

Notice: Variation of Permit

This permit has been varied by the Scottish Environment Protection Agency (SEPA) in exercise of its powers under Regulation 46 of the Pollution Prevention and Control (Scotland) Regulations 2012 (“the Regulations”). The terms used in this notice, unless otherwise defined, have the same meaning as in the Regulations.

Permit Number:	PPC/A/1013141/CP02
Site address:	Petroineos Manufacturing Scotland Limited (PIMSL) PO Box 21, Bo’ness Road, Grangemouth, Stirlingshire, FK3 9XH
Operator:	Petroineos Manufacturing Scotland Limited (PIMSL) SC010612 PO Box 21, Bo’ness Road, Grangemouth, Stirlingshire, FK3 9XH
Variation Number:	VAR01
Effective Date of Variation:	9 December 2022
Details of Variation:	The permit is varied as specified in the Schedule attached.

Schedule

The permit has been varied as follows:

- Condition 1.1.4.2 (j) has been deleted and replaced as follows:

Deleted

- Table 2.1 has been deleted and replaced as follows:

Table 2.1 - Reporting Requirements

Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Primary point of contact with SEPA	2.1.1 & 2.1.2	Without delay in the event of a different person being appointed	As required
Incident notification	2.4.4, 2.4.5, 4.5.7	Without delay by telephone, confirmation in writing by the next working day	As required
Incident investigation report	2.4.6	Within 14 days of the date of the Incident unless otherwise agreed in writing with SEPA	As required
Resource Utilisation Report	2.5.2	Once every four years	31 March 2023
Raw materials, energy and fuel	2.5.5	Annually within three months of the end of the calendar year	Annually
Assessment of measures to protect soil and groundwater	2.6.4	At least once every four years	30 November 2022
Groundwater monitoring	2.6.5	Annually	30 November 2019
Soil monitoring	2.6.6	At least every 10 years	30 November 2028
Methodology for groundwater/soil monitoring	2.6.7	At least three months in advance of groundwater or soil monitoring required by 2.7.5 or 2.7.6	Not applicable
Changes to soil and groundwater monitoring methodology	2.6.9	No later than six months after each monitoring event	Not applicable
Intention to cease permitted activities, or part thereof	2.8.2	No later than two months prior to the date of cessation	As required

Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Commissioning reports	3.8.2	Within one month from the end of the commissioning	As required
Noise and Vibration Assessment	4.2.1	At least every four years after first report	31 August 2022
VOC fugitive release inventory	4.4.1	Annually within two months of the end of the calendar year	Annually
Annual leak repair programme and review	4.4.3	Annually within two months of the end of the calendar year	Annually
Forecast of planned flaring events	4.5.1	Annually within one month of the end of the calendar year	Annually
Quarterly flaring review	4.5.2	Quarterly within one month of the end of the relevant period	Quarterly
Annual flaring review	4.5.3	Annually within two months of the end of the calendar year	Annually
Any planned flaring of hydrocarbons not declared in the forecast or of changes to the forecast	4.5.5	In advance	As required
Actual sulphur recovery of SRUs and TGU	4.7.3.1	Every two years	31 March 2020
Quarterly record of the monthly sulphur mass balance	4.7.4	Quarterly within one month of the end of the relevant period	Quarterly
Annual Sulphur/SO2 Emissions and Predicted sulphur dioxide annual mass emissions for the subsequent year	4.7.7	Annually within one month from the end of the calendar year	Annually
Air emission spot testing	5.2.5, 6.2.5.2, 7.2.5 & 8.2.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Air emission continuous monitoring results	5.2.5, 6.2.5.2, 7.2.5 & 8.2.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Mass emissions to air	5.2.6, 6.5.2, 7.2.6 & 8.2.6	Annually within two months from the end of the calendar year	Annually

Summary of Information to be Reported	Condition	Date/Within period/ Frequency to be Reported	Date First Report Due
Results of assessment of benzene and phenol levels in desalter brine from CDU1, CDU2 & CDU3	5.4.1	Annually within two months from the end of the calendar year	Annually
QAL 2 and AST Reports	6.2.5.2	Quarterly within one month from end of the relevant quarter	As required by Condition 6.2.1.5 and 6.2.1.6 respectively
Operating Hours and Energy Input per fuel	6.2.5.2.b	Quarterly and Annually within one month of the end of the calendar quarter and calendar year respectively	Quarterly and Annually
Notification of change to SUSD periods for LCPs	6.3.3.1 a	As required	14 days prior to change being made
Notification of more than 10 validated daily average data sets being discarded due to malfunction or maintenance of CEMS	6.3.3.1.b	As required	Within five days or other such periods agreed in writing with SEPA
Emissions to water	8.3.5	Quarterly within one month from the end of the relevant quarter	Quarterly
Mass emissions to water	8.3.6	Annually within two months from the end of the calendar year	Annually

3. Table 2.3 has been deleted and replaced as follows:

Table 2.3 – Resource Utilisation Data recording

Raw Material, Energy or Fuel	Unit of Measurement
Energy consumption	GJ
Electricity imported	GJ
Fuel Gas consumed	GJ/te of crude oil processed
Water Consumed	Kg/te of crude oil processed
Total VOC emissions to air	Kg/te of crude oil processed
Benzene emissions to air	Kg/te of crude oil processed

Carbon dioxide emissions	Kg/te of crude oil processed
Crude oil	Annual throughput in tonnes

4. Condition 4.7.1 (a) has been deleted and replaced as follows:

Deleted

5. In Condition 5.4.2 Table A is deleted and replaced as follows:

1. Planned operation of No.2 (standby) flare.
2. Planned Maintenance of the flare gas recovery system.
3. Flare gas quality outwith flare gas recovery system design envelope where recovery of the gas threatens the reliability of the system.
4. Periods of Refinery maintenance that require large volumes of nitrogen to be purged to the flare.

6. Section 5.5 is deleted.

7. Tables 5.1 to 5.4 are deleted and replaced as follows:

Table 5.1 - Emissions to Air ELVs

Source of Emission	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2
	Emission source	CDU3/DHT combined (BA-101 & BA-301)	CRU Main Heater & WHB common stack (S-110)	CRU 1 st Interheater Unit (B-109)
	Large Combustion Plant	Yes (124 MWth)	Yes (127 MWth)	Yes (63 MWth)
	Stack height/diameter (m)	79 / 3.7	95.7 / 2.7	67.5 / 2.4
	Location on Figure 5.1	1	2	5
	NGR	NS 9485 8183	NS 9487 8166	NS 9462 8182
Monitoring Details	Type of Monitoring	C, SS	C, SS	C, SS
	Sampling Location	Stack	Stack	Stack

Limits for Parameters from Emission Source	Carbon Monoxide	Refer to Table 6.1		
	Oxides of Nitrogen (as NO ₂)			
	Sulphur Dioxide			
	Particulate			
	Smoke			
	Dioxin/Furans	-	As specified in Condition 5.4.3	-

Note: where “ - ” is used no emission limit has been set.

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-FLARE-1	EP-FLARE-2
	Emission source	No. 1 Flare	No. 2 Flare
	Large Combustion Plant	No	No
	Stack height/diameter (m)	91.5 / 1.075	91.5 / 1.075
	Location on Figure 5.1	3	4
	NGR	NS 9501 8172	NS 9494 8159
Monitoring Details	Type of Monitoring	C (flow only)	C, SS (flow only)
	Sampling Location	Not required	Not required
	Oxides of Nitrogen (as NO ₂)	-	-
	Sulphur Dioxide	-	-
	Smoke	As specified in Condition 4.5.8	

Note: where “ - ” is used no emission limit has been set.

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-CDU1-1	EP-CDU1-2	EP-CDU2-1
	Emission source	No. 1 CDU B1 Heater	No. 1 CDU B1A Heater	No.2 CDU / No.2 DHT (combined)
	Large Combustion Plant	No (29MW)	No (19MW)	Yes (87 MW)
	Stack height/diameter (m)	42.3 / 1.37	56.4 / 1.58	61 / 3.38
	Location on 5.2	1	2	3
	NGR	NS 9452 8196	NS 9454 8194	NS 9462 8182
	Fuel	Fuel gas	Fuel gas	Fuel gas
Monitoring Details	Type of Monitoring	SS	SS	C, SS
	Sampling Location	Stack	Stack	Stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	100	100	Refer to Table 6.1
	Oxides of Nitrogen (as NO₂) mg/m³	150 note 4	150 note 4	
	Sulphur Dioxide mg/m³	500 note 1	500 note 1	
		35 note 2,3	35 note 2,3	
	Particulates mg/m³	-	-	
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold		
	Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes			

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 August 2023

Note 2: From 01 September 2023

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-HFU-1
	Emission source	Hydrofiner combined heater & stripper boilers
	Large Combustion Plant	No (18.3 + 12.3MW)
	Stack height/diameter(m)	80 / 1.35
	Location on Figure 5.2	4
	NGR	NS 9450 8179
	Fuel	Fuel Gas
Monitoring Details	Type of Monitoring	SS
	Sampling Location	Stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	100
	Oxides of Nitrogen (as NO₂) mg/m³	150 note 4
	Sulphur Dioxide mg/m³	500 note 1
		35 note 2, 3
	Particulates mg/m³	-
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes		

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 August 2023

Note 2: From 01 September 2023

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-HYDX-1		EP-HCU-2	EP-HYD-2
	Emission source	S – 601 No.2 VDU and HCU heaters (combined)		Mild Vacuum Column Reboiler (stack H-370)	Hydrogen Plant Reforming Furnace H201 (stack S-602)
	Stack height/diameter (m)	85 / 3.5		70 / 1.5	84 / 4.19
	Large Combustion Plant	Yes VDU2 Charge Heater H-101 (65MW) + H-301 (24 MW) + H-302 (80MW)		No (20MW)	No (118MW–steam reforming furnace)
	Location on Figure 5.3	1		5	7
	NGR	NS 9462 8182		NS 9477 8137	NS 9471 8154
	Fuel	Refer to Table 6.1		Fuel Gas	Fuel Gas
Monitoring Details	Monitoring Point Number	EP-VDU-1 (H101)	EP-HCU-1 (H301 & 302)	-	-
	Type of Monitoring	C, SS	C, SS	SS	C, SS
	Sampling Location	VDU2 duct to stack	HCU duct to stack	Duct to stack	Duct to stack
Limits for Parameters from Emission Source	Carbon Monoxide mg/m³	Refer to Table 6.1		100	100
	Oxides of Nitrogen (as NO₂) mg/m³			250 note 5	300
				150 note 4, 6	
	Sulphur Dioxide mg/m³			500 note 1	500 note 1
				35 note 2, 3	35 note 2
Particulate mg/m³	-	-			
Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold				
	Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes				

Note: where “-” is used no emission limit has been set.

Note 1: Until 31 August 2023

Note 2: From 01 September 2023

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

Note 5: Until 30 April 2023

Note 6: From 01 May 2023

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-HYD-1	EP-SRU-2	EP-SRU-4	EP-FLARE-3
	Emission source	Catacarb Regenerator Atmospheric Vent (V-205)	SRU5 J-50701A/B Eductors vent	SRU6 J-60701A/B Eductors vent	No. 3 Flare
	Stack height/diameter (m)	84 / 4.2	16.5 / 0.08	16.5 / 0.08	91.5 / 1.075
	Large Combustion Plant	No	No	No	No
	Location on 5.3	6	Not shown	Not shown	2
	NGR	NS 9471 8154	NS 9479 8153	NS 9475 8161	NS 9485 8145
Monitoring Details	Type of Monitoring	C, SS	-	-	C (flow only)
	Sampling Location	Duct to stack	-	-	Not required
Limits for Parameters from Emission Source	Carbon Monoxide, mg/m³	-	-	-	-
	Oxides of Nitrogen (as NO₂), mg/m³	-	-	-	-
	Sulphur Dioxide,	-	-	-	-
	Particulates, mg/m³	-	-	-	-
	Smoke	-	-	-	As specified in Condition 4.5.8

Note: where "-" is used no emission limit has been set.

Table 5.1 (cont'd) - Emissions to Air ELVs

Source of Emission	Emission point number	EP-SRU-1	EP-SRU-3
	Emission source	H – 50704 Sulphur Recovery Unit 5	H – 60704 Sulphur Recovery Unit 6
	Stack height/diameter (m)	70 / 0.91	70 / 0.91
	Large Combustion Plant	No	No
	Location on 5.3	3	4
	NGR	NS 9479 8153	NS 9475 8161
Monitoring Details	Type of Monitoring	C, SS	C, SS
	Sampling Location	Stack	Stack
Limits for Parameters from Emission Source	Carbon Monoxide, mg/m ³	-	-
	Oxides of Nitrogen (as NO ₂), mg/m ³	-	-
	Sulphur Dioxide, mg/m ³	1 tonne per day Note 1	
	Particulates, mg/m ³	-	-
	Hydrogen Sulphide, mg/m ³	-	-
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold	
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972)			

Note: where “-” is used no emission limit has been set.

Note 1: The limits apply except for:

- (i) periods of start-up and shutdown of either SRU and the TGTU;
- (ii) periods of planned preventative maintenance of TGTU notified in advance in writing to SEPA;
- (iii) in the case of Incidents solely involving the TGTU and its control and shutdown system (and without prejudice to Condition 2.4.1) where the cumulative duration of non-operation of TGTU does not exceed 7 days in a calendar year.

Table 5.2 - Emissions to Air Monitoring Requirements

Parameter	Emission point number(s)	Spot Sampling (SS)			Continuous (C)		
		Standard	Frequency	Operational Mode	Type	Standard	Averaging Period for ELV Compliance
Sulphur Dioxide	EP-CDU1-1 EP-CDU1-2 EP-HFU-1	BS EN 14791	Annually	Normal Operation	-	-	-
	EP-HYD-2	BS EN 14791	Annually	Normal Operation	-	BS EN 14181 BS EN 15267-3	Monthly
	EP-HCU-2	BS EN 14791	Annually	Normal Operation	-	-	-
	EP-SRU -1 with tail gas treatment unit operating	BS EN 14791	Annually	Normal Operation	Continuous	BS EN 14181 BS EN 15267-3	Daily average
	EP-SRU-3 with tail gas treatment unit operating	BS EN 14791	Annually	Normal Operation	Continuous	BS EN 14181 BSEN 15267-3	Daily average
Oxides of Nitrogen (as NO ₂)	EP-CDU1-1 EP-CDU1-2 EP-HFU-1 EP-HCU-2	BS EN 14792	Annually	Normal Operation	-	-	-
	EP-HYD-2	BS EN 14792	Annually	Normal Operation	Continuous	BS EN 14181 BS EN 15267-3	Monthly
Particulate	EP-CDU1-1 EP-CDU1-2 EP-HYD-2 EP-HCU-2	BS EN 13284-1:2002	Annually	Normal Operation	-	-	-
Carbon Monoxide	EP-CDU1-1 EP-CDU1-2	BSEN15058	Six monthly	Normal Operation	-	-	-
	EP-HYD-2	BS EN 15058	Annually	Normal Operation	Continuous	BS EN 14181 BS EN 15267-3	Monthly
	EP-HFU-1 EP-HCU-2	BSEN15058	Annually	Normal Operation	-	-	-

Parameter	Emission point number(s)	Spot Sampling (SS)			Continuous (C)		
		Standard	Frequency	Operational Mode	Type	Standard	Averaging Period for ELV Compliance
Smoke	EP-CDU1-1 EP-CDU1-2 EP-HFU-1 EP- HYD-2 EP- HCU-2	BS 2742:1969	As indicated by DCS monitoring	-	Stoichiometry via DCS	-	-
	EP-FLARE-1 EP-FLARE-2	-	-	-	CCTV	BS 2742: 1969	-

Table 5.3 - Reference Conditions

Emission Point Number	Reference Condition
EP-CDU1-1 EP-CDU1-2 EP-HFU-1 EP-HYD-2 EP-HCU-2 EP-SRU 1 and 3	Dry gas at 273K, 101.3kPa, 3% O2

Table 5.4 - Mass Emissions to Air

Parameter	Emission Point Number	Method Summary	Mass Emissions Result to be recorded as
Sulphur Dioxide	EP-FLARE-2	Calculated based on flow monitoring data and method agreed in writing with SEPA	SO2 tonnes/yr by each emission point and as a total
	EP-CDU1-1 EP-CDU1-2 EP-HFU-1	Calculated based on flow monitoring data	
	EP-HCU-2 EP- HYD-2 EP-FLARE- 3 EP-SRU-1 EP- SRU-3	Calculated based on flow monitoring and measured data	
Oxides of Nitrogen (as NO2)	EP-FLARE-1 EP-FLARE-2	Calculated based on flow monitoring data and method agreed in writing with SEPA	NO2 tonnes/yr by each emission point and as a total

Parameter	Emission Point Number	Method Summary	Mass Emissions Result to be recorded as
	EP-CDU1-1 EP-CDU1-2 EP-HFU-1	Calculated based on flow monitoring data	
	EP-HCU-2 EP-HYD-2	Calculated based on flow monitoring and measured data	
Particulates	EP-CDU1-1 EP-CDU1-2	Calculated based on flow monitoring data	Particulates tonnes/yr by each emission point and as a total
	EP-HCU-2 EP-HYD-2	Calculated based on flow monitoring and measured data	

8. Condition 6.4.1 has been deleted.

9. Table 6.1 has been deleted and replaced as follows:

Table 6.1 - Emissions to Air ELVs

	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2	EP-CDU2-1	EP-HYDX-1
Source of Emission	Emission source	CDU3/DHT combined (BA-101 & BA-301)	CRU Main Heater & WHB common stack (S-110)	CRU 1st Interheater Unit (B-109)	No.2 CDU / No.2 DHT (combined)	S – 601 No.2 VDU and HCU heaters H-101, H-301 & H-302 (combined)
	Large Combustion Plant & EIONET LCP Number	Yes (124 MWth) EIONET No. 3	Yes (127 MWth) EIONET No. 41	Yes (63 MWth) EIONET No. 40	Yes (87 MW) EIONET No. 1	Yes (169MW) EIONET No. 2
	Stack height/diameter (m)	79 / 3.7	95.7 / 2.7	67.5 / 2.4	61 / 3.38	85 / 3.5
	Location (Figure Number)	1 (Figure 5.1 in Schedule 5)	2 (Figure 5.1 in Schedule 5)	5 (Figure 5.1 in Schedule 5)	3 (Figure 6.1 in Schedule 6)	1 (Figure 7.1 in Schedule 7)
	NGR	NS 9485 8183	NS 9487 8166	NS 9490 8175	NS 9463 8184	NS 9463 8137
	Fuel	Fuel gas	Fuel gas	Fuel gas	Fuel gas	Fuel gas

Monitoring Details	Monitoring Point Number					EP-VDU-1	EP-HCU-1
	Type of Monitoring	C, SS	C, SS	C, SS	C, SS	C, SS	C, SS
	Sampling Location	Duct to Stack	Duct to Stack	Stack	Ducts to Stack	VDU2 duct to stack	HCU duct to stack
	Emission point number	EP-CDU3-1	EP-CRU-1	EP-CRU-2	EP-CDU2-1	EP-HYDX-1	
Limits for Parameters from Emission Source	CO mg/m ³	100	100	100	100	100	
	NO _x mg/m ³ (Monthly Mean)	150	150 Note 4	150 Note 4	150 Note 4, 5	150 - 200 Note 4, 6	
	SO ₂ mg/m ³	500 Note 1	500 Note 1	500 Note 1	500 Note 1	500 Note 1	
		35 Note 2	35 Note 2, 3	35 Note 2, 3	35 Note 2, 3	35 Note 2, 3	
	Particulate mg/m ³	5	5	5	5	5	
	Smoke	Not to exceed Ringelmann shade 2 within the first 10 minutes from start-up from cold					
Not to exceed Ringelmann shade 1 at any other time, as determined by BS 2742:1969 or its addendum (1972) other than short term excursions associated with soot blowing, load or fuel changes							

Note: where “ - ” is used no emission limit has been set.

Note 1: Until 31 August 2023

Note 2: From 01 September 2023

Note 3: During TAR periods, amine scrubber maintenance or scheduled CRU Regeneration events a higher monthly limit of 70mg/m³ applies. Each period must be agreed in writing in advance.

Note 4: During periods when Hydrogen levels in the fuel gas main exceed 50% an ELV of 200 mg/m³ applies. All periods must be reported to SEPA on a quarterly basis as agreed in writing. (This does not apply to VDU-2 when pre-heat is in operation).

Note 5: During periods when CDU2 is not operational DHT 2 Daily Limit is increased to 250mg/m³. The monthly ELV continues to apply.

Note 6: ELV calculated from ratio of fuel gas usage between VDU-2 and HCU, VDU-2 has an ELV of 200mg/m³, provided that air pre-heat greater than 200°C is in use (if air pre-heat greater than 200°C is not in use an ELV of 150 mg/m³ applies) and HCU has an ELV of 150mg/m³. See lookup Table 6.7.

Permit Number: PPC/A/1013141/CP02

10. Table 6.2 has been deleted and replaced as follows:

Emission Points	Parameter	Monitoring frequency	Monitoring standard or method	Operational Mode	Averaging Period for ELV Compliance and / or Reporting	Monitoring data collection frequency	Data handling requirements
EP-CDU3-1, EP-CRU-1 EP-HYDX-1 EP-CRU-2, EP-CDU2-1	NOx	Continuous	BS EN 14181 BS EN 5267-	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 14792	Normal Operation	Average over sample period.	Note 2	As specified in Condition 6.2.3
	SO2	Continuous	BS EN 14181 BS EN 5267-	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 14791 or using TGN M21 provided sampling is accredited (e.g UKAS)	Normal Operation	Average over sample period.	Note 2	As specified in Condition 6.2.3
	Particulate matter	6 monthly	BS EN 13284	Normal Operation	Average over sample period.	Note 2 and Note 4	As specified in Condition 6.2.3
	CO	Continuous (EP-CRU-1, EP-HYDX-1 and EP-CDU3-1) only) Note 6	BS EN 14181 BS EN 5267-	Normal Operation	As specified in Condition 6.3	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 15058	Normal Operation	Average over sample period.	Note 2	As specified in Condition 6.2.3

Emission Points	Parameter	Monitoring frequency	Monitoring standard or method	Operational Mode	Averaging Period for ELV Compliance and / or Reporting	Monitoring data collection frequency	Data handling requirements
	Oxygen	Continuous	BS EN 14181 BS EN 15267-3	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 14789 or alternative method agreed in writing	Normal Operation	Average over sample period.	Note 2	As specified in Condition 6.2.3
	Water vapour (if not measured on a dry basis)	Continuous Note 3	BS EN 14181 BS EN 15267-3	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 14790 or alternative method agreed in writing	Normal Operation	Average over sample period.	Note 2	As specified in Condition 6.2.3
	Temperature	Continuous	BS EN 14181 BS EN 15267-3	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2
		Annual	BS EN 16911-1	Normal Operation	Average over sample period	Note 2	As specified in Condition 6.2.3
	Pressure	Continuous Note 4	BS EN 14181 BS EN 15267-3	Normal Operation	As specified in Condition 6.1	Note 1	As specified in Condition 6.2.2

Permit Number: PPC/A/1013141/CP02

		Annual	BS EN 16911-1	Normal Operation	Average over sample period	Note 2	As specified in Condition 6.2.3
	Velocity/ flow	Annual	BS EN 16911-2	Normal Operation	Average over sample period	Note 2	As specified in Condition 6.2.3
EP-CDU3-1, EP-CRU-1, EP-CRU-2, EP-CDU2-1, EP-HYDX-1	Smoke	Continuous as indicated by DCS monitoring	BS 2742:1969 Stoichiometry by DCS	Normal Operation	As described in Table 6.1		

Notes:

1. Once every 10 seconds or average of all data recorded in one minute to represent a single measured value data point or any such other period that may be agreed in writing with SEPA.
2. Annually where CEMS in place, otherwise 6 monthly as identified in Column 3 above in accordance with Condition 6.2.3.
3. Moisture may be calculated from periodic monitoring data.
4. For plant burning fuel gas the requirement for Continuous monitoring for particulate and pressure when levels are consistently below the ELV may be waived, provided that this has been agreed in writing with SEPA. At the time of issue this applies to all units.

11. Table 6.5 has been deleted and replaced as follows:

Table 6.5 - Start up and shutdown thresholds

Plant Reference	Minimum start up load (MSUL)	Minimum shut-down load (MSDL)
EP-CDU3-1 in Tables 5.1 and Table 6.1	464 m3/Hr as measured by Feed meter 03FC0100	464 m3/Hr
EP-CDU2-1 in Tables 5.1 and Table 6.1	172 m3/Hr for 2CDU and 150 m3/Hr for DHT	172 m3/Hr for 2CDU and 150 m3/Hr for DHT
EP-CRU-1 in Tables 5.1 and Table 6.1	100 m3/Hr as measured by Feed meter 08FZ20118	100 m3/Hr as measured by Feed meter 08FZ20118
EP-CRU-2 in Tables 5.1 and Table 6.1	100 m3/Hr as measured by Feed meter 08FZ20118	100 m3/Hr as measured by Feed meter 08FZ20118
EP-HYDX-1 in Tables 5.1 and Table 6.1 monitored at the HCU and VDU to capture all the heater units:	165m3/hr for HCU and 280m3/hr for VDU	120m3/hr for HCU and 280m3/hr for VDU

Note 1: For combustion plants consisting of two or more combustion units discharging through a common wind shield the MSUL shall apply only to the start-up period of the first combustion unit when starting up and the MSDL shall apply only to the shut-down period of the last combustion unit when shutting down.

12. Condition 8.4.1 is deleted.

13. Table 8.2 has been deleted and replaced as follows:

Table 8.2 - Emissions To Water Monitoring Requirements

Parameter	Emission (Number(s))	Test Method	Reporting format	Sampling/ Measurement facility	Instantaneous	Composite	
					Frequency	Frequency	Sample basis
Flow	EP-ETP	MEWM ¹ ISBN 011752364X	m ³	Sampling facility at outlet of ETP to outfall	Continuous	-	-
pH	EP-ETP	MEWM ¹ ISBN 0117514284	pH units		Continuous	-	Flow proportional composite
					-	Weekly	
Ammoniacal Nitrogen (expressed as N)	EP-ETP	DIN 38406- E5	mg/l		-	Weekly	Flow proportional composite
Suspended solids	EP-ETP	MEWM ¹ ISBN 011751957X	mg/l & Annual Average		-	Daily	Flow proportional composite
Sulphide	EP-ETP	Methylene Blue, USEPA Method 376.2	mg/l		-	Weekly	Flow proportional composite
Total Arsenic	EP-ETP	EN ISO 11885	ug/l		-	Quarterly	Flow proportional composite
Total Chromium	EP-ETP	EN ISO 11885	ug/l		-	Weekly	Flow proportional composite
Total Copper	EP-ETP	EN ISO 11885	ug/l		-	Weekly	Flow proportional composite
Total Nickel	EP-ETP	EN ISO 11885	ug/l		-	Weekly	Flow proportional composite
Total Lead	ETP	TBC	ug/l		-	Quarterly	Flow proportional composite
Total Cadmium	ETP	TBC	ug/l		-	Quarterly	Flow proportional composite

Permit Number: PPC/A/1013141/CP02

Parameter	Emission (Number(s))	Test Method	Reporting format	Sampling/ Measurement facility	Instantaneous	Composite	
					Frequency	Frequency	Sample basis
Total Mercury	ETP	TBC	ug/l		-	Quarterly	Flow proportional composite
Total Vanadium	ETP	TBC	ug/l		-	Quarterly	Flow proportional composite
Total Zinc	EP- ETP	EN ISO 11885	ug/l		-	Weekly	Flow proportional composite
Biochemical Oxygen Demand	EP- ETP	EN ISO 10707	te/day		-	Weekly	Flow proportional composite

Parameter	Emission (Number(s))	Test Method	Reportin g format	Sampling/ Measurement facility	Instantaneous	Composite	
					Frequency	Frequency	Sample basis
Chemical Oxygen Demand	EP- ETP	ASTM D1252-95	te/day		-	Daily	Flow proportional composite
Hydrocarbon oil Index	EP- ETP	EN9377-2	mg/l, kg/day & Annual Average		-	Daily	Flow proportional composite
Phenol Index	ETP	EN 14402	mg/l		-	Monthly	Flow proportional composite
Benzene	EP- ETP	In-house UKAS accredited technique	mg/l	Sampling facility at outlet of ETP to outfall	-	Weekly	Spot sample
Toluene, Ethyl benzene and Xylene	EP- ETP	In-house UKAS accredited technique	mg/l		-	Monthly	Spot sample
Napthalene	EP- ETP	GC-MS, UKAS recognised technique calibrated using certified reference materials	ng/l		-	Monthly	Flow proportional composite
Anthracene	EP- ETP		ng/l		-	Monthly	Flow proportional composite
Fluoranthene	EP- ETP		ng/l		-	Monthly	Flow proportional composite

Parameter	Emission (Number(s))	Test Method	Reporting format	Sampling/ Measurement facility	Instantaneous	Composite	
					Frequency	Frequency	Sample basis
Phenanthrene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Pyrene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Benzo [a] anthracene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Chrysene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Benzo [a] pyrene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Benzo [ghi] perylene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Benzo [k] fluoranthene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Benzo [b] fluoranthene	EP-ETP		ng/l		-	Monthly	Flow proportional composite
Indeno [123-cd] pyrene	EP-ETP		ng/l		-	Monthly	Flow proportional composite

Note: where “ - ” is used no emission limit has been set.

Note 1: MEWM in the table above refers to the Environment Agency’s so-called “Blue Book” series of Methods for the Examination of Waters and Associated Materials. The ISBN number indicated refers to the specific title within this series.

14. Table 8.4 has been deleted and replaced as follows:

Table 8.4 - Mass Emissions to Water

Parameter	Combined Emissions (number)	Method (summary)	Mass Emission recorded as
Ammoniacal Nitrogen (expressed as N)	EP-ETP	Calculated based on flow monitoring data	Kg per year
Suspended Solids	EP-ETP	Calculated based on flow monitoring data	Kg per year
Sulphide	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Arsenic	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Chromium	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Copper	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Nickel	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Zinc	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Lead	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Cadmium	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Mercury	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Vanadium	EP-ETP	Calculated based on flow monitoring data	Kg per year
Biochemical Oxygen Demand	EP-ETP	Calculated based on flow monitoring data	Kg per year
Chemical Oxygen Demand	EP-ETP	Calculated based on flow monitoring data	Kg per year
Total Hydrocarbon	EP-ETP, EP-SC, EP-ESC	Calculated based on flow monitoring data	Kg per year
Benzene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Napthalene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Anthracene	EP-ETP	Calculated based on flow monitoring data	Kg per year

Parameter	Combined Emissions (number)	Method (summary)	Mass Emission recorded as
Fluoranthene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Phenanthrene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Pyrene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Benzo [a] anthracene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Chrysene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Benzo [a] pyrene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Benzo [ghi] perylene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Benzo [k] fluoranthene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Benzo [b] fluoranthene	EP-ETP	Calculated based on flow monitoring data	Kg per year
Indeno [123-cd] pyrene	EP-ETP	Calculated based on flow monitoring data	Kg per year

15. Annexes I & II have been deleted and replaced as follows:

ANNEX I – SULPHUR DIOXIDE DEROGATION

1 The Regulation

Regulation 25(6) of the Regulations provides that SEPA must include emission limit values that ensure that emissions do not exceed the levels associated with the best available techniques (BAT-AEL) laid down in the BAT Conclusions.

Regulation 25(12) of the Regulations states:

“SEPA may set a less strict emission limit value... for an installation if –

- (i) an assessment shows that achievement of the emission levels associated with the best available techniques as described in any BAT Conclusions would lead to disproportionately higher costs compared to environmental benefits due to the –
- (ii) the geographical location or local environmental conditions of the installation, or
- (iii) technical characteristics of the installation, ...”

Regulation 25(2)(c) provides that where a less strict value is set ("derogation"); it is a requirement that "the permit specifies the reasons for setting the value, including the result of the assessment and the justification for the conditions imposed". The purpose of this Appendix is to satisfy those requirements.

2 The Derogation Used

SEPA has decided to set ELVs that derogate from the BAT-AEL range in the BAT Conclusions in respect of Sulphur Dioxide.

Parameter	BAT-AEL ¹ in the BATc	Derogated ELV	Applicability
Sulphur Dioxide – fuel gas firing	35mg/Nm ³	500mg/Nm ³	All gas fired units until 01 September 2023

¹ BAT-AELs as specified in Tables 6, 13 and 14 of the Refining of mineral oil and gas BREF.

3 Basis for the Derogation

SEPA has set this emission limit value on the grounds that achievement of emissions within the BAT-AEL range would lead to disproportionately higher costs compared to environmental benefits due to the technical characteristics of the installation:

The technical characteristics of the installation mean that achievement of Sulphur Dioxide emissions within the BAT-AEL range would lead to disproportionately higher costs due to the need to:

- (i) Configuration of the plant within the site results in practical difficulties and increased time and costs for the construction of additional plant.
- (ii) The history of recent investment in techniques designed to reduce emissions.
- (iii) The remaining operational life of the plant

A Cost Benefit Analysis carried out by SEPA gave the result that achievement of emissions for in the case of Sulphur Dioxide within the BAT-AEL range would lead to disproportionately higher cost for the reasons given above.

4 Justification for the Conditions Imposed

SEPA has included an ELV of 500mg/Nm³ for Sulphur Dioxide on the grounds that SEPA considers it:

- represents BAT for the installation;
- ensures no significant pollution of the environment will be caused and that a high level of protection of the environment as a whole will be achieved;
- does not exceed any emission limit value set out in the Annex V to the Industrial Emissions Directive; and,

is time limited for planned upgrades to 01 September 2023 (500mg/Nm³ for gas firing).

ANNEX II – NITROGEN DIOXIDE DEROGATION

1 The Regulation

Regulation 25(6) of the Regulations provides that SEPA must include emission limit values that ensure that emissions do not exceed the levels associated with the best available techniques (BAT-AEL) laid down in the BAT Conclusions.

Regulation 25(12) of the Regulations states:

“SEPA may set a less strict emission limit value... for an installation if –

- (i) an assessment shows that achievement of the emission levels associated with the best available techniques as described in any BAT Conclusions would lead to disproportionately higher costs compared to environmental benefits due to the –
- (ii) the geographical location or local environmental conditions of the installation, or
- (iii) technical characteristics of the installation, ...”

Regulation 25(2)(c) provides that where a less strict value is set ("derogation"); it is a requirement that "the permit specifies the reasons for setting the value, including the result of the assessment and the justification for the conditions imposed". The purpose of this Appendix is to satisfy those requirements.

2 The Derogation Used

SEPA has decided to set ELVs that derogate from the BAT-AEL range in the BAT Conclusions in respect of Nitrogen Dioxide.

Parameter	BAT-AEL ¹ in the BATc	Derogated ELV	Applicability
Nitrogen Dioxide – fuel gas firing	150mg/Nm ³	250mg/Nm ³	H-370 until 30 April 2023

¹ BAT-AELs as specified in Tables 6, 13 and 14 of the Refining of mineral oil and gas BREF.

3 Basis for the Derogation

SEPA has set this emission limit value on the grounds that achievement of emissions within the BAT-AEL range would lead to disproportionately higher costs compared to environmental benefits due to the technical characteristics of the installation:

The technical characteristics of the installation mean that achievement of Nitrogen Dioxide emissions within the BAT-AEL range would lead to disproportionately higher costs due to the need to:

- (i) Configuration of the plant within the site results in practical difficulties and increased time and costs for the construction of additional plant.
- (ii) The history of recent investment in techniques designed to reduce emissions.
- (iii) The remaining operational life of the plant

A Cost Benefit Analysis carried out by SEPA gave the result that achievement of emissions for in the case of Nitrogen Dioxide within the BAT-AEL range would lead to disproportionately higher cost for the reasons given above.

4 Justification for the Conditions Imposed

SEPA has included an ELV of 250mg/Nm³ for Nitrogen Dioxide on the grounds that SEPA considers it:

- represents BAT for the installation;
- ensures no significant pollution of the environment will be caused and that a high level of protection of the environment as a whole will be achieved;
- does not exceed any emission limit value set out in the Annex V to the Industrial Emissions Directive; and,

is time limited to 30 April 2023 for H-370 (250mg/Nm³).