EPA Application Form

7.4.2 - Emissions to Atmosphere - Minor and Potential Emissions - Attachment

Organisation Name: *	Indaver Ireland Limited
Application I.D.: *	LA010332

* indicates required field

Amendments to this Application Form Attachment

Version No.	Date	Amendment since previous version	Reason
V.1.0	July 2017	N/A	Online application form attachment
As above	Mar 2017	Identification of required fields	Assist consistent completion of attachment

EMISSIONS TO ATMOSPHERE

Emissions to air/atmosphere include the following:

Main Emissions
Main emissions include all emissions of environmental significance. Where a **mass emission threshold** is specified in a BAT document (BAT Conclusions, National BAT note or BREF), emissions which exceed this threshold prior to abatement are regarded as significant, i.e., 'main emissions'. (In some cases emissions below the threshold can still be significant and qualify as Main Emissions).

Minor Emissions
Emissions below the mass emission threshold may be considered minor emissions and therefore do not generally need to be specifically controlled by the conditions or schedules of the licence (i.e., setting of ELVs, abatement control measures, or monitoring requirements). Emissions may also be deemed minor by virtue of their source/nature (e.g., laboratory fume hoods, workspace extractions, passive vents from storage tanks, HVAC exhausts), or composition (e.g., water vapour emissions).
For combustion plant such as boilers, these can be considered minor where the rated thermal input is < 1MW where natural gas is the main fuel, and for liquid and solid fuels where its < 250kW.

Fugitive Emissions
Fugitive emissions include emissions from non-point sources and diffuse sources.

Potential Emissions
These are emissions which only operate under abnormal process conditions. Typical examples include bursting discs, pressure relief valves, and emergency generators. Bypasses and flares may also fall within this category, depending on how they are operated or designed to operate. Although the Agency does not normally set controls in licences for potential emissions, it may do so for the purposes of environmental protection.

This attachment collects information on main and fugitive emissions to atmosphere. Waste gas means the final gaseous emission from a stack or abatement equipment.

For main and fugitive emissions to atmosphere, complete the separate '*Emissions to Atmosphere - Main* and *Fugitive Emissions'* attachment.

EMISSIONS TO ATMOSPHERE - Minor Emissions - one row per emission point

In completing this attachment for minor emissions, the applicant should supply sufficient information to justify the determination of the emission as minor. Notwithstanding the guidance provided on minor emissions, the Agency may consider any emission to be significant (i.e., a main emission) on the basis of environmental impact.

Complete the table below with summary details for all minor emission points to atmosphere.

Emission Point Code [1]	Easting [2]	Northing [3]	Description of source of emission(s)	Emission details [4]				Abatement system employed (if relevant)
				Parameter/ Material	mg/Nm^3[5]	kg/h	kg/year	
A3-1	306230	270910	Air Handling Unit	Extract from MCC room for cranes - Air	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-2	306265	270911	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-3	306273	270925	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-4	306287	270935	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-5	306311	270954	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-6	306261	270898	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A

[1] The following convention should be observed when labelling minor atmospheric emission points: A3-1, A3-2, A3-3,…etc.
[2] Six Digit GPS Irish National Grid Reference.
[3] Six Digit GPS Irish National Grid Reference.
[4] The maximum emission should be stated for each parameter emitted; the concentration should be based on the maximum 30 minute mean and must be the **PRE-ABATEMENT** level.
[5] Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0oC101.3kPa). Wet/dry should be clearly stated. Include reference oxygen conditions for combustion sources.

Emission Point Code [1]	Easting [2]	Northing [3]	Description of source of emission(s)	Emission details [4]				Abatement system employed (if relevant)
				Parameter/ Material	mg/Nm^3 [5]	kg/h	kg/year	
A3-7	306280	270913	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-8	306925	270924	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-9	306318	270942	Passive Air Extract	Warm air release from building roof area	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-10	306263	270889	Baker Tank Vent	Low level vapours from aqueous waste	Negligible	Negligible	Negligible	N/A
A3-11	306258	270889	Boiler Blowdown Vent	Steam emission during blowdown of boiler	N/A (clean steam)	N/A (clean steam)	N/A (clean steam)	N/A
A3-12	306265	270918	Main steam line pressure control valve	Emission of steam	N/A (clean steam)	N/A (clean steam)	N/A (clean steam)	N/A
A3-13	306262	270925	Feed water tank – Deaeration Vents	Emission of steam	N/A (clean steam)	N/A (clean steam)	N/A (clean steam)	N/A
A3-14	306305	270957	Air Filter - Clay/Carbon Silo venting to atmosphere	Activated carbon / clay dust	Negligible	Negligible	Negligible	Self-cleaning dust filter
A3-15	306313	270946	Air Filter – Hydrated Lime Silo venting to atmosphere	Hydrated Lime dust	Negligible	Negligible	Negligible	Self-cleaning
A3-16	306304	270941	Air Filter - Quicklime and Expanded Clay silos venting to atmosphere	Lime, Expanded clay dust	Negligible	Negligible	Negligible	Self-cleaning

Emission Point Code [1]	Easting [2]	Northing [3]	Description of source of emission(s)	Emission details [4]				Abatement system employed (if relevant)
				Parameter/ Material	mg/Nm^3[5]	kg/h	kg/year	
A3-17	306304	270941	Lime Prep Scrubber Vent	Quicklime dust	Negligible	Negligible	Negligible	Water scrubbing in vent line
A3-18	306191	270904	Firewater Diesel Pump Exhaust	Minor diesel emissions – pump run 1x per week	Negligible	Negligible	Negligible	N/A
A3-19	306193	270900	Firewater Diesel Pump Exhaust	Minor diesel emissions – pump run 1x per week	Negligible	Negligible	Negligible	N/A
A3-20	306195	270897	Firewater Diesel Pump Exhaust	Minor diesel emissions – pump run 1x per week	Negligible	Negligible	Negligible	N/A
A3-21	306238	270930	Admin Building HVAC Extract	Air extract from air conditioning	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-22	306258	270935	Bottom Ash Hall Air Extract	Warm air extract, treated with bag filter	Negligible	Negligible	Negligible	N/A
A3-23	306267	270947	Bottom Ash Hall Air Extract	Warm air extract, treated with bag filter	Negligible	Negligible	Negligible	N/A
A3-24	306240	270938	Deslagger Extract	Steam from deslagger	N/A (clean steam)	N/A (clean steam)	N/A (clean steam)	N/A
A3-25	306240	270938	Bottom Ash Roof Vent	Warm air from bottom ash hall	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-26	306260	270950	Bottom Ash Roof Vent	Warm air from bottom ash hall	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-27	306247	270931	Bottom Ash Roof Vent	Warm air from bottom ash hall	N/A (room air)	N/A (room air)	N/A (room air)	N/A

Emission Point Code [1]	Easting [2]	Northing [3]	Description of source of emission(s)	Emission details [4]				Abatement system employed (if relevant)
				Parameter/ Material	mg/Nm^3[5]	kg/h	kg/year	
A3-28	306262	270940	Bottom Ash Roof Vent	Warm air from bottom ash hall	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-29	306259	270930	Holding Ejectors Exhaust	Exhaust of steam from Air Cooled Condenser	N/A (clean steam)	N/A (clean steam)	N/A (clean steam)	N/A
A3-30	306259	270930	Flashtank Exhaust	No real emission, keeps tank at atmospheric pressure	Negligible	Negligible	Negligible	N/A
A3-31	306255	270885	Hydraulics Room Extract	Warm air emission from Hydraulics Room. Vent on side of building	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-32	306283	270906	Steam / Condensate Room Extract	Warm air emission from steam / condensate room. Vent on side of building	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-33	306290	270910	Compressor Room Extract	Warm air emission from air compressors. Vent on side of building	N/A (room air)	N/A (room air)	N/A (room air)	N/A
A3-34	306390	270896	Oxygen Vent	Oxygen produced from the splitting of water in the electrolyser	N/A (pure oxygen)	N/A (pure oxygen)	N/A (pure oxygen)	N/A
A3-35	306357	270980	Fumehood from laboratory	Normal lab solvents and re-agents	Negligible	Negligible	Negligible	N/A

*add rows to the table as necessary

Note: Map(s)/drawing(s) uploaded under 'Site Plans' in Tab 3 of the application form should identify the emission and monitoring points.

EMISSIONS TO ATMOSPHERE – Potential Emissions to Atmosphere

Potential emissions are emissions that are not active under normal operation and would include by-passes or pressure relief valves.

Complete the table below with summary details of all potential emissions to atmosphere

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
A4-1	Smoke Vent (Tipping Hall)	Vents open in event of fire alarm or if deluge system is activated	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-2	Smoke Vent (Tipping Hall)	Vents open in event of fire alarm or if deluge system is activated	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-3	Smoke Vent (Tipping Hall)	Vents open in event of fire alarm or if deluge system is activated	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-4	Smoke Vent (Tipping Hall)	Vents open in event of fire alarm or if deluge system is activated	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-5	Smoke Vent (Tipping Hall)	Vents open in event of fire alarm or if deluge system is activated	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-6	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-7	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify

[6] The following convention should be observed when labelling potential atmospheric emission points: A4-1, A4-2, A4-3,…etc.

[7] Estimate the potential maximum emission for each malfunction identified.

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
		manually by operators to release buildup of water vapor/fog.			
A4-8	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-9	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-10	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-11	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-12	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-13	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
		manually by operators to release buildup of water vapor/fog.			
A4-14	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-15	Smoke Vent (Bunker)	Vents open in event of fire alarm or if deluge system is activated. Can also be opened manually by operators to release buildup of water vapor/fog.	Smoke, particulates, CO, NOx	Generally not possible to quantify	Generally not possible to quantify
A4-16	Boiler Drum Safety Valve	Overpressure	High pressure steam	N/A (clean steam)	N/A (clean steam)
A4-17	Main steam line Safety Valve	Overpressure	High pressure steam	N/A (clean steam)	N/A (clean steam)
A4-18	Steam line – Medium pressure safety valve	Emission in event of issue with steam line	Medium pressure steam	N/A (clean steam)	N/A (clean steam)
A4-19	Steam line – Low pressure safety valve	Emission in event of issue with steam line	Low pressure steam	N/A (clean steam)	N/A (clean steam)
A4-20	Startup Ejector Exhaust	Exhausts during startup	Low pressure steam	N/A (clean steam)	N/A (clean steam)
A4-21	Feedwater Tank Safety Valve	Emission in case of emergency issue with feedwater tank. Extract on side of building	Water	N/A	N/A

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
A4-22	Feedwater Tank Safety Valve	Emission in case of emergency issue with feedwater tank. Extract on side of building	Water	N/A	N/A
A4-23	Turbine Exhaust Duct Safety Valve	Overpressure	Low pressure steam	N/A (clean steam)	N/A (clean steam)
A4-24	Turbine Exhaust Duct Bursting Disc	Overpressure	Low pressure steam	N/A (clean steam)	N/A (clean steam)
A4-25	Backup Diesel fired electricity generation plant	Trip on grid combined with failure of plant to switch automatically to Island mode resulting in a blackout and automatic or manual start-up of emergency diesel generator	CO NOx Particulates TOC	800 mg/m^3 500 mg/m^3 20 mg/m^3 250 mg/m^3	1.3 0.8 0.04 0.4
A4-26	Overpressure relief valve – Clay/ Carbon Silo	Overpressure in silo	Activated carbon/clay dust	Negligible	Negligible
A4-27	Overpressure relief valve – Hydrated Lime Silo	Overpressure in silo	Hydrated Lime dust	Negligible	Negligible
A4-28	Overpressure relief valve - Quicklime and Expanded Clay silos	Overpressure in silo	Lime, Expanded clay dust	Negligible	Negligible
A4-29	Overpressure relief valve – Flue Gas	Overpressure in silo	Flue Gas Cleaning Residues	Negligible	Negligible

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
	Cleaning Residue Silos 1 & 2				
A4-30	Overpressure relief valve – Boiler Ash Residue Silo	Overpressure in silo	Boiler Ash	Negligible	Negligible
A4-31	Overpressure relief valve – Maturation Silo	Overpressure in silo	Flue Gas Cleaning Residues	Negligible	Negligible
A4-32	Proposed Aqueous Waste Storage Tank	Overpressure device for safety to atmosphere Nitrogen from Blanketing system	Nitrogen and low level vapours from aqueous waste storage	Negligible	Negligible
A4-33	Proposed Aqueous Waste Storage Tank	Overpressure device for safety to atmosphere Nitrogen from Blanketing system	Nitrogen and low level vapours from aqueous waste storage	Negligible	Negligible
A4-34	Proposed Activated Carbon Unit	Venting of overpressure from aqueous waste storage tanks when furnace not in operation	Nitrogen and low level vapours from aqueous waste storage	Negligible	Negligible
A4-35	Hydrogen Vent from proposed hydrogen generation unit	Overpressure of Hydrogen gas in the event of system overpressure	Hydrogen Gas 99% purity	Generally not possible to quantify	Generally not possible to quantify

Emission Point Code [6]	Description of source of emission	Malfunction which could cause an emission	Emission details (Potential max. emissions) [7]		
			Parameter/Material	mg/Nm^3	kg/hour
A4-36	Extracted air from proposed Bottom ash storage building	Dust filter on fan outlet.	Dust, CO, H2	Negligible	Negligible
A4-37	Proposed boiler ash silo for third party ash	Overpressure relief from silo to atmosphere	Boiler ash residue in dust form	Negligible	Negligible
A4-38	Proposed flue gas cleaning residue silo for third party ash	Overpressure relief from silo to atmosphere	Flue gas residue in dust form	Negligible	Negligible
A4-39	Proposed flue gas cleaning residue silo for third party ash	Overpressure relief from silo to atmosphere	Flue gas residue in dust form	Negligible	Negligible
A4-40	Proposed Nitrogen storage vessel	Nitrogen gas venting in the event of overpressure	Nitrogen gas 95% purity	N/A (not a pollutant)	N/A (not a pollutant)

*add rows to the table as necessary