Annual permit report

Installation	Docksway
Permit reference	LP3135SB
Reporting period	2020
Permit Operator	Novera Energy

Author: Sam Morris Date: 21/01/2021

Authorised to sign as representative of the Operator

Fugitive Emissions Review		Reporting period: 2020
Installation Name:	**Docksway Landfill gas utilisation plant**	**Permit reference LP3135SB**

Substances Released/Potentially	**Description of event and any contamination/decontamination of the site which has occurred**
Landfill gas	Details of any notifiable events have been submitted to NRW in accordance with our notification procedure
Spillages	No significant spillages, contamination or decontamination to report for this installation

Raw Materials (& Water) Assessment Table					
Site:	Docksway	**Reporting period:**	2020	**Permit Reference:**	LP3135SB

Raw Materials	Application	Current Measures to Ensure Efficiency and Waste Minimisation	Annual Quantity Used	Fate of Material	Environmental Impact Potential	Reason Alternatives are Not Practicable	Details of Process Modifications which Could Result in Savings
Landfill gas	Fuel for engines to produce electricity	Kilowatt generation from volumes processed is maximised through effective operation, maintenance and servicing of plant	Variable depending on site conditions	Combustion	Potentially flammable, explosive, toxic, asphyxiant, ecotoxic, corrosive and odorous, greenhouse gas	N/A - Combustion of landfill gas essential for environmental control	N/A - environmental benefits to be gained from conversion of methane to CO2
Lubricating oils	To ensure efficiency of utilisation plant is maintained in accordance with manufacturer's instructions	Efficient use of lubricating oil is maximised through oil analysis to identify requirement for oil changes	Oil used is continually under review as part of the budgeting process	Reprocessing	Ecotoxic and odorous	Specification determined by engine manufacturer to ensure maximum performance and efficiency	Oil used is speciaised for landfill gas fuel as recommended by the OEM. Oil change intervals are based on oil analysis therefore maximising efficiency and minimising use
Water	Coolant for engine block and domestic water supply	Cooling water is recirculated around the engines to maximise efficiency and minimise consumption	No water supply on site.	Treatment	Inert	N/A - Inert therefore best practicable environmental option	Re-use of water for coolant purposes ensures volumes used are as low as reasonably practicable. Cleaning practices assessed and minimal volumes used, cleaning practices are infrequent
	Hygiene purposes	handwashing and (where available) toilet facilities		where installed toilet waste is removed from site and treated as sewerage	Inert	n/a	n/a
Glycol	Antifreeze for use in coolant water	Glycol is recirculated around the engines to maximise efficiency and minimise consumption	Glycol contained within enclosed-loop system is drained into a container for re-use. OEM* recommends change of glycol every 20,000 hours. Infinis policy is to change following natural depletion or contamination.	Reprocessing	Toxic, ecotoxic	Specification determined by engine manufacturer to ensure maximum performance and efficiency	Antifreeze mix is specific to engine type and pre-determined by the OEM*. Levels are topped-up following natural depletion or contamination
Battery Acid	In batteries used for engine start-up and to provide back-up power to ensure rapid restart following any loss of mains power supply	Battery use is essential minimised to the applications listed (see left)		Recycled	Corrosive	Portable electrical supply required for start-up	Minimal use of battery during start-up only therefore opportunity for savings is insignificant

*OEM: Original Engine Manufacturer

Waste Minimisation, Recovery and Disposal Assessment

Installation Name:	Docksway Gas Utilisation Plant	**Permit Reference:**	LP3135SB	**Reporting period:**	2020

Waste Stream	**Application/Source**	**Current Measures to Ensure Efficiency and Waste Minimisation**	**Fate of Material**	**Reason Alternatives are Not Practicable**	**Details of Process Modifications which Could Result in Savings**
Oil Filters (205ltr Drum)	Engine maintenance	Predetermined by manufacturers' recommendations to ensure efficiency	Reprocessing	Oil and filtration devices predetermined by manufacturers to ensure efficiency	Not applicable: oil filters changed at pre-determined life based on oil analysis and differential pressure
Oil Contaminated Rags & Absorbents (205ltr Drum)	Engine maintenance and housekeeping	Control measures in place to prevent spillage	Reprocessing	As above	No further modifications considered possible: Preventative maintenance and procedural practices minimise spillage and the requirement for oil absorbancy products
Waste Engine Oil (Bulk)	Engine maintenance	Efficient use of lubricating oil is maximised through oil analysis to identify requirement for oil changes	Reprocessing	As above	No further modifications considered possible: Oil used is specific to the landfill gas fuel in use and as recommended by the OEM*. Oil change intervals are based on oil analysis therefore maximising efficiency and minimising use
Batteries	Engine maintenance	Recharged	Recycled	Batteries essential for engine start-up and ensuring rapid restart	Batteries only replaced when they no longer hold a charge. Maintenance practices are in place to lengthen battery life
Fluorescent Tubes	Lighting	Replacement when faulty or damaged	Reprocessing	Alternatives not considered practicable due to warm-up time of energy saving bulbs	Tubes are only replaced when they have expired
General Waste	Packaging	Waste streams which can be reprocessed or recycled are identified and segregation facilities provided where appropriate	Disposal	Materials not segregated/ reprocessed are produced in small quantities only making alternatives not viable	Not applicable as a result of small quantities only being produced
Waste water/effluent	Welfare facilities	Facilities are maintained to ensure minimal water usage	Road tanker to treatment plant	Connection to mains sewer not practical - quantities produced are small.	Not applicable as a result of small quantities only being produced

*Original Engine Manufacturer

Annual Reporting of Other Performance Indicators

Installation:	Docksway Landfill Gas Utilisation Plant	**Permit Reference:**	LP3135SB

Parameter	**2020**	**Units**
Flare operation hours	339	hrs
Gas engine downtime hours	289	hrs*
Gas engine operation hours	8495	hrs
Volume of landfill gas combusted	148,177	m3 (treated by flare)
	2,649,353	m3 (treated by engines)
	2,797,530	m3 (total treated by engines & flare)

Operator's Comments:
Please contact permit-compliance@infinis.com for any queries regarding the above

Reporting of Performance Indicators (Form Ref: PI1)

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Annual Production/Treatment (MWh)	
Total production of energy	4411

Environmental Performance Indicators

Parameter	**Annual Average 2020**	**Units**	**Trends in Environmental Performance**	
			2018	**2019**
Total oxides of nitrogen (expressed as NO2) emission	2.7	Kg/MWh	2.1	1.5
Total carbon monoxide emission	1.7	Kg/MWh	4.6	3.0
Total engine downtime (downtime hrs/available operation time in hrs)	3.3	%	8.8	11.0

Reporting period	**Energy Imported (Primary Energy Usage) (MWh)**	**Parasitics (MWh)**	**Energy Exported (MWh)**	**Energy Used on Site (MWh)**	**Site Efficiency**
2020	5	268	4143	273	33.8

*site efficiency has been calculated as follows: ((Engine efficiency (%) x (gas to generation/total gas) x (power export / (power generation + imported power)).

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Accident Management Plan Review	**2020**
Date of next review	
Reviewed monthly following a review of notifiable events	

Permit requires that the accident management plan is reviewed at least every 2 years and was last updated 07/07/20 Revision 5.

Operator's comments:
No accidents occurred during this period which would require amendment to the Accident Management Plan for this installation.

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Emissions to Air Reporting	**2020**		
Report Submission Date		26-Oct-20	
Submitted to		Tyrone Ward & Elizabeth Parr	