From:	Sam Dumbrell
To:	Christopher Herbert [redacted]
Cc:	Kirstie May; CCD Planning Enforcement; [redacted] WSCC Planning [redacted]
Subject:	FW: WSCC/104/13/SR - Condition 9
Date:	16 March 2016 10:54:00
Attachments:	151002_416.01258.00004_Washington Sandpit_Discharge of Conditon 9_v1_Complete_doc2.pdf 151002_416.01258.00004_Washington Sandpit_Discharge of Conditon 9_v1_Complete_doc1.pdf 160209_01258.00004.16.06.4.Final Restoration.pdf
Importance:	High

Chris,

Further to my email yesterday, I just wanted to clarify that Condition 9's surface water drainage details have been approved. My comment below stating *I cannot not discharge this condition whilst the LDC process starts/continues as it is outside the planning regime* was for the benefit of my drainage colleagues.

Please acknowledge this response and the LDC status.

Regards, Sam

Sam Dumbrell | Senior Planner, County Planning, Residents' Services, West Sussex County Council |
Location: County Hall, Chichester, West Sussex, PO19 1RH
Internal: 26947 | External: 0330 222 6947 | E-mail: sam.dumbrell@westsussex.gov.uk

From: Sam Dumbrell
Sent: 15 March 2016 16:01
To: Christopher Herbert [redacted]
Cc: Kirstie May; CCD Planning Enforcement; [redacted]
Subject: FW: WSCC/104/13/SR - Condition 9
Importance: High

Chris,

Further to my email below and your email dated 09/02/16, with the attached updated Drawing No. 006 'Final Restoration' (dated FEBRUARY 2016), the scheme of surface water drainage is approved. Please ensure that the surface water drainage details continue to be implemented in full as approved throughout the operation of the development hereby permitted. I approving the scheme, WSCC's Drainage Advisor commented as follows:

1. *The Surface water drainage scheme report dated Oct 2015 has been supplied. Our comments are as follows:*
    a. *We concur with the section 2 hydrological/hydrogeological summary and historic groundwater levels.*
    b. *We concur with the phases surface water strategy to utilise swales and compliance with the SUDS treatment train.*
    c. *The strategy section 3.3 and supporting drawings illustrate a 'proposed watercourse' to be routed/diverted through the site. This will require land drainage consent, if not already applied for.*
    d. *We note the current EA permit to discharge and concur with the assessment of greenfield run-off and volume in section 3.5.*
    e. *We note that pump failure will not result in flood issues within the site or 3rd party land given that there will be sufficient volume above water level at all times within the lake.*
    f. *A maintenance and management regime has been supplied. This clearly outlines the inspection frequencies which is acceptable.*

We are satisfied the overall drainage and flood risks are low and the phased remedial works has been clarified against our initial comments.

We consider this information is sufficient in order to satisfy condition 9 but would recommend that you ensure the LDC application is processed prior to discharging this condition.

In terms of the LDC application, this needs to made through Horsham DC. I'm unsure how far you've got with this so I've cc'd Martin Brightwell into this email. Please liaise directly with Martin as a matter of urgency and keep me in the loop. I cannot not discharge this condition whilst the LDC process starts/continues as it is outside the planning regime.

Please acknowledge this response and the LDC status.

Regards, Sam

Sam Dumbrell | Senior Planner, County Planning, Residents' Services, West Sussex County Council |
Location: County Hall, Chichester, West Sussex, PO19 1RH
Internal: 26947 | External: 0330 222 6947 | E-mail: sam.dumbrell@westsussex.gov.uk

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- PROPOSED CAR PARKING AREA (BARE CONSOLIDATED GRAVEL/SAND)
- PROPOSED WATERBODY
- INFORMAL RECREATIONAL AREA WITH CAMPSITE
- PROPOSED PICNIC AREA
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

FINAL RESTORATION

006

Scale 1:1500 @ A3

Date FEBRUARY 2016

01258.00004.16.06.4.Final Restoration.dwg

FORMER CLAY BUND GRADED OUT TO FORM TOE OF RESTORED LANDFORM

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- NEW SWALES
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

YEAR 2

002

Scale: 1:1500 @ A3
Date: AUG 2015

01258.00004.16.02.4.Year 2 Restoration.dwg

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- NEW SWALES
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

YEAR 3

003

Scale: 1:1500 @ A3
Date: AUG 2015

01258.00004.16.03.4.Year 3 Restoration.dwg

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- NEW SWALES
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

YEAR 4

004

Scale	Date
1:1500 @ A3	AUG 2015

01258.00004.16.04.4.Year 4 Restoration.dwg

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- NEW SWALES
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

YEAR 5

005

Scale: 1:1500 @ A3
Date: AUG 2015

01258.00004.16.05.3.Year 5 Restoration.dwg

SWALE THROUGH TREE PLANTING TO BE CONFIRMED BY ECOLOGY / ARBORICULTURAL SPECIALISTS

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- PROPOSED CAR PARKING AREA (BARE CONSOLIDATED GRAVEL/SAND)
- PROPOSED WATERBODY
- INFORMAL RECREATIONAL AREA WITH CAMPSITE
- PROPOSED PICNIC AREA
- RETAINED SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

FINAL RESTORATION

006

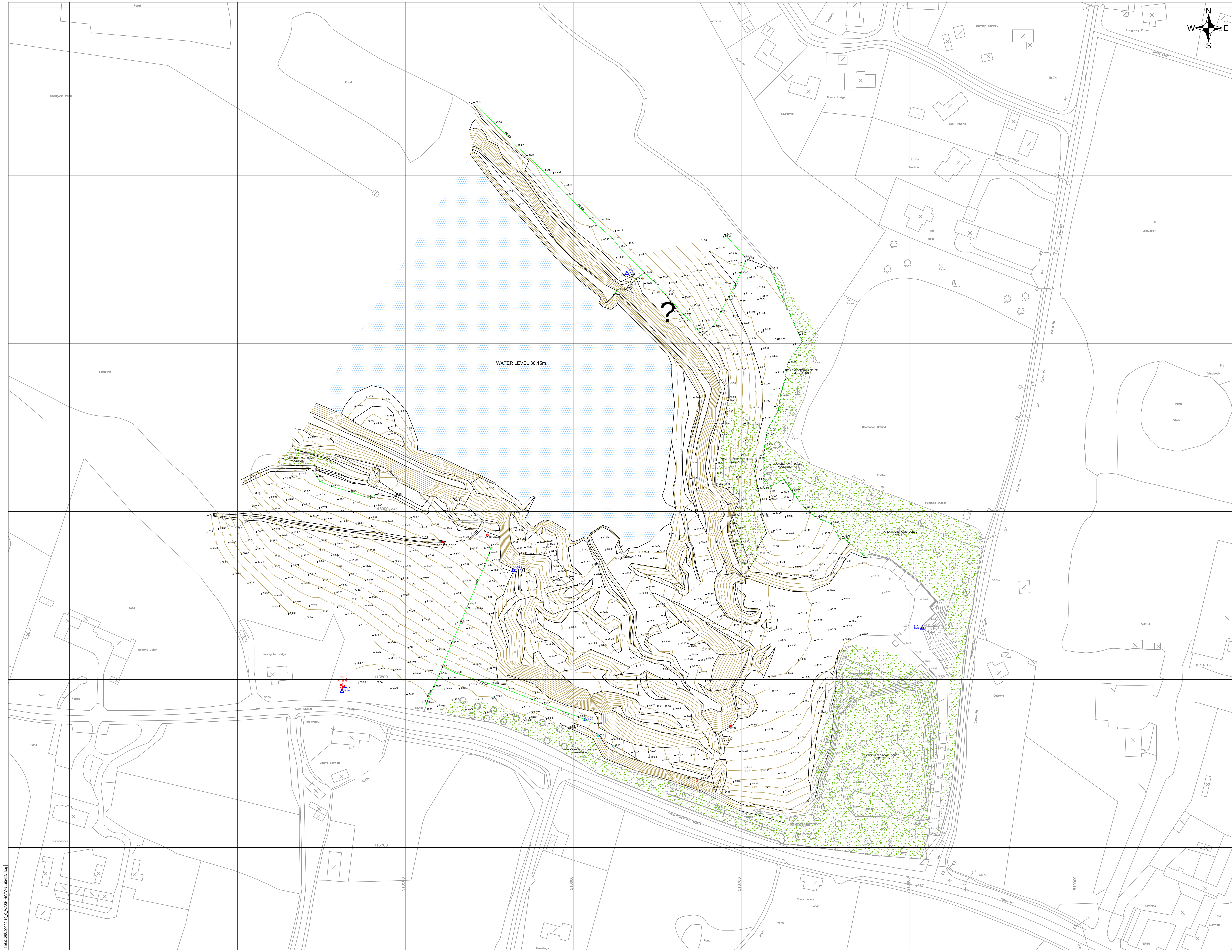
Scale: 1:1500 @ A3

Date: AUG 2015

01258.00004.16.06.3.Final Restoration.dwg

Appendices

Appendix A



NOTES

1. TOPOGRAPHICAL SURVEY INFORMATION SHOWN ON THIS DRAWING IS BASED UPON THE ORDNANCE SURVEY NATIONAL GRID HEIGHT AND PLAN DATUM DERIVED BY G.P.S.(OSTN02,OSGB36).

2. THIS PLAN HAS NO SCALE FACTOR APPLIED; THE ORIGIN OF THE OSGB36 DATUM IS BASED UPON SURVEY CONTROL STATION STN01.

3. THE ACCURACY OF THIS SURVEY IS COMMENSURATE WITH THE DRAWING SCALE SPECIFIED WITHIN THE TITLE BLOCK. CHECK ALL CRUCIAL DIMENSIONS ON-SITE.

4. SERVICES INCLUDING MANHOLES AND TELEGRAPH POSTS HAVE BEEN SURVEYED WHERE FOUND.

5. WHILST EVERY EFFORT HAS BEEN MADE TO INCLUDE ALL ACCESSIBLE DETAIL, SOME FEATURES MAY NOT BE SHOWN IF OBSCURED AT THE TIME OF SURVEY (e.g. AREA OVERGROWN)

6. PREVIOUS SURVEY (SHOWN IN GREY) SUPPLIED BY CLIENT DRAWING REF: W41-f-0311.dwg

LEGEND

AREA OVERGROWN / DENSE VEGETATION

Revision	By	Chk'd By	Date	Comments
0	NPS	VSQ	04/13	

SLR
SAILORS BETHEL
HORATIO STREET
NEWCASTLE UPON TYNE
TYNE AND WEAR. NE1 2PE
T: 0191 261 1966
F: 0191 230 2346
www.slrconsulting.com

Site
BRITANIA CREST,
WASHINGTON PIT

Project
TOPOGRAPHICAL SURVEY

Drawing Title
VOLUME CALCULATION AREA 16th APRIL 2013

Scale: 1:1000 @ A1
Date: APRIL 2013

Drawing Number: **001**
Revision: **0**

Appendix B

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.300
Area (ha)	50.000	Urban	0.000
SAAR (mm)	934	Region Number	Region 7

Results l/s

QBAR Rural	127.7
QBAR Urban	127.7
Q100 years	407.3
Q1 year	108.5
Q2 years	112.5
Q5 years	163.4
Q10 years	206.9
Q20 years	255.8
Q25 years	274.3
Q30 years	289.4
Q50 years	334.6
Q100 years	407.3
Q200 years	478.8
Q250 years	501.8
Q1000 years	658.9

ABERDEEN
214 Union Street,
Aberdeen AB10 1TL
T: +44 (0)1224 517405

AYLESBURY
7 Wornal Park, Menmarsh Road,
Worminghall, Aylesbury,
Buckinghamshire HP18 9PH
T: +44 (0)1844 337380

BELFAST
Suite 1 Potters Quay, 5 Ravenhill Road,
Belfast BT6 8DN Northern Ireland
T: +44 (0)28 9073 2493

BRADFORD ON AVON
Treenwood House, Rowden Lane,
Bradford on Avon, Wiltshire BA15 2AU
T: +44 (0)1225 309400

BRISTOL
Langford Lodge, 109 Pembroke Road,
Clifton, Bristol BS8 3EU
T: +44 (0)117 9064280

CAMBRIDGE
8 Stow Court, Stow-cum-Quy,
Cambridge CB25 9AS
T: + 44 (0)1223 813805

CARDIFF
Fulmar House, Beignon Close,
Ocean Way, Cardiff CF24 5PB
T: +44 (0)29 20491010

CHELMSFORD
Unit 77, Waterhouse Business Centre,
2 Cromar Way, Chelmsford, Essex
CM1 2QE
T: +44 (0)1245 392170

DUBLIN
7 Dundrum Business Park,
Windy Arbour, Dublin 14 Ireland
T: + 353 (0)1 2964667

EDINBURGH
4/5 Lochside View, Edinburgh Park,
Edinburgh EH12 9DH
T: +44 (0)131 3356830

EXETER
69 Polsloe Road, Exeter EX1 2NF
T: + 44 (0)1392 490152

GLASGOW
4 Woodside Place, Charing Cross,
Glasgow G3 7QF
T: +44 (0)141 3535037

GUILDFORD
65 Woodbridge Road, Guildford
Surrey GU1 4RD
T: +44 (0)1483 889 800

HUDDERSFIELD
Westleigh House, Wakefield Road,
Denby Dale, Huddersfield HD8 8QJ
T: +44 (0)1484 860521

LEEDS
Suite 1, Jason House, Kerry Hill,
Horsforth, Leeds LS18 4JR
T: +44 (0)113 2580650

LONDON
83 Victoria Street,
London, SW1H 0HW
T: +44 (0)203 691 5810

MAIDSTONE
19 Hollingworth Court, Turkey Mill,
Maidstone, Kent ME14 5PP
T: +44 (0)1622 609242

MANCHESTER
Quay West at Medium City UK
The Quays, Trafford Wharf Road
Manchester, M17 1PL
T: +44 (0)161 872 7564

NEWCASTLE UPON TYNE
Sailors Bethel, Horatio Street,
Newcastle upon Tyne NE1 2PE
T: +44 (0)191 2611966

NOTTINGHAM
Aspect House, Aspect Business Park,
Bennerley Road, Nottingham NG6 8WR
T: +44 (0)115 9647280

SHEFFIELD
STEP Business Centre, Wortley Road,
Deepcar, Sheffield S36 2UH
T: +44 (0)114 2903628

SHREWSBURY
2nd Floor, Hermes House,
Oxon Business Park,
Shrewsbury, SY3 5HJ
T: +44 (0)1743 239250

STAFFORD
8 Parker Court, Staffordshire
Technology Park, Beaconside,
Stafford ST18 0WP
T: +44 (0)1785 241755

STIRLING
No. 68 Stirling Business Centre,
Wellgreen, Stirling FK8 2DZ
T: +44 (0)1786 239900

WORCESTER
Suite 5, Brindley Court, Gresley Road, Shire Business Park,
Worcester
WR4 9FD
T: +44 (0)1905 751310

www.slrconsulting.com

Washington Sandpit

Hampers Lane, Sullington, West Sussex RH20 4AF

Details Pursuant to Planning Condition 9

Surface Water Drainage Scheme

Application No. WSCC/104/13/SR

SLR Ref: 416.01258.00004
Version No: 1
October 2015

CONTENTS

TABLES

DRAWINGS

APPENDICES

1.0 INTRODUCTION

1.1 Context

SLR Consulting Ltd has been commissioned by Britaniacrest Recycling to provide technical information associated with the surface water drainage scheme for the proposed continuation of mineral extraction and revised restoration scheme at Washington Sandpit.

1.2 Site Location

The Site is located at National Grid Reference (NGR) TQ 107 137 on land at Washington Sandpit, Hamper's Lane, Sullington, West Sussex, RH20 4AF.

The Site lies approximately 2km to the east of the village centre of Sullington. The Site is bound to the south by the A283 Washington Road and to the east by Hampers Lane. The northern boundary of the Site is defined by an unnamed tributary of the River Stor, beyond which is a recreational ground and residential dwellings. Sandgate Quarry, operated by CEMEX UK and part of the wider Sandgate Country Park, is located immediately to the west of the Site.

The Site is accessed from its south eastern corner via a surfaced access road from Hampers Lane, at its junction with the A283.

1.3 Development Outline

Sand extraction has taken place at the Site for over 60 years, with various planning permissions granted in the interim to consolidate consents and including extensions to increase the sandpit's life for extraction purposes and restoration deadlines. The most recent permission was granted in 2013, allowing the extraction of sand until 31 December 2015 with an approved restoration scheme to be completed by 31 December 2017 (Planning Ref: WSCC/086/13/SR).

The current proposal is to continue mineral extraction for a period of two years (approximately 84,000 tonnes of sand) and import 477,000 tonnes of inert waste over a period of five years to provide a revised restoration scheme.

The Site, as part of the wider Sandgate Country Park, has been allocated for recreational opportunities by Horsham District Council. The revised scheme will therefore be at higher final levels than those previously proposed to provide the additional recreational opportunities required.

1.4 Planning Background

A detailed planning application for the proposed development has been granted permission by West Sussex County Council (WSCC) (Planning Reference WSCC/104/13/SR), subject to a number of Planning Conditions.

Planning Condition 9, which relates specifically to surface water drainage, is worded as follows:

> ***Planning Condition 9: Surface Water Drainage Scheme***
>
> *The development hereby permitted shall not take place, including site clearance works, until a scheme of surface water drainage has been submitted and approved in advance and in writing by the County Planning Authority. The scheme shall include:*

- *design for the 1:100 year return period;*
- *inclusion of 30% peak run-off and 20% additional volume for climate change;*
- *infiltration rates and groundwater levels shall be determined by site investigation and/or testing during the winter period;*
- *inclusion of a suitable freeboard above the seasonal high groundwater table (minimum 1m unless otherwise advised by the County Planning Authority);*
- *consideration of overland flows (pluvial impacts); and*
- *surface water drainage management for implementation during the phased sand extraction and phased restoration operations (to ensure that suitable drainage infrastructure is present to maintain flow conveyance for the upstream catchment, including suitable on-site storage and attenuation measures, to ensure downstream impacts through flooding are not increased).*

Thereafter, the surface water drainage details shall be implemented in full as approved throughout the operation of the development hereby permitted.

Reason: To accord with paragraphs 103 and 120 of the NPPF (2012) to ensure that impacts through flooding and pollution are not caused.

1.5 Purpose of this Report

Conditions of the planning permission require supplementary information to be submitted to WSCC to seek to discharge this condition.

This report presents details of the proposed surface water drainage scheme to satisfy the requirements of Planning Condition 9.

1.6 Previously Submitted Information

The planning application was supported by an Environmental Statement (ES) and a Flood Risk Assessment (FRA)[1] dated October 2013.

[1] Washington Sandpit, Hamper's Lane, Sullington: Flood Risk Assessment. October 2013 (SLR reference: 416.01258.00004)

2.0 HYDROLOGICAL AND HYDROGEOLOGICAL CONTEXT

2.1 Topography

A topographic survey of the existing Site was completed in April 2013, a copy of which is enclosed at Appendix A. The survey shows ground levels across the Site falling in a general north westerly direction from approximately 58.00m to a surveyed water level of 30.15m Above Ordnance Datum (AOD) within the water body located in the north western area of the Site.

2.2 Hydrological Features

The closest watercourse to the Site is an unnamed tributary of the Stor River, which flows in a north westerly direction along the northern boundary of the Site.

The north western area of the Site currently comprises a water-filled void, forming a water body (referred to within this report as "the lake") extending onto the adjoining CEMEX UK site and currently used as part of their operations. Water is discharged from the lake into the adjacent watercourse via a pumped outfall, which is operated by CEMEX UK.

A minor watercourse/drainage channel is located to the south of the Site, flowing northwards towards the A283. This watercourse flows through a culvert beneath the A283 before currently discharging within the Site via pipes.

There are no other significant watercourses or hydrological features within the immediate proximity of the Site.

2.3 Geological and Hydrogeological Features

2.3.1 Geology

British Geological Survey (BGS)[2] geological records indicate that the solid geology underlying the Site is sandstone of the Folkstone Formation, which is described as medium to coarse grained well-sorted cross-bedded sands and weakly cemented sandstones. The north and west of the Site is overlain by superficial Head deposits of clay, silt, sand and gravel.

2.3.2 Hydrogeology

The Folkstone Formation is classified by the Environment Agency as a Principal Aquifer, which is described as '*layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale*'.

The Head deposit is classified by the Environment Agency as a Secondary (undifferentiated) aquifer, defined as having '*previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type*'.

The Site lies outside of any Source Protection Zones.

[2] BGS Geology of Britain Viewer, available at http://mapapps.bgs.ac.uk/geologyofbritain/home.html (Accessed on June 2013).

EA Groundwater Vulnerability Mapping indicates that the aquifer beneath the Site is designated as a major aquifer of intermediate vulnerability.

2.3.3 Groundwater Levels

With reference to the geology of Britain viewer published on the British Geological Survey website, borehole TQ11SW98 is located within the Site. However, at the time of writing, information from this borehole was not available.

Records from three boreholes located within close proximity to the Site are summarised in Table 2-1.

Table 2-1
Borehole Record Summary

Borehole reference	Location	Record Year	Ground Level (m AOD)	Rest Water Level (m AOD)
TQ11SW7	North of the Site	1934	54.86	42.06
TQ11SW13	Adjacent to the Site – South of the A283 Washington Road	1893	59.37	39.32
TQ11SW14		1893	56.13	39.32
		1959		40.46

The above indicates a groundwater table varying between 39.32m AOD and 42.06m AOD, i.e. between 20.05m and 12.8m below ground level respectively. However, knowledge of current Site operations and of the adjoining CEMEX UK quarry indicates that at the western end of the CEMEX site groundwater is managed and maintained at a groundwater level down to 17m AOD (when necessary for deeper excavations), some 13.15m below the lowest 'dry' area of the Site.

It is reasonable to assume that the natural water table has been artificially lowered by dewatering and local abstraction of groundwater by mineral extraction sites. The water table may rise to the levels recorded by the BGS following restoration of the Site, without intervention, if pumping of the lake were to cease.

3.0 SURFACE WATER AND SUDS DRAINAGE STRATEGY

3.1 Key Principles

The surface water drainage strategy for the development seeks to provide a sustainable and integrated surface water management scheme for the whole Site and aims to ensure no increase in downstream flood risk by managing discharges from the development to the local water environment in a controlled manner.

To comply with current guidance and best practice, Sustainable Drainage Systems (SuDS) will be implemented in order to manage the quantum and quality of surface water runoff discharged off-site from any proposed development at this Site.

Surface water attenuation capacity and strategic hydraulic throttles in the system ensure that post-development discharges are managed and controlled for up to and including the 1% Annual Exceedance Probability (AEP) storm event incorporating an allowance for climate change, in line with National Planning Policy Framework (NPPF) guidelines[3].

The surface water drainage strategy also aims to ensure no detrimental impact in downstream water quality providing robust surface water treatment via use of a management train incorporating SuDS.

3.2 Pre-development Surface Water Runoff

Prior to development of the Site for the extraction of minerals, rainfall upon the Site is likely to have discharged through a combination of overland flow, evaporation, transpiration and infiltration via the permeable sub-soils. Based upon Ordnance Survey 1:25,000 scale mapping, excess runoff not infiltrating to ground would tend to flow overland towards the unnamed tributary of the Stor River and the minor watercourse/drainage channel, which would likely have flowed across the Site historically.

3.3 Conveyance of Surface Water Runoff

The Site is proposed to be restored to higher ground levels using imported inert waste, following the proposed excavation of sands and gravels. Therefore, in accordance with the approved FRA[1], this report addresses the proposed management of surface water during the phased extraction of minerals and restoration of the Site. Works are to take place~~s~~ under six phases as shown on Drawing Nos. WP L/12A/01 to WP L/12 A/06.

Extraction of minerals will extend below existing ground to a level of approximately 30m AOD. As discussed at Section 2.3.3, current groundwater level is expected to be below this level at approximately 17m AOD. Moreover, as the restoration is planned to be complete within five years, it is considered unlikely that CEMEX UK will completely stop dewatering during that period as CEMEX UK excavation is expected to continue for over 20 years. Groundwater level is therefore unlikely to rise to pre-dewatering levels of 40m AOD. No further dewatering is therefore proposed.

A network of drainage swales is proposed for each of the phases as shown on Drawing Nos. 001 to 006. Swales located along the crest of the extraction pits have been specified to (i) intercept surface water runoff before conveying flow into the lake, and (ii) provide control for surface water runoff into the extraction pit to limit erosion along the face of the extraction pits.

[3] Table 5 of Technical Guidance to the National Planning Policy Framework : Department for Communities and Local Government : March 2012

Where possible the alignment of the swales has been set to accommodate surface water runoff though more than one phase. Drawing Nos. 001 to 006 show the proposed swale network, new swales for each phase and those retained form previous phase(s) are identified separately.

During the restoration of the southern slope of the site, a clay-lined drain will be constructed near the southern and eastern site boundary to convey flow from the concrete culvert at the A283 to the lake. It is understood that flow from this minor watercourse / drainage channel will continue to be dealt with by CEMEX UK under an existing riparian agreement.

3.4 Surface Water Discharge

In accordance with the approved FRA[1], it is proposed that surface water runoff generated from the six phases is discharged into the existing lake in the north western part of the Site.

Drawing Nos. WP L/12A/01 to WP L/12 A/05 show location of inert fill used to form the final restoration profile. As the Site will contain a degree of inert fill, infiltration techniques (without a degree of pre-treatment) are not deemed suitable as a means of discharging water from the lake due to the potential for mobilising rogue contaminants present within the fill and the risk to the underlying Principal Aquifer.

It is, therefore, proposed that the water within the lake solely discharge via the pumped outfall operated by CEMEX UK into an adjacent watercourse. It is of note that this arrangement will be retained by CEMEX UK beyond the final restoration phase.

As the lake outfall will be pumped, off site discharge will be controlled in line with the requirements of the relevant existing discharge consent and Environmental Permit for the adjoining CEMEX UK site. Under discharge permit no. 62/1/1291, a maximum discharge of 6,840m^3/day is permitted during dry weather which can be translated to:

6,840m^3/day (consented daily volume)

75l/s (continuous pumping over 24 hour period)

180l/s (continuous pumping over 10 hour 'working' period)

As no details have been provided for the maximum allowable discharge during wet weather, it is assumed that the pumping rate will be limited to historic pre-development 'greenfield' runoff rates, or less, as a conservative approach,

Existing runoff rates for the Site were estimated through application of methodology outlined in IH R124[4] as set out within the Interim Code of Practice for SuDS (ICP) for catchment areas of 50ha or less. IH R124 is widely recognised as current best practice for estimation of runoff rates for small rural catchments.

The IH R124 method can be used to estimate the 'greenfield' runoff rates for the design 1% AEP event by applying regional growth curve factors to the mean annual peak runoff (Q_{BAR}). Q_{BAR} is roughly equivalent to a 50% AEP event.

UK Hydrological Region 7 growth curve factors were used to estimate the greenfield runoff rate for the 1% AEP rainfall event. Details of the analysis are enclosed at Appendix B.

[4] Institute of Hydrology Report No. 124 (1994) (IH R124) Flood estimation for small catchments.

3.5 Surface Water Attenuation Requirements

Based on Drawing Nos. WP L/12A/01 to WP L/12 A/06, a number of discrete drainage sub-catchments have been defined for the purposes of the evaluating the effective contributing area. These sub-catchments have been defined based on the different land cover and underlying soils as summarised within Table 3-1.

Table 3-1
Sub-catchment Characteristics

Phase	Sub-catchment	Description	Area (ha)	Average Slope	Land cover	Soil type
Year 1	Yr1_A	Existing ground and vegetation to be retained	2.20	0.333	Scrub heathland	Sandy loam[1]
	Yr1_B	Existing survey	0.96	0.083	Bare earth	Sandy gravel[2]
	Yr1_C	Existing survey	1.07	0.250	Bare earth	Sandy gravel[2]
Year 2	Yr2_A	Existing ground and vegetation to be retained	2.39	0.286	Scrub heathland	Sandy loam[1]
	Yr2_B	Existing survey	0.95	0.083	Bare earth	Sandy gravel[2]
	Yr2_C	Proposed acid grassland / heathland	0.27	0.333	Cultivated land/short grass / grassed tip	Sandy loam[3]
	Yr2_D	Proposed scrub regeneration	0.13	0.250	Scrub heathland	Sandy loam[1]
	Yr2_E	Area restored to finished levels	1.00	0.082	Bare earth	Sandy loam[3]
	Yr2_F	Proposed native broadleaves woodland planting	0.16	0.200	Woodland	Sandy loam[3]
Year 3	Yr3_A	Proposed scrub regeneration	0.22	0.333	Scrub heathland	Sandy loam[1]
	Yr3_B	Existing ground and vegetation to be retained	1.75	0.083	Scrub heathland	Sandy loam[1]
	Yr3_C	Proposed acid grassland / heathland	3.01	0.125	Cultivated land/short grass / grassed tip	Sandy loam[3]
	Yr3_D	Proposed scrub regeneration	0.13	0.125	Scrub heathland	Sandy loam[1]
	Yr3_E	Area restored to finished levels	0.55	0.250	Bare earth	Sandy loam[3]
	Yr3_F	Proposed native broadleaves woodland	0.46	0.250	Woodland	Sandy loam[3]

Phase	Sub-catchment	Description	Area (ha)	Average Slope	Land cover	Soil type
		planting				
Year 4	Yr4_A	Existing ground and vegetation to be retained	1.60	0.286	Scrub heathland	Sandy loam[1]
	Yr4_B	Existing survey	0.78	0.083	Bare earth	Sandy gravel[2]
	Yr4_C	Proposed acid grassland / heathland	1.74	0.125	Cultivated land/short grass / grassed tip	Sandy loam[3]
	Yr4_D	Proposed scrub regeneration	0.13	0.125	Scrub heathland	Sandy loam[1]
	Yr4_E	Proposed scrub regeneration	0.25	0.333	Scrub heathland	Sandy loam[1]
	Yr4_F	Proposed native broadleaves woodland planting	0.69	0.167	Woodland	Sandy loam[3]
	Yr4_G	Area restored to finished levels	0.59	0.125	Bare earth	Sandy loam[3]
Year 5	Yr5_A	Existing ground and vegetation to be retained	1.78	0.333	Scrub heathland	Sandy loam[1]
	Yr5_B	Existing survey	1.20	0.059	Bare earth	Sandy gravel[2]
	Yr5_C	Proposed acid grassland / heathland	2.20	0.200	Cultivated land/short grass / grassed tip	Sandy loam[3]
	Yr5_D	Proposed scrub regeneration	0.13	0.125	Scrub heathland	Sandy loam[1]
	Yr5_E	Proposed scrub regeneration	0.23	0.333	Scrub heathland	Sandy loam[1]
	Yr5_F	Proposed native broadleaves woodland planting	0.87	0.125	Woodland	Sandy loam[3]
Final	Final_A	Existing ground and vegetation to be retained	1.44	0.333	Scrub heathland	Sandy loam[1]
	Final_B	Proposed car parking area	0.42	0.056	Bare earth	Clay/loam[4]

Phase	Sub-catchment	Description	Area (ha)	Average Slope	Land cover	Soil type
	Final_C	Proposed acid grassland / heathland	2.57	0.200	Cultivated land/short grass / grassed tip	Sandy loam[3]
	Final_D	Proposed scrub regeneration	0.13	0.125	Scrub heathland	Sandy loam[1]
	Final_E	Proposed scrub regeneration	0.25	0.333	Scrub heathland	Sandy loam[1]
	Final_F	Proposed native broadleaves woodland planting	1.16	0.250	Woodland	Sandy loam[3]

[1] In-situ superficial deposit
[2] In-situ bedrock
[3] Inert fill
[4] Consolidated gravel / sand

Whilst the land cover has been established from the Drawing Nos. WP L/12A/01 to WP L/12 A/06, the soil type has been based on the historic in-situ geology. In areas where no excavation has taken place, a 'Sandy loam' soil is used to represent the Head deposits of clay, silt, sand and gravel as described at Section 2.3.1. Where excavations have extended into the solid geology, a soil type of 'Sandy gravel' has been adopted due to presence of the Folkstone Formation.

Based on the above sub-catchment characteristics at Table 3-1, the runoff coefficient was estimated using the National Coal Board Nomogram Method in line with industry best practice for minerals and waste sites involving restored surfaces. The resulting effective contributing area for each catchment is summarised in Table 3-2.

Table 3-2
Attenuation Volume Required

Phase	Sub-catchment	Runoff Coefficient	Effective Contributing Area (ha)	Attenuation Volume Required (m^3)
Year 1	Yr1_A	0.445	0.98	987
	Yr1_B	0.380	0.37	
	Yr1_C	0.044	0.05	
Year 2	Yr2_A	0.435	1.04	1,537
	Yr2_B	0.380	0.36	
	Yr2_C	0.495	0.13	
	Yr2_D	0.425	0.06	
	Yr2_E	0.530	0.53	
	Yr2_F	0.270	0.04	
Year 3	Yr3_A	0.445	0.10	1,794
	Yr3_B	0.390	0.68	
	Yr3_C	0.395	1.19	
	Yr3_D	0.450	0.06	
	Yr3_E	0.580	0.32	
	Yr3_F	0.375	0.17	
Year 4	Yr4_A	0.435	0.70	1,722
	Yr4_B	0.380	0.29	
	Yr4_C	0.395	0.69	
	Yr4_D	0.450	0.06	

Phase	Sub-catchment	Runoff Coefficient	Effective Contributing Area (ha)	Attenuation Volume Required (m^3)
	Yr4_E	0.445	0.11	
	Yr4_F	0.355	0.24	
	Yr4_G	0.550	0.33	
Year 5	Yr5_A	0.435	0.77	2,100
	Yr5_B	0.360	0.43	
	Yr5_C	0.570	1.25	
	Yr5_D	0.450	0.06	
	Yr5_E	0.445	0.10	
	Yr5_F	0.375	0.33	
Final	Final_A	0.445	0.64	2,831
	Final_B	0.720	0.31	
	Final_C	0.570	1.46	
	Final_D	0.450	0.06	
	Final_E	0.445	0.11	
	Final_F	0.375	0.44	

Using the 'Quick Storage Estimate' module within MicroDrainage[5] and the Flood Estimation Handbook (FEH) method, the attenuation volume required for each phase is summarised in While the land cover has been established from the Drawings Nos. WP L/12A/01 to WP L/12 A/06, the soil type has been based on the historic in-situ geology. In areas where no excavation has taken place, a 'Sandy loam' soil is used to represent the Head deposits of clay, silt, sand and gravel as described at Section 2.3.1. Where excavations have extended into the solid geology, a soil type of 'Sandy gravel' has been adopted due to presence of the Folkstone Formation.

In line with industry best practice and professional experience, the mid-range value has been reported as the appropriate value for attenuation features with outlet discharge controlled by pumped arrangements.

3.5.1 Climate Change Allowances

The attenuation volume for Year 1 – 5 assumes a 5% increase in peak rainfall intensity to 2025 which covers the period during which the restoration scheme will be constructed. However, for the final restoration a 30% increase has been applied in line with best practice to allow for the effects of climate change over the next 100 years.

The volume available within the section of the lake under the control of Britaniacrest Recycling is summarised in Table 3-3.

[5] MicroDrainage (2013). WinDes Drainage Design and Modelling Software (Version 13)

Table 3-3
Volume Available within Lake

Phase	Available Volume (m^3)	Approx. Water level (m AOD)
Year 1 to 5	9,941	34
Final	14,038	41

As discussed at Section 3.3, groundwater level is expected to be at 17m AOD through the first five phases. However, to allow for fluctuation in pumping rate, it is assumed that water level within the lake may rise by 2 – 3m above the surveyed water level of 33.15m AOD. Moreover, CEMEX UK have infrastructure several metres above the current lake level, so they are not likely to allow the water level within the lake to rise by more than 2 – 3m. An existing water level of 33m AOD within the lake has therefore been assumed to be present during a storm event.

However, over the lifetime of the proposed restoration, groundwater is expected to rise to 40m AOD, thereby raising the water level within the lake. The volume within the lake available is therefore provided above the level of 40m AOD.

Comparison of Table 3-2 and Table 3-3 show that there is sufficient volume provided within the Site to attenuate flows to the historic pre-development 'greenfield' runoff rate with the maximum lake water level not exceeding 34m AOD during Year 1 to 5 and 41m AOD for the final restoration, i.e. it remains in excess of 5m below the level of the proposed campsite over the lifetime of the development.

3.6 Pump Failure

In the event of failure of the pump, preliminary calculations indicate a surface water runoff volume of 5,917m^3 generated during a 1% annual probability rainfall event inclusive of an allowance for climate change (+30%) for the final restoration, with a zero outfall discharge. Assuming a water level of 40m AOD at the start of the rainfall event, the pond has been estimated to have a capacity of 14,038m^3 to 41m AOD up to 95,204m^3 to the 45m AOD contour and is, therefore, deemed able to accommodate unattenuated surface water runoff from both the Site and the adjoining CEMEX UK site.

3.7 Reservoirs Act

Water levels within the lake will remain 'below natural ground' and hold less than 25,000m^3 of water. Therefore, the requirements under the Reservoirs Act do not apply to this facility.

3.8 Surface Water Treatment

In accordance with the approved FRA and CIRIA C697[3] surface water runoff from the proposed development will undergo robust treatment through a SuDS management train.

This approach will ensure that the surrounding surface water environment will not be adversely impacted by sediment loading or pollution. The approach involves the following:

1. **Prevention** – the use of good site design and housekeeping measures on site to prevent pollution within runoff.

2. **Source Control** – control of runoff at or very near its source.

3. **Site Control** – management of water from several sub-catchments.

A network of swales have been provided within the design of the phased extraction and restoration scheme to capture surface water runoff and provide a primary level of treatment prior to discharge into the existing pond.

The proposed swale network for each phase is shown on Drawing Nos. 001 to 006. The treatment capacity of each swale has been estimated through application of the methods outlined in recognised national guidance published by the National Coal Board (NCB)[6]. This method estimates treatment capacity as a direct function of available water surface area.

The method applies does not account for application of chemical settlement aids to the inflows to the swale systems which encourages particles to bind together to form a greater mass thus promoting settlement.

The treatment calculations are undertaken in accordance with '*Chapter 6 – Design of Sedimentation Ponds, National Coal Board – Mining Department, 1982, Technical Management of Water in the Coal Mining Industry*'. As such, to achieve acceptable sedimentation outflow rate less than or equal to 1×10^{-5}m/s, a maximum discharge into the existing pond of 7.28l/s is required with a minimum proposed length of swale of approximately 364m (Year 1) and width of 2m. It is of note that the length of swale proposed increases over the next phases as follows: 633m in Year 2, 490m in Year 3, 699m in Year 4, and 506m in Year 5 and 6. The swales include the reach conveying flow to the lake only.

The control of flow from the swale into the lake will be provided through the use of an orifice plate or pipe.

[6] National Coal Board – Mining Department (1982) : Technical Management of Water in the Coal Mining Industry (Chapter 6 – Design of Sedimentation Ponds)

4.0 PRINCIPAL OPERATION AND MAINTENANCE REQUIREMENTS

4.1 Overview

All surface water drainage features associated with the development will remain private and will be maintained and operated by Britaniacrest Recycling.

The following section outlines recommended maintenance requirements for the proposed surface water drainage system for the development within control of Britaniacrest Recycling. Therefore, only the maintenance and management of the swale network has been considered. If necessary these outline maintenance and management proposals will be refined by Britaniacrest Recycling during the operational phase and once the site is restored to suit specific conditions. It is expected that existing maintenance and management regime for the pump(s) will be retained by CEMEX UK over the lifetime of the development.

4.2 Swales

The proposed drainage scheme utilises swales as a mechanism for treatment and attenuation of surface water runoff. The anticipated maintenance and management plan for the piped system associated with the surface water drainage system is outlined in Table 4-1.

Table 4-1
Typical Maintenance Requirements

Maintenance Schedule	Required Action	Minimum Frequency
Regular Maintenance	Litter and debris removal.	Monthly / or as required.
	Grass cutting to maintain sward to desired height for conveyance / treatment and landscape/ecological benefit.	Monthly (during growing season) / or as required.
	Manage other vegetation and remove nuisance plants.	Monthly / or as required.
Occasional Maintenance	Re-seed areas of poor vegetation growth.	Monthly (at start), then as required.
	Prune and trim nearby trees and remove cuttings.	As required.
	Remove sediment from pre-treatment system when 50% full.	As required.
Remedial actions	Repair of erosion or other damage by re-seeding or re-turfing.	As required.
	Repair / rehabilitation of inlets, outlets and overflows.	As required.
	Rehabilitate infiltration surface using scarifying and spiking techniques if performance deteriorates.	As required.
Monitoring	Inspect inlet for blockages, and clear if required.	Monthly / or after large storms.
	Inspect bank sides, structures, pipework etc for evidence of physical damage.	Monthly / or after large storms.
	Inspect infiltration surfaces for compaction and ponding.	Monthly.
	Inspect silt accumulation rates and establish appropriate removal frequencies.	Six monthly.

5.0 CONCLUSIONS

Technical information provided within this report on behalf of Britaniacrest Recycling seeks to demonstrate that a sustainable and integrated drainage scheme can be implemented for the proposed continuation of mineral extraction and revised restoration scheme at Washington Sandpit, and that the requirements of Planning Condition 9 pursuant to Planning Permission WSCC/104/13/SR can be satisfied.

Technical details provided within this report seeks to demonstrate that the surface water drainage strategy, including SuDS provisions, are robust, deliverable, and sustainable in flood risk terms and in relation to the requirements of the NPPF and local planning policies.

It also seeks to demonstrate that the surface water drainage strategy and SuDS proposals are entirely consistent with the fundamental principles set out within the Flood Risk Assessment which accompanied the approved planning application for the proposed development.

6.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Britaniacrest Recycling; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Drawings

4.0m HIGH CLAY BUND CONSTRUCTED TO SEPARATE SITE FROM FROM LARGER SAND PIT AREA

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)
- PROPOSED BUND

BRITANIAGREST RECYCLING

SLR
8 PARKER COURT
STAFFORDSHIRE TECHNOLOGY
PARK, BEACONSIDE,
STAFFORD ST18 OWP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

YEAR 1

WP L/12A/01

Scale	Date
1:1500 @ A3	JUNE 2015

01258.00004.16.01.2.Year 1 Restoration.dwg

FORMER CLAY BUND GRADED OUT TO FORM TOE OF RESTORED LANDFORM

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION

BRITANIAGREST RECYCLING

SLR
8 PARKER COURT
STAFFORDSHIRE TECHNOLOGY
PARK, BEACONSIDE,
STAFFORD ST18 OWP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

YEAR 2

WP L/12A/02

Scale	Date
1:1500 @ A3	JUNE 2015

01258.00004.16.02.2.Year 2 Restoration.dwg

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

GW03

N
W E
S

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION

BRITANIACREST RECYCLING

SLR
8 PARKER COURT
STAFFORDSHIRE TECHNOLOGY PARK, BEACONSIDE,
STAFFORD ST18 OWP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

YEAR 3

WP L/12A/03

Scale 1:1500 @ A3

Date JUNE 2015

01258.00004.16.03.2.Year 3 Restoration.dwg

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION

BRITANIAGREST RECYCLING

SLR
8 PARKER COURT
STAFFORDSHIRE TECHNOLOGY
PARK, BEACONSIDE,
STAFFORD ST18 0WP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

YEAR 4

WP L/12A/04

Scale	Date
1:1500 @ A3	JUNE 2015

01258.00004.16.04.2.Year 4 Restoration.dwg

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION

BRITANIAGREST RECYCLING

SLR
8 PARKER COURT
STAFFORDSHIRE TECHNOLOGY
PARK, BEACONSIDE,
STAFFORD ST18 OWP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

YEAR 5

WP L/12A/05

Scale	Date
1:1500 @ A3	JUNE 2015

01258.00004.16.05.2.Year 5 Restoration.dwg

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- PROPOSED FINAL CONTOURS (1M INTERVALS)

RESTORED LANDSCAPE FEATURES

- PROPOSED NATIVE BROADLEAVED WOODLAND PLANTING
- PROPOSED ACID GRASSLAND / HEATHLAND
- PROPOSED SCRUB REGENERATION
- PROPOSED CAR PARKING AREA (BARE CONSOLIDATED GRAVEL/SAND)
- PROPOSED WATERBODY
- INFORMAL RECREATIONAL AREA WITH CAMPSITE
- PROPOSED PICNIC AREA

BRITANIAGREST RECYCLING

SLR
6 PARKER COURT
STAFFORDSHIRE TECHNOLOGY
PARK, BEACONSIDE,
STAFFORD ST18 OWP
T: 01785 241755
F: 01785 241780
www.slrconsulting.com

WASHINGTON SANDPIT

PHASED WORKING AND RESTORATION

FINAL RESTORATION

WP L/12A/06

Scale	Date
1:1500 @ A3	JUNE 2015

01258.00004.16.06.2.Final Restoration.dwg

4.0m HIGH CLAY BUND CONSTRUCTED TO SEPARATE SITE FROM FROM LARGER SAND PIT AREA

STOCKPILING AREA (MAX. HEIGHT OF STOCKPILES 5.0m)

N
W E
S

0 20 40 60 80 100
Metres
1:1500

LEGEND

- SITE BOUNDARY
- EXISTING SURVEY
- EXISTING CONTOURS (1M INTERVALS)
- EXISTING SANDSTONE FACES TO BE RETAINED (VALUABLE SAND MARTIN AND INSECT HABITAT)
- EXISTING GROUND AND VEGETATION TO BE RETAINED
- LIMIT OF CURRENT EXTRACTION WITH WORKING CONTOURS
- INERT WASTE INFILLING
- AREA RESTORED TO FINISHED LEVELS
- PROPOSED FINAL CONTOURS (1M INTERVALS)
- PROPOSED BUND
- NEW SWALES
- PROPOSED ROUTE OF MINOR WATERCOURSE / DRAIN CHANNEL
- DISCHARGE POINT

BRITANIAGREST RECYCLING

SLR
TREENWOOD HOUSE
ROWDEN LANE
BRADFORD-ON-AVON
WILTS. BA15 2AU
T: 01225 309400
F: 01225 309401
www.slrconsulting.com

WASHINGTON SANDPIT

PROPOSED SURFACE WATER PLAN

YEAR 1

001

Scale	Date
1:1500 @ A3	AUG 2015

01258.00004.16.01.4.Year 1 Restoration.dwg