Castle Hill Quarry

784-B043634

Operating Techniques

Environmental Permit Application

Castle Hill Quarry Co. Limited

April 2023

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

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1.0 INTRODUCTION

1.1 REPORT CONTEXT

1.1.1 This document has been prepared by Tetra Tech on behalf of the Operator, Castle Hill Quarry Co. Limited (CHQC).

1.1.2 CHQC currently operate a site known as Castle Hill Quarry at Cannington, Bridgwater, TA5 2QF. The current quarry site is centred at approximate National Grid Reference (NGR) ST 24562 40684 and comprises an active limestone quarry site which is extracted and processed on site to provide aggregates for the construction industry, carboniferous lime for agricultural use and limestone products to the animal feedstuffs industry.

1.1.3 This application relates to two extension areas at the quarry. The first area (known as 'Eastern Extension') is located to the south east of the existing quarry and is centred at approximate NGR ST 24834 40637. The second area (known as 'Old Golf Course Extension'), is located to the south of the Eastern Extension and is centred at approximate NGR ST 24834 40637. The location of both extension areas is shown on Drawing Number CHQC/B043634/PER/01.

1.1.4 CHQC are seeking to gain a bespoke waste recovery permit for the permanent deposit of inert waste to land to facilitate the infilling and restoration at the Eastern Extension and the Old Golf Course Extension Areas following the extraction of mineral.

2.0 OPERATING PROCEDURES

2.1 PERMITTED ACTIVITIES

2.1.1 The proposal entails the importation of inert waste for infilling of the quarry void that will be created within the Eastern Extension and the Old Golf Course Extension Areas following the mineral extraction activities.

2.1.2 The Eastern Extension Area will be restored in accordance with the following plans that were approved by a Planning Inspector on appeal (reference APP/G3300/W/18/3202520):-

- CASH 1610/4/C – Proposed Restoration Landform
- CHILL016(D) – Composite Restoration Scheme
- CASH 1610/6/C – Final Restoration Plan – Whole Quarry

2.1.3 The Old Golf Course Extension Area will be restored in accordance with the restoration plan (Drawing Number 2109_006/012_CHILL025_OGC Rest Plan) that was submitted to Somerset County Council (SCC) under planning permission SCC/3894/2021.

2.1.4 It is considered that the proposed activities on the site will fall under the following R/D codes:-

Table 1: Proposed R/D Codes

R/D Code	Description of Activity
R5	Recycling/reclamation of other inorganic materials
R13	Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection on the site where the waste is produced)

2.2 OPERATING HOURS

2.2.1 It is proposed that no operations, other than water pumping, servicing, maintenance and testing of plant or other similar work shall be carried out at the site except between the following times:-

- Monday to Friday: 07:00 – 19:00; and
- Saturday: 07:00 – 13:00

2.2.2 No working shall take place on Sundays, Bank Holidays and National Holidays.

2.3 WASTE TYPES

2.3.1 Waste is defined as *'Any substance or object the holder discards, intends to discard or is required to discard'* under the Waste Framework Directive (European Directive 2006/12/EC), which repeals the European Directive 75/442/EC as amended.

2.3.2 Permitted wastes accepted at the site will be strictly inert as classified under the Landfill Directive (1999/31/EC) and Council Decision (2003/33/EC) of 19th December 2002 *'establishing criteria and procedures for the acceptance of waste landfills'*.

2.3.3 Inert waste is defined in Article 2 of the Landfill Directive 1999/31/EC as follows:-

'Inert waste' means waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental

pollution or harm to human health. The total leachability and pollutant content and the ecotoxicity of its leachate are insignificant and, in particular, do not endanger the quality of any surface water and/or groundwater".

2.3.4 The site will have strict waste acceptance procedures in place to ensure that only inert wastes are accepted at the site. Details of these procedures are provided in Section 2.5

2.3.5 Table 2 lists those wastes that may be accepted at the site which do not require Waste Acceptance Criteria (WAC) testing under Council Decision (2003/33/EC), provided that they are inert and from a single source only (mixed loads from more than one site cannot be accepted without testing).

Table 2: Proposed Waste Types

EWC Code	Description	Restriction
01	**WASTE RESULTING FROM EXPLORATION, MINING, QUARRYING AND PHYSICAL AND CHEMICAL TREATMENT OF MINERALS**	
01 01	**Wastes from mineral excavation**	
01 01 02	Waste glass-based fibrous materials	Restricted to waste overburden and interburden only
01 04	**Wastes from physical and chemical processing of non-metafillerous minerals**	
01 04 08	Waste gravel and crushed rocks other than those mentioned in 04 04 06	
01 04 09	Waste sand and clay	
10	**WASTES FROM THERMAL PROCESSES**	
10 12	**Wastes from manufacture of ceramic goods, bricks, tiles and construction products**	
10 12 08	Waste ceramics, brick, tiles and construction products (after thermal processing)	
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**	
17 01	**Concrete, bricks, tiles and ceramics**	
17 01 01	Concrete	
17 01 02	Bricks	
17 01 03	Tiles and ceramics	
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Metal from reinforced concrete must have been removed.
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	Excluding topsoil, peat; excluding soil and stones from contaminated sites
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**	
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**	
19 12 09	Minerals only	Wastes from the treatment of waste aggregates that are otherwise naturally

		occurring minerals. Does not include fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard.
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**	
20 02	**Garden and park wastes (including cemetery waste)**	
20 02 02	Soil and stones	Only from garden and parks waste; excluding topsoil, peat.

2.3.6 In addition to the wastes that are listed in Table 2, CHQC propose to accept the waste codes listed in Table 3 below and will be subject to WAC testing as detailed in Section 2.5.

Table 3: Proposed Waste Types that Will Require WAC Testing

EWC Code	Description	Restriction
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**	
02 04	**wastes from the preparation and processing of meat, fish and other foods of animal origin**	
02 04 01	Soil from cleaning and washing beet	
10	**WASTES FROM THERMAL PROCESSES**	
10 13	**Wastes from manufacture of cement, lime and plaster and articles and products made from them**	
10 13 14	Waste concrete	
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**	
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**	
19 12 12	Other wastes from mechanical treatment of wastes other than those mentioned in 19 12 12	Restricted to crushed bricks, tiles, concrete and ceramics only. Metal from reinforced concrete must be removed. Does not include fines from treatment of any non-hazardous waste or gypsum from recovered plasterboard.

2.3.7 The waste types listed in Tables 2 and 3 will be deposited within a site that will benefit from an engineered attenuation layer that will be constructed with suitable waste materials that has a sufficient clay content capable of achieving the required permeability and attenuation standards. Further details of the attenuation layer are provided in the Environmental Setting and Site Design (ESSD) report (Appendix E of the Environmental Permit Application).

2.3.8 The attenuation layer will be restricted to the following waste codes in Table 4.

Table 4: Proposed Waste Types for the Attenuation Layer Only

EWC Code	Description
17	**CONSTRUCTION AND DEMOLITION WASTES (Excluding EXCAVATED SOILS FROM CONTAMINATED SITES)**

17 05	**Soil (excluding excavated soil from contaminated sites) soil and dredging spoil**
17 05 04	Soil and stones other than those mentioned in 17 05 03*
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES INLCUDING SEPARATELY COLLECTED FRACTIONS**
20 02	**Garden and park wastes**
20 02 02	Soil and stones

**This specifically excludes excavated soil from contaminated sites.*

2.4 WASTE QUANTITIES

2.4.1 In order to complete works, a volume of 119,000m^3 of inert materials will be required to restore the Eastern Extension Area and a volume of 550,000m^3 of inert materials will be required to restore the Old Golf Course Extension Area. This provides a total throughput of 669,000m^3.

2.4.2 When using a bulk density conversion factor of 1.5 tonnes/m^3, the total throughput equates to approximately 1,003,500 tonnes.

2.5 WASTE ACCEPTANCE PROCEDURES

Pre-acceptance Procedures

2.5.1 Before the waste is delivered to the site, basic characterisation will be undertaken by the waste producer to ensure that the waste is suitable for acceptance at the facility. This will require the waste producer or holder to provide the following information of the waste to CHQC:-

- Original source of the waste;
- The identity of the waste producer;
- All reasonably identifiable previous uses of the site and any site generating excavation or demolition waste;
- Information on the process producing the waste;
- Appearance of the waste, including colour and texture e.g., physical form;
- The quantity of the waste to be imported;
- The List of wastes (England) Regulations 2005 code;
- Details of any treatment used to remove unsuitable waste; and
- Results of waste tests.

2.5.2 The wastes listed in Table 2 may be accepted at the site without testing provided that there is confirmation that they are single stream loads from known reliable sources and that they are accompanied by the required information. Wastes which are required to be tested will be assessed by the waste producer in line with the WAC limits for inert waste as detailed in Table 5. In addition, the leaching limit values for organic parameters specified in Table 6 will be applied.

2.5.3 Loads that contain wastes from multiple waste streams may be accepted together, provided they are from the same source, comply with the waste types specified in the environmental permit and are accompanied by the required information.

Material Testing for attenuation Layer

2.5.4 Testing of materials to be used for the construction of the artificial attenuation layer, discussed within Section 4.1 of the Environmental Setting and Site Design document and restricted to those waste codes in Table 4, will be undertaken as per Section 2.5.2 above. In addition, WAC testing for these materials will be

undertaken as per Table 5 below, which will be the responsibility of the waste producer, the results of which will be assessed prior to acceptance. CHQC will not accept any waste onto the site for use within the attenuation layer unless the WAC test information is established by the waste producer or holder. Testing will only be accepted from accredited laboratories.

2.5.5 If the information provided demonstrates that the waste is acceptable, arrangements will be made to deliver the waste to the site.

2.5.6 A record will be kept of all WAC testing that is undertaken.

Waste Acceptance Procedures

2.5.7 All vehicles delivering waste to the site will be licensed waste carriers and each delivery must be accompanied by a Waste Transfer Note, consistent with fulfilling the company's responsibilities under the provisions of the Duty of Care.

On Site Verification

2.5.8 Each load of waste will be delivered to the site shall be, where possible, visually inspected before unloading. Each load will be inspected after unloading. These inspections will ensure that the wastes comply with the environmental permit and conform to the description provided in the Waste Transfer Note.

2.5.9 If there is uncertainty regarding the acceptance of wastes at the site, testing may be required. No wastes will be accepted on to the site if there is uncertainty as to its source, conformance with the conditions of the environmental permit and/or its suitability for the intended use.

2.5.10 Routine testing will be undertaken to confirm that the above procedures are adequate for controlling that nature of the incoming waste streams.

2.5.11 Duty of Care testing will be undertaken in accordance with Council Directive (2003/33/EC), the requirements of which are detailed in Table 5 below. This will be undertaken for waste materials that would be accepted for general fill and the attenuation layer.

Table 5: Waste Acceptance Criteria Thresholds for Inert Wastes That Require Testing

Determinand	Symbol	L/S = 10l/kg Mg/kg dry substance
Arsenic	As	0.5
Barium	Ba	20
Cadmium	Cd	0.04
Total Chromium	Cr total	0.5
Copper	Cu	2
Mercury	Hg	0.01
Molybdenum	Mo	0.5
Nickel	Ni	0.4
Lead	Pb	0.5
Antimony	Sb	0.06
Selenium	Se	0.1
Zinc	Zn	4
Chloride	Cl-	800

Fluoride	F-	10
Sulphate(a)	SO42-	3,000
Phenol index	PI	1
Dissolved Organic Carbon(b)	DO	500
Total Dissolved Solids	TDS	12,000

2.5.12 In addition, the leaching limit values for organic parameters specified in Table 6 will be applied. Toluene extractable matter will be tested in place of TPH and PAH testing. Where TEM is greater than 1,500 mg/kg further testing for TPH and PAH will be undertaken.

Table 6: Additional Waste Acceptance Criteria Thresholds (Organic Parameters)

Parameter	Value mg/kg
Total Organic Carbon (TOC)(a)	30,000
BTEX compounds (benzene, toluene, ethyl benzene & xylenes)	6
Polychlorinated biphenyls (PCBs) (7 congeners)	1
Mineral oil (C10 to C40)	500
PAHs (polycyclic aromatic hydrocarbons)	100
(a) In the case of soils, a higher limit value may be permitted by SEPA, provided a Dissolved Organic Carbon value of 500 mg/kg is achieved at L/S 10 l/kg at the pH of the soil or at a pH value of between 7.5 and 8.0.	

2.5.13 All site staff will be made aware of the waste acceptance procedures and will be trained in the procedures with dealing with non-conformances. The Site Manager will be responsible for ensuring that the procedures are implemented appropriate

2.6 UNAUTHORISED AND REJECTED WASTES

2.6.1 In the event that a load is identified as unacceptable upon discharge of the load, the waste shall be reloaded into the container if possible and isolated.

2.6.2 In the event that any load is identified as unacceptable upon discharge of the load when the haulier has exited the site, the waste shall be isolated or quarantined on the site.

2.6.3 If necessary, the Environment Agency (EA) will be contacted to agree the most appropriate course of action.

2.6.4 If a load is rejected, the following information shall be recorded:-

- Time and date of incident;
- Haulier and vehicle registration number;
- Customer;
- Waste type; and
- Reason for rejection.

2.6.5 Records will be kept of all rejected loads and these will be made available to the EA.

3.0 REGULATED FACILITY INFRASTRUCTURE

3.1 SITE ACCESS

3.1.1 Access to the site will be achieved by an access road off Combwich Road that runs in an east to west direction towards the existing quarry site and then south towards the extension areas

3.2 WEIGHBRIDGE AND WHEEL CLEANER

3.2.1 The site will benefit from a weighbridge and wheel cleaning facilities as shown on Drawing Number CHQOGC2109. The weighbridge will be maintained according to the manufacturer's specifications. The wheel washing system will be checked on a monthly basis and any necessary work will be carried out as soon as practicable. In the event of a breakdown, additional road cleaning equipment will be provided.

3.3 SECURITY

3.3.1 All vehicles delivering waste to the site would be required to report to the site office. Upon request, they may have to provide evidence of Registration as Waste Carriers. All other visitors to the site must sign the Visitors Book before proceeding onto the site and sign out prior to leaving.

3.3.2 Notice boards will be located near the main gate with direction signs and notices for traffic and personnel on site. These signs and notices include safety information that is relevant to particular areas. Regular reviews of the site's signage will be carried out by the Site Manager and external consultants to ensure that these remain fit for purpose.

3.3.3 The emergency contact telephone numbers for the site will be located on the above fixed notice board adjacent to the site entrance. The Notice Board will provide details of the named Site Licence Holder, Licence numbers and the name of the Site Manager who is also a holder of an appropriate technical competence for the site.

3.3.4 The site would be secured from the public highway by substantial lockable gates at the site entrance and all reasonable precautions would be taken to prevent the unauthorised entry of the general public and the unauthorised depositing of wastes.

4.0 EMISSIONS CONTROL

4.1 POINT SOURCE EMISSIONS TO AIR

4.1.1 There will be no point source emissions to air as a result of this application.

4.2 POINT SOURCE EMISSIONS TO GROUNDWATER

4.2.1 There will be no point source emissions to groundwater as a result of this application.

4.3 POINT SOURCE EMISSIONS TO SURFACE WATER AND SEWERS

4.3.1 There will be no additional point source emissions to surface water or sewer as a result of this application.

4.4 FUGITIVE EMISSIONS

4.4.1 Fugitive emissions have been identified as a potential environmental risk resulting from the proposal, as detailed in the Environmental Risk Assessment that accompanies this application as Appendix D.

5.0 ACCIDENT MANAGEMENT

5.1 All necessary measures would be taken to prevent the occurrence of accidents. The types of accidents and the potential environmental consequences associated with them have been identified in the Environmental Risk Assessment that accompanies this application (Appendix D of the Environmental Permit Application) and forms part of the site's EMS.

6.0 SITE MANAGEMENT

6.1 TECHNICAL COMPETENCE

6.1.1 The site would be supervised by an individual who possesses the required level of technical competence. A copy of the Certificate of Technical Competence (COTC) is provided as Appendix A.

6.2 MANAGEMENT SYSTEM

6.2.1 CHQC have a management system that meets the requirements of the EA's 'Develop a management system: environmental permits' guidance. A copy of the company's EMS contents is provided as Appendix B. The operator may update their EMS procedures from time to time to reflect working practice which would take precedent over the details contained herein.

6.2.2 All site operatives will be adequately trained in health, safety and environmental issues. Staff will only be permitted to undertake activities that they have been trained for. They will be made aware of the procedures they must follow in the event of an accident or incident and will be able to access any relevant documentation that they may require. All training, experience and qualifications of staff will be noted and these records will be maintained and kept up to date.

7.0 MANAGEMENT OF DOCUMENTATION

7.1 RECORD KEEPING

7.1.1 CHQC have an EMS which includes procedures for the management of documentation.

7.1.2 A record will be kept that provides details on all wastes deposited at the site. This will include details on waste types, quantities and the date of deposition. This will be provided to the EA at three-monthly intervals, within one month of the end of each period. A record of basic waste characterisation and any compliance testing or on-site verification will be maintained in the site office.

7.1.3 A site diary will be kept in the site office, and this will be updated daily. The diary will be used to record any accidents, incidents or complaints. This will provide an ongoing record throughout the period of operation at the site, and this will enable any investigative or corrective action that may be required.

7.1.4 The Environmental Permit and other documents containing information regarding the operation of the site will be kept in a convenient location, allowing access for any person that may be working at or visiting the site.

8.0 INCIDENTS AND NON-CONFORMANCES

8.1 CHQC have an EMS which includes the procedures for investigating and reporting any incidents and non-conformances at the site and for taking any corrective action.

8.2 The following types of incidents will require investigation:-

- Malfunction, breakdown or failure of plant and equipment;
- Deviation from site procedures and operating techniques;
- Near misses; and
- Complaints from external parties.

8.3 All staff will be trained to detect and report any such occurrences . Procedures will be taken to allow operation to resume and preventative measures may be put in place to ensure that the incident does not reoccur.

DRAWINGS

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APPENDICES

APPENDIX A - CERTIFICATE OF TECHNICAL COMPETENCE

APPENDIX B - INDICATIVE MANAGEMENT SYSTEM SUMMARY