

# Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Third Energy UK Gas Limited

Ebberston South Well Site  
Malton Cote Road  
Ebberston  
North Yorkshire

Permit number

EPR/BB3699AW

# Ebberston South Well Site

## Permit number EPR/BB3699AW

### Introductory note

#### **This introductory note does not form a part of the permit**

The main features of the permit are as follows.

This permit is for re-injection of 556 cubic metres per day (m<sup>3</sup>/d) of produced water in to the Ebberston South well.

This application is for a joint venture between Third Energy and Moorland Energy, however, the site is operated and maintained by Third Energy. The well site at Ebberston South is pre-existing site. The well was developed by Moorland Energy to target gas reserves in the Kirkham Abbey Formation (KAF) however, it was never brought into full production. This application will bring the site into production.

At this site gas is extracted from the KAF. Produced water is the naturally occurring water that is produced from a well alongside oil or gas. Historically produced waters are re-injected back into the formation from which they arose, however over time Third Energy believe this has lead to other similar wells becoming unproductive. This discharge is to re-inject the produced water originating from the KAF into the Sherwood Sandstone Formation (SSF) to try and overcome a similar situation occurring at Ebberston South. To enable the re-injection Third Energy will modify the existing well to become an re-injection borehole for produced water as well as a production well.

This is a direct discharge of produced water which is specifically allowed by paragraph 8 of Schedule 22 of the Environmental Permitting (England & Wales) Regulations 2010.

The discharge shall only take place where the concentration of Naturally Occurring Radioactive Material exceeds the value specified in the Environmental Permitting Regulations 2010, Schedule 23 Part 2(5), such that the discharge is radioactive waste for the purposes of Schedule 23 as authorised in Radioactive Substances Regulation permit EPR/NB3595DJ.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application EPR/BB3699AW/A001	Duly made 12/12/2014	Application for discharge of trade effluent comprising of produced water.
Additional information received	28/04/2015	Cumulative impact report
Permit determined EPR/BB3699AW	18/08/2015	Permit issued to Third Energy UK Gas Limited.

End of introductory note

# Permit

## The Environmental Permitting (England and Wales) Regulations 2010

Permit number

**EPR/BB3699AW**

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

**Third Energy UK Gas Limited** (“the operator”),

whose registered office is

**Knapton Generating Station**

**East Knapton**

**Malton**

**North Yorkshire**

**YO17 8JF**

company registration number **01421481**

to operate a groundwater activity at

**Ebberston South Well Site**

**Malton Cote Road**

**Ebberston**

**North Yorkshire**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
<b>WATER QUALITY TEAM LEADER</b>	<b>18/08/2015</b>

Authorised on behalf of the Environment Agency

# Conditions

## 1 Management

### 1.1 General management

- 1.1.1 The operator shall manage and operate the activity:
- (a) in accordance with a written management system that identifies and minimises risks of pollution so far as is reasonably practicable, including those risks arising from operations, maintenance, accidents, incidents, non-conformances and those drawn to the attention of the operator as a result of complaints; and
  - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of the permit.

## 2 Operations

### 2.1 Permitted activities

- 2.1.1 The only activity authorised by the permit is the activity specified in schedule 1 table S1.1.

### 2.2 The site

- 2.2.1 The groundwater activity shall take place at the discharge point marked on the site plan at schedule 7 to this permit and the discharge shall be made from the wellbore within the Sherwood Sandstone formation as listed in table S3.2; and, the operating techniques that are the subject of conditions prefixed by 2.3 shall be applied at the location shown, or otherwise described, in schedule 7.

### 2.3 Operating techniques

- 2.3.1 For the activity referenced in schedule 1, table S1.1 the activity shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 The re-injection borehole system shall be constructed to comply with the following:
- (a) the outlet of the re-injection borehole, including any associated diffusers, shall be within the saturation zone at all times;
  - (b) no part of the re-injection borehole system shall be situated within 10 metres of any watercourse (including any ditch that runs dry for part of the year), or any other surface water; or within 200m of a European site or Site of Special Scientific Interest (excluding one designated for geological purposes only) or within 200m of any other sensitive receptor.

- (c) no part of the re-injection borehole system at the well site shall be situated within a SPZ1 or within 50 metres of a well or borehole used for any purpose, other than abstraction from that well or borehole for the sole purpose of supplying water to the activity specified in table S1.1

## **2.4 Pre-operational conditions**

- 2.4.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3 have been completed.

## **3 Emissions and monitoring**

### **3.1 Emissions to water or land**

- 3.1.1 The limits given in schedule 3 table S3.1 shall not be exceeded.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 For the activity referenced in schedule 1, table S1.1 the operator shall take appropriate measures as far as is reasonably practicable:
  - (a) to prevent the input of hazardous substances to groundwater; and
  - (b) where a non-hazardous pollutant is not controlled by an emission limit, to limit the input of such non-hazardous pollutants to groundwater so as to ensure that inputs do not cause pollution of groundwater.

### **3.3 Monitoring**

- 3.3.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
  - (a) point source emissions specified in tables S3.1 and S3.3;
  - (b) surface water or groundwater specified in table S3.4.
- 3.3.2 The operator shall maintain records of all monitoring required by this permit.
- 3.3.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.3.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.3.4 Accessible sample points shall be provided and maintained to enable sampling/monitoring of emissions to be carried out at the monitoring points specified in table S3.3 and S3.4 of schedule 3 and shown marked on the site plan in schedule 7.

### **3.4 Installation of monitoring boreholes**

- 3.4.1 The operator shall submit for approval to the Environment Agency details of the scheme for groundwater monitoring at least 4 months prior to the commencement of the permitted activities.
- 3.4.2 The monitoring boreholes shall be installed to depths, by methods and according to a design agreed in advance and in writing by the Environment Agency.
- 3.4.3 The following details regarding the monitoring borehole(s) shall be provided to the Environment Agency within 1 month of installation:
  - (a) casings/linings (length, diameter, material, type of grout or filter media and whether slotted or plain);

- (b) depths and diameters of unlined sections;
- (c) standing groundwater levels;
- (d) details of strata encountered during drilling;
- (e) reference levels in metres above ordnance datum;
- (f) a location plan at a suitable scale showing the boreholes in relation to the point of discharge;
- (g) national grid references of the boreholes in the form AB 12345 67890;
- (h) any other information obtained from the boreholes relevant to the interpretation of water sample analysis.

3.4.4 Upon written approval of the groundwater monitoring schemes specified in PO 4 in Table S1.3, Schedule 1 shall be implemented unless otherwise agreed in writing.

The plans shall be reviewed within 6 months of start of operations and a written report submitted to the Environment Agency for approval detailing the review and containing any proposals for amending the plans.

Any revised groundwater monitoring plan or revised environmental management and monitoring plan should be implemented in place of the original in accordance with the Environment Agency's written approval unless otherwise agreed in writing.

## **4 Information**

### **4.1 Records**

4.1.1 All records required to be made by schedule 3, 4 and 5 to this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made.

4.1.2 The operator shall maintain convenient access, in either electronic or hard copy, to the records, plan and management system required to be maintained by this permit.

### **4.2 Reporting**

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 Within the time period after the end of the reporting period specified in schedule 4 table S4.1 the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and monitoring points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.2; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

## 4.3 Notifications

4.3.1 The Environment Agency shall be notified as soon as reasonably practicable following detection, within the site of the regulated facility of:

- (a) any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution; and
- (b) any breach of a limit specified in schedule 3 table S3.1.

Any other significant adverse environmental effects, which may have been caused by the activity, shall also be notified to the Environment Agency as soon as reasonably practicable following detection.

4.3.2 The information provided under condition 4.3.1 shall be supported by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

4.3.4 Where the operator proposes to make a change in the nature of the activity by increasing the concentration of, or the addition of, or allowing the introduction of, a substance to the activity to an extent that the operator considers could have a significant adverse environmental effect on the receiving waters, and the change is not permitted by emission limits specified within schedule 3 table S3.1 or the subject of an application for approval under the EP Regulations or under the terms of this permit:

- (a) the Environment Agency shall be notified in writing at least 14 days before the increase or addition or allowing the introduction; and
- (b) the notification shall contain a description of the proposed change.

## 4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "as soon as reasonably practicable", in which case it may be provided by telephone.

# Schedule 1 – Operations

Table S1.1 Activities	
Description of activity	Limits of specified activity
Re-injection of produced water for operations for extraction of hydrocarbons to ground via a borehole.	<p>Discharge of produced waters for operations for extraction of hydrocarbons to ground via a modified well which performs both as a production well and a re-injection borehole at grid reference SE 90344 87137.</p> <ul style="list-style-type: none"> <li>• The target formation for re-injection is the Sherwood Sandstone Formation;</li> <li>• The discharge shall only be made via perforations in the borehole which are situated within the Sherwood Sandstone Formation;</li> <li>• The discharge of re-injected produced waters to the Sherwood Sandstone Formation shall only be made using an Electronic Submersible Pump which is not supplemented by a booster pump.</li> <li>• The discharge shall not take place at a pressure that exceeds that stated in Schedule 3 Table S3.1.</li> </ul> <p>The re-injection borehole shall discharge produced water only into the target formation where it is designated as permanently unsuitable for other purposes (as defined in the Water Framework Directive article 11.3(j) and paragraph 8, Schedule 22 EPR 2010).</p> <p>The re-injection borehole shall be modified and tested in accordance with Operating Techniques OT 1 and OT 2 in Table S1.2.</p> <p>The monitoring boreholes shall be constructed and tested in accordance with the requirements in Table S1.2 OT 5.</p>

Table S1.2 Operating techniques			
Reference	Description of documentation	Parts	Date Received
OT 1	Disposal of produced water at Ebberston South Well Site – Technical Addendum	Section 2.3 – Proposed Modification and Figure 2	12/12/2014
OT 2	Disposal of produced water at Ebberston South Well Site – Technical Addendum	Section 2.4 – Monitoring and Maintenance and Section 2.5.2 Testing.	
OT 3	Ebberston South Water Injection: Seismic Event Risk Assessment	Section 4.3 Injectivity Assessment	
OT 4	To be provided as per PO3 in Table S1.3	To be provided as per PO3 in Table S1.3	On approval of PO3 in Table S1.3
OT 5	To be provided as per PO4 in Table S1.3	To be provided as per PO4 in Table S1.3	On approval of PO 4 in Table S1.3

<b>Table S1.3 Pre-operational measures</b>														
<b>Reference</b>	<b>Pre-operational measures</b>													
PO 1	<p>a) Prior to the operation of the well site the operator shall submit, for written approval by the Environment Agency, the as built construction details for the modified re-injection borehole and the operator shall confirm that well integrity tests have been performed to demonstrate that the re-injection borehole is fit for purpose.</p> <p>b) Where the details approved, through completion of PO1(a) demonstrate the as built construction details for the modified re-injection borehole differ from the detail specified in OT 1 in Table S1.2, the details approved by completion of PO1(a) shall supersede those detailed in OT 1 of Table S1.2.</p>													
PO 2	<p>(a) Prior to the operation of the well site the operator shall obtain water chemistry data from the Sherwood Sandstone formation (SSF) and the Kirkham Abbey formation (KAF) and submit this data to the Environment Agency for written approval. The water chemistry data for the SSF and KAF formations should include, but not be limited to, the following parameters:</p> <table border="1"> <thead> <tr> <th><b>Parameter</b></th> </tr> </thead> <tbody> <tr><td>Sodium</td></tr> <tr><td>Chloride</td></tr> <tr><td>Ammonia</td></tr> <tr><td>Conductivity</td></tr> <tr><td>Salinity</td></tr> <tr><td>pH</td></tr> <tr><td>Total Petroleum Hydrocarbons (TPH)</td></tr> <tr><td>Ethenediol</td></tr> <tr><td>2-Butoxy ethanol</td></tr> <tr><td>Non-ionic surfactants</td></tr> <tr><td>Methane</td></tr> <tr><td>Temperature (°C)</td></tr> </tbody> </table> <p>(b) Prior to activity commencing the operator shall also provide piezometric head data for the Sherwood Sandstone unit once the casing has been perforated in this formation.</p>	<b>Parameter</b>	Sodium	Chloride	Ammonia	Conductivity	Salinity	pH	Total Petroleum Hydrocarbons (TPH)	Ethenediol	2-Butoxy ethanol	Non-ionic surfactants	Methane	Temperature (°C)
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PO 3	<p>Prior to the operation of the well site and any works associated with the activity, the operator shall submit, for written approval by the Environment Agency a baseline groundwater and surface water monitoring scheme, including, but not limited to:</p> <p>i) locations and design details of the surface water monitoring points and groundwater monitoring boreholes;</p> <p>ii) details of the geological formations the boreholes in PO3 (i) are monitoring;</p> <p>iii) groundwater and surface water chemistry monitoring for a period of at least 3 months before the activity in Table S1.1, or works associated with this activity, is scheduled to take place;</p> <p>iv) monitoring for the following parameters</p> <table border="1"> <thead> <tr> <th><b>Parameter</b></th> </tr> </thead> <tbody> <tr><td>Groundwater Level</td></tr> <tr><td>Sodium</td></tr> <tr><td>Chloride</td></tr> <tr><td>Ammonia</td></tr> <tr><td>Conductivity</td></tr> <tr><td>Salinity</td></tr> <tr><td>pH</td></tr> <tr><td>Total Petroleum Hydrocarbons (TPH)</td></tr> </tbody> </table>	<b>Parameter</b>	Groundwater Level	Sodium	Chloride	Ammonia	Conductivity	Salinity	pH	Total Petroleum Hydrocarbons (TPH)				
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PO 4	<p>Prior to the operation of the well site the operator shall submit, for written approval by the Environment Agency a scheme for groundwater and surface water monitoring during the operational and post decommissioning phases of the re-injection activity, including, but not limited to:</p> <p>i) locations and design details of the surface water monitoring points and groundwater monitoring boreholes;  ii) details of the geological formations the monitoring boreholes PO4(i) are monitoring;  iii) monitoring for the following parameters:</p> <table border="1"> <thead> <tr> <th>Parameter</th> </tr> </thead> <tbody> <tr><td>Groundwater level</td></tr> <tr><td>Sodium</td></tr> <tr><td>Chloride</td></tr> <tr><td>Ammonia</td></tr> <tr><td>Conductivity</td></tr> <tr><td>Salinity</td></tr> <tr><td>pH</td></tr> <tr><td>Total Petroleum Hydrocarbons (TPH)</td></tr> <tr><td>Ethenediol</td></tr> <tr><td>2-Butoxy ethanol</td></tr> <tr><td>Non-ionic surfactants</td></tr> <tr><td>Methane (groundwater only)</td></tr> <tr><td>Temperature (°C)</td></tr> <tr><td>Gross alpha</td></tr> <tr><td>Gross beta</td></tr> </tbody> </table>	Parameter	Groundwater level	Sodium	Chloride	Ammonia	Conductivity	Salinity	pH	Total Petroleum Hydrocarbons (TPH)	Ethenediol	2-Butoxy ethanol	Non-ionic surfactants	Methane (groundwater only)	Temperature (°C)	Gross alpha	Gross beta
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PO 5	The groundwater and surface water monitoring schemes approved through completion of PO 3 and PO 4 shall be incorporated into the permit as operating techniques.																
PO 6	Prior to the operation of the well site, or any works associated with the activity, the operator shall implement the baseline groundwater and surface water monitoring scheme approved through completion of PO 3.																

## Schedule 2 – Waste types, raw materials and fuels

Schedule 2 not in use.

## Schedule 3 – Emissions and monitoring

Table S3.1 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Effluent(s) and discharge point(s)	Parameter	Limit (including unit)	Reference Period	Limit of effective range	Monitoring frequency	Compliance Statistic
Discharge of production waters from operations for exploration and extraction of hydrocarbons to ground via a re-injection borehole via Outlet 1	Maximum daily discharge volume	556 m <sup>3</sup> /day	Total daily volume	N/A	N/A	Maximum
	Maximum rate of discharge	6.5 litres per second	Instantaneous (spot sample)	N/A	N/A	Maximum
	15-minute instantaneous or averaged flow	No limit set. Record as l/s	15 minute	N/A	Continuous	N/A
	Injection pressures (tubing head pressure)	30 bar/435 psi	Instantaneous (spot sample)	N/A	Continuous	Maximum as described in OT 3
	Sodium	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Chloride	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Ammonia	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Conductivity	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Salinity	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	pH	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Total Petroleum Hydrocarbons (TPH)	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Ethenediol	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	2-Butoxyethanol	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Non-ionic surfactants	N/A	Instantaneous (spot sample)	N/A	Monthly	N/A
	Methane	N/A	instantaneous (spot sample)	N/A	Monthly	N/A

<b>Table S3.1 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>						
<b>Effluent(s) and discharge point(s)</b>	<b>Parameter</b>	<b>Limit (including unit)</b>	<b>Reference Period</b>	<b>Limit of effective range</b>	<b>Monitoring frequency</b>	<b>Compliance Statistic</b>
	Temperature (°C)	To be determined on completion of PO 2 in Table S1.3	Instantaneous (spot sample)	N/A	Monthly	N/A

<b>Table S3.2 Discharge points</b>			
<b>Effluent Name</b>	<b>Discharge Point</b>	<b>Discharge point NGR</b>	<b>Receiving water/Environment</b>
Production waters from operations for exploration and extraction of hydrocarbons	Outlet 1	SE 90351 87129	Sherwood Sandstone Formation via injection borehole

<b>Table S3.3 Monitoring points</b>			
<b>Effluent(s) and discharge point(s)</b>	<b>Monitoring type</b>	<b>Monitoring point NGR</b>	<b>Monitoring point reference</b>
Production waters from operations for exploration and extraction of hydrocarbons via Outlet 1	Effluent sampling	SE 90351 87129	Effluent sample point
	Flow monitoring	SE 90351 87129	Flow monitor point
	Injection pressure monitoring	SE 90351 87129	Injection pressure monitor point

**Table S3.4 Surface water or groundwater monitoring requirements**

Location or description of monitoring points	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Groundwater monitoring locations to be provided as specified in condition 3.4.3 and PO 4 in Table S1.3 and incorporated into the permit as OT 5 in Table S1.2	Sodium Chloride Ammonia Conductivity Salinity pH Total Petroleum Hydrocarbons (TPH) Ethanediol 2-Butoxyethanol Non-ionic surfactants Methane Temperature °C Groundwater level Gross alpha Gross beta	See OT 5 in Table S1.2	BS ISO 5667-11:2009 and Condition 3.3.3	Three borehole volumes must be purged prior to sampling. Samples must be filtered samples or as method agreed in writing with the Environment Agency  See OT 5 in Table S1.2
Surface water monitoring locations to be provided as specified in condition PO 4 in Table S1.3 and incorporated into the permit as OT 5 in Table S1.2	Sodium Chloride Ammonia Conductivity Salinity pH Total Petroleum Hydrocarbons (TPH) Ethanediol 2-Butoxyethanol Non-ionic surfactants Temperature °C Gross alpha Gross beta		Condition 3.3.3	See OT 5 in Table S1.2

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Monitoring point reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Total Daily volume	Flow monitor point	6 monthly Report to be submitted within 28 days	1 January
Rate of discharge	Flow monitor point	6 monthly Report to be submitted within 28 days	1 January
Injection pressures (tubing head pressure)	Injection pressure monitor point	6 monthly and reports to be provided to the Environment Agency upon request Report to be submitted within 28 days unless otherwise specified in writing by the Environment Agency	1 January 1 July
A report confirming the permeability of the Sherwood Sandstone Formation	Injection pressure monitor point	To be provided within 4 months of the start of the activity unless otherwise specified in writing by the Environment Agency	1 January
Table S3.1 parameters: Sodium, Chloride, Ammonia, Conductivity, Salinity, pH, Total Petroleum Hydrocarbons (TPH), Ethanediol, 2-Butoxyethanol, Non-ionic surfactants, methane and temperature.	Effluent sample point	6 monthly Report to be submitted within 28 days	1 January
Table S3.4 parameters; Sodium, Chloride, Ammonia, Conductivity, Salinity, pH and Total Petroleum Hydrocarbons (TPH), Ethanediol, 2-Butoxyethanol, Non-ionic surfactants, methane, temperature, groundwater level, c	Use reference points from table S3.4 and those approved through completion of PO 4 In Table S1.3.	6 monthly Report to be submitted within 28 days	1 January

<b>Table S4.2 Reporting forms</b>	
<b>Parameter</b>	<b>Reporting format</b>
Total daily volume	WISKI electronic format specified by the Environment Agency or some other format agreed in writing with the Environment Agency.
15-minute flow	WISKI electronic format specified by the Environment Agency or some other format agreed in writing with the Environment Agency.
Injection pressures (tubing head pressure)	Form as agreed in writing by the Environment Agency
A report confirming the permeability of the Sherwood Sandstone Formation	Form as agreed in writing by the Environment Agency

<b>Table S4.2 Reporting forms</b>	
<b>Parameter</b>	<b>Reporting format</b>
Table S3.1 parameters: Sodium, Chloride, Ammonia, Conductivity, Salinity, pH and Total Petroleum Hydrocarbons (TPH), Ethanediol, 2-Butoxyethanol, Non-ionic surfactants, methane and temperature.	Form as agreed in writing by the Environment Agency
Table S3.4 parameters: Sodium, Chloride, Ammonia, Conductivity, Salinity, pH and Total Petroleum Hydrocarbons (TPH), Ethanediol, 2-Butoxyethanol, Non-ionic surfactants, methane, temperature, groundwater level, gross alpha and gross beta	Form as agreed in writing by the Environment Agency

## Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

### Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection unless otherwise agreed in writing by the Environment Agency</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released/type or nature of sewage released	
Best estimate of the quantity or rate of release of substances and/or duration of discharge	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection unless otherwise agreed in writing by the Environment Agency</b>	
Best estimate of the environmental impact of the discharge	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

**Part B – to be submitted as soon as reasonably practicable unless otherwise agreed in writing by the Environment Agency**

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident/breach/exceedance	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

"annually" means once every year.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“appropriate measures” for the purposes of the emission of substances not controlled by emission limits condition (condition 3.2.1) do not require the operator to undertake treatment to a level beyond that specified in schedule 1 table S1.1, or to carry out routine monitoring for substances not controlled by emission limits.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the permitted activities, which are not controlled by an emission limit.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“MCERTS” means the Environment Agency's Monitoring Certification Scheme.

“aquifer” means a subsurface layer or layers of rock or other geological strata of sufficient permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater (WFD Art 2.11).

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“significant pollution” means a category 1 or category 2 incident indicated by the Common Incident Classification Scheme (CICS).

“year” means calendar year ending 31 December.

“produced water” means the naturally occurring water that is produced from a well alongside oil or gas.

## Schedule 7 – Site plan



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END OF PERMIT