

Dear Paul

Many thanks for your letter dated 5th August 2020 and your consideration of our Permit (EPR/ZP3933NJ) variation application.

In respect to your request further information, please find our responses below.

In response to Point 1:

“Regarding the OPRA profile submitted”

These points have been addressed in a response to Holly Noble (email dated 30th April 2020) relating to our BAT and OPRA Permit Review (originally submitted by ourselves in February 2020). We responded to Holly Noble on the 26th May 2020 via e-mail.

In response to Point 2:

“Please revise and re-submit the non-technical summary. This revised document needs to explain the changes that are proposed and not the how the site will be following the proposed changes as it does at present.”

See revised document (TTH/SSF/01-20/001).

In response to Point 3:

“Please explain, including technical detail, how the proposed treatment will work effectively, and produce the stated intended results, if the wastes are stored and treated together in one stockpile”.

The rationale for stockpile management is outlined below.

Wastes on receipt are stockpiled in accordance with required processing / treatment as determined by both the pre-acceptance and acceptance assessments. Compatible wastes from different batches may be stored / processed / treated together. Only wastes of the same EWC are stockpiled together (and typically waste of similar hazardous properties).

There are several options for the processing / treatment of waste within the Treatment Hub - treatment will only be carried out if shown to be necessary or appropriate. This is based on over 20 years' experience of contaminated land remediation and taking into account previous experience and data obtained from laboratory trialling (if required), trial batches / assessment and verification following processing / treatment to demonstrate the process has been effective and achieved the required outcomes.

In response to Point 4:

“Please explain, including technical detail, how the treatment processes will work and produce the stated intended results, for each waste type to be received and for each waste type to be used to benefit the process (In Table 2 of the permit variation supporting document, you list waste streams to be beneficial to the treatment process). This should have reference to the full details of the nature of the beneficial waste and to the full range of classifications that will be applied to the material to be removed from the site at the end of the process”.

The classification assigned to the resultant material can initially be split into a) non-waste, where the material has been fully recovered as a product either through an End of Waste position or via the CL:AIRE Definition of Waste Code of Practice or b) waste, where the waste code (EWC) will reflect the treatments / processing undertaken.

In terms of waste soils (17.05.03 and 17.05.04), significant volumes of these wastes end up in local landfills or are disposed of incorrectly. *The prime focus of the Treatment Hub is to divert wastes away from landfill in accordance with the Waste Hierarchy and in line with the Welsh Government's commitment to a Zero Waste Strategy.* The Treatment Hub achieves this through processing / treatment of waste as required, which results in a material which meets the "stated intended results" as defined by the specific requirements of the receiver site / facility. Many of the processes undertaken at the Treatment Hub are analogous to on-site remediation techniques, subtle in nature and NOT comparable to the overall waste treatment sector. All wastes accepted into the Treatment Hub are assessed for compatibility. The Treatment Hub does not import highly contaminated soils when there is little realistic expectation that the waste can be processed / treated in a timely / commercially acceptable manner. In accordance with prevailing regulations and our own pre-acceptance procedures, the Treatment Hub can demonstrate that a significant number of waste enquiries has been "rejected" at the pre-acceptance stage.

The required processing / treatment to achieve the stated intended results is dependent on the contamination / pollutant assessment on receipt of the waste at the facility and intended end-use (which will relate to chemical and physical properties). This is known as the pre-acceptance stage of waste acceptance.

Following assessment (in-house testing and laboratory testing) at the pre-acceptance stage it is commonly the case that a significant quantity of waste soils arriving at the Treatment Hub do not exhibit the hazardous components which the site investigation and subsequent waste classification attributed to them by the waste producer / appointed consultant. It is often the case that upon receipt of the waste at the Treatment Hub and following assessment by a competent chemist using a range of on-site analytical tools and by subsequent confirmatory analysis by an accredited laboratory, that accepted wastes are confirmed to meet the required criteria for reuse. On this basis, these wastes are not processed / treated but transferred to the designated receiver site retaining their original EWC or non-hazardous equivalent (for instance 17.05.04). This specific EWC fully describes the waste and is not restrictive to just soils / stones from site, as referenced in the Guidance on the Classification and Assessment of Waste (WM3) document:

- Chapter 17 - Construction and Demolition wastes (including excavated soil from contaminated sites)
- 17.05 Soil (including excavated soil from contaminated sites), stones and dredging spoil

If the waste processing involves some form of screening / crushing then waste is attributed the respective EWC 19.12.09 (or 19.12.12).

Wastes which undergo E-Clay Stabilisation predispose themselves to a specific end use, for instance landfill restoration and / or reuse under CL:AIRE Definition of Waste Code of Practice. E-Clay Stabilisation alone does not remove all of the untreated dangerous substances or convert them to non-dangerous substances and therefore further treatment is required to achieve required outcomes (in the event the waste did not undergo further treatment and was shown to be non-hazardous then the EWC 19.03.07 would be considered). Most of the 19 chapter of EWCs are very prescriptive in terms of defining the waste and no single EWC fully describes the resulting waste.

On this basis another EWC code is used which is considered to be more appropriate in coding the waste, for instance 17.05.04 or 19.13.02.

Some wastes on receipt require the addition of small amounts of agents (e.g. cement, woodchip, etc) to facilitate storage on receipt. Further drying of the waste is facilitated by the waste being stored indoors. This is not considered to be solidification, nor designed to change physical properties of the waste in respect to strength, compressibility, and/or permeability. These wastes undergo further processing / treatment which would reflect their respective EWC.

Waste received with elevated hydrocarbon concentrations are assessed on receipt and then stored (stockpiled) together pending further processing / treatment. Ambient conditions within the Treatment Hub facilitate the natural attenuation of the hydrocarbons. It should be noted that numerous hydrocarbon compounds will naturally attenuate.

In general soils do not lend themselves to any particular one of the above processing / treatment options due to their inherent heterogeneous nature (as reflected by the fact that EWC 17.05.03 and 17.05.04 are mirror entry codes). Soils exhibit a variable range of hazardous properties – as a consequence they may undergo a number of processing / treatment protocols to achieve the required intended results.

An EWC code is utilised which is considered to be the most appropriate in coding the waste.

To achieve the outcomes outlined above (in accordance with BAT), there is a requirement for a number of raw materials to be utilised where practical and relevant to do so (including cement, proprietary E-Clay additives, woodchip, water, etc). A number of waste streams have been demonstrated to be capable of providing an effective partial or full substitute for raw materials used within the facility. This is undertaken in accordance with Commission Implementing Decision (EU) 2018/1147 of the 10 August 2018 establishing best available techniques (BAT) conclusions for waste treatment, under Directive 2010/75/EU of the European Parliament and of the Council.

Best Available Technique (BAT) 22 states:

“In order to use materials efficiently, BAT is to substitute materials with waste. 17.8.2018 EN Official Journal of the European Union L 208/67 Description Waste is used instead of other materials for the treatment of wastes (e.g. waste alkalis or waste acids are used for pH adjustment, fly ashes are used as binders)”.

In this respect the Treatment Hub aims to operate in accordance with the aspirations of BAT 22.

All wastes outlined in Table 2 of the Permit Variation Technical Support Document (TTH/SSF/01-20/001) have been assessed in terms of

- Their performance in terms of outcomes for the replacement of the stated raw materials,
- Risk of contamination posed by the presence of impurities - these are not greater than the wastes they are intended to treat.
- The compatibility of the waste substituting other materials with the waste input; as outlined above the Treatment Hub does not store, process or treat wastes which are considered incompatible.

Many of the wastes imported are employed in on-site remediation techniques. Although not fully explored some of the wastes utilised could be subject to an End of Waste position.

Waste Stream	EWC Code Accepted under	Application	Summary of beneficial use in the process
Filter Cake	11.01.09	The presence of elevated aluminium in the incoming waste functions comparably to the raw material pillaring agent used in the formation of modified clay for the treatment of soils.	Partially / fully replaces raw material
Filter Cake	11.01.10	The presence of elevated aluminium in the incoming waste functions comparably to the raw material pillaring agent used in the formation of modified clay for the treatment of soils.	Partially / fully replaces raw material
Mine Water Sludge	19.02.06	Treatment of hydrocarbons (TPH, PAH and chlorinated HCs). Elevated iron in the incoming waste functions comparably to the raw material pillaring agent used in the formation of modified clay for the treatment of soils. The iron can in addition promote the reduction of hydrocarbon to shorter chain length molecules (analogous to Fentons Reagent, Persulphate, etc). These species are more receptive to natural to attenuation.	Partially / fully replaces raw material
Wood Burner Waste - Bottom Ash	19.01.11	Processing / treatment of soils. Can be used as a partial replacement of cement. A number of marketable products exist produced under WRAP Quality Protocol (for instance Cendri, ScotAsh, etc), utilising FBA. The waste can also be utilised for the absorption of water to improve waste management within the facility	Partially / fully replaces raw material
Wood Burner Waste - Fly Ash	19.01.13	Processing / treatment of soils. Can be used as a partial replacement of cement. A number of marketable products exist produced under WRAP Quality Protocol (for instance Cendri, ScotAsh, etc), utilising PFA. The waste can also be utilised for the absorption of water to improve waste management within the facility	Partially / fully replaces raw material
Trommel Fines	17.05.04	Processing / treatment of soils. Additive to enhance the soils porosity / handling capability of waste soils. Replaces other soils, woodchip, etc.	Partially / fully replaces raw material
Cement	16.03.03	Processing / treatment of soils. Can be used as a partial replacement of cement. The waste can also be utilised for the absorption of water to improve waste management within the facility	Partially / fully replaces raw material
Bag dust	10.03.20	Processing / treatment of soils. The waste can be utilised for the absorption of water to improve waste management within the facility.	Partially / fully replaces raw material

The strategy of the TTH is produce a non-hazardous re-usable material where feasible to do so.

The following EWCs will be used for waste leaving the Treatment Hub - the designated EWC is wholly dependent on the *overall* processing / treatment strategy adopted and will consist of the following (not exclusively):

- 17.01.07
- 17.05.04
- 19.03.05
- 19.12.09
- 19.12.12
- 19.13.02

The most appropriate EWC will be adopted for all waste leaving the facility (which best describes the waste).