



**This form will report compliance with your permit as determined by an Environment Agency officer**

Site	Preston New Road Exploration Site EPR/AB3101MW		Permit Ref	UP3431VF		
Operator/ Permit holder	Cuadrilla Bowland Limited					
Date	04/10/2018		Time in	09:30	Out	16:30
What parts of the permit were assessed	Operations - Pre-hydraulic fracturing site set-up					
Assessment	Site Inspection	EPR Activity:	Installation	X	Waste Op	Water Discharge
Recipient's name/position	HSE&P Manager					
Officer's name	EA Installations		Date issued	10/10/2018		

**Section 1 - Compliance Assessment Summary**

This is based on the requirements of the permit under the Environmental Permitting Regulations. A detailed explanation and any action you may need to take are given in the "Detailed Assessment of Compliance" (section 3). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our [Compliance Classification Scheme](#) (CCS). CCS scores can be consolidated or suspended, where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your [local office](#).

**Permit Conditions and Compliance Summary**

**Condition(s) breached**

Permit Condition	Compliance	Condition(s) breached
<b>a) Permitted activities</b>	1. Specified by permit	N
<b>b) Infrastructure</b>	1. Engineering for prevention & control of pollution	A
	2. Closure & decommissioning	NA
	3. Site drainage engineering (clean & foul)	A
	4. Containment of stored materials	N
	5. Plant and equipment	A
<b>c) General management</b>	1. Staff competency/ training	N
	2. Management system & operating procedures	A
	3. Materials acceptance	N
	4. Storage handling, labelling, segregation	N
<b>d) Incident management</b>	1. Site security	N
	2. Accident, emergency & incident planning	N
<b>e) Emissions</b>	1. Air	N
	2. Land & Groundwater	N
	3. Surface water	N
	4. Sewer	N
	5. Waste	N
<b>f) Amenity</b>	1. Odour	A
	2. Noise	N
	3. Dust/fibres/particulates & litter	N
	4. Pests, birds & scavengers	N
	5. Deposits on road	N
<b>g) Monitoring and records, maintenance and reporting</b>	1. Monitoring of emissions & environment	N
	2. Records of activity, site diary, journal & events	N
	3. Maintenance records	N
	4. Reporting & notification	N
<b>h) Resource efficiency</b>	1. Efficient use of raw materials	N
	2. Energy	N

**KEY: C1, C2, C3, C4 = CCS breach category ( \* suspended scores are marked with an asterisk), A = Assessed (no evidence of non-compliance), N = Not assessed, NA = Not Applicable, O = Ongoing non-compliance – not scored**

<b>Number of breaches recorded</b>	0	<b>Total compliance score</b> (see section 5 for scoring scheme)	0
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**If the Total No Breaches is greater than zero, then please see Section 3 for details of our proposed enforcement response**

## Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- the part(s) of the permit that were assessed (e.g. maintenance, training, combustion plant, etc)
- where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- any non-compliances identified
- any non-compliances with directly applicable legislation
- details of any multiple non-compliances
- information on the compliance score accrued inc. details of suspended or consolidated scores.
- details of advice given
- any other areas of concern
- all actions requested
- any examples of good practice.
- a reference to photos taken

This report should be clear, comprehensive, unambiguous and normally completed within 14 days of an assessment.

This visit was to inspect the hydraulic fracturing equipment and set-up in place prior to fracturing commencing and to review the procedures for hydraulic fracturing and seismic monitoring by speaking to Cuadrilla's contractors.

Activities on site at the time of the inspection included extensive hydraulic fracturing set-up works. Prior to hydraulic fracturing commencing well clean out was due to take place as well as logging of the lateral in Well 1z to determine the precise direction of the lateral, and the installation and testing of the down hole micro seismic array (geophones) in Well 2.

**This is the first of three visits assessing the pre-hydraulic fracturing site set-up for Well 1z.**

### Management Systems

Cuadrilla hold a number of documents which form part of their Environmental Management System (EMS). Namely a Master Hydraulic Fracturing Programme and a work instruction - "Compliance for Pumping" (fracturing fluid) which were referenced on site. The Master Hydraulic Fracturing Programme sets out how Cuadrilla plan to undertake fracturing at the site although it recognises that amendments to the schedule may be made, within the permitted limits, as the process continues.

The Compliance for Pumping instruction sets out key roles and responsibilities, stages of fracturing, hydraulic fracturing fluid composition, pumping volume and rate, sampling of fracturing fluid, chain of custody, pumping of fracturing fluid and reporting. The contents are in line with permit requirements.

A daily work schedule is communicated from Cuadrilla to Cuadrilla's Fracturing Contractor by the Fracturing Supervisor. The Fracturing Contractor also has their own management documents which will be reviewed during a later inspection. We were informed that communications between Cuadrilla and the Fracturing Contractor are included in their service level agreement (contract) and were a key part of the procurement process. This will be reviewed as part of a later inspection. Cuadrilla also undertook an internal audit of the Fracturing Contractor's operations during a pre-fracturing exercise.

Further EA inspections against the management procedures will be undertaken throughout the hydraulic fracturing process to check compliance.

### Micro Seismic Monitoring

The inspection was for the Environment Agency's micro seismic monitoring specialist, technical and regulatory officers to interrogate the Fracturing Contractor's planned installation and testing of the down hole micro seismic array.

Twenty-four geophone instruments are being used in Well 2 to monitor for micro seismic events during the hydraulic fracturing of Well 1z. This is a significant improvement on the twelve specified in the HFP for Well 1z and provides a large redundancy cover if any instruments were to fail. Spares are also easily available from within the UK should they be required. Notification is required to the Environment Agency throughout fracturing on geophone operation which will be included the daily reports.

A representative from the geophone contractor was on site to supervise the set up and installation of the instruments. An acceptance test is undertaken on all instruments. Certificates/sign off sheets were requested for these instruments and will be viewed during a subsequent inspection. The testing is also repeated on site prior to installation. Records of these tests will be reviewed during a subsequent inspection. Further testing of the instruments will be performed down hole to calibrate the geophones. Details of the calibration test to be provided to the Environment Agency.

Analysis of micro seismic data is undertaken on site and at the Fracturing Contractor's head quarters for verification. Analysis includes the identification of micro seismic event clusters to determine fracture growth has not exceeded the permit boundary. The turnaround for verification is minutes. No restriction on the number of events sent off site for verification is in place.

Cuadrilla's Geoscientist showed a modelled example of the software output which shows the potential micro seismic

event clusters. This is used to ensure that all fracturing is undertaken within the permitted boundary and is shared with the Environment Agency daily for review.

### **Fracturing Site Set-up**

- The officers 'walked the lines' whilst on site to gain familiarity with the fracturing set-up and equipment.
- Water tanks were inspected in place surrounded by a temporary bund. These tanks will be used to store rainwater and/or mains water for fracturing. They will provide some contingency in event that flowback requires storage in the future.
- The tanker area is surrounded by an accessible bund with Gorilla Berm access. This area is connected to the frac tank farm and the connection is protected by plastic sheeting to contain spillages from hose connections. Rainwater from these areas drains to a sump and is pumped to the appropriate tanks.
- UV treatment facilities are on site to ensure treatment of any water used in the process. This prevents the build-up of microbes in the fracturing fluid and avoids the use of biocides.
- The equipment used to measure, mix and store the sand and friction reducer was inspected. The mechanism used to measure the quantity of friction reducer and sand was explained and the sampling port and flow meter were observed. This process, along with sampling and monitoring results will be further audited at a later stage.
- A mesh was installed around the sand hopper to ensure adequate containment of any dust released from the process.
- Five frac pumps are in place to provide enough pressure to undertake fracturing. Redundancy is built in to the system.
- A bund is in place around the pumps, wells, and fracturing equipment which will contain any liquids and allow them to drain to the cellar for collection. Hoses have all been pressure tested up to 100psi and all solid steel piping pressure tested to 15,000 psi. The fracturing fluid lines and well head is capable of withstanding much higher pressures.
- During the site inspection, pressure testing all of the equipment above the frac tree was being undertaken. The safety systems on the wells were explained.
- The flare connections were observed and explained. A detailed flare audit will be undertaken at a later date when they are operational.



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**Section 3- Enforcement Response** **Only one of the boxes below should be ticked**

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Other than the provision of advice and guidance, at present we do not intend to take further enforcement action in respect of the non-compliance identified above. This does not preclude us from taking enforcement action if further relevant information comes to light or advice isn't followed.

In respect of the above non-compliance you have been issued with a warning. At present we do not intend to take further enforcement action. This does not preclude us from taking additional enforcement action if further relevant information comes to light or offences continue.

We will now consider what enforcement action is appropriate and notify you, referencing this form.

**Section 4- Action(s)**

Where non-compliance has been detected and an enforcement response has been selected above, this section summarises the steps you need to take to return to compliance and also provides timescales for this to be done.

Criteria Ref.	CCS Category	Action Required / Advised	Due Date
See Section 1 above			

## Section 5 - Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- advise on corrective actions verbally or in writing
- require you to take specific actions in writing
- issue a notice
- require you to review your procedures or management system
- change some of the conditions of your permit
- decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you.

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.

- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and or suspension or revocation of the permit.

- A civil sanction Enforcement Undertaking (EU) offer may also be available to you as an alternative enforcement response for this/these offence(s).

**See our Enforcement and Civil Sanctions guidance for further information**

This report does not relieve the site operator of the responsibility to

- ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- ensure you comply with other legislative provisions which may apply.

### Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance which could have a <b>major</b> environmental effect	60
C2	A non-compliance which could have a <b>significant</b> environmental effect	31
C3	A non-compliance which could have a <b>minor</b> environmental effect	4
C4	A non-compliance which has <b>no</b> potential environmental effect	0.1

**Operational Risk Appraisal (Opra)** - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

## Section 6 – General Information

### Data protection notice

The information on this form will be processed by the Environment Agency to fulfill its regulatory and monitoring functions and to maintain the relevant public register(s). The Environment Agency may also use and/or disclose it in connection with:

- offering/providing you with its literature/services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law and taking any resulting action
- preventing breaches of environmental law
- assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Information Regulations request.

The Environment Agency may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

### Disclosure of information

The Environment Agency will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within 28 days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

### Customer charter

#### What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with the officer's line managers. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 03708 506 506 (Mon to Fri 08.00–18.00) and ask for the Customer Contact team or send an email to [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk). If you are still dissatisfied, you can make a complaint to the Ombudsman. For advice on how to complain to the [Parliamentary and Health Service Ombudsman](#) phone their helpline on 0345 015 4033.