Response to letter of objection from the Environment Agency, dated 14th May 2025

Planning application ref NYC/2025/0030/ENV

Following recent discussions with senior officers at the Environment Agency (EA), Europa would like to take the opportunity to clarify matters with regard to the proposed well design at Burniston.

The safeguarding of all environmental parameters, including groundwater, is a fundamental consideration of Europa and has been factored into the design of the scheme from its outset. The proposed methods of drilling and casing are ones that have been established and applied over decades in the industry, in this country and worldwide; they will ensure the protection of groundwater resources. The proposed methods of drilling, potential for impact and mitigation measures are detailed fully within the submitted HIA report which accompanied the planning application (Hydrogeological Impact Assessment, Burniston Mill – Cloughton (PEDC C343) Hafren Water December 2024) and which included a conceptual slim hole well design (drawing 3729/HIA/07a). For ease of reference, this drawing is reproduced on page 3 of this response.

The purpose of including this information is to demonstrate the indicative casing and well construction as it relates to groundwater, not to seek approval from the EA for well design as part of the planning application. In this regard, the EA will be aware that Europa has applied for an EA permit in relation to the well operation.

Our response to the matters raised by the EA regarding potential for risk and means of safeguarding groundwater are re-iterated below.

Drilling and casing method

A sequence of steel casing of decreasing diameter will be installed in the well as it is deepened. The casing and associated cement will hydraulically isolate the well bore from the surrounding groundwater environment at all times.

The proposed casing schedule is summarised below. Please see drawing 3729/HIA/07a in the HIA for further details.

Casing diameter (inches)	Measured depth (m)
30	30
13 3/8	192
9 5/8	1404
7	2578
4 ½ liner	2983

Note casing depths are indicative and will be subject to change as part of the approval of the final well design and specific depth of stratigraphic targets encountered while drilling.

Before casing is installed in the deepened bore, and as drilling progresses, the well walls are supported by the significant hydrostatic head provided by the drilling fluid. This fluid is circulated continuously through the drill pipe and returned via the well annulus. This is industry best practice and accords with HSE guidelines and environmental standards that are acceptable to the EA.

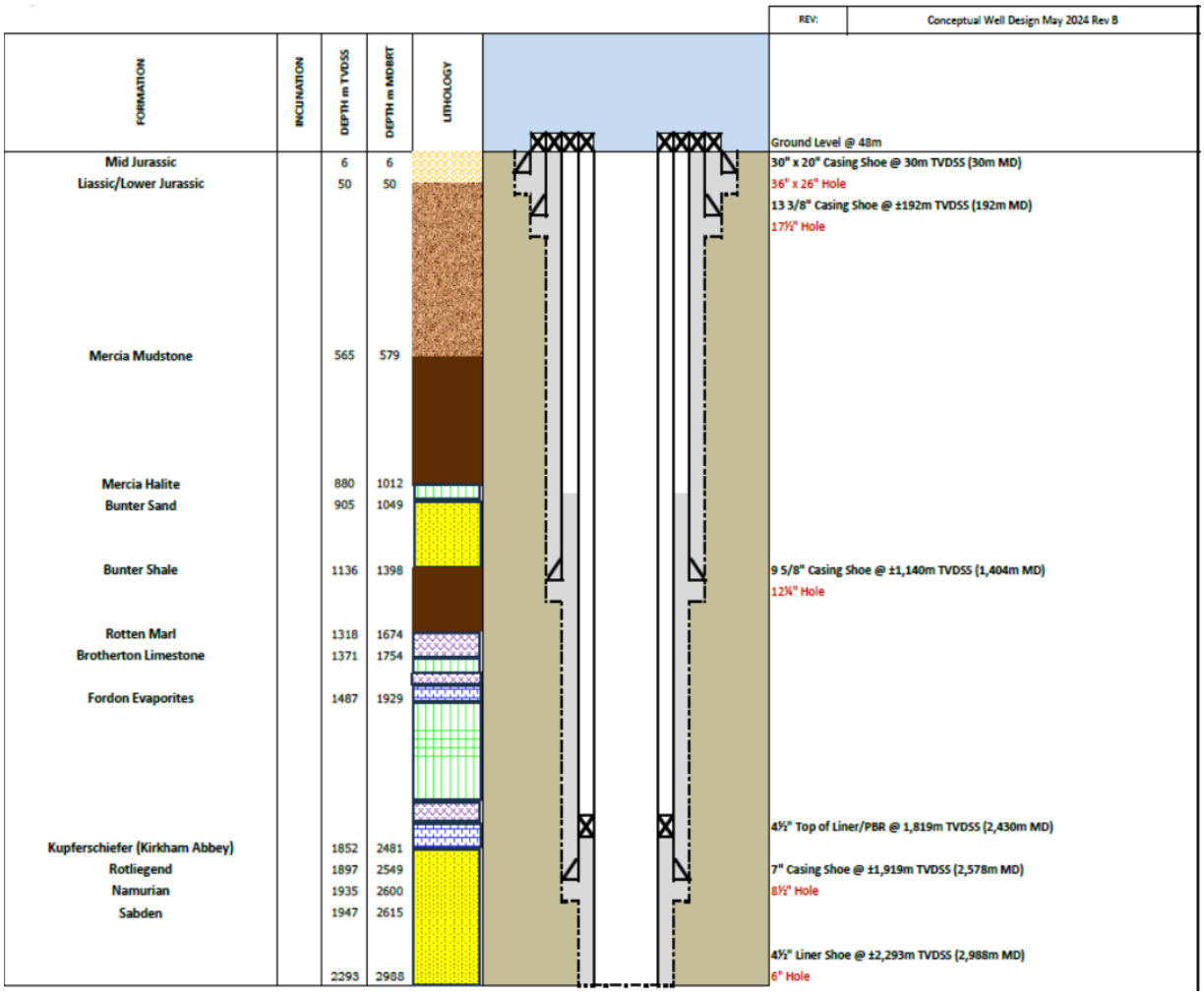
The drilling fluid is a highly engineered product with specific chemical and physical properties optimised for the geological formations which are being penetrated. The composition of the fluid will have been agreed with the EA. The drilling fluid is vital to ensure safe and efficient drilling and is a fundamental component of any drilling operation; a specialist contractor attends the site 24/7 during drilling to ensure that the drilling fluid is optimised at all times.

As drilling progresses the drilling fluid rapidly forms a layer, known as a filter cake, on the wall of the bore. This hydraulically isolates the drilling fluid within the well bore from the external groundwater environment. This must occur for the well to be progressed safely, efficiently and without adverse environmental impact.

Due to the installation of cemented casing at intervals and the mitigating effects of the drilling fluid there will be no interchange between the well bore and the external environment including groundwater aquifers.

Casing of individual aquifers

After each set of casing has been installed, cement is pumped through the well string and is circulated into the annular space between the well casing and surrounding strata. A tested cement seal and steel casing, therefore, exists throughout the full vertical extent of well. The cement in conjunction with the steel casing provides for well integrity with respect to all fluids encountered subsurface. Consequently, there is no material risk of any transfer of groundwater between aquifers. It can be seen from drawing 3729/HIA/07a which is re-produced below that the well design is such that multiple sets of cemented casing exist between the inside of the well bore and the surrounding formations.



In this regard the individual groundwater sources will be hydraulically prevented from mixing in the wellbore and then further sealed behind cement and casing.

Europa has confirmed a suitable casing seat in the Lias section and taken into consideration the identified risk by which saline aquifers at depth can “mix” with the active groundwater.

This identified risk, which is highly unlikely given no expected overpressure is rendered insignificant by the mitigation afforded by proposed methods of drilling and well construction (**see attachment: Burniston Site Further Ground Water Risk Assessment**).

As such there will be no significant risk to groundwater, either during drilling or residual risk upon completion and abandonment.

Legal definition of groundwater

For the reasons discussed above, the entire geological sequence and associated groundwater, from the base of the well to ground surface, is hydraulically separated from the well bore.

Testing of well integrity

This is part of the EA & HSE permitting process which is being pursued.

Condition 1

This condition is acceptable.

Permitting and gas flare BAT

The EA permit screening process has already been completed for the proposed development and a permit application has been duly made by the EA. This specifically addresses BAT with respect to temporary natural gas waste at the development site. The EA permitting process will determine BAT in this respect for the site.

Well Design

Section 3.2 in the HIA states that all aspects of the operation including well design are subject to approval under permitting.

> *"The well will be constructed in full compliance with the applicable regulations, in full regulatory oversight of the Environment Agency, the Health and Safety Executive and the NSTA."*

For the avoidance of doubt Europa reconfirms that the well design will follow HSE guidelines and meet environmental standards acceptable to the EA.

This approach accords with paragraph 112 of the Minerals Planning Practice Guidance. Well design and construction, well integrity during operation and mining waste are all covered by regulatory regimes other than planning, such as environmental permitting.

The commencement of development will be conditional upon securing the required permitting and approvals from the EA, HSE and NSTA in particular with respect to well design, operational procedures and possible emissions.

Europa appreciates the opportunity to further clarify to the EA the mitigation against groundwater pollution as part of the planning process and considers that this detailed response fully addresses the concerns in the EA's letter of objection of 15th May 2025.

Accordingly, Europa requests that the EA removes the objection to the planning application.