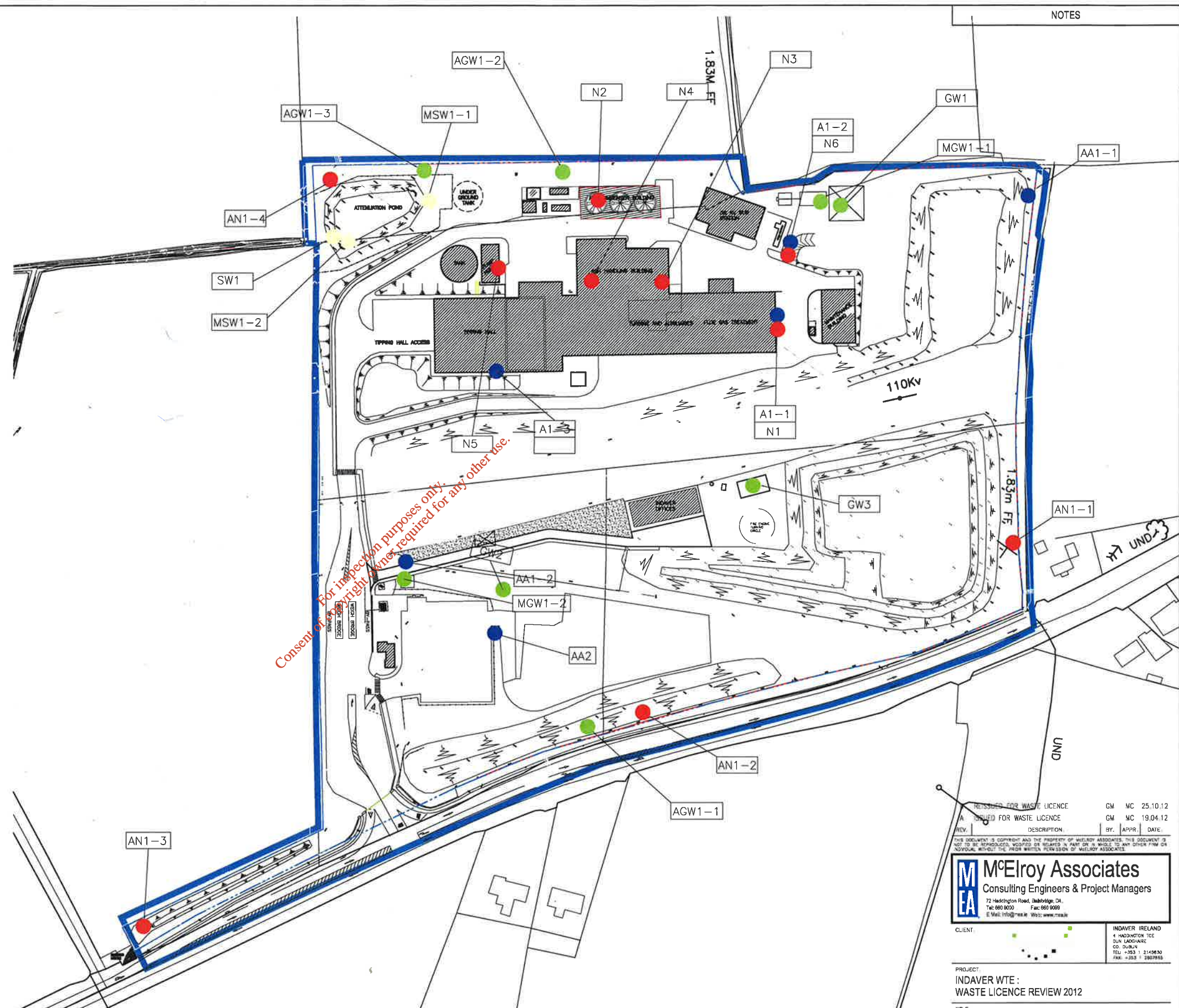


NAME	LABEL
A1-1	● STACK AIR EMISSION/MONITORING POINT
A1-2	● EMERGENCY GENERATOR AIR EMISSION
A1-3	● CARBON UNIT AIR EMISSION
AA1-1	● DOWNWIND ODOUR MONITORING
AA1-2	● UPWIND ODOUR MONITORING
SW1	● SURFACE WATER DRAINAGE OUTFALL EMISSION
MSW1-1	● SURFACE WATER MONITORING CHAMBER 1
MSW1-2	● SURFACE WATER 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

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ISSUED FOR WASTE LICENCE	GW	MC	25.10.12	
REVISED FOR WASTE LICENCE	GW	MC	19.04.12	
REV.	DESCRIPTION	BY	APPR.	DATE

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PROJECT: INDAVER WTE :  
 WASTE LICENCE REVIEW 2012

TITLE: EMISSION AND  
 MONITORING POINT LOCATIONS

DESIGNED:	CHECKED:	APPROVED:
MC	MC	NK
DRAWN:	DATE:	SCALE:
GM	APRIL '12	1:2500 @ A3
DWG No:	21098\WL\010	
REV:	B	



Your Ref: W0167-03  
Our Ref: W0167-03/FM31102012B

Aoife Loughnane  
Inspector, Environmental Licensing Programme  
Environmental Protection Agency  
Johnstown Castle Estate  
Co. Wexford

31<sup>st</sup> October 2012

Dear Aoife,

**Re: Article 13 Compliance**

Please find enclosed the Addendum to the 2012 EIS. The addendum has been prepared in response to the questions posed by the Agency and the outline answers in each case are given below.

**1) Chapter 7 Air Quality should be updated to reflect the information requested under Question 10 of the Article 12 Compliance Requirements.**

The PEC for each modelled parameter in Tables 7.6 to 7.9 of the EIS is now outlined in Tables 7.12 – 7.15 in the Addendum to the 2012 EIS. Results indicate that compliance with all relevant ambient air quality standards and guidelines are maintained even under all four volume flow scenarios.

The PEC of each modelled parameter associated with maximum abnormal operations (as per Condition 3.20.2 of licence W0167-02) at the requested volume flow of 183,700 Nm<sup>3</sup>/hr from the stack is outlined in Table 7.16 Results indicate that compliance with all relevant ambient air quality standards and guidelines are maintained even under abnormal operations based on 60 hours per annum.

Please refer to EIS Addendum – Chapter 7 “Air Quality”.

The additional information requested, is submitted here as an addendum to the original chapter 7 of the EIS and further supports the conclusion reached in the EIS that the proposed development will not have a significant impact on air quality.

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VAT Reg. No. IE9F70712T ■ IBAN IE61 201101 1668 4915 04 ■ BIC BOFIE2D  
Directors: J. Ahern, C. Jones, J. Keane, D. McGarry  
Belgian Directors: P. De Bruycker, M. Decorte, B. Goethals





**Non Technical Summaries**

The new information requested does not impinge on the Non Technical Summaries of the EIS and Waste Licence, and so there are no amendments to same.

Yours Sincerely,

A handwritten signature in blue ink, appearing to read "Conor Jones".

Conor Jones  
Infrastructure Director  
Indaver Ireland Limited

[www.indaver.ie](http://www.indaver.ie)

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## 7 Air Quality

The PEC for each modelled parameter in Tables 7.6 to 7.9 of the EIS is now outlined in Tables 7.12 – 7.15. Results indicate that compliance with all relevant ambient air quality standards and guidelines are maintained even under all four volume flow scenarios.

The PEC of each modelled parameter associated with maximum abnormal operations (as per Condition 3.20.2 of licence W0167-02) at the requested volume flow of 183,700 Nm<sup>3</sup>/hr from the stack is outlined below in Table 7.16 Results indicate that compliance with all relevant ambient air quality standards and guidelines are maintained even under abnormal operations based on 60 hours per annum.

The additional information requested is submitted here as an addendum to the original chapter 7 of the EIS and further supports the conclusion reached in the EIS that the proposed development will not have a significant impact on air quality.

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**Table 7.12** Predicted Environmental Concentration (PEC) For Each Modelled Parameter In Table 7.6 Of The EIS (Maximum Spot Volume Flow Scenario)

Compound	Background ( $\mu\text{g}/\text{m}^3$ )	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Limit Value ( $\mu\text{g}/\text{m}^3$ )
<b>NO<sub>2</sub> (1-Hr)</b>	<b>40</b>	62.96 <sup>Note 1</sup>	103.7	200
<b>NO<sub>2</sub> (Ann)</b>	<b>20</b>	0.94	20.9	40
<b>NO<sub>x</sub> (Ann)</b>	<b>25</b>	1.26	26.3	30
<b>SO<sub>2</sub> (1-Hr)</b>	<b>8</b>	30.09	34.6	350
<b>SO<sub>2</sub> (24-Hr)</b>	<b>4</b>	2.71	9.3	125
<b>PM<sub>10</sub> (24-Hr)</b>	<b>20</b>	0.20	37.3	50
<b>PM<sub>10</sub> (Ann)</b>	<b>20</b>	0.062	20.1	40
<b>PM<sub>2.5</sub> (Ann)</b>	<b>12</b>	0.062	12.1	25
<b>CO (8-hr)</b>	<b>400</b>	23.8	424	10000
<b>Benzene (Ann)</b>	<b>0.7</b>	0.062	0.76	5
<b>HCl (1-hr)</b>	<b>0.01</b>	5.31	5.3	100
<b>HF (1-hr)</b>	<b>0.005</b>	0.35	0.36	3
<b>Hg (Ann)</b>	<b>0.001</b>	0.00032	0.0013	1
<b>Cd (Ann)</b>	<b>0.001</b>	0.00032	0.0013	0.005
<b>As (Ann)</b>	<b>0.001</b>	0.00034	0.0013	0.006

Note 1 Value given as NO<sub>x</sub>.

**Table 7.13** Predicted Environmental Concentration (PEC) For Each Modelled Parameter In Table 7.7 Of The EIS (110% Maximum Volume Flow Scenario)

Compound	Background ( $\mu\text{g}/\text{m}^3$ )	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) 110% Maximum Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) 100% Maximum Volume Flow	Limit Value ( $\mu\text{g}/\text{m}^3$ )
<b>NO<sub>2</sub> (1-Hr)</b>	<b>40</b>	62.26 <sup>Note 1</sup>	103.7	200
<b>NO<sub>2</sub> (Ann)</b>	<b>20</b>	0.93	20.9	40
<b>NO<sub>x</sub> (Ann)</b>	<b>25</b>	1.25	26.3	30
<b>SO<sub>2</sub> (1-Hr)</b>	<b>8</b>	29.71	34.3	350
<b>SO<sub>2</sub> (24-Hr)</b>	<b>4</b>	2.68	9.2	125
<b>PM<sub>10</sub> (24-Hr)</b>	<b>20</b>	0.20	37.3	50
<b>PM<sub>10</sub> (Ann)</b>	<b>20</b>	0.062	20.1	40
<b>PM<sub>2.5</sub> (Ann)</b>	<b>12</b>	0.062	12.1	25
<b>CO (8-hr)</b>	<b>400</b>	23.5	423	10000
<b>Benzene (Ann)</b>	<b>0.7</b>	0.062	0.76	5
<b>HCl (1-hr)</b>	<b>0.01</b>	5.29	5.3	100
<b>HF (1-hr)</b>	<b>0.005</b>	0.35	0.36	3
<b>Hg (Ann)</b>	<b>0.001</b>	0.00032	0.0013	1
<b>Cd (Ann)</b>	<b>0.001</b>	0.00032	0.0013	0.005
<b>As (Ann)</b>	<b>0.001</b>	0.00034	0.0013	0.006

Note 1 Value given as NO<sub>x</sub>.

**Table 7.14** Predicted Environmental Concentration (PEC) For Each Modelled Parameter In Table 7.8 Of The EIS (Average Volume Flow Scenario)

Compound	Background ( $\mu\text{g}/\text{m}^3$ )	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Average Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Average Volume Flow	Limit Value ( $\mu\text{g}/\text{m}^3$ )
<b>NO<sub>2</sub> (1-Hr)</b>	<b>40</b>	59.80 <sup>Note 1</sup>	103.6	200
<b>NO<sub>2</sub> (Ann)</b>	<b>20</b>	0.91	20.9	40
<b>NO<sub>x</sub> (Ann)</b>	<b>25</b>	1.22	26.1	30
<b>SO<sub>2</sub> (1-Hr)</b>	<b>8</b>	28.81	33.4	350
<b>SO<sub>2</sub> (24-Hr)</b>	<b>4</b>	2.59	9.1	125
<b>PM<sub>10</sub> (24-Hr)</b>	<b>20</b>	0.20	37.3	50
<b>PM<sub>10</sub> (Ann)</b>	<b>20</b>	0.060	20.1	40
<b>PM<sub>2.5</sub> (Ann)</b>	<b>12</b>	0.060	12.1	25
<b>CO (8-hr)</b>	<b>400</b>	22.8	423	10000
<b>Benzene (Ann)</b>	<b>0.7</b>	0.060	0.76	5
<b>HCl (1-hr)</b>	<b>0.01</b>	5.18	5.2	100
<b>HF (1-hr)</b>	<b>0.005</b>	0.35	0.36	3
<b>Hg (Ann)</b>	<b>0.001</b>	0.00030	0.0013	1
<b>Cd (Ann)</b>	<b>0.001</b>	0.00030	0.0013	0.005
<b>As (Ann)</b>	<b>0.001</b>	0.00033	0.0013	0.006

Note 1 Value given as NO<sub>x</sub>.

**Table 7.15** Predicted Environmental Concentration (PEC) For Each Modelled Parameter In Table 7.9 Of The EIS (Minimum Spot Volume Flow Scenario)

Compound	Background (µg/m <sup>3</sup> )	Process Contribution (µg/m <sup>3</sup> ) Minimum Spot Volume Flow	Predicted Environmental Concentration (µg/m <sup>3</sup> ) Minimum Spot Volume Flow	Limit Value (µg/m <sup>3</sup> )
NO <sub>2</sub> (1-Hr)	40	54.16 <sup>Note 1</sup>	103.5	200
NO <sub>2</sub> (Ann)	20	0.88	20.9	40
NO <sub>x</sub> (Ann)	25	1.17	26.2	30
SO <sub>2</sub> (1-Hr)	8	26.40	30.9	350
SO <sub>2</sub> (24-Hr)	4	2.36	8.9	125
PM <sub>10</sub> (24-Hr)	20	0.19	37.3	50
PM <sub>10</sub> (Ann)	20	0.06	20.1	40
PM <sub>2.5</sub> (Ann)	12	0.06	12.1	25
CO (8-hr)	400	20.9	421	10000
Benzene (Ann)	0.7	0.058	0.76	5
HCl (1-hr)	0.01	5.02	5.0	100
HF (1-hr)	0.005	0.34	0.35	3
Hg (Ann)	0.001	0.00030	0.0013	1
Cd (Ann)	0.001	0.00030	0.0013	0.005
As (Ann)	0.001	0.00031	0.0013	0.006

Note 1 Value given as NO<sub>x</sub>.



**Table 7.16** Predicted Environmental Concentration (PEC) For Each Modelled Parameter Associated With Maximum Abnormal Operations At Volume Flow Rate 183,700 Nm<sup>3</sup>/hr (110% Maximum Volume Flow Scenario)

Compound	Background (µg/m <sup>3</sup> )	Process Contribution (µg/m <sup>3</sup> ) – Abnormal Operations <sup>Note 2</sup> – 110% Maximum Volume Flow	Predicted Environmental Concentration (µg/m <sup>3</sup> ) – Abnormal Operations <sup>Note 2</sup> – 100% Maximum Volume Flow	Limit Value (µg/m <sup>3</sup> )
NO <sub>2</sub> (1-Hr)	40	62.5 <sup>Note 1</sup>	104.6	200
NO <sub>2</sub> (Ann)	20	1.27	21.3	40
NO <sub>x</sub> (Ann)	25	1.69	26.3	30
SO <sub>2</sub> (1-Hr)	8	29.8	34.3	350
SO <sub>2</sub> (24-Hr)	4	2.69	9.2	125
PM <sub>10</sub> (24-Hr)	20	0.278	37.3	50
PM <sub>10</sub> (Ann)	20	0.084	20.1	40
PM <sub>2.5</sub> (Ann)	12	0.084	12.1	25
CO (8-hr)	400	24.9	425	10000
Benzene (Ann)	0.7	0.084	0.78	5
HCl (1-hr)	0.01	5.39	5.41	100
HF (1-hr)	0.005	0.36	0.370	3
Hg (Ann)	0.001	0.00044	0.0014	1
Cd (Ann)	0.001	0.00043	0.0014	0.005
As (Ann)	0.001	0.00054	0.0015	0.006

Note 1 Value given as NO<sub>x</sub>.

Note 2 60 hours of abnormal operations based on five hours at the start of every month.



Indaver Ireland Ltd.

# Carranstown Waste To Energy Facility Habitats Directive Screening Statement

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April 2012



## REPORT CONTROL

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FIGURES

- Figure 1 Site Location Map
- Figure 2 Site layout Map

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APPENDICES

- Appendix A Recent Aerial Photographs of site
- Appendix B NPWS Site Synopsis
- Appendix C NPWS Conservation Objectives





## 1.0 INTRODUCTION

In December 2011, Indaver Ireland Ltd. (Indaver) commissioned WYG Environmental and Planning (Ireland) Ltd (WYG) to prepare an Article 6 Habitats Directive Screening Statement to assess the potential impacts of proposed amendments to the Carranstown Waste to Energy facility at Duleek Co Meath. This assessment was undertaken as part of a proposed planning and licensing application for amendments to their existing facility at Carranstown Co Meath,

Habitats Directive Screening is required when a project is located within or in close proximity to a Natura 2000 site (*i.e.* Special Area of Conservation (SAC) and Special Protection Area (SPA)) to assess if and when there is potential for negative impacts on these conservation sites. The existing 200,000 tonne per annum waste to energy facility was constructed between 2009 and 2011. Though no protected sites are located adjacent to the site (or within 3km), a number of sites are located within the wider area (<10km). These include three SAC and SPA sites including;

- The River Boyne and Blackwater SAC/SPA
- The Boyne Estuary SPA
- The River Nanny Estuary and Shore SPA

Detail of the conservation objectives for each of the sites are presented in Section 3 of the report. Sensitive Annex I habitats and Annex II species are present.

### 1.1 Description of the Proposed Development

The application for the proposed development primarily seeks to increase the quantity of material accepted and processed at the facility from 200,000 TPA to 220,000 TPA and accept a number of suitable hazardous waste types. A number of other amendments to operational items are also proposed to include adjustments to waste acceptance hours. Other than a very slight increase in the amount of water abstracted for the process (<300m<sup>3</sup>/day) these amendments do not entail any significant changes to the existing emissions from the facility as already permitted under the existing planning permission (Ref) and EPA licence. In terms of construction works only very minor amounts of construction are required; two existing temporary structures are to be made permanent. These are a Centralised Maintenance Facility and a Modular Office Block. The only construction works required for these aspects is the installation of a constructed roadway to the office block and a new waste water treatment plant and percolation area. A site location and layout map are presented in Figures 1 & 2. Recent aerial photographs of the site are presented in Appendix A.



## 2.0 INFORMATION ON HABITAT DIRECTIVE ASSESSMENT

### 2.1 Legislation

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the ‘Habitats Directive’ - provides legal protection for habitats and species of European importance. The Directive requires the maintenance or restoration of habitats and species of European Community interest, at a favourable conservation status and provides the legislation to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as *Natura 2000*. Natura 2000 sites are Special Areas of Conservation (SAC) designated under the Habitats Directive and Special Protection Areas (SPA) designated under the Conservation of Wild Birds Directive (79/409/EEC).

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans or projects affecting Natura 2000 sites.

Article 6(3) establishes the requirement for Appropriate Assessment:

*Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*

Article 6(4) of the Directive deals with alternative solutions, the test of “imperative reasons of overriding public interest” (IROPI) and compensatory measures:

*If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*



## 2.2 Habitats Directive Screening Methodology

A Habitats Directive Assessment is an assessment of the potential impacts of a proposed project or plan on the conservation objectives of any Natura 2000 site and where necessary an assessment of the development mitigation and/or avoidance measures to preclude negative effects. The impacts assessed must include the direct, indirect and cumulative impacts of approving the plan or project, considered with any current or proposed activities, developments or policies impacting on the site. The potential impacts of policies outside the Natura 2000 sites, but potentially impacting upon them, must also be included in the assessment.

This Habitats Directive Screening Report has been prepared in accordance with the *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (DoEHLG 2009) and the EU issued guidelines - "Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC" (EC, 2002).

### Stage 1 – Screening

The Screening Process will identify the likely impacts upon the Natura 2000 site by a plan or project, either alone or in combination with other plans and projects and considers whether these impacts are likely to be significant.

Ultimately, this process determines whether or not an Appropriate Assessment is required *i.e.* whether the proposed development is likely to negatively affect the conservation objectives of the identified SAC/SPA

As outlined in the EU guidelines, in Stage 1 Screening the impact of the development without appropriate mitigation measures is considered in view of the Precautionary Principle *i.e.* the proposed development and potential impacts are assessed in Stage 1 screening without considering the effects of mitigation measures.

Subject to the outcome of the Screening Assessment, the further assessments that may be required include;

### Stage 2 - Appropriate Assessment

### Stage 3 - Assessment of Alternative Solutions

### Stage 4 – Assessment where Adverse Impacts Remain

## 3.0 STAGE ONE: SCREENING

### 3.1 Introduction

This stage of the screening process identifies the likely impacts upon a Natura 2000 site of a project or plan either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.

### 3.2 Site Identification and Selection Criteria

Three SAC and SPA sites are located within 10km of the site. Other conservation sites in the vicinity of the proposed development are detailed in Table 1 below.

**Table.1. Designated sites within approximately 5 km of the study area.**

Site	Designation	Site Code	Description	Approx. distance to study area
01578	Duleek Commons	pNHA	Calcareous marsh and fen system	2 km
01593	Thomastown Bog	pNHA	Raised bog surrounded by wet woodland and wet grassland	5 km
01862	Boyne River Islands	pNHA	Alluvial wet woodland	5 km
01861	Dowth Wetland	pNHA	Floodplain marsh with an associated area of deciduous woodland	4 km
002299	River Boyne & River Blackwater	SAC/SPA	Fresh water river with alkaline fen and alluvial woodlands	3km
000554	Laytown Dunes and Nanny Estuary	pNHA	Estuarine and Shoreline habitat	7km
004158	River Nanny Estuary and Shore	SPA	Estuarine and Shoreline habitat	8km
001957	Boyne Coast and Estuary	pNHA, SPA and SAC	Estuarine and Shoreline habitat	8km
001576	Cromwells Bush Fen	pNHA	Wetland/Fen System	7km
001579	Balrath Woods	pNHA	Native Woodlands	8km

Though it is unlikely given the nature of the development and its emissions and the distances between the facility and the protected sites, the River Boyne and River Blackwater SAC, River Boyne Estuary SPA and the River Nanny Estuary SPA could potentially be affected by the proposed development. Site synopses for





each of these sites is presented in Appendix B. A copy of the conservation management plans for the sites are presented in Appendix C.

### 3.3 Annex I Habitats

The River Boyne and River Blackwater SAC are designated for two Annex I habitats. The River Boyne and River Nanny Estuaries also bear protected wetland habitats. None of these habitat types are adjacent to the site and the groundwater and surfacewater regime is unaffected by the proposed development. The habitat types are presented in Table 1 below.

**Table 1:** Potential for qualifying habitat to be located adjacent to project site - based on desktop study

Habitat Name	Present in Grid O07 (or neighbouring grids within 10km)*	Present in section of protected site nearest proposed development
Alkaline Fens	Yes	Possibly – however nearest point of SAC site is a minimum of 4km from proposed development
<i>Alluvial Forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padio, Alnion incanae, Salicion albae)</i>	Yes	Possibly – however nearest point of SAC site is a minimum of 4km from proposed development
<i>Wetland</i>	Yes	No

\*Based on NPWS Habitats Directive habitat distribution maps (NPWS 2007)

### 3.4 Annex II Protected Faunal Species

The River Boyne and River Blackwater has been designated an SAC to protect a number of Annex II species (fish and mammal), which are listed in Table 2 below. No specific ‘in-stream’ surveys were carried out to determine if the species are present in the river adjacent to the project site. This table presents an assessment of the **potential** for the section of the River Boyne nearest to the project site to support the species.



**Table 2:** Potential for qualifying species to be located locally to project site - based on desktop study and site walkover survey

Species Name	Present in Grid O07 (or neighbouring grids within 10km)*	Is there potential that these species are present in the stretch of the River Boyne nearest to/downstream of the site
River lamprey <i>Lampetra fluviatilis</i>	Yes	Yes – though there is no direct connection to the River system and overland runoff distances (4km) are so large that any emissions or abstractions at the proposed development are unlikely to result in impact on the SAC
Atlantic Salmon <i>Salmo salar</i>	Yes	Yes - though there is no direct connection to the River and overland runoff distances (4km) are so large that any emissions or abstractions at the proposed development are unlikely to result in impact on the SAC
Otter <i>Lutra lutra</i>	Yes	Yes - though there is no direct connection to the River and overland runoff distances (4km) are so large that any emissions or abstractions at the proposed development are unlikely to result in impact on the SAC

\*Based on NPWS Habitats Directive species distribution maps (NPWS 2007)

### 3.5 Assessment of Bird Species of River Boyne and River Blackwater and River Boyne and River Nanny Estuaries

The River Boyne and River Blackwater, River Boyne Estuary and River Nanny Estuary and Shore sites have been designated SPA for a number of Annex I bird species (Birds Directive) which are:

#### **River Boyne and River Blackwater SPA**

- Whooper Swan *Cygnus Cygnus*

#### **River Boyne Estuary SPA**

- Golden Plover *Pluvialis apricaria*
- Bar Tailed Godwit *Limosa Lapponica*
- Little Tern *Sterna Albifrons*



**River nanny Estuary and Shore SPA**

- Golden Plover *Pluvialis apricaria*
- Bar Tailed Godwit *Limosa Lapponica*

**3.6 Summary**

In summary, though there are a number of protected sites for habitats, fauna and birds in the wider region around the site, none of these are adjacent or in close proximity to the proposed development site. The proposed development will not impact on the natural water regime. Air modelling conducted as part of the EIS for the development of the facility in 2006 and 2009 indicated no likely impacts on species or habitats at protected sites.

In terms of birds it is possible that bird species moving within their normal habitat or commuting during times of migration may pass through the site. The proposed development will not impact on these short term movements.

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## 4.0 CONSULTATION

On 18<sup>th</sup> November 2011, WYG discussed the proposed amendments to the development with Maurice Eakin (Regional Officer) with the National Parks and Wildlife Service (NPWS) via telephone. He indicated that given the nature of the proposed amendments to the development it was unlikely that an Appropriate Assessment would be required for the proposed development though ultimately this would be a matter for the relevant planning authority.

Previous consultation with the DOEHLG in 2006, considered the area to be largely intensive agricultural land use and that the existing Indaver facility would have no ecological issues. The ERFB highlighted the populations of brown trout in the Nanny. The Environmental Officer stated that it was imperative that preventative measures were taken to ensure non negative impact to water courses. A comprehensive series of measures have been incorporated into the design of the facility to ensure no impact on local water courses and the Nanny from the construction or operation of the facility.

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## 5.0 SCREENING

The assessment criteria below is based on the template outlined in the EU methodology and its purpose is to identify elements of the project likely to impact on the Natura 2000 sites and determine the significance of any of the identified impacts on the Natura 2000 site.

**Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.**

As outlined in the Tables above, though there are a number of protected sites for habitats, fauna and birds in the wider region around the site, none of these are adjacent or in close proximity to the proposed development site.

Based on the points above, the potential construction and operational phase impacts outlined below only consider the potential influence of site activities on the down-stream ecological receptors on the various River Boyne, Blackwater and Nanny protected sites.

**Construction Phase**

The proposed amendments entail very minimal amounts of construction within the existing site areas which have already been significantly disturbed.

**Fuel, Chemical or other deleterious material spill/run-off**

A release of fuel, chemical or contaminated waters during construction could impact negatively on the surrounding drainage network and subsequently fish, birds and mammals using the rivers downstream. As outlined above, best construction practice will be followed, so even without mitigation there will be minimum potential for deleterious material entering the river. However the facility as constructed has been designed with a surface water management system to collect and only discharge surface water runoff suitable for discharge. An inline monitoring system is already in place and working effectively to monitor any excess emissions from the facility. Therefore, it is considered highly unlikely that any contaminants could be released from the facility to the drainage network therefore there will be no significant impact on the Natura 2000 sites.

**Operational Phase**

All waste activities associated with the proposed development take place indoors. The majority of the municipal waste accepted at the facility is in solid form, therefore no leachate or liquid discharge will be anticipated. Any liquid wastes accepted are stored in designated areas with full containment. It is considered



that there will be no significant impact on the Natura 2000 sites during operation of the facility.

**Other Plans and Projects**

The Eastern River Basin District Management Plan provides the basis for implementation of the aims of the Water Framework Directive by 2015. The facility is located in the Nanny catchment area. The plan for the Nanny Area details its current condition, the objectives set for the catchment, any protected areas (important areas containing rare or vulnerable wildlife or habitats), the problems identified in those catchments and a proposed Programme of Measures to resolve those problems. The core objective of each of the management plans is to seek improvement of the water quality and maintaining it. The main pressures on the Nanny catchment include agricultural, industrial and waste water discharges from septic tanks etc. These pressures are exacerbated by the poor soil types in the Nanny area. High nutrient concentrations, low ecological ratings and poor oxygenation conditions are occurring.

The proposed facility will not entail any waste water discharges to the local river system. The surface water to be discharged from the facility will be clean run off only which will have been stored and monitored and confirmed fit for discharge prior to release.

**Cumulative elements**

The proposed development is located in close proximity to the Irish Cement facility and Quarry at Platin, Duleek, Co Meath. Platin Quarry currently abstracts a significant quantum of water from the underlying aquifer (for dewatering purposes) and discharges it to the River Nanny. The abstraction is from the Platin formation of limestones; an aquifer body identified as at Risk under the most recent ERBD report. The proposed Indaver development entails a very minor increase in the abstraction of water from the underlying aquifer to supply the main process, however ultimately the amount of water abstracted from the aquifer will be neutral i.e. Indaver will use a quantum of water in the process that Platin would otherwise need to be dewatered. Therefore, it is considered that there will be no cumulative impact from the proposed development on the aquifer and indirectly to the River Boyne and River Blackwater SAC, River Boyne Estuary SPA and River Nanny Estuary SPA.

**Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of following headings**

Size and scale

The project consists of relatively minor additions to an existing waste management facility. The facility is located in an industrial area surrounded by agricultural land uses with no direct contact with a Natura 2000 site. The works are located well away from the SAC and SPA site boundaries.



Land-take

The project will not require any land associated with the Natura 2000 sites.

Distance

The project site is located a minimum of 4km from the nearest point of a Natura 2000 site.

Resource Requirements

There will be no resource requirements from the Natura 2000 sites for the project.

Emissions

Other than clean surface water run off to local drainage which feeds the Nanny, there are no emissions from the site to the Natura 2000 sites.

Excavation requirements

There will be no excavation requirements from the Natura 2000 sites for the project.

Transportation requirements

The transportation of waste to/from the facility will be via the existing road network. The vehicles do not pass through any of the identified Natura 2000 sites. The relevant measures and procedures in place for vehicles to ensure no spillage or other losses during transportation.

**Describe any likely impacts on the Natura 2000 site as a whole in terms of: Interference with the key relationships that define the structure of the site; Interference with key relationships that define the function of the site**

Based on the information outlined above, it is considered that there will be no significant impact on the Annex I habitats or Annex II species of the Habitats Directive and no significant impact on the Annex I bird species of the Birds Directive for which the local Natura 2000 sites are designated. Therefore, there will be no interference with the key relationships that define the structure or function of the site.

**Provide indicators of significance as a result of the identification of effects set out above in terms of the following headings:**

Habitat Loss

There will be no habitat loss in the Natura 2000 sites from the proposed development.

Fragmentation

There will be no fragmentation in the Natura 2000 sites from the proposed development.



Disruption and Disturbance

There will be minimal disturbance during the construction phase, which is considered not to be of a significant scale.

Change to key elements of the site

There are no anticipated changes in the key elements of the sites by the proposed new development.

**Describe from the above those elements of the project or plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts are not known**

No elements of the project have been identified to have a significant impact on the integrity of the River Boyne and River Blackwater SAC and River Nanny and River Boyne Estuaries SAC/SPA Natura 2000 sites. Therefore, it is considered that a full Habitats Directive Appropriate Assessment Report is not required.

## 6.0 CONCLUSION

Based on the Habitats Directive Screening assessment it is anticipated that there will not be a significant impact on the integrity of River Boyne and River Blackwater SAC and River Boyne Estuary SPA and River Nanny Estuary SPA Natura 2000 site from the proposed development. Therefore it is considered that a full Habitats Directive Appropriate Assessment Report is not required.

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## 7.0 REFERENCES

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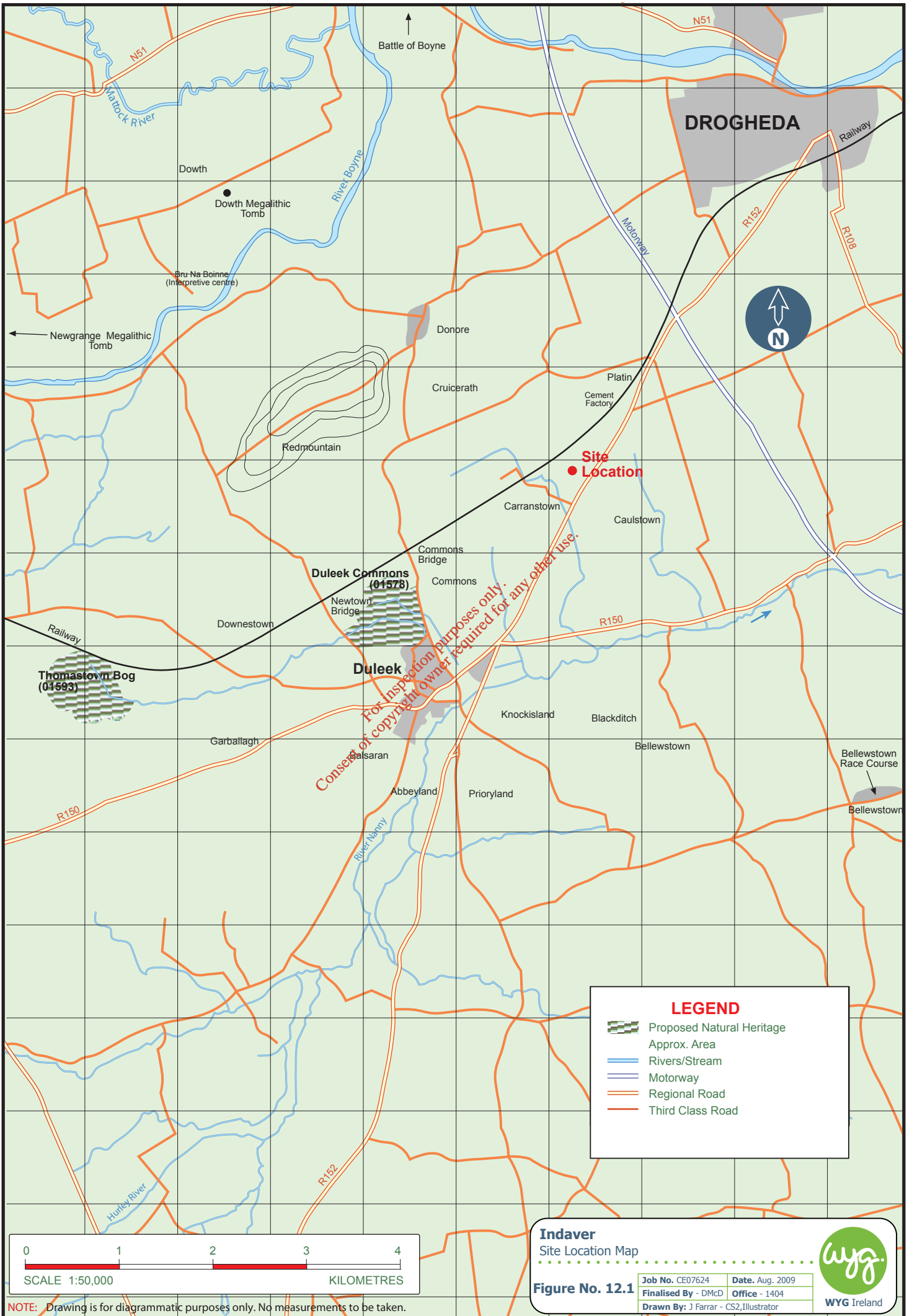
National Parks and Wildlife, the Heritage Service. Heritage Data Website ([www.npws.ie](http://www.npws.ie))

National Biodiversity Data Centre. NBDC Website ([www.biodiversityireland.ie](http://www.biodiversityireland.ie))

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## FIGURES

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**LEGEND**

- Proposed Natural Heritage Approx. Area
- Rivers/Stream
- Motorway
- Regional Road
- Third Class Road



NOTE: Drawing is for diagrammatic purposes only. No measurements to be taken.

**Indaver**  
Site Location Map

**Figure No. 12.1**

Job No. CE07624	Date. Aug. 2009
Finalised By - DMCD	Office - 1404
Drawn By: J Farrar - CS2, Illustrator	

WYG Ireland



**DRAINAGE LEGEND :**

- ES SLO EXISTING SURFACE WATER SEWER/WASTEWATER
- PC PROPOSED DRAINAGE CHANNEL
- EX RD EXISTING ROAD DULLY
- EX M EXISTING MAIN
- EX SW EXISTING SPONGE WATER LETTER AND CHAMBER
- EX VV EXISTING VALVE AND CHAMBER
- SB SITE BOUNDARY

**DRAWING LEGEND :**

- EXISTING BUILDINGS
- EXISTING HARDSTANDING AREAS
- HARDBOARD AREAS
- NEW BUILDINGS AREAS
- NEW PAVED ACCESS ROAD AREAS



PROPOSED SITE PLAN SCALE 1:500

**NOTES**

1. FOR STANDARD NOTES REFER TO DRAWING NO. CD/01.
2. RELEVANT ARCHITECTURAL, SERVICES & M.E.P. DRAWINGS.
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED. LEVELS ARE STRUCTURAL UNLESS OTHERWISE SPECIFIED. DIMENSIONS SHOWN MAY BE CHANGED.

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**INDAVYR**

BASED ON AS BUILT DRAWING  
 RECEIVED FROM JOHN SISK AND  
 SON ON THE 13/12/2011

REV.	DESCRIPTION	BY	DATE	CHKD	DATE
A	ISSUED FOR COMMENT	GM	16.12.11	GM	16.12.11
B	ISSUED FOR COMMENT	GM	21.12.11	GM	21.12.11

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**INDAVYR**

PROJECT: WASTE MANAGEMENT FACILITY  
 CARRANSTOWN CO. WEXH. IRELAND

TITLE: PROPOSED SITE PLAN

DESIGNED	CHKD	DATE
GM	GM	16.12.11
DRAWN	CHKD	DATE
GM	GM	16.12.11
CHECKED	DATE	
GM		
SCALE	SCALE	SCALE
1:500 @ A2	1:500 @ A2	1:500 @ A2
DATE	DATE	DATE
OCT 2011	OCT 2011	OCT 2011
PROJECT NO.	PROJECT NO.	PROJECT NO.
210981 CD/003	210981 CD/003	210981 CD/003
SHEET	SHEET	SHEET
8	8	8



# Appendix A

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## Appendix B

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## SITE SYNOPSIS

**SITE NAME: RIVER BOYNE AND RIVER BLACKWATER**

**SITE CODE: 002299**

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath and smaller areas of Cavan and Louth. The underlying geology is Carboniferous Limestone for the most part with areas of Upper, Lower and Middle well represented. In the vicinity of Kells Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. There are many large towns adjacent to but not within the site. Towns both small and large, include Slane, Navan, Kells, Trim, Athboy and Ballivor.

The site is a candidate SAC selected for alkaline fen and alluvial woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive – Atlantic Salmon, Otter and River Lamprey.

The main areas of alkaline fen are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. The humpokey nature of the local terrain produces frequent springs and seepages which are rich in lime. A series of base-rich marshes have developed in the poorly drained hollows, generally linked with these three lakes. Open water is usually fringed by Bulrush (*Typha latifolia*), Common Club-rush (*Scirpus lacustris*) or Common Reed (*Phragmites australis*) and this last species also extends shorewards where a dense stand of Great Fen Sedge or Saw Sedge (*Cladium mariscus*) frequently occurs. This in turn grades into a sedge and grass community (*Carex* spp., *Molinia caerulea*) or one dominated by the Black Bog-rush (*Schoenus nigricans*). An alternative direction for the aquatic/terrestrial transition to take is through a floating layer of vegetation. This is normally based on Bogbean (*Menyanthes trifoliata*) and Marsh cinquefoil (*Potentilla palustris*). Other species gradually become established on this cover, especially plants tolerant of low nutrient status e.g. bog mosses (*Sphagnum* spp.). Diversity of plant and animal life is high in the fen and the flora, includes many rarities. The plants of interest include Narrow-leaved Marsh Orchid (*Dactylorhiza traunsteineri*), Fen Bedstraw (*Galium uliginosum*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Least Bur-reed (*Sparganium minimum*). These species tend to be restricted in their distribution in Ireland. Also notable is the abundance of aquatic Stoneworts (*Chara* spp.) which are characteristic of calcareous wetlands.

The rare plant, Round-leaved Wintergreen (*Pyrola rotundifolia*) occurs around Newtown Lough. This species is listed in the Red Data Book and is protected under the Flora Protection Order, 1999, and this site is its only occurrence in Co. Meath.

Wet woodland fringes many stretches of the Boyne. The Boyne River Islands are a small chain of three islands situated 2.5 km west of Drogheda. The islands were formed by the build up of alluvial sediment in this part of the river where water movement is sluggish. All of the islands are covered by dense thickets of wet, Willow (*Salix* spp.) woodland, with the following species occurring: Osier (*S. viminalis*), Crack Willow (*S. fragilis*), White Willow (*S. alba*), Purple Willow (*Salix purpurea*) and Grey Willow (*S. cinerea*). A small area of Alder (*Alnus glutinosa*) woodland is found on soft ground at the edge of the canal in the north-western section of the islands. Along other stretches of the rivers of the site Grey Willow scrub and pockets of wet woodland dominated by Alder have become established, particularly at the river edge of mature deciduous woodland. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

The dominant habitat along the edges of the river is freshwater marsh - the following plant species occur commonly here: Yellow Flag (*Iris pseudacorus*), Creeping Bent (*Agrostis stolonifera*), Canary Reed-grass (*Phalaris arundinacea*), Marsh Bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*). In the wetter areas of the marsh Common Meadow-rue (*Thalictrum flavum*) is found. In the vicinity of Dowth, Fen Bedstraw (*Galium uliginosum*), a scarce species mainly confined to marshy areas in the midlands, is common in this vegetation. Swamp Meadow-grass (*Poa palustris*) is an introduced plant which has spread into the wild (naturalised) along the Boyne approximately 5 km south-west of Slane. It is a rare species which is listed in the Red Data Book and has been recorded among freshwater marsh vegetation on the banks of the Boyne in this site. The only other record for this species in the Republic is from a site in Co. Monaghan.

The secondary habitat associated with the marsh is wet grassland and species such as Tall Fescue (*Festuca arundinacea*), Silverweed (*Potentilla anserina*), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*) and Meadow Vetchling (*Lathyrus pratensis*) are well represented. Strawberry Clover (*Trifolium fragiferum*), a plant generally restricted to coastal locations in Ireland, has been recorded from wet grassland vegetation at Trim. At Rossnaree river bank on the River Boyne, is Round-Fruited Rush (*Juncus compressus*) found in alluvial pasture, which is generally periodically flooded during the winter months. This rare plant is only found in three counties in Ireland.

Along much of the Boyne and along tributary stretches are areas of mature deciduous woodland on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these are planted in origin. However the steeper areas of King Williams Glen and Townley Hall wood have been left unmanaged and now have a more natural character. East of Curley Hole the woodland has a natural appearance with few conifers. Broad-leaved species include Oak (*Quercus* spp.), Ash (*Fraxinus excelsior*), Willows, Hazel (*Corylus avellana*), Sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*), Horse chestnut (*Aesculus* sp.) and the shrubs Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Elder (*Sambucus nigra*). South-west of Slane and in Dowth, the addition of some more exotic tree species such

as Wych Elm (*Ulmus glabra*), Beech (*Fagus sylvatica*), and occasionally Lime (*Tilia cordata*), are seen. Coniferous trees, Larch (*Larix* sp.) and Scots Pine (*Pinus sylvestris*) also occur. The woodland ground flora includes Barren Strawberry (*Potentilla sterilis*), Enchanter's Nightshade (*Circaea lutetiana*) and Ground-ivy (*Glechoma hederacea*), along with a range of ferns. Variation occurs in the composition of the canopy, for example, in wet patches alongside the river, White Willow and Alder form the canopy.

Other habitats present along the Boyne and Blackwater include lowland dry grassland, improved grassland, reedswamp, weedy wasteground areas, scrub, hedge, drainage ditches and canal. In the vicinity of Lough Shesk, the dry slopes of the morainic hummocks support grassland vegetation which, in some places, is partially colonised by Gorse (*Ulex europaeus*) scrub. Those grasslands which remain unimproved for pasture are species-rich with Common Knapweed (*Centaurea nigra*), Creeping Thistle (*Cirsium arvense*) and Ribwort Plantain (*Plantago lanceolata*) commonly present. Fringing the canal alongside the Boyne south-west of Slane, are Reed Sweet-grass (*Glyceria maxima*), Great Willowherb (*Epilobium hirsutum*) and Meadowsweet.

The Boyne and its tributaries is one of Ireland's premier game fisheries and it offers a wide range of angling from fishing for spring salmon and grilse to seatrout fishing and extensive brown trout fishing. Atlantic Salmon (*Salmo salar*) use the tributaries and headwaters as spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. Atlantic Salmon run the Boyne almost every month of the year. The Boyne is most important as it represents an eastern river which holds large three-sea-winter fish from 20 –30 lb. These fish generally arrive in February with smaller spring fish (10 lb) arriving in April/May. The grilse come in July, water permitting. The river gets a further run of fish in late August and this run would appear to last well after the fishing season. The salmon fishing season lasts from 1<sup>st</sup> March to 30<sup>th</sup> September.

The Blackwater is a medium sized limestone river which is still recovering from the effects of the arterial drainage scheme of the 70's. Salmon stocks have not recovered to the numbers pre drainage. The Deel, Riverstown, Stoneyford and Tremblestown Rivers are all spring fed with a continuous high volume of water. They are difficult to fish in that some are overgrown while others have been affected by drainage with the resulting high banks.

The site is also important for the populations of two other species listed on Annex II of the E.U. Habitats Directive, namely River Lamprey (*Lampetra fluviatilis*) which is present in the lower reaches of the Boyne River while the Otter (*Lutra lutra*) can be found throughout the site. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. Common Frog, another Red Data Book species, also occurs within the site. All of these animals with the addition of the Stoat and Red Squirrel, which also occur within the site, are protected under the Wildlife Act.



Whooper Swans winter regularly at several locations along the Boyne and Blackwater Rivers. Parts of these areas are within the cSAC site. Known sites are at Newgrange (c. 20 in recent winters), near Slane (20+ in recent winters), Wilkinstown (several records of 100+) and River Blackwater from Kells to Navan (104 at Kells in winter 1996/97, 182 at Headfort in winter 1997/98, 200-300 in winter 1999/00). The available information indicates that there is a regular wintering population of Whooper Swans based along the Boyne and Blackwater River valleys. The birds use a range of feeding sites but roosting sites are not well known. The population is substantial, certainly of national, and at times international, importance. Numbers are probably in the low hundreds.

Intensive agriculture is the main landuse along the site. Much of the grassland is in very large fields and is improved. Silage harvesting is carried out. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the lakes. In the more extensive agricultural areas sheep grazing is carried out.

Fishing is a main tourist attraction on the Boyne and Blackwater and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The Eastern Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Parts of the river system have been arterially dredged. In 1969 an arterial dredging scheme commenced and disrupted angling for 18 years. The dredging altered the character of the river completely and resulted in many cases in leaving very high banks. The main channel from Drogheda upstream to Navan was left untouched, as were a few stretches on the Blackwater. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area. Drainage of the adjacent river systems also impacts on the many small wetland areas throughout the site. The River Boyne is a designated Salmonid Water under the EU Freshwater Fish Directive.

The site supports populations of several species listed on Annex II of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as examples of other important habitats. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site as does the presence of a range of Red Data Book plant and animal species and the presence of nationally rare plant species.

6.10.2006

## SITE SYNOPSIS

**SITE NAME: BOYNE ESTUARY SPA**

**SITE CODE: 004080**

This moderately sized coastal site, which is situated below the town of Drogheda, comprises most of the estuary of the Boyne River, a substantial river which drains a large catchment. Apart from one section which is over 1 km wide, its width is mostly less than 500 m. The river channel, which is navigable and dredged, is defined by training walls, these being breached in places. Intertidal flats occur along the sides of the channelled river. The sediments vary from fine muds in the sheltered areas to sandy muds or sands towards the river mouth. The linear stretches of intertidal flats to the north and south of the river mouth are mainly composed of sand. One or more species of Eelgrass (*Zostera* spp.) occur in the estuary. Parts of the intertidal areas are fringed by salt marshes, most of which are of the Atlantic type, and dominated by Sea-purslane (*Halimione portulacoides*). Other species present include Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Lax-flowered Sea-lavender (*Limonium humile*) and Glasswort (*Salicornia* spp.). Common Cord-grass (*Spartina anglica*) occurs frequently on the flats and salt marshes.

The Boyne Estuary is the second most important estuary for wintering birds on the Louth-Meath coastline. It has a total of ten species with populations of national importance, i.e. Shelduck (218), Oystercatcher (1,099), Golden Plover (6,070), Grey Plover (98), Lapwing (4,657), Knot (1,771), Sanderling (69), Black-tailed Godwit (471), Redshank (583) and Turnstone (175) - all figures are average peaks for the 5 year period 1995/96-1999/00. Of particular note is that the site supports 7% of the national population of Knot and 4% of the total for Golden Plover. Other species which occur include Bar-tailed Godwit (76), Cormorant (97), Brent Goose (172), Wigeon (454), Teal (230), Dunlin (480), Curlew (395), Mallard (197), Red-breasted Merganser (14), Greenshank (6), Ringed Plover (80) and Mute Swan (13). The site provides both feeding and high-tide roost areas for the birds. The estuary also attracts large numbers of gulls in winter, including Black-headed Gull (593), Common Gull (145), Herring Gull (403) and Great Black-backed Gull (160).

Little Tern bred in the past but successful breeding has not occurred since 1996. In 1998 and 1999 part of the shingle bank where the birds nested was washed away by storms. Also, human pressure in the beach areas has increased in recent years.

In general, the site has been modified by human activities. The river is regularly dredged to accommodate cargo ships, which can cause disturbance to the bird, fish and invertebrate communities in the estuary. Several factories operate upstream from the estuary and pollution and disturbance associated with these has had an impact on the ecology of the area. Significant developments within the site could cause disturbance to the wintering birds. Nowadays there are no significant shooting pressures as the site is a Wildfowl Sanctuary

The site is of considerable ornithological importance for wintering waterfowl, with ten species having populations of national importance. Little Tern has bred in the recent past and could do so again in the future. Of particular significance is that two of the wintering species, Golden Plover and Bar-tailed Godwit are listed on Annex I of the E.U. Birds Directive. Little Tern, which last bred successfully at the site in 1996, is also listed on Annex I of this directive.

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31.3.2005

## SITE SYNOPSIS

**SITE NAME: RIVER NANNY ESTUARY AND SHORE SPA**

**SITE CODE: 004158**

The site comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary (c. 3 km in length). The estuarine channel, which extends inland for almost 2 km, is narrow and well sheltered. Sediments are muddy in character and edged by saltmarsh and freshwater marsh/wet grassland. The saltmarsh is best developed in the eastern portion of the estuarine channel, with species such as Sea Plantain (*Plantago maritima*), Sea Aster (*Aster tripolium*), Red Fescue (*Festuca rubra*) and Sea Purslane (*Halimione portulacoides*) occurring. Further up the estuary, the marsh habitats support species such as Bulrush (*Typha latifolia*) and Yellow Flag (*Iris pseudacorus*). The shoreline, which is approximately 500 m in width to the low tide mark, comprises beach and intertidal habitats. It is a well-exposed shore, with coarse sand sediments. The well-developed beaches, which are backed in places by clay cliffs, provide high tide roosts for the birds. The village of Laytown occurs in the northern side of the River Nanny estuary.

This site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Oystercatcher, Ringed Plover, Golden Plover, Knot, Sanderling, Black-headed Gull and Herring Gull. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

This is an important site for wintering waders, with nationally important populations of Golden Plover (1,759), Oystercatcher (1,014), Ringed Plover (185), Knot (1,140) and Sanderling (240) present (all figures are average peaks for the 5 year period 1995/96-1999/2000). The populations of Knot and Sanderling are of particular note as they represent approximately 4% of their respective national totals. Black-headed Gull (926) and Herring Gull (609) also occur here in significant numbers. A range of other waterbirds also occurs, including Cormorant (35), Brent Goose (145), Mallard (76), Grey Plover (55), Lapwing (1,087), Dunlin (721), Bar-tailed Godwit (59), Curlew (107), Redshank (150), Turnstone (59), Common Gull (66) and Great Black-backed Gull (70). The site is of most importance as a roost area for the birds but the intertidal flats also provide feeding habitat. Many of the birds also utilise the intertidal areas and beaches further to the north and south, and also the fields above the shore.

The main threat to the wintering birds is increased levels of disturbance by beach users.

This site is of ornithological importance as it supports five species of wintering waterbirds in numbers of national significance. Two species using the site, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive.

1.6.2007

# Appendix C

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## Conservation Objectives for River Boyne and River Blackwater SAC [002299]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

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

- ◆ [1099] *Lampetra fluviatilis*
- ◆ [1106] *Salmo salar* (only in fresh water)
- ◆ [1355] *Lutra lutra*
- ◆ [7230] Alkaline fens
- ◆ [91E0] \* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*)

### Citation:

NPWS (2011) Conservation objectives for River Boyne and River Blackwater SAC [002299]. Generic Version 3.0.  
Department of Arts, Heritage & the Gaeltacht.

For more information please go to: [www.npws.ie/protectedsites/conservationmanagementplanning](http://www.npws.ie/protectedsites/conservationmanagementplanning)



## Conservation Objectives for Boyne Estuary SPA [004080]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

◆ <i>Tadorna tadorna</i>	[wintering]
◆ <i>Haematopus ostralegus</i>	[wintering]
◆ <i>Pluvialis apricaria</i>	[wintering]
◆ <i>Pluvialis squatarola</i>	[wintering]
◆ <i>Vanellus vanellus</i>	[wintering]
◆ <i>Calidris canutus</i>	[wintering]
◆ <i>Calidris alba</i>	[wintering]
◆ <i>Limosa limosa</i>	[wintering]
◆ <i>Tringa totanus</i>	[wintering]
◆ <i>Arenaria interpres</i>	[wintering]
◆ <i>Sterna albifrons</i>	[breeding ]
◆ Wetlands	[]

### Citation:

NPWS (2011) Conservation objectives for Boyne Estuary SPA [004080]. Generic Version 4.0. Department of Arts, Heritage & the Gaeltacht.

For more information please go to: [www.npws.ie/protectedsites/conservationmanagementplanning](http://www.npws.ie/protectedsites/conservationmanagementplanning)



## Conservation Objectives for River Nanny Estuary and Shore SPA [004158]

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Objective: To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:

◆ <i>Haematopus ostralegus</i>	[wintering]
◆ <i>Charadrius hiaticula</i>	[wintering]
◆ <i>Pluvialis apricaria</i>	[wintering]
◆ <i>Calidris canutus</i>	[wintering]
◆ <i>Calidris alba</i>	[wintering]
◆ <i>Larus argentatus</i>	[wintering]
◆ Wetlands	[]

**Citation:**

NPWS (2011) Conservation objectives for River Nanny Estuary and Shore SPA [004158]. Generic Version 4.0.  
Department of Arts, Heritage & the Gaeltacht.

For more information please go to: [www.npws.ie/protectedsites/conservationmanagementplanning](http://www.npws.ie/protectedsites/conservationmanagementplanning)



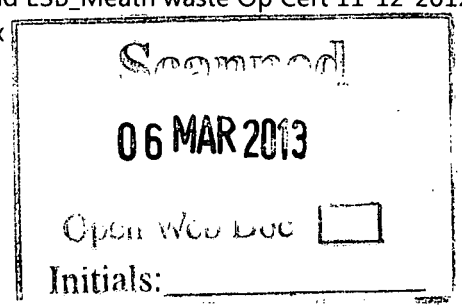
Additional Info.

W0167-03

Ann Kehoe

**Subject:** FW: Clarification requested - Indaver Ireland (Carranstown)  
**Attachments:** IMG\_0637 (Small).jpg; 12\_6463NR01 (Carranstown\_Repeat Attenuator Testing) Issued 7 December 2012.pdf; Eirgrid ESB\_Meath waste Op Cert 11-12-2012.pdf; EP\_115827AM03\_1.pdf; DESOTEC.pptx

**From:** Fiona Marshall [mailto:Fiona.Marshall@indaver.ie]  
**Sent:** 27 February 2013 16:34  
**To:** Aoife Loughnane  
**Subject:** Clarification requested - Indaver Ireland (Carranstown)



Dear Aoife,  
Apologies for the delay in our response, we are waiting on Meath County Council to provide the written response to the surface water discharge rate. I will forward that by separate email as soon as we receive same, in the meantime, the answers to your queries are outlined below:

- 1) Eirgrid Operating Cert – see attached doc “Eirgrid ESB Meath Waste Op Cert” for details.
- 2) Increase from 17MW to 21MW in the MEC –explain in more detail

An application to increase the MEC – Maximum Export Capacity, has been made to ESB Networks to increase from 17MW to 21MW. This does not mean that we will be generating and exporting 21MW when you look at longer term average output figures but it allows more flexibility when exporting to the grid as the MEC is compared to short term production values (30 minute intervals).

An average of the electricity produced over the course of 2012 was 16MW with 17.5 MW peaks in some months. However, if you look at short term values, then you will see higher values and we are constrained by the grid on these shorter term or spot values if they exceed the MEC. The max design output of the turbine is 20.2 MW so 21MW is the upper ceiling of what we could produce with no house load. Hence, the application for an increase in MEC is to ensure a smooth interaction with the grid during short-term peaks in energy output as opposed to any fundamental change in the overall energy output of the plant.

- 3) Carbon Odour Abatement Unit:
  - a. Provide manufacturers information on the emissions it can achieve; specifically Hydrogen Sulfide, Mercaptan & Amines - the manufacturer does not provide emission values as the input can vary so widely. They have provided indicative values based on case studies they have done (please see attached Power Point “DESOTEC” for overview and the values they give for MSW case study)
  - b. Has decision been made to buy or rent? Is it only to cover shutdown periods?  
Indaver has not decided to purchase or rent the unit yet. It would only be required to cover shut-down periods.
- 4) Noise: Confirm second silencer installed, and describe the work that took place during shut-down to fix the noise issue

During the shutdown in Nov 2012 it was agreed to install a silencer in the top of the stack to reduce the noise levels detected at the site boundary  
at the same time it was also agreed to look at the existing silencer at the outlet of the ID fan which was not performing in accordance with the specified design criteria.

In the top of the stack, location supports welded to the internal surface, The new silencer (see attached Photo IMG0637) was then lifted into place by a 250Ton crane and slipped inside the stack tip some 65m in the air.

The existing silencer at the outlet of the ID fan was stripped and the internals replaced with new baffles and a transition piece to create a laminar flow in the silencer.

After the works where completed AWN where taken back into the plant to carry out noise monitoring and the summary is as follows (see report attached – “12\_6463NR01 Carranstown Repeat Attenuator testing)

*“There is a significant improvement in the performance of the [original] silencer after the ID-fan.*

*Based upon a review of the original system calculation sheets, the measured values are close to the minimum values required to achieve the 43dB(A), in each Octave Band (63Hz – 8kHz). T  
There are some slight shortfalls in performance at certain frequencies remaining.*

*The secondary attenuator [installed during the shutdown in Nov 2012] at the top addresses these slight shortfalls.”*

- 5) Air Dispersion – Dioxins, Furans and PAH not included in the Article 12 response model.  
Please see attached Technical Note – EP115827AM03\_1 from AWN Consulting.
- 6) Surface water discharge: Provide written confirmation from Meath Co Co that surface water discharge rate is 59.8 l/s.

Awaiting letter from MCC

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# REPEAT TESTING OF STATIC INSERTION LOSS

## I.D. FAN ATTENUATOR

NOVEMBER 2012

---

Technical Report Prepared For

**Anthony JIGOREL**  
**LAB SA**  
**Project Guarantee Manager**

---

Technical Report Prepared By

**James Mangan** Acoustic Consultant

---

Our Reference

JM/12/6463NR01

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Date Of Issue

7 December 2012

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T Donnelly, T Hayes, D Kelly, E Porter

## EXECUTIVE SUMMARY

AWN Consulting Limited has been commissioned by LAB SA to conduct repeat acoustic tests on an attenuator associated with the I.D. Fan at the Indaver Carranstown Facility, Duleek, Co. Meath.

Various tests have been conducted in order to establish the Static Insertion Loss (SIL, dB) of the attenuator during scheduled shutdowns of the I.D. Fan. Initial testing was conducted on 29/29 August and shortfalls in performance were identified. Repeat testing has been requested following mitigation works that have been conducted in an attempt to increase the performance of the attenuator.

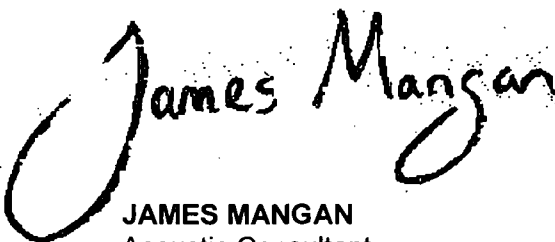
Noise measurements have been conducted under factory test conditions on 29 November. The measurement results have been presented and are discussed in the relevant sections of this report. In summary, the following general observations are made:

- Measured SIL (dB) values have significantly increased when compared to the testing conducted in August 2012;
- Based upon a review of the original system calculation sheets that were furnished to this office for review, the measured SIL (dB) values are close to the minimum values required to achieve the 43dB(A), in each Octave Band (63Hz – 8kHz), as stated within the aforementioned document. There are some slight shortfalls in performance at certain frequencies remaining;
- The secondary attenuator at the top of the stack would be expected to address these slight shortfalls in SIL (dB), however it is recommended that environmental noise measurements be conducted in order to assess noise emissions at noise sensitive locations in the vicinity.

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Report Prepared By:

Report Checked By:

  
JAMES MANGAN  
Acoustic Consultant

  
DAMIAN KELLY  
Principal Acoustic Consultant

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## 1.0 INTRODUCTION

AWN Consulting Limited has been commissioned by LAB SA to conduct repeat acoustic tests on the installed attenuator associated with the I.D. Fan at the Indaver Carranstown Facility, Duleek, Co. Meath.

Several tests have been conducted in order to establish the Static Insertion Loss<sup>1</sup> (SIL, dB) of the attenuator during a scheduled shutdown of the I.D. Fan. Results are presented for both tests conducted prior to and following mitigation works that have been completed in attempt to increase the attenuator performance.

Full details of the test are described in the following sections.

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<sup>1</sup> *Static Insertion Loss* (dB): The Insertion Loss of an attenuator under static (no flow) conditions. This is the data typically provided by product suppliers in their attenuator performance specifications.

*Dynamic Insertion Loss* (dB) is a measure of the acoustic performance of an attenuator when handling the rated flow. This is not necessarily the same as SIL because it includes regenerated noise and / or other velocity effects for which the attenuator and system should have been designed for. To date we have not seen any system calculations that have considered Dynamic Insertion Loss or flow regenerated noise.

## 2.0 SURVEY DETAILS

Details of tests undertaken are contained in the following sections.

### 2.1 Survey Period

Initial noise measurements were conducted on 28 and 29 August 2012 between 14:30 and 17:00hrs.

Post mitigation noise measurements were conducted on 29 November 2012 between 15:30 and 19:30hrs.

### 2.2 Attenuator Details

Following the initial August 2012 testing the I.D. Fan Attenuator has been amended and upgraded internally. In summary it is noted that:

- The overall attenuator cross section and length remains unchanged;
- Internal splitter configuration have been altered;
- Perforated linings have been replaced;
- Mineral fibre infill has been replaced, and;
- Veins have been installed between the fan and the attenuator.

### 2.3 Personnel and Instrumentation

James Mangan (AWN) conducted the sound tests, representatives from LAB SA were present to witness the tests.

The measurements were conducted using a Brüel & Kjær Type 2260D-102 Sound Level Meter. Before and after the survey the measurement apparatus was checked calibrated using a Brüel & Kjær Type 4231 Sound Level Calibrator.

Source noise levels were generated in the 125Hz to 8kHz Octave Bands using a Brüel & Kjær Type 4205 Reference Sound Power Source.

The 63Hz source noise levels were generated using a Brüel & Kjær Building Acoustic Package Type BZ7204-102.

### 2.4 Measurement Procedure

All measurements are made in octave frequency bands averaged over 30 seconds.

The assessment was carried out under factory conditions, the factory was generally unoccupied in order to keep background noise to a minimum. To be considered valid, the measurements taken are generally required to be 6dB above the prevailing background noise level. This was found to be the case during all measurements.

The Brüel & Kjær Type 4205 Reference Sound Power Source was located within the duct at the position of the fan, the sound power source was set to a reference level of 100dB  $L_w$  in each Octave Band from 125Hz to 8kHz.

Sound pressure level measurements were conducted at the inlet and at the outlet of the attenuator in each individual Octave Band (125Hz to 8kHz). Background noise measurements were conducted to ensure there was no interference that may impact upon the accuracy of results.



The Brüel & Kjær Type 4205 sound source has the capability to generate known sound power levels in the Octave Bands 125Hz to 8kHz, in order to establish the attenuator performance in the 63Hz Octave Band, the above procedure was repeated using the Brüel & Kjær Building Acoustic Package Type BZ7204-102.

It is possible to conduct attenuator testing in a laboratory and in full accordance with BS EN ISO 7235:2009 '*Acoustics. Laboratory measurement procedures for ducted silencers and air-terminal units. Insertion loss, flow noise and total pressure loss*'. For obvious reasons this was not considered feasible for this scheduled testing.

However, due consideration has been given to the content of the above document in conducting the testing on site. In addition, consideration has been given to the test standard BS EN ISO 5136:2009 '*Acoustics. Determination of sound power radiated into a duct by fans and other air-moving devices. In-duct method*'.

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### 3.0 RESULTS & DISCUSSION

The Static Insertion Loss values (dB) for the tested attenuator, prior to and following mitigation works, along with the improvements gained, are detailed in Table 1.

Ref	Measured Static Insertion Loss Octave Band Centre Frequency (Hz) dB							
	63	125	250	500	1k	2k	4k	8k
I.D Fan Attenuator Initial Tested August 2012	16.8	28.4	14.9	17.6	15.3	13.7	14.9	18.4
I.D Fan Attenuator Tested November 2012 Following Mitigation Works	14.9	36	29.8	36.3	45.5	40.6	28.3	24.8
Improvements Gained	-	7.6	14.9	18.7	30.2	26.9	13.4	6.4

**Table 1** Measured Static Insertion Loss values (dB)

The minimum required performance for this attenuator has previously been specified (by others) during the detailed design of the system. These system calculations are included in Appendix A for reference. From our review of this documentation we understand that the supplier stated the minimum performance values that were necessary were:

Ref	Minimum Required Static Insertion Loss Octave Band Centre Frequency (Hz) dB							
	63	125	250	500	1k	2k	4k	8k
I.D Fan Attenuator Minimum Requirement from Initial System Calculations	17	25	33	36	31	27	20	11
I.D Fan Attenuator Tested November 2012 Following Mitigation Works	14.9	36	29.8	36.3	45.5	40.6	28.3	24.8
Shortfall vs. Measured Attenuator Performance	2.1	-	3.2	-	-	-	-	-

**Table 2** Detailed Design Specification vs. Measured Static Insertion Loss values (dB)

It can be seen that at 63Hz and 250Hz there is a slight residual shortfall when compared to the minimum performance requirements from the initial system calculations. This is a significant improvement however in comparison to the shortfalls encountered during the attenuator testing prior to the upgrade works.

The secondary attenuator at the top of the stack would be expected to address these slight shortfalls in SIL (dB), however it is recommended that environmental noise measurements be conducted in order to assess noise emissions at noise sensitive locations in the vicinity.

#### 4.0 CONCLUSIONS

AWN Consulting Limited conducted repeat acoustic tests on the Attenuator associated with the I.D. Fan at the Indaver Carranstown Facility. The measurement results have been presented and are discussed in the previous sections.

Significant shortfalls in performance were initially identified and it was considered that the attenuator performance was a significant factor in terms of the noise complaints received from residents.

Following the upgrade works the attenuator performance values have significantly increased. There are some slight shortfalls in performance at certain frequencies remaining, however the secondary attenuator at the top of the stack would be expected to address these slight shortfalls in performance.

It is recommended that environmental noise measurements be conducted in order to reassess noise emissions at noise sensitive locations in the vicinity.

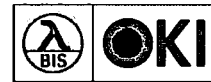
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**APPENDIX A**

**CALCULATION SHEET (DETAILED DESIGN - BY OTHERS) OUTLINING  
MINIMUM ATTENUATOR PERFORMANCE REQUIREMENTS**

**(See Overleaf)**

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**Verfahren für die Berechnung der Schallimmission von einer Schallquelle**

**Projekt: 10994 MEATH – KKS Nr. HNA30 BS001**

Der Schalldruckpegel an einem Immissionsort im Abstand  $S_m$  vom Mittelpunkt der Schallquelle wird nach folgender Formel berechnet:

Frequenz (Hz)	63	125	250	500	1000	2000	4000	8000
L (dB)	128	127	128	122	117	112	105	98
L <sub>w</sub> (dB)	140	139	140	134	129	124	117	110
K <sub>Ω</sub> (dB)	3	3	3	3	3	3	3	3
ΔL <sub>s</sub> (dB)	43	43	43	43	43	43	43	43
ΔL <sub>L</sub> (dB)	-	-	-	-	-	-	-	-
ΔL <sub>B</sub> (dB)	2	2	2	2	2	2	2	2
ΔL <sub>D</sub> (dB)	3	4	4	4	4	4	4	4
ΔL <sub>G</sub> (dB)	-	-	-	-	-	-	-	-
ΔL <sub>Z</sub> (dB)	-	-	-	-	-	-	-	-
ΔL <sub>M</sub> (dB)	2	2	2	2	2	2	2	2
Restpegel im Aufpunkt	86	84	85	82	74	69	62	55
A-Bewertung geforderter Wert (dB(A))	-26	-16	-9	-3	0	+1	+1	-1
Differenz	17	25	33	36	31	27	20	11

Kürzeldefinition:

- L<sub>w</sub> - Schalleistungspegel
- ΔL<sub>s</sub> - Abstandsmaß
- K<sub>Ω</sub> - Richtwirkungsmaß
- ΔL<sub>L</sub> - Luftabsorptionsmaß
- ΔL<sub>B</sub> - Bodendämpfungsmaß
- ΔL<sub>D</sub> - Bewuchsdämpfungsmaß
- ΔL<sub>G</sub> - Bebauungsdämpfungsmaß
- ΔL<sub>Z</sub> - Abschirmmaß
- ΔL<sub>M</sub> - Witterungsdämpfungsmaß

---

## TECHNICAL NOTE

---

Project **Carranstown WTE**

Subject **Article 12**

Author **Edward Porter**

Date **14/02/13**

Ref. **EP/11/5827AM03\_1**

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Conor,

Please find enclosed the response to the EPA request for additional information in relation to air quality (Point 10) and specifically in relation to dioxins / furans and PAHs emissions to air.

Kind regards



**Dr. Edward Porter**  
AWN Consulting

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AWN Consulting Limited  
Registered in Ireland No. 319812  
Directors: F Callaghan, C Dilworth,  
T Donnelly, T Hayes, D Kelly, E Porter

10 *Air Dispersion Model*

- (v) *Identify the predicted environmental concentrations (PECs) (background plus process contribution) for each modelled parameter in Tables 7.6 to 7.9 of the EIS.*

Response

Modelling of Dioxins, Furans & PAH's was not included in the Article 12 response as they had not been included in the EIS submitted as part of the planning and licensing applications. They had not been included as there are no ambient air quality standards to compare against and small changes in volume flow would not affect significantly the modeling results previously predicted in EIS's of 2009 & 2005. In any event, a technical note has been prepared by AWN Consulting to show the PEC's for the compounds mentioned and compared to the ambient air quality standards where applicable.

The PEC for each modelled parameter in Tables 7.6 to 7.9 of the EIS was outlined in Technical Memo EP\_115827AM02\_0. Shown in Tables 1 - 4 are the results for dioxins / furans and PAHs scenarios which indicate that compliance with all relevant ambient air quality standards and guidelines (where applicable) are maintained even under all four volume flow scenarios.

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Table 1 Predicted Environmental Concentration (PEC) For Dioxin / Furans &amp; PAHs (Maximum Spot Volume Flow Scenario)

Compound	Background	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Limit Value
Dioxin / Furans (Ann)	0.0028 – 0.0046 $\text{pg}/\text{m}^3$	0.00062 $\text{pg}/\text{m}^3$	0.0034 – 0.0052 $\text{pg}/\text{m}^3$	N/A
PAH(Ann)	0.090 $\text{ng}/\text{m}^3$	0.0019 $\text{ng}/\text{m}^3$	0.092 $\text{ng}/\text{m}^3$	1 $\text{ng}/\text{m}^3$

Table 2 Predicted Environmental Concentration (PEC) For Dioxin / Furans &amp; PAHs (110% Maximum Volume Flow Scenario)

Compound	Background	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) 110% Maximum Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) 110% Maximum Volume Flow	Limit Value
Dioxin / Furans (Ann)	0.0028 – 0.0046 $\text{pg}/\text{m}^3$	0.00062 $\text{pg}/\text{m}^3$	0.0034 – 0.0052 $\text{pg}/\text{m}^3$	N/A
PAH(Ann)	0.090 $\text{ng}/\text{m}^3$	0.0018 $\text{ng}/\text{m}^3$	0.092 $\text{ng}/\text{m}^3$	1 $\text{ng}/\text{m}^3$

Table 3 Predicted Environmental Concentration (PEC) For Dioxin / Furans &amp; PAHs (Average Volume Flow Scenario)

Compound	Background	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Average Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Average Volume Flow	Limit Value
Dioxin / Furans (Ann)	0.0028 – 0.0046 $\text{pg}/\text{m}^3$	0.00060 $\text{pg}/\text{m}^3$	0.0034 – 0.0052 $\text{pg}/\text{m}^3$	N/A
PAH(Ann)	0.090 $\text{ng}/\text{m}^3$	0.0018 $\text{ng}/\text{m}^3$	0.092 $\text{ng}/\text{m}^3$	1 $\text{ng}/\text{m}^3$

Table 4 Predicted Environmental Concentration (PEC) For Dioxin / Furans &amp; PAHs (Minimum Spot Volume Flow Scenario)

Compound	Background	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Minimum Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Minimum Volume Flow	Limit Value
Dioxin / Furans (Ann)	0.0028 – 0.0046 $\text{pg}/\text{m}^3$	0.00058 $\text{pg}/\text{m}^3$	0.0034 – 0.0052 $\text{pg}/\text{m}^3$	N/A
PAH(Ann)	0.090 $\text{ng}/\text{m}^3$	0.0017 $\text{ng}/\text{m}^3$	0.092 $\text{ng}/\text{m}^3$	1 $\text{ng}/\text{m}^3$



10 *Air Dispersion Model*

- (vi) *Identify the PECs for each modelled parameter associated with maximum abnormal operations (as per Condition 3.20.2 of licence W0167-02) at the requested volume flow of 183,700 Nm<sup>3</sup>/hr from the stack, or any revised volume flow as appropriate.*

The PEC of each modelled parameter associated with maximum abnormal operations (as per Condition 3.20.2 of licence W0167-02) at the requested volume flow of 183,700 Nm<sup>3</sup>/hr from the stack was outlined in Technical Memo EP\_115827AM02\_0. Shown in Table 5 are the results for dioxins / furans and PAHs scenarios which indicate that compliance with all relevant ambient air quality standards and guidelines (where applicable) are maintained even under abnormal operations based on 60 hours per annum.

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**Table 5** Predicted Environmental Concentration (PEC) For Dioxin / Furans & PAHs Associated With Maximum Abnormal Operations At Volume Flow Rate 183,700 Nm<sup>3</sup>/hr (110% Maximum Volume Flow Scenario)

Compound	Background	Process Contribution ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Predicted Environmental Concentration ( $\mu\text{g}/\text{m}^3$ ) Maximum Spot Volume Flow	Limit Value
Dioxin / Furans (Ann)	0.0028 – 0.0046 $\text{pg}/\text{m}^3$	0.00084 $\text{pg}/\text{m}^3$	0.0036 – 0.0054 $\text{pg}/\text{m}^3$	N/A
PAH(Ann)	0.090 $\text{ng}/\text{m}^3$	0.0025 $\text{ng}/\text{m}^3$	0.093 $\text{ng}/\text{m}^3$	1 $\text{ng}/\text{m}^3$

Note 1 60 hours of abnormal operations based on five hours at the start of every month.

Note 2 Dioxins modelled at 0.5  $\text{ng}/\text{m}^3$  for 60 hours/year (5 times normal operation emission rate for 60 hours/year)

Note 3 PAHs modelled at 0.015  $\text{mg}/\text{m}^3$  (5 times normal operation emission rate for 60 hours/year)

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10 *Air Dispersion Model*

- (viii) *Please submit an electronic copy of all files used in the air dispersion model (input, output, meteorological, terrain, buildings data etc).*

All normal operations modelling scenarios which derive an annual mean averaging period are based on a unitised emission rate (1 g/s). In relation to the abnormal scenarios, both dioxins / furans and PAHs are based on an abnormal operation which is five times normal operation for 60 hours per year (5 hours per month) and is identical to the previously submitted NO<sub>2</sub> abnormal operation file. Thus, the modelling files provided previously are also applicable for the current modelling scenarios.

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To:

Claire Downey  
Indaver Ireland Ltd  
Block 1 – 4th Floor  
West Pier Business Campus  
Old Dunleary Rd  
Dun Laoighaire

Date: 11-12-2012

### Operational Certificate

This is an Operational Certificate for Meath Waste to Energy which is connected to the Distribution System at Carranstown 38 kV Station. This Operational Certificate for Meath Waste to Energy shall be effective as of **Wednesday 5<sup>th</sup> of December at 06:00.**

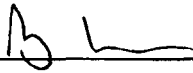
The values detailed in Appendix 1 shall be considered the Meath Waste to Energy Operating Characteristics and Registered Data. This data was confirmed or established under the Grid Code Compliance testing process as listed in Appendix 2 and shall be reflected by Indaver Ireland Ltd. in any Standing Technical Offer Data for the Trading and Settlement Code. No derogations against the Grid Code were required as a result of the Grid Code testing performed.

The Operational Certificate for Meath Waste to Energy is conditional on the following:

- A. That Indaver Ireland Ltd. ensure that Meath Waste to Energy remains compliant with the Grid Code and Distribution Code and any future revisions thereof communicated and approved by the CER.
- B. That Indaver Ireland Ltd. request clarification of Grid Code clause CC.7.3.1.1(r) and noting the clarification "Clarification of Clause CC.7.3.1.1(s) W2E Plant" published on the 20/01/12.
- C. Monitoring testing and investigation (Grid Code ref: OC10) of the performance of Meath Waste to Energy will continue to be carried out by EirGrid so to ensure the safe, secure and economic operation of the Transmission System. Any Performance Monitoring issues shall

without undue delay be addressed by Indaver Ireland Ltd which may include further testing to verify that Meath Waste to Energy is compliant. Failing an immediate resolution of the issue EirGrid will via ESB Networks, discuss a derogation approach with Indaver Ireland Ltd to address the non-compliance.

**Yours faithfully,**



---

Tony Hearne  
Manager, Renewables Planning,  
ESB Networks

Tel: 01 7026276

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### Appendix 1 Meath Waste to Energy (IW1) Registered Characteristics

Station Name	IW1
Number of Generating units	1
Primary Fuel Type / Prime Mover (e.g. gas, hydro etc.)	Municipal Waste
Secondary Fuel Type (e.g. oil)	n/a
Registered Capacity (MW)	16MW

	Symbol	Units
* Normal Maximum Continuous Generation Capacity:	19.5	MW
* Normal Maximum Continuous Export Capacity	17.5	MW
* Power Station auxiliary load	2	MW
§ Power Station auxiliary load	0.5	MVAr
* Maximum (Peaking) Generating Capacity	19.5	MW
* Maximum (Peaking) Export Capacity	17.5	MW
* Normal Minimum Continuous Generating Capacity	3	MW
* Normal Minimum Continuous Export Capacity	1	MW
* Generator Rating:	22.47	MVA
* Normal Maximum Lagging Power Factor	0.9	MVAr
* Normal Maximum Leading Power Factor	0.95	MVAr
§ Forbidden zones	n/a	MW
§ Terminal Voltage adjustment range	9.250 - 10.750	kV
§ Short Circuit Ratio	0.51	p.u.
§ Rated Stator Current	1297	Amps
	Symbol	Units
* Normal Maximum Continuous Generation Capacity:	19.5	MW
* Normal Maximum Continuous Export Capacity	17.5	MW
* Power Station auxiliary load	2	MW
§ Power Station auxiliary load	0.5	MVAr
* Maximum (Peaking) Generating Capacity	19.5	MW
* Maximum (Peaking) Export Capacity	17.5	MW
* Normal Minimum Continuous Generating Capacity	3	MW
* Normal Minimum Continuous Export Capacity	1	MW

* Generator Rating:	22.47	MVA
* Normal Maximum Lagging Power Factor	0.9	MVA <sub>r</sub>
* Normal Maximum Leading Power Factor	0.95	MVA <sub>r</sub>
§ Governor Droop	3.4%	
§ Forbidden zones	n/a	MW
§ Terminal Voltage adjustment range	9.250 - 10.750	kV
§ Short Circuit Ratio	0.51	p.u.
§ Rated Stator Current	1297	Amps

Reserve Capability

Primary Spinning Reserve: 1.33 MW at 90% of RC

Secondary Spinning Reserve: 1.98 MW at 90% of RC

Tertiary Reserve: 1.92 MW at 90% of RC

Replacement Reserve 15 MW

Give details of reserve capability of the generator in different operating modes:

Unit co-ordinating, turbine follow, recirculation, base load, etc.

Turbine always in 'turbine follow' mode and frequency response 'always on'.

What reserve, if any, is available when the unit is off load?

None.

**1.1.1 PC.A4.12.2 Forecast Availability**

Apart from the expected scheduled maintenance requirements,

Availability	Reason	Available Exported MW	Time %
Full availability	n/a	16MW	90
Partial availability	Poor CV waste conditions	12-14MW	10
Forced outage probability			

Total

100%

Reasons for partial availability might include poor fuel, loss of mill, loss of burners, hydro flow restrictions, etc.

The full PC.A4 submission is available from OSP on request to generator\_testing@eirgrid.com

## Appendix 2 Overview of Grid Code Compliance testing performed

	Test
1	The following to be provided: <ul style="list-style-type: none"> <li>➤ Power System Stabiliser study</li> <li>➤ Protection setting list</li> <li>➤ Inter-tripping schemes</li> <li>➤ Interlocking schemes</li> <li>➤ SCADA signal schemes</li> </ul>
2	Power Station to hand over generator transformer data and test sheets including transformer impedance data (positive and zero phase sequence) for top centre and bottom tap positions.
3	AVR settings to be provided
4	Agree settings of generator and generator transformer non-unit type protection schemes and witness testing of such relays with the agreed settings applied. Test protocols of factory tests to be available.
5	Data sheets and test results for excitation system. Available studies of the ability of the generation plant to ride through Distribution system (short circuit) faults.
6	Data sheets, design sheets and test results for governor system. Proposed settings also to be provided.
7	Data Provision on plant output variations with ambient conditions.
8	Check all interface cabling between Power Station and Distribution Station using as-built circuit and connection diagrams.
9	Confirm Power Station earthing and lightning protection system is complete for transformers and generator. Hand over of inspection report.
10	Confirm earthing and lightning protection system is complete for Distribution Station. Hand over of inspection report with earth resistance measurements.
11	Confirm connection between Power Station earth grid and Distribution Station earth grid is complete. Hand over of inspection report with earth resistance measurements.
12	Check operation and interlocking for HV CB, HV disconnect, HV ES, Generator CB, Generator disconnect, Generator CB ES, MV CB, MV ES <i>for those items of plant which are installed at this stage.</i> Test that trip signals from Distribution side trip the relevant CB's.
13	Test all CTs in Power Station on generator bus ducts and MV incomer and Generator and Unit transformers (when in transformer bushings). Test protocols of factory tests and site tests to be provided.
14	Test all CTs in Distribution Station. Test protocols of factory tests to be available.
15	Test all VTs in Power Station on generator bus ducts and MV incomer. Test protocols of factory tests and site tests to be provided.
16	Test all VTs in Distribution Station.
17	Function and accuracy check of all generator/generator transformer/unit transformer/ Distribution Station and lines protection including secondary cabling, <i>except for functions that have to be tested with running generator</i> by secondary current and voltage injection. Test protocols of factory tests and site tests to be provided. <i>See Item 34 of Phase B tests for remaining tests.</i> Visual check of Power Station protection/alarm batteries, chargers etc.



	Check that protection/alarm and generator and MV breaker control is supplied from battery back-up system.
18	Function check of all Distribution Station trip commands and signals and alarms/recording:
	➤ from Distribution Station to Power Station
	➤ From Power Station to Distribution Station
	Check of all signals to SCADA system.
	Check Power Station emergency tripping of HV CB and associated signal.
19	For the initial energising the generator transformer must have differential and buchholz protection and the unit transformer must have overcurrent (HV side preferable), differential and buchholz protection.
20	Inspection of procedures following tripping of generator transformer, failure of protection, failure of power supplies etc.
21	Check secondary side and neutral connection of generator and unit transformer is completed up to suitable isolating points and that secondary VT neutral point is connected and earthed. Check that suitable (lockable) earthing facilities are available for the equipment on the other side of the isolating points.
	Check access for visual check of earth switch and isolators
22	Check, calibration and sealing of Distribution Station metering including signals to Power Station.
23	Insulation resistance test, generator transformer HV side
	Insulation resistance test, generator transformer LV side
	Insulation resistance test, unit transformer HV side
	Insulation resistance test, unit transformer LV side
24	Insulation resistance test of conductors, to generator transformer with transformers disconnected.
	Insulation resistance test generator CB.
	Site test protocols of insulation resistance test MV switch gear, performed before energising MV switch gear.
25	Oil test generator transformer (moisture and breakdown)
	Oil test unit transformer (moisture and breakdown)
26	Insert Conductors, test resistance of connections.
27	Check safety barriers, fences, safety notices and site procedures for transformers. General site walk around to check site is ready for energising.
28	Agree Operating Procedures covering all plant and including a check to see that the procedures can be safely followed.
	Operational Diagram/Safety Rule Boundaries to be clarified.
	Specify Naming of plant, equipment etc.
29	Agree procedure for energising transformer.
30	Power Station to issue Declaration of Fitness stating that the transformer is fit to be energised and that other equipment not ready for energising is isolated. Also all agreed protection should be in place and tested and operating properly at the appropriate settings.
31	Energise transformer
32	Insulation resistance test of Conductors, generator CB to generator.
	Insulation resistance test of generator stator.
	Site test protocols of insulation resistance test MV switch gear and generator to be provided.
33	Insert Conductors, test resistance of connections.
34	Function and accuracy check of all generator/generator transformer/unit transformer/ Distribution station and lines protection including secondary cabling. Test protocols of factory tests and site tests to be provided. <i>Note that some or all of these tests may already have been completed as Item 17 of Phase A tests.</i>

12a	Check operation and interlocking for HV CB, HV disconnect, HV ES, Generator CB, Generator disconnect, Generator CB ES, MV CB, MV ES <i>for those items of plant which are installed at this stage.</i> <i>Note that some or all of these tests may already have been completed as Item 12 of Phase A tests.</i> Test that trip signals from Distribution side trip the relevant CB's.
35	Function check of all <del>Distribution Station</del> trip commands and signals and alarms/recording: <ul style="list-style-type: none"> <li>➤ from <del>Distribution</del> Station to Power Station</li> <li>➤ From Power Station to Distribution Station</li> </ul> Check of all signals to SCADA system. Check Power Station emergency tripping of HV CB and associated signal.
36	Testing of excitation system <ul style="list-style-type: none"> <li>- Functional checks (AVR stationer and dynamic control checks at no load condition)</li> <li>- Open circuit characteristic</li> <li>- Short circuit characteristic</li> </ul>
37	Function Check of protection alarm by primary voltage and current injection during open and short circuit tests.
38	Function check of signal transmitters by primary voltage and current injection during open and short circuit tests.
39	Turbine overspeed test. Test protocols of site tests to be available
40	Testing of Governor system - Functional checks (governor stationer and dynamic control checks at no load condition)
41	Testing of synchroniser - Generator CB and check contact closing time. Test protocols of factory tests to be available.
43	Power Station to issue Declaration of Fitness that: The generator protection has been fully tested and is fully operational. The synchroniser has been fully tested and is ready for operation. The generator is ready to be synchronised to the Grid.
44	Synchronise generator.
45	Measurement of initial block load following synchronising.
46	Testing of POR, SOR and TOR by frequency injection at various loads.
48	Measurement of governor droop characteristic at various loads.
49	Measurement of governor deadband characteristic while following the grid frequency. There should be no dead band applied.
50	Demonstration of minimum load operation. Process parameters (e.g. temperatures and vibration levels) should be recorded during this period and available following the test to demonstrate stable operation at the minimum load.
51	Demonstration of capability to ramp up and down between defined load points with a rate of not less than 1.5% of Registered Capacity per minute. The generator should demonstrate stable operation at Registered Capacity for some period following ramp up.
52	Load rejection test at 100% load and resynchronisation across HV CB after 1 hour operating at house load. The unit must remain running at normal frequency, feeding its own auxiliaries while completely disconnected from the grid for the 1 hour up to when resynchronisation takes place. Process parameters (e.g. temperatures and vibration levels) should be recorded during this period and available following the test to demonstrate stable operation at the minimum load.
53	Demonstration of time to synchronising and to full load on cold, warm and hot starts and following turbine and boiler trips.
54	Demonstration of shutdown time for selection of cold, warm and hot starts.
57	Verification of output versus ambient temperature.
60	Demonstration of accurate transmission of voltage, current and power signals including SCADA signals.

61	Demonstration of generator MW capability at minimum and maximum generator voltages at rated power factor.
62	Demonstration of operation of plant on house load at high frequency and low frequency limits of operation for 60 minutes.
63	Demonstration of amber, red and blue alerts.
65	Demonstration of capability of diesel generator to supply Power Station emergency loads and Distribution Station supply. Auto supply to Distribution Station in the event of loss of supply to be demonstrated. Procedure for operation in this mode to be handed over.
69	Demonstration of Registered Capacity
70	Provision of generator data following commissioning tests. See attached Planning Code Appendix of the Grid Code.
71	EirGrid Reliability run

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# INDAVER

Ref: W0167-03

John McEntagart  
Inspector, Environmental Licensing Programme  
Environmental Protection Agency  
Johnstown Castle Estate  
Co. Wexford.

August 29, 2013

Dear John,

**Re: Article 16 (1) and 16 (2) Notices – W0167-03**

Please find enclosed the response to the Article 16 (1) Notice of 18/07/2013, with attachments.

The Non Technical Summary of the E.I.S. is not affected by the information contained in this response. The Non Technical Summary of the Waste Licence Application W0167-03 is amended to reflect the information contained in our response to the Agency's Article 16 (1) Notice.

In response to Article 16 (2) Notice of 06/08/2013, enclosed are :

- Copy of newspaper notice published in the Irish Times on 09/08/2013
- Copy of site notice erected 08/08/2013
- Copy of Notification to the planning authority

There is one original and two copies of the above information, as well as 16 copies on CD-ROM.

Yours Sincerely

  
Fiona Marshall  
Regional Project Development Manager  
Indaver Ireland Limited

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■ Meath Waste-to-Energy Facility, Carranstown, Duisek, Co. Meath ■ tel. +353 1 280 4534 ■ fax +353 1 280 7865

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## Article 16 (1)

### 1. Classes of Activity – Section B.7

#### Response

In response to the Agency's instruction to act on one of the two options a) or b) set out in Article 16 (1) Notice of 18/07/2013, Indaver Ireland seeks to include the D10 activity in the revised Waste Licence W0167-03.

**Appendix A** contains revised Section B of waste licence application.

Indaver propose to agree with the Agency the relevant treatment code for each hazardous waste stream prior to acceptance.

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## 2. Laboratory compliance with BAT

**Justify that the use of the laboratory in Indaver's Dublin Port Facility, or other accredited laboratory, will conform to the requirements of BAT as per the IPPC reference document of Best Available Techniques for Waste Incineration (2006) regarding laboratory requirements for the incineration of hazardous waste and clinical wastes.**

### Response

Indaver Ireland has had over 30 years experience in determining the most suitable treatment technology for hazardous wastes. For the period 2007-2011, Indaver has assessed and found the most suitable outlets for 397,414 tonnes of waste, in addition to accepting over 200,000 tonnes of non hazardous municipal and industrial waste into the Meath facility. Each of these outlets has Waste Acceptance Criteria which the waste streams must meet in order to be accepted. The Meath facility is no different. The Waste Acceptance Criteria must be met before any waste is accepted on site.

In addition to detailed waste profiling done with the waste producer by the Technical Team, (See Section 5.6.1 of EIS), and the Classification Tour, (See Response to Article 12 request of October 2012, Point 3) the laboratory in the Dublin Port Facility is used to sample waste streams that are currently being exported all over Europe for various types of treatment. The laboratory test results have assisted Indaver's Waste Treatment Department to determine the outlet best suited to each waste stream. Since the laboratory was installed in July 2006, 2540 samples have been processed.

The BREF document (Section 4.1.3.4 Checking, sampling and testing incoming wastes) outlines that there should be *"the use of a suitable regime for the assessment of incoming waste. The assessments carried out are selected to ensure:*

- *that the wastes received are within the range suitable for the installation ....*

*....The techniques adopted vary from simple visual assessment to full chemical analysis.."*

And

5.4 Specific BAT for hazardous waste incineration:

*69. in addition to the quality controls outlined in BAT4, at HWI to use specific systems and procedures, using a risk based approach according to the source of the waste, for the labelling, checking, sampling and testing of waste to be stored/treated (see 4.1.3.4). Analytical procedures should be managed by suitable qualified personnel and using appropriate procedures". Among test to be conducted are:*

- *the calorific value*
- *the flashpoint*
- *PCBs*
- *Halogens (e.g. Cl, Br, F) and sulphur*
- *heavy metals*
- *waste compatibility and reactivity*

*Knowledge of the process or origin of the waste is important as certain hazardous characteristics, (for example toxicity or infectiousness) are difficult to determine analytically.*

Indaver will only accept waste streams where there is sufficient control of the entire delivery chain from Producer to acceptance at the facility to guarantee full traceability. This is a prerequisite for sustainable waste management. Indaver will therefore never use intermediate



mixing facilities if traceability of the waste streams (origin, composition,) would be lost due to the activities of the mixing facility.

It is imperative to the safe and sustainable operation of the Meath facility that characteristics of the incoming waste is known, as is the case with the current outlets in Europe where Indaver must supply analysis to prove that Waste Acceptance Criteria (in accordance with BAT) is met.

The Dublin Port Laboratory currently has the capability to carry out the following analysis:

- VOC's by GC/MS,
- Halogens, sulphur and metals by XRF,
- % water by Karl Fischer,
- calorific value by bomb calorimeter,
- pH by pH electrode, density,
- free solids by gravimetry

In addition to our own laboratory, other laboratories are used to confirm potential waste streams meet the set waste acceptance criteria. This includes Indaver's Antwerp hazardous waste laboratory as well as third party laboratories around Europe.

For Clinical Waste, 4.1.3.4 of BREF document states "*Sampling not advisable for high risk material for safety reasons*" however this is another instance where "*Knowledge of the process or origin of the waste is important as certain hazardous characteristics, (for example toxicity or infectiousness) are difficult to determine analytically.*"

Should Indaver participate in a future HSE clinical waste tender and be successful, we would invest in the infrastructure required for direct feeding as required by the IED. However, should the current segregation rules change in order to differentiate further between infectious and non-infectious risk waste such an investment may not be required as this would allow the non-infectious risk waste to be accepted directly into the bunker.

In any event, Indaver will apply to the Agency for a Technical Amendment or Licence Review as required. At this point, we only propose to accept wastes that can be fed directly into the bunker.



### 3. Suitability of Wastes for incineration at the Carranstown Facility

***Explain how Indaver will determine and demonstrate that the hazardous waste proposed to be accepted at the facility is low level hazardous waste and therefore suitable for incineration at the Carranstown facility.***

#### Response

As stated in the EIS (sections 1.1.2, 2.2.2., 5.4.2, & 5.6.1,) and Response to Article 12 request (Point 3), Grate incineration technology is not suited for all types of hazardous waste. Some of the hazardous waste exported from Ireland requires more specialist treatment than exists at the Meath WTE facility.

Waste Acceptance Criteria was set for non hazardous industrial wastes (see Article 12 Response Point 4.iii) The limits for PCBs, Halogens, Heavy Metals etc. were set to reflect the design of the plant, and its ability to safely treat incoming non hazardous waste streams. Should the current application be approved, even more stringent Waste Acceptance Criteria are proposed for hazardous wastes (See Figure 1 below) . The existing Emission Limit Values as set out in Indaver's current waste licence W0167-02 are to be maintained. As required by our existing licence, BAT, IED, and internal procedures<sup>1</sup> all waste streams must be assessed, analysed where possible and classified to capture all properties of the waste.

This classification (as detailed in Section 5.6.1 of the EIS), the packaging type and physical properties of the waste will determine if a proposed waste stream is suitable for treatment in the Meath Facility. The classification is stored in the Laboratory Information Management System (LIMS) and can be produced for inspection at any Indaver location to demonstrate the hazards of the waste are suitable for treatment at the Meath facility.

For clarity, the following list outlines the waste characteristics/properties that would be suitable:

- Can be unloaded directly into the bunker and not require specific infrastructure for unloading
- No bulk waste in powder form leading to dust formation and odour during unloading
- Flashpoint > 55 °C when unloading
- Acceptable pH range of the waste: 5 – 9
- No reaction with water, acid, base and/or solvents leading to exothermic reactions, gas formation or polymerisation
- The waste does not release toxic gases (Cl<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, HCN, H<sub>2</sub>S) in contact with other wastes and/or products
- No wastes subject to ADR and IMDG, except empty packaging, absorbents, filters, wipes, PPE, and liners contaminated with flammable and/or corrosive substances
- Does not contain organic substances which are not sufficiently destroyed in MSWI process: DRE > 99,9999 % and DE > 99,99 % (see definitions of DRE and DE in the POP directive (850/2004/EC)) Regular testing of bottom ash and air monitoring filters will continue to confirm the absence of organic substances.
- Does not contain radionuclides above background level

<sup>1</sup> Waste Acceptance Criteria ENV 01.00 and Classification & Identification of Waste Operations 4.2 (submitted with EIS)

The proposed hazardous Waste Streams must also conform with the limit values given below in Figure 1

LIMIT VALUES for hazardous waste streams		
Organic Cl	<	1%
Organic F, Br & I	<	0,1%
S	<	3%
F	<	0,4%
Br	<	0,5%
I	<	0,5%
POP	<	1 mg/kg DS
Hg	<	1 mg/kg DS
Tl	<	2 mg/kg DS
Cd	<	10 mg/kg DS
Se	<	10 mg/kg DS
Mo	<	20 mg/kg DS
As	<	50 mg/kg DS
Be	<	100 mg/kg DS
Sb	<	100 mg/kg DS
Ni	<	200 mg/kg DS
Co	<	200 mg/kg DS
Sn	<	200 mg/kg DS
Cr	<	200 mg/kg DS
V	<	200 mg/kg DS
Pb	<	500 mg/kg DS
Cu	<	1000 mg/kg DS
Zn	<	1250 mg/kg DS

Figure 1

Physical Limits

The plant also has some restrictions on the physical properties (shape, size and density) of waste that can be accepted. For example, waste containers up to 60L in size can be accepted. They must be drained of liquids. This allows the waste to be effectively mixed in the bunker and fed to the hopper without causing obstruction.

It is hoped that the above clearly defined acceptance criteria addresses any concerns that this is a “catch- all” application to allow Indaver to treat large variations in waste types.

## 4. Specific BAT for Clinical Waste

***Explain how Indaver will confirm to specific BAT for clinical waste incineration Section 5.6 (80) regarding washing out of waste containers and how it will manage any potential effluent arising from doing so.***

### Response

Section 5.6 (80) states *“the washing out of waste containers that are to be re-used in a specifically designed, designated washing facility, with disinfection as required, and the feeding of any accumulated solids to the waste incinerator”*

As stated in Section L.1.3.c of the Waste Licence Application, Indaver do not intend to re-use any waste containers on site.

Section 2.2.4.1 of the BREF document states: *“In some cases a distinction is made between the incineration routes for pathological (potentially infectious waste) and non-pathological waste. The treatment of pathological waste is sometimes restricted to dedicated incinerators, while non-pathological waste is, in some cases, incinerated with other wastes in non-dedicated incinerators e.g. MSWI”*

In Ireland, healthcare waste has been segregated according to the current treatment options available (autoclave or landfill) since the award of the last HSE Tender. All healthcare risk waste is currently designated as “Risk Waste” rather than Infectious/Non Infectious. It is possible to make this distinction and accept certain wastes directly to the bunker as is currently the case in other European Countries.

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## Article 16 (2)

**1. Re-publish the newspaper notice and erect a new site notice**

**Appendix B8** – copy of notice published in the Irish Times Friday August 9, 2013

– copy of site notice erected Thursday August 8, 2013

**2. Notify the planning authority of all the relevant classes of activity proposed in the licence application**

**Appendix B8** – copy of letter sent to planning authority

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## Further Information/Clarification

- 1) Indaver withdraw the request to have EWC Code 19 12 11\* considered in the list of proposed waste codes as detailed in Attachment H.1 of the application W0167-03.
- 2) It has also been suggested in third party submissions to the Agency as recently as March 2013 that Indaver have yet to indicate the tonnages of each waste type that it expects to receive. Indaver submit that point 4 (iii) of our response to Article 12 request by the Agency submitted in October 2012 addresses this, as well as the suggestion that Indaver plan to “re-introduce” flue gas treatment residues to the thermal treatment process. Indaver would also like to confirm that there is no issue with incomplete combustion at the facility. In fact, the TOC levels measured in each sample of bottom ash taken are excellent when compared to those of equivalent facilities around Europe, proving complete combustion.
- 3) Indaver have asked the Agency to remove the upper limit of 50,000 tonnes on the waste type 19 12 12 and this has been interpreted as being “SRF or RDF” however Indaver would submit that SRF or RDF are better described by EWC 19 12 10, as confirmed by the Agency’s guidance document of October 2012. The 19 12 12 material in question is organic fines and other mechanical treatment residues.
- 4) It has been submitted by third parties that hazardous wastes “be managed at a dedicated facility by the technology and procedures specifically designed for hazardous waste.” Indaver submit that the IED, BREF document and even the R1 guidance document all reference certain hazardous wastes being treated in MSW incinerators. Indeed some of the largest, most respected waste management companies in Europe send hazardous waste to MSW incinerators with the same technology as the Meath facility. (e.g. Veolia Umweltservice in Soest is a special waste storage facility and in 2010 and 2011 delivered 3802 tons of hazardous waste (EWC 150110\* 150202\*, 170204\*, 200127\*) to Municipal Waste Incinerators in North Rhine Westphalia region of Germany.)

## Amendment to Non-Technical Summary submitted with W0167-03

Section A.1.3 (Classes of Activity) is amended to read:

### 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 implementations of the Waste Framework Directive require amendments 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 to 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 construction 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.

*D10 Incineration on land*

In the event that the waste does not meet the criteria specified in the guideline for the calculation of the R1 Energy Efficiency formula.

*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.

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## APPENDIX.A

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## **Attachment B.6: Site Notice (amended)**

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.

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## Attachment B.7: Type of Activity (amended)

### **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 to 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 construction 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.

*D10 Incineration on Land*

In the event that the waste does not meet the criteria specified in the calculation of the R1 Energy Efficiency formula.

*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.

## **APPENDIX B8 (Amended)**

- Site Notice
- Newspaper Advertisement
- Notification to Planning Authority

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**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).

**D10** Incineration on Land

**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).

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.

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). 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.



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LEGAL NOTICES

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR THE REVIEW OF A WASTE LICENCE

Innovative Ireland Limited, 4th Floor, Block 1, West Pier Business Campus, Old Dublin Road, Dun Laoghaire, Co. Dublin, intends to apply to the Environmental Protection Agency for a revision of the waste licence W0167-02 the Meath Waste Management Facility, Carranstown, Duleek, Co. Meath - National Grid Reference 5063E, 2709N.

The principal class of activity under the Fourth Schedule of activity under 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, calcination, etc.) D10 Incineration on Land D14 Re-packaging 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).

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. 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). 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.

THE HIGH COURT  
Record No: 2013 No. 363 COS  
IN THE MATTER OF CUSTOM HOUSE CAPITAL INVESTMENT PROPERTY FUNDS PLC  
AND IN THE MATTER OF THE COMPANIES ACTS, 1963 TO 2012  
AND IN THE MATTER OF A PROPOSAL FOR A SCHEME OF ARRANGEMENT PURSUANT TO SECTION 201 OF THE COMPANIES ACT, 1963

Notice is hereby given that that on the 1st day of August 2013 a Petition was presented to the Central Office of the High Court of Ireland, Four Courts, Irish Quay, Dublin 7, Ireland (the "High Court") for an Order sanctioning a proposed Scheme of Arrangement (the "Scheme") pursuant to Section 201 of the Companies Act, 1963. The Petition is directed to be heard at 10.30 a.m. on the 28th day of August 2013 at the Four Courts, Dublin 7.

Any interested party desiring to oppose the making of the Order sanctioning the Scheme should appear at the time of hearing in person or by Counsel for that purpose. A copy of the Petition will be furnished to any such person requiring same from the under-mentioned Solicitors Dated 7 August 2013  
Arthur Cox  
Solicitors for the Petitioner  
Earlsfort Centre  
Earlsfort Terrace  
Dublin 2  
(Ref: CN/141)

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Fiona Redmond  
 Senior Executive Planner,  
 Planning Department,  
 Meath County Council,  
 County Hall,  
 Navan  
 Co. Meath

09<sup>th</sup> August 2013

Dear Fiona,

**Re: Application to the Environmental Protection Agency for the review of a Waste Licence**

As required by Notice from the EPA under Article 16 (2), in line with the requirements of 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.

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).

D10 Incineration on Land

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  
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 ■ 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 4260  
 ■ Meath Waste-to-Energy Facility, Carranstown, Duleek, Co. Meath ■ tel: +353 1 280 4534 ■ fax: +353 1 280 7865

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# INDAVER

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



Fiona Marshall  
Regional Project Development Manager  
Indaver Ireland Limited



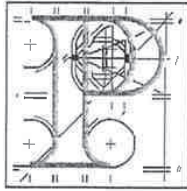
## APPENDIX E

Copy of An Bord Pleanála Grant of Permission (17.PA0026)

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# An Bord Pleanála



## STRATEGIC INFRASTRUCTURE DEVELOPMENT

## PLANNING AND DEVELOPMENT ACTS 2000 TO 2011

An Bord Pleanála Reference Number: 17.PA0026

(Planning Authority: Meath County Council)

**APPLICATION** for permission under section 37E of the Planning and Development Act, 2000, as amended, in accordance with plans and particulars, including an environmental impact statement, lodged with An Bord Pleanála on the 30<sup>th</sup> day of April, 2012 by Indaver Ireland Limited of 4<sup>th</sup> Floor, Block 1, West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, County Dublin.

**PROPOSED DEVELOPMENT:** Amendments to the existing development as follows:

- (a) To increase the intake tonnage of waste from 200,000 tonnes to 220,000 tonnes per annum.
- (b) To allow the acceptance of some additional types of waste defined as hazardous and non-hazardous in the European Waste Catalogue.
- (c) A change in status of the temporary spare parts warehouse building (single storey building 25 metres x 15 metres x 6.7 metres high) to a permanent centralised maintenance depot.
- (d) A change in status of the temporary electrical switchgear building (associated with the above) 4 metres x 2.5 metres x 3.2 metres high from temporary to permanent.
- (e) A change in status of the temporary construction modular office building (single storey building 33 metres x 12 metres x 3 metres high) from temporary to permanent.

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- (f) A change in status of the temporary electrical switchgear building (associated with the above) 3 metres x 2.7 metres x 3.2 metres high from temporary to permanent.
- (g) Construction of an access roadway to the modular office building.
- (h) 22 number new car parking spaces associated with the modular office building.
- (i) A new on-site effluent treatment system associated with the modular office building.
- (j) Change in status from temporary to permanent for hardcored areas associated with the spare parts warehouse, construction offices and temporary site car park.
- (k) An additional fuel storage tank (8.7 metres length x 2.7 metres diameter).
- (l) An additional ammonia storage tank (7.75 metres length x 3.5 metres diameter).

All at Carranstown, Duleek, County Meath.

### DECISION

**GRANT permission under section 37G of Planning and Development Act, 2000, as amended, for the above proposed development in accordance with the said plans and particulars based on the reasons and considerations under and subject to the conditions set out below.**

**DETERMINE under section 37H(2)(c) the sum to be paid by the applicant in respect of costs associated with the application as set out in the Schedule of Costs below.**

### MATTERS CONSIDERED

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included the submissions and observations received by it in accordance with statutory provisions.

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## REASONS AND CONSIDERATIONS

In coming to its decision, the Board had regard to the following:

- (a) the provisions of the EU Waste Framework Directive, including the waste hierarchy set out in Article 4, which prioritises *energy recovery* over *disposal*, and the principles of *self-sufficiency* and *proximity* set out in Article 16;
- (b) the provisions of the National Development Plan 2007-2013 in relation to waste management;
- (c) the provisions of the National Hazardous Waste Management Plan 2008-2012, which recommends that Ireland should strive for greater self-sufficiency in hazardous waste management;
- (d) the provisions of the North East Region Waste Management Plan 2005-2010, and the North East Region Waste Management Plan 2005-2010 Review Report;
- (e) the policies and objectives of the Meath County Development Plan 2007-2013;
- (f) the planning history of the site, and the existing waste-to-energy recovery facility on site, which operates under a licence issued by the Environmental Protection Agency;
- (g) the limited quantity and types of hazardous waste that would be accepted for treatment;
- (h) the location of the site, and its proximity to a national transport network;
- (i) the documentation submitted in support of the application and to the oral hearing, including the environmental impact statement and the Habitats Directive screening statement;
- (j) the submissions on file, including those from prescribed bodies, and the Inspector's report and assessment, and
- (k) the waste licence review application (Registration Number W0167-03) made to the Environmental Protection Agency for the proposed development.

FJR

The Board considered that the environmental impact statement submitted with the application, supported by the further information submitted to the Board over the course of the application, including the information submitted to the oral hearing, the submissions of prescribed bodies and the planning authority, and other submissions on file, were adequate in identifying and describing the likely significant effects of the proposed development. The Board completed an environmental impact assessment, and agreed with the Inspector in his assessment of the likely significant effects of the proposed development, and generally agreed with his conclusions on the acceptability of the mitigation measures proposed and residual effects in relation to the increase in non-hazardous waste capacity. The Board did not share the Inspector's concerns regarding the residual effects of the treatment of hazardous waste (as summarised in Section 11.9.12 of the Inspector's report) for the following reasons:

1. Having regard to the level of geotechnical, hydrogeological and hydrological information available on the current file and on the planning appeal history files, the Board considered that any residual concerns in relation to details of the waste water treatment system could be appropriately addressed by means of condition.
2. Having regard to the level of information on file relating to the acceptance, handling, storage and management procedures for various waste streams, and to the application to the Environmental Protection Agency for a revised waste licence, the Board was satisfied that the details of such procedures would be satisfactorily dealt with by the waste licensing process, and that adequate information was available to inform its decision-making for planning and environmental impact assessment purposes.
3. The Board considered that the availability of an appropriate, licenced treatment facility in Ireland for segregated hazardous waste (as opposed to export abroad) should not necessarily lead to a change in public perception or practice in relation to waste management. Moreover, public communication programmes can respond to changes in attitudes should they arise.

Having completed the environmental impact assessment, the Board concluded that the proposed development would not be likely to have significant adverse effects on the environment.

The Board carried out a screening exercise in relation to the potential impacts of the proposed development on European sites, having regard to its nature

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and scale, to the receiving environment, to the Habitats Directive screening statement submitted with the application, to the submissions on file generally, including those from the prescribed bodies and from the planning authority, and to the Inspector's assessment, which is noted, and concluded that the proposed development, in itself or in combination with other plans or projects, would not be likely to have a significant effect on any European site.

The Board considered that, subject to compliance with the conditions set out below, the proposed development would be in compliance with national, regional and local waste management policies, would not seriously injure the amenities of the area or of property in the vicinity, would not be prejudicial to public health, would be acceptable in terms of traffic safety and convenience and would, therefore, be in accordance with the proper planning and sustainable development of the area.

In deciding not to accept the Inspector's recommendation to refuse permission for the acceptance of hazardous waste:

1. The Board considered that the acceptance of a limited quantity of specified types of hazardous waste in this existing commercial waste-to-energy plant would provide an alternative to the current export of a significant proportion of such waste in accordance with the principles of self-sufficiency and proximity as set out in the EU Waste Framework Directive.
2. Point (3) above addresses the reasons for not accepting the Inspector's second recommended reason for refusal.
3. Point (2) above addresses the reasons for not accepting the Inspector's third recommended reason for refusal.
4. The Board noted Condition 30 of Planning Appeal Reference Number PL17.219721, which required the developer to pay a financial contribution in respect of a community recycling park. The Board considered the provision of a community recycling park at Duleek to be a matter for the planning authority.

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## CONDITIONS

1. The proposed development shall be carried out in accordance with the plans and particulars lodged with the application, as amended by the further information received by An Bord Pleanála on the 11<sup>th</sup> day of June, 2012 and on the 30<sup>th</sup> day of August, 2012, as further amended by the information submitted to the oral hearing, and in accordance with the provisions of the submitted environmental impact statement, including environmental mitigation measures contained therein, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.

**Reason:** In the interest of clarity.

2. Conditions attached to the planning permission granted under planning register reference number SA/901467 shall be complied with in full, except where otherwise specified in the following conditions.

**Reason:** In the interest of clarity.

3.
  - (1) The tonnage of waste accepted for treatment at the facility shall not exceed 20,000 tonnes per annum.
  - (2) Non-hazardous waste to be accepted at this facility shall primarily be waste generated in the waste region in which it is located. Where non-hazardous waste is accepted from outside that region, it shall only be done in accordance with the proximity principle and Ministerial Policy as set out in Circular WIR:04/05.
  - (3) The tonnage of separately collected hazardous waste accepted for treatment at the facility shall not exceed 10,000 tonnes per annum.

The only hazardous waste types to be accepted for treatment shall be in accordance with the European Waste Catalogue Codes listed in Table 2.1 of the environmental impact statement submitted to An Bord Pleanála with the application on the 30<sup>th</sup> day of April 2012, as attached in Appendix 1 of this Order.

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**Reason:** To clarify the nature and scope of the permitted development.

4. The hours of waste acceptance and dispatch of residues/waste shall only be between 07.00 and 18.30 on Monday to Friday, and between 08.00 and 14.00 on Saturday. Waste shall not be accepted or dispatched on Sundays or public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.

**Reason:** In the interest of the amenities of property in the vicinity and to facilitate the operation of the waste-to-energy facility.

5. Prior to commencement of construction, the applicant shall submit to and agree in writing with the planning authority details of the proposed additional waste water treatment facility on site in accordance with the requirements of the Wastewater Treatment Manual "Treatment Systems for Small Communities, Business, Leisure Centres and Hotels" issued by the Environmental Protection Agency (1999).

**Reason:** In the interest of public health.

6. In relation to any excavation or ground disturbance, the developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall:

- (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and
- (b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works.

The assessment shall address the following issues:

- (i) the nature and location of archaeological material on the site, and

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- (ii) the impact of the proposed development on such archaeological material.

A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

**Reason:** In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

7. Construction stage details for water supply and drainage arrangements, including the disposal of surface water, shall comply with the requirements of the planning authority.

**Reason:** In the interest of public health, and to ensure a proper standard of development.

8. Site development and building works shall be carried out only between the hours of 08.00 to 19.00 Mondays to Fridays inclusive, between 08.00 to 14.00 on Saturdays and not at all on Sundays or public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.

**Reason:** In order to safeguard the amenities of property in the vicinity.

9. The developer shall pay the sum of €60,000 (sixty thousand Euro) (updated at the time of payment in accordance with changes in the Wholesale Price Index – Building and Construction (Capital Goods), published by the Central Statistics Office), to the planning authority as a contribution in respect of public roads improvements to benefit the proposed development. The works and measures shall include:

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- (i) improved permanent road markings delineating the right turn lane at the access to the site from the R152 Regional Road; and
- (ii) permanent signage to assist in the enforcement of the traffic management plan, which prohibits traffic associated with the waste-to-energy facility from travelling along the R150 Regional Road between its junction with the R153 Regional Road to the west and the N2 National Road to the east.

This contribution shall be paid prior to the commencement of the development or in such phased payments as the planning authority may facilitate. The application of indexation required by this condition shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine.

**Reason:** It is considered reasonable that the developer should contribute towards the specific exceptional costs which are incurred by the planning authority and which will benefit the proposed development.

#### SCHEDULE OF COSTS

In accordance with section 37H of the Planning and Development Act 2000, as amended, the Board requires a reasonable contribution to be paid by the applicant towards costs incurred by An Bord Pleanála and by the planning authority in its consideration of the application, as attached in Appendix 2 of this Order.

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## SCHEDULE OF COSTS

In accordance with section 37H of the Planning and Development Act 2000, as amended, the Board requires the following reasonable contribution to be paid by the applicant towards costs incurred by An Bord Pleanála, the planning authority and by persons who made submissions/observations to the Board in its consideration of the application:

To An Bord Pleanála	€21,045
To Meath County Council	€ 8,260
To Louth and Meath Health Protection Group	Nil
To James Rountree	Nil
To Louth People Against Incineration	Nil

A breakdown of the Boards costs is set out in the attached Appendix 2.

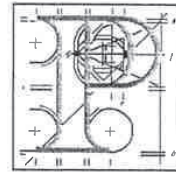
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Fiona O'Riordan

Member of An Bord Pleanála  
duly authorised to authenticate  
the seal of the Board.

Dated this 4<sup>th</sup> day of February 2013.



## Appendix 1.

## Strategic Infrastructure Development

File No. 17.PA0026

**Brief Description of Development:** Amendments to existing permissions for Waste to Energy Plant at Carranstown, Duleek, Co. Meath.

### List of Proposed New European Waste Catalogue (EWC) Codes and Waste Types

(Listed in Table 2.1 of the environmental impact statement submitted to An Bord Pleanála on the 30<sup>th</sup> day of April, 2012)

EWC	Example of Material	Industry Source	Waste Management Region
160507*	Toilet bowl or other cleaners, detergents etc.	All industry	ALL Regions
160508*	Denture fixative waste	All industry	ALL Regions
160303*	Colourings used in cosmetic manufacture	All industry that generates off specification or redundant products	ALL Regions
160305*	Cosmetic eye shadow base, mascara, lipstick	All industry that generates off specification or redundant products	ALL Regions
150202*	Rags and cloths contaminated with paints	All industry that uses absorbents/filters/PPE etc	ALL Regions
150110*	Plastic jerricans previously containing cleaning agents	All industry that uses packaging	ALL Regions
170204*	Wood from dismantled warehouse contaminated with creosote or other preservative	Construction & Demolition projects	ALL Regions

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EWC	Example of Material	Industry Source	Waste Management Region
170903*	Construction & Demolition waste such as window frames from a pharmaceutical building - may contain trace pharmaceutical powders.	Construction & Demolition projects	ALL Regions
170505*	Dredging spoil from firewater retention ponds	Construction & Demolition projects	ALL Regions
170503*	Soil & stones from clean up operations resulting from building foundations where possible contamination has occurred (e.g. on pharma site - old building)	Construction & Demolition projects	ALL Regions
180103*	Medical/Infectious Wastes. (Excluding Sharps) from Clinics, nurses stations etc	Healthcare industry, users of healthcare/ diagnostic/ research products	ALL Regions
130701*	Waste fuel oil and diesel	Manufacture/supply use of oils & fuels	ALL Regions
070101*	Water from a spill clean up containing trace oils and adhesive powders.	Manufacturers or users of organic chemicals	ALL Regions
080308	Waste Ink Solution (Water and Non hazardous Ink Solids), paint and water mixture	Manufactures or users of paints & inks	ALL Regions
200137*	Treated wood from Civic Amenity sites	Municipal/Industrial/ Commercial Waste	ALL Regions
200127*	Paint cans, and paint waste from Civic Amenity sites	Municipal/Industrial/ Commercial Waste	ALL Regions

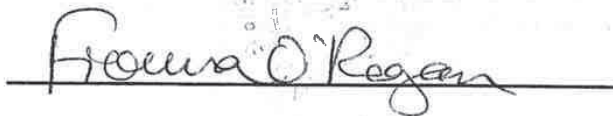
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EWC	Example of Material	Industry Source	Waste Management Region
200128	Water based paint from Civic Amenity sites	Municipal/Industrial/ Commercial Waste	ALL Regions
070501*	Rinsewaters containing trace pharmaceutical residues.	Pharmaceutical manufacturers or users	ALL Regions
070513*	Headache tablets	Pharmaceutical manufacturers or users	ALL Regions
070511*	Waste water treatment sludge from pharmaceutical plant - trace pharma powders may be present	Pharmaceutical manufacturers or users	ALL Regions
191303*	Sludges from soil remediation - e.g. illegal dumping clean up	Soil & Groundwater remediation Projects	ALL Regions
160107*	Discarded oil filters from garages and mechanics	Vehicle/Machinery Maintenance	ALL Regions
191206*	Wood (treated) from waste management facilities	Waste Management Facilities	ALL Regions
191211*	Shredded paint buckets and cans – contents previously pumped off and packaging shredded	Waste Management Facilities	ALL Regions
191003*	Material from shredding of white goods (after recycling) may contain some trace hazardous materials such as plastics with brominated flame retardants.	Waste Management Facilities where there is metal shredding	ALL Regions

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EWC	Example of Material	Industry Source	Waste Management Region
190811*	Waste water treatment sludge from local authority treatment plants where possible contamination may have occurred	Waste water treatment plants	ALL Regions
030104*	Wood shavings and small pieces of wood, treated with preservative, from furniture/window manufacturers	Wood Processing/Furniture manufacturer	ALL Regions
190113* 190112 190107*	Flue Gas Treatment residues, bottom ash and boiler ash, temporarily returned to site before being re-sent for treatment	Indaver Ireland WTE, Carranstown	NE Region

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**Member of An Bord Pleanála  
duly authorised to authenticate  
the seal of the Board.**

Dated this 4<sup>th</sup> day of February 2013.

## APPENDIX F

### Regulation 9 – Compliance Record

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## REGULATION 9 COMPLIANCE INFORMATION

### Environmental Protection Agency (Industrial Emissions)(Licensing) Regulations, 2013

Further to a recent request by the Environmental Protection Agency (EPA) in relation to a notice for the purposes of Section 76A(3) of the Waste Management Act as amended (dated 19<sup>th</sup> February 2014), please see below the required information required under Part IV of the Environmental Protection Agency Act 1992 as amended by SI 137 of 2013 European Union (Industrial Emissions) Regulations, 2013. These responses should be read in conjunction with the documents previously submitted to the Agency provided with the attached Industrial Emissions Directive Application covering letter;

9. (1) An application for a licence shall be submitted to the headquarters of the Agency and shall be in such form as may be determined by the Agency which may include electronic submission via the website of the Agency.

Please find enclosed application on behalf of Indaver Ireland as per the request referred to above dated 19<sup>th</sup> February 2014. The Application has been submitted to the Headquarters of the Agency.

(2) Without prejudice to the generality of paragraph (1), an application for a licence shall;

a) Give:

- i. The name, address and telephone number of the applicant and, if different, any address to which correspondence relating to the application should be sent and, if the applicant is a body corporate, the address of its registered or principle office,

Indaver Ireland Limited, 4<sup>th</sup> Floor, Block 1, West Pier Business Campus, Old Dunleary Road, Dun Laoghaire, Co. Dublin (also registered address and address for correspondence for the applicant). Telephone 01 2804534

- ii. The location or postal address (including, where appropriate, the name of the relevant townland or townlands) of the premises to which the activity relates,

Meath Waste Management Facility, Carranstown, Duleek, Co Meath

- iii. The name of the planning authority in whose functional area the activity is or will be carried on, and

Meath County Council

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 is controlled,

Not Applicable

- b) Give:
- i. In the case of an established activity, the number of employees and other persons working on or engaged in connection with the activity on the date after which a licence is required and during normal levels of operation, or
  - ii. In any other case the gross capital cost of the activity to which the application relates,

Please refer to Chapter 5, Section 5.8 of the enclosed 2012 EIS for details relating to employee numbers. There are currently 36 indaver employees and approximately 11 contractors. This is in line with the estimates detailed in the 2012 EIS.

- c) Specify the relevant class or classes in the First Schedule to the Act of 1992 to which the industrial emissions directive activity relates,

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): (iii) treatment of slags and ashes.

- d) In accordance with section 87(1B)(a) of the Act of 1992 in the case where an application for permission for the development comprising or the purposes of the industrial emissions directive activity to which the application for the licence relates is currently under consideration by the planning authority concerned or An Bord Pleanála, a written confirmation from the planning authority or An Bord Pleanála, as appropriate, of the fact

See copy of An Bord Pleanala grant of permission 17.PA0026 (Appendix E of cover letter enclosed)– confirmation has been requested regarding from An Bord Pleanala regarding the application for alteration under Section 146B (Appendix I of the cover letter)

together with either:

- i. A copy of the environmental impact statement, 2 hard copies and 2 electronic copies or in such a form as may be specified by the Agency, that was required to be submitted with the application for planning permission, or Please see enclosed 2012 EIS (Appendix G) and associated documents including 2014 Review of 2012 EIS with regard to the proposed alteration under Section 146B (Appendix H).
- ii. A written confirmation from the planning authority or An Bord Pleanála that an environmental impact assessment is not required by or under the Act of 2000, An Environmental Impact Assessment was undertaken by An Bord Pleanala for planning permission ref 17.PA0026 for the existing permission and an application to the Bord has been made to confirm that a new

Environmental Impact Assessment is not required for the application for alteration under Section 146B.

- e) In accordance with section 87(1B)(b) of the Act of 1992 in the case where permission for the development comprising or for the purposes of the industrial emissions directive activity to which the application for the licence relates has been granted, a copy of the grant of permission

See copy of An Bord Pleanála grant of permission 17.PA0026 (Appendix E of cover letter enclosed)– confirmation has been requested regarding from An Bord Pleanála regarding the application for alteration under Section 146B (Appendix I of the cover letter)

together with either:

- i. A copy of the environmental impact statement, 2 hard copies and 2 electronic copies or in such a form as may be specified by the Agency, that was required to be submitted with the application for planning permission, or

Please see enclosed 2012 EIS (Appendix G) and associated documents including 2014 Review of 2012 EIS with regard to the proposed alteration under Section 146B (Appendix H)

- ii. A written confirmation from the planning authority or An Bord Pleanála that an environmental impact assessment was not required by or under the Act of 2000, An Environmental Impact Assessment was undertaken by An Bord Pleanála for planning permission ref 17.PA0026 for the existing permission and an application to the Bord has been made to confirm that a new Environmental Impact Assessment is not required for the application for alteration under Section 146B.

- f) Specify the raw and ancillary materials, substances, preparations, fuels and energy which will be produced by or utilised in the activity,

Please refer to Chapter 5, Section 5.7 of the 2012 EIS and the Tables provided with Attachment G of the Waste Licence Application for W0167-03. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- g) Describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems, and operating procedures for the activity,

Please refer to Chapter 5 “Project Description” of the 2012 EIS and Attachment F of the Waste Licence Application for W0167-03. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- h) Indicate how the requirements of section 83(5)(a)(i) to (v) and (vii) to (xa) of the Act of 1992 shall be met, having regard, where appropriate, to any relevant specification issued by the

Agency under section 5(3)(b) of that Act or any applicable best available techniques (BAT) conclusions adopted in accordance with Article 13(5) of the Industrial Emissions Directive and the reasons for the selection of the arrangements proposed,

Please refer to Attachment L of the Waste Licence Application for W0167-03 and Point 2 of the Article 16 response submission to the EPA. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- i) Give particulars of the source, nature, composition, temperature, volume, level, rate, method of treatment and location of emissions, and the period or periods during which the emissions are, or are to be, made,

Please refer to Attachment E of the Waste Licence Application for W0167-03. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- j) Identify monitoring and sampling points and outline proposals for monitoring emissions and the environmental consequences of any such emissions,

Please refer to Attachment F of the Waste Licence Application for W0167-03. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- k) Provide:
  - i. Details, and an assessment, of the impacts of any existing or proposed emissions on the environment as a whole, including on an environmental medium other than that or those into which the emissions are, or are to be, made, and
  - ii. Details of the proposed measures to prevent or eliminate, or where that is not practicable, to limit, reduce or abate emissions,

Please refer to the various chapters of the 2012 EIS which detail the assessments undertaken to assess the impacts of the emissions from the facility on the environment. As well as design aspects which incorporate measures and systems to limit, reduce and abate emissions, each chapter presents relevant mitigation measures for each environmental aspect. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- l) Describe in outline the main alternatives to the proposed technology, techniques and measures which were studied by the applicant,

Please refer to Chapter 3 (Alternatives) of the 2012 EIS for details. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- m) Describe the condition of the site of the installation,

Please refer to Chapter 9 of the 2012 EIS for a description of the ground conditions at the site of installation. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- n) Provide, when requested by the Agency, in the case of an activity that involves the use, production or release of relevant hazardous substances (as defined in section 3 of the Act of 1992) and having regarded to the possibility of soil and groundwater contamination at the site of installation, a baseline report in accordance with section 86B of the Act of 1992,

Please refer to Chapters 9 and 10 of the 2012 EIS for a description of the soil and groundwater conditions at the site of installation. Please also refer to the enclosed 2014 Review of 2012 EIS (Appendix H).

- o) Specify the measures to be taken to comply with an environmental quality standard where such a standard requires stricter conditions to be attached to a licence than would otherwise be determined by reference to best available techniques,

NOT APPLICABLE

- p) Describe the measures to be taken for minimising pollution over long distances or in the territory of other states,

NOT APPLICABLE

- q) Describe the measures to be taken under abnormal operation conditions, including start-up, shutdown, leaks, malfunctions, breakdowns and momentary stoppages,

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.

Please find enclosed Appendix 1 attached correspondence with the Agency ref 112/Response to Audit Report/si 12dm the Protocol for Resumption of Activities after abnormal operation or breakdown as submitted to the Agency November 2013 and the measures to be taken under abnormal conditions of the automatic monitors and samplers as submitted to the Agency 16<sup>th</sup> April 2012.

- r) Describe the measures to be taken on and following the permanent cessation of the activity or part of the activity to avoid any risk of environmental pollution and to return the site of the activity to a satisfactory state or the state established in the baseline report if such is required under section 86B of the Act of 1992,

Please refer to Attachment K of the Waste Licence Application for W0167-03.

- s) Describe the arrangements for the prevention of waste in accordance with Part III of the Act of 1996, and where waste is generated by the installation, how it will be in order of priority in accordance with section 21A of the Act of 1996, prepared for re-use, recycling, recovery or where that is not technically or economically possible, disposed of in a manner which will prevent or minimise any impact on the environment,

The primary waste type generated by the facility is bottom ash. For details as to how bottom ash wastes are managed, please refer to Section A.1.11 of the WLA for W0167-03 and Chapters 5 of the 2012 EIS. Please also refer to the enclosed 2014 Review of 2012 EIS.

- t) Specify, by reference to the relevant European Waste Catalogue codes as prescribed by Commission Decision 2000/532/EC of 3 May 2000<sup>2</sup>, the quantity and nature of the waste or wastes produced or to be produced by the activity, or the quantity and nature of the waste or waste accepted or to be accepted at the installation,

Please refer to attachment A1.4 of the WLA for W0167-03 and Point 4(iii) of the Article 12 response to the Agency. Please also refer to the enclosed 2014 Review of 2012 EIS.

- u) State whether the activity consists of, comprises, or is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazardous involving Dangerous Substances) Regulations 2006 (S.I. No. 74 of 2006) apply,

Please refer to attachment B8 of the Waste Licence Application for W0167-03.

- v) Describe, in the case of an activity which gives rise, or could give rise, to an emission containing a hazardous substance which is discharged to an aquifer and is specified in the Annex to Council Directive 80/68/EEC of 17 December 1979<sup>3</sup> on the protection of groundwater against pollution caused by certain dangerous substances, the arrangements necessary to comply with the said Council Directive,

The only emissions to ground from the facility are of treated effluent from sanitary puraflo systems and related engineered percolation areas. No emissions of potentially hazardous substances are considered to occur via these discharges.

- w) Include a non-technical summary of information provided in relation to the matters specified in subparagraphs (c) to (x) of this paragraph,

Please refer to the enclosed revised Non Technical Summary dated 1<sup>st</sup> April 2014

- x) Include any other information required under Article 11 of the Industrial Emissions Directive.

Indaver consider that all information required in relation to the basic obligations as operators is addressed in the information provided above and enclosed with this submission.

Further to previous correspondence with the Agency, Indaver wish to confirm that it is no longer proposed to accept healthcare wastes (EWC code 18 01 03\*) as was originally applied for in April 2012.

4. An Application shall be accompanied by-

a) A copy of the relevant page of the newspaper in which the notice in accordance with Regulation 5 has been published

Please refer to Appendix B of the attached cover letter

b) A copy of the text of the site notice erected or fixed on the land or structure in accordance with Regulation 6

Please refer to Appendix B of the attached cover letter

c) A copy of the notice given to the planning authority under section 87(1)(a) of the Act of 1992

Please refer to Appendices I and J of the attached cover letter

d) A copy of such plans, including a site plan and location map, and such other particulars, reports and supporting documentation as are necessary to identify and describe –

i) the activity

ii) the position of the site notice in accordance with Regulation 6,

iii) the point or points from which emissions are made or are to be made,

iv) monitoring and sampling points, and

Please refer to Appendix 2 which contains all required plans including site plan and location as described above.

e) A fee specified in accordance with Section 99A of the Act of 1992.

Further to correspondence with the Agency no fee has been submitted with this application.

5. A signed original, 1 hardcopy and 2 electronic copies of the application as required under paragraphs (1) and (2) or under paragraphs (1) and (3), where the application concerns a review of a licence, and the accompanying documents and particulars as required under paragraph (4) shall be submitted to the headquarters of the Agency.

The required copies are enclosed.

# APPENDIX 1

## COPY OF RESPONSE TO EPA AUDIT REPORT

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Dr. David Matthews  
Environmental Protection Agency  
Office of Environmental Enforcement  
McCumiskey House, Richview  
Clonskeagh Road  
Dublin 14

8<sup>th</sup> November 2013

Your Ref: W0167-02si12dm  
Our Ref: 112/Response to Audit Report W0167-02si12dm

Dear Dr. Matthews,

With regard to the recent audit W0167-02si12dm please find the following response.

### Observation 1 Accident Prevention Policy

Indaver have several documents that make up the policy for accident prevention however none were named Accident Prevention Policy. There is now an overarching document called Major Accident Prevention Policy which combines the elements of the register of environmental aspects, emergency response procedure, incident management plan book and other relevant procedures. This is stored in our document management system which is maintained on site for inspection as required.

The second part of the observation referenced training for employees in this document. As part of Indaver's QESH (Quality, Environment, Safety and Health) management system, an action has been created to ensure that training is given to the Regional Management Team and then fed down through the rest of the company. This has been given a three month period to be closed out. Indaver's reference OFI 13/194.

### Observation 2 Maintain a map of all bunds on site and completed testing of overdue bunds

A drawing (IND-MEATH-ARC-HSE-000-0605) has been created for inspection as required by the Agency. It references the SAP maintenance number, the location of the bund and the name of the bund. This drawing will be maintained on the Indaver document management system and is available for inspection.

All bunding inspection testing is now up to date. These have been separately sent in through the Alder system as a licencee return LR 005949.

### Observation 3 Dedicated Protocol for resumption of activities following a breakdown

Please find attached as Appendix A the protocol for abnormal operating conditions and breakdowns.

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. IE9F70712T ■ IBAN IE53 AIBK 9334 0630 3250 49 ■ AIBKIE2D  
Directors: J. Ahern, C. Jones, J. Keaney, D. McGarry  
Belgian Directors: P. De Bruycker, M. Decorte, B. Goethals





I trust this is to the satisfaction of the Agency but should there be any further queries please do not hesitate to contact me.

Kind Regards,

A handwritten signature in black ink that reads "Grace McCormack". The signature is written in a cursive, flowing style.

Grace McCormack  
Quality & Environmental Manager  
Indaver Ireland Limited  
Carranstown |Duleek |Co-Meath  
Tel: +353 41 213 4005  
E-Email: [grace.mccormack@indaver.ie](mailto:grace.mccormack@indaver.ie)  
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## Appendix A : Protocol for resumption of activities after abnormal operation or a breakdown

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## 1. Purpose

To receive agreement from the Agency for the protocol required for the resumption of incineration activities after a shut down that was caused by a breakdown in accordance with Condition 3.20 of W0167-02.

## 2. Definition

*Breakdown* - Any technical stoppage, disturbance, or failure of the purification devices or the measurement devices.

*Purification Devices* - Any critical element of the flue gas treatment process

*Measurement Devices* – Devices used to measure the ELV's at the stack i.e Continuous Emissions Monitoring System (CEMS)

*ELV's* – Emission limit values

*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.

*ELV's* – Emission limit values

*CEMS* – Continuous emissions monitoring system

## 3. Responsibilities

Panel operators have a responsibility to constantly monitor the emissions as they happen and to operate the plant in such a way as the ELV's are not breached. They are also responsible to report a breakdown to the appropriate maintenance technician on call and /or the manager on call.

## 4. References

Extract from licence W0167-02

### **Condition 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.

This refers to situations whereby a forced shutdown was made due to major deficiency/incident in the plant, directly related to the functioning of the abatement system e.g. a fire in the bag house filter.

A regular failure of an instrument or mechanical device is not subject to this statement in the case whereby the correct actions can be taken by operations/maintenance to correct the situation. (e.g. replacement of filterbag after leak of a bag, replacement of a spare part that is in stock, a switch from a duty to a stand by pump, switch from lime milk to hydrated lime). At all stages during the regular failures the plant is in control and there is no risk to emissions and in this case there is no requirement to shutdown the plant.

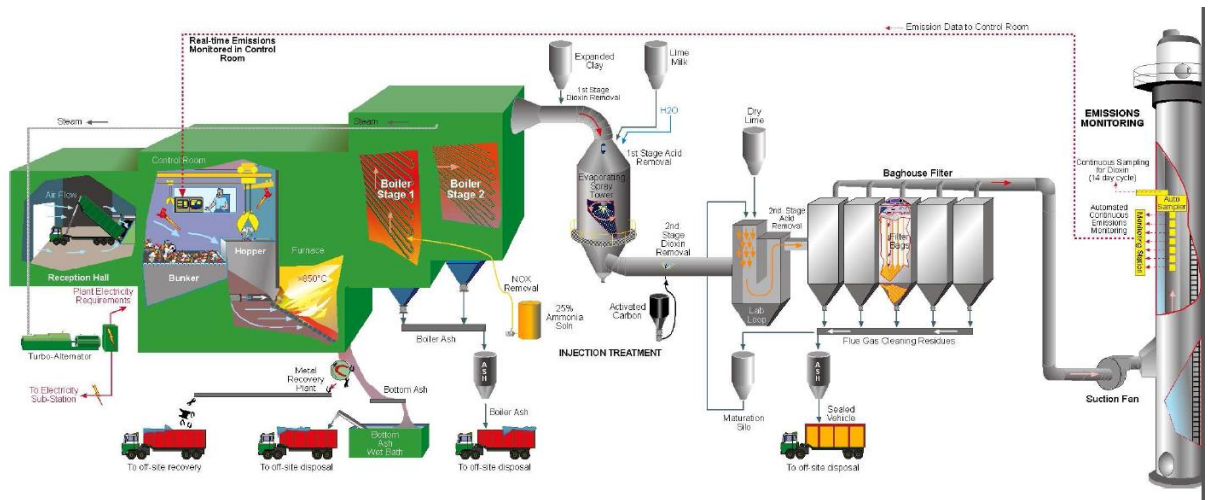
For those situations whereby the shutdown must ensue, prior to start up the following protocol will be followed. The Agency will be notified of the situation through the Indaver procedure Environmental Incident Investigation and Reporting. This will be completed via a telephone call and via the Alder system. Only when the situation has been rectified will operations start the plant up again.

### 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 limits 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  $150\text{mg/m}^3$  (expressed as 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.

Indaver have installed a number of design conditions which means that it is not likely that the plant will have abnormal operations.

For the Purification Devices i.e. any part of the flue gas treatment system, there is a back up for each part of the process. A diagram of the purification system is shown below as figure 1.



To trap heavy metals and dioxins, expanded clay is injected at the spray dryer absorber. If the expanded clay has broken down there is a back up in the form of activated carbon which may be used instead.

For the neutralization of acids, lime milk is used in the spray dryer absorber. If the lime milk system has broken down, then the hydrated lime may be used instead.

For the treatment of NO<sub>x</sub>, ammonia is used. There are back up pumps and spare lances available to deliver ammonia to the boiler.

For the catchment of dust there is a 6 house filter bag system in place. The system is over designed and can be run when only 5 of the houses are working and one can be isolated in the case of a leak of a filter sock or other issue with the filter house.

As part of the licence Indaver is also required to have a critical equipment stock of equipment on site at all times. This was included as part of the commissioning plan. This is managed using our SAP maintenance management system. This list is attached below and demonstrates all the critical pieces of equipment and the back ups that are in stock at the facility for the purification and measurement devices.

Description	KKS	Critical	Classification	BackUp \ Spare Parts
H2O-pump 1 from service tank SNCR	2204-013-0231-GHF23-AP001	Y	Abatement Equipment	Duty Standby
NH3 Pump 1 to boiler	2204-013-0231-HQA04-AP001	Y	Abatement Equipment	Duty Standby
Atomizer 1 Spray Absorber	2204-014-0401-HTD11-AM001	y	Abatement Equipment	Spare Part
HNO3 tank 1 Absorber system	2204-014-0401-HTS10-BB001	y	Abatement Equipment	Duty Standby
HNO3 tank 2 Absorber system	2204-014-0401-HTS10-BB002	y	Abatement Equipment	Duty Standby
Ca(OH)2 injector nozzle 1	2204-014-0402-HTD20-BN002	y	Abatement Equipment	Duty Standby
Ca(OH)2 injector nozzle 2	2204-014-0402-HTD20-BN003	y	Abatement Equipment	Duty Standby
Bag house filter cell 1	2204-014-0403-HTE11-AT001	y	Abatement Equipment	Duty Standby
Bag house filter cell 2	2204-014-0403-HTE12-AT001	y	Abatement Equipment	Duty Standby
Bag house filter cell 3	2204-014-0403-HTE13-AT001	y	Abatement Equipment	Duty Standby
Bag house filter cell 4	2204-014-0403-HTE14-AT001	y	Abatement Equipment	Duty Standby
Bag house filter cell 5	2204-014-0403-HTE15-AT001	y	Abatement Equipment	Duty Standby
Bag house filter cell 6	2204-014-0403-HTE16-AT001	y	Abatement Equipment	Duty Standby
CEMS multigas analyzer	2204-014-0405-HNE10-GH001	y	Abatement Equipment	Testo
Dust analyser	2204-014-0405-HNE10-GH002	y	Abatement Equipment	Spare Parts
Silo 1 FGT residue	2204-014-0407-ETH10-BB001	y	Abatement Equipment	Duty Standby
Silo 2 FGT residue	2204-014-0407-ETH20-BB001	y	Abatement Equipment	Duty Standby
Dosing screw expanded clay	2204-014-0408-HTK22-AF001	y	Abatement Equipment	Spare Parts
Lime Pump 1	2204-014-0409-HTK14-AP001	y	Abatement Equipment	Duty Standby
Lime Pump 2	2204-014-0409-HTK14-AP002	y	Abatement Equipment	Duty Standby
Booster fan 1 A-Carbon transport	2204-014-0410-HTK32-AN001	y	Abatement Equipment	Duty Standby
Booster fan 2 A-Carbon transport	2204-014-0410-HTK32-AN002	y	Abatement Equipment	Duty Standby
Dosing screw 1 hydrated lime	2204-014-0411-HTK42-AF001	y	Abatement Equipment	Duty Standby
Booster fan Ca(OH)2 transp normal	2204-014-0411-HTK44-AN001		Abatement Equipment	Duty Standby
Flow norm transport Air Ca(OH)2	2204-014-0411-HTK44-CF001		Abatement Equipment	Duty Standby
TOC Measurement of Discharge Water	2204-018-0009-GUD01-CA001	y	Abatement Equipment	Duty Standby
PH Measurement of Discharge Water	2204-018-0009-GUD01-CA002	y	Abatement Equipment	Duty Standby
Conductivity measurem.of Discharge water	2204-018-0009-GUD01-CA003	y	Abatement Equipment	Duty Standby

To ensure stand by equipment is in place for the measurement devices Indaver have purchased and have readily available the following back up measurement devices to ensure that emissions are monitored continuously. This has previously been sent to the Agency and the original letters are attached at the end of this protocol.

Duty Measurement Devices	Stand By Measurement Devices
ACF-NT Analyser (CEMS)	Testo 350XL
Dust Analyser-DURAG	Replacement measurement head-Critical Spare Part



Ms. Mary Gurrie  
Environmental Protection Agency  
Office of Environmental Enforcement  
McCumiskey House, Richview  
Clonskeagh Road  
Dublin 14

16<sup>th</sup> April 2012

Your Ref: W0167-02/GC17IM  
Our Ref: 72/Condition 6.10 Proposal

Dear Ms. Gurrie,

Condition 6.10 of W0167-02 states that all automatic monitors and samplers shall be functioning at all times unless alternative sampling or monitoring has been agreed with the Agency in writing.

Indaver have the following automatic monitors and samplers which will be dealt with by this proposal.

ACF-NT-Air Emissions (CO, NO and NO<sub>2</sub>, SO<sub>2</sub>, TOC, HCl, HF)

DURAG-Dust monitoring

Amesa-Dioxin continuous sampling

Analyser for surface water attenuation pond (TOC, pH, Conductivity)

### **ACF-NT-Air Emissions**

To perform back up analysis at the stack, Indaver have purchased and installed a TESTO Device. This is a 350XL Testo unit which use electrochemical sensors to measure CO, O<sub>2</sub>, NO and SO<sub>2</sub>. This unit is present at the stack and will be used should there be a breakdown of the CEMS. It will also be used should Indaver be approaching 2.5 hours of maintenance so as to not lose a day through unavailability of the CEMS i.e. Indaver Ireland Limited would use the data from the TESTO device to demonstrate compliance of the above mentioned parameters on a continuous basis.

The TESTO will be connected into the DURAG(emission computer) system so as to ensure there are readings continuously being measured. The TESTO will be used temporarily until such time as the CEMS system is back up and running again. The parameters that are not measured on the TESTO are HCl, HF, TOC and NO<sub>x</sub>.

HF is currently a quarterly requirement under Schedule C.1.2 and therefore will not need continuous measurement.



HCl is measured further back in the process at the inlet to the spray dryer and is measured along with SO<sub>2</sub>. These results at the spray dryer (using a PRO-CAL unit) are used to dose lime at an appropriate rate. This is done automatically but can be completed manually if the situation is deemed necessary. The amount of lime dosed to treat the HCl and SO<sub>2</sub> can be used to calculate the resultant HCl in the stack, however due to the fact that the SO<sub>2</sub> will be monitored using the TESTO it is comparable to state that once SO<sub>2</sub> values are below the ELV that also HCl will also be below its ELV since they both receive automatic dosing from the values at the spray dryer to treat the gases on the way into the spray dryer absorber.

TOC will not be measured using the TESTO however CO will be measured and both parameters are determined by the burning process. The CO result of the back-up measurement will demonstrate good burning of the waste at the grate.

For NO<sub>x</sub> a calculation will be performed using the result for NO. The result for NO will be sent to the DURAG and calculated to get the result for NO<sub>x</sub>.

### **DURAG-Dust Monitoring**

Indaver has spare parts in stock including the complete measuring head and this is available on site and calibrated with the same frequency as the measuring head in the stack. In case of failure this can be exchanged in a short period of time if required.

### **Amesa-Dioxin Continuous Sampling**

Currently there is no back up system in place for this. Should this system breakdown it will be reported as an incident under our licence and fixed as soon as practicable. It should also be noted that by measuring CO using the TESTO device that this ensures the process is running smoothly and therefore there would be no issues with dioxin results once the results for CO were within the ELV.

### **Analyser for surface water attenuation pond (TOC, pH, Conductivity)**

There is an analyser on the inlet and the outlet to the pond. Should one of the analyser's fail the other analyser will continue to be used to monitor either the water entering the pond or being discharged from the pond. However in both cases no water will be discharged outside of the limits which have been agreed as trigger levels with the Agency. Therefore should the outlet analyser fail, the service contract in place with the supplier will be called upon and the analyser fixed as soon as possible. Should the inlet analyser fail but the outlet analyser is still functioning Indaver will continue to discharge once the levels are below the accepted trigger levels.



Should this proposal be to the Agency's satisfaction Indaver Ireland Limited request that written agreement be provided as required by Condition 6.10.

I trust this is to the satisfaction of the Agency but should there be any further queries please do not hesitate to contact me.

Kind Regards,

A handwritten signature in black ink that reads "Grace McCormack". The signature is written in a cursive style with a large initial 'G'.

Grace McCormack  
Quality & Environmental Manager MSW  
Indaver Ireland Limited  
Carranstown |Duleek |Co-Meath  
Tel: +353 41 213 4005  
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Ms. Mary Gurrie  
Environmental Protection Agency  
Office of Environmental Enforcement  
McCumiskey House, Richview  
Clonskeagh Road  
Dublin 14

7<sup>th</sup> July 2012

Your Ref: W0167-02/rfi11mg  
**Our Ref:** 78/Response to W0167-02/rfi11mg (Condition 6.10)

Dear Ms. Gurrie,

Please find the response to the request for information in relation to Condition 6.10 of W0167-02.

Item 1, 2 and 3 on your letter reference W0167-02/rfi11mg:

Testo: Calibration and maintenance procedures are available on site for inspection as requested. MAI 06.00 applies and Use of Mobile Emission Unit Testo 350. Records of the calibration and maintenance are also available on site for inspection as requested.

Item 4:

There is no back up system for pressure, moisture and flow. However to ensure that the data is corrected default values are programmed into the DURAG. Please see the following values which are programmed into the DURAG.

- H2O : 21.99 % Vol
- Flow : 130000 Nm3/h wet; 101413 Nm3/h dry
- P stack : 1013 mbar

There is a service contract in place with ABB which include 24 hour response and includes a spare parts contract should the spare part not be held on our own site.

Item 5:

Calculation for NO<sub>x</sub> calculation is as follows:

$$\text{NO}_{\text{calculated}} = \text{NO}_{\text{raw}} * [(21-11)/(21-\text{O}_2\text{calculated})]$$

$$\text{NO}_{\text{xcalculated}} = [\text{NO}_{\text{calculated}} * 1.53]$$

This is completed by the DURAG in real time and the reports that are produced take this calculation into account when the TESTO is being used.

Item 6:

NO<sub>x</sub> will be treated as a continuous measurement as the TESTO measures NO and a calculation is performed in order to get real time NO<sub>x</sub> values.

For HCl and TOC the proposal is that the TESTO will be used in a manner in order to ensure compliance with Condition 4.1.1.3. Indaver Ireland Limited have a service contract in place with ABB for 24 hour, 7 day a week service provision and have spare parts stored on our site in accordance with the contract with ABB. There is also a 24 hour contract in place for spare parts which ABB hold for our services. This will be used in order to reduce the amount of time that the TESTO will be used for.

Item 7:

The replacement measurement head is calibrated along with the dust monitor that is in place at the stack. This will ensure that the replacement head can be used when required. To replace this head will take less than 2.5 hours in order to ensure that a days availability is not lost.

There is no other alternative monitoring of dust at the stack or anywhere else in the process.

Item 8:

Indaver Ireland Limited have a contract in place with Catalyst Environmental Limited to perform the quarterly emission measurements and other air emissions monitoring to ensure compliance with the licence. Should the CEMS break down and the services of Catalyst are required to test for the emission parameters of the licence that are not measured using the TESTO e.g. dust and dioxins then a request for a monitoring visit would be put in place. A full monitoring campaign would take place to incorporate all pollutants as per the licence inclusive of dioxins and dust. This request would be put in place within 5 working days of the original breakdown. Should the services of Catalyst not be available at this time an alternative competent air emissions testing company would be contacted.

Results for this monitoring campaign are usually received within a 20 working day turnaround however this can be reduced in extreme circumstances but will not be less than 5 days for the issuing of the reports.

Surface Water Attenuation Pond:

The procedure 'Surface Water Attenuation Pond and Fire Water Retention Tank' has been updated to reflect the requirements of W0167-02/rfi11mg.

Should this proposal be to the Agency's satisfaction Indaver Ireland Limited request that written agreement be provided as required by Condition 6.10.

I trust this is to the satisfaction of the Agency but should there be any further queries please do not hesitate to contact me.



Kind Regards,

*Grace McCormack*

Grace McCormack  
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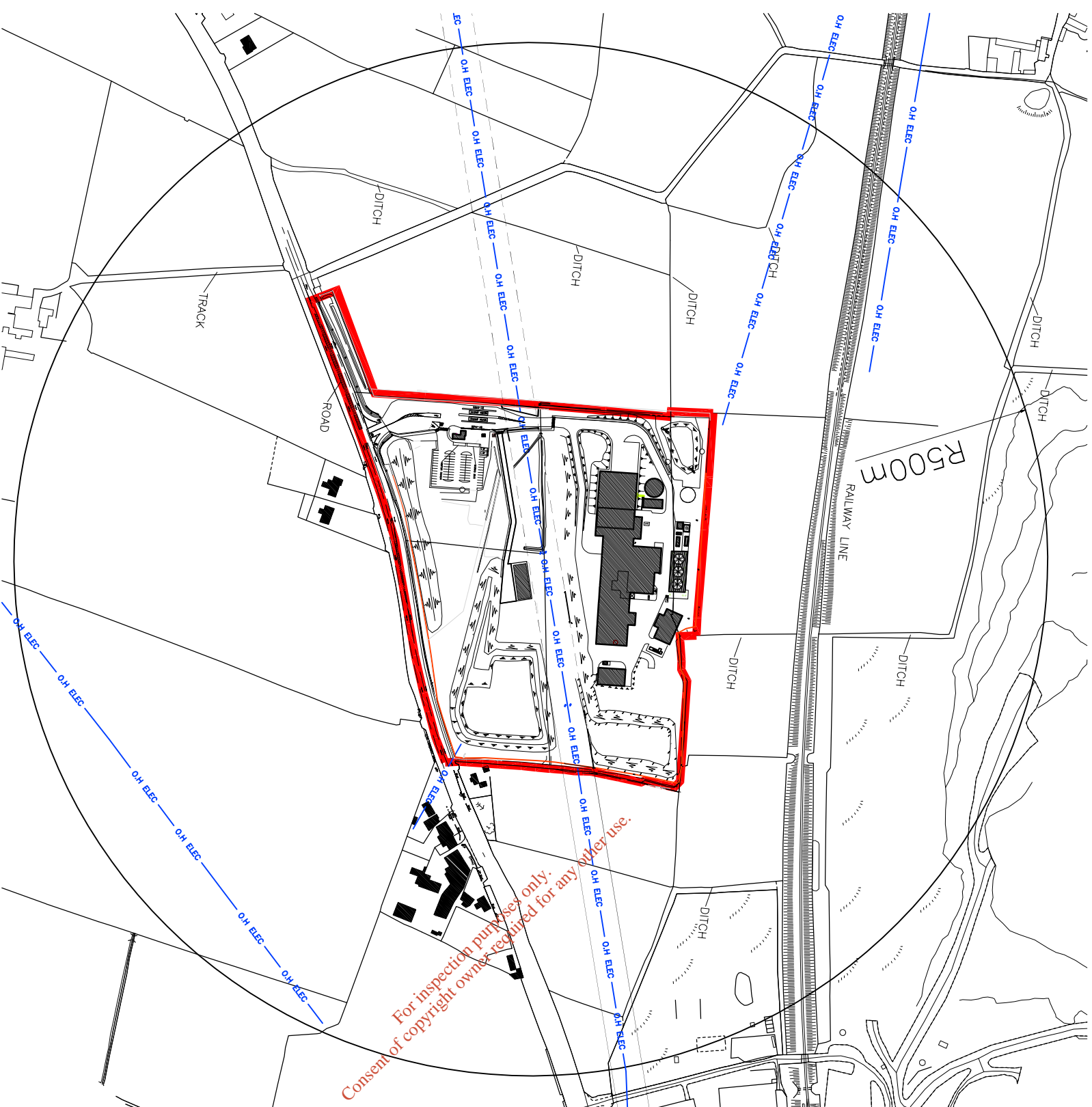


## APPENDIX 2

### PLANS DRAWINGS AND MAPS

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LOCATION PLAN SCALE 1:5000

REV. A	ISSUED FOR WASTE LICENCE	GM	MC	19.04.12
REV. 1	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 2	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 3	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 4	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 5	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 6	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 7	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 8	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 9	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 10	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 11	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 12	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 13	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 14	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 15	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 16	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 17	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 18	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 19	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12
REV. 20	ISSUED AS SUPPLEMENTARY PLAN TO WASTE LICENCE	GM	MC	19.04.12

PROJECT: INDAVER WTE: WASTE LICENCE REVIEW 2012

TITLE: LOCATION MAP

**McElroy Associates**  
Consulting Engineers & Project Managers

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**INDAVER IRELAND**  
4 HADDISCOE ROAD  
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TEL: +353 1 2144830  
FAX: +353 1 2577850

DESIGNED:	MC	CHECKED:	MC	APPROVED:	MC
DRAWN:	CM	DATE:	APRIL 12	SCALE:	1:2500 @ A3
PRC No.:	21098\WL\003	REV:	A		





NOTES

Map Series:  
 =====  
 1:2500

2381-D  
 REVISION DATE = 14-Nov-2011  
 SURVEY DATE = 01-Jul-1993  
 LEVELLED DATE = 31-Dec-1991

2443-B  
 REVISION DATE = 14-Nov-2011  
 SURVEY DATE = 31-Dec-1993

2381-C  
 REVISION DATE = 14-Nov-2011  
 SURVEY DATE = 31-Dec-1993

2443-A  
 REVISION DATE = 14-Nov-2011  
 SURVEY DATE = 01-Nov-2004

Clip Extent:  
 =====  
 LLX,LLY = 305995,270369  
 LRX,LRy = 306570,270369  
 ULX,ULY = 305995,271291  
 URX,URY = 306570,271291

Projection:  
 =====  
 IG

ITM Centre Point Co-ordinate:  
 =====  
 X,Y = 706210,770848

Extraction Date:  
 =====  
 26-Apr-2012

A	ISSUED FOR PLANNING	NK	NK	26.04.12
REV.	DESCRIPTION.	BY.	APPR.	DATE.

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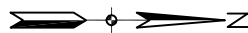
CLIENT:  
 INDAVER IRELAND LTD

PROJECT:  
 WASTE MANAGEMENT FACILITY  
 CARRANSTOWN CO. MEATH

TITLE:  
 SITE LOCATION MAP

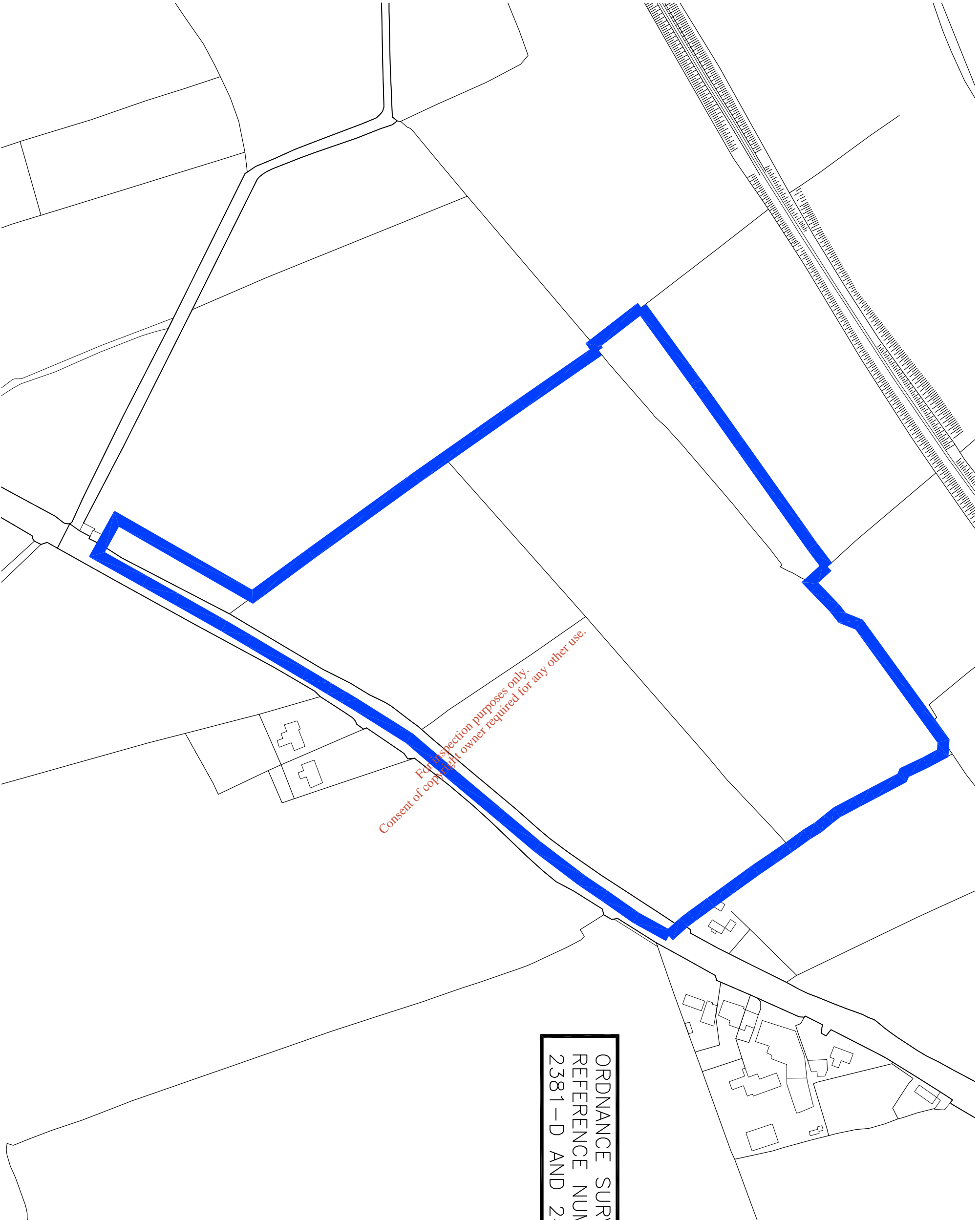
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DRAWN: NK	DATE: 26.04.12	SCALE: AS SHOWN @ A3

DRG. No. **21098/SM/001** REV. **A**



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

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SITE PLAN SCALE 1:2500

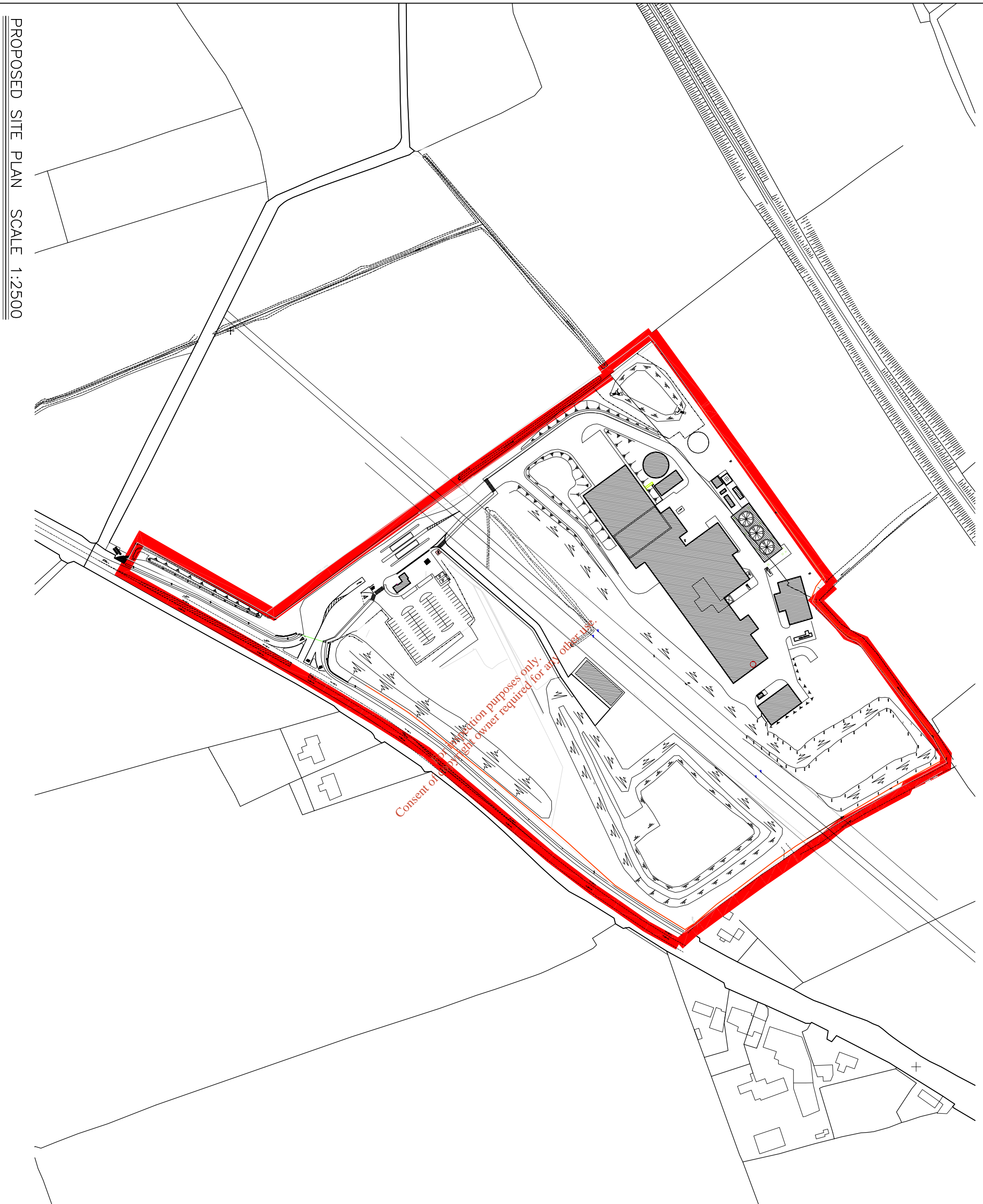
REV. A ISSUED FOR WASTE LICENCE CM MC 19.04.12


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CLIENT: INDAVER WTE  
INDAVER WTE  
WASTE LICENCE REVIEW 2012

PROJECT: INDAVER WTE  
WASTE LICENCE REVIEW 2012  
TITLE: SITE OWNERSHIP MAP

DESIGNED:	MC	CHECKED:	MC	APPROVED:	MC
DRAWN:	CM	DATE:	APRIL 12	SCALE:	1:2500 @ A3
DWG No.:	21098\WL\001	REV:	A		



PROPOSED SITE PLAN SCALE 1:2500

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

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**INDAVER WASTE**  
 WASTE LICENCE REVIEW 2012

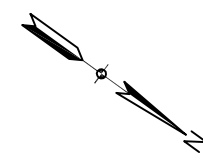
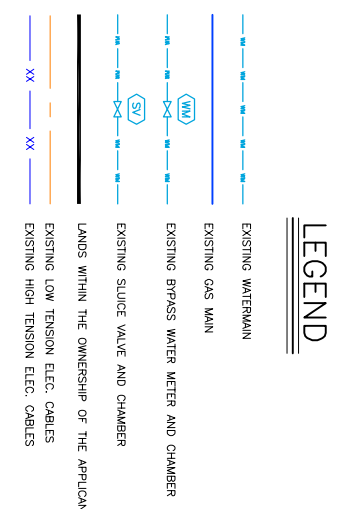
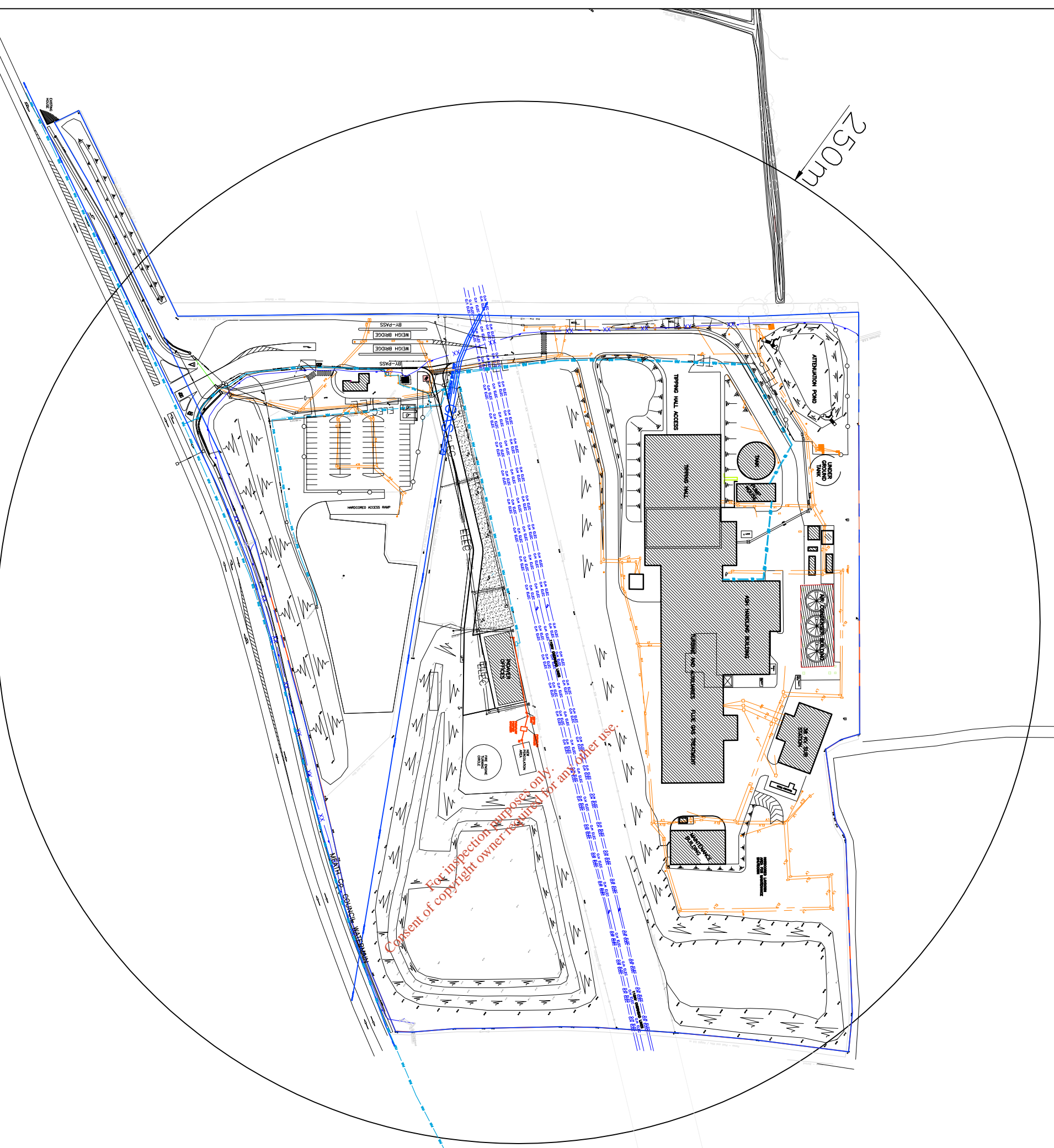
PROJECT: INDAVER WASTE  
 WASTE LICENCE REVIEW 2012

TITLE: SITE PLAN

DESIGNED:	MC	CHECKED:	MC	APPROV:	NK
DRAWN:	CM	DATE:	APRIL 12	SCALE:	1:2500 @ A3
DWG No.:	21098\WL\002	REV:	A		



250m



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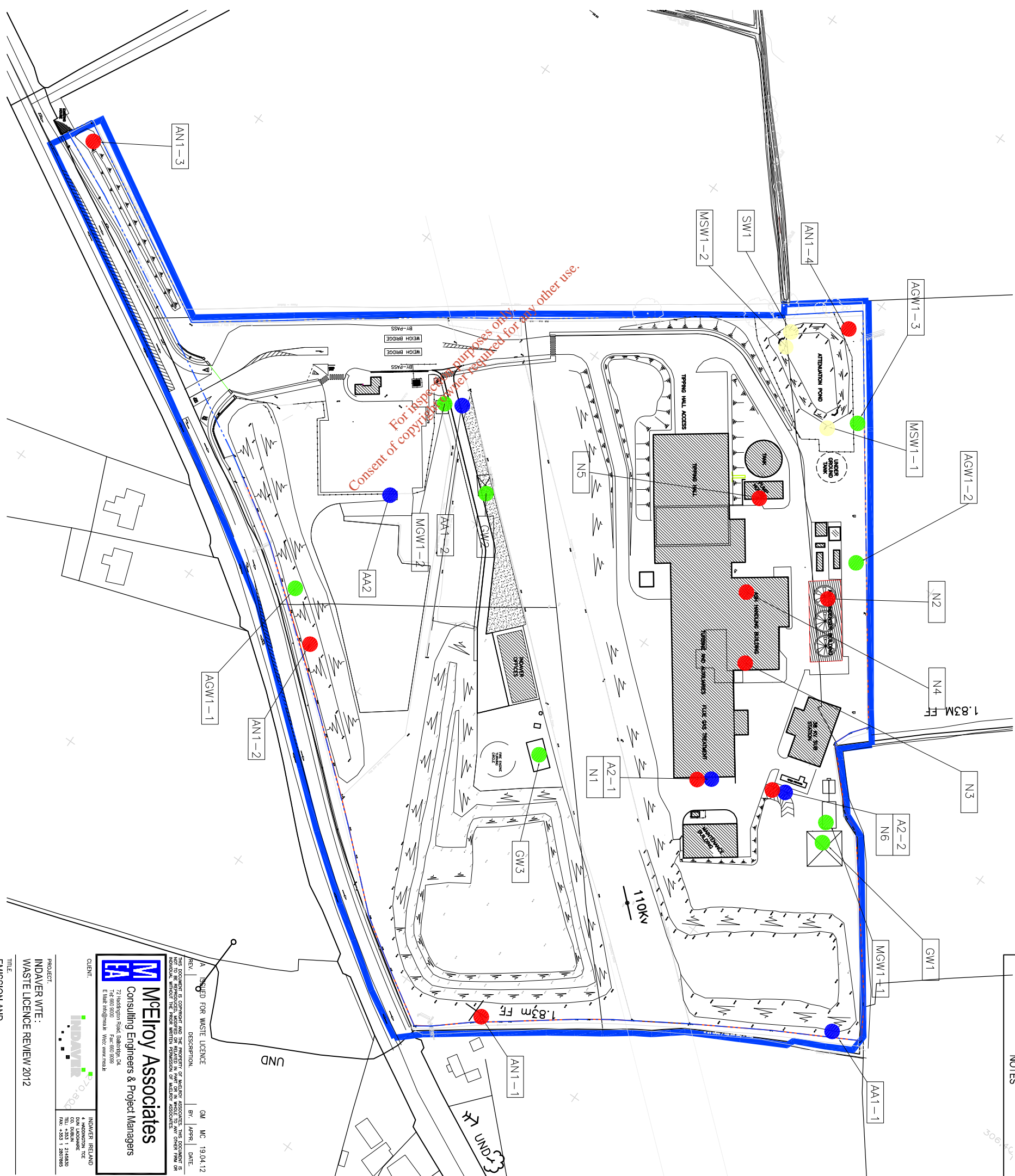
UNDERGROUND SERVICES PLAN SCALE 1:2000

A ISSUED FOR WASTE LICENCE CM MC 19.04.12  
 REV. | DESCRIPTION. | BY. | APRIL. | DATE.  
 PROJECT: INDAVER WTE: WASTE LICENCE REVIEW 2012  
 TITLE: SITE SERVICES PLAN

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DESIGNED:	CHECKED:	APPROVED:
MC	MC	NK
DATE:	SCALE:	
APRIL 12	1:2500 @ A3	
DRG No. 21098 \ WL \ 004	REV. A	

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 PURAFLU MONITORING CHAMBER
MGW1-2	GROUNDWATER PURAFLU 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 LOUVER 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



DESIGNED:	CHECKED:	APPROB:
MC	MC	NK
DATE:	SCALE:	
APR/11 12	1:2500 @ A3	
DRW:	REV:	
21098\WL\010	A	

PROJECT: INDAVER WTE: WASTE LICENCE REVIEW 2012

TITLE: EMISSION AND MONITORING POINT LOCATIONS

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

NOTES