INDAVER

www.indaver.ie

Ms Ann Kehoe,
Administration Officer,
Office of Climate, Licensing & Resource use,
EPA,
P.O. Box 3000,
Johnstown Castle,
Co. Wexford.

2 April 2014

Re: Indaver Ireland (Licence ref W0167-03) Application for IED Licence

Dear Ms Kehoe,

An application for a waste licence review (W0167-03) was made to the EPA on 23rd April 2012. As outlined in a letter received from the EPA on 19th February 2014, we note the change in the applicable rules, Pursuant to the European Union (Industrial Emissions) Regulations 2013, Part IV of the Environmental Protection Agency Act 1992. Please note that we are not proposing to withdraw our application and resubmit it as a new application under the new Part IV as outlined in paragraph 3 of your letter (19/2/2014) instead we have taken your option of furnishing the Agency with the required information. We would also note that we are submitting to the Agency for an alteration of 15,000 tonnes per annum for a period up to 31st December 2019.

Indaver Ireland has submitted an application to An Bord Pleanala for an alteration up to 31st December 2019 for 15,000 tonnes of additional non hazardous waste to this facility. A review of the environmental impact for this additional alteration has been undertaken and has been shown to have no additional impact on the environment. A summary of the assessment of environmental impact and the reasoning for this alteration is provided for clarity (2014 Review Report).

To comply with the requirements for submitting a valid application for a licence in accordance with Regulation 9 of the EPA (Industrial Emissions/Licensing) Regulations, 2013, we are forwarding the following documents.

- IED Registration Form
- Copy of notice published in the newspaper and site notice
- A revised non technical summary
- Waste Licence Application 2012 and Articles 12, 13 and 16 responses
- A copy of the Grant of Planning Permission (17.PA0026)

ISO 9001
ISO 14001
OHSAS 18001

Indaver Ireland Ltd. ▪ Registered in Ireland No. 59667
Registered Office: 4th Floor, Block 1, West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, CO. DUBLIN, IRELAND ▪ tel. + 353 1 280 4534 ▪ fax + 353 1 280 7865
▪ Tolka Quay Road, Dublin Port, DUBLIN 1, IRELAND ▪ tel. + 353 1 280 4534 ▪ fax + 353 1 280 7865
▪ Unit 11, South Ring Business Park, Kinsale Road, CORK, IRELAND ▪ tel. + 353 21 470 4260 ▪ fax + 353 21 470 4250
▪ Meath Waste-to-Energy Facility, Carranstown, Duleek, CO. MEATH, IRELAND ▪ tel. + 353 1 280 4534 ▪ fax + 353 1 280 7865
VAT Reg. No. IE9F70712I ▪ IBAN IE53 AIBK 9334 0630 3250 49 ▪ AIBKIE2D
Directors: J. Ahern, C. Jones, J. Kearney, D. McGarry
Belgian Directors: P. De Bruycker, M. Decorte, B. Goethals

member of DELTA the multi utility company

- Regulation 9 – Compliance Record
- Environmental Impact Statement (2012) submitted with 17.PA0026
- 2014 Review Report
- Copy of letter to An Bord Pleanala and receipt for submission
- Copy of letter to Meath County Council

Please note we have requested a written confirmation from An Bord Pleanala confirming that they are considering an application for an alteration (under section 146B) and that an EIS is not required.

If you have any further queries please do not hesitate in contacting me.

Yours sincerely,

Jane Hennessy
Communications Manager

APPLICATION TO ENVIRONMENTAL PROTECTION AGENCY FOR A LICENCE

INDAVER IRELAND (W0167-03)

Information Required pursuant to European Union (Industrial Emissions) Regulations 2013, Part IV of the EPA Act 1992 as amended

awnconsulting

For Submission To:

Office of Climate, Licensing and Resource Use, Environmental Protection Agency

3 April 2014

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(Electronic Copies of all documents also enclosed)

APPENDIX A

IED Registration Form

Registration Form

Declaration by waste licence applicants as to whether proposed licensable activities fall under the revised First Schedule of the EPA Acts 1992 to 2013

Organisation details

Name of applicant:	Indaver Ireland Limited
Application facility:	Indaver Ireland Limited (Duleek)
Waste licence application register number:	W0167-03
CRO[2] number:	

Instructions

You should firstly review all of the classes of activity included in the First Schedule of the EPA Acts 1992 to 2013 (a colour coded version of the new First Schedule is available on the IED pages of the EPA website –

http://www.epa.ie/licensing/industrialemissionslicensing/

You should determine if your activities fall under any of the classes of activity so listed and complete the table below accordingly. If no classes of activity apply, you should tick the appropriate boxes at the bottom of the table.

You should then consider whether any of the chapters III to VI of the IED are applicable to your activity and complete the table at the end of the Registration Form.

[2] Companies Registration Office

Guidance on "Capacity"

The classes of activity generally refer to the "capacity" of an activity. Applicants should consider both the legal and technical capacity of an installation when completing the Registration Form and making a decision as to whether the class of activity is applicable.

See also paragraphs (1) and (2) of the 'Interpretation' section of the new First Schedule for information on how the capacities of one or more activities should be aggregated for the purposes of the Registration Form. These paragraphs are as follows:

> "(1) If 2 or more activities falling within the same paragraph under a particular heading of this Schedule are carried on in the same installation by the same person, then, for the purpose of any threshold specified in that paragraph, the capacities of such activities shall be aggregated.
>
> (2) For waste management activities, the calculation referred to in subparagraph (1) shall apply at the level of activities referred to in paragraphs 11.2, 11.4(a) and 11.4(b)."

For further discussion on the interpretation of "capacity" see the European Commission's *Guidance on Interpretation and Determination of Capacity under the IPPC Directive* at http://ec.europa.eu/environment/air/pollutants/stationary/ippc/general_guidance.htm.

Guidance on "Pre-treatment of waste for incineration or co-incineration"

This topic is relevant to activity classes 11.4(a)(iii) and 11.4(b)(ii).

The term "pre-treatment" is not defined in the Industrial Emissions Directive. The term "treatment" is defined in the Waste Framework Directive (2008/98/EC) as:

> 'recovery or disposal operations, including preparation prior to recovery or disposal'.

The term 'treatment' has the same meaning as 'pre-treatment'.[3]

Waste licence applicants will have already selected applicable recovery and disposal activities in their waste licence applications (section B.7 of the waste licence application form) that they have sought for authorisation. As a general rule, it is appropriate that any of

[3] Municipal Solid Waste – Pre-treatment & Residuals Management: An EPA Technical Guidance Document, 2009.

these activities followed by dispatch of the waste for incineration or co-incineration should be regarded as "pre-treatment of waste for incineration or co-incineration" for the purposes of the new First Schedule.

When deciding whether an activity comprises "pre-treatment of waste for incineration or co-incineration" for the purposes of the new First Schedule, applicants should consider what happens *within the waste facility that is to be authorised*, and not any treatment or pre-treatment that took place previously at another facility or the presence of waste segregation practices at the point of waste collection.

The following should not generally be regarded as constituting "pre-treatment of waste for incineration or co-incineration":

- the incidental generation of waste from waste treatment activities and the dispatch of such incidental waste for incineration.

Solid recovered fuels and refuse derived fuels are often but not always produced to a technical specification that might also comprise a quality standard and/or a quality assurance scheme. They are also often produced to be classified by the EWC codes 191210 or 191212. The absence of:

- a technical specification,
- a quality standard,
- a quality assurance scheme, and/or
- EWC codes 19 12 10 and 19 12 12

for a solid recovered fuel or refuse derived fuel is not indicative that an activity does not comprise "pre-treatment of waste for incineration or co-incineration".

Guidance on "Class 11.1" – non-IED activity

Class 11.1 is not an IED class of activity. If this class of activity is selected, a reason must be provided at the end of the form. Class 11.1 will generally only be applicable where there are *non-IED* classes of activity being carried on at a facility in addition to *IED* classes of activity. The following are IED classes of activity, subject to relevant capacity thresholds: 11.2, 11.3, 11.4, 11.5, 11.6 and 11.7.

This table lists only class 11 activities. There is space at the bottom of the table to list other applicable classes of activity and you should take the time to consider the entire new First Schedule.

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations [5] (Section 76A of Waste Management Acts)
11	Waste management		
11.1 [6]	The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.[6]		

[4] Please note, this form relates to all of the activities included in your licence application. This includes activities that you are already authorised to carry out if you intend to maintain these activities under a new licence (should it be granted).

[5] European Union (Industrial Emissions) (Licensing) Regulations 2013, S.I. No. 137 of 2013.

[6] If this class of activity is selected, an explanation must be provided. Complete the box below the table.

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations [5] (Section 76A of Waste Management Acts)
11.2	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities;		30/9/2013 if IPPC Directive already applies to activity. 28/2/2014 if not.
(a)	biological treatment;		
(b)	physico-chemical treatment;		
(c)	blending or mixing prior to submission to any of the other activities listed in paragraph 11.2 or 11.3;		
(d)	repackaging prior to submission to any of the other activities listed in paragraph 11.2 or 11.3;		
(e)	solvent reclamation or regeneration;		
(f)	recycling or reclamation of inorganic materials other than metals or metal compounds;		
(g)	regeneration of acids or bases;		
(h)	recovery of components used for pollution abatement;		

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations [5] (Section 76A of Waste Management Acts)
(i)	recovery of components from catalysts;		
(j)	oil re-refining or other reuses of oil;		
(k)	surface impoundment.		
11.3	Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants:		30/9/2013 if IPPC Directive already applies to activity. 28/2/2014 if not.
(a)	for non-hazardous waste with a capacity exceeding 3 tonnes per hour;	✓	
(b)	for hazardous waste with a capacity exceeding 10 tonnes per day.	✓	
11.4(a)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving one or more of the following activities:		
(i)	biological treatment;		30/9/2013
(ii)	physico-chemical treatment;		30/9/2013

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations [5] (Section 76A of Waste Management Acts)
(iii)	pre-treatment of waste for incineration or co-incineration;		28/2/2014
(iv)	treatment of slags and ashes;		28/2/2014
(v)	treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components.		28/2/2014
11.4(b)	Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day[7] involving one or more of the following activities, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply):		28/2/2014
(i)	biological treatment;		
(ii)	pre-treatment of waste for incineration or co-incineration;		
(iii)	treatment of slags and ashes;		

[7] When the only waste treatment activity carried out is anaerobic digestion, the capacity threshold for that activity shall be 100 tonnes per day.

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations [5] (Section 76A of Waste Management Acts)
(iv)	treatment in shredders of metal waste, including waste electrical and electronic equipment and end-of-life vehicles and their components.		
11.5	Landfills, within the meaning of section 5 (amended by Regulation 11(1) of the Waste Management (Certification of Historic Unlicenced Waste Disposal and Recovery Activity) Regulations 2008 (S.I. No. 524 of 2008)) of the Act of 1996, receiving more than 10 tonnes of waste per day or with a total capacity exceeding 25,000 tonnes, other than landfills of inert waste.		30/9/2013
11.6	Temporary storage of hazardous waste (other than waste referred to in paragraph 11.5) pending any of the activities referred to in paragraph 11.2, 11.3, 11.5 or 11.7 with a total capacity exceeding 50 tonnes, other than temporary storage, pending collection, on the site where the waste is generated.		28/2/2014
11.7	Underground storage of hazardous waste with a total capacity exceeding 50 tonnes.		28/2/2014

Class of activity	Description of activity	Tick all classes of activity that apply to your waste licence application[4] (clear cells only)	Transition date to IE Licensing Regulations[5] (Section 76A of Waste Management Acts)
0.1	None of the above classes of activity apply to the existing or proposed activities that are the subject of my waste licence application.		
0.2	Other applicable activities in the new First Schedule of the EPA Acts (List in the box to the right any other activities, other than class 11, that you carry out or have applied for a waste licence to carry out).		

Clarification of any considerations of "capacity" taken into account when completing the Registration Form:

N/A

If class 11.1 was selected, explain here the reason(s) for its selection:

N/A.

Please select all applicable Chapters of the Industrial Emissions Directive (2010/75/EU):

- ☐ III: Special provisions for combustion plants
- ☑ IV: Special provisions for waste incineration plants and waste co-incineration plants
- ☐ V: Special provisions for installations and activities using organic solvents
- ☐ VI: Special provisions for installations producing titanium dioxide

Acknowledgements and final declaration

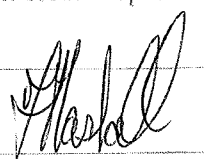
I acknowledge that:

- The information provided to the EPA in this form will be made publicly available and will be open to inspection by any person.
- This form does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the European Union (Industrial Emissions) Regulations 2013, the European Union (Industrial Emissions) (Licensing) Regulations 2013 or other legislation.
- By ticking box 0.1 above, I am stating that none of my existing activities or any new activities for which I've made application for authorisation under a waste licence are listed in the new First Schedule of the EPA Acts 1992 to 2013.

I declare the following:

- The EPA may copy this registration form response for its own use and make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA offices and via the EPA's website.
- I have read
    - this registration form and accompanying letter, and
    - the new First Schedule of the EPA Acts 1992 to 2013,

  in their entirety.
- I make this response on behalf of the organisation named in this registration form.
- I certify that the information given in this registration form response is true, accurate and complete.

Signature on behalf of applicant:	
Date of signature:	9 · 08 · 2013
Print name:	FIONA MARSHALL
Job title:	REGIONAL PROJECT DEVELOPMENT MANAGER.

From: Fiona Marshall
To: Licensing Staff
Subject: IED Registration Form (Waste)
Date: 09 August 2013 08:52:58
Attachments: 20130809074613.pdf

Dear Ms. Roche/Ms. Bolger,

Please find attached Indaver Ireland's completed IED Registration form for our Duleek facility – W0167-03.

Best regards

Fiona

Fiona Marshall
Regional Project Development Manager
Direct tel: + 353 21 601 9491
Mobile: + 353 86 028 9785
Fax: + 353 21 470 4250

APPENDIX B

Copy of Notice published in Newspaper and Site Notice

PUBLIC NOTICES

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A LICENCE

Indaver Ireland Limited, 4th Floor, Block 1 West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intends to apply to the Environmental Protection Agency for a licence for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath, National Grid Reference 3063E, 2709N. The facility is currently operating under Waste Licence W0167-02 which is under review by the Agency.

Recent changes under the European Union (Industrial Emissions) Regulations 2013 require determination of this application for a licence under Part IV of the Environmental Protection Agency Act 1992 as amended (the Act of 1992).

The classes and nature of the Industrial Emissions Directive activities in accordance with the First Schedule to the Environmental Protection Agency Act 1992 as amended will be as follows:

11.3 Disposal or recovery of waste in incineration plants or in waste co-incineration plants (a) for non-hazardous waste with a capacity exceeding 3 tonnes per hour, (b) for hazardous waste with a capacity exceeding 10 tonnes per day.

11.4 (b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving the following activity (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): (iii) treatment of slags and ashes.

The review of Waste Licence W0167-02 principally relates to a 10% increase in throughput and the acceptance of additional waste types at the Meath Waste Management Facility.

This application for a licence includes the changes comprised in the review of Waste Licence and an additional increase in throughput of 15,000 tonnes of non-hazardous waste per annum for the period up until 31 December 2019, being a total increase of 17.5% of throughput for that period.

This application is accompanied by an Environmental Impact Statement (EIS) as was submitted to An Bord Pleanala and Meath County Council in 2012. The Environmental Impact Statement together with any further information relating to the effects on the environment of the emissions from the activity which has been or may be furnished to the Agency in the course of the Agency's consideration of the application, will be available from the headquarters of the Agency.

A copy of the application for the licence may be inspected on the Agency's website or inspected at or obtained from the headquarters of the Agency as soon as is practicable after the receipt by the Agency of the application for the licence.

FAMILY NOTICES

All notices are subject to authentication.

To place a notice

TELEPHONE: (01) 6758585

or

LO-CALL 1850 44 66 44

9 a.m. – 5 p.m. Monday – Friday

After 5 p.m. Monday – Friday

And on Sunday 5 p.m. – 8 p.m.

Death Notices will only be

DEATHS

BANKS (née Rocliffe) (Stillorgan) — March 31, 2014, Muriel, (peacefully), after a short illness at St.Vincent's Private Hospital. Beloved wife of the late Brendan. Deeply regretted by her loving brother Ken (England), sister-in-law Julie, nieces, nephews, relatives and friends. Rest in peace. Funeral today (Thursday) after 10 o'c. Mass, to Shanganagh Cemetery. Family flowers only please. Donations if desired to Alzheimer Society, The Orchard Care Centre, Temple Road, Blackrock, Co.Dublin (www. Alzheimer.ie).

BIRCH (née Patel) Susan (formerly of Rutland Ave. Crumlin Dublin 12) March 23, 2014 (Hertfordshire UK and Perth Australia) (suddenly), beloved wife of Richard and much loved mother to Nathan and Luke; sadly missed by her husband and children, her loving mother Imelda, brothers Ian, Dwayne, Gareth and James, mother-in-law, nieces, nephews and godparents, aunts, uncles, cousins, friends, neighbours and extended family. Reposing at Massey Bros. Funeral Home 'The Haven' 177 Crumlin Road, today (Thursday) between 3.00pm and 8.00pm. Removal tomorrow (Friday) from Massey Bros. Funeral Parlour to the family home then proceeding on foot to St. Bernadette's Church for 10.00am Mass followed by burial immediately afterwards to Mount Jerome Cemetery. Family flowers only. Donations in lieu, if desired, to The Irish Heart Foundation. All enquiries to Massey Bros. Tel: (01) 6778902.

BOYLAND, Ronald (Ronnie) - April 2, 2014. Peacefully at home. Dearly loved husband of Anne and dear dad of Keith, Janice and Jonathan. He will be sadly missed by his mother Marjorie, sisters Helen and Margaret, brothers-in-law, sisters-in-law, nephews, nieces, relatives and friends. Funeral service on Saturday, April 5 in St. Seachnaill's Church of Ireland Church, Dunshaughlin at 11 o'clock followed by cremation in Newlands Cross crematorium (arriving at 1pm). Family flowers only please. Donations in lieu to Meath Palliative care.

BUTLER, Marie (née Harlow) Barradrum, Streete village, Co. Westmeath, beloved wife of the late Fred - April 1, 2014, after a short illness. Sadly missed by her children Francis, Jackie, John, Fredrick, Brian and Ken and brothers Henry and Frank, daughters-in-law, many adored and beloved grandchildren and great-grandchildren and extended family and friends. Reposing at her house from 4 o'clock today, Thursday. Funeral tomorrow, Friday at 2 o'clock in Streete Church followed by burial in adjoining grave yard. House private on Friday morning please.

"What Thou lovest well remains"

BYRNE (Sandycove, Co Dublin and formerly Donnybrook) - April 1, 2014 (peacefully) surrounded by his family in the tender care of all the staff of the Nightingale Unit, Blackrock Clinic Dr. Gabriel John. Beloved husband of Beatriz and the late Ellen. Predeceased by his son Xavier and loving father of Aisling, Deirdre, Gabriel, Beibhinn, Mema, Felicity, Raphael and Hannah. Sadly missed by his wife and children and brothers Louis and Peter, sons-in-law, daughter-in-law, sisters-in-law, brothers-in-law, his 15 grandchildren and all his relatives and many friends. Rest in peace. Requiem Mass today (Thursday) at 10.00am in Our Lady Queen of Peace Church,

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A LICENCE

Indaver Ireland Limited, 4th Floor, Block 1 West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intends to apply to the Environmental Protection Agency for a licence for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath, National Grid Reference 3063E, 2709N. The facility is currently operating under Waste Licence W0167-02 which is under review by the Agency.

Recent changes under the European Union (Industrial Emissions) Regulations 2013 require determination of this application for a licence under Part IV of the Environmental Protection Agency Act 1992 as amended (the Act of 1992).

The classes and nature of the Industrial Emissions Directive activities in accordance with the First Schedule to the Environmental Protection Agency Act 1992 as amended will be as follows:

11.3 Disposal or recovery of waste in incineration plants or in waste co-incineration plants (a) for non-hazardous waste with a capacity exceeding 3 tonnes per hour, (b) for hazardous waste with a capacity exceeding 10 tonnes per day.

11.4 (b) Recovery, or a mix of recovery and disposal, of non-hazardous waste with a capacity exceeding 75 tonnes per day involving the following activity, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. No. 254 of 2001) apply): (iii) treatment of slags and ashes.

The review of Waste Licence W0167-02 principally relates to a 10% increase in throughput and the acceptance of additional waste types at the Meath Waste Management Facility.

This application for a licence includes the changes comprised in the review of Waste Licence and an additional increase in throughput of 15,000 tonnes of non-hazardous waste per annum for the period up until 31 December 2019, being a total increase of 17.5% of throughput for that period.

This application is accompanied by an Environmental Impact Statement (EIS) as was submitted to An Bord Pleanala and Meath County Council in 2012. The Environmental Impact Statement together with any further information relating to the effects on the environment of the emissions from the activity which has been or may be furnished to the Agency in the course of the Agency's consideration of the application, will be available from the headquarters of the Agency.

A copy of the application for the licence may be inspected on the Agency's website or inspected at or obtained from the headquarters of the Agency as soon as is practicable after the receipt by the Agency of the application for the licence.

Date Erected: 3rd April 2014

APPENDIX C

Revised Non Technical Summary

Attachment A.1: Non-Technical Summary
A.1.1 Nature of Facility

In April 2012, Indaver Ireland (Indaver) applied to the Agency for a review of their existing waste licence W0167-02 to increase the capacity of their Meath waste-to-energy plant from 200,000 tonnes per annum to 220,000 tonnes per annum (tpa). In addition it was proposed to accept a number of suitable hazardous waste types for treatment in the Meath WTE facility. Most of these are already present in the MSW waste being currently accepted on site, (e.g. paint tins, rags and wipes contaminated with paints or oils), and are treated without difficulty.

In February 2014, the Agency advised that the process for reviewing that licence (W0167-03) has changed in accordance with the amendment of Part IV of the Environmental Protection Agency Act 1992 required under the European Union (Industrial Emissions) Regulations 2013.

This revised Non Technical Summary has therefore been prepared to accompany an application for an Industrial Emissions Directive (IED) Licence. In addition Indaver is also applying to An Bord Pleanala and the Agency for an alteration for a further increase in throughput of 15,000 tonnes per annum of non hazardous wastes for a period of 5 years up until 31st December 2019.

Similar to other conventional solid fuel power plants, the tonnage throughput of waste-to-energy facilities is defined by the size of the boiler (thermal capacity), the average expected CV of the waste and the number of operating hours per annum. In the Meath WTE facility, the boiler has a design capacity of 70MW. If the waste has a low calorific value, then more waste needs to be processed to achieve the same thermal output. Conversely, if waste has a higher calorific value then less waste is processed to achieve the same thermal output.

As Irish waste has a lower calorific value than anticipated, more waste can be processed at the facility than previously expected to meet the thermal capacity of the boiler. As a result, it is now proposed to accept a further additional 15,000 tpa at the Meath WTE facility for a fixed period up until December 2019 bringing the total capacity to 235,000tpa for that period.

The proposed amendments sought by this application in terms of the additional waste types and additional capacity do not result in any significant changes to the nature of the process or waste handling procedures. A planning application has been submitted to An Bord Pleanala for an alteration of the permission under Section 146B for the additional 15,000 tonnes per annum. A copy of the existing Environmental Impact Statement prepared in 2012 and a 2014 EIS review assessment prepared by AWN Consulting ,in light of the alteration, has been submitted to the Bord. Confirmation has been sought from the Bord that a new Environmental Impact Statement is not required. Similarly this will not result in any significant changes to the nature of the operation its process or waste handling procedures.

The facility is located in the townland of Carranstown, approximately 2.7km north east of Duleek in Co. Meath as shown in Figure 1.1. Following a period of c.3years of construction works, the facility accepted its first loads of waste in October 2011. The facility has been operational for almost three years.

A.1.2 Developer Profile

Indaver Ireland Limited (Indaver)
In 1999 Indaver NV acquired 60% of MinChem Environmental Services Limited, a hazardous waste management company operating in Ireland since 1977. In 2003 Indaver NV acquired the remaining 40% of MinChem and in 2004 changed the name of the company to Indaver Ireland Limited. Today, Indaver Ireland Limited, with offices in Carranstown, Dun Laoghaire, Dublin Port and Cork, employs approximately 175 people and is the company that operates the Meath WTE Facility.

Indaver Ireland Limited are a registered Waste Broker (IRE/AG040/12), and also operate an EPA Licenced (W36-02) Waste Transfer Station and Solvent Recovery facility in Dublin Port. In 2010, Indaver Ireland Limited managed approximately 65,000 tonnes of hazardous waste for its customer base, and exported the majority of this amount to other Indaver Group facilities or external treatment centers.

Indaver Ireland

Indaver Ireland, a wholly owned subsidiary of Indaver NV, was established in 1999 to develop waste infrastructure in Ireland. Indaver Ireland developed and built the Meath WTE facility and then transferred this to Indaver Ireland Limited to operate. Indaver Ireland has plans to develop and build a waste to energy facility in Ringaskiddy, County Cork. Information on Indaver's projects can be found on the website www.indaver.ie.

Indaver NV Company Profile
Indaver NV, is the Flemish parent company of Indaver Ireland and Indaver Ireland Limited. Indaver is a waste management company that specialises in integrated waste management for industries and households. Indaver recycles, treats and disposes of both domestic and industrial waste. Advice on the prevention of waste is an integral part of the Indaver service.

The Dutch multi utility company, Delta is the majority shareholder of Indaver NV with a 75% shareholding. Flemish Environmental Holding is the holding company of the Government of Flanders and it has a 16% stake in Indaver NV. The remaining shares are held by a number of leading private companies in Flanders. The Indaver group plays a leading role in the implementation of the Flemish Government Waste Policy. The company employs over 1600 people and has operations in seven European countries. In 2010, Indaver offered a solution for the management of over 5 million tonnes of waste in its own processing installations as well as in external centres.

A.1.3 Classes of Activity

As outlined above, Indaver is required to apply for an Industrial Emissions Directive Licence for the classes of activity below. It is also proposed to accept an additional 15,000 tonnes of non hazardous wastes for a fixed period until 31st December 2019.

A.1.3.a Class of Activity

The classes of activity under the First Schedule of the EPA Acts 1992 (as amended) are;

11.3 Disposal or recovery of waste in incineration plants or in waste co-incineration plants (a) for non hazardous waste with a capacity exceeding 3 tonnes per hour, (b) for hazardous waste with a capacity exceeding 10 tonnes per day

11.4(b) Recovery or a mix of recovery and disposal, of non hazardous waste with a capacity exceeding 75 tonnes per day involving the following activity, (other than activities to which the Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001) apply): (iii) treatment of slags and ashes.

A.1.4 Quantity and Nature of Waste

A.1.4.a Quantity and nature of waste

As outlined above Indaver Ireland applied for the acceptance of an additional 20,000 tonnes of wastes in April 2012 and are now applying for an Industrial Emissions Directive and a further increase in annual tonnage of wastes accepted at the Carranstown Facility. In 2012 it was proposed to increase the annual tonnage accepted from 200,000 to 220,000 tonnes. It is now proposed to accept an additional 15,000 tonnes of non hazardous waste bringing the total to 235,000 tonnes comprising up to 15,000 tpa of suitable hazardous wastes (as detailed below) and the remainder non hazardous wastes as per the EWC codes presented in Schedule A of W0167-02 including Non Hazardous Residual Municipal Wastes, Commercial and Industrial Non Hazardous Wastes, Sewage and Industrial Sludges, Non Hazardous Aqueous Wastes and Construction and Demolition Waste. (Note it is no longer proposed to accept healthcare wastes 18 01 03* as was originally applied for in April 2012).

EWC Description	EWC	EST QTY P.A.
Aqueous Wastes: Rinse waters containing sugar coating solution and pharmaceutical residues, ink and water mixtures, aqueous washings from spill cleanups.	070501* 080308 070101*	Not exceeding 15,000T per annum of these materials.
Contaminated Packaging/Clothing. These waste types from pharmaceutical, computer chip or chemical manufacturers are commonly classified as hazardous waste due to the potential contamination from exposure to the materials that they were designed to protect people from. The level of risk is very low but again because they have been assigned a hazardous EWC code, they must be exported to incinerators abroad. An example being empty paint tins, or rags and wipes contaminated with paint/glues/inks etc	150110* 150202*	
Redundant or Off Specification Materials/Products: Mascara, lipstick and other make-up. Eye drops, eye baths that are out of date. Headache Tablets, Starch and Sugars used for coating capsules & filler powders.	070513* 160303* 160305* 160507* 160508*	
Treated or Contaminated Wood. Once wood/timber has been treated, it can no longer be recycled. If treated with certain preservatives, this then makes the waste “hazardous” even though the same timber is used on decking, furniture, schools etc.	170204* 170903* 191206* 200137* 030104*	
Sludges from waste water treatment plants (municipal & industrial) can currently be treated at the facility provided that they are classified as non hazardous. Some sludges are still spread on land as a fertiliser, but industrial facilities with waste water treatment plants of their own have moved away from this practice in recent years. Due to the possibility (but not the certainty) of certain contaminants being present in some industrial sludges, environmentally conscious companies commonly assign hazardous EWC codes to their sludges as a precaution. Despite the fact that these sludges are no different to other non-hazardous sludges, we cannot accept them at the facility without	070511* 190811*	

further permission to do so.		
Other soils, and sludges similar to waste water treatment sludges from land decontamination projects	170505* 170503* 191303*	
Shredded and pre-mixed Material such as car shred waste and shredded paint containers	191003* 191211*	
Discarded paint and inks: This material is currently mainly disposed of by domestic waste producers at Civic Amenity sites (and exported to similar facilities on the continent)	200127* 200128	
Discarded Oil Filters	160107*	
Waste Oil	130701*	
Return to site of any reject Bottom Ash, FGR & Boiler Ash	190113* 190107* 190112	

Indaver Ireland are seeking to have the Maximum 50,000 tpa restriction on EWC Code 19 12 12 removed, and to be listed alongside Non- Hazardous residual municipal waste. There are large quantities of this material available in the market with very limited treatment options.

Deliveries will only be accepted at the facility from authorised carriers holding relevant waste collection permits. Frequent inspections of waste will be carried out to ensure that all contractors are in compliance with Indaver Ireland's waste acceptance criteria. Any non-conforming waste will be consigned to a designated waste quarantine area for removal from site.

A.1.5 Raw and Ancillary Materials

A.1.5.a Raw and ancillary material use

The main use of raw materials onsite is in the flue gas treatment system, which requires hydrated lime (Ca(OH)2), quicklime (CaO), expanded clay (Dioxorb), activated carbon, nitrogen gas (N2) and a nitrogen oxides (NOx) removal reagent ("SNCR" reagent) of ammonia solution. In order to be conservative for this application a 10% increase in raw material is projected. Raw materials are also required for purifying water in the steam cycle. This typically involves the use of trisodium phosphate (Na3PO4), caustic soda (NaOH), nitric acid) and ammonium hydroxide (NH4OH). Oils are used as both a fuel in the auxiliary burners and diesel generator set and, in smaller quantities, as lubricants for equipment and coolant in transformers.

The site is connected to the 38kV distribution network, to export electricity during normal operations. During normal operations the electrical demand of the site is met with electricity from the generator with the excess electricity exported.

Approximately 8.5m3 per hour of water is extracted from a groundwater well onsite, which is mostly used in the evaporating spray reactor, ash quench, steam cycle and staff/visitor facilities.

With the proposed increased waste acceptance it is projected that the combustion process will produce approximately 73,800 tpa residues in the form of bottom ash, boiler ash and flue gas cleaning ash. Ferrous metals and possibly other materials will be recovered from the bottom ash insofar as practicable and the remaining residues will be sent offsite for recovery and/or disposal.

A.1.6 Site Infrastructure and Operations

A.1.6.a Site Infrastructure

The proposed facility as amended (and altered) will incinerate and recover energy from the residual fraction of non-hazardous household, commercial and industrial waste and sludges and the proposed additional suitable hazardous waste types. As outlined earlier the proposed amendments and alteration will require no changes to the process or facility infrastructure (with the exception of the additional structures at the office block and the maintenance facility as granted planning permission by An Bord Pleanala under ref 17.PA.0026). The facility consists of an incineration plant with energy recovery (a "waste-to-energy" plant) and ancillary services.

The main buildings or structures on the site will include:
- The main process building
- A turbine building with air cooled condensors
- A Spare Parts Facility to be converted to a Centralised Maintenance Facility
- A temporary office structure to be converted to a permanent modular office block
- A transformer compound and ESB substation
- A security building
- A water storage tank and pumphouse

The main process building is approximately 160m long, 40m wide at the widest point and 40m above ground at the highest point. The stack is c.65m tall. The general layout of the facility and the proposed amendments is shown in Figure A.1.a.

Figure A.1a: General layout of the facility

A.1.6.b Process Description

The plant is based on conventional grate furnace technology with a horizontal steam boiler and an advanced flue gas treatment system designed to meet current emissions regulations. The plant will produce 18MW electricity of which approximately 16MW will be exported to the distribution network. A schematic of the process is provided in Figure A.1.b.

Waste acceptance and handling

Grate incineration technology is not suited for all types of hazardous waste. Careful consideration has been given to the process of identifying the proposed additional hazardous waste streams. These are waste streams that Indaver currently export, that would be suitable for the Meath Grate WTE.

Deliveries are only accepted at the facility from authorised carriers holding relevant waste collection permits. It is foreseen that only minor adjustments will have to be made to the existing Waste Acceptance Procedure and Waste Handling Procedure (ENV 01.00 and ENV 02.00 respectively) to reflect the acceptance of the proposed additional waste codes. These procedures are included in the accompanying EIS.

All trucks entering the site report to the weighbridge where they present documentation to staff in the gatehouse and are weighed. Details on all waste entering the facility will be recorded in a tracking system.

Trucks then drive to the enclosed waste acceptance hall and discharge loads into the bunker through one of the five discharge chutes. Liquid wastes proposed will be pumped directly into the furnace.

Frequent inspections of waste take place in the reception hall to ensure all waste is in compliance with Indaver Ireland's waste acceptance criteria. Any nonconforming waste will be consigned to a waste quarantine area in the service yard where it will be held until alternative disposal arrangements are made.

Operators located in the control room overlooking the bunker screen and mix the waste using overhead grab cranes. The blended waste is fed to the highest point in the furnace via hoppers, and forms a plug that isolates the furnace from the bunker.

The reception hall is enclosed and maintained under negative pressure to ensure there are no odour or litter emissions. The bunker has an approximate capacity of 5,600 tonnes, which facilitates the storage of waste for a continuous feed of fuel to the furnace outside of waste acceptance hours. The average retention time of the waste in the bunker is approximately three days.

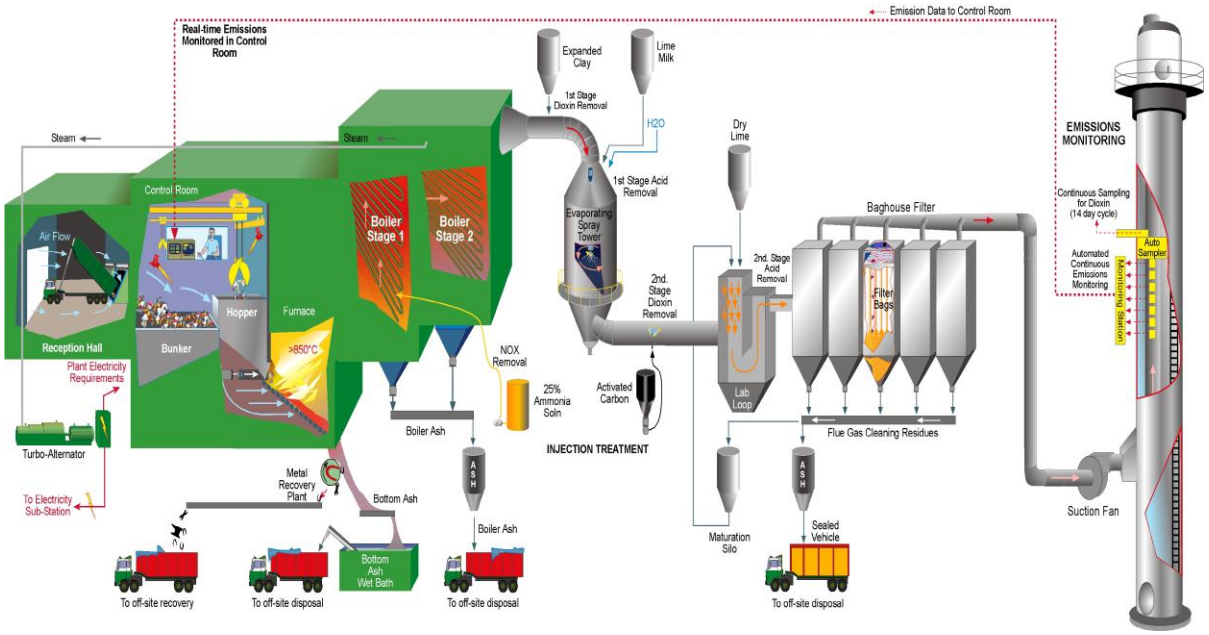


Figure A.1b: Process Schematic

Moving Grate Furnace

The waste in the hoppers is fed to the furnace at a controlled rate by feeding rams. The furnace consist of a grate mechanism, which promotes the complete and efficient combustion of waste through slow and continuous movement, mechanical breakup and effective air distribution.

The combustion of waste on the grate produce both gases and solid residues. The gases pass into a post-combustion chamber situated over the grate, where further combustion takes place. Bottom ash is discharged at the end of the grate into a water bath or “wet de-slagger”. The average residence time of waste in the furnace is approximately one hour.

Oxides of nitrogen (NOx) are treated using Selective Non Catalytic Reduction (SCNR). This involves injecting an SCNR reagent (ammonia) at two levels into the post-combustion chamber.

The control system in the furnace monitors a range of parameters, and makes adjustments to the process to ensure complete combustion and that emissions limits are met.

Boiler

The boiler immediately follows the furnace and has been designed to recover energy from hot flue gases to produce steam. In the process, the flue gases are cooled from about 950^{o}C to about 190^{o}C. The total residence time of gases in the boiler is approximately 30 seconds.

In order to comply with the EU Waste Incineration Directive 2000/76/EC, the boiler is designed to ensure that flue gases are maintained at 850^{o}C for at least 2 seconds after the last air/fuel injection. Auxiliary burners are used where necessary to ensure these conditions are met, for example during startup. The burners are not required during normal operation.

The velocity of gases in the boiler is controlled to minimise dioxin formation and promote the deposition of boiler ash into a hopper for removal.

Electricity generation and Steam Cycle

Steam from the boiler at 40 bar and 400^{o}C is sent to the steam turbine, which drives a generator set to give an electrical output of approximately 18MW. As approximately 2MW is required for use within the plant, the amount available for export to the national grid will be about 16MW.

To maximise energy recovery, steam leaving the turbine is maintained at extremely low pressure by an air cooled condenser. Using air cooled condensers rather than cooling water reduces water consumption and avoids water discharge. The flow of steam through the cycle is approximately 82 tonnes per hour at 100% load..

A small quantity of water is purged constantly from the steam cycle and replaced with fresh makeup water from a water purification (demineralisation) plant. This “boiler blow down” is recycled within the process plant.

Flue gas treatment system

The flue gas treatment system is designed to ensure emissions from the stack are well below limits set by EU Directive 2000/76/EC. The system has been designed to produce no effluent and to minimise the consumption of water, reagents and energy.

The key stages of the treatment system include:

• A first dioxin removal stage, where expanded clay (“Dioxorb”) is injected into a duct at the outlet of the boiler. Any dioxins and heavy metals are adsorbed into the clay for removal in the baghouse filter downstream.

• A spray drier absorber, which cools flue gases and injects lime slurry to react with acid gases such as HCl and SO2. This forms reaction salts, which are also removed in the baghouse filter downstream.

• A second stage dioxin removal and acid gas treatment, which takes place in a reaction duct with the injection of activated carbon, recirculated and reactivated reagent from the baghouse filter and fresh lime absorbent (where necessary). This ensures that any remaining pollutants are captured.

• A high performance baghouse filter, to trap dust and heavy metals. The residue is shaken off the filters into dust collection hoppers. As it still contains some un-reacted lime, most of it can be reactivated and recycled into the reaction duct to minimise the amount of residue going for disposal.

• An induced draught fan and a stack equipped with continuous emissions monitoring systems. The fan maintains the flue gas system under constant pressure to ensure that all gases pass through the system. Treated gases will then leave the 65m stack at a temperature of 140^{o}C.

The flue gas treatment system will be controlled using parameters measured at the stack, and if possible at the boiler exit.

Residues handling
Solid residues will be collected from three different process areas including:
• Bottom ash and grate siftings from the grate furnace. This will constitute the bulk of residue from the facility at c.27% of waste input by weight or 59,400 tpa.
• Boiler ash from the boiler ash hopper. This will constitute about 0.7% of the waste input by weight or 1,500 tpa.
• Flue gas treatment residues from the spray drier absorber and baghouse filter hoppers. This will constitute about 3.7% of the waste input by weight or 8,200 tpa.
As a result of the proposed alteration (i.e. the additional 15,000 tonnes per annum until 2019), the residues will increase pro rata.

The bottom ash and grate siftings will be passed over a sieve to separate out oversized ash particles. Approximately 5,000 tpa ferrous metals will also be separated out for recycling. The remaining ash will be stored in an ash hall with 2,400 tonnes capacity. The water content of the grate siftings and bottom ash will be approximately 25%, which will minimise dust emissions during storage.
Boiler ash and flue gas cleaning residues will be stored in silos in the main process building before being sent offsite. The boiler ash and flue gas cleaning residue transport, storage and truck discharge mechanisms will be specially designed to minimise dust emission.

A.1.6.c Compliance with BAT, the Waste Incineration Directive and Industrial Emissions Directive
The facility as constructed was designed to comply with the Waste Incineration Directive 2000/76/EC which has now been replaced by the Industrial Emissions Directive 2010/75/EU. This design ensures ;
• The facility design is suited to the types of waste to be accepted,
• Designing the plant for maximum energy efficiency in order to optimise electrical output,
• Minimising the generation of residues by designing the combustion process to be as complete as possible, minimising reagent use in the flue gas treatment system and other measures,
• Recovering metals from the bottom ash, and striving to recover and reuse as much as possible from the bottom ash where practicable. All disposal of residues will be to appropriate licensed facilities.

A detailed assessment of the compliance of the facility with BAT is presented in Attachment L of the Waste Licence Application as submitted in 2012.

A.1.6.d Condition of the Site of Installation and Requirement for Baseline Report
In advance of the construction of the facility an extensive site investigation was completed and was included in Chapter 9 of the EIS accompanying the 2012 Waste Licence Application. This assessment is considered to provide sufficient data in relation to the condition of the site of installation (subject to discussion with the Agency). In addition ongoing monitoring and sampling at the facility including monitoring of groundwater and surface water emissions ensures potential hazardous emissions to soil and or water are minimised and avoided where possible.

A.1.7 Fit and Proper Persons requirements
It is submitted that Indaver Ireland have previously demonstrated (via the previous licence applications and related correspondence) that all the requirements of Section 40 (a-i) of the Waste Management Act and the relevant aspects of the Industrial Emissions Licensing Regulations and Environmental Protection Agency Act as amended in terms of fit and proper persons are met by the facility and its operator. The proposed amendments and alteration do not alter Indavers status in relation to any of the requirements.

A.1.8 Nature of Emissions from the Facility
It is one of Indaver's core values to operate in a way that is safe, socially responsible and sustainable with minimal impact on activities and surroundings. This includes avoiding any release, disposal or

emission that might harm the environment. Compliance with national and European regulations will be achieved as a minimum expectation.

A.1.8.a Air emissions

The main emission point from the facility is at the stack through which treated flue gases are discharged. These flue gases consist primarily of carbon dioxide (CO2) and water vapour but may also contain a number of substances regulated by EU and Irish legislation.

The process is designed and operated to ensure typical emission concentrations for all pollutants are well below the limits specified in the Waste Incineration Directive (2000/76/EC) and the limits set out in the Industrial Emissions Directive which has replaced it. This Directive specifies the most stringent emissions limits of any industry. There is one minor emission source from the emergency generator, which is only run in the unlikely event that there is no alternative power source for the plant. It is anticipated that the total annual operation of this generator will not exceed 12 hours per year. There will be no fugitive or uncontrolled emissions to air from the facility.

A.1.8.b Surface Water Emissions

The process has been specifically designed to minimise the use of water and to ensure that there is no process effluent discharge. All water from the main process building is recirculated within the plant.
There is one emission source from the drainage system, consisting of non-contaminated surface water runoff collected from roofs and hardstand areas. This will discharge to a drainage ditch at the western corner of the site at a rate controlled by a hydrobrake system, which will mimic a discharge from agricultural land. Two monitoring stations are in place to detect any contamination and divert it to a separate storage tank, or if this is full, shut off all discharge from the system. A Class II full retention separator for petrol like substances is also in place at the discharge point.

The undeveloped area of the site continues to drain naturally to existing drainage ditches. Waters draining from these areas will not come into contact with any potential contamination from the plant.

A.1.8.c Emissions to Sewer

There are no emissions to sewer from the facility. All sanitary effluent from staff and visitor facilities is treated onsite in a Puraflo treatment system, which discharges treated effluent to ground as described below.

A.1.8.d Groundwater Emissions

There are currently two minor emissions to ground of treated sanitary effluent from staff and visitor areas. It is proposed to install another puraflo system and engineered percolation area (designed and constructed in accordance with EPA guidelines) to serve the new modular office block.

The Puraflo system provides a combination of physical, chemical and biological treatment of the wastewater in a biofibrous medium. It is common to development located in areas with no public sewer facilities such as golf clubs and is certified by the Irish Agrement Board. There will be no fugitive or uncontrolled emissions to ground or groundwater. No hazardous substances are discharged.

A.1.8.e Noise Emissions

There are six potential sources of continuous noise, all from process equipment at various points in the plant. The stack, air cooled condensers and turbine coolers are the most significant continuous sources of noise as they are located externally. These will always be operated below the EPA permitted noise limits as stipulated in the licence. Traffic noise assessments for theadditional 20,000 tonnes and the proposed alteration have found the additional site traffic will have little impact on overall noise in the locality and is therefore not considered to be a significant emission.

A.1.8.f Other Nuisances

To limit nuisances such as vermin, dust emissions and litter, all deliveries, handling and storage activities take place in fully enclosed environments. The main process building is maintained under negative pressure and the facility is kept clean and tidy at all times. Roads, parking areas and service yards are paved and therefore minimise the potential for dust emissions. Measures for limiting the impact of traffic movements on the road network have been complete include road widening and the provision of a ghost island junction to facilitate a turning lane.

The facility is considered to be normal fire risk since the likely fuel source, the waste, has a high moisture content and a slow natural burn rate. The entire plant has been designed for and provided with adequate fire protection and detection systems consistent with the requirements of the Building Regulations, the Code of Practice for Fire Safety in Buildings BS5588 and in consultation with Indaver's insurers. The system include smoke/heat detectors, an alarm system, onsite storage of water for fire fighting purposes and manual call points.

A.1.8.g Abnormal Operating Conditions

In general, abnormal operating conditions such as malfunctions, breakdowns, and other non-conforming events which have the potential to generate environmental incidents will be responded to as required by site staff. As appropriate any incidents arising, will be notified to the EPA and the necessary remedial works carried out. The facility design incorporates the necessary level of standby/duty capacity for critical elements of plant and equipment.

Furthermore a Protocol for Resumption of Activities after abnormal operation or breakdown was submitted to the Agency in November 2013 and is enclosed with the Regulation 9 compliance list provided with this application.

A.1.9 Impacts of Emissions from the Facility

A.1.9.a Air Emissions

Air emissions from the facility via the stack are controlled through both process optimisation and physical / chemical treatment in the flue gas treatment system. These systems have been designed to ensure emissions are significantly lower than the limits set out in the EU Waste Incineration Directive (2000/76/EEC) and Industrial Emissions Directive (which replaces it). Data obtained from the facility since commencement in October 2011 confirms this is the case (Section 5.7 of the EIS).

To limit fugitive emissions from the facility, the main process building is maintained under negative pressure. The storage, treatment and handling operations for waste, consumables and residues are carried out in enclosed environments with filters or closed loop loading systems fitted where necessary. The storage area for consumables, boiler ash and flue gas treatment residues are isolated from the main process building to contain any emissions that may arise from this area.

In the 2006 EIS, 2009 EIS Amendment application, 2012 amendment application the emissions from the plant were assessed based on the maximum allowable limits in the Waste Incineration Directive (which has been replaced by the Industrial Emissions Directive 2010/75/EU) and 110% of the estimated flue gas flow rate at the plant nominal capacity. This, combined with the fact that the actual emissions from the plant are well below the limits modeled, ensures that the assessment of the impact on air quality is robust.

The 2014 Review of the EIS was completed at 110% of actual flue gas flow rates at the plant nominal capacity.

Throughout the various studies, a worst case approach was taken for all input assumptions including emissions, background concentrations and weather conditions. The study demonstrated that all substances emitted from the facility will meet the most stringent ambient air quality standards for the protection of human health and the environment, even where the plant is operating at maximum or abnormal operating conditions.

An odour impact assessment also found that all predicted ground level concentrations will be lower than the recommended EPA limit even during a worst case meteorological year.

An assessment of the potential worst-case impact of dioxin and furan emissions on an individual living near the site (Maximum At Risk Individual) due to inhalation and ingestion was also conducted. This found that the proposed facility would have no significant impact on dioxin and furan intake even considering worst case scenario exposure levels.

A.1.9.b Surface Water Emissions
The surface water discharge consists only of clean surface water runoff and mimics natural discharge rates from agricultural land. There is no discharge of process effluent to surface water.

Any potential contamination identified by the monitoring stations or fire alarm system will automatically divert or will shut off the discharge from the system. All potentially polluting substances will be stored within the main process building and provided with adequate containment. Substances stored in the yard areas will be fully bunded. As a result, the proposed facility will not have any negative impact on surface waters.

A.1.9.c Groundwater Emissions
The only emissions to ground from the facility are treated domestic sewage from Puraflo systems and engineered percolation areas. These systems, designed and constructed in accordance with EPA requirements, discharge into the overburden via a percolation area. There will be no other discharge to ground from the facility. Groundwater extraction for domestic and process water requirements will only increase marginally and will therefore not have any negative impacts on the aquifer.

There will be no fugitive emissions from the facility to ground or groundwater. All areas where potentially polluting materials are handled are either indoors or in bunded, contained and hardstand areas. The waste bunker has been fitted with a double containment system to ensure that in the unlikely event that a leak should occur, the liquids are collected and removed. All bunds will be integrity tested in accordance with the facility licence to confirm they are watertight on a regular basis.

A.1.9.d Noise Emissions
To limit noise emissions, key items of equipment are located within the main process building and acoustic insulation has been installed where required. Due to these and other measures, noise modelling of the proposed development found that operational noise impacts will not exceed EPA recommended limits offsite. Predicted noise levels due to vehicle movements onsite were found to be within recommended criteria and will not have a negative impact on the local community. The predicted noise increase from additional traffic using public roads was estimated at less than 3dB in all instances and its impact is therefore considered to be negligible with a magnitude of change imperceptible. Anti-vibration mounts are used on all plant with the potential to generate significant levels of vibration, which will ensure vibration from operations is not significant.

A.1.9.e Impacts on Ecology
The existing development as constructed between 2009 and 2011 required the removal of arable crop land, improved agricultural grassland and a number of hedgerows in the area. The proposed amendments to the facility entailed only minor construction works. The alteration requires no additional construction . It is therefore not anticipated that there will be any additional impact on the ecology of the surrounding environment.

A.1.10 Monitoring and Sampling

A.1.10.a Air Monitoring and Sampling
Continuous monitoring on stack emissions assesses the following parameters, in line with the requirements of EU Directive 2000/76/EC as replaced by the Industrial Emissions Directive 2010/75/EU:
• Total dust
• Total Organic Carbon (TOC)
• Hydrogen Chloride (HCl)
• Hydrofluoric Acid (HF)
• Sulfur dioxide (SO2)
• Oxides of nitrogen (NOx)
• Carbon Monoxide (CO)
• Temperature
• Oxygen (O2)
Measurements are relayed to the plant computerised control system and the emission registration software system where operators view the results.

In accordance with Schedule C.1.2 of W0167-02, grab samples are also taken from the stack on a quarterly basis to monitor for heavy metals and their compounds. These are taken and measured by an external accredited laboratory. Furthermore, although not required by EU or Irish legislation, a dioxin

sampling system has been installed. This enables the collection of dioxin samples over a fortnightly period for analysis in an independent laboratory.

A.1.10.b Surface Water Monitoring and Sampling
Surface waters pass through two monitoring chambers before being discharged, which will measure for the parameters required by the EPA and the drainage division of Meath County Council. Schedule C.2.3 of licence W0167-02 requires surface water monitoring to be conducted continuously at 2 locations. It is not proposed to conduct any additional surface water monitoring as a result of the proposed amendments.

A.1.10.c Groundwater Monitoring and Sampling
The emission of treated domestic effluent to ground will be monitored on a quarterly basis from a sampling chamber located at the discharge point.

Schedule C.6.1 of licence W0167-02 requires ambient groundwater monitoring to be conducted monthly for a number of indicator parameters and biannually for a wider suite at three locations. It is not proposed to conduct any additional groundwater monitoring as a result of the proposed amendments.

A.1.10.d Noise Monitoring and Sampling
Schedule C.6.2 of licence W0167-02 requires noise monitoring to be conducted annually at 4 locations. It is not proposed to conduct any additional noise monitoring as a result of the proposed amendments.

A.1.10.e Meteorological Monitoring and Sampling
A meteorological monitoring station monitors wind speed and direction and atmospheric pressure at the facility on a continuous basis. Precipitation volume and temperature is also monitored on a daily basis. All measurements meet World Meteorological Organisation Standards and Recommendations.

A.1.11 Waste Arisings

A.1.11.a Handling of Waste Arising
Bottom ash generated by the facility has been classified non-hazardous and consists mostly of inert materials such as glass, sand, metal pieces and stones. Approximately 5,340 tpa ferrous metals will be extracted from the bottom ash generated by the process for recycling, which will be sent off-site to an appropriate and licensed recycling facility.

In the absence of an alternative recovery outlet, bottom ash is currently being sent to a nearby non-hazardous landfill. The volume of ash produced by a waste-to-energy plant requires significantly less landfill capacity to dispose when compared to sending MSW directly to landfill. In addition, due to the inert nature of the ash, it will have a less adverse impact than untreated waste, which is currently being landfilled. However, should the appropriate standards be devised for the reuse of bottom ash components in the construction industry, Indaver will explore options for the further treatment and reuse of bottom ash.

Flue Gas Residues and Boiler ash are currently sent for re-use in the remediation of salt mines in Germany. The increase in residues produced will result in a small increase in traffic movements to dispose/re-use of the residues. The impact of this is discussed in detail in Chapter 13. Based on experience from other grate furnaces in Europe burning additional wastes of the type proposed, the classification of the bottom ash will remain unchanged. The classification of the other residues produced will also remain unchanged.

It is not envisaged to solidify or otherwise pre-treat these residues prior to export as this would only increase their overall mass and volume, thereby increasing the environmental impact of their transport. Indaver Ireland has over 20 years experience of sourcing suitable outlets, both in Ireland and abroad, for the disposal of hazardous waste. Indaver also operates its own hazardous waste landfill in Antwerp, Belgium. Other wastes arising from the facility will include only minor quantities of waste from facility operations and staff and visitor facilities.

A.1.12 Accident Prevention and Emergency Response

It is the policy of Indaver Ireland to attach the greatest importance to the health and safety of all persons employed on and indirectly affected by site activities. The proposed amendments and alteration to the facility require no changes that would affect the continuing non-SEVESO status of the site.

A.1.12.a Accident Prevention and Emergency Response

The facility has been designed in accordance with internationally recognised health and safety standards, design codes, legislation, good practice and experience. To improve safety and minimise the risk of emergency situations, the plant design include:

- manual and automatic controls
- a comprehensive interlock system which can automatically shut down the plant in a safe manner in the event of equipment failure or dangerous situations arising
- fire detection and fighting systems
- backup systems for pumps, control systems, power supply and instruments.

The plant is operated in line with Indaver Ireland's Quality, Environmental, Safety and Health (QESH) system which is accredited to the quality standard ISO 9001, the environmental standard ISO 14001 and the safety standard OHSAS 18001.

Hazard and operability studies have been conducted to systematically identify hazards towards the production of a comprehensive set of standard operating procedures for the plant to help minimise the risk of accident/emergency situations arising. Indaver's experience of successfully operating similar plants in Belgium allows potential hazards to be easily identified. Wherever possible, Indaver strive to minimise human interaction in safety critical operations in order to eliminate the potential for "human factors" to initiate or exacerbate major accidents at the site. The facility is and will continue to be well maintained and cleaned at all times. A preventative maintenance system is in place, which incorporates routine checks and maintenance of key equipment to ensure they remain in good working order. A Site Emergency Plan has been prepared and sets out the response measures to be taken by personnel in the event of an emergency. These measures ensure maximum protection for site employees, visitors and people in other premises near the site to limit damage to property and minimise the impact on site operations and on the environment.

Through recruitment, training, performance management, employee development and succession planning, Indaver Ireland aims to ensure that all members of staff are in possession of the knowledge, skills and experience necessary to perform their jobs to a satisfactory standard.

A.1.13 Closure, Restoration and Aftercare

A.1.13.a Closure, Restoration and Aftercare Measures

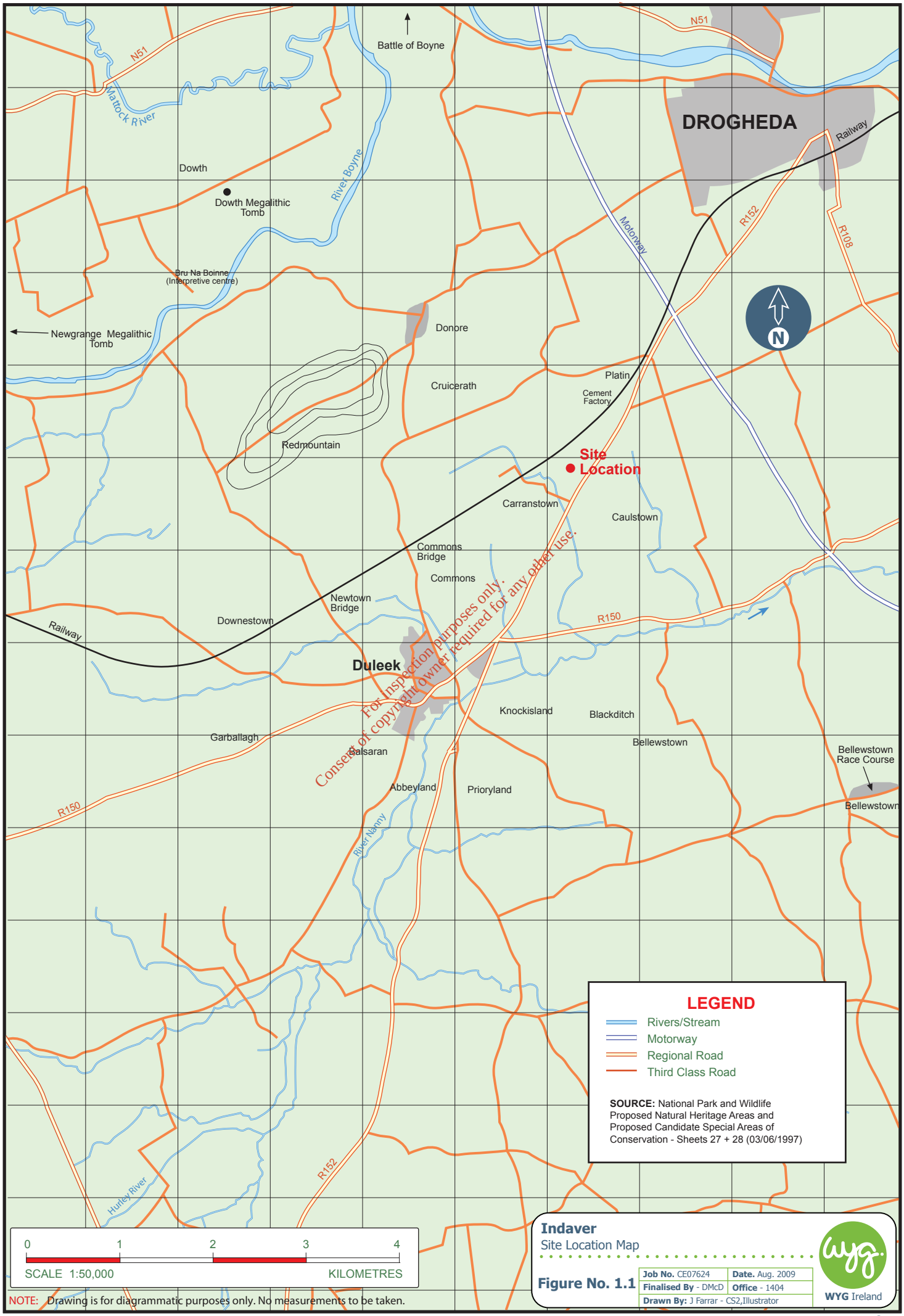
In 2011 an ELRA and CRAMP was prepared by Byrne O'Clerigh on behalf of Indaver to address the requirement for financial provision for the known and unknown liabilities associated with the facility.

The total lifespan of the plant is currently anticipated to be 30 years but this can be extended with maintenance and replacement of equipment. Should circumstances arise whereby it becomes necessary to shut down the facility, Indaver will provide the EPA with a detailed decommissioning plan for its approval before the commencement of any works.

This will include measures to avoid any pollution risk and return the site of operation to a satisfactory state. The absence of materials stored or landfilled onsite will mean that an aftercare management plan is not required.

A.1.14 Definitions and Abbreviations

BAT	Best Available Techniques
BREF	European IPPC Bureau Reference Document
dB	decibel (noise)
EWC	European Waste Catalogue
HAZOP	Hazard and Operability
HSA	Health and Safety Authority
l/s	litres per second
MARI	Maximum At Risk Individual
MJ	Megajoules
MSW	Municipal Solid Waste, including household and commercial waste and street sweepings
MW	Megawatt (of energy)
NCV	Net Calorific Value
PAH	Poly Aromatic Hydrocarbons
PEC	Predicted Emissions Concentration (at ground level)
PVC	Poly vinyl chloride
QESH	Quality, Environmental, Safety and Health
SNCR	Selective Non-Catalytic Reduction
TOC	Total Organic Carbon
tpa	tonnes per annum
tph	tonnes per hour



APPENDIX D

Waste Licence Application Form 2012 (ring binder)

and Article 12, 13 and 16 Responses

TABLE OF CONTENTS

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Waste Licence Application Form

EPA Ref. Nº: *(Office use only)*	

This document does not purport to be and should not be considered a legal interpretation of the provisions and requirements of the Waste Management Acts 1996 to 2011.

Environmental Protection Agency
P.O.Box 5000, Johnstown Castle Estate, County Wexford
Telephone: 053-60600 Fax: 053-60699

Environmental Protection Agency
Application for a Waste Licence

WASTE MANAGEMENT ACTS 1996 to 2003

CONTENTS

INTRODUCTION

A valid application must contain the information prescribed in the Waste Management (Licensing) Regulations 2004 (SI No. 395 of 2004). **The applicant is strongly advised to read the *Application Guidance Notes* for Waste Licensing, available from the EPA.**

The applicant must conform to the format set out in the guidance notes for applications. Each page of the completed application form must be numbered, e.g. *page 5 of 45*, etc. Also duplicated pages from the application form should be uniquely numbered, e.g. page 5(i) of 45, etc. **The basic information should for the most part be supplied in the spaces given in application form** and any supporting documentation should be supplied as attachments, as specified. Consistent measurement units must be used throughout.

The applicant should note that the application form has been structured so that it requires information to be presented in an order of progressive detail.

When it is found necessary, additional information may be provided on supplementary attachments which should be clearly cross referenced with the relevant sections in the main document.

While all sections in the application form may not be relevant to the activity concerned, the applicant should look carefully through all aspects of the form and provide the required information, in the greatest possible detail.

All maps/drawings/plans must be no larger than A3 size and scaled appropriately such that they are clearly legible. In exceptional circumstances, where A3 is considered inadequate, a larger size may be requested by the Agency.

Information supplied in this application, including supporting documentation will be put on public display and open to inspection by any person. Should the applicant consider information to be confidential, this information should be submitted in a separate enclosure bearing the legend " In the event that this information is deemed not to be held as confidential, it must be returned to .....". In the event that information is considered to be of a confidential nature, then the nature of this information, and the reasons why it is considered confidential (with reference to the " Access to Information on the Environment" Regulations) should be stated in the Application Form, where relevant.

It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.

CHECKLIST

Articles 12 and 13 of the Waste Management (Licensing) Regulations, 2004 (S.I. No. 395 of 2004) set out the information which must, in all cases, accompany a waste licence application. In order to ensure that the application fully complies with the legal requirements of Articles 12 and 13 of the 2004 Regulations, all applicants should **complete** the following.

In each case, refer to the attachment number(s) of your application which contain(s) the information requested in the appropriate sub-article.

Article 12(1) In the case of an application for a waste licence, the application shall -

(a) give the name, address and, where applicable, any telephone number and telefax of the applicant (and, if different, the operator of the facility concerned), the address to which correspondence relating to the application should be sent and, if the applicant or operator is a body corporate, the address of its registered office or principal office,

LOCATION	Section B.1 Application Form	
CHECKED	**Applicant** ☒	**Official** ☐

(b) give the name of the planning authority in whose functional area the relevant activity is or will be carried on,

LOCATION	Section B.3 Application Form	
CHECKED	**Applicant** ☒	**Official** ☐

(c) in the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled,

LOCATION	Not Applicable	
CHECKED	**Applicant** ☒	**Official** ☐

(d) give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the facility or premises to which the application relates,

LOCATION	Section B.2 Application Form	
CHECKED	**Applicant** ☒	**Official** ☐

(e) describe the nature of the facility or premises concerned, including the proposed capacity of the facility or premises, and in the case of application in respect of a landfill of waste, the requirements specified in Annex 1 of the Landfill Directive,

LOCATION	Attachment D.2 & Chapter 5 of EIS
CHECKED	**Applicant** ☒ **Official** ☐

(f) specify the class or classes of activity concerned, in accordance with the Third and Fourth Schedules of the Act[1] and, in the case of an application in respect of the landfill of waste, specify the class of landfill in accordance with Article 4 of the Landfill Directive,

LOCATION	Section B.7 Application Form	
CHECKED	**Applicant** ☒	**Official** ☐

(g) specify, by reference to the relevant European Waste Catalogue codes as presented by Commission Decision 2000/532/EC of 3 May 2000, the quantity and nature of the waste or wastes which will be treated, recovered or disposed of,

LOCATION	Section H and Chapter 5 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(h) specify the raw and ancillary materials, substances, preparations, fuels and energy which will be utilised in or produced by the activity,

LOCATION	Section G	
CHECKED	**Applicant** ☒	**Official** ☐

(i) describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems and operating procedures for the activity,

LOCATION	Section D, E, F and Chapter 5 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(j) provide information for the purpose of enabling the Agency to make a determination in relation to the matters specified in paragraphs (a) to (g) of section 40(4) of the Act,

LOCATION	Section L	
CHECKED	**Applicant** ☒	**Official** ☐

[1] Note that the Third and Fourth Schedules of the Act were amended by the European Communities (Waste Directive) Regulations, 2011.

(k) give particulars of the source, location, nature, composition, quantity, level and rate of emissions arising from the activity and, where relevant, the period or periods during which such emissions are made or are to be made,

LOCATION	Section E	
CHECKED	**Applicant** ☒	**Official** ☐

(l) give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit or abate such emissions,

LOCATION	Section E	
CHECKED	**Applicant** ☒	**Official** ☐

(m) identify monitoring and sampling points and indicate proposed arrangements for the monitoring of emissions and the environmental consequences of any such emissions,

LOCATION	Section E and I	
CHECKED	**Applicant** ☒	**Official** ☐

(n) describe any proposed arrangements for the prevention, minimisation and recovery of waste arising from the activity concerned,

LOCATION	Section H and Chapter 5 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(o) describe any proposed arrangements for the off-site treatment or disposal of solid or liquid wastes,

LOCATION	Section H and Chapter 5 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(p) describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected emissions and minimise the impact on the environment of any such emission,

LOCATION	Section J	
CHECKED	**Applicant** ☒	**Official** ☐

(q) describe the proposed measures for the closure, restoration, remediation or aftercare of the facility concerned, after the cessation of the activity in question,

LOCATION	Section L	
CHECKED	**Applicant** ☒	**Official** ☐

(r) in the case of an application in respect of the landfilling of waste, give particulars of –

(i) such financial provision as is proposed to be made by the applicant, having regard to the provisions of Articles (7)(i) and (8)(a)(iv) of the Landfill Directive and section 53(1) of the Act, and

LOCATION	Not Applicable	
CHECKED	**Applicant** ☒	**Official** ☐

(ii) such charges as are proposed or made, having regard to the requirements of section 53A of the Act,

LOCATION	Not Applicable	
CHECKED	**Applicant** ☒	**Official** ☐

(s) state whether the activity is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazards involving Dangerous Substances) Regulations, 2000 (S.I. No. 476 of 2000) apply,

LOCATION	Chapter 5 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(t) in the case of an activity which gives rise or could give rise to an emission into an aquifer containing the List I and II substances specified in the Annex to Council Directive 80/68/EEC of 17 December 1979, describe the existing or proposed arrangements necessary to give effect to Articles 3,4,5,6,7,8,9 and 10 of the aforementioned Council Directive,

LOCATION	Section E and Chapters 9,10 and 11 of EIS	
CHECKED	**Applicant** ☒	**Official** ☐

(u) include a non-technical summary of information provided in relation to the matters specified in paragraphs (a) to (t) of this sub-article,

LOCATION	Attachment A	
CHECKED	**Applicant** ☒	**Official** ☐

Article 12(4) Without prejudice to Article 13(1) and (2), an application for a licence shall be accompanied by -

(a) a copy of the relevant page of the newspaper(s) in which the notice in accordance with article 6 has been published,

LOCATION	Section B	
CHECKED	**Applicant** ☒	**Official** ☐

(b) a copy of the text of the notice or notices erected or fixed in accordance with article 7,

LOCATION	Section B	
CHECKED	**Applicant** ☒	**Official** ☐

(c) where appropriate, a copy of the notice given to a local planning under article 9,

LOCATION	Section B	
CHECKED	**Applicant** ☒	**Official** ☐

(d) a copy of such plans (appropriately scaled and no larger than A3 size), including a site plan or plans and location map or maps, and such other particulars, reports and supporting documentation as are necessary to identify and describe, as appropriate -
(i) the position of the notice in accordance with article 7,

LOCATION	Section B	
CHECKED	**Applicant** ☒	**Official** ☐

(ii) the point or points from which emissions are made or are to be made, and

LOCATION	Section and Section F	
CHECKED	**Applicant** ☒	**Official** ☐

(iii) the point or points at which monitoring and sampling are undertaken or are to be undertaken,

LOCATION	Section F	
CHECKED	**Applicant** ☒	**Official** ☐

(e) such fee as is appropriate having regard to the provisions of articles 40 and 41.

INCLUDED Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐

Article 12(5)(a) & (b) An application shall comprise 1 signed original of the application and 2 copies in hardcopy format plus 2 copies of all files in electronic searchable PDF format on CD-Rom.

HARDCOPIES PROVIDED Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐

CD OF PDF FILES PROVIDED? Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐

Article 13 Where a development requires an Environmental Impact Assessment to be carried out, 1 signed original and 2 copies in hardcopy format of the environmental impact statement plus 16 copies in electronic searchable PDF format on CD-ROM should accompany this application.

EIA REQUIRED ? Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐
3 HARD COPIES OF EIS INCLUDED ? Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐
16 CD versions of EIS, as PDF files, PROVIDED? Y/N	Y	
CHECKED	**Applicant** ☒	**Official** ☐

PROCEDURES

It is recommended that pre-application consultations with the Agency are undertaken before a formal submission of the waste licence application.

The procedure for making and processing of applications for waste licences, and for the processing of reviews of such licences, appear in the Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) and are summarised below. The application fees that shall accompany an application are listed in the Second Schedule to the Regulations.

Prior to submitting an application the applicant must publish in a local newspaper, and erect on site, a notice of intention to apply. An applicant, other than a local authority in whose functional area the development is located, must also notify the Local Planning Authority, in writing, of their intention to apply.

An application for a licence must be submitted on the appropriate form (available from the Agency) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form, supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each emission point. These should be simple, logical, and traceable throughout the application.

The application form is divided into a number of sections of related information. The purpose of these divisions being to facilitate both the applicant and the Agency in the provision of the information and its assessment. Attachments should be clearly numbered, titled and paginated and must contain the required information as set out in the application form. Additional attachments may be included to supply any further information supporting the application. Any references made should be supported by a bibliography.

All questions should be answered. No waste management facility is exactly the same and hence each application will require different information. It is therefore possible that some of the sections of this application form may not be relevant to the activity concerned. **Where information is requested in the application form, which is not relevant to the application, the words "not applicable" should be clearly written on the form. The abbreviation "N/A" should not be used.**

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation will be put on public display and be open to inspection by any person. **Should the applicant**

consider information to be confidential, then the nature of this information, and the reasons why it is considered confidential should be clearly stated in an attachment to the Application Form. This information should be submitted in a separate enclosure bearing the legend "In the event that this information is deemed not to be held as confidential, it must be returned to (representative of the applicant)".

Applicants should be aware that a contravention of the conditions of a waste licence is an offence under Section 39 of the Waste Management Acts 1996 to 2003.

The provision of information in an application for a waste licence which is false or misleading is an offence under Section 45 of the Waste Management Acts 1996 to 2003.

Note: Drawings. The following guidelines are included to assist applicants:

- *All drawings submitted should be titled and dated.*
- *They should have a **unique reference number** and should be signed by a clearly identifiable person.*
- *They should indicate a scale and the **direction of north**.*
- *All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the site location can be to a scale of between 1:50 000 to 1:126 720. All drawings should, however, be A3 or less and of an appropriate scale such that they are clearly legible. Provide legends on all drawings and maps as appropriate.*

The provision of information in an application for a waste licence, which is false or misleading, is an offence under s45 of the Acts.

SECTION A NON-TECHNICAL SUMMARY

A Non-Technical Summary is to be submitted. The summary should include information on those aspects outlined in the Guidance Note and must comply with the requirements of Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004.

The Non-Technical Summary should form **Attachment A.1**.

SECTION B GENERAL

B.1 Applicant's Details

Name*:	Indaver Ireland Limited
Address:	4th Floor, Block 1
	West Pier Business Campus
	Old Dunleary Road
	Dun Laoghaire, Co. Dublin
Tel:	01 280 4534
Fax:	01 280 7865
e-mail:	info@indaver.ie

* This should be the name of the applicant which is current on the date this Waste Licence Application is lodged with the Agency. It should be the name of the legal entity (which can be a limited company or a sole trader). A trading/business name is not acceptable.

Name and Address for Correspondence

Only application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant.

Name:	Conor Jones
Address:	Unit 11
	South Ring Business Park
	Kinsale Road, Cork
Tel:	021 601 9488
Fax:	021 470 4250
e-mail:	Conor.jones@indaver.ie

Address of registered or principal office of Body Corporate (if applicable)

Address:	4th Floor, Block 1
	West Pier Business Campus
	Old Dunleary Road
	Dun Laoghaire, Co. Dublin
Tel:	01 280 4534
Fax:	01 280 7865
e-mail:	info@indaver.ie

If the applicant is a body corporate, the following information must be attached as **Attachment B1**:

a) a Certified Copy of the Certificate of Incorporation or Memorandum and Article of Association;
b) the Company's Registration Number from the Companies Registry Office; and
c) a list of the Company Directors.

State the interest of the applicant in the land which is subject to the application. The applicant is (please check):

Landowner	☒
Lessee	☐
Prospective Purchaser	☐
Other (please specify)	

Name and address of all occupiers of the land on which the Activity is situated (if different from applicant named above).

Name: As above
Address:

Tel:
Fax:
e-mail:

Name and address of the current* owner(s) and lessees of the land, buildings and ancillary plant on which the activity is or will be situated (if different from applicant named above).
An appropriately scaled drawing(≤A3) showing the above details should be included in **Attachment B1.**

Name: As above
Address:

Tel:
Fax:
e-mail:
*Current at the time the application is submitted

B.2 Location of Activity

Name:	Indaver Ireland Limited
Address*:	Carranstown
	Duleek
	Co. Meath
Tel:	01 280 4534
Fax:	01 280 7865
e-mail:	info@indaver.ie

* Include any townland

National Grid Reference (8 digit 4E,4N)	3063E, 2709N

Location maps (≤A3), appropriately scaled, with legible grid references should be enclosed in **Attachment B.2.** The site boundary must be outlined on the map in colour.

B.3 Planning Authority

Give the name of the planning authority in whose functional area the activity is or will be carried out.

Name:	Meath County Council
Address:	County Hall
	Navan
	Co. Meath
Tel:	046 909 7000
Fax:	046 909 7001

Has the Planning Authority received written notification from the applicant of the application to The Environmental Protection Agency for a Waste Licence under Article 9 of the Waste Management (Licensing) Regulations?

Planning Authority notified	**Yes** ☒
	No ☐

Planning Permission relating to this application:-

has been obtained	☐
is being processed	☐
is not yet applied for	☒
is not required	☐

Local Authority Planning File Reference Nº:	

Attachment B.3 should contain ***the most recent*** planning permission, including a copy of ***all*** conditions, and the required copies of any EIS should also be enclosed. For existing activities, **Attachment B.3** should also contain copies of of the most recent waste licence and any permits in force at the time of submission. Where planning permission is not required for the development, provide reasons, relevant correspondence, *etc*.

B.4 Sanitary Authority

In the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority or other body, give the name of the sanitary authority in which the sewer is vested or by which it is controlled and the waste water treatment plant (if any) to which the sewer discharges.

Name:	Not Applicable
Address:	
Tel:	
Fax:	

The applicant must enclose, as **Attachment B.4,** a copy of any effluent discharge licence and/or agreement between the applicant and the body with responsibility for the sewer.

B.5 Other Authorities

The applicant should tick the appropriate box below to identify whether the activity is located within the Shannon Free Airport Development Company (SFADCo.) area.

Within SFADCo. Area	**Yes** ☐	**No** ☒

The applicant should indicate the **Health Board Region** where the activity is or will be located.

Name:	Carmel Lynch
Address:	Meath Community Services
	Navan
	Co. Meath
Tel:	046 90 78818
Fax:	

B.6 Notices and Advertisements

Articles 6 and 7 of the Waste Management (Licensing) Regulations 2004 requires all applicants to advertise the application in a newspaper and by way of a site notice. See *Guidance Note.*

Attachment B.6 should contain a copy of the site notice and an appropriately scaled drawing (≤A3) showing its location on site. **The original application must include the complete newspaper in which the advertisement was placed**. The relevant page of the newspaper containing the advertisement should be included with the original and three copies of the application.

B.7 Type of Waste Activity, Tonnages & Fees

B.7.1 Specify the class or classes of activity in Table B.7.1, in accordance with the Third Schedule or Fourth Schedule to the Waste Management Acts 1996 to 20010, as amended by the European Communities (Waste Directive) Regulations, 2011, to which the application relates (check the relevant box(es) and mark the principal activity with a 'P').

Attachment B.7 should identify the principle activity and include a brief technical description of each of the other activities specified. **There can only be one principal activity.**

TABLE B.7.1 THIRD AND FOURTH SCHEDULES OF THE WASTE MANAGEMENT ACTS 1996 TO 2010

Waste Management Acts 1996 to 2010					
Third Schedule Waste Disposal Operations		**Y/N**	**Fourth Schedule Waste Recovery Operations**		**Y/N**
D 1	Deposit into or on to land (e.g. including landfill, etc.).		R 1	Use principally as a fuel or other means to generate energy: This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above: - 0.60 for installations in operation and permitted in accordance with applicable Community acts before 1 January 2009, - 0.65 for installations permitted after 31 December 2008, using the following formula, applied in accordance with the reference document on Best Available Techniques for Waste Incineration: Energy efficiency = (Ep - (Ef + Ei)/ (0.97x(Ew+Ef) where— 'Ep' means annual energy produced as heat or electricity and is calculated with energy in the form of electricity being multiplied by 2.6 and heat produced for commercial use multiplied by 1.1(GJ/year), 'Ef' means annual energy input to the system from fuels contributing to the production of steam (GJ/year), 'Ew' means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/year), 'Ei' means annual energy imported excluding Ew and Bf(GJ/year), '0.97' is a factor accounting for energy losses due to bottom ash and radiation.	P
D 2	Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.).		R 2	Solvent reclamation/regeneration.	
D 3	Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.).		R 3	Recycling /reclamation of organic substances which are not used as solvents (including composting and other biological transformation	

				processes), which includes gasification and pyrolisis using the components as chemicals.	
D 4	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.).		R 4	Recycling/reclamation of metals and metal compounds.	Y
D 5	Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.).		R 5	Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.	Y
D 6	Release into a water body except seas/oceans.		R 6	Regeneration of acids or bases.	
D 7	Release to seas/oceans including sea-bed insertion.		R 7	Recovery of components used for pollution abatement.	
D 8	Biological treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12.		R 8	Recovery of components from catalysts.	
D 9	Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcinations, etc.).	Y	R 9	Oil re-refining or other reuses of oil.	
D 10	Incineration on land.		R 10	Land treatment resulting in benefit to agriculture or ecological improvement.	
D 11	Incineration at sea (this operation is prohibited by EU legislation and international conventions).		R 11	Use of waste obtained from any of the operations numbered R 1 to R 10.	
D 12	Permanent storage (e.g. emplacement of containers in a mine, etc).		R 12	Exchange of waste for submission to any of the operations numbered R 1 to R 11 (if there is no other R code appropriate, this can include preliminary operations prior to recovery including pre-processing such as, amongst others, dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11).	
D 13	Blending or mixing prior to submission to any of the operations numbered D 1 to D 12 (if there is no other D code appropriate, this can include preliminary operations prior to disposal including pre-processing such as, amongst others, sorting, crushing, compacting, pelletising, drying, shredding, conditioning or separating prior to submission to any of the operations numbered D1 to D12).		R 13	Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y
D 14	Repackaging prior to submission to any of the operations numbered D 1 to D 13.	Y			
D 15	Storage pending any of the operations numbered D 1 to D 14 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced).	Y			

TABLE B.7.2 MAXIMUM ANNUAL TONNAGE

The maximum annual tonnage of waste to be handled at the site should be indicated and the year to which the quantity relates indicated.

Maximum Annual Tonnage (tpa)	220,000
Year	c.30years from commencement date

B.7.3 FEES

State each class of activity for which a fee is being submitted as per Part I of the Second Schedule of the Waste Management (Licensing) Regulations 2004, S.I. No. 395 of 2004. Note: two fees are required if disposal and recovery are to occur.

Waste Activity	**Fee (in €)**
Disposal of Waste (appropriate disposal activity 1.1 – 3.3)	22,500
Recovery of Waste (4)	6,000
	28,500

TABLE B.7.4 (FOR A LANDFILL APPLICATION)

STATE WHICH OF THE FOLLOWING IS RELEVANT TO THE CURRENT APPLICATION.

(a) landfill for hazardous waste	☐
(b) landfill for non-hazardous waste	☐
(c) landfill for inert waste	☐

B.8 SEVESO II DIRECTIVE

State whether the activity is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazards involving Dangerous substances) Regulations, 2000 (S.I. No. 476 of 2000), apply.

Regulations Apply	Yes ☐	No ☒

If yes, **Attachment B.8** should include the relevant details**.** Supporting information, as well as copies of any Hazardous Operation Studies (HAZOP) carried out for the site, should also be included in the attachment.

SECTION C MANAGEMENT OF THE FACILITY

Advice on completing this section is provided in the *Guidance Note*.

C.1 Technical Competence and Site Management

This information should form **Attachment C 1**.

Details of the applicant's experience and qualifications, along with that of other relevant employees, should be summarised as shown below. Statements of duties, responsibilities, experience and qualifications should be submitted for each position named below. Additional information, including the management structure and an organisational chart, should be included in **Attachment C 1.**

Name	Position	Duties and Responsibilities	Experience /Qualifications
		Please Refer to Attachment C1	

C.2 Environmental Management System

Attachment C 2 should contain the Environmental Management System (EMS) details required.

Please refer to Attachment C.2

C.3 Hours of Operation

Attachment C 3 should contain details of hours of operation for the waste facility, civic waste facilities and other facilities.

(a) Proposed hours of operation.
(b) Proposed hours of waste acceptance/handling.
(c) Proposed hours of any construction and development works at the facility and timeframes (required for landfill facilities).
(d) Any other relevant hours of operation expected.

Please refer to Attachment C.3

C.4 Conditioning Plan

Address as **Attachment C 4,** in the case of a LANDFILL Application, and only for the review of a Landfill Waste Licence.

SECTION D INFRASTRUCTURE & OPERATION

D.1 Infrastructure

Complete the following table detailing the site infrastructure. **Attachment D 1** should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.1. Additional advice on completing this section is provided in the application *Guidance Note*.

Please refer to Attachment D.1

Table D.1. Infrastructure		y/n	Comments
D.1.a	**Site security arrangements including gates and fencing**	y	
D.1.b	**Designs for site roads**	y	
D.1.c	**Design of hardstanding areas**	y	
D.1.d	**Plant**	y	
D.1.e	**Wheel-wash**	n	Not required
D.1.f	**Laboratory facilities**	n	Not required
D.1.g	**Design and location of fuel storage areas**	y	
D.1.h	**Waste quarantine areas**	y	
D.1.i	**Waste inspection areas**	y	
D.1.j	**Traffic control**	y	
D.1.k	**Sewerage and surface water drainage infrastructure**	y	
D.1.l	**All other services**	y	
D.1.m	**Plant sheds, garages and equipment compound**	y	
D.1.n	**Site accommodation**	y	
D.1.o	**A fire control system, including water supply**	y	
D.1.p	**Civic amenity facilities**	n	Not Required
D.1.q	**Any other waste recovery infrastructure**	n	Not Required
D.1.r	**Composting infrastructure**	n	Not Required
D.1.s	**Construction and Demolition waste infrastructure**	n	Not Required
D.1.t	**Incineration infrastructure (if applicable).** **Provide information to fulfil Article 4 (2) & (3) of the Incineration of Waste Directive**	Y	
D.1.u	**Any other infrastructure**	n	

D.2 Facility Operation

In **Attachment D 2** describe the plant, methods, processes and operations of the waste facility, as required by the *Guidance Note*.

Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

LANDFILLS

The following Sections D3 to D7 should only be completed for Landfill Applications. Reference should be made to the Agency landfill manual 'Landfill Site Design (2000)' when completing this section.

D.3 Liner System

Complete the following table regarding the liner system to be used for the landfill/landfill extension and detail the information requested as **Attachment D.3**. ***Items D3c to D3g should only be completed for immediate projects only (ie Years 1 & 2).*** A schedule of Liner construction activities for the medium to long term need only be listed in item D3a below, since Condition 3 of any licences granted will provide reporting requirements for any future projects.

TABLE D.3 LINER SYSTEM

		y/n	Comments
D.3.a	**Provide information to fulfil Annex 1 of the Landfill Directive**		
D.3.b	**What type of liner system is specified?**		
D.3.c	**Has a Quality Control Plan been specified?**		
D.3.d	**Has a Quality Assurance Plan been specified?**		
D.3.e	**Have independent, third-party supervision, testing and controls been specified?**		
D.3.f	**Have basal gradients for all cells and access ramps to the cells been designed?**		
D.3.g	**Has a leak detection survey been specified?**		

D.4 Leachate Management

Complete the following table detailing leachate management arrangements. Further information should be included in **Attachment D.4.**

TABLE D.4.1 LEACHATE MANAGEMENT ARRANGEMENTS

		y/n	Comments
D.4.a	**Is there a Leachate Management Plan?**		
D.4.b	**Have annual quantities of leachate been calculated?**		
D.4.c	**Has the total quantity of leachate been calculated?**		
D.4.d	**Have the size of the cells been specified taking account of the water balance calculations?**		
D.4.e	**Has a leachate collection system been specified?**		
D.4.f	**Has a leachate storage system been specified?**		
D.4.g	**Has a system for monitoring the level of leachate in the waste been designed?**		
D.4.h	**Is leachate recirculation proposed/practised?**		
D.4.i	**Has leachate treatment onsite been specified?**		
D.4.j	**Has leachate removal been specified?**		

D 5 Landfill Gas Management

All landfill sites should have suitable arrangements for the management of landfill gas. **Attachment D.5** should contain the appropriate documentation. Information provided should follow the sequence, and use the headings, established in Table D.5. ***Items D5g to D5m should only be completed for immediate or current gas collection projects only (ie Years 1 & 2).*** A schedule of gas management aspects for the medium to long term need only be listed in item D5f below, since Condition 3 of any proposed decision/licence will provide reporting requirements for any future projects.

Table D.5. Landfill Gas Management

		y/n	Comments
D.5a	**Is there a Landfill Gas Management Plan?** **Provide estimates of the volumes of landfill gas which will be produced by the waste disposed of in the site for the next 20 years, and compare to the EPER list for methane:**		
D.5b	**Is there a passive venting system?**		
D.5c	**Does the passive system cover all of the filled area?**		
D.5d	**Have gas alarm systems been installed in the site buildings?**		
D.5e	**Have measures been installed to prevent landfill gas migration (e.g. barriers)?**		
D.5f	**Has a time-scale been proposed for the installation of landfill gas infrastructure?**		
D.5g	**Is gas flaring undertaken at the site?**		
D.5h	**Is there an active (i.e., pumped) landfill gas extraction system?**		
D.5i	**Does the active system cover all of the filled area?**		
D.5j	**Is landfill gas used to generate energy at the site?**		
D.5k	**Have emissions from the flarestack and utilisation plant been assessed for source, composition, quantity and level and rate?**		
D.5l	**Has a maintenance programme for the control system been specified?**		
D.5m	**Has a condensate removal system been designed?**		

D.6 Capping System

Complete the following table detailing the design of the capping system. **Attachment D.6** should contain the appropriate documentation. ***Items D6e to D6k should be completed for immediate projects only (ie Years 1 & 2).*** Condition 10 of any proposed decision/licence will provide reporting requirements for capping requirements beyond this timeframe.

Table D.6 Capping System

		y/n	Comments
D.6a	**Has the daily cover been specified?**		
D.6b	**Has the intermediate cover been specified?**		
D.6c	**Has the temporary capping been specified?**		
D.6d	**Has the Capping System been designed and does it meet the requirements of the Landfill Directive Annex 1 (3.3)?**		
D.6e	**Does the Capping System include a flexible membrane liner?**		
D.6f	**Have all capping materials been specified?**		
D.6g	**Has a Method Statement for construction been produced?**		
D.6h	**Has a Quality Control Plan been produced?**		
D.6i	**Has a Quality Assurance Plan been produced?**		
D.6j	**Has a programme for monitoring landfill stability been developed?**		
D.6k	**Has a programme for monitoring landfill settlement been developed?**		

SECTION E EMISSIONS

Give particulars of the source, location, nature, composition, quantity, level and rate of emissions arising from the activity and, where relevant, the period or periods during which such emissions are made or are to be made.

The applicant should address in particular any emission point where the substances listed in the Schedule of S.I. 394 of 2004 are emitted.

E.1 Emissions to Atmosphere

Details of all point emissions to atmosphere should be supplied. Table E.1.(i) (for Landfill Gas Flare emissions) must be completed for all landfills with a flare. Complete Table E.1(ii) and E.1(iii) for all other main emission points, including stack sources (incinerator stacks, landfill gas utilisation plants, air handling unit emissions etc.). Complete Table E.1(iv) for minor/fugitive/ground emission points.
Please refer to Attachment E.1

E.2 Emissions to Surface Waters

Attachment E.2 Tables E.2(i) and E.2(ii) should be completed where relevant.
Please refer to Attachment E.2

E.3 Emissions to Sewer

Attachment E.3 Tables E.3(i) and E.3(ii) should be completed, where relevant.
Not Applicable

E.4 Emissions to Groundwater

Describe the existing or proposed arrangements necessary to give effect to Articles 3,4,5,6, and 7 of Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution by certain dangerous substances.

Table E.4(i) should be completed, as relevant, for each source.

Supporting information should form **Attachment E.4**
Please refer to Attachment E.4

E.5 Noise Emissions

Give particulars of the source, location, nature, level, and the period or periods during which the noise emissions are made or are to be made.

Table E.5(i) should be completed, as relevant, for each source.

Supporting information should form **Attachment E.5**
Please refer to Attachment E.5

E.6 Environmental Nuisances

Attachment E.6 should contain the appropriate documentation. Information provided should follow the sequence, and use the headings as relevant established in Table D.6. Additional advice on completing this section is provided in the *Guidance Note*.

Please refer to Attachment E.6

TABLE E.6 ENVIRONMENTAL NUISANCES

Bird Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Dust Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Fire Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Litter Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Traffic Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Vermin Control	**Control method specified**	**yes** ☒	**no** ☐	**not applicable** ☐
	Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐
Road Cleansing	**Control method specified**	**yes** ☐	**no** ☐	**not applicable** ☒
	Attachment included	**yes** ☐	**no** ☐	**not applicable** ☒

SECTION F CONTROL & MONITORING

F.1: Treatment, Abatement and Control Systems

Describe the proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the installation/facility. Details of treatment/abatement systems (air and effluent emissions) should be included, together with appropriately scaled schematics (≤A3) as appropriate.

For each Emission Point identified complete Table F.1 of the Annex, and include detailed descriptions and appropriately scaled schematics (≤A3) of all abatement systems.

Attachment F.1 should contain any supporting information.
Please refer to Attachment F.1

F.2- F. 9. Monitoring and Sampling Points

Programmes for environmental monitoring should be submitted as part of the application. These programmes should be provided as **Attachments F.2 to F.6** and meet the advice published by the Agency in the relevant BAT Note. For Landfills the additional **Attachments F.7 to F.8** should be completed. Furthermore for a landfill application the applicant must refer to the Agency *Landfill Monitoring Manual (2003)* for further details on monitoring requirements for proposed facilities.
Include details of monitoring/sampling locations and methods.
Please refer to Attachment F.2-F9 - Environmental Monitoring to continue as per existing licence W0167-02

F.2 Air
- to include Dust, Odour

Monitoring Arrangements specified	**yes** ☒	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☒	**no** ☐	**not applicable** ☐
Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

F.3 Surface Water

Monitoring of surface water shall be carried out at not less than two points, one upstream from the waste facility and one downstream.

Monitoring Arrangements specified	**yes** ☒	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☒	**no** ☐	**not applicable** ☐
Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

F.4 Sewer Discharge

Monitoring of sewer discharge shall be carried out at the point specified by the local authority/Agency.

Monitoring Arrangements specified	**yes** ☐	**no** ☐	**not applicable** ☒
Monitoring points identified, (plus 12-figure grid references)	**yes** ☐	**no** ☐	**not applicable** ☒
Attachment included	**yes** ☐	**no** ☐	**not applicable** ☒

F.5 Groundwater

Groundwater monitoring is required at all landfill facilities; and certain other waste facilities depending on waste activities and the underlying aquifer vulnerability.

Monitoring Arrangements specified	**yes** ☒	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☒	**no** ☐	**not applicable** ☐
Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

F.6 Noise

Monitoring Arrangements specified	**yes** ☒	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☒	**no** ☐	**not applicable** ☐
Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

F.7 Meteorological Data

Monitoring Arrangements specified	**yes** ☒	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☒	**no** ☐	**not applicable** ☐
Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

Application for Landfills require the additional Attachments F.7 to F.8, to be completed:

Not Applicable

F.8 Leachate

Monitoring Arrangements specified	**yes** ☐	**no** ☐	**not applicable** ☐
Monitoring points identified, (plus	**yes** ☐	**no** ☐	**not applicable** ☐

12-figure grid references)	
Attachment included	**yes** ☐ **no** ☐ **not applicable** ☐

F.9 Landfill Gas

Complete each of the following tables to show whether information has been included on aspects of landfill gas monitoring. **Attachment F.9** should also contain information to show whether the data given in Tables F.9.(a) and F.9(b) below represents actual or anticipated data. Complete Table F.9 as follows:

Table F.9 (a) Landfill Gas Monitoring for existing landfill gas flares / utilisation plants

Parameter	Concentration (mg/Nm^3)	Proposed Frequency of Analysis	Information Included Y/N	Method of Analysis	Information Included Y/N
Inlet					
Methane (CH_4) % v/v					
Carbon dioxide (CO_2) %v/v					
Oxygen (O_2) % v/v					
Outlet					
Volumetric Flow Rate					
SO_2					
Nox					
CO					
Particulates					
TA Luft Class I, II, III organics					
Hydrochloric acid					
Hydrogen Fluoride					

Table F.9(b) Landfill Gas Monitoring

Parameter	**Proposed Frequency of Analysis**		**Information Included Y/N**	**Method of Analysis**	**Information Included Y/N**
	Gas boreholes / vents/ wells/ perimeter locations	Facility Office			
Methane (CH_4) % v/v					
Carbon Dioxide (CO_2) % v/v					
Oxygen (O_2) % v/v					
Atmospheric Pressure					
Temperature					

Table F.9 (c) Landfill Gas Infrastructure

Equipment	**Monitoring Frequency**	**Information Included Y/N**	**Monitoring Action**	**Information Included Y/N**
Gas Collection System				
Gas Control System				

Monitoring Arrangements specified	**yes** ☐ **no** ☐ **not applicable** ☐
Monitoring points identified, (plus 12-figure grid references)	**yes** ☐ **no** ☐ **not applicable** ☐
Attachment included	**yes** ☐ **no** ☐ **not applicable** ☐

SECTION G RESOURCES USE & ENERGY EFFICIENCY

G.1 Raw Materials, Substances, Preparations and Energy

Attachment G.1 should contain a list of all raw, product and ancillary materials, substances, preparations, fuels and energy which will be utilised in or produced by the activity. Information on any insecticides, herbicides or rat poisons etc. should also be provided with their respective data and safety sheets. The Standard Forms, provided in Annex 1, should be used in the description of these materials, substances, etc., where relevant. Additional advice on completing this section is provided in the *Guidance Note*.

Attachment included	**yes** ☒ **no** ☐ **not applicable** ☐

G.2 Energy Efficiency

A description of the energy used in or generated by the activity must be provided in **Attachment G.2**.

Attachment included	**yes** ☒ **no** ☐ **not applicable** ☐

SECTION H MATERIALS HANDLING

H.1 Waste Types and Quantities – Existing & Proposed

Provide an estimation of the quantity of waste likely to be handled in relation to each class of activity applied for. This information should be included in Table H.1(a).

TABLE H.1(A). QUANTITIES OF WASTE IN RELATION TO EACH CLASS OF ACTIVITY APPLIED FOR

Waste Management Acts 1996 to 2010 3rd Schedule (Disposal) Operations			Waste Management Acts 1996 to 2010 4th Schedule (Recovery) Operations		
Class of Activity Applied For		Quantity (tpa)	Class of Activity Applied For		Quantity (tpa)
Class D 1			Class R 1	P	220,000
Class D 2			Class R 2		
Class D 3			Class R 3		
Class D 4			Class R 4	x	6,000
Class D 5			Class R 5	x	2,000
Class D 6			Class R 6		
Class D 7			Class R 7		
Class D 8			Class R 8		
Class D 9	x	5,000	Class R 9		
Class D 10			Class R 10		
Class D 11			Class R 11		
Class D 12			Class R 12		
Class D 13			Class R 13	x	11,000
Class D 14	x	1,000			
Class D 15	x	4,500			

In Table H. 1 (B) provide the annual amount of waste handled/to be handled at the facility. Additional information should be included in **Attachment H.1.** The tonnage per annum should be given of that expected for the life of the licence, with at least the next five years tonnages provided. For Landfill Review applications provide an estimate of the quantity of waste already deposited in (i) lined cells; (ii) unlined cells.

TABLE H.1(B) ANNUAL QUANTITIES AND NATURE OF WASTE

Year	Non-hazardous waste (tonnes per annum)	Hazardous waste (tonnes per annum)	Total annual quantity of waste (tonnes per annum)
2012-2042	205,000	15,000	220,000

A detailed inventory of the types and quantities of wastes currently handled at the site and proposed to be handled should be submitted as Table H.1 (C).

TABLE H.1 (C) WASTE TYPES AND QUANTITIES

WASTE TYPE	TONNES PER ANNUM (existing)	TONNES PER ANNUM (proposed)	TOTAL (over life of site) tonnes
Household	0-200,000	0-220,000	6,600,000
Commercial	0-200,000	0-220,000	6,600,000
Sewage Sludge	0-20,000	0-20,000	600,000
Construction and Demolition	0-20,000	0-20,000	600,000
Industrial Non-Hazardous Sludges	0-20,000	0-20,000	600,000
Industrial Non-Hazardous Solids	0-50,000	0-50,000	1,500,000
Hazardous ***(Specify detail in Table H 1.2)**	0	15,000	450,000
Inert Waste imported for restoration purposes	COMPLETE FOR LANDFILL & CONTAMINATED LAND FACILITIES ONLY		

*** TABLE H.1.2 HAZARDOUS WASTE TYPES AND QUANTITIES**

HAZARDOUS WASTE	DETAILED DESCRIPTION * REFERENCE SHOULD BE MADE TO THE RELEVANT EUROPEAN WASTE CATALOGUE CODES AS PRESENTED BY COMMISSION DECISION 2000/532/EC	Tonnes Per Annum (Existing)	(Tonnes Per Annum Proposed)
Waste Oil	Please Refer to Attachment H.1		
Oil filters			
Asbestos			

Paint and Ink			
Batteries			
Fluorescent Light Bulbs			
Contaminated Soils			
OTHER HAZARDOUS WASTE (APPLICANT TO SPECIFY)			

Attachment H.1 should contain any relevant additional information.

It should be noted that an applicant may be issued with a licence which restricts the type of wastes which may be deposited.

H.2 Waste Acceptance Procedures

Procedures for checking waste loads as they arrive at the facility must be included. These should follow the requirements of the Agency's Waste Acceptance Manual. A copy of these procedures and other associated documentation should be included as **Attachment H.2.**
Please refer to Attachment H.2

H.3 Waste Handling

Waste handling and the operating procedures used at the facility including waste treatment processes should be described in **Attachment H.3**. Included in the attachment should be information on the plant used on site and on the methods and processes for handling waste on-site. Special requirements hold for contaminated soil facilities, see *Guidance Note*.
Please refer to Attachment H.3
In addition, an application for a Landfill requires Section H.3.a to be completed: NOT APPLICABLE

H.3a Waste Handling at the Landfill Facility

State whether all waste will be subject to treatment prior to landfilling. Provide information as to the quantities of biodegradable municipal waste and how the targets of the Landfill Directive (1999/31/EC) relating to that waste type are to be achieved. In particular describe how the following will be achieved:

(a) a reduction by 16/07/06 to 75% by weight of the total amount of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available;

(b) a reduction by 16/07/09 to 50% by weight of the total amount of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available;

(c) a reduction by 16/07/16 to 35% by weight of the total amount of biodegradable municipal waste produced in 1995 or the latest

year before 1995 for which standardised Eurostat data is available;

(d) Evidence should be provided to show that energy will be used efficiently.

H.4 Waste Arisings

Waste Arisings should be considered for all contaminated soil applications. Details of all waste materials generated on the site including, name, description and nature as well as the source(s) should be identified. The quantities of each type of waste generated on an annual/monthly basis should be calculated and stated in Tables H.4(i) and H.4(ii) of the application form. Applicants should also provide conversion factors used to relate volume (m^3) and tonnage (t) for their waste stream.

Please refer to Attachment H.4

SECTION I EXISTING ENVIRONMENT & IMPACT OF THE FACILITY

Detailed information is required to enable the Agency to assess the existing environment. This section requires the provision of information on the ambient environmental conditions at the site prior to the commencement of waste management activities or prior to the receipt of a review application.

Where development is proposed to be carried out, being development which is of a class for the time being specified under Article 24 (First Schedule) of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. **In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.**

I.1.Assessment of atmospheric emissions

Describe the existing environment in terms of air quality with particular reference to ambient air quality standards.

Provide a statement whether or not emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to the atmosphere are likely to impair the environment.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Attachment I.1 should also contain full details of any dispersion modelling of atmospheric emissions from the activity, where required.

Please refer to Attachment I.1 (and Section 7.4 of accompanying EIS)

I.2. Assessment of Impact on Receiving Surface Water

Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Table I.2(i) should be completed

Provide a statement whether or not emissions of main polluting substances (as defined in the Schedule of S.I. 394 of 2004) to water are likely to impair the environment.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment I.2.**
Please refer to Attachment I.2 (and Chapter 11 of accompanying EIS)

I.3. Assessment of Impact of Sewage Discharge.

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Full details of the assessment and any other supporting information should form **Attachment I.3.**
Not Applicable

I.4 Assessment of impact of ground/groundwater emissions

The scope and detail of this assessment will depend to a large extent on the extent and type of ground emissions at any site, which in turn are related to the risk. Details should be included in **Attachment I.4**. Comprehensive guidelines are contained in the *Application Guidance Note,* and include particular requirements for landfill and brownfield facilities.

Describe the existing groundwater quality. Tables I.4(i) should be completed.
Please refer to Attachment I.4 (Chapters 9 & 10 of accompanying EIS)

I.5 Ground and/or groundwater contamination

Summary details of known ground and/or groundwater contamination, historical or current, on or under the site must be given.

Full details including all relevant investigative studies, assessments, or reports, monitoring results, location and design of monitoring installations, appropriately scaled plans/drawings (≤A3), documentation, including containment engineering, remedial works, and any other supporting information should be included in **Attachment I.5**.
Please refer to Attachment I.5 (Chapter 11 of accompanying EIS)

I.6 Noise Impact.

Give details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.

Ambient noise measurements
Complete Table I.6(i) in relation to the information required below:

(i) State the maximum Sound Pressure Levels which will be experienced at typical points on the boundary of the operation. (State sampling interval and duration)

(ii) State the maximum Sound Pressure Levels which will be experienced at typical noise sensitive locations, outside the boundary of the operation.

(iii) Give details of the background noise levels experienced at the site in the absence of noise from this operation.

Prediction models, appropriately scaled maps (≤ A3), diagrams and supporting documents, including details of noise attenuation and noise proposed control measures to be employed, should form **Attachment I.6**
Please refer to Attachment I.6 (Chapter 8 of accompanying EIS)

I.7 Assessment of Ecological Impacts & Mitigation Measures

The ecology of the site and the surrounding area should be assessed in the vicinity of the largescale waste facilities such as landfill or incinerator developments. An assessment of the ecology should form **Attachment I.7.** Comprehensive guidelines are contained in the *Application Guidance Note*
Please refer to Attachment I.7 (Chapter 12 of accompanying EIS)

SECTION J ACCIDENT PREVENTION & EMERGENCY RESPONSE

Describe the existing or proposed measures, including emergency procedures, to minimise the impact on the environment of an accidental emission or spillage.

Also outline what provisions have been made for response to emergency situations outside of normal working hours, i.e. during night-time, weekends and holiday periods.

Describe the arrangements for abnormal operating conditions including start-up, leaks, malfunctions or momentary stoppages.

Supporting information should form **Attachment J.**

Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

SECTION K REMEDIATION, DECOMMISSIONING, RESTORATION AND AFTERCARE

Describe the existing or proposed measures to minimise the impact on the environment after the activity or part of the activity ceases operation, including provision for post-closure care of any potentially polluting residuals.

For Landfill Applications, capping proposals are required, and reference should be made to the *Landfill Manual on 'Restoration and Aftercare'* published by the Agency, when completing this section.

Attachment included	**yes** ☒ **no** ☐ **not applicable** ☐

SECTION L STATUTORY REQUIREMENTS

L. 1 Section 40(4) WMA

Indicate how all the requirements of Section 40(4)[(a) to (i)] of the Waste Management Acts 1996 to 2003 will be met.

Applicants should also describe how the proposed facility will comply with the requirements of BAT. In particular, reference should be made to the considerations referred to in Annex IV of Council Directive 96/61/EC concerning integrated pollution prevention and control.

Attachment L.1 should contain the documentation requested above, along any relevant additional information.

Attachment included	**yes** ☒ **no** ☐ **not applicable** ☐

L.2 Fit and Proper Person

The WMA in Section 40(4)(d) specifies that the Agency shall not grant a licence unless it is satisfied that the applicant (if the applicant is not a local authority) is a fit and proper person. Section 40(7) of the WMA specifies the information required to enable a determination to be made by the Agency.

- Indicate whether the applicant or other relevant person has been convicted under the Waste Management Acts 1996 to 2003, the EPA Act 1992 and

2003, the Local Government (Water Pollution) Acts 1977 and 1990 or the Air Pollution Act 1987.

- Provide details of the applicant's technical knowledge and/or qualifications, along with that of other relevant employees (Link to Section C.1 of the application).

- Provide information to show that the person is likely to be in a position to meet any financial commitments or liabilities that may have been or will be entered into or incurred in carrying on the activity to which the application relates or in consequence of ceasing to carry out that activity (Link to Section K of the application).

Supporting information should be included as **Attachment L 2** with reference to where the information can be found in the application.

Attachment included	**yes** ☒	**no** ☐	**not applicable** ☐

Attachment A.1: Non-Technical Summary

A.1.1 Nature of Facility

Indaver Ireland is applying for a review of waste licence W0167-02 to increase the capacity of their Meath waste-to-energy plant from 200,000 tonnes per annum to 220,000 tonnes per annum (tpa). In addition it is proposed to accept a number of suitable hazardous waste types for treatment in the Meath WTE facility. Most of these are already present in the MSW waste being currently accepted on site, (e.g. paint tins, rags and wipes contaminated with paints or oils), and are treated without difficulty.

The Environmental Protection Agency (EPA) has confirmed that this application constitutes a review rather than a new application, at a meeting with Indaver on February 7th, 2012.

Similar to other conventional solid fuel power plants, the tonnage throughput of waste-to-energy facilities is defined by the size of the boiler (thermal capacity), the average expected CV of the waste and the number of operating hours per annum. In the Meath WTE facility, the boiler has a design capacity of 70MW. If the waste has a low calorific value, then more waste needs to be processed to achieve the same thermal output. Conversely, if waste has a higher calorific value then less waste is processed to achieve the same thermal output.

As Irish waste currently has a lower calorific value than anticipated, more waste can be processed at the facility than previously expected to meet the thermal capacity of the boiler. As a result, it is now proposed to accept an additional 20,000 tpa at the Meath WTE facility bringing the total capacity to 220,000tpa.

The proposed amendments sought by this application in terms of the additional waste types and additional capacity do not result in any significant changes to the nature of the process or waste handling procedures (with the exception of one waste type if granted). This application also seeks to remove the restriction on the hours of dispatch of residues from the site, and to extend the hours of waste acceptance.. A planning application is also to be submitted to An Bord Pleanala to address some other proposed changes including conversion to permanent status of structures, car parking, an additional foul water treatment system for a new office building however these require only minor construction works.

The facility is located in the townland of Carranstown, approximately 2.7km north east of Duleek in Co. Meath as shown in Figure 1.1. Following a period of c.3years of construction works, the facility accepted its first loads of waste in October 2011. The facility is now fully operational.

A.1.2 Developer Profile

Indaver Ireland Limited (Indaver)

In 1999 Indaver NV acquired 60% of MinChem Environmental Services Limited, a hazardous waste management company operating in Ireland since 1977. In 2003 Indaver NV acquired the remaining 40% of MinChem and in 2004 changed the name of the company to Indaver Ireland Limited. Today, Indaver Ireland Limited, with offices in Carranstown, Dun Laoghaire, Dublin Port and Cork, employs approximately 125 people and is the company that operates the Meath WTE Facility.

Indaver Ireland Limited are a registered Waste Broker (IRE/AG040/12), and also operate an EPA Licenced (W36-02) Waste Transfer Station and Solvent Recovery facility in Dublin Port. In 2010, Indaver Ireland Limited managed approximately 65,000 tonnes of hazardous waste for its customer base, and exported the majority of this amount to other Indaver Group facilities or external treatment centers.

Indaver Ireland

Indaver Ireland, a wholly owned subsidiary of Indaver NV, was established in 1999 to develop waste infrastructure in Ireland. Indaver Ireland developed and built the Meath WTE facility and then transferred this to Indaver Ireland Limited to operate. Indaver Ireland is also trying to develop and build an Industrial waste facility, which includes a hazardous waste incinerator, in Ringaskiddy, County Cork. Information on Indaver's projects can be found on the website www.indaver.ie.

Indaver NV Company Profile

Indaver NV, is the Flemish parent company of Indaver Ireland and Indaver Ireland Limited.. Indaver is a waste management company that specialises in integrated waste management for industries and households. Indaver recycles, treats and disposes of both domestic and industrial waste. Advice on the prevention of waste is an integral part of the Indaver service.

The Dutch multi utility company, Delta is the majority shareholder of Indaver NV with a 75% shareholding. Flemish Environmental Holding is the holding company of the Government of Flanders and it has a 16% stake in Indaver NV. The remaining shares are held by a number of leading private companies in Flanders. The Indaver group plays a leading role in the implementation of the Flemish Government Waste Policy. The company employs over 800 people and has operations in six European countries. In 2010, Indaver offered a solution for the management of around 4.3 million tonnes of waste in its own processing installations as well as in external centres.

A.1.3 Classes of Activity

As outlined above it is proposed to accept a number of additional waste streams at the facility and these wastes coupled with recent changes to regulations following the implementation of the Waste Framework Directive require amendment to the classes of activity permitted at the Meath waste management facility. A revised list of activities is listed below.

A.1.3.a Classes of Activity

The principal class of activity under the Fourth Schedule of the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows:

R1: Use principally as a fuel or other means to generate energy: This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:

-0.60 for installations in operation permitted in accordance with applicable Community acts before 1 January 2009,

-0.65 for installations permitted after 31 December 2008.

The process at the facility is based on conventional grate incineration technology and will be used treat non-hazardous household, commercial and industrial solid waste and sludge and suitable forms of hazardous wastes. This technology is proven and reliable and has been used in many countries worldwide. Information relating to the energy efficiency of the facility is provided in Attachment G2.

B.7.1.2 Other Relevant Activities

The following other activities will take place at the site under the Fourth Schedule of the Waste Management Acts 1996 to 2010 as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows::

R4 Recycling/reclamation of metals and metal compounds

Ferrous metals are recovered from the bottom ash and sent off site for recycling. As standards and markets develop, the facility may be retrofitted with systems for the reclamation of non-ferrous metals also.

R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials

As standards and markets develop, the facility may be retrofitted with systems for recycling or reclaiming other inorganic materials from bottom ash.

R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)

Waste intended for energy recovery is stored temporarily in the waste bunker. If pre-treated bottom ash residues are found suitable for use in road contruction or other applications, and there are outlets for this material, it will be stored on site for treatment and distribution.

The following activities will take place at the site under the Third Schedule of the Waste Management Acts 1996 to 2010 as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows::

D9 Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any of the operations D1 to D12(e.g. evaporation, drying, calcinations, etc)

Should hazardous waste landfill capacity become available in Ireland a solidification plant may be installed to pre-treat flue gas treatment residues and boiler ash prior to disposal at this outlet.

D14 *Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.*

This activity will occur on site if non conforming wastes are discovered in the reception area, some of these items may have to be repackaged prior to being sent off site for disposal.

D15 *Storage prior to 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.*

Residues are stored on site prior to being transported for disposal, as would any non-conforming wastes.

A.1.4 Quantity and Nature of Waste

A.1.4.a Quantity and nature of waste

As outlined above Indaver Ireland intend to apply for an increase in annual tonnage of wastes accepted at the Carranstown Facility. It is proposed to increase the annual tonnage accepted from 200,000 to 220,000 tonnes. It is also proposed to accept a number of suitable hazardous wastes and non hazardous wastes as detailed below.

EWC Description	EWC	EST QTY P.A.
Aqueous Wastes: Rinse waters containing sugar coating solution and pharmaceutical residues, ink and water mixtures, aqueous washings from spill cleanups.	070501* 080308 070101*	Not exceeding 15,000T per annum of these materials.
Contaminated Packaging/Clothing. These waste types from pharmaceutical, computer chip or chemical manufacturers are commonly classified as hazardous waste due to the potential contamination from exposure to the materials that they were designed to protect people from. The level of risk is very low but again because they have been assigned a hazardous EWC code, they must be exported to incinerators abroad. An example being empty paint tins, or rags and wipes contaminated with paint/glues/inks etc	150110* 150202*	
Redundant or Off Specification Materials/Products: Mascara, lipstick and other make-up. Eye drops, eye baths that are out of date. Headache Tablets, Starch and Sugars used for coating capsules & filler powders.	070513* 160303*	

	160305* 160507* 160508*	
Treated or Contaminated Wood. Once wood/timber has been treated, it can no longer be recycled. If treated with certain preservatives, this then makes the waste "hazardous" even though the same timber is used on decking, furniture, schools etc.	170204* 170903* 191206* 200137* 030104*	
Medical Wastes Bandages, gauze/wipes, incontinence pads, used cotton wool from Nurses Stations & veterinary/dental practices etc., expired medicines, gloves and gowns, expired medications / chemicals	180103*	
Sludges from waste water treatment plants (municipal & industrial) can currently be treated at the facility provided that they are classified as non hazardous. Some sludges are still spread on land as a fertiliser, but industrial facilities with waste water treatment plants of their own have moved away from this practice in recent years. Due to the possibility (but not the certainty) of certain contaminants being present in some industrial sludges, environmentally conscious companies commonly assign hazardous EWC codes to their sludges as a precaution. Despite the fact that these sludges are no different to other non-hazardous sludges, we cannot accept them at the facility without further permission to do so.	070511* 190811*	
Other soils, and sludges similar to waste water treatment sludges from land decontamination projects	170505* 170503* 191303*	
Shredded and pre-mixed Material such as car shred waste and shredded paint containers	191003* 191211*	
Discarded paint and inks: This material is currently mainly disposed of by domestic waste producers at Civic Amenity sites (and exported to similar facilities on the continent)	200127* 200128	
Discarded Oil Filters	160107*	
Waste Oil	130701*	
Return to site of any reject Bottom Ash, FGR & Boiler Ash	190113* 190107* 190112	

Indaver Ireland are seeking to have the Maximum 50,000 tpa restriction on EWC Code 19 12 12 removed, and to be listed alongside Non- Hazardous residual municipal waste. There are large quantities of this material available in the market with very limited treatment options.

Indaver intend to apply to An Bord Pleanala to amend the existing permission in relation to permitted waste acceptance hours. This is to facilitate waste contractors and spread the deliveries of waste during the day. At present the majority of deliveries are arriving to site in the early morning period particularly from 08.00 to 09.00. It is proposed to extend waste acceptance from their current hours of between 0800 and 1830 Monday to Friday inclusive and between 0800 and 1400 on Saturdays to 0600- 2000 Monday to Friday and 0600 to 1400 on Saturdays. The plant will continue to operate 24 hours a day for approximately 7,752 hours per annum, depending on the energy content of the waste.

Deliveries will only be accepted at the facility from authorised carriers holding relevant waste collection permits. Frequent inspections of waste will be carried out to ensure that all contractors are in compliance with Indaver Ireland's waste acceptance criteria. Any non-conforming waste will be consigned to a designated waste quarantine area for removal from site.

A.1.5 Raw and Ancillary Materials

A.1.5.a Raw and ancillary material use

The main use of raw materials onsite is in the flue gas treatment system, which requires hydrated lime (Ca(OH)2), quicklime (CaO), expanded clay (Dioxorb), activated carbon, nitrogen gas (N2) and a nitrogen oxides (NOx) removal reagent ("SNCR" reagent) of ammonia solution. In order to be conservative for this application a 10% increase in raw material is projected. Raw materials are also required for purifying water in the steam cycle. This typically involves the use of trisodium phosphate (Na3PO4), caustic soda (NaOH), nitric acid) and ammonium hydroxide (NH4OH). Oils are used as both a fuel in the auxiliary burners and diesel generator sets and, in smaller quantities, as lubricants for equipment and coolant in transformers.

The site is connected to the 38kV distribution network, to export electricity during normal operations. During normal operations the electrical demand of the site is met with electricity from the generator with the excess electricity exported.

Approximately 8.5m3 per hour of water is extracted from a groundwater well onsite, which is mostly used in the evaporating spray reactor, ash quench, steam cycle and staff/visitor facilities.

With the proposed increased waste acceptance it is projected that the combustion process will produce approximately 69,100 tpa residues in the form of bottom ash, boiler ash and flue gas cleaning ash. Ferrous metals and possibly other materials will be recovered from the bottom ash insofar as practicable and the remaining residues will be sent offsite for recovery and/or disposal.

A.1.6 Site Infrastructure and Operations

A.1.6.a Site Infrastructure

The proposed facility as amended will incinerate and recover energy from the residual fraction of non-hazardous household, commercial and industrial waste and sludges and the proposed additional suitable hazardous waste types. As outlined earlier the proposed amendments will require no changes to the process or facility infrastructure (with the exception of the additional structures at the office block and the maintenance facility). The facility consists of an incineration plant with energy recovery (a "waste-to-energy" plant) and ancillary services.

The main buildings or structures on the site will include:
- The main process building
- A turbine building with air cooled condensors
- A Spare Parts Facility to be converted to a Centralised Maintenance Facility
- A temporary office structure to be converted to a permanent modular office block
- A transformer compound and ESB substation
- A security building
- A water storage tank and pumphouse

The main process building is approximately 160m long, 40m wide at the widest point and 40m above ground at the highest point. The stack is c.65m tall. The general layout of the facility and the proposed amendments is shown in Figure A.1.a.

Figure A.1a: General layout of the facility

A.1.6.b Process Description

The plant is based on conventional grate furnace technology with a horizontal steam boiler and an advanced flue gas treatment system designed to meet current emissions regulations. The plant will produce 18MW electricity of which approximately 16MW will be exported to the distribution network. A schematic of the process is provided in Figure A.1.b. Current output from the facility is averaging c.16.56MW due to lower calorific value of waste and the plant being in a start-up phase and not operating at 100% capacity.

Waste acceptance and handling

Grate incineration technology is not suited for all types of hazardous waste. Careful consideration has been given to the process of identifying the proposed additional hazardous waste streams. These are waste streams that Indaver currently export, that would be suitable for the Meath Grate WTE.

Deliveries are only accepted at the facility from authorised carriers holding relevant waste collection permits. It is foreseen that only minor adjustments will have to be made to the existing Waste Acceptance Procedure and Waste Handling Procedure (ENV 01.00 and ENV 02.00 respectively) to reflect the acceptance of the proposed additional waste codes. These procedures are included in the accompanying EIS.

All trucks entering the site report to the weighbridge where they present documentation to staff in the gatehouse and are weighed. Details on all waste entering the facility will be recorded in a tracking system.

Trucks then drive to the enclosed waste acceptance hall and discharge loads into the bunker through one of the five discharge chutes. Liquid wastes proposed will be pumped directly into the furnace. If acceptance of wastes EWC 18 01 03* is allowed, a direct feed mechanism will be installed to feed this material directly into the furnace.

Frequent inspections of waste take place in the reception hall to ensure all waste is in compliance with Indaver Ireland's waste acceptance criteria. Any nonconforming waste will be consigned to a waste quarantine area in the service yard where it will be held until alternative disposal arrangements are made.
Operators located in the control room overlooking the bunker screen and mix the waste using overhead grab cranes. The blended waste is fed to the highest point in the furnace via hoppers, and forms a plug that isolates the furnace from the bunker.

The reception hall is enclosed and maintained under negative pressure to ensure there are no odour or litter emissions. The bunker has an approximate capacity of 5,600 tonnes, which facilitates the storage of waste for a continuous feed of fuel to the furnace outside of waste acceptance hours. The average retention time of the waste in the bunker is approximately three days.

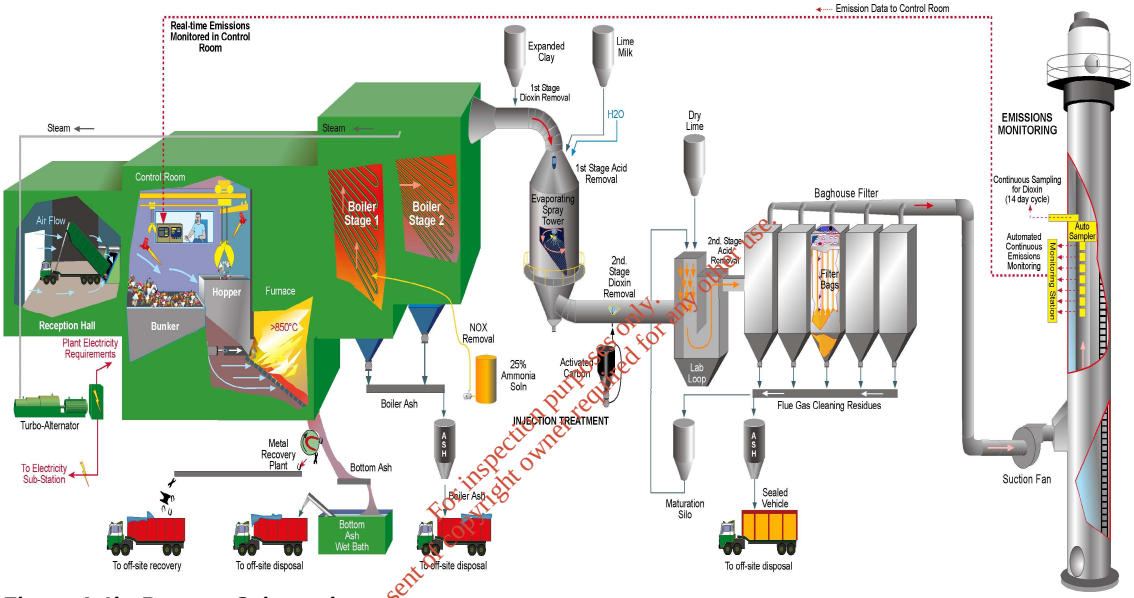


Figure A.1b: Process Schematic

Moving Grate Furnace

The waste in the hoppers is fed to the furnace at a controlled rate by feeding rams. The furnace consist of a grate mechanism, which promotes the complete and efficient combustion of waste through slow and continuous movement, mechanical breakup and effective air distribution.

The combustion of waste on the grate produce both gases and solid residues. The gases pass into a post-combustion chamber situated over the grate, where further combustion takes place. Bottom ash is discharged at the end of the grate into a water bath or "wet de-slagger". The average residence time of waste in the furnace is approximately one hour.

Oxides of nitrogen (NOx) are treated using Selective Non Catalytic Reduction (SCNR). This involves injecting an SCNR reagent (ammonia) at two levels into the post-combustion chamber.

The control system in the furnace monitors a range of parameters, and makes adjustments to the process to ensure complete combustion and that emissions limits are met.

Boiler

The boiler immediately follows the furnace and has been designed to recover energy from hot flue gases to produce steam. In the process, the flue gases are cooled from about 950°C to about 190°C. The total residence time of gases in the boiler is approximately 30 seconds.

In order to comply with the EU Waste Incineration Directive 2000/76/EC, the boiler is designed to ensure that flue gases are maintained at 850°C for at least 2 seconds after the last air/fuel injection. Auxiliary burners are used where necessary to ensure these conditions are met, for example during startup. The burners are not required during normal operation.

The velocity of gases in the boiler is controlled to minimise dioxin formation and promote the deposition of boiler ash into a hopper for removal.

Electricity generation and Steam Cycle

Steam from the boiler at 40 bar and 400°C is sent to the steam turbine, which drives a generator set to give an electrical output of approximately 18MW. As approximately 2MW is required for use within the plant, the amount available for export to the national grid will be about 16MW.

To maximise energy recovery, steam leaving the turbine is maintained at extremely low pressure by an air cooled condenser. Using air cooled condensers rather than cooling water reduces water consumption and avoids water discharge. The flow of steam through the cycle is approximately 82 tonnes per hour at 100% load..

A small quantity of water is purged constantly from the steam cycle and replaced with fresh makeup water from a water purification (demineralisation) plant. This "boiler blow down" is recycled within the process plant.

Flue gas treatment system

The flue gas treatment system is designed to ensure emissions from the stack are well below limits set by EU Directive 2000/76/EC. The system has been designed to produce no effluent and to minimise the consumption of water, reagents and energy.

The key stages of the treatment system include:

- A first dioxin removal stage, where expanded clay ("Dioxorb") is injected into a duct at the outlet of the boiler. Any dioxins and heavy metals are adsorbed into the clay for removal in the baghouse filter downstream.
- A spray drier absorber, which cools flue gases and injects lime slurry to react with acid gases such as HCl and SO2. This forms reaction salts, which are also removed in the baghouse filter downstream.
- A second stage dioxin removal and acid gas treatment, which takes place in a reaction duct with the injection of activated carbon, recirculated and reactivated reagent from the baghouse filter and fresh lime absorbent (where necessary). This ensures that any remaining pollutants are captured.
- A high performance baghouse filter, to trap dust and heavy metals. The residue is shaken off the filters into dust collection hoppers. As it still contains some un-reacted lime, most of it can be reactivated and recycled into the reaction duct to minimise the amount of residue going for disposal.
- An induced draught fan and a stack equipped with continuous emissions monitoring systems. The fan maintains the flue gas system under constant pressure to ensure that all gases pass through the system. Treated gases will then leave the 65m stack at a temperature of 140°C.

The flue gas treatment system will be controlled using parameters measured at the stack, and if possible at the boiler exit.

Residues handling

Solid residues will be collected from three different process areas including:

- Bottom ash and grate siftings from the grate furnace. This will constitute the bulk of residue from the facility at c.27% of waste input by weight or 59,400 tpa.
- Boiler ash from the boiler ash hopper. This will constitute about 0.7% of the waste input by weight or 1,500 tpa.

• Flue gas treatment residues from the spray drier absorber and baghouse filter hoppers. This will constitute about 3.7% of the waste input by weight or 8,200 tpa.
The bottom ash and grate siftings will be passed over a sieve to separate out oversized ash particles. Approximately 5,000 tpa ferrous metals will also be separated out for recycling. The remaining ash will be stored in an ash hall with 2,400 tonnes capacity. The water content of the grate siftings and bottom ash will be approximately 25%, which will minimise dust emissions during storage.
Boiler ash and flue gas cleaning residues will be stored in silos in the main process building before being sent offsite. The boiler ash and flue gas cleaning residue transport, storage and truck discharge mechanisms will be specially designed to minimise dust emission.

A.1.6.c Compliance with the Waste Incineration Directive
The facility as constructed has been designed to comply with the Waste Incineration Directive 2000/76/EC by:
• Ensuring the facility design is suited to the types of waste to be accepted,
• Designing the plant for maximum energy efficiency in order to optimise electrical output,
• Minimising the generation of residues by designing the combustion process to be as complete as possible, minimising reagent use in the flue gas treatment system and other measures,
• Recovering metals from the bottom ash, and striving to recover and reuse as much as possible from the bottom ash where practicable. All disposal of residues will be to appropriate licensed facilities.

A.1.7 Section 40(4) of the Waste Management Act

It is submitted that Indaver Ireland have previously demonstrated (via the previous licence applications and related correspondence) that all the requirements of Section 40 (a-i) of the Waste Management Act are met by the facility and its operator. The proposed amendments do not alter any of the requirements.

A.1.8 Nature of Emissions from the Facility

It is one of Indaver's core values to operate in a way that is safe, socially responsible and sustainable with minimal impact on activities and surroundings. This includes avoiding any release, disposal or emission that might harm the environment. Compliance with national and European regulations will be achieved as a minimum expectation.

A.1.8.a Air emissions
The main emission point from the facility is at the stack through which treated flue gases are discharged. These flue gases consist primarily of carbon dioxide (CO_2) and water vapour but may also contain a number of substances regulated by EU and Irish legislation.

The process is designed and operated to ensure typical emission concentrations for all pollutants are well below the limits specified in the Waste Incineration Directive (2000/76/EC). This Directive specifies the most stringent emissions limits of any industry. There is one minor emission source from the emergency generator, which is only run in the unlikely event that there is no alternative power source for the plant. It is anticipated that the total annual operation of this generator will not exceed 12 hours per year. There will be no fugitive or uncontrolled emissions to air from the facility.

A.1.8.b Surface Water Emissions
The process has been specifically designed to minimise the use of water and to ensure that there is no process effluent discharge. All water from the main process building is recirculated within the plant.
There is one emission source from the drainage system, consisting of non-contaminated surface water runoff collected from roofs and hardstand areas. This will discharge to a drainage ditch at the western corner of the site at a rate controlled by a hydrobrake system, which will mimic a discharge from agricultural land. Two monitoring stations are in place to detect any contamination and divert it to a separate storage tank, or if this is full, shut off all discharge from the system. A Class II full retention separator for petrol like substances is also in place at the discharge point.

The undeveloped area of the site continues to drain naturally to existing drainage ditches. Waters draining from these areas will not come into contact with any potential contamination from the plant.

A.1.8.c Emissions to Sewer
There are no emissions to sewer from the facility. All sanitary effluent from staff and visitor facilities is treated onsite in a Puraflo treatment system, which discharges treated effluent to ground as described below.

A.1.8.d Groundwater Emissions
There are currently two minor emissions to ground of treated sanitary effluent from staff and visitor areas. It is proposed to install another puraflo system and engineered percolation area (designed and constructed in accordance with EPA guidelines) to serve the new modular office block.

The Puraflo system provides a combination of physical, chemical and biological treatment of the wastewater in a biofibrous medium. It is common to development located in areas with no public sewer facilities such as golf clubs and is certified by the Irish Agrement Board. There will be no fugitive or uncontrolled emissions to ground or groundwater.

A.1.8.e Noise Emissions
There are six potential sources of continuous noise, all from process equipment at various points in the plant. The stack, air cooled condensers and turbine coolers are the most significant continuous sources of noise as they are located externally. These will always be operated below the EPA permitted noise limits as stipulated in the licence. Traffic noise assessments have found site traffic to have little impact on overall noise in the locality and is therefore not considered to be a significant emission.

A.1.8.f Other Nuisances
To limit nuisances such as vermin, dust emissions and litter, all deliveries, handling and storage activities take place in fully enclosed environments. The main process building is maintained under negative pressure and the facility is kept clean and tidy at all times. Roads, parking areas and service yards are paved and therefore minimise the potential for dust emissions. Measures for limiting the impact of traffic movements on the road network have been complete include road widening and the provision of a ghost island junction to facilitate a turning lane.

The facility is considered to be normal fire risk since the likely fuel source, the waste, has a high moisture content and a slow natural burn rate. The entire plant has been designed for and provided with adequate fire protection and detection systems consistent with the requirements of the Building Regulations, the Code of Practice for Fire Safety in Buildings BS5588 and in consultation with Indaver's insurers. The system include smoke/heat detectors, an alarm system, onsite storage of water for fire fighting purposes and manual call points.

A.1.9 Impacts of Emissions from the Facility

A.1.9.a Air Emissions
Air emissions from the facility via the stack are controlled through both process optimisation and physical / chemical treatment in the flue gas treatment system. These systems have been designed to ensure emissions are significantly lower than the limits set out in the EU Waste Incineration Directive (2000/76/EEC). Data obtained from the facility since commencement in October 2011 confirms this is the case (Section 5.7 of the EIS).

To limit fugitive emissions from the facility, the main process building is maintained under negative pressure. The storage, treatment and handling operations for waste, consumables and residues are carried out in enclosed environments with filters or closed loop loading systems fitted where necessary. The storage area for consumables, boiler ash and flue gas treatment residues are isolated from the main process building to contain any emissions that may arise from this area.

In the 2006 EIS and subsequently in the 2009 EIS Amendment application, the emissions from the plant were assessed based on the maximum allowable limits in the Waste Incineration Directive (which will be replaced by the Industrial Emissions Directive 2010/75/EU) and 110% of the estimated flue gas flow rate at the plant nominal capacity. Recent measurements of the short term average nominal flue gas flowrate have shown that the flue gas flowrate is higher than was anticipated and in order to ensure that assessment from 2009 was still valid, the model was re-run and shows (as explained in Chapter 7 Section 7.4 of the EIS) that the variation in flowrate does not materially alter the original conclusions

and that the assessment is still valid. This, combined with the fact that the actual emissions from the plant are well below the limits modeled, ensures that the assessment of the impact on air quality is robust.

Throughout the various studies, a worst case approach was taken for all input assumptions including emissions, background concentrations and weather conditions. The study demonstrated that all substances emitted from the facility will meet the most stringent ambient air quality standards for the protection of human health and the environment, even where the plant is operating at maximum or abnormal operating conditions.

An odour impact assessment also found that all predicted ground level concentrations will be lower than the recommended EPA limit even during a worstcase meteorological year.

An assessment of the potential worst-case impact of dioxin and furan emissions on an individual living near the site (Maximum At Risk Individual) due to inhalation and ingestion was also conducted. This found that the proposed facility would have no significant impact on dioxin and furan intake even considering worst case scenario exposure levels.

A.1.9.b Surface Water Emissions
The surface water discharge consists only of clean surface water runoff and mimics natural discharge rates from agricultural land. There is no discharge of process effluent to surface water.

Any potential contamination identified by the monitoring stations or fire alarm system will automatically divert or will shut off the discharge from the system. All potentially polluting substances will be stored within the main process building and provided with adequate containment. Substances stored in the yard areas will be fully bunded. As a result, the proposed facility will not have any negative impact on surface waters.

A.1.9.c Groundwater Emissions
The only emissions to ground from the facility are treated domestic sewage from Puraflo systems and engineered percolation areas. These systems, designed and constructed in accordance with EPA requirements, discharge into the overburden via a percolation area. There will be no other discharge to ground from the facility. Groundwater extraction for domestic and process water requirements will only increase marginally and will therefore not have any negative impacts on the aquifer.

There will be no fugitive emissions from the facility to ground or groundwater. All areas where potentially polluting materials are handled are either indoors or in bunded, contained and hardstand areas. The waste bunker has been fitted with a double containment system to ensure that in the unlikely event that a leak should occur, the liquids are collected and removed. All bunds will be integrity tested in accordance with the facility licence to confirm they are watertight on a regular basis.

A.1.9.d Noise Emissions
To limit noise emissions, key items of equipment are located within the main process building and acoustic insulation has been installed where required. Due to these and other measures, noise modelling of the proposed development found that operational noise impacts will not exceed EPA recommended limits offsite. Predicted noise levels due to vehicle movements onsite were found to be within recommended criteria and will not have a negative impact on the local community. The predicted noise increase from additional traffic using public roads was estimated at less than 3dB in all instances and its impact is therefore considered to be negligible with a magnitude of change imperceptible. Anti-vibration mounts are used on all plant with the potential to generate significant levels of vibration, which will ensure vibration from operations is not significant.

A.1.9.e Impacts on Ecology
The existing development as constructed between 2009 and 2011 required the removal of arable crop land, improved agricultural grassland and a number of hedgerows in the area. The proposed amendments to the facility entail only minor construction works and is therefore not anticipated that there will be any additional impact on the ecology of the surrounding environment.

A.1.10 Monitoring and Sampling

A.1.10.a Air Monitoring and Sampling

Continuous monitoring on stack emissions assesses the following parameters, in line with the requirements of EU Directive 2000/76/EC,:

- Total dust
- Total Organic Carbon (TOC)
- Hydrogen Chloride (HCl)
- Hydrofluoric Acid (HF)
- Sulfur dioxide (SO2)
- Oxides of nitrogen (NOx)
- Carbon Monoxide (CO)
- Temperature
- Oxygen (O2)

Measurements are relayed to the plant computerised control system and the emission registration software system where operators view the results.

In accordance with Schedule C.1.2 of W0167-02, grab samples are also taken from the stack on a quarterly basis to monitor for heavy metals and their compounds. These are taken and measured by an external accredited laboratory. Furthermore, although not required by EU or Irish legislation, a dioxin sampling system has been installed. This enables the collection of dioxin samples over a fortnightly period for analysis in an independent laboratory.

A.1.10.b Surface Water Monitoring and Sampling

Surface waters pass through two monitoring chambers before being discharged, which will measure for the parameters required by the EPA and the drainage division of Meath County Council. Schedule C.2.3 of licence W0167-02 requires surface water monitoring to be conducted continuously at 2 locations. It is not proposed to conduct any additional surface water monitoring as a result of the proposed amendments.

A.1.10.c Groundwater Monitoring and Sampling

The emission of treated domestic effluent to ground will be monitored on a quarterly basis from a sampling chamber located at the discharge point.

Schedule C.6.1 of licence W0167-02 requires ambient groundwater monitoring to be conducted monthly for a number of indicator parameters and biannually for a wider suite at three locations. It is not proposed to conduct any additional groundwater monitoring as a result of the proposed amendments.

A.1.10.d Noise Monitoring and Sampling

Schedule C.6.2 of licence W0167-02 requires noise monitoring to be conducted annually at 4 locations. It is not proposed to conduct any additional noise monitoring as a result of the proposed amendments.

A.1.10.e Meteorological Monitoring and Sampling

A meteorological monitoring station monitors wind speed and direction and atmospheric pressure at the facility on a continuous basis. Precipitation volume and temperature is also monitored on a daily basis. All measurements meet World Meteorological Organisation Standards and Recommendations.

A.1.11 Waste Arisings

A.1.11.a Handling of Waste Arising

Bottom ash generated by the facility has been classified non-hazardous and consists mostly of inert materials such as glass, sand, metal pieces and stones. Approximately 5,000 tpa ferrous metals will be extracted from the bottom ash generated by the process for recycling, which will be sent off-site to an appropriate and licensed recycling facility.

In the absence of an alternative recovery outlet, bottom ash is currently being sent to a nearby non-hazardous landfill. The volume of ash produced by a waste-to-energy plant requires significantly less landfill capacity to dispose when compared to sending MSW directly to landfill. In addition, due to the

inert nature of the ash, it will have a less adverse impact than untreated waste, which is currently being landfilled. However, should the appropriate standards be devised for the reuse of bottom ash components in the construction industry, Indaver will explore options for the further treatment and reuse of bottom ash.

Flue Gas Residues and Boiler ash are currently sent for re-use in the remediation of salt mines in Germany. The increase in residues produced will result in a small increase in traffic movements to dispose/re-use of the residues. The impact of this is discussed in detail in Chapter 13. Based on experience from other grate furnaces in Europe burning additional wastes of the type proposed, the classification of the bottom ash will remain unchanged. The classification of the other residues produced will also remain unchanged.

It is not envisaged to solidify or otherwise pre-treat these residues prior to export as this would only increase their overall mass and volume, thereby increasing the environmental impact of their transport. Indaver Ireland has over 20 years experience of sourcing suitable outlets, both in Ireland and abroad, for the disposal of hazardous waste. Indaver also operates its own hazardous waste landfill in Antwerp, Belgium. Other wastes arising from the facility will include only minor quantities of waste from facility operations and staff and visitor facilities.

A.1.12 Accident Prevention and Emergency Response

It is the policy of Indaver Ireland to attach the greatest importance to the health and safety of all persons employed on and indirectly affected by site activities. The proposed amendments to the facility require no changes that would affect the continuing non-SEVESO status of the site.

A.1.12.a Accident Prevention and Emergency Response

The facility has been designed in accordance with internationally recognised health and safety standards, design codes, legislation, good practice and experience. To improve safety and minimise the risk of emergency situations, the plant design include:

- manual and automatic controls
- a comprehensive interlock system which can automatically shut down the plant in a safe manner in the event of equipment failure or dangerous situations arising
- fire detection and fighting systems
- backup systems for pumps, control systems, power supply and instruments.

The plant is operated in line with Indaver Ireland's Quality, Environmental, Safety and Health (QESH) system which is accredited to the quality standard ISO 9001, the environmental standard ISO 14001 and the safety standard OHSAS 18001.

Hazard and operability studies have been conducted to systematically identify hazards towards the production of a comprehensive set of standard operating procedures for the plant to help minimise the risk of accident/emergency situations arising. Indaver's experience of successfully operating similar plants in Belgium allows potential hazards to be easily identified. Wherever possible, Indaver strive to minimise human interaction in safety critical operations in order to eliminate the potential for "human factors" to initiate or exacerbate major accidents at the site. The facility is and will continue to be well maintained and cleaned at all times. A preventative maintenance system is in place, which incorporates routine checks and maintenance of key equipment to ensure they remain in good working order. A Site Emergency Plan has been prepared and sets out the response measures to be taken by personnel in the event of an emergency. These measures ensure maximum protection for site employees, visitors and people in other premises near the site to limit damage to property and minimise the impact on site operations and on the environment.

Through recruitment, training, performance management, employee development and succession planning, Indaver Ireland aims to ensure that all members of staff are in possession of the knowledge, skills and experience necessary to perform their jobs to a satisfactory standard.

A.1.13 Closure, Restoration and Aftercare

A.1.13.a Closure, Restoration and Aftercare Measures

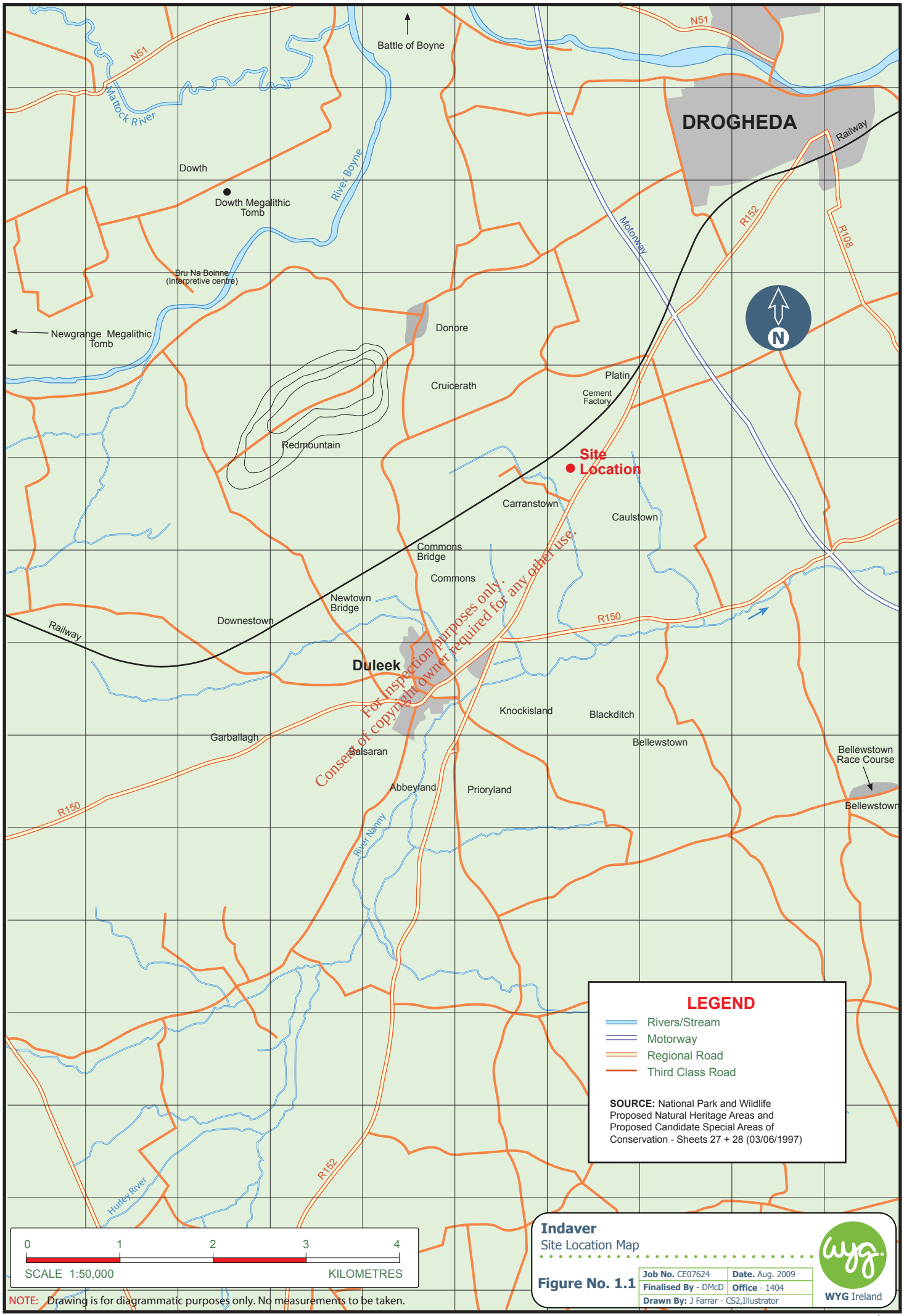
In 2011 an ELRA and CRAMP was prepared by Byrne O'Clerigh on behalf of Indaver to address the requirement for financial provision for the known and unknown liabilities associated with the facility.

The total lifespan of the plant is currently anticipated to be 30 years but this can be extended with maintenance and replacement of equipment. Should circumstances arise whereby it becomes necessary to shut down the facility, Indaver will provide the EPA with a detailed decommissioning plan for its approval before the commencement of any works.

This will include measures to avoid any pollution risk and return the site of operation to a satisfactory state. The absence of materials stored or landfilled onsite will mean that an aftercare management plan is not required.

A.1.14 Definitions and Abbreviations

BAT	Best Available Techniques
BREF	European IPPC Bureau Reference Document
dB	decibel (noise)
EWC	European Waste Catalogue
HAZOP	Hazard and Operability
HSA	Health and Safety Authority
l/s	litres per second
MARI	Maximum At Risk Individual
MJ	Megajoules
MSW	Municipal Solid Waste, including household and commercial waste and street sweepings
MW	Megawatt (of energy)
NCV	Net Calorific Value
PAH	Poly Aromatic Hydrocarbons
PEC	Predicted Emissions Concentration (at ground level)
PVC	Poly vinyl chloride
QESH	Quality, Environmental, Safety and Health
SNCR	Selective Non-Catalytic Reduction
TOC	Total Organic Carbon
tpa	tonnes per annum
tph	tonnes per hour



Attachment B.1: Company Details

B.1.1 Branch Registration and Certificate of Incorporation

Appendix B1 contains a certified copy of the certificate of registration of Indaver Ireland Limited.

B.1.2 Registration Details

The applicant is registered in Ireland with registered offices at:
4th Floor, Block 1,
West Pier Business Campus,
Old Dunleary Road,
Dun Laoghaire,
Co. Dublin,
Ireland

B.1.3 Company Directors

The authorised representatives of Indaver Ireland Ltd. are:
Directors: John Ahern, Conor Jones, Jackie Keaney, David McGarry
Belgian Directors: Paul De Bruycker, Michel Decorte, Bart Goethals

B.1.4 Site Ownership

A site ownership plan (Drawing 21098WL1001 RevA) is located in Appendix B2.

Attachment B.2: Site Plan, Location and Services

B.2.1 Site Plan, Location and Services Maps

Drawings can be found in the appendices as listed in Table B.2.a below.

Table B.2.a: Location of Drawings

Drawing	Drawing Number	Location
Site Plan	21098\WL\002 RevA	Appendix B3
Location Map	21098\WL\003 RevA	Appendix B4
Services Plan	21098\WL\004 RevA	Appendix B5

Attachment B.3: Planning Permission and Waste Licence

B.3.1 Permissions and Licences

Please find in Appendix B6 a copy of planning permission PL17.219721 issued by An Bord Pleanala on the 15th October 2007, including 31 planning conditions and subsequent planning permission for amendments to the facility granted by Meath County Council in December 2009 (SA901467). Appendix B7 includes a copy of the facility's current Waste Licence W0167-2 for which this application is a revision.

Also find enclosed a copy of notification to Meath Co Council regarding the application to the Environmental Protection Agency under Article 9 of the Waste Management (Licensing) Regulations.

Attachment B.6: Site Notice

Appendix B8 includes a copy of the newspaper advertisement, site notice and notice to the local planning authority. The site notice location is indicated in Drawing 21098\WL\005 RevA in Appendix D1.

Attachment B.7: Type of Activity

B.7.1 Principal Activity

The principal class of activity under the Fourth Schedule of the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows:

> *R1: Use principally as a fuel or other means to generate energy: This includes incineration facilities dedicated to the processing of municipal solid waste only where their energy efficiency is equal to or above:*
>
> > *-0.60 for installations in operation permitted in accordance with applicable Community acts before 1 January 2009,*
> >
> > *-0.65 for installations permitted after 31 December 2008.*

The process at the facility is based on conventional grate incineration technology and will be used treat non-hazardous household, commercial and industrial solid waste and sludge and suitable forms of hazardous wastes. This technology is proven and reliable and has been used in many countries worldwide. Information relating to the energy efficiency of the facility is provided in Attachment G2.

B.7.1.2 Other Relevant Activities

The following other activities will take place at the site under the Fourth Schedule of the Waste Management Acts 1996 to 2010 as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows::

R4 Recycling/reclamation of metals and metal compounds

Ferrous metals are recovered from the bottom ash and sent off site for recycling. As standards and markets develop, the facility may be retrofitted with systems for the reclamation of non-ferrous metals also.

R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials

As standards and markets develop, the facility may be retrofitted with systems for recycling or reclaiming other inorganic materials from bottom ash.

R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)

Waste intended for energy recovery is stored temporarily in the waste bunker. If pre-treated bottom ash residues are found suitable for use in road contruction or other applications, and there are outlets for this material, it will be stored on site for treatment and distribution.

The following activities will take place at the site under the Third Schedule of the Waste Management Acts 1996 to 2010 as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows::

D9 Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are disposed of

by means of any of the operations D1 to D12(e.g. evaporation, drying, calcinations, etc)

Should hazardous waste landfill capacity become available in Ireland a solidification plant may be installed to pre-treat flue gas treatment residues and boiler ash prior to disposal at this outlet.

D14 *Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.*

This activity will occur on site if non conforming wastes are discovered in the reception area, some of these items may have to be repackaged prior to being sent off site for disposal.

D15 *Storage prior to 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.*

Residues are stored on site prior to being transported for disposal, as would any non-conforming wastes.

Attachment B.8: SEVESO II Directive

B.8.1 SEVESO opinion and correspondence

The proposed amendments to the facility require no changes that would affect the continuing non-SEVESO status of the site.

Appendix B1

Short Certificate of Incorporation of a Company

(Electronic Form, for Public Service Use only)

I hereby certify

that company number **59667,**

INDAVER IRELAND LIMITED,

was Incorporated under the Companies Act 1963

as a Limited Company on

Friday, the 19th day of August, 1977.

Certified by me at Dublin, this **Friday, the 22nd day of June, 2007.**

(18763B)

Registrar of Companies

Paul Farrell

Companies Act 1963, section 370(1); Electronic Commerce Act 2000, sections 12 and 13

Note

The above certificate of incorporation is furnished free of charge by the registrar of companies and is valid solely for public service use. A process has been put in place whereby, where necessary, the certificate may be verified by a public service body on inquiry to the registrar.

The applicant for any public service who is required to produce a certificate of incorporation must certify below that the certificate has not been tampered with in any way. The certificate shall be retained by the public service organisation that requires its delivery and may be used as evidence of any wrongful use.

I, (name) _____

of (address) _____

hereby declare that this is one and the same as the Certificate of Incorporation of the above company that was made available electronically, for public service use, at my request, by the registrar of companies. I further declare that to the best of my knowledge, information and belief, the said Certificate has not been altered or amended in any way. I acknowledge that it is a criminal offence to forge a public document with intent to defraud or deceive, and that it is an offence to utter a forged document with intent to defraud or deceive, in each case punishable with imprisonment for a term not exceding two years.

I make this Declaration for the benefit of

(name of public body) _____

to whom I am furnishing the Certificate.

_____ _____

Signature of Applicant Date

Forgery Act 1913, section 4 and 6

Appendix B2

NOTES

N

ORDNANCE SURVEY MAP
REFERENCE NUMBERS :
2381–D AND 2443–B

SITE PLAN SCALE 1:2500

REV.	DESCRIPTION.	BY.	APPR.	DATE.
A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12

McElroy Associates
Consulting Engineers & Project Managers
72 Haddington Road, Ballsbridge, D4.
Tel: 660 9000 Fax: 660 9099
E Mail: info@mea.ie Web: www.mea.ie

CLIENT.
INDAVER IRELAND
4 HADDINGTON TCE
DUN LAOGHAIRE
CO. DUBLIN
TEL: +353 1 2145830
FAX: +353 1 2807865

PROJECT.
INDAVER WTE :
WASTE LICENCE REVIEW 2012

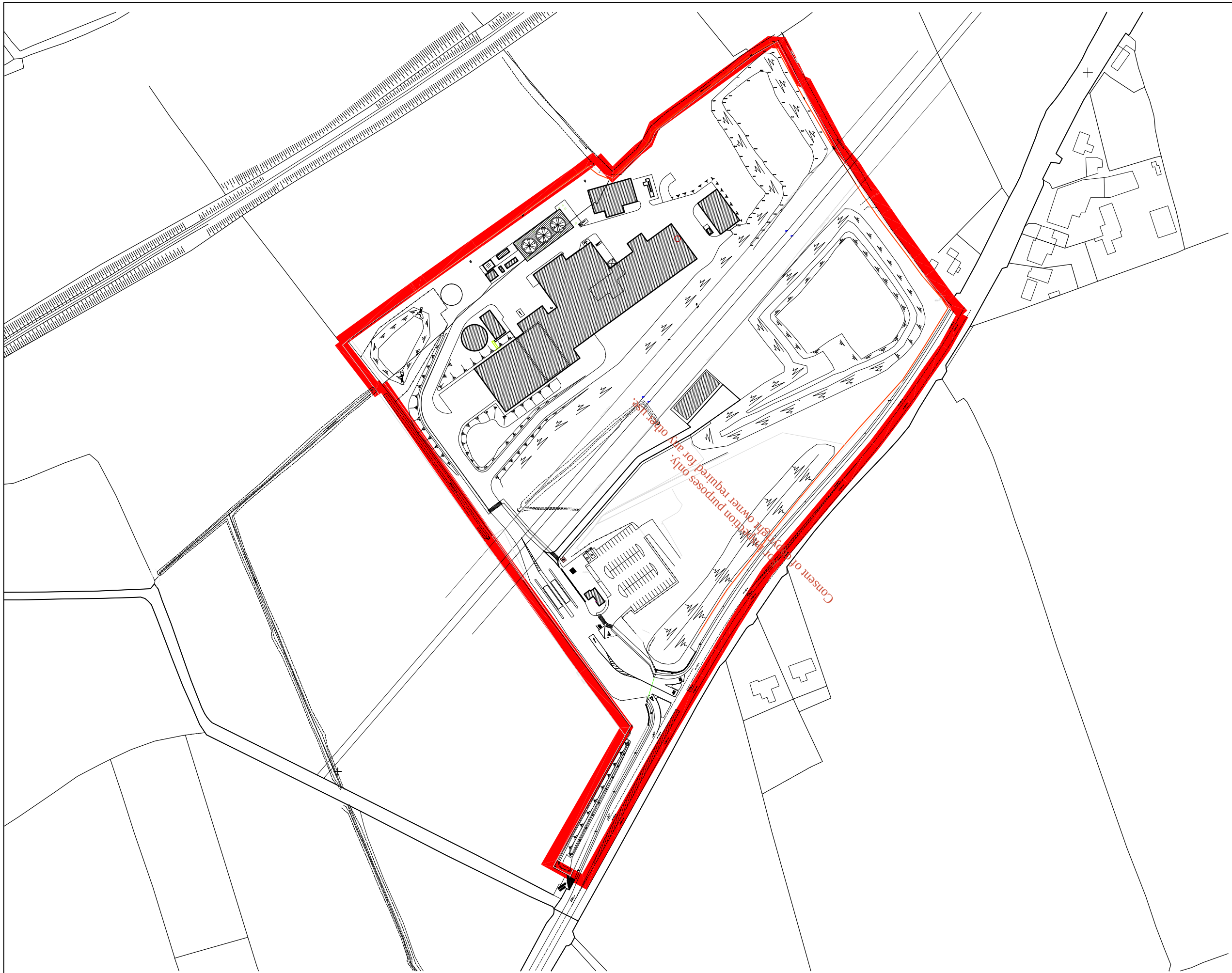
TITLE.
SITE OWNERSHIP MAP

DESIGNED:	CHECKED:	APPR'D:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3

DRG.No. 21098\WL\001 REV. A

Appendix B3

NOTES



PROPOSED SITE PLAN SCALE 1:2500

REV.	DESCRIPTION.	BY.	APPR.	DATE.
A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12

McElroy Associates
Consulting Engineers & Project Managers
72 Haddington Road, Ballsbridge, D4.
Tel: 660 9000 Fax: 660 9099
E Mail: info@mea.ie Web: www.mea.ie

CLIENT.
INDAVER IRELAND
4 HADDINGTON TCE
DUN LAOGHAIRE
CO. DUBLIN
TEL: +353 1 2145830
FAX: +353 1 2807865

PROJECT.
INDAVER WTE :
WASTE LICENCE REVIEW 2012

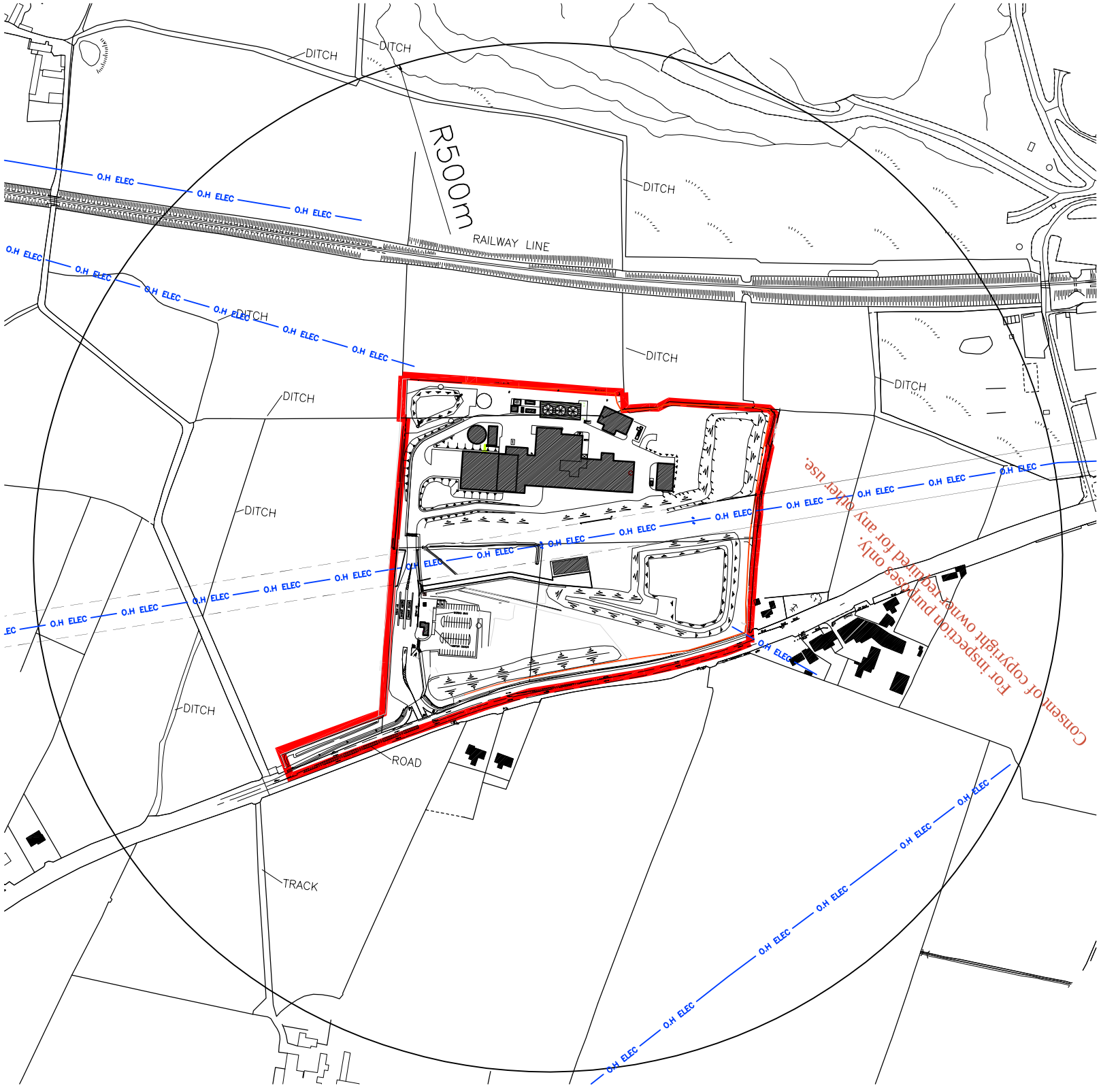
TITLE.
SITE PLAN

DESIGNED:	CHECKED:	APPR'D:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3

DRG.No. 21098\WL\002 REV. A

Appendix B4

NOTES



LOCATION PLAN SCALE 1:5000

REV.	DESCRIPTION.	BY.	APPR.	DATE.
A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12

McElroy Associates
Consulting Engineers & Project Managers
72 Haddington Road, Ballsbridge, D4.
Tel: 660 9000 Fax: 660 9099
E Mail: info@mea.ie Web: www.mea.ie

CLIENT. INDAVER

INDAVER IRELAND
4 HADDINGTON TCE
DUN LAOGHAIRE
CO. DUBLIN
TEL: +353 1 2145830
FAX: +353 1 2807865

PROJECT.
INDAVER WTE :
WASTE LICENCE REVIEW 2012

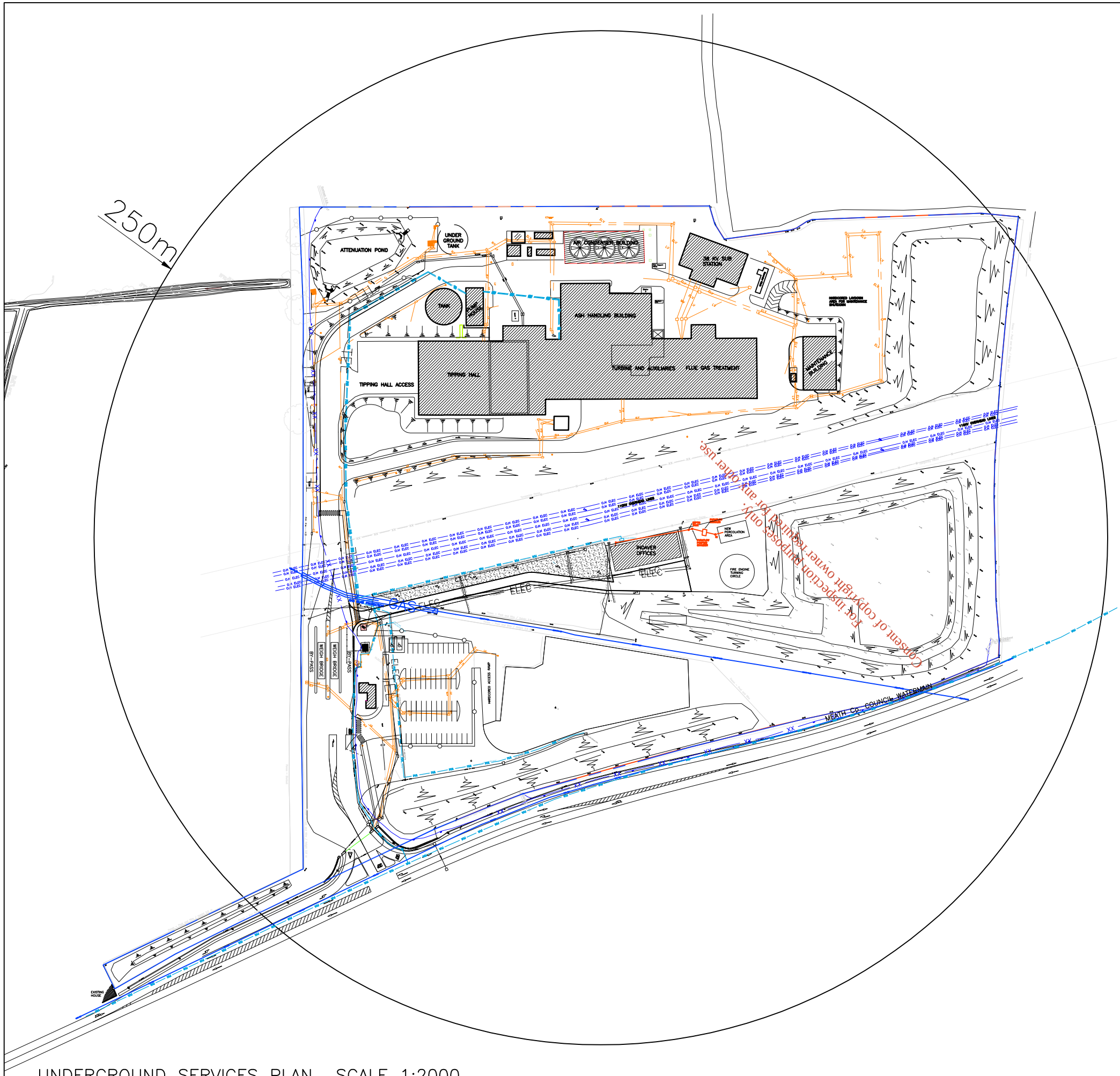
TITLE.
LOCATION MAP

DESIGNED:	CHECKED:	APPR'D:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3

DRG.No. 21098\WL\003 REV. A

Appendix B5

NOTES



UNDERGROUND SERVICES PLAN SCALE 1:2000

LEGEND

- EXISTING WATERMAIN
- EXISTING GAS MAIN
- WM — EXISTING BYPASS WATER METER AND CHAMBER
- SV — EXISTING SLUICE VALVE AND CHAMBER
- LANDS WITHIN THE OWNERSHIP OF THE APPLICANT
- EXISTING LOW TENSION ELEC. CABLES
- XX — XX — EXISTING HIGH TENSION ELEC. CABLES

REV.	DESCRIPTION.	BY.	APPR.	DATE.
A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12

McElroy Associates
Consulting Engineers & Project Managers
72 Haddington Road, Ballsbridge, D4.
Tel: 660 9000 Fax: 660 9099
E Mail: info@mea.ie Web: www.mea.ie

CLIENT. INDAVER

INDAVER IRELAND
4 HADDINGTON TCE
DUN LAOGHAIRE
CO. DUBLIN
TEL: +353 1 2145830
FAX: +353 1 2807865

PROJECT.
INDAVER WTE :
WASTE LICENCE REVIEW 2012

TITLE.
SITE
SERVICES PLAN

DESIGNED:	CHECKED:	APPR'D:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3

DRG.No. 21098\WL\004 REV. A

Appendix B6

Meath County Council
Planning Department
Abbey Mall
Abbey Road
Navan
Co. Meath
Phone: 046 909 7000 Fax: 046 909 7001

Planning & Development Act 2000 - 2008
NOTIFICATION OF FINAL GRANT

TO: Indaver N.V.
4 Haddington Terrace
Dun Laoghaire
Co. Dublin

Planning Register Number: SA/901467
Application Receipt Date: 16/09/2009
Further Information Received Date:

In pursuance of the powers conferred upon them by the above-mentioned Act, Meath County Council has by Order dated 10/11/2009 GRANTED PERMISSION to the above named for the development of land in accordance with the documents submitted namely:- amendments and alterations to previously permitted development for a 70MW waste to entergy facility as applied for under(Planning permission register reference number SA60050 and An Bord Pleanala register reference number PL17.219721) as follows. Reduction in length of the main building by approx 45m;increase in width of the main process building by approx 8m (at widest point);increase in height of the main process building by approx 1m;increase in height of the flue cleaning building by approx 1m;increase in height of the bunker roof by approx 4.3m & decrease in width by approx 5m addition of an external fire escape from the administration block;inclusion of an additional floor within the administration block to accommodate an education centre;decrease in tipping hall roof height by approx 5m and decrease in width by approx 4m;relocation of the sprinkler tank and pumphouse (including height reduction of pumphouse by approx 2.5m & height increase of tank of approx 3.5m);relocation and modification to air cooled condenser (including a decrease in height of approx 8.5m);relocation and modification of ESB compound and switchroom (including a increase in height from 3m to 3.6m);modifications of the stormwater attenuation tank from an underground tank to a lagoon type tank;omission of proposed education, warehouse and workshop building, relocation and amendments to the proposed gatehouse and internal access road. Planning permission is also sought for an Ash Storage Hall approx 22m x 44m x 12.4m high and associated ash loading bay approx 23.8m x 4.4m x 12.4m high and the addition of a second puraflo effluent treatment plant to service the gatehouse. Planning permission is also sought for 2 no. new signs to main building on the south elevation and other minor modifications which are detailed in the plans and particulars submitted all on 10.36 hectare site. This application relates to an activity, which is the subjection to a waste licence under Part V of the Waste Management Act 1996. An Environmental Impact Statement will be submitted to the Planning Authority with this application. at Carranstown, Duleek, Co. Meath, **subject to the 13 conditions set out in the Schedule attached.**

Signed on behalf of Meath County Council

Administrative Officer

DATE: **14/12/2009**

NOTE: (Outline Permission Applications Only)

OUTLINE PERMISSION is subject to the subsequent Application for Permission consequent on the grant of Outline Permission of the Planning Authority. Until such has been obtained to detailed plans of the development proposed, the development is NOT AUTHORISED.

NOTE:
The permission herein granted shall, on the expiration of 5 years beginning on the date of the granting of permission, cease to have effect as regards: -

(1) In case the development to which the permission relates is not commenced during the period, the entire development and

(2) In case such development is so commenced, so much thereof as is not completed within that period.

Schedule of Conditions

1. The development shall be carried out in accordance with the plans and particulars lodged with the Planning Authority on the 16th September 2009, and in accordance with the provisions of the Environmental Impact Statement, except as may otherwise be required in order to comply with the following conditions.
Reason: In the interests of clarity.

2. The conditions of SA60050 (PL17.219721) relating to the overall development shall be fully complied with except where conditions hereunder specify otherwise.
Reason: In the interest of proper planning control.

3. The site construction working hours shall be confined to between 0700 and 1900 hours Monday to Saturday, inclusive (excluding bank holidays and Sundays) unless otherwise agreed in writing with the Planning Authority.
Reason: In the interests of residential amenity.

4. The developer shall fully comply with the requirements of Bord Gais relating to the execution of any works in the vicinity of the Bord Gais distribution mains, which traverse the site.
Reason: In the interest of development control.

5. Details of the materials to be used in the external finishes of the building, including samples shall be subinitted to and agreed in writing with the Planning Authority prior to their construction.
Reason: In the interests of the visual amenities of the area.

6. A) The potable water supply from the public water supply mains shall be used for potable water uses only.

   B) As per Meath County Council Water Bye-Laws 2007 Part 3 Water Conservation, a Water Management and Conservation Plan shall be submitted to Meath County Council Water Services Infrastructure Section for approval within 2 months of the final grant. Such plan shall set out details of how best practice in water conservation shall be applied in respect of the proposed development to include water mains and internal plumbing and how water usage, leaks or excessive consumption may be identified and remedied. The applicant shall demonstrate how the measures outlined in the said Water Management and Conservation Plan will reduce the potable water demand of the proposed development.

   C) The development shall be designed to operate satisfactorily at minimum water mains pressure in the public water mains at peak hour demand.

   D) If not already in place, a water meter shall be installed at the connection to the public water main. The water meter shall be capable of remote reading. The type of and location for the water meter to be agreed with Meath County Council Water Liaison Officer prior to commencement of development.
   Reason: In the interests of public health and orderly development.

7. A) As 'long term storage' is not being provided on the proposed development the application of growth curve factors for the 1 in 30 and 1 in 100 year events shall not be used.

B) There shall be no pumped discharges to local drainage ditches/watercourses. Standoff manholes shall be provided before discharging to local drainage ditches/watercourses.

C) As per the Section 3.15 of the Greater Dublin Regional Code of Practice for Drainage Works Version 6.0, soak ways, filter drains and similar infiltration systems must comply with the relevant documents, including BRE Digest 365, CIRIA C522.

Class 1 Light Liquid Separators shall be in accordance with the latest version of European Standards prEN 858: Parts 1 & 2 and shall be installed at suitable locations, as agreed with the Area Engineer, on the private drainage system before discharging to the drainage ditch/ watercourse.

D) Within 2 months of the final grant, the applicant shall undertake and submit to the Planning Authority a Hydrological Study of the drainage ditch/watercourse into which it is proposed to discharge surface water from the proposed development. The Hydrological Study to be carried out by a qualified, experienced and competent Hydrologist. The study shall be carried out from the proposed point of discharge from the development site to a point to be agreed with the Area Engineer and shall examine the capacity of the drainage ditch/watercourse, in particular capacity at any existing culverts/pipes, and shall include details on cross sections, invert levels, flow data and water quality data.

E) Proposed regrading and cleaning out of existing drainage ditches shall be carried out under the supervision of a qualified Ecologist and in consultation with the Eastern Regional Fisheries Board.

F) Application for connection to the local drainage ditch/watercourse and for the carrying out of proposed regrading and cleaning out works shall be made to the Area Engineer.

G) Within 2 months of the final grant, the applicant shall submit full details of the proposed surface water attenuation pond together with a full risk assessment identifying all hazards and the proposed mitigation measures to eliminate/reduce the hazards identified together with a programme for the operation and maintenance of the proposed surface water attenuation pond. All work from the design stage through to construction and maintenance should be carried out in accordance with current Safety & Health Regulations.

H) The application shall comply with the Greater Dublin Strategic Drainage Study (GDSDS) Regional Drainage Policies Volume 2, for New Developments.

I) The rate of surface water runoff from the proposed development shall not exceed the pre-development 'greenfield' runoff rate.

J) Within 2 months of the final grant the applicant shall liaise with Meath County Council Water Services Infrastructure and agree exceedence routes and measures that will be provided for dealing with storm events greater than the 1 in 100 year storm event.

K) The Fire Fighting provisions for the proposed development to be agreed with Meath County Council Chief Fire Officer prior to commencement of development.

Reason: In the interests of public health and orderly development.

8. During the construction phase of the proposed development, noise levels at the site when measured at noise sensitive locations shall not exceed 65 dBA between the hours of 07:00 and 19:00 hours, Monday to Saturday inclusive, excluding bank holidays and public holidays and Sundays and 45 dBA at any other time. The $L_{Aeq,1hour}$ shall apply to all measurements.
Reason: To protect the amenities of property in the vicinity of the site.

9. Dust deposition monitoring at the site shall be carried out by a suitably qualified independent body on a quarterly basis. Dust deposition, when measured at the site boundaries and averaged over 30 days shall not exceed 350mg/m^2/day using the 'Bergerhoff Method'.
Reason: To protect the amenities of property in the vicinity of the site.

10. The single phase puraflo system serving the security gate house this shall be designed and constructed in accordance with the EPA code of practice wastewater treatment and disposal systems serving single houses (P.E. < or equal to10).
Reason: In the interests of public health.

11. No traffic, during either the construction phase or once the plant is operational, shall pass through the Bru na Boinne World Heritage Site
Reason: In order to protect the amenities of the World Heritage Site.

12. The proposed ash storage building should be completely enclosed and maintained under negative ventilation, trucks emerging from the building should be completely sealed and exit the site through the wheel wash in order to prevent any fugitive dust emissions.
Reason: In the interests of public health.

13. The developer shall provide aviation warning lights on the emission stack. The details of which shall be agreed in writing with the Irish Aviation Authority and the Planning Authority. The co-ordinates of the as constructed position of the stack and the as constructed elevation shall be submitted to the Irish Aviation Authority.
Reason: In the interests of public safety, development control and the protection of light aircraft using the surrounding area.

Meath County Council

COMMENCEMENT NOTICE

(Notice to a Building Control Authority pursuant to Part II of the Building Control Regulations, 1997)

NOTICE TO THE BUILDING CONTROL AUTHORITY

OFFICE USE ONLY
Date Rec. .....
Reg. Ref. .....
Date entered .....
Entered by .....
Fee Rec. € .....

Name of Authority:

Meath County Council, Building Control Section,
County Hall, Navan, Co. Meath.
Tel 046 - 9021581 Fax: 046 - 9021463

1. I, the undersigned, hereby give notice / give notice on behalf* of the person(s) named below, to the above Building Control Authority (in accordance with part II of the Building Control Regulations) that I / the persons named* below intend to carry out the project as described below. (*Cross out whichever is inappropriate)

Signature: ..... Date: .....

Name of person(s): .....

Address: .....

.....

Tel: ..... Fax: .....

Email: .....

NOTE

*This notice to be submitted not less than **Fourteen Days** and not more than **Twenty Eight Days** before commencement of works or the material change of use to Meath County Council, Building Control Section*

Commencement Date: .....

Fee payable (Amount): € .....

2(a) PROJECT PARTICULARS: *(In addition, for Residential Developments, please complete Section 2b below)*

Description of proposed development:

.....

.....

Planning permission no.: .....

Date of grant: .....

Date of expiry: .....

Fire Safety Certificate Number *(if applicable)*: .....

Location of development: .....

2(b) Residential Development Information: (See Over for Details)

Total number of dwelling units (all phases*): .....

Total no of phases* .....

Phase for this commencement notice: .....

No. of units for this phase/commencement notice**: .....

Commencement date for this phase .....

(Proposed) end - date for this phase: .....

* where applicable, i.e. phasing not relevant for single houses

** include single house figure here also

3. Builder:

Name: .....

Tel: ..... Fax: .....

Address: .....

Email: .....

4. Building Owner Details: *(if different from Section 1 above)*

Name: .....

Tel: ..... Fax: .....

5. Building Designer Details:

Name: .....

Tel: ..... Fax: .....

Address: .....

Email: .....

6. Information: person(s) from whom such plans, docume any other information, as are necessary to show that the bu works will, if built in accordance with design, comply with requirements of the Building Regulations, may be obtained.

Name: .....

Tel: ..... Fax: .....

Address: .....

Email: .....

7. Drainage System Foundations: Person(s) from whom notifications of the pouring of any foundations and /or the covering up of any drainage systems may be obtained

Name: .....

Tel: ..... Fax: .....

Address: .....

Email: .....

Notes for Guidance of the Applicant

A Commencement Notice is required for:

- the erection of a building,
- the material alteration or extension of a building,
- the material change of use of a building.

to which the Building Regulations apply.

Where the building work is exempted development for the purposes of planning legislation, no Commencement Notic is required except in the case of:

- any building or works for which a Fire Safety Certifi is required,
- any material alteration (excluding a material altera consisting solely of minor works) in a shop, office industrial building including those for which a Fire Safety Certificate is not required.

Please answer all questions.

Along with this notice, please enclose one copy of a site map to a scale of a least 1:2500 indicating the site outlined A Commencement Notice must be accompanied by the appropriate fee.

Fees effective from 1st July 1998

Commencement Notice

€ 30, or where -

(a) the proposed works or the material char of use (as the case may be) related to m than one building, and

(b) neither part III of the Building Control Regulations 1997, nor part III of the Building Control Regulations 1991 and 1994 apply to such works or buildings.

€ 30 in respect of each building

*Maximum Fee payable in any case €3,8

Appendix B7

LICENCE REG NO W0167-02 HAS BEEN TRANSFERRED
Please note that licence Reg No. W0167-02 was transferred to Indaver Ireland Limited on 29th August 2011, for further information on this please refer to Transfer Notification on the Agency's website.

Headquarters
P.O. Box 3000
Johnstown Castle Estate
County Wexford
Ireland

WASTE LICENCE

Licence Register Number:	W0167-02
Licensee:	Indaver Ireland (Branch of Indaver NV)
Location of Facility:	Carranstown, Duleek, County Meath.

INTRODUCTION

This introduction is not part of the licence and does not purport to be a legal interpretation of the licence.

This revised waste licence is for the operation of an incinerator to burn non-hazardous waste and to recover energy in the form of steam which will be used to generate electricity at Carranstown, Duleek, County Meath. The facility is located within a site area of approximately 10 hectares.

Only residual non-hazardous waste (household, commercial and industrial) may be accepted at the facility. The licence authorises a maximum of 200,000 tonnes of waste per annum to be accepted at the facility for incineration, and 2,000 tonnes of waste per annum to be accepted for treatment in the proposed residue solidification plant.

Infrastructure for the incineration plant includes waste reception area, furnace, boiler, energy recovery system, facilities for the treatment of exhaust gases, facilities for handling and storage of incineration residues, stack, devices and systems for controlling, recording and monitoring of the incineration process. The plant will have one incineration line with a design capacity of 26.7 tonnes per hour. The heat produced from the process will be used to generate approximately 17.2MW of electricity, of which 2.1MW will be used on site and 15.1MW will be exported to the national grid.

The facility falls within the scope of Annex I of Council Directive 2008/1/EC concerning integrated pollution prevention and control. The following IPPC Directive activities will be carried on at the installation:

Category 5.2: Installations for the incineration of municipal waste (household waste and similar commercial, industrial and institutional wastes) with a capacity exceeding 3 tonnes per hour; and

Category 1.1: Combustion installations with a rated thermal input exceeding 50MW.

The activities also fall within the scope of Annex II of Council Directive 2008/98/EC on waste, under the following:

Operation D10: Incineration on Land; and

Operation R1: Use principally as a fuel or other means to generate energy.

The licensee must manage and operate the facility to ensure that the activities do not cause environmental pollution. The licensee is required to carry out regular environmental monitoring and submit all monitoring results and a wide range of reports on the operation and management of the facility to the Agency.

The licence sets out in detail the conditions under which Indaver Ireland (Branch of Indaver NV), 4 Haddington Terrace, Dun Laoghaire, County Dublin will operate and manage this facility.

Table of Contents

Glossary of Terms

All terms in this licence should be interpreted in accordance with the definitions in the Environmental Protection Agency Acts 1992 to 2007 / Waste Management Acts 1996 to 2010, unless otherwise defined in the section.

Abnormal Operations	Any technical stoppage, disturbance, or failure of any of the purification devices or the measurement devices, during which the concentrations in the discharges to air may exceed the prescribed emission limit values.
Adequate Lighting	20 lux measured at ground level.
AER	Annual Environmental Report.
Aerosol	A suspension of solid or liquid particles in a gaseous medium.
Agreement	Agreement in writing.
Annually	At approximately twelve-monthly intervals.
Application	The application by the licensee for this licence.
Appropriate Facility	A waste management facility, duly authorised under relevant law and technically suitable.
Attachment	Any reference to Attachments in this licence refers to attachments submitted as part of this licence application (Register No. W0167-02).
BAT	Best Available Techniques.
Bi-annually	All or part of a period of six consecutive months.
Biennially	Once every two years.
Biodegradable Waste	Any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food, garden waste, sewage sludge, paper and paperboard.
BOD	5 day Biochemical Oxygen Demand (without nitrification suppression).
Breakdown	Any technical stoppage, disturbance, or failure of the purification devices or the measurement devices.
CCTV	Closed Circuit Television.
CEN	Comité Européen De Normalisation – European Committee for Standardisation.

COD	Chemical Oxygen Demand.
Condition	A condition of this licence.
Consignment Note	As specified in the Waste Management (Movement of Hazardous Waste) Regulations (S.I. No. 147 of 1998).
Construction and demolition (C&D) waste	Wastes that arise from construction, renovation and demolition activities: Chapter 17 of the EWC or as otherwise may be agreed.
Containment boom	A boom that can contain spillages and prevent them from entering drains or watercourses or from further contaminating watercourses.
Daily	During all days of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement on any one day.
Day	Any 24 hour period.
Daytime	08:00 hrs to 22:00 hrs
dB(A)	Decibels (A weighted).
Dioxins and Furans	As defined in Council Directive 2000/76/EC on the incineration of waste.
Documentation	Any report, record, results, data, drawing, proposal, interpretation or other document in written or electronic form which is required by this licence.
Drawing	Any reference to a drawing or drawing number means a drawing or drawing number contained in the application, unless otherwise specified in this licence.
Emergency	Those occurrences defined in Condition 9.4.
Emission Limits	Those limits, including concentration limits and deposition levels established in *Schedule B: Emission Limits*, of this licence.
EMP	Environmental Management Programme.
Environmental damage	As defined in Directive 2004/35/EC.
EPA	Environmental Protection Agency.
European Waste Catalogue (EWC)	A harmonised, non-exhaustive list of wastes drawn up by the European Commission and published as Commission Decision 2000/532/EC and any subsequent amendment published in the Official Journal of the European Community.

Facility	Any site or premises used for the purpose of the recovery of disposal of waste.
Fortnightly	A minimum of 24 times per year, at approximately two week intervals.
Gas Oil	Gas Oil as defined in Council Directive 1999/32/EC and meeting the requirements of S.I. No. 119 of 2008.
GC/MS	Gas chromatography/mass spectroscopy.
HEPA filter	High efficiency particulate air filter.
Hours of waste acceptance	The hours during which the facility is authorised to accept waste.
ICP	Inductively coupled plasma spectroscopy.
Incident	The following shall constitute as incident for the purposes of this licence: a) an emergency; b) abnormal operation; c) breakdown; d) any emission that does not comply with the requirements of this licence; e) the attainment or exceedance of any trigger level specified in this licence; and f) any indication that environmental pollution has, or may have, taken place.
Incineration Plant	As defined in Council Directive 2000/76/EC on the incineration of waste.
Incinerator Residue	As defined in Council Directive 2000/76/EC on the incineration of waste.
Industrial waste	As defined in Section 5(1) of the Waste Management Acts 1996 to 2010.
Inert Waste	Waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and/or groundwater.
K	Kelvin.
kPa	Kilopascals.
L_{eq}	Equivalent continuous sound level.
Licensee	Indaver Ireland (Branch of Indaver NV), 4 Haddington Terrace, Dun Laoghaire, County Dublin.

Liquid waste	Any waste in liquid form and containing less than 2% dry matter, or any waste tankered to the facility.
List I	As listed in EC Directive 2006/11/EC.
List II	As listed in EC Directive 2006/11/EC.
Local Authority	Meath County Council.
Maintain	Keep in a fit state, including such regular inspection, servicing, calibration and repair as may be necessary to perform its function adequately.
Mass flow limit	An emission limit value expressed as the maximum mass of a substance that can be emitted per unit time.
Mass flow threshold	A mass flow rate above which a concentration limit applies.
Mixed Municipal Waste	Mixed municipal waste means waste from households as well as commercial, industrial and institutional waste, which because of its nature and composition is similar to waste from households, but excluding fractions indicated in the Annex to Decision 94/3/EC (4) under heading 20 01 that are collected separately at source and excluding the other wastes indicated under heading 20 02 of that Annex.
Monthly	A minimum of 12 times per year, at intervals of approximately one month.
Night-time	22:00 hrs to 08:00 hrs.
Noise-sensitive location (NSL)	Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.
Nominal Capacity	As defined in Council Directive 2000/76/EC on the incineration of waste.
O.D.	Ordinance datum Malin Head.
Oil separator	Device installed according to the International Standard I.S. EN 858-2:2003 (Separator system for light liquids, (e.g. oil and petrol) – Part 2: Selection of normal size, installation, operation and maintenance).
PRTR	Pollutant Release and Transfer Register.
Quarterly	All or part of a period of three consecutive months beginning on the first day of January, April, July or October.
Recyclable Materials	Those waste types, such as cardboard, batteries, gas cylinders, etc., which may be recycled.

Residue	As defined in Council Directive 2000/76/EC on the incineration of waste.
Residual Waste	In the context of intake to an incinerator/WtE plant, residual waste is waste that has been subjected to pre-treatment (including, *inter alia,* pre-segregation, sorting) to extract, to the maximum practical and available extent having regard to BAT, the recyclable/reusable components.
Sample(s)	Unless the context of this licence indicates to the contrary, the term samples shall include measurements taken by electronic instruments.
Sanitary effluent	Wastewater from facility toilet, washroom and canteen facilities.
Sludge	The accumulation of organic and inorganic solids resulting from chemical coagulation, flocculation and/or sedimentation after water or wastewater treatment with greater than 2% dry matter.
SOP	Standard operating procedure.
Source segregated waste	Waste which is separated at source; meaning that the waste is sorted at the point of generation into a recyclable fraction(s) for separate collection (e.g., paper, metal, glass, plastic, bulk dry recyclables, biodegradables, etc.,) and a residual fraction. The expression 'separate at source' shall be construed accordingly.
Specified emissions	Those emissions listed in *Schedule B: Emission Limits* of this licence.
Standard method	A National, European or internationally recognised procedure (e.g. I.S. EN, ISO, CEN, BS or equivalent); or an in-house documented procedure based on the above references; a procedure as detailed in the current edition of "Standard Methods for the Examination of Water and Wastewater" (prepared and published jointly by A.P.H.A., A.W.W.A. & W.E.F.), American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA; or an alternative method as may be agreed by the Agency.
Storm water	Rain water run-off from roof and non-process areas.
The Agency	Environmental Protection Agency.
TOC	Total organic carbon.
Treatment/pre-treatment	Any manual, thermal, physical, chemical or biological processes that change the characteristics of the waste in order to reduce its volume or hazardous nature or facilitate its handling, disposal or recovery.
Trigger level	A parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee.
Water Services Authority	Meath County Council.
Weekly	During all weeks of plant operation and, in the case of emissions, when emissions are taking place; with at least one measurement in any one week.

WEEE Waste Electrical & Electronic Equipment

WtE Plant Waste-to-Energy incineration plant.

WWTP Waste water treatment plant.

Decision & Reasons for the Decision

The Environmental Protection Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this licence, any emissions from the activity will comply with and will not contravene any of the requirements of Section 40(4) of the Waste Management Acts 1996 to 2010.

In reaching this decision the Environmental Protection Agency has considered the application and supporting documentation received from the applicant, all submissions received from other parties and the report of its inspector.

No objection having been received to the proposed determination, the licence is granted in accordance with the terms of the proposed determination.

Part I Schedule of Activities Licensed

In pursuance of the powers conferred on it by the Waste Management Acts 1996 to 2010, the Environmental Protection Agency (the Agency) under Section 46(8) of the said Acts hereby grants this Waste Licence to Indaver Ireland (Branch of Indaver NV), 4 Haddington Terrace, Dun Laoghaire, County Dublin to carry on the waste activities listed below at Carranstown, Duleek, County Meath, subject to conditions, with the reasons therefor and the associated schedules attached thereto set out in the licence.

Licensed Waste Disposal Activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2010

Class 7.	**Physico-chemical treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 8 to 10 of this Schedule (including evaporation, drying and calcination).**
Class 8.	**Incineration on land or at sea. [Principal Activity]**
Class 12.	**Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.**
Class 13.	**Storage prior to 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.**

Licensed Waste Recovery Activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2010

Class 3.	**Recycling or reclamation of metals and metal compounds.**
Class 4.	**Recycling or reclamation of other inorganic materials.**
Class 9.	**Use of any waste principally as a fuel or other means to generate energy.**
Class 13.	**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 such waste is produced.**

Part II Schedule of Activities Refused

On the basis of the information before it, the Agency, pursuant to its powers under Section 46(8) of the Waste Management Acts 1996 to 2010, hereby refuses the following class of activity.

Refused waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2010

Class 8.	**Oil re-refining or other re-uses of oil:** Reason: The use of a fuel in the auxiliary burners is a normal and integrated step in the facility technical processes and does not involve the combustion of waste and is not therefore an independent waste treatment process for wastes imported to, or produced on, the site.

Part III Conditions

Condition 1. Scope

1.1 Waste activities at this facility shall be restricted to those listed and described in *Part I Schedule of Activities Licensed*, and shall be as set out in the licence application or as modified under Condition 1.5 of this licence and subject to the conditions of this licence.

1.2 Activities at this facility shall be limited as set out in *Schedule A: Limitations* of this licence.

1.3 No hazardous wastes shall be accepted at the facility.

1.4 For the purposes of this licence, the facility authorised by this licence is the area of land outlined in red on Drawing No. 18081\WL\002 *Proposed Site Plan* of the application. Any reference in this licence to "facility" shall mean the area thus outlined in red. The licensed activities shall be carried on only within the area outlined.

1.5 No alteration to, or reconstruction in respect of, the activity, or any part thereof, that would, or is likely to, result in

(i) a material change or increase in:

- the nature or quantity of any emission;
- the abatement/treatment or recovery systems;
- the range of processes to be carried out;
- the fuels, raw materials, intermediates, products or wastes generated, or

(ii) any changes in:

- site management, infrastructure or control with adverse environmental significance;

shall be carried out or commenced without prior notice to, and without the agreement of, the Agency.

1.6 The facility shall be controlled, operated and maintained, and emissions shall take place as set out in the licence. All programmes required to be carried out under the terms of this licence become part of this licence.

1.7 This licence is for purposes of waste licensing under the Waste Management Acts 1996 to 2010 only and nothing in this licence shall be construed as negating the licensee's statutory obligations, or requirements under any other enactments or regulations.

1.8 This licence is being granted in substitution for the waste licence granted to the licensee on 24th November 2005 (Register No W0167-01). The previous waste licence (Register No: W0167-01) is superseded by this licence.

Reason: ***To clarify the scope of this licence.***

Condition 2. Management of the Facility

2.1 Facility Management

2.1.1 The licensee shall employ a suitably qualified and experienced (minimum 10 years in incinerator operation) facility manager who shall be designated as the person in charge. The facility manager or a nominated, suitably qualified and experienced deputy (minimum 5 years incinerator experience) shall be present on the facility at all times during its operation or as otherwise required by the Agency.

2.1.2 The licensee shall ensure that personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and experience as required and shall be aware of the requirements of this licence.

2.2 Management Structure

2.2.1 Prior to the commencement of waste activities, the licensee shall submit written details of the management structure of the facility to the Agency. Any proposed replacement in the management structure shall be notified in advance in writing to the Agency. Written details of the management structure shall include the following information:

a) the names of all persons who are to provide the management and supervision of the waste activities authorised by the licence, in particular the name of the facility manager and any nominated deputies;

b) details of the responsibilities for each individual named under a) above; and

c) details of the relevant education, training and experience held by each of the persons nominated under a) above.

2.3 Environmental Management System (EMS)

2.3.1 Prior to the acceptance of waste at the facility, the licensee shall establish and maintain an Environmental Management System (EMS). The EMS shall be updated on an annual basis and submitted to the Agency as part of the Annual Environmental Report (AER).

2.3.2 The EMS shall include, as a minimum, the following elements:

2.3.2.1 Management and Reporting Structure.

2.3.2.2 Schedule of Environmental Objectives and Targets.

The licensee shall prepare and maintain a Schedule of Environmental Objectives and Targets. The schedule shall, as a minimum, provide for a review of all operations and processes, including an evaluation of practicable options, for energy and resource efficiency, the use of cleaner technology, cleaner production, and the prevention, reduction and minimisation of waste and shall include waste reduction targets. The schedule shall include time frames for the achievement of set targets and shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

2.3.2.3 Environmental Management Programme (EMP)

(i) The licensee shall, not later than six months from the date of commencement of waste activities, submit to the Agency for agreement an EMP, including a time schedule, for achieving the Environmental Objectives and Targets prepared under Condition 2.2.2.2. Once agreed the EMP shall be established and maintained by the licensee. It shall include:

- designation of responsibility for targets;
- the means by which they may be achieved;
- the time within which they may be achieved.

(ii) The EMP shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER).

(iii) A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.

2.3.2.4 Documentation

(i) The licensee shall establish and maintain an environmental management documentation system which shall be to the satisfaction of the Agency.

(ii) The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

2.3.2.5 Corrective Action

The licensee shall establish procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for persons initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

2.3.2.6 Awareness and Training

The licensee shall establish and maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.3.2.7 Maintenance Programme

The licensee shall establish and maintain a programme for maintenance of all plant and equipment based on the instructions issued by the manufacturer/supplier or installer of the equipment. Appropriate record keeping and diagnostic testing shall support this maintenance programme. The licensee shall clearly allocate responsibility for the planning, management and execution of all aspects of this programme to appropriate personnel (see Condition 2.1 above).

2.3.2.8 Efficient Process Control

The licensee shall, in accordance with the Test Programme / Commissioning Plan, establish and maintain a programme to ensure there is adequate control of processes under all modes of operation. The programme shall identify the key indicator parameters for process control performance, as well as identifying methods for measuring and controlling these parameters. Abnormal process operating conditions shall be documented, and analysed to identify any necessary corrective action.

2.3.2.9 Public Awareness & Communications Programme

The licensee shall maintain a Public Awareness and Communications Programme to ensure that members of the public are informed and can obtain information at the facility, at all reasonable times, concerning the environmental performance of the facility. The Public Awareness & Communications Programme shall, as a minimum, include the following:

(i) Maintain information at the facility as required in Condition 11.2 which shall be available for inspection at all reasonable times;

(ii) Maintain the following information via the internet:

a) Real time data from on-line process and emissions monitoring of the incinerator (the parameters, format and timeframe for publication to the internet shall be agreed by the Agency but as a minimum shall include combustion chamber temperature as outlined in *Schedule C.1.1: Process Control*, of this licence)

b) A weekly summary of continuous emissions monitoring data;

(iii) Establish a Community Liaison Committee and facilitate regular meetings of that Committee at a frequency to be agreed with the Committee. The Agenda for each meeting shall be prepared and circulated in advance.

Reason: ***To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.***

Condition 3. Infrastructure and Operation

3.1 The licensee shall establish and maintain all infrastructure referred to in the licence application and in this licence prior to the commencement of the licensed activities, or as required and specified by the conditions of this licence.

3.2 Monitoring Infrastructure

3.2.1 Prior to commencement of waste acceptance at the facility, the licensee shall install and maintain a minimum of two downgradient and one upgradient monitoring boreholes to allow for sampling and analyses of groundwater in overburden and bedrock. All wellheads shall be adequately protected to prevent contamination or physical damage.

3.2.2 Meteorological Station

3.2.2.1 The licensee shall operate a weather monitoring station at the facility which records the requirements specified in *Schedule C.5: Meteorological Monitoring*, of this licence.

3.2.2.2 The licensee shall provide and maintain in a prominent location on the facility a windsock, or other wind direction indicator, which shall be visible from the public roadway outside the site.

3.2.3 Monitoring equipment shall be vibration isolated in accordance with manufacturers' instructions.

3.2.4 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.

3.2.5 The licensee shall clearly label and provide safe and permanent access to all on-site sampling and monitoring points and to off-site point as required by the Agency. The requirement with regard to off-site points is subject to the prior agreement of the landowner(s) concerned.

3.2.6 The licensee shall maintain all sampling and monitoring points, and clearly label and name all sampling and monitoring locations, so that they may be used for representative sampling and monitoring.

3.3 Facility Notice Board

3.3.1 The licensee shall provide and maintain a Facility Notice Board on the facility so that it is legible to persons outside the main entrance to the facility. The minimum dimensions of the board shall be 1200 mm by 750 mm.

3.3.2 The board shall clearly show:

(i) the name and telephone number of the facility;

(ii) the waste acceptance hours;

(iii) the name of the licence holder;

(iv) an emergency out of hours contact telephone number;

(v) the waste licence reference number; and

(vi) where environmental information relating to the facility can be obtained.

3.4 Facility Security

3.4.1 Security and stockproof fencing and gates as described in Attachment D.1.a – *Site Security Arrangements* of the application, shall be installed and maintained. The security fence and gates shall be at the locations shown on Drawing No. 18081\WL\005 of the licence application – '*Site Plan'*, revision B.

3.4.2 Prior to the acceptance of waste at the facility, the licensee shall install a CCTV system which records all truck movements into and out of the facility, as well as operations in the waste reception hall, bunker and ash storage areas. The CCTV system shall be operated at all times and copies of recordings kept on site for a period to be agreed by the Agency. Copies of these stored recordings shall be made available to the Agency on request.

3.5 Waste Inspection and Quarantine Areas

3.5.1 An impermeable Waste Inspection Area and a Waste Quarantine Area shall be provided and maintained at the facility.

3.5.2 These areas shall be constructed and maintained in a manner suitable, and be of a size appropriate, for the inspection of waste and subsequent quarantine if required. The waste inspection and waste quarantine areas shall be clearly identified and segregated from each other, and quarantined waste shall be appropriately stored and clearly labelled.

3.5.3 Drainage from these areas shall be diverted for collection and safe disposal. The collected water shall be either used as process water in the incineration plant, or if unsuitable, tankered off site for treatment at an authorised waste or wastewater treatment facility.

3.6 The licensee shall provide and maintain two weighbridges at the facility.

3.7 Fire-water Retention

3.7.1 The licensee shall, to the satisfaction of the Agency, establish and maintain a suitable fire-water risk management programme. The risk management programme shall be fully implemented in advance of acceptance of waste at the facility.

3.7.2 In the event of a fire or spillage to storm water, the site storm water shall be diverted to suitable containment. The licensee shall have regard to any guidelines issued by the Agency with regard to firewater retention.

3.8 The licensee shall provide the following minimum residual storage capacity:

(i) bottom ash: 1,600 m^3;

(ii) boiler ash: 100 m^3;

(iii) fly ash/flue gas cleaning ash: 420 m^3.

3.9 Prior to the date of commencement of the waste activities at the facility, the licensee shall install and provide adequate measures for the control of odours and dust emissions, including fugitive dust emissions, from the facility. Such measures shall at a minimum include the following:-

3.9.1 Installation and maintenance of negative pressure at the waste reception, waste bunker, waste storage and incinerator residue storage/loading areas of the incineration plant, to ensure no significant escape of odours or dust.

3.9.2 Doors at the entry/exit points from the buildings where waste is accepted and stored, shall be kept closed where possible.

3.9.3 Implementation of an odour and fugitive dust management system to include periods when the incinerator is not operational.

3.10 Prior to the date of commencement of waste activities at the facility, the licensee shall ensure that adequate standby and back up equipment, to include that listed in the Test Programme/Commissioning Plan Report, is provided on site to provide for contingency arrangements in the event of a breakdown of critical waste handling, treatment or abatement equipment.

3.11 Tank, Container and Drum Storage Areas

3.11.1 All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines 'Storage and Transfer of Materials for Scheduled Activities' (2004).

3.11.2 All tank and drum storage areas shall, as a minimum, be bunded, either locally or remotely, to a volume not less than the greater of the following:

(i) 110% of the capacity of the largest tank or drum within the bunded area; or

(ii) 25% of the total volume of substance that could be stored within the bunded area.

3.11.3 All drainage from bunded areas shall be treated as hazardous waste unless it can be demonstrated to be otherwise. All drainage from bunded areas shall be diverted for collection and safe disposal.

3.11.4 All inlets, outlets, vent pipes, valves and gauges must be within the bunded area.

3.11.5 All tanks, containers and drums shall be labelled to clearly indicate their contents.

3.11.6 The integrity and water tightness of all bunding structures and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated to the satisfaction of the Agency and shall be reported to the Agency following installation and prior to their use as a storage area. The licensee shall repeat the test at five year intervals and include the results of the tests in the AER.

3.11.7 The licensee shall provide adequate tank storage on site for aqueous wastes delivered to the facility for treatment. The location and capacity of such tank storage shall be notified to the Agency prior to the acceptance of waste at the facility.

3.12 Wastewater Treatment

3.12.1 The licensee shall provide and maintain Wastewater Treatment Systems at the facility for the treatment of sanitary effluent arising on-site, as described in Appendix 9.5 *Puraflo Modular Secondary Treatment Plant Specifications* of the EIS (2009) submitted with the licence application.

3.12.2 The wastewater treatment systems and percolation areas shall satisfy the criteria set out in the Agency's Wastewater Treatment Manual on *Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (p.e. 10 – 500)* (EPA, 1999). Any references therein to *Treatment Systems for Single Houses* (EPA, 2000) shall be replaced by the *Code of Practice on Waste Water Treatment and Disposal Systems serving single houses (p.e. ≤ 10)* (EPA, 2009).

3.13 Surface Water Management

3.13.1 Effective surface water management infrastructure shall be provided and maintained at the facility during construction and operation of the facility. The surface water management infrastructure shall be as described in Section 11.3.3 *Storm Water Management* of the EIS (2009) submitted with the application. The rate of surface water discharge from the site shall not exceed 36.2 litres per second, unless otherwise agreed by the Water Services Authority.

3.14 Drainage System, pipeline identification

3.14.1 Prior to the commencement of waste activities, all wastewater gullies, drainage grids and manhole covers shall be painted with red squares whilst all surface water discharge gullies, drainage grids and manhole covers shall be painted with blue triangles. These colour codes shall be maintained so as to be visible at all times during facility operation, and any identification designated in this licence (e.g. SW1) shall be inscribed on these manholes.

3.14.2 Silt Traps and Oil Separators

The licensee shall install and maintain:

(i) Silt traps to ensure that all storm water discharges, other than storm water from roofs, from the facility pass through a silt trap in advance of discharge;
(ii) A Class I oil separator on the storm water discharge from yard areas.
(iii) A forecourt separator at the diesel delivery area.

The silt traps and separators shall be in accordance with I.S. EN 585-2:2003 (separator systems for light liquids).

3.14.3 The drainage system, bunds, silt traps and oil separators shall be inspected weekly, desludged as necessary and properly maintained at all times. All sludge and drainage from these operations shall be collected for safe disposal.

3.14.4 The licensee shall have in storage an adequate supply of containment booms and/or suitable absorbent material to contain and absorb any spillage at the facility.

3.14.5 Appropriate drainage infrastructure shall be provided at the aqueous waste unloading area to collect any potential spills or losses. All waste water from this area shall be diverted for collection and safe disposal.

3.15 Existing 200mm Diameter Gas Main

3.15.1 The pathway for the existing gas main shall be clearly delineated on site. An on-site permanent way-leave width of 14m and a working strip of 18m shall be provided and maintained by the licensee.

3.16 Waste Acceptance / Removal Hours and Hours of Operation

3.16.1 Waste may be accepted at, or removed from, the facility only between the hours of 0800 to 1830 Monday to Friday inclusive and 0800 to 1400 on Saturdays.

3.16.2 Waste shall not be accepted at, or removed from, the facility on Sundays and Public Holidays without the written approval of the Agency.

3.16.3 The incineration plant may be operated 24 hours per day, Monday to Sunday inclusive.

3.17 Incineration Plant

3.17.1 Prior to the commencement of waste activities, the licensee shall provide and maintain incineration plant as specified in the licence application (Reference W0167-02), or as may be varied with the written approval of the Agency.

3.17.2 The incinerator plant design and construction shall incorporate the following:

(i) The stack elevation of the incineration plant (Emission Point Reference No. A1-1) shall at minimum be 95.5m O.D.

(ii) Appropriate seismic design of the foundation.

3.18 Incineration Plant – Test Programme / Commissioning Plan

3.18.1 The licensee shall, at least three months prior to the date of plant commissioning, submit to the Agency for its agreement, a Test Programme / Commissioning Plan.

3.18.2 The Test Programme / Commissioning Plan shall as a minimum:

(a) Verify the residence time as well as the minimum temperature and the oxygen content of the exhaust gas which will be achieved during normal operation and under the most unfavourable operating conditions anticipated.

(b) Demonstrate that the combustion chamber will be able to achieve 850°C for two seconds on a continuous basis.

(c) Establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in this licence.

(d) Assess the performance of any monitors on the abatement system and establish a maintenance and calibration programme for each monitor.

(e) Confirm that all measurement equipment or devices (including thermocouples) used for the purpose of establishing compliance with this licence has been subjected, in situ, to its normal operating temperature to prove its operation under such conditions.

(f) Establish a list of the standby and back up equipment required to provide for contingency arrangements in the event of a breakdown of critical waste handling, treatment or abatement equipment.

3.18.3 The Test Programme / Commissioning Plan shall be implemented as agreed and a report on its implementation shall be submitted to the Agency on completion.

3.18.4 The Incineration plant shall not be operated by the licensee (outside of the agreed Test Programme / Commissioning Plan) until such time as it is authorised to do so by the Agency.

3.19 Incineration Plant operations – additional requirements

3.19.1 The plant shall be operated in accordance with the criteria for operation and control as determined in the test programme in Condition 3.18.

3.19.2 The nominal capacity of the plant shall be 26.7 tonnes per hour.

3.19.3 Prior to the commencement of waste activities the licensee shall establish and maintain standard operating procedures for the operation of the Incineration plant. These shall incorporate the process controls identified in *Schedule C: Control and Monitoring*, of this licence.

3.19.4 The plant shall be operated in order to achieve a level of incineration such that the Total Organic Carbon (TOC) content of the slag and bottom ashes is less than 3% or their loss on ignition is less than 5% of the dry weight of the material.

3.19.5 Even under the most unfavourable of conditions, the incineration plant shall be operated in such a way that, after the last injection of combustion air, the gas resulting from the process is raised, in a controlled and homogenous fashion, for a duration of two seconds to a temperature of 850°C, as measured near the inner wall or at another representative point of the combustion chamber as authorised by the Agency. Waste shall be charged into the incinerator only when these operating conditions are being complied with and when the continuous monitoring shows that the emission limit values are not being exceeded.

3.19.6 The incineration plant shall be equipped with at least one auxiliary burner. The burner must be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below 850°C. The auxiliary burner shall also be used during plant start-up and shut-down operations in order to ensure the temperature of 850°C is maintained at all times during the operations and as long as unburned waste is in the combustion chamber.

3.19.7 During start-up or shut-down or when the temperature of the combustion gas falls below 850°C, the auxiliary burner shall not be fed with fuels which may cause higher emissions than those resulting from the burning of gas oil, as defined in Council Directive 75/716/EEC, liquefied gas or natural gas.

3.19.8 The incineration plant shall have and operate an automatic system to prevent waste feed:

(a) At start-up, until the temperature of 850°C has been reached;

(b) Whenever the temperature of 850°C is not maintained;

(c) Whenever the continuous measurements show that any emission limit value is exceeded due to disturbances or failures of the purification devices; and

(d) Whenever stoppages, disturbances, or failure of the purification devices or the measurement devices may result in the exceedance of the emission limit values.

3.19.9 The boiler shall be equipped with an automatic cleaning system to minimise the reformation of dioxins and furans.

3.19.10 The waste bunker shall be equipped with the following:-

(a) a smoke detection system (or equivalent) with alarm and water cannon for fire control; and

(b) a detector for the presence of explosive gases.

3.20 Abnormal Operation / breakdown

3.20.1 In the case of a breakdown, the licensee shall shut down incineration plant operations as soon as practicable, until normal operations can be restored. The licensee shall not resume incineration operations except in accordance with a protocol to be agreed with the Agency.

3.20.2 In the case of abnormal operations:

(i) The licensee shall under no circumstances continue to incinerate waste for a period of more than four hours uninterrupted where emission limit values specified in *Schedule B.1: Emission Limits to Air*, of this licence are exceeded, and

(ii) The cumulative duration of abnormal operation over one calendar year shall be less than 60 hours, and

(iii) The total dust content of the emissions from the stack (A1-1) shall under no circumstances exceed 150 mg/m^3 (expressed as a half-hourly average) and the emission limit values specified in *Schedule B.1: Emission Limits to Air*, of this licence for CO and TOC shall not be exceeded.

3.21 There shall be no bypass of the air abatement system.

3.22 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer.

3.23 All pump sumps or other treatment plant chambers from which spillage of environmentally significant materials might occur in such quantities as are likely to breach local or remote containment or separator, shall be fitted with high level liquid alarms (or oil detectors as appropriate) prior to the commencement of waste activities.

3.24 The licensee shall provide and use adequate lighting during the operation of the facility in hours of darkness.

3.25 Engineering Works

3.25.1 All construction works shall be supervised by an appropriately qualified person, and that person, or persons, shall be present at all times during which relevant works are being undertaken.

3.25.2 Following the completion of infrastructural works and prior to operation, the licensee shall commission an independent construction quality assurance validation and submit the validation report to the Agency on completion. The report shall, as appropriate, include the following information:-

(a) A description of the works;

(b) As-built drawings of the facility;

(c) Records and results of all integrity and validation tests carried out (including failures) including a report on the details of the computational fluid dynamic modelling of the incineration plant;

(d) Drawings and sections showing the location, capacity and discharge points of all pipes, drains, bunds, bunkers and waste storage areas;

(e) Name(s) of contractor(s)/individual(s) responsible for undertaking the work;

(f) Records of any problems and the remedial works carried out to resolve those problems; and

(g) Any other information requested in writing by the Agency.

3.25.3 The licensee shall submit proposals for the installation of residue treatment and bottom ash recovery infrastructure to the Agency for its agreement at least three months in advance of the intended date of commencement of any such works (installation of infrastructure). No such works shall be carried out without the prior agreement of the Agency.

Reason: ***To provide for appropriate operation of the facility to ensure protection of the environment.***

Condition 4. Interpretation

4.1 Emission limit values for emissions to atmosphere from the incineration plant in this licence shall be interpreted in the following way:

4.1.1 Continuous Monitoring

4.1.1.1 The half-hourly average values and the 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-off periods if no waste is being incinerated) from the measured values after having subtracted the value of the confidence interval specified at Condition 4.1.1.2 below. The daily average values shall be determined from those validated average values.

4.1.1.2 At the daily emission limit value level, the values of the 95% confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:

Carbon monoxide:	10%
Sulphur dioxide:	20%
Nitrogen dioxide:	20%
Total dust:	30%
Total organic carbon:	30%
Hydrogen chloride:	40%
Hydrogen fluoride:	40%
Ammonia:	40%

4.1.1.3 To obtain a valid daily average value no more than five half hourly average values in any day shall be discarded due to malfunction or maintenance of the continuous measurement system. No more than ten daily average values per year shall be discarded due to malfunction or maintenance of the continuous measurement system.

4.1.2 Non-Continuous Monitoring

4.1.2.1 For periodic measurements, compliance shall be determined from the measured value after having subtracted the uncertainty error for the selected method of sampling and analysis for each relevant pollutant.

4.1.2.2 For any parameter where, due to sampling/analytical limitations, a 30 minute sampling period is inappropriate, a suitable period between 30 minutes and 8 hours should be employed and the value obtained therein shall not exceed the emission limit value.

4.1.2.3 For all other parameters, no 30 minute mean value shall exceed the emission limit value.

4.1.2.4 For flow, no hourly or daily mean value shall exceed the emission limit value.

4.2 The results of the measurements made to verify compliance with the emission limit values shall be standardised at the following conditions:

Temperature	273 K
Pressure	101.3 kPa
Oxygen	11%

dry gas, in exhaust gas of incineration plants.

4.3 Noise

Noise from the facility shall not give rise to sound pressure levels (Leq, T) measured at noise sensitive locations which exceed the limit value(s).

Reason: ***To clarify the interpretation of limit values fixed under the licence.***

Condition 5. Emissions

5.1 No specified emission from the facility shall exceed the emission limit values set out in *Schedule B: Emission Limits* of this licence. There shall be no other emissions of environmental significance.

5.2 The licensee shall ensure that there are no discharges of waste water from the cleaning of exhaust gas to surface water, sewer or ground.

5.3 The licensee shall ensure that the activities shall be carried out in a manner such that emissions do not result in significant impairment of, or significant interference with the environment beyond the facility boundary.

5.4 There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at noise sensitive locations.

5.5 The licensee shall maintain negative air pressure in the waste reception hall and waste bunker unless otherwise agreed by the Agency. Air extracted from these areas shall be discharged via the stack (emission point A1-1).

5.6 The licensee shall ensure that all or any of the following:

- Vermin;
- Birds;
- Flies;
- Mud;
- Dust;
- Litter;
- Odour;

associated with the activity do not result in an impairment of, or an interference with, amenities or the environment at the facility or beyond the facility boundary or any other legitimate uses of the

environment beyond the facility boundary. Any method used by the licensee to control or prevent any such impairment/interference shall not cause environmental pollution.

5.7 The licensee shall ensure that all vehicles delivering waste to and removing waste from the facility are appropriately covered, and sealed in the case of hazardous incinerator residues.

5.8 The licensee shall, during the Test Programme / Commissioning Plan and on a quarterly basis thereafter, determine the PM_{10} and $PM_{2.5}$ fraction of the Total Dust from Emission Point Reference No. A1-1 (Stack). The results of these determinations shall be submitted to the Agency annually as per the AER.

Reason: ***To provide for the protection of the environment by way of control and limitation of emissions.***

Condition 6. Control and Monitoring

6.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out below and as in accordance with *Schedule C: Control & Monitoring* of this licence.

6.1.1 Analyses shall be undertaken by competent staff in accordance with documented operating procedures.

6.1.2 Such procedures shall be assessed for their suitability for the test matrix and performance characteristics shall be determined.

6.1.3 Such procedures shall be subject to a programme of Analytical Quality Control using control standards with evaluation of test responses.

6.1.4 Where any analysis is sub-contracted it shall be to a competent laboratory.

6.2 The licensee shall carry out a noise survey of the site operations within three months after the commencement of the licensed activity and annually thereafter. The survey programme shall be submitted to the Agency in writing at least one month before the survey is to be carried out. The survey programme shall be in accordance with *Schedule C: Control & Monitoring*, of this licence or as otherwise agreed by the Agency. A record of the survey results shall be available for inspection by any authorised persons of the Agency, at all reasonable times and a summary report of this record shall be included as part of the AER.

6.3 Subject to the requirements and provision of Article 11 of the Council Directive 2000/76/EC on the incineration of waste, the Agency may amend the frequency, locations, methods and scope of monitoring as required by this licence and shall notify the licensee accordingly. The licensee shall provide such information concerning such amendments as may be requested in writing by the Agency and such alterations shall be carried out within any timescale nominated by the Agency.

6.4 Monitoring and analysis equipment shall be operated and maintained so that all monitoring results accurately reflect any emission, discharge or environmental parameter specified in this licence.

6.5 All persons conducting the sampling, analyses, monitoring and interpretation as required by this licence shall be suitably competent.

6.6 Measurements for the determination of concentrations of air and water polluting substances shall be carried out representatively.

6.7 Monitoring equipment shall be vibration isolated in accordance with manufacturers' specifications.

6.8 Sampling and analysis of all pollutants including dioxins and furans as well as reference measurement methods to calibrate automated measurement systems shall be carried out in accordance with CEN-standards. If CEN standards are not available, ISO, national or international standards which will ensure the provision of data of an equivalent scientific quality shall apply.

6.9 All treatment/abatement and emission control equipment shall be calibrated and maintained in accordance with the instructions issued by the manufacturer/supplier or installer. For Incineration Plant, the appropriate installation and the functioning of the automated monitoring equipment for emissions into air shall be subject to an annual surveillance test. Calibration shall be done by means of parallel measurements with the reference methods at least every three years.

6.10 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the waste activities are being carried on, unless alternative sampling or monitoring has been agreed, in writing, by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.

6.11 The licensee shall, at a minimum of one week intervals, inspect the facility and its immediate surrounds for nuisances caused by litter, vermin, birds, flies, mud, dust and odours.

6.12 The readouts from continuous emission monitors shall report monitoring compliance information that enables direct comparison with the emission limit values specified in *Schedule B: Emission Limits*, of this licence.

6.13 The licensee shall prepare a programme, to the satisfaction of the Agency, for the identification and reduction of fugitive emissions using an appropriate combination of best available techniques. This programme shall be included in the Environmental Management Programme.

6.14 Prior to the acceptance of waste at the facility, the licensee shall submit to the Agency for its agreement, groundwater monitoring trigger levels (ammonia, TOC and chloride as a minimum).

6.15 Residues from the incineration plant shall be subject to the monitoring and analysis specified in *Schedule C.4: Monitoring of Residue* of this licence, prior to determining the route for disposal or recycling. The monitoring and analysis shall establish the physical and chemical characteristics and polluting potential of the residues.

6.16 The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee prior to use. This testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee.

6.17 Storm Water

6.17.1 A visual examination of the storm water discharges shall be carried out daily. A log of such inspections, shall be maintained.

6.17.2 Prior to the acceptance of waste at the facility, the licensee shall propose storm water trigger levels for the agreement of the Agency, having regard to the parameters in *Schedule C.2.3 Monitoring of Storm Water Emissions* of this licence.

Reason: ***To provide for the protection of the environment by way of treatment and monitoring of emissions.***

Condition 7. Resource Use and Energy Efficiency

7.1 The licensee shall, prior to the commencement of waste activities at the facility, review and report to the Agency on the energy efficiency aspects of the design to maximise the recovery of the energy generated from the incineration of waste. Surplus energy from the operation of the facility shall be exported to the National Grid.

7.2 The licensee shall build and operate the facility to achieve an energy efficiency of, as a minimum, 0.65 using the formula below to calculate Energy Efficiency:

$$\text{Energy Efficiency} = [E_p-(E_f + E_i)] / [0.97 \times (E_w + E_f)] \text{ where}$$

E_p = annual energy produced as heat or electricity (GJ/year) (heat produced for commercial use is multiplied by 1.1 and electricity is multiplied by 2.6)

E_f = annual energy input to the system from fuels contributing to the production of steam (GJ/year)

E_w = annual energy contained in the waste input using the net calorific value of the waste (GJ/year)

E_i = annual energy imported excluding E_w and E_f

And 0.97 is a factor accounting for energy losses.

7.3 The licensee shall carry out an audit of the energy efficiency of the site within one year of the date of commencement of waste acceptance. The licensee shall consult with the Agency on the nature and extent of the audit and shall develop an audit programme to the satisfaction of the Agency. The audit programme shall be submitted to the Agency in writing at least one month before the audit is to be carried out. The energy efficiency audit report shall include:

7.3.1 A review of opportunities for increasing the overall energy efficiency of the facility.

7.3.2 Progress with those opportunities identified in the previous report.

7.3.3 The net usable energy produced per tonne of waste processed (i.e. energy consumption of the facility and unused energy discharged from cooling operations to be deducted).

The report shall include a full breakdown of the calculation of each parameter in the equation referred to in Condition 7.2 and the net usable energy produced per tonne of waste processed.

The audit report shall be repeated annually and submitted to the Agency in the AER.

7.4 The recommendations of the audit shall, where appropriate, be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.

7.5 The licensee shall identify opportunities for:

(a) The reduction in the quantity of water used on site including recycling and reuse initiatives, wherever possible.

(b) The recovery/recycling of residues.

(c) Optimisation of fuel and raw material usage on site.

These shall be incorporated into the Schedule of Environmental Objectives and Targets under Condition 2 above.

Reason: ***To provide for the efficient use of resources and energy in all site operations.***

Condition 8. Materials Handling

8.1 All waste handling and treatment shall be undertaken within the facility building, with the exception of storage of non-conforming waste at the outdoor waste quarantine area.

8.2 Disposal or recovery of waste shall only take place in accordance with the conditions of this licence and in accordance with the appropriate National and European legislation and protocols.

8.3 Waste Acceptance/Removal and Characterisation Procedures

8.3.1 Waste shall be accepted at/removed from the facility only from/by an authorised or exempted carrier under National or European legislation or protocols. Copies of the waste collection permits must be maintained at the facility.

8.3.2 The quantity of waste to be accepted at the facility on a daily basis shall not exceed the appropriate storage capacity available for such waste.

8.3.3 Prior to commencement of waste acceptance at the facility, the licensee shall establish and maintain, and submit to the Agency for written approval, detailed written procedures for the acceptance and handling of wastes. Once approved by the Agency, the procedures shall be implemented at the facility. These procedures shall include the following:

(a) Procedures for waste profiling from new and known customers, waste inspection prior to discharge into the bunker, and waste characterisation;

(b) Methods for the characterisation of waste sent off-site for disposal/recovery, in order to distinguish between inert, non-hazardous and hazardous wastes. In the case of materials dispatched to landfill, such methods shall have regard to the EU decision (2003/33/EC) on establishing the criteria and procedures for the acceptance of waste at landfills or any revisions pursuant to Article 16 and Annex II of Directive (1999/31/EC) on the landfill of waste;

(c) Procedures for the reception and weighing of incoming and outgoing wastes;

(d) Procedures for the handling of waste and incinerator residues including bunker and silo management;

(e) Procedures to determine the mass of each category of waste in accordance with, and by reference to, the relevant EWC codes as outlined by Commission Decision 2000/532 of 3rd May 2000, as amended.

8.4 Waste Pre-treatment

8.4.1 In the case of municipal waste, only waste that has been subject to pre-treatment shall be accepted for incineration at the facility.

8.4.2 Pre-treatment shall reflect published EPA technical guidance as set out in *Municipal Solid Waste – Pre-treatment and Residuals Management,* EPA, 2009.

8.5 Any waste deemed unsuitable for processing at the facility or in contravention of this licence shall be immediately separated and removed from the facility at the earliest possible time. Temporary storage of such wastes shall be in a designated Waste Quarantine Area. Waste shall be stored under appropriate conditions in the quarantine area to avoid contamination of stormwater, putrefaction, odour generation, the attraction of vermin and any other nuisance or objectionable condition.

8.6 The licensee shall ensure that waste from the incineration plant, prior to being sent for disposal or recovery off site, is:-

8.6.1 Segregated, classified, packaged and labelled in accordance with National, European and any other standards which are in force in relation to such labelling;

8.6.2 Stored, loaded and unloaded in designated areas, protected as may be appropriate against spillage and leachate run-off;

8.6.3 Stockpiled in such a manner as to minimise dust generation.

8.7 No waste classified as green list waste in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended) shall be consigned for recovery without the agreement of the Agency.

8.8 Unless otherwise agreed in writing by the Agency, the licensee is prohibited from mixing a hazardous waste of one category with a hazardous waste of another category or with any other non-hazardous waste.

8.9 Waste shall be accepted at the facility only from known customers or new customers subject to initial waste profiling and waste characterisation off-site.

8.10 Incinerator Residues

8.10.1 Bottom ash shall be stored at dedicated areas within the ash handling building on concrete hardstanding with contained drainage.

8.10.2 Boiler ash and flue gas cleaning residues shall be stored in dedicated enclosed silos (equipped with HEPA filters) within the main process building, on concrete hardstanding with contained drainage.

8.10.3 Dry residues in the form of dust, such as boiler dust, and dry residues from the treatment of combustion gases, shall be stored in closed containers in such a way as to prevent dispersal in the environment.

8.10.4 Lime grits shall not be mixed with residues.

8.10.5 Metals for recycling that are recovered from the bottom ash shall be stored at a dedicated area within the bottom ash handling building on concrete hardstanding with contained drainage.

8.10.6 Prior to the commencement of solidification of waste residues from the incineration process, the licensee shall establish and maintain procedures for the solidification process to be agreed by the Agency.

8.11 Waste sent off-site for recovery or disposal shall be conveyed only by holders of wastes collection permits issued under National or European legislation or Protocols to an appropriate facility authorised to accept such waste. The waste shall be transported from the site of the activity to the site of recovery/disposal only in a manner that will not adversely affect the environment and in accordance with the appropriate National and European legislation and protocols.

8.12 The licensee shall neither import waste into the State nor export waste out of the State except in accordance with the relevant provisions of Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and associated national regulations.

Reason: ***To provide for the appropriate handling of material and the protection of the environment.***

Condition 9. Accident Prevention and Emergency Response

9.1 The licensee shall, prior to the commencement of waste activities, ensure that a documented Accident Prevention Procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

9.2 The licensee shall, prior to the commencement of waste activities, submit a written Emergency Response Procedure (ERP) to the Agency for its agreement. The ERP shall address any emergency situations which may originate on the facility and shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary. The procedure should also develop appropriate responses to off-site emergency situations that may have implications for the safe operation of the licensees site.

9.3 Incidents

9.3.1 In the event of an incident the licensee shall immediately:

(a) carry out an immediate investigation to identify the nature, source and cause of the incident and any emission arising therefrom;

(b) isolate the source of any such emission;

(c) evaluate the environmental pollution, if any, caused by the incident;

(d) identify and execute measures to minimise the emissions/malfunction and the effects thereof;

(e) identify the date, time and place of the incident;

(f) notify the Agency and other relevant authorities.

9.3.2 The licensee shall provide a proposal to the Agency for its agreement within one month of the incident occurring or as otherwise agreed by the Agency, to:

(i) identify and put in place measures to avoid recurrence of the incident; and

(ii) identify and put in place any other appropriate remedial actions.

9.4 Emergencies

9.4.1 In the event of a complete breakdown of equipment or any other occurrence which results in the shutdown of the incineration plant or process line, any waste:-

(a) arriving at the facility shall be transferred directly to an appropriate facility;

(b) stored or awaiting processing at the facility shall, subject to the agreement of the Agency, be transferred to an appropriate facility within three days of shut-down, unless otherwise agreed with the Agency.

9.4.2 All significant spillages occurring at the facility shall be treated as an emergency and immediately cleaned up and dealt with so as to alleviate their effects.

9.4.3 A fire outbreak at the facility shall be treated as an emergency and immediate action shall be taken to extinguish it and notify the appropriate authorities.

9.4.4 In the event that monitoring of local wells indicates that the facility is having a significant adverse effect on the quantity or the quality of the water supply, this shall be treated as an emergency and the licensee shall provide an alternative supply of water to those affected.

Reason: ***To provide for the protection of the environment.***

Condition 10. Decommissioning & Residuals Management

10.1 Following termination, or planned cessation for a period greater than six months, of use or involvement of all or part of the site in the licensed activity, the licensee shall, to the satisfaction of the Agency, decommission, render safe or remove for disposal/recovery any soil, subsoil, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.

10.2 Decommissioning Management Plan (DMP)

10.2.1 The licensee shall prepare, to the satisfaction of the Agency, a fully detailed and costed plan for the decommissioning or closure of the site or part thereof. This plan shall be submitted to the Agency for agreement in advance of the commencement of the waste activities.

10.2.2 The plan shall be reviewed annually and proposed amendments thereto notified to the Agency for agreement as part of the AER. No amendments may be implemented without the agreement of the Agency.

10.2.3 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Condition 10.2.1 above.

10.3 The Decommissioning Management Plan shall include, as a minimum, the following:

(a) a scope statement for the plan;

(b) the criteria that define the successful decommissioning of the activity or part thereof, which ensures minimum impact on the environment;

(c) a programme to achieve the stated criteria;

(d) where relevant, a test programme to demonstrate the successful implementation of the decommissioning plan; and

(e) details of the costings for the plan and the financial provisions to underwrite those costs.

10.4 A final validation report to include a certificate of completion for the Decommissioning Management Plan, for all or part of the site as necessary, shall be submitted to the Agency within three months of execution of the plan. The licensee shall carry out such tests, investigations or submit certification, as requested by the Agency, to confirm that there is no continuing risk to the environment.

Reason: ***To make provision for the proper closure of the activity ensuring protection of the environment.***

Condition 11. Notification, Records and Reports

11.1 In the event of an incident occurring on the facility, the licensee shall:-

(a) notify the Agency as soon as practicable and in any case not later than 10.00 a.m. the following working day after the occurrence of any incident;

(b) submit a written record of the incident, including all aspects described in Condition 9.3.1 (a-e), to the Agency as soon as practicable and in any case within five working days after the occurrence of any incident.

(c) in the event of an incident which relates to discharges to surface water, notify Inland Fisheries Ireland as soon as practicable and in any case, not later than 10:00 a.m. on the following working day after such an incident; and

(d) should any further actions be taken as a result of an incident occurring, the licensee shall forward a written report of those actions to the Agency as soon as practicable and no later than ten days after the initiation of those actions.

11.2 The licensee shall store and maintain the following documents and records at the facility:-

(a) a copy of this licence and any elements of the licence application or EIS documentation referenced in this licence;

(b) the current EMS for the facility;

(c) the previous year's AER for the facility;

(d) all reports and proposals prepared in accordance with the conditions of this licence;

(e) all written records specified in Condition 11.3; and

(f) all notifications to the Agency and relevant correspondence with the Agency;

(g) up to date site drawings/plans showing the location of key process and environmental infrastructure, including monitoring locations and emission points;

(h) up to date Standard Operational Procedures for all processes, plant and equipment necessary to give effect to this licence or otherwise to ensure that standard operation of such processes, plant or equipment does not result in unauthorised emissions to the environment;

The above documents and records shall be available on site for inspection by authorised persons of the Agency.

11.3 The licensee shall maintain written records at the facility of the following:-

11.3.1 All sampling, audits, analysis, measurements, incidents, inspections, examinations, tests, malfunction, breakdown, calibrations, surveys, maintenance or remedial works carried out in accordance with the requirements of this licence.

11.3.2 For each load of waste arriving at and departing from the facility, the following:-

(a) the date and time;

(b) the name of the carrier (including if appropriate, the waste collection permit details);

(c) the vehicle registration number;

(d) the trailer, skip or other container unique identification number (where relevant);

(e) the name of the producer(s)/collector(s) of the waste as appropriate;

(f) the name of the waste facility (if appropriate) from which the load originated or to which the load departed, including the waste licence or waste permit register number;

(g) a description of the waste including the associated EWC codes;

(h) the quantity of the waste, recorded in tonnes;

(i) details of the treatment(s) to which the waste has been subjected, if any;

(j) the classification or coding of the waste, including whether MSW or otherwise;

(k) whether the waste is for disposal or recovery, and if recovery, for what purpose;

(l) the name of the person checking the load;

(m) where loads of waste are removed or rejected, details of the date of occurrence the types of waste and the facility to which they were removed; and

(n) where applicable a consignment note number (including transfrontier shipment notification and movement/tracking form numbers, as appropriate).

11.3.3 For waste accepted at or dispatched from the facility:

(a) the type, relevant EWC code and total tonnage of waste accepted at the facility for disposal on a daily, monthly and annual basis;

(b) the type, relevant EWC code and total tonnage of waste accepted at the facility for recovery on a daily, monthly and annual basis;

(c) the type, relevant EWC code and total tonnage of waste sent off-site for disposal on a daily, monthly and annual basis;

(d) the type, relevant EWC code and total tonnage of waste sent off-site for recovery on a daily, monthly and annual basis

(e) the type, relevant EWC code and total tonnage of waste disposed of at the facility on an hourly, daily, monthly and annual basis;

(f) the type, relevant EWC codes and total tonnage of waste recovered at the facility on a monthly and annual basis; and

(g) details of any approved waste mixing.

11.3.4 Off-site profiling and pre-characterisation of customer waste arriving direct to the incinerator for disposal.

11.3.5 All training undertaken by facility staff.

11.3.6 Details of all wastes consigned abroad for recovery and classified as 'Green' in accordance with the EU Shipment of Waste Regulations (Council Regulation EEC No. 1013/2006, as may be amended). The rationale for the classification must form part of the record.

11.3.7 Details of all wastes consigned abroad for disposal.

11.3.8 All incidents.

11.3.9 All complaints from third parties.

11.4 The written record of all complaints relating to the operation of the activity shall give details of the following:-

(a) date and time of the complaint;
(b) name of the complainant;
(c) details of the nature of the complaint;
(d) actions taken on foot of the complaint and the results of such actions; and
(e) the response made to each complainant.

11.5 Data Management

11.5.1 The licensee shall, prior to the commencement of waste acceptance at the facility, develop and establish a Data Management System for collation, archiving, assessing and graphically presenting the environmental monitoring data generated as a result of this licence.

11.5.2 The licensee shall submit all records of sampling, analysis, measurements, incidents, inspections, examinations, tests, malfunctions, breakdown, calibrations, maintenance or remedial works and reports and notifications to the Agency on a quarterly basis, unless otherwise specified by a condition of this licence. Such records, reports and notifications shall:

(a) be sent to the Agency's Office of Environmental Enforcement, McCumiskey House, Richview, Clonskeagh Road, Dublin 14, or other office as directed by the Agency;

(b) comprise one original and two copies;

(c) be formatted in accordance with any written instruction or guidance issued by the Agency;

(d) include whatever information as is specified in writing by the Agency;

(e) be accompanied by a written interpretation setting out their significance in the case of all monitoring data; and

(f) be transferred electronically to the Agency's computer system if required by the Agency; and

(g) be certified as accurate and representative by the facility manager/deputy.

11.5.3 The frequency of such reporting may be altered by the Agency having regard to the environmental performance of the facility.

11.6 Pollutant Release and Transfer Register (PRTR)

The licensee shall prepare and report a PRTR for the site. The substance and/or wastes to be included in the PRTR shall be as agreed by the Agency each year by reference to EC Regulations No. 166/2006 concerning the establishment of the European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC. The PRTR shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted electronically in specified format and as part of the AER.

11.7 Annual Environmental Report

11.7.1 The licensee shall submit to the Agency, by the 31st of March each year, an Annual Environmental Report (AER) covering the previous calendar year.

11.7.2 The AER shall include as a minimum:

(a) The information specified in *Schedule D: Annual Environmental Report*, of this licence and shall be prepared in accordance with any relevant written guidance issued by the Agency.

(b) A report of annual audits undertaken by the licensee of the waste disposal, treatment and recovery sites for the residues and other wastes dispatched from the facility.

(c) Pollutant Release and Transfer Register (PRTR).

11.8 Records of off-site waste profiling and characterisation shall be retained by the licensee for all active customers and for a ten year period following termination of licensee/customer agreements.

11.9 The licensee shall notify the Agency in writing, seven months in advance of the intended date of commencement of acceptance of waste for Scheduled Disposal/Recovery activities at the facility.

11.10 The licensee shall maintain a record/log of the use of the emergency generator. A summary of the record/log shall be included as part of the AER.

11.11 Waste Recovery Report

The licensee shall, as part of the AER for the facility, submit a report on the contribution by this facility to the achievement of the waste recovery objectives agreed under Condition 2.3.2.2 and as otherwise may be stated in National and European Union waste policies. The report shall, as a minimum, include tonnages of the recovery of incinerator residues on site, off-site and their final use.

Reason: ***To provide for the collection and reporting of adequate information on the activity.***

Condition 12. Financial Charges and Provisions

12.1 Agency Charges

12.1.1 The licensee shall pay to the Agency an annual contribution of €58,660, or such sum as the Agency from time to time determines, having regard to variations in the extent of reporting, auditing, inspection, sampling and analysis or other functions carried out by the Agency, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Waste Management Acts 1996 to 2010. The first payment shall be as specified by the Agency, and shall reflect the enforcement effort prior to the acceptance of waste at the facility. This payment shall be paid to the Agency within one month of the date upon which demanded by the Agency. In subsequent years the licensee shall pay to the Agency such revised annual contribution as the Agency shall from time to time consider necessary to enable performance by the Agency of its relevant functions under the Waste Management Acts 1996 to 2010, and all such payments shall be made within one month of the date upon which demanded by the Agency.

12.1.2 In the event that the frequency or extent of monitoring or other functions carried out by the Agency needs to be increased, the licensee shall contribute such sums as determined by the Agency to defray its costs in regard to items not covered by the said annual contribution.

12.2 Environmental Liabilities

12.2.1 The licensee shall as part of the AER, provide an annual statement as to the measures taken or adopted at the site in relation to the prevention of environmental damage, and the financial provisions in place in relation to the underwriting of costs for remedial actions following anticipated events (including closure) or accidents/incidents, as may be associated with the carrying on of the activity.

12.2.2 The licensee shall arrange for the completion, by an independent and appropriate qualified consultant, of a comprehensive and fully costed Environmental Liabilities Risk Assessment (ELRA) to address the liabilities from past and present activities. The assessment shall include those liabilities and costs identified in Condition 10 for execution of the Decommissioning Management Plan. A report on this assessment shall be submitted to the Agency for agreement prior to the acceptance of waste at the facility. The ELRA shall be reviewed as necessary to reflect any significant change on site, and in any case every three years following initial agreement. The results of the review shall be notified as part of the AER.

12.2.3 Prior to the acceptance of waste at the facility, the licensee shall, to the satisfaction of the Agency, make financial provision to cover any liabilities identified in Condition 12.2.2. The amount of indemnity held shall be reviewed and revised as necessary, but at least annually. Proof of renewal or revision of such financial indemnity shall be included in the annual 'Statement of Measures' report identified in Condition 12.2.1.

12.2.4 The licensee shall have regard to the Environmental Protection Agency Guidance on Environmental Liability Risk Assessment, Decommissioning Management Plans and Financial Provision when implementing Conditions 12.2.2 and 12.2.3 above.

Reason: ***To provide for adequate financing for monitoring and financial provisions for measures to protect the environment.***

SCHEDULE A: Limitations

A.1 Waste Categories and Quantities for Acceptance for Incineration

Only waste falling within the descriptions in the first column (subject to the notes at the end of the table), bearing the waste codes in the second column, and being of the types of waste listed in the third column may be accepted. The maximum tonnage of any type of waste which may be accepted is as listed in the fourth column, subject to the proviso that the total quantity of all wastes must not exceed the overall limit at the bottom of that column.

Waste Type	European Waste Catalogue (EWC) Code	Description	Maximum Quantity (Tonnes per annum)
Non-hazardous Residual Municipal Waste. Note 1	20 03 01	Mixed Municipal Waste.	200,000
	20 03 02	Waste from Markets.	
	20 03 03	Street Cleaning Residues.	
	20 03 07	Bulky Waste.	
	20 03 99	Municipal wastes not otherwise specified.	
Commercial & Industrial non-hazardous Waste	02 01 02, 02 01 03, 02 01 04, 02 01 06, 02 01 07, 02 01 09, 02 01 99, 02 02 02, 02 02 03, 02 02 99, 02 03 02, 02 03 03, 02 03 04, 02 03 99, 02 04 99, 02 05 01, 02 05 99, 02 06 01, 02 06 02, 02 06 99, 02 07 01, 02 07 02, 02 07 03, 02 07 04, 02 07 99	Wastes from rendering plants, slaughterhouses, veterinarians, farms, horse stables, food factories, warehouse distributors, manufacturers, restaurants.	50,000
	03 01 01, 03 01 05, 03 01 99, 03 02 99, 03 03 01, 03 03 07, 03 03 08, 03 03 99	Wastes from furniture production, carpentry, forestry.	
	04 01 01, 04 01 02, 04 01 05, 04 01 09, 04 01 99, 04 02 09, 04 02 10, 04 02 15, 04 02 17, 04 02 21, 04 02 22, 04 02 99	Wastes from leather, fur and textile industries.	
	05 01 99, 05 06 99, 05 07 02, 05 07 99	Wastes from petroleum refining, natural gas purification and pyrolysis of coal.	
	06 01 99, 06 02 99, 06 03 99, 06 04 99, 06 06 03, 06 06 99, 06 07 99, 06 08 99, 06 09 04, 06 09 99, 06 10 99, 06 11 01, 06 11 99, 06 13 03, 06 13 99	Wastes from inorganic chemical processes.	
	07 01 99, 07 02 13, 07 02 15, 07 02 17, 07 02 99, 07 03 99, 07 04 99, 07 05 14, 07 05 99, 07 06 99, 07 07 99	Wastes from organic chemical processes.	
	08 01 12, 08 01 18, 08 01 99, 08 02 01, 08 02 99, 08 03 13, 08 03 18, 08 03 99, 08 04 10, 08 04 99	Wastes from paint/varnish/coating/glue manufacturers, painting companies, householders, printers waste, general maintenance contractors.	

09 01 07, 09 01 08, 09 01 10, 09 01 99	Wastes from photographers, pharmacists, schools and colleges.
10 01 25, 10 01 99, 10 03 99, 10 04 99, 10 05 99, 10 06 99, 10 07 99, 10 08 99, 10 09 99, 10 10 99, 10 11 99, 10 12 99, 10 13 99	Wastes from thermal processes.
11 01 14, 11 01 99, 11 02 03, 11 02 06, 11 02 99, 11 05 99	Wastes from metal plating, engineering firms.
12 01 01, 12 01 03, 12 01 05, 12 01 13, 12 01 99	Wastes from crane companies, jewellers, car manufacturers, engineering firms.
Note 2 15 01 01, 15 01 02, 15 01 03, 15 01 04, 15 01 05, 15 01 06, 15 01 07, 15 01 09, 15 02 03	Packaging wastes from manufacturing companies, schools, hospitals, chemical industry, local authorities, householders.
16 01 03, 16 01 06, 16 01 15, 16 01 17, 16 01 18, 16 01 19, 16 01 20, 16 01 22, 16 01 99, 16 02 16, 16 03 04, 16 03 06, 16 05 09, 16 07 99, 16 11 02, 16 11 04, 16 11 06	Wastes from garages, maintenance of vehicles, farming, warehouse distributors, companies who produce a product/batch, e.g. pharmaceutical, chemical, food manufacturing (off-specification products), schools, universities, hospitals.
18 01 01, 18 01 02, 18 01 04, 18 01 07, 18 01 09, 18 02 01, 18 02 03, 18 02 06, 18 02 08	Wastes from healthcare/hospitals, universities, veterinarians.
Note 2 19 02 03, 19 02 10, 19 02 99, 19 05 01, 19 05 02, 19 05 03, 19 05 99, 19 06 04, 19 06 06, 19 06 99, 19 08 01, 19 08 02, 19 08 09, 19 08 99, 19 09 01, 19 09 04, 19 09 05, 19 09 99, 19 10 01, 19 10 02, 19 10 04, 19 10 06, 19 11 99, 19 12 01, 19 12 02, 19 12 03, 19 12 04, 19 12 05, 19 12 07, 19 12 08, 19 12 10, 19 12 12, 19 13 02	Wastes from waste management facilities, transfer stations, water treatment facilities (e.g. local authorities, pharma industry), mechanical-biological treatment plants, landfills.
Note 2 20 01 01, 20 01 08, 20 01 10, 20 01 11, 20 01 25, 20 01 30, 20 01 32, 20 01 38, 20 01 39, 20 01 40, 20 01 41, 20 01 99, 20 02 01, 20 02 03, 20 03 06	Wastes from waste management facilities, transfer stations, waste collectors, local authorities, septic tank companies.

Sewage & Industrial Sludges	02 01 01, 02 02 01, 02 02 04, 02 03 01, 02 03 05, 02 04 03, 02 05 02, 02 06 03, 02 07 05, 03 03 02, 03 03 05, 03 03 10, 03 03 11, 04 01 07, 04 02 20, 05 01 10, 05 01 13, 06 05 03, 07 01 12, 07 02 12, 07 03 12, 07 04 12, 07 05 12, 07 06 12, 07 07 12, 08 01 14, 08 01 16, 08 02 02, 08 03 07, 08 03 15, 08 04 12, 08 04 14, 10 01 21, 10 02 15, 10 11 18, 10 12 13, 11 01 10, 12 01 15, 19 02 06, 19 08 05, 19 08 12, 19 08 14, 19 09 02, 19 09 03, 19 09 06, 19 11 06, 19 13 04, 19 13 06, 20 03 04	Wastes from industrial and municipal wastewater treatment plants, washing and cleaning at commercial and industrial sites.	20,000
Non-hazardous Aqueous Wastes	08 01 20, 08 02 03, 08 03 08, 08 04 16, 11 01 12, 16 10 02, 16 10 04, 19 04 04, 19 06 03, 19 06 05, 19 07 03, 19 13 08	Wastes from pharmaceutical industry, paint/varnish/coating/glue manufacturers, painting companies, engineering firms, printers waste, general maintenance contractors, metal plating.	10,000
Construction & Demolition Waste	**Notes 2 & 3** 17 02 01, 17 02 02, 17 02 03, 17 03 02, 17 05 04, 17 05 08, 17 06 04		50,000
Total			**200,000**

Note 1: Household waste (as well as commercial and other waste that, because of its nature or composition, is similar to household waste) that has been pre-sorted or segregated to remove reusable and recyclable materials**.**

Note 2: Non-contaminated and separately collected recyclable waste shall only be accepted for incineration subject to the prior agreement of the Agency.

Note 3: While the specified C&D wastes may not have a significant energy content, they may be accepted for incineration to treat and remove organic contamination from non-hazardous bulk inorganic materials.

A.2 Waste Categories and Quantities for Acceptance for Treatment other than Incineration

Maximum annual quantity to be accepted for treatment other than incineration shall not exceed: 2,000 tonnes.

Waste Type	European Waste Catalogue (EWC) Code	Description	Maximum Quantity (Tonnes per annum)
Industrial Non-hazardous Waste **Note 1**	10 01 01, 10 01 02, 10 01 03, 10 01 15, 10 01 17, 10 01 19	Wastes from thermal processes	2,000

Note 1: These wastes may be accepted at the facility for waste-to-waste applications in a residue pre-treatment facility, e.g. fly ash from other combustion processes may be used as a substitute for cement in the solidification of the flue gas treatment residues.

SCHEDULE B: Emission Limits

B.1 Emission Limits to Air

Emission Point Reference No.: A1-1 (Stack Emission)

Location: Main process building

Volume to be emitted: Maximum rate per hour: 147, 000 m^3

Minimum Discharge height: 65 m above ground level (95.5m O.D.)

Parameters	Units	Half Hour Average		Daily Average	Periodic
		A	B		
Total dust	mg/m^3	30 Note 1	10 Note 1	10	-
Gaseous and vaporous organic substances, expressed as total organic carbon	mg/m^3	20 Note 1	10 Note 1	10	-
Hydrogen chloride (HCl)	mg/m^3	60 Note 1	10 Note 1	10	-
Hydrogen fluoride (HF)	mg/m^3	4 Note 1	2 Note 1	1	-
Sulphur dioxide (SO_2)	mg/m^3	200 Note 1	50 Note 1	50	-
Oxides of Nitrogen (NO and NO_2, expressed as NO_2)	mg/m^3	400 Note 1	200 Note 1	200	-
The sum of Cadmium (as Cd) and thallium (as Tl), and their compounds Note 2	mg/m^3	-		-	0.05
Mercury (as Hg) and its compounds Note 2	mg/m^3	-		-	0.05
The sum of antimony (as Sb), arsenic (as As), lead (as Pb), chromium (as Cr), cobalt (as Co), copper (as Cu), manganese (as Mn), nickel (as Ni), and vanadium (as V) Note 2	mg/m^3	-		-	0.5
Arsenic and its compounds Note 2	mg/m^3	-		-	0.2
Dioxins/furans (TEQ) Note 3	ng/m^3	-		-	0.1
Carbon monoxide (CO) Note 4	mg/m^3	100 Note 5		50 Note 6	150 Note 7

Note 1: None of the half-hourly average values shall exceed any of the emission limit values set out in column A, or, 97 % of the half-hourly average values over the year shall not exceed any of the emission limit values set out in column B.

Note 2: All average values over the period of a minimum of 30 minutes and a maximum of 8 hours. Metals include both gaseous, vapour and solid phases as well as their compounds (expressed as the metal or total as specified).

Note 3: Average values shall be measured over a sample period of a minimum of 6 hours and a maximum of 8 hours. The emission limit value refers to the total concentration of dioxins and furans calculated using the concept of toxic equivalence in accordance with Annex I of Directive 2000/76/EC.

Note 4: The emission limit values of carbon monoxide (CO) concentrations shall not be exceeded in the combustion gases (excluding the start-up and shut-down phase).

Note 5: Taken in any 24 hour period.

Note 6: 97% of the daily average value over the year does not exceed the emission limit value.

Note 7: 95% of all measurements determined as 10-minute average values shall not exceed the emission limit value.

B.2 Emissions to Water

There shall be no process emissions to water.

B.3 Emissions to Sewer

There shall be no emissions to sewer.

B.4 Noise Emissions

Daytime dB(A) L_{Aeq} (30 minutes)	Night-time dB(A) L_{Aeq} (30 minutes)
55 **Note 1**	45 **Note 1**

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise-sensitive location.

SCHEDULE C: Control & Monitoring

C.1.1. Process Control [Note 1]

Monitoring of Incinerator		
Control Parameter	**Monitoring (continuous unless otherwise stated in licence)**	**Key Equipment** [Note 2]
Combustion	Combustion chamber temperature [Note 3]	Thermocouple
Exhaust gas	% O_2 in exhaust gas	O_2 analyser
Exhaust gas	Exhaust gas temperature	Thermocouple
Exhaust gas	Exhaust gas pressure	Pressure monitor
Exhaust gas	Water vapour content [Note 4]	Standard method
Furnace pressure	Pressure in the furnace	Pressure monitors
Waste input	Feed Rate	Low level detector and visual
Hydrocarbon	Hydrocarbon levels	LEL Detector
Burnout of waste in the furnace	CCTV monitoring of flame	CCTV Camera
Monitoring of Boiler		
Control Parameter	**Monitoring (continuous unless otherwise stated in licence)**	**Key Equipment**
Flue gas	Pressure	Pressure sensors
Flue gas	Temperature	Thermocouple
NO_X	Concentration and Reagent	NO_X Analyser and Reagent dosage rate
Feed water supply	Water rate and water level	Flow meter and level
Monitoring of Energy Recovery		
Control Parameter	**Monitoring (continuous unless otherwise stated in licence)**	**Key Equipment**
Energy Recovery	Steam Flow, Condenser Control, Turbine Control	Flow meter, Temperature, Pressure analysers

C.1.1 (Continued)

Flue gas cleaning		
Location	**Item/Parameter**	**Monitoring Equipment**
First stage dioxin/furan and heavy metals removal duct	Flue gas temperature	Thermocouple
	Flue gas pressure	Pressure transmitters
	Expanded clay dosing	Dosage rate meter and dosing bin weight
	Expanded clay silo	Low level alarm
	HCl and SO_2 concentration	Inline flue gas analyser
Spray Drier Absorber	Lime dosage rate	Flow meter
	Lime slurry buffer tank	Low level alarm
	Rotary atomiser	Weekly cleaning
	Outlet temperature	Thermocouple
LAB Loop	Activated Carbon dosing	Dosage rate meter and dosing bin weight
	Hydrated lime dosing	Dosage rate meter
	Activated carbon and hydrated lime supply silos	Low level alarms on both silos
	Pressure differential across LAB Loop	Pressure sensors on either side of loop
Baghouse Filter	Pressure differential across filters	Differential pressure indicator
	Temperature of discharge hopper	Thermocouple
	Discharge hopper	High level alarm
Reagent recirculation	Re-circulated flue gas cleaning residues supply hopper	Low and high level alarms
Maturation silo	Maturation time in silo	Flow meters at inlet and outlet
ID Fan	Flue gas pressure	Pressure sensors at inlet
Residues		
	Item/Parameter	**Monitoring Equipment (where applicable)**
Residue Silos:	Silo Capacity	High Level Alarms
	Silo emissions to air	HEPA Filter Integrity
Solidification:	Ash	Quantity & Type of ash
	Cement/Iron Silicate & Water	Quantity

Note 1: Or other monitoring equipment agreed in advance by the Agency
Note 2: The licensee shall maintain appropriate access to standby and/or spares to ensure the operation of the system.
Note 3: Near the inner wall of the combustion chamber (or other representative location agreed by the Agency).
Note 4: Not necessary if gases are dried prior to analysis.

C.1.2. Monitoring of Emissions to Air

Emission Point Reference No.: A1-1 (Stack)		
Parameters	**Monitoring Frequency**	**Analysis Method / Technique** [Note 1]
Total dust	Continuous	Iso-kinetic/gravimetric
PM_{10} and $PM_{2.5}$	Quarterly	To be agreed by the Agency
Gaseous and vaporous organic substances, expressed as total organic carbon	Continuous	Flame Ionisation Detector
Hydrogen chloride (HCl)	Continuous	Infra red analyser
Hydrogen fluoride (HF)	Quarterly	To be agreed by Agency
Sulphur dioxide (SO_2)	Continuous	Infra red analyser
Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	Continuous	Infra red analyser
Nitrous oxide (N_2O)	Quarterly	To be agreed by the Agency
Cadmium (as Cd) and thallium (as Tl), and their compounds	Quarterly	To be agreed by the Agency
Mercury (as Hg) and its compounds	Quarterly	To be agreed by the Agency
Antimony (as Sb), arsenic (as As), lead (as Pb), chromium (as Cr), cobalt (as Co), copper (as Cu), manganese (as Mn), nickel (as Ni), and vanadium (as V) and their compounds	Quarterly	To be agreed by the Agency
Dioxins/furans	Continuous sampling with analysis every two weeks. Biannual measurement, average value over sample period of between 6 and 8 hours. (Quarterly for first year of operation)	Continuous sampling method as per application. Other measurements as per CEN method (EN 1948, parts 1,2, and 3)
Carbon monoxide (CO)	Continuous	Infra red analyser

Emission Point Reference No.: A1-2 (Back-up Diesel Fired Electricity Generation Plant)		
Parameter	**Monitoring Frequency** [Note 2]	**Analysis Method/Technique**
CO	On installation	Flue gas analyser/datalogger
NOx	On installation	Flue gas analyser
Particulates	On installation	Isokinetic/Gravimetric
TOC	On installation	Flame ionisation

Note 1: Or other methods agreed in advance by the Agency.
Note 2: Monitoring to be carried out on installation and thereafter as instructed by the Agency.

C.2.1. Control of Storm Water Emissions

Emission Point Reference No: SW-1

Description of Treatment: Oil removal

Control Parameter	Monitoring	Key Equipment
Oil removal	Mineral oil content in water	Forecourt separator, Class I separator

C.2.3. Monitoring of Storm Water Emissions

Emission Point Reference No: SW-1

Monitoring locations: Monitoring Chamber 1 (MSW1-1) prior to attenuation pond.
Monitoring Chamber 2 (MSW1-2) at outlet of attenuation pond.

Parameter [Note 1]	Monitoring Frequency	Analysis Method/Technique
pH	Continuous	pH meter and recorder
TOC	Continuous	TOC analyser and recorder
Conductivity	Continuous	Conductivity meter and recorder

Note 1: Trigger levels of contamination to be established in accordance with Condition 6.17.

C.2.2. Monitoring of Emissions to Water

There shall be no process emissions to water.

C.3.1. Control of Emissions to Sewer

There shall be no emissions to sewer.

C.3.2. Monitoring of Emissions to Sewer

There shall be no emissions to sewer.

C.4 Monitoring of Incinerator Residues

Residue Monitoring Parameter and Frequency		
Waste Description	**Parameters to be measured**	**Frequency** [Note 1]
Bottom Ash	TOC, metals [Note 2] and their compounds, chloride, fluoride, sulphate, dioxins/furans and dioxin-like PCBs. Classification (hazardous/non-hazardous)	Quarterly Annually
Boiler Ash	TOC, metals [Note 2] and their compounds, chloride, fluoride, sulphate, dioxins/furans and dioxin-like PCBs. Classification (hazardous/non-hazardous)	Quarterly Annually
Flue gas treatment residues	TOC, metals [Note 2] and their compounds, chloride, fluoride, sulphate, dioxins/furans and dioxin-like PCBs. Classification (hazardous/non-hazardous)	Biannually Annually
Other [Note 3]		

Note 1: All analysis to be undertaken at an accredited laboratory employing accredited procedures.
Note 2: Metals shall include Ba, Cd, Mo, Sb, Se, Zn, Tl, Hg, Pb, Cr, Cu, Mn, Ni, As, Co, V, and Sn.
Note 3: Analytical requirements to be determined on a case by case basis.

C.5 Meteorological Monitoring

Monitoring Location: On-site weather monitoring station AA2

Parameter	Monitoring Frequency	Analysis Method/Technique
Precipitation Volume	Daily	WMO Standard [Note 1]
Temperature (min/max.)	Daily	WMO Standard [Note 1]
Wind Speed and Direction	Continuous	WMO Standard [Note 1]
Atmospheric Pressure	Continuous	WMO Standard [Note 1]

Note 1: World Metrological Organisation Standards and Recommendations.

C.6 Ambient Monitoring

C.6.1 Ambient Groundwater Monitoring

Monitoring Locations: Upgradient: AGW1-1
Downgradient: AGW1-2 and AGW1-3

Parameter	Monitoring Frequency	Analysis Method/Techniques
TOC	Monthly	Standard Method
Ammonia (NH_4),	Monthly	Standard Method
Conductivity	Monthly	Standard Method
pH	Biannually	pH electrode/meter
Nitrate	Biannually	Standard Method
Nitrite	Biannually	Standard Method
Chloride	Biannually	Standard Method
Fluoride	Biannually	Standard Method
Metals (Cd, TI, Hg, Pb, Cr, Cu, Mn, Ni, As, Co, V, Sn) and their compounds	Biannually	Standard Method
Organohalogens [Note1]	Biannually	GC-MS
Total coliforms	Biannually	Standard Method
Faecal coliforms	Biannually	Standard Method

Note 1: Screening for pollutant list substances (such as US EPA volatile and/or semi-volatile compounds).

C.6.2 Ambient Noise Monitoring

Monitoring Locations: Site boundary locations AN1-1, AN1-2, AN1-3 and AN1-4.

Parameter	Monitoring Frequency	Analysis Method/Technique
$L(A)_{EQ}$ [30 minutes]	Annual	Standard [Note 1]
$L(A)_{10}$ [30 minutes]	Annual	Standard [Note 1]
$L(A)_{90}$ [30 minutes]	Annual	Standard [Note 1]
Frequency Analysis(1/3 Octave band analysis)	Annual	Standard [Note 1]

Note 1: "International Standards Organisation. ISO 1996. Acoustics - description and Measurement of Environmental noise. Parts 1, 2 and 3."

SCHEDULE D: Annual Environmental Report

Annual Environmental Report Content [Note 1]
Reporting period.
Details of waste activities carried out at the facility.
Summary of quantity and composition of waste received, recovered and disposed of in reporting period.
Summary report on emissions.
Summary of noise survey.
Summary of all environmental monitoring.
Summary record of the use of the emergency generator.
Resource and energy consumption summary.
Waste recovery report (Condition 11.11).
Tank, drum, pipeline and bund testing and inspection report.
Summary of reported incidents and complaints.
Summary of audits of waste disposal, treatment and recovery sites for the residues from facility.
Environmental Management Programme – report for previous year.
Environmental Management Programme – proposal for current year.
Pollutant Release and Transfer Register – report for previous year.
Pollutant Release and Transfer Register – proposal for current year.
Report of particulates monitoring.
Review of Decommissioning Management Plan.
Statement of measures in relation to prevention of environmental damage and remedial actions (Environmental Liabilities).
Environmental Liabilities Risk Assessment Review (every three years of more frequently as dictated by relevant on site change including financial provisions).
Any other items specified by the Agency.

Note 1: Content may be revised subject to the agreement of the Agency.

Sealed by the seal of the Agency on this the 16th day of February 2011.

PRESENT when the seal of the Agency
Was affixed hereto:

_____

Frank Clinton, Authorised Person

Fiona Redmond
Senior Executive Planner,
Planning Department,
Meath County Council,
County Hall,
Navan
Co. Meath

23rd April 2012

Dear Fiona,

Re: Application to the Environmental Protection Agency for the review of a Waste Licence

As required by Part II, Article 9 of the Waste Management (Licensing) Regulations 2004 (SI No. 395 of 2004) we wish to inform you that we, Indaver Ireland Limited of 4th Floor, Block 1,West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intend to apply to the Environmental Protection Agency for a revision of the waste licence W0167-02 for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath – national grid reference 30633E, 2709N.

The principal class of activity under the Fourth Schedule of the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows:

R1: Use principally as a fuel or other means to generate energy

The following other activities will take place at the site;

Third Schedule
D9 Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any of the operations D1 to 12(e.g. evaporation,drying, calcinations, etc).
D14 Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.

Indaver Ireland Ltd ■ Registered in Ireland No. 59667
Registered Office: 4th Floor, Block 1, West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, CO DUBLIN, IRELAND ■ tel. +353 1 280 4534 ■ fax +353 1 280 7865
■ Tolka Quay Road, Dublin Port, DUBLIN 1, IRELAND ■ tel. +353 1 280 4534 ■ fax +353 1 280 7865
■ Unit 11, South Ring Business Park, Kinsale Road, CORK, IRELAND ■ tel. +353 21 470 4260 ■ fax +353 21 470 4250
■ Meath Waste-to-Energy Facility, Carranstown, Duleek, Co. Meath ■ tel. +353 1 280 4534 ■ fax +353 1 280 7865

VAT Reg. No. IE9F70712T ■ IBAN IE61 BOFI9011 1668 4915 04 ■ BIC BOFIIE2D
Directors: J. Ahern, C. Jones, J. Kearney, D. McGarry
Belgian Directors: P. De Bruycker, M. Decorte, B. Goethals

ISO 9001 CERTIFIED
ISO 14001 CERTIFIED
OHSAS 18001 CERTIFIED

member of DELTA the multi-utility company

D15 Storage prior to 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.

Fourth Schedule
R4 Recycling/reclamation of metals and metal compounds.
R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced).

The application principally relates to a 10% increase in throughput, extension of hours of waste acceptance & dispatch and the acceptance of additional waste types at the Meath Waste Management facility.

In accordance with Part IV, Article 19 of the Regulations (SI No. 395 of 2004), a copy of the application for the licence review will, as soon as practicable after receipt by the Agency, be available for inspection at, or purchased from the headquarters of the Agency at Johnstown Castle Estate, Co. Wexford.

The application is being accompanied by an Environmental Impact Statement (EIS) in accordance with Part III, Article 13, sub-articles (1) and (4) of the Regulations (SI No. 395 of 2004). The EIS will also be available from the headquarters of the Agency.

Yours Sincerely,

Conor Jones
Infrastructure Director
Indaver Ireland Limited

Kieran Somers,
Executive Officer
An Bord Pleanala,
64 Marlborough Street,
Dublin 1

23rd April 2012

Dear Kieran,

Re: Application to the Environmental Protection Agency for the review of a Waste Licence

As required by Part II, Article 9 of the Waste Management (Licensing) Regulations 2004 (SI No. 395 of 2004) we wish to inform you that we, Indaver Ireland Limited of 4th Floor, Block 1,West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intend to apply to the Environmental Protection Agency for a revision of the waste licence W0167-02 for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath – national grid reference 3063E, 2709N.

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The following other activities will take place at the site;

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D14 Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
D15 Storage prior to 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.

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VAT Reg. No. IE9F70712T ■ IBAN IE61 BOFI9011 1668 4916 04 ■ BIC BOFIIE2D
Directors: J. Ahern, C. Jones, J. Keaney, D. McGarry
Belgian Directors: P. De Bruycker, M. Decorte, B. Coelhals

Fourth Schedule
R4 Recycling/reclamation of metals and metal compounds.
R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced).

The application principally relates to a 10% increase in throughput, extension of hours of waste acceptance & dispatch and the acceptance of additional waste types at the Meath Waste Management facility.

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The application is being accompanied by an Environmental Impact Statement (EIS) in accordance with Part III, Article 13, sub-articles (1) and (4) of the Regulations (SI No. 395 of 2004). The EIS will also be available from the headquarters of the Agency.

Please note that the Planning Authority has been also been notified.

Yours Sincerely,

Conor Jones
Infrastructure Director
Indaver Ireland Limited

Appendix B8

Radio

RTÉ Radio 1
FM: 88.2-90.0; 95.2 MHz, LW: 252 kHz.
News on the hour. **5.30am** Risin' Time. **7.00** Morning Ireland. **9.00** The John Murray Show. **10.00** Today with Pat Kenny. **12.00** The Ronan Collins Show. **1.00** News. **1.45** Liveline. **3.00** Mooney. **4.30** Drivetime. **7.00** Sport at Seven. **7.30** Arena. **8.30** The John Creedon Show. **9.50** Nuacht. **10.00** Arts Tonight. **11.00** News. **11.10** Book on One. Week two of *Where the God of Love Hangs Out*, by Amy Bloom. Read by Karen Cogan. **11.25** Late Date. **2.00** Through the Night: The John Murray Show. **2.30** Today with Pat Kenny. **3.30** Liveline. **4.00** Miriam Meets... **5.00** Bowman.

Tom Holland talks about his new book, *In the Shadow of the Sword: The Battle for Global Empire and the End of the Ancient World* on *Today with Pat Kenny,* RTÉ R1, 10am

RTÉ 2FM
FM: 90.4-92.2; 97.0 MHz.
6.00am Damian Farrelly. **7.00** Breakfast with Hector. **9.00** Tubridy. **11.00** Colm Hayes. **1.00** Larry Gogan's Golden Hour. **2.00** Rick in the Afternoon. **4.30** More Music Drive with Will Leahy. **7.00** Dave Fanning. **9.00** Jenny Huston. **11.00** Dan Hegarty - The Alternative. **1.00** 2fm Overnight.

RTÉ Lyric FM
FM: 96-99 MHz.
7.00am Marty in the Morning. **10.00** Niall Carroll's Classical Daytime. **2.00** The John Kelly Ensemble. **4.00** Liz Nolan's Classic Drive. **7.00** My Tunes. Aedín Gormley invites guests to discuss some music pieces that hold a special meaning for them. Here, Natalie Clein, cellist and mentor to young musicians around the world. **8.00** The Lyric Concert with Paul Herriott. Renee Fleming (soprano), London Philharmonic Orchestra under Christoph Eschenbach. Wagner: *Tannhauser Overture*. Strauss: *Four Last Songs*. Beethoven: *Symphony No 7 in A, Op 92*. **10.00** The Blue of the Night. **1.00** Lyric through the Night.

RTÉ Raidió na Gaeltachta
FM: 92.6-94.4; 102.7 MHz.
7.00am Nead na Fuiseoige. **8.00** Adhmhaidin. **9.00** Iris Aniar. **10.15** Geantraí Cheoil. **10.55** Tuairisc Spóirt. **11.00** Barrscéalta. **12.00** An Saol ó Dheas. **1.00** Nuacht. **2.00** Ardtráthnóna. **3.00** Sruth na Maoile. **4.00** Spórt an Luain. **5.00** Glór Anoir. **5.45** Nuacht. **6.30** Fógraí an Lae. **7.00** Camchuairt. **9.00** An Taobh Tuathail. **11.00** Iris Aniar. **12.00** Barrscéalta. **1.00** An Saol ó Dheas. **2.00** Ardtráthnóna. **3.00** Nead na Fuiseoige. **4.00** Geantraí Cheoil.

Today FM
FM: 100-102 MHz.
5.00am Louise Duffy. **7.00** The Ian Dempsey Breakfast Show. **9.00** The Ray D'Arcy Show. **12.00** Ray Foley. **2.30** Tony

Tim McInnerny *(Blackadders* Capt Darling, above) stars in *Odour*, a black comedy by James O'Neill in Afternoon Drama BBC R4, 2.15pm

Matthews and pianist Simon Lepper perform songs by Faure, Berg and Barber. **2.00** Afternoon on 3. *BBC Philharmonic - Reflections on Debussy*. With Louise Fryer. Vaughan Williams: *Fantasia on a theme of Thomas Tallis*. Debussy: *Fantaisie; Prelude a l'apres-midi d'un faune*. **4.30** In Tune. **6.30** Composer of the Week. *Nikos Skalkottas (1904-1949)*. **7.30** Radio 3 Live in Concert. Mitsuko Uchida in a live piano recital from the Royal Festival Hall, London. Schubert: *Piano Sonata in C minor, D958; Piano Sonata in A, D959; Piano Sonata in B flat, D960*. **10.00** Night Waves. **10.45** The Essay. **11.00** Jazz on 3. **12.30** Through the Night.

BBC Radio 4
FM: 92.4-94.6 MHz, LW: 198 kHz.
News on the hour. **6.00am** Today. **9.00** Start the Week. **9.45** Book of the Week. *Sightlines*, by Kathleen Jamie. **10.00** Woman's Hour. **10.45** 15 Minute Drama. *Small Town Murder*, by Scott Cherry. **11.00** Mind Changers. **11.30** Mr Blue Sky. **12.00** You and Yours. **1.00** The World at One. **1.45** Shakespeare's Restless World. **2.00** The Archers. **2.15** Afternoon Drama. *Odour*, by James O'Neill. **3.00** Counterpoint. **3.30** The Food Programme. **4.00** One in a Million. **4.30** Beyond Belief. **5.00** PM. **6.00** News. **6.30** The Unbelievable Truth. **7.00** The Archers. Alan is late for an important meeting and Tom takes a well-earned breather. **7.15** Front Row. John Wilson marks Shakespeare's birthday. **7.45** Shakespeare's Restless World. **8.00** It's My Story. *Mr Fan, from Boatperson to Horseman*. **8.30** Crossing Continents. All Turkish men have to complete a period of military service, unless they are sick, disabled or homosexual. But for gay men, applying for exemption is a humiliating process. **9.00** The Material World. How maths can improve politics. **9.30** Start the Week. Andrew Marr discusses national identity with David Hare, Iain Banks, Rachel Seiffert and George Benjamin. **10.00** The World Tonight. **10.45** Book at Bedtime. *The House on Paradise Street*, by Sofka Zinovieff. **11.00** Word of Mouth. **11.30** Today in Parliament. **12.00** News. **12.30** Book of the Week. *Sightlines*, by Kathleen Jamie. **12.48** Shipping Forecast. **1.00** As BBC World Service.

BBC Radio 5 live

GOLDEN WEDDINGS

MC DONALD — Vincent and Terry (née O'Flynn) on April 23, 1962, in St Rynagh's Church, Banagher, Co. Offaly. Congratulations on your Golden Wedding Anniversary with love from Éimear and Peter, Neal and Sinéad, Eunan and Mary, and your grandchildren Ciarán, Aoife, Ben, Calum, Jack, Harry (R.I.P.) and Caelan.

DEATHS

BARRY (née **Lawlor**) (Rathfarnham, Dublin 16) — April 20, 2012 (tragically) at home. Clare, loving mother of Ruthie and Mikey. Very sadly missed by her children, sisters, brothers, her father John, nieces, nephews, relatives and friends. Removal tomorrow (Tuesday) from Quinn's of Glasthule to the Church of the Annunciation, Rathfarnham arriving at 6pm. Funeral on Wednesday after 10am Mass to Shanganagh Cemetery. House private. No flowers please. Donations if desired to Pieta House, Lucan.
"Sleep peacefully mum"

LEGAL NOTICES

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE.

Indaver Ireland Limited, 4th Floor, Block 1,West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intends to apply to the Environmental Protection Agency for a revision of the waste licence W0167-02 for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath - National Grid Reference 3063E, 2709N.

The principal class of activity under the Fourth Schedule of the Waste Management Acts 1996 to 2010, as amended by the European Communities (Waste Directive) Regulations, 2011 will be as follows: R1: Use principally as a fuel or other means to generate energy: The following other activities will take place at the site; Third Schedule D9 Physico-chemical treatment not specified elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any of the operations D1 to 12 (e.g. evaporation,drying, calcinations, etc). D14 Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule. D15 Storage prior to 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. Fourth Schedule R4 Recycling/reclamation of metals and metal compounds. R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials. R13 Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced).

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The application is being accompanied by an Environmental Impact Statement (EIS). The EIS together with any further information relating to the application, as may be furnished to the Agency in the course of the Agency's consideration of the Application, will also be available from the headquarters of the Agency.

DEATHS

BARRY, Paul, (Harold's Cross, Dublin and late of Main St. Kilbeggan, ex-Oireachtas staff), — April 19, 2012, peacefully, at Tallaght Hospital (previously in the tender loving care of the staff at Our Lady's Hospice, Harold's Cross), son of the late William and Bridie, predeceased by his brothers Jim and Kieran and sister Marian; deeply regretted and sorely missed by his loving brothers Gerard and Anthony, sisters Ann, Joan, Frances and Gemma, brothers-in-law, sisters-in-law, nieces, nephews, relatives and a large circle of friends. Rest in peace. Removal this (Monday) morning to the Church of St. Paul of the Cross, Mount Argus, (Harold's Cross) arriving for 10.00 o'c Funeral Mass and afterwards to Mount Jerome Crematorium, Harold's Cross. Family flowers only please. Donations if desired to Our Lady's Hospice, Harold's Cross.

BRERETON (née **O'Brien**) **Philomena** (Phil) Naas and late of Rathfarnham — April 22, 2012 (peacefully). Beloved wife of the late Denis and loving mother of Denis, Lavinia, Dorothy and Steph. Sadly missed by her loving son and daughters, her grandchildren, Beth, Patrick, Charlie, Harry and Sophie, Her sons-in-law Ed and Andrew and Denis's partner Belinda, her nieces and nephews, the wider family and friends. Rest in Peace. Reposing at her daughter's home at Naas today (Monday). Funeral Mass at 11.30 o'clock tomorrow (Tuesday) in the Church of the Annunciation, Rathfarnham followed by burial at Mount Jerome Cemetery.

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE

Indaver Ireland Limited, 4th Floor, Block 1,West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin, intends to apply to the Environmental Protection Agency for a revision of the waste licence W0167-02 for the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath – National Grid Reference 3063E, 2709N.

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Fourth Schedule
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R5 Recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials.
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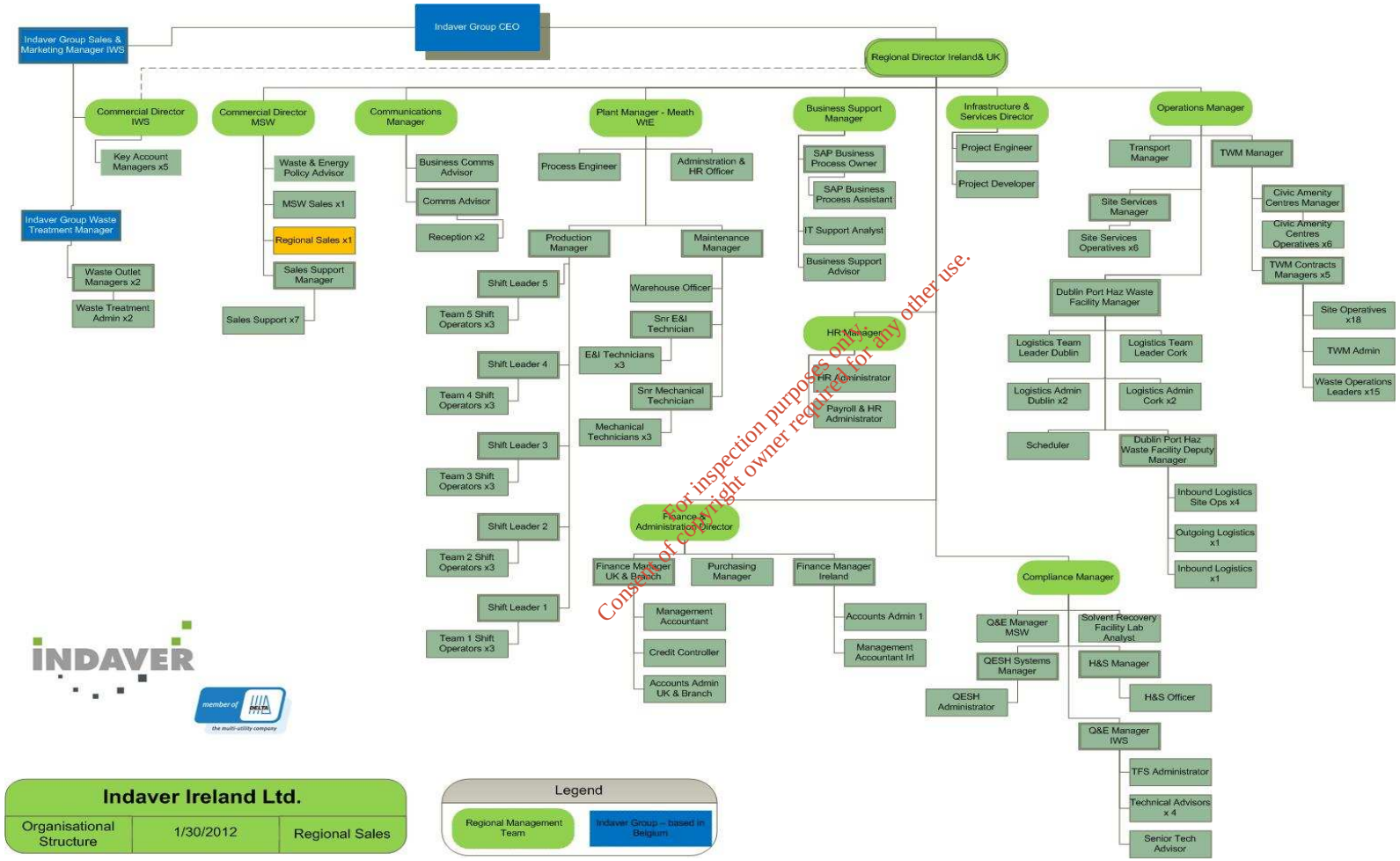
Attachment C.1: Site Management

C.1.1 Management structure

Indaver Ireland Ltd. manages the Meath Waste Management Facility through the management and staff structure shown in Figure C.1.1.a.

All managers, including team leaders, are actively involved in the implementation of the environmental management programme. Every manager and staff member in the organisation is expected and required to accept responsibility for the protection of the environment and ensuring the safety of the area within his/her care.

Responsibilities for environmental objectives and targets are clearly defined in the QESH Manual, the Indaver Improvement Plan and in all operational procedures (refer to Attachment C.2 below).



C.1.1a Responsibilities, qualifications and training

C.1.2.a Indaver Ireland Management

The key management roles at Indaver Ireland overseeing the facility's operations are outlined in Table C.1.a below.

Table C.1.a: Indaver Ireland Management

Name	Position	Duties and Responsibilities	Experience /Qualifications
John Ahern	Managing Director	The Managing Director is responsible for ensuring, in so far as is reasonably practicable, that personnel, planning, and investment are adequate to meet the commitments of the QESH policies and the QESH management system, and to ensure, in so far as is reasonably practicable, adherence to the duties laid out in Section 8 of the Safety, Health and Welfare at Work Act 2005. He issues clear written guidance to each management team leader giving a description of their team member's responsibilities and targets for the year and ensure that adequate resources are available for the management, performance of work and verification activities.	John Ahern has a degree in chemical engineering from University College Dublin. Since 1995 John has worked in the waste industry, as managing director of MinChem and then of Indaver Ireland. During this time he has lead a team of professionals who have obtained planning permission for a hazardous waste transfer station, a hazardous waste solvent recovery facility, a non-hazardous waste incinerator and a hazardous waste incinerator.

Sonia Dean	Compliance Manager	The compliance manager of Indaver Ireland has a national responsibility for implementing and ensuring compliance with Waste / IPC Licences, the IS09002 Quality Standard, the ISO 14001 Environmental Standard and the OSHAS 18001 Safety Standard. She holds responsibility for all health and safety aspects of the Meath Waste to Energy facility, in conjunction with the Health and Safety Manager and the Quality and Environmental Manager MSW. This function reports to the Managing Director.	Sonia has a Masters Degree in Environmental Biotechnology from Dublin City University and 10 years experience working in Environment, Quality and Health & Safety both in the public and private sector. Sonia joined Indaver in 2010 and has a strong background in construction and commissioning of power stations, environmental legislation, waste management and environmental law enforcement in Europe.
Conor Jones	Infrastructure Director	The infrastructure director is responsible for the development of all capital infrastructure projects in Ireland. Process improvements at the Meath waste to energy plant will also be a specific responsibility by close co-operation with the Plant Managers team.	Conor has a degree in Chemical Engineeering from University College Dublin and has 13 years experience in the waste industry. Conor has been involved in the development of Indaver's incineration projects in Ireland since 2001.
Jackie Keaney	Commercial Director MSW	The commercial director has responsibility for the development of sales activities in the Irish region and for municipal solid waste for the Carranstown facility.	Jackie has a Masters Degree in Environmental Science from Trinity College in Dublin and has been working with Indaver since 1998. Jackie has worked on the planning, policy, environmental and communications aspects of the infrastructure projects for the past eight years.
Jenny Keenan	Human Resources Manager	The HR Manager manages and develops HR procedures, company performance management systems, coordinates and plans training programmes, and administers training management systems amongst other things.	Jenny has a Masters degree in Occupational Psychology from Liverpool John Moores University. Jenny has worked for Indaver Ireland for 4 years in her role as OD Executive and HR Manager.

C.1.2.b Meath facility management

At present the Meath facility employs 20 permanent personnel to run and control the plant on a 24 hours basis. An additional 22 employees provide management, operation, quality control and maintenance functions. Staffing levels ensure that the environmental performance of the facility is maintained and that the facility is continuously manned and operational 24 hours per day.

The duties of key personnel at the Meath facility are detailed in Table C.1.b below.

Table C.1.b: Meath Facility Management

Position	Duties and Responsibilities	Experience /Qualifications
Plant Manager	The plant manager will be the management representative with overall responsibility for the operation of the facility and will ensure the whole facility is run efficiently, safely and within all licence requirements. Specific responsibilities will include: • Ensuring the acceptance and processing of waste at the facility is carried out in accordance with environmental procedures and operating licence requirements. • Ensuring emissions from the facility are within the limits required by relevant legislation and the operating licence. • Monitoring compliance with the regulations covering the transport of waste. • Ensuring any incident or accident onsite is dealt with appropriately, including any reporting requirements. • Planning and implementing actions that lead to a continuous improvement of the installations. • Giving leadership and motivation to the teams. • Communication with unions, local authorities and local residents. • Ensuring the profitability of the facility and supported by the financial team.	▪ Master Degree in Engineering (Electro-Mechanics, Mechanics, Industrial Chemistry, Metallurgy, Nautical Sciences, Mining) with more then 10 years of industrial managerial experience. ▪ Additional degree in Business Management or equivalent experience ▪ Knowledge and experience with regards to High Temperature Continuous Process' (metallurgy, power generation, cement industry, petrochemicals, ..) ▪ Experience with safety and environmental management systems ▪ Good communication skills and the ability to communicate with external bodies
Process Engineer	The Process Engineering Function of the Meath Waste Treatment Facility is considered as a key managerial and technologic support function to the operational management of the Plant in order to facilitate and to optimize the entire operational process-chain and its links with the external process connections. ▪ Waste Supply Plan prepared in agreement with the external logistic services and in compliance with the Installation needs & possibilities. ▪ Daily and/or weekly Process and operational settings available for production teams. ▪ Optimization opportunities with regards to environmental, quality and	▪ Honours Bachelor degree or Masters degree in Engineering (Industrial Chemistry, Metallurgy, Environmental Sciences) ▪ Experience in continuous operating process industry with furnace / steam boiler combination and flue gas cleaning equipment. ▪ Knowledge of process equipment and its applications. ▪ Affinity with quality systems ISO9001 / ISO14001 ▪ Good communication skills, written and oral to

	operational situations identified and proposals hereto elaborated. ▪ Updated Production procedures available and communicated to production teams. ▪ Environmental flows and parameters monitored and operational control actions defined. ▪ Technological support to production teams provided in an organized way. ▪ Electricity production and supply data available and communicated with the external system operator.	present and justify technical proposals. ▪ Analytic and synthesis qualities to assess process relations and to create individual either generic solutions. PC applications for data management.
Production Manager	The Production Manager of the Meath Waste Treatment Facility is responsible for the organization of the production activities and for operational coordination of the Thermal Treatment Plant in order to process the delivered incoming products taken into account the safety, environmental and planning objectives. The Production Manager manages, coordinates and supervises all production activities of the Thermal Treatment Facility, in order to realize the defined production targets. He is in direct contact with the Maintenance Manager to optimize the Plant Availability and to plan the maintenance and shutdown activities in function of the external Waste Supplies. The function of Production Manager contains also the first line safety management activities of the site. With regard to this activity, he will fulfil the role of Plant Safety Manager and advise the Plant Manager towards the implementation of specific measures. The production objectives of the incinerator facility are defined and approved by the Plant Manager in consultation with the Production Manager.	▪ Masters Degree in Engineering (Electro-Mechanics, Mechanics, Industrial Chemistry, Metallurgy, Nautical Sciences, Mining) ▪ Proven managerial experience within the process industry. ▪ Knowledge and experience with regards to High Temperature Continuous Process' (metallurgy, power generation, cement industry, petrochemicals, ..) ▪ Knowledge of SAP applications ▪ Experience with safety and environmental management systems ▪ Minimum 10 years of experience in an industrial environment
Quality & Environmental Manager	It is the Q & E Manager's remit to ensure compliance with environmental legislation and waste licence requirements as well as stakeholder requirements is done at the highest level required. 1. Establish and implement the quality and environmental requirements for the Meath Waste to Energy Facility.	Degree level qualification in technical/science subject Minimum 5 years experience in quality and environmental management <u>Core Skills</u> Technical aptitude Organisation skills

	2. Maintain compliance to and manage the Meath Waste to Energy Facility waste licence and ensure all reports and monitoring are completed and submitted in line with licence requirements 3. Communication with the Regulatory Authorities in relation to the MSW Facility. 4. Ensure best practice in Quality and Environmental standards on site including identification and implementation of Q&E improvement projects to ensure continuous improvement on site 5. To ensure implementation of QESH management system requirements in the MSW business including: a. Implementation, review and amendment of site specific Q&E procedures b. To ensure timely completion of all Q&E improvement actions such as OFI, CAR and IIP actions related to the site. c. Co-operate with the Q&E Systems Manager for the achievement and maintenance of the management system standards ISO 9001, OHSAS 18001, ISO 14001 on site.	Attention to detail Good communication & interpersonal skills Management skills Leadership Influencing Excellent knowledge of waste licencing and environmental legislation
Maintenance Manager	The holder of this position is responsible for structuring, managing and optimising of the maintenance cycle for the assigned installations of the site with a view to maximising the availability of the installations. This relates to the following main domains: - curative maintenance - preventive and predictive maintenance and technical safety management	▪ Honours Bachelor Degree in Engineering (Electro mechanical, Mechanical, Marine Engineering) / an Ordinary Bachelor Degree with extended experience in maintenance of process equipment. ▪ Minimum 5 years of experience in a Maintenance environment within the continuous process industry. ▪ Good knowledge of different type of equipment

	- shutdown maintenance and servicing - developing maintenance expertise	and the respective maintenance procedures. ▪ Knowledge of civil engineering work, mechanical, electricity and instrumentation.

C.1.2.c Employee training

Indaver Ireland staff are fully prepared for all aspects of operation of the facility. Training is managed by means of the Training and Staff Competence Procedure, an example of which is provided in Appendix C1.

All key operations staff have undergone extensive training by experienced personnel at a comparable waste-to-energy plant operated by Indaver in Belgium.

In addition, all plant personnel have undergone training in co-operation with the waste-to-energy plant manufacturer and equipment designers and suppliers. As part of the contractual agreement for the facility, representatives from the contractor are required to remain on-site until the facility has been fully commissioned and are required to be on call for 24 months after commissioning. This enables the operators to become familiar with the equipment and train directly with the equipment's design engineers.

In addition, the contractor will continue to have remote read only access to the plants central control system. Hence, operational difficulties may be resolved instantly with the contractor even after they are no longer required to be present on site.

C.1.2.d Environmental Awareness

Awareness of the environment is instilled in all staff by means of the ISO 14001 Quality Standard including. Dedicated environmental awareness training is carried out at all levels and aims to develop in staff an understanding of:

- induction training, environmental management notice boards and environmental posters
- the key elements of ISO 14001 and the operating licence
- waste handling
- emergency response
- environmental auditing
- waste legislation
- safety issues
- the impacts that the company's activities could have on the environment.

All awareness training will be logged in the training record of the staff member.

C.1.2.e Quality Control

The company's quality control system is managed through a single quality, environmental and health & safety management system, which is described in Attachment C.2.

Attachment C.2: Environmental Management Systems

C.2.1 Indaver's quality and environmental management policies

No modifications are proposed to the sites environmental management systems as approved in Waste Licence 167-2.

Indaver Ireland conducts all its activities in accordance with its quality, environmental and health & safety (QESH) management system. The activities in the Meath waste management facility are operated in accordance with this management system.

This system is computerised and can be accessed by all employees. It is accredited to the quality standard ISO 9001, the environmental standard ISO 14001 and the safety standard OHSAS 18001. The achievement of these accreditations demonstrates the company's commitment to conducting its activities in such a manner as to minimise or eliminate any potential adverse effects on the environment or on the health & safety of anyone who may be affected by the company's activities. Copies of the accreditation certificates for one of Indaver's existing facilities in Ireland is provided in Appendix C2. The accreditation process for the Meath WTE plant has begun, and it is hoped that this will be in place in early 2013.

The structure of the QESH management system is shown in Figure C.2.1.a below. To maintain and administer the QESH system and accreditation with ISO standards, Indaver Ireland has a dedicated Quality, Environmental, Safety and Health (QESH) department.

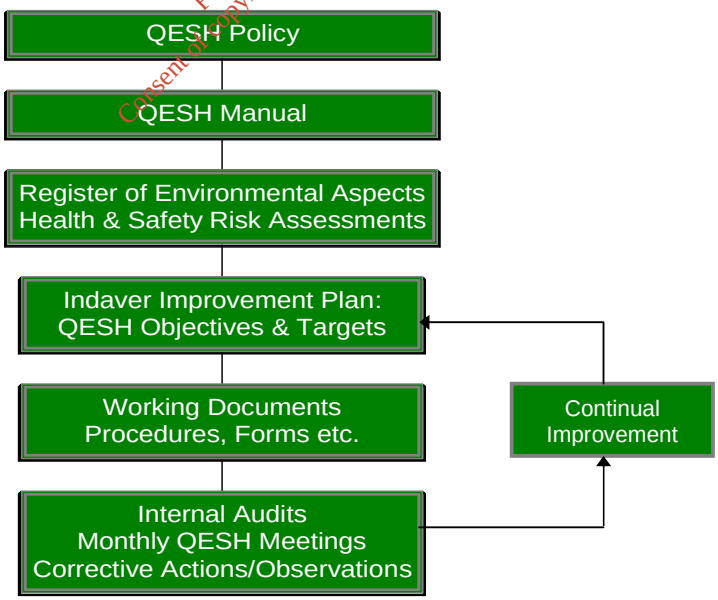


Figure C.2.1.a: Structure of QESH Management System

The QESH policy is the top-level document of the management systems and it defines Indaver's overall aims and objectives. A copy of Indaver's QESH policy is included in Appendix C3.

The Register of Environmental Aspects and the Health & Safety Risk Assessments review each of Indaver's activities in detail and identify any aspects that could pose an environmental or health & safety risk.

Any aspects deemed significant are detailed in the Indaver Improvement Plan. This document details the company's objectives and targets for the improvement of control over these aspects. Control can take many different forms, such as introducing additional safety equipment, conducting staff training or introducing a new operating procedure.

Indaver have over 130 operational procedures in place covering all aspects of its activities in Ireland. Indaver are currently in the process of moving all our procedures, forms, manuals etc from a Lotus notes document management system – (QESH Software) to a Microsoft Office SharePoint (MOSS) document management system. The procedures for the Meath facility are currently split between the QESH software and MOSS systems. The project will continue to integrate all procedures onto the one system. These procedures outline the important quality, environmental, health & safety issues in each area of operation and help to ensure compliance with relevant legislation as well as existing licences and permits. An index of Indaver's QESH management system procedures is provided in Appendix C4.

Internal and external audits are conducted to monitor the effectiveness of the QESH management systems. Audits are conducted internally against all procedures and an external accreditation body also audits the company every 6 months.

Issues raised as a result of these audits are dealt with through corrective actions and observations. This ensures that the company systems and operations are continually improved.

Attachment C.3: Hours of Operation

C.3.1: Hours of Operation

Subject to the planning application to be submitted in conjunction with this licence application, it is proposed to extend opening hours at the facility to accept wastes between 0600 and 2000 Monday to Friday inclusive and between 0600 and 1400 on Saturdays. It is also proposed to remove the restrictions on the dispatch of waste residue from site. The waste-to-energy plant operates 24 hours a day, 7 days per week.

Annual operating hours are also affected by planned and unplanned shutdowns. The capacity of the waste bunker will allow the acceptance of waste during shut downs for up to one week. From experience of operating similar plants in Belgium, non-scheduled events typically require a maximum shutdown of one-week per year. A scheduled shutdown for maintenance takes place once a year and is typically longer than one week, but less than three weeks. As these shutdowns are scheduled, it is possible to organise an alternative outlet for the waste, for example, another waste-to-energy plant or a landfill facility.

As per previous planning permissions, it is anticipated that any site construction works required by the proposed amendments will be confined to between 0700 and 1900, Monday to Saturday inclusive. No works will take place outside these hours or on Sundays or Bank or Public holidays unless otherwise agreed in writing with the planning authority.

Appendix C1

Procedure: Training & Staff Competence

Reference	Status	Version	Owner
Operations_10.6	Authorised	12	Jenny Keenan

Type Operations Manual **Sub-Type** Training & Staff Competence

1. Purpose

This procedure has been re-issued as an interim procedure while other software options and means of tracking training are being investigated.
The purpose of this procedure is to detail the level of competence and training required of all personnel and sub-contractors to enable them to carry out their activities.
It also aims at explaining the way training administration is organised, as well as presenting tools that can be utilised to ensure an appropriate level of training is met within the Company.

2. Definition

The **Manager/Team Leader** is the Direct Line Manager to whom the employee reports to.
The **Business Unit (BU) Manager** is the person with overall responsibility for the whole Business Unit
The **Cost Centre Manager** (CCM) is the person with overall responsibility regarding expenses for his/her cost centre

3. Responsibilities

It is the responsibility of each **manager and team leader** to ensure that their staff/team receive all necessary training and to ensure that this procedure is adhered to.
It is the responsibility of each **manager and team leader** to ensure that any risks associated with any job are fully explained to, and understood by, all employees (including also temporary employees) and any contractors.
It is also the responsibility of the manager/team leader to ensure that every training content his/her team members receive is fully understood and agreed.
The manager and/or trainer must ensure that the training takes into consideration anything that could prevent a full understanding from the employee, for example a low level of English. This may be done by a quick question and answer session after each training, or an observation of the employee using the training content.

It is the responsibility of the person providing training to ensure training is signed off and it is the responsibility of every person attending training to ensure the trainer provides a sign off for completion.

It is the responsibility of the **employee** to only sign a training that s/he has fully understood and agreed.

It is the responsibility of the **Human Resources Department** to ensure appropriate follow-up of training plans, and to record all training records, whether they are sign-offs, attendance sheets, or certificates, into the system and ensure a system for flagging refresher training is in place.

It is the responsibility of the **QESH department** to audit Training manuals whenever relevant.

4. References

New Employee Training Manual	Operations 10.6.2
Excel Version of Indaver Ireland Training Summary for Easy Tracking	 Training Plan Tracker Indaver Ireland Excel version.xlsx
Excel Version of Indaver Ireland Meath Training Summary for Easy Tracking	 Training Plan tracker Meath Excel version.xlsx
Training Database	Operations 10.6.3
Hazard Identification & Risk Assessment	Operations 13.4
Approval & Monitoring of General Contractors	Operations 11.3
Performance Management Form Part II	Operations 18.2.2
Employee Performance Management	Operations 18.2

5. Procedure

New Employee Induction Training:

All new employees receive the following induction training upon commencement of employment:

Induction Area	Scope
Company Induction	About Indaver NV About Indaver Ireland Limited Activities Organisational Structure Mission Statement Company Culture Performance Management Systems Goods Ideas Recognition Draw Websites IT Systems Employee Handbook Working at Indaver
QESH Induction	**QESH Management Systems** QESH Management Structure QESH Policies Indaver Improvement Plan **Quality Issues** QESH Software QESH Website & Company Website Audits Compliance

	Customer Complaints **Environmental Awareness** Environmental Complaints Environmental Officers In House Recycling Energy & Resource Usage **Health & Safety Awareness** Safety Health and Welfare at Work Act 2005 Employers/Employees Duties Safety Statement (Layout and contents) Accident Reporting Safety Representatives Site Safety Rules Fire Safety Fire Extinguishers First Aid
QESH Software Induction	**Accessing Software** Desktop Shortcut Password **Available Modules** Procedures Controlled Documents Suggestions Box Management Review **Change Requests** Creating a new Change Request Viewing existing Change Requests **Suggestions** Creating a new Suggestion
IT/Systems Induction	Username/ID Desktop Outlook - Shared Calendars Favourites Phone & Voicemail
Time Recording system	Logging Hours and Leave
Health & Safety Training	**Manual Handling**

Job Specific Training-Employee Training Manual:

All staff should receive the necessary training to enable them to function effectively in their positions. In order to ensure all necessary training is identified, a Operations 10.6.1 New Employee Training Manual should be prepared for all new employees. This outlines the minimum training requirements for new employees based on the function they are performing within the company.

The New Employee Training Manual contains the following:

1. Training Matrix:	The Training Matrix outlines the minimum training requirements for different positions/roles in the company. This takes into account the responsibility involved with each role e.g. further training is provided for managers.
2. Employee Specific Training Summary:	The Employee Training Plan Summary enables the manager to outline the training to be arranged and to track what training has been completed.
3. Training Sign Off's	The booklet contains standard training sign off's for Company Induction,

QESH Induction, QESH Software Induction, ITRS Training, Leaders Handbook Training, IT/Systems Induction, ADR/IMDG Awareness Training and Manual Handling Training aswell as blank training sign off's which can be filled out with specifics at the time of training.

Standard training sign offs must be used where available. All new standarised training sign offs must be sent to the HR Department for inclusion in the training sign offs section. Notes section on the sign offs should state level of training (Presentation, read procedure or full practical demonstration required) and also version number of any procedure.

All training manuals must contain all these three parts at all time: 1.Training Matrix 2.Employee Specific training summary, and 3.Training sign offs.

It is the employee's **manager/team leader's** responsibility to:

1. Print out a Training manual for each new employee in his/her team.
2. Review the **Employee Specific Training Summary** and indicate in the column titled "Applicable Yes/No", by entering yes or no, if training is required in the areas listed. This ***must*** reflect the training requirements outlined for the relevant position on the Training Matrix.
3. Write the **date** of each completed training in the 'Completed' column on the Training Summary.
4. Liaise with the different departments to **organise training** in these areas e.g. technical, QESH, commercial etc...
5. **Manage** the completion of all training within a reasonable time frame (The target should be to have it completed within 1 year and if it is not completed, the manager needs to contact HR to explain why there is training still outstanding).
6. Ensure all training conducted is **signed off** in the manual by both the trainee and trainer. **A copy of every sign-off must be sent to the** HR department.
7. Conduct **3 month reviews during the goal setting meeting using Performance Management Form Part II Operations 18.2.2** - The effectiveness of any training must be reviewed with the employee. If the employee feels further training is required in an area then this should be immediately organised. The manager should ensure the training is fully understood by asking a few questions, or observing the employee using the content of the training.

NOTE:

- The training indicated on the Training Matrix outlines the minimum training requirements. Any additional training in areas not specified should be arranged if the manager/team leader sees a benefit to it. However, the priority *must* be put on completing the training identified in the matrix (i.e. training marked with X in the matrix)

- In some areas the matrix suggests a department which would be capable of providing training in that area. In other areas it just mentions Line Manager. The manager/team leader should evaluate who the best person/department to conduct training is.

- The actual level of training required for an employee in each area should be determined by the manager/team leader. This should take into consideration the position of the employee, the risks associated with the role, as well as his/her level of responsibility within the company.

For example: Packaged Waste Section

- For: Accounts team: The matrix does not indicate that this is a training requirement for accounts personnel however the *Manager* might decide that some awareness in this area would be of use to an accounts administrator to give them a better understanding of the company's operations. This training could be conducted by the line manager reviewing the relevant procedure with the employee.
- For Site Services Ops: the matrix indicates training is required in this area. Full, detailed training on procedures including practical training required. This training must be conducted by a fully competent trainer with experience in this field.
- For QESH team-members: the matrix indicates training is required in this area. A general understanding of procedures is needed for auditing purposes etc. This training could be conducted by the line manager reviewing the relevant procedure with the employee.

Training Manuals should be available for inspection by the HR Department and/or the QESH department whenever required.

When s/he has completed the training manual (i.e.: when all training identified in the matrix have been conducted and reviewed), The Manager/Team leader must ask the HR Department for validation, and approval.
The training manual is then **kept by the manager/team leader or the employee,** who can include all sign-offs of training that happen afterwards.Completion of the manual only signifies that the employee has completed their initial job specific training, but training is a continuous process that continues for the duration of employment with the company, it does not stop once the training manual has been completed.

It is the HR Department responsibility to ensure that the training manuals reflect and incorporate any new systems/procedures/activities and to issue new versions as required. Managers/team leaders must highlight any gaps noted in the training plan to the HR Department. The Health and Safety Manager must highlight to the HR Department any new training identified through Hazard Identification and Risk Assessments, carried out as per Operations 13.4 Hazard Identification & Risk Assessment, that must be added to the manual.

NOTE
Quantitative fit testing will have to be performed on all employees who will be using 3M full face masks as PPE part of their normal work activities. We also need to ensure that if a person passes the fit test
while clean shaven that they will be expected to be clean shaven at all times when wearing that mask at work.

Personal Development Training:

An individual's personal development needs should be discussed by each employee and their manager on an ongoing basis. A formal review is conducted during the annual performance review session (as per the procedure Operations 18.2 Employee Performance Management) and training needs for the following year should be reviewed in tandem with the future ambitions and personal interests of the employee. Progress towards completion of agreed training is reviewed at the quarterly goal setting sessions and further training for the coming period should be identified.

If an employee moves from one position to another within the company it is their line managers responsibility to ensure additional training needs are identified and that the person receives training in all areas relevant to their new position. The training manual should be used in this situation, to know which training have to be conducted for the new position.

Approval of External Training:

- Only the **Managing Director** is ultimately authorised to approve a training request or not.
- An external training Requisition (Operations 10.6.2) form must be completed and forwarded to the Managing director, following the process below.

1. A need in training is identified
2. The team leader/manager determines it requires an external trainer. He contacts the HR Department, who can give information about prices, available dates, companies etc….
   It is then the responsibility of the **Team Leader/Manager** to fill out the external training request form, with all required details.
3. The team leader passes the Form to the **Cost Centre Manager** (CCM), who will decide whether to approve the training request or not. (Note: the CCM may complete the form him/herself if more convenient)
4. The CCM then passes the Form to he **Business Unit (BU) Manager**. The BU Manager, after discussion with the CCM, will decide whether to approve the training request or not.
5. The BU Manager then passes the request to the **Managing Director (MD)**, who after a final discussion, will decide whether to approve the training request or not. If approved the MD signs the form.
6. The approved form is then passed to HR Department
7. The HR Department then informs any relevant person, helps organise the training if needed, and passes a copy of the approved form to Accounts.

- Every Training request must pass by the hands of the Business Unit Manager and the Cost Centre Manager before being passed to the Managing Director
- Every external training request must follow the above steps; a training request can only pass one step if it has been approved by the relevant person. This will ensure that the MD only gets requests for training that have been approved by the whole management chain before.
- The request form reflects this by having three boxes for each required signature.
- Upon completion of the external training certificates of attendance must be forwarded to the HR department for filing.

Evaluation of Effectiveness of Training & Review of Training Requirements:

It is the employee's **manager/team leader's** responsibility to conduct **3 month reviews during the goal setting meeting using Performance Management Form Part II Operations 18.2.2** - The effectiveness of any training must be reviewed with the employee. If the employee feels further training is required in an area then this should be immediately organised. The manager should ensure the training is fully understood by asking questions, or observing the employee using the content of the training.

The level of competence of employees and the effectiveness of training is determined partly through internal audits and through ongoing assessment by team leaders. Opportunities for improvement (OFI's) and corrective actions are raised from these audits as necessary. As part of this ongoing assessment, managers review training at least on a quarterly basis using the goal setting form in Operations 18.2.

Regular management reviews of corrective actions and OFI's raised are conducted and any trends which highlight a gap in staff training or competence are identified. These results are actioned and the appropriate training and resources are made available.

Training requirements are also discussed as an agenda item at relevant meetings. All training requirements and completed training is recorded on Operations 10.6.3 Training Database by the HR department and copies of training records are filed and maintained by the HR Department.

Training Sign Offs and Certificates:

- **Training carried out internally:**

A Copy of the sign-off or certificate for **all training** carried out must be scanned by the person giving the training and then forwarded to the HR Department for filing. The HR Department to check a scanned copy of the Sign-off has been added to the employee's training file on the system. A hard copy is also maintained by the HR Department.

The Manager/Team Leader must also keep a copy of the sign-off. This should be put in the employee's training manual.

Every training sign-offs can be found on *S:\23_Region\Ireland\Training\Employees Training Files\Current Employees*

It is the responsibility of the trainer to ensure a sign off is completed for each person completing the training and it is the responsibility of every person attending training to ensure the trainer provides a sign off for completion.

- **Training carried out externally:**

Certificates for all external training undertaken must also be forwarded to the HR Department

It is the responsibility of every person organising external training to ensure training certificates are received and forwarded to the HR Department.

Training Records Management:

It is the responsibility of the person giving the training to scan the training sign off and forward it to the HR Department for storage and recording.

It is the responsibility of the HR Department to update Operations 10.6.3 Training Database. This must be done as soon as the HR Department receives a sign-off or a certificate

All training is recorded, according to the following elements:

- Department
- Employee's manager
- Employee's name
- Training name
- Start Date

- End Date
- Certificate-based or not (mostly for external training)
- Date of renewal/refresher if any
- Comments (details about the content, procedure number, etc...)

Operations 10.6.3 Training Database also highlights which training must be refreshed and when, as well as follow up on the external training requests process.

It is the responsibility of the HR Department to;
- Keep the database up-to-date.
- Answer any request manager/team leader might have about training.
- Inform Manager Team-leader about training that must be refreshed.

Every manager/team leader can contact the HR Department to extract any particular training record, or ask any question regarding training.

Since all sign-offs are scanned and put on the system, every manager can access his team member's training files using this folder: *S:\23_Region Ireland\Training\Employees Training Files\Current Employees*

Training for Laboratory Staff:

Due to the specialised nature of laboratory work additional information is indicated below:

Specific test methods

For a laboratory staff member to be considered competent to perform an analysis, all associated SOPs must be read and understood. Following practical training, a competency test must be carried out by the trainee, as detailed below.

Competency tests

Where possible, an in-house standard is prepared by the trainer. This is analysed four times by the trainee. If an in-house standard is not feasible, the trainer and trainee conduct the analysis at the same time and the result for the trainer is taken as the true value.
Accuracy is determined as the % Recovery for most tests, except where this is not an appropriate measure of accuracy. An example of an inappropriate test is pH, where the required accuracy is better measured as a fixed range instead of a percentage. % Recovery is calculated from:

$$\% \text{ Recovery} = (\text{Measured Value}/\text{True Value}) * 100\%$$

Precision is determined as the difference between duplicates as a percentage of the mean:

$$\% \text{ Precision} = (100 * (x1 - x2) / \text{mean}(x))$$

The level of accuracy and precision which must be achieved in order to demonstrate competence is dependent on the test. The table below presents the limits.

Analysis	% Recovery	% Precision
CV	80-120%	10%
pH	+/- 0.2 pH unit 7070	1%
Volatile organics	70-130%	20%
Flash point	+/- 2℃	5%

Water	80-120%	10%
Metals	80-120%	10%
Halogens & Sulphur	80-120%	10%

A copy of every Competency test results must be sent to the HR Department

Contractor Training:

The training carried out by our main Site Services contractors (those who work for us on an ongoing basis) must be recorded on Operations 10.6.3 Training Database and records maintained by the HR Department. Refresher training is monitored through Operations 10.6.3 Training Database.

When approving a new company for Site Services contractors as per Operations 11.3 Approval and Monitoring of General Contractors it is the responsibility of the QESH department to request all current training records for the new Site Services contractor's personnel who will carry out work on our behalf. The Site Services Manager must review the training to ensure it is adequate for the job that will be undertaken.

When approving a new General Contractor as per Operations 11.3 Approval and Monitoring of General Contractors training records are viewed for the contractor prior to approval

Temporary staff

All temporary staff must be competent to carry out the role that they have been contracted to do. It is the responsibility of the employees manager to ensure the temporary employees receives all training necessary to carry out the role. This particularly applies to safety critical tasks. The manager must ensure the temporary employee is made aware of all the risks associated with the tasks and the site they will work on. The training they will require depends on the role that they are fulfilling and the manager should review the training plan, review what training is required for that role and decide based on that information what is essential for the employee to carry out that role. If the manager should be in any doubt, they should review the suggested training with the Health and Safety Manager to ensure it is adequate.

Last Change :
Added in 'Quantitative fit testing will have to be performed on all employees who will be using3M full face masks as PPE part of their

normal work activities. We also need to ensure that if a person passes the fit test while clean shaven that they will be expected to be clean shaven at all times when wearing that mask at work.' Changed all references from Training Officer to HR Department updated Training Matrix and Training sign offs. Jenny Keenan 28/05/2010. changed ITRS references to time recording system. Removed 3 month review sign offs from procedure and training sign offs and training review expanded on Performance Management Form Part II Operations 18.2.2. Training plans separated for Indaver Ireland and Meath as training requirements are totally different Training matrices and summaries fully updated following consultation with managers for each department as part of the training working group. training sign offs updated as per training working group. added to section on training sign offs - Standard training sign offs must be used where available. All new standarised training sign offs must be sent to the HR Department for inclusion in the training sign offs section. Added section - Temporary staff. All temporary staff must be competent to carry out the role that they have been contracted to do. It is the responsibility of the employees manager to ensure the temporary employees receives all training necessary to carry out the role. This particularly applies to safety critical tasks. The manager must ensure the temporary employee is made aware of all the risks associated with the tasks and the site they will work on. The training they will require depends on the role that they are fulfilling and the manager should review the training plan, review what training is required for that role and decide based on that information what is essential for the employee to carry out that role. If the manager should be in any doubt, they should review the suggested training with the Health and Safety Manager to ensure it is adequate. Removed reference to monthly QESH meeting. Removed section on verification of competency following training group meeting. Fire extinguisher training now removed from all employees as only applicable to some roles. Changed target completion to 1 year with the manager to contact HR to explain if there is still training outstanding. added line. Notes section on the sign offs should state level of training (Presentation, read procedure or full practical demonstration required) and also version number of any procedure. Added It is the responsibility of each manager and team leader to ensure that any risks associated with any job are fully explained to, and understood by, all employees (including also temporary employees) and any contractors. Added this line to the procedure. Completion of the manual only signifies that the employee has completed their initial job specific training, but training is a continuous process that continues for the duration of employment with the company, it does not stop once the training manual has been completed. added As part of this ongoing assessment, managers review training at least on a quarterly basis using the goal setting form in Operations18.2 Jenny Keenan 08/08/2011
Mary Miller 30/08/2011 15:56:28 Version: 12

Change History :
Previously Word Operations 6.2 New Document
Patricia McGrath 02/07/2001 08:58:12 AM Version: 0

Previously Word QCM 6.2, Issue no 4, 02/08/00
Patricia McGrath 29/05/2001 18:30:23 Version: 1

Addition of Induction courses, training matrix. Incorporated Operations 4.11 Staff Competence at the Transfer Station (Ops 4.11 is now obsolete).
Patricia McGrath 18/09/2002 15:52:55 Version: 2

Included section on evaluation of effectiveness of training through internal audits and review of non conformances.
Patricia McGrath 23/07/2003 13:08:31 Version: 3

Procedure amended to reflect the new Training Plan which has been developed. All external training must now be approved by the managing director.
Patricia McGrath 11/10/2004 19:21:05 Version: 4

CRM training and training videos added to Employee Training Plan. New version of spreadsheet attached to the procedure.
Patricia McGrath 02/08/2005 16:53:13 Version: 5

Training review period on Employee Training Plan changed to3 months from 2 months. Link to Training Schedule re-established.
Patricia McGrath 01/09/2005 11:15:35 Version: 6

Changed 2 month review to 3 month review (as this was missed during last issue of procedure). Added section of Personal Development Training. Reattached amended Employee Training Plan and Training Matrix, These were both reviewed and updated Training matrix - additional training added such as stowage training, IMDG/ADR awareness training split into three levels (logs, Ops, Comm). Training plan - reference to obsolete procedures removed. Additional training requirements added to end to reflect training matrix.
Patricia McGrath 15/12/2005 12:57:56 Version: 7

Additional section on training for laboratory staff included. Training Plan replaced by New Emplyee Training Manual. Evaluation of effectiveness of training section removed from Operations 10.6.2. Included paragraph on new training management software.
Patricia McGrath 20/03/2007 17:57:29 Version: 8

Updated Training Matrix in light of changes - removed paper operatives from job titles and removed all paper related training, split TWM and Sites Services Admin into two job titles as they are now two separate jobs, TFS Regs updated with new Regs, added security plan training. Employee Training Plan Tracker renamed Employee Training Summary and added new training to reflect changes made to Training Matrix. Simplified what needs to be printed to make up the New Employee Training Manual and stated that all items should be bound or kept in a folder. Stated that training software sends emails to managers to notify when refresher training due. Included section on certs/sign offs.

Patricia McGrath 02/01/2008 12:30:12 Version: 9

New Employee Training Manual issued as controlled document Operations 10.6.1. Link to this control document added to procedure. The manual is now one pdf so reference to different files that make it up removed. Amended section on Job Specific Training - added additional instruction and notes on use of New Employee Training Plan New Employee Induction Training - added ITRS training. Evaluation of Effectiveness of Training & Review of Training Requirements - removed specifics in relation to CAR's and OFI's to reflect different approach. CAR's or OFI will be raised if training needs are identified dependent on situation Removed requirement to forward pages from training manual as completed to QESH. Training manual passed to QESH upon completion. Further screenshots on use of training software added.
Mary Miller 03/11/2008 17:09:06 Version: 10

A copy of every single file, sign off and cert to be sent to the training officer and not to the QESH department. No more training software until further notice. Training records are maintained by the TO. Explanation of the external training request process. Addition of new external training request form, which includes mandatory sign-offs for Cost centre manager and Business Unit Manager. Training officer is point of contact for any issue related to training administration and organisation TO also responsible for updating the training manual, managers to highlight any gaps. Training manuals must be kept by manager after completion. Training Database linked as a controlled document Operations 10.6.3. Reference to Risk Assessments and that H&S Manager must highlight to the TO any new training requirements as a result of RAs. Added section on contractor training. Clarified how differing levels of responsbility, ability, literacy, risk must be taken account of.
Mary Miller 12/06/2009 15:19:12 Version: 11

Added in 'Quantitative fit testing will have to be performed on all employees who will be using3M full face masks as PPE part of their normal work activities. We also need to ensure that if a person passes the fit test while clean shaven that they will be expected to be clean shaven at all times when wearing that mask at work.' Changed all references from Training Officer to HR Department. updated Training Matrix and Training sign offs. Jenny Keenan 28/05/2010. changed ITRS references to time recording system. Removed 3 month review sign offs from procedure and training sign offs and training review expanded on Performance Management Form Part II Operations 18.2.2. Training plans separated for Indaver Ireland and Meath as training requirements are totally different Training matrices and summaries fully updated following consultation with managers for each department as part of the training working group. training sign offs updated as per training working group. added to section on training sign offs - Standard training sign offs must be used where available. All new standarised training sign offs must be sent to the HR Department for inclusion in the training sign offs section. Added section - Temporary staff. All temporary staff must be competent to carry out the role that they have been contracted to do. It is the responsibility of the employees manager to ensure the temporary employees receives all training necessary to carry out the role. This particularly applies to safety critical tasks. The manager must ensure the temporary employee is made aware of all the risks associated with the tasks and the site they will work on. The training they will require depends on the role that they are fulfilling and the manager should review the training plan, review what training is required for that role and decide based on that information what is essential for the employee to carry out that role. If the manager should be in any doubt, they should review the suggested training with the Health and Safety Manager to ensure it is adequate. Removed reference to monthly QESH meeting. Removed section on verification of competency following training group meeting. Fire extinguisher training now removed from all employees as only applicable to some roles. Changed target completion to 1 year with the manager to contact HR to explain if there is still training outstanding. added line. Notes section on the sign offs should state level of training (Presentation, read procedure or full practical demonstration required) and also version number of any procedure. Added It is the responsibility of each manager and team leader to ensure that any risks associated with any job are fully explained to, and understood by, all employees (including also temporary employees) and any contractors. Added this line to the procedure. Completion of the manual only signifies that the employee has completed their initial job specific training, but training is a continuous process that continues for the duration of employment with the company, it does not stop once the training manual has been completed. added As part of this ongoing assessment, managers review training at least on a quarterly basis using the goal setting form in Operations 18.2 Jenny Keenan 08/08/2011
Mary Miller 30/08/2011 15:56:28 Version: 12

- End of Document -

Appendix C2

THE INTERNATIONAL CERTIFICATION NETWORK

IQNet and NSAI hereby certify that the organisation

Indaver Ireland Ltd

4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

for the following range of activities

The provision of specialist hazardous and non-hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery.

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

I.S. EN ISO 9001:2008

Registration Number:	**IE-19.5315**
Registration Date:	**24 August 2011**
Last Amended on:	**24 August 2011**
Remains valid until:	**23 August 2014**

Signed:

René Wasmer
President of IQNet

Signed:

Maurice Buckley
CEO NSAI

Issued on 24 August 2011

The validity of this certificate is maintained through on-going surveillance inspections.

National Standards Authority of Ireland, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland

IQNet Partners*:
AENOR *Spain* AFNOR Certification *France* AIB-Vincotte International *Belgium* ANCE *Mexico* APCER *Portugal* CISQ *Italy* CQC *China* CQM *China* CQS *Czech Republic* Cro Cert *Croatia* DQS Holding GmbH *Germany* DS *Denmark* ELOT *Greece* FCAV *Brazil* FONDONORMA *Venezuela* HKQAA *Hong Kong China* ICONTEC *Colombia* IMNC *Mexico* Inspecta Certification *Finland* IRAM *Argentina* JQA *Japan* KFQ *Korea* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland* PCBC *Poland* Quality Austria *Austria* RR *Russia* SII *Israel* SIQ *Slovenia* SIRIM QAS International *Malaysia* SQS *Switzerland* SRAC *Romania* TEST St Petersburg *Russia* TSE *Turkey* YUQS *Serbia*
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.
* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

Certificate of Registration
of Quality Management System to I.S. EN ISO 9001:2008

Indaver Ireland Ltd
4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

NSAI certifies that the aforementioned company has been assessed and deemed to comply with the provisions of the standard referred to above in respect of:-

The provision of specialist hazardous and non-hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery.

Approved by:
Maurice Buckley
CEO NSAI

QUALITY
I.S. EN ISO 9001:2008
NSAI Certified

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

Registration Number: **19.5315**
Original Registration: 24 August 2011
Last amended on: **24 August 2011**
Valid from: 24 August 2011
Remains valid to: **23 August 2014**

This certificate remains valid on condition that the Approved Quality Management System is maintained in an adequate and efficacious manner.
NSAI is a partner of IQNet - the international certification network (www.iqnet-certification.com)

All valid certifications are listed on NSAI's website - www.nsai.ie. The continued validity of this certificate may be verified under "Certified Company Search"

NSAI (National Standards Authority of Ireland), 1 Swift Square, Northwood, Santry, Dublin 9, Ireland T +353 1 807 3800 E: Info@nsai.ie www.nsai.ie
NSAI Inc. 402 Amherst Street, Nashua, New Hampshire, NH 03063, USA T +1 603 882 4412 E: info@nsaiinc.com www.nsaiinc.com

THE INTERNATIONAL CERTIFICATION NETWORK

IQNet and NSAI hereby certify that the organisation

Indaver Ireland Ltd

4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

for the following range of activities

The provision of specialist hazardous and non-hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery.

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

I.S. EN ISO 14001:2004

Registration Number:	**IE-14.0627**
Registration Date:	**24 August 2011**
Last Amended on:	**24 August 2011**
Remains valid until:	**23 August 2014**

Signed:

René Wasmer
President of IQNet

Signed:

Maurice Buckley
CEO NSAI

Issued on 24 August 2011

The validity of this certificate is maintained through on-going surveillance inspections.

National Standards Authority of Ireland, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland

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NSAI

Certificate of Registration
of Environmental Management System to I.S. EN ISO 14001:2004

Indaver Ireland Ltd

4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

NSAI certifies that the aforementioned company has been assessed and deemed to comply with the provisions of the standard referred to above in respect of:-

The provision of specialist hazardous and non-hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery..

Approved by:
Maurice Buckley
CEO NSAI

ENVIRONMENT
I.S. EN ISO 14001:2004
NSAI Certified

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

Registration Number: **14.0627**
Original Registration: 24 August 2011
Last amended on: **24 August 2011**
Valid from: 24 August 2011
Remains valid to: **23 August 2014**

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NSAI Inc. 402 Amherst Street, Nashua, New Hampshire, NH 03063, USA T +1 603 882 4412 E: info@nsaiinc.com www.nsaiinc.com

THE INTERNATIONAL CERTIFICATION NETWORK

IQNet and NSAI hereby certify that the organisation

Indaver Ireland Ltd

4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

for the following range of activities

The provision of specialist hazardous and non hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery.

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

OHSAS 18001:2007 S.R.

Registration Number:	**IE-18.0224**
Registration Date:	**24 August 2011**
Last Amended on:	**24 August 2011**
Remains valid until:	**23 August 2014**

Signed:

René Wasmer
President of IQNet

Signed:

Maurice Buckley
CEO NSAI

Issued on 24 August 2011

The validity of this certificate is maintained through on-going surveillance inspections.

National Standards Authority of Ireland, 1 Swift Square, Northwood, Santry, Dublin 9, Ireland

IQNet Partners*:
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NSAI

Certificate of Registration

of Occupational Health and Safety Management System to OHSAS 18001:2007

Indaver Ireland Ltd

4th Floor, Block 1
West Pier Business Campus
Old Dunleary Road
Dun Laoghaire
Co. Dublin

NSAI certifies that the aforementioned company has been assessed and deemed to comply with the provisions of the standard referred to above in respect of:-

The provision of specialist hazardous and non hazardous waste management services, including management of waste shipment, total waste management, on site services and solvent recovery.

Approved by:
Maurice Buckley
CEO NSAI

HEALTH & SAFETY
OHSAS 18001:2007
NSAI Certified

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

Registration Number: **18.0224**
Original Registration: 24 August 2011
Last amended on: **24 August 2011**
Valid from: 24 August 2011
Remains valid to: **23 August 2014**

This certificate remains valid on condition that the Approved Occupational Health and Safety Management System is maintained in an adequate and efficacious manner.
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NSAI Inc. 402 Amerst Street, Nashua, New Hampshire, NH 03063, USA T +1 603 882 4412 E: info@nsaiinc.com www.nsaiinc.com

Appendix C3

QESH POLICY

Attention to Quality, the Environment, Safety & Health

Indaver's Quality, Environmental, Safety & Health management system is a fundamental part of our company culture and organisation.

We are committed to:

- Complying with all Irish, UK and EU legislation, environmental, health & safety and transport legislation and regulations, including relevant licences and permits.
- Identifying the environmental aspects and health & safety hazards associated with our activities and ensuring a commitment to the prevention of pollution from our activities.
- Ensuring, in so far as is reasonably practicable the prevention of injury and ill health of our employees, visitors, contractors and members of the public who may be affected by the company's activities.
- Minimising the potential for environmental incidents and health & safety incidents. Recording and reporting any incidents or accidents to the relevant competent authorities.
- Being a customer driven company where all decisions are based on an over-riding ambition to serve our customers better, provide our customers with excellent service levels and help them ensure their compliance with all relevant legislative requirements
- Developing QESH management processes, operational procedures and audit capabilities to ensure that effective systems are in place.
- The continual improvement of our management systems through the setting of QESH Objectives and Targets through our Indaver Improvement Plan and the measurement of them against key performance indicators and the Indaver group standards.
- Identifying the major accident scenarios and maintaining an appropriate major accident prevention policy in accordance with the current European SEVESO Directive, and as transposed into Irish and UK legislation, as relevant to specific sites.
- Fully considering the impact on the environment and the implications and risks to safety and health before committing capital expenditure or entering into any new business ventures.
- Being at the forefront in the provision of high quality, sustainable waste management solutions and waste infrastructure.
- Ensuring, in so far as is reasonably practicable, that employees comply with their duty to follow the QESH rules and procedures.
- Ensuring employees report as soon as practicable any:
  - EHS incidents
  - Unsafe work or defects in the place of work which could endanger safety, health & welfare
  - Other contraventions of QESH rules, procedures or regulatory requirements
- Providing employees with the skills and training required to function effectively in their positions and encouraging the personal development of employees to their full potential so as to maximise their contribution to the specific needs of the organisation.
- Encouraging and developing leaders who drive and inspire others towards excellence by displaying role model behaviour.
- Being open and honest and ensuring effective communication of the QESH culture of the company through:
  - Ensuring the availability of the QESH policy, procedures and access to QESH records to all employees and interested parties;
  - Providing the necessary training and support to employees and sub contractors
  - Encouraging employee involvement in decision-making and open and free communication between employees and management
- Co-operating with contractors, suppliers and customers to develop a similarly concerned approach to the protection of the environment and to the safety & health of others.
- Ensuring efficient usage of materials and energy resources and promoting a policy of recycling/recovery of waste wherever possible, both in-house and with our customers.
- Measuring the perceptions of employees, customers and suppliers to identify opportunities for improvement and to achieve results, which satisfy all of the organisation's stakeholders.
- Making alterations and changes to the QESH policy in the light of experience and ensuring it is kept up to date.

The success of this policy will depend on each employee's co-operation and will be reviewed on an ongoing basis. Staff and others to whom this policy applies should feel free to put forward suggestions at any time.

Date: May 2010

Version 4

Indaver is an integrated waste management company offering both hazardous and non-hazardous waste management services. We operate a number of offices and facilities throughout Ireland and the UK. Our parent company Indaver NV is based in Flanders, Belgium which is part of the Delta group.

Appendix C4

Controlled Document : Procedures Index

Reference	Status	Version	Owner
Op_index	Authorised	20	Mary Miller

Type Index Sub-Type

Administration of System

Operations 10.3	Identification & Evaluation of Environmental Aspects
Operations 10.4	Setting and Monitoring of QESH Objectives and Targets
Operations 10.5	Quality, Environmental, Safety and Health Records
Operations 10.7	Processing Preventive & Corrective Actions
Operations 10.8	Internal External and Customer Audits
Operations 10.11	Customer Surveys by Means of Post Collection Questionnaires & Balance Scorecards
Operations 10.12	Identification Review & Evaluation of Legal Requirements
Operations 10.13	Archiving
Operations 10.14	QESH Management Review Meetings

Amgen Dun Laoghaire TWM

Operations 27.1	Amgen Dun Laoghaire TWM - Collection and Disposal of Mixed Vials
Operations 27.2	Amgen Dun Laoghaire TWM - Collection and Packing of Solid Pharmaceutical Waste On Site
Operations 27.3	Amgen Dun Laoghaire TWM - Collection and Disposal of Non Hazardous Waste
Operations 27.4	Amgen Dun Laoghaire TWM - Collecting and Disposal of Uncontaminated Glass Vials
Operations 27.5	Amgen Dun Laoghaire TWM - Collection and Disposal of Waste Batteries
Operations 27.6	Amgen Dun Laoghaire TWM - Collection and Disposal of Waste Electronic Electrical Equipment (WEEE)
Operations 27.7	Amgen Dun Laoghaire TWM - Collection and Recycling of Cardboard
Operations 27.8	Amgen Dun Laoghaire TWM - Collection and Disposal of Waste Fluorescent Tubes
Operations 27.9	Amgen Dun Laoghaire TWM - Collection and Disposal of Waste Cooking Oils
Operations 27.10	Amgen Dun Laoghaire TWM - Collection and Disposal of Waste Machinery Oils
Operations 27.11	Amgen Dun Laoghaire TWM - Collection and Packaging of Toners/Ink Cartridges for Disposal

Operations 27.12	Amgen Dun Laoghaire TWM - Collecting and Disposing of Triple Rinsed Winchesters
Operations 27.13	Amgen Dun Laoghaire TWM - Collection and Packing of Biohazardous Waste/Cin Bins
Operations 27.14	Amgen Dun Laoghaire TWM - Collection Listing and Packing of Laboratory Smalls On Site
Operations 27.15	Amgen Dun Laoghaire TWM - Loading of Waste Shipments for Movement Off Site
Operations 27.16	Amgen Dun Laoghaire TWM - Collection and Disposal of Chloroform Bovine Waste
Operations 27.17	Amgen Dun Laoghaire TWM - Collection of Empty Contaminated Drums
Operations 27.18	Amgen Dun Laoghaire TWM - Collecting and Decanting of Azithromycin Ketalar Vorinconazole IGF-IR Pegvisomant and Ketanest S Liquid Waste
Operations 27.19	Amgen Dun Laoghaire TWM- Codes of Conduct and Housekeeping on site
Operations 27.20	Amgen Dun Laoghaire TWM- Incident/Accident Reporting & Emergency Response Procedure
Operations 27.21	Amgen Dun Laoghaire TWM- Procedure for the Change Out of Waste Klericide Drums

Approval Amendment & Control

Operations 1.1	Amendment, Issue and Control of QESH System Documentation

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Operations 19.1	Purchase Procedure Non Waste Flow Indaver Ireland Limited
Operations 19.2	Purchase Procedure Indaver Ireland Branch
Operations 19.3	Purchase Procedure Indaver UK
Operations 19.4	Credit Collection Policy
Operations 19.5	Procedure for Posting Receipts and Payments
Operations 19.6	Bank Reconciliation
Operations 19.7	Intercompany Reconciliations
Operations 19.8	Cara and Cedar Accounting and Reporting
Operations 19.9	Foreign Currency Transactions and Balances
Operations 19.10	Journal Entries
Operations 19.11	Key Performance Indicators (KPI) Reporting
Operations 19.12	Staff Expenses Policy
Operations 19.13	Inventory Stock Taking
Operations 19.14	Irish VAT Return
Operations 19.15	Procedure for the management payments
Operations 19.16	Petty Cash Procedure
Operations 19.17	Accruals
Operations 19.22	Creditor's Reconciliation
Operations 19.23	Posting Non Waste Flows Invoices
Operations 19.24	IFRS month end pack
Operations 19.25	Bank Reconciliation Indaver UK
Operations 19.26	Post UK Bank Statement
Operations 19.27	Process for passing AVG invoices
Operations 19.29	GSK UK Invoicing
Operations 19.30	Payment to UK Suppliers

Boston Scientific TWM

Operations 29.1	Boston Scientific Galway TWM - Transfer to Tankers of Aqueous Waste
Operations 29.2	Boston Scientific Galway TWM - Emergency Response Procedure
Operations 29.3	Boston Scientific Galway TWM - Hazardous Waste Removal
Operations 29.4	Boston Scientific Galway TWM - Collection of Non Hazardous Waste
Operations 29.5	Boston Scientific Galway TWM - Collection of HSM Cardboard Baler
Operations 29.6	Boston Scientific Galway TWM - Forklift Operation Procedure
Operations 29.7	Boston Scientific Galway TWM - Compactor Operation Procedure
Operations 29.8	Boston Scientific Galway TWM - Drum Compactor Operation

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Operations 17.1	Civic Amenity Site - Waste Acceptance, Storage, Loading & Collection
Operations 17.2	Civic Amenity Site - Site Maintenance, Safety & Security
Operations 17.3	Emergency Response Procedure for the Civic Amenity Sites
Operations 17.5	Repak Invoicing for the Civic Amenity Sites

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Operations 4.2	Classification & Identification of Waste
Operations 4.8	Safety Data Sheets

Commercial Support

Operations 3.12	Entering and Updating Costs in the Fixed Disposal Rates Screen in Tracker

Communications

Operations 6.1	Internal & External Communications

Customer Support

Operations 3.1	Customer Enquiry Processing and Quotation
Operations 3.21	Customer Complaints & Comments

De Puy TWM

Operations 43.1	De Puy TWM - Collection of Waste from Sigma Trays & Hips & Poly Valuestreams
Operations 43.2	De Puy TWM - Storage Placing & Removing Waste Materials on Racking
Operations 43.3	De Puy TWM - Removal of Empty Drums Containing Chemical Residue Oakite & BCR & COSA & CIP-92
Operations 43.4	De Puy TWM - Collection & Listing and Packinf of Lab Smalls on site in DePuy
Operations 43.5	De Puy TWM - Collection of Ceramic Waste from the Wax Room & Dip Room
Operations 43.6	De Puy TWM - Collection of Waste Bags & Containers from the Porocoat Area
Operations 43.7	De Puy TWM - Removal of Dust Collection Bins & Replacement of Liner in Bin
Operations 43.8	De Puy TWM - Collection of Boilerclave Wax & Waste Bags & Containers from the Foundry & Boilerclave & Middle Foundry Room

Dublin Port Hazardous Waste Facility

Operations 16.1	Blending Pre-Acceptance Checks
Operations 16.2	Sampling Loading and Unloading at the Blending Plant
Operations 16.3	Stream Acceptance and Blending
Operations 16.8	Operation of the Nitrogen Blanketing System
Operations 4.1	Acceptance & Storage of waste at the Transfer Station & Solvent Recovery Facility
Operations 4.3	Monitoring of Storm Water Emissions to Surface Water Sewer
Operations 4.4	Testing and Removal of Water from Sumps
Operations 4.19	Relocation of Material within Storage Bays
Operations 4.22	Forklift Charging Procedure
Operations 4.23	Storm Water Monitoring System
Operations 4.24	Stock Count Procedure for the Dublin Port Hazardous Waste Facility

Emergency Response

Operations 8.2	Spill Clean Up at the Transfer Station
Operations 8.3	General Fire & Evacuation Procedure
Operations 8.4	Internal/External Flooding Procedure
Operations 8.7	General Emergency Response & Spill Clean Up
Operations 8.8	Indaver ADR Collection Vehicle's - Emergency Response Procedure and Drivers Responsibilities
Operations 8.9	Procedure upon Receipt of an Emergency Response Call

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Operations 6.2	Environmental Complaints
Operations 6.3	Environmental Non Compliance
Operations 6.4	Environmental Incident Investigation & Reporting
Operations 6.5	Internal Waste Management
Operations 6.6	Monitoring and Recording of Environmental Information
Operations 6.7	Monitoring and Measuring of Environmental Emissions

Equipment

Operations 15.1	SAP for the Creation of Maintenance
Operations 15.2	Maintenance of Equipment
Operations 9.1	Purchase Hire & Decommissioning of Equipment

Genzyme TWM

Operations 42.1	Genzyme TWM - Collecting and Handling of Non Hazardous Waste
Operations 42.2	Genzyme TWM - Collecting and Handling of Hazardous Waste
Operations 42.3	Genzyme TWM - Decanting & Washing

GSK Cork TWM

Operations 33.1	GSK Cork TWM - C & D Construction Waste
Operations 33.2	GSK Cork TWM - Catalyst Recovery

Operations 33.3	GSK Cork TWM - Confidential Paper
Operations 33.4	GSK Cork TWM - Construction Waste Compound
Operations 33.5	GSK Cork TWM - Emergency Response
Operations 33.6	GSK Cork TWM - Empty Drums
Operations 33.7	GSK Cork TWM - Hazardous Packaged Waste
Operations 33.9	GSK Cork TWM - Laboratory Waste
Operations 33.10	GSK Cork TWM - Non Hazardous Waste
Operations 33.11	GSK Cork TWM - On Site Transfer of Drums & IBC's
Operations 33.12	GSK Cork TWM - Site Services
Operations 33.13	GSK Cork TWM - Baling Procedure
Operations 33.14	GSK Cork TWM - Waste Tanker Management
Operations 33.15	GSK Cork TWM - WWTP Sludge
Operations 33.16	GSK Cork TWM - Labelling Workflow

GSK, Dungarvan TWM

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Operations 31.2	Glaxosmithkline Dungarvan - Carboard Procedure
Operations 31.3	Glaxosmithkline Dungarvan - Controlled Substances Procedure
Operations 31.4	Glaxosmithkline Dungarvan - Nicotine Waste Procedure
Operations 31.5	Glaxosmithkline Dungarvan - Non Hazardous Landfill Waste Procedure
Operations 31.6	Glaxosmithkline Dungarvan - Paper Newspaper and Magazine Procedure
Operations 31.7	Glaxosmithkline Dungarvan - Printer Cartons and Shippers Procedure
Operations 31.8	Glaxosmithkline Dungarvan - 40ft Containers of Packaged Waste
Operations 31.9	Glaxosmithkline Dungarvan - Movement of Lab Waste Solvent ex Chemstore Procedure

GSK Stafford Miller TWM

Operations 32.1	GSK Stafford Miller - Canteen Waste Procedure
Operations 32.2	GSK Stafford Miller - Cardboard Cartons and Foil Procedure
Operations 32.3	GSK Stafford Miller - Cardboard and Plastic Procedure
Operations 32.4	GSK Stafford Miller - Foil and Tubes Procedure
Operations 32.5	GSK Stafford Miller - Lead Acid Batteries Procedure
Operations 32.6	GSK Stafford Miller - Non Hazardous Landfill Waste Procedure
Operations 32.7	GSK Stafford Miller - Non Hazardous RDF Waste Procedure
Operations 32.8	GSK Stafford Miller - Paper Newspapers and Magazine Procedure
Operations 32.9	GSK Stafford Miller - WEEE Procedure
Operations 32.10	GSK Stafford Miller - 40ft Containers of Packaged Waste
Operations 32.11	GSK Stafford Miller - Moving Empty Drums to Cork Metal
Operations 32.12	GSK Stafford Miller - Dealing with Empty Fibre Kegs
Operations 32.13	GSK Stafford Miller - Movement of Empty Drums
Operations 32.14	GSK Stafford Miller - Movement of Transfer Station Packaged Waste
Operations 32.15	GSK Stafford Miller - Dealing with Rejected Raw Materials

Health & Safety

Operations 13.10	Control of Hot Work
Operations 13.11	Control of Confined Space Entry
Operations 13.1	Health & Safety Incident Investigation & Reporting

Operations 13.2	Completion of Time Sheets
Operations 13.4	Hazard Identification & Risk Assessment
Operations 13.5	General Site Security
Operations 13.6	HazID Safety Study
Operations 13.7	Management of Change Procedure
Operations 13.8	Management of Seveso - Monitoring, Auditing and Review of Major Accident Prevention Policy (MAPP) and the Safety Management System
Operations 13.9	The HAZOP Safety Study
Operations 16.4	Lock Out and Tag Out Procedure
Operations 16.5	Identification of Safety Critical Components of an Installation
Operations 16.6	Opening Pipelines and Vessels
Operations 16.7	Permit to Work Procedure
Operations 4.12	Health & Safety Checks

HR Procedures

Operations 18.1	Employee Recruitment & Induction
Operations 18.2	Employee Performance Management
Operations 18.3	Employee Leaving Procedure
Operations 18.4	Employee Absence Management Procedure

IT Systems

Operations 9.4	Backing Up Computer System
Operations 9.5	Operation of the Out of Hours Telephone System
Operations 9.7	Change Control Procedure for Indaivers Bespoke Software Applications
Operations 9.8	Logging IMIS Trouble Tickets
Operations 9.9	Issue of IT Equipment and Mobile Phones and Carkits to Employees

Lab

Operations 20.1	Receiving Logging and Storage of Samples
Operations 20.12	Handling and Storage of Stock Reagents
Operations 20.19	Equipment Calibrations and Maintenance
Operations 20.21	Laboratory Quality Control System
Operations 20.23	Operation of the Lone Worker System
Operations 20.24	Emergency and Safety Equipment
Operations 20.29	Laboratory Spills and Leaks
Operations 20.4	Waste Handling and Storage and Disposal
Operations 20.8	Data Handling in the Laboratory
Operations 21.11	Determination of the Flash Point of Waste Samples
Operations 21.12	Determination of methanol in waste
Operations 21.13	Determination of organic solvents in waste
Operations 21.14	Density Determination
Operations 21.1	Determination of Metals and Halogens and Sulphur Using XRF
Operations 21.2	Determination of the Calorific Value Using an IKA Bomb Calorimeter
Operations 21.3	Determination of Free Solids in Liquid Waste Samples
Operations 21.4	Determination of the pH of Liquid Waste Samples

Operations 21.5	Determination of Fluoride in Liquid Waste Samples by Ion Selective Electrode
Operations 21.6	Determination of Ash Content
Operations 21.7	Determination of Water Content by Karl Fischer Titration
Operations 21.9	Determination of Waste Compatibility
Operations 22.1	Operation and Calibration of the Bruker XRF Spectrometer
Operations 22.10	Calibration and Use of the Analytical Balances
Operations 22.13	Operation and Maintenance of Varian Saturn 2100T GC/MS
Operations 22.14	Operation of the Stuart Magnetic Stirrer and Hotplate
Operations 22.16	Operation of the Fume Hoods
Operations 22.2	Operation of the IKA C 500 Bomb Calorimeter
Operations 22.20	Operation and Maintenance of the Micropipettes
Operations 22.23	Handling of Compressed Gases
Operations 22.3	Operation of the Hettich Universal 320R Centrifuge
Operations 22.4	Operation of the Eutech 5500 pH/Ion Meter
Operations 22.5	Operation and Maintenance of TRICOOL 21 S2/10EXT Chiller
Operations 22.6	Operation of the Binder FD53 Laboratory Oven
Operations 22.7	Operation of the Carbolite Muffle Furnace
Operations 22.8	Operation of the Metrohm 787 Karl Fischer Titrino
Operations 22.9	Operation of the Millipore Direct Q 5 Water Purification System
Operations 23.1	X-Ray Radiation Protection

Movement & Tracking

Operations 2.1	Moving a Waste Load under Transfrontier Shipment Form (TFS) direct from a Customer's Site to a Waste Facility
Operations 2.2	Moving a Waste Load under C1 from a Customer's site transiting the Transfer Station to a Waste Facility on TFS
Operations 2.3	Moving a Waste load under Transfrontier Shipment Form (TFS) from Storage in the Transfer Station to a Waste Facility
Operations 2.4	Shipment of Controlled Drugs and Scheduled Substances
Operations 2.8	Moving a Waste Load to Indaver's Transfer Station
Operations 2.9	Moving a Waste Load to a Waste Facility within Ireland
Operations 2.10	Moving Waste from Storage in the Transfer Station to a Waste Facility within Ireland
Operations 2.13	Obtaining Approval from Norit for a New Spent Carbon Stream and Placing an Order for Carbon
Operations 2.16	Moving Green List Waste for Recovery on CMR Note
Operations 2.18	Procedure for Recording & Consigning Waste on RecTracker
Operations 2.19	Dealing with a Waste Load Rejected at a Facility
Operations 2.20	Moving an Empty Uncleaned Tank Offsite to a Tank Cleaning Station within Ireland

Merck Sharpe and Dohme, Clonmel TWM

Operations 30.1	MSD TWM - Tanker Management
Operations 30.2	MSD TWM - Acetonitrile Toll Management
Operations 30.3	MSD TWM - Hazardous Packaged Waste

Merck Sharpe and Dohme, Swords TWM

Operations 45.1	MSD Swords TWM - Collection & Removal of Non Hazardous Waste
Operations 45.2	MSD Swords TWM - Collection & Removal of Non Routine Waste
Operations 45.3	MSD Swords TWM - Collection & Removal of Hazardous Waste
Operations 45.4	MSD Swords TWM - Completion of Customer Monthly Waste Management Logs
Operations 45.5	MSD Swords TWM - Storage Collection and Removal of Laboratory Smalls

Pfizer Grangecastle TWM

Operations 26.1	Pfizer Grangecastle TWM - Collection and Triple Rinsing of Empty Contaminated Drums
Operations 26.2	Pfizer Grangecastle TWM - Collection and Packing of Red Bagged Waste and Sharps Bins On Site
Operations 26.3	Pfizer Grangecastle TWM - Collecting Listing and Packing of Lab Smalls On Site
Operations 26.4	Pfizer Grangecastle TWM - Collecting Listing Decanting of Liquid Waste and Packing of Jerricans On Site
Operations 26.5	Pfizer Grangecastle TWM - Autoclaving of Biohazardous waste and the Collection and Packing of Inactivated Biohazardous Yellow Bagged Waste / Cin Bins
Operations 26.6	Pfizer Grangecastle TWM - Collection and Packing of Biohazardous Yellow Bagged Waste / Cin Bins and Clinical Waste On Site
Operations 26.7	Pfizer Grangecastle TWM - Collecting and Storing of Genetically Modified Microorganisms Biohazardous Waste On Site
Operations 26.8	Pfizer Grangecastle TWM - Collection of Empty Contaminated Drums and IBCs On Site
Operations 26.9	Pfizer Grangecastle TWM - Collection Waste Vials Containing Prevnar MNTX Tygacil and Media On Site
Operations 26.10	Pfizer Grangecastle TWM - Collection of Waste Cooking Oils from On Site Canteens
Operations 26.11	Pfizer Grangecastle TWM - Collection of Waste Hydraulic Lubricant Compressor and Engine Oils On Site
Operations 26.12	Pfizer Grangecastle TWM - Collection and Disposal of Waste Electronic Electrical Equipment (WEEE)
Operations 26.13	Pfizer Grangecastle TWM - Collection and Disposal of Waste Batteries
Operations 26.14	Pfizer Grangecastle TWM - Collection and Disposal of Waste Fluorescent Tubes
Operations 26.15	Pfizer Grangecastle TWM - Collection and Disposal of Toner and Ink Cartridges
Operations 26.16	Pfizer Grangecastle TWM - Loading of Containers for Waste Shipments On Site
Operations 26.17	Pfizer Grangecastle TWM - Codes of Conduct and Housekeeping On Site
Operations 26.18	Pfizer Grangecastle TWM - Incident/Accident Reporting & Emergency Response Procedure On Site
Operations 26.19	Pfizer Grangecastle TWM - Safe Operation of the Drum Press for Compacting Hazardous Waste in the East Drum Store
Operations 26.20	Pfizer Grangecastle TWM - Procedure for the Safe Operation of the bailing equipment
Operations 26.21	Pfizer Grangecastle TWM - Collecting and Disposal of Uncontaminated Glass
Operations 26.22	Pfizer Grangecastle TWM - Safe Operation of the Compactor Equipment
Operations 26.23	Pfizer Grangecastle TWM - Collecting Documenting and Transferring Wooden Pallets off site for Reuse
Operations 26.24	Pfizer Grangecastle TWM - Collecting Documenting and Transferring UN Approved Drums off site for Reuse
Operations 26.25	Pfizer Grangecastle TWM - Collection of Non Hazardous Waste on site and

	Transporting to the Non Hazardous Waste Compound
Operations 26.26	Pfizer Grangecastle TWM - Loading Operations Drop & Pick Up of Skips and Curtainsiders
Operations 26.27	Pfizer Grangecastle TWM - Use of Forklift Trucks Onsite
Operations 26.28	Pfizer Grangecastle TWM - Collection and Handling of Confidential Waste Paper Bags and Wheelie Bins

Sales & Invoicing

Operations 3.14	GSK Change Control Procedure
Operations 3.2	Completion of New Customer Account Application Forms and New Supplier Account Opening Forms
Operations 3.4	Preparing Jobs for Invoicing
Operations 3.5	Waste and Transport Invoice Approval
Operations 3.9	Certificates of Disposal/Recovery
Operations 3.10	Drum & Package Supply Procedure

Schering Plough Avondale TWM

Operations 37.1	Schering Plough Avondale TWM - Bulk Tanker
Operations 37.2	Schering Plough Avondale TWM - Lab Waste Collections
Operations 37.3	Schering Plough Avondale TWM - Non Hazardous Waste Management
Operations 37.4	Schering Plough Avondale TWM - Procedure for the Movement of Hazardous Waste
Operations 37.5	Schering Plough Avondale TWM - Administration Procedure

Schering Plough Bray TWM

Operations 34.1	Schering Plough Bray TWM - Loading of Hazardous Chemical Loads
Operations 34.2	Schering Plough Bray TWM - Packing & Collection of Lab Smalls & Lab Waste
Operations 34.3	Schering Plough Bray TWM - Treatment of Solid Flammable Hazardous Waste on Site
Operations 34.4	Schering Plough Bray TWM - Decanting of Solvent Waste & Liquid Antibiotic Waste & Micro Limit Waste
Operations 34.5	Schering Plough Bray TWM - Treatment of WEEE Batteries & Fluoroscent Tubes
Operations 34.6	Schering Plough Bray TWM - Treatment of Pallet Box - Dry Hazardous Waste Compactor
Operations 34.7	Schering Plough Bray TWM - Treatment of Paller Box- Lab Waste
Operations 34.8	Schering Plough Bray TWM - Treatment of Mixed Dry Recyclables
Operations 34.9	Schering Plough Bray TWM - Treatment of Glass for Incineration

Schering Plough Brinny TWM

Operations 35.1	Schering Plough Brinny - Batteries/WEEE/Tube Collections
Operations 35.2	Schering Plough Brinny - Hazardous Packaged Waste
Operations 35.3	Schering Plough Brinny - Laboratory Smalls Management
Operations 35.4	Schering Plough Brinny - Laboratory Waste Management
Operations 35.5	Schering Plough Brinny - Medical Waste Collections
Operations 35.6	Schering Plough Brinny - Non Hazardous Waste Management
Operations 35.7	Schering Plough Brinny - Sludge Management

Operations 35.8	Schering Plough Brinny - Invoicing Procedure

Schwarz Pharma TWM

Operations 36.1	Schwarz Pharma TWM - Bulk Solvent Waste & Sodium Acetate Waste
Operations 36.2	Schwarz Pharma TWM - Packaged Loads off Site
Operations 36.3	Schwarz Pharma TWM - Non Hazardous Waste
Operations 34.4	Schwarz Pharma TWM - Lab Reagent Waste

TFS

Operations 3.6	Raising a TFS & a Financial Guarantee

Training & Staff Competence

Operations 10.6	Training & Staff Competence

Transport Issues

Operations 14.1	Vehicle Maintenance & Servicing
Operations 14.2	Ensuring Compliance with Driver Hours
Operations 14.3	Requesting Transport Pricing from Approved Hauliers

TWM Administration

Operations 25.1	Setting Up a TWM Contract and the Provision of a Waste Operations Leader (WOL)
Operations 25.2	TWM Non Hazardous Recycling Certs

Vendor Control

Operations 11.1	Haulier Approving and Monitoring
Operations 11.2	Approving and Monitoring of Waste Facilities
Operations 11.3	Approval & Monitoring of General Contractors
Operations 11.8	Control of Approved Facilities for Customers

Waste Handling

Operations 4.6	Taking and Moving a waste Sample for Analysis
Operations 5.1	Requesting Completing and Issuing Instructions to Work
Operations 5.2	Interpretation of UN Marking System
Operations 5.3	Inspection of Packages for Carrying Waste
Operations 5.4	Loading containers & curtainsiders for Shipment
Operations 5.8	Assignment and Use of Personal Protective Equipment
Operations 5.10	Repackaging of Waste
Operations 5.12	Labelling of Packages
Operations 5.13	On Site Placarding of Bulk and Packaged Waste Loads
Operations 5.19	Laboratory Smalls
Operations 5.21	DGSA/Non Regulated Material Incident Investigation & Reporting

Last Change :
Removed Belview, Honeywell procedures and Ops 2.14, 2.15, 5.6, 5.22,. Added all SP Avondale, Bray, Schwarz, MSD Swords, GSK Dungarvan, Stafford Miller, De Puy, Genzyme TWM procedure. Also added Ops 9.9, 19.5, 19.12, 19.13, 19.14, 19.16, 19.17, 19.22, 19.23, 19.24, 19.25, 19.26, 19.27, 19.29, 19.30, 27.19, 27.20, 27.21, 29.3,. Renamed Ops 3.5, 5.21 and 10.14 and all Pfizer DL procedures changed to Amgen.
Mary Miller 06/07/2011 08:43:34 Version: 20

Change History :
New Document
Kiera Sullivan 30/08/2001 16:50:05 Version: 0

New Document
Patricia McGrath 14/01/2002 17:45:18 Version: 1

Included new procedures Ops 2.14, Ops 3.9 and Ops 4.18
Patricia McGrath 12/02/2002 11:47:28 Version: 2

New Procedure Ops 14.2 and 8.9. Ops 4.15 reissued as Ops 13.3
Patricia McGrath 01/05/2002 13:06:11 Version: 3

Added new procedures Ops 4.19, Ops 3.7, Ops 10.14, Ops 11.7, Ops 13.1 and Ops 13.4
Removed obsolete procedures Ops 9.3, Ops 7.7, Ops 10.1 and Ops 10.2
Patricia McGrath 26/06/2002 13:10:05 Version: 4

Updated to reflect new procedures and sections and to remove obsolete procedures
Patricia McGrath 27/09/2002 15:07:58 Version: 5

Addition of new procedure Ops 4.20, Civic Amenity Site Procedures, Ops 3.21 and removal of obsolete movement procedures.
Patricia McGrath 13/01/2003 16:25:43 Version: 6

Ops 5.14 obsolete, New procedure Ops 4.21 added, Ops 4.6 renamed and moved from TS section
Patricia McGrath 10/03/2003 20:21:43 Version: 7

Ops 4.9, 4.20 and 3.13 obsolete. Ops 9.2 recategorsied as "Equipment". Ops 9.4 & 9.5 recategorised as "IT Systems". New procedure Ops 2.16 and Ops 3.13
Patricia McGrath 21/07/2003 15:02:52 Version: 8

Addition of HR procedures. OPerations 3.8 and Operation 5.17 removed as obsolete
Patricia McGrath 09/03/2004 13:31:38 Version: 9

Removed Contractor section and put these procedures under waste handling. Removed Operations 11.5, Operations 5.5, Operations 8.1 and Operations 4.16 as these procedures were made obsolete.
Patricia McGrath 28/01/2005 19:41:42 Version: 10

Additional column indicating Manager responsible by procedure was added Removed Operations 4.7, 4.14, 4.18, 5.9, 5.16, 5.18, 8.6, 9.2, 12.1, 12.2, 12.3 & 12.4 as these were made obsolete. Took out Operatons 4.18 and Operations 12.8 as they are being made obsolete. Procedures Ops 18.3, Ops 7.8 and Ops 13.5 were added. Moved Ops 3.1 from Sales and Invoicing to Customer Support and Ops 4.8 from Transfer Station to Classification and ID of Waste. Renamed Operations 5.8 to Assignement and Use of PPE
Patricia McGrath 03/01/2006 17:51:12 Version: 11

Added procedures Ops 13.10, 13.11, 13.6 and 13.7 to Health and Safety. Added procedure Ops 3.14 to Sales and Invoicing. Renamed Transfer Station as Transfer Station & Solvent Recovery Facility and added procedures Ops 16.1, 16.2, 16.3. Inserted a new section for Lab and added procedures Ops 20.1, 20.11, 20.12, 20.2, 20.21, 20.23, 20.3, 20.4, 20.9, 21.11, 21.14, 21.2, 21.3, 21.4, 21.5, 21.6, 21.7, 21.8, 21.9, 22.1, 22.10, 22.14, 22.15, 22.16, 22.17, 22.19, 22.2, 22.20, 22.22, 22.23, 22.3, 22.4, 22.6, 22.7, 22.8 and 22.9.. Removed procedures Ops 3.13, 4.13, 4.21, 5.15 and 12.5. Updated person responsible for each procedure. Operations 10.9 has been removed as it is now obsolete.
Patricia McGrath 27/03/2007 12:40:43 Version: 12

Removed responsible person column. Added procedures Ops 13.8, 13.9, 15.1, 16.5 and 16.6 to Health and Safety. Renamed Transfer Station & Solvent Recovery Facility as Dublin Port Hazardous Waste Facility and added procedures Ops16.8 and 4.23. Added procedures Ops 20.8, 21.1 and 23.1 to Lab. Added procedure Ops 15.1 to Equipment. Removed Ops 17.4, 20.11, 20.2, 20.3,

20.9, 22.15, 7.4, 11.4, 11.7 and 5.20.
Roisin Murphy 31/08/2007 10:00:53 Version: 13

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Ops 21.8, 22.19, 22.22 have been deleted from the index, operations 20.24, 20.29, 21.12, 21.13, 22.13 and 22.5 have been added to the laboratory section of the index. Paper Recycling Service has been removed as the procedures have been obsoleted.
Grace McCormack 28/01/2008 12:02:56 Version: 14

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Ops 22.17 deleted from Index. Ops 11.8, 18.4, 20.19 and 2.19 added. All Pfizer and Wyeth procedures added.
Mary Miller 31/07/2008 15:34:11 Version: 15

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Ops 4.17 removed and Ops 3.7. Added Ops 5.22. A number of titles of procedures updated to reflect changes Ops 8.3, Ops 4.8, Ops 10.11, Ops 10.17, ops 3.6.
Mary Miller 02/02/2009 17:11:20 Version: 16

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Ops 8.5, 4.10 removed as obsolete. Ops 13.1, 3.10, 2.4 name changed. Ops 30.1, 30.2, 30.3, 28.2, 9.7, 9.8 17.5, 4.24 added. Checked and fixed all links.
Mary Miller 16/06/2009 14:32:51 Version: 17

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Ops 10.8, 2.13 renamed. Ops 13.3 removed. Added GSK Cork procedures. Checked links.
Mary Miller 25/01/2010 09:06:57 Version: 18

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Name of Wyeth Grangecastle TWM Procedures was changed to Pfizer Grangecastle TWM. Added the following Procedures: Transport Issues 14.3; Health and Safety 16.7; Accounts 19.1;19.2;19.3;19.4;19.6;19.7;19.9; Belview Port 24.1;24.2;25.1; Pfizer Grangecastle26.17;26.18;26.19; Pfizer Dun Laoghaire 27.18; Honeywell 28.1; 28.2;28.3;28.4;28.5;28.6;28.7;28.8;28.9;28.10;28.11;28.12;28.13; 28.14; 28.15; 28.16; 28.17; 28.18; 28.19; 28.20; 28.21; 28.22; 28.23; 28.24; Boston Scientific Galway 29.1; 29.2; 29.4; 29.5; 29.6; 29.7; 29.8; Movement & Tracking 2.20; Schering Plough Brinny 35.1; 35.2; 35.3; 35.4; 35.5; 35.6; 35.7; 35.8
Mary Miller 31/05/2010 08:06:50 Version: 19

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Removed Belview, Honeywell procedures and Ops 2.14, 2.15, 5.6, 5.22,. Added all SP Avondale, Bray, Schwarz, MSD Swords, GSK Dungarvan, Stafford Miller, De Puy, Genzyme TWM procedure. Also added Ops 9.9, 19.5, 19.12, 19.13, 19.14, 19.16, 19.17, 19.22, 19.23, 19.24, 19.25, 19.26, 19.27, 19.29, 19.30, 27.19, 27.20, 27.21, 29.3,. Renamed Ops 3.5, 5.21 and 10.14 and all Pfizer DL procedures changed to Amgen.
Mary Miller 06/07/2011 08:43:34 Version: 20

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Attachment D.1: Infrastructure

D.1.1 General Description

Please refer to Chapters 1 and Chapter 5 of the accompanying EIS for a general description of the proposed development. In summary the following primary infrastructural changes are proposed;

Two currently temporary structures are to be converted to permanent status;
They are (i) a 375m^2 spare parts warehouse to include an associated electrical switchgear building & hardcore surround and (ii) a single story 396m^2 modular office block with associated infrastructure of a new effluent treatment plant and percolation area, electrical switchgear building, paved roadway leading to office building and hardcore surround. 22 additional car parking spaces will be added to the existing car park and the former temporary Contractor's construction parking area will also be converted to permanent status. Future additional storage capacity, (pending anticipated requirements) is also proposed for ammonia storage and fuel oil storage tanks.

The general layout of the facility is shown in the drawings of Appendix B3-B5. An aerial photograph of the site (dated March 2012) is presented below in Figure D.1.a.

Figure D.1.a: Site Layout

D.1.a Site security arrangements

Security measures provided at the site are detailed in Chapter 5 of the accompanying EIS. No changes to security arrangements are proposed in this application.

D.1.b-c Site roads and hardstanding areas

The layout of the existing roads and paved areas are shown in the drawings accompanying this application. As part of this application it is proposed to install a new paved road to serve the proposed permanent modular office building and convert to permanent status number of additional hardstanding areas to accommodate additional working areas required by contractors for annual shutdown and maintenance. A description of these areas is provided in Chapter 5 of the accompanying EIS.

Overall, approximately 6.8Ha of the site will consist of roofs, hardstands, roads and grassed areas which drain into the stormwater drainage system. Details of this system are provided in Attachment D.1.k and Section 11 of the accompanying EIS.

D.1.d Plant (weighbridge)

Two weighbridges are provided at the facility for vehicles entering and leaving the site, as shown in Appendix B3-B5. These have a capacity of 50 tonnes each and are approximately 3.3m x 15.7m in size.

Detail on waste acceptance procedures is provided in Chapter 5 of the accompanying EIS.

D.1.e Wheel Wash

As all roads are hard-surfaced, there is no permanent wheel wash at the facility.

D.1.f Laboratory facilities

There is no requirement for laboratory facilities on site. Should any requirement for laboratory analysis arise for the proposed new waste streams (e.g. liquid waste), then Indavers Laboratory in the Dublin Port facility or other accredited laboratory will be used. Permanent monitoring equipment for the continuous measurement of stack emissions is in place. Non-continuous monitoring and other analysis is carried out by independent and accredited laboratories. Details on air emissions monitoring arrangements are included in Attachment F.2.1.

D.1.g Fuel storage

At present 44m^3 of Fuel Oil storage is provided at the facility. As detailed in Section 5.4.6 of the EIS, it is anticipated based on the experiences gained to date during the commissioning process that at some future date, additional storage capacity would be beneficial to operational efficiency. It is proposed to apply for a duplicate 44m^3 tank for this purpose. The tank will be located next to the existing tank as shown on the drawings accompanying this application (EIS Chapter 5 Figure 5.4).

D.1.h-i Waste Quarantine and Inspection

Waste acceptance and handling procedures are outlined in Chapter 5 of the accompanying EIS. The proposed additional wastes quantities and types will require limited changes to the existing waste acceptance and handling procedures.

D.1.j Traffic control

No changes are proposed to the existing traffic control system at the site. A speed limit of 20 kmph remains in place to control traffic onsite. This limit is signposted at the entrance of the facility. The inbound weighbridge and bypass lane has been designed at a sufficient distance from the site entrance so as to ensure any queuing onsite does not disrupt traffic on the Regional Road R152.

At the weighbridges and bypass lane, traffic control is provided by barriers. Both inbound and outbound traffic can pass through a bypass lane if they do not require weighing. This helps maintain the flow of traffic onsite and avoid queuing.

At present the primary staff and visitors carpark is located next to the security building near the entrance to the facility The existing staff carpark provides 44 spaces for vehicles with an additional 2 designated disabled parking spaces. It is proposed to provide an additional 22 car parking spaces. There is also a parking area for a bus next to the security building. Access to the site from public areas will be controlled by the security station.

A temporary car park originally used as an overflow parking area by contractors during construction works is to be converted for use as a general laydown/parking area for annual maintenance and shutdown periods. Please refer to the attached Drawings of Appendix B3-B5 and Figure D.1.a.

D.1.k Sewerage and Surface Water Drainage

D.1.k.a Sewerage infrastructure

There are no process effluent emissions to sewer. Domestic sewage from toilets, changing and kitchen areas discharges via the foul drainage system into on site effluent treatment systems. A new effluent treatment system is proposed for the permanent modular office structure. Its location is shown on the drawings accompanying the application (Drawing Ref 21098\WL\005\RevA).

Effluent entering the system passes into a collection chamber (similar to a septic tank) which retains any solids, before being pumped through a rising main to a series of Puraflo modules. In these modules, the effluent is evenly distributed over the surface of a biofibrous media. As the effluent percolates through the media, it is treated by a combination of physical, chemical and biological interactions between the pollutants and the media. The treated effluent emerges from the base of the unit and is distributed over a percolation area, which will be constructed in accordance with the guidelines in the EPA's Wastewater Treatment Manual and requirements of the recently published Guidance on the Authorisation of Discharges to Ground.

The location of the treatment system and percolation area is shown in the drawings of Appendix B3-B5.

D.1.k.b Surface water drainage infrastructure

The waste-to-energy plant has been designed to ensure there will be no process effluent. Therefore, the drainage infrastructure is only required to handle surface water runoff and any spills or firewater that may occur.

A description of the proposed surface water management system is provided in Chapter 11 of the accompanying EIS.

D.1.l All Other Services

D.1.l.a Power

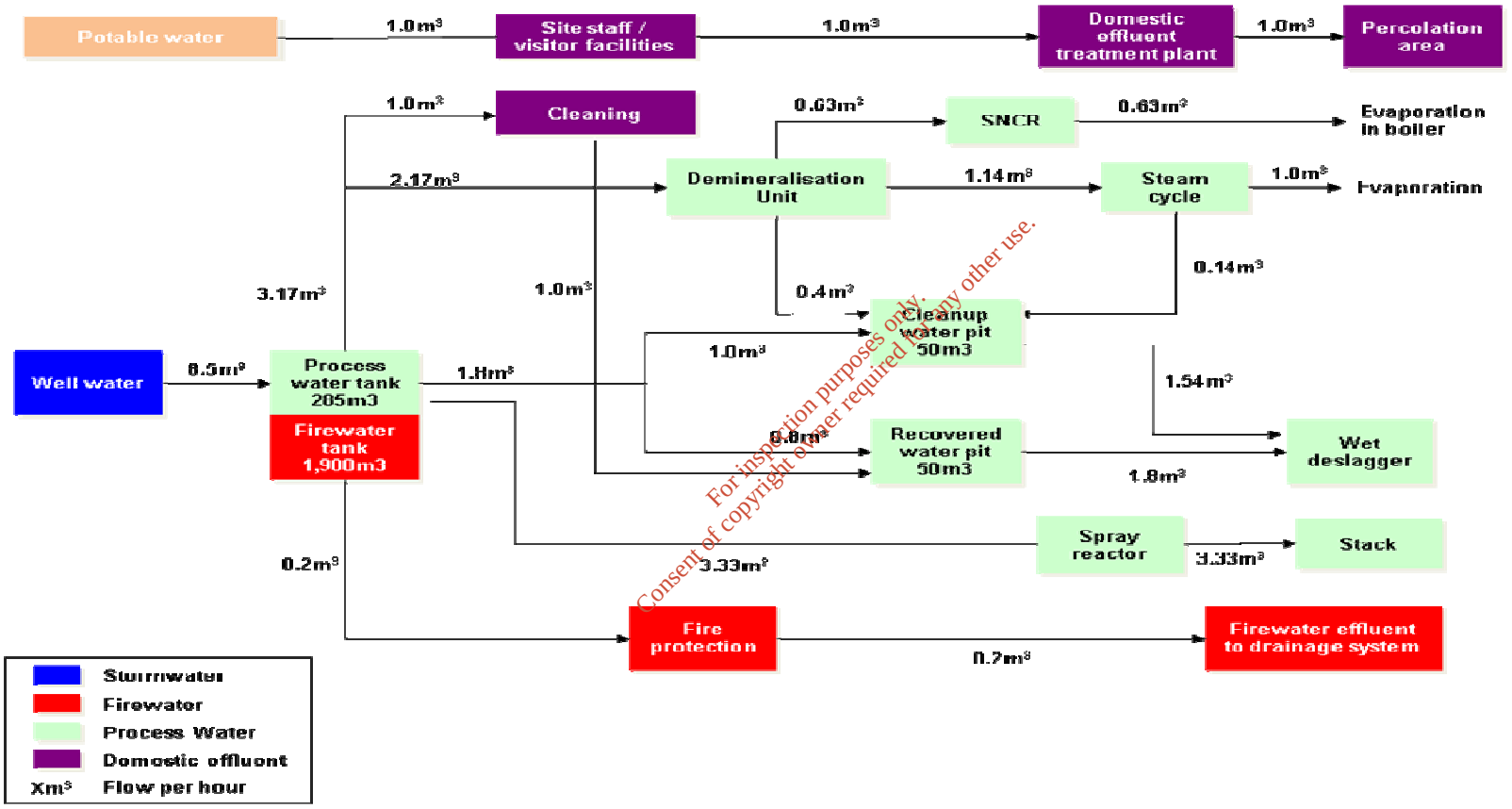
No changes are proposed to the power infrastructure in place and permitted under W0167-2.

D.1.l.b Water Supply

No changes are proposed to the water supply system at the site. Only a very minor quantity of additional water (c 300l per day) will be abstracted for the proposed development.

A schematic of the onsite water balance is provided in Figure D.1.c.

Figure D.1.c: Site Water Balance



D.1.l.c Telephone

No changes are proposed to the existing communications systems at the facility.

D.1.m Plant Sheds, Garages and Compounds

D.1.m.a Maintenance Building

It is proposed to make permanent an existing temporary spare parts warehouse building as described in the accompanying EIS. A description of this building is provided in Chapter 5. The location of this building is shown in Figure D.1.a.

D.1.n Site Accommodation

A description of the accommodation provided at the facility is presented in Chapter 5 of the accompanying EIS. Accommodation is provided at the site at three primary locations namely the site security building, the main process building and the proposed permanent modular office block. The locations of these buildings are shown in Figure D.1.a.

D.1.o Fire control system

This application entails no changes in terms of fire control systems. The main fire safety objectives adopted in the design and operation of the facility are outlined in Chapter 5 of the accompanying EIS.

D.1.p Civic Amenity Sites

Civic amenity facilities are not provided at the facility by direction of An Bord Pleanala in planning reference PL17.219721 (see Appendix B6).

D.1.q Any other waste infrastructure

No other waste recovery infrastructure will be provided at the facility.

D.1.r Composting infrastructure

There will be no composting infrastructure.

D.1.s Construction and demolition waste infrastructure

There will be no construction and demolition waste infrastructure.

D.1.t Incineration infrastructure

A detailed description of the incineration infrastructure of the facility is provided in Chapter 5 of the accompanying EIS.

D.1.t.u Compliance with Waste Incineration Directive

It is submitted that the compliance of the facility with Articles 4(2) and (3) of the Incineration of Waste Directive has been fully demonstrated in previous submissions and applications. Additional detail is available on request.

D.1.v Any Other Infrastructure

There will be no other infrastructure on the site.

Attachment D.2: Description of Processes

The proposed amendments will not entail any significant changes to the nature of the process as already exists. A detailed description of the plant, methods, processes and operations of the facility is provided in Chapter 5 of the accompanying EIS.

Attachment E.1: Emissions to Atmosphere

No additional sources of emissions to atmosphere are proposed by this application. Please refer to Chapter 7 of the accompanying EIS for a description of emissions to atmosphere. It is proposed to increase the maximum short term average volume flowrate to allow for daily fluctuations based on the waste input and operating conditions. The maximum annual average flowrate of 147,000 Nm^3/hr has been increased to 183,700 Nm^3/hr based on average measured values at the plant.

Drawing (21098\WL\010 Rev A) of Appendix F1 shows the locations of all emission points including those to atmosphere. More details about the type and nature of the emissions are provided in Table E.1 (ii) (a) and E.1 (iii) (a) in Appendix E1. Details on the minor emissions source are provided in Table E.1 (ii) (b) and E.1 (iii) (b) in Appendix E2

Attachment E.2: Emissions to Surface Waters

Other than additional storm water runoff from roofs of the new permanent modular office block and maintenance buildings (and associated additional hardstanding and parking areas), there are no modifications to the surface water emissions as approved in Waste Licence W0167-02. The additional run off from hardstanding areas is minor and the existing attenuation system and corresponding maximum discharge rate are as previously agreed with the local authority and agency. Chapter 11 of the accompanying EIS and Attachment D.1.k describe the existing surface water management system. Please refer to the relevant Tables of Appendix E3 for further details.

Attachment E.3: Emissions to sewer

There are no emissions to sewer from the facility. All sanitary effluent from staff and visitor facilities will be treated onsite in Puraflo treatment systems as outlined in Attachment D.1.k.

For this reason, Tables E.3(i) and E.3(ii) have not been included.

Attachment E.4: Emissions to Groundwater

Chapters 9 and 10 of the EIS describe the potential impacts of site activities on groundwater (primarily related to emissions from the treatment of domestic effluent at the onsite waste water treatment systems). With the additional percolation area proposed for the new modular office building, there will now be three minor emissions from the facility to ground, which will be referred to as:

- GW1 Groundwater percolation area (Gatehouse)
- GW2 Groundwater percolation area (Main Process Building)
- GW3 Groundwater percolation area (New Modular Office Building)

Please refer to Chapters 9 and 10 for further details and the Tables of Appendix E4 for details.

Attachment E.5: Noise emissions

There are six existing potential sources of continuous noise due to the operation of process equipment, which will be referred to as:

- N1 Stack
- N2 Air Cooled Condensors
- N3 Turbine Cooling
- N4 Fan Turbine Building
- N5 Compressor Louver Grids
- N6 Cooling Oven Grid

No additional noise sources are proposed in this application. Please refer to Section 8 of the EIS which provides information on the existing noise emissions from site activities. A copy of the tables relating to noise emissions as previously submitted is enclosed in Appendix E5.

Attachment E.6: Other Environmental Nuisances

On the basis of the assessments presented in the accompanying EIS, the proposed amendments to the facility will not result in any additional environmental nuisances. Mitigation measures are in place to ensure vermin (including birds flies and rodents), dust, litter and traffic nuisances are minimised. A brief description of these mitigation measures are outlined below with references to the appropriate section of the EIS.

E.6.1 Vermin Control

Vermin including birds, flies and rodents are attracted to untreated waste and associated odours. To prevent access of vermin to untreated waste, all waste delivery trucks are enclosed and waste handling and storage takes place in the enclosed waste reception hall. The hall is maintained under negative pressure to prevent odour emissions.

Ensuring the rapid turnover of waste in the reception hall and bunker also minimises odour emissions and the potential for vermin. Most of the waste delivered to the facility will be loaded directly into the waste bunker and will be processed within four days on average. There will be no storage of waste in the reception hall.

All parts of the facility are kept clean and tidy through good housekeeping measures, which reduces bird and fly nuisance. In addition, a comprehensive rodent control plan is in place, implemented by a specialist rodent control company who visit the site eight times per year. Records of these site visits are maintained by Indaver Ireland.

E.6.2 Dust Control

Potential sources of dust from the facility include stored waste, solid consumables, and residues. As outlined in Attachment E.1, all solid materials are be transported and handled in fully enclosed environments to prevent dust emissions. Maintaining the bunker area under negative pressure also helps to prevent dust emissions from stored waste.

Dust emissions from traffic will be minimal as the roads, parking areas and service yards are paved. Good housekeeping practices such as litter patrols (see below) and keeping the site clean help to maintain the roads free of dust.

There are currently no issues with dust emissions from the site and the proposed review will not alter this situation in any material way.

E.6.3 Litter

All waste is handled in enclosed areas and stored in the main process building under negative pressure to limit windborne litter. The waste bunker is large enough to allow acceptance of waste during periods of shutdown to ensure waste is never stored outside of this area. The area is kept clean and odour free through good housekeeping practices including regular

washing and sweeping of the operating areas and monitoring of waste deliveries. The facility also operates "litter patrols" around the site and on local approach roads to ensure that litter is not an issue.

E.6.4 Traffic

As the application entails the transport of an increased volume of waste to site, increased traffic movements will occur. A comprehensive traffic assessment has been included in Chapter 13 of the EIS.

No additional on-site measures are required for the extra tonnage proposed.

E.6.5 Fire Control

Fire risk and emergency response measures are outlined in Chapter 5 of the accompanying EIS and in Attachment D.1.o. There are no additional measures proposed as part of the review application.

Appendix E1

Appendix E1: Revised Emissions Table E.1(ii)(a)

TABLE E.1(ii)(a) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N^{o}:	A2-1
Source of Emission:	Waste to energy plant (stack)
Location :	Main process building - See drawing 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (12 digit, 6E,6N):	306331E, 270963N
Vent Details Diameter: Height above Ground(m):	 2.2m 65m
Date of commencement:	October 2011

Characteristics of Emission :

(i) Volume to be emitted:			
Average/day	4,008,000 Nm^3/d[1]	Maximum/day[2]	4,408,800Nm^3/d
Maximum rate/hour	200,000Nm^3/h [3]	Min efflux velocity	17.06 m/sec [4]
(ii) Other factors			
Temperature	150^{o}C(max)	130^{o}C(min)	140^{o}C(avg)
For Combustion Sources: Volume terms expressed as : ☐ wet. ✓ dry. 11 %O_2			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)[5]	60 min/h 24 h/day 325 day/y

[1] Based on an annual average flowrate of 167,000 Nm^3/h.
[2] Based on maximum annual average flowrate of 183,700 Nm^3/h.
[3] Based on short term average (e.g over a 60 minute period)
[4] At conditions on exit of stack e.g. actual exit temperature, 5.6% O_2 and wet
[5] Based on an average of 7,800 hours operation per year

TABLE E.1(iii)a: MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: ***A2-1***

Parameter[6]	Prior to treatment[(1)]				Brief description of treatment	As discharged[7(1)]					
	mg/Nm^3		kg/h			mg/Nm^3		kg/h.[8]		kg/year	
	Avg	Max	Avg	Max		Avg[9]	Max[10]	Avg	Max	Avg	Max
Dust	2,000	3,000	294	612	Baghouse Filter	5	10	0.74	2.04	6,439	17,870
SO2	658	1,664	97	339	Spray Dryer absorber/lime slurry	40	50	5.88	10.2	51,509	89,532
NOx (as NO2)	160	160	24	33	SNCR	160	200	23.5	40.8	206,035	357,408
Hg	0.2	0.5	0.03	0.1	Clay Injection/baghouse filter/activated carbon	0.04	0.05	0.006	0.01	52	89
HCl	1,472	2,984	216	609	Spray Dryer absorber/lime slurry	8	10	1.18	2.04	10,302	17,870
HF	10	30	1.47	6.12	Spray Dryer absorber/lime slurry	0.8	1	0.12	0.2	1,030	1,787
PCDD/F[11]	0.000005	0.000005	1.0	1.0	Clay Injection/baghouse filter/activated carbon	0.00000005	0.0000001	0.0085	0.02	0.0001	0.0002

[6] All values are at standard conditions of T=273 Kelvin, P=101.3kPa, 11% O2 dry gas. All heavy metals measurements include compounds eg Cd represents Cadmium, and its compounds.
[7] All values are relevant for the sample period specified under Directive 2000/76/EC. For Cd, Tl, Hg and Heavy Metals categories the sample period is between 30 minutes and 8 hours. For dust, TOC, HCl, HF, CO,SO2 and NOx the sample period represented in Table E.1 is 24 hours.
[8] The average discharge is based on a the maximum annual average flow rate of 147,000 NM3/h as modelled in Chapter 7 of the EIS. The maximum discharge is based on the maximum average 24 hour average flowrate and should only be considered for this timeframe.
Average
[9] Average values are based on guaranteed emission limits from the supplier pre construction. Actual emission rates are expected to be lower in line with experience from Belgium
[10] Maximum values are based on maximum concentrations permitted under Directive 2000/76/EC over the specified sample period

Heavy Metals[12]	100	150	14.7	30.6	Clay Injection/baghouse filter/activated carbon	0.4	0.5	0.06	0.10	515	894
Cd & Tl	0.4	1	0.06	0.2	Clay Injection/baghouse filter/activated carbon	0.04	0.05	0.006	0.01	52	89
TOC	8	10	1.18	2.04	Combustion optimisation	8	10	1.18	2.04	10,302	17.870
CO	40	50	5.9	10.2	Combustion optimisation	40	50	5.9	10.2	51,509	89,352

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

[11] All PCDD/F values are expressed on maximum concentrations permitted under the Directive 2000/76/EC over the specified sample period
[12] Heavy metals includes Antimony (Sb), Arsenic (As), Chromium (Cr), Cobalt (Co), Copper (Cu), Lead (Pb)m Manganese (Mn), Nickel (Ni), Vanadium (V) and their compounds

Appendix E2

Appendix E2: Revised Minor Emissions Table E.1(ii)(b)

TABLE E.1(ii)(b) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N^{o}:	A2-2
Source of Emission:	Emergency Generator
Location :	Main process building - See drawing 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (12 digit, 6E,6N):	306347E, 270099N
Vent Details Diameter: Height above Ground(m):	 0.25m 3m
Date of commencement:	October 2011

Characteristics of Emission :

(i) Volume to be emitted:			
Average/day	0 m^3/d	Maximum/day	3,656 m^3/d
Maximum rate/hour	3,656 m^3/hr	Min efflux velocity	20.7 m/sec
(ii) Other factors			
Temperature			150^{o}C(avg)
For Combustion Sources: Volume terms expressed as : ☐ wet. ✓ dry. 11 %O_2			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/h 1 h/day 12 day/y

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: ***A2-2***

Parameter	Prior to treatment[1]				Brief description of treatment	As discharged[13]					
	mg/Nm^3		kg/h			mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max		Avg	Max	Avg	Max	Avg	Max
Nox	As discharged				Maintenance for Efficient Operation		500		1.83		21.94
CO	As discharged				As above		650		2.38		28.52
TOC	As discharged				As above		150		0.55		6.58
Particulates	As discharged				As above		100		0.37		4.39

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

[13] All values are at standard conditions of T=273K, P=101.3kPa, 11%O2 dry gas

Appendix E3

Appendix E3: Revised Table E.2(i)

TABLE E.2(i): EMISSIONS TO SURFACE WATERS (One page for each emission)

Emission Point:

Emission Point Ref. N^{o}:	SW1
Source of Emission:	Surface water drainage outfall
Location :	Wet drain to west of site- See drawing ref 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (10 digit, 5E,5N):	30612E, 27086N
Name of receiving waters:	River Nanny
Flow rate in receiving waters:	0.01 m^3/s Dry Weather Flow 0.06 m^3/s 95%ile flow
Available waste assimilative capacity:	Refer to Chapter 11 of accompanying EIS- Study by KD Environmental 2012

Emission Details:

(i) Volume to be emitted			
Normal/day[14]	40.5m^3	Maximum/day[15]	5,166.7m^3
Maximum rate/hour[16]	215.28m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	The period or periods during which surface water will be discharged will depend on rainfall patterns and cannot be defined exactly. The normal volumetric emission per day given above assumes a continuous discharge based on annual average rainfall.

[14] Flow will depend on rainfall periods but for the purposes of this assessment, the normal flow is averaged over a typical year's rainfall (671.8mm- 2011 Dublin Airport MET station) and a non-permeable collection area of 22,000m^2
[15] Based on maximum discharge rate of 59.8 litres per second
[16] Based on maximum discharge rate of 59.8 litres per second

Appendix E4

Appendix E4: Revised Table E.4(i)

TABLE E.4(i): EMISSIONS TO GROUNDWATER (1 Page for each emission point)

Emission Point or Area:

Emission Point/Area Ref. N^{o}:	GW1
Emission Pathway: (borehole, well, percolation area, soakaway, landspreading, etc.)	Percolation area
Location :	Northern margin of site- See drawing ref 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (10 digit, 5E,5N):	30638E, 27101N
Elevation of discharge: (relative to Ordnance Datum)	29.0m OD
Aquifer classification for receiving groundwater body:	Rkd (regionally important , diffuse karst aquifer, good development potential)
Groundwater vulnerability assessment (including vulnerability rating):	M (moderate)
Identity and proximity of groundwater sources at risk (wells, springs, etc):	Chapter 10 of the 2009 EIS identifies wells within a 3km radius of the site. This shows there are 2 domestic wells 600m to the west of the site, 5 domestic wells 1 to 1.5km to the south-east and 1 domestic well to the north. Other wells are further than 2.5km from the site.
Identity and proximity of surface water bodies at risk:	River Nanny (tributary) 180m from site River Boyne 3.5km from site

Emission Details:

(i) Volume to be emitted			
Normal/day	0.75 m^3	Maximum/day	1.5 m^3
Maximum rate/hour	0.06 m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/h 24 h/day 365 day/y

TABLE E.4(i): EMISSIONS TO GROUNDWATER (1 Page for each emission point)

Emission Point or Area:

Emission Point/Area Ref. N^{o}:	GW2
Emission Pathway: (borehole, well, percolation area, soakaway, landspreading, etc.)	Percolation area
Location :	Adjacent to security building – See drawing ref 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (10 digit, 5E,5N):	30617E, 27089N
Elevation of discharge: (relative to Ordnance Datum)	32.6m O.D
Aquifer classification for receiving groundwater body:	Rkd (regionally important , diffuse karst aquifer, good development potential)
Groundwater vulnerability assessment (including vulnerability rating):	M (moderate)
Identity and proximity of groundwater sources at risk (wells, springs, etc):	Chapter 10 of the 2009 EIS identifies wells within a 3km radius of the site. This shows there are 2 domestic wells 600m to the west of the site, 5 domestic wells 1 to 1.5km to the south-east and 1 domestic well to the north. Other wells are further than 2.5km from the site.
Identity and proximity of surface water bodies at risk:	River Nanny (tributary), 180m from site River Boyne 3.5km from site

Emission Details:

(i) Volume to be emitted			
Normal/day	0.23m^3	Maximum/day	0.45 m^3
Maximum rate/hour	0.02m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/h 24 h/day 365 day/y

TABLE E.4(i): EMISSIONS TO GROUNDWATER (1 Page for each emission point)

Emission Point or Area:

Emission Point/Area Ref. N^{o}:	GW3
Emission Pathway: (borehole, well, percolation area, soakaway, landspreading, etc.)	Percolation area
Location :	Centre of site-at Modular Office Building- See drawing ref 21098\WL\010 Rev A in Attachment B Appendix B2
Grid Ref. (10 digit, 5E,5N):	306374E, 270890N
Elevation of discharge: (relative to Ordnance Datum)	37.3m OD
Aquifer classification for receiving groundwater body:	Rkd (regionally important , diffuse karst aquifer, good development potential)
Groundwater vulnerability assessment (including vulnerability rating):	M (moderate)
Identity and proximity of groundwater sources at risk (wells, springs, etc):	Chapter 10 of the 2009 EIS identifies wells within a 3km radius of the site. This shows there are 2 domestic wells 600m to the west of the site, 5 domestic wells 1 to 1.5km to the south-east and 1 domestic well to the north. Other wells are further than 2.5km from the site.
Identity and proximity of surface water bodies at risk:	River Nanny (tributary), 180m from site River Boyne 3.5km from site

Emission Details:

(i) Volume to be emitted			
Normal/day	2.7 m^3	Maximum/day	5.4 m^3
Maximum rate/hour	0.225 m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	60 min/h 24 h/day 365 day/y

Appendix E5

Appendix E5: Noise Emission Table E.5(i)

Table E.5(i): NOISE EMISSIONS - Noise sources summary sheet

Source	Emission point Ref. No	Grid Reference	Equipment Ref. No[17]	Sound Pressure[1] dBA at reference distance	Octave bands (Hz) Sound Pressure[1] Levels dB(unweighted) per band									Impulsive or tonal qualities	Periods of Emission
					31.5	63	125	250	500	1K	2K	4K	8K		
Stack	N1	30633E, 27096N	N/A	94	-	82	89	92	79	75	69	70	70	None	Continuous
Air Cooled Condensers	N2	30626E, 27104N	N/A	98	-	82	87	88	88	93	91	83	80	None	Continuous
Turbine Cooling	N3	30628E, 27099N	N/A	86	-	64	69	72	83	80	77	72	64	None	Continuous
Grate Cooling	N4	30625E, 27100N	N/A	86	-	69	74	77	81	80	76	71	63	None	Continuous
Pump house louver	N5	30621E, 27102N	N/A	89	-	59	73	78	79	82	82	85	71	None	Continuous
Emergency generator	N6	30635E, 27010N	N/A	101	-	60	65	81	90	94	95	97	83	None	Continuous

1. For items of plant sound power levels may be used.

[17] Equipment reference numbers will be made available to the EPA once the Piping and Instrument Diagrams (P&ID) have been completed as part of the detailed design phase.

Attachment F.1: Abatement Systems

F.1.1 Air Emissions

As outlined in Attachment D and E no additional emission sources to atmosphere are proposed in this application. Therefore no additional abatement systems are required. Further details on treatment, abatement and control for the existing emission points are given in the relevant tables of Attachment E, Appendix E.

Table F.1.a: Abatement and Treatment Techniques for Emissions Point A2-1

Emission to be treated / abated	Treatment / abatement process
Particulates (dust), Hydrocarbons (expressed as Total Organic Carbon (TOC), pollutants relating to the presence of certain wastes (e.g. chlorine due to presence of PVC)	Abatement: The quality of waste entering the furnace impacts on the completeness of combustion and on the nature of gases released. Waste acceptance and handling procedures are in place to ensure wastes are screened and mixed in the bunker to remove any non-conforming items and provide for complete combustion.
Carbon Monoxide (CO), TOC	Abatement: The temperature and residence time of waste in the furnace affects the completeness of combustion. Regulation of temperature is a critical factor for CO abatement. As the waste travels through the furnace the initial heat (temperature range of 50°C to 100°C) will drive moisture from the waste. The next stage in combustion will be the release of volatiles such as CO. The volatilisation of combustible gases takes place typically at temp range 200°C to 750°C, and then combustion takes place above the waste on the grate at 850°C. To achieve burnout of organics and abate TOC in the flue gasses, a minimum temperature of 850°C will be maintained for at least 2 seconds in the first pass of the boiler.
Poly-Chlorinated Dibenzo Dioxins (PCDD) and Poly-Chlorinated Dibenzo Furans (PCDF)	A minimum temperature of 850°C will be maintained for at least 2 seconds in the first pass of the boiler to abate PCDD and PCDF formation. Other dioxin abatement measures such as rapid cooling over the range 450°C to 250°C by increasing the velocity of the flue gases through the section of the boiler where cooling over this temperature range will occur, to prevent re-formation of dioxins and regular cleaning will also take place of heat transfer surfaces to remove any metals which could act as a catalyst in the formation of dioxins.

Oxides of Nitrogen (NO_x)	Treatment: A Selective Non-Catalytic Reduction (SNCR) reagent of 24.9% ammonia solution is injected at two levels into the furnace to react with and remove NO_x from the flue gases.
Particulates, PCDD, PCDF, heavy metals	Treatment: Expanded clay and activated carbon are injected in two stages in the flue gas treatment system to trap these components. The clay, carbon and entrained particulates are then removed from the flue gases in the baghouse filter
Sulphur Dioxide (SO_2), Hydrogen Chloride (HCl), Hydrogen Fluoride (HF)	Treatment: Lime slurry is injected in the spray drier absorber, and, where necessary, fresh hydrated lime in the reaction duct to react with these acid gases. The reaction salts are then removed from the flue gases in the spray drier absorber or in the baghouse filter
Visible plume	Abatement: The temperature of the emissions exiting the stack is approximately 140°C, which is high enough to mitigate against a visible plume. It is not possible to avoid completely the visible plume as it also depends on the ambient air conditions and in winter months the plume will be visible and less visible in summer months.

F.1.2 Effluent Emissions

F.1.2.a Point and Area Source Effluent Emissions

As outlined earlier the facility generates no process water discharge. Spillages and washwater from within the main process building are sent directly to a spilled water tank and returned to the process. Attachment D.1.k and Chapter 11 of the accompanying EIS describes these systems in greater detail.

SW1

The surface water drainage system has been designed to ensure that any discharge from the site will be similar in nature and quality to greenfield agricultural runoff. A schematic of the system and an outline of the abatement measures taken to control the quality and flow of the discharge are provided in Chapter 11 of the accompanying EIS.

GW1-GW3

There are no emissions to sewer from the facility. Domestic effluent collected from staff and visitor facilities is treated in Puraflo® systems prior to discharge to engineered percolation areas in the overburden (emissions point GW1-GW3). The systems are described in Chapter 10 of the EIS and the relevant sections of Attachments D and E.

F.1.2.b Fugitive Emissions

All substances with the potential to cause a negative impact on groundwater or surface waters are stored in appropriate containers within the main process building and/or in bunded areas.

All waste entering the facility (non hazardous and hazardous EWC codes) will be stored in fully contained structures therefore in the unlikely event of a spillage or a particularly wet load of incoming waste, there will be no potential for leakage to soils. All waste storage facilities are impervious to the materials stored therein. The waste bunker has a base thickness of 1.1m and a wall thickness underground of 800mm, with a secondary containment system with fully sealed membrane and leak detection system to ensure that at all times the bunker remains water tight. The leak detection system is checked on a monthly basis. In the event that any liquid is encountered in this leak detection system the source of the liquid will be investigated and mitigation works completed as and when required.

All other concrete bunding structures (for storage of fuels and other raw materials) have been constructed as watertight structures in accordance with the requirements of relevant Codes of Practice such as BS8007 British Standard for Design and Construction of Aqueous Liquid Retaining Structures. These structures will be integrity tested in accordance with the requirements of the facility licence and guidelines given in the Code of Practice for leakage to confirm that they are watertight.

As outlined in Attachment E.1.2, all storage, treatment and handling of residues and consumables and any plant cleaning operations, with the exception of fuel & ammonia solution storage, takes place within the main process building. The proposed additional fuel tank (see Attachment D.1.g) and ammonia storage tank in the service yard will be double skinned. Materials stored within the main process building will also be provided with bunding where necessary. Any spills or washwater will be contained within the building and directed to the spill tank for recirculation.

These measures ensure that there are no fugitive emissions to groundwater.

Attachment F.2-F.9: Monitoring & Sampling

Schedule C of existing facility licence W0167-02 details the monitoring requirements at the facility. A summary of the monitoring requirements are present on Table F.1 below. The location of all emission points and monitoring points is shown on drawing 21098\WL010 Rev A provided in Appendix F1. As outlined in Attachment D and E and throughout this application, no additional emissions to surface water, sewer or noise are proposed by this application. It is considered that the slight changes to the emissions to atmosphere and the additional minor emissions to groundwater are sufficiently dealt with by the existing monitoring requirements. In conclusion it is considered that there is no requirement to make any additions to the existing monitoring programme. Tables F2 to F8 and Table Ff have therefore been omitted.

However consideration of the following suggested amendments to the monitoring programme are requested.

In relation to Schedule B1 of the licence, Emission Limits to Air, Indaver request that Note 3 to the Table be amended. The licence requires the sample period for average values for dioxin and furans to be measured over a sample period of minimum 6hrs to maximum 8 hours. Indaver currently have a continuous monitoring system in place so it is recommended that the note be updated/removed.

In relation to Schedule C4 of the licence, monitoring of incinerator residues, it is requested that Note 1 to the table be amended. The licence requires analyses of residues to be conducted at an accredited laboratory employing accredited procedures. Indavers experience is that while many laboratories are accredited for soil analyses few are accredited for the equivalent analyses in bottom ash. Indaver would like if the note were amended to say accredited laboratories where possible.

Table F.1

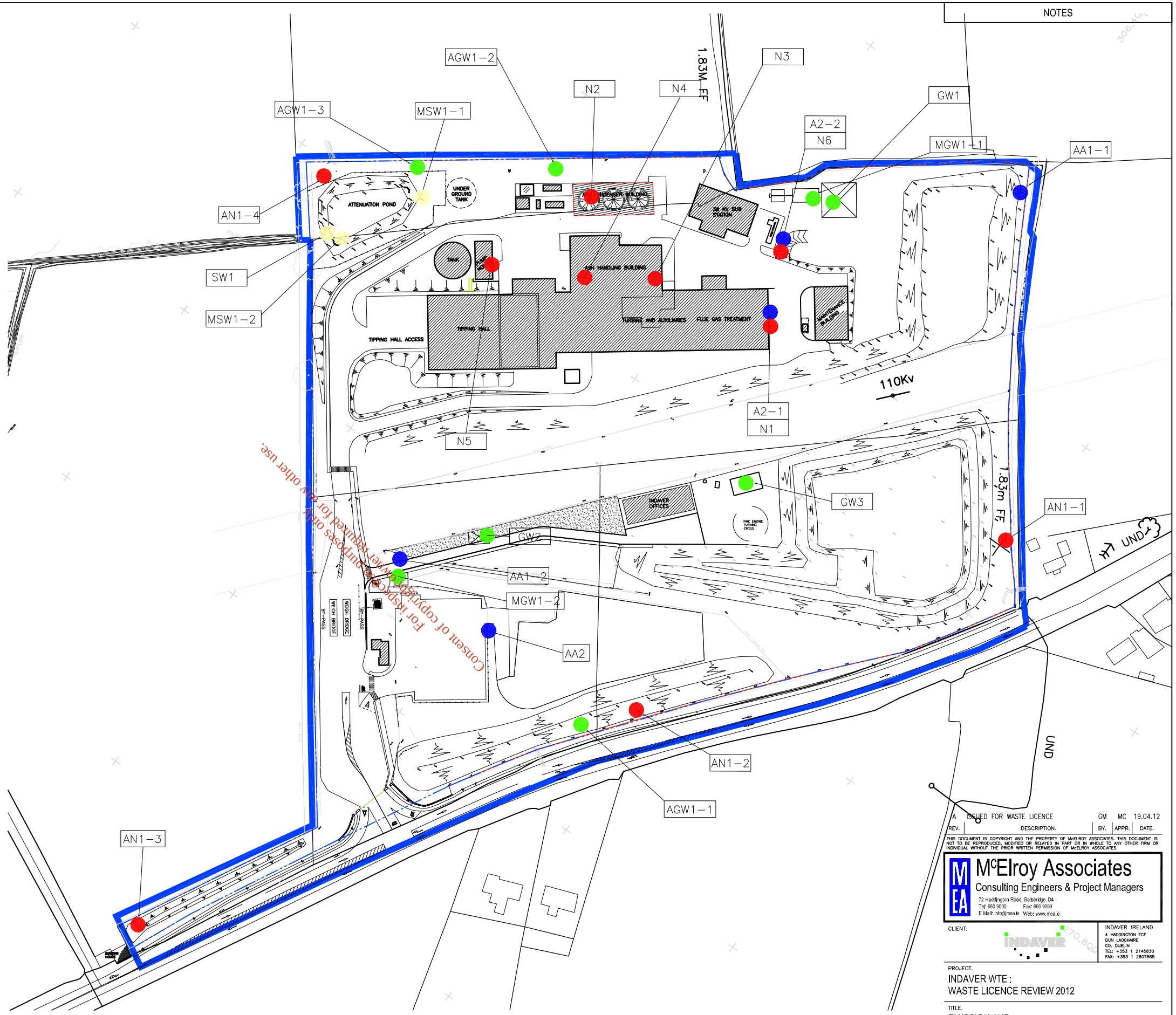
Emission Type/Aspect:	Licence Condition Ref:	Details:
Air	C1.1 to C.1.2	Process Control and Monitoring of Air (including continuous monitoring) at A1-1 Stack and A1-2 Back up Generator

Surface Water	C.2.1 to C.2.3	Storm Water emissions at SW1 (including continuous monitoring)
Sewer Discharge	C.3.1 to C.3.2	No discharge
Groundwater (Ambient)	C.6.1	Monthly and Biannual monitoring at Upgradient and Downgradient monitoring boreholes (AGW1-1 to AGW1-3)
Noise (Ambient)	C.6.2	Annual monitoring at Boundary Locations (AN1-1 to AN1-4)
Meteorological Data	C.5	On site weather monitoring station AA2

Appendix F1

NAME	LABEL
A2–1	STACK AIR EMISSION/MONITORING POINT
A2–2	EMERGENCY GENERATOR AIR EMISSION
AA1–1	DOWNWIND ODOUR MONITORING
AA1–2	UPWIND ODOUR MONITORING
SW1	SURFACE WATER DRAINAGE OUTFALL EMISSION
MSW1–1	SURFACE WATER MONITORING CHAMBER 1
MSW1–2	SURFACE WATER MONITORING CHAMBER 2
GW1	GROUNDWATER PERCOLATION AREA EMISSION
GW2	GROUNDWATER PERCOLATION AREA EMISSION
GW3	GROUNDWATER PERCOLATION AREA EMISSION
MGW1–1	GROUNDWATER PURAFLO MONITORING CHAMBER
MGW1–2	GROUNDWATER PURAFLO MONITORING CHAMBER
AGW1–1	UPSTREAM GROUNDWATER MONITORING WELL
AGW1–2	DOWNSTREAM GROUNDWATER MONITORING WELL 1
AGW1–3	DOWNSTREAM GROUNDWATER MONITORING WELL 2
N1	STACK NOISE EMISSION
N2	AIR COOLED CONDENSOR NOISE EMISSION
N3	TURBINE COOLING NOISE EMISSION
N4	GRATE COOLING No's 1& 2 NOISE EMISSION
N5	PUMP HOUSE LOUVER NOISE EMISSION
N6	EMERGENCY GENERATOR LOUVRE NOISE EMISSION
AN1–1	AMBIENT NOISE MONITORING 1
AN1–2	AMBIENT NOISE MONITORING 2
AN1–3	AMBIENT NOISE MONITORING 3
AN1–4	AMBIENT NOISE MONITORING 4
AA2	WEATHER MONITORING STATION

NOTES



REV.	DESCRIPTION.	BY.	APPR.	DATE.
A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12

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PROJECT.
INDAVER WTE :
WASTE LICENCE REVIEW 2012

TITLE.
EMISSION AND
MONITORING POINT LOCATIONS

DESIGNED:	CHECKED:	APPR'D:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3

DRG.No. 21098\WL\010 REV. A

Attachment G.1: Raw Materials

G.1.1 Raw Material Use

A list of all raw and ancillary materials requirements for the Meath waste-to-energy facility is provided in Table G.1.a. The quantities given are based on the measured consumptions over the first 6 months of operation of the plant.

All chemicals are stored and handled in accordance with relevant health, safety and environmental guidelines.

Table G.1.a: Raw, Product and Ancillary Materials, Substances, Preparations, Fuels and Energy Used or Produced by Activity

Ref. Nº or Code	Material/ Substance(1)	CAS Number	Danger(2) Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R(3) - Phrase	S(3) - Phrase
M1	Ammonia solution (NH_4OH) (24.9%)	1336-21-6	Corrosive, dangerous to the environment	1	30	Boiler feedwater additive	34	(1/2), 26, 36/37/39, 45, 61
M2	Ammonia solution (NH_4OH) (24.9%)[1]	1336-21-6	Corrosive, dangerous to the environment	66	975	SNCR reagent	34	(1/2), 26, 36/37/39, 45, 61
M3	Urea[1]	57-13-6		0	0	Not used		
M4	Activated carbon	7440-44-0	N/a	35	122	Flue gas treatment	N/a	22, 24/25
M5	Expanded clay (Dioxorb)	1305-62-0	Irritant	35	220	Flue gas treatment	38, 41	22, 24, 25
M6	Hydrated lime ($Ca(OH)_2$)	1305-62-0	Irritant	217	128	Flue gas treatment	41	26, 39
M7	Quick lime (CaO) (95%)	1305-78-8	Irritant	432	2,960	Flue gas treatment	41	26,39
M8	Trisodium phosphate (Na_3PO_4)	7601-54-9	Corrosive	0.5	6	Boiler feedwater additive	34	26, 36/37/39, 45
M9	NaOH (50%)	1310-73-2	Corrosive	1.6	27	Demineralisation	35	(1/2),26, 37/39, 45
M10	HCl (30%)	7647-01-0	Corrosive	1	30	Demineralisation	34, 37	(1/2)26, 45
M11	Light Fuel Oil	68334-30-5	Harmful, dangerous to the environment, Flammable	34	300	Auxiliary firing in furnace	10, 51/53, 65, 66, 67	16,24, 29/35, 61, 62
M12	Diesel oil	68334-30-5	Harmful, dangerous to the environment, Flammable	6.8	15	Fuelling onsite vehicles	40, 65, 52/53	24, 36/37, 43, 62
M13	Hydraulic Oil	Mixture	Harmful	0.9	5	Lubrication of moving parts	N/a	N/a

[1] Either Ammonia solution or Urea can be used as a SCNR reagent

Ref. Nº or Code	Material/ Substance[1]	CAS Number	Danger[2] Category	Amount Stored (tonnes)	Annual Usage (tonnes)	Nature of Use	R[3] - Phrase	S[3] - Phrase
M14	Oil free of Polychlorinated biphenyl (PCB)	63148-62-9	N/A	7.3	0	Transformers	N/A	N/A
M15	Electricity import	N/A	N/A	N/A	2,380 MWh[2]	Provide site load in event of shutdown	N/A	N/A
M16	FGT-residues	Mixed, need analysis on a case by case basis	Harmful to aquatic organisms, may cause long term effects in the aquatic environment	126	11,000	Products of flue gas treatment process	R52/53	N/A
M17	Boiler ash	Mixed, need analysis on a case by case basis	Harmful to aquatic organisms, may cause long term effects in the aquatic environment	84	3,300	Products of waste combustion	R52/53	N/A
M18	Bottom ash residue	Mixed, need analysis on a case by case basis	N/A	1,240	55,000	Products of waste combustion	N/A	N/A

Notes: 1. In cases where a material comprises a number of distinct and available dangerous substances, please give details for each component substance.
2. c.f. Article 2(2) of SI Nº 77/94
3. c.f. Schedules 2 and 3 of SI Nº 77/94

[2] Anticipated to be no more than 980 hours per year at 2.48MW

Attachment G.2: Energy Efficiency

G.2.1 Energy Efficiency

G.2.1.a Waste Framework Directive

The revised Waste Framework Directive 2008/98/EC considers energy efficient waste-to-energy facilities to be recovery plants, assigning them a R1 code. To qualify for this recovery code, new plants must have a 0.65 efficiency factor according to the R1 formula used in the Directive. This is calculated as follows:

$$(E_p - (E_f + E_i)) / (0.97 \times (E_w + E_f))$$

Where:

E_p = annual produced and utilised energy from waste (total of heat/steam plus electricity as equivalents) (MWh/h). According to the BREF notes, this includes both exported and circulated energy. Electricity output is multiplied by 2.6 as it is considered to be more valuable[3] than heat. Heat output is multiplied by 1.1.

E_f = annual energy input to the system by imported energy (fuels) with steam production (MWh/h), e.g. auxiliary fuels. Only the energy contributing to normal operations is included here.

E_i = annual imported energy without steam production (MWh/h) e.g. for start up and shut down

E_w = annual energy input to the system by waste (MWh/h)

0.97 = factor accounting for energy losses in bottom ash and by radiation

As per the Waste Framework Directive, the formula has been applied in accordance with the reference document on the Best Available Techniques for waste incineration (Annex 10.4). The parameters used are listed in Table G.2.a below.

[3] The range of potential uses for electricity is greater than that for heat.

Table G.2.a: Parameters used in R1 calculation

Parameter	Value used[1]	Comment
E_p	= (2227MJ x 2.6) + (57MJ x 1.1) = 5,853MJ	From operational data, the typical electricity production from the turbine is approx. 2227MJ/t. This is scaled up using the equivalence factor of 2.6 for electricity. The internal consumption of produced steam for soot blowers and ejectors (57MJ/t) is also counted in E_p. This is also multiplied by the equivalence factor for steam (1.1).
E_f	(37.5MJ x 1.1 x 50%) = 20.5MJ	Approx. 37.35MJ fuel is used in the plant per tonne waste, of which 50% is used in startup and contributes to steam production. This is multiplied by the equivalence factor 1.1 to give E_f.
E_i	(37.3MJ x 1.1 x 50%) + (13.1MJ x 2.6) = 54.6MJ	The remaining 50% of fuel used in startup does not contribute to steam production. This is multiplied by the equivalence factor 1.1. Electricity is also used during startup and shutdown. This is multiplied by the equivalence factor 2.6.
E_w	8,700MJ	The approx. calorific input of the fuel is 8,700MJ/t

[1] Units are 1 MJ/t

$(E_p – (E_f + E_i)) / (0.97 \times (E_w + E_f))$

(5,853-(20.5+54.6))/ (0.97 x (8,700 + 20.5)

5,777.9/(0.97 x 8,720.5) = 0.683

From this calculation, the Meath waste-to-energy facility will have an efficiency of 0.683 and therefore qualifies for the R1 code.

G.2.1.b Energy Efficiency in Design

The facility has been designed with energy efficiency as a priority in order to maximise electricity production.

Heat from the combustion of waste is converted to electricity at a gross efficiency of 25% and a net efficiency of 21% (when in-house consumption is netted off). The energy efficiency of a waste-to-energy plant is lower than that of a typical power plant because of the requirement to maintain temperatures and pressures below levels at which corrosive flue gases attack boiler components. This reduces the potential for steam output from the boiler and limits electricity generation. Waste-to-energy plants must also operate with a higher quantity of excess air, compared with power plants, to meet lower emissions limits. This also reduces the energy efficiency of the plant because heat is lost to the additional combustion air.

Some of the Best Available Techniques selected for the plant to optimise energy efficiency include:

- Minimising flue gas heat losses by:
    - optimising primary and secondary air distribution to minimise excess air requirements
    - minimising the boiler exit temperature to ensure the maximum transfer of energy from the flue gases to steam
    - selecting a flue gas treatment technique that does not require re-heating at any stage (i.e. where the temperature decreases from the boiler exit to the stack)
- Ensuring the thermal conversion efficiency of the boiler will be greater than 80%
- Selecting a turbine suited to high energy efficiency and maximum expansion of steam to very low pressure (0.1 bar, in vacuum)

The overall energy demand on the site has been minimised by:

- Selecting low energy systems, such as the SNCR system for NO_x abatement
- Minimising the use of primary fuels by using energy produced onsite
- Sourcing secondary combustion air from the main process building where it is effectively pre-heated
- Installing variable speed drives on fans and pumps

As well as factoring efficiency into design considerations, the efficient use of energy and resources is an ongoing concern at all Indaver facilities. It is one of the 11 key objectives in the Indaver Improvement Plan. Targets set out under this objective include items such as:

- Reviewing in-house energy and resource usage by:
    - conducting electrical inspections
    - conducting regular energy efficiency audits
    - establishing Key Performance Indicators (KPIs) for these resources
- Developing energy reduction initiatives including:
    - awareness campaigns
    - energy management systems
    - installing motion detectors for lighting

An example of an awareness campaign run at existing Indaver facilities in Ireland is attached in Appendix G1.

G.2.1.c Energy Balance

In summary, for a 69,3MW waste thermal input per incineration line the following heat balance is expected:

- Heat loss by radiation from the hot equipment (furnace, boiler, steam cycle) is approximately 1.5 MW (2% for the boiler furnace, 1% for the remainder). This heat is not recovered but does heat the building before

being evacuated through the natural draft building ventilation to atmosphere,

- 61.3MW is converted into steam. The remaining 9.7 MW of heat is released from the boiler to the flue gas treatment system,
- Steam at 40 bar / 400^{o}C enters the turbine and steam at 0.15 bar / 46^{o}C leaves the turbine The 61.26 MW steam is converted to 17.2 MW electricity. The vacuum steam leaving the turbine is condensed in a closed loop in the air cooled condensers. The excess heat is released into the atmosphere,
- Because of the power of the ID-fan, 0.5 MW is added to flue gas going to the stack,
- 1.2 MW is lost over the wet deslagger,
- 0.04 MW is lost over the flue gas residue silo.

A guideline heat balance for the site is shown in Figure G.2.a below to provide an overview of heat transfer. As per condition 7.3 of WL0167-02, Indaver will conduct an audit of the energy efficiency of the site, and this will be repeated annually and included in the Annual Environmental Report.

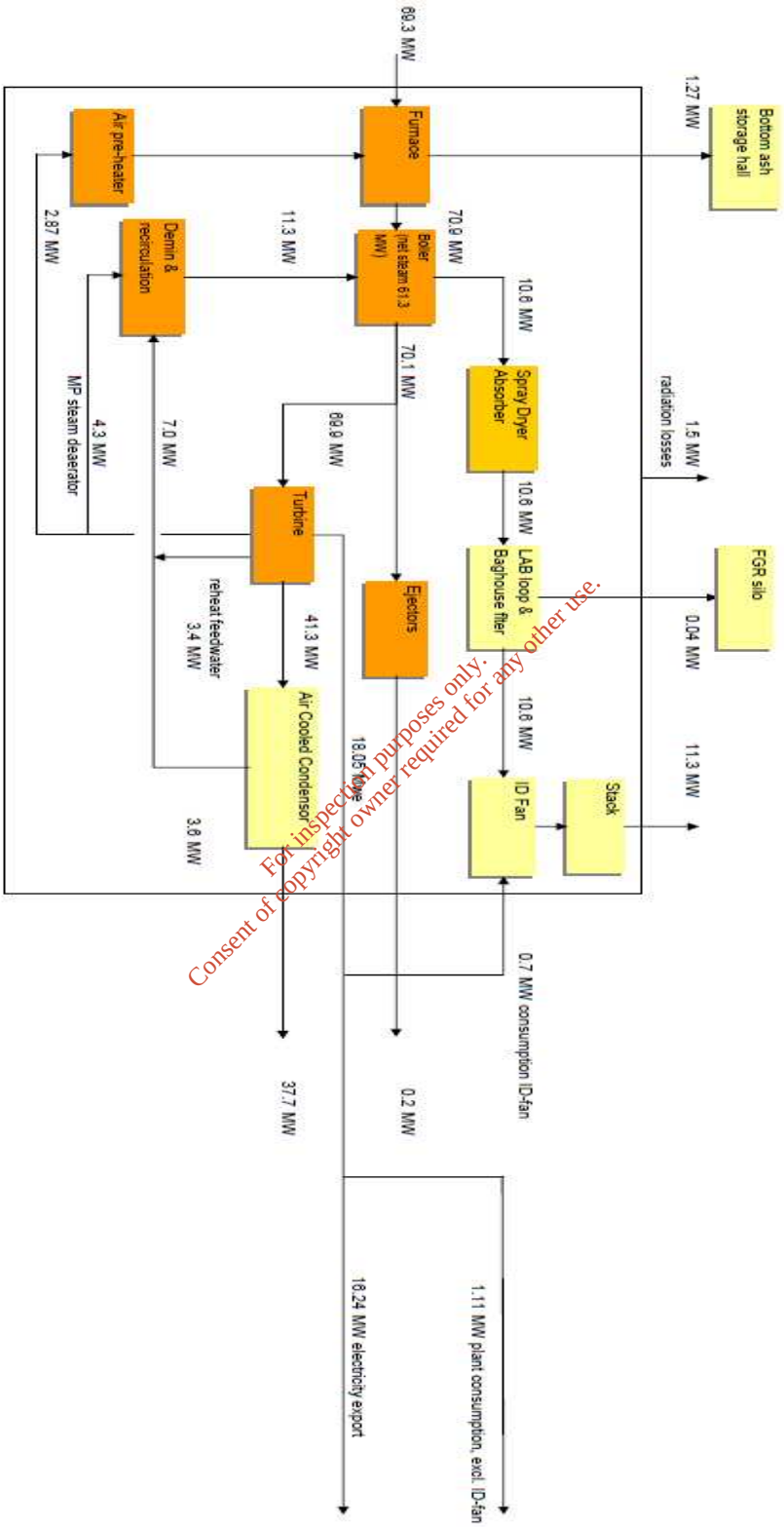


Figure G.2.a: Heat Balance for Meath Waste-to-Energy Plant

Appendix G1

INDAVER IRELAND

Energy Efficiency

LIGHTING TIPS

Did you know lighting accounts for about 45% of the electricity usage in a commercial building:

Flex your POWER

Lighting an empty office overnight wastes enough energy to heat water for 1,000 cups of coffee.

What can you do?

1 The Off Switch

Turn lights off when leaving a room or area. When leaving for lunch or meetings switch off desk lamps and office lights.

2 Good Housekeeping

Dirty reflectors and louvers reduce light output by 20%. To ensure optimum efficiency, clean reflectors, windows and roof-lights.

3 Hours of Use

Make sure that full lighting is not being used unnecessarily outside of normal business hours.

4 Office Set Up

Is the office layout making the most of natural light?

5 Task Lighting

Where possible use individual task lighting in preference to increasing illumination over a large area.

6 Light Bulbs

Make sure that the light bulbs in your office are the most energy efficient with longer lifespans and lower maintenance costs.

Contact us if you have any new ideas

- Talk to your manager
- Take your idea to the next Sphere Meeting
- Use the QESH suggestion box
- E-mail info@indaver.ie

Save the trees—only print this message if absolutely necessary

INDAVER

Energy Efficiency

HEATING TIPS

Did you know heating and air conditioning accounts for about 25% of the electricity usage in a commercial building:

Reducing the temperature in a room by just 1°C can cut the heating bill by as much as 10%.

What can you do?

1 Optimum settings

Air conditioning and heating controls should not be set so that they conflict with each other. Otherwise, heating and cooling will take place at the same time and waste energy. Ideally, set heating at 19°C and air conditioning at 24°C. Make sure that the two systems cannot work at the same time.

2 Thermostats and Timers (Wall mounted heaters)

Set wall-mounted heaters on timer. Check that timers are set to the minimum period and ensure room thermostats and radiator controls are on minimum settings.

3 The off switch (Office Equipment)

It costs nothing to switch office equipment off. Office equipment generates heat. If possible locate heat-generating equipment such as photocopiers, away from air-conditioned spaces. Where this is not possible, locate them in areas where they are well ventilated and cannot build up heat. Office equipment can add significantly to your electricity bill, not only in running costs, but also in air conditioning.

4 Occupied areas

Ensure that only occupied areas are heated and that heating is reduced during non-working hours, such as bank holidays or weekends.

Contact us if you have any new ideas

- Talk to your manager
- Take your idea to the next Sphere Meeting
- Use the QESH suggestion box
- E-mail info@indaver.ie

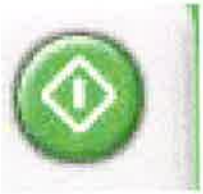
Save the trees—only print this message if absolutely necessary

INDAVER IRELAND

Energy Efficiency

OFFICE EQUIPMENT TIPS

Did you know that a photocopier left on overnight wastes enough energy to photocopy 5,300 A4 sheets?



A PC monitor left switched on overnight wastes enough energy to laser print 800 A4 copies.

What can you do?

1 Switch off

Make sure all office equipment is switched off overnight. Switch off your screen at lunchtime - the screen on a personal computer uses as much energy as all of its other components.

2 Standby mode

Standby is not switched off!! Even on standby a photocopier consumes as much as 200 watts per day. If you see a light on a machine switch if off.

3 Only switch on when needed

Don't switch on appliances unless you are ready to start using them. Photocopiers and printers don't need to be switched on immediately in the morning. Get into the habit of switching on only when needed.

Contact us if you have any new ideas

- Talk to your manager
- Take your idea to the next Sphere Meeting
- Use the QESH suggestion box
- E-mail info@indaver.ie

Save the trees—only print this message if absolutely necessary

Attachment H.1: Waste Types and Quantities

As outlined in this application Indaver intend to apply for an increase in annual tonnage of wastes accepted at the Carranstown Facility. It is proposed to increase the annual tonnage accepted from 200,000 to 220,000 tonnes. It is also proposed to accept a number of suitable hazardous wastes and non hazardous wastes as detailed below.

Table H.1.a Proposed Additional Waste Types

EWC Description	EWC	EST QTY P.A.
Aqueous Wastes: Rinse waters containing sugar coating solution and pharmaceutical residues, ink and water mixtures, aqueous washings from spill cleanups.	070501* 080308 070101*	Not exceeding 15,000MT per annum of these materials.
Contaminated Packaging/Clothing. These waste types from pharmaceutical, computer chip or chemical manufacturers are commonly classified as hazardous waste due to the potential contamination from exposure to the materials that they were designed to protect people from. The level of risk is very low but again because they have been assigned a hazardous EWC code, they must be exported to incinerators abroad. An example being empty paint tins, or rags and wipes contaminated with paint/glues/inks etc	150110* 150202*	
Redundant or Off Specification Materials/Products. Mascara, lipstick and other make-up. Eye drops, eye baths that are out of date. Headache Tablets, Starch and Sugars used for coating capsules & filler powders.	070513* 160303* 160305* 160507* 160508*	
Treated or Contaminated Wood. Once wood/timber has been treated, it can no longer be recycled. If treated with certain preservatives, this then makes the waste "hazardous" even though the same timber is used on decking, furniture, schools etc.	170204* 170903* 191206* 200137* 030104*	
Medical Wastes Bandages, gauze/wipes, incontinence pads, used cotton wool from Nurses Stations & veterinary/dental practices etc., expired medicines, gloves and gowns, expired medications / chemicals	180103*	
Sludges from waste water treatment plants (municipal & industrial) can currently be treated at the facility provided that they are classified as non hazardous. Some sludges are still spread on land as a fertiliser, but industrial facilities with waste water treatment plants of their own have moved away from this practice in recent years. Due to the possibility (but not the certainty) of certain contaminants being present in some industrial sludges, environmentally conscious companies commonly assign	070511* 190811*	

hazardous EWC codes to their sludges as a precaution. Despite the fact that these sludges are no different to other non-hazardous sludges, we cannot accept them at the facility without further permission to do so.		
Other soils, and sludges similar to waste water treatment sludges from land decontamination projects	170505* 170503* 191303*	
Shredded and pre-mixed Material such as car shred waste and shredded paint containers	191003* 191211*	
Discarded paint and inks: This material is currently mainly disposed of by domestic waste producers at Civic Amenity sites (and exported to similar facilities on the continent)	200127* 200128	
Discarded Oil Filters	160107*	
Waste Oil	130701*	
Return to site of any reject Bottom Ash, FGR & Boiler Ash	190113* 190107* 190112	

Indaver also request that EWC Code 19 12 12 have the restriction of Max: 50,000 tpa removed, and to be listed alongside Non- Hazardous residual municipal waste. There are large quantities of this material available in the market with very limited treatment capacity elsewhere

Attachment H.2: Waste Acceptance

H.2.1: Waste Acceptance Procedures

Appendix H1 contains a copy of the waste acceptance SOP (Env 01.00) as employed at the facility. If the proposed amendments are granted, this procedure will be amended. As outlined in Section 5.6.1 of the EIS, where the waste is not suited for laboratory analysis, the process and origin of the waste at the producer site will be reviewed as well as all possible components to assess the suitability for treatment.

Attachment H.3: Waste Handling

H.3.1 Waste Handling Procedures

Appendix H2 contains a copy of the waste handling SOP (Env 02.00) as employed at the facility. As discussed in Section 5.6.1, this will be amended to reflect the non-manual handling and feeding of wastes with EWC Code 18 01 03*, but it is not proposed to change other aspects of the Waste Handling Procedure – solid wastes will continue to be fed into the bunker, and liquid wastes will continue to be fed into the furnace by direct injection.

Attachment H.4: Waste Arising

H.4.1 Solid Residues

H.4.1.a Solid Residues Generated

It is not foreseen that the characteristics of the solid residues (bottom ash, boiler ash and flue gas treatment residues) will change with the addition of the types of new waste streams proposed. The proposed increase in capacity of 20,000 tonnes per annum will result in an increase in the quantities of residues produced – detail on this increase is given in Section 5.6.12 of the EIS.

H.4.1.b Storage of Residues

The handling and storage of bottom ash, boiler ash, flue gas treatment residues and ferrous metals are outlined in Chapter 5 of the accompanying EIS.

H.4.1.c Reuse / Disposal of Residues

All residues are removed by appropriately permitted waste management contractors and sent for reuse or disposal to suitably licensed facilities. At present the majority of bottom ash is being sent to Louth County Council Whiteriver Landfill, Collon, Co Louth.

Across the EU, bottom ash is commonly either sent to non-hazardous landfill or is pre-treated to recover components for reuse in the construction or similar industries.

To facilitate reuse, Member States set quality criteria that define the quality of recovered material and the conditions under which they can be reused. Such criteria facilitates the development of markets for treated ash by guaranteeing the quality of the material.

For bottom ash to meet this criteria it must be of a higher grade than if it were to be disposed of in a landfill. This improvement in quality can be achieved by treating the ash in an ash recovery plant. At present there is no bottom ash recovery plant in Ireland and there are no bottom ash reuse criteria. However, it is the intention of Indaver to proactively identify potential outlets for bottom ash and to work with the EPA in establishing reuse criteria. With these in place, it may become feasible to develop an ash recovery plant or other pre-treatment system to produce bottom ash components that can be reused.

Boiler Ash

As boiler ash is classified as hazardous there are limited reuse options. At present boiler ash is exported with flue gas treatment residues for remediation of a salt mine. .

Flue Gas Treatment Residues

Due to their leachate characteristics, flue gas treatment residues are classified as hazardous waste. Although some reuse options for flue gas treatment residue are emerging, Indaver NV considers it more environmentally preferable to concentrate and isolate such hazardous material from the environment through safe disposal.

Currently the flue gas treatment residues are exported to a licensed hazardous waste facility for remediation of salt mines.

Indaver has over 20 years of experience sourcing suitable outlets, both in Ireland and abroad, for the disposal of hazardous waste. Indaver also operates its own hazardous waste landfill in Antwerp, Belgium. It is the policy of Indaver to approve waste facilities before sending any material to them the first time in line with the company's internal procedure *Operations 11.2 Approval and Monitoring of Waste Facilities*. To obtain approval, waste facilities must prove that they have the relevant legal licences and/or permits, adequate insurance and operate within their legal operational parameters.

Recovered Metals

Ferrous metals recovered from bottom ash are sent off-site to an appropriate and licensed recycling facility. It is not possible to recover non-ferrous metals. This is because a non-ferrous metal recovery system requires a homogeneous, dry, evenly distributed layer of ash to be spread on a conveyor belt, which is difficult to achieve without pre-treating bottom ash. As less than 1% of the metal in the input waste will be non-ferrous, the effort required to present bottom ash in this manner does not outweigh the environmental gain.

As previously mentioned, Indaver intends to proactively identify opportunities for the development of an ash recovery plant in Ireland.

H.4.2 Other Wastes

Other wastes arising from the facility will include minor quantities of waste from facility operations and staff and visitor facilities. These are listed in Table H.4.b.

Table H.4.b: Other wastes arising

Waste	EWC Code[1]	EWC description	Description and quantities	Handling, Reuse and Disposal
Maintenance Dept. Waste	13 01 10* 13 01 11* 13 01 12* 15 01 02 15 02 03	Mineral-based non-chlorinated hydraulic oil Synthetic hydraulic oils Readily biodegradable hydraulic oils Empty oil containers Absorbents, filter materials, clothing etc.	Used oil from the lubrication and cooling of moving parts throughout the waste-to-energy plant. Protective clothing, spill absorbents etc. from maintenance activities. Arising in minor quantities only.	Waste oils will be stored in a properly bunded area and sent offsite for recycling. Empty containers will be sent for recycling off site. Contaminated clothing, rags, spill absorbents etc will be taken to the bunker on site.
Petrol interceptor residues	13 05 06* 13 05 07* 13 05 02*	Oil from oil/water separators Oily water from oil/water separators Sludges from oil/water separators	Residues such as grit, stones or oily water removed from petrol interceptors during regular inspections. Arising in minor quantities only.	Oily water and sludges are stored in a properly bunded area and sent offsite for physico chemical treatment.
Electrical and Electronic Equipment	16 02 14	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	Redundant items of equipment from the plant arising in minor quantities	Discarded equipment will be either be sold on if in good condition, or will be sent offsite to be scrapped for parts or for disposal to an appropriately licensed facility.
Kitchen waste	20 01 01 20 01 02 20 01 08 20 01 25 20 01 39 20 01 40	Separately collected: Paper and cardboard Glass Biodegradable kitchen and canteen Edible oil and fat Plastics Metals	Wastes arising from the canteen and kitchen catering for approximately 50 onsite staff. Arising in minor quantities only.	Where possible, biodegradable waste will be composted onsite or sent offsite for composting. Otherwise, it will be sent to the waste-to-energy facility for treatment. Separately collected recyclable waste such as glass and plastics will be sent offsite for recycling.

[1] European Waste Codes are detailed in the EU Directive 2001/118/EC, List of Wastes

Office waste	20 01 01 20 01 21* 20 01 29* 20 01 30 20 01 33* 20 01 35* 20 01 39 20 01 40	Separately collected: Paper and cardboard Fluorescent tubes and other mercury-containing waste Detergents containing dangerous substances Detergents other than those mentioned in 20 01 29 Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components Plastics Metals	As there will be approximately 50 onsite staff, minor quantities of office waste are expected.	Separately collected recyclable waste such as paper, electronic equipment, etc. will be sent offsite for recycling where possible. Any materials that cannot be recycled e.g. detergents will be sent offsite for disposal at appropriately licensed facilities or if permitted, sent to the WTE plant for treatment
Waste from landscaping	20 02 01 20 02 02	Biodegradable waste Soil and stones	Garden and green waste from onsite landscaping will be expected in minor quantities.	If possible, garden and green waste will be composted onsite or sent offsite for composting.
General waste or rejected bunker waste	20 01 38 20 03 07 17 04 05	Wood other than that mentioned in 20 01 37 Bulky waste Iron and steel	Pallets from the delivery of equipment will occur in relatively minor quantities. Or bulky waste unsuitable for the bunker e.g. mattresses or large pieces of metal or wood.	Where possible materials such as wood waste will be sent for recycling. Otherwise it will either be sent to the waste-to-energy plant or removed from site by appropriately permitted waste contractors.

Appendix H1

INDAVER	**Procedure Title:**	**Waste Acceptance Criteria**		
	Procedure Ref.	ENV 01.00		
	Version:	0	**Pages:**	8
	Issue Date:		**Last Modified:**	18.07.2011
	Owner:	Aidan Kennedy Process Engineer		

1. Purpose

This document has been prepared to give clear guidelines on the type of waste that can be accepted at Meath Waste-to-Energy.

2. Definition

EWC - European Waste Catalogue
LIMS - Laboratory Information Management System
MSW - Municipal Solid Waste
WAC – Waste Acceptance Criteria
QESH – Quality, Environmental Safety and Health
SAP – Management Software System

3. Responsibilities

The process engineer has responsibility to approve waste based on criteria listed below before it arrives on site.

4. References

Waste handling procedure ENV 02.00
Waste Licence W0167-02

5. Procedure

<u>Details on the methodology for waste profiling for new and existing customers:</u>

Pre-Acceptance

Information requested from potential customer:

- A meeting takes place between the Account Manager and customer contact.
- Licence conditions are made known to the customer such as waste acceptance criteria, source segregation, facility opening hours.
- Potential waste type(s) for acceptance are discussed and may be viewed in certain cases by the Process Engineer.
- Information is gathered from the customer and this information, such as waste type, source of waste including the process producing the waste, composition, physical state and appearance,

packaging type is sent to the technical department for classification (see classification procedure Operations 4.2). Should there be insufficient information to classify the waste a chemical analysis may be required.

- Waste is then put into any of the following categories:
    - MSW or equivalent
    - Sludge
    - Liquids
    - Non MSW

- The EWC code is checked versus the licence to ensure that the waste type can be accepted under the licence.
- If the customer is the haulier for the waste, a letter of acceptance is created from Indaver (or this may have been completed in advance of the signing of the contract) and sent to the customer to ensure that their waste collection permit is updated with our facility. Then a copy of the updated waste collection permit is sent to our QESH department for filing.
- The contract is then put in place with the customer.
- The contract is valid for the period stated in the contract.
- Based on the contract deliveries are planned in advance. All loads and sales orders are stored on our SAP system. The classification is stored in the Laboratory Information Management System (LIMS) and reports can be produced at any time which show the classification of the waste type.

Sampling and Analysis

Number of analyses required:

- Number of analyses required will be decided upon on the basis of information received on the waste stream. In many cases one analysis is sufficient to accept the waste stream.
- In the case of municipal waste or where reliable and complete composition and information on the waste is received, analysis will not be required.

Who completes the sampling and analysis:

- The sampling can be completed by either the customer or an Indaver representative.
- The analysis of the samples are to be completed by an approved contracted laboratory.

Approach to verification sampling and analysis by Indaver, during initial profiling and on an ongoing basis, including frequency of testing:

- After the results of the sample have shown compliance with the Indaver WAC a trial load can be organised. This is agreed with the planner and the Process Engineer.
- Should there be any changes to the process or composition then a new sample may be requested. It is the customers responsibility to inform Indaver of these updates/changes to process.
- When the contract for this waste stream gets renewed, the quotation is reviewed and updated as necessary on the SAP system.
- During the contract should there be any anomalies with the waste stream this will be raised and preventative and corrective measures would be investigated. This could include a reclassification of the waste stream or update on the composition of the waste or analysis.

Non-conforming Waste

Actions in the event of a non-conformance with waste acceptance criteria:

- Should a waste stream be inspected and found to be in non compliance with the original composition of the waste then the Planner/ Account Manager is informed. An investigation will then occur. Here the received waste type will be investigated as to whether it is possible to treat the waste under the licence and operationally. Should the waste stream not be treatable under our licence or operationally then the waste is moved to quarantine and is quarantined as per ENV 02.00.
- Should the waste be outside tolerable limits and not be feasible to be treated within the process then the waste will not be accepted.

Specific Waste Acceptance Criteria:

Waste acceptance criteria are designed to fulfil the requirements of:

- Licence and planning conditions
- Operational conditions such as size
- Safety procedures
- Chemical restrictions
- Practical experience of operating a waste to energy plant

Licence and planning conditions

- Waste will only be accepted from known customers or new customers subject to initial profiling and characterisation.
- Deliveries of waste will only be accepted from authorised or exempted carriers under national or European legislation.
- Deliveries must be booked in advance.
- Waste collectors must hold a valid waste collection permit and Indaver will hold copies of this in their internal system.
- Delivery of waste is allowed between 08.00 and 18.30 from Monday to Friday and 08.00 and 14.00 on Saturdays.
- All waste accepted at the plant will be characterised prior to planning the acceptance of the load.
- Loads must be covered when they arrive on site.

The full list of acceptable waste streams, by EWC code, is provided in Schedule A of the current waste licence. Only EWC codes listed on our current waste licence are acceptable.

The following categories will not be accepted;

- EWC codes not on the current waste licence
- Source segregated recyclable material, unless by agreement with the EPA (i.e. due to contamination or a failure in the recycling market)

Appendix H2

	Procedure Title:	**Waste Handling**		
	Procedure Ref.	ENV 02.00		
	Version:	1	**Pages:**	5
	Issue Date:	18.7.2011	**Last Modified:**	18.7.2011
	Owner:	Aidan Kennedy		

1. Purpose

This procedure covers waste handling in the Meath Waste to Energy facility. It covers all movements of waste from the security gate to the feeding hopper.

2. Definition

EPA - Environmental Protection Agency
WAC - waste acceptance criteria

3. Responsibilities

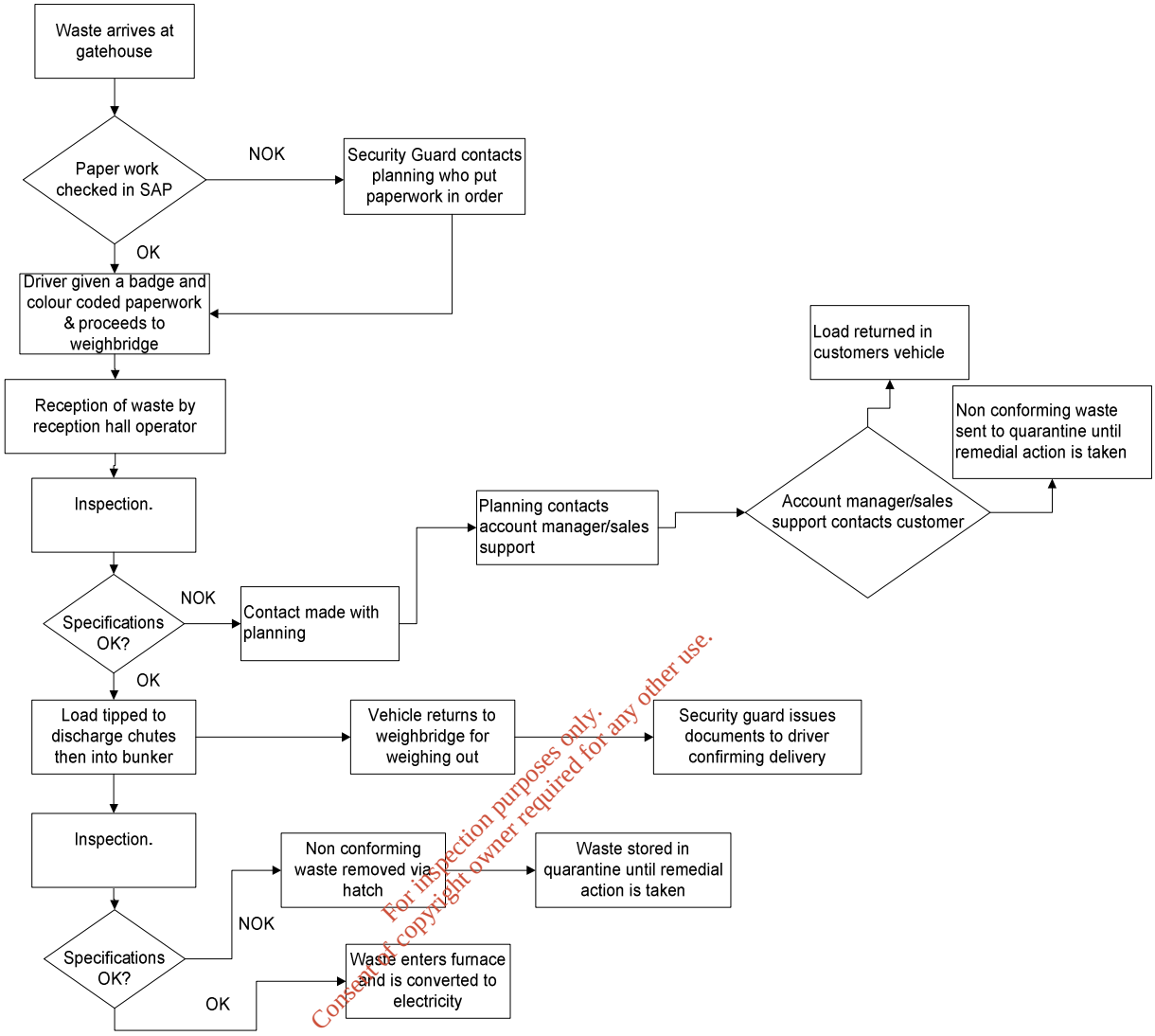
Indaver's customers have a responsibility to deliver waste in compliance with the waste acceptance criteria. The Tipping Hall Operator is responsible for conducting visual checks of the waste to ensure compliance with the waste acceptance criteria. The crane driver is responsible for performing visual checks as they clear the discharge chutes and mix the waste. They are also responsible for checking the closed circuit TV screen on the hopper as a final check. The security guard is responsible for enforcing the opening hours.

4. References

Waste acceptance criteria ENV 01.00
Waste Licence W0167-02
Waste inspection checklist ENV 02.01
Waste acceptance daily report ENV 02.02

5. Procedure

Overall work flow



1 Reception of waste truck.

Waste is only accepted if it is planned and scheduled in the SAP system and in accordance with the requirements of the licence. All waste supplied must be in conformance with Indaver's waste acceptance criteria (WAC).The criteria for acceptance are outlined in the WAC procedure.

The vehicle parks in a designated bay and the driver walks to the reception/security hut via a designated walkway. When a driver arrives on site for the first time they must complete an induction before entering the site. The opening hours of the facility in accordance with the licence W0167-02 will be adhered to unless in extreme cases where to do so would pose a significant threat to the environment or public safety.

1.1 Document check

The security personnel checks that the paperwork supplied with the vehicle matches what is available on the SAP system. The following information is recorded by the security guard:

a) the date and time
b) the name of carrier (and waste collection permit details if appropriate)
c) the vehicle registration number
d) the trailer, skip, or other unique identification (where relevant)
e) the name of producer/ collector of waste as appropriate
f) the name of waste facility from which the load originated, including the waste licence or waste permit register number
g) description of the type of waste including EWC codes
h) quantity of waste in tonnes
i) details of the treatment(s) to which the waste has been subjected, if any.
j) the classification or coding of the waste, including whether MSW or otherwise.
k) name of person checking the load
l) if a load is rejected/ removed detail the date, type of waste and facility to which they were removed
m) if applicable a consignment note number (CMR number)
n) Badge number (which is handed to the driver).

Once everything is confirmed as acceptable, the security guard hands the driver details of the waste, to inform the Tipping Hall Operator where to direct the load and grants the driver access to the reception hall and a badge to activate the weighbridge. The paper work is coded for each waste type with a colour as per the table below.

MSW or equivalent	No mark on paper
Sludge	Blue mark
Non MSW	Yellow mark
Liquids	Green mark

If an unscheduled load arrives at the gate, the security guard makes contact with the planning department. The planning department then ensures the SAP system is updated as required.

Should an anomaly arise the planning department will ensure the matter is dealt with appropriately. All anomalies will be recorded by the planning department.

The records of waste accepted are submitted to the planning authority on a monthly basis as agreed in line with Condition 4 of planning permission PL 17.219721 and will be summarised in the annual environmental report. The records of waste accepted will be maintained at the facility and reported as part of annual environmental report.

1.2 Weighing in

The vehicle drives to the 'in' weighbridge where they use the badge to activate the weighing of the load. There is no requirement to leave the cab during weighing. This weight is automatically recorded on the SAP system. On receiving a green light the driver moves the vehicle towards the reception hall.

The security guard will look out for anomalies on the weighing scales (too heavy/light may indicate waste is out of specification). If the security guard notices any anomalies the Tipping Hall Operator is notified via the hand held radio system.

1.3 Reception hall

Entry to the reception hall is controlled by the Tipping Hall Operator. The tipping hall operator gives a signal to the driver and then the driver may enter the reception hall. The relevant paper work is handed to the acceptance Tipping Hall Operator. If materials meet the acceptance criteria, the vehicle driver is directed to the appropriate discharge chute. Liquids loads will be sent for direct injection. More detailed inspections may be carried out periodically as outlined below.

2 Inspections

There are various options for waste inspections. For every load received checklist ENV 02.02 is completed by the person inspecting the waste. At least one of the following must be performed on every load received.

Should any anomalies be noted the Tipping Hall Operator makes contact with the planning department. They in turn contact the relevant account manager, who contacts the customer to discuss return of the load or additional costs for Indaver to dispose of the load on their behalf. Depending on the wishes of the customer, the waste in question is returned to the suppliers or moved to the quarantine area to await removal from site at the customers expense. Photographs may be taken by the Tipping Hall Operator as evidence. Should anomalies be noticed inside the bunker the waste is removed via the hatch to await correct disposal offsite.

2.1 Visual on discharge

This inspection is carried out in the waste inspection area of the reception hall. As the load is being tipped into the reception chutes the Tipping Hall Operator watches for any non conformance to the waste acceptance criteria. If a non conformance is spotted the Tipping Hall Operator immediately radios the crane driver who will remove the waste in question via the bunker hatch to await correct disposal offsite. The tipping hall operator will also notify the planning department who contacts the relevant account manager.

2.2 Visual in truck

This may be carried out if the Tipping Hall Operator suspects non compliance and it is possible to inspect vehicle before load is discharged. CCTV cameras are in place at the weighbridge and waste can be inspected using this e.g. tipper trucks where the cover has been pulled back. Another possible method would involve the Tipping Hall Operator using a ladder or mobile platform to look into the truck. Should any waste not be in conformance with the WAC a detailed inspection will follow.

2.3 Detailed inspections

These will be carried out periodically as required to ensure that customers do not supply waste outside the WAC. As a minimum one random inspection per week will be carried out. During such inspections the contents of the load are tipped onto the reception hall floor and the tipping hall operator completes a check of the contents to ensure compliance with the WAC. Once it is shown that the waste is in accordance with the WAC/licence, the waste is loaded into the bunker using a front loader. The front

loader will only be used by trained personnel. Should anomalies be noticed the non conforming waste is segregated to await correct disposal offsite.

For a new customer the frequency of inspection will be increased to ensure that the waste has been characterised correctly and that it meets the WAC.

Records of the detailed inspections will be completed by the Tipping Hall Operator and maintained on site. These records will contain as a minimum, the name of the person carrying out the inspection, the customers details, the trucks licence plate number and whether any non conformities were spotted.

2.4 Camera inspection

There is a camera in the bunker/hopper area of the plant. This camera is a moveable camera and can be directed to inspect waste in the bunker or in the hopper. The monitor for this camera is in the control room where a crane operator can ensure that only acceptable waste loaded into the hopper.

2.5 Inspection by crane operator

As the crane operator mixes and transfers the waste they must always be vigilant for any waste that does not conform to the waste acceptance criteria. Should any non conforming waste be found it is removed via the hatch to be disposed of in a correct manner.

3 Weighing out

The Vehicle follows the one way route, observing the speed limit, and exits via the 'out' weighbridge. A tare weight is then recorded on SAP. The security guard stamps/signs the paper work for the driver. The security guard then gives the driver the relevant paperwork. A recovery certificate will be provided to the customer in due course to prove that Indaver accepted and treated their waste.

4 Waste to energy

The waste is mixed in the bunker and fed to the hopper where it enters the furnace and is converted into energy.

Attachment I.1: Impact on Air Quality

Please refer to Chapter 7 of the accompanying EIS which presents a description of the existing environment in terms of air quality. This chapter also presents an assessment of the impact of the facility on the environment with reference to the relevant standards.

In the 2006 EIS and subsequently in the 2009 EIS Amendment application, the emissions from the plant were assessed based on the maximum allowable limits in the Waste Incineration Directive (which will be replaced by the Industrial Emissions Directive 2010/75/EU) and 110% of the estimated flue gas flow rate at the plant nominal capacity. Recent measurements of the short term average nominal flue gas flowrate have shown that the flue gas flowrate is higher than was anticipated and in order to ensure that assessment from 2009 was still valid, the model was re-run and shows (as explained in Section 7.4 of the EIS) that the variation in flowrate does not materially alter the original conclusions and that the assessment is still valid. This, combined with the fact that the actual emissions from the plant are well below the limits modeled, ensures that the assessment of the impact on air quality is robust.

Attachment I.2: Impact on Surface Water

Please refer to Chapter 11 of the accompanying EIS which presents a description of the existing environment in terms of surfacewater. This chapter also presents an assessment of the impact of the facility on the environment with reference to the relevant standards. As outlined in Attachments D and E the proposed development will entail no additional emissions to surface water. Therefore the impact of the emissions remains the same as permitted under the existing licence W0167-02.

Attachment I.4: Impact on Ground and Ground Water

Please refer to Chapter 9 and 10 of the accompanying EIS which present a description of the existing environment in terms of geology, soils, hydrogeology and groundwater. These Chapters also present an assessment of the impact of the facility on the environment with reference to the relevant standards.

Attachment I.5: Ground and Groundwater Contamination

Please refer to Chapter 11 of the accompanying EIS which presents a description of the existing environment in terms of ground and groundwater. This chapters also present an assessment of the impact of the facility on the environment with reference to the relevant standards.

Attachment I.6: Impact on Noise

Please refer to Chapter 5 of the accompanying EIS which presents a description of the existing environment in terms of noise and vibration. This chapter also presents an assessment of the impact of the facility on the environment with reference to the relevant standards. As outlined in Attachments D and E the proposed development will entail no additional noise emissions.. Therefore the impact of the emissions remains the same as permitted under the existing licence W0167-02.

Attachment I.7: Impact on Ecology

Please refer to Chapter 12 of the accompanying EIS which presents a description of the existing environment in terms of ground and groundwater. This chapters also present an assessment of the impact of the facility on the environment with reference to the relevant standards. As outlined in Attachments D and E the proposed development will entail no additional impact on ecology Therefore the impact of the facility to ecology remains the same as permitted under the existing licence W0167-02.

Attachment J.1: Accident Prevention and Emergency Response

J.1 Accident Prevention

As detailed in Section 5.14 of the accompanying EIS, the facility has been built in accordance with the relevant aspects of the Safety Health and Welfare at Work Act, 2005, the Safety, Health and Welfare at Work (Construction) Regulations, 2001 and associated regulations. The design and construction process was carried out by skilled personnel according to internationally recognised standards, design codes, legislation, good practice and experience.

Indaver conducts all its activities in accordance with its Quality, Environmental, Safety and Health (QESH) system which is accredited to the quality standard ISO 9001, the environmental standard ISO 14001 and the safety standard OHSAS 18001. In compliance with the Safety, Health and Welfare at Work Act, 2005, Indaver have a safety statement covering the operation of the plant. The operation of the waste-to-energy plant entails hazards associated with the handling of combustible materials, chemicals and high-pressure steam. During the design phase of the plant, hazard and operability (HAZOP) studies were carried out. These studies systematically assessed hazards that could arise during both steady and non-steady state operations and identified the necessary mitigation measures required. Indaver's experience of successfully operating similar plants in Belgium allows potential hazards to be easily identified.

Based on the HAZOP studies and operating instructions from plant suppliers, a comprehensive set of standard operating procedures have been drawn up for all aspects of the operation of the plant, to minimise the risk of accident or emergency situations arising. Copies of the Waste Acceptance and Waste Handling Procedures are presented in Chapter 5 of the accompanying EIS. These and other measures will be managed by the company's QESH team, which has specific responsibility for quality, environment, safety and health at the facility.

Wherever possible, Indaver strives to minimise human interaction in safety critical operations in order to eliminate the potential for "human factors" to initiate or exacerbate major accidents at the site. Through recruitment, training, performance management, employee development and succession planning, Indaver ensures all members of staff are in possession of the knowledge, skills and experience necessary to perform their jobs to a satisfactory standard. This includes adhering to strict rules on safety such as a working permit system, training and provision and use of personal protection equipment.

The facility is well maintained and cleaned at all times. A preventative maintenance system is also in place incorporating routine checks and maintenance of key equipment to ensure they remain in good working order.

J.1.2 Emergency Response

An emergency response procedure has been prepared for the facility and is presented in Appendix J1. The procedure sets out the response measures to be taken by personnel in the event of an emergency. Measures have been designed to ensure maximum protection for site employees, visitors and people in other

premises near the site to limit damage to property and minimise the impact of site operations on the environment. A dedicated Emergency Response Team have been appointed to respond to any emergency which may arise.

J.1.3 Public Liability Insurance

Indaver NV has a global insurance policy, which includes public liability, product liability, legal expense, environmental liability and on-site cleanup costs. Please refer to Attachment L.2.3 for more information.

Appendix J1

INDAVER IRELAND	**Procedure Title:**	Meath Emergency Response Procedure		
	Procedure Ref.	Operations XX.X		
	Version:	Draft	Pages:	20
	Issue Date:	30.05.11	**Last Modified:**	30.05.11
	Owner:	Colum Smith, Health & Safety Manager		

Contents

1 Purpose

This procedure describes the emergency response process in place at Indaver Ireland's Meath Waste to Energy facility. The purpose of the procedure is to:

- Describe the emergency response process including roles & responsibilities, resources, facilities & equipment to identify, respond to, and address emergency situations
- Contain and control emergency situations so as prevent/minimise the effects of emergency situations on personnel, property and the environment

2 Definitions

The following types of emergency situation are defined:

2.1 Local Emergency

These are smaller incidents that can be handled at a local level by the operational team and/ or plant Emergency Response Team (ERT) without impacting on others part of the plant, personnel or environment e.g. first aid injury, minor spill etc.

2.2 Plant Emergency

These are incidents that could have a significant adverse impact on on-site personnel and/or the Indaver plant and site environment e.g. serious injury, major fire.

2.3 External Emergency

These are incidents that could have an adverse off-site impact e.g. major bunker fire with release of smoke-plume off-site, significant damage to off-site environment etc.

With respect to the above emergency situations, three different types of alarm signal may be generated:

2.4 Local Alarm

Individual local areas of the plant (Flue Gas Cleaning, Bottom Ash Hall, Steam/Condensate Area & Turbine, Furnace Boiler, Tipping Hall & Bunker, and Administration Building) are equipped with local Sounders (different sound to Plant Alarm) and Strobes which are activated by smoke / heat / flame detectors and break glass units in the local area.

These detectors and break glass units are not linked to the Plant Alarm which requires manual activation from the Control Room. Local sounders in noisy areas (Shredder Area, ID Fan, Compressor Room, and Turbine) are set at a higher decibel level. A direct communication (via radio) will be sent from the Control Room to the Emergency Response Team (ERT) Members to respond to any local alarms.

2.5 Plant Alarm - Start:

Description: Slow waving klaxon siren (approx. 5 times / min.)
Meaning: Plant wide alarm (e.g. for large fire). Activated by key switch in Control Room.
In the event of a malfunction of the plant alarm siren, the Control Room will issue an alarm message over the radio system to individual personnel and a Manual Plant Horn will be activated by both the Shift Supervisor in the building and by the Security Guard outside the security hut.

2.6 Plant Alarm - End:

Description: Continuous non-waving flat sound of klaxon siren (approx. 1 minute)
Meaning: End of Alarm. Activated from the Control Room.

3 Roles & Responsibilities

3.1 Incident Controller (Plant Manager)

- Overall responsibility for ensuring there are adequate resources, training, facilities and equipment in place to address any emergency situations that may arise at the Meath plant
- Establishes Emergency Control Centre (ECC) in Plant Managers Office or alternative location if emergency situation/safety considerations dictate
- Proceeds to ECC in order to ascertain as much detail (i.e. number of injured persons, location, nature and extent of incident etc.) of the emergency as possible from the ERT Leader or from the person discovering the incident
- Briefs other ECC Members and co-ordinates activities in the Emergency Control Centre
- Communicates with ERT Leader for duration of emergency situation
- Communicates with the Site Evacuation Co-Coordinator to ensure all persons are accounted for in the event of an evacuation at Assembly Point
- Communicates with Process Controller in Plant Control Room on any process control required during the emergency situation
- Communicates with External Emergency Services before they arrive on site.
- Manages all other external communication required during emergency: relatives of employees, regulatory authorities (HSA, EPA, CER, ESB etc), press/media (through Indaver Managing Director and Communications Manager), neighbouring establishments
- Notifies Indaver senior management and organisation of incident as required
- Decides on End of Emergency following consultation with ERT Leader and Emergency Services (if present on site) and instructs Panel Operator to sound Plant Alarm End
- Follows (as appropriate) Incident Controller Prompt Sheet attached to this procedure.

3.2 Communications Officer (Process Engineer)

- Proceed to Emergency Control Centre (ECC) if directed by Incident Controller
- Establishes contacts with external agencies and personnel (Emergency Services, Employee Relatives, Regulatory Authorities, Neighbouring Establishments) as directed by the Incident Controller
- Alerts Indaver Ireland Managing Director and Indaver organisation (flash mail) as directed by Incident Controller