

**Indaver Ireland Limited**

## IE Licence Review Application

Waste Storage Capacity Calculations

Reference: LA010332

Issue | 06 July 2023

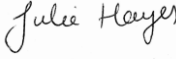


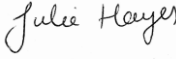


This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 289377-00

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## Document Verification

**Project title** IE Licence Review Application  
**Document title** Waste Storage Capacity Calculations  
**Job number** 289377-00  
**Document ref** LA010332  
**File reference** 4-04 Reports

<b>Revision</b>	<b>Date</b>	<b>Filename</b>	Attachment 4-3-7 Waste Storage Capacity Calculations		
Draft 1	February 2023	<b>Description</b>	Draft 1 for Client Review		
			<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
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		<b>Description</b>	Issue		
			<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
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		<b>Description</b>			
			<b>Prepared by</b>	<b>Checked by</b>	<b>Approved by</b>
		<b>Name</b>			
		<b>Signature</b>			

Issue Document Verification with Document

# Contents

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1.	Waste Storage Capacity	1
1.1	Calculations	2

# 1. Waste Storage Capacity

Table Heading	Description	Working	Tonnage	Density
Waste accepted and in storage pending treatment	MSW + Solid Haz Waste in Bunker	Waste Feed (7,111T)	7,111	0.35 - 0.65
	Aqueous Waste	2 x 300m <sup>3</sup>	600	1
	Waste oils	1000 Litres	0.82	0.82
	Interceptor residue	5m <sup>3</sup>	4.5	0.9
	WEEE	25 tonnes	25	0.21
	Recyclable	20 tonnes	20	0.21
	Miscellaneous Hazardous Waste	1 tonne	1	0.49
	Third Party Ash	2 x 200m <sup>3</sup> FGCR (260T) 1 x 100m <sup>3</sup> Boiler Ash & other residues (80T)	340	0.65 (FGCR) 0.8 (Boiler Ash)
	<b>Subtotal</b>		<b>8102.32</b>	
Other materials (non-waste) accepted, including non-waste feedstocks	Quick Lime	115 m <sup>3</sup>	126.5	1.1
	Hydrated Lime	150 m <sup>3</sup>	330	2.2
	Ammonia	62 m <sup>3</sup>	56.42	0.91
	Activated Carbon/ Clay	80 m <sup>3</sup>	56	0.7
	Expanded Clay	80 m <sup>3</sup>	56	0.7
	Boiler Treatment Chemicals/Other additives	Chemicals, oils, greases, lubricants	5.45	1
	Sodium Hydroxide	0.15 m <sup>3</sup>	0.3195	2.13
	Nitric Acid	3 m <sup>3</sup>	3.45	1.51
	Sodium Chloride	4 tonnes	4	2.16
	Ethylene Glycol	1000 litres	1.11	1.11
	Lubricant Oil	7 m <sup>3</sup>	6.65	0.7-0.95
	Nitrogen (blanketing of storage tanks)	5 m <sup>3</sup>	5.8	1.16
	Fuel Oil	52.9 m <sup>3</sup>	43.9	0.83
	Propane	0.018-0.05 kg x 22	0.0011	0.49

Table Heading	Description	Working	Tonnage	Density
	CEMS gases	150 litres Nitrogen (0.174T) 200 litres Hydrogen (0.018T) 910 litres mixture of gases (Nitrogen >88%) (1.06T) 0.429 tonnes mixture of gases (Argon 93%)	1.68	1.16 (Nitrogen) 0.09 (Hydrogen) 1.66 (Argon)
	<b>Subtotal</b>		<b>697.29</b>	
Capacity of Treatment Vessels and Chambers	Flue Gas Treatment Pathway (including boiler passes)	200,000 Nm <sup>3</sup> /hr (max annual average hourly Flue Gas Flowrate)	-	-
	Hydrogen Generation Unit	50 m <sup>3</sup> Electrolyte Storage Tank (Potassium Hydroxide)	75	1.5 (Potassium Hydroxide)
		50m <sup>3</sup> Gas Holder Tank (Hydrogen)	0.0045	0.02
		2T Storage Tank (Hydrogen)	2	-
		0.5T fully loaded tube trailer (Hydrogen)	0.5	-
<b>Subtotal</b>		<b>77.5</b>		
Treated Waste, whether classified as waste or not	Bottom Ash	600 T (existing) 5,000 T (proposed development)	5,600	1.22
	Boiler Ash	122 m <sup>3</sup>	97.6	0.8
	Flue Gas Cleaning Residues	476 m <sup>3</sup>	309.4	0.65
	Metals	Ferrous (100 tonnes) Non-Ferrous (25T)	125	1.5
	Pre-treated residues	100 tonnes	100	1.17
	<b>Subtotals</b>		<b>6,232</b>	
	<b>TOTAL</b>		<b>15,109.1</b>	

## 1.1 Calculations

The following were used to assist with the calculations:

- 1 tonne = 1 m<sup>3</sup> x Density
- 1 tonne = 1,000 Litres x Density
- 1 tonne = 1,000 kg