The Bacup Clay Company Limited

Tong Quarry

Operational Plan

Document Ref: 213036/OP

August 2021

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1.0 INTRODUCTION

Overview

1.1 This Operational Plan describes how the operation of the site will occur in accordance with Environment Agency standards and outlines how the activities will meet with risk assessment guidance from the Environment Agency website[1] and relevant sector guidance. The Operator is The Bacup Clay Company Limited. The waste operation is a bespoke deposit for recovery scheme on land off Tong Lane. The restoration throughput is up to 200,000 tonnes per annum. The site location plan is presented in drawing 213036/D/001. The sensitive site receptors are presented in drawing 213036/D/002.

1.2 This Operational Plan outlines the waste activities/processes and the necessary controls required. This plan should be read in conjunction with the Environmental Site Setting and Design with appended H1 Environmental Risk Assessment (213036/ESSD), Waste Recovery Plan (213036/WRP) and Importation Protocol (213036/IP).

Working Hours

1.3 The site will operate in standard operating hours as presented in Table 1.

Table 1. Operating Hours

Days	Hours
Monday to Friday	0730-1700
Saturday	0800-1330
Sunday and Public Holidays	No vehicle movements or operation

2.0 MANAGEMENT

Management

2.1 The site will be operated in accordance with the Operator's site-specific Environmental Management System (EMS).

2.2 The site will have specific management plans including, but not limited to, the following:

- Operational Plan (this document);
- Accident Management Plan;
- Waste Recovery Plan;
- Importation Protocol;
- Dust Management Plan;
- Noise Management Plan;
- Surface Water Management Plan (spill response procedure within it);
- Site and Equipment Maintenance Plan; and
- Complaints procedure.

2.3 These plans and other site procedures set out the following:

- Control of operations on the environment;
- Register of Environmental Effects;
- Monitoring of emissions;
- Management of Staff Competence & Training (Roles and Responsibilities);
- Training of all staff on EMP

1 Environment Agency website, *Control and monitor emissions for your environmental permit* page, (accessed August 2021): https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit

- Record Keeping;
- Inspections (Daily Record and includes TCP presence);
- Policies;
- Review process of the EMS; and
- Site Closure arrangements.

Staffing

2.4 All staff and operatives have clearly defined roles and responsibilities with specified skills for each post required.

2.5 At all times there will be sufficient staff to manage and operate activities on the site without causing a risk to the environment. Staff employed at the site on a typical shift may include:

- Materials Engineer and Technically Competent Person (TCP) or delegate;
- Plant operative; and
- Site Manager.

2.6 In accordance with Environment Agency guidance[2] the site will be supervised by the TCP, in addition to at least one member of staff who is fully conversant with the requirements of the Permit and Operational Plan regarding, in particular, the following:

- Waste acceptance and control procedures;
- Operational controls and environmental monitoring;
- Maintenance;
- Record-keeping;
- Accident/incident action plans; and
- Notifications to the Environment Agency.

2.7 The TCP will be on site for at least 20 % of the operational hours at the facility.

2.8 Technical staff will demonstrate continuing competence by passing periodic assessment. Personal training records will be kept, to provide evidence.

2.9 All contractors will be trained about the relevant working controls and legal responsibilities relating to their areas of works.

2.10 The Site Manager will only authorise for works to be undertaken once relevant legal requirements and a site-specific risk assessment has been completed.

[2] Environment Agency website, Environmental permit competence requirements: changes to technically competent manager attendance, accessed August 2021 https://www.gov.uk/government/consultations/environmental-permit-competence-requirements-changes-to-technically-competent-manager-attendance

3.0 WASTE MANAGMENT OPERATIONS

Overview

3.1 This section of the Operational Plan outlines the waste management processes for the waste acceptance, storage and works at Tong Quarry. Schedule 1 details the processes operating at the site. Schedule 2.1 presents the permitted waste types for the restoration of Tong Quarry. The operations and the maximum and annual quantities of waste to be imported to the site are described in Table 3.1 below.

Table 2 Maximum and Annual Quantities of Waste and Non-Waste

Activity	Quantity
Deposit for recovery: restoration including temporary storage and placement of inert material and restoration soils including topsoil (R3, R5 and R13)	200,000 tonnes of waste per annum 1,860,000 tonnes of waste in total.

3.2 Only waste from pre-selected contracts are permitted at the site. There are no-adhoc acceptance of material at the gate. No hazardous waste is to be accepted. The permitted waste operations and permitted waste types are detailed in Schedules 1 and 2.

Waste acceptance, storage and quarantine

3.3 The Importation Protocol (213036/IP) is implemented at the site to ensure that all material conforms to the required standard. The Importation Protocol contains the performance specification, testing and inspection requirements.

3.4 Prior to permitting the delivery of the waste, the waste producer is required to provide the operator with sufficient information for a basic characterisation of the waste. All wastes transported to the site are weighed by estimated density to its container size or by weighbridge. Only permitted waste that conforms to the type and description in the documentation supplied by the producer and/or holder will be accepted. The waste must conform to the pre-importation data on the WAF sheet.

3.5 The site operates a quarantine area. The quarantine area is shown on drawing 213036/D/007. The quarantine area is flexible in size. It can accommodate small isolated non-compliant waste in sealed, lockable containers; or larger stockpiles of material underlain and covered by HDPE geomembrane plastic sheeting to prevent pathways to local receptors.

3.6 When plastic sheeting is to be used, the basal sheeting rolls be overlapped to ensure sufficient seal between rolls. Once the cover plastic has been placed, the quarantined material will be left until final classification has been determined. The area will not be disturbed and will be appropriately sign posted to ensure no risk of disturbance or damage to the plastic liner.

3.7 If material is deemed potentially unsuitable the producer will be notified and no further import of the suspect material will be permitted until the matter is fully resolved.

Waste Recovery

3.8 Operations involve the storage and placement of imported suitable mineral-based wastes using a bulldozer. HGV's will be the method of delivery. The wastes comply with the Importation Protocol.

4.0 ENVIRONMENTAL OPERATING CONTROL

Drainage and pollution control

4.1 During the operations, surface water is managed in accordance with the Surface Water Management Plan (shown in Appendix A)

4.2 The Hydrogeological Risk Assessment (HRA) has provided importation criteria which are implemented for the protection of groundwater, and therefore the percolation into the ground or redirection to nearby ditches should not result in pollution of the ground or surface waters.

4.3 Fuel is stored in a mobile self-bunded fuel bowser conforming to the Control of Pollution (Oil Storage) (England) Regulations 2001. All maintenance of plant on-site will be undertaken on hardstanding near the site compound.

4.4 The site supervisor ensures that only authorised and trained staff carry out activities involving the refuelling of plant or associated maintenance.

4.5 Other oils and lubricants are stored within the sealed container, stored within lockable units of the welfare cabin. All plant and materials when not in operation are stored in the main compound area. The operation of machinery can generate a risk of spillages from hydraulic hose burst. A site spillage plan is within the EMS at the site. The spillage plan outlines how oils and hydrocarbons will be contained and cleaned up.

4.6 The materials accepted on site comply to the thresholds set out in the Importation Protocol for the protection of both Human Health and Controlled Waters and will be monitored via the waste acceptance criteria set out in the Importation Protocol. Inspection and validation testing requirements are in accordance parameters set out in the Importation Protocol.

4.7 Surface water and groundwater monitoring will be undertaken on a quarterly basis and detailed in the Hydrogeological Risk Assessment. The monitoring locations are shown on drawings 213036/D/007.

Procedures for control and remediation of leaks and spillages

4.8 Leaks and spillages from operational equipment and plant on site are controlled by the application of good housekeeping techniques and regular documented maintenance of all plant and equipment. Spill kits and absorbent granules/pads are maintained at the site offices.

4.9 All site staff are trained to deal with leaks and spillages according to the spillage management procedure. The site supervisor and TCP ensure that any required remedial actions are completed to an appropriate standard. In the unlikely event of a significant spillage that could not be controlled on site, the EA is notified as soon as possible. All significant spillages and leaks are recorded in the Site Diary.

Noise

4.10 The noise levels generated by the site operations will not result in nuisance due to the control mechanisms proposed, the nature of surrounding land and its uses, the hours of the operations and the distance of the site from nearby residential properties. A 3 m high soil bund is to be constructed along the western and north western extent of the quarry void following the topsoil stripping works in the northern area of the site. Following construction of the bund, surrounding residential and educational areas have no direct line of site from dwellings / school to the development.

4.11 The Operator will ensure that works at the site are in line with the Noise Management Plan (213036/NMP).

Air emissions

4.12 There will be no point source emissions of air pollutants. Any release will be fugitive. Operations at the site will be undertaken in accordance with the Dust Management Plan (213036/DEMP).

Litter

4.13 The waste types received at the site will have no litter. The site will be inspected daily and any litter identified will be bagged and removed from the site.

Mud

4.14 The following controls are in place to ensure that mud is controlled from leaving the site and impacting on surrounding local roads. The site is accessed via a 400 m long access route from Tong Lane to the west of the site. The internal haul route is surfaced with impermeable surfacing either tarmac and/or concrete.

4.15 All vehicles will be inspected to ensure they were clean to avoid mud being carried onto the internal road. All vehicles will be briefed on using the wheel wash before leaving site. In the event that wheels and under carriage are muddy they will hand washed.

4.16 In the event that excessive mud or dust is deposited onto Tong Lane, sweeping of the impacted area will be organise immediately. Any routine inspections and subsequent actions will be recorded in the Site Diary.

Odour

4.17 The permitted material for filling have a low odour potential. This will be managed through the Importation Protocol. Accordingly, the risk of imported materials being malodorous is considered to be very low.

4.18 Any complaints will be recorded in the site diary and the malodorous waste source investigated.

Fire

4.19 No fires or burning of waste is permitted at the site. The risk associated with the occurrence of fire on the site is anticipated to be low. Any occurrence of fire at the site will be regarded as an emergency and acted upon immediately upon discovery. Daily inspections will include visual observations of plant and vehicles to identify any potential evidence of smouldering. No 'hot loads' will be brought to/accepted at site.

4.20 The site has security arrangements during normal working hours. The site is fully fenced and locked at night. Access to the site is controlled through one entrance. These measures will prevent unauthorised access and the potential for vandalism and the risk of arson.

4.21 The operations are a low burning potential. The following actions in the event of fire will be undertaken:

- Notify the Fire Brigade immediately and the EA as soon as is practicable;
- Isolate the burning area and attempt to extinguish the fire, if this can be undertaken without placing any member of staff or the public at risk; and
- Evacuate the site if the fire is not containable in line with Health & Safety Plan.

4.22 All instances of fires (or suspected fires resulting from arson or vandalism) will be recorded in the Site Diary.

4.23 The permitted wastes have a low combustion potential and no fire or burning of material will occur on site. The site will be secured when not in operation and any fuel sources securely stored and locked.

Pests

4.24 The waste recovery activity is considered to have a low risk of attracting pests. The site inspection regime will identify the presence of any pest and implement necessary controls to remove pests from the site.

5. WASTE

5.1 The operation is designed to import inert material and re-use inert quarry waste to restore Tong Quarry to pre-development ground levels for use as agricultural land. In the very unlikely event that there are any non-compliant materials, they are segregated and sent for onward use or recovery by suitably licenced facilities.

5.2 Recovery and disposal routes appropriate to the nature of the residual waste generated by the recovery will be managed in line with the waste hierarchy, to ensure materials are reused and recovered where practicable.

5.3 The Operator adheres to Section 34 of the Environmental Protection Act 1990 'Waste Management: The Duty of Care – A Code of Practice'. Residual wastes are stored in appropriate covered bays and/or containers, which are correctly labelled. Waste streams, in particular those designated to be disposed of, are constantly assessed by the management team to ensure the efficiency of the recovery operations is maintained. Quarterly waste returns are completed and submitted to the EA in accordance with the Permit requirements.

5.4 All materials transferred from the site are supported by Waste Transfer Notes and suitable Duty of Care paperwork.

6. INFORMATION MANAGEMENT

Records

6.1 All records required by the Permit are held by the Operator. The Operator keeps all records relating to the site in the main office.

6.2 The Site Diary is maintained by the site management. All records relating to the site are kept for a minimum for 2 years. The following significant events is recorded in the Site Diary:

- Maintenance of plant in accordance with manufacturer's recommendations;
- Breakdowns;
- Emergencies;
- Problems with material stockpile quality and action taken;
- Site inspections and consequent actions carried out by the operator. These include those undertaken by specialists;
- Technically competent management attendance at site;
- Any Monitoring undertaken;
- Importation volumes and Duty of Care paperwork;
- Severe weather conditions which adversely affected site activities;
- Complaints about site operations and actions taken; and
- Environmental problems and remedial actions (including spills and leaks).

6.3 All records are held electronically and be available to the relevant authorities on site.

Reporting

6.4 Within one month of the end of each quarter, the Operator submits to the Environment Agency the tonnages of the waste received and recovered, as well as any waste to disposal as necessary.

6.5 Any other requirements of the permit are reported accordingly. This includes:

- Notification when plant has broken down resulting in a potential to pollute;
- When a condition of the permit has been breached; and
- When a limit in the permit has been breached and there is considered significant adverse impact

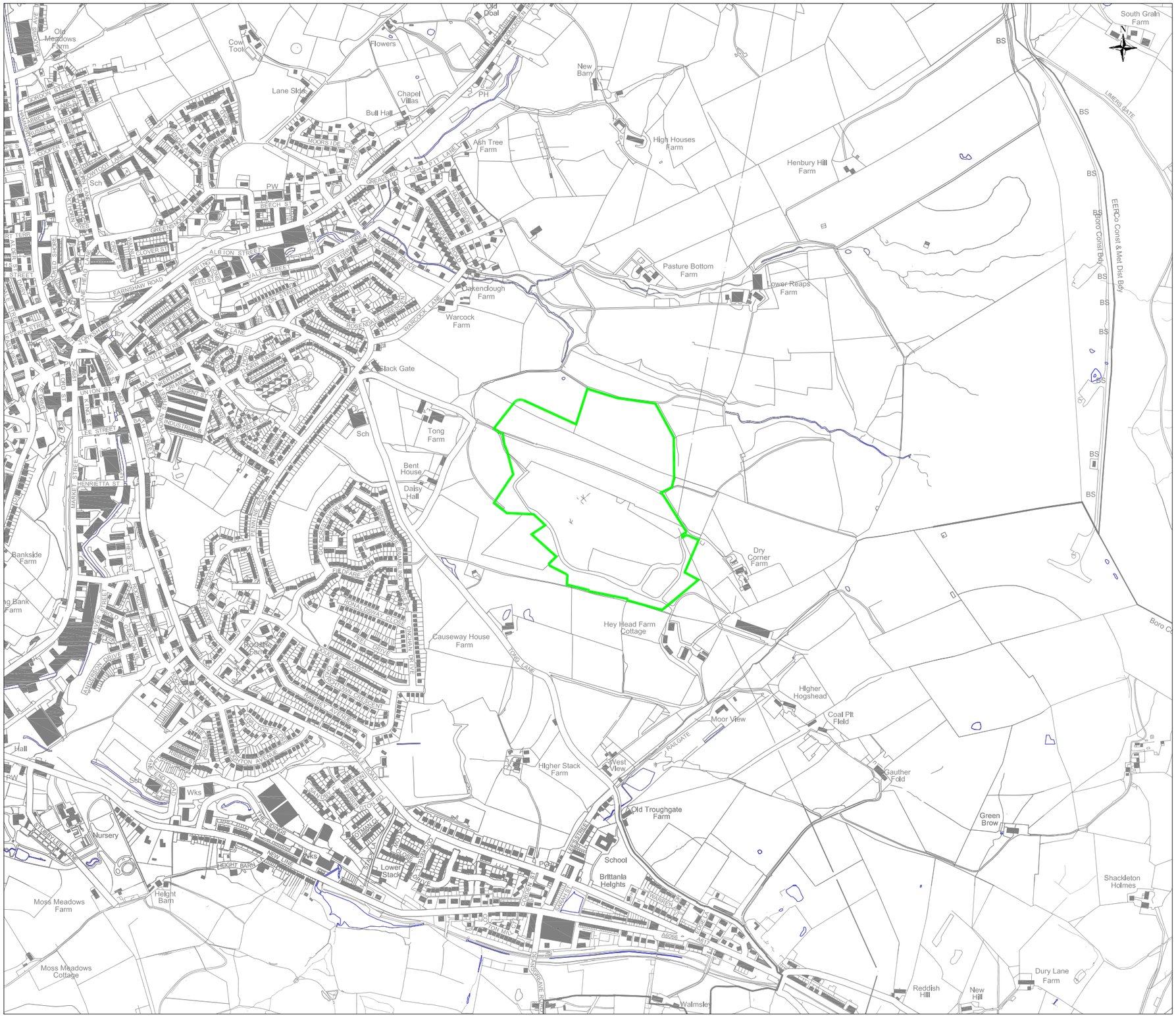
Duty of Care

6.6 In accordance with Duty of Care requirements, the Operator maintains a schedule of all waste transfers from the site. The schedule and Duty of Care paperwork is made available for inspection, as required. Records are maintained at the Operator's main office.

Availability of Permit and Management Plan

6.7 A copy of the Permit, all management plans and the supporting documents, is kept available on site for reference when required by all site staff carrying out work under the requirements of the Permit.

DRAWINGS



Key:

Site Boundary

Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Site Location Plan

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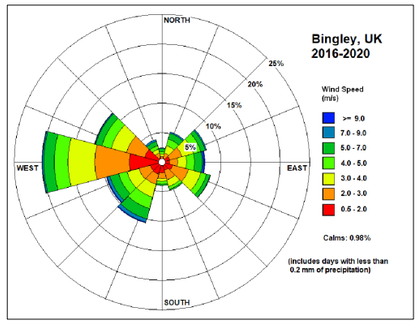
Scale	Date	Drg. No.	Rev.
1:10,000@A3	July '21	213036/D/001	
	Drawn: JM / Chkd.: ML		

Key:

- Site Boundary
- 1 Access Road
- 2 Hey Head Cottage
- 3 Tong Farm
- 4 Slack Gate
- 5 Residential Dwelling along Pennine Road
- 6 Pennine Road
- 7 Dwellings along Tong Lane
- 8 St. Marys RC Primary School
- 9 Recreational Fields
- 10 Hey Head Farm
- 11 Lowland Fens Priority Habitat
- 12 Dry Corner Farm
- 13 Blanket Bog Priority Habitat
- 14 Tong Lane
- 15 Communications Tower
- 16 Agricultural Fields
- 17 Warcock Lane
- 18 Dwellings along Warcock Lane
- 19 Lower Reaps Farm
- 20 Pasture Bottom Farm
- 21 Commercial/Industrial Land Uses
- 22 Vale Street Nursery
- 23 Priority Deciduous Woodland Habitat
- 24 Bacup Britannia Community Primary School
- 25 Early Years & Childcare Centre
- 26 Irwell Medical Practice
- 27 European Protected Species- Bats
- 28 Priority Grassland Habitat
- 29 Rochdale Road (A671)
- 30 New Line Picnic Site
- Surface Water Course
- 500 m and 1 km radius
- Public Right of Way

Bingley Wind Rose:



Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Sensitive Receptors Plan

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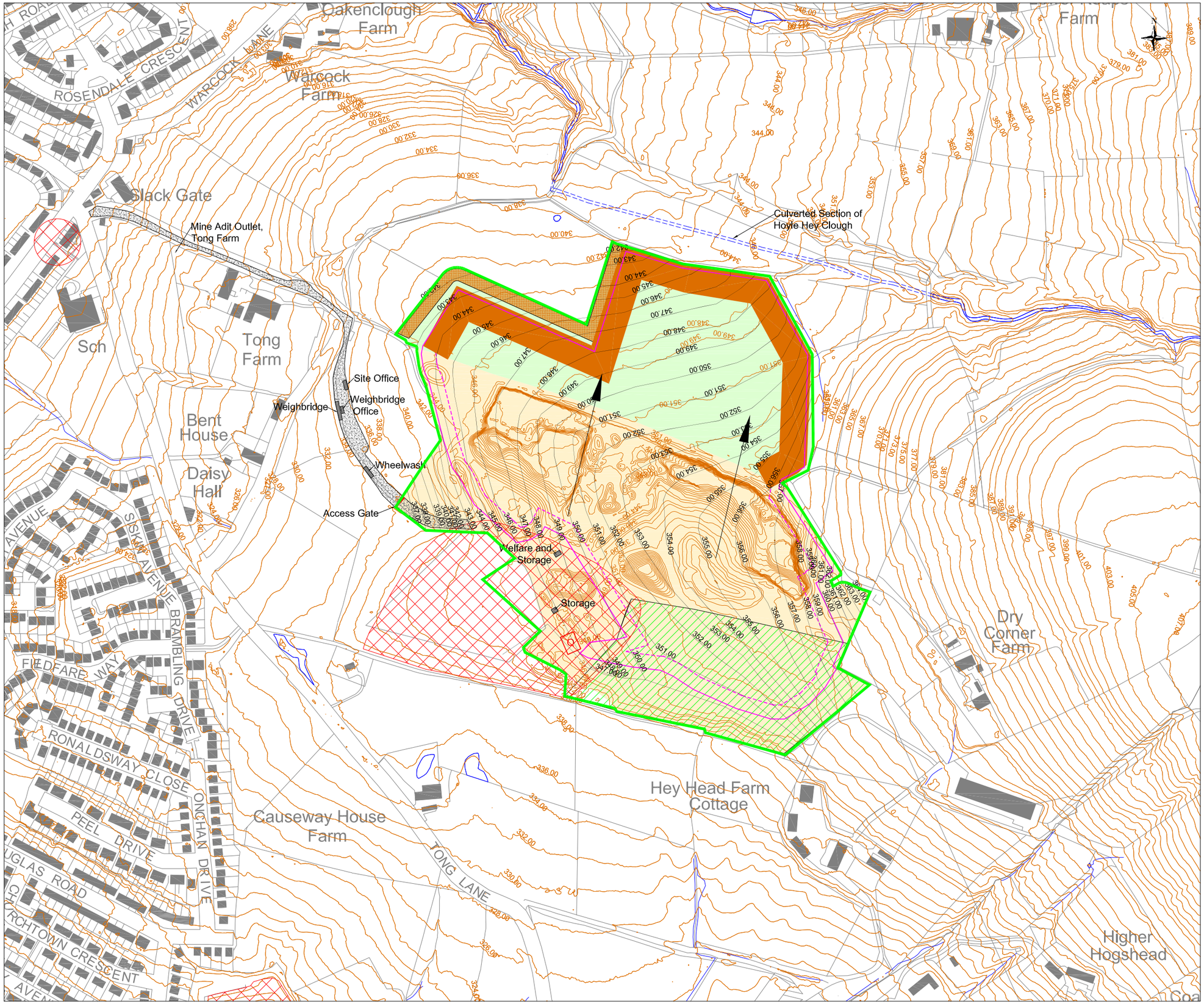

Key:

- Site Boundary
- Existing Contours (346.00)
- Proposed Contours (346.00)
- Quarry Extension Area
- Quarry Area
- Restored Area
- Historic Waste Deposit
- Engineered Sidewall Geological Separation Layer
- Proposed / Existing Top of Quarry Face
- Proposed / Existing Base of Quarry Face
- Sequence of Mineral Extraction and Restoration Works

Note:

1. Existing contours taken from Digital Terrain Model supplied by National LiDAR Program from 2019.
2. Proposed Contours taken from Restoration Scheme by Minerals and Waste Planning (drawing reference 9865A/05, January 2020).

Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Site Layout and Waste

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Scale	Date	Drg. No.	Rev.
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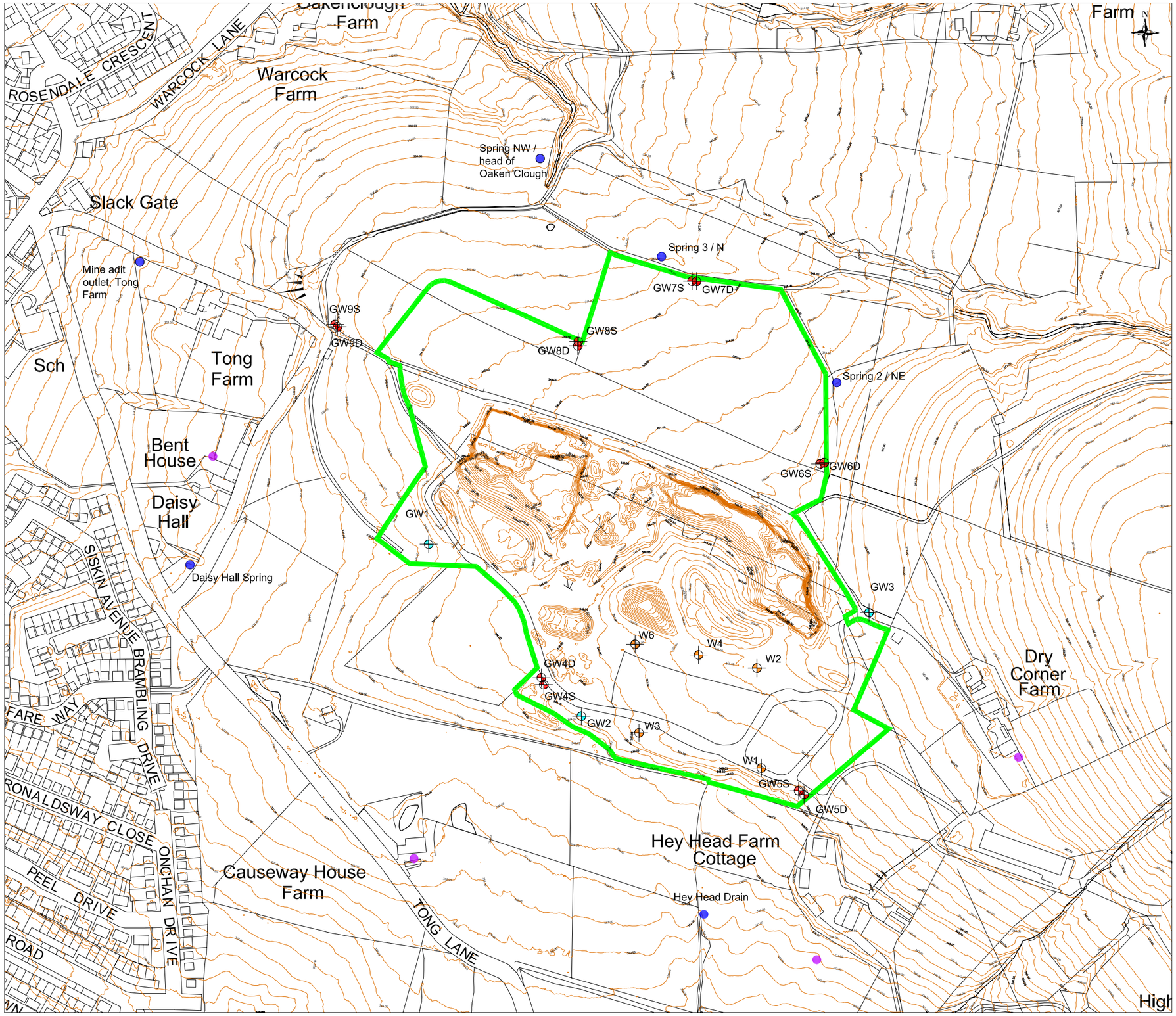
	Drawn: JM / Chkd.: ML		



Key:

- Site Boundary
- Perimeter Borehole (2021)
- Existing Perimeter Borehole
- Existing In-waste Borehole
- Noise Monitoring Points
- Surface Water Monitoring Points
- 346 Existing Ground Level Contour (m AOD)

Notes:

1. Existing ground levels were taken from the National LiDAR Survey Data undertaken in 2019.

Surface Water Monitoring Point Coordinates		
ID	X	Y
Oaken Clough	388025	422994
Spring 3 / N	388146	422897
Spring 2 / NE	388320	422772
Hey Head Drain	388187	422245
Daisy Hall Spring	387678	422591
Mine adit outlet	387628	422892

Rev.	Details	Drawn / Chkd.	Date

Project
213036
Tong Quarry

Title
Monitoring Plan

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Scale	Date	Drg. No.	Rev.
1:4,000@A3	Sep '21	213036/D/006	
	Drawn: JM / Chkd.: ML		

Key:

- Site Boundary
- 346.00 Proposed Contours
- Quarry Extension Area
- Quarry Area
- Restored Area
- Proposed / Existing Top of Quarry Face
- Proposed / Existing Base of Quarry Face
- Side Wall Geological Separation Layer
- Surface Water Drain
- Surface Water Attenuation Pond
- Surface Water Flow Direction
- Surface Water Course
- Q Quarantine Area
- Soil Management Area
- 3 m High Topsoil Bund
- Impermeable Concrete Surfacing
- Site Buildings / Infrastructure
- Access Gate

Note:

1. Proposed Contours taken from Restoration Scheme by Minerals and Waste Planning (drawing reference 9865A/05, January 2020).

Rev.	Details	Drawn / Chkd.	Date

Project

213036
Tong Quarry

Title

Site Infrastructure and Drainage Plan

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AAe
Environmental Consultants

Scale	Date	Drg. No.	Rev.
1:4,000@A3	Aug '21	213036/D/007	
	Drawn: JM / Chkd.: ML		

Schedules

Schedule 1.1 Activities Description of activities for waste operations	Limits of activities
R13: Storage of wastes pending any of the operations numbered R3 and R5 R3: Recycling/reclamation of organic substances which are not used as solvents R5: Recycling or reclamation of other inorganic wastes	Secure storage and use of wastes listed in table S2.1 for the purpose of reclamation as detailed in the approved waste recovery plan. The activities shall not be carried out other than in accordance with the approved waste recovery plan.

Schedule 2.1 Permitted Wastes for the use of waste in construction	
Waste code	**Description**
01	**Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals**
01 01	**Wastes from mineral excavation**
01 01 02	Wastes from mineral non-metalliferous excavation
01 04	**Wastes from physical and chemical processing of non-metalliferous minerals**
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays
10	**Wastes from Thermal Process**
10 12	**Concrete, bricks, tiles and ceramics**
10 12 08	Waste ceramics, bricks, 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
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
17 05 08	Track ballast, soil and stones other than those mentioned in 17 05 07
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 02	**Wastes from physico / chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 06	Sludges from physico / chemical treatment other than those mentioned in 19 02 05 (limited to soil washing only)
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 09	Minerals (for example sand, stones)
19 13	**Wastes from soil and groundwater remediation**
19 13 02	Solid wastes from soil remediation other than those mentioned in 19 13 01
20	**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
20 02	**Garden and park wastes (including cemetery waste)**
20 02 02	Soil and stones

APPENDIX A

Photograph – North Easterly View of Existing Quarry Void 8th May 2021

TONG QUARRY, TONG LANE, BACUP, LANCASHIRE, OL13 9XA

WATER MANAGEMENT PLAN

FOR

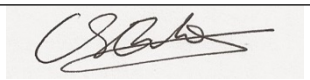
THE BACUP CLAY COMPANY LTD

C. S. Eccles - Brownfield Land Consultancy
Contaminated Land Assessments, Options Appraisals, Remediation Strategy & Verification,
Geotechnical Design, Earthworks & Materials Reuse, Waste Assessments & Classification, Ecology

Report 192.06.01 of 26/05/21

DOCUMENT CONTROL SHEET

Report Title:	**Tong Quarry, Tong Lane, Bacup, Lancashire, OL13 9XA - Water Management Plan**
Client:	**The Bacup Clay Company Limited**
Report Reference:	**192.06.01**
Report Status:	**For Use**
Version:	**2.0**
Report Date:	**28th May 2021**

Written by: Chris Eccles, BEng, MSc, DIC, FGS, CGeol, CSci, CEnv, SiLC, UK RoGEP Adviser CL:AIRE DoWCoP QP 020, NQMS Suitably Qualified Person	
	28th May 2021

CONTENTS

1 INTRODUCTION

1.1 The Bacup Clay Company Ltd (the quarry owners) commissioned this report to provide additional details of how surface water and groundwater will be managed during the quarrying works in order to discharge Planning Condition 7.

1.2 Lancashire County Council has granted Planning Permission to extend the quarry (Application number is LCC/2020/0018) and this includes backfilling the quarry void with imported inert materials. The location is presented in Figure 1 below.

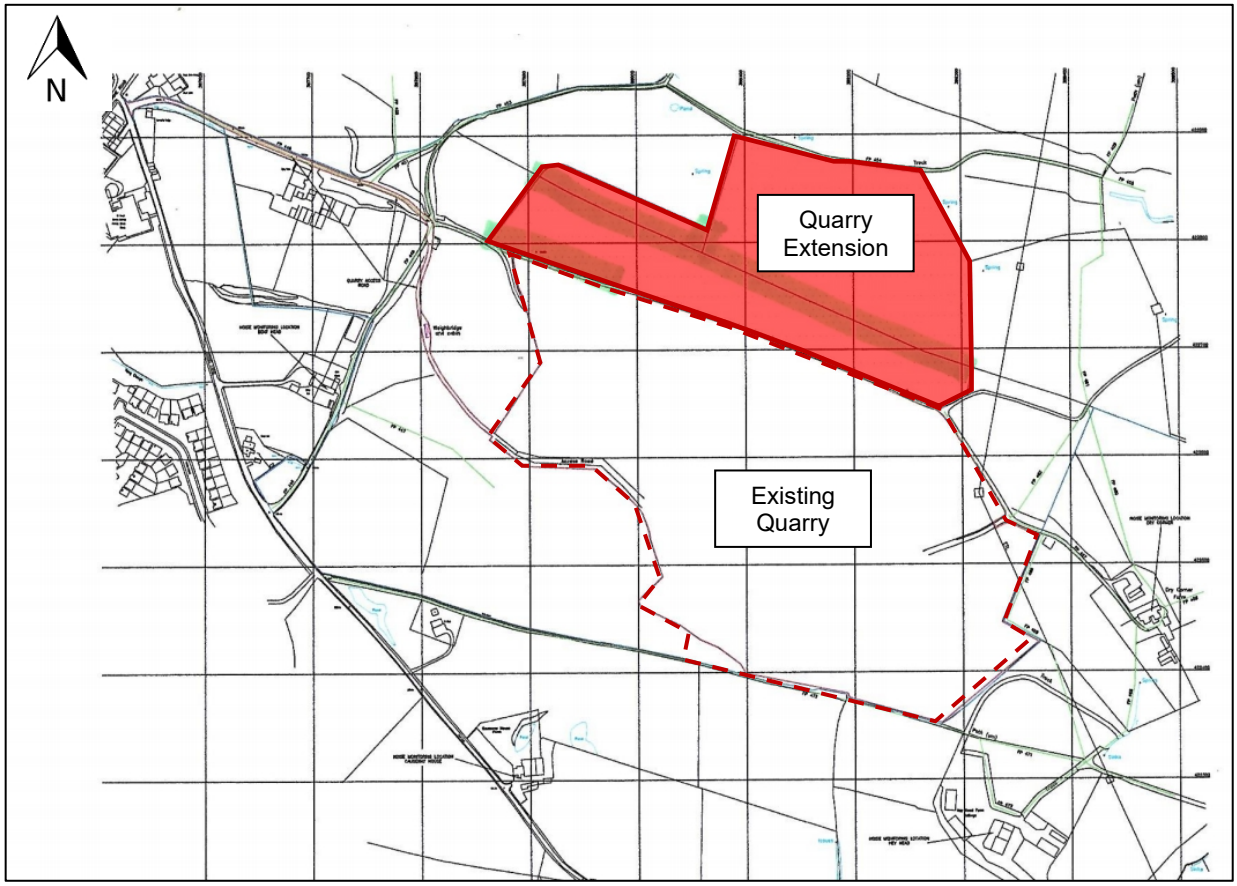


Figure 1: Tong Quarry - Existing Quarry and Extension Area

1.3 Details of the water regime and the Water Management Scheme were provided as part of the planning application for the extension within the following documents:

- Document H Environmental Risk Assessment Appendix 3 Surface Water Management Scheme;
- Environmental Statement 5, Hydrological and Hydrogeological Impact Assessment; and
- Environmental Statement 3. Flood Risk Assessment.

1.4 The Planning Authority has asked for additional details to be provided and agreed prior to works on the extension being commenced as set out in Planning Condition 7. This report sets out the additional requested information.

2 SITE LOCATION & DESCRIPTION

2.1 Tong Quarry is located approximately 0.5km to the east of Bacup in Lancashire at grid reference SD 881 225. The site is situated approximately 600m to the south east of Tong Farm. The quarry is established on former agricultural land in an area that is predominantly rural. Tong Lane runs south east to north west 300m to the south west of the site. The only other access routes in the area are the quarry access track and agricultural access tracks. The location of the site is indicated in Figure 2.

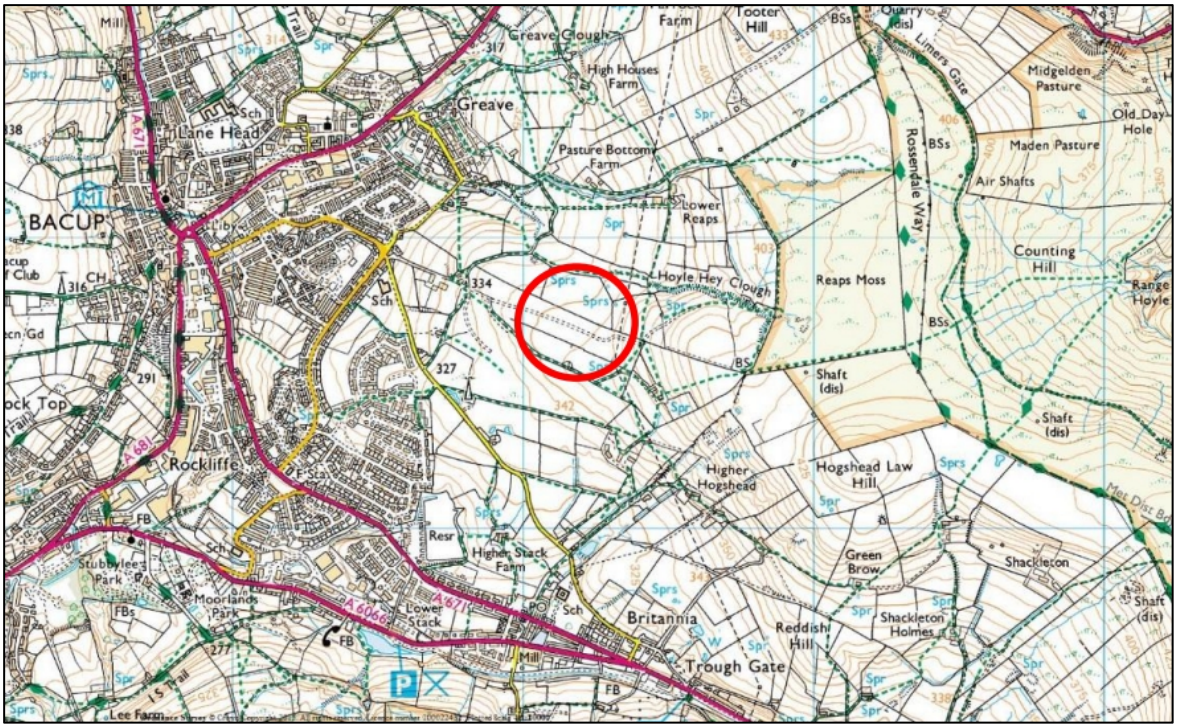


Figure 2: Site Location

2.2 The existing quarry has been worked roughly from south to north. The southern and eastern part of the existing quarry has been backfilled and part restored along the southern boundary. The limited remaining reserve in the existing quarry is in the central part of the north.

2.3 The quarry extension area comprises parts of three grassed fields separated by drystone walls. The ground level falls to the north/north west in this extension area. There is an existing track which separates the existing quarry from the extension.

3 PLANNING CONDITION 7

3.1 Planning Condition 7 is presented below:

7. Prior to commencement of mineral extraction a Water Management Plan shall be submitted to and approved in writing by the County Planning Authority. For each mineral extraction phase of the development, the plan shall include the following:-

i. The means, location and anticipated quantities of water that may need to be used, drained or discharged from the development, and how they would be obtained or disposed of.

ii. Contingency plans for what to do in the event of any pollution incidents on site or how best to treat or control any drainage or discharges from the site or neighbouring ground.

iii. Details of how to dispose of any significant accumulation of water in the void during any period of dormancy, or how to deal with any unexpected influx of water or encounter with polluted abandoned mine waters.

iv. Where there may be an occasional need to discharge an accumulated volume of water from the site, consideration should be given in the Water Management Plan as to the maximum rate of discharge at which this might be done without causing flooding or scour in the receiving waterbody. That should then be used to establish the maximum permitted rate of discharge if the receiving water may be vulnerable to surcharge.

v. In the case of discharging into old mine workings, consideration should also be given to the possibility of displacing polluted mine waters.

The development shall be carried out in accordance with the approved details.

Reason: To ensure that the proposed development does not harm the water environment and to comply with Policy DM2 of the Joint Lancashire Minerals and Waste Local Plan.

3.2 The proposals to discharge items i) to v) are set out in the following five sections of this report.

4 I) THE MEANS, LOCATION AND ANTICIPATED QUANTITIES OF WATER THAT MAY NEED TO BE USED, DRAINED OR DISCHARGED FROM THE DEVELOPMENT, AND HOW THEY WOULD BE OBTAINED OR DISPOSED OF

Water Use

4.1 In terms of use of water, it is proposed that a limited quantity of water will be required for the site's wheel wash. This will be potable water from the mains. A new wheel wash is to be fitted, it will be a recirculating wheel wash. It requires 7 m^3 of water to be set up initially and top ups when required. In winter months it is likely that no water will be required to top up the wheel wash but during summer months it is likely that peak water usage will be about 2 m^3 per operational day due to losses to vehicles and evaporation. Details of the proposed wheel wash will be a newer version than the specification sheet in Appendix 1 (the supplier has recently updated the wheel wash and the new specification sheet is not yet available).

4.2 Water will also be used by the quarry during dry periods to control dust in accordance with the submitted Dust Control Measures. The water for this will be from an on-site pond at the south side of the existing quarry.

4.3 Note that the site has portable units for welfare/toilets. These are serviced weekly by a contractor who provides water including for operation of toilets. They remove all foul water to suitable off-site disposal facilities as part of their service.

Water Drained or Discharged

4.4 There is no proposal for any foul water discharges from the site (see Para 4.3).

4.5 It should be noted that the current quarry has not discharged any water to surface waters from the quarry excavation. Therefore, the issue of the requirement to discharge from excavation in the quarry extension should be considered based on this information. For most of the area of the quarry extension and for most of the year, there will be no requirement for any discharges to surface water. In simple terms, meteoric water which accumulates within the floor of the quarry drains away through the bedrock to the groundwater table at depth below the quarry floor. It is acknowledged that this situation is complicated by the localised presence of mine shafts and adits although there are none recorded within the footprint of the extension.

4.6 There are three main groundwater bodies at the site:

- Deep. The main aquifer below the site (the Woodhead Hill Rock) is at a level lower than the base of the quarry. The water level in this aquifer is at a lower level than the base of the quarry. Therefore groundwater percolates through the rocks into this stratum which underdrains the site.

- Shallow. Above the Woodhead Hill Rock and below the sandstones which are quarried (the Great Arc Sandstone and Ganister Rock), there is a sequence of mainly mudstones with thin sandstones and siltstones. This impedes the vertical drainage of water from the base of the quarry. This creates a transient perched water table which is under-drained resulting in the base of the existing quarry having no water accumulating in the base for most of the year. Water is present in the base at the lower western end of the existing quarry during the winter and this usually drains away during March. This year has been unseasonably wet and there is still some water present in mid-May 2021 but the level is falling and it is expected disappear soon for the summer. After periodic very heavy rain storms during summer months, water typically collects in the base of the quarry and drains away after a few days. It is anticipated that this mode of drainage will continue into Phase E1 (see Figure 3 on following page for phasing). The floor of the quarry in Phase E1B will be above the groundwater table. However, in Phase E1A at the lower western end of the quarry, surface water will collect in the base during

winter months as per the current quarry and water may also collect in the north western corner of the Phase E2. Further discussion of this is set out below.

- Surface perched water. This is water within the peat and glacial clay at shallow depth. For the extension, this water will be collected by an up gradient perimeter drain on the eastern side of the quarry and will discharge into Hoyle Hey Clough to the north of the extension. There is a current spring and stream/drain which is located just outside the quarry's north eastern perimeter which collects the majority of the water from the east of the extension discharging into Hoyle Hey Clough. The on-site perimeter ditch above the crest of the quarry face will run in parallel to the off-site drain but it will commence further to the south than the spring.

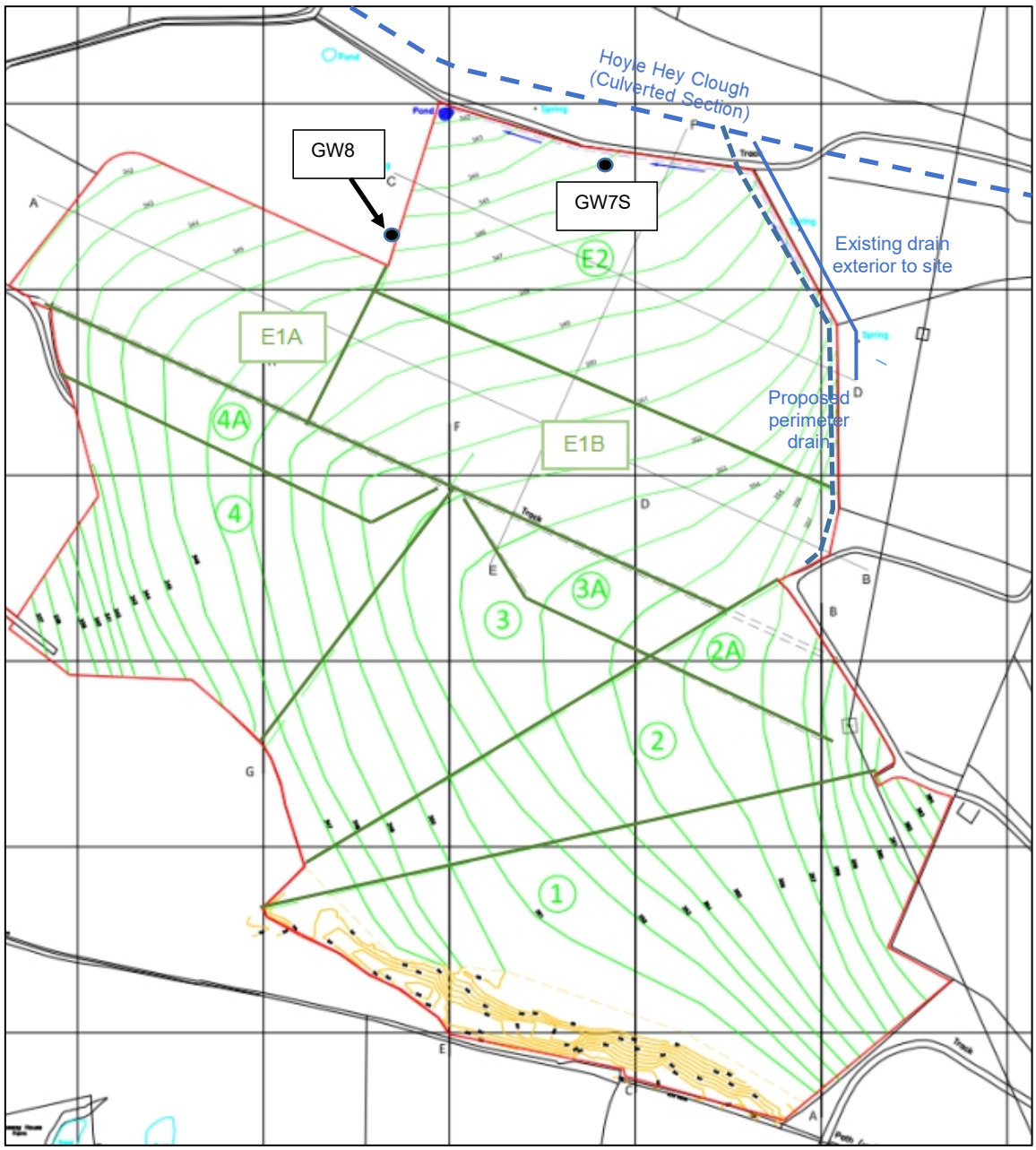


Figure 3: Phasing of Restoration – Note that excavation order will be Phase E1B, E1A then E2 (Based on MWP Planning: Restoration Landform and Phasing. Drawing 9865/05A 17/01/20)

4.7 The majority of quarried material from Phase E1A will be above the shallow perched water table in the mudstones all year round. Only the lower areas of this phase will be affected by the perched groundwater present in the winter. Therefore it is proposed that the excavation into the base of the quarry in Phase E1A and subsequent filling will be timed to be carried out during summer months in order that pumping of water can be avoided. If there is an unexpectedly high groundwater level in this area extending into the late spring, consideration will be given to remove this water by pumping into a temporary lagoon within the base of Phase E1B.

4.8 For Phase E2, the shallow groundwater levels appear to be relatively complex and are likely to be affected by current drainage into mine workings. Well GW7S installed to a depth of 17.68 m which is located on the northern perimeter has a highest depth to groundwater between 17.54 and 17.63 m between 20th February and 8th May 2021 indicating that the floor of the quarry will be a dry excavation whereas a well located to the west of Phase E2 with a base depth of 18.35 m has a depth to groundwater of 1.05 to 7.39 m during the same period. Therefore, a more proactive approach to groundwater will be required in Phase E2.

4.9 The quarrying will be extended down to close to the shallow groundwater level. Then separate areas of Phase E2 will be excavated to the base of the quarry. Dewatering from the excavation will be from sumps which will be pumped through lamella settlement tanks to the discharge location. The principal aim of the settlement tanks will be to remove sediment prior to discharge. The discharge into the tanks will also aerate the water prior to discharge which also improves water quality. The discharge quality/limits will involve a maximum suspended solids target limit and this would normally advise at 60 mg/l. If the tanks do not achieve the agreed limits, then a temporary lagoon for settlement and/or treatment (e.g. deflocculation of clays) will be required before discharge to surface water.

4.10 The pumped water will be discharged to Hoyle Hey Clough (see Para 4.12 below regarding dewatering and discharging consents). Note that the working of the quarry will be in such a way that only a limited area of the base and side walls of the excavation will be below the water table. Backfilling of the excavation will take place in tandem with the excavation is carried out so there is filling with inert waste at one side of the open area and excavation. Thus inflow and dewatering will be minimised. The management of the quarry will also be so that the excavation down to the water level will be in the winter months and excavation below the winter water table will be in the summer and early autumn in order that dewatering volumes are minimised. Note that quarry backfill material is nearly all a clay and is of low permeability so this material will limit inflows into the quarry excavations as it is been placed.

4.11 Based on experience of the site, the water levels, the permeability of the rocks and other factors, it is anticipated that a single 6” pump will be sufficient to carry out the proposed dewatering. This will pump at a maximum rate of 375 m^3 per hour but at about 250 m^3 per hour for normal use when heads and discharge pipe friction losses are taken into account. It is assessed that the winter flow rate in the Hoyle Hey Clough is higher than this. Surcharging of the water course will not occur due to the discharges only being carried out during the drier periods of the year when the base flow in the Clough will be low. If storm events are forecast during dry period the dewatering rate will also be reduced.

4.12 The above proposal for dewatering and for discharge are permitted activities. Permit applications will be produced and submitted to the Environment Agency for approval. The process to apply for these Permits will commence about 18 months prior to the anticipated requirement for the dewatering and discharge to enable time for additional hydrogeological, hydrological and ecological studies to be undertaken to support the permit applications and time for determination of the permits. No dewatering or discharging will take place until appropriate permits are in place. The works will then be carried out in line with the permits requirements with appropriate monitoring and testing as required. Note that no dewatering or discharges are anticipated to be required for Phase E1A or E1B which are the first phased of the extension.

5 II) CONTINGENCY PLANS FOR WHAT TO DO IN THE EVENT OF ANY POLLUTION INCIDENTS ON SITE OR HOW BEST TO TREAT OR CONTROL ANY DRAINAGE OR DISCHARGES FROM THE SITE OR NEIGHBOURING GROUND.

5.1 The site has been operating for decades without any pollution incidents and it is likely that this will continue during the continued operation of the quarry extension. Pollution prevention will be in accordance with the current government guidance: https://www.gov.uk/guidance/pollution-prevention-for-businesses. The principal potential pollutant used on site is diesel. This is stored in accordance with standard UK requirements in fully bunded tanks. The principal risk comes from refuelling operations. Again, routine good practice will be implemented with refuelling carried out away from surface water (and monitoring boreholes), drip trays used and spill kits available.

5.2 Minor leaks and spillages from operational equipment and plant on site are controlled by the application of good housekeeping techniques and regular documented maintenance of all plant and equipment. Spill kits and absorbent granules/pads will be maintained at the site offices.

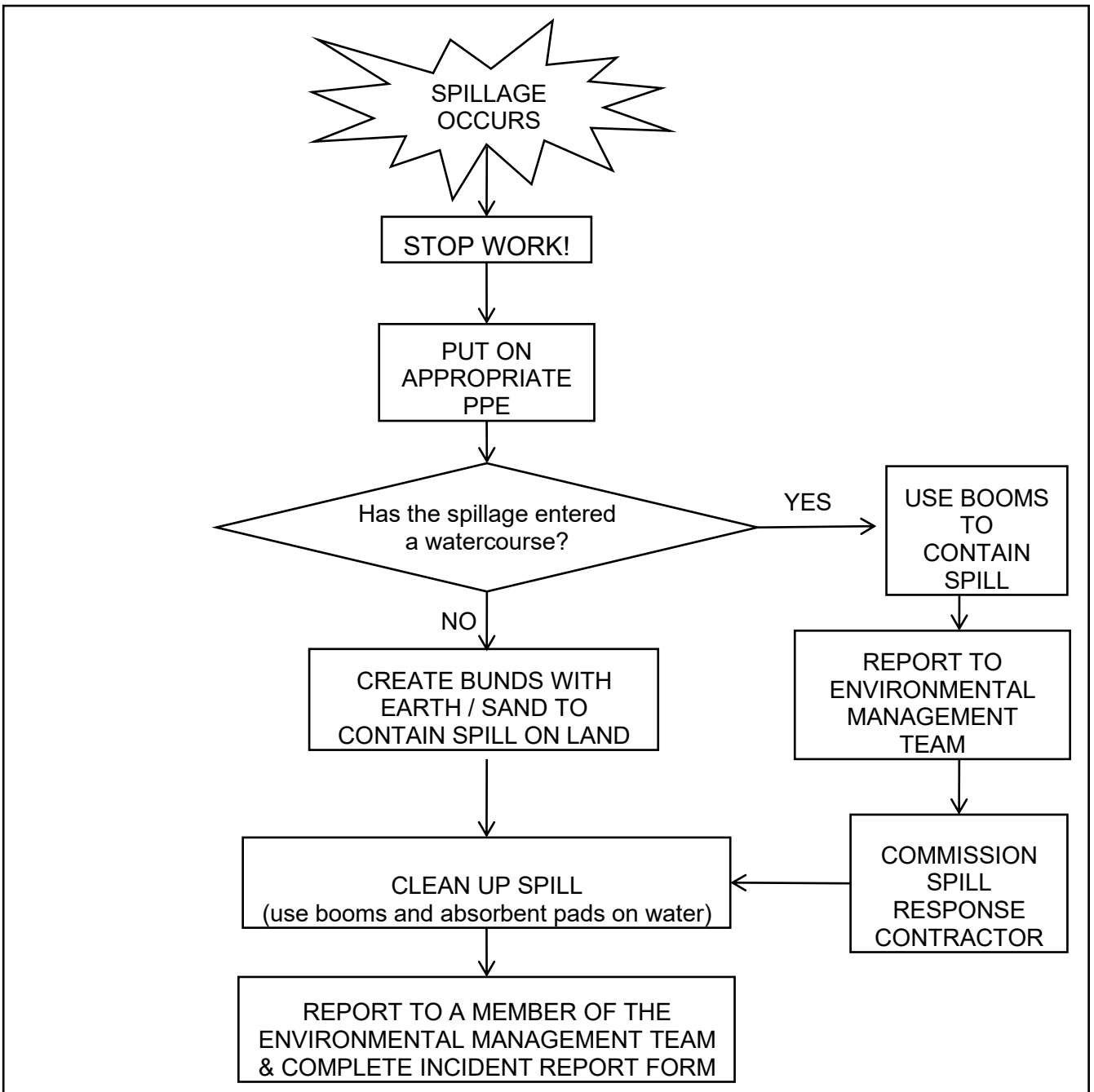
5.3 If the ground or water feature is impacted in a way that spill kits and absorbent granules/pads are insufficient then this is a much more significant event. If such a spillage occurs then the procedure on the following page will be implemented.

5.4 All site staff will be trained to deal with leaks and spillages according to the spillage management procedure. The site supervisor/quarry manager will ensure that any required remedial actions are completed to an appropriate standard. A 24hr Spill Response Contractor will be called to assist where appropriate as per the procedure on the following page. In the unlikely event of a significant spillage occurs that could not be controlled on site then the EA will be notified as soon as possible on their emergency hotline: 0800 807060.. All significant spillages and leaks will be recorded in the Site Diary whether or not the EA are notified.

5.5 In terms of dewatering and discharges to surface waters this has the potential to cause pollution principally from silt and sediment deoxygenating the receiving waters. However, with the use of lamellar settlement tanks (and if required a larger settlement lagoon) to take the initial pumped water prior to discharge, this risk will be eliminated. The operation of the dewatering and discharges by implementing the required permits will add additional management controls reducing the potential risk still further. Should a potential pollution incident occur due to discharging water the Environment Agency will be notified as fast as possible on their emergency hotline: 0800 807060.

5.6 Note that risk from potential chemical contamination from discharges into the receiving waters is assessed to be a relatively low risk will be controlled through testing and monitoring in accordance with the Environmental Permit. If required treatment of the water in the settlement pond can be carried out prior to discharge such as aeration to increase dissolved oxygen, precipitate some metals and reduce, BOD, COD, etc,

Spillage Management Procedure



NOTES

If, at any point, you are unable to complete any step in this procedure inform a member of the Environmental Management Team as a matter of urgency. In this instance an Emergency Response Contractor will be contacted.

It is the responsibility of the Environmental Management Team to notify the applicable Regulator of the incident, if necessary– Call EA 0800 807060.

Clean-up materials containing oils or diesel will be classed as Hazardous Waste, ensure correct disposal.

24hr Spill Response Contractor (Liquid Cargo Management): 01884 841 387
Back up 1: Andrew Pape 07841 070 320
Back up 2: Mark Orr 07801 034 922

6 III) DETAILS OF HOW TO DISPOSE OF ANY SIGNIFICANT ACCUMULATION OF WATER IN THE VOID DURING ANY PERIOD OF DORMANCY, OR HOW TO DEAL WITH ANY UNEXPECTED INFLUX OF WATER OR ENCOUNTER WITH POLLUTED ABANDONED MINE WATERS.

Disposal of Any Significant Accumulation of Water in the Void

6.1 Given that the quarry worked almost continuously through the Covid crisis of 2020/21, it is extremely unlikely that there will be a reason why the site will become dormant such that it closes for more than a month in any year. However, if there is a period of dormancy of the quarry then depending on the state of the quarry there may be limited water in the base of the quarry if the base is above the water table. It will also depend upon the duration and time of year and the phase that the quarry development it is in. However, in the unlikely event that the quarry is dormant for a significant period and it is left with a deep void which becomes water filled, then this water will have to be pumped out prior to recommencing deep excavations. The pumping will require abstraction and discharge consents to be in place. Prior to commencement of pumping there will be a hydrogeological assessment of the specific dewatering requirements to assess the likely flow rates, durations, attenuation requirements etc. Discussions will be held with the Environment Agency and if any permit variations are required or new permits then these will be arranged before works commence. If the Environment Agency agrees to an increased bumping rate it may be necessary to add additional settlement tanks or to construct a larger settlement lagoon prior to commencing any pumping.

Dealing with Any Unexpected Influx of Water or Encounter with Polluted Abandoned Mine Waters

6.2 Due to the hydrogeological regime this is unlikely to occur. However, if it does occur then stockpiled quarry fines will be placed to produce a low permeability barrier over the ingress to seal off the influx. Testing of the quarry fines from processing the aggregate has shown that this material has a 7.4×10^{-10} m/s. Fire Clay also produced at the quarry and testing has shown that when recompacted this has a very similar permeability to the quarry fines and this may also be used to form a low permeability barrier. The polluted influx water would be allowed to infiltrate back into the ground rather than discharging to sewer or surface water because this is an appropriate and low risk response.

6.3 Depending on where the influx occurs in terms of depth and location then some quarry reserve may not be removed if it is not economic to extract. Alternatively, in order to extract the consented ground some investigation followed by grouting may be appropriate to seal off the influx. This grouting would remove the flow path for the water and minimise the amount of ingress so that inflows are reduced to a negligible magnitude. Grouting would involve mobilisation of drilling rigs, packer equipment, grout mixing/batching equipment and pumps.

7 IV) WHERE THERE MAY BE AN OCCASIONAL NEED TO DISCHARGE AN ACCUMULATED VOLUME OF WATER FROM THE SITE, CONSIDERATION SHOULD BE GIVEN IN THE WATER MANAGEMENT PLAN AS TO THE MAXIMUM RATE OF DISCHARGE AT WHICH THIS MIGHT BE DONE WITHOUT CAUSING FLOODING OR SCOUR IN THE RECEIVING WATERBODY. THAT SHOULD THEN BE USED TO ESTABLISH THE MAXIMUM PERMITTED RATE OF DISCHARGE IF THE RECEIVING WATER MAY BE VULNERABLE TO SURCHARGE

7.1 There has been no pumped discharges from the site in the last 11 years so this is not anticipated to be a requirement for Phase E1 but it is likely to be a requirement for Phase E2. As indicated earlier, water will only be discharged from the quarry void in accordance with an Environmental Permit. In order to acquire this permit then the above items will form part of the permit application and approval. Therefore it is proposed than no further details will be provided at this stage because this is part of the permitting process.

8 V) IN THE CASE OF DISCHARGING INTO OLD MINE WORKINGS, CONSIDERATION SHOULD ALSO BE GIVEN TO THE POSSIBILITY OF DISPLACING POLLUTED MINE WATERS

8.1 The western end of the current quarry void formerly drained into former mine workings connected to an old drainage adit which discharges to a surface drain to the west of Tong Farm. It is not intended to continue this for the quarry extension. It should be noted that the discharge from this adit is sampled and tested and that the water quality is similar to the five other surface water. For example in May 2021, sulphate is slightly higher in the adit discharge than the other surface waters but iron is lower in the adit water than the others. This indicates that direct discharge to old mine workings does not appear to be a significant issue in this location.

8.2 During Phase E1A it is likely that some water from the base of the quarry will infiltrate into the ground and migrate into this former adit. There is no plausible reason why water from the quarry extension discharging via this adit will displace polluted mine waters.

8.3 It is possible that other mine adits or shafts will be encountered during the works. This risk is higher in Phase 2A but because the shallow groundwater table is higher in part of his phase it is likely that quarrying will not cause displacement of any polluted mine waters. If encountered it is not proposed that there will be direct discharge into these mine entries.

8.4 As part of the Hydrological Risk Assessment prepared for the Permit Application for restoration of the quarry extension (the Working Plan has been submitted to the Environment Agency and we are waiting response) it is proposed that any mine entries encountered in the extension will be sealed with clay which has a permeability no greater than 1×10^{-9} m/s. Quarry fines from processing aggregate and Fire Clay from the quarry meet this requirement. This means that mine entries and old workings encountered in the floor or quarry face will not form a permanent direct high permeable pathway for migration of groundwater from the quarry to controlled waters.

9 OTHER COMPLIANCE ISSUE & WATER MANAGEMENT

9.1 The Bacup Clay Company Ltd maintains access to applicable environmental legal requirements which are applicable to the environmental risks associated with operation of the quarry, restoration and the Company's general activities. In addition to being in compliance with legislation and relevant permits they also follow other industry best practice standards regarding environment:

CIRIA 2010: Environmental Good Practice Guide (3rd ed.); C692;
CIRIA 2001: 'Control of Water Pollution on Construction Sites'
CIRIA 2001: 'Environmental Management in Construction

Oil and fuel storage and use

9.2 The Bacup Clay Company Ltd will comply with the Water Environment Control of Pollution (Oil Storage) (England) Regulations 2001 which apply in relation to storage of any oil-based materials including petrol, diesel, waste and vegetable and plant oil, but excludes uncut bitumen.

9.3 All hazardous materials will be managed to be transferred back to the working compound for safe and secure storage at the end of each working day. They will comply with appropriate requirements for Storage and Handling of Drums and Intermediate Bulk Containers (IBCs) in relation to chemical storage, handling and use.

9.4 The Operator will maintain its vehicles, plant and equipment in accordance with relevant legislation and manufactures guidance. The Operator will train and authorise its staff to operate the vehicles, plant and equipment to uphold the above. This ensures leaks are minimised.

9.5 The site supervisor/quarry manager will ensure that only authorised and trained staff carry out activities involving the refuelling of plant or associated maintenance. All refuelling plant will be fitted with automatic shut-off systems and operators trained on requirements. At no time will equipment be left unsupervised during refuelling.

9.6 See Section 5 above for other compliance issues and spill response measures.

Surface Water Monitoring

9.7 During quarrying, monitoring of water quality will continue on a monthly basis during the lifetime of the quarry and restoration to enable any pollution incidents to be identified and the effectiveness of pollution mitigation measures to be evaluated.

9.10 In addition around key activities including works around watercourses routine inspections will be undertaken to determine that no pollution is occurring. During any pumping of groundwater there will be at least daily inspections of the discharge from this activity.

Ground Water Monitoring

9.11 Groundwater monitoring will be carried out in accordance with the following report:

AA Environmental Ltd: Tong Quarry, Bacup - Groundwater Monitoring Scheme Report No 213036/GWMS of March 2021.

9.12 This commenced in February 2021 and provides reassurance that pollution is not occurring.

APPENDIX 1

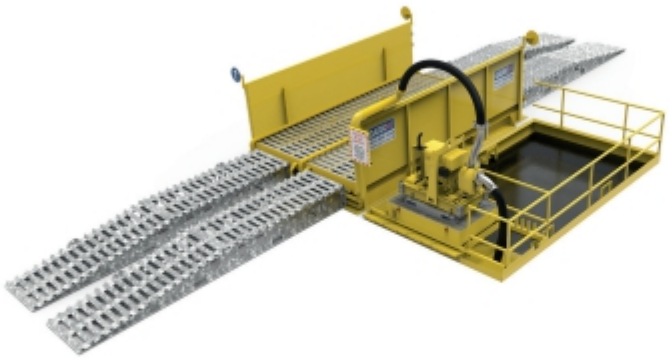
PROPOSED NEW WHEEL WASH

PROPOSED NEW WHEEL WASH

GARIC
ON-DEMAND, ON-SITE, ON-TIME.

ENVIRO WHEEL WASH

A HISTORY OF INNOVATION



STANDARD SPECIFICATIONS:

Product code	300002
Unit name	Enviro Wheel Wash
Capacity of lagoon	3374G/15338L
Dimensions with ramps	62 x 24ft / 20 x 7.3m
Dimensions without ramps	22 x 24ft / 6.7 x 7.3m
Weight	8500Kg
Weight (with pump)	17000Kg
Power type	6" Diesel water pump
Steel fabricated wash area	✔
Internal removable rumble road sections	✔
25mm water inlet (c/w ball cock fitted)	✔
Heavy duty lifting/lashing points	✔
Automated magic eye system	✔
Dig measurements	6.3m length x 1.02m depth x 3.5m width

Our enviro wheel wash is the ideal solution for demolition, quarrying and ground works sites where trucks, dumpers and lorries are regularly passing through heavy duty mud, dirt and debris.

Our fully automated and totally self-sufficient enviro wheel wash is perfect for sites where sticky clay and mud can be a big problem. As vehicles pass through the wheel wash, exceptionally powerful jets spray water onto the wheels, chassis and undersides, cleaning the vehicles without them even needing to stop. The wheel wash is environmentally friendly and utilises the latest water filtration technology combined with a 100 percent water recirculation system.

It doesn't require an operative and is easy to maintain due to an innovative easy-clean water catchment area. Furthermore, it requires no electricity power source because it runs off a simple yet reliable 6" diesel pump.

The enviro wheel wash can be elevated and placed directly onto a surfaced area with ramps or excavated into the ground making it suitable for a large variety of sites.

KEY FEATURES:

- Powered heavy duty wheel wash
- Steel fabricated wash area
- Heavy duty lifting and lashing points
- Cleaning area with vertical spray jets
- Automatic sensors

OPTIONAL EXTRAS AVAILABLE

- Electric pumps
- Water fills
- Water Tank / Bowser
- Header Tank / Bowser

0330 094 8064 | www.garic.co.uk | info@garic.co.uk

*All data is based on Garic product specifications. If unavailable at the time of hire, an alternative specification model may be supplied.

END OF REPORT