Coombefield Quarry

Environmental Permit Application

Environmental Management & Monitoring Plan

Portland Stone Limited

September 2022

Prepared on Behalf of Tetra Tech Environment Planning Transport Limited.

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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, Portland Stone Limited (PSL) to support an environmental permit application for Coombefield Quarry (the site) at Southwell Road, Isle of Portland, Dorset, DT5 2EG.

1.1.2 SPL are seeking to gain a bespoke environmental permit to allow the operation of an inert landfill and a waste management facility that will include the following:-

- Inert waste recycling facility (including crushing and screening); and
- Household, Commercial and Industrial (HCI) Waste Transfer Station (including waste electrical and electronic equipment (WEEE) with treatment via manual sorting and separation (via a picking station), screening (with a vibrating screen separator), the shredding of specific non-hazardous waste streams to produce RDF and the baling of specific waste streams such as cardboard, plastics and RDF.

1.1.3 This document corresponds to Part B4 of the Environmental Permit application forms, specifically detailing the environmental management and monitoring plan for the inert landfill activity at the site.

2.0 GROUNDWATER MANAGEMENT AND MONITORING

2.0.1 Adherence to the Waste Acceptance Criteria will ensure that the waste deposited at the site complies with the inert classification thereby mitigating any risk to groundwater.

2.0.2 A Hydrogeological Risk Assessment (HRA) has been prepared for the application (Appendix F of the Environmental Permit Application). The objective of the HRA is to assess the potential risk of significant impacts on groundwater quality as a result of the proposed changes, to derive control and compliance limits for groundwater and surface water and to provide recommendations for contingency actions on the event of exceedances of those levels.

2.1 GROUNDWATER MONITORING SCHEDULE

2.1.1 The HRA recommends that groundwater should continue to be monitored at the existing monitoring points (P1-21, P2-21, P3-21 and P4-21). The location of all groundwater monitoring points is shown on the Drawing Number PSL/B034779/MON/01.

2.1.2 The parameters to be sampled and monitoring frequency to be included in the Environmental Permit are presented in Table 1 below. These requirements are considered adequate in providing in providing an ongoing characterisation of the groundwater conditions.

Table 1: Proposed Groundwater Monitoring Determinands and Sampling Frequency

Monthly	Quarterly	Annually
Levels	pH, Chloride, Alkalinity, Amm N, Sulphate, Sodium, Potassium, Iron, Manganese, Cadmium, Chromium, Copper, Calcium, Nickel, Lead, Zinc, Electrical conductivity, Magnesium, Selenium, Mercury	*To include quarterly suites plus:* Hazardous Substances

Compliance Limits (Groundwater Quality)

2.1.3 Although the site will accept inert materials, a set of Compliance Limits (CL) will still be required to form part of the Environmental Permit, since this is defined as a value set at the down gradient compliance points P1/21 and P3/21, calculated to be a maximum concentration allowable at that point in order to protect the identified potential principal receptor i.e. groundwater.

- However, compliance limits will not be derived and presented at this stage in the application process since the baseline groundwater quality is impaired by potential anthropogenic inputs and the monitoring data set

is not considered to be developed enough to obtain reach realistic values. Therefore, it is proposed that compliance limits will be submitted at a later date and after consultation with the Agency.

Contingency Plan (Groundwater Quality)

2.1.4 Once compliance limits have been agreed, should site monitoring identify an increase in the concentration of the selected determinands then a series of contingency actions will be required. Suggested contingency actions, which require agreement with the EA, are provided in Table 3 below.

Table 2: Suggested Contingency Actions for Exceeding Groundwater Compliance

Appropriate Contingency Action	Timescale
Advise Site Management	Immediately
Advise Operator's Environmental Manager	Within 1 day
Advise Environment Agency	Withing 1 day
Confirm by repeat sampling and analysis	Within 1 Month
Review existing monitoring information	1 Month
Review site management/operations, implement actions to prevent future failure of a compliance level	3 Months
Review assumptions in conceptual site model	3 Months
Review existing HRA Compliance Levels	6 Months
Consult EA about need for corrective action	6 Months

2.2 QUALITY CONTROL PROCEDURES

Monitoring Personnel

2.2.1 Monitoring will be undertaken by suitably trained person(s) appointed by the site management who are familiar with the monitoring procedures. The monitoring personnel will have access to the Environmental Permit and any relevant accompanying application documents to gain an understanding of the conditions applicable to groundwater monitoring (levels and quality). Personnel will also be familiar with the assessment criteria to identify compliance and assessment levels.

Monitoring Procedures

2.2.2 The groundwater levels will be measured prior to sampling using an electronic dip tape/dip meter.

2.2.3 The groundwater samples will be collected using a portable electric submersible pump or other suitable sampling equipment. In order to obtain a sample of the groundwater, each monitoring borehole will be purged to at least three times the well volume (if possible) to prevent sampling non-representative, stagnant

samples.

2.2.4 On-site analysis will include temperature, pH and electrical conductivity. All groundwater samples will be collected in 1 litre polyethylene or glass containers. Unless the containers already contain a preservative, they will be flushed three times with the sample prior to filling.

2.2.5 Filled sample bottles will be stored upright in cool boxes with ice packs. Sample bottles will be pre-labelled in accordance with laboratory requirements and will be submitted to a UKAS accredited laboratory within 24 hours of collection, together with the sample details, tests and suites required. If samples have to be kept overnight, they will be stored in a fridge/cool box and maintained at approximately 4ºC.

Recording and Reporting

2.2.6 A copy of the sampling results will be stored on site for the duration of the site operations.

2.2.7 The site management will ensure that copies of the sampling results are sent to the EA in an agreed format and at quarterly frequencies.

3.0 SURFACE WATER MANAGEMENT AND MONITORING

3.1 SURFACE WATER FEATURES

3.1.1 According to the Hydrological and Hydrogeological Assessment that was completed by BCL Consultant Hydrogeologists Limited (October 2021), a water features survey was undertaken in June 2021 which identified two areas of surface water within a 2km radius of the site. Details of these features are summarised in Table 4 below.

Table 3: Surface Water Features within 2km of the Site

Name	Type	Easting*	Northing*	Distance	Notes
Red Door Tunnel	Spring	369172	70211	0.2	Water emerges from the base of the cliff beneath Cheyne House.
Culvers Well	Spring	368405	69261	1.3	Dry at time of visit. Spring from Mesolithic site travels 300m through a gully and terminates as a waterfall on the cliff edge.

3.2 SURFACE WATER MONITORING SCHEDULE

3.2.1 Surface water quality has been monitored regularly at one location at the site (SW1). The location of these monitoring points is shown on Drawing Number PSL/B034779/MON/01.

3.2.2 The HRA recommends that surface water should continue to be monitored at this location in accordance with the schedule detailed in Table 5.

Table 4: Proposed Surface Water Monitoring Determinands and Sampling Frequency

Quarterly
pH, Chloride, Ammoniacal Nitrogen, Phosphorus, Suspended Solids, Sulphate, COD, Electrical conductivity, suspended solids, visual oils and grease

3.3 COMPLIANCE LIMITS

3.3.1 As per Section 2.1, compliance limits have not been set for surface water quality monitoring.

3.4 CONTINGENCY PLAN

3.4.1 In the unlikely event of a pollution incident caused by a direct discharge of contamination e.g. leaking pipework, fuel spillage, the following emergency procedure will be implemented:-

- Immediately report incident to the Site Manager; and
- Identify the source and prevent further leak/spillage.

3.4.2 For major fuel/oil spillage implement the following procedures:-

a) Clear the area immediately and extinguish any naked flames. Attempt to make a bund to contain the fuel/oil in order to limit the extent of the spillage;

b) If possible, try and contain the spill using absorbent materials available on site;

c) Phone 999, ask for the Fire and Rescue Service and request assistance;

d) Ring the EA and explain what has happened so they can take appropriate action;

e) At no time put staff, customers or the public at risk;

f) If appropriate, close the site, wait at the gate for emergency services and explain the situation prior to allowing access to site;

g) Do not allow staff or the public to go back into the site until authorised to do so;

h) Keep customers and if appropriate, the public informed about what is going on when appropriate;

i) Once it is safe to enter the site, re-open to customers and update the EA;

j) Complete the site diary and any other paperwork about the incident; and

k) The resultant spillage material should be disposed of in accordance with Environmental

l) Permitting requirements. Specialist advice must be sought in the event of any doubt.

3.4.3 For minor fuel/spillage implement the following procedure: -

i. Clear the area immediately and extinguish any naked flames;

ii. Lay absorbent material over the spill to soak up the spillage and if any drains are nearby place the absorbent material around the drain to stop any liquid going into any surface water gullies; and

iii. Once the liquid has all been absorbed use a shovel to clear up the waste, put it in a plastic sack and then place it in the fullest container for non-recyclable waste for disposal via the normal route.

3.4.4 In the event of the pollution reaching a surface water course, implement remedial measures in accordance with EA guidance. Undertake additional monitoring to ensure water quality does not exceed assessment criteria.

4.0 GAS MANAGEMENT AND MONITORING

4.0.1 A Gas Risk Assessment (GRA) has not been prepared for the site, as the Environment Agency's 'Landfill and other Permanent Deposits of Waste: How to Surrender your Environmental Permit' (EPR 5.02) guidance, notes that gas generally develops from biodegradable wastes. Given that the site proposes to accept inert wastes, it is considered that the risk for gas to develop at the site is low.

4.0.2 Nevertheless, a screening report has been prepared which has been submitted with the Environmental Permit application as Appendix G.

4.1 MANAGEMENT

4.1.1 The Gas Screening Report indicates that due to the inert nature of the proposed waste types, the site will not give rise to significant quantities of gas. The negligible quantities of gas generated are unlikely to be under significant pressure which will minimise the likelihood of gas migration. The risk to nearby sensitive receptors associated with the generation and migration of gas is low.

4.1.2 Due to this low risk, it is considered that no active gas management will be required for the site.

4.2 MONITORING

4.2.1 According to the EA's 'Landfill Operators: Environmental Permits' guidance, monitoring data for background gases is only required for landfills that propose to accept hazardous and non-hazardous waste. In terms of inert landfills, the guidance does not indicate that monitoring for background gases is required however, the guidance notes that monitoring must commence once operations commence.

4.2.2 At present, background gas is not monitored at the site. However, in accordance with the aforementioned guidance, in-waste landfill gas monitoring infrastructure will be installed within each completed phase of filling. These monitoring points will also be monitored in accordance with the monitoring programme detailed in Table 6.

Table 5: Monitoring Programme

Parameter	Monitoring Frequency
Methane, carbon dioxide, oxygen, meteorological data, atmospheric pressure, differential pressure, temperature.	Quarterly

4.3 COMPLIANCE LEVELS

4.3.1 Compliance Levels will be set for each borehole following the completion of 12 months background monitoring. Limits will be set based on guidance set out in the Technical Guidance Note LFTGN03 and Industry Code of Practice for Perimeter Soil Gas Emissions.

5.0 METEOROLOGICAL MONITORING

5.0.1 Due to the acceptance of inert waste at the site and with reference to the HRA, it is considered unnecessary to manage and monitor leachate. This negates the need to monitor meteorological conditions for the purpose of using water balance calculations as a tool for evaluating leachate production.

5.0.2 Atmospheric pressure and ground conditions will be monitored and recorded during all gas monitoring visits.

5.0.3 Weather conditions that may be unfavourable to infilling particularly dry loads will be used to determine the acceptability of such wastes on a particular day, for example strong winds given as severe weather warnings from the Meteorological Office.

5.0.4 Details on weather conditions will be recorded in the Site Diary on a daily basis.

6.0 AMENITY MANAGEMENT AND MONITORING

6.0.1 An Environmental Risk Assessment (ERA) has been prepared in accordance with the Environment Agency's Risk Assessment guidance. It specifically deals with the following:-

- Particulate Matter Management and Monitoring;
- Noise Management and Monitoring;
- Odour Management and Monitoring;
- Mud Management and Monitoring;
- Litter Management and Monitoring; and
- Birds, Vermin and Insect Management and Monitoring.

6.0.2 Due to the inert nature of the waste, the site will not produce odour or litter nor will it attract birds, vermin and insects.

6.0.3 The ERA concluded that the risk of particulate matter and noise annoyance was not significant and therefore it is not proposed to implement monitoring regimes for these potential hazards.

6.0.4 The ERA also considered the risk of mud being transferred to the local highways as not significant. A wheel washing facility will be employed on site which will be used by HGVs before they leave the site. Water sprays will also be employed to dampen the access road. However, in the unlikely event that mud is deposited on the road then a road sweeper will be utilised as necessary.

7.0 HEALTH IMPACT MONITORING

7.0.1 Due to the inert nature of the waste, it is considered unnecessary to undertake health impact monitoring on the surrounding population.

DRAWINGS

PSL/B034779/MON/01 - Borehole Location Plan