CWML 1 - Bespoke Environmental Permit for aggregate and soil recycling facility at Crown Waste Management Limited - Hartshill Quarry Nuneaton Road, Nuneaton CV10 0RT.

Non-Technical Summary

1.0 Introduction

Crown Waste Management Limited are a waste management provider within Warwickshire. They already operate a waste management facility at Pool Road Industrial Estate, Pool Road, Nuneaton, Warwickshire, CV10 9AE - EAWML 40211.

The Crown family of companies also includes Crown Aggregates Limited who operate a hard rock quarry at Hartshill Quarry Nuneaton Road, Nuneaton CV10 0RT.

Hartshill Quarry is a hard rock quarry with extraction by blasting and use of excavators. Mineral extraction has taken place at the site for over a century.

From the mid-1990s, the Quarry was not in operation. Following its sale in the mid-2010s, operations were re-established with planning permission from Warwickshire Country Council.

Crown Aggregates Limited currently operate an aggregates wash plant at Hartshill Quarry, for the processing of 'primary' aggregates again with planning permission from Warwickshire Country Council.

The company wish to add a separate wash plant for the washing of 'secondary' (recycled) aggregates and soils. This process will separate the washed material in sands, grits and varying sizes of stones and provide a recycled alternative to virgin extracted materials.

Finally, the site employs the use of a mechanical road sweeper to keep internal roads and importantly external roads clean. As a result, EWC code 20 03 03 will be added to the permit to allow street cleaning residues to be accepted at the site.

The proposed new washing activity will share the same site entrance from the B4111 Nuneaton Road and as a result the same concreted access road, weighbridge and wheelwash.

2.0 Waste stream acceptance

The proposed waste streams accepted at the site those in the table below –

17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**	
17 01	**concrete, bricks, tiles and ceramics**	
17 01 01	Concrete	Solid
17 01 02	Bricks	Solid
17 01 03	Tiles and ceramics	Solid
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Solid
17 02	**Wood, glass and plastic**	
17 02 02	Glass	Solid
17 03	**bituminous mixtures, coal tar and tarred products**	
17 03 02	road base and road planings (other than those containing coal tar) only	Solid
17 05	**soil (including excavated soil from contaminated sites) stones and dredging spoil**	
17 05 04	soil and stones other than those mentioned in 17 05 03	Solid
17 05 08	track ballast other than those mentioned in 17 05 07	Solid
17 09	**Other construction and demolition**	
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 (wood only)	Solid
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION / INDUSTRIAL WASTE**	
19 12	**wastes from the mechanical treatment of wastes**	
19 12 09	minerals (for example sand, stones)	Solid
19 12 12	mixtures of soils, bricks, concrete, tile and block and Commercial industrial fines	Solid
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**	
20 02	**garden and park wastes**	
20 02 02	soil and stones	Solid
20 03	**Other municipal wastes**	
20 03 03	street-cleaning residues	Liquid, sludge, solid

3.0 Industries Serviced

Crown Waste Management Limited serves a number of industries, however the wash plant will aim to recycle waste predominantly from the construction and demolition sectors.

The company will then provide a premium washed 'secondary' aggregates back into the construction sector.

4.0 Hazardous waste

Crown Waste Management Limited will not accept any hazardous waste at the facility a strict waste acceptance process will be in place and adhered to.

5.0 Hartshill Quarry Site

The Hartshill Quarry site is situated close to Hartshill village, which is a large village and civil parish in North Warwickshire, England, 2.5 miles (4 km) north–west of the town of Nuneaton.

Hartshill Quarry is an active Granite quarry. The recycling facility itself sits within a worked part of the Granite quarry.

Access to the site is provided by a private road, from the B4111 Nuneaton Road.

6.0 Recycling Process

The recycling process is simple as the site deals predominantly with construction and demolition wastes to produce soil, soil substitutes and secondary aggregates.

Wastes that are in line with those set out in the proposed wastes and will only be accepted at the site. Wastes will be delivered to the site and tipped in specific tipping areas in stockpiles. When waste arrives at the site it will be stored on a hard standing area awaiting the screening / washing process, with the exception of road sweepings.

Soils again will be stored in stockpiles when delivered to the site, they are then run through a screen to remove stones and larger items such as bricks and tiles, these in term are run through the crusher and the stones stored in stockpiles. The screened soil again is then stored in distinct stockpiles.

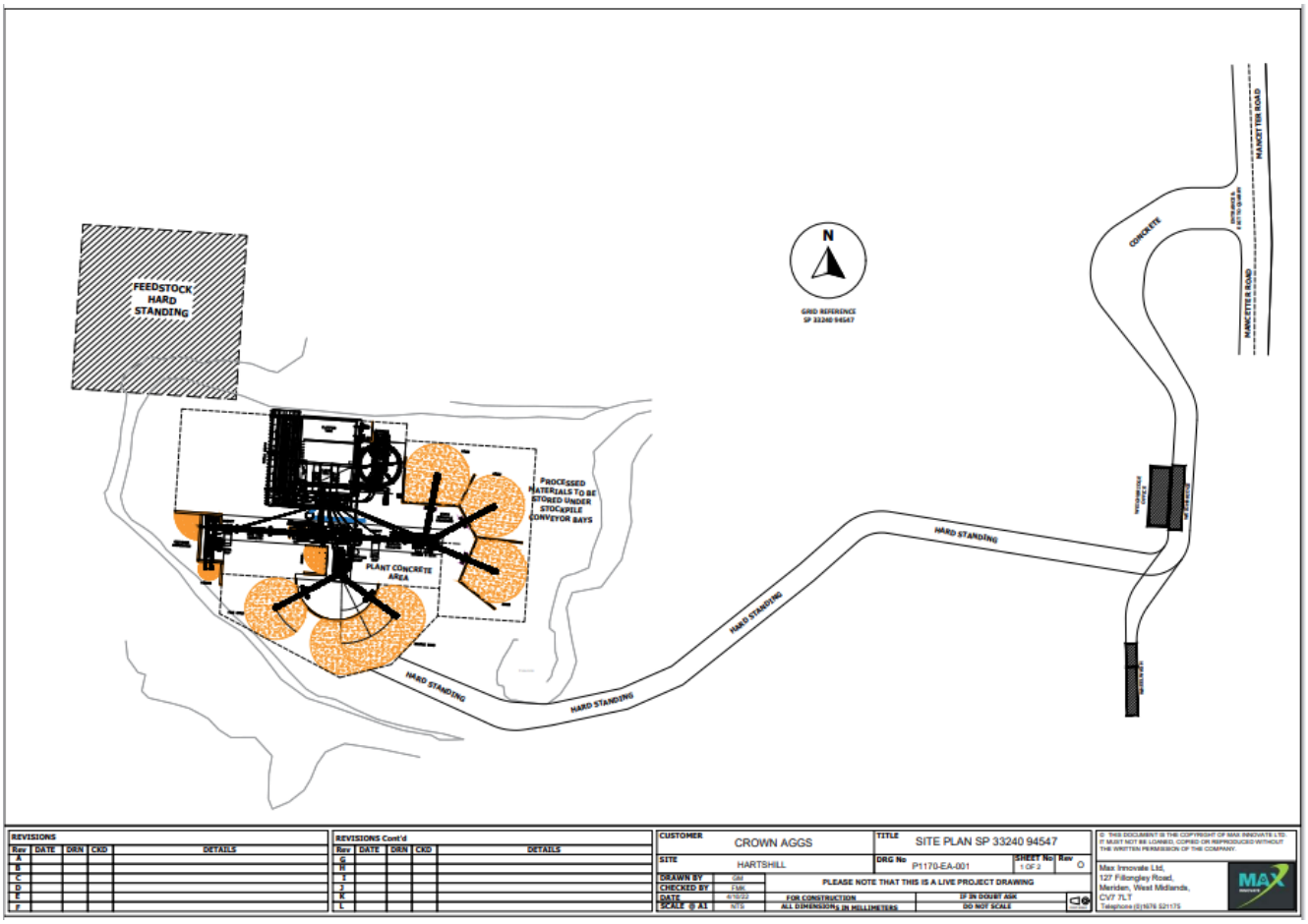
The site will employ a wash plant to wash the crushed and screened aggregates and soils to produce a superior recycled product with all smaller fine particles removed.

The wash plant will be self-contained, being sat on an impermeable concrete pad. The washing process is water intensive with water evaporating from the washed stockpiles. With

this in mind all run-off in contained and collected and wash waters are recycled. The collected water drains to a central sump to be pumped back into the plants water treatment system.

The actual drainage arrangements have not been finalised yet.

Proposed site layout



7.0 Water treatment Process

The dirty water from the wash plant is fed into a large thickener tank to separate the solids from the water so the water can be reused in the washing process. Crown Aggregates and most wash plants we install have a full closed loop water treatment plant meaning dirty wash waters are recycled along with any runoff from the washed aggregates are collected via drains within the sealed drainage system. Runoff is collected within a 4m^3 sump and pump directly into the water treatment system.

A flocculant solution is added to the dirty water as it enters the thickener tank which causes the silt particles to clump together and settle within the tank.

A large rake in the bottom of the thickener tank rotates slowly to plough the settled particles to the centre of the tank so a thickened sludge can be pumped out of this tank into a sludge buffer tank.

From the sludge buffer tank, the sludge is pumped through a filter press so that the flocculated silt particles can be separated from the water. The clean water is then returned to the washing process.

The filter press monitors the flow of clean water coming out of the sludge and when the desired moisture content has been reached the filter press will open and automatically discharge the solid filter cakes.

The water treatment plant has an automatic sampling system which takes samples every few minutes of the dirty water entering the thickener system. This system measures the settlement rate of the silt particles and automatically adjusts the flow rate of the flocculant solution which is added to the dirty water. This ensures that the dirty water is not over or under flocculated and maintains the clarity of the water overflowing the thickener to be reused in the washing process.

The anionic flocculant is stored in powder form in 20kg bags and is added to an automatic mixing and dosing system to make up a small batch of liquid solution which is then dosed into the thickener.

This system makes up a batch of liquid solution and only creates another batch when the previous one has been used.

Part of the water treatment process is the ‘pressing’ of the thickened sludge via pressing in a filter press. This produces a filter cake that will still contain some moisture. The filter cake is dropped from the press onto the sealed concrete pad. Any runoff is again captured in the sump. The cake is stored on concrete pad until it is removed from site for use in recovery projects or disposed of in a landfill. The filter cake is not treated in any further way on site.

If in the event of additional liquid capacity being required a tanker would be employed to remove the liquids to a permitted waste facility. This would also happen when the water treatment system is cleansed for maintenance or contamination is observed or identified during testing.

The aim is to produce recycled aggregates to specific standards whilst ensuring they are traceable and do not mix together in a factory production process. As a result, all screened grades of washed aggregates are stored within their own defined bays delineated with concrete block bay walls. As a result, all products remain segregated once washed.

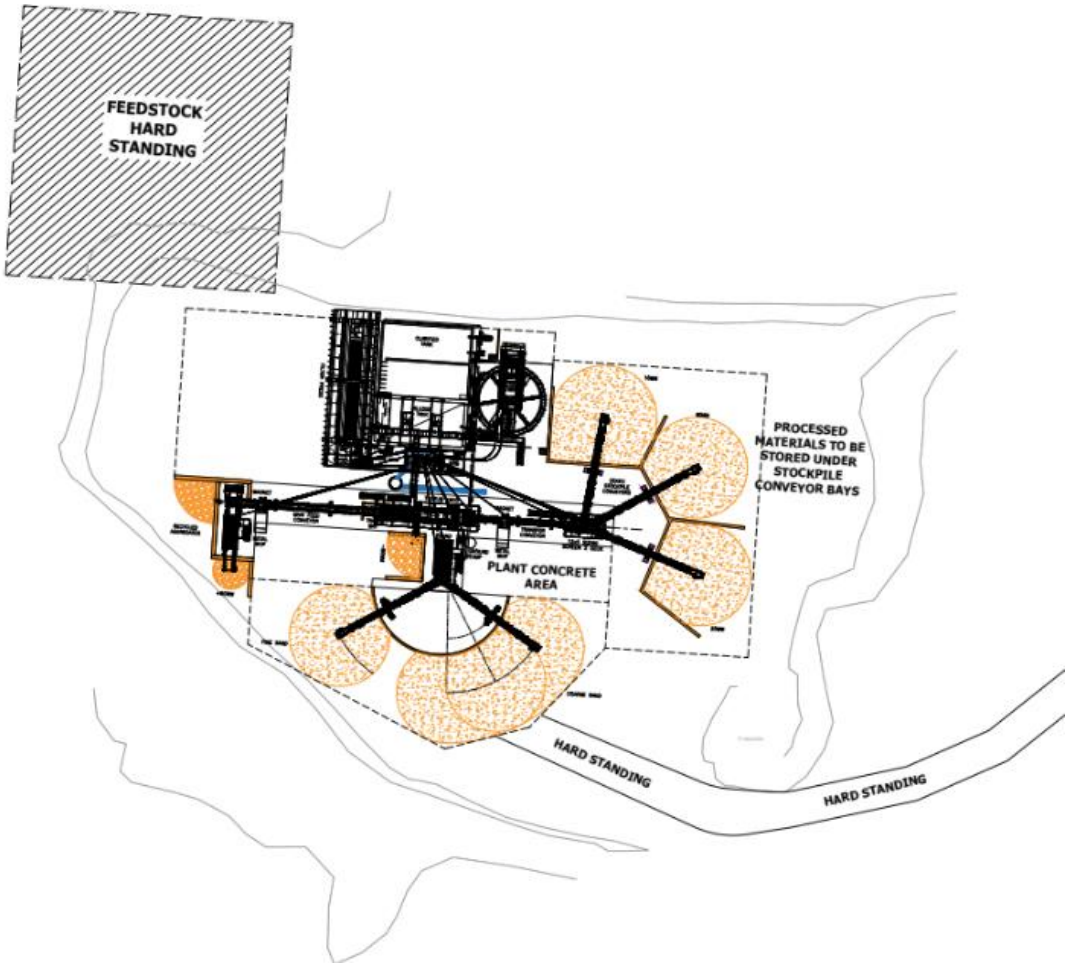
Road sweepings will de-water via gravity and the resulting solids will be washed within the wash plant to recover the sand, grit and stones within them. The sweepers will tip there loads onto the sealed concrete pad and allow the water drain to the sump with the other liquids.

8.0 Wastes received and stored

The only wastes to be received under the permit will be soils, brick, tiles, planings, stones and road sweepings. The volume of waste to be received are -

- The maximum quantity of waste to be received within 1 week in 3,000 tonnes.
- The maximum quantity of waste to be received within 1 year is 150,000 tonnes.
- The maximum quantity of waste to be stored on the site at any time is 10,000 tonnes

Waste to be recovered will be stored on hard standing, but once washed treated wastes that will become products will be stored on a concrete pad.



9.0 Drainage

The wash plant is placed on an impermeable concrete pad forming part of a sealed drainage system. All water drains to a sealed sump and then is recycled in the washing process.

Waste awaiting processing with the exception of road sweeping waste will be store on hard standing.

Road sweepings will be stored on a sealed concrete pad, draining to a sealed sump.

10.0 Emissions

There will be no point source emission from the site.

11.0 Fire

There will be no flammable wastes accepted at the site.