

**Environmental Permitting (England and Wales) Regulations 2010
Environment Agency Specification**

Cuadrilla Bowland Limited
Cuadrilla House
Stowe Court
Stowe Street
Lichfield
Staffordshire
WS13 6AQ

Our ref: EPR/KB3395DE

Date: 16 January 2015

Dear Sir,

Permit reference: EPR/KB3395DE
Applicant: Cuadrilla Bowland Limited
Site: Preston New Road Exploration Site

In response to your application for a new environmental permit I enclose a radioactive waste sampling, analysis and pollution inventory reporting specification.

The specification is made under conditions 3.2.1, 3.2.2, 3.2.3 and 4.2.2 of your new permit. It requires you to collect, assess, use and report on information about the radioactive waste you generate, accumulate and transfer for disposal.

Yours Sincerely

Team Leader Radioactive Substances Regulation

Environmental Permitting (England and Wales) Regulations 2010
Environment Agency Specification

Environment Agency Specification made under conditions 3.2.1, 3.2.2, 3.2.3 and 4.2.2 of permit number: EPR/KB3395DE

Issued to: Cuadrilla Bowland Limited

for the accumulation and disposal of radioactive waste at or from:

Preston New Road Exploration Site, Preston News Road, Plumpton, Fylde, Lancashire PR4 3PJ

Permit conditions

The relevant permit conditions are:

3.2.1 If required by the Environment Agency, the operator shall

- (a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency specifies; and
- (b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency specifies, and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the relevant legislation are complete.

4.2.2 The operator shall supply such information in relation to:

- (a) the disposals of radioactive waste; and
- (b) the samples, tests, surveys, analysis and calculations, environmental monitoring and assessments undertaken under condition 3.2.1;

in such format and within such timescales as the Environment Agency may specify in writing.

This specification is effective from: 16 January 2015

Issued by: Team Leader Radioactive Substances Regulation

(Authorised to issue such documents on behalf of the Environment Agency)

Date: 16 January 2015

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The Environment Agency specifies that:

- 1 The operator shall undertake the monitoring specified in table 1.

| Table 1 ; monitoring | |
|-----------------------------|---|
| Waste type | Monitoring requirement |
| Aqueous radioactive waste | To determine by analysis the total disposals ¹ per month of Ra-226 Ra-228 ² Pb-210 Po-210 |
| | To determine by analysis the total activity in accumulation on the last day of each month of Ra-226 Ra-228 ² |
| Solid radioactive waste | To determine by analysis the total disposals per month of Ra-226 Ra-228 ² Pb-210 Po-210 Th-228 |

(1) this covers all forms of disposal of aqueous waste including off-site transfer and the re-injection of produced water, other than NORM contaminated well stimulation fluid remaining in situ.

(2) Ra-228 may be inferred via Ac-228 measurement

- 2 The results of measurements and analysis shall be available
- For solid waste before it is removed from the site, and
 - For aqueous waste, wherever practicable, before it is removed from the site or disposed of on site.
- 3 Analyses shall be carried out by suitably accredited laboratory(ies).

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- 4 The Operator shall supply information relating to disposals of radioactive waste as specified in the attached Schedule, taking account of the guidance provided in Reporting Form PI(RAS), and in accordance with the following:
- (a) the information shall be provided not later than 28 February each year for disposals made during the preceding calendar year;
 - (b) the information shall be provided by:
 - (i) using our web-based reporting system (accessible from <https://www.gov.uk/government/collections/pollution-inventory-reporting>)
 - (c) the information provided on release quantities shall be the Operator's best estimate achievable with the time and resources available. The Operator is not required to perform additional monitoring, beyond any demanded by the permit, in order to complete the Reporting Form.

Pollution Inventory Schedule – radioactive waste

Part 1 About the operator and site

The information we require you to provide in Part 1, includes:

- details about you and your operations – permit number, operator name and address, and contact details;
- any claim that information provided is confidential.

Purpose of Parts 2, 3 and 4 of this Schedule

We require you to provide information on your releases of radioactive wastes to air, water and sewers, and transfers of radioactive wastes to other sites or operators. Parts 2, 3 and 4 of this Schedule list the individual reportable radionuclides for each environmental medium/disposal route (air, sewers, controlled water, waste transfers) and the reporting thresholds that apply to those radionuclides.

Part 2 Releases to air

| Annual reporting threshold | Radionuclide |
|---------------------------------|------------------------------|
| 1 10 ¹¹ Bq (100 GBq) | Tritium |
| 1 10 ⁹ Bq (1 GBq) | Carbon-14 |
| 1 10 ¹¹ Bq (100 GBq) | Fluorine-18 |
| 1 10 ⁸ Bq (100 MBq) | Sulphur-35 |
| 1 10 ¹² Bq (1 TBq) | Argon-41 |
| 1 10 ¹² Bq (1 TBq) | Krypton-85 |
| 1 10 ¹² Bq (1 TBq) | Technetium-99m |
| 1 10 ⁹ Bq (1 GBq) | Ruthenium-106 |
| 1 10 ⁷ Bq (10 MBq) | Iodine-125 |
| 1 10 ⁶ Bq (1 MBq) | Iodine-129 |
| 1 10 ⁷ Bq (10 MBq) | Iodine-131 |
| 1 10 ¹² Bq (1 TBq) | Xenon-133 |
| 1 10 ⁸ Bq (100 MBq) | Caesium-137 |
| 1 10 ⁹ Bq (1 GBq) | Radon-222 |
| 1 10 ⁷ Bq (10 MBq) | Uranium alpha |
| 1 10 ⁶ Bq (1 MBq) | Plutonium alpha |
| 1 10 ⁶ Bq (1 MBq) | Americium-241 |
| 1 10 ⁶ Bq (1 MBq) | Other alpha particulate |
| 1 10 ⁶ Bq (1 MBq) | Other beta/gamma particulate |

Pollution Inventory Schedule – radioactive waste

Part 3 Releases to sewers

| Annual reporting threshold | Radionuclide |
|-----------------------------------|------------------------------------|
| 1 10 ⁶ Bq (1 MBq) | Total alpha |
| 1 10 ⁶ Bq (1 MBq) | Total beta/gamma (but not tritium) |
| 1 10 ¹¹ Bq (100 GBq) | Tritium |
| 1 10 ⁸ Bq (100 MBq) | Carbon-14 |
| 1 10 ¹⁰ Bq (10 GBq) | Fluorine-18 |
| 1 10 ⁸ Bq (100 MBq) | Sodium-22 |
| 1 10 ⁶ Bq (1 MBq) | Phosphorus-32 |
| 1 10 ⁷ Bq (10 MBq) | Phosphorus-33 |
| 1 10 ⁷ Bq (10 MBq) | Sulphur-35 |
| 1 10 ⁷ Bq (10 MBq) | Chromium-51 |
| 1 10 ⁷ Bq (10 MBq) | Cobalt-57 |
| 1 10 ⁶ Bq (1 MBq) | Cobalt-58 |
| 1 10 ⁶ Bq (1 MBq) | Cobalt-60 |
| 1 10 ⁸ Bq (100 MBq) | Gallium-67 |
| 1 10 ⁶ Bq (1 MBq) | Selenium-75 |
| 1 10 ⁹ Bq (1 GBq) | Strontium-89 |
| 1 10 ⁷ Bq (10 MBq) | Strontium-90 |
| 1 10 ⁹ Bq (1 GBq) | Yttrium-90 |
| 1 10 ⁶ Bq (1 MBq) | Zirconium-95 |
| 1 10 ⁶ Bq (1 MBq) | Niobium-95 |
| 1 10 ⁶ Bq (1 MBq) | Technetium-99 |
| 1 10 ¹⁰ Bq (10 GBq) | Technetium-99m |
| 1 10 ⁸ Bq (100 MBq) | Ruthenium-106 |
| 1 10 ⁸ Bq (100 MBq) | Indium-111 |
| 1 10 ⁸ Bq (100 MBq) | Antimony-125 |
| 1 10 ⁹ Bq (1 GBq) | Iodine-123 |
| 1 10 ⁸ Bq (100 MBq) | Iodine-125 |
| 1 10 ⁷ Bq (10 MBq) | Iodine-129 |
| 1 10 ⁸ Bq (100 MBq) | Iodine-131 |
| 1 10 ⁷ Bq (10 MBq) | Caesium-134 |
| 1 10 ⁷ Bq (10 MBq) | Caesium-137 |
| 1 10 ⁸ Bq (100 MBq) | Cerium-144 |
| 1 10 ⁸ Bq (100 MBq) | Samarium-153 |
| 1 10 ¹¹ Bq (100 GBq) | Erbium-169 |
| 1 10 ⁹ Bq (1 GBq) | Thallium-201 |
| 1 10 ⁷ Bq (10 MBq) | Thorium-230 |
| 1 10 ⁷ Bq (10 MBq) | Thorium-232 |
| 1 10 ⁸ Bq (100 MBq) | Uranium alpha |
| 1 10 ⁷ Bq (10 MBq) | Neptunium-237 |

Pollution Inventory Schedule – radioactive waste

| Annual reporting threshold | Radionuclide |
|--------------------------------|------------------|
| 1 10 ⁷ Bq (10 MBq) | Plutonium alpha |
| 1 10 ⁸ Bq (100 MBq) | Plutonium-241 |
| 1 10 ⁷ Bq (10 MBq) | Americium-241 |
| 1 10 ⁸ Bq (100 MBq) | Curium-242 |
| 1 10 ⁶ (1 MBq) | Other alpha |
| 1 10 ⁶ (1 MBq) | Other beta/gamma |

Part 4 Releases to controlled water

| Annual reporting threshold | Radionuclide |
|---------------------------------|------------------------------------|
| 1 10 ⁶ Bq (1 MBq) | Total alpha |
| 1 10 ⁶ Bq (1 MBq) | Total beta/gamma (but not tritium) |
| 1 10 ¹² Bq (1 TBq) | Tritium |
| 1 10 ⁸ Bq (100 MBq) | Carbon-14 |
| 1 10 ¹⁰ Bq (10 GBq) | Sulphur-35 |
| 1 10 ⁷ Bq (10 MBq) | Cobalt-60 |
| 1 10 ⁸ Bq (100 MBq) | Strontium-90 |
| 1 10 ⁹ Bq (1 GBq) | Yttrium-90 |
| 1 10 ⁹ Bq (1 GBq) | Zirconium-95 |
| 1 10 ⁸ Bq (100 MBq) | Niobium-95 |
| 1 10 ⁹ Bq (1 GBq) | Technetium-99 |
| 1 10 ⁹ Bq (1 GBq) | Ruthenium-106 |
| 1 10 ¹⁰ Bq (10 GBq) | Antimony-125 |
| 1 10 ⁸ Bq (100 MBq) | Iodine-129 |
| 1 10 ⁷ Bq (10 MBq) | Caesium-134 |
| 1 10 ⁸ Bq (100 MBq) | Caesium-137 |
| 1 10 ⁹ Bq (1 GBq) | Cerium-144 |
| 1 10 ⁷ Bq (10 MBq) | Thorium-230 |
| 1 10 ⁷ Bq (10 MBq) | Thorium-232 |
| 1 10 ⁸ Bq (100 MBq) | Uranium alpha |
| 1 10 ⁸ Bq (10 MBq) | Neptunium-237 |
| 1 10 ⁸ Bq (10 MBq) | Plutonium alpha |
| 1 10 ¹⁰ Bq (100 MBq) | Plutonium-241 |
| 1 10 ⁸ Bq (10 MBq) | Americium-241 |
| 1 10 ¹⁰ Bq (100 MBq) | Curium-242 |
| 1 10 ⁶ Bq (1 MBq) | Other alpha |
| 1 10 ⁶ Bq (1 MBq) | Other beta/gamma |