# **EEMS Data Requirements**

### A1 The data and reporting requirements are defined below.

Report	Frequency
Aromatic	bi-annual
Atmospheric Consumption Installation	annual
Atmospheric Consumption Terminal	annual
Atmospheric Direct Installation	annual
Atmospheric Direct Terminal	annual
Atmospheric Drilling	annual
Atmospheric Export Installation	annual
Atmospheric Export Terminal	annual
Atmospheric Halogen Installation	annual
Atmospheric Halogen Terminal	annual
Atmospheric Turbine Gas	Annual
Atmospheric Turbine Oil	Annual
Decommissioning Chemicals	End of year activity
DrillFluids	1 month after well completion
Drilling permit chemicals	1 month after well completion
EP RTR	Annual
Oil in Water (Produced and Displaced Water)	Monthly
PermProd (Production Chemicals)	Quarterly
Pipeline permit chemicals	End of year activity
Radioactivity	Annual
Radioactivity pt 2	Quarterly
Waste Decommissioning	Annual
Waste Drilling	Annual
Waste Norm	Annual
Waste Operational	Annual

### A2 Not used

### A. 3 Data Items per Report

# A.3.1 OPPC new name (previously named Oil in Water (Produced and Displaced Water)) (Monthly)

There additionally new data items as recorded in section A4.4.

Summary Level 1

Operator

Installation Name

HC Type Oil or Gas

Report Date

OPPC permit Number New field free text

Plus for each and every sample point

Note that the addition and removal of sample points at any point in the reporting year must be simple and take into account the cross validation with the Aromatic reporting.

Produced Water (Oil in Water)
Each and every reported sample point
Average oil in water
Oil in Water unit
Days on Stream
Total volume discharged (m3)
Weight of oil discharged (tonnes)

Condensate in Water (Displaced)
Each and every reported sample point
Average Condensate in Water
Condensate in Water Unit
Days on Stream
Total Volume Water Discharged (m3)
Weight of Condensate Discharged (tonnes)

### A.3.2 Aromatic Report (Bi-annual)

Summary Level 1 Operator Installation Name Reporting Half Year

Summary Level 2
Sample Point Type
Produced or Displaced Water Sample Point Name
Sample Date
Sample by
Water Discharged (cubic metres) \*

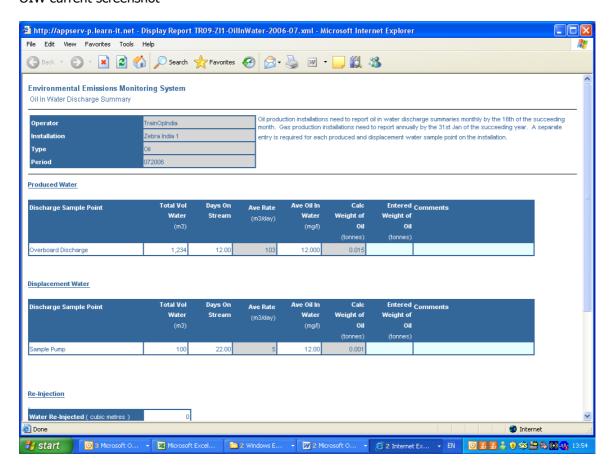
- \* Current system has a cross check between the summed monthly report A.3.1 and the figure in Water Discharged and they must match or the return cannot be submitted. This needs to be maintained in the revised system, however must be simple to change for two possible instances:
  - a) Addition or removal of sample point during the six month period
  - b) Asset transfer during the six month period

### Summary Level 3

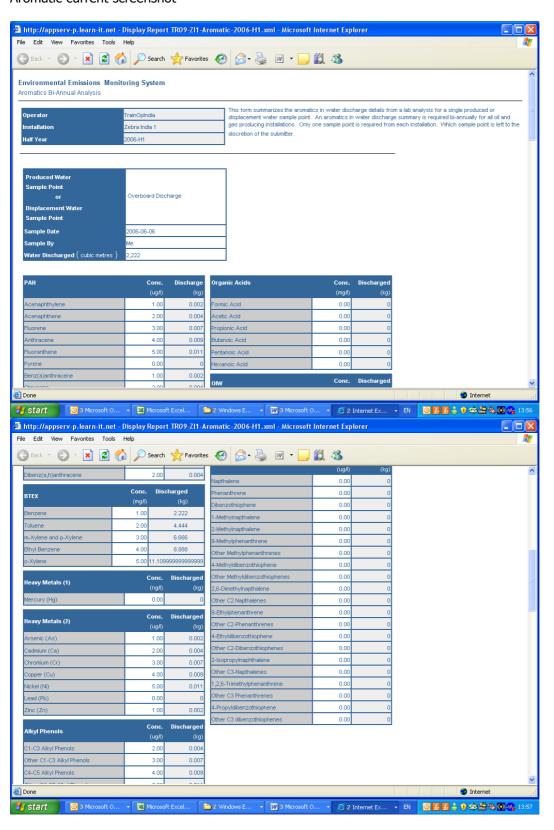
PAH (name of each compound analysed)	Concentration (ug/l)	Discharged (kg)
BTEX (name of each compound analysed)	Concentration (mg/l)	Discharged (kg)
Heavy Metals 1 (name of each compound analysed)	Concentration (ng/l)	Discharged (kg)
Heavy Metals 2 (name of each compound analysed)	Concentration (ug/l)	Discharged (kg)
Alkyl Phenols (name of each compound analysed)	Concentration (ug/l)	Discharged (kg)
Organic Acids (name of each compound analysed)	Concentration (mg/l)	Discharged (kg)
OIW (name of each compound analysed)	Concentration (mg/l)	Discharged (kg)
NPD (name of each compound analysed)	Concentration (ug/l)	Discharged (kg)

Copies of current reports below for Oil in Water and Aromatics

### OIW current screenshot



#### Aromatic current screenshot



### A.3.3 Production Chemicals Report (PON15D) (Quarterly)

Summary Level 1

Operator

Installation Name

Permit Pulled from Oil Portal

Reporting Quarter/Year

Summary Level 2

DTI ID Manufacturer Chemical Name Function Group Chemical Label HQ/CNS Ranking

Amount used (kg)

Pulled from Oil Portal

Pulled from Oil Portal

Pulled from Oil Portal

Pulled from Oil Portal Pulled from Oil Portal

Pulled from Oil Portal

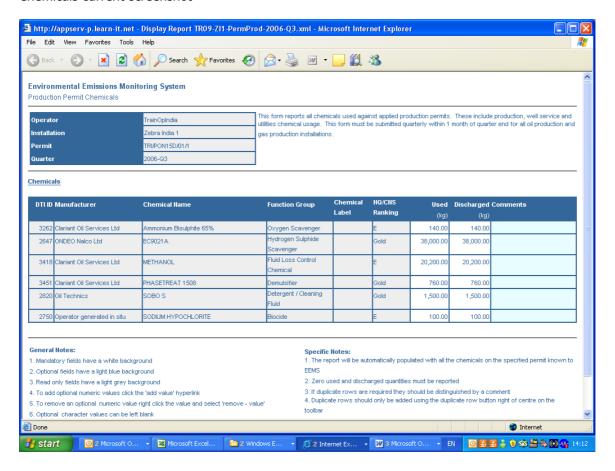
Comments

Used

Discharged Amount used (kg)

Additionally want the substation or priority

### Chemicals current screenshot



# A.3.4 Atmospheric (Annually)

There are underlying factors in EEMS as shown:

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<b>Emission Source</b>	Emission Category	CO2	NOX	N2O	SO2	CO	CH4	VOC
Diesel Consumption	Engines	3.2	0.0594	0.00022	0.004	0.0157	0.00018	0.002
Diesel Consumption	Heaters	3.2	0.0028	0.00022	0.004	0.00071	0.00000705	0.0000282
Diesel Consumption	Turbines	3.2	0.0135	0.00022	0.004	0.00092	0.0000328	0.000295
Fuel Oil Consumption	Engines	3.2	0.0594	0.00022	0.004	0.0157	0.00018	0.002
Fuel Oil Consumption	Heaters	3.2	0.0028	0.00022	0.004	0.00071	0.00000705	0.0000282
Fuel Oil Consumption	Turbines	3.2	0.0135	0.00022	0.004	0.00092	0.0000328	0.000295
Well Testing	OIL	3.2	0.0037	0.000081	0.0000128	0.018	0.025	0.025
Gas Consumption	Engines	2.86	0.0576	0.00022	0.0000128	0.0076	0.0198	0.0032
Gas Consumption	Heaters	2.86	0.0024	0.00022	0.0000128	0.0006	0.000089	0.0000099
Gas Consumption	Others	2.86	0.0061	0.00022	0.0000128	0.003	0.00092	0.000036
Gas Consumption	Turbines	2.86	0.0061	0.00022	0.0000128	0.003	0.00092	0.000036
Gas Flaring	GAS	2.8	0.0012	0.000081	0.0000128	0.0067	0.018	0.002
Gas Flaring	OIL	2.8	0.0012	0.000081	0.0000128	0.0067	0.01	0.01
Gas Venting	GAS	0	0	0	0	0	0.9	0.1
Gas Venting	OIL	0	0	0	0	0	0.5	0.5
Oil Loading	Rail/Truck	0	0	0	0	0	0.0001	0.00059
Oil Loading	Ship (Offshore)	0	0	0	0	0	0.000017	0.002
Storage Tanks	Fixed Roof	0	0	0	0	0	0.000035	0.000035
Storage Tanks	Floating Roof (External)	0	0	0	0	0	0.00000009	0.00000081
Storage Tanks	Floating Roof (Internal)	0	0	0	0	0	0.000000067500	0.000000607
Well Testing	GAS	2.8	0.0012	0.000081	0.0000128	0.0067	0.045	0.005
Oil Loading	Ship (Onshore)	0	0	0	0	0	0.000017	0.001

Table B

<b>Location Type</b>	HC Type	<b>Equipment Type</b>	<b>Emission Weight KG</b>
OFFSHORE	Oil and Gas	Pumps	1.72
OFFSHORE	Oil and Gas	Valves	4.52
OFFSHORE	Oil and Gas	Open-ended Pipes	8.94
OFFSHORE	Oil and Gas	Other	60.9
ONSHORE	Light Crude	Connections	1.44
ONSHORE	Light Crude	Valves	11.7
ONSHORE	Light Crude	Open-ended Pipes	10.6
ONSHORE	Light Crude	Pumps	2.79
ONSHORE	Light Crude	Other	66
ONSHORE	Heavy Crude	Connections	0.0701
ONSHORE	Heavy Crude	Valves	0.114
ONSHORE	Heavy Crude	Open-ended Pipes	1.36
ONSHORE	Heavy Crude	Pumps	0.0263
ONSHORE	Heavy Crude	Other	0.613
ONSHORE	Gas	Connections	2.4
ONSHORE	Gas	Valves	33.9
ONSHORE	Gas	Open-ended Pipes	9.11
ONSHORE	Gas	Pumps	101
ONSHORE	Gas	Other	42.7
OFFSHORE	Oil and Gas	Connections	0.946

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Turbine ID	UKOOA Ref	Turbine Type	A Factor	B Factor	C Factor
1885	RR - RB211-24C	GAS	0.0010522	0.00012786	0.0000039
1886	RR - Avon	GAS	0.00068645	0.00008706	0.0000005
1887	RR - MaxiAvon	GAS	0.0007913	0.00010372	0.00000032
1888	RR - Olympus	GAS	0.0009542	0.00002028	0.00000029
1889	RR - RB211-24G	GAS	0.00077481	0.00015447	0.00000137
1890	Solar - Mars	GAS	0.00057563	0.00032588	0
1891	Solar - Saturn	GAS	0.00016566	0.00083434	0
1892	Solar - Centaur	GAS	0.00053441	0.00046559	0
1893	Solar - Taurus	GAS	0.00002012	0.00040077	0
1894	GE - LM6000	GAS	0.01341005	-0.00028893	0.00000434
1895	GE - LM5000	GAS	0.00060108	0.00019871	-0.0000063
1896	GE - LM1500	GAS	0.00038019	0.00009252	0.0000006
1897	GE - Frame5	GAS	0.00084577	0.00007711	0
1898	GE - Frame6	GAS	0.00084248	0.00007876	0
1899	Allison - 501	GAS	0.00003478	0.00048261	0
	Alstom - GT40	GAS	0.00085095	0.00007453	0
1901	Alstom - GT10_low_NOx	GAS	0.00099087	0.00000457	0
1902	Alstom - Tornado	GAS	0.00044161	0.0002792	0
1903	Aeroderivative	GAS	0	0.000161	0
1904	Industrial - LESS THAN 35MW	GAS	0.000908	0.000323	0
1905	Industrial - more THAN 35MW	GAS	0.000813	0.000078	0
1906	RR - MaxiAvon	OIL	0.00077766	0.0001067	0.00000224
1907	GE - LM6000	OIL	0.00602494	0.00018944	0
1908	Aeroderivative	OIL	0.01724	0	0
1909	Industrial	OIL	0.01724	0	0

## Table D

Gas	Composition	%	MW	<b>GMOL</b>
CH4		94	16	15.04
VOC		3	40	1.2
N2		2	28	0.56
CO2		1	44	0.44
H2S		0	34	0
H2O		0	18	0

## A.3.4.1 Atmospheric Export Return

Summary Level 1 Operator

Type Installation or Terminal

Installation Name Terminal Name Reporting Year EP-ETS

PPC

Both permit numbers are to be non-mandatory fields (additional information compared to currently) and should not be a field that fails validation

Summary Level 2
Calculated, Estimated or Measured
Carbon Dioxide (CO2)
Carbon Monoxide (CO)
Nitrogen Oxides (NOx)
Sulphur Oxides (SOx)
Methane (CH4)
VOC

## Summary Level 3a

**Export Data** 

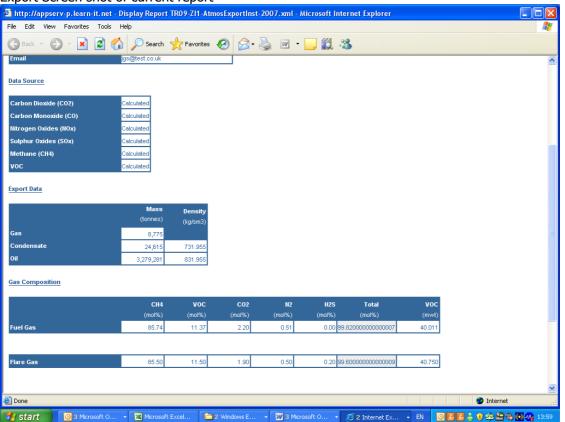
Gas Export Mass tonnes

Condensate Export Mass tonnes Density kilogram's per std cubic metre
Oil Export Mass tonnes Density kilogram's per std cubic metre

### Summary Level 3b

Gas	CH4	VOC	CO2	N2	H2S	Total	VOC
Composition							
Fuel Gas	mol %	mwt					
Flare Gas	mol %	mwt					
Vent Gas	mol %	mwt					

Export Screen shot of current report



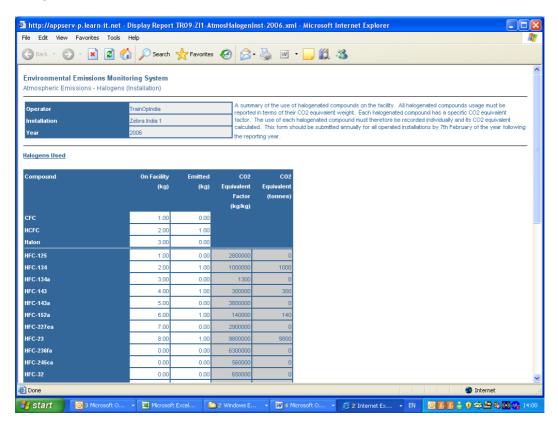
### A.3.4.2 Atmospheric Halogen Return

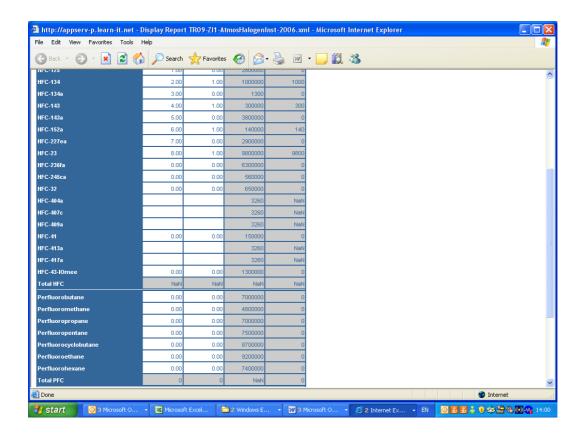
Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2

Compound On Facility Emitted CO2 equivalent factor CO2 equivalent factor Per compound kg kg Kg/kg tonnes

Addition of compounds must be simple. Halogen Screenshot of current screens





## A.3.4.3 Atmospheric Consumption Return

Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2 (a to c)

Gas Consumption - Plant Operations (table a)

Diesel Consumption – Plant Operations (table b)

Fuel Oil Consumption - Plant Operations (table c)

VOC Total Use for CO2 NOx CO CH4 N<sub>2</sub>O SO2 **Turbines** tonnes tonnes tonnes tonnes tonnes tonnes tonnes **Engines** tonnes tonnes tonnes tonnes tonnes tonnes tonnes Heaters tonnes tonnes tonnes tonnes tonnes tonnes tonnes

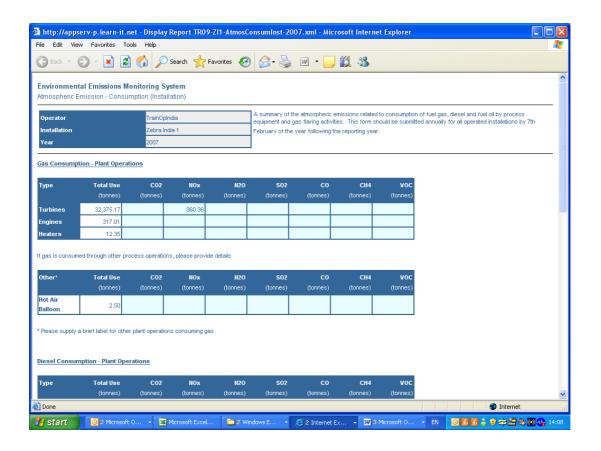
For Gas Consumption – If gas consumed through other process details must be provided

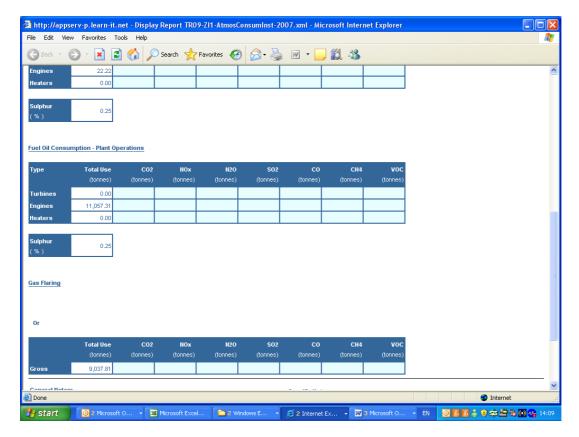
For Diesel Consumption – Sulphur Content at default value 0.2% must have option to change

Current system the NOx gas and diesel turbines value is taken directly from the Oil and Gas Turbine report submissions. This can be overwritten.

As for Diesel consumption, Fuel Oil Consumption Sulphur Content at default value 0.2% must have option to change.

Summary Level 2d Gas Flaring VOC Total Use for CO2 NOx N2O SO2 CO CH4 Routine tonnes tonnes tonnes tonnes tonnes tonnes tonnes Operations Maintenance tonnes tonnes tonnes tonnes tonnes tonnes tonnes Upsets/Others tonnes tonnes tonnes tonnes tonnes tonnes tonnes OR CO2 CO CH4 VOC NOx N2O SO2 Gross tonnes tonnes tonnes tonnes tonnes tonnes tonnes





## A.3.4.4 Atmospheric Gas Turbine Return

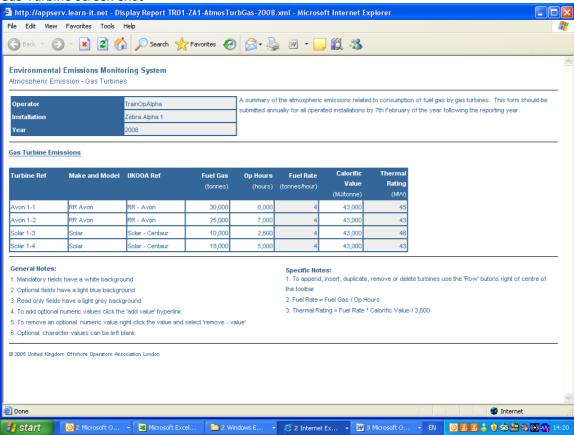
Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2

Turbine Thermal Make and **UKOOA Fuel Gas** Op Hours Fuel Rate Calorific Ref Model Ref Value Rating **Tonnes** Hours Tonnes/hour MJ/tonne MW

Note that turbines etc are manually loaded into the system if additions required – this must be a simple process in the enhancement. There is no permit for this data to be pulled from currently.

## Gas Turbine screen shot



### A.3.4.5 Atmospheric Oil Turbine Return

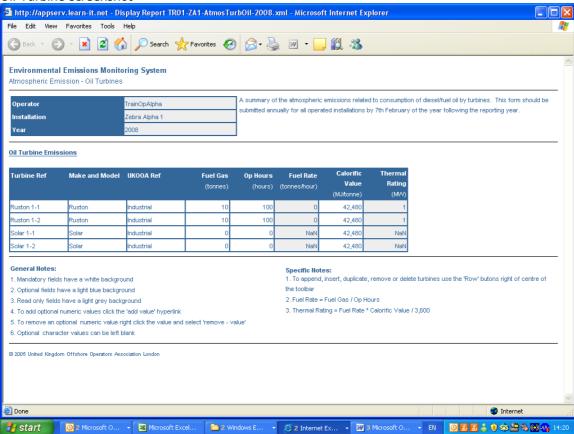
Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2

Thermal Turbine Make and **UKOOA Fuel Gas** Op Hours **Fuel Rate** Calorific Ref Model Ref Value Rating **Tonnes** Hours Tonnes/hour MJ/tonne MW

As fro Gas Turbines, note that turbines etc are manually loaded into the system if additions required – this must be a simple process in the enhancement.

### Oil Turbine screenshot



## **A.3.4.6 Atmospheric Direct Emissions Return**

Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2a Gas Flaring

Gas Flaring										
	Total Use	CO2	NOx	N2O	SO2	CO	CH4	VOC		
Operational Maintenance Emergency	tonnes tonnes tonnes									
OR										
	Total Use	CO2	NOx	N2O	SO2	CO	CH4	VOC		
Gross	tonnes									
Summary Level 2b Direct Process Emissions										
		CO2	NOx	N2O	SO2	CO	CH4	VOC		
Separate Entry each active pla		tonnes								

Summary Level Oil Loading	el 2c							
	Total Use	CO2	NOx	N2O	SO2	CO	CH4	VOC
Ship Rail/Trucks *	tonnes tonnes							
* Terminal on	ly							
Summary Leve Storage Tanks		s only)						
J	Total Use	CO2	NOx	N2O	SO2	CO	CH4	VOC
Floating Roof - Internal	tonnes							
Floating Roof - External	tonnes							
Fixed Roof	tonnes							

Summary Level 2e Fugitive Emissions pt 1

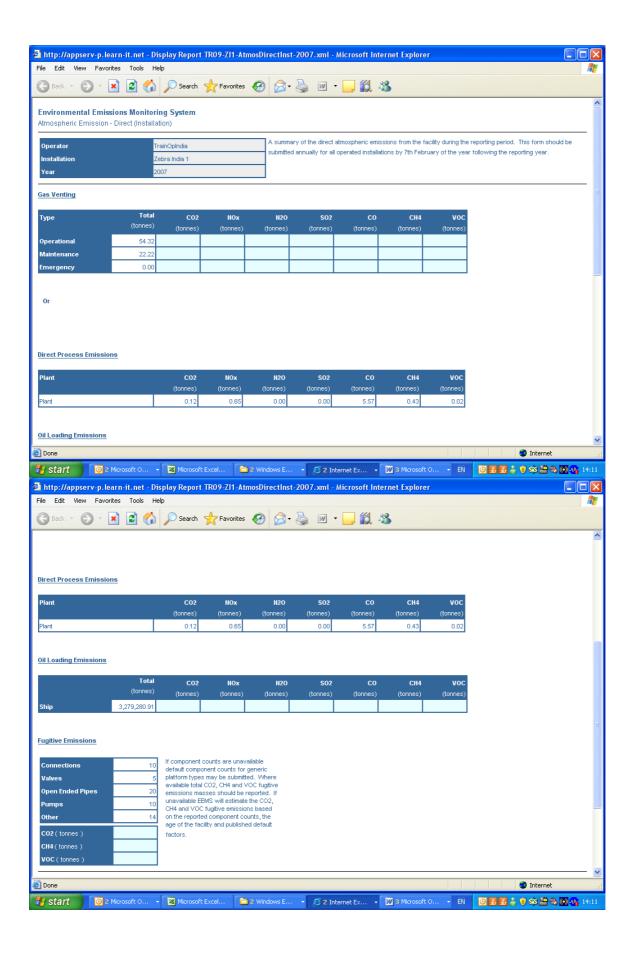
Connections The total number of connections on the facility Valves The total number of valves on the facility

Open Ended Pipes The total number of open ended pipes on the facility Pumps The total number of open ended pipes on the facility

Other The total number of other types of components on the facility

Fugitive Emissions pt 2

Carbon Dioxide (CO2) tonnes Methane (CH4) tonnes VOC tonnes



## A.3.4.7 Atmospheric Drilling Return

Summary Level 1 Operator Installation Name Reporting Year

Summary Level 2a

Well No./Permit Number HC Type Weight

Oil or Gas tonnes

Summary Level 2b

Total CO2 NOx N2O SO2 CO CH4 VOC

Use

Engines tonnes tonnes tonnes tonnes tonnes tonnes tonnes

Sulphur Content at default value 0.2% must have option to change

# A.3.5 Waste (Annually)

## A.3.5.1 Waste Operational Return

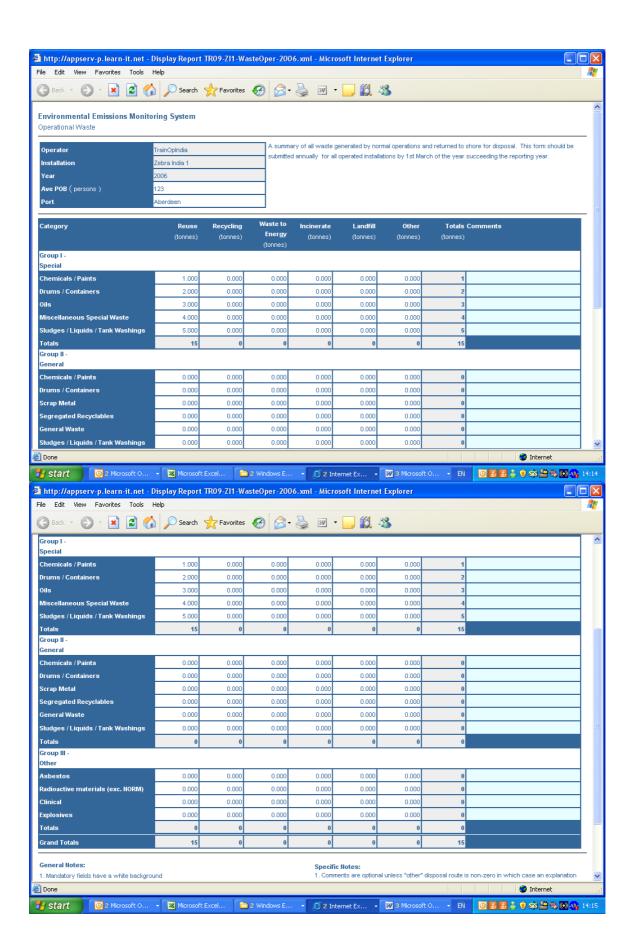
Summary Level 1 Summary Level 1 Operator Installation Year

Ave POB persons

**UK Port** 

Export Port Free text

Category	Reuse	Recycling	Waste to Energy	Incinerate	Landfill	Other	Totals	Comments
Group I Specials Sub Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Group II General Sub Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Group III Other Sub Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	



### A.3.5.2 Waste Back Loaded Drill Cuttings Return

Summary Level 1

Operator

Installation

Year

Ave POB persons

**UK Port** 

Export Port Free text

Summary Level 2a

Category Reuse Recycling Waste to Incinerate Landfill Other Totals Comments Energy (please

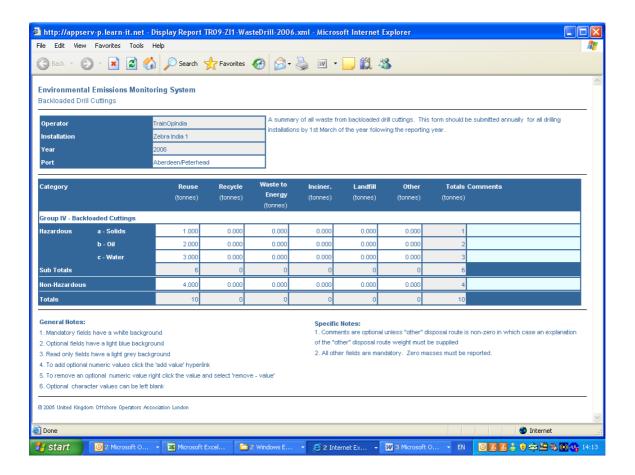
define)

Group IV tonnes tonnes tonnes tonnes tonnes tonnes tonnes

Backloaded cuttings Hazardous Sub Totals

Group IV tonnes tonnes tonnes tonnes tonnes tonnes tonnes tonnes

Non Hazardous Totals



### A.3.5.4 Decommissioning Return

Summary Level 1

Operator

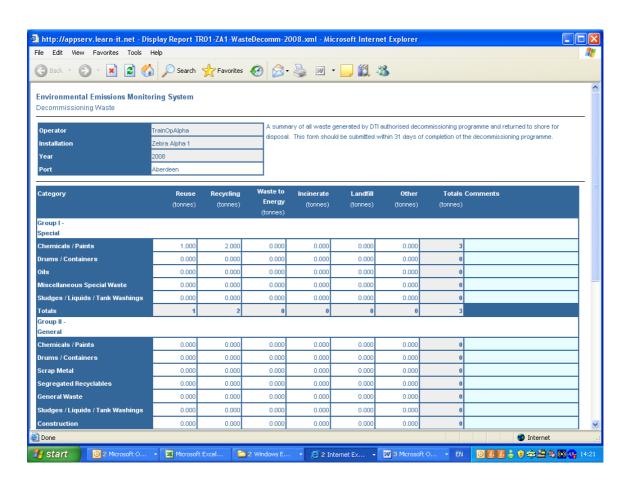
Installation Year

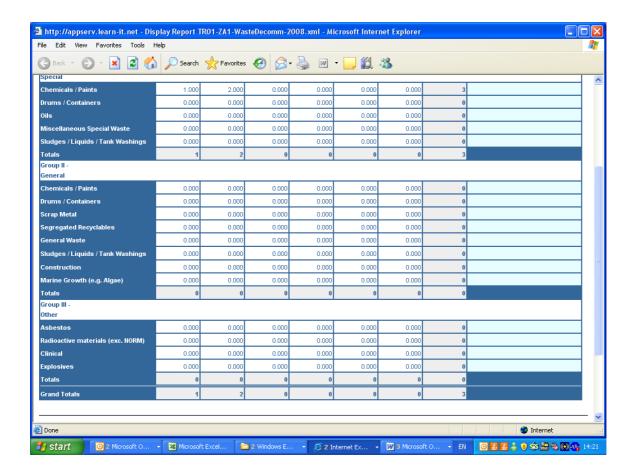
Ave POB persons

**UK Port** 

Export Port Free text

Category	Reuse	Recycling	Waste to Energy	Incinerate	Landfill	Other	Totals	Comments
Group I Specials Sub Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Group II General Sub Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Group III Other	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	
Sub Totals Totals	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	tonnes	





## A.3.6 Drilling, Pipeline and Decommissioning Chemicals

Summary Level 1 Well Chemicals

Operator

Installation

Well No

Permit From Oil Portal

Type Started Completed

Summary Level 1 Pipeline Chemicals

Operator

Pipeline From Oil Portal Permit From Oil Portal

Type Started Completed Latitude Longitude Depth Summary Level 1

**Decommissioning Chemicals** 

Operator Installation

Permit From Oil Portal

Type Started Completed

Summary Level 2

Well, Pipeline and Decommissioning Chemicals

DTI ID Pulled from Oil Portal
Manufacturer Pulled from Oil Portal
Chemical Name Pulled from Oil Portal
Function Group Pulled from Oil Portal
Chemical Label Pulled from Oil Portal
HQ/CNS Ranking Pulled from Oil Portal

Used Amount used (kg)
Discharged Amount used (kg)

Comments

As per Production chemicals screenshot.

### A4. New Requirements

### A4.1 Radioactivity Report

The enhancement of EEMS will contain as expansion of radioactivity reporting from previous report. However final consultation with the Operators to be completes and the data set is subject to change until that point in time. The final decisions are imminent. The data set shown below is likely to be similar in most aspects after the final consultation.

Please take the following data tables as indicative and subject to change.

### A.4.1.1 Summary Table

Summary with no data entry.

# A.4.1.2 Total Naturally Occurring Radioactive Material (NORM) Discharges to Sea and/or Discharged by Re-Injection and by Onshore Disposal (yearly)

Summary Level 1
Operator
Installation
MODU / Vessel
Reporting year

Summary Level 2

~		,,					
	NORM (LSA) SCALE	NORM (LSA) SCALE	Dischar	ge to sea	Discharge by	Comments	
0		Mass disposed (kg)	Activity disposed (MBq)	Mass disposed (kg)	Activity disposed (MBq)	Comments	
O	FOHUKE	Offshore <14.8 Bq/g *	0.000000	0.000000	0.000000	0.000000	
		Offshore >14 8 Ba/a **	0.000000	0.000000	0.000000	0.000000	

ONSHORE SITE 1 DETAILS	NORM (LSA) SCALE	Disposed	of onshore	Comments
	NORIVI (LSA) SCALE	Mass disposed (kg)	Activity disposed (MBq)	Confinents
	Offshore <14.8 Bq/g *	0.000000	0.000000	
	Offshore >14.8 Bq/g **	0.000000	0.000000	

ONSHORE SITE 2 DETAILS	NORM (LSA) SCALE	Disposed	of onshore	Comments
	NORWI (LSA) SCALE	Mass disposed (kg)	Activity disposed (MBq)	Comments
	Offshore <14.8 Bq/g *	0.000000	0.000000	
	Offshore >14.8 Bq/g **	0.000000	0.000000	

ONSHORE SITE 3 DETAILS	NORM (LSA) SCALE	Disposed	of onshore	Comments
	NORIVI (LSA) SCALE	Mass disposed (kg)	Activity disposed (MBq)	Comments
	Offshore <14.8 Bq/g *	0.000000	0.000000	
	Offshore >14.8 Bq/g **	0.000000	0.000000	

<sup>\*</sup> Deemed radioactive, but exempt under the Radioactive Substances Act, 1993 (RSA'93)

# A.4.1.3 Naturally Occurring Radioactive Material (NORM) Discharged in Produced Water (yearly)

For each and EVERY sample point.

Summary Level 1
Operator
Installation
Reporting year

Life OPPC Permit Number

### Summary Level 2

Sample type	
Produced water (PW) sample point	
Displaced water sample point	
Injection water sample point	
Reporting year	
Sample by	
Total volume of water discharged	0 cu

ANALYTICAL RESULTS	Period 1	Period 2	Period 3	Period 4	Units
Mass of sample analysed					g
Mass of particulates in sample					g
Activity of Pb-210 in particulate					Bq/g
Activity of Pb-210 in soluble					Bq/g
Activity of Ra-226 in particulate					Bq/g
Activity of Ra-226 in soluble					Bq/g
Activity of Ra-228 in particulate					Bq/g
Activity of Ra-228 in soluble					Bq/q

Produced water sample period	Sample date	Total volume of PW discharged during each sample period	Pb-210	Pb-210 Total activity	Ra-226	Ra-226 Total activity	Ra-228	Ra-228 Total activity	Comments
		cu. m	Bq/l	MBq	Bq/l	Mbq	Bq/l	MBq	
Period 1			0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
Period 2			0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
Period 3			0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
Period 4			0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	

# A.4.1.4 PRODUCTION — Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Offshore (yearly)

DESCALING USING HIGH PRESSURE WATER JETTING WITH DIRECT DISCHARGE OF WATER AND THE SCALE TO THE SEA (without settlement and separation of the scale)

Summary Level 1 Operator Installation

<sup>\*\*</sup> Deemed radioactive under RSA '93

### Summary Level 2

Description of unit descaled	Total mass	Pb-210 Activity concentration	Pb-210 Total activity	Ra-226 Activity concentration	Ra-226 Total activity	Ra-228 Activity concentration	Ra-228 Total activity	Thorium-228 Activity concentration	Thorium-228 Total activity	Comments
e.g. tubulars, valves etc	kg	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	

# A.4.1.4a PRODUCTION – Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Onshore (yearly)

DESCALING USING HIGH PRESSURE WATER JETTING ONSHORE Summary Level 1
Operator
Installation
Reporting year

### Summary Level 2

Description of unit descaled	Total mass	Pb-210 Activity concentration	Pb-210 Total activity	Ra-226 Activity concentration	Ra-226 Total activity	Ra-228 Activity concentration	Ra-228 Total activity	Thorium-228 Activity concentration	Thorium-228 Total activity	Comments
e.g. tubulars, valves etc	kg	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	

# A.4.1.5 PRODUCTION – Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Offshore (yearly)

DESCALING USING ACIDS / DISSOLVERS WITH DIRECT DISCHARGE OF WATER AND THE SCALE TO THE SEA (without settlement and separation of the scale)

This has to be agreed and updated.

# A.4.1.6 DECOMMISSIONING – Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Offshore (yearly)

DESCALING USING HIGH PRESSURE WATER JETTING WITH DIRECT DISCHARGE OF WATER AND THE SCALE TO THE SEA (without settlement and separation of the scale)

# Summary Level 1

Operator	0
Installation	0
Reporting year	0

Operator of Subsea Installation
Subsea Field Name
Subsea Installation Name
Subsea Installation Location

Description of unit descaled	Total mass	Pb-210 Activity concentration	Pb-210 Total activity	Ra-226 Activity concentration	Ra-226 Total activity	Ra-228 Activity concentration	Ra-228 Total activity	Thorium-228 Activity concentration	Thorium-228 Total activity	
e.g. tubulars, valves etc	kg	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	

#### GENERAL NOTES

Samples should be taken of the total effluent as it is discharged to the sea during each separate descaling operation. Where a descaling operation lasts several days, the activity may be regarded as a single operation. The sample should be taken while the descaling discharge is fully under way; not at the beginning or the end of the process or immediately prior to or after any pause in the operation.

The amount of Pb-210, Ra-226, Ra-228 and Th-228 discharged should be estimated on the basis of measurements of the **quantity and activity of the solids in the samples**. There is no need to analyse the liquid component, as more than 95% of the radioactivity in a sample is likely to be concentrated in the solids. The solids should be analysed using high-resolution gamma-spectrometry (or other more precise and more accurate methods). Estimates of total discharges of the radionuclides should be calculated by multiplying the activity concentrations in Bq/litre by the total volume of the effluent discharged (prior to any post-treatment dilution).

Th-228 activity can be derived directly from Pb-212.

# A.4.1.6a DECOMMISSIONING – Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Onshore (yearly)

### DESCALING USING HIGH PRESSURE WATER JETTING ONSHORE

### Summary level 1

Operator	0
Installation	0
Reporting year	0

Operator of Subsea Installation	
Subsea Field Name	
Subsea Installation Name	
Subsea Installation Location	

### Summary Level 2

Description of unit descaled	Total mass	Pb-210 Activity concentration	Pb-210 Total activity	Ra-226 Activity concentration	Ra-226 Total activity	Ra-228 Activity concentration	Ra-228 Total activity	Thorium-228 Activity concentration	Thorium-228 Total activity	
e.g. tubulars, valves etc	kg	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	Bq/g	MBq	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	
			0.000000		0.000000		0.000000		0.000000	

#### GENERAL NOTES

Samples should be taken of the total effluent as it is discharged to the sea during each separate descaling operation. Where a descaling operation lasts several days, the activity may be regarded as a single operation. The sample should be taken while the descaling discharge is fully under way; not at the beginning or the end of the process or immediately prior to or after any pause in the operation.

The amount of Pb-210, Ra-226, Ra-228 and Th-228 discharged should be estimated on the basis of measurements of the **quantity and activity of the solids in the samples**. There is no need to analyse the liquid component, as more than 95% of the radioactivity in a sample is likely to be concentrated in the solids. The solids should be analysed using high-resolution gamma-spectrometry (or other more precise and more accurate methods). Estimates of total discharges of the radionuclides should be calculated by multiplying the activity concentrations in Bq/litre by the total volume of the effluent discharged (prior to any post-treatment dilution).

Th-228 activity can be derived directly from Pb-212.

Individual disposal sites will be captured in Table 2, therefore only provide total mass and activity concentration for each specific unit descaled.

# A.4.1.7 PRODUCTION or is this DECOMMISSIONING??? — Total Naturally Occurring Radioactive Material (NORM) Arising during Descaling Operations Offshore (yearly)

DESCALING USING ACIDS / DISSOLVERS WITH DIRECT DISCHARGE OF WATER AND THE SCALE TO THE SEA (without settlement and separation of the scale)

This has to be agreed and updated.

### A.4.1.8 Radioactivity Discharged as a result of Tracer Experiments (yearly)

Summary Level 1
Operator
Installation
Reporting year

	Source description	Isotope	Activity used *	$\beta$ or $\gamma$ emitter	Comments
	e.g. Near well bore - solids (sand)	e.g. Scandium-46, Iridium-192			
	e.g. Near well bore - liquids (flow profiling				
	e.g. Interwell - water flood	e.g. Tritium (H-3), Carbon-14			
Reservoir					
Studies					
Otauloo					
	e.g. Various (separator studies)	e.g. Bromine-82			
	e.g. Various - organic (oil tracing)				
	e.g. Various - aqueous (water tracing)				
Process					
Studies					
Studies					

<sup>\*</sup>Activity of tracer used for measurement purposes

#### **GENERAL NOTES:**

Tracer companies supply the Operator with reports detailing the quantity of tracer(s) used. The Operator should therefore complete the EEMS Form.

Activity is to be reported in MBq although it is appreciated that some tracers will be applied in doses significantly higher than this and could be in the TBq range. In such cases, please convert to MBq (x103).

For short half-life tracers such as Br-82 (half life 36h) the contractor will have greater activity on the registration than is likely to be used to take account of decay. In such cases, the contractor should state the actual activity used.

Information on H-3 and  $\beta$  or  $\gamma$  emitters required by OSPAR.

### A4.2 Drill Fluids

The enhancement of EEMS will contain as a simplification and fit for purpose reporting, un updated version of the Drill Fluids report. However final consultation with the Operators to be completes and the data set is subject to change until that point in time. The final decisions are imminent. The data set shown below is likely to be similar in most aspects after the final consultation.

### Please take the following data tables as indicative and subject to change.

Summary Level 1	
<b>Administrative Details</b>	

Permit Holder	
Chemical Permit Number	
Well Number	
Spud Date	
Completion Date	

### Summary level 2

Well Information

Well Section Diameter	Start Depth (metres)	t Depth (metres) End Depth (metres)		Fluid Type	OBM / SBM Fluid	Weight of Cuttings
(inches)	Start Depth (metres)	End Depth (metres)	(metres)	(WBM / OBM / SBM)	System (Name)	(tonnes)

## Summary level 3a

Cuttings mass ban

WBM Cuttings

I	Well Section Diameter	Weight of Cuttings (tonnes)		Weight of Cuttings Discharged (tonnes)	Weight of Cuttings Injected (tonnes)	Weight of Cuttings Shipped to Shore (tonnes)	Weight of Any Cuttings Discharged Accidentally or Force Majeure (tonnes)																
Ε																							
г																							

### Summary level 3b

OBM / SBM Cuttings

	Weight of Cuttings		Cuttings Discharged				
Well Section Diameter			Weight (tonnes)	Base Oil or Base Synthetic Concentration (g/kg)	Weight of Cuttings Injected (tonnes)	Weight of Cuttings Shipped to Shore (tonnes)	Weight of Any Cuttings Discharged Accidentally or Force Majeure (tonnes)
					·		

## Summary level 3c

OBM / SBM Mass Balance

Well Section Diameter	OBM / SBM Fluid System (Name)	Weight Fluid Used (tonnes)	Fluid SG	Water / Fluid Ratio	Base Oil Or Base Synthetic Concentration (g/kg)	Base Synthetic Used	Weight of Base Oil or Base Synthetic Left in Well (kg)

## 3c cont'd

Weight of Base Oil or Base Synthetic Discharged with Cuttings (kg)	Weight of Base Oil or Base Synthetic Injected with Cuttings (kg)	Weight Of Base Oil or Base Synthetic Recovered Offshore and Shipped to Shore (kg)	Weight of Base Oil or Base Synthetic Shipped to Shore with Cuttings for Recycling (kg)	Weight of Base Oil or Base Synthetic Shipped to Shore with Cuttings for Disposal (kg)	Weight of Any Base Oil or Base Synthetic Discharged Accidentally or Force Majeure (kg)	Weight of Any Base Oil or Base Synthetic Not Accounted for, e.g. Weight Evaporated (kg)

### A4.3 EP RTR

There may at some point be the need to add in additional data due to legislation, however currently that has not been defined by the EU, and ease of change will be the key area to allow for these types of updates.

### A4.4 Additions to OPPC Reporting

Please take the following data tables as indicative and subject to change.

(Reference section A3.1)

### **A.4.4.1 Schedule 1e**

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 1E Produced Water Discharges to Sea as a Result of Well Testing

Operator Installation Date Activities Completed

OPPC Permit Number alpha numeric i.e. T00623.12

### Summary Level 2

Total Volume of Produced Water Discharged
(m3)

Weight of Dispersed Oil Discharged (tonnes)

Average Dispersed Oil Concentration (mg/l)

calculated field

returns within 28 days of completion of the operation

### A.4.4.2 Schedule 6a

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 6a Online Backwashing of Produced Sand/Scale -Discharge of Produced Sand/Scale to Sea

Summary Level 1 Operator Installation Period

OPPC Permit Number alpha numeric i.e. T00623.12

### Summary Level 2

Annual Quantity of
Sand/ Scale Discharged
(tonnes)
Quantity of Oil on
Sand/ Scale discharged
(tonnes)
Average Concentration
(mg/kg)
calculated

Returns on an annual basis by 1 March of following year

### A.4.4.3 Schedule 6b

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 6b Offline Backwashing of Produced Sand/Scale -Discharge of Produced Sand/Scale to Sea

Operator	
Installation	
OPPC Permit Number	alpha numeric - ie T00623.12
Period - Life Permits only	annual - ie 2008
For Term Permits only -	
date of completion of	
activities	
C	
Summary Level 2	
Permit Requirements:	
Maximum mg/ kg	
Quantity of Sand/ Scale	
Discharged (tonnes)	
Quantity of Oil on	
Sand/ Scale discharged	
(tonnes)	
Average Concentration	
(mg/kg)	calculated

Life returns on an annual basis by 1 March of following year Term Returns within 28 days of completion of permit

## **A.4.4.4 Schedule 7a**

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 7a Drill Cuttings and Associated Drilling Fluid Discharges - Discharge of Drill Cuttings contaminated with reservoir hydrocarbons Return of Required Information\*

Summary Level 1 Operator Installation Well Number

OPPC Permit Number alpha numeric i.e. T00623.12

Sample Number**	
Depth of Well Section (metres)	
Length of Well Section (metres)	
Diameter of well section (inches)	
Approx well location of samples	
Typrox went weather of early tee	Lat and Long
T. 10 ('' ( "' 1' 1 14' )	
Total Quantity of cuttings discharged (tonnes)  Total Quantity of oil discharged (tonnes)	
Average % of oil on oil bearing reservoir cuttings discharged (mg/kg	) calculated
Analysis method/ calibration used	text may be a large text bo:
*Returns must be completed for all permits, including operations wher **A minimum of 5 sample data points - maximum of 10. *** - returns to be made 28 days after each well - separate returns for	-
Minimum of 5 samples - upper limit 10	
Sample 1	
Date and time of sample	
Concentration of oil on	
cuttings concentration	
(mg/kg)	
C 1. 0	
Sample 2	
Date and time of sample	
Concentration of oil on	
cuttings concentration	
(mg/kg)	
A.4.4.5 Schedule 7b	<del></del>
The Offshore Petroleum Activities (Oil Pollution Pi Schedule 7b Well Intervention Discharges to Sea	revention & Control) Regulations 2005
Summary Level 1	
Operator	
Installation	
OPPC Permit Number alpha numeric	i.e. T00623.12
Period - OPPC Life Permit only annual - ie 2008	
Date Operations Completed –	•
term permits only	
com permits only	
Summary Loyal 2	
Summary Level 2	
Total Volume of well intervention fluids discharged in 3	
Total weight of dispersed oil in fluids discharged some	
Average concentration of oil in well intervention fluid	

<sup>\*</sup>Returns must be completed for all permits, including operations where a zero oil discharge has been measured.

\*\* - Life permit returns made on an annual basis by 1 March of following year

\*\*\* - Term permit returns to be made within 28 days of on completion of permit

### A.4.4.6 Schedule 7d

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 7d Well Clean Up Operations

Summary Level 1 Operator Installation

OPPC Permit Number alpha numeric - i.e. T00623.12

Period – OPPC Life permit only Annual - i.e. 2008

Date of Completion of permit – Date

Term Permits only

Summary Level 2

Total Volume of well clean-up fluid discharged (n3)

Total weight of disperesed oil in well clean up fluid discharged tonnes)

Average concentration of oil in the well clean up fluids discharged (ng/l)

calculated

### **A.4.4.7 Schedule 7e**

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 7e Pipeline Discharges to Sea

Summary Level 1 Operator Pipeline Number if more than one pipeline only enter one

OPPC Permit Number alpha numeric - ie T00623.12 Date of Completion of discharge

activities

Summary Level 2

Total Volume of fluid discharged (n3)

Total weight of oil discharged (tonnes)

Average concentration of oil in fluids discharged (ng/l)

lculated		

Returns to be made within 28 days of completion of permit

#### A.4.4.8 Schedule 7f

The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 7f Maintenance and Cleaning Discharges

Summary Level 1 Operator Installation

OPPC Permit Number alpha numeric - ie T00623.12 Date of Completion of the permit

<sup>\*</sup>Returns must be completed for all permits, including operations where a zero oil discharge has been measured.

<sup>\*\* -</sup> Life permit returns made on an annual basis by 1 March of following year

<sup>\*\*\* -</sup> Term permit returns to be made within 28 days of on completion of permit

<sup>\*</sup>Returns must be completed for all permits, including operations where a zero oil discharge has been measured.

Summary Level 2					
Total Volume of maintenance and clea	ning fluid discharged (m3)				
Total weight of dispersed oil in mainte			calculated		
Average concentration of oil in mainte	nance and cleaning fluids di	scharged	carcuratea		
*Returns must be completed for all perr	nits, including operations whe	ere a zero oil dis	scharge has been me	easured.	
Returns to be made within 28 days of co	ompletion of permit				
A.4.4.9 Schedule 7g					
The Offshore Petroleum Activities (Oil Pollution Prevention & Control) Regulations 2005 Schedule 7g Decommissioning Activities					
Summary Level 1 Operator Installation					
OPPC Permit Number Date of Completion of the Permit	alpha numeric - ie T00	0623.12			
Summary Level 2					
Quantity of Oil discharged (tonnes)					
Learnings for Future Decommissioning a	ctivities text			probably a large box	
*Returns must be completed for all permit *** - Volumes of oil discharged should be				ed.	
Returns to be made within 28 days of com					
	ipiotion of pointing				
A.4.4.10 Schedule 7h	podon or pomili				
<b>A.4.4.10 Schedule 7h</b> The Offshore Petroleum Activitie Schedule 7h Miscellaneous Oil D	s (Oil Pollution Preventi	on & Control	) Regulations 20	05	
The Offshore Petroleum Activitie	s (Oil Pollution Preventi	on & Control	) Regulations 20	05	
The Offshore Petroleum Activitie Schedule 7h Miscellaneous Oil D Summary Level 1 Operator	s (Oil Pollution Preventi		l) Regulations 20	05	
The Offshore Petroleum Activities Schedule 7h Miscellaneous Oil Dischedule 7h Miscellaneous Oi	s (Oil Pollution Preventi ischarged to Sea		l) Regulations 20	05	
The Offshore Petroleum Activities Schedule 7h Miscellaneous Oil Description Summary Level 1 Operator Installation  OPPC Permit Number Date of Completion of the	s (Oil Pollution Preventi ischarged to Sea		, <b>-</b>	05	
The Offshore Petroleum Activities Schedule 7h Miscellaneous Oil Discellaneous Oil Di	s (Oil Pollution Preventi ischarged to Sea alpha numeric - ie T00	0623.12	, <b>-</b>	05	

calculated

Average concentration of oil within the fluids discharged (ng/l)

<sup>\*</sup>Returns must be completed for all permits, including operations where a zero oil discharge has been measured.

\*\* - Returns to be submitted 28 days after completion of the permit