Springwell Quarry
Dust Management Plan

Springwell Quarry, Gateshead, Tyne & Wear
NE9 7SQ

Contents

Drawings

SWQ-04-004 Air Quality Receptor Plan

Revision Control

REVISION	PREPARED BY	DATE	REASON FOR REVISION	APPROVED BY	DATE
00	N Dixon (WA)	01/03/2017	Document issued for review.	R Molloy	01/03/2017
01	N Dixon (WA)	10/03/2017	Document finalised.	R Molloy	12/03/2017
02	N Dixon (WA)	19/06/2018	Updated with latest dust assessment findings.	R Molloy	20/06/2018
03	N Dixon (WA)	10/01/2022	Tyneside Minimix reference removed.	R Molloy	12/01/2022
04	E Virgo & M Gill	12/12/2023	Controls for Wash Plant included.	R Molloy	12/12/2023

Background

Thompsons of Prudhoe operate Springwell Quarry, a former sandstone quarry located to the west of the village of Springwell. The quarry covers an area of 18 hectares, of which approximately half (9 hectares) has now been restored, with the remainder used for recycling and landfilling of inert non-hazardous demolition and construction waste.

The permitted operations at the quarry are in accordance with the current planning permission and environmental permits. A summary of conditions relating to dust as required by the permission and permits is provided at Appendix 1, alongside the control measures in place to satisfy those conditions for ease of reference.

An air quality assessment dated March 2017 has been undertaken by Wardell Armstrong LLP, for the extension of time application which sets out the operations and processes in detail and includes an assessment in accordance with the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning, May 2016.

This air quality assessment concludes that the impact of dust generating activities at the quarry is considered to be negligible and not significant on surrounding residential sensitive receptors in accordance with the IAQM guidance, when taking into consideration mitigation measures and dust monitoring results.

A review of the Air Quality Management Plan (AQMP) dated June 2016, submitted in support of the extension of time application, has also been undertaken and a revised DMP produced, which takes into account additional dust mitigation measures employed at the quarry.

This latest revision to the plan takes account the operation of a Soils Washing Plant to be located at the site of the Waste transfer buildings as shown on Drawing SWQ-04-004.

Introduction

The purpose of the DMP is to provide detailed mitigation measures to ensure dust, mud and debris are controlled, removed and mitigated during operations at Springwell Quarry. The plan is intended to cover the entire site and all dust generating operations.

In a wider site context, the plan is to be considered in parallel with Thompsons of Prudhoe's Environmental Management Procedures and the requirements of both the planning and permitting conditions.

The aims of this DMP are as follows:

- To identify responsibilities for controlling dust arising from operations
- To monitor the existing situation with regards to weather conditions, sources of dust levels around the site
- To minimise the generation of dust by the use of good general management practices
- To plan ahead so that predictable dust generations scenarios that could have an impact are reviewed to minimise dust arising and impact on sensitive receptors in the locality
- The documentation of relevant operational control methods
- To monitor and review the performance of the managerial and operational control measures put into place

1. Dust Generating Activities

1.1 Site Description

The site currently comprises of two waste transfer buildings processing construction and demolition waste and a landfill facility. There is also a crushing plant which processes brick and concrete, raw/processed material stockpiles and associated screening plant also located within the quarry void. The existing quarry void is between 25 and 30 metres in depth, down to the base of the sandstone unit.

The site lies within the City of Sunderland and is situated immediately north west of Springwell Village and 2km north west of Washington, between Springwell Village and Eighton Banks. Access to the site is off the B1288 (Springwell to Wrekenton Road).

The site is a working quarry with a Waste Transfer Station and construction and demolition waste landfill facility, there is also a waste recycling plant with processed brick and concrete hardcore stockpiles and associated screening plant located within the quarry void.

1.2 Potential Dust Sources

The following dust generating operations have been identified. These are also indicated on Drawing Number MG/SWQ04/004:

- Aggregate/Sand Stockpiles- Northern part of the site adjacent to the wash plant
- Washing Plant buildings- Storage of plant and housing for significant part of the wash plant
- Incoming materials storage area- East part of the site where materials will be situated prior to being processed through the wash plant
- Secondary storage, soil screening area – central part of the site
- Working area/landfilling – southern part of the site. Construction and demolition material is imported, processed, crushed and screened at this location. Both raw and processed materials are stored in this area. Residual wastes not suitable for recycling are landfilled into Cell A area known as Phase 4 (i.e. within the southern part of the working area)
- Mobile plant and site haulage

2. Dust Sensitive Properties

The closest dust sensitive properties to the site have been identified as:

- Redhill House, Springwell Village
- Railway Close, Springwell Village
- Red Bungalows, Windsor road, Springwell Village
- Thomas Street, Eighton Banks

3. Management

3.1 Site Management

The Operations Manager will exercise, either personally or by delegation to suitably trained and responsible staff, day-to-day control of the site. They will be responsible for the satisfactory working of the whole site and for ensuring full compliance with the DMP and monitoring plan.

3.2 Quarry Staff

Staff at all levels will receive the necessary training and instruction in their duties relating to all operations and the potential sources of dust emissions. Particular emphasis will be given to plant and equipment malfunctions and abnormal conditions.

Any member of staff who fails to comply with the provisions of the DMP will be retrained as necessary and may also be subject to disciplinary action.

3.3 Contractors and Visitors

The Operations Manager will ensure that contractors and visitors are aware of the need to comply with the provisions of this plan so far as they are relevant to their activities on site.

4 Control Measures

4.1 IPPC and BAT

IPPC requires that installations are to be operated in such a way that all appropriate preventative measures are taken against pollution, in particular through the Best Available Techniques (BAT). BAT includes both the technology used and the way in which the installation is designed, built and operated. In deciding what level of control constitutes BAT for a given installation, the following factors need to be considered. These include:

- Costs and benefits
- The technical characteristics of the installation
- Geographical location
- Local environmental conditions

4.2 Best Available Techniques (BAT) for Dust

Thompsons of Prudhoe will employ good practice measures for the control of dust, including adequate maintenance of any parts of plant or equipment whose deterioration may give rise to increase in dust.

Thompsons of Prudhoe will employ such dust control techniques necessary to ensure that the dust from site does not give rise to reasonable cause for annoyance, in the view of the regulator.

4.3 Operational Controls

Waste Transfer Station Processing Buildings

- Separation and sorting of mixed waste is undertaken within enclosed buildings, all roller shutter/sliding doors are to be closed when sorting
- Plasterboards, timber and metal are stored within the building to await onward transport for disposal or further recycling

Washing Plant

- Washing of materials to be undertaken within the confines of the wash plant layout area all situated on hardstanding
- Protection to be provided for housing to the south by the sections of the Waste Transfer Shed that have been left in situ to partially enclose washing operations
- Stockpiles will not exceed prescribed limits and will be maintained under wet conditions to minimise dust release

Materials Handling

- Vehicles that arrive onsite that are known to carry inert soil & stones will be directed to the soil screening area
- Concrete waste will directed to the concrete processing area to await further processing
- Brick waste will be tipped directly onto the Brick raw materials stockpile. The Brick raw materials stockpile where possible will be benched to reduce drop heights
- Both Concrete/Brick raw material stockpiles will be dampened down using the onsite water bowser when necessary
- A wind break, in the form of a bund made from waste stone and concrete, has been constructed near to the pre-crushing activities where the mechanical muncher or “bomb” is operated
- In the event that tipping is suspended due to high winds, all vehicles will be directed to the quarantine area in the base of the quarry or the waste transfer station depending on the strength of the wind. Details will be recorded in the site Diary
- Materials handling across the site is kept to a minimum to avoid unnecessary emissions of dust
- All materials handling is subject to visual inspections in accordance with Section
- 5.2 Of this DMP. Operations with the potential to generate dust emissions are assessed to determine whether mitigation such as dampening down with water from the onsite bowser is required

Materials Processing

- Mobile crushers are located within the quarry void and therefore sheltered from prevailing winds
- The mobile crushers, aggregate screening and soil screening operations are carried out in accordance with the conditions of the environmental permit
- A high pressure fogging system is incorporated into the belt feed and product conveyor of the crusher
- A staged procedure is implemented at the site for crushing and tipping activities depending on wind speed. Further details are provided at Section 5 of this DMP
- All dust suppression equipment fitted is maintained in working order and used at all times

Stockpiles

- Visual inspections of stockpiles are undertaken at regular intervals and recorded in site environmental log books. Water suppression is available with use of the onsite Tractor/Bowser to prevent fugitive emissions, any water applied to stockpiles is recorder in the Tractor/Bowser Daily log sheet
- With regards to material stored within the Waste Transfer Station buildings, no material is stored higher than the sides of the bays, i.e. 3m

Site Haul Roads and Public Highway

- The site access road and aggregate storage area is hard surfaced
- Hard surfaced roads and working areas are kept clean and free of mud and debris with the use of either the site tractor/brush or the road sweeper, which operates daily at the site. Increased use of the sweeper is considered during dry and windy conditions. All sweeper movements are recorded both in the site diary and the tractor/bowser daily log sheet
- Internal haul roads are unmade however visual observations, in accordance with Section 5.2 of this DMP, are undertaken and an onsite water bowser deployed should these roads require to be dampened
- A speed limit of 10mph is enforced onsite to minimise the potential for generation of dust. Drivers will be challenged if caught speeding and disciplinary measures enforced
- Wheel cleaning facilities are provided at the site exit and are maintained with regular pumping of dirty water from the collection sump and the cleaning out of heavy solids from the collection sump fortnightly during the winter months. All maintenance work carried out on the wash are recorded both in the site diary and the tractor/bowser daily log sheet
- The wheel wash is designed at a length so as to wash the rolling circumference of a moving vehicle tyre, detailed signage is in place to advise the driver how to approach and drive through the wash. Drivers again will be challenged on the use of the wheel wash
- Visual observations of the public road and adjacent path outside of the site access are undertaken and recorded throughout the day. Further details of visual monitoring are provided at Section 5.2 of this DMP

Additional Screening

An additional screening bund is to be constructed along the east boundary of the site. This bund would providing additional screening to site operations both for aggregate crushing in the base of quarry, for the Washing Plant and vehicles entering and leaving this part of the site.

4.4 Management Controls

Maintenance

Effective control of airborne dust emissions requires the maintenance and proper operation of all plant and equipment, including fixed and mobile suppression equipment.

A programme of planned maintenance is carried out on all plant and equipment in accordance with manufacturer's recommendations to ensure that it operates at optimum efficiency. Stocks of essential spares and consumable items are held at the site or kept readily available for use at short notice.

Any malfunction or breakdown leading to abnormal emissions is dealt with promptly and operations will be modified or suspended until normal working can be restored. All such malfunctions and the actions taken will be recorded in the site diary.

Training

Training of all staff is undertaken in the form of toolbox talks which include:

- Awareness of their responsibilities with regards to the environmental permits
- Procedures for the minimising of emissions on startup and during operations
- Actions to take to minimise emissions during abnormal conditions, including notification to the Operations Manager who can then follow the Emergency Procedures provided at Section 6 of this DMP and notify the relevant authorities, if necessary

The Operations Manager maintains a record of the onsite training, all off site training records are held at our Prudhoe Head office and these records are available to the relevant authorities within one working week of a request.

5 Monitoring

5.1 Onsite Weathering Station

An onsite weather station is located at the office to Springwell Quarry.

As weather conditions can significantly affect dust propagation a staged operating procedure system will be adopted to identify weather conditions when there is an increased or high risk of wind-blown dust. The trigger levels are based on average wind speeds, the levels and average wind speed (mph) indicated are detailed below. A more detailed copy of the Staged site crushing/ screening and tipping closure procedure can be seen in Appendix 2.

Level 0	Average indicated wind speed 0 mph – 10 mph
Level 1	Average indicated wind speed 11 mph – 15 mph
Level 2	Average indicated wind speed 16 mph – 20 mph
Level 3	Average indicated wind speed 21 mph – 25 mph
Level 4	Average indicated wind speed above 26 mph

These trigger levels are communicated to the site operatives throughout the day using site radio/text or verbal instruction. Changes to trigger levels are recorded both on the operator environmental log books and the site Diary.

5.2 Visual Monitoring

Activities with the potential to cause dust emissions, as detailed at Section 1.2, will be monitored at the start-up of operations and again depending at what the staged operating level is on the day. This will include a visual assessment of any potential impacts at downwind receptors and of any visible emissions beyond the site boundary.

All observations and findings, including time, location, wind and weather conditions, will be recorded in the site diary and the operators environmental log book. Should visible dust be generated, the Operations Manager will act promptly to identify the source(s) of the dust and take the necessary corrective action.

Each event, its cause and the action taken will be recorded in the site diary and the operator environmental log book. If necessary, to avoid complaints associated with nuisance dust, the Operations Manager will instruct the reduction or suspension of any operation or process causing visible dust emissions across the site boundary towards a sensitive receptor until the emissions can be controlled.

Site personnel will be instructed to inform the Operations Manager whenever visible dust emissions are observed, or appear likely to occur, as a result of any operation or process.

5.3 Deposited Dust

Deposited dust is monitored at five locations at and around Springwell Quarry using 'Frisbee-type' dust deposition monitors. The samples are collected on a monthly basis by QEM Systems limited and analysed.

The analyses are reported as follows:

- Brick dust (mg)
- Total dust deposit (mg) and Daily deposit (mg/m2/day)
- Calcium (includes dissolved solids)
- Magnesium (includes dissolved solids)

The long term deposited dust monitoring locations are shown at Drawing SWQ-04-004 provided. The locations have been selected to ensure that dust emissions potentially associated with the quarry are monitored over the longer term.

A site specific threshold limit of 200mg/m2/day is applied as a trigger for investigation to identify the likely dust source(s), taking into account of the sampling location. A record is held of all monitoring results.

5.4 Reporting

A monthly summary of the dust monitoring results is provided by QEM Systems Limited, with quarterly reviews undertaken as detailed at Section 8 of this DMP.

6 Emergency Response Measures

An emergency response procedure is to be followed in the event of major dust emissions.

For the purposes of the emergency response, major dust emissions will be defined as:

- Visible dust crossing the site boundary
- Fugitive dust from buildings
- Persistent fugitive dust when loading or tipping soils, waste or aggregates
- Persistent fugitive dust from mobile plant or haul movements
- Persistent wind-blown dust

Should control measures fail in preventing significant dust emissions, as above, then the following responses will be initiated:

- Relevant plant shall stop work immediately
- A fitter to be called to inspect any malfunctioning plant
- In the event of very windy weather, as detailed in Section 5.2, work shall cease

The Regulator and Pollution Control of Local Authority are to be made aware of the case of abnormal emissions without delay if it is likely to have an effect on the local community.

7 Complaints Procedure

All complaints will be recorded and reported to the Quarry Manager, who will investigate the circumstances and ensure that the necessary corrective measures are taken.

A prompt response will be made to the complainant and a record, including copies of all correspondence and telephone notes, will be held in a secure place at the quarry office.

Complaints history will be reviewed on a quarterly basis in line with the procedure provided at Section 8 of this DMP. A copy of the complaints record from is provided at Appendix 3.

8 Review

Quarterly reviews will be undertaken of the dust monitoring results, complaints and any specific actions which may have been implemented as a result of dust emissions.

The continuing effectiveness of the dust management plan will be reviewed every two years in consultation with the Mineral Planning Authority and Environment Agency. The review will take into account dust monitoring records, complaints history and any further sensitive development on neighbouring land, if applicable.

The plan will be amended as necessary, including any changes to the monitoring scheme and control measures which may be agreed.

Review of the plan will also be undertaken in the event of exceedances of the nuisance dust deposition compliance limit of 200mg/m2/day.

9 Records

Records of the following will be held in a secure location within the office at Springwell Quarry for at least 2 years and will be made available to the relevant authorities to examine. Any historical records held off site will be made available to the relevant authorities for inspection within 1 working week of the request.

Appendices

Appendix 1: Summary of Conditions Relating to Dust and Control Measures Implemented

Permission	Condition	Control
EPQ10/111 Mobile Crushing and Screening Process	1.1 The best available techniques shall be used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation, which is not regulated by any other condition of this Permit.	Dust control is achieved by enclosure of the crusher and grader within the walls of the unit and by the application of a fogging water spray to the belt and conveyor.
	2.1 The operator shall keep records of inspections, monitoring and maintenance, including all non-continuous monitoring, inspections and visual assessments. The records shall be: • Kept on site • Kept by the operator for at least 2 years • Made available for the regulator to examine	Maintenance undertaken in accordance with Section 4.4 of the DMP. Visual inspections undertaken in accordance with Section 5.2 of the DMP. Records held on site in accordance with Section 9 of the DMP.
	4.1 In the case of abnormal emissions, the Regulator shall be informed without delay if the emission is likely to have an effect on the local community. 4.2 The Pollution Control or Environmental Health Department in whose area the plant is operating shall be informed without delay if there is an emission that is likely to have an effect on the local community, as well as the Regulator that issued the Permit	Emergency response procedures are detailed within Section 6 of the DMP, which include notification of the Regulator and Pollution Control or Environmental Health Department of the local authority in the event of likely effects on the local community.
	5.1 There shall be no visible airborne dust emissions beyond the site boundary from where the crusher is deployed, from any of the permitted activities, including stockpiling. 5.7 The Operators shall, if necessary, provide additional water suppression such as a bowser or irrigation sprays to minimise emissions from roadways or stockpiles, where vehicle movements to and from the site associated with the crushing and screening operations, give rise to airborne dust emissions. 5.8 Deposits of dust on external surfaces of the plant shall be removed daily using wet methods whenever practical. 5.10 The discharge height of the product from the crusher to the stockpile below shall be kept to a minimum. 5.11 Where dusty materials are stored, stockpiles shall be wetted where necessary to minimise dust emissions. 5.12 Conditioning with water or proprietary conditioning agents shall take place at or before the point of discharge from the conveyor.	Visual monitoring is undertaken in accordance with Section 5.2 of the DMP. Operational controls are provided at Section 4.3 of the DMP.
	6.0 Maintenance	Section 4.4 of the DMP details the Maintenance procedures for the site.
	7.0 Training	Section 4.4 of the DMP details the Training procedures for the site.

Appendix 2- Staged Site Crushing/Tipping Closure Procedure

Level 0	**Average Indicated Wind Speed 0mph – 10mph** Crusher operating as normal, dust suppression system on, operator to carry out minimum of 3 daily inspections, observing and recording any change in wind speed and direction. Normal tipping of aggregates.
Level 1	**Average Indicated Wind Speed 11mph – 15mph** Crusher operating as normal, dust suppression system on, operator to carry out minimum of 5 daily inspections observing and recording any change in wind speed and direction. Normal tipping of aggregates with increased water bowser use on tipping areas and haul roads. Stock piles of crushed aggregates to be watered down
Level 2	**Average Indicated Wind Speed 16mph – 20mph** Crusher operating depending on Wind direction, dust suppression system on, Hourly inspections to be carried out observing and recording any increase in wind speed and direction. Site manager will monitor wind speed and direction from site weather station. Water bowser to suppress feed materials as well as haul roads and tipping areas. No tipping of aggregates over high faces. Loading out of crushed aggregates to carry on, along with continued watering down of the stockpiles.
Level 3	**Average Indicated Wind Speed 21mph – 25mph** Site manager to advise crusher operator if and when crushing can commence. Tipping of aggregates to take place in low level quarantine area with water bowser in attendance. Loading out of crushed aggregates to carry on, along with continued watering down of the stockpiles.
Level 4	**Average Indicated Wind Speed above 25mph** No Crushing to take place, Tipping of aggregates to be suspended in the crushing area. Demolition sites and Third Party customers to be advised that site is closed. Loading out of crushed aggregates to carry on, along with continued watering down of the stockpiles.

Appendix 3- Complaints Record Form

COMPLAINTS LOG

RELATING TO: *(Site Name / Location)*

RECEIVED BY *(Name)*

DATE RECEIVED:

VIA: *(* Delete as Appropriate)*

ORIGINATING FROM: *(Name / Organisation)*

(Address line 1)

(Address line 2)

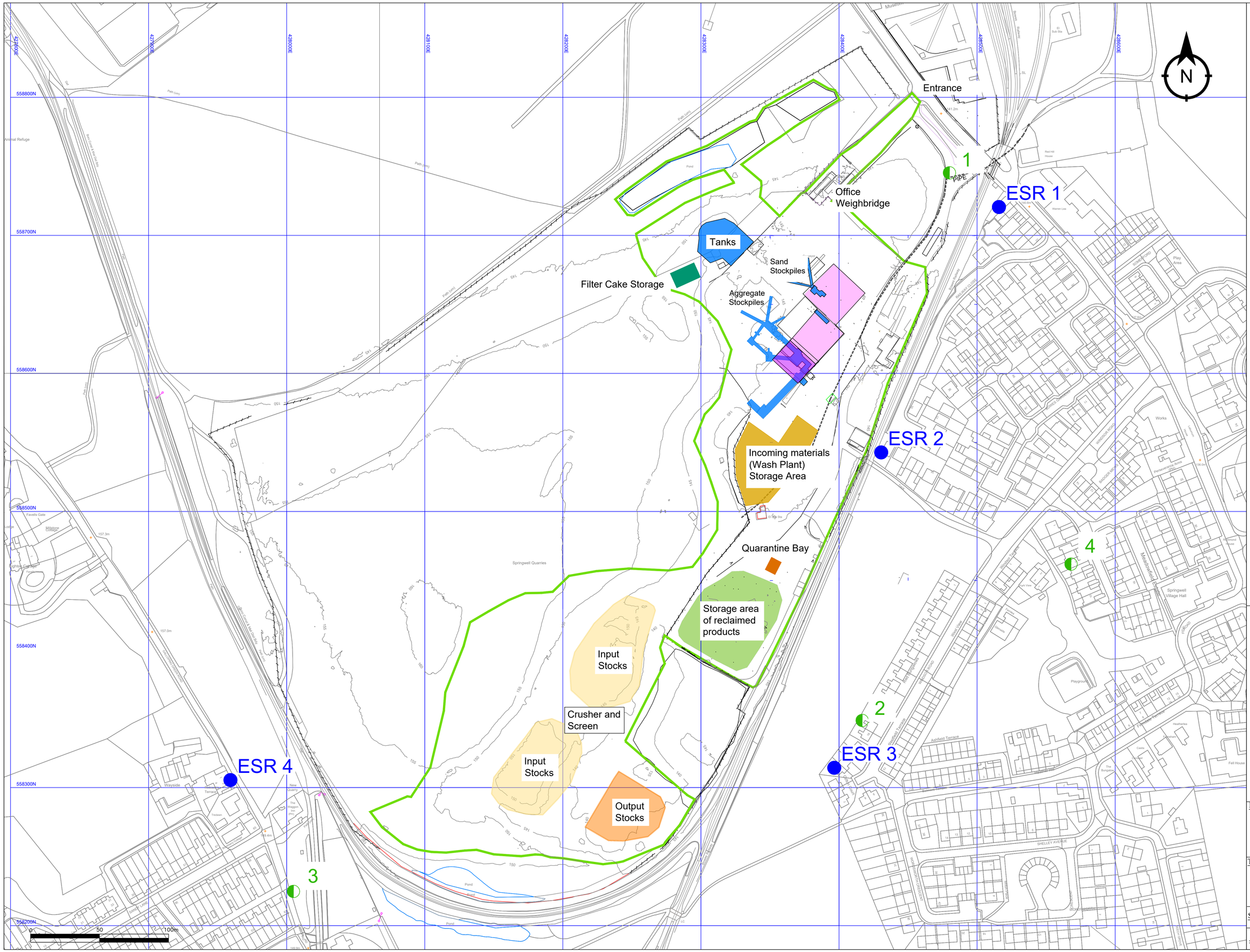
(Address line 3)

(Telephone Number)

COMPLAINT JUSTIFIED (Y/N) *(* Delete as Appropriate)*

SATISATISFACTORILY RESOLVED: (Y/N) *(* Delete as Appropriate)*

PLEASE ATTACH ALL RELATED CORRESPONDENCE TO THIS FORM



KEY

- Permit Boundary
- Washing Plant Units
- Process and Storage Building Retained
- Process Building Re-built and insulated with noise attenuation cladding
- Existing Sensitive Receptors
- Dust Monitoring Location
  1. Red Hill
  2. No 15 Red Bungalows, Windsor Road
  3. 63 Thomas Street, Eighton Banks
  4. Meadowfield Road

THOMPSONS OF PRUDHOE

Princess Way
Low Prudhoe
Northumberland
NE42 6PL

01661 832422

Project;

SPRINGWELL QUARRY
PERMIT VARIATION

Title;

AIR QUALITY
RECEPTOR PLAN

Scale 1:1250	Drawn MG	Date 12/12/23	
Job no. SWQ-04	Dwg no. 004	Rev.	