

CHAPTER 3: SITE DESCRIPTION

Introduction

- 3.1 This chapter describes the site context, which includes the location of the site, a brief site history and a description of the immediate site and the surrounding area. A description is provided of the Approved Restoration Plan, which has also been used as a baseline scenario for the EIA. It also summarises the potential environmental constraints to the development of the site.

Site Location and Overview

- 3.2 The application site is irregular in shape and extends to approximately 51.58 hectares in area. It comprises the former Moneystone Quarry located between the villages of Whiston and Oakamoor, Staffordshire. The site is shown edged red on the Site Location Plan at **Figure 1.1**.
- 3.3 The site lies within the Churnet Valley in the administrative boundary of SMDC and lies between the parishes of Kingsley and Oakamoor. It is located approximately 1.6km south east of Whiston, 2km north-west of Oakamoor, and 11km south of Leek. The site is accessible via the A52 which links the M6 to the M1.
- 3.4 The topography of the area is particularly distinctive with considerable level changes. The low-lying river valley cuts through the area on a roughly north-west/south-east axis. Ground levels rise sharply away from the river to the north-east. The quarry lies at relatively low/intermediate levels in the wider topographic context.

Site History

- 3.5 Active large scale quarrying started in the late 1950s in Quarry 1 and continued until the early 1970s. The quarry floor is between 150m to 160m AOD. Quarrying ceased in Quarry 1 in the early 1970s, and was used as Lagoons for tailings and acidic liquor. This activity resulted in the creation of two lagoons. In March 2001 the tailings were overtipped with overburden and reject material. The land areas were topsoiled with surface material from other areas of the quarry and have subsequently vegetated with grass and small shrubs
- 3.6 Small scale quarrying is noted in 1879 in the northeastern corner of Quarry 2. This was most likely for local building stone. Large scale quarrying recommenced in the late 1950s, with the south-eastern part of Quarry 2 completed by the late 1970s. Excavation of the northern half was largely finished by the late 1990s. The lower southern half of the excavation was used for tailings and acidic liquor disposal between 1987 and 1999, which formed a lagoon in this area.
- 3.7 Quarry 2 west excavation commenced in 1985 and was completed in the southern half of the quarry in the mid-1990s, and then continued towards the north and northwest until late 2000. The southern half of this excavation was used for tailings and acidic liquor disposal from 1997, which formed another lagoon.
- 3.8 There is a tunnel that passes under Eaves Lane and connects Quarry 1 and Quarry 2. The tunnel is approximately 50m long, 4.7m wide and 4.3m high. The floor of the tunnel falls about 4m (5 degrees) from north to south. The tunnel was originally driven in 1963, widened in 1983 and again in 1994 to allow larger

machinery to pass through. As part of the tunnel widening, individual sandstone blocks in the roof of the tunnel have been secured by rock bolting and a survey of the fracturing of the rocks was undertaken.

- 3.9 Excavation started in 2001 on Quarry 3 by stripping off the overburden to the whole quarry area. This overburden was used in other parts of the quarry or stockpiled on the shale floor at the northern extent in the west of Quarry 2. By 2008 Quarry 3 had deepened below the water table to around 140m AOD. Since 2003 pumping out of water has been required in the eastern section of Quarry 3. Quarry 3 ceased operation in 2012.
- 3.10 The processing area has been in place since at least 1960. This area contains two large metal clad mill buildings. A large chimney is located on the east side of one of the mill buildings, a conveyor is located to the north of the buildings with a stockpile beneath. To collect waste from production, two lagoons were constructed in the lower ground to the south of the production area. Both lagoons were constructed by excavating approximately 6m to 7m below existing ground and forming bunds with excavated material to give a depth of about 10m.

Site Description

- 3.11 Features of the site and the surrounding location may form a constraint to development or be identified as a sensitive receptor with the potential to be affected by the proposed development. Identifying such constraints and receptors early in the design process ensures that appropriate mitigation measures are designed into the proposals progressively from the outset. As such, a thorough baseline assessment was undertaken at the outset of the process to identify such constraints and to inform the iterative design process.

Overview of the site

- 3.12 The site measures approximately 51.58 hectares. Currently, prior to implementation of the restoration plan, the vast majority of the site is quarried areas. The remainder of the proposed development site comprises patches of scrubland, hedgerows, trees and associated vegetation.

Quarry 1

- 3.13 An existing road from Eaves Lane provides access into the quarry site, this is a tarmac lane approximately 6m wide. The road leads southwards from the road to an area which was previously a cluster of quarry buildings and associated machinery. Currently there is an area of hardstanding here, along with rubble from the demolished buildings. Two buildings remain, the Sibelco lab (area not subject to this application re-submission), and an admin building.
- 3.14 Further south from this area, the existing road leads down as the ground drops away to the old Churnet Valley Railway line at the bottom of the valley. This area of the site contains areas of woodland and existing water pools.
- 3.15 Directly to the south of Eaves Lane the ground dramatically drops away to the base of Quarry 1. There are some areas of woodland planting around the back of the quarry and an existing lake to the south. The second basin in Quarry 1 is slightly higher in elevation with a small embankment leading up to another pool of water. There is woodland planting to the back of the quarry, before the quarry walls steeply climb up to Eaves Lane.

- 3.16 Separating the two quarry areas in Quarry 1 is a track leading under Eaves Lane to Quarry 2 via a tunnel.

Quarry 2

- 3.17 Quarry 2 consists of a large area of unstable ground to the south, leading to an embankment of firmer ground to the north. The land gradually climbs up until it reaches the sharp incline of the quarry walls. North of this area is an existing woodland plantation. This area sits much higher than the rest of Quarry 2 on a distinct plateau above the rest of the quarry.
- 3.18 To the south of Quarry 2 but not within the application boundary lines a promontory which juts out from Eaves lane at the higher level. This is a historical remnant of an old road which had previously cut across the site northwards at this point connecting back to Blakeley Lane. The northern pocket of the site north of Quarry 2 comprises plantation conifer woodland accessed off Blakely Lane.

Quarry 3

- 3.19 A track leads down into the historic quarry from the existing access road. The quarry walls drop at a steep gradient into a lake which now fills the base of the quarry. There is a small ridge cut into the quarry wall at about halfway down its length. This runs around the quarry at approximately the same height all the way around. Vegetation has started to take around the quarry walls and there is an existing landscape bund which runs the majority of the length of the top of the quarry adjacent to Eaves Lane.

Topography

- 3.20 The topography of the site has been drastically altered by the quarrying activities that have been carried out on the site over the course of the last 50 years. Across the site, the topography is broadly 'tiered' with Quarry 2, to the north of Eaves Lane, at the highest level, and Quarries 1 and 3, and the main processing plant at a lower level. South of the existing buildings, ground levels fall steeply to the River Churnet.
- 3.21 The individual quarries themselves have dramatic changes in levels, with on average around a 20m drop from road level.
- 3.22 Quarry 3 has steeply sloping sides, with a small plateau about 2m wide cut into the quarry sides. The bottom of the quarry has been allowed to fill with water to form a significant water body which is several metres deep.

Geology and Hydrology

- 3.23 The site is located within the Millstone Grit Group below the Coal Measures. The sandstone excavated as part of the quarrying operations represents Rough Rock Formation of coarse grained sandstone interbedded with grey mudstone. Groundwater in the sandstone has been artificially lowered as part of the quarrying operations and previous borehole logs have shown that the water table is perched. Groundwater to the east of Quarry 3 flows southwards, whilst groundwater to the west flows west and then south discharging to small perennial streams feeding the River Churnet.
- 3.24 According to Environmental Agency maps the site is located within Flood Zone 1. This places the proposed development on land with the lowest flood risk, with less than a 1 in 1000 annual probability of flooding.

Access and Transport Links

- 3.25 The site is accessed by Whiston Eaves Lane, which connects the village of Whiston to the north of the site and to Oakamoor located to the south east of the site. At Whiston, the Lane joins the A52 which is a strategic route connecting Stoke-on-Trent to the west and Ashbourne to the east. Blakeley Lane is located adjacent to the north eastern boundary of the site which joins Whiston Eaves Lane to the east of Crowtrees Farm. Access to the northernmost part of the site, the wooded area north of Quarry 3, is gained via a spur off of Blakeley lane. This spur is a remnant of the former route of Blakeley Lane, which was diverted to make way for the quarrying activity.
- 3.26 There are a number of cycle and footpath links through the site and in the immediate vicinity. Footpath 50 runs along the northern edge of the site, north of Whiston Eaves Lane, extending westwards to Whiston and eastwards towards Blakeley Lane. An application for a footpath diversion order has been made to Staffordshire County Council to divert Footpath 50 through the site along the north and eastern edges of Quarry 2. The application has been made in respect of the consented restoration proposals for the quarry.
- 3.27 Footpath 70 runs north-eastwards from Footpath 50 north of Whiston Eaves Lane and Footpath 51 runs broadly north from Whiston Eaves Lane, crossing the golf course to Whiston.
- 3.28 Footpath 68 runs through the site from Littleheath House Farm to Whiston Eaves Lane before it connects to Footpath 69 which also runs along Whiston Eaves Lane. Footpath 69 ceases at the entrance of the quarry site where it connects to Footpath 49 which runs alongside the eastern extent of Quarry 3 before turning westward passing Dustystyle Farm heading southward where it eventually connects to Staffordshire Way. The Staffordshire Way long distance recreational footpath runs on the western slopes of the River Churnet and there are a number of other recreational circular routes, promoted by SMDC, such as the 'Oakamoor and Whiston Circular Route', which partly runs along Footpath 50.

Surrounding Area

- 3.29 The site is located within the Churnet Valley, approximately 19km from Stoke-on-Trent, 11km from the Peak District and 16km from Ashbourne all of which are connected via principal routes such as the A52, which is located to the north of the site. There are also a number of small local villages and hamlets within less than 2km of the site, including Whiston, Oakamoor, Farley and Alton. These villages are typical of the local landscape surrounding the site and consist of small clusters of residential development with a number of local services.
- 3.30 The site is also located in close proximity to a number of national and local tourist attractions, all of which are well connected by principle transport routes, such as the A52 or via bridleways, public footpaths and cycle routes. These include, but are not limited to, the following:
- Alton Towers: located approximately 3km south east of the site. There are a number of road linkages which connect the site to Alton Towers, such as via Whiston Eaves Lane, Carr Bank, Farley Road and Farley Lane. There are also numerous public footpaths and bridleways which provide linkages between the two sites;

- Foxfield Steam Railway: located approximately 11km south west of the site. This is a heritage steam railway linking Blythe Bridge to Godleybook. Road linkages are from the A52 and the A521;
- Churnet Valley Railway: located approximately 4km north-west of the site. The railway is located at Cheddleton Station and links Leek Brook to Froghall. There are numerous linkages to the station via either the A52 or the A520 or via public footpaths such as the Staffordshire Way which runs through the Churnet Valley;
- Sudbury Hall: located approximately 16km south-east of the site towards Ashbourne. This is a National Trust site and houses a Museum of Childhood and numerous landscape gardens. Linkages via the A52;
- Whiston Hall Hotel, a Victorian Hall, built in 1850 with an 18 hole golf course is situated to the north-west of the site; and,
- There are also a small number of campsites including Star Caravan park at Cotton, Hales Hall Camping and Caravan Park near Cheadle and numerous public houses within walking distance of the site.

Residential Receptors

- 3.31 Immediately surrounding the site there are a number of local farmsteads which are sparsely distributed throughout the local landscape. Grassland fields used for grazing are typical features to the north and south of the site, with the majority of them being separated by low drystone walls or hedgerows.
- 3.32 The farmsteads bordering the site include Crowtrees Farm to the east, Cottage Farm lies to the north east and Little Eaves Farm lies on the western boundary of the site.
- 3.33 A number of other farmsteads are located within 1km of the site. These include:
- Oldfield Farm to the north east (300m);
 - Blakeley Farm to the north east (550m);
 - Moneystone Farm to the north east (350m);
 - Orchard Farm to the south east (800m);
 - Littleheath House Farm to the north west (200m);
 - Heath House Farm to the north west (500m);
 - Eavesford Farm to the north west (700m); and
 - Whiston Grange Farm to the north west (350m);
- 3.34 Along the north western side of the site, north of Quarry 3, there are a number of residential properties and rock outcrops which form the north and north western boundary of the site. This includes Rock Cottage a stone built cottage with a rock outcrop forming a gable end of the property, situated on Blakeley Lane along with Wood View, The Bungalow and Moneystone Cottages.
- 3.35 In the wider area are the small settlements of Oakamoor to the south, Cotton to the east, Whiston and Froghall to the north west, and Kingsley Holt to the west.

Flood Risk and Drainage

- 3.36 Quarry 3 is below the water table and has required removal of water since 2003. The drainage of the site and assessment of surface and ground water changes across the wider development will be an important factor which will influence the design and operational aspects of the scheme.

- 3.37 The River Churnet is located approximately 70m south of the southern boundary of the proposed development. Depending on the flow of surface and ground water, any contaminants from the quarry could contaminate the waterbody.

Landscape

- 3.38 The site and surrounding area are covered by National Character Area 64 'Potteries and Churnet Valley'. This area is characterised with a strong contrast between remote uplands, urban areas, sheltered woodland valleys and hillside pastures. There are extensive former industrial and extractive sites, many now reclaimed, intermixed with settlements and open land.
- 3.39 The majority of the quarries are currently well concealed through careful positioning in the landscape, favourable topography and screening by tree cover. The nature of the quarrying activities means that the quarries themselves are located at lower ground levels to the immediate surrounding context. Therefore tree cover, in the form of existing woodland and areas of plantation, successfully screens many potential views of the quarries. In addition, landscape bunding around Quarry 3 provides screening of much of this quarry from Eaves Lane.

Biodiversity & Habitats

- 3.40 Baseline surveys indicate a number of diverse habitats and site features on the site including: current and former mineral workings, standing weather habitats, running water, bar ground/ephemeral habitats, grassland, scrub, plantation woodland, semi-natural broadleaved woodland, hedgerows and trees, stands of bracken/tall herb and habitat mosaics.
- 3.41 The area surrounding the site contains a number of habitats and features that are protected by Statutory designation – these include a SSSI and SBI to the south west, an area of Ancient Woodland is found on the southern woodland area.
- 3.42 The site has a very good breeding population of birds with several areas where there was a high concentration of breeding territories, especially on the south side of the site, near the River Churnet and in the Whiston Eaves/Rake Edge areas.
- 3.43 Seven ponds were found to support populations of amphibians. Of the seven, three were found to support Good to Excellent populations of great crested newts (GCNs) and smooth newts.

Utilities and Services

- 3.44 Utilities information has been provided by the previous owners, Sibleco. The plan presented at **Figure 3.2** indicates that utilities currently serving the site are predominantly located on the southern portion of the quarry access road, of Whiston Eaves Lane.
- 3.45 In the processing area, the utilities are spread across this part of the site, connecting the infrastructure that was previously located here. These services are located where the hub and associated parking for the site are proposed. These also extend further to the east beyond the site boundary, into the area reserved for photovoltaics.
- 3.46 The utilities currently present on site include electricity cables (33KV and 3.3KV), water, foul and storm water drainage, data and natural gas. Overhead power cables enter the site from the south west.

- 3.47 Foul water is currently disposed into septic tanks located south of the processing area.

The Approved Restoration Plan

- 3.48 The Approved Restoration Plan sets out the requirements for the restoration of the site following the cessation of quarrying activities. The approved restoration plan is largely based upon agricultural restoration and nature conservation of the quarries and the surrounding areas within the site. The restoration plan components will form the baseline assessment on the site. This is shown in **Figure 3.1**.
- 3.49 The approved restoration plan has a number of distinctive features which are outlined further below and a referred to in several sections of this ES:

Quarry 1

- 3.50 Quarry 1 will be subject to a planting scheme which will supplement existing birch and willow planting with broadleaved planting. Self-seed birch will be removed from the northern extent of Quarry 1. Additional areas will be provided for green hay strewing and open grassland. The grassland will be managed by grazing following its establishment.

Quarry 2

- 3.51 Surrounding the periphery of the lake in Quarry 2 will be marginal aquatic planting which is integrated with further scrub/wetland habitat forming the ground cover across the western expanse of Quarry 2. To the north of the scrub habitat, a mosaic of bare ground, heath and acid grassland area will be created for invertebrate interest. The northern boundary of the site is formed by birch and willow scrub, this is to be removed.
- 3.52 An open ditch forms the division between the eastern and western sections of Quarry 2. This will be sympathetically designed to provide a sinuous route. The bottom half of the ditch is bordered by birch and pine which is to be removed, allowing natural grassland recolonization. The lagoon will be strewn with green hay. The eastern boundary of Quarry 2 will be subject to thinning of pine and birch to allow heather to regenerate in the area. Heath and acid grassland will be created alongside the green hay, and will witness the removal of 30% of the existing vegetation adjoining the heath and acid grassland boundary. The north eastern section of Quarry 2 is to be maintained as open grassland.

Quarry 3

- 3.53 Where appropriate, bare open faces will be created to enhance invertebrate and sand martin interest within the site. Safety considerations and final resting water level will dictate where and how many will be located around Quarry 3.

Lagoons

- 3.54 Several lagoons are proposed as part of the restoration plan, which are based on the locations of existing waterbodies. These are numbered as shown on the Restoration Plan as Lagoon 4 (within Quarry 2), Lagoon 6 (east of Quarry 2) and Lagoon 7 (within Quarry 1).

Summary

- 3.55 This chapter has presented the site context, which includes the location of the site, a brief site history, a description of the existing site and the surrounding area and restoration, which acts as the baseline for the EIA. Based on the information presented in this chapter, the main environmental constraints to the development of the site have been identified as follows:
- Topographical issues;
 - Potential for ground contamination and need for remediation;
 - Sensitive landscape;
 - Potential nuisance effects on nearby residential properties;
 - Nearby SSSI, SBI and ancient woodland.
- 3.56 These identified constraints have been taken into account in the development of the proposals to ensure a thorough iterative design process and through the identification of appropriate mitigation measures.