



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

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|--|--|---------------|-----------------|-----------|------------------|
| Site | Preston New Road Exploration Site EPR/AB3101MW | Permit Ref | UP3431VF | | |
| Operator/ Permit holder | Cuadrilla Bowland Limited | | | | |
| Date | 29/10/2018 | Time in | 09:30 | Out | 16:45 |
| What parts of the permit were assessed | Hydraulic Fracture Plan compliance and well pad inspection | | | | |
| 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 | 21/11/2018 | | |

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 |
|---|--|-----------------------|
| a) Permitted activities | 1. Specified by permit | A |
| b) Infrastructure | 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 | N |
| c) General management | 1. Staff competency/ training | N |
| | 2. Management system & operating procedures | A |
| | 3. Materials acceptance | N |
| | 4. Storage handling, labelling, segregation | N |
| d) Incident management | 1. Site security | N |
| | 2. Accident, emergency & incident planning | N |
| e) Emissions | 1. Air | N |
| | 2. Land & Groundwater | N |
| | 3. Surface water | N |
| | 4. Sewer | N |
| | 5. Waste | N |
| f) Amenity | 1. Odour | N |
| | 2. Noise | N |
| | 3. Dust/fibres/particulates & litter | N |
| | 4. Pests, birds & scavengers | N |
| | 5. Deposits on road | N |
| g) Monitoring and records, maintenance and reporting | 1. Monitoring of emissions & environment | N |
| | 2. Records of activity, site diary, journal & events | N |
| | 3. Maintenance records | N |
| | 4. Reporting & notification | N |
| h) Resource efficiency | 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

| | | | |
|------------------------------------|---|---|---|
| Number of breaches recorded | 0 | Total compliance score (see section 5 for scoring scheme) | 0 |
|------------------------------------|---|---|---|

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 was the fourth in a series of visits assessing hydraulic fracturing activities for Well 1z. All activities assessed were compliant with the requirements of the Environmental Permit.

Inspection topics:

- Microseismic Monitoring
- Well Pad inspection
- Daily morning reports

Officers attended the morning briefing of hydraulic fracturing operatives on site.

A weak solution of hydrochloric acid was circulated down the well in compliance with the permit. At 11:10am pumping of hydraulic fracturing fluid in to sleeve 32 was started. At 11:33am the down-hole geophones detected a micro-seismic event which would indicate that a Traffic Light System (TLS) red event and as a result pumping was stopped as a precaution and the well flushed. Shortly after the micro-seismic event was detected, the TLS system categorised the event as a red event and placed it as a magnitude 1ML. Officers observed the activities on the display screens in the visitor's cabin. Regulators were informed of the event.

In accordance with the red event detected during pumping operations, the traffic light system flowchart referenced in the Hydraulic Fracture Plan requirements were followed and pumping operations were suspended immediately. Pressure was reduced in the well and the operator began flowing back. Pumping operations were suspended for 18 hours, the operator is also required to provide an investigation report to the operators.

A well integrity check was being conducted at the time of the inspection. This is called a 'casing pressure test'. The pressure was held at 540bar for 7 minutes with no changes to the pressure curve and therefore no signs of well integrity issues.

The operator provided regulators with an investigation report. The details of the report were in line with the requirements of Appendix 4 of the Hydraulic Fracture Plan. We are satisfied that there has not been a breach of the sub-surface permit boundary in relation to this event and well integrity was not compromised.

Microseismic data for the TLS events on 23rd (stage 14), 24th (stage 18), 26th (stage 30) and 27th (stage 31) October were inspected and discussed in detail with Cuadrilla's contractor to ensure Cuadrilla's contractor were interpreting the micro-seismic data in line with the hydraulic fracture plan. No events were plotted near or outside of the sub surface permit boundary. Data was being interpreted in line with the hydraulic fracture plan.

Well Pad Inspection

Due to concerns from members of the public regarding the integrity and stability of the well pad a further walkover of the well pad and external areas was undertaken. Photographs were taken and are displayed in a separate report attached to this inspection report. During the site walkover, officers did not observe any signs of instability or loss of integrity. No leaks were observed from the well head, pipes or tanks and no groundwater was observed surfacing through the well pad.

Photographs taken during the visit were reviewed by a geotechnical engineer who did not identify any issues in the photographs which would indicate the failure of the containment system.

Daily Morning Reports

The daily morning reports for activities taking place on 23rd - 29th October were reviewed and contained the following information.

23/10/18 - main frac of 128.9m³ occurred containing injection water with proppant. Flowback produced (17.93m³) stored for reuse. Induced seismicity of 0.4ML was noted at 15:45 but did not trigger a Traffic Light trailing event as it did not occur during pumping operations.

24/10/18 - mini frac of stage 18 of 10.5m³ containing injection water without proppant. Flowback volume of 0.19m³ stored for reuse. Induced seismicity of 0.48ML was noted at 14:02 but did not trigger a Traffic Light trailing event as it did not occur during pumping operations.

25/10/18 - split injection of stage 22 of 350.9m³ containing injection water with proppant. Flowback volume of 20.62m³ stored for reuse. Induced seismicity of 0.37ML was noted at 15:59 which occurred during pumping and triggered an Amber Traffic Light event.


26/10/18 - diagnostic injection test and main frac of stage 30 of 142.2m³ containing injection water with proppant. Two induced seismicity events of 0.26 ML (Amber on the Traffic Light System) and 0.76ML (Red on the Traffic Light System) were recorded at 12:26 and 12:36 respectively.

27/10/18 - diagnostic injection test and main frac of stage 31 of 111.7m³ containing injection water with proppant. Flowback volume of 9.18m³ stored for reuse. Induced seismicity of 0.78ML (Red trailing event on the Traffic Light System) was recorded at 11:55 which was outside the pumping times.

28/10/18 - No activity

29/10/18 - main frac of stage 32 of 119.1m³ containing injection water with proppant. Flow back volume of 8.45m³ stored for reuse. Induced seismicity of 1.0ML (red on the Traffic Light System) was recorded at 11:30.

We have not detected a breach of the sub-surface permit boundary and all fractures were within the shale rock formation.

| | | | |
|---|---|-----------------------------|------------|
|  Environment Agency | EPR Compliance Assessment Report | Report ID: UP3431VF/0317707 | |
| This form will report compliance with your permit as determined by an Environment Agency officer | | | |
| Site | Preston New Road Exploration Site EPR/AB3101MW | Permit | UP3431VF |
| Operator/ Permit | Cuadrilla Bowland Limited | Date | 29/10/2018 |

| | | | |
|---|--|---|--|
| 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 major environmental effect | 60 |
| C2 | A non-compliance which could have a significant environmental effect | 31 |
| C3 | A non-compliance which could have a minor environmental effect | 4 |
| C4 | A non-compliance which has no 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. 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.