



Advanced material treatment, remediation and recycling technology

The Treatment Hub Swansea

EPR Permit Application Support Document.

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The Hub

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1. Introduction.

This document provides supporting evidence in reference to our application for a bespoke Environmental Permit.

Currently the Treatment Hub Ltd holds a bespoke permit (EPR/ZP3933NJ) at the former Alcoa Manufacturing (GB) Ltd existing site at Westfield Industrial Park, Waunarlwydd, Swansea, SA5 4SF. The Treatment Hub has operated under this permit since April 2014 acting as a regional specialist soils and waste treatment hub, primarily for the treatment and re-use of contaminated soils.

As a consequence of the success of the facility in servicing the local market in terms of contaminated soils it is deemed necessary to expand the facility to accommodate the required supply and demand placed on the existing facility. Therefore, the Treatment Hub, with the assistance of the site owners (Garrison Barclay Estates), have identified a larger building still within the Westfield Industrial Park, Waunarlwydd, Swansea, SA5 4SF estate. We seek a new permit application for this site prior to surrendering the bespoke permit (EPR/ZP3933NJ) on the existing facility to maintain continuity of business. It would be our intention to run both the existing and new facility together for a short period of time, during which we would cease accepting waste at the existing facility in preference to the new, whilst exporting materials from the existing premises.

In addition, we would look to increase the throughput and permitted storage tonnage of the new facility based on operational experience achieved through the last five years. Equally, we seek to increase the range of permitted EWCs accepted at the Treatment Hub based on local waste streams and our capability to recycle them using the technologies utilised within the Treatment Hub, primarily to divert materials away from landfill

The treatment process will primarily utilise proprietary clay formulations (referred to as 'E-Clays') in combination with cementitious materials to treat the soils / materials for the purposes intended.

The objective will be to either treat the soils / materials for;-

- reuse at either the source or another suitable location.
- produce a material suitable for restoration purposes at sites with an appropriate exemption or restoration plan.
- reuse as a raw material in product manufacture (in accordance with 'End-of-Waste' requirements) .
- waste declassification to enable disposal at an inert / non-hazardous landfill (in accordance with landfill acceptance criteria).

The Treatment Hub operating under permit EPR/ZP3933NJ, has successfully demonstrated this model for recycling since 2014.

The hub operation is be designed to operate in accordance with waste hierarchy principles as far as practically possible

The Treatment Hub operating under permit EPR/ZP3933NJ leased part of Building 2 from the site owners Garrison Barclay Estates (previously Alcoa Manufacturing), with an approximate permitted area of 2,575m². It is our intention to increase the permitted area within a new building on the Westfield Industrial Park of circa 4.400m² within Building Unit 3.

The Hub

The activity would be housed entirely within an existing industrial process building, which constitutes part of a multiple bay building. Following a number of adaptation to the existing building, the building will provide two number entrances / exits with external access, parking and turning areas.

The existing Treatment Hub Permit (EPR/ZP3933NJ) allows for use of the building for the operation of a proprietary hazardous and non-hazardous waste treatment (physical and chemical immobilization) process incorporating the use of modified clays and binding chemicals.

The Treatment Hub currently operates as a regional specialist soils and materials treatment hub. The process will utilise natural bentonite clay formulations (referred to as 'E-Clays') to recover the wastes for use as:-

- soils / fill material for development sites as required¹
- soils for restoration purposes²
- raw materials for the manufacture of a range of products (to be determined)³
- disposal to suitable landfill facility in accordance with prevailing waste law.

This is a clarification of the original document.

The treatment process will be permitted by Natural Resources Wales as a Waste Recovery Installation and be operated in accordance with the EPR 2010 Regulations. The proposed Installation meets the description of a Part A(1) process activity as defined by Section 5.4 '*Recovery of Waste*', Paragraph A(1)c(iii) namely;

'Unless carried on as part of other Part A activity, recovering hazardous waste in a plant with a capacity of more than 10 tonnes per day by means of the following operation-

(iii) recycling / reclamation of inorganic materials other than metals and metal compounds (R5).

All activities associated with the proposed Installation will be carried out within the main building. There will be no storage or treatment activities carried out in any external areas. It is proposed to treat approximately 50,000 tonnes per annum.

Notes

1. The use of treated materials will be subject to meeting the Cl:aire Code of Practice – soils
2. The production of materials meeting the requirement of local facilities requiring restoration purposes.

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3. The use of the treated material as raw material feedstock will be subject to an End of Waste determination application to Natural Resources Wales. This application will form a separate document to this permit application

The remainder of this application support document is structured accordingly:

- Section 2: Provides a detailed planning history of the site and associated activities;
- Section 3: Provides specific details associated with the Bespoke Installation Permit Application;
- Section 4: Provides specific nature and detailed description of the emissions to air and water associated with the installation;
- Section 5: Provides details of all environmental monitoring associated with the Installation;
- Section 6: Provides an Environmental Impact and Assessment of the Installation.

The Installation boundary of the installation is provided Figure 1 (which also highlights the current permitted area [EPR/ZP3933NJ] for comparison). Figure 2 shows the proposed site set up, however at this stage is only indicative, based on operational requirements for the existing Treatment Hub.

The Hub

Figure 1 – Proposed Permitted Area (including existing Treatment hub Permit area under EPR/ZP3933NJ).

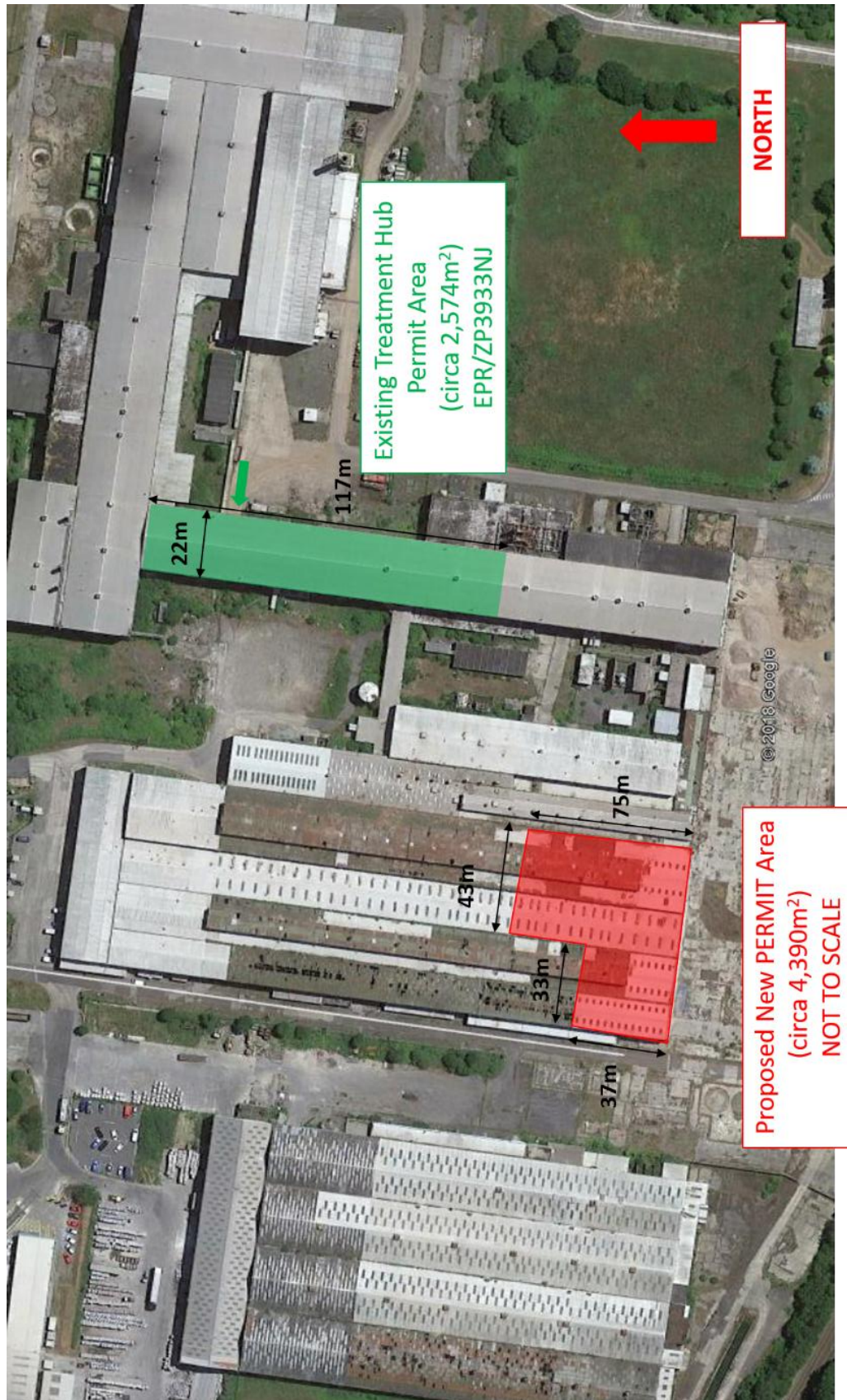
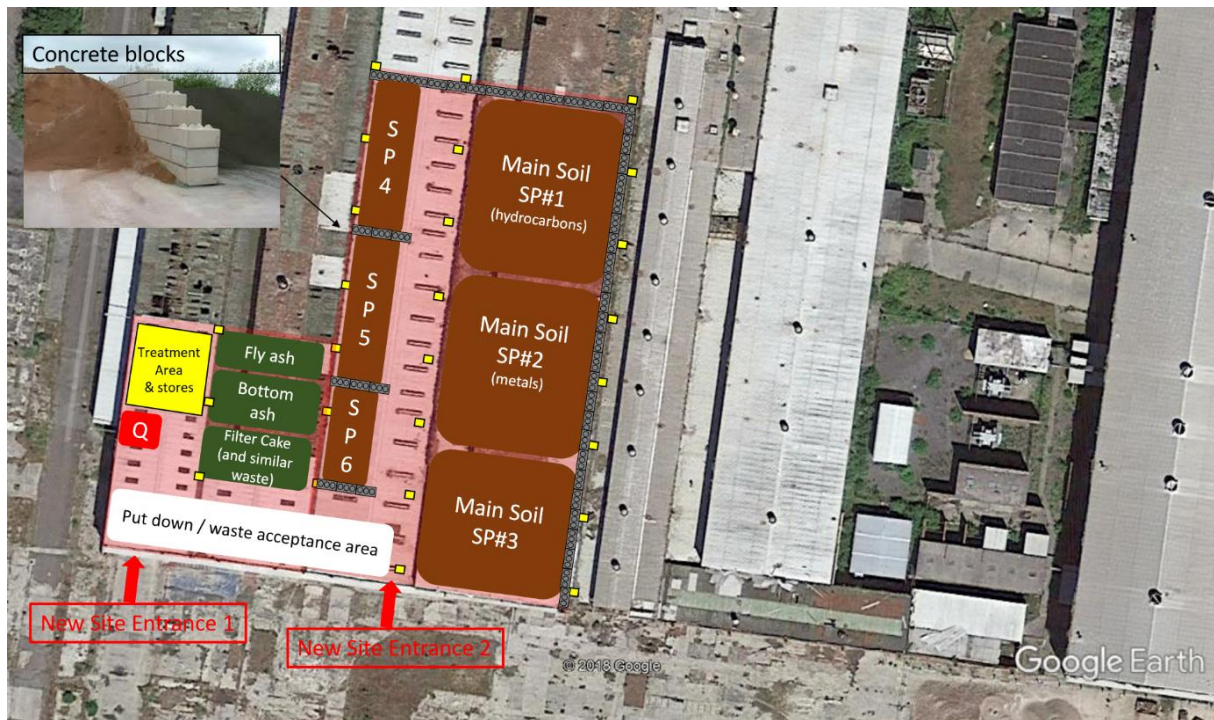


Figure 2 – Proposed Site Setup.



It is proposed that a portable welfare facility will be used for onsite welfare requirements. In addition, the Treatment hub will lease an office in the main office block onsite.

Non-Technical Summary

The Applicant (The Treatment Hub Ltd) is making this application for a new Bespoke Installation Permit Application at the former Alcoa Manufacturing (GB) Ltd existing site at Westfield Industrial Park, Waunarlwydd, Swansea, SA5 4SF. The company wishes to expand its operation through a new permit prior to surrendering the existing permit. The new facility will continue to treat contaminated soils and other waste streams using predominately physical and chemical immobilisation operation.

The Treatment Hub seek to nominally process approximately 50,000 tonnes per annum of materials sourced from (mainly) the local area for the production of materials for supply into the construction sector and other appropriate markets. The site will be designed to accept both hazardous and non-hazardous granular materials and soils in accordance with stringent site waste acceptance procedures.

The facility has been specifically designed to process, recover and treat a number of industrial filter cake and some similar hazardous materials in the same manner, in order to facilitate beneficial re-use and recovery. In addition to treat and recover for beneficial re-use (where practically possible) soils originating from Brownfield (contaminated) sites.

It is the applicant's intention to provide this service to a number of local industrial businesses, predominantly within the steel, metals and general manufacturing sectors, waste materials that may be deemed may compliment the treatment operations, as well as providing a regional hub for the treatment of material arising from the contaminated land remediation sector.

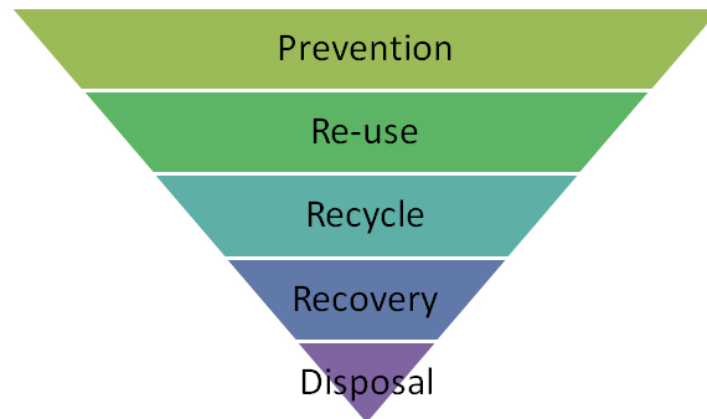
The end product produced by The Treatment Hub's processes will both transferred to an end user either as a

The Hub

- product (as for treated soils / aggregates which will be assessed and deemed suitable for reuse under the Cl:aire Definition of Waste Code of Practice, where the processed material to be 'fully recovered' and therefore 'ceasing to be waste')
- waste under an EWC 19 code for restoration purposes
- raw material replacement (using an end of waste protocol)
- back to the original site (under the Cl:aire Definition of Waste Code of Practice)
- disposal at landfill a lower disposal rate

The treatment Hub will operate in accordance with the waste hierarchy.

Figure 3 – Waste Hierarchy.



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In respect to contaminated soils.

There is little scope for the Treatment Hub to **PREVENT** the waste as much of the throughput is a consequence of historical industrial activity / legacy.

Working with Envirotreat, the Treatment Hub can offer integrated remediation solutions for Brownfield redevelopment to **REUSE** contaminated soils onsite under Envirotreats' Mobile Environmental Permit.

Utilising proprietary technologies developed by Envirotreat, the Treatment Hub can **RECYCLE** and **RECOVER** contaminated soils for beneficial reuse at other construction / development sites or reuse locally for restoration purposes.

DISPOSAL is will be restricted to waste which cannot be successfully recycled / recovered and will represent a very small proposition of all material imported

In respect to other waste streams.

There is little scope for the Treatment Hub to **PREVENT** the waste and it is incumbent on the waste producer to minimise this.

Where possible the Treatment Hub will explore opportunities to treat waste and **REUSE** as a raw material elsewhere or can be used to compliment the treatment proposed utilised at the Treatment Hub (ie the use of pozzolanic materials to replace cement).

Utilising proprietary technologies developed by Envirotreat, the Treatment Hub can **RECYCLE** and **RECOVER** contaminated soils for beneficial reuse at other construction / development sites or reuse locally for restoration purposes.

DISPOSAL is will be restricted to waste which cannot be successfully recycled / recovered and will represent a very small proposition of all material imported

Technology Overview.

The Treatment Hub Ltd wishes to (continue to) operate a waste recovery installation for the treatment and processing of hazardous and non-hazardous soils and wastes.

The installation shall be located entirely within the Building Unit 3 (see figure 1) and will generally comprise:

- Materials Delivery Area: Materials will be delivered by tippers, articulated lorries / skip lorries and stored pending treatment.
- Materials Handling: Material handling will be via excavator and loading shovels.
- Material Processing: The process involves the introduction of water to activate / mix the modified clay products, however this is absorbed into the soil matrix - it is in essence a non-liquid process. Physical plant includes the use of water tanks and mixing plant (grout mixer). Wastes/soils will be combined with the modified clay slurry in enclosed vessels using excavators to mix.
- Collection Areas: Treatment runs will be carried out and the output (non-leachable) will be stored ready for collection by articulated lorries.

The proposed process is a proprietary treatment and recovery technology which predominately utilises biological reduction and chemical / physical immobilisation techniques (E-Clay Stabilisation) that incorporates the use of specially modified clays and other key additives to enhance the treatment process.

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In respect to the E-Clay technology, the proprietary clay formulation(s) can be applied for the effective remediation of soils and wastes, enabling otherwise unusable materials to be brought back into effective use on a sound technical and commercial basis. The clays can be employed to treat both inorganic and organic materials.

Modified clays incorporate reactive reagents which chemically immobilise and treat targeted contaminants. The clay formulations are designed to address identified contamination concerns based on proposed intended end use.

By using a selected clay formulation (or in some cases a combination of clay formulations) the following group of pollutants/contaminants can be successfully treated:

- Aliphatic hydrocarbons;
- Aromatic hydrocarbons;
- Metals;
- Problematic species (e.g. hexavalent chromium, free and complex cyanides, ammonium etc.);
- Radionuclides (we are not proposing accepting / treating these); and
- Tributyltin.

(however, it is not proposed that all these are dealt with at the Treatment Hub).

Cementitious additives are often incorporated into the process, primarily to improve the physical and chemical properties of the treated material. The objective is to produce a chemically and physically stabilised treated material which can then be used as a product.³

In summary, The Treatment Hub Ltd wish to continue to operate a chemical treatment process which stabilises and recovers contaminated soils, hazardous and non-hazardous granular materials for recycling.

Emissions to Air

There will be no point-source or fugitive emissions to air arising from the process.

Emissions to Water

Due to the nature of process there will be no point source or fugitive emissions to water and any / all liquid waste emissions will be tankered offsite for disposal.

Emissions to land

There will be no emissions to land arising from the installation, all materials processed at the site will either be fully recovered / recycled (to other development / restoration) sites or rendered inert and will be transferred offsite for safe inert reuse or disposal.

Waste Management

All materials processed at the site will either be fully recovered / recycled (to other development / restoration) sites or rendered inert and / or non-hazardous will be transferred offsite for safe use or disposal.

All materials are treated and stored internally within the confines of the existing site buildings.

2. Planning Status.

The Treatment Hub Ltd (the Applicant) will be operating their process within the existing 'former Building 3' owned by Garrison Barclay Estates.

<https://www.gbestates.com/>

These buildings were constructed prior to the existence of the Town and Country Planning Act and therefore have existing extant permission for industrial uses.

The buildings have historically been used for the manufacture of rolled aluminium products and have as part of their ancillary uses, produced, treated and processed hazardous and non-hazardous filter cake materials. Alcoa decommissioned their hot rolling mill processes in 2006/2007 and since then the buildings have remained dormant.

In bringing the buildings back into serviceable use the Applicant consulted with The City and County of Swansea Planning and Development team and have subsequently made an application for 'Existing Lawful Use' of the buildings.

3. Proposed Permit.

Type of Permit

The Treatment Hub Ltd are making an application for a new Permit to replace the current Bespoke Installation Permit (EPR/ZP3933NJ) for the proposed installation of a Waste Recovery Process that uses physical and chemical immobilisation techniques. Once the new Permit is granted and premises operational, it is intended to surrender the existing bespoke Permit (EPR/ZP3933NJ).

The Treatment Hub seek to nominally process approximately up to 5,000 tonne per week of hazardous and non-hazardous materials (contaminated soils and other waste streams as detailed by the list of EWC proposed) sourced from the local area to fully recycle.

The site is designed to accept both hazardous and non-hazardous soils and materials in accordance with stringent site waste acceptance procedures.

The anticipated throughput of the plant is not expected to exceed 50,000 tonnes per annum. The processes are all generally static, in-situ treatment that requires plant / machinery use on a daily basis.

All aspects of the activity will be carried out internally with no processing or storage of wastes / soils will be carried out externally.

The technical guidance note used in the preparation of this application document is '*EPR5.06 - The storage and treatment of hazardous and non-hazardous wastes.*'

The Hub

The Existing Site

Installation Boundary

All proposed new operations will be entirely contained within the existing buildings as shown in Figure 1 and 2 (above). The proposed permitted area (installation boundary) is shown in **BLUE** in the scaled map below. The area shown in **RED** has subsequently been demolished and removed from site.

All vehicular access roads and car parking areas are outside of the Installation Boundary.

Figure 4 - Planning Area.



Infrastructure and Design

When some of the building were demolished the gable end of the remaining building were closed off. It our intention to create new doors / vehicle entrances within this southern gable end as shown in the figures below.

The building benefits from an integral concrete slab, there are some internal rainwater downpipes and gully drains.

The downpipes will be protected by blockwork to 1m. Floor gullies if deemed redundant will be removed and the slab repaired to make integral. Alternatively, a blockwork bund will be built around each gully to 1m.

Concrete blocks will be used to form a dwarf wall down the western side of the facility to protect the adjoining unit from stockpiled soils.

Concrete blocks will be used create temporary bunds where required. Otherwise Heris Fencing will be used to designate the site boundary.

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Existing Site Drainage Arrangements

The drainage arrangements on site will be fully surveyed with all internal drainage being made redundant (decommissioned) or bunded to protect from water / soils ingress.

Otherwise all internal areas comprise impermeable concrete slabs with no internal drains.

Tertiary containment will be provided by the building floor slabs and building lower walls.

There are no effluent emissions arising from the proposed process;

All domestic effluent (toilets, sinks etc) discharge to a foul drainage system.

In the event of a fire, all fire water would be contained onsite.

Hardstanding

All internal areas will comprise of an impermeable concrete slab construction with no internal drains being present (existing drainage will be decommissioned or bunded accordingly).

The building is constructed with solid masonry walls which in turn provide a high degree of tertiary containment.

Threshold protection across all access doorways will be provided to ensure that any liquids, hazardous or non-hazardous are retained within the main building.

The previous use of the buildings as rolling mill necessitated substantial reinforced concrete foundations and load bearing flooring to be installed throughout. The thickness of the flooring is known to exceed 300mm in all areas.

There are no external surface water drains on site, therefore all external surface water 'runs off' to the wider surface water drainage system provided by the industrial estate.

Tanks and Bunds

The process requires the use of proprietary admixtures and chemicals all of which are stored in small volume containers and tanks.

The entire chemical storage area is located on a dedicated secondary containment area located away from the vehicle access and delivery areas. A secure area directly outside the building (on existing integral hardstanding) will be used for the temporary storage of cement / bentonite and liquids in approved containers following deliveries.

Only water will be stored within a static / mobile tank (10000litre – see figure).

Chemicals will generally be stored in small volume containers and/or IBC's. There are no large volume process related storage tanks associated with the Installation.

Figure 5 – Location 1 of proposed opening for lorry access



Figure 6 - Location 2 of proposed opening for lorry access

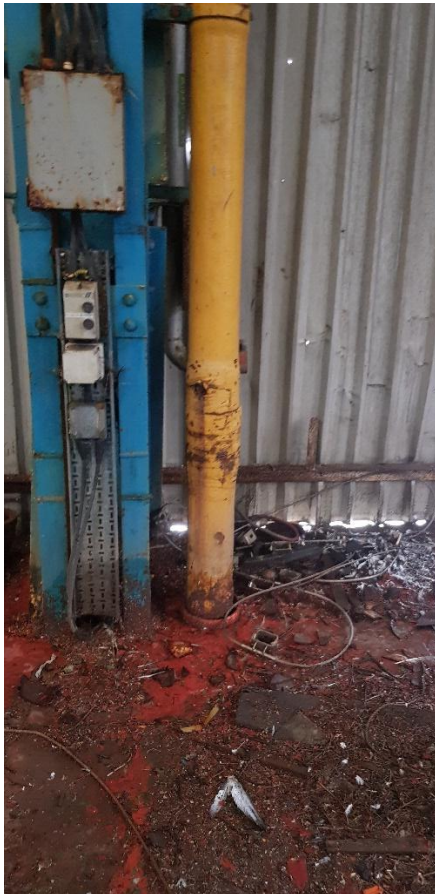


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Figure 7 – Western facility boundary wall requiring concrete block protection.



Figure 8 – Existing internal downpipe and floor gully drains.



Building design and layout

The Treatment Hub will be utilising the existing buildings, as shown in Figure 1 and 2. There will be no changes to the existing buildings.

The building is a substantial high bay industrial building, with clad portal frame. Externally the building is finished with metal profile clad sheeting. The roof structure is predominantly steel profile cladding on a pitched steel truss frame. A series of roof lights helps to give the building good interior lighting, further internal electrical lanterns will not be required.

Description of the Process

Description of the Process

The treatment / recovery process is a combination of natural bioremediation and physico-chemical operation designed to stabilise / treat any potential contamination issues associated with the hazardous and non-hazardous contaminated soils and other waste streams industrial filter cake or and other selected wastes in accordance to Table 1. This is an expansion of currently accepted EWCs and merely reflects those wastes we believe we can safely accept and recycle. The Treatment Hub only accepts wastes that it believes can be recycled and brought back to beneficial use. The treatment process transforms the received waste feedstocks into a non-hazardous granular material that can be used for development or restoration purposes. .

The physico-chemical process involves the treatment of contaminated soils, filter cake waste, other selected waste streams with a combination of cementitious materials, and a suitable modified clay formulation to chemically immobilise/ treat potential pollutants of concern and to ensure that the product is non-polluting. The treatment process generally involves encapsulation in which there are no material changes to the individual components. The designated clay formulation will comprise of modified pillared clays designed to absorb and chemically immobilise the identified contaminants of concern, further additives are used to compliment this treatment process. The use of modified clays provides additional safeguards in this respect as the contaminants of concern will be chemically immobilised within the clay matrix structure. This immobilisation process will also significantly reduce the risks associated with potentially leachability of the hydrocarbons / metal contaminants within the treated medium, thereby addressing the requirement for the treated material to be non-polluting.

The cementitious additives will provide the necessary physical properties to enable the treated material to be used as a product.

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Figure 9 – Typical Treatment Plant setup.



Figure 10 – Soil addition to mixing skip.

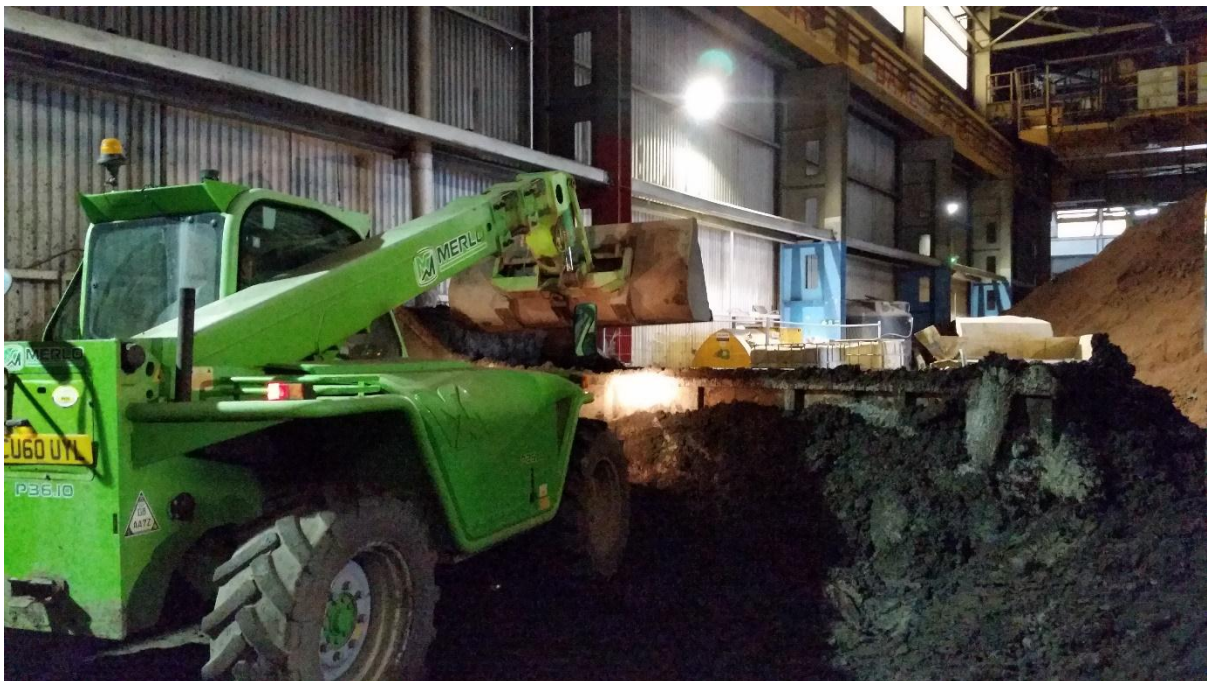


Figure 11 – Soil addition to mixing skip.



Figure 12 – Soil mixing.



The main processes of the operations are summarised below:

- **Reception:** Operator-owned vehicles or registered waste carriers will deliver appropriate waste to the site. All unsuitable waste will be returned or disposed of. Wastes accepted into the site will be unloaded and fed into the treatment operation.
- **Treatment Operation:** Designated wastes streams will be stored pending treatment. The received waste will be treated when required (not envisaged to continuous) in a batch operation by mixing with modified clay and cementitious additives. The treated material will then be stockpiled.

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- **Validation Process:** All material will be subject to visual assessment as well as physical and chemical analysis.
- **Final Storage:** All material is stored until distributed.

A simple process flow diagram is provided in Figure 13 below.

Figure 13 – Simplified Process Schematic.

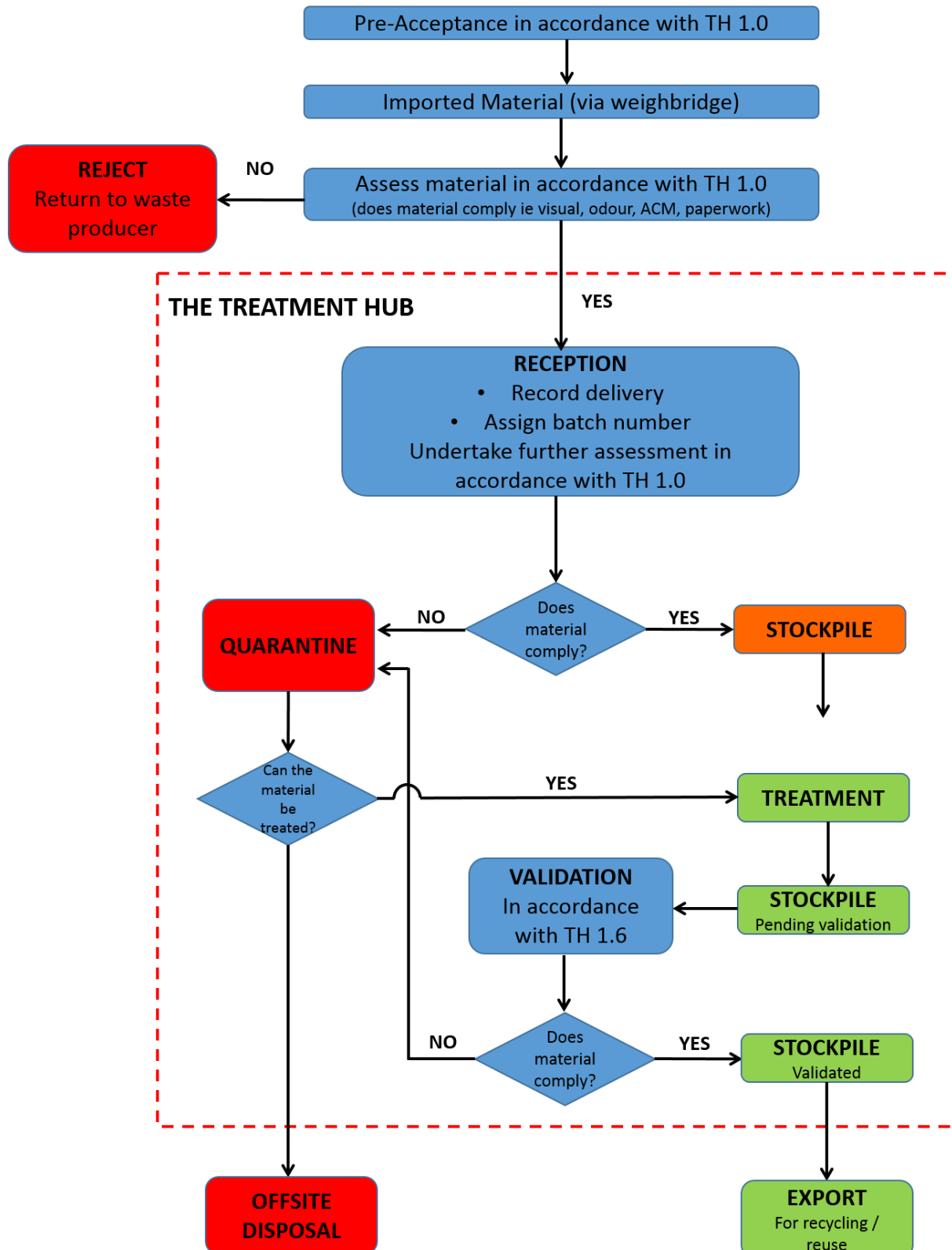


Table 1 - Shows the types of waste that are proposed to be accepted on the site.

- 01 WASTES RESULTING FROM EXPLORATION, MINING, QUARRYING, AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**
 - 03 *wastes from physical and chemical processing of metalliferous minerals*
 - 07 other wastes containing dangerous substances from physical and chemical processing of metalliferous minerals
 - 08 dusty and powdery wastes other than those mentioned in 01 03 07
 - 99 wastes not otherwise specified
 - 04 *wastes containing dangerous substances from physical and chemical processing of non-metalliferous minerals*
 - 07 wastes containing dangerous substances from physical and chemical processing of non-metalliferous minerals
 - 08 waste gravel and crushed rocks other than those mentioned in 01 04 07
 - 09 waste sand and clays
 - 10 dusty and powdery wastes other than those mentioned in 01 04 07
 - 11 wastes from potash and rock salt processing other than those mentioned in 01 04 07
 - 12 tailings and other wastes from washing and cleaning of minerals other than those mentioned in 01 04 07 and 01 04 11
 - 13 wastes from stone cutting and sawing other than those mentioned in 01 04 07
 - 14 wastes not otherwise specified
 - 05 *drilling muds and other drilling wastes*
 - 04 freshwater drilling muds and wastes
 - 05 drilling muds and other drilling wastes
 - 06 drilling muds and other drilling wastes containing dangerous substances
- 02 WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**
 - 01 *wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing*
 - 01 sludges from washing and cleaning
 - 03 *wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation*
 - 01 sludges from washing, cleaning, peeling, centrifuging and separation
 - 05 sludges from on-site effluent treatment
 - 99 wastes not otherwise specified
 - 05 *wastes from the dairy products industry*
 - 02 sludges from on-site effluent treatment
 - 99 wastes not otherwise specified
 - 07 *wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)*
 - 01 wastes from washing, cleaning and mechanical reduction of raw materials
 - 05 sludges from on-site effluent treatment
 - 99 wastes not otherwise specified

03 **WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD**

- 01 *wastes from wood processing and the production of panels and furniture*
 - 01 waste bark and cork
 - 99 wastes not otherwise specified
- 03 *wastes from pulp, paper and cardboard production and processing*
 - 01 waste bark and wood
 - 10 fibre rejects, fibre-, filler- and coating-sludges from mechanical separation
 - 11 sludges from on-site effluent treatment other than those mentioned in 03 03 10
 - 99 wastes not otherwise specified

05 **WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL**

- 01 *wastes from petroleum refining*
 - 05 oil spills
 - 06 oily sludges from maintenance operations of the plant or equipment
 - 09 sludges from on-site effluent treatment containing dangerous substances
 - 10 Sludges from on-site effluent treatment other than those mentioned in 05 01 09

06 **WASTES FROM INORGANIC CHEMICAL PROCESSES**

- 02 *wastes from the MFSU of bases*
 - 01 calcium hydroxide
 - 02 ammonium hydroxide
 - 03 sodium and potassium hydroxide
 - 04 other bases
- 05 *sodium and potassium hydroxide*
 - 02 sludges from on-site effluent treatment containing dangerous substances
 - 03 sludges from on-site effluent treatment other than those mentioned in 06 05 02

07 **WASTES FROM ORGANIC CHEMICAL PROCESSES**

- 01 *wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals*
 - 11 sludges from on-site effluent treatment containing dangerous substances
 - 12 sludges from on-site effluent treatment other than those mentioned in 07 01 11
 - 99 wastes not otherwise specified
- 06 *wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics*
 - 11 sludges from on-site effluent treatment containing dangerous substances
 - 12 sludges from on-site effluent treatment other than those mentioned in 07 06 11
 - 99 wastes not otherwise specified

10 WASTES FROM THERMAL PROCESSES

- 01 *wastes from power stations and other combustion plants (except 19)*
 - 01 bottom ash, slag and boiler dust (excluding boiler dust mentioned in 10 01 04)
 - 05 Calcium-based reaction wastes from flue-gas desulphurisation in solid form
 - 07 Calcium-based reaction wastes from flue-gas desulphurisation in sludge form
 - 14 bottom ash, slag and boiler dust from co-incineration containing dangerous substances
 - 15 Bottom ash, slag and boiler dust from co-incineration other than those mentioned in 10 01 14
 - 16 fly ash from co-incineration containing dangerous substances
 - 17 fly ash from co-incineration other than those mentioned in 10 01 16
 - 18 wastes from gas cleaning containing dangerous substances
 - 19 wastes from gas cleaning other than those mentioned in 10 01 05, 10 01 07 and 10 01 18
 - 20 sludges from on-site effluent treatment containing dangerous substances
 - 21 sludges from on-site effluent treatment other than those mentioned in 10 01 20
- 02 *wastes from the iron and steel industry*
 - 07 solid wastes from gas treatment containing dangerous substances
 - 08 solid wastes from gas treatment other than those mentioned in 10 02 07
 - 99 wastes not otherwise specified
- 03 *wastes from aluminium thermal metallurgy*
 - 19 flue-gas dust containing dangerous substances
 - 20 flue-gas dust other than those mentioned in 10 03 19
 - 21 other particulates and dust (including ball-mill dust) containing dangerous substances
 - 22 other particulates and dust (including ball-mill dust) other than those mentioned in 10 03 21
 - 99 wastes not otherwise specified
- 08 *wastes from other non-ferrous thermal metallurgy*
 - 15 flue-gas dust containing dangerous substances
 - 16 flue-gas dust other than those mentioned in 10 08 15
 - 99 wastes not otherwise specified
- 09 *wastes from casting of ferrous pieces*
 - 03 furnace slag
 - 05 casting cores and moulds which have not undergone pouring containing dangerous substances
 - 06 casting cores and moulds which have not undergone pouring other than those mentioned in 10 09 05
 - 07 casting cores and moulds which have undergone pouring containing dangerous substances
 - 08 casting cores and moulds which have undergone pouring other than those mentioned in 10 09 07
 - 09 flue-gas dust containing dangerous substances
 - 10 flue-gas dust other than those mentioned in 10 09 09
 - 11 other particulates containing dangerous substances
 - 12 other particulates other than those mentioned in 10 09 11
 - 99 wastes not otherwise specified
- 10 *wastes from casting of non-ferrous pieces*
 - 03 furnace slag
 - 05 casting cores and moulds which have not undergone pouring containing dangerous substances
 - 06 casting cores and moulds which have not undergone pouring other than those mentioned in 10 10 05
 - 07 casting cores and moulds which have undergone pouring containing dangerous substances

- 08 casting cores and moulds which have undergone pouring other than those mentioned in 10 10 07
 - 09 flue-gas dust containing dangerous substances
 - 10 flue-gas dust other than those mentioned in 10 10 09
 - 11 other particulates containing dangerous substances
 - 12 other particulates other than those mentioned in 10 10 11
 - 99 wastes not otherwise specified
- 11 **WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY**
- 01 wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)
 - 09 sludges and filter cakes containing dangerous substances
 - 10 sludges and filter cakes other than those mentioned in 11 01 09
 - 99 wastes not otherwise specified
- 12 **WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS**
- 01 *wastes from shaping and physical and mechanical surface treatment of metals and plastics*
 - 16 waste blasting material containing dangerous substances
 - 17 waste blasting material other than those mentioned in 12 01 16
 - 99 wastes not otherwise specified
- 13 **OIL WASTES AND WASTES OF LIQUID FUELS (except edible oils, and those in chapters 05, 12 and 19)**
- 05 *oil/water separator contents*
 - 01 solids from grit chambers and oil/water separators
 - 02 sludges from oil/water separators
 - 03 interceptor sludges
 - 08 mixtures of wastes from grit chambers and oil/water separators
- 16 **WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
- 09 oxidising substances
 - 01 permanganates, for example potassium permanganate
 - 03 peroxides, for example hydrogen peroxide
 - 04 oxidising substances, not otherwise specified

17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)

- 01 *concrete, bricks, tiles and ceramics*
 - 01 concrete
 - 02 bricks
 - 03 tiles and ceramics
 - 06 mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
 - 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
- 02 *bituminous mixtures, coal tar and tarred products*
 - 03 bituminous mixtures other than those mentioned in 17 03 01
- 05 *soil (including excavated soil from contaminated sites), stones and dredging spoil*
 - 03 soil and stones containing dangerous substances
 - 04 soil and stones other than those mentioned in 17 05 03
 - 05 dredging spoil containing dangerous substances
 - 06 dredging spoil other than those mentioned in 17 05 05
 - 07 track ballast containing dangerous substances
 - 08 track ballast other than those mentioned in 17 05 07
- 09 *other construction and demolition wastes*
 - 03 other construction and demolition wastes (including mixed wastes) containing dangerous substances
 - 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

19 WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE

- 01 *wastes from incineration or pyrolysis of waste*
 - 11 bottom ash and slag containing dangerous substances
 - 12 bottom ash and slag other than those mentioned in 19 01 11
 - 13 fly ash containing dangerous substances
 - 14 fly ash other than those mentioned in 19 01 13
 - 15 boiler dust containing dangerous substances
 - 16 boiler dust other than those mentioned in 19 01 15
 - 19 sands from fluidised beds
 - 99 wastes not otherwise specified
- 02 *wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)*
 - 05 sludges from physico/chemical treatment containing dangerous substances
 - 06 sludges from physico/chemical treatment other than those mentioned in 19 02 05
 - 99 wastes not otherwise specified
- 03 *stabilised/solidified wastes (4)*
 - 04 wastes marked as hazardous, partly (5) stabilised
 - 05 stabilised wastes other than those mentioned in 19 03 04
 - 06 wastes marked as hazardous, solidified
 - 07 solidified wastes other than those mentioned in 19 03 06
- 08 *wastes from waste water treatment plants not otherwise specified*
 - 11 sludges containing dangerous substances from biological treatment of industrial waste water
 - 12 sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
 - 13 sludges containing dangerous substances from other treatment of industrial waste water

- 14 sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
- 13 wastes from soil and groundwater remediation
 - 01 solid wastes from soil remediation containing dangerous substances
 - 02 solid wastes from soil remediation other than those mentioned in 19 13 01
 - 03 sludges from soil remediation containing dangerous substances
 - 04 sludges from soil remediation containing dangerous substances
 - 05 sludges from groundwater remediation containing dangerous substances
 - 06 sludges from groundwater remediation other than those mentioned in 19 13 05
- 20 **MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
 - 02 *garden and park wastes (including cemetery waste)*
 - 02 soil and stones
 - 03 *other municipal wastes*
 - 03 street-cleaning residues

Chemicals and consumable products

The installation will require the use of a number of natural raw materials and proprietary chemicals to enable the stabilisation and recovery of the waste feedstocks.

Table 2 - Outline Summary of all Key Raw Materials.

Raw Material	Chemical Nature	Use	Estimated Quantity per Annum
Water			As required
Bentonite	Smectite Mineral Clay (solid)	Base Material for modified clay	4,000 tonnes
Envirotrete A	Quaternary Ammonium Salt (liquid)	Chemical Reagent for modified Clay production	300 tonnes
Envirotrete B	Chlorohydrol Salt (liquid)	Chemical Reagent for modified Clay production	300 tonnes
Envirotrete C	Iron Salt (liquid)	Chemical Reagent for modified Clay production	30 tonnes
Cementitious Materials	Ordinary Portland Cement; Pulverised Fuel Ash; Other Pozzolanic Materials (Solids)	Stabilisation medium	4,500 tonnes

Please note that the formulations of the above chemicals are proprietary and have not been provided for the purposes of commercial confidentiality.

The Hub

The envisaged storage requirements (at any one time) would be a maximum of 5 IBC's of Envirotrete 'A' (circa 5 tonnes); 5 pallets of Envirotrete 'B' i.e. 20 x 205 litre drums (circa 5.5 tonnes) and 8 carboys of Envirotrete 'C' (circa 0.2 tonnes). Other listed reagents would be ordered as required, stock consisting of residual quantities following treatment.

Solid materials ie bentonite and cementitious materials will be delivered to site as required and not stored for any significant time period.

Reception

All materials received by at the site will be subject to inspection and Acceptance procedures. All wastes arriving at site will be subject to pre-agreed contractual arrangements and in accordance to Pre-Acceptance criteria (as defined by Quality Management System Working Plan Procedure TH-1.0).

Upon arrival the material will be stockpiled within a dedicated stockpiles / bund. The concrete pad has been designed to ensure that there is no potential subsurface contamination or any form of material to escape outside of the Permit boundary.

Each stockpile will represent a single batch of material and subsequently be allocated a unique batch reference for the identification of the material throughout the entire treatment operation. The batch identity reference number will be retained throughout the treatment lifecycle and will be used as a means of unique identification with the end user.

For treatment purposes some batches of similar wastes may be treated together. This will only be undertaken following full characterisation of the waste.

The batch reference number enables the following information to be collated and is used to track the materials as it progresses through the plant:

- Period of time when the waste feedstock was produced;
- Quantities of "as received" waste feedstock;
- Analytical data relating to the "as received" waste feedstock;
- Details of treatment operation (dates, personnel, treatment, etc);
- Analytical data relating to the treated material; and
- Date shipped offsite, associated quantities and customer.

Generally, all waste feedstock material accepted onto site will undergo chemical analysis to determine the "as received" composition (typically over 100tonne).

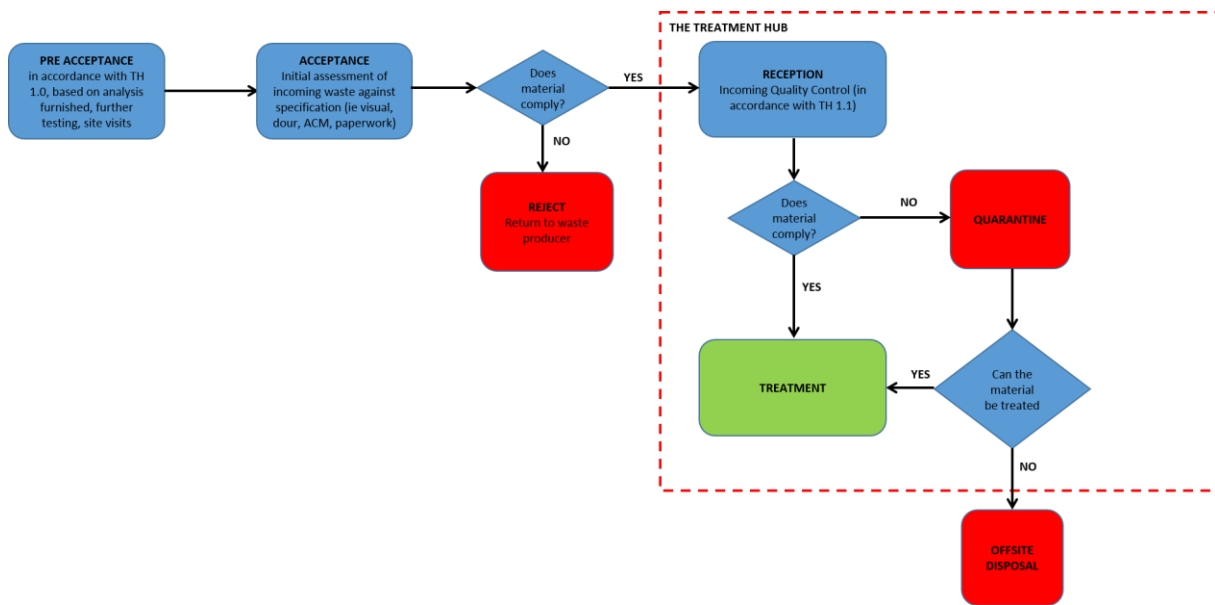
This analysis will form the basis of the Waste Acceptance Procedure into the recovery facility on site. In the unlikely event that the "as received" waste feedstock fails the required Waste Acceptance Procedure the failing material will be quarantined.

In the event that the "as received" waste feedstock fails the Waste Acceptance Procedure, it would be necessary to implement one of the two possible scenarios described below:

- Laboratory treatability testing to determine whether the material can be treated for compliance purposes and if successful, subsequent treatment as necessary; or
- The material would be pre-treated to enable offsite disposal to an appropriately licenced landfill.

Figure 14 shows the waste acceptance process and rejection / procedure schematically:

Figure 14 - Waste Acceptance Process.



Treatment Operation

Upon acceptance into the treatment facility the waste will be stockpiled in batches in readiness for the treatment operation.

The treatment operation will be carried out within an engineered containment cell (comprising a concrete bund, skip or similar) and has two key criteria:

- Chemical stabilisation / treatment of targeted chemical pollutants.
- Physical improvement of waste material to enable recovery as a product for the purpose intended.

Where required the waste feedstock may be screened / crushed to meet geotechnical requirement.

The modified clays are produced in a bespoke grout mixer, where a slurry of pure bentonite clay is produced, speciality additives are added to produce a modified clay product.

The modified clays are added to the waste feedstocks in the form of a liquid slurry mixture. All other admixtures are added as a dry cementitious powder to act as a binding agent.

Once treated, the materials are transferred to the main stockpile storage area.

The modified clays used by the process are derived from the modification of naturally-occurring Smectite Clays combined with selected chemical reagents. This modified clay produces a reactive treatment medium, which is capable of chemically absorbing/ immobilising and treating a range of pollutants present within soils.

The addition of Quaternary Ammonium Salts (QAS) to the clay structure produces an 'inorgano' modified clay. This material has organophilic properties which are capable of absorbing organic compounds such as aliphatic hydrocarbons of varying chain length and polarity. The reactivity of modified clays towards aromatic hydrocarbons and other substituted organic groups is enhanced.

The Hub

By the introduction of transition metals to the clay structure, which has been proven to be more effective than other commercially available organo clays in treating pure hydrocarbons (ie. benzene), further additives are used control swell / shrink characteristics, oxidation state and assist in adsorption onto clay matrix.

Modified clays function using multiple chemical bonding reactions (i.e. Van Der Waals attraction forces / transition metal ligand bonding / dipole-dipole effects, ionic bonding to full covalent bonding and / or molecular alteration) enabling the treatment of mixed waste materials / contaminated soils.

Pillared modified clays are produced that have the ability to withstand excessive dehydration without loss of stability. Pillared modified clays contain molecular props creating basal separation within the clay structure. This creates interlamellar spacing sufficient to provide access for larger molecules such as polychlorinated biphenyls and polyaromatic hydrocarbons to be absorbed within the clay matrix.

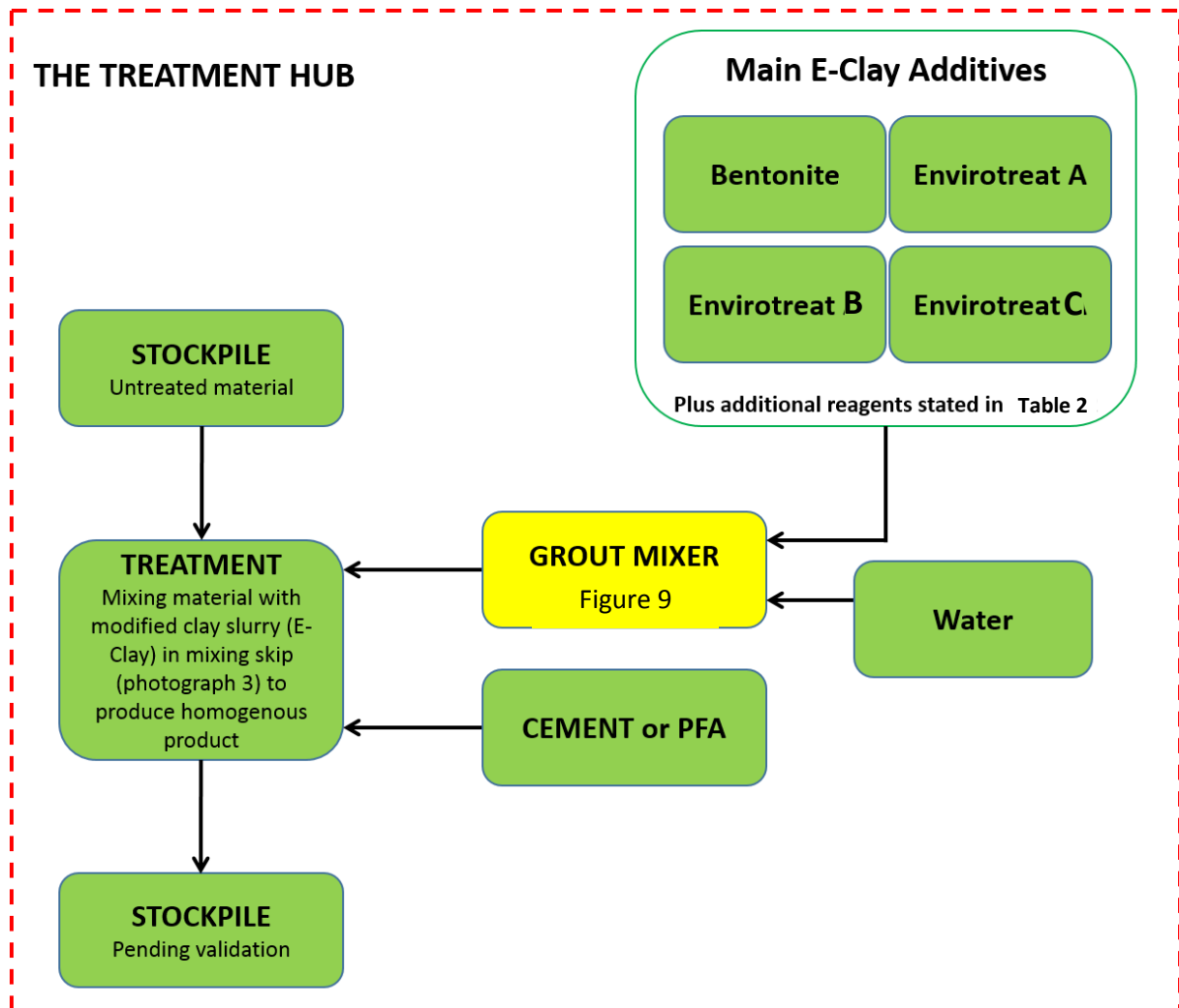
The Treatment Hub along with their technology partner 'Enviro-treat' are able to design modified clays on a site specific basis to enable the treatment of a range of inorganic and organic pollutants, in most cases using one modified clay design applied in a single process.

The mixed and treated materials are then stockpiled into individual batches (covered with a membrane to prevent the release of any volatile contaminants present within the waste feedstock materials, if required).

The treatment process creates a stable material that can be used for a number of safe uses.

Figure 15 below shows the treatment operation schematically.

Figure 15 – Schematic of Treatment Operation.



The Hub

Throughout the treatment process key environmental aspects, i.e. water quantity, chemical additions etc. will be monitored in accordance to the Quality Control and Management Plan.

Validation Process

Once treated, the recovered product will be validated for compliance with product and environmental criteria. This will involve a change of visual assessment as well as physical and chemical analysis.

If a batch of treated material fails any of the relevant validation criteria then the batch will be quarantined pending further action. In this event it would be necessary to consider and implement one of two possible scenarios:

- Laboratory treatability trailing to determine whether the failed material could be retreated to produce a complaint material and if successful, subsequent retreatment as necessary; or
- The material would be assessed to enable offsite disposal to an inert landfill or as a worst case scenario, for disposal to a non-hazardous landfill.

In the unlikely event that material used in the field is seemed not satisfactory then the material will be returned into a quarantined area where it will be evaluated.

In addition to this, environmental/chemical criteria will also be determined. Each batch treated will be evaluated on a project by project basis against these environmental criteria for suitability and may include some / all of

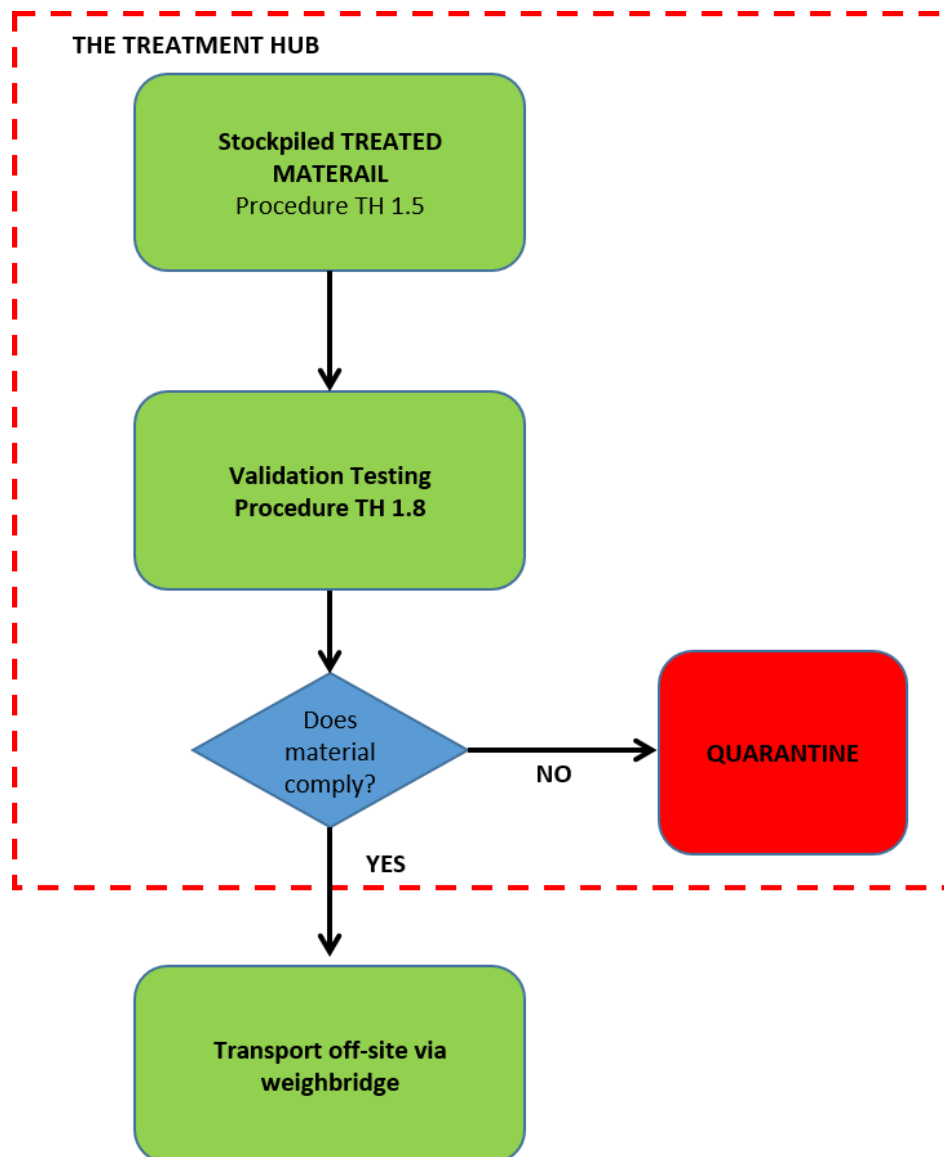
- Leachable and Total Petroleum Hydrocarbons;
- Leachable and Total Polycyclic Aromatic Hydrocarbons;
- Leachable and Total Inorganics (cyanides, sulphate , ammonia, etc)
- Leachable and Total Metals.

The specification / validation criteria will be based on specific customer requirements and the desired end use of the material.

In specific cases, the stabilised material will be suitable for use as a raw material feedstock for third party products. In such cases the validation requirements will meet a pre-determined specification as defined the customer and will be subject to an “end of waste” determination position where required.

Figure 16 below shows the validation process schematically.

Figure 16 - Schematic of Validation Process.



Final Storage

Once the materials have passed validation, they will be transported offsite for reuse.

Environmental Management & Quality Plan.

The Treatment Hub has developed an Environmental and Quality Management System covering all operations within the Treatment Hub. This is regularly reviewed / audited by Senior Management and a Technically Competent Person

All aspects of the operation will be managed in accordance within the formal Environmental Management and Quality Plan. The plan defines all activities throughout the lifecycle of the treatment process (ie. pre-acceptance, acceptance, treatment, validation and final oft-site transfer).

The Environmental and Quality Management system is designed to meet the requirements of the Environmental Permitting Regulations and associated pollution prevention guidance.

The Hub

The Environmental and Quality Management system is designed to ensure:

- The identification of all foreseeable environmental impacts and risks that The Treatment Hub activities pose to the environment.
- Prevention or minimisation of any identified risks to a practical minimum?
- Legal Compliance assurance.
- Activities at the site will be managed in accordance with the management system, which will be subject to continuous review, audit and improvement. Specific detailed management system reviews will take place if there is a significant change to the activities, following an accident or if a non-compliance is found.
- Furthermore, the whole management system will be subject to annual external audit by competent third parties.

The key aspects of the Environmental and Quality Management system for the site include:

- Preventative maintenance;
- Operator requirements;
- Training and competence;
- Emergency response and incident management; and
- Monitoring, measurement and reporting.

The environmental and quality management system and procedures are written to ensure that the environmental risks and impact of the normal running of the site activities are documented and minimised.

The system is fully developed, implemented and operational.

Table 3 shows the structure of the proposed Environmental Management Plan.

Table 3 – Structure or Proposed Environmental and Quality Management System.

Reference No.	Title	Purpose
TH 1.0	Waste Pre-Acceptance	This procedure defines the screening, checking and pre-acceptance of all incoming waste prior to its arrival onsite.
TH 1.1	Waste Acceptance	This procedure outlines the onsite controls and considerations that need to be applied when waste material arrives onsite for processing. Acceptance of non-conforming wastes will be a direct breach of the permitted conditions of the sites Environmental Permit.
TH 1.2	Waste and Material Storage	This procedure outlines the waste storage requirements for all wastes that are processed onsite.
TH 1.3	Document and Data Control	This procedure defines the necessary documentation such as the Batch Reference Note that is required to ensure compliance.
TH 1.4	Purchasing	Purchasing controls are designed to ensure that all material processed on site is within defined parameters so as to ensure that the products and services provided by the company conform to customer requirements.
TH 1.5	Chemical stabilisation / immobilisation / treatment	To outline the control activities for the safe and managed chemical treatment of wastes/ soils.
TH 1.6	Validation Process	This procedure is to ensure that the product is validated for compliance with product and environmental criteria
TH 1.7	Control of Records	This procedure describes the way in which the company maintains records in a manner that prevents loss or damage. Records retained to provide objective evidence that the Documented Management System is being operated within the company and that customer and permit requirements are being complied with. The system used to retain records will ensure that all traceability requirements are met.
TH 1.8	Training	To ensure that all training needs are identified for all relevant personnel. In addition, educational and training qualifications and records are maintained.
TH 1.9	Security	To ensure that all site and driver security controls are implemented and maintained to minimise security risks at The Treatment Hub.
TH 1.10	Emergency Procedures	To ensure the safe evacuation of the site and protection of the environment in the event of a site emergency.

The Hub

Site Maintenance

All maintenance activities on site will be carried out in accordance to the manufacturers' recommendations and will be integrated within the company's Environmental Management System.

The key aspects of the maintenance management programme will include:

- Infrastructure inspection: A programme of inspection of all bunded areas and concrete storage pads;
- A programme of Planned Preventative Maintenance (PPM) on key plant and this programme also will ensure critical components of plant such as belts and motors are replaced early rather than waiting for equipment to fail.
- The inspection and maintenance schedules that the manufacturer recommends are adhered to, including any period of recommended shut-down.
- Maintenance and calibration of all company laboratory and testing equipment to ensure compliance with Quality Control/UKAS requirements.

The sites maintenance programme will ensure that all equipment or infrastructure that is deemed essential in the prevention of pollution to the environment (eg hard-standing, bunds etc.) or the prevention of local nuisance impacts is maintained and kept in good operating condition.

It is proposed that all maintenance activities will be carried out under contract by a suitably qualified and competent third-party organisation.

A third-party road sweep is employed once a week (more depending on site activity) to clean up external areas associated with lorries arriving and leaving the unit. This will be continued.

Operator Competence.

There will be up to 3 operatives required to operate the facility. These operatives will work on a dayshift basis. All site operatives will be assessed as competent and appropriately trained in accordance with the site Environmental Permit.

The Treatment Hub will operate the site using qualified and competent personnel. The company has a number of WAMITAB qualified personnel under contract who will be available as required in possession of the qualifications considered suitable for Ex-Situ treatment of contaminated land and materials.

All staff working for and on the behalf of the site will be suitably trained and competent. (e.g. professional maintenance engineers, electricians, equipment operators etc).

Certificates of Competence for key operational personnel are provided in Annex 4.

Operation.

The site will be operated with deliveries, loading and unloading, treatment, etc. being carried out in accordance to the schedule below:

- Monday - Friday 7.00 - 18.00;
- Saturday 7.00 -18.00;
- Sunday No deliveries or collections (except under specific circumstances);
- Bank Holidays No deliveries or collections (except under specific circumstances).

Additional activities will include general site housekeeping and administration activities. The site will maintain written operation instructions all for the plant and monitoring equipment present onsite.

The Hub

All personnel working at the facility will be trained in the necessary sections of the Environmental Management Plan and associated Procedures.

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Site security

The Westfield Industrial Site is a secure site and is provided with 24 hour security personnel who man the main gatehouse on a 24/7 basis.

As such, all personnel and vehicles entering the site are strictly controlled and managed; no vehicles or personnel will be allowed access to the facility without prior authorisation.

The Treatment Hub facility will generally only be manned daytime only basis. At all times when the facility is not manned or occupied, it will be securely locked and protected.

The entire Westfield Industrial Estate is equipped with CCTV monitoring of all external areas.

Accidents and Emergencies.

The site has developed an Accident Management Plan based around the specific risks associated with the site operations.

The key aspects of the Site Accident Management Plan are:

- Reviewed by Site Management annually and as soon as practicable after an accident;
- Considers hazards presented by emergency shut-down procedures;
 - actions in case of fire/explosion;
 - contaminated firewater;
 - failure of any equipment;
 - spillages and uncontrolled releases;
 - plant or equipment failure;
 - vandalism;
 - flooding;
- Identify events or failures that could damage the environment;
- Assesses the likelihood and the potential environmental consequences from accidents at the site;
- Proposes action to minimise the potential causes and consequences of accidents.

The Accident Management Plan has been appended and specific emergency response procedures will be developed.

These procedures are complete and fully developed and implemented.

The Hub

Incident Reporting

The reporting of Incidents and non-conformities will form a key component of the companies Management System. Identified non-conformities under the system include, but are not limited to the following:

- Uncontrolled leaks and spillages of any materials with the potential to cause pollution to the environment (chemicals, hydraulic fluid, oils);
- Non-compliance to any permitted condition or consent limit (missing of reporting deadlines, breach of any permitted consent limits;
- Internal Audit findings (legal non compliances, EMS procedural breaches, system non-compliances);
- External and Internal Complaints; and
- Whenever a plant malfunction, breakdown or failure, or any near miss occurs.

The company's EMS will undergo periodic external audit and review to ensure that both compliance and continuous improvement is achieved. The EMS requires that all identified incidents and non-conformities will be investigated and closed out.

Furthermore, the site management system will have documented procedures and registers to:

- Ensure that any members of the public / residents are alerted and informed if a significant plant issue arises (fire, explosion etc.);
- Record, report and investigate any internal or external complaints to ensure that any necessary measures are taken to prevent, or where that is not possible to minimise, the causes; and
- Inform any members of the public about the nature of the site, key contacts and sources of further information.

4. Emissions and their Abatement.

Emissions to air

The proposed installation will not have any emissions to air.

Emissions to water

The proposed Installation will not have any emissions or effluents that will be discharged to controlled waters.

Emissions to Sewer

The proposed Installation will not have any emissions or effluents that will be discharged to sewer.

Emissions to land

There will be no direct emissions to land arising from the installation.

Odour

The nature of the materials processed at the site will not be malodorous or likely to have the potential for offsite odour impact. The proposed operation is not considered to have a potential for offsite odour impact

Noise Impacts

The proposed Installation will not give rise to any adverse noise impacts.

With the exception of the fixed and mobile plant the process is largely static and unable to give rise to noise impacts.

All fixed and mobile plant will be operated internally and restricted to permitted use only.

The site does not have any external discharge points or external roof mounted plant and equipment that has the potential to give rise to offsite noise impacts.

The physical plant mixing and processing will be undertaken in campaigns.

Furthermore, the location of the plant in the approximate centre of the site ensures that any noise created by the 'delivery and collections will be fully screened by the buildings fabric.

Fugitive emissions

There are no new fugitive emissions arising from the proposed new plant. The site has strict acceptance criteria that prohibit materials with concentrations of VOC (Benzene) greater than 1ppm. All materials transported to site will have previously been tested and certified to meet Facility Acceptance Specification prior to delivery.

No malodorous materials will be accepted onto site.

Waste Generation and Management

Types and Amounts of Waste

The sole purpose of the facility is to act as a regional specialist soils and materials treatment hub. The process will therefore receive waste materials that would otherwise be destined for disposal, but can otherwise be treated, stabilised and re-used (follows the waste hierarchy).

The very nature of the site means that all materials received will be imported wastes, which will be subsequently mixed with proprietary clay formulations (referred to as 'E-Clays') in combination with cementitious material to form a stabilised material that is validated and suitable for the intended end use.

All materials treated by the site will be suitable for:

- reuse at either the source or another suitable location;
- reuse as a raw material in product manufacture (in accordance with 'End-of-Waste' requirements);
- waste declassification to enable disposal at an inert / non-hazardous landfill (in accordance with landfill acceptance criteria).

The hub operation will be designed to operate in accordance with waste hierarchy principles as far as practically possible.

Table 4 below shows a tabular summary of site wastes.

Table 4 – Summary of Site Wastes.

Waste	EWC	Approx. Quantities	Source	R/D Code	Fate
Imported wastes / contaminated land	As per Table 1	50,000 tonne per annum	Contaminated land, industrial wastes or similar wastes	R05	Treatment
Exported treated material	N/A	50,000 tonne per annum	Treated contaminated land, industrial wastes or similar wastes	R05	Construction fill / Landscaping / Restoration / Raw materials

Throughput of Waste

The facility principally produces a product which can then be used as a raw material or soil / aggregate. The plant will typically process approximately up to 1,000 tonnes per week of hazardous and non-hazardous waste.

The Hub

Typically, the treatment process will increase the total mass of the material by between 3-5%.

The site will be designed to accept and treat approximately 50,000 tonnes per annum.

Under IIB of the Waste Framework Directive the Installation activities fall under the generic description

Waste Storage

All waste materials are stored internally in stockpiles in accordance with the batch code and treatment programme. The materials are all located internally on dedicated concrete pads and are covered for protection.

No more than 20,000 tonne of material will be stored internally at any time.

Resource Efficacy and Climate Change

The energy use of the proposed operation is very low so there is no need for improvements involving energy efficiency.

5. Environmental monitoring.

Emissions to air

There are no point source emissions to air. Therefore, no monitoring is required.

Emissions to water

There are no point source emissions to water from within the process. Therefore, no monitoring is required.

Emissions to Sewer

There are no point source emissions to sewer arising from the process. Therefore, no monitoring is required.

Emission to Land

There are no point source emissions to land arising from the process. Therefore, no monitoring is required

Incoming Waste Monitoring

All waste materials accepted onto site will be monitored for the following:

- Origin;
- Weight;
- Visual Inspection;
- Physical properties;
- Chemical properties;

Monitoring frequency

Due to the nature of the process no formal environmental monitoring is proposed.

6. Impact to the Environment.

Impacts to Air

There will be no impacts to the air relating to the proposed installation

Impacts to Controlled Waters

There will be no process effluents discharged to controlled waters from the Installation.

Impacts to sewer

All discharges to sewer relate to the domestic sewage arisings. There are no process emissions which will arise from the plant.

Impacts to Land

There are no impacts to land relating to the proposed installation.

Noise Impacts

All activities will take place internally and on a daytime basis only. The physical plant mixing and processing will be operated in campaigns This plant is considered very unlikely to be able to give rise to noise nuisance outside the building.

Given the relatively inert nature of the process, no noise nuisance impacts are considered likely to arise.