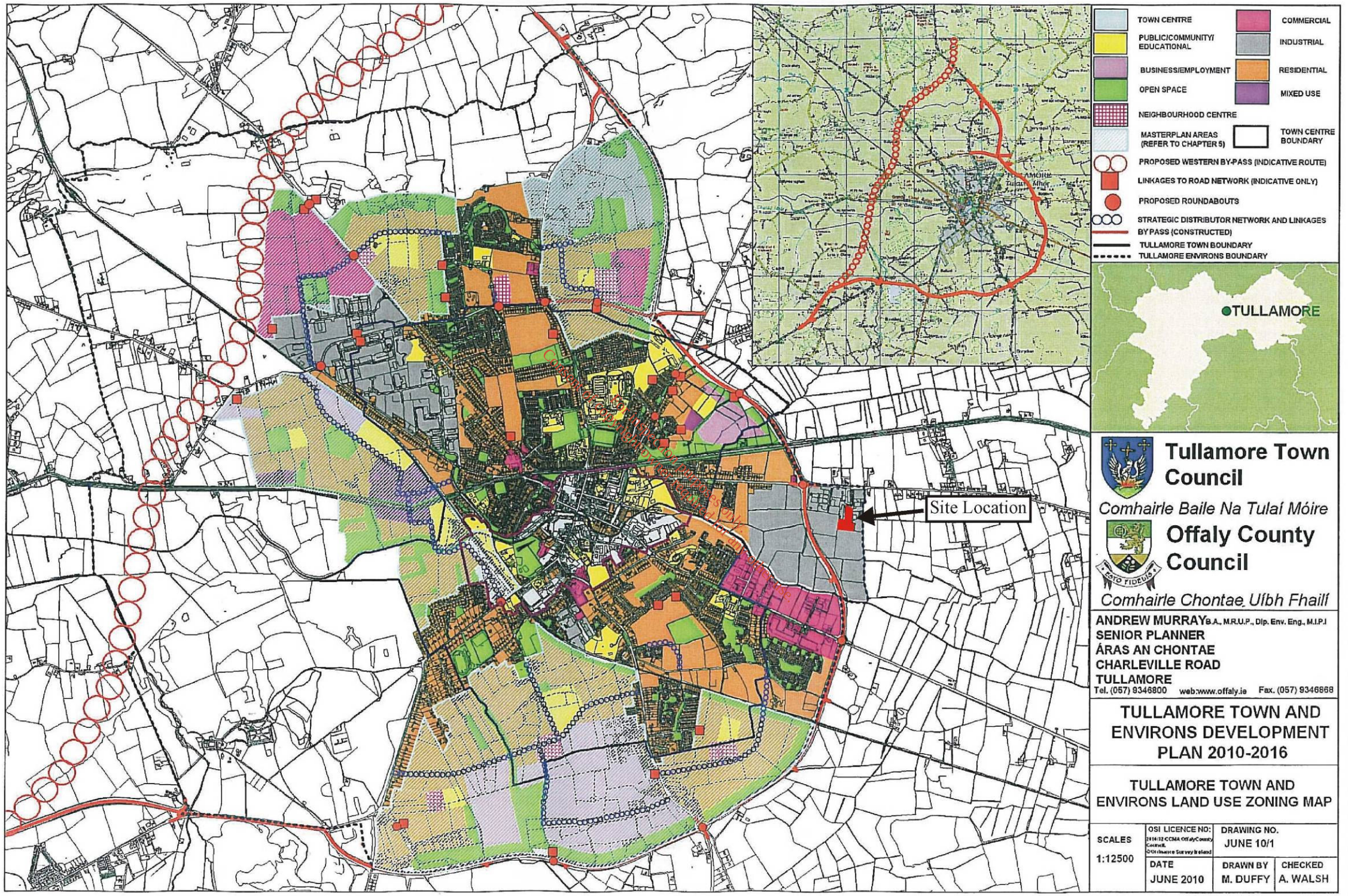

Figure 2.1.2: Tullamore Town and Environs Development Plan 2010-2016 Land Use Zoning Map

2.2 SITE DESCRIPTION

Operations at the KMK facility can be divided into two main areas 1) the WEEE materials recovery area and 2) the metals and specific metallic wastes recovery area.

Figure 2.2.1 provides an overview of the existing site layout using a modified aerial photo.

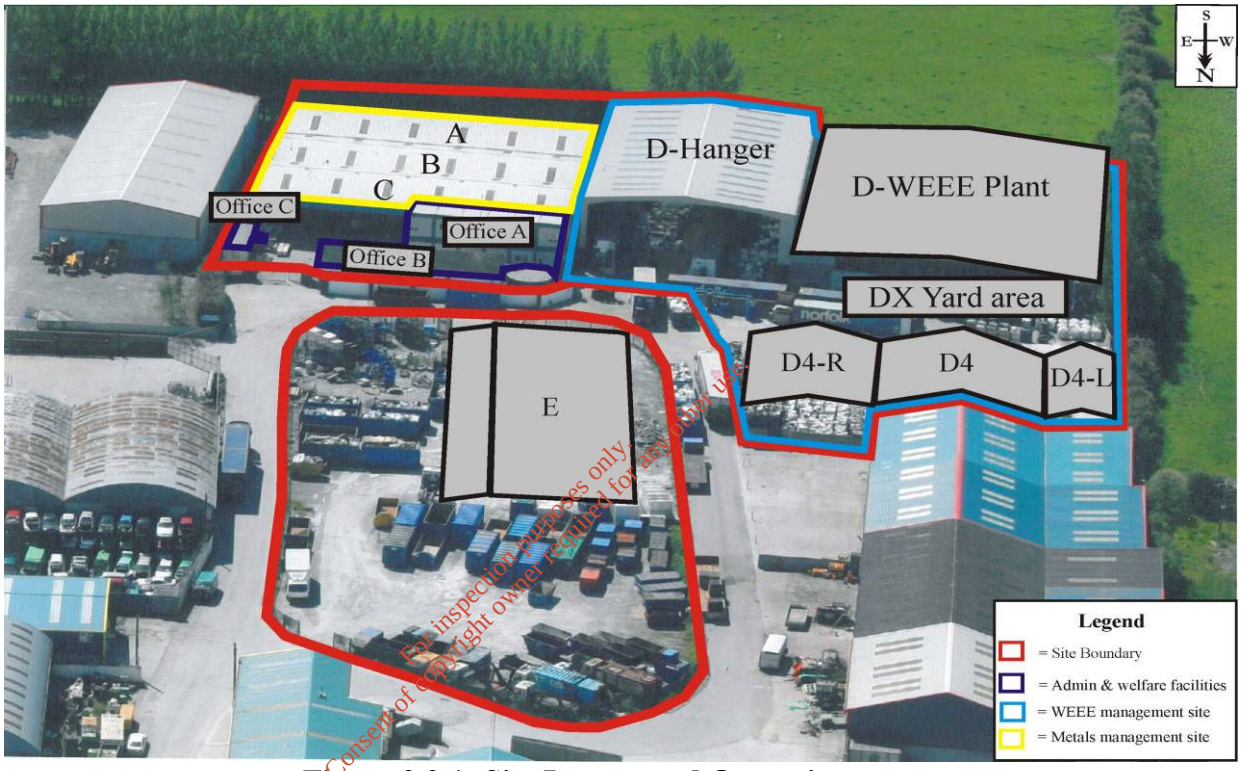

Figure 2.2.1: Site Layout and Operation

The total site area within the red boundary is 12,891m^2 or 1.289hectacres.

The WEEE recycling and recovery area covers the majority of the site and incorporates the D-Hanger, D-WEEE Plant, D4, D4-R, D4-L and E buildings as illustrated above.

The specifics of the buildings are described below;

The D-Hanger building has a total covered area of 1,016m^2 and a maximum height of 11.13m (planning grant ref: 07/78).
The D-WEEE Plant building has a total covered area of 1,760m^2 with a maximum height of 11.530m (planning ref: 10/101)
The D4-R and D4-L roof structures cover a total combined area of 532m^2 (planning ref: 09/311).

The E building has a total covered area of 1,120m^2 and a maximum height of 8.55m (planning grant ref: 10/46).

It is estimated that WEEE accounts for 85% of all waste acceptance and handling by KMK, therefore WEEE recovery is the prime waste processing operation at the facility.

The metals recovery area of the site is comprised of a 1,400m^2 warehouse type building subdivided into three areas (A, B and C), for all metallic and metallic type wastes recovery and storage. Metallic wastes accounts for 15% of the total waste intake at the KMK site. This buildings main function is as a transfer point for wastes to and from the site. A site layout drawing ref: 12-022-02 is in Appendix 2.

All onsite buildings and their uses are described in 2.5 below.

2.3 GENERAL DESCRIPTION OF THE SURROUNDING AREA

The site is located within the Cappincur Industrial Estate, approximately 2km on the eastern outskirts of Tullamore Town. Land surrounding the site is primarily in use as industrial with agricultural grassland to the east and with a once off housing pattern along the Tullamore – Ballinagar Road to the north.

2.4 AREAS OF SIGNIFICANCE

There are 11 residential buildings within 500m of the centre of the existing KMK site. There are no designated areas or sensitive locations (schools, churches or public grounds) and no recorded sites or monuments within 500m of the site. A location map of dwellings in the area is provided within Chapter 10: Landscape and Visual Impact as Figure 10.4.1.1.

The only designated area within relative proximity to the site is the Grand Canal proposed Natural Heritage Area (pNHA) - Site Code 002104 (approximately 650m from the site according to NPWS map viewing records). Figure 12.3.1 provides a map of designated areas in close proximity to the facility.

The facility is in the Tullamore River (IE_54_549) catchment area. The Tullamore River has been assigned an interim status of 'moderate'. This catchment is classed as a protected area and therefore Objective 1 (restoration by 2015) applies. Implications of surface water runoff and discharge to surface waters are outlined in the Chapter 9: Water of this

EIS, which also includes a map of water features and water quality in the area (Figure 12.5.1.1).

2.5 SITE PROCESSES

KMK currently operates a hazardous and non hazardous metals and WEEE recycling facility and is EPA licensed (W0113-03) to handle up to 20,000 tonnes of waste per annum. All incoming wastes and materials to KMK are profiled off-site by management prior to acceptance at the facility. This procedure ensures that all wastes are approved for acceptance to the site (under the terms of Waste Licence W0113-03) and that they are suitable prior to delivery at the facility. This waste profiling thus ensures minimal needs for waste quarantine requirements at the facility.

Collected waste arrives as either metallic materials or WEEE materials. All metallic based wastes are accepted, sorted and stored inside a designated building prior to off-site export for further recovery. Incoming WEEE materials are pre-treated prior to further recovery on-site. The resultant WEEE is exported in a safe and fully authorised manner to approved recovery outlets in UK and Europe.

A complete description of all waste management activities at the site is presented in Table 2.5.1 below.

Table 2.5.1: Buildings/Area Uses and descriptions

Area	Building refs	Description of waste processes. note 1
Metallic wastes, sludges and liquids management areas	**Building A (self bunded secure area)**	Dedicated storage for non-ferrous metals, base metal fractions, and packaged filter cakes arriving directly from customers via KMK (brand) collections. Metals arrive to building, are weighed, inspected, labelled, repacked and stored in their original containers. There is no processing of metals / metallic wastes at this location. Materials are transferred off-site once sufficient quantities are available.
	Building B (secure with bunded area)	This building is split into two separate locations i.e. a double bunded area with sump and a regular area with separate activities as follows: <u>Double bunded area with sump:</u> Dedicated bunded storage for: waste oil removed from Oil Filled Radiators (at the D-Hanger building on-site); Lead Acid Batteries; sludges (typically clay consistency); liquids; and other materials (capacitors, ionisation chamber smoke detectors, and packaged nickel-cadmium batteries). All incoming materials are weighed, inspected, labelled (as appropriate) and stored. Lead acid batteries are checked, repackaged, palletised and stored prior to loading. Sludges (with no processing) and occasional liquids are stored in this area.

Area	Building refs	Description of waste processes. [note 1]
		Materials are transported for further recycling or treatment once a full consignment is achieved. The 'Willfly separation machine' (shaker sorting table) is used for sorting minerals and other metals at this location. <u>Regular B building area.</u> This area is used for sorting and repackaging of dry materials. Cables are weighed, sorted and baled. Computer hard drives are weighed and shredded. Materials are kept in dry storage and in-house stock labelling is updated until such as time as a viable consignment is achieved.
	Building C	This building is split into two separate locations i.e. an insulated warehouse area and a materials loading and off-loading area. The respective activities are as follows: <u>Insulated secure warehouse area</u> The use of this warehouse is flexible; it serves as an insulated, dry storage area, and can be used for dismantling / sorting when not required for insulated dry storage. At the moment it houses KMKs E-Scrap Dismantling Station and Tubes/Bulbs Sorting Area: E-Scrap: KMK's Electronic Scrap dismantling station serves the purpose of dismantling items which are either too robust for KMKs WEEE Plant or which require manual disassembly

Area	Building refs	Description of waste processes. [note 1]
		for better recovery of component parts Fluorescent Tubes and Light Bulbs of all types are collected typically by KMKs Van Drivers; they are delivered here where they are recorded and sorted by type, before being sent offsite for further recycling at facilities which specialises in recovery of glass and metal from tubes/bulbs. All materials and fractions arising from these activities are sent for further recycling / recovery once a viable consignment is achieved. <u>Materials loading and off-loading area</u> This area is used for off-loading (of incoming materials) and loading of materials arising from KMKs processes, plus temporary storage (under cover) of large bulky metal items and packaged items awaiting transport offsite.
Administration and Welfare Facilities	**Offices A, B & C**	Includes the main reception area and offices, meeting rooms, canteens and toilet facilities.
WEEE Management Areas (D Buildings)	**D-Hanger**	The Hanger building is an open ended dedicated WEEE receipt, bulk acceptance and pre-sorting area, with a large storage bay for pre-sorted WEEE pending processing through the WEEE Plant. Pre-sorted WEEE is loaded mechanically onto the WEEE Plant Conveyor.

Area	Building refs	Description of waste processes. [note 1]
		The activities inside the Hanger are as follows; Pre-sorting of WEEE, this involves manually removing any item which is destined for processing elsewhere other than in the WEEE Plant (i.e. Monitors, Televisions, Oil Filled Radiators, Central Processing Units, and large / robust items which are dismantled as Electronic Scrap) and other items which are not suitable for the WEEE Plant (i.e. Paper, Wood, Compressed Cylinders). The removed items are collected in cages / bins and dispatched by fork lift truck to other areas on-site for processing. Oil filled radiator de-pollution (removal of oil) takes place in the Hanger Building, on a purpose built and bunded frame, with a drip tray which feeds into an IBC. Bulk acceptance and loading takes place under cover for materials for off-site export.
	D-WEEE Plant	The D-WEEE Plant fully enclosed secure building houses a dedicated **Smasher Process** for WEEE treatment i.e. a dedicated process for mechanical disassembly, granulation, shredding, and sorting of the various components of WEEE (plastics, metals, batteries, cables, capacitors and other handpicked items). *The general running of the WEEE plant is described below. This is subject to change, and only intended as a general overview: additional fractions (of either positive or negative value) may be removed at any particular stage, depending on the general composition of incoming*

Area	Building refs	Description of waste processes. [note 1]
		material. Pre-sorted WEEE travels from the D-Hanger Building via Conveyor **Belt 1**, which is a manned picking line for removal of cable, wood, plastic, smoke detectors, capacitors and any of the items for which KMK has a separate dedicated process (although these typically have already been removed during the pre-sort in the Hanger Building). Materials travel up the conveyor into a Trommel where they are broken down by a combination of gravity and impact within the machine: Smaller pieces, by design, fall through the Trommel onto Conveyor **Belt 2,** which exits the Trommel House then passes under a magnetic separator; the result being small-sized ferrous and non-ferrous fractions. These fractions pass by manned conveyors, mainly for removal of batteries, circuit boards, connectors, and copper. The resulting non-ferrous fraction is a mix of plastics and metal, which is further segregated by the Eddy Current and/or Flotation Tank, as appropriate. Larger pieces travel from the Trommel House on a conveyor to the **Sorting Cabin**, passing under a magnetic separator which segregates the materials onto two belts of (larger sized) non-ferrous and ferrous pieces. Belt 1 is manned for manual removal (picking) of plastic, packaging, circuit boards, transformers, motors, stainless steel, batteries, cable and aluminium; the residual is non-ferrous

Area	Building refs	Description of waste processes. [note 1]
		fraction which will be sent for further granulation through the Shredder. Any residual fraction which requires further granulation (i.e. as from the Sorting Cabin) can be put through the Shredder (also located in the WEEE Plant) whereby the material is shredded and then transported along a conveyor with overhead magnet which sorts the material (ferrous from non-ferrous). Residual fractions which are well granulated (but mixed, either mixed non-ferrous metals and plastics, or ferrous metals) are then put through either the Eddy Current or the Flotation Tank for final segregation of plastics and different types of metals.
	D4 building	This building is used to dismantle Cathode Ray Tube (CRT) monitors and televisions. The respective activities are follows: CRT monitors and televisions are dismantled manually at dedicated work benches using a combination of power and hand tools. Dismantling involves: removing the outer housing; 'venting' the CRT (to prevent implosion); removing the Tip and the Copper Yoke; and cleaning the CRT so that it is ready for Glass Splitting. Glass Splitting: cleaned CRTs travel along a conveyor to the Glass Splitting Station, whereby an operative uses a ribbon heater to weaken the glass between the front and back glass, so that it breaks at the right place, where after the front glass is removed from the back glass, the shadow mask is removed, and the powder coating is removed by vacuuming. Front glass and back glass is then sent for recycling at a specialised facility, and shadow masks are sent as

Area	Building refs	Description of waste processes. [note 1]
		steel.
	D4-R building	This building is currently used for Washing Machine De-pollution and Steel Baling. The activities are follows: Large Household Appliances are inspected on collection and again on delivery at KMK, by the off-loading team. Washing Machines are offloaded to D4-R where they are dismantled by an operative. The operative removes the Capacitor, any wood / plastic, and any items of positive recycling value (i.e. motors and cable). De-polluted Washing Machines are then baled at this location using KMK's industrial horizontal baler (with Grab). Additional items made of steel and steel from KMKs other processes is also baled at this location. Bales are loaded and sent off-site for further recycling at a specialised steel recycling facility.
	D4-L building	This building is used for Household Batteries Sorting. The activities are follows: Incoming household batteries are stored inside the building in plastic containers until there is a viable quantity to warrant a sort activity. Sorts are typically carried out by three specially trained operatives over a number of non-consecutive days. Batteries are loaded into a Hopper and fed along a conveyor whereby the

Area	Building refs	Description of waste processes. [note 1]
		various chemistries are handpicked into separate fractions bins (6 Volts, Nickel Cadmium, Lead, Nickel Metal Hydride, Lithium, Lithium Ion, and Button Cells; plus WEEE and Rubbish). The remainder is predominantly Alkaline (96-98%), but is subject to a second sort to achieve the required >99%, and then a Quality Check. Segregated batteries are stored in closed labelled containers or FIBC's (bags) before being sent offsite for recycling.
	DX Yard Area	This area is used for off-loading and loading of WEEE, including Large Household Items. Trucks deliver WEEE collections to the DX Yard. Fridges and Freezers are inspected, offloaded and re-stacked securely on an empty truck, which is stationed intentionally for this purpose (typically an empty truck body is delivered when a full one is collected). All other items are removed to the appropriate processing area (Washing Machines to D4-R; CRT to D4; Batteries to D4-L; mixed WEEE to the Hanger).
WEEE management	**E building**	This building has been created for additional storage and processing capacity of materials incoming and outgoing. Future planned activities will be as follows: KMK proposes a flexibility such as relocation of specific individual processes within E building for example but not limited to the operations previously described at D4-R building. Environmental controls include; the surface is impermeable (concreted), under roof, and drainage is channelled to KMKs new attenuation tank and interceptor, thereby controlling and

Area	Building refs	Description of waste processes. note 1
		managing all drainage. KMK may also require an air emissions point from E building (the precise nature and location of which is to be confirmed), to allow for a ventilation/extraction system should it be required in the future and associated with a waste treatment process.
	E yard area	This area is to be used for the following activities; Logistics and vehicle movements. Weighbridge usage and maintaining records Storage for incoming waste materials and skips, containers. Staff car parking.

Note 1 = All incoming wastes and materials to KMK are profiled off site by management prior to acceptance at the facility. This procedure ensures that all wastes are approved for acceptance to the site (under the terms of Waste Licence W0113-03) and that they are suitable prior to delivery at the facility. This waste profiling thus ensures minimal needs for waste quarantine requirements at the facility.

2.6 MATERIAL ASSETS

2.6.1 Plant and Machinery

The following table provides a summary of all plant located in the processing areas at the KMK facility.

Table 2.6.1: Site Operation Plant and Machinery

Location	Equipment Details	No. Of Units	Waste Handled
WEEE Management Area:			
D Hanger	Forklift Trucks	2	Incoming WEEE - Small Household Appliances (SHA's), electrical equipment wastes and materials
	Automated conveyor system	1	Small Household Appliances (SHA's), electrical equipment wastes and materials
	Mechanical Wheeled Grab machine	1	Small Household Appliances (SHA's), electrical equipment wastes and materials
D-WEEE Plant	Complete **Smasher Process** for WEEE treatment – conveyor belts, picking lines, sorting cabin, rotating drum (trommel type), shredder, magnetic separation and flotation tank	1	All pre-sorted incoming WEEE from the D-Hanger Building.
D4 building	Cathode Ray Tube (CRT) plant (work benches, conveyor, glass splitting unit)	1	Cathode Ray Tube (CRT) monitors and televisions.
D4-R building	Grab and steel baler machine	1	Large Household Appliances (LHAs) (cookers, dishwashers, washing machines)
D4-L building	Battery Sorter Machine Racking	1	Household Portable Batteries
DX yard area	Forklift Trucks	3	Off-loading and loading of WEEE, including LHAs and fridges/freezers

Location	Equipment Details	No. Of Units	Waste Handled
E building	None at present	-	To be used for off-loading and loading of WEEE. Possible future use as described in D4-R previously.
Metals Management Area:			
Location	**Equipment Details**	**No. Of Units**	**Waste Handled**
Building A	Fork Lift Truck used for A, B and C areas combined.	1	Non-ferrous metals, base metal fractions, and packaged filter cakes
Building B	Willfly separation machine. Cable baler Small shredder Bunded area	1 1 1	Metals and minerals Cables Computer hard drives Lead acid batteries, sludges, liquids
Building C	Work benches Tube racking	1 1	Electronic equipment disassembly Fluorescent bulbs sorting and storage

2.6.2 Raw Materials

The raw materials are effectively incoming wastes i.e. metals, small quantities of metallic based wastes (sludges, filter cakes, tradable metallic liquids) and waste electrical & electronic equipment (WEEE) which accounts for the vast majority of incoming materials. Please refer to Appendix 3 for the full listing of wastes including their EWC codes. In relation to the quantities of incoming raw material wastes, as part of the companies' compliance with its waste licence it submits an Annual Environmental Report (AER) to the EPA. Utilising the latest figures submitted to the Agency for the reporting year 2011 an overview of waste stock is provided below in Table 2.6.1.2.

Wastes received/accepted at the facility originate from sources such as Local Authority civic amenity centres, waste transfer stations and commercial and industrial sites from business-to-business (B2B) operations.

No dangerous substances defined as highly flammable or explosive liquids are collected, treated or stored on site, apart from kerosene for Fork Lift Truck fuelling and heating oil for administration block and welfare area heating purposes.

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000 do not apply to this facility. No list I or list II substances are to be accepted or treated on site.

Table 2.6.2: Waste (raw materials) incoming for 2011

Source of waste accepted.	Total quantities (tonnes)
Local Authority civic amenity sites	8,770.542
Commercial	7,188.589
Industrial	580.805
Transfer Stations	4,838.740
Total	**21,378.676**

It is estimated that approximately 85% of the total waste intake in 2011 was waste electrical and electronic equipment (WEEE).

2.6.3 Consumables

There are no consumables necessary for any of the processing at the site. The only raw materials used onsite are a reserve of hydraulic and engine oil for the machines as well as kerosene fuel and heating oil both stored separately in bunded tanks inside D-Hanger Building. All WEEE processing plant is powered by electricity supply.

2.6.4 Hazardous Materials

Waste received at the KMK site is separated into different streams ranging from Large Household Appliances (LHA's), Small Household Appliances (SHA's), batteries, ITC Materials, etc. There are hazardous materials associated with a percentage of the waste received; these wastes are processed and stored awaiting removal to an approved outlet, or stored without any form of processing awaiting removal to an approved outlet. Table 2.6.3.1 provides details of waste materials handled at KMK and whether these wastes contain hazardous/non-hazardous components and are or are not processed onsite.

Table 2.6.3: Waste Materials Accepted (Hazardous and Non-Hazardous)

Waste Streams	Description	Haz	Non-Hazardous	Processed	Stored
Large Household	Televisions	√	-	√	√
	Computer Monitors	√	√	√	√

Waste Streams	Description	Haz	Non-Hazardous	Processed	Stored
Appliances	Central Processing Units	√	√	√	√
	Printer Material	√	√	√	√
	Washing Machines	-	√	√	√
	Cookers	-	√	√	√
Large Household Appliances (Cold)	Fridges	√	-	-	√
	Freezers	√	-	-	√
	Fridge-Freezers	√	-	-	√
Small Household Appliances	Scrap from Telephones	-	√	√	√
	Lighting Equipment	√	√	-	√
	Toy/Leisure/Sport Eqt.	√	√	√	√
	Laptops	√	√	√	√
Medical Devices	Batteries	√	-	-	√
	Fluorescent Lights	√	-	-	√
Electrical / Electronic Tools	Batteries	√	-	-	√
Material Metals	Lead Acid Batteries	√	-	-	√
	Zinc Oxide Powder	√	-	-	√
	Nickel Zinc Filter Cake	√	-	-	√
	Solder Dross	√	√	-	√
	Nickel Iron Filter Cake	√	-	-	√
	Tin Sodium Filter Cake	√	-	-	√
	Nickel Hydroxide Filter Cake	√	-	-	√
	Cobalt Chrome Extractor Dust	√	-	-	√
	Zinc, Copper, Iron Hydroxide Filter Cake (Brokered)	√	-	-	√
	Tantalum	-	√	-	√
	Titanium Scrap	-	√	-	√
	Graphite	-	√	-	√
	Graphite Solids	-	√	-	√
	Cobalt Chrome Extractor Dust	-	√	-	√
	Zinc Discs	-	√	-	√
	Solder Wipes	-	√	-	√

Waste Streams	Description	Haz	Non-Hazardous	Processed	Stored
	X-Ray Film	-	√	-	√
	Scoring Paste (Old Stock)	-	√	-	√
	Aluminium Oxide Powder	-	√	-	√
	Ferrous Metal Filings and turnings (swarf) from the iron and steel industry	-	√	-	√
	Stainless Steel production off-cuts and swarf	-	√	-	√
	Aluminium Blister Pack Shred	-	√	-	√
	Zinc Production off-cuts and swarf	-	√	-	√
	Damaged Pots (Iron & Steel)	-	√	-	√
	Brass Scrap	-	√	-	√
	Copper Scrap	-	√	-	√
	Silvered Cans	-	√	-	√
Sludges	Waste Oil from Radiators	√	-	-	√
	Cutting Fluid	√	-	-	√
Household Portable Batteries	Alkaline and other	√	√	√	√

2.6.5 Bunds and Underground Services

Bund integrity testing is conducted every 3 years on all bunds at the facility. Building D4 was developed with a fully internal bunded facility and commissioned for use in September 2008.

All mobile and fixed bunds at the site are assessed accordingly along with daily visual assessments, of which records are maintained at the site. All details of work, testing, etc of onsite bunds are forwarded to the Environment Protection Agency as part of the facilities licence requirements.

There are no underground services at the site requiring testing. Presently there are three fully operational interceptors on-site which are de-sludged and cleaned bi-annually or sooner if required. A comprehensive interceptor maintenance plan is in place whereby an outside contractor is engaged to monitor and maintain the working efficiency of the interceptor units at regular intervals throughout the working year.

The details of the existing interceptors are as follows;

A Class 2 interceptor is located in the **yard area outside C building**. This interceptor is receiving surface water from the small yard area, which is approximately 550m^2. The roof rain water from buildings A, B and C is also discharging to the interceptor and prior to discharge to the land drain at the east of the site. The discharge pipe from the interceptor connects into a manhole and discharges directly towards the land drain towards the east of the site.
This interceptor operates at 10 litres/second and has three separate chambers which are accessible for inspection and maintenance purposes and have the correct load bearing requirement.
The Class 2 interceptor is free of debris from the yard area currently.
The Class 2 interceptor has a capacity of approximately 4,500 litres in total.
The inlet pipe is 150mm diameter which is sufficient to take the current surface water flows.
The outlet pipe increase to 225mm in order to accept surface water from additional surface area as it flows towards the discharge point to the adjoining land drain.

Plate 2.6.5-1: view of the manhole covers open at the CX interceptor unit

A Class 1 interceptor is located in the **DX yard area** close to the western boundary of the site. This interceptor is receiving surface water from a total area of approximately 2000m^2 and is receiving some roofed area rain water from buildings D4, D4-L and D4-R.

The Interceptor has a diameter of 2.7m with an overall internal depth of 2.5m. This provides for a total volume of 14.5m^3 approximately. The interceptor is served by 3 separate compartments as follows:

At the point of the inlet (225mm) the inlet pipe is turned at a 90 degree angle to a depth of 300mm. This inlet pipe discharges initially into a chamber approximately 0.8m^3 in volume. This chamber serves as a primary settlement area within the Interceptor. This chamber is accessed by a manhole opening.
The second chamber is the large settlement area consisting of approximately 10.8m^3 in volume. This chamber is positioned between the primary settlement chamber and the coalescent media on the outlet. It is also served by an accessible manhole.
The third chamber consists of approximately 2.8m^3 of coalescent media. This black membrane's function is to provide a suitability large surface area for un-dissolved oil droplets to form. The nature of the media is to encourage the oil to rise along the surface area through a series of openings thus facilitating the process of settlement of hydrocarbon on the surface of the water level within the tank. The separated water then exits the outlet at a lower level to the point of discharge.

The interceptor is discharging directly to the land drain via a 225mm outlet.

All waters discharged from these interceptors (via discharge points CX and DX) are sampled and reported upon on a quarterly basis as part of compliance with the waste licence.

The recent development of E area incorporated an interceptor and attenuation tank surface water management infrastructure. These are fully described in Section 3.3.1 below.

3.0 Proposed Development

It is proposed by KMK to increase the permitted annual tonnage for waste acceptance at the facility from 20,000 tonnes to a maximum of 35,000 tonnes. In addition, all associated plant and machinery used at the site are to be authorised by planning permission where required.

3.1 LAYOUT AND INFRASTRUCTURE

The site layout using a modified aerial photo is shown below.

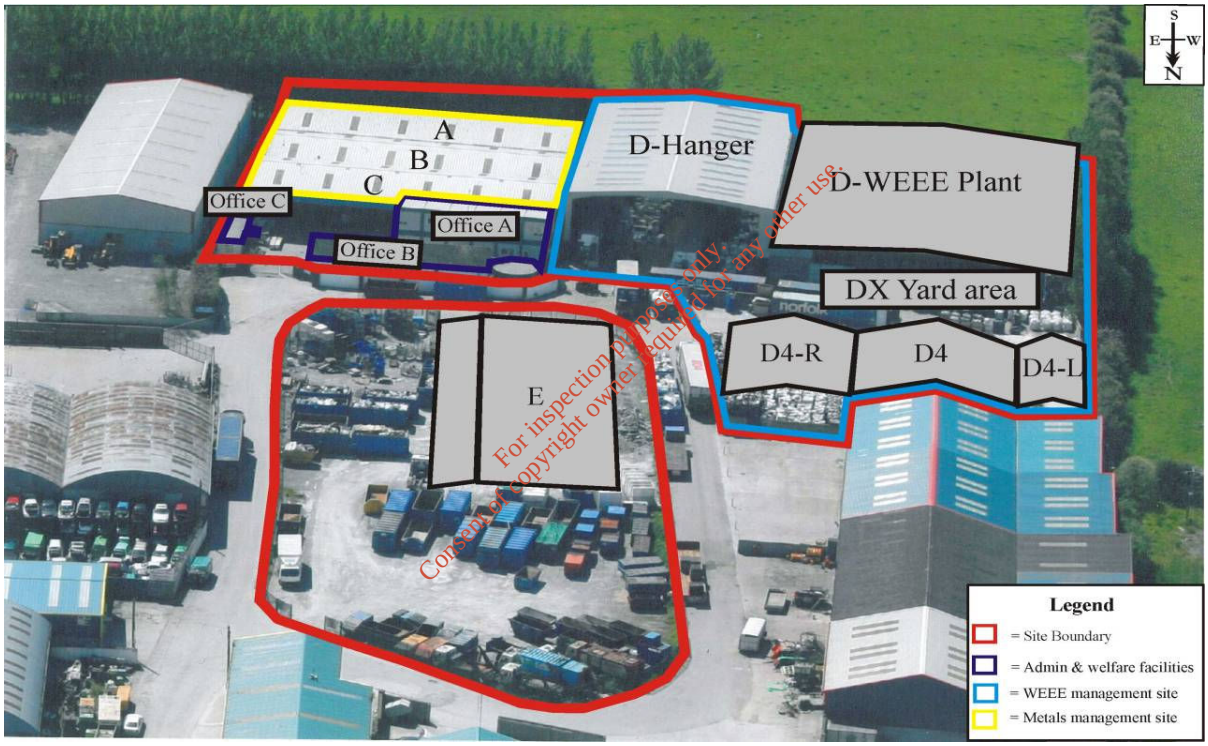

Figure 3.1.1: Existing Site Layout

The infrastructure and operations are previously described in section 2.5 and table 2.5 also.

KMK proposes to increase the capacity of the overall site from 20,000 tonnes to a maximum of 35,000 tonnes per year, of metals and Waste Electrical and Electronic Equipment (WEEE). The proposed additional waste tonnage is to be the same wastes in type and description to that currently acceptable in the waste licence.

There is ample space and infrastructural resources in place for the acceptance, processing and storage of the proposed additional tonnages of WEEE/wastes in a safe and secure manner.

In summary, the facility will promote the recovery and recycling of hazardous and non hazardous wastes. It is envisaged that the facility will help to:

- improve the nationwide recycling/recovery infrastructure
- reduce the reliance on direct export of WEEE from sources (civic amenity sites and commercial sites)
- promote the treatment and recovery of WEEE (removal of hazardous components, extraction of metals and other materials from WEEE and sorting WEEE by categories) which is necessary for efficient and appropriate export.
- promote the recovery of household batteries and diverting this waste stream from landfill.

Hence the proposed facility will thereby provide a more sustainable solution to waste management within Ireland.

A detailed site layout map is provided as Appendix 2 to this EIS.

3.2 WASTE ACCEPTANCE AND PROPOSED OPERATION

KMK proposes to increase the capacity of the overall site from 20,000 tonnes to a maximum of 35,000 tonnes per year, of metals and Waste Electrical and Electronic Equipment (WEEE). In light of the 'Duty and Stand-by Capacity Report' submitted to the Environmental Protection Agency in 2009, this report concluded that there is adequate storage facilities at the site for additional tonnages of WEEE in a safe and secure manner.

It is expected that approximately 85% of the waste intake figure will account for WEEE and the remaining 15% of incoming waste will be metallic based materials. All domestic and canteen related wastes are collected by an authorised waste contractor fortnightly and sent to a municipal waste incinerator for energy recovery.

The proposed infrastructure and operations are previously described in section 2.5 and table 2.5 also.

The principal class of activity carried out by KMK as defined by the Waste Management Act 1996 is:

- *Class 13 of the Fourth Schedule: Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than*

temporary storage, pending collection, on the premises where the waste concerned is produced.

Other activities carried out on site include:

- *Class 3 of the Fourth Schedule: Recycling or reclamation of metals and metal compounds.*
- *Class 4 of the Fourth Schedule: Recycling or reclamation of other inorganic materials.*
- *Class 6 of the Fourth Schedule: Recovery of components used for pollution abatement.*
- *Class 7 of the Fourth Schedule: Recovery of components from catalysts*
- *Class 11 of the Fourth Schedule: Use of waste obtained from any activity referred to in a preceding paragraph of this schedule.*
- *Class 12 of the Fourth Schedule: Exchange of waste for submission to any activity referred to in a preceding paragraph of this schedule.*

The hours of waste acceptance and operation of the facility are; 06:00 to 22:00 Monday to Friday inclusive and 06:00 to 13:00 on Saturdays. The hours as detailed above provide for adequate flexibility of activities in the event of any contingency plans at the site where additional time is required for specific waste handling projects.

Proposed further development at E Area will be as follows;

- Finished car parking surfaces for employees, visitors and KMK waste collection vehicles
- Two weighbridges to be located at E area, one within the yard and the other adjacent to the E building.
- The purpose E building will be for incoming and outgoing WEEE materials prior to export from KMK.
- Storage of empty receptacles/skips/containers used by KMK for off-site usage.
- Waste collection vehicle marshalling and control.
- Weighbridge usage.

3.3 MATERIAL ASSETS

The KMK facility is well established and fully operational. Changes with regard to material assets at the site are outlined below.

3.3.1 Buildings and Structures

All building structures are currently in place and operational at the site apart from the E building which is being presently commissioned and the yard is undergoing final phase completion.

A considerable element of the development of E area is the surface water management infrastructure. In summary, the site development at E area will achieve the following surface water protection measures;

- All yard water, roof water and water run-off from the proposed weighbridge(s) will pass through a combination of a silt trap, followed by a storm water attenuation tank system (all located at the north part of E area). The outfall from the attenuation system will be treated by a Class 1 hydrocarbon interceptor unit.

- The subsequent treated water discharge from the Class 1 interceptor will be diverted to the existing storm water network of the industrial estate prior to final discharge to the existing land drain along the west boundary of the site. Therefore KMK will adequately treat all surface water run-off from their site at E area prior to discharge to the land drain off-site.

An surface water manhole for sampling and inspection is installed immediately downstream of the Class 1 interceptor. See SW MH16 on the layout drawing ref: 12-022-P02. This sampling location is now proposed as the monitoring point for the E area and is included in the waste licence review to the EPA.

In addition, a combination of a 1.6m precast retaining wall and palisade fence with sliding entrance gates is incorporated at E area.

3.3.2 Site Security

CCTV has been installed at the facility with a central control and administration point inside the site management office. In addition, a combination of a 1.6m precast retaining wall and palisade fence with sliding entrance gates will be incorporated at E area. The precast concrete wall will ensure no unauthorised access of the weighbridge(s) occurs.

3.4 ENVIRONMENTAL MANAGEMENT

KMK has established an internal management system or IMS. This IMS incorporates the following; ISO 14001:2004 Environmental Management System, ISO 9001:2008 Quality Management System and OHSAS 18001:2007 Health and Safety Management Standard. In terms of environmental management, KMK has ISO 14001 Environmental Management System accreditation since 2001 which was the first management system at the site. All elements of the IMS are audited annually by the certification body National Standards Authority of Ireland (NSAI).

All environmental monitoring is conducted at the site in compliance with Schedule C of the Conditions of KMK current Waste Licence W0113-03. An Annual Environmental Report (AER) is submitted to the EPA which provides an overview of the facilities environmental performance, monitoring and waste activities for each calendar year. Records of all environmental monitoring are readily available onsite. Regular inspections are carried out by an EPA inspector as part of the Office for Environmental Enforcement (OEE) of the EPA. Any non-compliances (where relevant) resulting from these inspections are logged and the EPA notified in writing of all corrective and preventative actions taken to mitigate them.

To date there have been no significant adverse impacts to the environment associated with operations at the site. Between 2001 and 2011 there have been no complaints of an environmental nature related to operations at the site received by KMK. In the event of a complaint, it shall be recorded in the complaints log which is kept on site as part of the facilities ISO 14001 Environmental Management System (EMS).

3.4.1 Construction

The only areas to be finished in terms of construction and site development during the first two quarters of 2012 are presented in Table 3.4.1 below;

Table 3.4.1: Summary of construction & development targets for 2012 site completion.

E area development targets for 2012	Time Scale
Resurfacing of E Area, including car park, access route and all remaining areas.	June 2012
Repairs, maintenance and modifications to the palisade fence boundary of E area including new sliding entrance gates.	June 2012

E area development targets for 2012	Time Scale
Install attenuation tank and interceptor unit for surface water run-off from surfaced areas.	April 2012
Install Second Weighbridge	August 2012
Upgrading of the existing Waste Water Treatment System and associated sand filter	To be completed after grant of planning
Replacement of boundary wall and piers at front of site (along original entrance)	July 2012

Construction and development work at the facility will take place during normal working hours. By its nature, work associated with the surfacing of E Area and installation of the weighbridge will be temporary and short-lived. A licensed contractor will be employed for all construction works and will ensure suitable disposal of any Construction and Demolition type wastes arising from the development of the E Area.

3.4.2 Operation

There will be no significant changes to waste types processed at the site, only an increase in the volume of waste currently processed. All existing waste management is carried out in compliance with Waste Licence W0113-03. Future waste management operations at the site will be under the control and conditions of the new Waste Licence to be granted by the EPA which is at present under determination (ref: W0113-04).

3.5 REMEDIATION AND AFTERCARE

This site will not require remediation. The concrete yard and flooring system will inhibit the entrance of contaminants into the underlying soil and groundwater. Interceptor units and drainage gullies will collect and treat any potential pollutant yard water run-off before they can reach land drains in the area.

At present it is the intention of KMK to operate this facility for the foreseeable future. Should part of the activity cease to operate, a review of the licence or technical amendment submission with the EPA will be arranged. Decommissioned equipment will be removed from the site to an appropriate disposal or recovery facility.

Should all activities cease to be at the facility, KMK will enter into a review of the waste licence with the EPA in order to surrender the waste licence. The following actions will be carried out to ensure the site is free of contamination and of continuing emissions:

- All waste at the facility will be sent off-site for appropriate recycling/disposal at alternative licensed facilities.
- All Waste Handling and storage equipment and vehicles will be removed from the site either by selling them and / or decontamination where necessary, dismantling them and recovering them by an approved metal recycler.
- All fuel tanks and bunds will be decommissioned.
- The interceptors will be examined and cleaned out by approved contractors.
- The gates to the facility will be locked and security measures implemented to prevent scavenging on site after it is decommissioned.
- Ongoing monitoring shall be carried out by an EPA approved consultancy and records of all monitoring shall be maintained after the closure process.
- A Clean Closure verification audit shall be completed by an EPA approved consultancy which will confirm that clean closure has been achieved by the facility. Details of this audit shall then submitted to the Agency.

This decommissioning process will make the site a safe, usable industrial site appropriate for any commercial activity within the confines of the existing industrial estate.

In the event of decommissioning the facility, KMK will follow the procedures as defined under the granted licence and specified in the Decommissioning Plan which has been submitted to the Agency as part of compliance with license W0113-03. A financial bond is currently arranged to ensure funds will be available to carry out such works should they be required.

4.0 Human Beings

4.1 INTRODUCTION

This Chapter provides population profiles of the study area, county and state, and addresses potential impacts upon human beings not dealt with elsewhere throughout this EIS.

4.2 POPULATION PROFILE AND TRENDS

Tullamore is a town of considerable size, with a population which increased by 6.1% between 2002 and 2006, and further increased by 4.1% in 2011 to a current figure of 11,346 persons. The Environs of Tullamore (Cappincur) (the site surrounds) had a population of 79 persons in 2006, which has increased by 153% to a population of 200 people recorded in the 2011 Census.

Table 4.2.1: Population Trends 2002 to 2011

District	2002	2006	2011			Change in Population 2006-2011	
	Persons	Persons	Persons	Males	Females	Actual	%
State	3,917,203	4,239,848	4,588,252	2,272,699	2,315,553	348,404	8.2
County Offaly	63,663	70,868	76,687	34,430	38,257	5,819	8.2
Tullamore (Urban)	10,270	10,900	11,346	5,480	5,866	446	4.1
Environs of Tullamore (Cappincur)	87	79	200	92	108	121	153.2

Source of Information: CSO, Census of Population 2011.

The Offaly County Housing Strategy to 2015 states that the Tullamore and environs area is to increase in population from 13,000 persons to 30,000 persons by 2020.

4.3 IMPACTS ON LOCAL RESIDENCES

The KMK facility is currently operating successfully as a Waste Electrical and Electronic Equipment (WEEE) and Metals recycling facility under its current waste licence W0113-03 from within the Cappincur Industrial Estate.

There will be no change in the nature of activities carried out at the site, and no change in land use, in addition there will be no notable visual change in the site from outside of the site boundaries, and hence potential impacts upon local residences is limited. Impacts associated with facility related traffic are discussed in Chapter 5 of this EIS. Visual impacts are discussed in Chapter 10.

4.4 LOCAL ECONOMY

4.4.1 Agriculture, Forestry and Fisheries

The entire site is already in use within the Cappincur Industrial Estate for waste management operations (previously described in Section 2 of this EIS). There will be no change in land use of this area as a result of the proposed increase in waste capacity at KMK. There will be no expansion of the activity into Greenfield areas. There will therefore be no impact upon agriculture, forestry and fisheries in the area.

4.4.2 Employment and Local Economy

The previous and on-going construction development of the site requires significant temporary employment of individuals from the construction industry through services such as site clearance, building construction, supervision, electrical contracting works, raw materials use; concrete, aggregates, construction steel, cables etc, plant use and rental etc. This is at a time when the construction industry is in sharp decline in Ireland.

The operational phase of the existing site and into the future provides an even more significant employment contribution. The site currently employs 57 staff (not including summer students, of whom there were 6 during 2012). The facility is open from 6am until 10pm, staffed by operatives on two shifts (6am – 2pm and 2pm – 10pm), plus Van Drivers (mostly offsite) and daytime office workers; there could be up to 40 employees onsite at any one time, with an additional 5 working offsite. KMK also outsources a number of services (many of which are locally based) including: diesel, kerosene, and electricity; haulage; technical IT support; consultancy (environmental; dangerous goods; radiation safety; drainage systems / engineering); accountancy; maintenance / repairs (mechanic, electrician, plumber, steel worker and construction); security (CCTV, Alarm, and Fire Detection Systems); training providers (fork lift licences; ADR; Fire Safety; First Aid; Manual Handling);

company doctor (medical checks); work wear and PPE; drinking water suppliers etc. The estimated employment provided by KMK directly to outside contractors is expected as an equivalent to 12 employees. KMK purposefully seeks to employ locally based services and to purchase locally sourced products wherever possible. The direct and indirect employment and demand for services by KMK contributes significantly to employment and trade in the local and national economy.

4.5 IMPACTS ON NATIONAL ECONOMY

The KMK facility has an overall positive impact on the national economy by virtue of the provision of employment (as previously described above) and the requirement of raw materials (wastes) for its waste recycling operations. Therefore, not only does the facility offer sustainable employment but it also actively recovers WEEE and metal wastes in Ireland which otherwise would be sent abroad for recovery.

The KMK facility has a key role in helping the government realise the national requirements of the WEEE Directive 2002/96/EC and National Waste Management Plans.

The most recent EPA publication 'National Waste Report 2010', reports that 45,012 tonnes of total Waste Electrical and Electronic Equipment (WEEE) was collected in 2010, which is very similar to the 2009 figure. Similar to 2009, there was a decrease in heavy WEEE products by consumers due to a decrease in consumer spending. This was also affected by an increase in EEE reuse (mostly limited to mobile phones and computers) and therefore not being classified as waste. Slightly less than 50% of WEEE collected in Ireland in 2010 was exported abroad for treatment.

KMK is the principal contractor of WEEE Ireland compliance scheme and also provides service to the ERP compliance scheme. KMK is responsible for managing over 45% of Ireland's total WEEE. Therefore KMK has an overall national positive impact by the implementation of the WEEE Directive and a provision of recovery of WEEE within Ireland, thereby reducing the need to export WEEE for treatment.

The continued success and future operations of the KMK facility is an exemplar of a company contributing significantly toward the national WEEE compliance scheme through WEEE Ireland, and, in accordance with the EPA, it is striving to continue and increase its annual recovery of WEEE.

The benefits of an indigenous recycling industry are that it helps cushion volatile commodity prices; helps support Ireland recycling effort by minimising the export of intact WEEE; and helps the economy by providing employment and investment in

Ireland, which is of particular importance during challenging economic times and of benefit to Irish commerce and society as a whole. The KMK facility is a significant contributor to Irelands recycling industry and its continued success.

4.6 PREVENTION OF ACCIDENTS, HEALTH AND SAFETY

4.6.1 Hazardous Wastes and Dangerous Substances

KMK are permitted to process hazardous and non-hazardous metallic based wastes including WEEE, metals, metals compounds and associated by-products, printer toners containing dangerous substances, lead acid batteries, household batteries and capacitors which may contain dangerous substances. All existing wastes permitted are listed in the Waste Licence W0113-03. A revised waste acceptance list has been submitted to the EPA as part of the waste licence review application re: W0113-04 (see Appendix 3 to this EIS). It is expected that this revised list will be included in the new licence once granted and thus regulated by the EPA.

KMK acknowledges that whilst some wastes accepted can potentially contain PCBs, the acceptance and management of this waste type is completely incidental to the principal activities of the facility and dose not occur during the normal day to day running of the site.

KMK complies with the EPA Guidance Management Plan for Polychlorinated Biphenyls (PCBs) in Ireland (EPA, August 2008) and in particular, sampling, storage and labelling on incoming waste materials as referred to in the EPA guidance note. The 'off-site waste profiling' procedure addresses these requirements in terms of waste with the potential to contain PCBs from customers.

The following management systems are in place at the KMK site;

- OHSAS 18001:2007 Health and Safety Management Standard
- ISO 9001:2008 Quality Management Standard
- ISO 14001:2004 Environmental Management Standard

Therefore H&S is considered of utmost importance by KMK and as such H&S of all employees and visitors is managed effectively by dedicated staff on-site.

All staff are trained appropriately on suitable handling, storage and disposal methods of materials and wastes they may come into contact with in the relative areas in which they operate and the materials processed on site.

KMK have been operating since 1985 and have been regulated by the EPA since 2001 with their Waste Licences W0113-01, W0113-02 and currently W0113-03.

In terms of the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2006, these regulations are designed to implement the **Seveso II** on the control of major hazards involving dangerous substances. Dangerous substances are referred to in Schedule 1 Part 1' Named Substances' of the Regulations and include solvents, LPG or PCBs. The regulation applies to activities where dangerous substances are used, present or stored in substantial amounts equal to or exceeding threshold amounts prescribed in the First Schedule of the Regulations. KMK do not store dangerous substances in quantities exceeding regulation threshold amounts and therefore are not required to comply with the regulations and do not pose a major accident threat.

4.6.2 Fuel Storage

The site has the following fuel/oil storage tanks;

- A 3,200 litre capacity diesel tank (double skinned) located within a steel bunded unit and under roof in the D-Hanger building. This is used for fork lift truck fuelling.
- A 1,100 litres capacity kerosene oil tank (double skinned) located within the same steel bunded unit in the D-Hanger building. This is used for heating purposes on-site.

The steel bunded unit used to hold both tanks is alarmed so that any liquid spilled inside is detected once it reaches a specified level i.e. level alarmed.

4.6.3 Fire Risk and Emergency Response

All staff are trained on fire safety and the emergency response procedure (ref: 313-Pro-IMS ERP) under OHSAS 18001:2007. This procedure itemises responsibilities and actions to be taken by all staff in the event of a fire or serious accident situation.

The site is well equipped for small fire control with the strategic location of fire extinguishers, fire water supply tank and hoses.

In the event of a major fire on-site, the local fire-fighting emergency service will be contacted to control the fire. The KMK site is located approximately two kilometres east of Tullamore town centre and is accessed directly from the Tullamore N52 by-

pass via the Ballinagar-Daingean road. The response time for the Fire Brigade to attend the site is approximately 10 to 15minutes.

The facility will remain closed after such an event until deemed safe and environmentally secure to resume operation.

5.0 Traffic

5.1 INTRODUCTION

The following study and report was conducted in 2009 by TrafficWise Ltd. ENVIROCO Management Ltd has commented on sections of the report below as part of an update where new relevant information or changes have occurred since 2009 and thereby amending elements of the report in-line with the present situation of 2012.

Trafficwise Ltd. has been retained by KMK to quantify the roads and traffic impact arising from the proposed intensification of waste acceptance at the existing recycling facility at Cappincur Industrial Estate, Tullamore.

The traffic section of the report is structured in general accordance with the Institution of Highways & Transportation (IHT) document 'Guidelines for Traffic Impact Assessment' (September 1994). This document is acknowledged by the National Roads Authority (NRA): Traffic and Transport Assessment Guidelines (Sept 2007) to represent the best practice approach in preparing Traffic Impact Assessments.

5.2 EXISTING CONDITIONS

5.2.1 Site Location and Access Arrangements

Cappincur Industrial Estate is located approximately two kilometres east of Tullamore town centre and is accessed directly from the southern side of the Daingean Road.

The Industrial Estate includes for the following land uses which use the main or primary industrial estate access: the subject recycling facility, a ceramic tile warehouse, a plumbing and heating superstore, a car breakers yard, a farm machinery dealer, a car and farm machinery garage, kitchen and bathroom showrooms, a motorcycle store, a courier warehouse, a sliding wardrobes distributor, a driving school and a fuel merchant.

There are two other accesses into the industrial estate, both of which are located to the west of the main entrance. One access exclusively serves the AES Waste

Transfer Facility; the other serves a number of industrial/warehouse units, including the existing KMK Recycling Facility, and this is recognised as the main industrial estate access for the purposes of this application.

The KMK Metal's facility is situated in the southern portion of the Industrial Estate and can only be accessed from the main industrial estate access road. This road has a width ranging from 6.5-7.5m over its length. The access road runs in a southerly direction, before joining a loop road around an oval shaped area in front of the recycling facility. The northern half of this oval shaped area is currently being used by AES Ltd.; whilst KMK Recycling Ltd. uses the southern half. AES Ltd. use this area to park trailers, vehicles and skips, whilst KMK Recycling Ltd. use the area for staff and visitor parking.

The Industrial Estate generally provides an inadequate quantum of parking facilities and vehicles tend to park along one or both sides of the main access road, thereby narrowing the effective road width. Within the industrial estate therefore vehicular access to the existing recycling facility is from time to time hindered, especially for large HGV.

ENVIROCO would like to add the following comments to this section; the previously mentioned oval shaped area is currently defined as E area of the KMK, facility and AES is no longer using part of this site. Therefore KMK exclusively owns and operates this area (refer to layout drawing Drawing No. 12-022-P02)

5.2.2 Sightline Appraisal at the Main Entrance to the Industrial Estate

Visibility sightlines have been evaluated against the figures provided by the NRA: Design Manual for Roads and Bridges (DMRB).

The Daingean Road has a 60kph speed limit in the vicinity of the industrial estate. Table 2 of TD9 'Highway Link Design' shows that a 'desirable' minimum stopping sight distance for a design speed of 60kph is 90m. Accordingly the sight distance or 'y' distance is 90m.

TD41-42 'Geometric Design of Major/Minor Priority Junctions and Vehicular Access to National Roads' requires sightlines to be measured from a 3.0m setback ('x' distance) from the edge of the running carriageway.

Looking in both directions from a 3.0m setback DMRB compliant sightline distances are currently available for the required 90m distance.

The Daingean Road runs in a straight alignment past the industrial estate; as such forward visibility for mainline road users approaching vehicles turning into the access is in line with the requirements of the NRA: DMRB i.e. 90m sightlines are available at progressive intervals from a point 135m in advance of the access in both directions.

5.2.3 The Local Road Network

The Daingean Road is a local road with a 60kph posted speed limit in the vicinity of the Cappincur Industrial Estate. The speed limit reverts to the default national speed limit of 80kph for local roads, approximately 0.5km to the east of the Industrial Estate.

The Daingean Road runs from Tullamore to Ballinagar in an easterly direction for approximately 10kms; at Ballinagar the road joins with the R402 before following on to Daingean, approximately 5km northwards.

5.2.4 Current Local Authority Road Objectives

In summarising current road policies and future objectives for the general area, reference has been made to the County Offaly Development Plan 2009-2015.

The most significant road construction project that will have the greatest impact upon development generated traffic is the N52 Tullamore Bypass. This road project is being undertaken by the NRA and will run to the east of Tullamore. The project involves constructing a new 14km single carriageway route, running from the N52 in the town land of Gormagh (North of Tullamore) to the N52 in the town land of Heath (South of Tullamore). The project is currently scheduled for completion for the end of 2010.

The following future road scheme objectives will offer significant benefits to traffic generated by the proposed development. These objectives are outlined in the development plan and are dependent on future adequate funding:

- N52 to construct a new road between Tullamore and Kilbeggan
- N52 to secure a corridor for a bypass to the west of Tullamore.
- To construct, upgrade and improve the R420 Tullamore to Daingean Road where necessary.

ENVIROCO comments to this section; the previously mentioned N52 Tullamore Bypass is now complete and opened since October 2009 under Transport 21. KMK waste collection vehicular traffic uses the N52 Bypass when travelling to the site from

all directions (north, south, east and west). The development objectives listed in bullet points above have not been carried out to date.

5.2.5 Public Transport

Bus Eireann Bus No. 120 passes the site, with approximately five return journeys every day. There are no bus stops in the vicinity of the industrial estate although bus drivers can be requested to stop on demand. Bus No. 120 runs from Birr to Tullamore to Edenderry to Dublin.

Tullamore train station is located on the southwest side of the town; approximately 3.5km from the industrial estate. Trains run frequently between Dublin and Galway/Ballina/Westport.

5.3 OPERATION OF EXISTING FACILITY

5.3.1 Overview

The existing facility is EPA licensed to process some 20,000 tonnes of hazardous and non-hazardous waste including Waste Electrical and Electronic Equipment (WEEE) per annum (waste licence No W0113-03).

There is no weighbridge at the existing facility. All vehicles importing (deliveries) and exporting (collections) waste must instead travel to the nearby AES waste transfer facility to record payload details. Such details include pick up/delivery time; name of contractor; waste type and net weight. The AES Waste Transfer Facility is also located at the Cappincur Industrial Estate but is accessed directly off the Daingean Road (the access to the AES facility is located to the west of the main industrial estate access road).

Existing waste acceptance and operation hours will be remain from 06:00hrs to 22:00hrs Monday to Friday; and 06:00hrs to 13:00hrs on Saturday.

The existing facility currently employs some 55 people including drivers, yard workers, administration and management staff.

ENVIROCO would like to amend this section as follows; the previously mentioned weighbridge at AES will not be used from July 2012 onwards because KMK will have their own two weighbridges fully operational at that stage at their site. Therefore there will be no requirement for KMK waste incoming and outgoing loads to divert to AES for weighing from July 2012 onwards.

5.3.2 Waste Types

The existing facility accepts the following types of hazardous and non-hazardous waste:

- Electrical and Electronic Waste (WEEE): (Large and small household appliances, IT and telecommunications equipment, lighting equipment, LCD's, batteries, computers, medical devices, electrical/electronic tools, consumer equipment, automatic dispensers).
- Metals (Precious metal scrap, metal pastes and wipes, metallic residues, stainless steel, steel alloys, non-ferrous metals, automotive electronics, batteries).

Presently, WEEE waste accounts for approximately 85% of all waste accepted at the facility; equivalent to 17,000 tonnes per annum; metals waste accounts for approximately 3,000 tonnes or 15% of all waste accepted.

5.3.3 Site Layout

The KMK Recycling Ltd. site is split into three areas: the WEEE recovery area; the Metals recovery area; and the car park.

The WEEE recovery area is made up of existing areas D1, D2, D3, D4 and DX. There are two gated accesses into the WEEE recovery area: one gate provides access to the existing warehouse building (sub-divided into D1, D2, D3 and DX (recently constructed)); and the other gate provides access to existing building D4 (this building is used for portable batteries and fluorescent bulbs WEEE waste).

The Metals recovery area is made up of an existing warehouse building which is sub-divided into areas A, B and C. The site offices and canteen are located directly in front of the Metals recovery area.

KMK Recycling Ltd. currently use the southern half of the oval shaped piece of land which is bounded by the loop access road in the vicinity of the site. This area is used as a car park for staff and visitors. The northern half of the oval shaped piece of land is currently operated by the AES Waste Transfer Facility; and is used to store AES trucks, skips and trailers. There is a northern and southern access into the two areas. The oval shaped piece of land has a gravel surface which is in a state of disrepair.

ENVIROCO would like to amend this section as follows; the KMK site is split into three areas: the WEEE recovery area; the Metals recovery area; and the car park. The site layout plan is shown on Drawing No. 12-022-P02.

The WEEE recovery area is made up of existing areas D-Hanger, D-WEEE Plant building, D3X yard, D4, D4-L and D4-R buildings and E area. There are two gated accesses into the WEEE recovery area: one gate provides access to the existing warehouse building (sub-divided into D-Hanger and D-WEEE Plant (recently constructed)); and the other gate provides access to existing building D4, D4-L and D4-R buildings (these buildings are used for portable batteries recycling, CRT television & monitor de-pollution, steel baling and washing machines de-pollution).

The Metals recovery area is made up of an existing warehouse building which is sub-divided into areas A, B and C. The site offices and canteen are located directly in front of the metals recovery area.

KMK site includes the oval shaped piece of land which is bounded by the loop access road in the vicinity of the site. This E area is being developed at present and will be used for WEEE recovery activities and as a car park for staff and visitors. AES no longer uses a portion the E area site for their own activities.

5.3.4 Procedures for Importing and Exporting Waste

Waste is generally imported in vehicles ranging from vans to HGV, such as hook loaders, rigid and roll-off vehicles. KMK provide a B2B (Business to Business) service which involves WEEE Recycle Vans picking up e-waste from commercial customers. Larger HGV tend to arrive from other Materials Recovery Facilities and Civic Amenity sites around the country.

Once payload details have been recorded by the weighbridge (at the nearby AES facility), HGV turn right out of that facility back onto the Daingean Road, and then turn right into the main access road of the industrial estate, continuing on towards the KMK facility.

Inbound vehicles arrive at one of three internal entry gates, depending on the type of waste being transported. Each gate provides access into a separate waste storage area, these being the WEEE storage/processing areas and the metals storage area. Waste is accepted and sorted into various recyclable categories as soon as it arrives.

All processed and/or sorted waste is ultimately transferred off site and exported for further processing (recovery operations off-site).

Large articulated vehicles (40 foot containers) are always used to transport processed waste from the facility. When the articulated vehicles are fully loaded, drivers must

register the payload details at the AES Facility weighbridge before continuing on to their final destination.

ENVIROCO would like to amend this section as follows; as previously stated, the weighbridge at AES will not be used from July 2012 onwards because KMK will have their own two weighbridges fully operational at that stage at their site. Therefore there will be no requirement for KMK waste incoming and outgoing loads to divert to AES for weighing from July 2012 onwards. All other activities will remain unchanged.

5.4 TRAFFIC GENERATION OF EXISTING FACILITY

5.4.1 Overview

The existing facility generates traffic arising from waste activities together with traffic arising from staff and visitor movements.

In the interests of quantifying existing traffic generation we have obtained 3-months of site records pertaining to waste related traffic movements from May to July 2009. For each load imported/exported to/from the facility the records include time of entry/exit, type of vehicle, waste material and payload (tonnes). This data has been cross referenced against an independent traffic count undertaken at the main industrial estate entrance.

All traffic movements currently generated by the facility have been quantified following a review of CCTV footage at the existing staff car park and entrance gates. This review was undertaken on the day of the independent traffic count survey (30th July 2009).

5.4.2 Staff and Visitor Traffic

The existing facility employs some 55 staff; half of which generally drive to work every day. The remainder either car pool, cycle, walk or get a lift to work. This is confirmed by CCTV footage at the staff car park area on 30 July 2009, from which 20No. car trips were recorded over the working day.

5.4.3 AES Waste Traffic

AES Ltd. currently use the northern half of the oval shaped piece of land in front of the site. This traffic has been quantified by counting the number of AES lorries using the main industrial estate access on the day of the traffic count survey. A total of 20 HGV trips (in and out) were recorded over the course of the day (Figure 5.4.3.1)

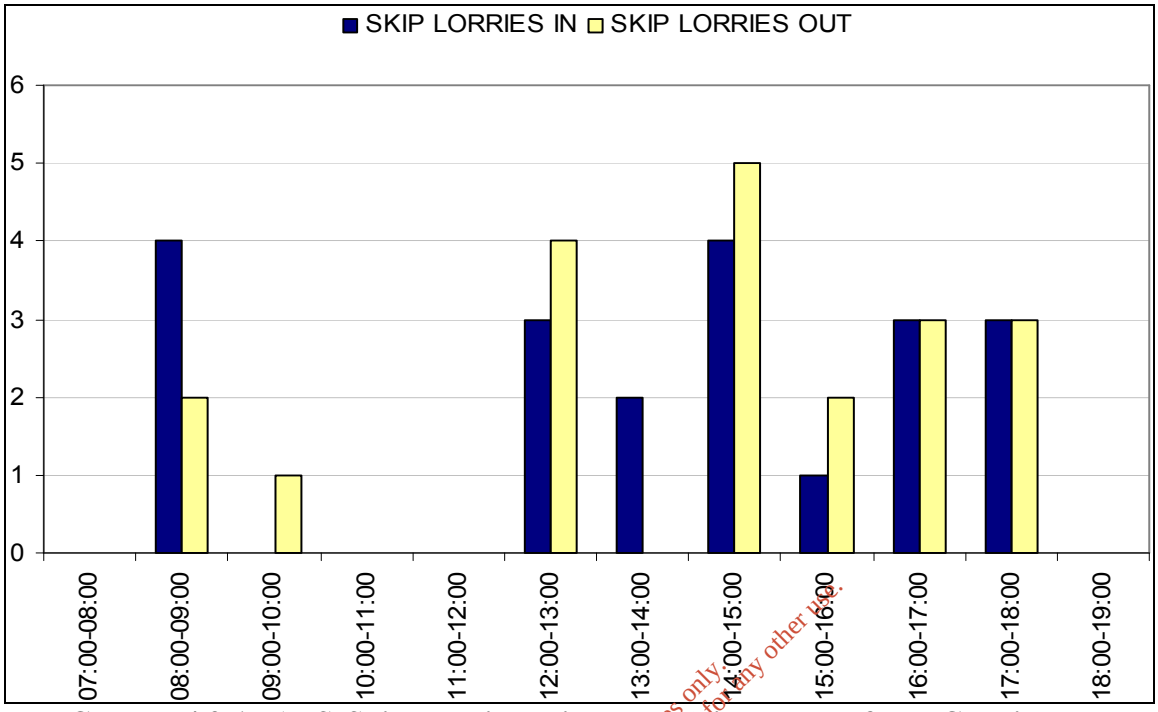

Chart 5.4.3-1: AES Skip Lorries using the main access of the Cappincur Industrial Estate (2009 Traffic Count Survey)

ENVIROCO would like to amend this section as follows; AES Ltd. no longer use the northern half of the oval shaped piece of land in front of the site. The oval land area is now referred to as E area and is under a final stage of development and commissioning for KMK use over the remaining few months. Therefore the AES related traffic referred to in table 5.4.3.1 is not applicable to the overall traffic impact at the KMK site.

5.4.4 KMK Recycling Ltd. Waste Traffic

Following a review of 3-months of site records the average daily traffic generated by the existing facility (based on the existing processing capacity of 20,000 tonnes per annum) is quantified in Table 5.4.4.1 below.

For calculation purposes it is assumed that the facility operates for 270No. days per annum; with average load details provided in the footnotes below Table 5.4.4.1. The data has been cross referenced against 3-months of site records.

Table 5.4.1: Existing Traffic Generation (2009)

Activity	Waste	Tonnes (Yearly)	Vans (B2B)	HGV
Import	WEEE	17,000[1]	5[2]	10[3]
	Metals	3,000	0	2[3]
Export	WEEE	17,000	0	3[4]
	Metals	3,000	0	1[4]
Ancillary	Skip collection		0	1
Total KMK Waste Traffic			5	17
KMK Staff			20	0
AES Traffic			25	37
Total Traffic			25	37

[1] Of the 17,000 tonnes per annum, approximately 700 tonnes arrive in vans and 16,300 tonnes in HGV
[2] Import WEEE: Average Load per Van is 0.5 tonnes
[3] Import WEEE/Metals: Average Load per HGV is 6.0 tonnes
[4] Export WEEE/Metals: Average Load per HGV is 20.0 tonnes

With regard to the spread of waste related traffic across a typical working day, site records show that the majority of deliveries arrive on site from 08:00hrs to 10:00hrs; with the majority of collections occurring from 15:00hrs to 17:00hrs.

Including traffic generated by staff, visitors and the AES facility, the existing site generates in the region of 25No. car/van trips and 37No. HGV trips per day.

This correlates well with a review of CCTV footage on the day of the traffic count survey, which recorded 20No. car/van trips and 20No. HGV trips to the KMK Recycling Ltd. site. The daily profile of these trips is shown in Figure 5.4.4.1. Taking into account some 20 No. AES HGV trips it can be seen that the site as a whole generated a total of 20No. car/van trips and 40No. HGV trips on the day of the survey.

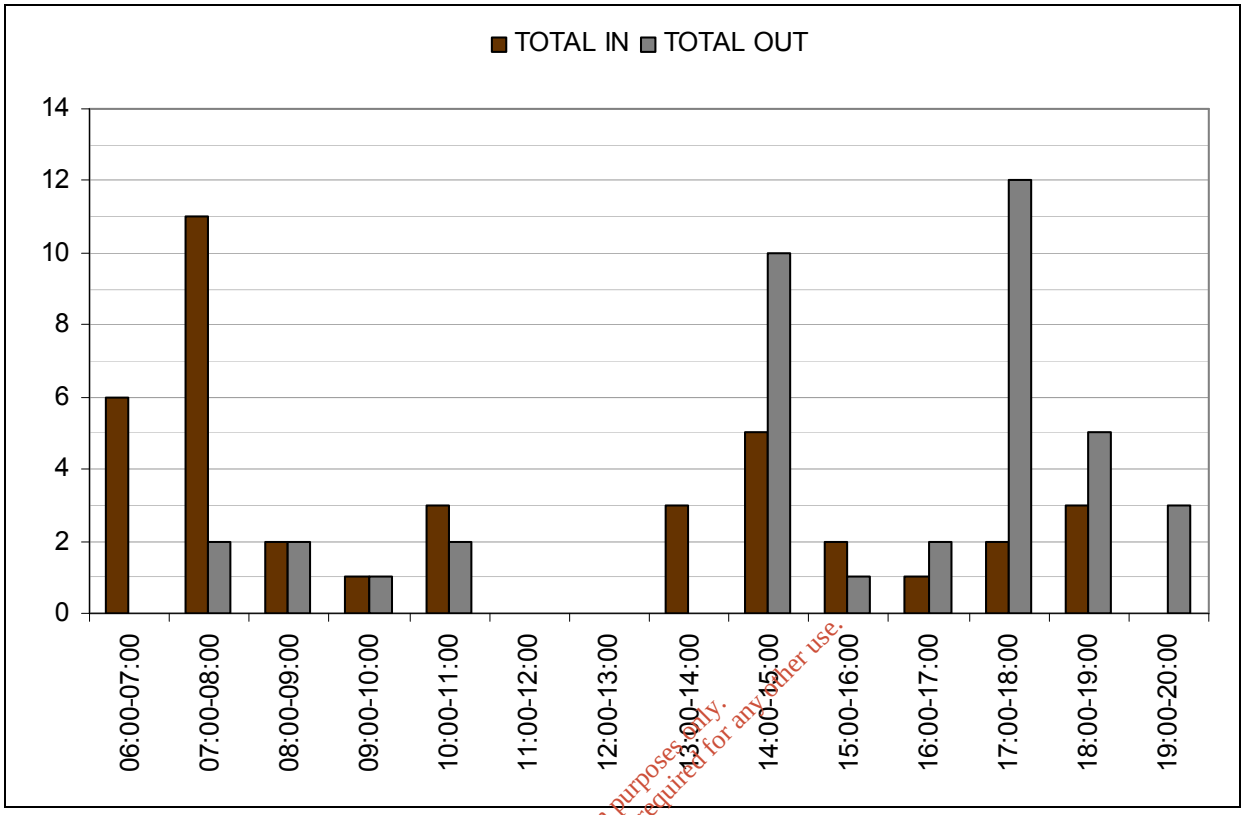

Chart 5.4.4-1: KMK Generated Traffic Using the main access of the Cappincur Industrial Estate (KMK CCTV footage and Site Records)

ENVIROCO would like to amend this section as follows; the daily traffic volumes were noted at the KMK facility for a week during April 2012 (normal uninterrupted waste activities). As un update, the following was noted; Including traffic generated by staff and visitors, the existing site generates in the region of 25No. car/van trips and 37No. HGV trips per day.

5.5 BACKGROUND TRAFFIC FLOWS

5.5.1 Overview

Abacus Transportation Surveys Ltd., an independent data collection company, carried out a 12-hour classified traffic count survey at the main industrial estate access on the Daingean Road.

The surveys were carried out on Thursday 30 June 2009 from 06:00hrs to 20:00hrs using video surveillance (a DVD copy of the survey can be made available if required). A hard copy of the survey data and location map is provided in Appendix 4 and 5 respectively in this EIS.

5.5.2 Traffic Generation, Cappincur Industrial Estate (Main Access)

A total of 830 No. traffic movements (425 No. in and 405 No. out) were recorded at the main access into the Cappincur Industrial Estate over the course of the 12-hour classified traffic count survey.

The daily traffic profile of the Cappincur Industrial Estate main access is shown in Figure 5.5.2.1.

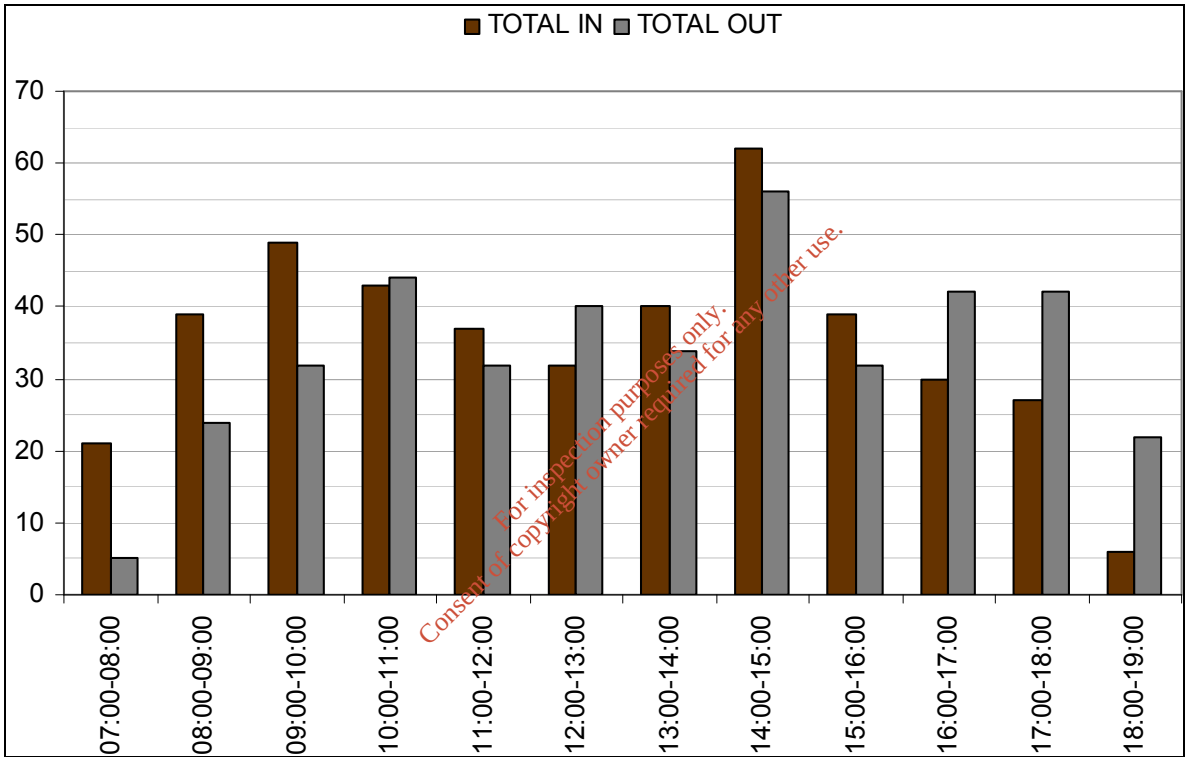

Chart 5.5.2-1: Traffic Flows at the Main Access of the Cappincur Industrial Estate (2009 Traffic Count Survey)

The peak hour was recorded from 14:00hrs to 15:00hrs, during which a total of 118No. vehicle movements (62No. in and 56No. out) were recorded.

The Industrial Estate generated a total of 696No. light vehicle movements. This represents some 84% of the total traffic generated at the industrial estate access. On average approximately 30No. cars/vans in and out were recorded every hour.

A total of 134No. HGV movements were generated (68No. in and 66No. out). This represents 16% of the total traffic generated. On average 6No. HGV in and out were recorded every hour.

5.5.3 Traffic Flows on the Daingean Road

Over the course of the CCTV traffic survey the Daingean Road carried in the region of 3,500No vehicles. The daily traffic flow profile is shown in Figure 5.5.3.1. The majority of traffic travelled westbound (towards Tullamore) in the morning and eastbound (towards Daingean) in the evening.

The peak hour period on the Daingean Road was recorded as 17:00-18:00hrs during which a total two-way flow of 357No vehicles was recorded. It is considered that the Daingean Road is not heavily subscribed; with an average two-way hourly flow of 290No. vehicles.

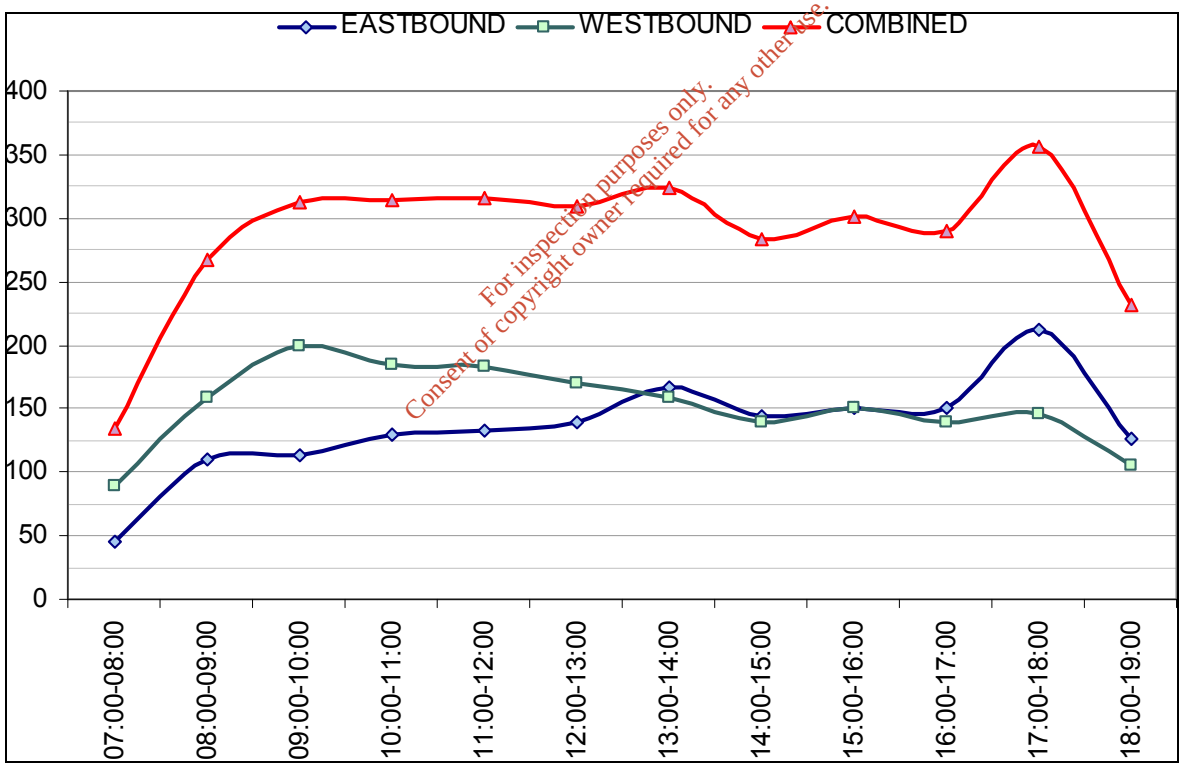

Chart 5.5.3-1: Traffic Flows on the Daingean Road (2009 Traffic Count Survey)

A total of 247 No. HGV (including industrial estate traffic) were recorded on the Daingean Rd during the survey. This represents some 7% of the total traffic.

Using NRA document RT201, the Daingean Road has an estimated Average Annual Daily Traffic (AADT, the Bi-directional traffic count representing an average 24hr-day in a year) in the range of 3,700 to 4,700 vehicles per day.

5.6 PROPOSED DEVELOPMENT

5.6.1 Description of Scheme

The proposed development will incrementally increase the permitted tonnage of waste accepted on site from 20,000 to a maximum of 35,000 tonnes per annum.

The rate of increase in waste acceptance will depend on market forces, nonetheless for the purposes of this report it is anticipated that waste acceptance might realistically increase by 10% year on year, until the ultimate processing capacity of 35,000 tonnes per annum is reached. Current projections indicate that the processing capacity may be reached in 2015. Future projections of total waste accepted over the coming years are provided in Table 5.6.1.1.

Table 5.6.1: Forecast Year on Year Increase in Waste Acceptance

Year	Tonnes per annum
Existing (2009)	20,000
Year of Opening (2010)	22,000
Year of Opening +1 (2011)	24,200
Year of Opening +2 (2012)	26,600
Year of Opening +3 (2013)	29,300
Year of Opening +4 (2014)	32,200
Year of Opening +5 (2015)	35,000

The existing oval shaped area in the vicinity of the site will be taken under full control by the KMK Recycling Ltd and renamed as E area for operational purposes. Half of this area is currently operated by the KMK; with AES using the other half.

The new proposed E area will be used as follows:

- Car parking for employees, visitors and KMK Recycling Ltd. waste collection vehicles
- Temporary storage of WEEE waste in approved receptacles/skips/containers during peak waste acceptance times. The quantities to be stored will be appropriate to the nature of an overflow waste storage area.
- It is proposed to construct a 1,152m2 building structure within E area as per layout drawing (ref; CY-02) attached to this application. The purpose of this building will be for WEEE waste acceptance prior to on-wards processing at D

areas of the existing site and also for temporary storage of pre-treated WEEE prior to export from KMK Recycling Ltd.
- Storage of empty receptacles/skips/containers used by KMK Recycling Ltd. for off-site usage.
- Waste collection vehicle marshalling and control.
- Weighbridge usage.

Existing waste acceptance and operation hours will be remain from 06:00hrs to 22:00hrs Monday to Friday; and 06:00hrs to 13:00hrs on Saturday. Although it is expected that the majority of waste vehicles will continue to arrive at the facility between the existing hours of waste acceptance i.e. 08:00hrs to 17:00hrs.

Staffing levels and the number of delivery/collection vehicles in the fleet will not increase. The type of vehicle used to transport waste is not programmed nor expected to change.

ENVIROCO would like to amend this section as follows; whilst the forecast projection in Table 5.6.1.1 remains in principal unchanged, it may be a case that additional years will be required to reach the proposed 35,000 tonnes of waste per annum. Alternatively, the proposed waste volume may not be succeeded or may be reached sooner, depending on future waste management contracts awarded to KMK which is unknown at present. Secondly, the development of E area is currently near completion and will be fully finished and operational by end of June 2012.

5.7 FORECAST TRAFFIC GENERATION

Forecast daily traffic generation is provided in Table 5.7.1 below. In the preparation of this table it is assumed that the makeup of future waste intake will be similar to the existing scenario i.e. 85% is WEEE waste; 15% is Metals waste. It is assumed that the facility will continue to operate for an average of 270No. days per annum; and that average waste payload values will be similar to existing values (see Table 5.7.1 notes).

Table 5.7.1: Forecast Traffic Generation (2015)

Activity	Waste	Tonnes (Yearly)	Vans (B2B)	HGV
Import	WEEE	30,000[6]	8[7]	14[8]
	Metals	5,000	0	2[8]
Export	WEEE	30,000	0	6[9]
	Metals	5,000	0	1[9]
Ancillary	Skip collection		0	1
Total KMK Waste Traffic			8	24

KMK Staff	20	0
AES Traffic	0	0
Total Traffic	28	24

[6] Of the 30,000 tonnes per annum, approximately 1,200tonnes arrive in Vans and 28,800tonnes in HGV
[7] Import WEEE: Average Load per Van is 0.5 tonnes
[8] Import WEEE/Metals: Average Load per HGV is 6.0 tonnes
[9] Export WEEE/Metals: Average Load per HGV is 20.0 tonnes

The values in Table 5.7.1 are based on an ultimate processing capacity of some 35,000 tonnes per annum. It is assumed that such a capacity is likely to occur some five years after the opening year of the development (grant of permission).

AES traffic will no longer be generated by the oval shaped piece of land in front of the existing KMK Recycling Ltd. facility. Taking this, as well as traffic generated by staff and visitors into account, the proposed development is forecast to generate some 28No. car/van trips and 24No. HGV trips per day, when it is operating at ultimate capacity.

In the initial opening year (2010), the proposed development is estimated to generate in the region of 26No. car/van trips and 20No. HGV trips.

ENVIROCO would like to amend this section as follows; whilst the forecast generation in Table 5.7.11 remains valid in principal it may be a case that additional years will be required to reach the proposed 35,000 tonnes of waste per annum. Alternatively, the proposed waste volume may not be succeeded or may be reached sooner, depending on future waste management contracts awarded to KMK which is unknown at present.

5.7.1 Construction Traffic

The primary traffic generators during construction are considered to be deliveries of construction materials and construction staff. Based on our experience of similar projects this is likely to be less than 20No trips per day.

Since traffic generation during the construction period is forecast to be low, we have not considered it worthwhile to undertake a separate assessment of the 'short term' traffic impact during construction.

It is the intention of the KMK to comply with Local Authority policy on maintaining the roads serving the site clean of detritus and debris associated with the development of the site.

If further detail regarding the control of the construction project and specifically the control of construction traffic is required by the Local Authority, it is respectfully suggested that a Construction Traffic Management Plan can be prepared as a condition of planning.

ENVIROCO would like to amend this section as follows; the construction works on-site are near completion and E area will be fully developed and operational by end of July 2012. There will be little to no construction traffic impact thereafter.

5.7.2 Traffic Impact

In Table 5.7.2.1, traffic impact arising from the proposed development is quantified based on traffic levels during the opening year and five years thereafter when the proposed development is operating at ultimate capacity.

Table 5.7.2: Impact of Proposed Development upon Traffic Generation

Description	Year	Cars/Vans	HGV	Total
Existing Facility (20,000 t/a)	2009	25	37	**62**
Proposed Development (22,000t/a)	2010	26	20	**46**
Proposed Development (35,000t/a)	2015	28	24	**52**

Table 5.7.2.1 shows that the proposed development will have a neutral impact upon traffic generation across a typical working day. The main reason for this is that AES HGV will no longer have access the industrial estate to store skips, lorries etc. Instead it is our understanding that AES will use the existing nearby AES waste transfer facility for storage purposes.

Although the waste acceptance hours are currently from 06:00 to 22:00, the majority of waste vehicles are expected to continue to arrive at the facility between the existing waste acceptance hours of 08:00hrs to 17:00hrs.

The traffic impact of the proposed development for the network peak hour is quantified in Section 5.8.

On balance the traffic forecasts show that there is likely to be no adverse impact arising from the volume of traffic generated by the application site. When the proposed development operates at ultimate capacity, it is expected to generate in the region of 10No. vehicle trips less than at present.

ENVIROCO would like to amend this section as follows; the principals and conclusions in the aforementioned section remain valid.

5.8 CAPACITY ASSESSMENT OF INDUSTRIAL ESTATE ACCESS

5.8.1 Assessment Scope

The existing industrial estate access on the Daingean Road has been analysed to determine existing or future capacity issues.

5.8.2 Assessment Years

In line with the advice provided in the NRA: Traffic and Transport Assessment Guidelines, the industrial estate access has been modelled in the opening year; opening year +5yrs; and opening year +15yrs. 2010 has been selected as a realistic opening year.

5.8.3 Assessment Peak Hour

Capacity assessments examine performance of the road network during the peak hours of traffic activity. From the traffic surveys the evening peak hour of 17:00hrs to 18:00hrs has been identified as the network peak hour (refer to Figure 5.4.4.1).

5.8.4 Traffic Growth Rates

The levels of traffic generation assumed at the site in the opening year (2010) and opening year +5 (2015) have already been outlined. Once the ultimate capacity has been reached in 2015, the level of traffic generated by the site is expected to remain static.

The growth rates in the NRA 'Future Traffic Forecasts 2002-2040' document were used to forecast background traffic growth on the Daingean Road.

The growth rates used to derive opening year (2010), opening year +5 (2015) and opening year +15 (2025) from the recorded 2009 flows are as follows:

- 2009-2010 (Opening Year) 1.03
- 2009-2015 (Opening Year +5) 1.13
- 2009-2025 (Opening Year +15) 1.30

The above traffic growth rates have been directly applied to the network peak hours. It can be appreciated nonetheless that growth rates are not always directly applicable to peak hour periods (peak hour spread as opposed to intensification).

5.8.5 Program Used to Determine Capacity

The computer modelling program PICADY (Priority Intersection CApacity and DelaY) has been used to prepare a comparative assessment of the current and future performance of the local road network (raw data is supplied in Appendix 6)

The program output provides information with regards to capacity, queuing and delay. Generally a reserve capacity of 20-25% corresponding to a Ratio of Flow to Capacity (RFC) of 0.700-0.750 is accepted at junctions in rural areas.

5.8.6 Scenarios Analysed

A series of traffic scenarios have been assessed both with and without the proposed development in place. These are referred to respectively as the 'do nothing' and 'do something' scenarios and have been provided so that the incremental impact of development traffic can be evaluated against a baseline whereby no development whatsoever were to occur (see Appendix 7 for maps of same).

The do nothing scenario assumes that the facility will continue to operate at current processing levels i.e. 20,000 tonnes per annum; and that AES skip lorries will continue using the site. The do something scenario meanwhile assumes that AES skip lorries will no longer use the site for storage purposes; and that processing will increase from 22,000 tonnes per annum in the opening year (2010) to an ultimate capacity of 35,000 tonnes per annum in the opening year +5 and opening year +15.
'Do nothing' and 'do something' traffic scenarios have been analysed for the network peak hour (17:00-18:00hrs) for the opening year (2010), opening year+5 (2015) and opening year+15 (2015).

5.8.7 Performance of Industrial Estate Access

The peak hour performance of the industrial estate access is estimated in Table 5.8.7.1:

Table 5.8.1: Performance of Industrial Estate Access

Year	Assessment Scenario	RFC
2009	Existing	0.068
2010	Do Nothing Do Something	0.007 0.066
+5yrs 2015	Do Nothing Do Something	0.078 0.080

Year	Assessment Scenario	RFC
+15yrs	Do Nothing	0.091
2025	Do Something	0.092

Table 5.8.7.1 forecasts that the industrial estate access could have an RFC of 0.091 without the development and 0.092 with the development some fifteen years after opening (2025). These results clearly show that the traffic impact arising from the proposed development is highly unlikely to be significant; an adverse impact on capacity is also unlikely.

From the above assessment it is clear that the proposed development is unlikely to compromise the operation of the existing industrial estate access; similarly it is not likely to compromise the flow of traffic on the Daingean Road.

5.9 RECOMMENDED MITIGATION MEASURES

The existing operation of the site which requires vehicles importing and exporting loads to/from the facility to travel to the nearby AES waste transfer facility to register payload details is considered cumbersome and inefficient. It is therefore recommended that a new weighbridge is constructed on the oval shaped piece of land in front of the existing facility.

It is proposed that this area is re-surfaced, and that a new staff car parking area of up to 25No. parking spaces are segregated from a new skip storage/HGV parking area. The inclusion of an onsite weighbridge will clearly half the number of times KMK delivery/collection vehicles are required to enter and leave the Daingean Road. It can reasonably be assumed therefore that the development will be positive with respect to increased capacity and reduced traffic hazard on the Daingean Road.

The forecast traffic generation of the current application is likely to be either traffic neutral or indeed beneficial to the network; accordingly, no further mitigation measures are recommended.

ENVIROCO would like to amend this section as follows; the KMK site is presently being developed in-line with the recommendations as outlined above. In fact there will be two operational weighbridges within the site by June-July 2012 and this will ensure that the practice of using the AES site for weighbridge use will be effectively stopped. The proposal to increase the waste acceptance from 20,000 to 35,000 tonnes per annum will not have any negative effect on traffic in the immediate vicinity of the site.

6.0 Climate and Air Quality

6.1 INTRODUCTION

It is widely accepted that current levels of greenhouse gasses i.e. carbon dioxide and methane, primarily generated through use of non-renewable fossil fuels, are the drivers of global temperature increase. According to the Offaly County Development Plan 2009-2015, the major sectors that have contributed to greenhouse gas emissions over the last 15-20 years are transport, energy, agriculture, waste, industrial/commercial services and residential.

With regard to climate, Ireland receives good air from the prevailing winds of the Atlantic Ocean. The Environmental Protection Agency monitors and produces annual reports of Ireland's air quality. The Council is responsible as the regulatory authority for the enforcement of the Air Pollution Act 1987, and as such follows procedures for the licensing of certain industrial activities.

6.2 RECEIVING ENVIRONMENT

The nearest weather station to the site is Mullingar Weather Station, Co. Westmeath. Rainfall, temperature and wind speed information from Met Éireann is displayed below in Tables 6.2.1 and 6.2.2.

Table 6.2.1: Annual Rainfall (mm) Data for Mullingar Weather Station

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2012 (mm)	97.4	42.4	15.4	75.4	55.1	43.6							**329.3**
2011 (mm)	47.1	119.0	36.1	35.0	67.3	65.1	60.3	65.1	122.1	133.0	106.2	87.8	**944.1**
2008 (mm)	138.5	54.6	91.6	59.1	19.4	84.7	98.6	154.5	104.7	124.0	78.2	57.1	**1065.0**
Mean	92.4	66.3	72.6	59.0	70.9	67.0	61.2	82.9	85.1	94.1	87.9	92.2	**931.5**

Note: Data for the most recent months are provisional. All means are for the period 1961-1990.
Annual totals for 2008 are the totals of 129 daily values.
Annual totals for 2012 are the means of 159 daily values

Monthly temperatures for 2008, 2009, 2011 to 2012 (part thereof) as available to date are provided below, together with mean monthly temperatures (averaged from 1961 to 1990), and monthly average wind speed (1960-1990).

Table 6.2.2: Temperature (°C) and Wind Speed (Knots) for Mullingar Weather Station, Co. Westmeath

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2012 (°C)	5.8	6.6	7.9	6.7	10.5	12.5	-	-	-	-	-	-	**7.7**
2011 (°C)	2.9	6.3	6.0	10.5	10.6	11.6	14.1	13.2	13.3	11.0	8.9	5.1	**9.5**
2009 (°C)	3.5	4.9	6.5	8.7	10.8	14.4	14.7	14.5	-	-	-	-	**-**
2008 (°C)	5.6	5.4	5.5	7.5	12.5	12.5	14.5	14.9	12.0	8.1	6.7	4.1	**9.1**
Mean (°C)	4.0	4.2	5.7	7.6	10.1	13.0	14.7	14.2	12.3	9.7	5.9	4.8	**8.8**
Mean Wind Speed 1960-1990	9.7	9.7	10.0	8.5	8.0	7.4	7.3	7.2	7.6	8.4	8.5	9.3	**8.5**

Note: Data for the most recent months are provisional. All means are for the period 1961-1990.
Annual temperatures for 2008 are the means of 129 daily values.
Annual temperatures for 2012 are the means of 159 daily values

6.3 ENVIRONMENTAL MONITORING

Annual dust deposition monitoring, based on a modified version of the Bergerhoff Method VID 2119 'Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)', is carried out by ENVIROCO Management Ltd in compliance with the current Waste Licence ref: W0113-03. An assessment of the treated stack emissions point at D-WEEE plant (building) which is a new licensed emission point was conducted by Odour Monitoring Ireland Ltd, on 2nd December 2011 and by Glenside Environmental Services on 24th May 2012. These reports are included in Appendix 8 to this EIS. In terms of the latest ambient dust monitoring for 2011, this is detailed below;

Dust deposition assessment was carried out at the site from 2nd August to 1st September 2011 by ENVIROCO Management Ltd. The dust monitors were left in-situ for 31 days. Monitoring locations are predetermined, though two were amended because of obstruction: A2-5 – sampling was carried out outside of the boundary instead of inside; A2-6 – position changed from the northern boundary to just inside the entrance to the D4 area. Table 6.3.1 describes the locations of monitoring points, as illustrated in Figure 6.3.1.

Table 6.3.1: Description of Monitoring Locations

Location	Grid Reference		Description
	(Easting)	(Northing)	
A2-1	E635955	N725044	Car Park at Fence Boundary
A2-2	E635959	N725004	Eastern boundary, beside port-a-cabin
A2-3	E635882	N724955	Fence at southern boundary
A2-4	E635911	N724993	Site Entrance
A2-5	E635866	N725002	Western boundary
A2-6	E635902	N725021	Northern boundary

Figure 6.3.1: Dust Monitoring Stations 2011

6.3.1 Depositional Dust

Results of depositional dust monitoring during 2011, including EPA guidance limits, are displayed in Table 6.3.2.

Table 6.3.2: Total Depositional Dust (02/08/11 – 01/09/11)

Station I.D.	Monitoring Location	Irish Grid Ref.		Dust Deposition mg/m^2/day	EPA licence Limits mg/m^2/day
		Easting	Northing		
A2-1	Car Park at Fence Boundary	0635888	0725079	970.0	350
A2-2	Eastern boundary, beside disused portacabin	0635900	0725035	270.0	350
A2-3	Fence at southern boundary	0635825	0724990	97.2	350
A2-4	Site Entrance	0635867	0725029	617.2	350
A2-5	Western Boundary	0635798	0725037	76.7	350
A2-6	Northern Boundary	0635853	0725059	195.0	350

Table 6.3.3: Results of Metallic Species In Dust at the Facility

Parameters	Metallic analysis in dust (mg/sample)					
	A2-1	A2-2	A2-3	A2-4	A2-5	A2-6
Aluminium (Al)	15.2	6.2	4.5	15.6	2.3	7.8
Copper (Cu)	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
Arsenic (As)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cadmium (Cd)	0.02	0.03	0.02	0.02	0.01	0.03
Chromium (Cr)	0.95	0.45	0.34	1.21	0.23	0.62
Iron (Fe)	2.56	1.54	0.88	3.56	0.24	0.65

Parameters	Metallic analysis in dust (mg/sample)					
	A2-1	**A2-2**	**A2-3**	**A2-4**	**A2-5**	**A2-6**
Mercury (Hg)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel (Ni)	0.05	0.02	0.01	0.05	0.01	0.02
Lead (Pb)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (Zn)	0.01	<0.01	<0.01	0.02	<0.01	0.01

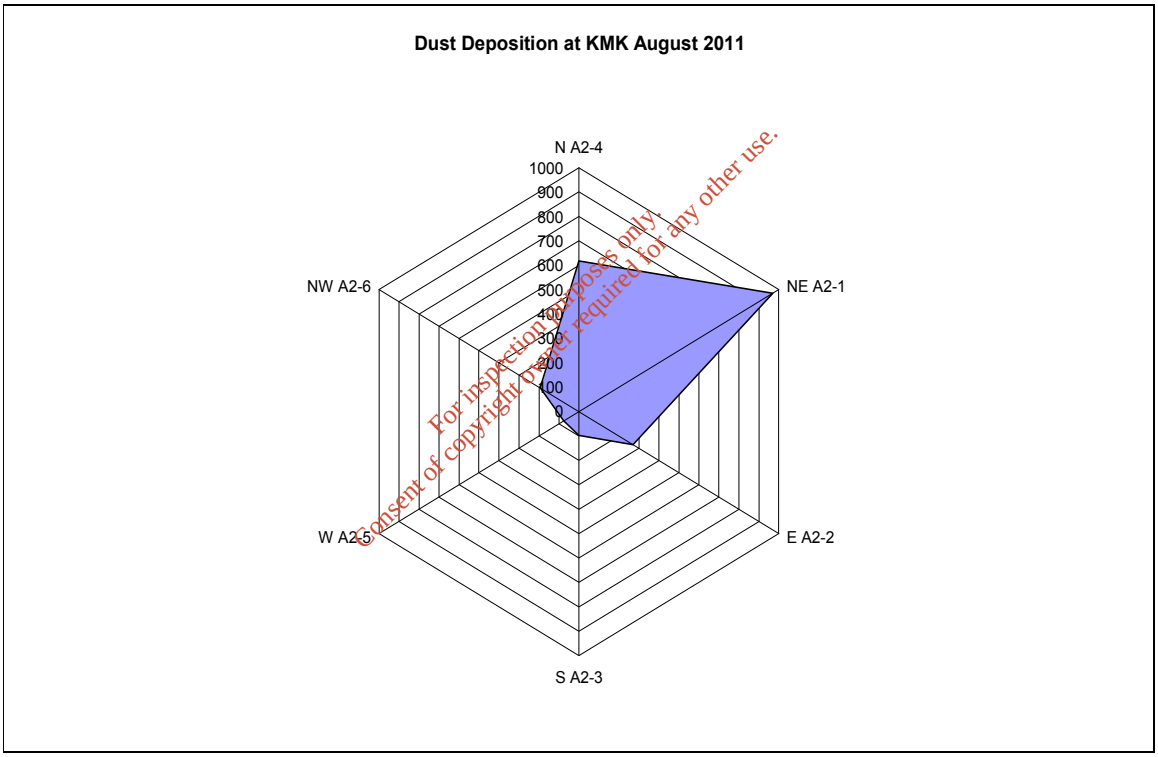

Chart 6.3.1-1: Distribution of Dust at the KMK Facility

Weather conditions can have a noticeable impact upon dust creation and dust entrainment in the air. Drier weather will increase the ambient dust on the ground and will lighten small particulates. Wind strength will determine the size of particles that can be entrained in the air and the distance they will be transported.

ENVIROCO Management Ltd have established a meteorological station in the Tullamore area. This unit is a Davis Vantage Vue system and was operational during the month of August 2011. Data from this unit was correlated to assess local weather

patterns during August. Figure 3-1 shows a generated wind rose for August. This highlights that the predominate wind was South-westerly.

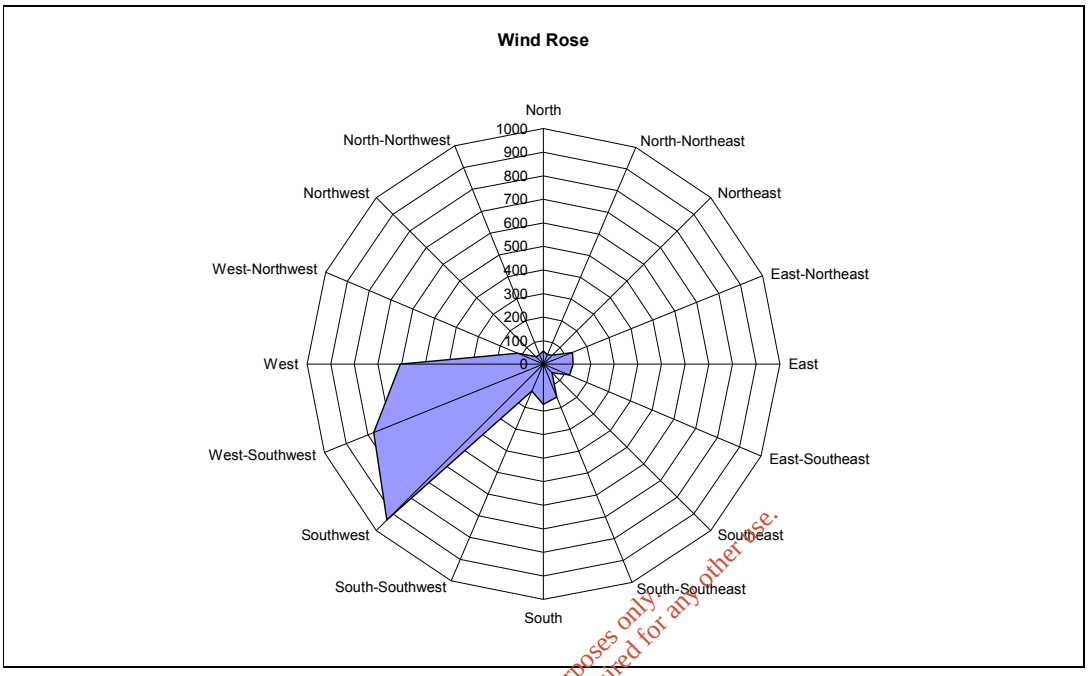

Chart 6.3.1-2: Wind Rose for Tullamore, August 2011

Table 6.3.4: Meteorological Data from the Vantage Vue Weather Station, Tullamore

Parameter	Month August
Average Temperature	13.86
Highest Temperature	23.0
Lowest Temperature	5.5
Average Wind Speed	0.69
Highest Wind Speed	10.3
Rainfall Total	74.6
Average Pressure	730.18

Temperature in ºC; Wind Speed in m/s; Rainfall in mm

Based on the Beaufort Scale of Wind Force it is clear that during the August event for 17 of the 31 days wind in the area was less than 6 knotts, which could be classified as a wind force 1 or 2 light air/ light breeze; which according to the specifications results in "direction of wind shown by smoke but not by wind vanes". The longest period of the event, a beaufort scale of 3 (Gentle Breeze) was recorded – leaves and twigs in constant movement, which occurred for 15 of the days of monitoring. On the 10th

August, significant wind was recorded, with a beaufort scale rating of 4 – Moderate Breeze.

Dust monitoring was conducted during the month of August 2011. The event occurred during the end of the summer period, as required in the waste licence, the period of monitoring was a typical operational month at KMK with average wind, rainfall and dry climatic periods.

Dust monitoring around the boundaries of the KMK, Cappincur site show dust deposition results which vary above and below the EPA recommendation limit of 350mg/m^2/day.

It is widely accepted that vehicular movements at the KMK facility and general vehicular movements within the Industrial Estate by neighbouring units contributes significantly to ambient dust levels in the area.

During August this normal activity on site was enhanced by the extensive building works ongoing at the KMK site. This activity increased vehicle movements, included cutting and shaping of metal components (for roofing) and the installation of new concrete walls, excavations groundworks, foundations and floors, some of which were in close proximity to dust monitoring stations.

It is acknowledged that during periods of dry weather, KMK yard operatives routinely dampen down all internal roads and yard areas in order to prevent dust generation. This is achieved using a mobile water container and fork truck. Therefore, despite the on-going construction works, active site and dry weather, only two monitoring stations i.e. A2-1 and A2-4, recorded levels of dust higher than the Licence limit of 350 mg/m2/day. All other stations were in compliance.

Station A2-1 is situated to the north of the facility, adjacent the entrance/exit road from the facility. During the monitoring period, it was noted that the construction of a new shed building to the west of this station was in place. The grounds around the shed were still under building works and the ground was disturbed. These works would have a notable increase in local dust generation.

Station A2-4, situated east of the main office block and adjacent the operational shed units, was exposed to the rebuild of the adjacent shed building. Works during the monitoring period included the cutting and shaping of concrete floors and installation of plant equipment. These additional sources of dust generation are only present during this build event, and will be fully finished in the coming weeks.

An analysis of the metallic species in all seven dust samples was also carried out over the same 31 day period using the same sampling methods as those for the total dust deposition. The sample parameters for arsenic, copper, mercury and lead measured were all below the actual laboratory limits of detection (see Table 6.3.1.2).

Zinc was detected in only 3 stations – A2-1,4 and 6, all at low levels.

Cadmium, Chromium and Nickel were detected in all sampling jars at levels less than 1.4 mg. Iron was detected in all stations at levels between 0.2 to 2.6 mg.

Aluminium was detected at low levels, ranging from 2.3mg at station A2-5, to 15.2mg at station A2-1. The cutting of roofing material and construction works at height may have influenced the quantities of aluminium detected at all stations.

In terms of comparison of metals in ambient air samples to relevant standards where relevant, this can be achieved by conducting a PM10 sampling event for industrial operations (i.e. measurement of breathable dusts in the air) which metallic speciation of the samples. This sampling event is strongly health and safety orientated with emphasis on sampling methods, times, set back distances from roads and specialised equipment to be used. The regulation S.I No. 58 of 2009 (Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations 2009) covers this process. However, the existing waste licence at the facility does not require this sampling method.

In conclusion, monitoring of dust deposition occurred at six stations around the site between 2nd August and to 1st September 2011. Stations were left in situ for 31 days. During the August event, only 2 of the stations resulted in dust deposition levels greater than the EPA limit of 350 mg/m2/day. An analysis of metals in the dust samples showed there were some detection levels but not for all metals. The significance of the metals in dust deposition is not considered significant.

During dry weather conditions damping down of the immediate areas around the site entrances with water (either use a hose reel to spray dusty areas or the mobile water container) occurs, which reduces the capability of dust to become airborne.

In line with existing planning permissions at the KMK facility, a concrete surface has been installed at the E area. This will have the effect of preventing clay and muck creation at this area and hence the generation of dust particles from vehicles driving on this surface.

Additional buildings for WEEE acceptance, handling and storage are now built and are currently being prepared for use. When these buildings are operational, the dust

derived from construction activities will be removed. KMK are continuing to cover all grounds with concrete, to improve the facility operation and reduce the potential for dust generation.

6.4 STACK EMISSION POINT.

In relation to dusts/particulates generated inside the D-WEEE plant (building), these are exhausted to a duct/ventilation system and directed to the dust collection system (bag house type) for treatment. Bag house filters consist of fabric bags e.g. woven or felted synthetic, glass fibre or cotton. The dusty incoming air enters the baghouse and is subsequently filtered. Dusts are captured in the bag and cleaned air passes through it. Therefore, dusts are captured in the bag and cleaned air is forced out by the fan. Bag house filtration systems are known for their efficiency and cost effectiveness. Based on information received from the manufacturer of the dust collector system, the residual dust to be emitted is approximately <10mg / m^3. This proposed dust emission is considered low in industry terms and also is comparable to best practice emissions.

An assessment of the stack emission point located at D-WEEE plant (building) was conducted by Odour Monitoring Ireland Ltd on 2nd December 2011 and by Glenside Environmental Services on 24th May 2012. Both monitoring reports are contained in Appendix 8.

In terms of monitoring of the air emission stack from the WEEE-Plant Building, this was performed for the following parameters;

- Airflow rate
- Total particulates
- Moisture content
- Specified metals (particulate bound and gaseous based metals)

The WEEE processing plant was in use during monitoring, and the samples were taken as discharged from the emission stack after treatment by the bag house filter stack unit.

The actual measured emissions for each monitoring event are summarised and tabulated below in tables 6.4.1 and 6.4.2.

In summary the actual measured total particulate matter during the first monitoring event was 1.68 (mg/Nm^3) and was 1.82 (mg/Nm^3) for the second monitoring event.

Table 6.4.1: Summary of Air Emissions stack monitoring event on 2nd December 2011.

Emission points identity	Parameter	Periodic monitoring result	Expanded uncertainty (%)	Emission limit value
Dust filtration plant – exhaust stack	Volume flow (Nm^3/hr dry gas)	29,197	-	None at present
	Cadmium and Thallium (mg / Nm^3 dry gas)	<0.00052	<1.0	None at present
	Mercury (mg / Nm^3 dry gas)	<0.000015	<1.0	None at present
	Lead (mg / Nm^3 dry gas)	0.00512	<1.0	None at present
	Chromium (mg / Nm^3 dry gas)	0.0392	<1.0	None at present
	Total particulate matter (mg/Nm^3 dry gas)	1.68	<2.0	None at present

Table 6.4.2: Summary of Air Emissions stack monitoring event on 24th May 2012.

Emission points identity	Parameter	Periodic monitoring result	Expanded uncertainty (%)	Emission limit value
Dust filtration plant – exhaust stack	Volume flow (Nm^3/hr dry gas)	16,362	-	None at present
	Cadmium and Thallium (mg / Nm^3 dry gas)	<0.0018	n/a	None at present
	Mercury (mg / Nm^3 dry gas)	<0.0008	n/a	None at present
	Lead (mg / Nm^3 dry gas)	0.0059	n/a	None at present
	Chromium (mg / Nm^3 dry gas)	0.0048	n/a	None at present
	Total particulate matter (mg/Nm^3 dry gas)	1.82	0.06	None at present

The air emissions stack assessment was therefore completed over two separate monitoring events and approximately 6 months apart. Given the start-up and initial commissioning phase of the WEEE separation process at both times of monitoring, KMK contests that a maximum limit of 20mg/Nm^3 for total particulates be strongly considered as the license limit for the reviewed waste license (the present emission limit value is 10mg/Nm^3 as per Technical Amendment granted on 24th June 2012 by the EPA). This limit will accommodate any additional treated dust emissions that may arise during periods of prolonged and/or repeat WEEE separations within the building. It is proposed to conduct annual stack air emissions monitoring (i.e. total particulates and metals constituents) for future operations at the site in combination with a continuous particulates monitoring probe installed on the emissions stack. For comparison purposes, the following information is noted;

- *Draft BAT Guidance Note on Best Available Techniques for Ferrous Metal Foundaries. Draft September 2011*. This BAT on table 6.1 states an emission level for dust of 5-20mg/Nm^3.
- *Draft BAT Guidance Note on Best Available Techniques for the Initial Melting and Production of Iron & Steel Sector, December 2009*. Table 6.1 itemises various emission levels for emissions to air, such as Total Particulates 5-10mg/Nm^3, lead 0.5-2mg/Nm^3 , chromium 0.05mg/Nm^3 etc.
- *BAT Guidance Note on Best Available Techniques for Non-Ferrous Metals and Galvanising.* Table 6.1 itemises various emission levels for emissions to air, such as Total Particulates 10mg/Nm^3, lead 0.5-2mg/Nm^3 , chromium 0.05mg/Nm^3 etc.
- *Final Draft BAT Guidance Note on Best Available Techniques for the Waste Sector: Waste Transfer and Materials Recovery.* There are no actual air emission levels referred to in this document with the exception of fugitive dusts.
- A previous waste licence No: W0233-01 for a company called Techrec Ltd, Dublin had 2 emission points whereby the **total particulates** levels were **50mg/m^3**, they also had the limits; chromium 1mg/m^3 and nickel 5mg/m^3. This company operated as a WEEE processing waste management plant, which is very similar to KMK present operations and activity.

Hence, the proposed maximum limit of 20mg/Nm^3 for total particulates is considered appropriate for the site operations and the corresponding metals constituents will be lower accordingly.

The actual licensed emission limit values are to be agreed with by the EPA as part of the future Waste Licence review ref: W0113-04 but it is reasonable to assume the actually total particulates will either remain as 10mg/Nm^3 as per the present Technical Amendment or be amended to 20mg/Nm^3 as previously described above.

6.5 POTENTIAL IMPACTS

Weather conditions, both wet and dry, can have a noticeable impact upon dust creation and entrainment in the air and on vehicle wheels. Drier weather will increase the ambient dust on the ground and will lighten small particulates. Wind strength will determine the size of particles that can be entrained in the air and the distance they will be transported. Wetter weather will result in entrainment of matter on vehicle wheels, which may then dry out and later rise as dust.

The existing surface is conducive to dust generation: dampened matter can be entrained by vehicle wheels to concreted areas, where it may dry and lift as dust. The previous development of E Area, included surfacing of all ground areas with tarmac (car parking area) and concrete (for all other areas); thereby providing conditions which should significantly reduce the potential for dust generation.

The treated air emission from the stack at D-WEEE building will not have a negative effect on the environment. This is expected for the following reasons;

- Existing monitoring data and technical specification information of the stack air emissions and treatment system shows that the present emissions are comparable to best practices within the industry and not environmentally significant i.e. the emissions properties are; dry, ambient temperature, minor particulates, low metal concentrations.
- Annual monitoring of the stack emissions is proposed and this frequency of monitoring will be conditioned within the proposed Waste Licence ref: W0113-04 once granted. This monitoring will be enforced by the EPA and self compliance will be demonstrated by KMK.
- A high level remote alarm device is installed on the emissions stack to bring to immediate attention to KMK management should elevated total particulates levels occur. The devise is remotely linked to a PC at the site General Manager's office. This measure will ensure a prompt response to mitigate and prevent continual elevated/abnormal emissions from the stack (further explained below).
- The internal air handling system within the D-WEEE Plant building and associated bag house outside treatment system are considered BAT and will be maintained to a comprehensive service plan by KMK and an outside maintenance contractor.

6.6 MITIGATION

Not withstanding the four aforementioned bullet points above, control measures, which will further ensure dust and air control, include: processing of waste inside buildings, a complete air extraction system with filtration at D-WEEE Building as previously explained, temporary outside storage of waste prior to processing and/or export from the facility and environmental monitoring as to be scheduled in the pending new Waste Licence ref: W0113-04.

In terms of the remote probe device, this item effectively operates as a bag breach detector whereby any potential breach or problem on the filter bag possibly resulting in abnormal emissions from the stack will be automatically detected by the probe and a message sent to the General Manager's office alerting him to the situation. This remote probe was appraised and fitted directly to the stack by the providers of the WEEE treatment equipment and will provide a real time detection should any abnormal emissions occur on the stack. Hence there will be no continual emissions from the stack that will be significant as KMK will rectify any plant defect as a matter of urgency. As a further method of stack emissions assessment, KMK will also conduct annual monitoring as detailed 6.7 below.

In addition, good housekeeping measures will also ensure that ambient dust generation is eliminated or kept to a minimum. Where dust entrainment or windblown ambient dust is likely, areas should be swept and dampened down, particularly during periods of dry weather i.e. by using a road sweeper, mobile water dampening supply on-site or by spraying lightly with water from a hose.

6.7 FURTHER MONITORING

All air and dust monitoring will be conducted by approved independent environmental contractors.

Monitoring of ambient depositional dust is carried out as an annual requirement of Waste Licence W0113-03 and will continue for the new waste licence W0113-04.

The proposed annual stack air emissions monitoring will be conditioned (most probably annually) within the new waste licence once granted. KMK proposes the following parameters;

- Airflow rate
- Total particulates
- Moisture content
- Specified metals (lead, chromium, aluminium, arsenic, cadmium, zinc).

7.0 Noise

Noise is described as 'unwanted sound' and is typically associated with specific sources such as transportation (roads, railways, airports), construction (site preparation works, generators, heavy equipment) and industrial (engines, associated traffic, extraction fans).

This chapter will review the current known acoustic environment where the KMK facility is located and place their activities within the context of this environment. Local sensitive receptors will be identified and a risk based system will be utilised to assess the potential for disamenity from the granting of this application to these sensitive receptors.

Within this chapter the following terms will be utilised:

A (A-weighting)	A single letter A, within any of the indices, indicates that the result has been A-Weighted, a method that reduces high and low noise frequencies, while emphasising middle frequencies, based upon human trials concerning hearing response curves
Ambient Noise	The level of noise present in the local environment from diverse sources – not directly associated with the facility noise been examined
Background noise	Level of noise in the existing environment that is exceeded for 90% of a monitoring period (also LAF90)
dB	Decibel, indicates that the number is based upon the decibel scale, a base 10 –log scale based upon a '0'dB expressed as the 'threshold of hearing' (20μPa) and 20 times the log of the root mean square of the measured sound pressure
Leq	The equivalent continuous sound level. It is a single decibel number used to reflect the varying noise sources.
Lmax	The maximum root mean squared (RMS) sound pressure level recorded during a measurement period.
Sensitive Receptor	Any place where humans congregate that sound arising from their environment would be deemed 'annoying'. Includes schools, churches, parks, walk-ways, offices, homes, etc.

7.1 POTENTIAL FOR IMPACTS

Noise has many sources, both manmade and environmental. Noise is observer defined, as levels unacceptable to one person may be perceived as necessary or enjoyable to another. As such the monitoring of noise is primarily an observational discipline requiring a full identification of the sources of possible noise and the type of sound that is being emitted (continuous, intermittent, tonal, broad-spectrum, single source, multiple source).

The Environmental Protection Agency (EPA) has adopted a noise level (as a continuous equivalent noise reading – Leq) of 55 dB(A) as an indicator of annoyance due to noise arising from industrial activity. This level is given at the receptor or noise sensitive location (NSL).

The KMK site is a fully functioning waste management recovery facility for WEEE and metals. Within the confines of its boundary it utilises forklifts and specialist machinery for the separation of various components of WEEE in particular and there is some baling of treated large household appliances (LHAs). This facility is serviced by articulated trucks and commercial vans, which bring in waste materials (metals and waste electrical and electronics). All processed waste loads depart the site in articulated trucks only.

Many of these activities have associated noise sources. Truck engines, vehicle reversing alarms and equipment noise from treatment/processing areas all have the potential to reduce the amenity of other persons.

At the KMK facility the primary noise sources are listed in the below table

Table 7.1.1: Sources of Noise at the KMK facility

Noise Source	Location	Noise Level (L_{Aeq} values)
Forklifts	Around site, mobile	60-65
Idle truck engines	E area, weighbridges, DX yard, C yard areas	70-75
Smasher Unit and associated plant	D-Hanger & D-WEEE Plant buildings, with associated extraction unit on southern wall of D-WEEE building	88-92*
CRT Dismantling plant	D4 building	88-92*
Euromec Hydraulic	D4-R building	-

Noise Source	Location	Noise Level (L_{Aeq} values)
Baler (for baling of LHAs metals)		
Battery Sorting Plant	D4-L building	60-65*
Erdwich Shredder	C building	-

*L_{Aeq} values are taken from measurements within buildings, including reflections from walls, floors and ceilings. External levels are significantly lower due to acoustic absorption and insulation of the building structures, and the loss of acoustic energy as it moves from the confines of the building to the wider environment.

Where noise is an integral part of the activity – i.e. truck engines are not currently replaceable by quieter options, construction of barriers or attenuators may be investigated, to try and ensure that noise levels do not become unpleasant at sensitive receptors. In conducting such investigations it becomes paramount to understand what the levels of noise arising from the facility are, the location of the sensitive receivers, the nature of the receivers and the existing background acoustic environment.

7.2 EXISTING BACKGROUND ACOUSTIC ENVIRONMENT

Monitoring was conducted in November 2011 (refer to Appendix 9 for full report) along the field to the south of the KMK facility. This monitoring showed that at a distance over 40 meters from the plant, LAeq values stopped fluctuating. Values were recorded at increasing distance from a point 20 meters from the southern wall of D-WEEE Plant building to over 200 meters from the D-WEEE Plant building. A steady LAeq value of 54 dB was noted when noise arising from the plant was not audible to the human ear.

The land to the south of the facility is zoned industrial but presently used for cattle grazing although no livestock were present in the field during the monitoring events. Therefore these measurements are seen as representative of the background noise levels for the area.

Primary noise audible in this field arose from the N52 Tullamore By-Pass which is clearly visible to the south and west.

Measurements to the north and west of the facility become increasingly complex due to the presence of varying building structures causing reflections, refractions and barriers, along with the presence of industrial, commercial and other waste activities arising from several other operators in the industrial park.

Access to the lands to the east is currently not attained. To the east are agricultural lands used for cattle grazing.

This daytime level of a LAeq of 55 dB, is good for an area located so close to a primary national road and in close proximity to an industrial/commercial park. Typical levels for noise are displayed in the table below:

Table 7.2.1: Sound Pressures of Typical Noise Sources

Sound Pressure level dB(A)	Typical source
120	Jet take off at 50m
100	Pneumatic Drill
90	Generator hall
80	Light machine shop, Heavy Truck at 15m
60-70	Light traffic (cars) at 15m
60	Office Noise
40	Library
20	Rural evening

The background levels in the agricultural fields clearly show that the local area is not a 'Quite Area' as defined by the European Noise Directive (2002/49/EC). It is therefore the aim of industrial and commercial businesses to ensure that they work towards ensuring that noise within the local environment, as arising from their activities do not contribute unnecessarily to the local acoustic environment.

7.3 CURRENT ACOUSTIC ENVIRONMENT ON SITE

Annual noise monitoring, as recently as December 2011 (refer to Appendix 10 for full report), was conducted at established noise measurement stations around the facility boundary. This monitoring incorporated 6 measurement stations, from 6am to 1pm. The measurements show that at the boundary stations of the KMK facility, noise levels range from a LAeq of 60-70 dB. These measurements include sources of noise such as traffic within the industrial park, road traffic, neighbouring facility activities and construction activities occurring within the area, along with noise associated with the activities of the KMK facility.

Noise sources from the facility, audible at the site boundaries have been identified as:

- Vehicles entering/leaving the site
- Personnel entering/leaving buildings
- Unloading and loading of trucks with waste materials
- The movement of fork lift trucks in and around the site
- Reversing alarms from forklift trucks

- Operation of the baler unit for Large Household Appliances (LHA).
- Processing of WEEE inside the D-WEEE Plant building
- Air extraction unit on the south wall at D-WEEE Plant building
- Operations from construction of a steel structure at a neighbouring industrial unit.

Referencing the 'Sound Pressures of Typical Noise Sources', the level of noise recorded in and around the KMK facility is comparable to light road traffic at 15 meters or light industrial work-shops. This is achieved by the control of primary noise sources on site by strategic site management. All heavy plant is located within the primary buildings, buildings are located furthest from sensitive receptors and no opening into the building structures has a direct line of sight with any sensitive receptors. Machinery within the buildings can be muffled or contained, depending upon the best practice available to minimise the spread of noise from these noise sources. Further mitigation measures are described below.

7.4 SENSITIVE RECEPTORS IN THE LOCALITY

The KMK facility is located within the confines of the Cappincur Industrial Estate, on the eastern edge of Tullamore Town. Within the Industrial Park there are no high sensitivity receptors for noise. Businesses within the locality are relatively robust, dealing with solid fuel sales, car breaking, carpentry, waste management, couriers, farm machinery sales and vehicle alterations. Therefore these businesses have not been classified as 'Sensitive Receptors' for noise control measures.

Primary Sensitive Receptors would include general congregational areas, such as schools, churches, parks, etc. The closest of these are located within the town of Tullamore, at distances over 1.1 km from the site, with the Tullamore By-Pass separating the site, both physically and acoustically from any of these receptors.

High Sensitive Receptors includes any homes where people reside and their associated gardens. There are no identified housing estates or high density population zones in close proximity to the Cappincur Industrial Estate, until you cross the N52 Tullamore By-Pass road. Once-off style linear housing does occur along the Ballinagar road to the north. These houses are therefore the closest Noise Sensitive Receptors to the KMK facility.

As linear road housing, by its very nature, is located adjacent to a road network, they will be exposed to a certain degree of road traffic noise (depending upon the level of traffic on the road). These dwellings are located at approximately 150 meters from their closest boundary (garden) to the site closest boundary (being E area).

There is no direct line of site from any of the operational activities at the KMK facility and dwellings located on the L-2025 Ballinagar road. Views from this road towards the facility are included in Chapter 10 – Landscape and Visual Assessment.

7.5 NOISE IMPACTS

The intervening ground between the KMK facility and the L-2025 Ballinagar Road comprises industrial/commercial buildings, walls and tarmac roads. These hard surfaces have a greater tendency to reflect and refract noise than softer grassland. The height of many of the intervening buildings also acts as a form of barrier, increasing the direct line movement of sound from the KMK facility to the Sensitive Receptors. The table below gives the typical attenuation (loss) of sound pressure from a source point, arising from distance. The table is based on the mathematical formulation that sound will expand in a sphere, thereby spreading the contained sound pressure over a larger area with increasing distance.

Table 7.5.1: Attenuation of Noise over Distance for Point Sourcce Emissions (industrial source)

Distance m	Noise level dB
10	70
20	64
40	58
80	52
160	46

As discussed, the acoustic environment around the KMK facility, within the Cappincur Industrial Estate, is approximately a LAeq of 60 - 70 dB. All primary noise sources are contained within the building structures of the facility, with forklifts and truck movements operating outside. The only notable noise emission source from the facility buildings is an air emissions stack located on the southern side of the D-WEEE Plant building. Following best practice for the noise control, this is positioned to minimise impact to existing receptors.

The closest Sensitive Receptors are identified as dwelling houses located along the L-2025 Ballinagar road to the north. These dwellings are located at distances greater than 150 meters from their closest boundary (garden) to the site closest boundary (being E area). Located adjacent a local road and at a similar distance from the Tullamore By-Pass as the KMK facility is, these dwellings will have similar residual noise levels as were identified from the monitoring conducted at the KMK site. The table above shows that under normal circumstances, a noise value of 70 dB will decrease to approximately 47dB at a distance of 150m. The primary noise sources on

site are the movement and idle engine noise from articulated truck units. Noise levels from the articulated trucks alternates from a maximum (Lmax) of 105dB under high engine revs to commence movement, to an idle engine noise of less than a Leq of 80 dB(A). Under both scenarios the level of noise, attributable from truck activities on the KMK facility, is less than 55 dB(A) at the closest Sensitive Receptors.

Background noise monitoring within the land to the south of the site shows a daytime noise level of Leq 54 dB(A). This measurement was found to be irrespective of activities within the KMK facility or activities in general within the Cappincur Industrial Estate. This background or residual noise level was primarily influenced by the day-time traffic movement on the N52 Tullamore By-pass to the west.

Noise sensitive receptors to the KMK facility are located to the north, along the L-2025 Ballinagar local road. These dwellings are separated from the KMK facility by the Cappincur Industrial Estate structures and boundary walls. These sensitive receptors, arising from their proximity to the N52 By-Pass, which is similar to the distance measurements in land to the south were located, their proximity to road traffic on the road, their proximity to other operational facilities within and adjacent the Cappincur Industrial Estate, are likely to experience a day-time acoustic environment in excess of the residual noise level recorded at a LAeq of 54 dB.

BS 4142:1997, a document designed for the purposes of assessing the likely impact of industrial noise on mixed residential and industrial areas, references the following likelihood of complaints relating to noise.

Table 7.5.2: BS 4142:1997 Criteria for likelihood of Noise Impact

dB influence from Industrial Activity at Sensitive Receptors	**Likelihood of complaint**
+10 dB	Complaints are likely
+5 dB	Marginal significance
Influence is 10dB lower than existing noise levels	Positive indication that complaints are unlikely

The table shows that for complaints to be minimised, and therefore to be having as low an acoustic impact as possible, the acoustic effect from the operation of the facility should be less than 5dB above the residual noise present. Measurements in the agricultural grasslands to the south of the KMK facility, unaffected by industrial activities, show a LAeq value of 54 dB. The higher likely impact from activities at the KMK facility show a LAeq value of 55 dB at sensitive receptors, based upon measurement of activities on site, and distance attenuation. This gives a marginal increase of 1dB above the residual noise levels.

7.6 MITIGATION

The development is not applying for any infrastructural or plant changes to the site that will cause notable variations to the noise arising from site activities. Current alterations to site development will see the improvement of traffic flow management by accessing E area for weighbridge use thereby reducing truck idling times and the completion and commissioning of E area in the northern sector of the site, which will offer further concrete obstructions i.e. boundary walls to noise propagation to the north.

The addition of the air emissions stack unit, on the southern boundary of the D-WEEE Plant building minimises the potential for impact from this emission point on any current noise sensitive receptors. The land to the south of the site is zoned for industrial purposes, and is therefore not likely to become residential or otherwise acoustically sensitive in the future.

Future monitoring of noise will be conducted under the EPA's latest guidance – "*Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)*" and will be reported to the Agency on an annual basis. Any notable increase to the regular monitoring stations noise levels will be investigated and improved upon where required.

7.7 CONCLUSION

The KMK facility is located to the rear of a long established Industrial Estate at Cappincur, to the east of Tullamore town.

The facility has developed in a progressive manner to ensure that noise production areas are orientated away from the sensitive receptors to the north. Management have followed best practice in the enclosure of significant noise sources to abate possible noise issues on site.

Residual noise levels, or the noise recorded in the vicinity, when activities from the industrial estate are not present, are approximately a LAeq of 54 dB.

Noise recorded at site boundaries of the KMK facility during normal operations are approximately a LAeq of 70dB.

Using base distance attenuation, from the closest boundary of dwellings to closest boundary of the site, this gives a projected noise level, attributable to KMK activities of a LAeq of 55 dB.

Guidance for the likelihood of impact on sensitive receptors, and therefore likelihood of complaint, indicates that a difference of less than 5dB is marginal, and therefore unlikely to cause complaint.

Therefore it is advised that the development of the KMK site, as proposed in this application, will not have any undue impact on the noise arising from the facility. Current improvements to traffic flow, construction/commissioning of E area and the containment of primary activities within specialist buildings, will ensure that future waste acceptance will not equate to any notable noise increase.

8.0 Soils and Geology

8.1 INTRODUCTION

In this section of the EIS soil and geology in the existing environment are addressed. A desk study has been carried out to identify the soils, quaternary and bedrock geology of the area, Sources of information have included the Geological Survey of Ireland (GSI), Offaly County Council, Environmental Protection Agency (EPA), Office of Public Works (OPW), National Parks and Wildlife Service (NPWS), Teagasc and Met Éireann.

The primary effects on geological features and characteristics of the soil and geology are described below. Any potential impacts of the proposed development are identified and measures to avoid, reduce and mitigate potential impacts are outlined.

8.2 EXISTING ENVIRONMENT

8.2.1 Landscape

County Offaly is largely a rural county comprising of flat and undulating agricultural landscape, coupled with boglands. Field boundaries, particularly along roadside verges which are primarily composed of mature hedgerows, typify the county's rural landscape. County Offaly also has a number of Esker Landscapes, which encapsulate the geographical change that emerged following the ice age and merits protection given its unique importance in providing scientific, recreational and amenity value.

KMK is located in an established industrial estate at Cappincur approximately two kilometres east of Tullamore town centre. The land immediately surrounding the site is zoned industrial. The area is classified in the Offaly County Development Plan 2009-2015 as a landscape of Low Sensitivity to development Sensitivities of this classification are low because these areas in general can absorb quite effectively appropriately designed and located development in all categories (e.g. telecommunication masts, wind energy installations, afforestation and agricultural structures).

The site is located approximately 900m south of the Grand Canal, the closest landscape classified as a High Sensitivity Area in the Offaly County Development Plan 2009-2015. The Grand Canal, bordered by hedgerows dating back 200 years, traverses the county a distance of approximately 64km from Edenderry to Shannon Harbour, over large tracts of bog land, and passing through a number of towns (including Daingean and Tullamore). The Grand Canal is of great

importance for tourism and recreation, and is valued for its visual quality, particularly outside of settlement areas.

8.2.2 Soils

Soils at the site comprise surface water gleys / groundwater gleys with limestone till subsoil. To the east of the site is an area of grey brown podzolics / brown earths with limestone till subsoil. To the south are marl type soils and marl subsoils, and to the west and north are smaller patches of mineral alluvial, with a subsoil of alluvium (undifferentiated gravelly).

8.2.3 Bedrock

The KMK site is underlain by Dinantian Pure Unbedded Limestone and an area of a bedrock aquifer of high vulnerability to environmental pollution (aquifer vulnerability is discussed fully in Chapter 9: Water).

8.3 SITE INVESTIGATION

The site was visited throughout the first quarter of 2012. The site is located within an existing industrial estate and is well established as a recycling facility operating within the remit of existing waste licence W0113-03 as regulated by the EPA.

The two main elements of the planning application are an increase in waste acceptance and a regularisation of all existing and proposed activities on-site. The vast majority of the site is presently covered in concrete and buildings, the only section requiring further work is E area (car park). E area also has a robust surface water management infrastructure as part of its development (previously granted planning permission ref 10/46). This includes; impermeable concrete yard, attenuation tanks, silt trap and Class 1 Interceptor for all surface water run-off.

8.4 AREAS OF INTEREST

County Offaly has a number of sites of geological and landscape interest, including boglands; eskers; uplands; waterways, lakes and wetlands; forests and woodlands. Features of interest within close proximity to the site include the Grand Canal, located approximately 900m north and the Tullamore River, located a similar distance to the south.

The Grand Canal is an area classified as High Sensitivity in the Offaly County Development Plan 2009-2015 and is further described in Sections 9.2.2 and 12.5.2. The Tullamore River is of moderate status south of the KMK facility, and falls under protection by the Water Framework Directive as a RPA Nutrient Sensitive River further downstream (west of Tullamore Town) where water quality is diminished.

A full list of areas protected under the various site designations (Natural Heritage Area, Special Protected Area, Special Area of Conservation and proposed Natural Heritage Area) is provided in Chapter 12 of this EIS, Flora and Fauna.

8.5 IMPACTS AND MITIGATION

The procedure for determination of potential impacts on the receiving soil and geological environment was to identify potential receptors within the site boundary and surrounding environment and use the information gathered during the field work and desk study to assess the degree to which these receptors will be impacted upon. Impacts are usually described in terms of quality, significance, duration and type. However for the purpose of this EIS study and the nature of the site, the impacts to ground are minimal at best.

The site is existing and operates as a metals and WEEE waste management operation. Facilities to be developed and fully commissioned for this development proposal are limited to; 1) E area on-site which includes - completion of a second weighbridge; completion of the car park surface and HGV waiting area; and completion of precast boundary walls where required and 2) the re-development upgrade works for the on-site Waste Water Treatment System (WWTS). Therefore the present on-site percolation area will be removed and decommissioned. The new WWTS will comprise of a second batch reactor unit followed by a sand filter biological treatment system with discharge to surface water land drain. Therefore, there will be no discharge to ground from the development.

No emissions to the soil and geological environment at the site will take place during the construction phase or normal operational management of the development e.g. as a result of resurfacing, weighbridge installation or WWTS upgrade development works.

All WEEE and metals acceptance and processing occurs inside the respective site buildings on-site. Temporary storage of some metals occurs outside on the fully impermeable serviced areas prior to off-site removal for further recovery.

The proposed development will invoke no change to the soil and geological environment of the site and surrounding area apart from the removal of the on-site percolation area, thus a neutral, permanent impact is forecast.

8.6 FURTHER MONITORING

The geological impact assessment forecasts no significant impact to soils and underlying geology as a result of this development. There are no recommendations for further monitoring.

9.0 Water

This chapter focuses on surface water and ground water components of the EIS for the proposed development. The format of this chapter provides a hydrological assessment of the site, followed by an analysis of potential impacts and a discussion of mitigation measures and monitoring requirements.

9.1 SCOPE AND METHODOLOGY

The objectives of this chapter of the EIS are to:

- Characterise current surface water quality, hydrological and hydrogeological systems;
- Assess the potential impact of the proposed development
- Discuss mitigation measures to minimise potential impacts
- Consider monitoring requirements

The site is routinely visited by ENVIROCO Management Ltd. staff for quarterly surface water and annual groundwater monitoring events at the site. Monitoring of surface and groundwater at the site is carried out as per the requirements of Waste Licence W0113-03.

A combination of desk study and site visit was carried out in order to form this assessment. Desk study was carried out using data sourced at the Geological Survey of Ireland (GSI), Environmental Protection Agency (EPA), Offaly County Council (Water Quality Services), Office of Public Works (OPW), National Parks and Wildlife Service (NPWS), Teagasc and Met Éireann.

9.2 EXISTING ENVIRONMENT

The topography of County Offaly is varies from rolling to gently undulating, the shape and form determined by the effects of quaternary glaciations. A significant boundary of the County is the River Shannon, which separates County Offaly from Counties Galway and Roscommon.

The KMK facility is situated at in the Shannon (HA25) Water Region. The Shannon River Catchment Area covers a vast area of over 15,000km2, representing just over one fifth of the area of the Republic of Ireland. The HA25 Catchment stretches north across Co. Cavan, east to Co. Meath, south to Co. Cork and west covering a significant portion of Co. Clare.

9.2.1 Vulnerability

The site is underlain by a locally important aquifer, which would be capable of yielding enough water to boreholes or springs to supply villages, small towns or industrial operations. According to specific GSI terminology the aquifer is

classified as 'LI: Locally Important Aquifer – Bedrock which is Moderately Productive only in local zones'. There are no source protection areas within close proximity to the site, the nearest being located approximately 6km from the site.

Vulnerability classifications highlight the likely contamination of the underlying aquifer should ground pollution occur, and can help in the choice of proposed mitigation or preventative measures, with regard to potential groundwater contamination.

Groundwater vulnerability at the site and in the wider region is predominantly classified as 'High', implying that, should contamination of the surface layer occur, there is a high potential for contamination of the underlying aquifer.

9.2.2 Areas of Significance

Approximately 900m north of the KMK facility is the Grand Canal, and at a similar distance to the south of the site is the Tullamore River (IE_54_549; Stream Order 3), with an assigned interim status of "moderate" and requiring restoration by 2015.

The Grand Canal is classified as a High Sensitivity Area in the Offaly County Development Plan 2009-2015. The Canal, bordered by hedgerows dating back 200 years, traverses the county a distance of approximately 64km from Edenderry to Shannon Harbour, over large tracts of bog land, and passes through a number of towns, including Daingean and Tullamore. The Grand Canal is of significant tourism and recreation value, particularly outside of settlement areas and largely for its visual quality. Rural stretches of the canal are especially sensitive to large development structures, insensitively designed sporadic housing, and large-scale land uses such as extractive industries. The Grand Canal is protected under its area designation as a pNHA (NPWS site code 002104) under the County Development Plan 2009-2015.

The Tullamore River, located south of the site, is indicated as being of Moderate water quality status: Q3-4, where Q5 is high status and Q1-2 is bad status. The most up-to-date EPA River Water Quality information for this river provides historical Biological Quality Ratings (Q-Value) records from 1971 to 2011 and is illustrated in Figure 9.2.1 below:

Table 9.2.1: Tullamore River Water Quality Report

0300	4	3-4	4	4	4	-
0600	4-5	4	4	4	4	4*

Assessment: Continuing satisfactory in 2008, however heavy instream siltation (0600) was noted .

Station No.	*Station Location*	*National X*	*Grid Ref. Y*	*Discovery Series No.*	*County Code*
0300	South Br at Toem	186718	147503	66	TY
0600	Br u/s Dead R confl	184133	145644	66	LK

Site Altitude and Upstream Catchment Characteristics (where available):

Station No.	*Alt*	*Area*	*Sil*	*Cal*	*Pasture*	*Forestry*	*Bogs*	*Urban*	*Misc Ag.*	*Water*	*Other*
0300	93	3	100	0	41	4	3	0	51	0	0
0600	56	104	49	51	92	1	0	4	4	0	0

Alt is in metres Area is km2 and Sil, Cal are % siliceous and calcareous bedrock and Pasture, Forestry, etc., are % of catchment area.

Back to top

River and Code: **TULLAMORE** **25T03**

Tributary of: 25C06 CLODIAGH (TULLAMORE) OS Catchment No: 155

OS Grid Ref of confluence: N 280 254

Date(s) Surveyed: 31/12/1971, 31/12/1975, 31/12/1977, 31/12/1981, 31/12/1986, 31/12/1987, 31/12/1989, 31/12/1990, 31/12/1993, 31/12/1996, 17/8/1999, 23/8/2002, 16/8/2005, 23/10/2007, 14/10/2008, 15/10/2008, 4/8/2011

Biological Quality Ratings (Q Values)

Station Nos.	1971	1975	1977	1981	1986	1987	1989	1990	1993	1996	1999	2002	2005	2007	2008	2011
0030	-	-	-	-	-	-	-	-	3	3	3	3	3	-	3-4	3-4
0100	4	3-4	3-4	4	4	3	-	-	4-5	3	3	3	3-4	-	3	3-4
0400	1-2	2	1-2	2	2	2	2-3	2-3	2-3	2-3	2	2	2	2-3	2-3	2-3

Assessment: Unsatisfactory ecological conditions continue at the three stations surveyed on the Tullamore River in August 2011. The macroinvertebrate fauna indicated a slight improvement from poor to moderate ecological conditions at Springfield Bridge (0100). The complete lack of sensitive macroinvertebrate species and dominance of pollution tolerant fauna coupled with low dissolved oxygen (48% oxygen saturation) and abundant plant growth indicated Poor ecological conditions again downstream of Tullamore (0400) .

Station No.	*Station Location*	*National X*	*Grid Ref. Y*	*Discovery Series No.*	*County Code*
0030	Br d/s Geashill Stream	244474	222320	48	OF
0100	Br S of Cappincur	238697	224074	48	OF
0400	Br near Ballycowan Br	229537	225031	48	OF

Site Altitude and Upstream Catchment Characteristics (where available):

Station No.	*Alt*	*Area*	*Sil*	*Cal*	*Pasture*	*Forestry*	*Bogs*	*Urban*	*Misc Ag.*	*Water*	*Other*
0030	68	10	0	100	65	2	5	3	25	0	0
0100	58	54	0	100	72	0	5	0	19	0	3
0400	52	132	0	100	68	2	6	5	13	0	6

Alt is in metres Area is km2 and Sil, Cal are % siliceous and calcareous bedrock and Pasture, Forestry, etc., are % of catchment area.

9.3 EXISTING EMISSIONS

9.3.1 Surface Water

Emissions to surface water from the site occur as storm water and are discharged to an adjacent land drain along the west boundary of the site, via emission points CX and DX, described as follows:

CX: discharge pipe located on the western boundary arising from the C Area
DX: discharge pipe located on the western boundary arising from the D Area

A proposed additional emission point will be included at E area on completion of building works and subsequent inclusion within the waste licence (as previously described in Section 3 of this EIS). Therefore E emission point will be as follows;

E: discharge point located within E area and prior to joining with the surface water drainage network from the remaining industrial estate. The final outfall of the drainage being to the land drain located on the western boundary of the site.

It is a requirement of Waste Licence W0113-03 that all current surface water emissions from the KMK facility are monitored on a quarterly basis, with daily visual inspection, and bi-annual analysis of metals. Therefore this requirement only applies to CX and DX at present, but will also include E emissions point once agreed with the EPA via the waste licence review application.

Figure 9.3.1.1 shows photos of the surface water discharge points.

Results of quarterly monitoring events from 2010 to 2011 are displayed in Tables 9.3.1 and 9.3.2 below.

Emission Points inspection chambers and labels for CX & DX

Emission point outfalls at CX and DX to drain

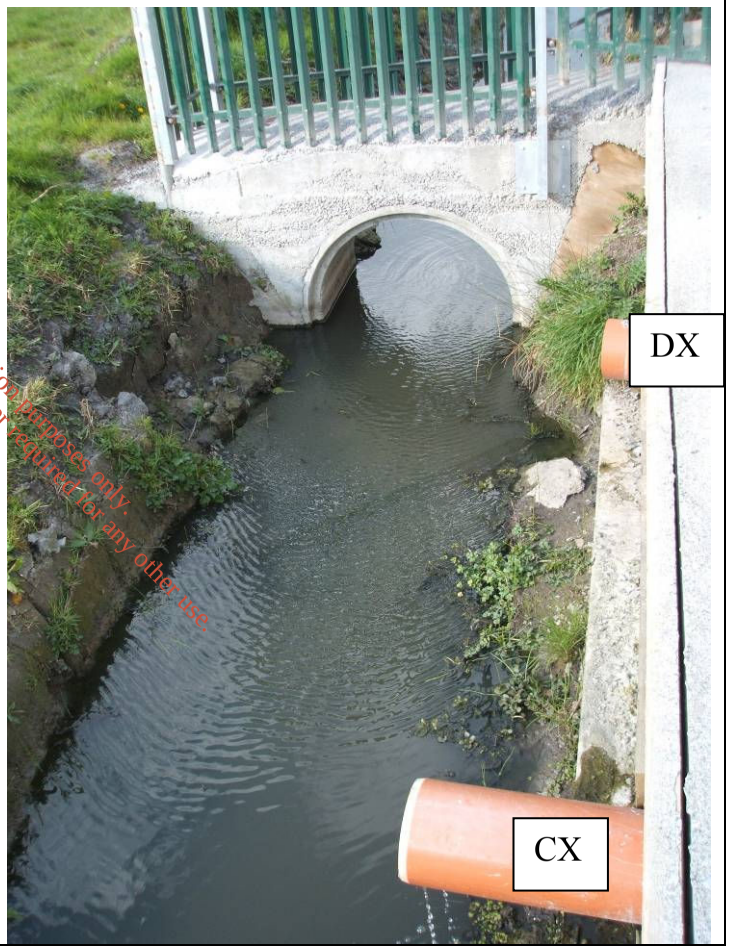

Figure 9.3.1-1: Surface Water Emission Points - taken March 2012

Table 9.3.1: Surface Water Emissions Monitoring Results for CX discharge 2010-2011

Parameters	CX 1st Quarter No flow	CX 10/06/10	CX 30/09/10	CX 03/11/10	CX 21/02/11	CX 29/06/11	CX 15/08/11	CX 07/12/11	Trigger Levels	Action levels
Aluminium (µg/l)	-	0.0112	0.0029	160	3.8	8.98	<2.9	<2.9	**3,000**	**5,000**
COD (mg/l)	-	7.74	37.7	<10	25	19.4	20.4	26.9	**40**	**40**
Arsenic (µg/l)	-	0.00038		1.2	0.49	1.01	0.623	1.96	**500**	**100**
Chromium (µg/l)	-	0.00939	0.00592	9.9	9.5	6.32	5.52	12.9	**32**	**50**
Conductivity (µS/cm)	-	173	**1380**	350	1410	509	627	**1,960**	**1,000**	**1,000**
Iron (mg/l)	-	<0.019	**0.26**	**70**	<0.019	<0.019	<0.019	0.06	**0.2**	**2.0**
Lead (mg/l)	-	0.000904	0.000397	**0.091**	0.0028	0.00467	0.0016	0.00456	**0.05**	**0.05**
Mercury (µg/l)	-	<0.00001	<0.00001	<0.5	<0.001	<0.00001	0.0000101	<0.00001	**0.07**	**1**
Nickel (µg /l)	-	0.00149	0.00668	9.2	8.47	5.09	2.45	6	**3,000**	**5,000**
Mineral Oil by Gc(mg/l)	-	<0.01	0.00001	<0.001	0.102	<0.01	<0.01	<0.01	**1.0**	**2.0**
pH (units)	-	7.77	**8.54**	7.9	8.66	8.56	8.42	7.97	**6.0 – 9.0**	**5.5 – 9.0**
Suspended Solids (mg/l)	-	<2	6.5	43	7.5	3.5	6	5.5	**50**	**100**
Chloride[note1] (mg/l)	-	-	-	-	-	58.7	-	472		
Zinc (mg/l)	-	0.0435	0.411	0.3	0.0707	0.0754	0.00573	0.0691	**3.0**	**5.0**
Diesel Range Organics (mg/l)	-	0.0704	0.046	<0.0001	-	-	-	-	**1.0**	**2.0**
Ammonia (mg/l)	-	**0.993**	**14.4**	0.06	**17.0**	<0.2	**4.72**	**31.9**	**0.2**	**4.0**

Chloride Note 1: this parameter is not required for measurement in the waste licence and was only tested at times for comparison and discussion purposes.

Table 9.3.2: Surface Water Emissions Monitoring Results for DX discharge 2010-2011

Parameters	DX 1st Quarter No flow	DX 10/06/10	DX 30/09/10 No flow	DX 03/11/10	DX 21/02/11	DX 29/06/11	DX 15/08/11	DX 07/12/11	Trigger Levels	Action levels
Aluminium (µg/l)	-	0.0404	-	**6,000**	87	21.5	35.6	12.5	**3,000**	**5,000**
COD (mg/l)	-	**236**	-	**63**	302	74.8	103	35.1	**40**	**40**
Arsenic (µg/l)	-	0.000892	-	4.5	1.59	0.542	0.839	2.99	**500**	**100**
Chromium (µg/l)	-	0.00207	-	24	6.5	5.6	5.61	10.2	**32**	**50**
Conductivity (µS/cm)	-	507	-	720	1760	3,590	850	954	**1,000**	**1,000**
Iron (mg/l)	-	<0.019	-	0.16	<0.019	0.000265	0.189	0.072	**0.2**	**2.0**
Lead (mg/l)	-	0.00733	-	**0.4**	0.0227	0.0124	0.00087	0.00236	**0.05**	**0.05**
Mercury (µg/l)	-	0.0000146	-	<0.5	0.1	<0.00001	<0.00001	<0.00001	**0.07**	**1**
Nickel (µg /l)	-	0.0103	-	34	30.1	10.6	13	10.4	**3,000**	**5,000**
Mineral Oil by Gc(mg/l)	-	**1.3**	-	0.034	3.83	0.197	0.298	<0.01	**1.0**	**2.0**
pH (units)	-	8.08	-	**10.7**	8.37	8.33	8.55	8.3	**6.0 – 9.0**	**5.5 – 9.0**
Suspended Solids (mg/l)	-	**362**	-	**440**	316	14	46	5	**50**	**100**
Chloride[note1] (mg/l)	-	-	-	-	-	1,310	-	183	-	-
Zinc (mg/l)	-	0.121	-	1.4	0.0457	0.00822	0.0024	0.0249	**3.0**	**5.0**
Diesel Range Organics (mg/l)	-	**11.1**	-	0.100	-	-	-	-	**1.0**	**2.0**
Ammonia (mg/l)	-	<0.2	-	0.1	**1.42**	**1.35**	**2.11**	**1.47**	**0.2**	**4.0**

Chloride Note 1: this parameter is not required for measurement in the waste licence and was only tested at times for comparison and discussion purposes.

The waste licence limits set for the surface water discharge to drain from the facility (CX and DX) are established under the May 2010, TRIGGER & ACTION LEVELS FOR SURFACE WATER DISCHARGES report as previously submitted to the EPA.

In terms of discharges from CX outlet, throughout the four Quarter sampling events during 2011 in particular, there were fluctuations in conductivity and ammonia.

The increase in ammonia levels was thoroughly investigated during 2011. Whilst no definitive source was identified, a few possibilities were considered;

- Possible ammonia source to an issue regarding incoming battery boxes on site. All battery boxes are sealed and maintained on site. It was noted however that occasionally a battery box that had contained rainwater off-site at customer locations. Although the residual contents of the boxes in such cases is primarily rainwater, there is a potential risk that any leaked/residual battery fluids from damaged/corroded portable batteries are also present (which can contain ammonium chloride salt). The ammonium based salt can potentially mix with rainwater and thus cause the elevated ammonium results and subsequently elevated conductivity and chloride also.

- Groundwater water is sourced from an outside tap and used to fill a container for use as yard dampening water during periods of dry weather. It is possible that any ammonia within this supply could lead to elevated ammonia levels in the run-off within this yard. A sample of the groundwater is being tested for ammonia.

Therefore, these were considered as possible explanations for the increases in ammonia, chloride and indirectly the conductivity levels on occasion. As a precaution and to mitigate potential ammonia sources, it was agreed with management at KMK to store any rainwater from all battery boxes in B-Bund area as waste liquid for safe disposal off-site by approved waste collectors. In addition, there is now a rainwater harvesting tank in place at the facility to use as a water source for dampening down areas instead of the outside tap. Also, an ammonia test of the outside tap water was undertaken and the results showed that there was no ammonia contamination in the groundwater.

A subsequent sample from CX outfall was taken on 9th February 2012 and the results are tabulated below.

Table 9.3.3: Results of Sampling on 9th February 2012

Parameter	CX	Trigger Levels	Action levels
Suspended Solids (mg/l)	4	50	100
Conductivity (µS/cm)	162	1000	1000
Ammonia as NH_3 (mg/l)	**0.57**	0.2	4.0
pH (units)	7.31	6.0 – 9.0	5.5 – 9.0
COD (mg/l)	23	40	40
Iron (mg/l)	<0.001	0.2	2.0
Arsenic (mg/l)	<0.001	0.05	0.10
Zinc (mg/l)	0.002	3.0	5.0
Chromium (mg/l)	<0.001	0.032	0.05
Nickel (mg/l)	<0.001	3.0	5.0
Aluminium (mg/l)	0.129	3.0	5.0
Lead (mg/l)	<0.001	0.05	0.05
Mercury (mg/l)	<0.0002	0.00007	0.001
Mineral Oil (mg/l)	<0.010	1.0	2.0
Chloride (mg/l)	17.9	None proposed	None proposed

As can be seen from Table 9.3.3 above, there is noted a significant improvement in ammonia discharges from CX and all other parameters also.

In terms of discharges from DX outlet, throughout the 2011 Quarter sampling events, there were fluctuations in conductivity and COD with elevated levels of total suspended solids in the first quarter.

Ammonia fluctuated from 1.35 mg/l in the 2nd Quarter to a 2.11 in the 3rd Quarter. COD was notably high in the 1st Quarter monitoring event. Throughout 2011 this parameter has continued a steep decline in strength, with the fourth Quarter event under the Trigger Levels for COD. The high COD was linked to the elevation in suspended solids. A close review of the existing maintenance programme for the D-interceptor was acted on and improvements followed.

Mineral oil exceeded the Action Levels in the 1st Quarter monitoring event. Maintenance of the D-interceptor was conducted after this monitoring event, and

subsequent measurements through 2011 were within Trigger value results for mineral oil.

It is important to note that both interceptors at CX and DX are emptied by a vacuum tanker on a number of occasions during the year when deemed necessary as part of the on-going maintenance contract and interceptor inspections. Once the interceptor is emptied, it is backwashed with clean water on the same day and setup for correct working again.

An investigation of impacts to the land drain from CX and DX was initiated in August 2011 at KMK which included sampling up-stream and down-stream of the discharge outlets CX and DX. A completed impact report was submitted to the EPA in November 2011 and is included in Appendix 11. This report concluded that there is little to no reduction in the water quality of the land drain downstream of the discharge points CX and DX.

Conversely, the quality appears to improve somewhat downstream of the KMK discharge for most parameters. This is due to the following reasons;

- The quality of the discharges at CX and DX are controlled and treated by the facility interceptor units. There interceptors are maintained and operated correctly.
- All clean roof rain water run-off from the buildings (apart from buildings A,B & C which are flowing to CX outlet) are being discharged to the land drain directly. This clean water is diluting any possible contamination within the drain body. Similarly the clean roof rain water run-off from buildings A, B & C are diluting down the contamination in the CX outlet.
- The volume and flow of water being discharged from KMK via CX and DX discharges is controlled and partially attenuated by the additional sampling/holding chamber at the outlets but also more influenced by climatic rainfall.
- The impact from the CX and DX discharges is quite negligible in terms of increases in all parameters on the day of investigation.
- Taking into consideration the average daily rainfall for August i.e. 2.4mm, this would increase the flows and also the loadings from CX and DX by virtue of an increase in volume being discharged from the outlets. This also is not considered as a significant impact to the drain due to the fact that an increase in rainfall also equates to an increase in clean roof water run-off being discharged to the land drain and KMK have considerably increased the roof areas on-site in the past few years.

Based on the quarterly analysis data, nature of activity at the site and the drain impact investigation, it is considered that the KMK discharge is not resulting in a significant negative effect on the land drain and the site interceptors are operating adequately in

terms of removal of silts, metals, physical debris etc. Furthermore the on-going programme of interceptor maintenance will ensure that the surface water discharges from the facility remain minimal and appropriate to the nature and scale of operations on-site.

9.3.2 Groundwater

Annual analysis of groundwater is carried out at two borehole locations at the KMK facility, in compliance with EPA Waste Licence W0113-03.

Samples are therefore taken from two groundwater sampling locations:

- GW1 - from the pump house, and is used as the drinking water supply
- GW2 - from a tap located at the southern boundary of the facility which is a monitoring well only. This water is not used routinely but will be used to top up the new rain water harvesting system during periods of low rainfall via a ball cock system.

The summary of all groundwater monitoring undertaken at the KMK facility to date is summarised in the tables below for both GW1 and GW2 boreholes.

Table 9.3.4: Groundwater Monitoring GW1 Results 2008 – 2012

Parameters	GW1 14/08/03	GW1 15/12/04	GW1 28/09/05	GW1* 11/10/06	GW1 13/12/06	GW1 21/12/07	GW1 10/03/08	GW1 26/05/09	GW1 01/09/10	GW1 07/12/11	GW1 06/01/12 (test for VOCs and nitrogen only)	GW1 09/02/12 (repeat test for VOCs only)	EC Drinking Water Guideline SI. 278/2007	Groundwater Threshold Values
Conductivity @ 20C (µS/cm)	531	501	496	568*	8	588	546	502	487	502	-	Not required	2500	800 - 1875
pH (pH units)	7.8	7.8	7.6	7.36*	8.12	7.5	7.59	7.3	8.26	8.06	-	Not required	NRG	6.5-9.5
E. Coli (cfu/100mls)	Not required	0	Not required	Not required	Not required	0	<1	0	0	0	-	Not required	0	0
List I/II Screen i.e. VOCs (µg/l)	Not required	Not required	Not required	Not required	Not required	None Detected	Not required	None Detected	None Detected	Not tested**	Detected note2	<1	NRG	NRG note 1
Total Nitrogen (as N) (mg/l)	Not required	Not tested**	<1	2*	2	1.12	4	<0.1	<1	Not tested**	<1	Not required	50	NRG
Chloride (mg/l)	Not required	12	13	14*	13	10.93	15	12.32	12.5	14.3	-	Not required	250	24 – 187.5
Nickel (µg/l)	16.7	<100	<100	90*	3	1	2	<0.5	1.25	1.77	-	Not required	20	15
Lead (µg/l)	<0.6	<200	-	86*	<1	3	1	<0.5	0.028	<0.02	-	Not required	25	18.75
Iron (µg/l)	19	390	340	485*	85	1,180	0.244	<10	19	<19	-	Not required	200	NRG
Chromium (µg/l)	<2	<50	<50	101*	8	1	<1	<0.5	4.66	11.8	-	Not required	50	37.5
Arsenic (µg/l)	2.3	<1	<1	91*	<1	1	<1	<0.5	0.197	0.313	-	Not required	10	7.5
Aluminium (µg/l)	<6.6	<10	210	732*	<2	173	170	<20	<2.9	<2.9	-	Not required	200	150
Mercury (µg/l)	<0.4	<0.1	<0.1	<0.05*	<0.05	<0.20	Not required	<0.05	<0.01	<0.01	-	Not required	1	0.75

NRG: No reference given

NRG [note1]: No reference given except for following; 1,2 – Dichloroethane – 2.25(µg/l), Vinyl chloride – 0.375 (µg/l), Benzene – 0.75 (µg/l), Total for Trichloroethene & Tetrachloroethene – 7.5 (µg/l)

Not tested**: Not scheduled for testing in error.

Detected [Note 2]: Detectible levels for following: Chloroform 3.56(µg/l), Carbontetrachloride 1.38 (µg/l), Trichloroethene 6.63 (µg/l), Tetrachloroethene 1.27 (µg/l), Total Trichloroethene & Tetrachloroethene 7.9 (µg/l)

* Shaded area denotes contested values not approved by KMK at that time and interpreted as an error on laboratory analysis or errors in sampling methods leading to contamination of the samples.

Groundwater Threshold Values sourced from EC Environmental Objectives (Groundwater) Regulations, SI 9/2010

Table 9.3.5: Groundwater Monitoring GW2 Results 2008 – 2012

Parameters	GW2 This well was not within the licence boundary at the time.	GW2 15/12/04	GW2 28/09/05	GW2* 11/10/06	GW2 13/12/06	GW2 21/12/07	GW2 10/03/08	GW2 26/05/09	GW2 01/09/10	GW2 07/12/11	GW2 06/01/12 (test for VOCs and nitrogen only)	GW2 09/02/12 (repeat test for VOCs only)	EC Drinking Water Guideline SI. 278/2007	Groundwater Threshold Values
Conductivity @ 20C (µS/cm)	-	N/A	<50	559*	558	Could not take sample	544	503	481	502	-	Not required	2500	800 - 1875
pH (pH units)	-	N/A	7.7	7.92*	7.91	As above	7.52	7.2	8.28	8.22	-	Not required	NRG	6.5-9.5
E. Coli (cfu/100mls)	-	Not required	Not required	Not required	Not required	As above	<1	4	0	0	-	Not required	0	0
List I/II Screen i.e. VOCs (µg/l)	-	Not required	Not required	Not required	Not required	As above	Not required	None Detected	None Detected	Not tested**	Detected note2	<1	NRG	NRG note 1
Total Nitrogen (as N) (mg/l)	-	N/A	3.8	1*	2	As above	10	<0.1	<1	Not tested**	<1	Not required	50	NRG
Chloride (mg/l)	-	N/A	13	14*	13	As above	15	12.25	12.6	14.5	-	Not required	250	24 – 187.5
Nickel (µg/l)	-	N/A	<100	129*	24	As above	135	13	20.9	76.8	-	Not required	20	15
Lead (µg/l)	-	N/A	-	79*	<1	As above	<1	<0.5	0.03	<0.02	-	Not required	25	18.75
Iron (µg/l)	-	N/A	<50	434*	76	As above	0.237	118	19	<19	-	Not required	200	NRG
Chromium (µg/l)	-	N/A	<50	97*	8	As above	<1	<0.5	4.43	11.5	-	Not required	50	37.5
Arsenic (µg/l)	-	N/A	1.4	92*	3	As above	3	2	5.88	2.31	-	Not required	10	7.5
Aluminium (µg/l)	-	N/A	110	103*	<2	As above	186	37	<2.9	<2.9	-	Not required	200	150
Mercury (µg/l)	-	N/A	<0.1	<0.05*	<0.05	As above	Not required	<0.05	<0.01	<0.01	-	Not required	1	0.75

NRG: No reference given

NRG [note1]: No reference given except for following; 1,2 – Dichloroethane – 2.25(µg/l), Vinyl chloride – 0.375 (µg/l), Benzene – 0.75 (µg/l), Total for Trichloroethene & Tetrachloroethene – 7.5 (µg/l)

Not tested**: Not scheduled for testing in error.

Detected [Note 2]: Detectible levels for following: Chloroform 5.12(µg/l), Carbontetrachloride 1.67 (µg/l), Trichloroethene 7.59 (µg/l), Tetrachloroethene 1.31 (µg/l), Total Trichloroethene & Tetrachloroethene 8.9 (µg/l)

* Shaded area denotes contested values not approved by KMK at that time and interpreted as an error on laboratory analysis or errors in sampling methods leading to contamination of the samples.

Groundwater Threshold Values sourced from EC Environmental Objectives (Groundwater) Regulations, SI 9/2010

GW1 has been monitored since 2003. GW2 has been monitored since 2004, when it became within KMK's site boundary and therefore subject to Waste Licence conditions.

As can be seen from the tables 9.3.2.1, the majority of groundwater results are broadly within both the EC Drinking Water Guidelines S.I. 278/2007 and the EC Environmental Objectives (Groundwater) Regulations, S.I. 9/2010.

One monitoring event (October 2006) produced anomalous results for GW1 and GW2, attributed to contamination during sampling and/or an error at the laboratory. This monitoring event was repeated in December 2006, producing much improved results i.e. consistent with those on file from previous years. For the purposes of this discussion, 2006 results in table 9.3.2.1 relate to the December monitoring event.

All results since 2009, with the exception of Nickel are in compliance with the drinking Water and Groundwater Guidelines and Regulations.

Historical exceedences have been noted for the following parameters:

E-Coli (bacterial coliforms): Elevated e-coli was reported at GW2 in 2009 (4cfu/100mls) versus the limit of 0cfu/100mls:

- Historically and presently there is no foul sewer treatment scheme within the Industrial Estate, which has resulted in the construction of individual septic tank and percolation systems for each of the businesses operating within the industrial estate including KMK. The KMK treatment system percolation area is located sufficiently away from the wells. Therefore the source of possible residual levels of bacteria detected may well have originated off-site during that year or maybe counted in error from the laboratory, although this was not contested at that time.

Nickel: Elevated levels of Nickel were reported at GW2 in 2006 (24ug/l); 2008 (135ug/l); 2010 (20.9ug/l) and 2011 (76.8ug/l) – versus the limits of 20ug/l for Drinking Water and 15ug/l for Groundwater:

- Nickel and iron are both naturally present in much soils and rocks in general, and this broad fact is generally well documented. For example according to the 'Soils of Co. Offaly' National Soil Survey of Ireland by Teagasc 2003, the typical levels of trace nickel in agricultural soils ranges from 0.5 to 100 mg/kg.

Iron: Whilst there are no regulatory guidelines on Iron content in Groundwater, the guideline limit for Drinking Water is 200ug/l. Iron levels reported for GW1 exceed

the Drinking Water guidelines as follows: 390ug/l in 2004, 340ug/l in 2005, 1180ug/l in 2007. Since 2007 there have been no elevated iron levels.

- Elevated iron levels are attributed to a possible natural presence in groundwater, resulting from the soils and rocks in the immediate area:
  - "muddy limestone…sometimes results in higher levels of iron in groundwaters in…Offaly, for example in Ferbane and Gallen (Cronin et al, 1999)" Source: Killeigh and Meelaghans Group Water Schemes Report, GSI (2001).
  - The 'Soils of Co. Offaly' National Soil Survey of Ireland by Teagasc 2003 also refers frequently to natural Iron in soils and leaching of Iron through the soil layers.

Aluminium: The limits for Aluminium are 200ug/l according to Drinking Water Guidelines and 150ug/l according to the Groundwater Regulations; there are reported to have been some slight exceedences prior to 2008, as follows:

- GW1 was reported to have 210ug/l in 2005, 173 ug/l in 2007, and 170 in 2008; since 2008 there were no exceedences (<20ug/l in 2009; <2.9ug/l in 2010 and 2011).
  - GW2 has had one reported exceedence: 186ug/l in 2008; since 2008 there were no exceedences (37ug/l in 2009, and <2.9 in 2010 and 2011). There was no recognisable source for aluminium in groundwater.

9.3.2.1 General comment on trends;

In relation to the groundwater tests at GW1 and referring to the previous tables of results 9.3.4, the general trends show elevated iron from 2004 to 2007 and elevated aluminium levels from 2005 to 2008. The parameter results from 2009 to 2011 shows no elevated levels with the exception of slight detections for some VOCs (volatile organic compounds). These detected levels were suspected as being an error and a repeat sampling event was carried out in February 2012. These subsequent results show that VOCs are not present in the groundwater at GW1.

In relation to the groundwater tests at GW2 and referring to the tables 9.3.5, the trend has been for elevated nickel levels from 2006 to 2011 with the exception of no elevated nickel for 2009. Similarly to above, there were slight detections for some VOCs (volatile organic compounds) and hence a repeat sampling event was carried out in February 2012. These subsequent results show that VOCs are not present in the groundwater at GW2.

9.3.3 Wastewater

All domestic sewage is presently treated on-site by the waste water treatment plant (WWTP) i.e. Biocycle type unit with a working capacity for a population size of 17 persons. The final treated effluent is being discharged to soak-away (on-site percolation area) along the south boundary of the site. A maintenance programme is in place at KMK whereby the Biocycle providers carry out routine inspections, maintenance and repairs to the system if required.

As part of this application and to address condition 4 of a previous grant of planning permission ref: 10/101 with states: *'The proposed new soil polishing filter shall be installed in accordance with the recommendations of the 2009 EPA Code of Practice 'Wastewater Treatment and Disposal Systems Serving Single Houses (P.E ,10)'. Setback distances shall be adhered to as far as reasonably practicable'* KMK appraised the situation and explored three options available as follows;

- Purchase additional land space adjoining the existing percolation area, remove the existing percolation area and install a new area subject to the *2009 EPA Code of Practice.* This option was not viable to KMK due to unavailability of land and prohibitive costs.
- Connect to the proposed foul sewer network once it is installed by Offaly County Council. This option was discounted due to a delay for several years for the foul sewer line to become available to users of Cappincur Industrial Estate.
- The option to contain the domestic effluent in a holding tank for off-site removal to the County Council Wastewater Treatment plant was considered. However, this practise was discounted as unsustainable due to prohibitive costs and time incurred for liquid transport and associated treatment fees by the Tullamore Council Waste Water Treatment Plant over a number of years.
- A final option was to upgrade the existing WWTS on-site taking into consideration best available technologies as alternatives to the standard percolation methods. After approaching two providers of WWTS, a full appraisal of the system proposed by a local company Molly Precast Environmental Solutions was strongly considered as an appropriate method of treatment of effluent and associated wastes. This is considered the best option and is discussed further below.

The full details of the proposed upgrade works to the WWTS and associated drain impact report are detailed in Appendix 12 and will involve the following key improvements;

- The existing Biocycle treatment tank will be modified for use as a primary holding chamber for domestic effluent storage and settlement.

- A new tank will be installed to be used as a buffering and reaction tank called a Sequencing Batch Reactor (SBR) including dosing for ortho-phosphate and total nitrogen removal. This secondary treatment process is designed to reduce BOD, COD, solids and ammonia over an 8, 10 or 12 hour batch cycle and thus prepare the effluent for sand filter treatment.

- The sand filter is a biological treatment process designed to further reduce the parameter loadings and ensure the final discharged effluent is acceptable for surface water assimilation. The parametric values given for the output of the sand filter by the provider Molloy Precast Environmental Solutions is 5/1/1 for BOD/phosphates/ammonia respectively. These projected treatment values are rated as environmentally sound and of low environmental impact. There will be a sampling chamber located immediately downstream of the sand filter whereby sampling of the final treated effluent can occur (see Figure 9.3.3 below for illustration purposes).

Figure 9.3.3: photos of demonstration model of sand filter biological treatment process - taken July 2012 courtesy of Molloy Precast Environmental Solutions, Tullamore.

The final treated effluent discharge to land drain will also include rainwater run-off from a building roof (ref: D-Hanger) and rainwater soakage from the open area of the sand filter (during wet weather only). This rainwater will increase the volume of discharge but will also dilute the overall discharged loading. The average rainfall contribution is therefore estimated as:
1.2m (annual rainfall) x [95m^2 (sand filter area) + 1,016m^2 (D-Hanger building area)] /365 = 3.65m^3/day

The drain impact and assimilative impact report in Appendix 12 concludes the following remarks;

- All domestic and associated effluent from the proposed up-graded WWTS is effectively treated by a primary, secondary and final biological process prior to entry to the land drain.
- There will be a sampling chamber installed on the final outfall from the sand filter unit for sampling of treated effluent quality prior to linking with the roof water discharge pipe from D-Hanger building. This sampling point will provide monitoring of the discharge prior to dilution with rainwater during wet weather. The true dilution effect of the effluent discharge can be determined by sampling of the discharge pipe at the land drain during wet weather for comparison purposes.
- There are no chemicals or other substances entering the WWTS and therefore precluded from entering the land drain.
- The receiving land drain flows through a myriad of other land drains prior to entry to the Tullamore River. This network of land drains will assist greatly in assimilation of the organic and other parameters prior to entry to the river.

The proposed increase of waste acceptance tonnage and future operations at the KMK site will not affect the population usage of the WWTS and will not impact on its treatment capability.

9.3.4 Storm water run-off

All storm water runoff from the existing site operations is diverted through the two existing surface water interceptors prior to discharge to the existing land drain west of the site and this is further explained in section 2.6.4 of this EIS.

KMK has almost completed developing E area; by means of E building, weighbridge(s), fencing, entrance gates etc. The majority of this area is surfaced with concrete. Therefore, run-off from the proposed surfaced areas of E is directed via a combination of a silt trap, followed by a storm water attenuation tank system (all

located at the north part of E area). The outfall from the attenuation system is treated by a Class 1 hydrocarbon interceptor unit prior to connection to the existing shared drain in the industrial estate which serves to remove surface water run-off from a number of commercial businesses (previously described in Section 3.3.1 of this EIS).

9.4 CLIMATE AND RECHARGE POTENTIAL

Rainfall and evapotranspiration data were sourced from Met Éireann. The closest synoptic station to the site is Mullingar (II), approximately 29km northeast of the site (point to point). The Average Annual Rainfall (AAR) based on a 30 year annual averages from Mullingar weather station is 934.3mm (Table 9.4.1).

Table 9.4.1: Average Annual Rainfall (AAR) (mm) 1961-1990

Mullingar (II) Synoptic Station -												
Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	***Annual***
93.1	66.3	72.3	59.1	72.4	66.2	61.8	81.2	85.9	94.0	88.2	93.8	**934.3**

The average Potential Evapotranspiration (PE) for Mullingar (II) is 438 mm/yr. Actual Evapotranspiration (AE) is estimated as 416 mm/yr (=0.95 PE). The multiplication factor allows for the reduction in evapotranspiration during periods when a soil moisture deficit is present. The multiplication factor used by the GSI is equivalent to 0.95 (Water Framework Directive, 2004).

The Effective Rainfall (ER) for the site is determined from:

ER = AAR – AE.

= 934.3 mm/yr – 416 mm/yr

ER = 518.3 mm/yr

The planning application is focused upon an increase in the acceptance of annual waste tonnages and the regularisation of all activities on-site.

Tables 9.4.2 provides details on all existing surface areas which will contribute to surface water runoff from the site.

Table 9.4.2: Existing Surface Areas for Surface Water Runoff

Source	Surface Area	Make Up	Treatment	Destination
A,B,C building and all office roofs	1,557m^2	Clean rainwater run-off	Drainage gullies, and Class 2 interceptor unit	Existing land drain along west boundary
C yard area	900m^2	Potentially contaminated rainwater runoff	Drainage gullies, and Class 2 interceptor unit	Existing land drain along west boundary
D yard area	408m^2	Potentially contaminated rainwater runoff	Drainage gullies, and Class 1 interceptor unit	Existing land drain along west boundary
D area (outside of buildings and D yard)	560m^2	Potentially contaminated rainwater runoff	None	Existing land drain along west boundary
D-Hanger	1,016m^2	Clean rainwater run-off	None	Existing land drain along west boundary
D-WEEE plant building	1,760m^2	Clean rainwater run-off	None	Existing land drain along west boundary
D4 roof	595m^2	Clean rainwater run-off	Drainage gullies, and Class 1 interceptor unit	Existing land drain along west boundary
D4-R roof	320m^2	Clean rainwater run-off	Drainage gullies, and Class 1 interceptor unit	Existing land drain along west boundary
D4-L roof	212m^2	Clean rainwater run-off	Drainage gullies, and Class 1 interceptor unit	Existing land drain along west boundary
DX yard area	968m^2	Potentially contaminated rainwater runoff	Drainage gullies, and Class 1 interceptor unit	Existing land drain along west boundary
E area: building roof	1,120m^2	Clean rainwater run-off	Attenuation tank, Class 1 interceptor followed by industrial estate	Existing land drain along west boundary

			shared storm drain.	
E area: Yard	3,566 m^2	Potentially contaminated rainwater runoff	Drainage gullies, Attenuation tank, Class 1 interceptor followed by industrial estate shared storm drain.	Existing land drain along west boundary
Total	**12,982m^2**	**Various rainwater sources**	**As above**	**Existing land drain along west boundary**

Therefore, the total surface area of the existing site including roofed, yard and car parking areas is 12,982m^2. Based on the ER value determined above (518.3mm/yr), the average volume that is available for runoff from the existing site area is given by:

Site Recharge (Runoff) = Area x ER
= 12,982m^2 * 0.518 m/yr
= 6,724.67m^3/yr (18.4m^3/d, 0.213 l/s)

Therefore the average volume of storm water run-off generated by KMK as a result of the total site is 18.4m^3/d. Approximately 36% of this run-off will be hydraulically controlled by means of an attenuation tank functioning E area of the site.

9.5 IMPACTS AND MITIGATION

9.5.1 Impacts.

There will be four surface water discharge points to the existing land drain along the western boundary of the site. Two of these discharges (CX and DX) are existing at present and are described as follows:

CX: discharge pipe located on the western boundary arising from the C Area
DX: discharge pipe located on the western boundary arising from the D Area

The third discharge point will be included at E area on completion of building works and subsequent inclusion within the waste licence (as previously described in Section 3 of the this EIS). Therefore E emission point will be as follows;

E: discharge point located within E area and prior to joining with the surface water drainage network from the remaining industrial estate. The final outfall of the drainage being to the land drain located on the western boundary of the site.

The final discharge point will be termed F and will comprise of final treated domestic effluent from the on-site WWTS as described previously in section 9.3.3.

The on-going monitoring of CX and DX is described and discussed comprehensively in previous Section 9.3.1. The overall impacts to the land drain from CX and DX is minimal by virtue of appropriate interceptors on-site and effective maintenance and management of same.

The proposed impact from the discharge point at E area will be minimal for similar reasons i.e. silt traps, attenuation tank, interceptor unit with final controlled discharge to land drain once agreed with the EPA.

The proposed impact from the discharge at point F (on-site WWTS source) will be acceptable to the land drain on the basis of the parametric values given for the output of the sand filter (5/1/1) for BOD/phosphates/ammonia respectively, the low volumes to be discharged from the system and the relative quality of the land drain up-stream of the proposed discharge point to effectively assimilate the loadings from KMK.

There is no trade effluent generated from the site activities and hence there will be no trade effluent impacts from the KMK site operations.

In terms of groundwater, there will be no discharges to ground from the present site as the existing percolation area will be decommissioned. The existing boreholes at GW1 and GW2 will remain in-situ with no alterations and will remain as groundwater monitoring locations. The proposal to increase waste acceptance and regularise all WEEE treatment plant/equipment will not impact any further on the existing surface water run-off or the groundwater underneath the site.

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9.5.2 Mitigation measures

The KMK site is authorised at present by a Waste Licence (W0113-03) which is regulated by the EPA. Historically, the site has been authorised by waste licenses since December 2001 and as such all environmental impacts and emissions have always been controlled and monitored by KMK and overseen by the EPA.

A summary of mitigation measures adopted at the site are thus tabulated below;

Table 9.5.1: Mitigation Measures Summary

No	Impacted environmental media	Mitigation measures
1	Surface water land drain along western boundary of site being subject to storm water emissions from CX, DX and proposed E emissions point.	○ Class 2 interceptor for treatment of surface water run-off from area leading to CX discharge. ○ Class 1 interceptor for treatment of surface water run-off from area leading to DX discharge. ○ Silt trap, attenuation tank and Class 1 interceptor for proposed treatment of surface water run-off from E area leading to E discharge point. ○ Robust interceptor inspection, maintenance and quarterly monitoring programme is presently enacted at KMK for CX and DX discharge points. This programme will be extended to include the treatment units at E area. ○ All metals and waste materials treatment and processing at site is carried out inside buildings or under roofs. ○ All sludge and liquid containing wastes (minimal quantities accepted) are stored in appropriate containers inside bunded areas at the site. These bunded areas are inside buildings so that rainfall does not interact with the bund contents.
2	Surface water land drain along western boundary of site being subject to treated domestic effluent from the proposed up-graded WWTS. This proposed emission point is to be termed F.	○ A significant up-grade works to the WWTS on-site is proposed to effectively treat effluent to a standard acceptable for discharge to land drain. This treatment is a 3 stage process; primary – existing tank to be modified for use as a primary holding and settlement tank,

		secondary treatment using a new sequence batch reactor tank with added dosing for nitrates and phosphates removal and finally biological treatment using a purpose designed sand filter system for final effluent polishing and loading reduction prior to discharge to land drain.
3	Groundwater underneath the site being subjected to treated domestic sewage emissions from on-site percolation area.	○ The existing WWTS is to be significantly up-graded and the percolation area is to be removed. Therefore there will be no discharges to ground and/or soak-away from the revised WWTS at KMK. ○ All existing groundwater monitoring boreholes are sampled annually to ensure quality of groundwater is monitored. ○ A rainwater harvesting tank is used at the facility to keep a supply of rainwater for use in dampening down the concrete yard during dry weather. This clean water supply will benefit the groundwater by reducing abstraction demand on the groundwater as a site water supply.

Spillages though unlikely, could occur and would give rise to the release of unauthorised or unexpected emissions from the site but will be treated by the robust on-site water run-off infrastructure.

An emergency situation, will be handled as outlined in the existing company Emergency Response Procedure (ERP) as part of the company IMS - ISO 14001.

9.6 CONCLUSIONS & RECOMMENDATIONS

KMK are fit and proper to hold a waste licence as defined by the EPA and an existing waste license is in place at the site ref: W0113-03 for several years without adverse environmental impacts.

Environmental emissions from the operation of this facility by KMK are monitored as part of the existing waste licence W0113-03.

Environmental pollution will not occur from the site for the following reasons:

- Waste acceptance and processing will occur indoors or under roof.
- All on-site domestic effluent will be treated by the proposed revised WWTS.
- All surface water runoff from existing outside yard areas is treated by silt traps and interceptors before entering the land drain.
- The Environmental Management System (EMS) for the site is effective at controlling and monitoring all potential emissions from the facility.
- The Best Available Techniques (BAT) will be used to prevent, eliminate and control emissions from the activity concerned. The activity is consistent with the objectives of the waste licence conditions.

10.0 Landscape and Visual Impact

This chapter examines the potential impact the proposed development may have on the quality of the landscape, views and viewpoints.

The visual impact assessment will determine the impact the proposed development will have upon occupants of residential accommodation, users of public recreational open space, road users, and workers in their place of work.

The landscape is assessed in terms of its character, context, significance and sensitivity. Sensitivity of the landscape is defined as the extent to which a landscape can accommodate change, without unacceptable loss of existing character. Whether the visual impact is positive, negative or neutral depends on the interaction between views of the proposed development and views from the receiving environment.

10.1 CHARACTERISTICS OF THE SITE AND SURROUNDING AREA

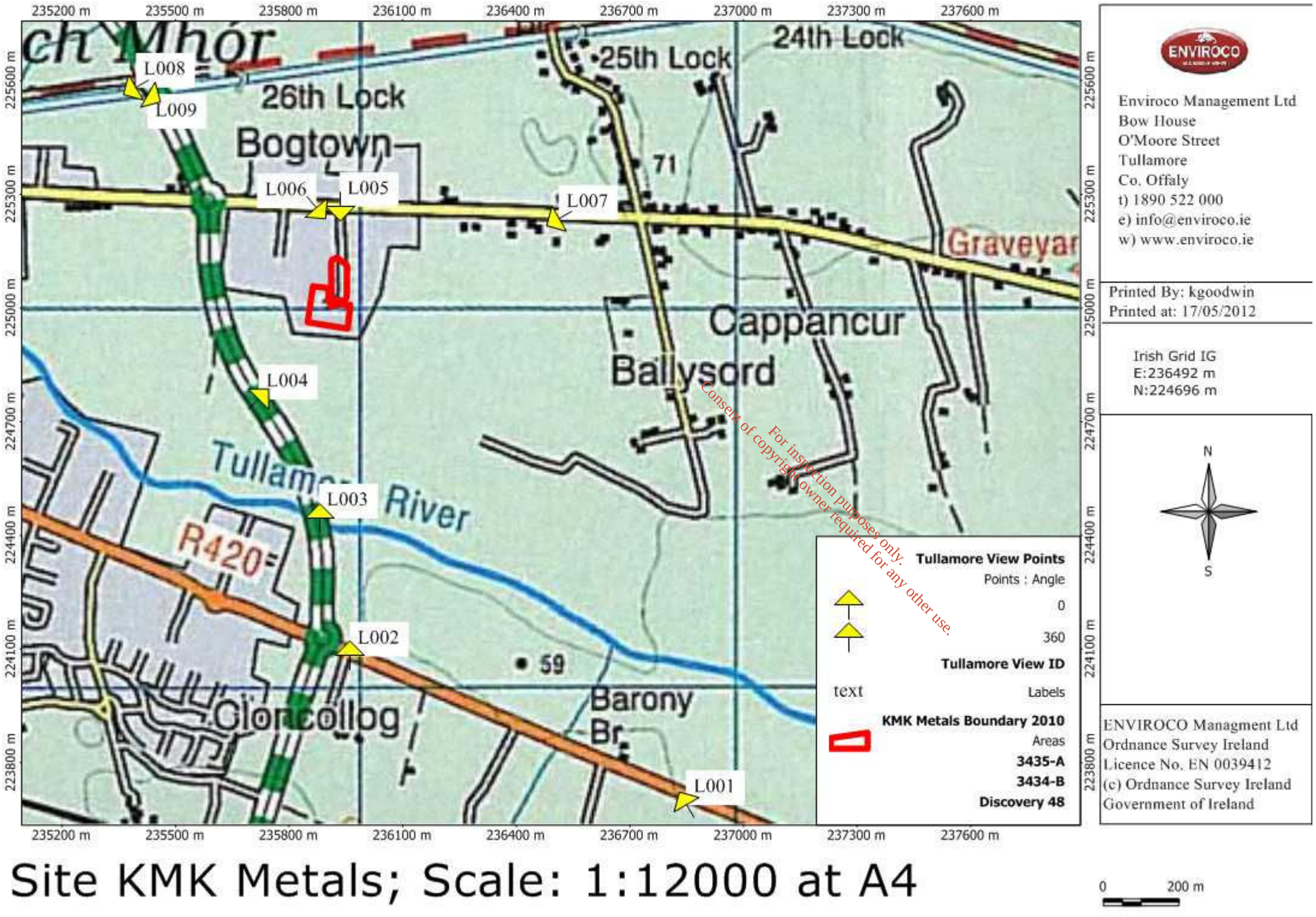
The site is in operation as a WEEE and metals recycling and recovery facility. The site is well maintained and operated. The site is bounded by agricultural lands to the east, industrial zoned land to the south and west and the Cappincur Industrial Estate units to the north. The only entrance to the Industrial Estate is accessed via a public road north of the facility i.e. Ballinagar Road. The KMK unit is located in the southern most portion of the industrial estate, and of all the units within the estate, it is the furthest from the estate entrance. Views of the site from the Ballinagar Road and from residences located immediately along the road are largely shielded by other industrial estate units.

The KMK site has progressively grown over the last decade, benefiting from various grants of planning permissions. The latest development is the construction of the E-Building and development of E area including boundary walls, entrances, weighbridges, car park etc. In addition, a previous building was demolished on-site and replaced by a new building now referred to as D-WEEE Plant building with a slightly higher roof structure. All of these developments have existing planning for their construction (see section 5.4 of EIS) and are developed within the rear of the industrial estate. The new buildings are in keeping with a modern industrial type design and are suitable for their situation in Cappincur Industrial Estate.

Site visits in April, May and July 2012 obtained views of the site from the surrounding locality (Tullamore area) and from within the Cappincur Industrial Estate (local and other businesses views). As these views both have different impacts, they will be discussed separately.

Figure 10.1.1 shows the location of the KMK site in relation to other units of the industrial estate and the immediate surrounding area. Photographic view points and orientations of viewpoints are also illustrated in this figure (ref; L001 to L008). The Plates which follow relate to the viewpoints indicated in Figure 10.1.1.

Figure 10.1.1 Viewpoints of the Site from the Tullamore Area



10.2 VIEWS OF THE SITE FROM TULLAMORE AREA

It was noted on the site visit that the N52 By-Pass of Tullamore is a significant visual barrier, due to its height and length, of the lands to the east, including the Cappincur Industrial Estate, from Tullamore Town. No clear line of sight was obtained from the housing estates or business properties of Tullamore, either due to the Tullamore By-Pass or other building structures within the town.

Figure 10.1.1 show the locations where views or partial views, of the site were obtained from the local area. The majority of views were obtained from the N52 road, or gaps in hedging along the R420 to the south.

L001 R420 looking northwest

Plate L001 shows a view taken from a pull in along the R420 southeast of the site. The KMK facility is not visible from this distance, arising from the local topography, mature hedging and trees.

L002 View from R420-N52 Roundabout

Plate L002 is taken just before the R420 meets the N52 road. The site is partially visible, with D-Hanger & D-WEEE Plant buildings identifiable to the centre of the plate. The light colouration of the building and its longitudinal profile give it a softer appearance, while the height of the N52 road, diminishes the height aspect of the building. The cream coloured building to the left of the plate is Smith Bros hardware warehouse.

L003 View from N52 at Tullamore River crossing

Plate L003 shows the visibility of north moving traffic on the N52 as they cross the Tullamore River. The D-Hanger & D-WEEE Plant building and to a lesser extent building 'A' (blue roof) are visible nestled between the high popular trees to the east and roadside (N52) hedging to the west. Light colouration of the main building structures D-Hanger & D-WEEE Plant in combination with the wave effect of the rise and fall of their roofs softens the visual impact of the site. This section of road, from the Tullamore River Bridge to the Ballinagar Road roundabout, gives north moving traffic on the N52 the best views of the KMK facility.

L004 – View from the N52

Plate L004 shows a closer view location to the KMK facility, on the N52. The D-Hanger & D-WEEE Plant and associated emission stack are visible, along with the D building immediately joined on the left. To a lesser extent the A building is present, just visible above hedging to the right of the D-Hanger building. The longitudinal profile of the D-Hanger & D-WEEE Plant buildings mixed with the wave design of their roofs and light colouration of building panels, slightly off-set by the blue borders, offer an industrial style image suitable for Cappincur Industrial Estate.

L005 – View at entrance to Cappincur Industrial Estate

Plate L005 shows the entrance gates into the Cappincur Industrial Estate, as accessed from the Ballingar Road. To the centre of the image the C building is just visible, between other shed units from neighbouring businesses. The remaining units of the KMK facility are not visible at this point.

L006 View towards Cappincur Industrial Estate

On approach to the Cappincur Industrial Estate from the Ballinagar road, buildings associated with other operators within the industrial estate are prominent. The boundary security fencing and security gate are also very prominent. No view of KMK structures is present.

L007 – View from the Ballinagar Road

From the Ballinagar Road, sparse hedging results in a partial view of the Cappincur Industrial Estate. The KMK facility is not truly visible, though to the centre left of the image, the top of the roof line from the newly constructed E-building can be identified. The sheds to the front of centre in the image are operated by other businesses within the Cappincur Industrial Estate.

L008 – View of the Grand Canal (Tullamore By-Pass)

Plate L-008 shows a view of the Grand Canal, taken from the bridging point on the N52, looking towards Tullamore town. The image shows the flat topography of the locality, and the low lying nature of development within the Tullamore area. Mature hedging is visible along both banks and through the fields to the right of the image.

L-009 – View of KMK from N52 at Grand Canal bridge.

L-009 is taken from the N52's bridge crossing over the Grand Canal at Tullamore. The road is elevated above the surrounding landscape. The KMK facility is partially visible behind other building structures towards the centre of the image. Predominately from this angle, buildings closer to the Ballinagar and N52 take prominence. The newly constructed D and E buildings can be identified in the image from their grey roof tops.

Overall views of the site are sparse, except for views from the N52 north bound immediately south of the site. The proximity and height of the N52 as it approaches the KMK facility from the south offers clear views of the facilities southern and western flanks. These areas of the facility are mostly new constructs, built under granted planning permissions by Offaly County Council, and have been designed to give accommodate the surrounding area and reflect the industrial nature of the Cappincur Industrial Estate. From all adjoining roads to the site, no clear views are attainable of activities within the KMK facility or of the products generated from the activities within the facility.

10.3 VIEWS OF THE SITE FROM WITHIN THE CAPPINCUR INDUSTRIAL ESTATE

The KMK facility is one of several industries within the Cappincur Industrial Estate, and therefore the visual assessment took into account the possibility that the development could affect or result in disamenity to other proprietors or customers within the Cappincur Industrial Estate. This chapter reviews photos taken in May 2012 from within and around the Cappincur Industrial Estate.

Figure 1.3.1 shows the location and direction of each of the plates.

V001 – View of the (under construction) E-Area

The new fence line and E-building are clearly visible behind the original E-area green palisade fence. This view is taken from the KMK boundary adjacent the administration buildings, as could be seen by road users circling the E-Area. The E-Building will be utilised as waste storage and/or processing bays, with the large overhead shelter

maintaining a dry floor. For security reasons the boundary wall of the E-Area and access gates have been raised and climbing deterrents added.

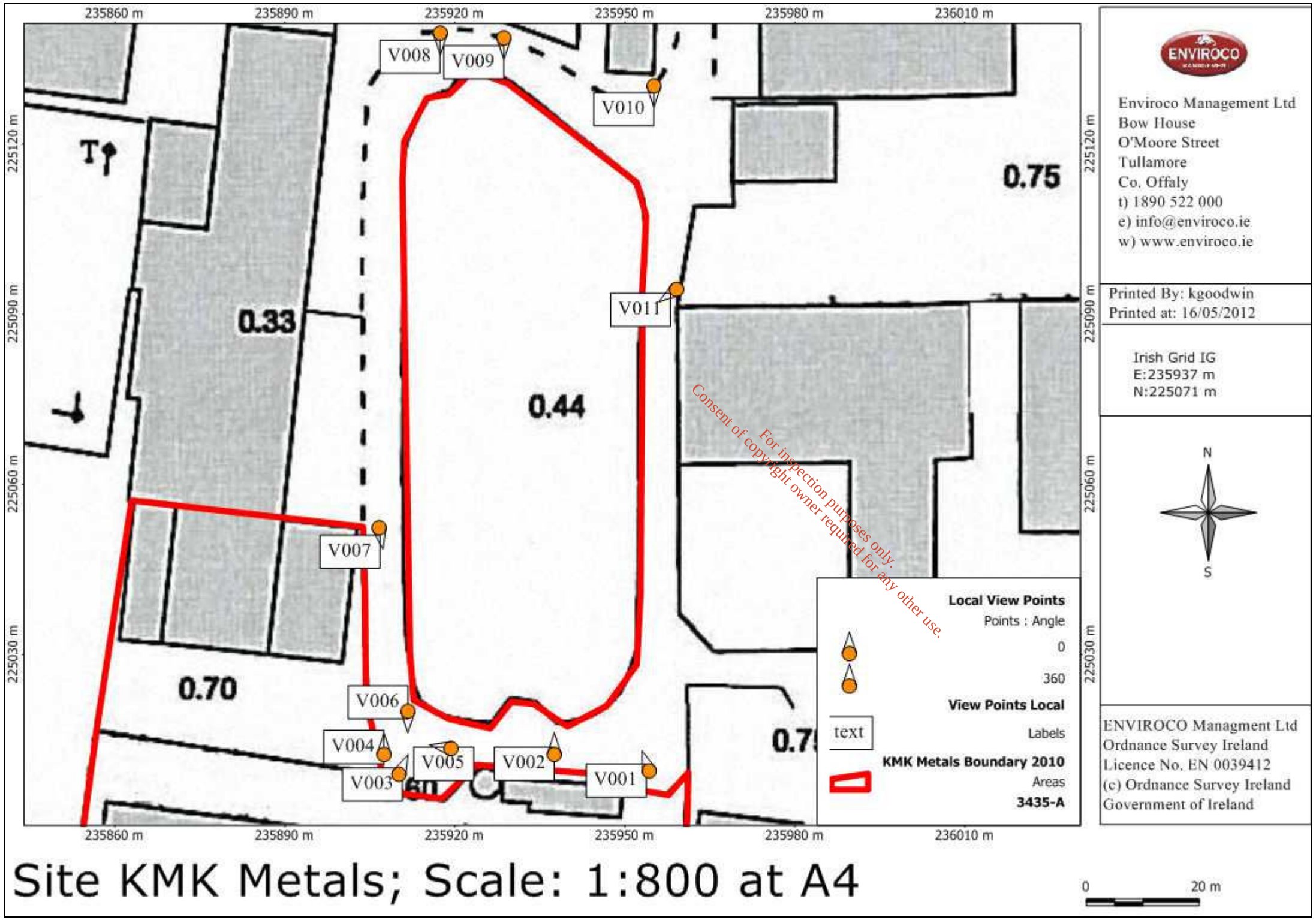


Figure 1.3.1 – Local area photographs of the KMK Facility

V002 – View of E Building yard

The E-building front yard area will enable the storage of site vehicles and assist with the access/egress of vehicles to the facility. The work buildings of neighbouring units are visible to the rear of the picture.

V003 – Rear of E- Area

The rear view of the E-building show the height of the structure and the security lighting and access points for staff. The newly installed weighbridge is visible to left of the plate. Neighbouring shed units are visible to the centre right of the plate.

V004 – Western Corridor of Cappincur Industrial Estate

The western corridor of the Cappincur industrial estate shows the new E-Buidling, installed weighbridge and D4 building (to left). Towards the left of centre of the plate, neighbouring shed units become visible, as well to the rear of the plate.

V005 – D-Area

V005 looks through the access gates towards the unloading area (DX yard) between buildings D-WEEE Plant and D4. The concrete pavement is visibly in good condition and the view is limited to only the unloading/loading of the waiting vehicles. None of the primary site processes are visible.

V006 – D Building

From viewpoint V006, visual access to the D-Hanger building is achieved. This building is utilised for the pre-sorting of incoming WEEE. A two storey administration block is prominent to the left of the plate and boundary walls and security gates are visible to the left and right of the plate respectively. Repair work is to be carried on the existing wall pier to the right of the plate.

V007 – View south along the Western Corridor of the Cappincur Industrial Estate

V007 gives an indication to the scale of both the E and D buildings, compared to the administration block at the KMK facility. The site activities are maintained within the boundaries of the facility and regular maintenance of the area by staff ensures that the development is kept to a high level of visual amenity within the industrial park.

V008 – View south towards E-Area

Plate V008 shows the sight of the Cappincur Industrial Estate from the northeast to the south. The access road along the western corridor is to the right of the plate. Centred is the newly constructed E-Building, with the boundary walls for the E-area also visible. This viewpoint shows the roof line flow that is present between the KMK buildings and some of the existing structures within the industrial park area.

V009 – View north to south

V009 shows the new boundary wall around this section of E-Area which encompasses the employee car-parking zone. The E-Building is visible to the centre of the plate and part of the D-Hanger building can be identified to the centre right. To the far left of the plate neighbouring buildings are visible to the front of a line of popular trees.

V010 - Eastern Corridor – Cappincur Industrial Estate

V010 shows the newly constructed E-Area boundary walls and E-Building itself while the C-Building is visible at the end of the eastern corridor road.

V011 View of E-Area boundary wall

V011 is taken along the eastern corridor of the Cappincur Industrial Estate, giving a close up view of the newly constructed boundary wall, with some localised fencing detail and the open end section of E-Building is visible also.

From within the Cappincur Industrial Estate the KMK facility becomes clearly visible at the branching of the industrial estates access road towards the western and eastern corridors. The KMK facility incorporates the central island (E area) that these two corridors circumvent and the buildings to the southern section of the estate. Other firms are active along the east, west and north.

10.4 VISUAL IMPACT ASSESSMENT

This section considers the potential visual impact of the proposed development upon receptors in the area. Receptors are considered to be any person with a view of the proposed development.

Receptors are graded in order of sensitivity, based upon likely duration of exposure. In descending order of sensitivity, receptors are generally agreed to be:

- Occupants of residential accommodation
- Users of public recreational open space
- Road users
- Workers in their place of work

Evaluation of the degree of impact is based on the extent to which the proposed development is visible from the receptors natural cone of vision, and the extent to which the development changes the character of this view. The degree of visual impact has been assessed in four levels of impact:

- High
- Medium
- Low
- Negligible

10.4.1 Occupants of Residential Accommodation

The landscape of the surrounding area includes agricultural grasslands to the east, industrial zoned land south and west, and beyond the other buildings of the industrial estate, the Ballinagar Road with one off houses to the east and west.

Figure 10.4.1.1 shows the locations of dwellings in the area, indicating by use of a 500m radius of the KMK facility.

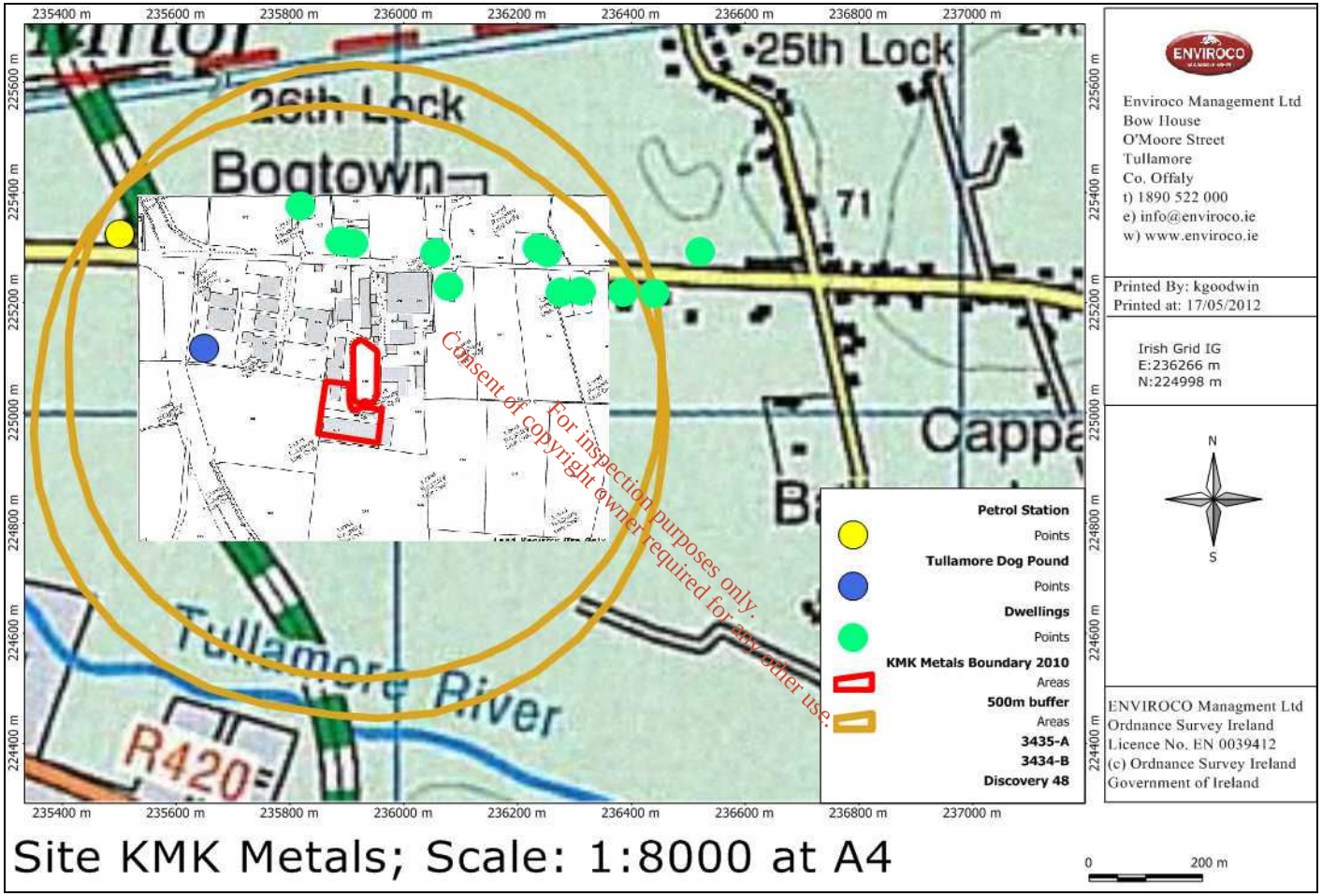


Figure 10.4.1: Dwellings within 500m of the Site [note 1]

Note 1 = the two buffer distance lines reflect two centre points taken on-site i.e. one at E area and one at D area in order to maximise the 500m distances around the site.

The visual assessments laid out in this chapter have shown that from the local and regional roads in the area, only limited visibility of the KMK site, and the Cappincur Industrial Estate in general, are achievable. The N52 from the R420 junction to the Ballinagar Road junction, gives the greatest visible line of sight towards KMK. To the west of the N52, the N52 road itself becomes a visual barrier, screening the Cappincur Industrial Estate from businesses and homes within the Tullamore area.

10.4.2 Users of Public Open Space

There are no major areas of public open space within 500m. Walkways along the banks of the Grand Canal to the north are present just beyond the 500m buffer. Due to the high hedgerows and low lying aspect of the canal (refer to L008), users of this recreational area will not have a view impacted upon by the KMK facility.

10.4.3 Road Users

The facility is accessed via an existing access road within the Cappincur Industrial Estate. The site is not clearly visible from the road as is illustrated by:

- L005: View into the Cappincur Industrial Estate
- L006: View of the Cappincur Industrial Estate
- L007: View from the Ballinagar Road (restricted view only)

The angle of movement along the R420 regional road to the south greatly restricts the view line of users towards the KMK facility. Views L001 and L002 show the variation in visibility, where L001 has no view due to topography, ecological features (hedging, trees) and distance, while L002 has a partial view. It is therefore not predicted that road users of the R420 would have an issue with visual alterations to the Cappincur Industrial Estate.

The N52 Tullamore By-Pass is located to the west of the development. Traffic moving from the north to the south (Kilbeggan to Birr) would have views of the Cappincur Industrial Estate, but the KMK facility would be difficult to discern due to its location to the rear of the estate, refer to view L009.

Traffic moving south to north on the N52 (Birr to Kilbeggan) have, from the R420 junction, to south of the Ballinagar junction, clear views of the southern and

western boundaries of the KMK site. The following views relate to south to north moving traffic on the N52 along this stretch of road:

L003 – at the Tullamore River Bridge

L004 - closest point of the N52 to the KMK facility southern boundary

Both of these views show the line of sight obtained by road users moving northbound on the N52. Beyond the Ballinagar junction, northbound traffic loses sight of the industrial estate. Prior to the R420 junction, the road layout, topography and distance restrict any potential views of the industrial park from traffic users.

The views achieved by the north moving traffic is of the newly constructed D-WEEE Plant unit primarily, with buildings D-Hanger and D4 visible to either side of this main construct. These buildings, as shown in the plates above, are designed and built to high standards. The buildings mark the southern end of the Cappincur Industrial Estate, reflecting the continued development occurring within this industrial sector of Tullamore.

The proposed development that this EIS applies will not effect these views. All constructed buildings, as visible from the surrounding road infrastructure have current planning and will not be altered in shape or design by this application.

10.4.4 Workers in their Place of Work

The primary industry of the surrounding area is industrial and the facility is located in Cappincur Industrial Estate surrounded by other industry users.

Plates V007 to V011 were taken from within the Cappincur Industrial Estate, the primary view points obtained from other businesses. These views show the scale of the KMK development along the southern section of the industrial estate. Recently constructed D-Hanger, D-WEEE Plant and E buildings have given the area a sense of advancement and investment, while maintaining a roof line similar to the surrounding structures.

Construction on the central land holding in the southern section of the site (E-area) results in the majority of businesses within the industrial estate having views, partial or otherwise, of the KMK buildings. The modernisation of the majority of these visible units, and the maintenance of the existing units to a high level, ensures that the KMK buildings are in good visual shape, while the planning and

design of new constructs has been done by keeping with the existing industrial nature of the locality.

This application will not result in the alteration to any of the existing buildings or structures.

It is therefore concluded that there will be no negative impact upon workers in their place of work.

10.5 MITIGATION MEASURES

All potential impacts of the proposal were found to be negligible after the visual impact assessment was carried out; therefore no mitigation measures are proposed.

The development will not undergo physical alterations to existing structures of open spaces. Views that are achievable from within the Cappincur Industrial Estate and from the N52 and other roads, will be protected by the continued investment of KMK to the maintenance of their units.

11.0 Cultural Heritage

11.1 INTRODUCTION

This Chapter of the EIS considers local heritage features (i.e. buildings, places and sites which have acquired special interest and values through time and as such, warrant protection and preservation, where feasible) and sensitive locations (i.e. schools, churches, public grounds).

11.2 CONTEXT

11.2.1 Legislation Framework

The European Convention on the Protection of the Archaeological Heritage (The Granada Convention) requires that archaeological heritage is taken account of in the development process. This convention also includes the setting and context of archaeological sites as part of the archaeological heritage that requires protection. Ireland ratified this Convention in 1997, and as such is legally bound by it; this resulted in legislative provisions for the protection of our architectural heritage being implemented through the Local Government Planning and Development Act, 2000, as amended.

11.2.2 National Heritage Plan 2002

A key objective of the National Heritage Plan (2002) seeks to "place heritage at the heart of public life". The plan recognises that heritage is communal and we all share a responsibility to protect it. Protection of heritage must begin at local level enabling everybody to become actively involved in preserving and enhancing the heritage of County Offaly.

11.2.3 Offaly Heritage Plan 2012-2016

This Offaly Heritage Plan outlines a five-year, specific action plan of work to be carried out in County Offaly, overseen by the Offaly Heritage Forum.

In the context of the 1995 Heritage Act, the term "Heritage" is considered to encompass monuments, archaeological objects, heritage objects, architectural heritage, flora, fauna, wildlife habitats, landscapes1, seascapes, wrecks, geology, heritage gardens and parks, inland waterways.

'The aim of the Offaly Heritage Forum is to work with all of us in Offaly, to increase awareness and appreciation of our manmade, cultural and natural

heritage, leading to actions which promote its protection, enhancement and vitality.'

11.2.4 Offaly County Development Plan 2009-2015

A review of the Offaly County Development Plan 2009-2015 provided a background on the built and natural heritage of County Offaly, and the aims and objectives for the protection of same.

Offaly County Council seeks to conserve, protect and enhance Offaly's built and natural heritage where possible. The Council will aim to strike a reasonable balance between conservation and development objectives in the interests of the proper planning and sustainable development of the county.

11.2.5 Designation and Protection of National Monuments

The Minister for the Department of Environment, Heritage and Local Government (DoEHLG) is responsible for the protection of archaeological heritage, including the Licensing of archaeological excavations through the exercise of powers under the National Monuments Act 1930 to 2004.

The National Monuments Acts 1930 – 2004 provide for the protection of archaeological heritage. The National Monuments Service (NMS) of the DoEHLG have responsibility for the designation of National Monuments through the Archaeological Survey of Ireland and implementing the protective and regulatory controls on our archaeological heritage established under the National Monuments Acts 1930 to 2004. The Record of Monuments and Places (RMP) was established under Section 12 of the National Monuments (Amendment) Act 1994 and structures, features, objects or sites listed in this record are known as Recorded Monuments.

11.3 EXISTING ENVIRONMENT

A desktop study was carried out of sites and monuments in the area (Discovery Series Map No. 48 and the National Monuments Service.

There are no schools, churches or public grounds (sensitive locations) within close proximity to the site. Only one Sites and Monuments Record (SMR) was found in the vicinity, approximately 1380metres south east of the site, beyond the Tullamore River, as indicated in Figure 11.3.1.

The SMR shown in Figure 11.3.1 (Grid Ref: X 234643 Y 224720) is classified as:

Habitation Site possible TULLAMORE (Ref: OF017-009) - A concentration of archaeological features which are indicative of habitation, the remains being

insufficient to allow a more specific classification. These may be of any date up to the medieval period (5th-16th centuries).

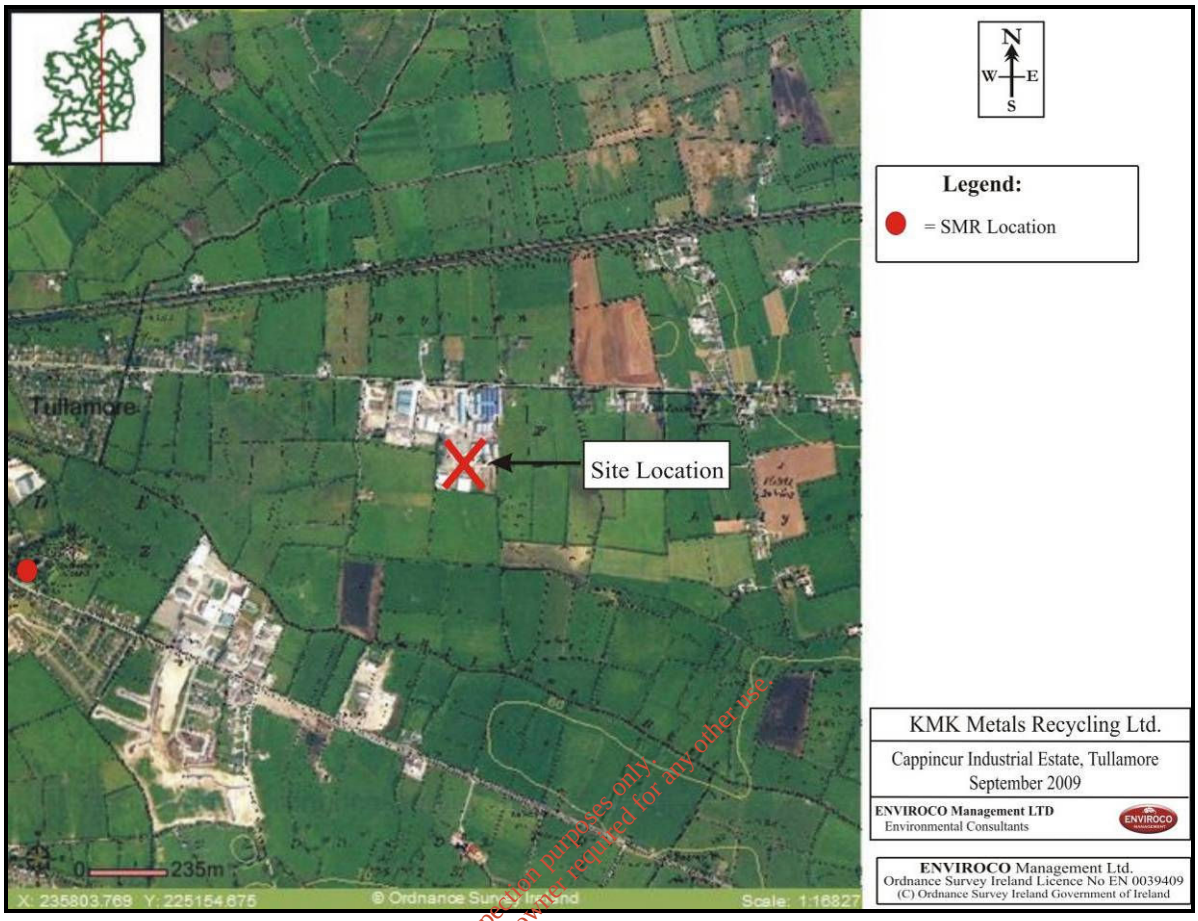


Figure 11.3.1: Features of Archaeological and Cultural Importance

11.4 POTENTIAL IMPACTS

There are no anticipated impacts upon the cultural heritage of the area. There is only one site and monument record in the area and this is sufficient distance from KMK to be affected by site activities and the proposed development.

The KMK facility is located within an existing industrial estate, and the proposed future waste acceptance and completion of E area of the site will not result in further development of Greenfield space or additional structures/buildings, hence there will be no impact upon features in the area. Furthermore, the existing site is in a fully zoned industrial area and all buildings are authorised by previous planning permissions.

11.5 MITIGATION MEASURES AND MONITORING

There are no predicted impacts upon the identified features of archaeological and cultural importance in the area, and as such no mitigation measures are proposed and no further monitoring is required.

12.0 Flora and Fauna

12.1 INTRODUCTION

This Chapter of the EIS considers designated areas in the locality; flora and fauna of the site and local area; potential impacts upon flora and fauna; mitigation measures for the protection of same, and monitoring requirements where applicable.

12.2 BACKGROUND TO AREA DESIGNATIONS

Offaly has a wide diversity of natural and semi-natural habitats such as bogs, wetlands, lakes, river and upland habitats that support a wide range of wild plant and animal species. Many of these areas are coming under increasing pressure as development intensifies, and it is important that measures are put in place to respond to these pressures and that any development shall not have a detrimental effect on the natural environment (Offaly County Development Plan, 2009-2015).

There are a number of land use designations related to environmental protection that must be considered with development proposals.

Land use designations are listed below, followed by descriptions of the most common designations:

- Special Areas of Conservation
- Special Protection Areas
- Natural Heritage Areas
- Statutory Nature Reserve
- National Park
- Wildfowl Sanctuary
- Ramsar Site
- Salmonid Water
- Sensitive Areas for Fisheries and Forestry
- Areas of Special Control in County Development Plans
- Special Amenity Order
- Tree Preservation Order
- World Heritage Site

- Designated Areas under REPS

Natural Heritage Areas are designated by the National Parks and Wildlife Service (NPWS) of the Department of Environment Heritage and Local Government (DoEHLG), under the provisions of the Wildlife (Amendment) Act 2000, in recognition of nationally important habitats, species and sites of geological interest. The amendment to the Act provides a procedure for designating proposed Natural Heritage Areas (pNHA's) and a procedure for the landowner or others to object to such a designation if they wish. Natural Heritage Areas cover nationally important semi-natural and natural habitats, landforms or geological features, wildlife plant and animal species or a diversity of these natural attributes. pNHA's at present have no legal status but are protected under relevant County Development Plans.

The Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora) is the main legislative instrument for the protection and conservation of biodiversity in the EU. Under the Directive member States are obliged to designate Special Areas of Conservation (SACs) which contain habitats or species considered important for protection and conservation in a European Union context. The Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds), is concerned with the long-term protection and management of all wild bird species and their habitats in the EU. The Directive requires '*inter alia*' that Special Protection Areas (SPAs) be established to protect migratory species and species which are rare, vulnerable, in danger of extinction, or otherwise require special attention.

Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas, designated under the Birds Directive, form a pan - European network of protected sites known as Natura 2000. The Habitats Directive sets out a unified system for the protection and management of SACs and SPAs.

In addition to this section of the EIS, a Natura Impact Statement (NIS) has been prepared and submitted with this planning application. Stage I Screening, under Part 6(3) of the Habitats Directive, will be conducted by Offaly County Council as the competent authority under the regulations. This NIS is submitted to establish the likely risks this development may have, to assess these risks in a logical and scientifically sound manner, to enable the competent authority to establish whether the development can proceed. The NIS concludes that there is no likely impact from the proposed development upon local protected environments or protected sites known as Natura 2000 sites. It was decided therefore unnecessary to proceed any further with investigations.

12.3 DESIGNATED AREAS

The proposed development site is not on or adjacent any Natura Protected sites, nor is there any National Parks and Wildlife (NPWS) sites on or adjacent it.

Figures 12.3.1, 12.3.2 and 12.3.3 gives a 15km grid centred on the KMK site, and identifying all NHAs, SACs and SPAs respectively in this locality. The maps show that there are no Special Protected Areas (SPA's) within 15km, though the Slieve Bloom Mountains SPA (code 004160) is on the border of this buffer zone. Due to its distance and nature, and the low likely impacts arising from this development, the Slieve Bloom Mountains are not further analysed in this document. Several closer proximity protected sites are present and this NIS will evaluate whether the development has a likely chance of impact upon these.

Within Figure 12.3.2 the 15Km grid identifies 6 Special Areas of Conservation (SAC's), these are identified in Table 12.3.1 below.

Table 12.3.1: Proximity to Natura 2000 Sites

Name of Site	Code	Distance (Km)
Charleville Wood SAC	000571	3.2
Raheenmore Bog SAC	000582	9.71
Split Hill and Long Hill Esker SAC	001831	11.3
Clara Bog SAC	000572	9.8
River Barrow & River Nore SAC	002162	10.01
Clonaslee Esker and Derry Bog SAC	000859	14.8

In terms of the County Development Plan, the closest ecologically sensitive area is actually a proposed NHA, and this is the Grand Canal. This feature is also an amenity of Tullamore Town. This feature is illustrated in Figure 12.3.4 below.

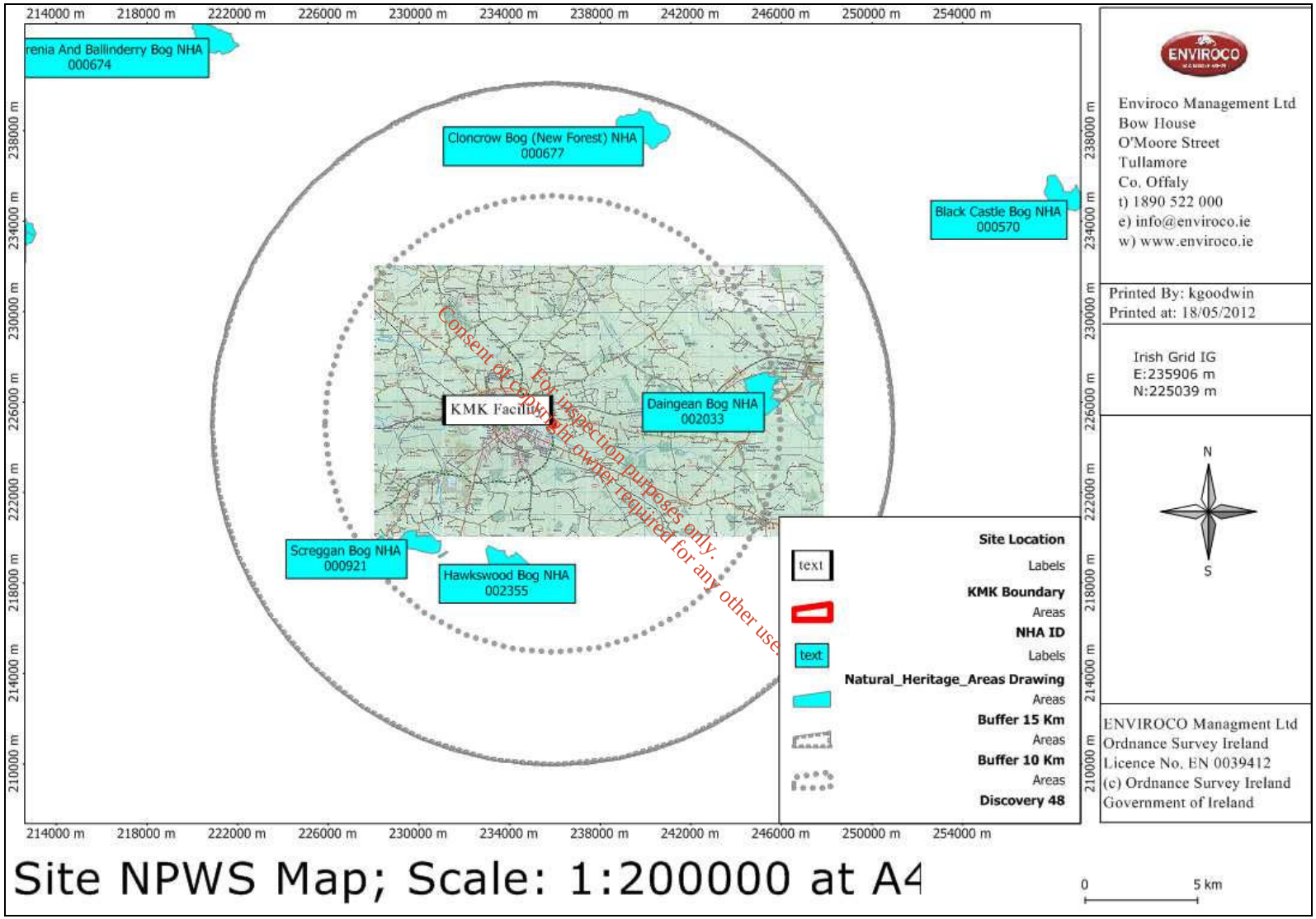


Figure 12.3.1: Overview Natural Heritage Areas (NHA's) within 15Km of the KMK Site

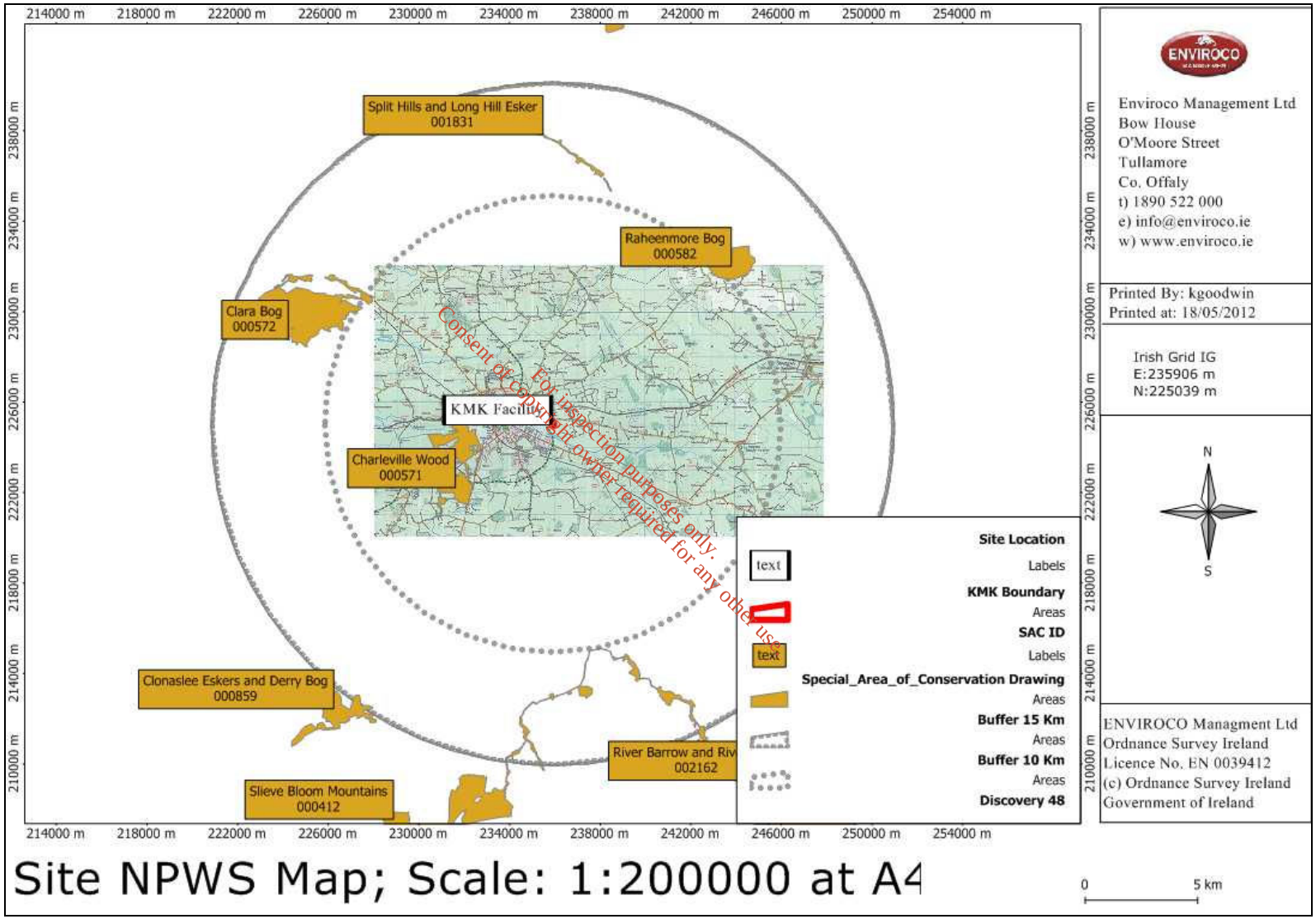


Figure 12.3.2: Overview Special Areas of Conservation (SAC) within 15Km of the KMK Site

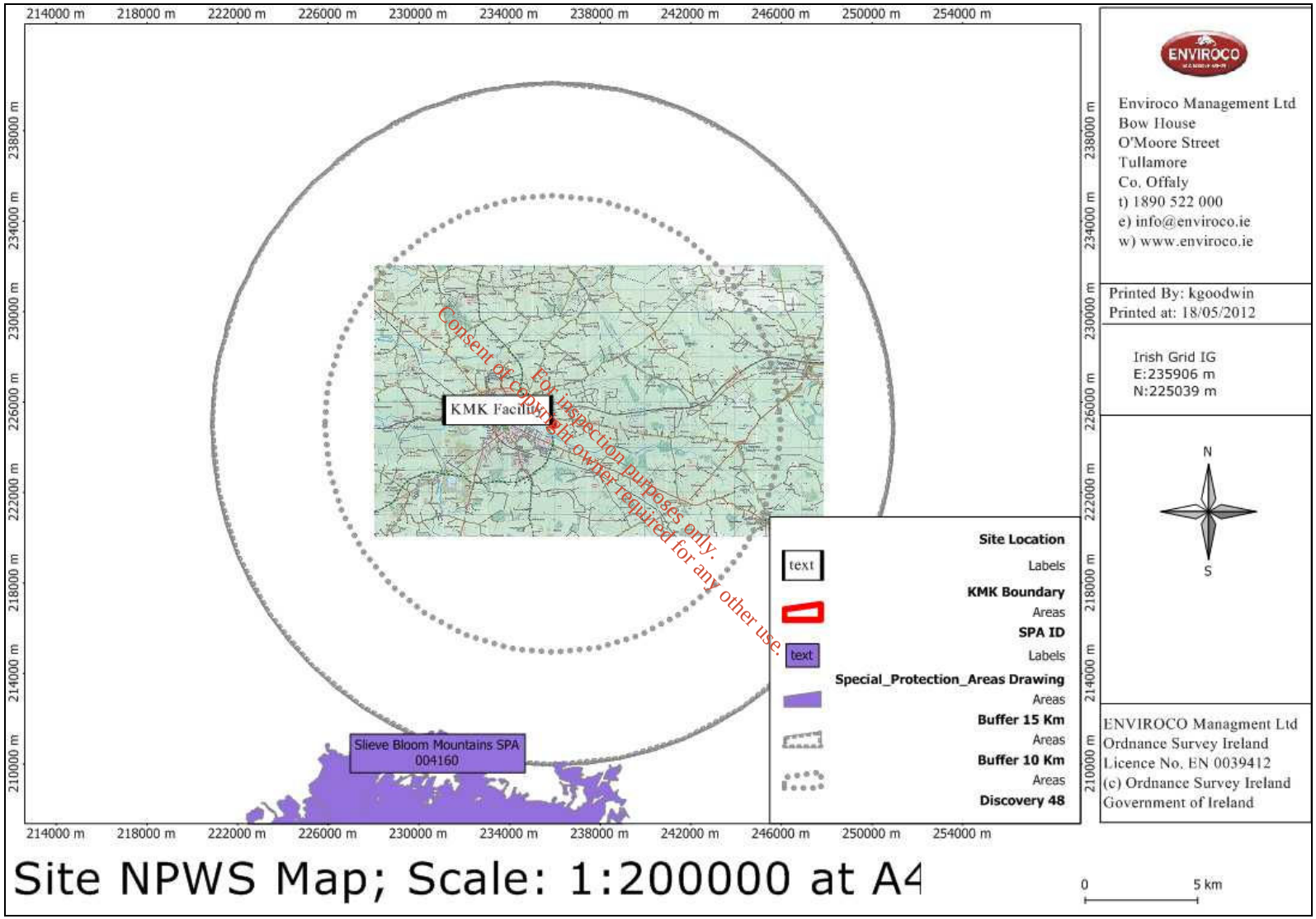


Figure 12.3.3: Overview Special Protected Areas (SPA) within 15Km of the KMK Site

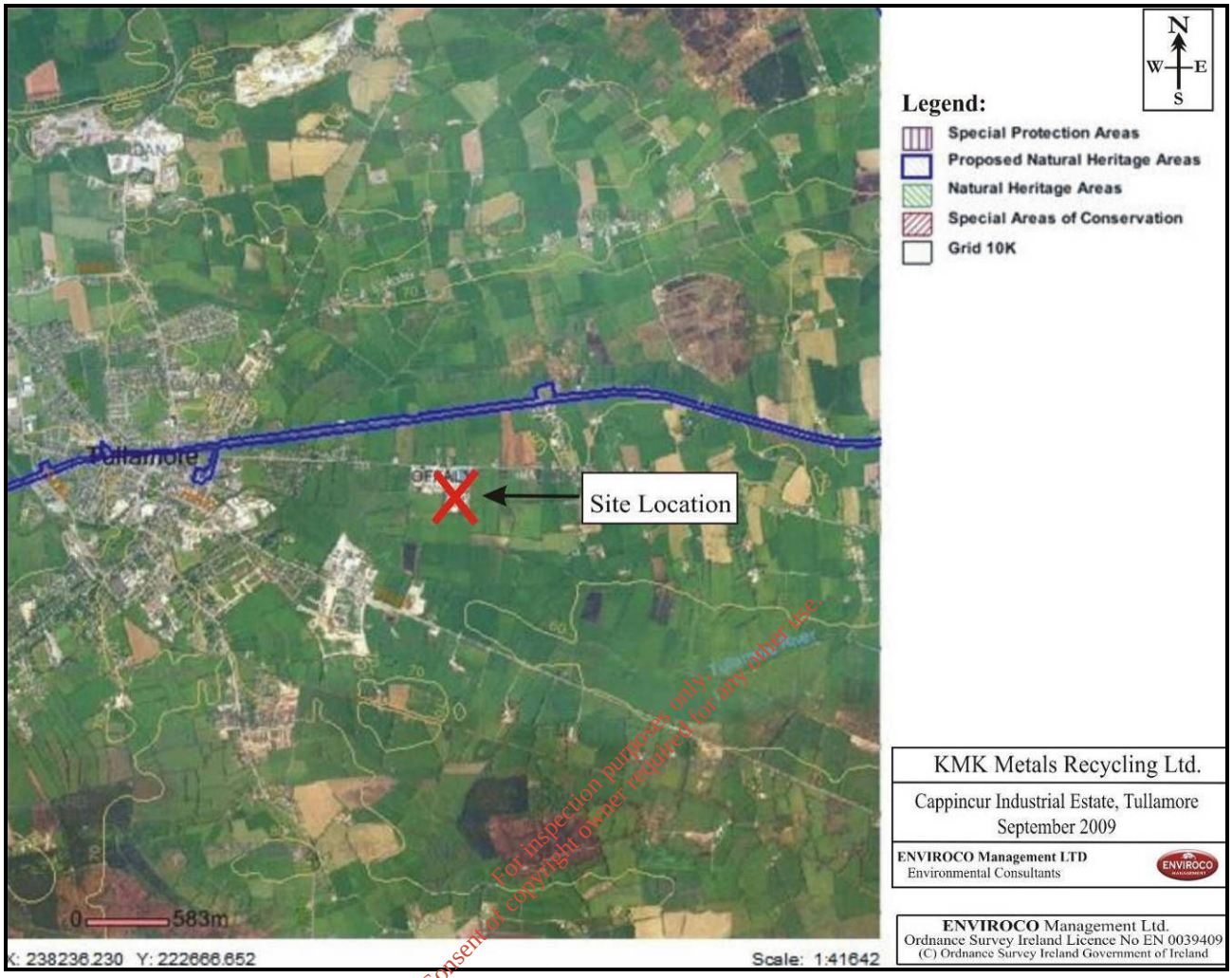


Figure 12.3.4: Closest designated Areas (Grand Canal) to the KMK Metal's site

12.4 HABITATS, FLORA AND FAUNA OF THE SITE

The site is situated within the boundaries of the Cappincur Industrial Estate. The KMK facility is well developed and operational as a waste recycling and recovery facility, and includes a combination of buildings, hard standing areas, concreted surfaces, waste processing buildings, offices and staff facilities. All buildings at the site are modern and there are no vegetative areas. There are no habitats or species of ecological importance at the site.

12.5 HABITATS, FLORA AND FAUNA OF THE SURROUNDING AREA

The site lies within the confines of an established industrial park of Tullamore Town. The primary activity within the park is industrial / commercial. No additional virgin land (Greenfield space / agricultural lands) are to be affected by this application.

Land surrounding the site to the east, south and west, is presently agricultural grassland and is grazed by cattle. The land to the south and west is zoned industrial for future development purposes. To the north are other units of the Industrial Estate. The developed industrial estate is of limited ecological importance, whilst the surrounding agricultural land (which includes hedges and tree lines) provides typical breeding grounds for insects and small mammals, and foraging/hunting grounds for birds and larger mammals.

Adjacent to the west boundary of the site is a land drain (approximately 1.4m wide), into which treated surface water is discharged from the KMK facility (via emission points CX and DX and a proposed E emission point). The land drain flow varies throughout seasons from moderate to nearly stagnant (flow estimated as 0.0889m3/sec in August 2011) and therefore the natural dissolved oxygen concentration is low Hence, this land drain feature contributes to limited biodiversity in the area, and is likely to be utilised by insects, birds and small mammals for habitat, refuge, breeding and foraging.

Figure 12.5.1 illustrates the land drain and associated discharge points CX and DX, as at March 2012.

Emission point outfalls at CX and DX to drain

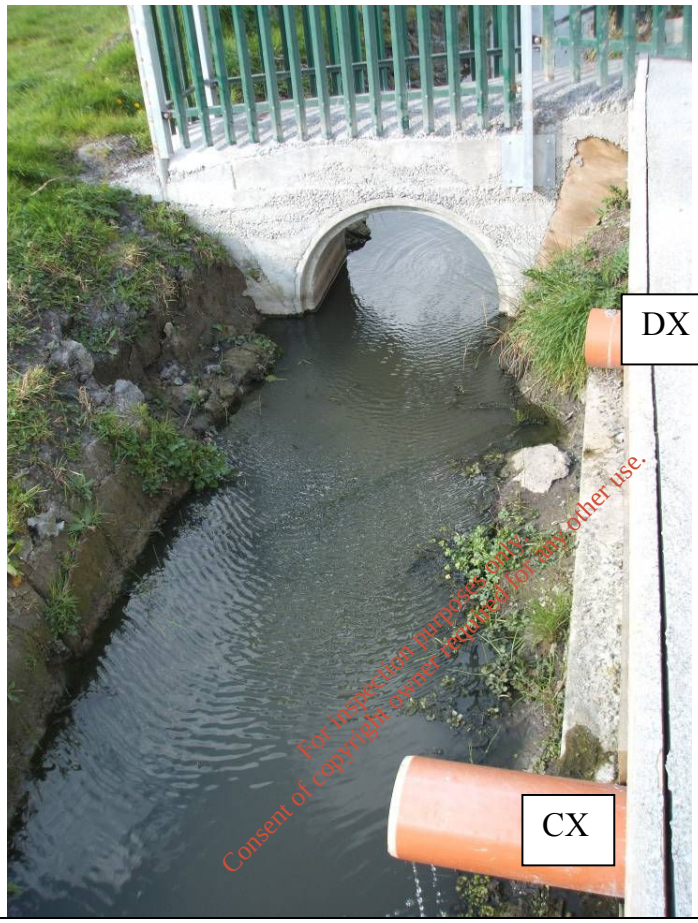


Plate 11.2.5-1: Emission Point Outfalls at CX and DX to Land Drain

12.5.1 Tullamore River

The KMK facility is located within the catchment area of the Tullamore River (IE_54_549), which has a Q-rating for the hydrometric station outside of Tullamore (station 25T030100) for 2011 as 3-4 which is moderate classification. However, the Tullamore River, as it passes Tullamore Town is 1(a) 'At risk of not achieving good status and with a poor classification under the Water Framework Directive (WFD)

Figure 12.5.1 shows the Tullamore River status.

In 2010, under the Urban Waste Water amendment Regulations, the Tullamore River received protection status in terms of strict limits of emissions to the river from Local Authority waste water treatment plants. These regulations do not directly affect private licensed emissions.

In terms of pathway, the Tullamore River flows south of the site in a North West direction toward and through Tullamore Town, where it then falls under protection by the Water Framework Directive as an RPA Nutrient Sensitive River. The Tullamore River supports a listed species, protected under the Flora Protection Order (1999): Opposite-Leaved Pondweed (Groenlandia densa).

The River is due for restoration by 2015.

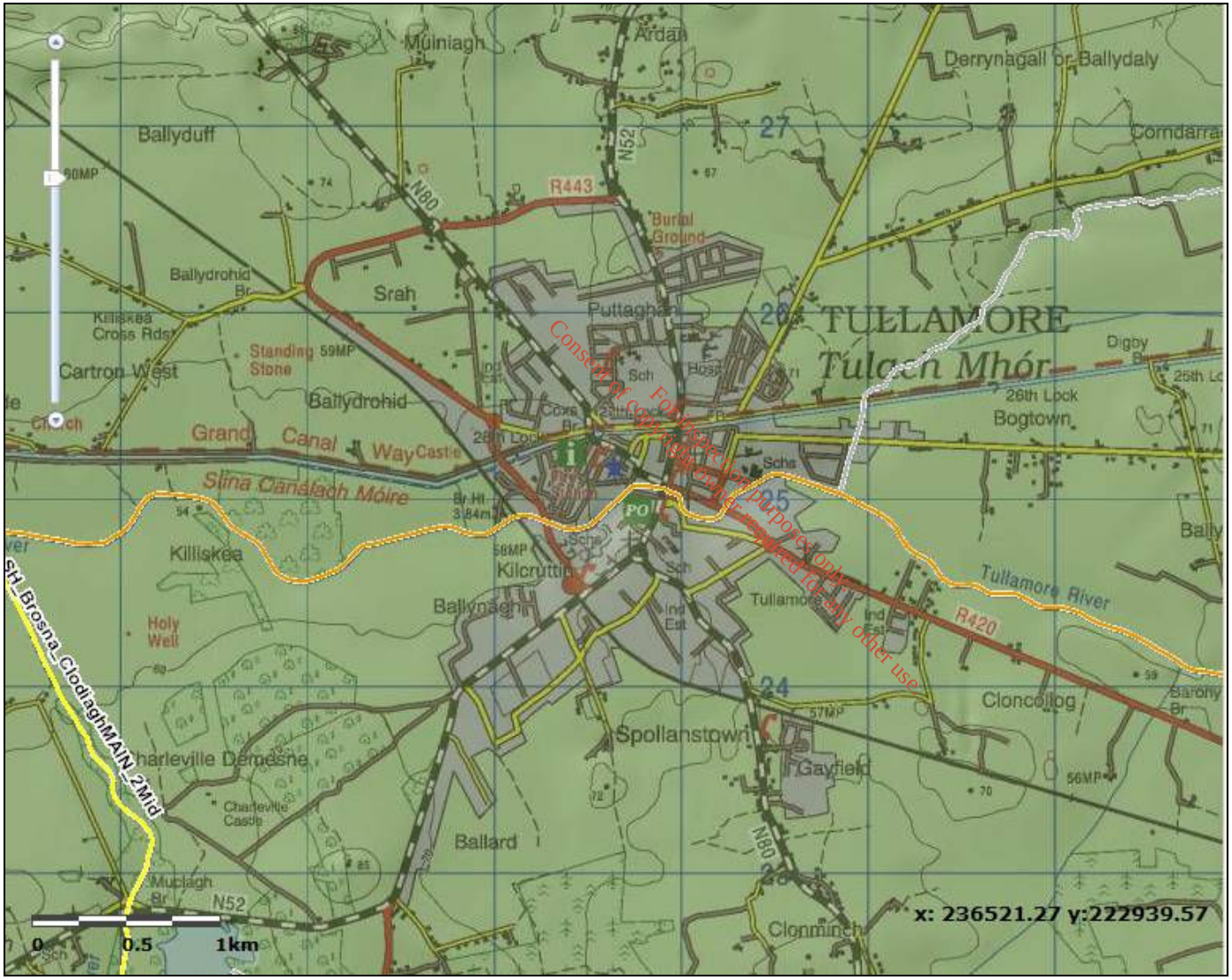


Figure 12.5.1: Tullamore River Status – 2011 Q-rating 3 to 4 (source EPA Envision Map Viewer)

12.5.2 Grand Canal

North of the KMK facility is the Grand Canal, proposed Natural Heritage Area (pNHA) NPWS site code 002104. The Grand Canal is listed in the Offaly County Development Plan 2009-2015 as a waterway of high sensitivity and high amenity and is illustrated in Plate 12.5.2 below.

Plate 12.5.2-1: Grand Canal view from bridge on N52 By-pass close to site

The Grand Canal is a man-made waterway linking the River Liffey at Dublin with the River Shannon at Shannon Harbour and the Barrow at Athy. A number of habitats are found along the canal: hedgerow, tall herbs, calcareous grassland, reed fringe, open water, scrub and woodland. The ecological value of the canal lies more in the diversity of species it supports along its linear habitats than in the presence of rare species. The Canal crosses through towns and agricultural land, therefore providing a valuable wildlife corridor and refuge (NPWS, 1995).

Under the Habitats Directive there is a requirement that certain species listed in Annex IV of the Habitats Directive are strictly protected. These species are not necessarily associated with areas subject to a specific designation. The Grand Canal is one of these sites, designated for the protection of its plants, species and habitats

under the provisions of the Wildlife Act 1976. (S.I. No. 338 of 1980) (Offaly County Development Plan 2009-2015).

12.6 POTENTIAL IMPACTS

Flora, fauna and habitats of ecological importance at and within close proximity to the site are limited and minima by virtue of the nature of existing and proposed land use in the area and the significantly developed site (concrete areas and buildings).

Sensitive ecological habitats in the wider area include the Grand Canal pNHA, and the Tullamore River into which flows the land drain adjacent to the west boundary of the site.

There are no emissions to the Grand Canal, which is considered to be located a sufficient distance so as to be unaffected by current and proposed site activities. This proposal will therefore result in no impact to the Grand Canal.

There are emissions from the site to the land drain via CX, DX and proposed E area.

In terms of discharges from CX outlet, throughout the four Quarter sampling events during 2011 in particular, there were fluctuations in conductivity and ammonia. The increase in ammonia levels was thoroughly investigated during 2011. Whilst no definitive source was identified, a few possibilities were considered and described in detail in section 9.3 of the EIS. The monitoring conducted in 2012 to date shows a greatly reduced level of ammonia in discharges from CX.

In terms of discharges from DX outlet, throughout the 2011 Quarter sampling events, there were fluctuations in conductivity and COD with elevated levels of total suspended solids in the first quarter. These emissions are not considered significant.

No additional potential impacts have been identified with regard to the development.

12.7 MITIGATION MEASURES

Emissions from the site are routinely monitored and do not result in any serious contravention of KMK self imposed limits (see 12.8 below). The proposed E area within the waste licence boundary will not result in significant or otherwise adverse emissions to the land drain.

Emissions to the land drain from the KMK site will be controlled as follows;

- Existing yard surface water discharges from 'C' yard is treated by a Class 2 interceptor unit with final discharge to the land drain.
- The discharge from 'D' yard is treated by a Class 1 interceptor unit with final discharge to the same land drain.
- Proposed discharge from E area will be directed via a combination of a silt trap, followed by a storm water attenuation tank system (all located at the north part of E area). The outfall from the attenuation system will be treated by a Class 1 hydrocarbon interceptor unit prior to connection to the existing shared drain in the industrial estate which serves to remove surface water run-off from a number of commercial businesses with final discharge to the local land drain.

Spillages, though unlikely, could occur and would give rise to the release of unauthorised or unexpected emissions from the site. As an emergency situation, this event would be handled as outlined in the existing company Emergency Response Procedure (ERP) as part of ISO 14001. The ERP in force at the existing site (W0113-03) will be modified to take into account the proposed E area of the site and the proposed increase in tonnages.

12.8 MONITORING

Environmental emissions from the operation of this facility by KMK are monitored quarterly as part of the existing waste licence W0113-03, which requires sampling and analysis at emission points CX and DX as outlined in Waste Licence W0113-03. KMK have self imposed emission limit values as defined in a report sent to and agreed with the EPA in 2010 called the Trigger & Actions Levels report. The ELVs are thus tabulated below;

Table 12.8.1: ELVs currently regulated at KMK by the EPA for CX & DX emissions.

Parameter	Trigger Levels	Action levels
Suspended Solids (mg/l)	50	100
Conductivity (µS/cm)	1000	1000
Ammonia as NH_3 (mg/l)	0.2	4.0
pH (units)	6.0 – 9.0	5.5 – 9.0
COD (mg/l)	40	40
Iron (mg/l)	0.2	2.0
Arsenic (mg/l)	0.05	0.10
Zinc (mg/l)	3.0	5.0
Chromium (mg/l)	0.032	0.05
Nickel (mg/l)	3.0	5.0
Aluminium (mg/l)	3.0	5.0
Lead (mg/l)	0.05	0.05
Mercury (mg/l)	0.00007	0.001
Mineral Oil (mg/l)	1.0	2.0

It is proposed by KMK incorporate the proposed emission to surface water from E area once agreed by the EPA as part of the waste licence review ref: W0113-04 and to continue with the established monitoring as tabulated above for all three emission points.

13.0 Interaction of the Foregoing

In addition to the assessment of the likely significant effects of the development on the specific aspects of the environment already considered, there is also a requirement to consider the interactions of each factor.

Table 13.1 indicates which environmental factors are likely to interact with each other. The table should be read that changes in any one transmitter are likely to result in impacts upon listed receptors where indicated with an asterisk (*). The significance of these interactions is discussed throughout the previous chapters of this EIS. Interaction can be positive, negative or neutral. In most cases, the interactions below are neutral because of existing conditions of Waste Licence W0113-03 and adopted mitigation measures.

Table 12.8.1: Interactions of the Foregoing

		Receptor									
Transmitter	Human Beings										
	Traffic & Transport										

Air/Odour											
Noise											
Soils & Geology											
Surface Water											
Ground Water											

	er										
	Visual Landscape										
	Flora										
	Fauna										

Examples of positive interactions from Table 13.1 are as follows:

- **Human Beings** will alter the **Traffic and Transport** of the area by weighbridge installation, thereby reducing the number of trips to and from the site. Reduction in **Traffic and Transport** will benefit Human Beings in the area and may reduce dust generation / entrainment, improving **Air Quality**.

- **Human Beings**, through assimilation of the proposed development, will improve environmental management at the site which may help improve **Water Quality** for associated **Flora and Fauna** and increase amenity value for Human Beings.

14.0 Summary of potential impacts and mitigation measures

14.1 INTRODUCTION

ENVIROCO Management Ltd. scoped, co-ordinated and prepared this Environmental Impact Statement on behalf of KMK, Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly.

KMK is applying for planning permission to regularise activities on-site and propose an increase in annual waste acceptance from 20,000 to 35,000 tonnes.

The requirement for WEEE recycling capacity is in response to the requirements of the Waste Electronic and Electrical Equipment (WEEE) Directive 2002/96/EC, implemented in Ireland in August 2005, to prevent WEEE; promote the reuse, recycling and recovery of WEEE; and improve the environmental performance of all operators involved in the life cycle of Electronic and Electrical Equipment (EEE).

Throughout the course of this EIS, consideration of potential impacts and mitigation measures were made with reference to the following: location; proposed operation and design; and potential impacts upon human beings; noise; traffic and transport; air quality, climate and odour; geology; hydrogeology; visual impact; culture, and flora and fauna.

14.2 SUMMARY OF IMPACTS

Mitigation measures, as may be recommended throughout this report, have been suggested in order to protect local receptors and the surrounding environment from potential impacts as a result of this development. Not all foreseen impacts are negative, hence those summarised in Table 14.2.1 are ranked according to its likely effect on the natural environment (+ positive impact; 0 no impact; - negative impact).

Table 14.2.1: Summary of Potential Impacts and Mitigation Measures (+ = positive; — = negative; 0 = no impact)

	Potential Impact	Ranking of Impact	Mitigation Measures	Ranking after Mitigation Measure
Human Beings	Use of construction industry services / materials	+	No mitigation required	N/A
	An increase in Irelands recycling capacity	+	No mitigation required	N/A
Traffic and Transportation	Forecast traffic generation of the current application is likely to be either traffic neutral or indeed beneficial to the network	+	No mitigation required	N/A
Climate, Air Quality, Odour	Proposals for the E Area are expected to result in a significant reduction in dust generation and entrainment across the site. There will be a lessened potential for dust generation, which could presently occur during periods of dry weather	+	Waste processing can occur inside buildings only. Stack emissions are fully treated for particulate levels prior to discharge to atmosphere using a bag house filter unit and constantly monitored with a probe device. Outside storage will be temporary only (prior to processing and/or export from the facility) Where dust entrainment or windblown dust is likely, areas should be swept and dampened down Routine monitoring and reporting of depositional dust will be carried out as required by the facility Waste Licence	+

	Potential Impact	Ranking of Impact	Mitigation Measures	Ranking after Mitigation Measure
Noise	Noise emissions being experienced by off-site receptors	0	Emissions stack is positioned away from main noise receptors and also is constructed to best practise for noise emission reduction. All waste processing activities are inside buildings. Routine monitoring and reporting of noise will be carried out as required by the facility Waste Licence	0
Geology	The proposed development will invoke no change to the soil and geological environment of the site and surrounding area apart from removal of percolation area, thus a neutral, permanent impact is forecast	0	Decommissioning of existing percolation area and cessation of soak-away for domestic effluent.	0

	Potential Impact	Ranking of Impact	Mitigation Measures	Ranking after Mitigation Measure
Water	Existing discharges from CX, DX and E on-site and waste management activities.	0	○ Class 2 interceptor for treatment of surface water run-off from area leading to CX discharge. ○ Class 1 interceptor for treatment of surface water run-off from area leading to DX discharge. ○ Silt trap, attenuation tank and Class 1 interceptor for proposed treatment of surface water run-off from E area leading to E discharge point. ○ Robust interceptor inspection, maintenance and quarterly monitoring programme is presently enacted at KMK for CX and DX discharge points. This programme will be extended to include the treatment units at E area. ○ All metals and waste materials treatment and processing at site is carried out inside buildings or under roofs. ○ All sludge and liquid containing wastes (minimal quantities accepted) are stored in appropriate containers inside bunded areas at the site. These bunded areas are inside buildings so that rainfall does not interact with the bund contents.	0

	Potential Impact	Ranking of Impact	Mitigation Measures	Ranking after Mitigation Measure
	There will be an additional discharge to land drain i.e. treated domestic effluent from the proposed upgraded WWTS.	0	Up-grade works to the WWTS on-site. This treatment is a 3 stage process; primary – existing tank to be modified for use as a primary holding and settlement tank, secondary treatment using a new sequence batch reactor tank with added dosing for nitrates and phosphates removal and finally biological treatment using a purpose designed sand filter system for final effluent polishing and loading reduction prior to discharge to land drain.	+
Landscape and Visual Impact	KMK site is mostly visible from within Cappincur Industrial estate and partially visible from routes to the estate. Therefore there will be no significant impact as upon: occupants of residential accommodation; users of public open space and public road users. The proposed E Area will reduce congestion of industrial estate access roads and should improve conditions of the E Area for workers in their place of work.	0 +	No mitigation required	N/A
Cultural Heritage	There are no anticipated impacts upon the cultural heritage of the area.	0	No mitigation required	N/A

	Potential Impact	Ranking of Impact	Mitigation Measures	Ranking after Mitigation Measure
Flora and Fauna	There is no ecology on-site. Any potential impacts to ecology from KMK is most likely via discharges to land drain which is adequately controlled and referred to in the Water Section above.	0	No mitigation required	N/A