Weaverthorpe Wellsite

Non-Technical Summary

Environmental Permitting (England and Wales) Regulations 2016

- **Application for a Bespoke Mining Waste Operation with Flare**
- **Application for a Bespoke Installation**

ISSUE No.	Description
250527	Draft for Client Review
250814	Initial issue for an application for a Mining Waste Operation with Flare >10 Tonnes per day
250903	Issued after Operator review

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1. PURPOSE AND CONTEXT

This Non-Technical Summary forms part of an application to the Environment Agency to authorise the undertaking of specific 'permitted activities' at the proposed Weaverthorpe Wellsite (herein referred to as the 'Wellsite'). In the context of onshore oil and gas operations, a number of activities are considered applicable to the environmental permitting regime.

The Wellsite within which the 'permitted activities' are undertaken is considered a 'regulated facility' under The Environmental Permitting (England and Wales) Regulations 2016, as amended (EPR2016) [Ref.1]. Throughout the life of the Wellsite, this Non-Technical Summary shall be considered a live 'operating technique' and must be complied with as it forms part of the environmental permit.

The purpose of the Non-Technical Summary is to set out the operations proposed to be conducted at the Wellsite and how they are applicable under EPR2016. It also lays out the management plans and documentation of the application and how they satisfy the requirements of EPR2016.

Egdon Resources U.K. Limited is the 'Operator' as defined under EPR2016 and shall herein be referred to as the Operator within this Non-Technical Summary.

The Operator is proposing to construct a wellsite ~850m to the east of the village of Foxholes located within the administrative boundary of North Yorkshire Council and within Foxholes with Butterwick parish. The boundary with the East Riding of Yorkshire lies approximately 350m to the east.

The Wellsite is located ~2 Km to the west of Wold Newton, ~15 Km south of Scarborough and ~16 Km northwest of Bridlington.

The Wellsite will be constructed to accommodate the drilling of an exploratory borehole to evaluate the potential for natural gas accumulations within the Sherwood Sandstone target formation.

An application to the Environment Agency is being proposed under EPR2016 to apply for a 'Mining Waste Operation with Flare', as defined by reference 1.8.6 of the Environment Agency (Environmental Permitting and Abstraction Licensing) (England) Charging Scheme [Ref.2].

For clarity, domestic legislation derived from European Union legislation such as the Mining Waste Directive (MWD) [Ref.3] and Industrial Emissions Directive (IED) [Ref.4] continue to have an effect in domestic law following the UK's withdrawal from the European Union in accordance with the European Union (Withdrawal) Act 2018 [Ref.5]. European Directives are therefore still applicable to both this Non-Technical Summary and the activities performed by the Operator.

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2. SCOPE

This Non-Technical Summary is applicable to the Weaverthorpe Wellsite and all operations conducted therein. It is applicable to the Operator, its contractors and subcontractors and can be used to support an application to the Environment Agency for an environmental permit under EPR2016.

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3. Abbreviations and Definitions

~:	Approximately
BAT:	Best Available technique
c400m:	Circa 400m
CQA:	Construction Quality Assurance
EPR2016:	The Environmental Permitting (England and Wales) Regulations 2016, as amended
Groundwater Activity:	Has the meaning given within Regulation 2 of EPR2016
ha:	Hectare – A unit of square measurement equal to 10,000 square metres
IED:	The Industrial Emissions Directive aims to prevent and reduce harmful industrial emissions, while promoting the use of techniques that reduce pollutant emissions and that are energy and resource efficient
Installation Activity:	Has the meaning given within Regulation 2 of EPR2016
Km:	Kilometre – A unit of measurement of length equal to one thousand metres
m:	Metre – A unit of measurement of length equal to one hundred centimetres
Mining Waste Operation:	Has the meaning given within Regulation 2 of EPR2016
MWD:	The Mining Waste Directive – Directive 2006/21/EC of the European Parliament and the Council on the management of waste from extractive industries
NSTA:	North Sea Transition Authority
NGR:	National Grid Reference
Operating Technique:	Documents approved by the regulator to ensure compliance with the issued permit
Operator:	Has the meaning given within Regulation 7 of EPR2016
Permitted Activities:	Any activity or operation defined within Schedule 1 to 29 of EPR2016
Regulated Facility:	Has the meaning given within Regulation 8 of EPR2016
UK:	United Kingdom
Water Discharge Activity:	Has the meaning given within Regulation 2 of EPR2016
WR11:	Environment Agency's form for 'Notice of the intention to drill for minerals'

Table 1: Abbreviations and Definitions

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4. REGULATED FACILITY

The 'regulated facility' is located in the countryside in the county of North Yorkshire. It is centred on National Grid Reference (NGR) TA 02308 73142 and is located at the following address.

Weaverthorpe Wellsite

Land North of Butt Lane

Foxholes

North Yorkshire

YO25 3HY

Figure 1: Weaverthorpe Wellsite – Current (Source: Google Earth 17/12/2024)

4.1 Site Location Plan and Site Layout Plan

A number of site plans have been provided within the Site Plans document (04 – Site Plans) and detail the extent of the Wellsite, including its location, site layouts and point source emissions.

A copy of the following plans are provided within the Site Plans document (04 – Site Plans).

- 04A - ZG-ER-WRP1-FH-EPR-04-01 Location Plan 2500 Scale A2
- 04B - ZG-ER-WRP1-FH-EPR-04-02 Location Plan 10000 Scale A3
- 04C - ZG-ER-WRP1-FH-EPR-04-03 Indicative Site Layout Plan - Construction Phase 500 Scale A2
- 04D - ZG-ER-WRP1-FH-EPR-04-04 Indicative Site Layout Plan - Drilling Phase 500 Scale A3
- 04E - ZG-ER-WRP1-FH-EPR-04-05 Indicative Site Layout Plan - Well Testing Phase 500 Scale A3
- 04F - ZG-ER-WRP1-FH-EPR-04-06 Indicative Site Layout Plan - Retention Phase 500 Scale A2
- 04G - ZG-ER-WRP1-FH-EPR-04-07 Indicative Site Layout Plan - Well Abandonment Phase 500 Scale A3
- 04H - ZG-ER-WRP1-FH-EPR-04-08 Indicative Section Plan - Covered Ditch Construction 25 Scale A3

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5. ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2016

5.1 Permitted Activities

The Wellsite has yet to be constructed and does not currently hold an environmental permit. Current Operational Status (Pre-Application)

The Wellsite is located on agricultural land to the north of Butt Lane, near Foxholes, and is currently used for growing a potato crop.

The Wellsite is located ~850m to the east of the village of Foxholes, ~2 Km to the west of Wold Newton, ~15 Km south of Scarborough and ~16 Km northwest of Bridlington and covers an area of approximately 1.3 ha including the access track.

The Wellsite is located within the administrative boundary of North Yorkshire Council and within Foxholes with Butterwick parish.

The closest residential receptors are:

- West Field House – 570m; and
- Foxholes – 870m.

The proposal is to construct a temporary Wellsite within an enclosed and secure compound to drill an exploratory borehole. Should natural gas be encountered as predicated, the drilling rig will be demobilised from the Wellsite and the intention is then to undertake a short term well test. If natural gas is not encountered during the drilling phase, the exploratory borehole will be decommissioned (abandoned) in accordance with industry guidance, the drilling rig and associated equipment then removed and the Wellsite restored to its former condition.

5.2 Proposed Development

The Operator is proposing to undertake four (4) phases of development as illustrated within Table 2.

Phase	Description	Approximate Timescale
Phase 1	**Construction of Site Access and the Wellsite** a) Access track civils from Butt Lane; construct access track along field boundary b) Install groundwater monitoring boreholes c) Earthworks on well pad; install fencing and gates d) Create perimeter containment system e) Install liner/tertiary containment f) Construct well cellar g) Install temporary matting as usable surface platform	5 weeks
Phase 2	**Drilling of the Weaverthorpe-1 Well.** a) Set conductor b) Mobilise rig and services c) Drill Weaverthorpe-1 well d) Log well to evaluate reservoir e) Rig down equipment and release drilling rig	8 weeks

Phase	Description	Approximate Timescale
Phase 3	**Testing – Dependent on the outcome of Phase 2** a) Mobilise test spread b) 5–7 days operational well test (short term well test), with shut-in periods to gather downhole data c) Gas management via approved ground flare system d) Suspend well to evaluate results e) Remove equipment and facilities	4 weeks
Phase 4a	**Site Suspension** a) Success case (proven gas from test evaluation): with well suspended, reduce site area size, remove temporary matting, install aggregate to create smaller working platform b) Install a surface water interceptor to manage clean surface water run-off	4 weeks
Phase 4b	**Site Restoration** a) Failure case (no gas encountered during drilling, or insufficient gas following test evaluation): plug wellbore with cement plugs to surface, cut conductor below ground level and remove well cellar, remove matting and liner, backfill perimeter ditches and restore site to agricultural land	6 weeks

Table 2: Phases of Development

Phase 1 – Wellsite Construction

Construction of the Wellsite will be undertaken during Phase 1 and will include the construction of an access and working site area with a well cellar, perimeter containment ditch and tertiary containment system.

The perimeter containment ditch system will be installed to facilitate easy reduction in site area in the testing success case. The design and installation of the well cellar, together with the design of the tertiary containment system will be subject to review and verification by the Environment Agency, and installed under a Construction Quality Assurance Plan (CQA).

Groundwater monitoring boreholes will be installed during the site construction phase.

The tertiary containment system and perimeter containment ditch ensures that any accidental spillages that may occur during the subsequent phases of operation are contained within the Wellsite.

Security fencing will be installed.

Phase 2 – Drilling Operation

The second phase of the development will include the drilling of an exploratory borehole (Weaverthorpe-1 Well). Following mobilisation of the drilling rig to site, the Weaverthorpe-1 Well will be drilled including a c400m deviated section in a north-westerly direction.

If drilling results are positive then the Weaverthorpe-1 Well will be cased and completed for testing as set out in Phase 4a. If not, then operations will move to abandonment and restoration as detailed in Phase 4b.

Phase 3 – Short Term Well Test

The third phase of the development will include a short term well test of the Weaverthorpe-1 Well. Following demobilisation of the drilling rig, a well test spread will be mobilised to site and will include a Shrouded Ground Flare, a 3-phase separator, waste storage tanks, a slick line unit and a coiled tubing unit.

The test will follow a standard short-term well test permitted under the well test regulations provided by the North Sea Transition Authority (NSTA). This will limit flare activity to a maximum of 96 hours over the full test period. Following the testing period, the Weaverthorpe-1 Well will be suspended to evaluate the results.

Phase 4a – Site Suspension

In a success case, the Weaverthorpe-1 Well will remain suspended and the well head and well cellar left in place, whilst regulatory approvals for production are progressed, developed and submitted.

The temporary matting will be removed, and the site working platform reduced; aggregate will be brought in to facilitate this. A surface water interceptor will be installed during this phase to manage clean surface waters.

The Wellsite will be maintained on a care and maintenance basis until such point as all regulatory approvals for production are progressed or if such approvals are not forthcoming then operations will move to abandonment and restoration as detailed in phase 4b.

Phase 4b – Site Restoration

In a failure case following testing (or failure to gain regulatory approvals as per phase 4a above) the well will be fully abandoned by setting cement plugs in the casing to surface, cutting the conductor below ground level and capping the casing with a welded plate. The well cellar will be removed, as will the perimeter/tertiary containment systems, groundwater borehole systems and the temporary matting (or aggregate). The groundwater monitoring boreholes will be decommissioned and the site will be restored to its original land condition and contours.

5.3 Non-Permitted Activities

Additional activities associated with the development, but not regulated under EPR2016 as a 'permitted activity' includes, but is not limited to:

- Car parking for staff vehicles;
- Provision of welfare facilities for site staff;
- Well and wellsite maintenance; and
- Storage and disposal of non-hazardous and hazardous wastes not directly associated with the permitted activities.

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6. ENVIRONMENTAL LEGISLATION AND APPLICABILITY

The proposed Wellsite has yet to be constructed and does not currently hold an environmental permit.

6.1 Proposed Permitted Activities

The Wellsite will be the subject of several activities which, under current environmental legislation, requires an environmental permit. The Environment Agency regulates all permitted activities under the Environmental Permitting (England and Wales) Regulations 2016, as amended (EPR2016). Under EPR2016, Operators are required to submit environmental permit applications to the Environment Agency to seek approval to undertake such activities.

Onshore oil and gas developments are the subject of the environmental permitting regulations, and as such a number of environmental permits will be required to be obtained from the Environment Agency.

This Non-Technical Summary provides details on the proposed operations to be conducted at the Wellsite and provides an explanation as to which permitted activities will be required/applied for.

6.2 Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency regulates all permitted activities under EPR2016 and require Operators to submit environmental permit applications to seek approval to undertake such activities. The Operator has assessed the activities associated with the proposed operations and considers certain activities to fall in scope of EPR2016 and therefore require the necessary environmental permits.

6.2.1 Industrial Emissions Activity

Schedule 1, Part 2 of EPR2016 details a number of activities that are classified as an Industrial Emissions Activity including 'Energy Activities' (Chapter 1) and 'Waste Management' (Chapter 5). Energy Activities include the storage of crude oil, whilst Waste Management includes the incineration of waste.

6.2.1.1 Incineration of Natural Gas

Schedule 1, Part 2 of EPR2016 transposes the requirements of the Industrial Emissions Directive, which requires an environmental permit to authorise an installation operation for the incineration and co-incineration of waste, as detailed within Section 5.1.

Part A(1)

(a) The incineration of hazardous waste in a waste incineration plant or waste co-incineration plant with a capacity exceeding 10 tonnes per day.

The proposed short term well testing phase of operations, which include a Well Clean Up (WCU) and Short Term Well Test, may involve the incineration of natural gas exceeding 10 tonnes per day and therefore an installation permit is being applied for.

6.2.1.2 Oil Storage

Schedule 1, Part 2, of EPR2016 transposes the requirements of the Industrial Emissions Directive, which requires an environmental permit to authorise an installation for gasification, liquefaction and refining activities, as detailed within Section 1.2, Part A(1) including the loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.

The proposed exploratory operations may involve the handling and storage and unloading of oil or condensate and therefore under EPR2016 a Standard Rules SR2015 No.2 Crude Oil Storage permit will be applied for.

6.2.2 Mining Waste Operation

Schedule 20 of EPR2016 defines a mining waste operation as being the management of extractive waste, whether or not it involves a waste facility. Under EPR2016, an environmental permit is required to authorise a mining waste operation.

In order to drill, test and undertake well treatments from the proposed Weaverthorpe-1 Well, it is necessary to apply for an environmental permit for a mining waste operation (which includes a flare).

The 'mining waste operation' will consider the extractive waste volumes and waste streams created as a result of both the drilling process and any subsequent testing and well treatment operations.

6.2.3 Groundwater Activity

Under Schedule 22 of EPR2016, an activity that could involve the discharge of pollutants into groundwater must be notified to the Environment Agency, together with the nature of these pollutants, under EPR2016. The Environment Agency will then determine whether the groundwater activity needs to be permitted.

During the life of the well, it may be necessary to undertake near wellbore treatments, including the use of liquid CO_2 which falls within the definition of a 'groundwater activity' under Schedule 22 of EPR2016.

Schedule 22 3 (3) of EPR2016 provides that '*The regulator may determine that a discharge, or an activity that might lead to a discharge, is not a groundwater activity if the input of the pollutant…*

> *(b) is or would be of a quantity and concentration so small as to obviate any present or future danger of deterioration in the quality of the receiving groundwater.*

To assist the regulator in determining whether the proposed activities are/are not considered groundwater activities a description of the operations, together with a technical justification as to why the Operator believes these can be excluded under Schedule 22 paragraph 3 (3) of EPR2016, is included within the Waste Management Plan (05 - Waste Management Plan) provided in support of the environmental permit application.

6.2.4 Water Discharge Activity

Schedule 21 of EPR2016 relates to water discharge activities, including the discharge or entry to inland freshwaters, coastal waters or relevant territorial waters of any trade effluent.

For clarity, the Environment Agency has provided the following response with regards to surface water discharges in their pre-application response:

> *'Please note that with regards to the water discharge activity, providing that the water discharged from the site is only unpolluted rainwater and you are taking necessary measures to prevent pollution we would not regulate this as a Schedule 21 water discharge activity. We may put additional restrictions on discharge to the site during well workover or testing phases.'*

The Operator is proposing to discharge only 'clean' surface run-off water from the Wellsite and therefore a surface water discharge permit will not be applied for.

The discharge of 'clean' surface run-off water from the Wellsite will be the subject of a Surface Water Management Plan (13 – Surface Water Management Plan) provided in support of the environmental permit application.

For clarity, the Operator is not proposing to discharge surface run-off water during Phase 2 and Phase 3 operations. Surface run-off water collected within the perimeter ditch during Phase 2 (drilling operations) and Phase 3 (short term well test) will be transferred off site by an Environment Agency licenced waste contractor to an Environment Agency licensed waste treatment facility.

In the event that the Weaverthorpe-1 Well is a success case, 'clean' surface run-off water will be discharged to surface through a Class 1 Interceptor which will be installed following a successful short term well test phase of operations.

6.2.5 Water Resources Act 1991 (as amended by the Water Act 2003)

Under Section 199 of the Water Resources Act 1991 [Ref.6] (as amended by the Water Act 2003 [Ref.7]), a notice of the intention to construct or extend a boring for the purpose of searching for or extracting minerals must be submitted to the Environment Agency using form WR11.

The WR11 requires that a method statement, including drilling and casing designs, together with storage and use of chemicals and drilling muds, accompanies the WR11 application form.

The Weaverthorpe-1 Well will be the subject of an individual WR11 application.

7. RISKS POSED TO THE ENVIRONMENT AND HUMAN HEALTH

The risks posed by the proposed 'permitted activities' have been considered within the Environmental Risk Assessment which forms part of any application to the Environment Agency and is considered an 'operating technique'.

The Environmental Risk Assessment (which is qualitative) considers activities that have the potential to cause harm to the environment and human health.

In addition, the Operator has employed the services of specialist consultants to address the risks posed specifically to air, groundwater, surface water and noise. Each assessment will be verified by the Environment Agency as part of the permit determination process.

A copy of the following assessments are provided in support of the environmental permit application:

1. Environmental Risk Assessment (07 – Environmental Risk Assessment);
2. Hydrogeological Risk Assessment (08 - Hydrogeological Risk Assessment);
3. Air Quality Impact Assessment (11 – Air Quality Impact Assessment); and
4. Noise and Vibration Impact Assessment (12 – Noise and Vibration Impact Assessment).

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8. OPERATING TECHNIQUES AND SUPPORTING DOCUMENTATION

A number of 'operating techniques' are required as part of a submission to the Environment Agency for approval. Any revision to these documents also requires approval from the Environment Agency prior to implementation. Typical 'operating techniques' associated with onshore oil and gas operations include those described below, and are tailored to the proposed development.

8.1 Application Forms

Application Forms accompany any application to the Environment Agency. The Application Forms provide details on the Operator, the 'regulated facility', the activities to be undertaken and the limits of those activities.

8.2 Site Location and Site Layout Plans

Site Plans are provided to illustrate the location of the 'regulated facility', together with an indicative layout plan. Emissions points and monitoring points are also illustrated on the plans together with any additional information as requested by the Environment Agency.

8.3 Waste Management Plan (Extractive Waste)

The Waste Management Plan is an 'operating technique' and principal document ensuring that the Operator complies with the conditions of the issued permit. It provides information on the 'mining waste operation' to be conducted and the waste management arrangements for the extractive waste streams.

8.4 Site Condition Report

The Site Condition Report is an 'operating technique' and principal document ensuring that the Operator has provided a record of the site condition prior to the commencement of 'permitted activities'. It will continue to be updated as the development progresses to record any changes to the environment upon permit surrender.

A Site Condition Report is required for applications concerning 'installation activities' in accordance with EPR2016.

8.5 Environmental Risk Assessment

The Environmental Risk Assessment is an 'operating technique' and principal document ensuring that the risk posed to the environment by wellsite operations is reduced to as low as possible, so far as reasonably practicable. The Environmental Risk Assessment follows the Environment Agency guidance using the Source-Pathway-Receptor model. The mitigation provided within the Environmental Risk Assessment shall be implemented at the Wellsite.

8.6 Chemical Inventory and Well Schematic

The Chemical Inventory and Well Schematic (together with Safety Data Sheets) is an 'operating technique' detailing the chemicals proposed as part of the development i.e. down the wellbore or within the installation process. It outlines the chemical products (i.e. drilling fluid and treatment additives) to be used within the proposed operations and details the location where they are to be used.

8.7 Waste Gas Management Plan

The Waste Gas Management Plan is an 'operating technique' and principal document ensuring that the Operator complies with the management arrangements for waste gas for the Wellsite. The Waste Gas Management Plan demonstrates to the Environment Agency that the Operator has considered the Best Available Techniques (BAT) for the management of waste gas. It also provides a drawing highlighting the point source emissions to air.

8.8 Odour Management Plan

The Odour Management Plan is an 'operating technique' and principal document ensuring that the Operator complies with the management arrangements for odour within the Wellsite. The Odour Management Plan demonstrates to the Environment Agency that the Operator has considered the operations and activities within the Wellsite that have the potential to generate odour, the necessary odour management controls and monitoring procedures.

8.9 Surface Water Management Plan

The Surface Water Management Plan outlines the management arrangements for the collection of surface run-off water within the Wellsite. It details whether a discharge can take place or whether discharges are not permitted to be undertaken.

The Surface Water Management Plan also outlines when restrictions are enforced upon the Wellsite to prevent the discharge of surface run-off water when there is a higher chance of contamination taking place.

REFERENCES

1. The Environmental Permitting (England and Wales) Regulations 2016

   Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents/made

2. Environment Agency (Environmental Permitting and Abstraction Licensing) (England) Charging Scheme

   Available at: https://www.gov.uk/government/publications/environmental-permits-and-abstraction-licences-tables-of-charges

3. Council Directive 2006/21/EC on the management of waste from extractive industries and amending Directive 2004/35/EC

   Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02006L0021-20090807&from=EN

4. Council Directive 2010/75/EU on the industrial emissions (integrated pollution prevention and control)

   Available at https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN

5. European Union (Withdrawal) Act 2018

   Available at: https://www.legislation.gov.uk/ukpga/2018/16/contents/enacted

6. Water Resources Act 1991

   Available at: https://www.legislation.gov.uk/ukpga/1991/57/contents

7. Water Act 2003

   Available at: https://www.legislation.gov.uk/ukpga/2003/37/contents