

Environment Agency permitting decisions

Bespoke permit

We have decided to grant the permit for Fawley Remediation Treatment and Recovery Facility operated by Biogenie Site Remediation Limited.

The permit number is EPR/ZP3133RH

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Description of main features of the installation/the changes introduced by the variation
- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Description of the main features of the Installation

The site is made up of a number of areas (a waste storage area, a treatment area and two restoration areas) located within the boundary of the Fawley Oil Refinery. The Fawley Oil Refinery is located approximately 6.5 Kilometres to the south of Southampton on the coast of Southampton Water. The National Grid Reference for the centre of the refinery is SU 44871 03909.

The remediation of contaminated soils and sludges produced by the Fawley Oil Refinery have to date been treated under a mobile plant permit. With the subsequent deposit for recovery activity taking place under an exemption. A phase of treatment and on-site recovery of 6,200m³ of materials was completed in 2010, with a further phase of 4,200m³ of materials treated and recovered in 2013. The mobile plant permit and exemption are no longer appropriate for the activities and a site based Environmental Permit is now required to encompass the waste treatment and recovery activities being undertaken at the site.

Only suitable waste produced at the Fawley Oil Refinery will be accepted at the site. The waste will be used to restore two decommissioned areas (Block 106 and Area 1) of the Fawley Oil Refinery through the permanent deposit of waste. We have assessed the waste recovery plan submitted by the Applicant and agreed that the activity is deposit of waste for recovery. See the key issues section for more information. If the waste material requires remediation before it is suitable for use in restoration, the Applicant will undertake bioremediation treatment and, if required, stabilisation/ solidification on the materials:

Bioremediation:

Bioremediation is a process that acts to accelerate the natural degradation of organic compounds within contaminated materials through the encouragement of natural soil microflora processes. The process exploits the ability of natural soil microbial populations (for example bacteria and fungi) to biodegrade or biotransform toxic environmental organic and inorganic pollutants into less toxic or innocuous products (for example carbon dioxide and water vapour).

The site will operate a bioremediation process to treat contaminated waste from the Fawley Oil Refinery. The bioremediation process will have a capacity to treat up to 15,750 tonnes per annum of hazardous waste and 4,500 tonnes per annum of non-hazardous waste. These waste materials comprise soils or sludges with high organic contaminant loading which, depending on the level of contamination, may be considered as hazardous waste.

Once accepted for treatment, waste materials will be transferred to the remediation area where the waste will be arranged into biopiles (a biopile describes the process of the biological treatment of a stockpile of soil with an active aeration system). The biopiles will have a maximum height of 3 metres and edges sloped to a 45° angle to ensure minimal infiltration of rainfall. Waste streams will be treated in separate cells upon the treatment pad with a record of batches maintained throughout the process.

Once a biopile is formed the waste will be left to allow the microfauna to establish and degrade the organic compounds within the material. Soils will typically be treated for a

period of 26 weeks depending on the degree of contamination and the bioremediation treatment process will operate on a continuous basis. The biopiles will be covered after construction in order to minimise rainwater infiltration, moisture loss and the release of odours. They will need to be periodically uncovered to allow mixing and sampling operations. The majority of the process is automated and controlled with the exception of occasional mechanical turning using an excavator. The biopile will be mechanically turned approximately once every 6 weeks to ensure the correct moisture levels and allow aeration of the material and to facilitate additional inputs (amendments). Soil is sampled during this turnover and analysed to allow monitoring of contaminant concentrations and other physico-chemical parameters to ensure optimal conditions exist and are maintained.

Testing of materials in advance of the biopile formation will allow optimisation of the treatment process. The process is specifically optimised for each treatment batch including the maintenance of oxygen and moisture conditions along with the addition of substances to tailor nutrient concentration and structure of the materials to encourage the growth of natural soil microflora. The required additional substances for each batch is based upon a combination of its chemical and physical condition. The substances which will be routinely added include organic additions typically up to 20% by volume (for example spent mushroom compost or wood chip) and nitrogen based fertilisers (<1% by volume).

The bioremediation process includes controls on gaseous and aqueous emissions (see key issues section of more information).

Outputs from the process will comprise of waste materials with significantly lower levels of contaminants. Upon completion of the bioremediation treatment period, validation testing will be undertaken to analyse the materials against remedial targets which correspond with site specific waste acceptance criteria (WAC) for the permanent deposit of waste for recovery. Following bio-remediation, any waste which is not suitable for deposit for recovery will either be, a) subjected to stabilisation/ solidification treatment using Ordinary Portland Cement or b) transferred off site for disposal at a suitably permitted facility.

Stabilisation/ solidification:

Previous phases of the works have identified leachable concentrations of metals within the waste materials. These concentrations are above those suitable for waste recovery at the site and where they occur further treatment by stabilisation/ solidification will be undertaken.

The process is specifically designed to target the mobility of nickel and zinc. The aim of the stabilisation/ solidification process is to restrict the mobility of contaminants through immobilising mechanisms, reducing the risk of the target contaminant leaching from the waste. This will be achieved by mixing the material with cement.

Stabilisation/ solidification of materials will take place in a separate area of the remediation treatment area to the bioremediation. The treatment bays will be constructed of a separately bunded area located upon the impermeable remediation treatment pad. The treatment area will comprise of up to two treatment bays designated for combining the materials with Ordinary Portland Cement which acts as

the binder. Cement will be directly applied to the materials in the treatment bay at a rate of 3% by weight and combined using an excavator-mounted mixing plant.

On completion of each batch, the stabilised materials will be transferred from the treatment bay to a temporary storage area for curing and ensuring it is suitable prior to use in restoration. Following stabilisation/ solidification, any waste which is not suitable for deposit for recovery will be rejected and transferred off site for disposal at a suitably permitted facility.

Key issues of the decision

Site condition report

The Applicant provided a site condition report which contains information on the previous land use, a report on the baseline conditions and details of the hydro-geological setting of the site. We are satisfied that the site description is representative of the site.

The existing oil refinery is operated by Esso Petroleum Company Limited and together with the remediation treatment and recovery facility forms a multi operator installation.

Due to their close proximity the pre-treatment storage area, treatment area and one of the restoration areas (Area 1) share a similar geology. The underlying bed rock for this part of the site consists of Barton Clay Formation which is classified as unproductive strata; meaning it has low permeability with negligible significance for water supply or river base flow. These areas are covered by made ground, thought to be associated with the development of the refinery, consisting of sand and gravel at variable depths (typically 1-2 metres).

The remaining restoration area (Block 106) is also situated on an area of made ground, with sand and gravel at variable depths across the area (typically 0.5-2 metres). The bed rock underlying Block 106 consists of Barton Clay Formation and Chama Sand Formation. The Chama Sand Formation is classified as a Secondary A Aquifer under the requirements of the Water Framework Directive. Groundwater vulnerability maps show that the Chama Sand Formation is classified as a minor aquifer. The installation does not lie within a groundwater source protection zone.

Flood risk maps indicated that parts of the site may be susceptible to flooding. The remediation area, pre-treatment storage area and Area 1 all lie within areas designated as a flood zone 3 (these are defined as areas that could be affected by flooding, either from rivers or the sea, if there were no flood defences). Block 106 lies within an area designated as a flood zone 1 (areas which are 'very unlikely' to flood from either rivers or the sea). The nearest surface watercourse is the surface water management system for Fawley Oil Refinery. This is located close to each of the four areas which make up the site. At its closest point the surface water management system lies approximately 10 metres to the south west of the pre-treatment storage area. To the north and east of the site lies Southampton Water. Southampton Water is a tidal estuary meaning that during periods of low tide tidal mud flats are present to the north and east of the site. At its closest point, the site lies approximately 320 metres to the south west of the high tide level of the Southampton Water.

The areas of land covered by the permit form part of the larger Fawley Oil Refinery complex. Prior to the refinery development (in the 1950s) historical maps show the land as being undeveloped. During the life of the refinery, all of the areas covered by this permit have had a history of crude oil and/or fuel product storage:

- Pre-treatment storage area: this comprises a former bulk storage tank whose metal superstructure has been demolished leaving the concrete pad. The

refinery tank zone information suggests the tank formerly stored diesel and/or fuel oil for a number of decades before demolition.

- Treatment area: an area of the refinery adjacent to two storage tanks thought to be used for 'Slops' storage (oil/oil contaminated water).
- Area 1: this comprises a former bulk storage tank thought likely to have been used for crude oil storage.
- Block 106: an area of open ground formerly occupied by bulk storage tanks adjacent to a number of diesel and/or fuel oil storage tanks and hence it is thought likely this was the fuel product stored in these former tanks.

In order to provide a baseline, the Applicant has used data from site investigations undertaken in 2008. We are satisfied that data from 2008 is appropriate as it predates any treatment operations (under a mobile plant permit) or previous phases of material being deposited for recovery in Block 106 (under an exception). The site investigations show variable concentrations of Total Petroleum Hydrocarbon (TPH) contamination across the site. Groundwater monitoring results from November-December 2014, identified no evidence of petroleum hydrocarbon contamination in the Block 106 deposit area, but slightly elevated concentrations in the pre-treatment and bioremediation areas.

The baseline report is an important reference document in the assessment of contamination that might arise during the operational lifetime of the installation and at cessation of activities at the installation. The standard condition requiring monitoring of soil and/or groundwater is included within the permit. This condition requires the periodic monitoring of groundwater at least once every five years and soil at least once every ten years. At the definitive cessation of activities, the Operator has to satisfy us that the necessary measures have been taken so that the site ceases to pose a risk to soil or groundwater, taking into account both the baseline conditions and the site's current or approved future use. To do this, the Operator will apply to us for surrender of the permit, which we will not grant unless and until we are satisfied that these requirements have been met.

Waste pre-acceptance and acceptance

Pre-acceptance and acceptance procedures will be in place to characterise the waste and limit the potential for adverse impacts.

At the pre-acceptance stage, the applicant will create a record within their material tracking system. This record will be populated with the information compiled at the pre-acceptance stage including:

- date for delivery
- the waste's source and the specific process which produced the waste
- the quantity of the waste
- chemical analysis of the waste
- the form the waste takes
- hazards associated with the waste
- relevant sample storage requirements

The waste types are limited to those produced from a known process and will only come from the Fawley Oil Refinery. The Applicant has undertaken a detailed technical appraisal of the proposed waste types. This has given them an understanding of the characteristics of the waste types and their suitability for the site processes. The waste characterisation exercise has identified the type and degree of contamination of the waste materials to be accepted at the site. The results of this analysis have been summarised by the Applicant in their application. We are satisfied that the proposed waste types are suitable for use in restoration and/or the remediation treatment processes at the site.

Before any waste is accepted at the site, checks will be made on the site's available storage capacity and a visual inspection of the waste materials will take place. After the initial visual screening the delivery vehicle will be directed to discharge their load at the pre-treatment storage area, where the waste is kept pending sampling and verification and compliance testing. The Applicant has confirmed that waste acceptance verification will be undertaken by a suitably qualified and experienced remediation engineer.

Compliance testing will be undertaken on solid and leachate samples at a rate of one sample per 500m³ of material to confirm the identity of the waste and its description, compliance with the environment permit, consistency against the pre-acceptance characterisation and its suitability for treatment by bioremediation and/or stabilisation/solidification. Samples will be collected as the waste is deposited in the holding area and following placement of materials on the treatment pad. This sampling programme is undertaken to confirm baseline concentrations, and also to confirm the absence of any contaminants, such as metals or asbestos, for which the treatment has not been designed.

The Applicant will have a rejection procedure in place to prevent non-conforming wastes being accepted at the site for use in restoration or remediation treatment. If the non-compliance is identified before they are offloaded at the pre-treatment storage area, the materials will be rejected and the load returned on the delivery vehicle. If during verification and compliance testing waste materials are identified as non-conforming, they will be rejected and stored in the site's designated quarantine area pending removal off-site to a suitably licensed facility within five working days. Records of the non-conformance will be made and the operator of the refinery will be notified of the non-conformance.

We have compared the waste pre-acceptance and acceptance procedures with our sector guidance S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste. We are satisfied that the procedures will minimise the potential for nonconforming waste to be received at the site and that if non-conforming wastes are identified procedures are in place to minimise the potential for them to have a detrimental impact upon the environment.

Control of emissions from the bioremediation process

Emissions to air (from the air extraction system) and leachate will be produced by the bioremediation process. The biopiles consist of a number of operational controls which allow the control of gaseous and aqueous emissions.

There will be one point source emission to air from the site. Air extracted through the biopile during bioremediation will be released to atmosphere via a stack exhaust to aid dispersion. An assessment of the potential impacts (including odour) from the stack emissions was included within the application and is discussed further in the odour and air emissions sections below.

Forced air extraction ensures a constant stream of air is fed through the materials helping to maintain aerobic conditions. The air extraction system comprises a series of perforated pipes laid above an impermeable pad upon which the waste materials are placed. The pipes are connected to a blower which applies a vacuum, drawing air through the waste. Air from the air extraction system is passed through the air-water separator to remove moisture from the effluent stream. Once moisture is removed, the effluent air is emitted through a stack to aid dispersion.

The process does not need a significant input of water except, water will only be required in order to maintain moisture levels essential for efficient bioremediation. Throughout the treatment process the biopiles will produce a small volume of leachate (approximately 0.52m³ per day) the leachate from the bioremediation treatment process will be directed to the Fawley Oil Refinery effluent treatment plant. The Applicant has confirmed that the effluent treatment plant has sufficient capacity available to treat the effluent from the biopiles.

Air emissions

The discharge of process emissions to atmosphere has the potential to impact upon air quality. An Air Quality Assessment report was included within the application; this report assesses the potential impacts on local air quality as a result of emissions from the biopile stack exhaust. The report also considers the potential impact of odour from the stack emissions, this is discussed further in the odour section below.

The Applicant carried out sampling of the stack exhaust and background concentrations using waste characterisation to identify pollutants and define the analysis suite. The Air Quality Assessment report contains an assessment of the key pollutants and considers the potential impacts associated with the emissions to air from the stack (Total Petroleum Hydrocarbons (TPH), Volatile Organic Compounds (VOCs) and Polyaromatic Hydrocarbons (PAHs)).

The Applicant has assessed the monitoring results using the Environment Agency's H1 screening tool. Based on the H1 screening we are satisfied that all of the modelled pollutants, with the exception of PH C8-C10 aromatic fraction and benzo-a-pyrene, screen out as insignificant and do not require further assessment.

Having taken into account the background concentration, the Predicted Environmental Contribution (PEC) for PH C8-C10 aromatic fraction is less than 70% of the long-term environmental standard. We are therefore satisfied that the emissions will not cause an exceedance of the Environmental Assessment Level (EAL).

Where measured emissions were below the limit of detection, the detection limit was applied as a precautionary approach. The limit of detection was used for benzo-a-

pyrene and therefore the actual emissions are likely to be lower than the values used in the screening. Given the chemical properties of this pollutant it is considered unlikely that there would be significant emissions from the site. Benzo-a-pyrene is released to atmosphere predominantly when combustion is incomplete (usually because there is insufficient oxygen). In soil it would be expected to adsorb very strongly and would not be expected to leach to water given its low solubility. Also, evaporation from soils and surfaces is not expected to be significant given its vapour pressure. Based on this, volatilisation of benzo-a-pyrene as a result of the bioremediation process (which operates at 30 - 50 degrees Celsius) is anticipated to be low. We are satisfied that it is unlikely that the treatment process would give rise to significant emissions of benzo-a-pyrene and therefore we have not requested the Applicant to carry out detailed modelling.

Amenity issues

The Operator has confirmed that the site will be designed, operated and maintained in a way which minimises the potential environmental risks and impacts of the facility.

The Applicant will carry out a programme of Planned Preventative Maintenance; all items of plant and equipment, including bunds, drains and tanks will be regularly inspected and maintained in accordance with the site's inspection and maintenance schedule. Procedures will ensure that appropriate corrective action is taken in response to problems identified at the site and any complaints received. They will also ensure that non-conformances are reported, investigated and rectified, and that failures and weaknesses are prevented. These procedures will form part of the sites Environmental Management System.

Security measures will be in place to prevent unauthorised access to the site. The site is located wholly within the Fawley Oil Refinery which benefits from substantial existing security measures, including high security fencing bordering the entirety of the site, 24 hour attendance by security guards and CCTV.

Odour

As part of their application the Applicant has submitted an air quality assessment and environmental risk assessment which consider odour.

The risk assessment identifies potential sources of odour and sensitive receptors and considers pathways for impact.

The Applicant has identified the following parts of the operation as potential sources of odour at the site:

- Waste acceptance
- Storage of contaminated materials
- Bioremediation process
- Stabilisation/ solidification process
- Failure of equipment (for example the biopile blower)
- The development of anaerobic conditions
- The use of waste in restoration

The Applicant has committed to good housekeeping and has detailed measures which are aimed at reducing the potential for odour from the site. These control measures consist of methods aimed at preventing the generation of odour and include:

- Strict waste pre-acceptance and acceptance procedures will be in place to prevent the receipt of strongly malodorous waste types
- The waste types are limited to those produced from a known process and will only come from a singular known source (the Fawley Oil Refinery)
- Non-conforming materials received at the site will be segregated and stored in the site's designated quarantine area prior to removal off site.

The absence of oxygen in the waste material could lead to decomposition of the organic content under anaerobic conditions, this has the potential to cause odours. Optimum conditions need to be maintained to allow efficient drying and avoid anaerobic decomposition. Air extraction and the periodic turning of the waste will limit the possibility of anaerobic conditions forming. The biopiles will be covered with a tarpaulin which will be combined with the air extraction system and release via the stack to limit fugitive emissions of odour during bioremediation treatment. Failure of the blower could cause a slowdown in the treatment process and the development of anaerobic conditions with resulting fugitive emissions of odour from the biopile. The Applicant has confirmed that a combination of regular inspections, a preventative maintenance programme and rapid technical response will be in place to prevent and/or reduce the possible detrimental impact of equipment failures at the site.

Prior to treatment by stabilisation/ solidification, the waste materials will have undergone treatment by bioremediation. The bioremediation treatment will have degraded contaminants within the materials such that the odour potential of the materials will be greatly reduced at this stage in the process.

The Applicant's environmental risk assessment concludes that, due to distance, no effective pathways exist and that the potential for impact from odour at sensitive receptors is low.

The air quality assessment report submitted as part of the application includes a qualitative assessment of odour from the bioremediation process. The biopile incorporates an air extraction system to promote aerobic treatment of waste products within the biopile. The air extracted through the biopile is discharged to atmosphere via a stack exhaust. The discharge of process emissions to atmosphere has the potential to impact upon air quality (including the release of odour). The report considers the potential sources of odour, possible pathways and receptor sensitivity in order to conclude the risk of exposure to odorous emissions from the stack:

- *Potential sources of odour:*
The potential for odour will vary depending on the level of contamination in the wastes, the types of contamination and the stage of treatment in the biopile (as treatment progresses the levels of Volatile organic compounds (VOCs) present will reduce). Given the petrochemical nature of the hydrocarbon contamination

the Applicant has stated that the odours have the potential to be moderately unpleasant.

- *Pathway Effectiveness:*

The report states that the pathway between source and receptor can be considered ineffective on account of a) the distance between source and closest sensitive receptors, and b) the direction of the prevailing wind.

There are no commercial or industrial premises (other than those associated with the wider oil refinery) or residential properties within 500 metres of the site.

- *Receptor sensitivity:*

The site is wholly located within the boundary of the Fawley Oil Refinery, as such the Applicant has concluded that the land uses immediately surrounding the site are considered of low sensitivity given they are associated with the refinery. The Solent is located to the north east and receptors using the waterway would be transient and are therefore considered of low sensitivity.

The report considers that the closest highly sensitive receptors are the villages of Fawley (1km south west) and Hamble-le-Rice (2.2km north east).

The report concludes that the risk of odour exposure from the stack emission point is considered to be negligible and the likely magnitude of effects is also considered to be negligible.

The treatment and subsequent deposit for recovery of the waste has been previously carried out at the site without any complaints being received regarding odour. Based on the compliance history and the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise odour. The standard odour condition has been included within the permit. This condition requires the operator to take appropriate measures to prevent or minimise odour. It also means that if odour does become an issue and complaints are received, then the operator will be required to submit an Odour Management Plan for the site to the Environment Agency.

Noise and vibration

The Applicant has identified the following parts of the operation as potential sources of noise and vibration at the site:

- vehicle movements
- bioremediation treatment process
- stabilisation/ solidification treatment process
- deposit for recovery activities

The Applicant has detailed measures which are aimed at reducing the potential for noise and vibration from the site, these include:

- Vehicle movements will be restricted to the operational hours specified in the planning permission
- Traffic calming measures will be implemented to enforce speed limits
- Drop heights will be minimised
- Consideration will be given to noise when selecting plant equipment
- Site plant and machinery will be operated and maintained in accordance with manufacturer's specifications
- Machines will be shut down when not in use
- Equipment required to run on a continuous basis for the bioremediation process will be housed within an acoustic enclosure
- Auditory inspections will also be carried out daily and in response to complaints. With a record of the inspection findings being made in the site diary.

The application includes a risk assessment, which considers noise and vibration. The assessment identifies potential sources of noise and sensitive receptors and considers pathways for impact. Their risk assessment concludes that with the implementation of the management measures described above there will be no significant impact on surrounding sensitive receptors.

Based upon the information in the application we are satisfied that the appropriate measures will be in place to prevent or where that is not practicable to minimise noise and vibration and to prevent pollution from noise and vibration outside the site. The standard noise and vibration condition has been included within the permit. This condition requires the operator to take appropriate measures to prevent or minimise noise and vibration. It also means that if noise and vibration does become an issue and complaints are received, then the operator will be required to submit a management plan for the site to the Environment Agency.

Dust

Given the nature of the material and operations to be undertaken on site, there is potential for the site to produce dust. The Applicant has submitted an air quality assessment, which considers dust, as part of their application. The assessment identifies potential sources of dust and sensitive receptors and considers pathways for impact.

The Applicant has identified the parts of the operation with the greatest potential to produce particulate emissions, these include:

- Vehicle movements
- Waste handling
- Waste storage
- Biopiles (during turning operations)

The operator has committed to operating techniques including good housekeeping and cleaning procedures to ensure that the potential for the generation and emissions of dust is kept to a minimum. The following measures are proposed by the operator to reduce the potential of dust from the site:

- Waste soils will be brought onto site in enclosed or sheeted vehicles to prevent the escape of dust during transit
- Roadways will be kept clean; a road brush will be utilised when necessary to sweep internal roads
- The site is wholly located within the confines of the Fawley Oil Refinery. As such, there will be no off-site vehicle movements which could lead to the deposit of mud or dusty material on public roads
- Drop heights will be minimised to prevent emissions of dust
- Dust suppression sprays will be used when required
- Potential sources of particulates will be maintained in moist conditions or covered to minimise the potential for wind whipping or dust release
- As much as possible, the operation of machinery and dust causing activities will be undertaken during periods of calm weather
- Daily, visual inspections of all areas of the site and site boundary will be carried out by site personnel with a record made in the site diary of the inspection findings and any remedial action taken

The Applicant has stated that dust is unlikely to be emitted during the turning of the biopiles as dust is an indication that the moisture content of the soil is too low. Moisture conditions within the biopiles will be closely controlled in order to maintain optimum conditions during the treatment process.

Based upon the information in the application we are satisfied that appropriate measures will be in place to prevent and/or minimise dust emissions.

The standard 'emissions of substances not controlled by emission limits' condition has been included within the permit. This means that, if dust does become an issue and complaints are received, the operator will be required to submit Dust Management Plan for the site to the Environment Agency.

Accidents

The Applicant has confirmed that the site's accident management plan will be implemented and maintained to ensure the site and its staff are fully prepared for any incidents. The accident management plan will be reviewed annually or as soon as practicable after an incident, with changes made accordingly to minimise the risk of occurrence. The accident management plan will be included within the site's Environmental Management System and cover eventualities including:

- receipt of unauthorised waste
- containment failure of bunds, drainage systems or tanks
- leakage of fuel and oils
- fire
- flooding
- security and vandalism

The Applicant has detailed mitigation measures which are aimed at minimising the likely occurrence and reducing the potential impact of accidents:

- only waste authorised by the permit will be accepted at the site. Robust pre-acceptance and acceptance assessments will minimise the potential for non-conforming being received at the site
- all wastes will be subject to inspection and checking against the declaration on the waste transfer note / consignment note and in the event that unauthorised waste is delivered to the site, the waste will be segregated and stored in a designated quarantine area prior to export from site.
- bunds, drains and tanks will be subject to inspection and a preventative maintenance programme
- Tanks will be surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest tank within the bund or 25% of the total contents, whichever is largest
- operational areas of the site will have impermeable surfacing and engineered drainage systems
- spill kits will be available on site
- the plant inspection schedule will include checks of electrical equipment within the site to ensure that any faults are identified and repaired
- site staff will be trained in fire prevention

Having considered the information submitted in the Application, we are satisfied that appropriate measures will be in place to ensure that accidents that may cause pollution are prevented but that, if they should occur, their consequences are minimised.

Containment and drainage

The permit allows the temporary storage of hazardous and non-hazardous waste as well as the permanent deposit of waste for recovery. The Applicant has confirmed that the storage arrangements at the site have been designed to ensure appropriate containment and the reduction and minimisation of emissions.

The Applicant has committed to employing a material management system enabling the tracking of materials as they progress through the storage and treatment process. The material management system will ensure that hazardous and non-hazardous waste types will not be mixed with one another and separate waste streams will not be mixed or combined.

Prior to transfer to the treatment area, waste materials will be stored on a constructed concrete base with a concrete bund. Separate waste streams will not be mixed or combined. In the case of non-hazardous contaminated soils, these may be stored directly in the treatment area prior to treatment. Once analysis has confirmed the proposed recovery route for each batch of materials received, each batch will be transferred to the appropriate area of the site for treatment. The remediation treatment processes have been designed to ensure capacity to treat the volume of materials as required by the Operator of the oil refinery meaning the period of time over which materials will be stored prior to treatment will be kept to a minimum.

Potentially polluting substances, such as diesel, will be stored in suitably sized and designed storage vessels (bunded or double skinned tanks). Tanks will be constructed so that any leaks/spillages will be contained. Tanks will be surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest tank within the bund or 25% of the total contents, whichever is largest. Tanks

will be visually inspected on a regular basis by the site staff to ensure the continued integrity and identify the requirement for any remedial action. Spill kits will be kept on site (materials suitable for absorbing and containing minor spillages will be maintained on site).

There will be no point source emissions to surface water. All operational areas of the site will have impermeable surfacing and engineered drainage systems linked to the Fawley Oil Refinery site drainage system. The treatment area comprises a single impermeable surfaced treatment pad which is profiled to enable drainage of leachate towards a drainage channel. The drainage channel is lined and wedge welded to the treatment pad liner and filled with 20mm-40mm of shingle to act as a french drain. At its lowest point the drainage channel is connected to an air-water separator from which water is pumped to the Fawley Oil Refinery site drainage system for treatment in the effluent treatment plant prior to discharge.

The pre-treatment storage area will have an impermeable concrete base, a concrete bund and a sealed drainage system. The Applicant has stated that they will inspect and maintain storage areas and associated infrastructure, including site surfacing, drainage systems and containment on a regular basis and that drains will be regularly inspected and cleared of blockages as required.

The areas of the site where the treated material is to be reused are permeable and surface water will be allowed to naturally drain. The Applicant has undertaken a Hydrogeological Risk Assessment (HRA) in order to establish site specific WAC for the waste recovery operations. This is aimed at protecting groundwater and surface waters from contamination by ensuring that waste deposits will not adversely affect down gradient hydrogeological receptors. Wastes will only be deposited for recovery in Block 106 and Area 1 for restoration should the waste materials meet the areas' site specific WAC for solid and leachable contaminants.

We agree that the Applicants' containment and drainage proposals are suitable for the site.

Deposit for Recovery

The Operator has applied to deposit approximately 9915m³ of treated wastes to restore areas of an Fawley Oil Refinery site that have undergone decommissioning (referred to as 'Block 106' and 'Area 1'). The restoration scheme aims to achieve ecological and safety benefits through the improvement of land quality and contouring. The areas of site will be restored to wildflower meadow with no alternative future use envisaged as the refinery site as a whole is to remain operational long term. The areas of restoration are shown outlined in red on figure 1 below.

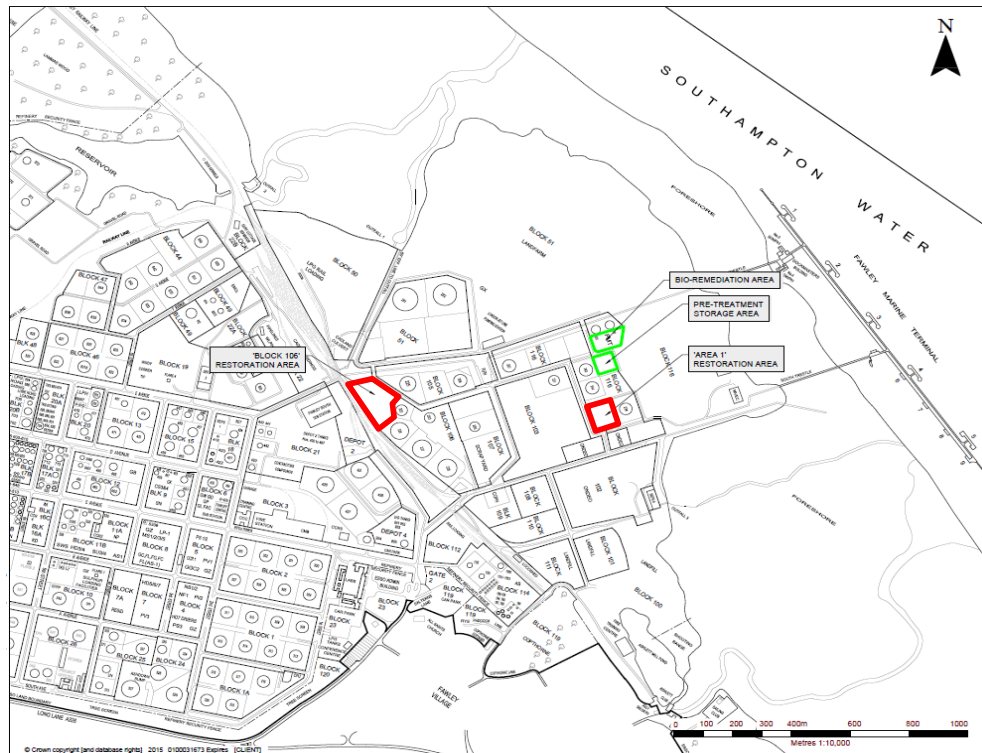


Figure 1 – Areas of restoration (enclosed by red boundary)

The Operator submitted a Waste Recovery Plan (WRP) with their application. The WRP was produced with reference to our EPR13 guidance “Defining Waste Recovery: Permanent Deposit of Waste on Land”. The objective of the WRP was to demonstrate the proposed restoration of the land constituted ‘recovery’ of waste rather than ‘disposal’ of waste.

Whether an activity constitutes disposal or recovery depends on a legal test derived from the Waste Framework Directive and European case law. Waste recovery is about using waste to replace other non-waste materials to achieve a beneficial outcome in an environmentally sound manner. Or in other words, putting materials that would otherwise be disposed of to a beneficial use, saving the use of non-waste materials and conserving natural resources.

We have considered several questions in assessing the Operator’s WRP including:

- Is there a clear benefit to the activity?
- Is the recovered waste material(s) suitable?
- Is only the minimum amount of waste being used?
- Is the recovered waste a substitute for non-waste?, and
- Will the work be completed to an appropriate standard?

Based on the information that has been provided, we have concluded that the proposed activity is a waste ‘recovery’ activity. We have approved the WRP and referenced it within Table S1.2 of the permit as it forms part of the Operating Techniques for the installation.

Annex 1: decision checklist

This document should be read in conjunction with the application, supporting information and permit/notice.

Aspect considered	Justification / Detail	Criteria met
		Yes
Receipt of submission		
Confidential information	A claim for commercial or industrial confidentiality has not been made.	✓
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
Consultation		
Scope of consultation	<p>The consultation requirements were identified and implemented. The decision was taken in accordance with our Public Participation Statement and our Working Together Agreements.</p> <p>For this application we consulted the following bodies:</p> <ul style="list-style-type: none">• Public Health England and the Director of Public Health• Health and Safety Executive• The local authority	✓
Responses to consultation and web publicising	<p>The web publicising and consultation responses (Annex 2) were taken into account in the decision.</p> <p>The decision was taken in accordance with our guidance.</p>	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on what a legal operator is.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
The site		
Extent of the site of the facility	<p>The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including the location of the part of the installation to which this permit applies on that site.</p> <p>A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.</p> <p>The activities covered by this permit form part of a multi operator installation, the plan in the permit reflects this. The land edged in green represents the extent of the installation covered by this permit and the land edged in red represents the extent of the land covered by the other operator/s of the installation.</p>	✓
Site condition report	<p>The operator has provided a description of the condition of the site.</p> <p>We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED–guidance and templates (H5).</p> <p>See key issues section for more information.</p>	✓
Deposit for recovery	<p>We have agreed that the activity is deposit of waste for recovery.</p> <p>See key issues section for more information.</p>	✓
Biodiversity, Heritage, Landscape and Nature Conservation	<p>The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat .</p> <ul style="list-style-type: none"> • There are 2 Special Areas of Conservation (SAC) within 10 kilometres of the installation (The New Forest and Solent Maritime) • There are 2 Special Protection Areas (SPA) within 10 kilometres of the installation (New Forest and Solent & Southampton Water) 	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<ul style="list-style-type: none"> • There are 2 Ramsars within 10 kilometres of the installation (Solent & Southampton Water and New Forest) • There are 2 Sites of Special Scientific Interest (SSSI) within 2 kilometres of the installation (Hythe to Calshot Marshes and Lee-on-the Solent to Itchen Estuary) • There are 10 local wildlife sites within 2 kilometres of the installation <p>A full assessment of the application and its potential to affect the sites has been carried out as part of the permitting process. We consider that the application will not affect the features of the sites.</p> <p>We have not formally consulted on the application. The decision was taken in accordance with our guidance. An Appendix 11 form was completed, concluding no likely significant impact, and submitted to Natural England for information only.</p> <p>Appendix 4 forms were completed, concluding that the permission is not likely to damage the site. The form was saved to our Electronic Document and Records Management System in accordance with our guidance.</p>	
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes:</p> <ul style="list-style-type: none"> - Sector Guidance Note S5.06: recovery and disposal of hazardous and non-hazardous waste. <p>The key measures proposed by the Operator are discussed in the key issues section of this document, they include the following:</p> <ul style="list-style-type: none"> • Pre-acceptance and acceptance procedures will be in place to characterise the waste and limit the potential for adverse impacts • A designated quarantine area will be used to store any non-conforming wastes 	✓

Aspect considered	Justification / Detail	Criteria met Yes
	<ul style="list-style-type: none"> • Vehicle movements will be restricted to the operational hours specified in the planning permission • Tanks will be surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest tank within the bund or 25% of the total contents, whichever is largest • Operational areas of the site will have impermeable surfacing and engineered drainage systems • Spill kits will be available on site • The Applicant will carry out a programme of Planned Preventative Maintenance on all items of plant and equipment • Security measures will be in place to prevent unauthorised access to the site <p>The proposed techniques/ emission levels for priorities for control are in line with the benchmark levels contained in the Technical Guidance Note and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs.</p>	
The permit conditions		
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.</p> <p>The remediation and recovery operations are only permitted to accept waste from the Fawley Oil Refinery. This is specified in Table S1.1 of the permit. The permitted waste codes are listed in Tables S2.2, S2.3 and S2.4 of the permit.</p>	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓
Emission limits	We have decided that emission limits should be not set in the permit.	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Monitoring	We have decided that monitoring should be carried out for the process parameters listed in the permit, using the methods detailed and to the frequencies specified.	✓
Reporting	We have specified reporting in the permit.	✓
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with our guidance on what a competent operator is.	✓
Technical competence	Technical competency is required for activities permitted. The operator is a member of an agreed scheme.	✓
Relevant convictions	The Case Management System has been checked to ensure that all relevant convictions have been declared. No relevant convictions were found.	✓
Financial provision	There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with our guidance on what a competent operator is.	✓

Annex 2: Consultation and web publicising responses

The application was advertised on the Environment Agency's website from 26/01/2016 to 23/02/2016, no comments were received in response to the publication.

We also consulted the Health and Safety Executive, Public Health England and the Director of Public Health, and the Local Authority, however no response has been received.