

3.2.5 Separate noise modelling has been undertaken for the following scenarios, all of which are cumulative with the ongoing Woodsmith Mine works:

- Site clearance and haul road construction;
- Temporary stockpile construction; and
- Pump operation (night-time working)

3.2.6 The predicted noise levels at NSRs due to site clearance and haul road construction have been compared to the limit of 55 dB $L_{Aeq,1hr}$ for normal daytime working. For temporary stockpile construction, the applicable limit is 70 dB $L_{Aeq,1hr}$ as these works will last for no more than 8 weeks as per the criterion in the PPGM and applied in the Woodsmith Mine planning consent. For pump operation the limit is 42 dB $L_{Aeq,1hr}$ as these could run at night.

3.3 Vibration

3.3.1 The DMRB LA111 Noise and Vibration states that “A study area of 100m from the closest construction activity with the potential to generate vibration is normally sufficient to encompass vibration sensitive receptors”. The closest NSR is around 170m away; hence, vibration impacts due to the proposed Works are not anticipated and these have been excluded from further assessment.

3.3.2 The DMRB LA111 Noise and Vibration does not account for the potential vibration effects of blasting. Blasting is being undertaken at the Woodsmith Mine site and the vibration emissions are controlled and monitored as required by the relevant planning conditions for the site. Blasting is not included in the proposed Works and therefore blasting vibration has not been considered within this NVIA.

4 ASSESSMENT

4.1 Predicted Noise Levels

- 4.1.1 **Tables C.1 and C.2** in **Appendix C** provide the predicted levels for the proposed Works cumulative with continuing works at the Woodsmith Mine site.
- 4.1.2 The predicted cumulative noise levels during the proposed site clearance and haul road construction works are at least 6 dB below the 55 dB $L_{Aeq,1h}$ noise limit at the identified noise-sensitive receptors. During the temporary stockpile construction works, the predicted cumulative noise levels are at least 14 dB below the 70 dB $L_{Aeq,1h}$ noise limit. Predicted cumulative night-time noise levels with the pumps operational at the worst-affected noise-sensitive receptor are equal to the 42 dB $L_{Aeq,1h}$ noise limit.
- 4.1.3 The predictions incorporate appropriate mitigation measures, as described in Section 6. In particular, an assumption has been made that the pumps will not start operating until the top soil bund is constructed to a height of at least 2m. If the pumps need to be used during the night before this time, temporary screening will be required between the pumps and the closest noise-sensitive receptor (Parkdown Bungalow). The prediction methodology is conservative and exceedances of the noise limits are therefore not anticipated.

5 NOISE MONITORING PROGRAMME

5.1 Noise Monitoring

- 5.1.1 Continuous noise monitoring, as required by Woodsmith Mine planning condition NYMNPA-18, is being undertaken at three key residential receptor locations and seven boundary locations as described in the relevant site NVMPs (e.g. Phase 4 document reference 40-RHD-WS-70-EN-PL-0017) and shown in **Appendix B, Figure B1**. The Sound Level Meters (SLMs) are recording L_{Aeq} , L_{Amax} , L_{A90} , and L_{A10} data with a “fast” time constant (see **Appendix A** for descriptions of these terms). Weather condition monitoring is carried out simultaneously.
- 5.1.2 A system of real time alerts enables remote monitoring of noise levels and appropriate action by contractors. This monitoring will continue throughout the proposed Works.
- 5.1.3 Since construction started in 2017, visits have been made to the various receptors to undertake attended noise monitoring and to maintain unattended noise monitoring equipment. At those receptors to the south and west of the site (Moorside, Thornhill and the Wainwright Coast to Coast Path) site noise was generally inaudible during each visit.

6 MITIGATION MEASURES

6.1 Purpose of the Section

6.1.1 This section outlines measures to be taken by the contractors to limit, and manage the impact of, noise and vibration. These measures comprise Best Practicable Means, specific mitigation actions to be adopted and communication procedures.

6.2 Best Practicable Means

6.2.1 The Control of Pollution Act (1974) and BS 5228:2009+A1:2014 define working methods and mitigation measures referred to as Best Practicable Means (BPM). Appropriate BPM set out in previous NVMPs (e.g. Phase 4, reference 40-RHD-WS-70-EN-PL-0017), will continue to be applied to the proposed Works and the ongoing simultaneous works at Woodsmith Mine.

Management Structure and Responsibilities

6.2.2 While overall accountability for compliance with environmental and approvals requirements will remain with Anglo American, all contractors working on site are responsible for undertaking the construction activities in accordance with the requirements of this NVIA.

6.2.3 The Construction Environmental Management Plan (CEMP) submitted with this application (reference 40-RHD-WS-70-EN-PL-0059) provides details of the lines of responsibility for environmental management (including relating to robust implementation of noise management and mitigation measures) during the proposed Works.

Maintenance

6.2.4 Maintenance of plant will be carried out routinely and in accordance with the manufacturers' guidance. Daily inspections will be undertaken as described in NVMPs for the Woodsmith Mine site (e.g. Phase 4, reference 40-RHD-WS-70-EN-PL-0017).

Training

6.2.5 The site induction programme and site rules will include good working practice instructions for site staff, managers, visitors and contractors to help minimise noise, as set out in previous NVMPs (e.g. Phase 4, reference 40-RHD-WS-70-EN-PL-0017).

6.3 Specific Mitigation

6.3.1 As part of the development of NVMPs for previous phases of work at the Woodsmith Mine site, a variety of mitigation measures have been specified, including acoustic barriers/bunds and limitations to operational hours for certain activities. Where applicable, these measures are assumed to be carried forward into the Woodsmith Mine works which will occur simultaneously with the proposed Works.

6.3.2 If it is necessary to use the pumps at night, before the top soil bund has been constructed to a height of at least 2m, temporary screening will be required. This screening will need to be at least 2m high and block line of sight from the pumps to the closest noise-sensitive receptor (Parkdown Bungalow). No additional specific mitigation measures are deemed necessary to control the noise from the proposed Works.

6.3.3 All individual operations will be kept under review and relevant mitigation will be applied.

6.4 Communications

Procedure for complaints or exceedance of limits

6.4.1 The procedures to be followed in the event of a complaint or an exceedance of permitted noise limits will remain as set out in previous NVMPs (e.g. Phase 4, reference 40-RHD-WS-70-EN-PL-0017).

Public relations

6.4.2 Good public relations with local residents will be maintained.

6.4.3 A Community and Stakeholder Engagement Plan is provided in Appendix A to the CEMP for the proposed Works (40-RHD-WS-70-EN-PL-0059). It details actions to be taken by Anglo American and the Contractors.

7 Conclusions

- 7.1.1 This NVIA assesses the potential noise and vibration impacts of the proposed temporary stockpiling of topsoil and subsoil on land adjacent to Woodsmith Mine, Sneatonthorpe. The assessment considers the cumulative impacts of the proposed Works with the on-going phased works at Woodsmith Mine on the nearest noise-sensitive receptors.
- 7.1.2 The proposed Works to be undertaken as part of this planning application are as follows:
- Site clearance;
 - Installation of access between Woodsmith Mine and the application site;
 - Construction of temporary haul road;
 - Installation of temporary drainage features, including attenuation pond, swales and silt netting; and
 - Temporary stockpiling of topsoil and subsoil.
- 7.1.3 The site clearance, installation of access, haul road and temporary drainage features will take approximately 4 weeks. Temporary stockpile construction will take approximately 8 weeks. These operations will be undertaken during the daytime only. There may also be a requirement for pumps associated with the proposed Works to run at night.
- 7.1.4 The assessment has been undertaken in accordance with the relevant guidance for the control of mineral extraction noise (PPGM) and vibration (BS5228-2) from mineral extraction sites. This guidance has been reviewed and the following noise level limits are deemed applicable:
- 55 dB $L_{Aeq,1hr}$ for normal daytime working (07:00 – 19:00);
 - Up to 70 dB $L_{Aeq,1hr}$ for temporary noisy operations to provide noise-reducing earth bunds and / or barriers (for up to 56 calendar days per year); and
 - 42 dB $L_{Aeq,1hr}$ for night-time works (23:00 – 07:00).
- 7.1.5 The above limits are also contained in NYMNPA Condition 20 and NYMNPA Condition 21 which control noise from the Woodsmith Mine site.
- 7.1.6 Based on guidance in the DMRB LA111 Noise and Vibration, vibration impacts from the proposed Works are not anticipated.
- 7.1.7 Noise levels from the proposed Works and ongoing working at Woodsmith Mine have been predicted at the nearby noise-sensitive receptors. If it is necessary to use the pumps at night, before the top soil bund has been constructed to a height of at least 2m, temporary screening will be required to block line of sight from the pumps to the closest noise-sensitive receptor (Parkdown Bungalow). With this mitigation in place, the predictions indicate that the applicable limits will not be exceeded for any of the identified activities. Hence, the noise effects from the proposed Works are compliant with the first aim of the NPSE (to avoid effects above the SOAEL).
- 7.1.8 Woodsmith Mine applies Best Practicable Means, mitigation measures and monitoring to minimise its noise effects. The proposed Works will also implement BPM and the ongoing Woodsmith Mine noise monitoring will also capture the noise from the proposed Works. These measures demonstrate compliance with government policy in relation to the second aim of the NPSE (to minimise effects between the LOAEL and SOAEL).
- 7.1.9 The noise from the proposed Works is therefore considered compliant with the requirements of UK Government policy and relevant guidance.

Appendix A Acoustic Terminology

Term	Definition
Noise sensitive receptors	People, property or designated sites for nature conservation that may be at risk from exposure to noise and vibration that could potentially arise as a result of the proposed development/project
Noise and Vibration study area	The area assessed for noise and vibration impacts during this assessment
Baseline scenario	Scenarios with the proposed development/project not in operation
Decibel (dB)	A unit of noise level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 µPa, the threshold of normal hearing is 0dB, and 140dB is the threshold of pain. A change of 1dB is only perceptible under controlled conditions. Under normal conditions a change in noise level of 3dB(A) is the smallest perceptible change.
dB(A)	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
$L_{Aeq,T}$	The A-weighted equivalent continuous sound level – the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq,T}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter.
$L_{A10,T}$	The A-weighted noise level exceeded for 10% of the specified measurement period (T). L_{A10} is the index generally adopted to assess traffic noise
$L_{A90,T}$	The A-weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142:2014 it is used to define the 'background' noise level.
L_{Amax}	The maximum A-weighted sound pressure level recorded during a measurement.
PPV	Instantaneous maximum velocity reached by a vibrating element as it oscillates about its rest position.
'A' weighting	A frequency weighting to compensate for the varying sensitivity of the human ear to sound at different frequencies. Application of the A-weighting is indicated by the "A" shown in the measurement parameter.
Fast time constant	Sound level meters have two conventional time weightings, F = Fast and S = Slow with time constants of 125 ms and 1000 ms respectively. Fast time constant relates to the response time of the meter which allows rapid variations in noise level to be registered.

Appendix B Figures



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Legend:

— Temporary Soil Storage Stockpile Area

— Woodsmith Mine Site

Site Boundary Monitoring Locations

● BML1 - Parkdown Bungalow

● BML2 - Thornhill

● BML3 - Moorside Farm

● BML4 - Souisgrave Farm/Mainwright Coast to Coast Walk

● BML5 - Lound House

● BML6 - Sneaton Foss/Falling Foss

● BML7 - Between shaft sinking area and BML4

Receptor Monitoring Locations

▲ NM1 - Parkdown Bungalow

▲ NM2 - Thornhill

▲ NM3 - Moorside Farm

Client:	Anglo American Ltd	Project:	Woodsmith Mine Temporary Soil Storage Stockpiles
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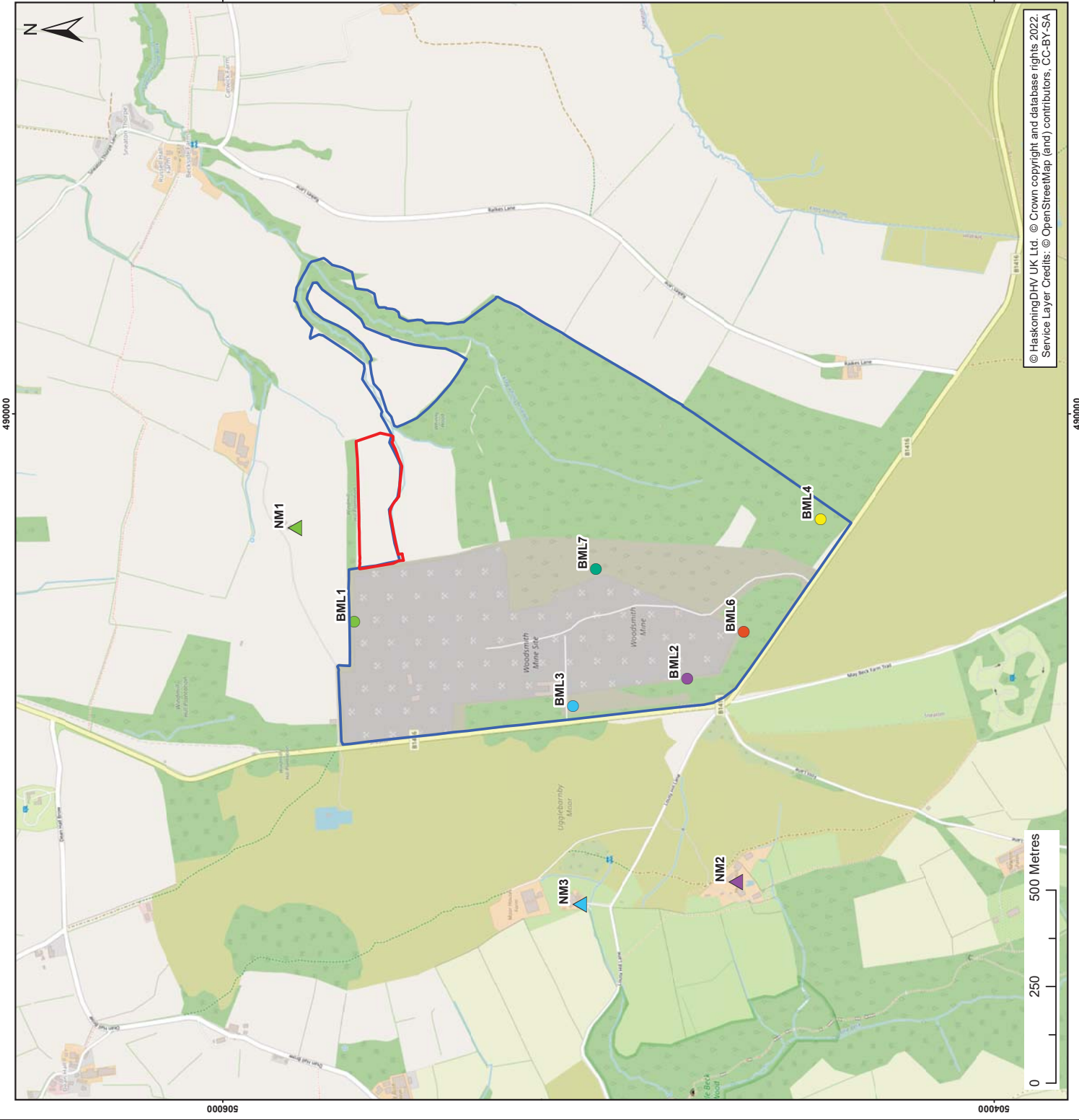
Title:	Residential and Boundary Monitoring Locations
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Appendix:	B	Figure:	B.1	Drawing No.:	40-RHD-WS-70-EN-NT-0003
Rev:	0	Date:	19/12/2022	Drawn:	GC
		Checked:	TB	Size:	A3
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ROYAL HASKONINGDHV
 INDUSTRY AND BUILDINGS
 RIGHTWELL HOUSE
 BRACKEN
 PETERBOROUGH PE1 8PW
 +44 (0)1733 33 44 55
www.royalhaskoningdhv.com



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Appendix C Predicted Noise Levels

The predicted noise levels detailed within the tables below are considered to represent the most conservative scenario.

Table C.1 Calculated highest noise levels during proposed Works cumulative with Woodsmith Mine works – Daytime (07:00 to 19:00)

Receptor Location	Haul Road and Site Clearance		Stockpile Construction	
	Limit $L_{Aeq,1hr}$ dB	Maximum Predicted $L_{Aeq,1hr}$ dB	Limit $L_{Aeq,1hr}$ dB	Maximum Predicted $L_{Aeq,1hr}$ dB
Parkdown Bungalow	55	49	70	57
Moor House Farm	55	47	70	47
Moorside Farm	55	43	70	43
Thornhill	55	42	70	42
Soulgrave	55	38	70	39
Wainwright Coast to Coast Path	55	42	70	43
Sneaton Foss Caravan Park	55	42	70	43
Falling Foss Tearooms	55	27	70	27
Lound House Caravan Park	55	41	70	42

Table C.3 Calculated highest noise levels including completed bunds and operational water pumps cumulative with Woodsmith Mine works – at night

Receptor Location	Night-time (19:00–07:00)	
	Limit $L_{Aeq,1hr}$ dB	Maximum Predicted $L_{Aeq,1hr}$ dB
Parkdown Bungalow	42	42
Moor House Farm	42	38
Moorside Farm	42	32
Thornhill	42	33
Soulsgrave	42	31
Wainwright Coast to Coast Path	42	34
Sneaton Foss Caravan Park	42	35
Falling Foss Tearooms	42	18
Lound House Caravan Park	42	35

Modelling Assumptions

The modelled results for the proposed temporary stockpile Works cumulative with the phase 17 works (as detailed in Phase 17 NVMP) are shown in **Tables C.1 to C.3**.

The works at the site are considered to comprise mineral extraction and the conditioned noise limits are in accordance with the Planning Practice Guidance for Minerals (PPGM). The PPGM does not specify the method to be used to predict noise propagation; therefore, in line with acoustics industry best practice, noise propagation from the site was calculated using the ISO 9613-2 methodology.

Overall, the model setup and assumptions made on the number of plant and their location within the site were conservative, and therefore the predicted impacts are considered to be worst-case.

The following works equipment, associated sound power levels and conservative assumptions regarding plant 'on-times' were used within the SoundPLAN noise model:

Proposed Works

Site Clearance and Haul Road Construction

- 1 x Volvo EC480E Excavator, 100% on-time, daytime only, L_{WA} 106 dB
- 1 x Cat D6T Dozer, 100% on-time, daytime only, L_{WA} 105 dB
- 2 x Bomag Rollers 100% on-time, daytime only, L_{WA} 109 dB
- 2 x Volvo A30G dump trucks L_{WA} 111 dB

Stockpile Construction – equipment operating in application site

- 1 x Volvo EC480E Excavator, 100% on-time, daytime only, L_{WA} 106 dB
- 1 x Dozer, 100% on-time, daytime only, L_{WA} 105 dB
- 2 x Bomag Rollers 100% on-time, daytime only, L_{WA} 109 dB
- Dump Truck Tipping Fill, 15% on time (45 seconds per event), daytime only, L_{WA} 111 dB
- 2 x Super silent pumps, 100% on time, 24 hours, L_{WA} 90 dB

Haul Route between material handling area (in Woodsmith Mine) and application site

- Dump truck based on 15 x trips each way per hour daytime only, L_{WA} 111 dB

Equipment at material handling area (in Woodsmith Mine)

- 1 x Volvo EC480E Excavator, 75% on-time, daytime only, L_{WA} 106 dB

Phase 17 Works (from the Phase 17 NVMP doc. ref. 40-RHD-WS-70-EN-PL-0058)

Construction Operations at the Service Shaft Building

- 1 x Concrete Truck to Concrete Batch Plant based on 1 trip per hour, 24 hrs, L_{WA} 107 dB
- 1 x Dump truck to Material Handling Platform based on 2 x trips per hour daytime and 1 trip per hour night-time, L_{WA} 110 dB

Construction Operations at the Production Shaft Building

- 1 x Concrete Truck to Concrete Batch Plant based on 1 trip per hour, 24 hrs, L_{WA} 107 dB
- 1 x Dump truck to Material Handling Platform based on 2 x trips per hour daytime and 1 trip per hour night-time, L_{WA} 110 dB

Construction Operations at the MTS Shaft

- 2 x Concrete Trucks to Concrete Batch Plant based on 1 trip per hour, 24 hrs, L_{WA} 107 dB
- 1 x MTS IDF Heater, 100% on time, 24 hours, L_{WA} 93 dB
- 1 x Dump truck to Material Handling Platform based on 2 x trips per hour daytime and 1 trip per hour night-time, L_{WA} 110 dB

Operation of the Materials Handling Bunker

- 2 x Front end loader, 33% on-time daytime and 17% on-time night, L_{WA} 107dB
- 1 x Volvo EC480E Excavator, 75% on-time, daytime only, L_{WA} 106 dB
- 1 x Dozer, 75% on-time, daytime only, L_{WA} 105dBA

Relocation of Workshops and Relocation of Process Water Tank

- 1 x 25t Excavator moving rubble, 50% on-time, daytime only, L_{WA} 114 dB
- 1 x Concrete Pump, 50% on-time, daytime only, L_{WA} 112 dB
- 1 x Dump Truck, 25% on-time, daytime only, L_{WA} 115 dB
- 1 x Mobile Crane 50% on-time, daytime only, L_{WA} 110 dB
- 2 x Poker Vibrator, 50% on-time, daytime only, L_{WA} 106 dB
- 1 x Telehandler, 50% on-time, daytime only, L_{WA} 99 dB
- 2 x Torque Gun, 50% on-time, daytime only, L_{WA} 104 dB

General sitewide works

- 10 x Telehandlers (3 at night), 50% on time each, L_{WA} 99 dB
- 7 x MEWP, 50% on time each, daytime only, L_{WA} 108 dB
- 1 x Tractor, 50% on time, daytime only, L_{WA} 112 dB
- 1 x Road Sweeper, 50% on time, daytime only, L_{WA} 104 dB
- 16 x Tower Light, 100% on time, night only, L_{WA} 85 dB
- 1 x Harmonic Filters, 100% on time, 24 hours, L_{WA} 82 dB
- 1 x Modular Substation, 100% on time, 24 hours, L_{WA} 80 dB from the roof only

Regular HGV movements

- NDWWTP Delivery, one per hour, daytime only, L_{WA} 104 dB
- WAREHOUSE Delivery, two per hour, daytime only, L_{WA} 108 dB
- Skip Replacement, one per hour, daytime only, L_{WA} 106 dB
- Coaches to Main Welfare, 4 per hour, 24 hrs, L_{WA} 108 dB
- Deliveries to Concrete Batch Plant, 1 per hour, daytime only, L_{WA} 108 dB
- Septic Tankers, 1 per hour, daytime only, L_{WA} 104 dB

Borehole Remediation and Exploratory Works – Main Rig

- 1 x Rig 50 Marriott HH-220 Drilling Rig comprising of point sources:
 - 1 x Top Drive (Enclosed), 100% on-time, 24hrs, L_{WA} 97 dB
 - 1 x Centrifuge, 100% on-time, 24hrs, L_{WA} 87 dB
 - 3 x Mud Plant Pumps (Enclosed), 100% on-time, 24hrs, L_{WA} 98 dB each
 - 2 x Shale Shakers, 100% on-time, 24hrs, L_{WA} 95 dB each
 - 1 x Main Platform Area Source, 100% on-time, 24hrs, L_{WA} 92 dB
 - 1 x Rig Above Trailer (including pipe storage area) Area Source, 100% on-time, 24hrs, L_{WA} 90 dB
 - 1 x Degasser, 100% on-time, 24hrs, L_{WA} 59 dB
 - 1 x Accumulator/Hydraulic Power Unit, 100% on-time, 24hrs, L_{WA} 90 dB
- 2 x MTU Generators (Enclosed), each comprising of:
 - 1 x Containerised Engine, 100% on-time, 24hrs, L_{WA} 95 dB
 - 1 x Exhaust, 100% on-time, 24hrs, L_{WA} 99 dB

Boreholes Remediation and Exploratory Works – Ancillary Plant

- 1 x Grout Truck, 100% on-time, 24hrs, L_{WA} 108 dB
- 1 x Merlo Forklift on Drill Pad, 25% on-time loading, 25% on-time mobile between Drill Pad and Drilling Contractor Compound areas, 24hrs, L_{WA} 99 dB
- 4 x Tower Lights, 100% on-time, 24hrs, L_{WA} 85 dB

Boreholes Remediation and Exploratory Works – Drilling Contractor Compound

- 1 x Tower Light, 100% on-time, 24hrs, L_{WA} 85 dB
- 1 x Generator for Canteen, 100% on-time, 24hrs, L_{WA} 85 dB

Hydro Boreholes at Production Shaft and Service Shaft

- 1 x Rig 15 MI-45 Massenza Drilling Rig (Truck Mounted), 100% on-time, 24hrs, L_{WA} 101 dB
- 1 x F800 Mud Pump (Cummings KTA 38 G3 V12), 100% on-time, 24hrs, L_{WA} 97.6 dB
- 1 x Rig 19 Enerflow ESR-550 Mobile Service Rig, 100% on-time, 24hrs, L_{WA} 110dB
- 1 x Telehandler, 50% on time, daytime only, L_{WA} 99dB
- 1 x MEWP, 50% on time, daytime only, L_{WA} 108dB

Construction Operations within Service Shaft Building

Internal reverberant noise level, 85 dB(A), 100% on-time, 24hrs

Construction Operations within Production Shaft Building

Internal reverberant noise level, 85 dB(A), 100% on-time, 24hrs

Construction Operations within MTS Building

Internal reverberant noise level, 85 dB(A), 100% on-time, 24hrs

1 x Front end loader, 33% on-time daytime and 17% on-time night at MTS, L_{WA} 107dB

Development of Mitigation Screening Bund F

1 x Dozer, 75% on-time, daytime only, L_{WA} 109 dB

1 x Dump Truck to Bund F tipping area, based on 2 x trips per hour daytime and 1 trip per hour night-time, L_{WA} 110 dB

1 x Dump truck tipping, 25% on-time, daytime only, L_{WA} 107 dB (measured on site)

1 x Dump truck tipping, 60 secs on-time daytime, 30 secs on-time night to Material Handling Platform, L_{WA} 107 dB

1 x Mobile Crusher, 10% on-time, daytime only, L_{WA} 109 dB

Grout shed and winches

1 x Grout Shed operations, internal reverberant noise level 80 dB(A), 50% on-time, 24hrs

1 x MTS Winch House, internal reverberant noise level 85 dB(A) 100% on-time, 24hrs

Service Shaft and Production Shaft Ventilation and Dust Silencer

1 x Silencer, 100% on-time, 24hrs, L_{WA} 88 dB(A)

1 x Service Shaft Winch House, internal reverberant noise level 85 dB(A), 100% on-time, 24hrs

1 x Production Shaft Winch House, internal reverberant level 85 dB(A), 100% on-time, 24hrs

1 x PS ventilation, 100% on-time, 24hrs, L_{WA} 93 dB

1 x PS ventilation, 100% on-time, 24hrs, L_{WA} 94 dB

1 x SS ventilation, 100% on-time, 24hrs, L_{WA} 93 dB

1 x SS ventilation, 100% on-time, 24hrs, L_{WA} 94 dB

Air Compressing Facility

Internal reverberant noise level 96 dB(A), 100% on-time, 24hrs

2 x Condensate pumps, 100% on-time, 24hrs, L_{WA} 81 dB

NDWWTP

1 x Dissolved Air Flotation Unit, 80% on time, daytime only, L_{WA} 93 dB

1 x Shaft Head Shaker Unit at NDWWTP, 80% on time, daytime only, L_{WA} 93 dB

1 x Shaft Head Shaker Unit at minus 45m below ground level inside Production Shaft building, internal reverberant level 85 dB(A), 100% on-time, 24hrs

1 x Shaft Head Shaker Unit at minus 45m below ground level inside Service Shaft building, internal reverberant level 85 dB(A), 100% on-time, 24hrs

LNG Plant

1 x Tanker discharging LNG, 80% on time, daytime only, L_{WA} 92 dB

4 x Genbachers, 100% on time, 24 hours, L_{WA} 85 dB

Concrete Batching Plant Operation

1 x Batch Plant with Concrete Mixer, 100% on time, 24 hours, L_{WA} 99 dB

1 x Batch Plant with Concrete Mixer, 10% on time, 24 hours, L_{WA} 99 dB

Creation of Bund E Attenuation Ponds

1 x Volvo EC480E Excavator, 75% on-time, daytime only, L_{WA} 106 dB

2 x Volvo A30G Dump Truck, 75% on-time, daytime only, L_{WA} 104 dB

1 x Dozer, 75% on-time, daytime only, L_{WA} 105dBA

1 x Water Pump, 100% on-time, daytime only, L_{WA} 93 dB

Acoustic modelling input data

Data sources used for this modelling are shown in Table C-3.

Table C-3 Data sources

Data	Source file	Origin
Nearby building locations	Base Noise Model MAR22.geo	Ordnance Survey Vectormap
Site topography	CAD drawing entitled 'WS Drone Platform Model 211111 North Part' CADDXF 201202 WS DTM Contour CADDXF entitled 'Woodsmith Mine Planning Application for Borehole Remediation Location Plan', reference (DRG No. 40-ARI-WS-7100-CI-22-01092 Rev. 1, dated 10/03/22. ARUP	Anglo American ARUP
Wider area topography	NZ80NE, NZ80SE, NZ90NW, NZ90SW _DTM_2m.tif Ordnance Survey Vector Map	Defra LiDAR survey data (available at Defra Survey Data Download) Ordnance Survey
Site layout	Drawing entitled 'Woodsmith Mine Temporary Earthworks Storage Bund General Arrangement', reference (DRG No. 40-ARI-WS-7100-CI-22-01103 Rev. 0, dated 24/10/22. ARUP	ARUP

Acoustic model settings

Acoustic modelling has been undertaken using the following model settings:

- Maximum search radius of 2500m.
- Maximum number of reflections: 3
- Noise predictions carried out at each floor level of sensitive receptors, ground floor level is 1.5m above ground, each storey is 2.5m high.
- Side diffraction enabled.
- Ground absorption has been set as:
 - Drill Pad, SS, PS, MTS platforms, warehouse storage areas, welfare, batch plant, NDWWTP areas and roads/haul routes within site set to $G=0$;
 - Acoustic landscaped bund areas within site red line boundary set to $G=0.6$ (representative of mixed ground);
 - Ground outside of site red line boundary set to $G=1$ (representing soft ground).



Project Title / Facility Name:

Woodsmith Project

Document Title:

**TECHNICAL NOTE - WOODSMITH - TEMPORARY SOIL STORAGE STOCKPILES
- LANDSCAPE AND VISUAL APPRAISAL**

Document Review Status

- 1. Reviewed – Accepted – Work May Proceed By: Angela Samuels
- 2. Reviewed – Accepted As Noted, Work May Proceed, Revise & Resubmit On: 20 Dec 2022 09:56
- 3. Reviewed – Work May Not Proceed, Revise & Resubmit
- 4. For information only
- 5. On Hold – Pending Project Restart & Ramp Up

Rev.	Revision Date (dd mmm yyyy)	Reason For Issue	Prepared by	Verified by	Approved by
0	16-Dec-2022	Information	IFI		
A	09-Dec-2022	Review	IFR		

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40-RHD-WS-70-EN-TN-0001

Technical Note

HaskoningDHV UK Ltd.
Industry & Buildings

To: NYMNPA
From: Royal HaskoningDHV
Date: 16 December 2022
Copy: Anglo American
Our reference: 40-RHD-WS-70-EN-TN-0001
Classification: Project related

Subject: Temporary Soil Storage Stockpiles - Landscape and Visual Appraisal

1 Introduction and Description of the Proposal

Anglo American Woodsmith Ltd is submitting a planning application for the temporary stockpiling of topsoil and subsoil on land adjacent to Woodsmith Mine, North Yorkshire. Woodsmith Mine is currently under construction and was granted planning permission by the North York Moors National Park Authority (NYMNPA) (permission NYM/2014/0676/MEIA as subsequently varied by NYM/2017/0505/MEIA).

The proposal comprises the temporary storage of topsoil and subsoil, including installation of temporary drainage features (an attenuation pond, swales and silt netting), installation of access between Woodsmith Mine and the Application Site and the construction of temporary haul road. Topsoil will be stockpiled to a maximum height of 3m and subsoil to a maximum height of 7m. The stockpiles will be seeded in a progressive manner as they are completed. Once seeded, they will remain in situ until the material is required by the Woodsmith Mine site for restoration works.

This technical note provides an appraisal of the potential landscape and visual impacts associated with the proposal.

2 Context and Methodology

The proposal is located within the North York Moors National Park and is subject to specific considerations in relation to impacts on the landscape and scenic beauty of the Park. However, as noted above, the Application Site is located immediately adjacent to the Woodsmith Mine site which is currently under construction and includes a number of visible temporary engineering features such as cranes, the MTS shaft head house, other site buildings and structures and earth bunds. The location of the Application Site in relation to Woodsmith Mine is shown on drawing 40-ARI-WS-7100-CI-22-01106 Location Plan (**Appendix A**).

Given the above, views from the west, south and north towards the Application Site (i.e. from the B1416 and Whitby) would be limited due to screening provided by the existing Woodsmith Mine site infrastructure. As such, the principal views for consideration are those from the east. To support the consideration of the landscape and visual effects of the proposal, photomontages were prepared by Worley for two viewpoints along the A171 Robin Hood's Bay Road. Drawings were prepared to illustrate the following:

- Current view;
- View with stripped field; and
- View with proposed stockpiles.

These are provided as **Appendix B**.

In the consideration of landscape and visual effects, landscape impacts relate to changes in the physical fabric and/or character of the landscape whereas visual impacts relate to changes that would occur in the composition of view character for relevant receptors, including residents and users of public rights of way. In identifying the significance of the effects, consideration was given to a number of factors including:

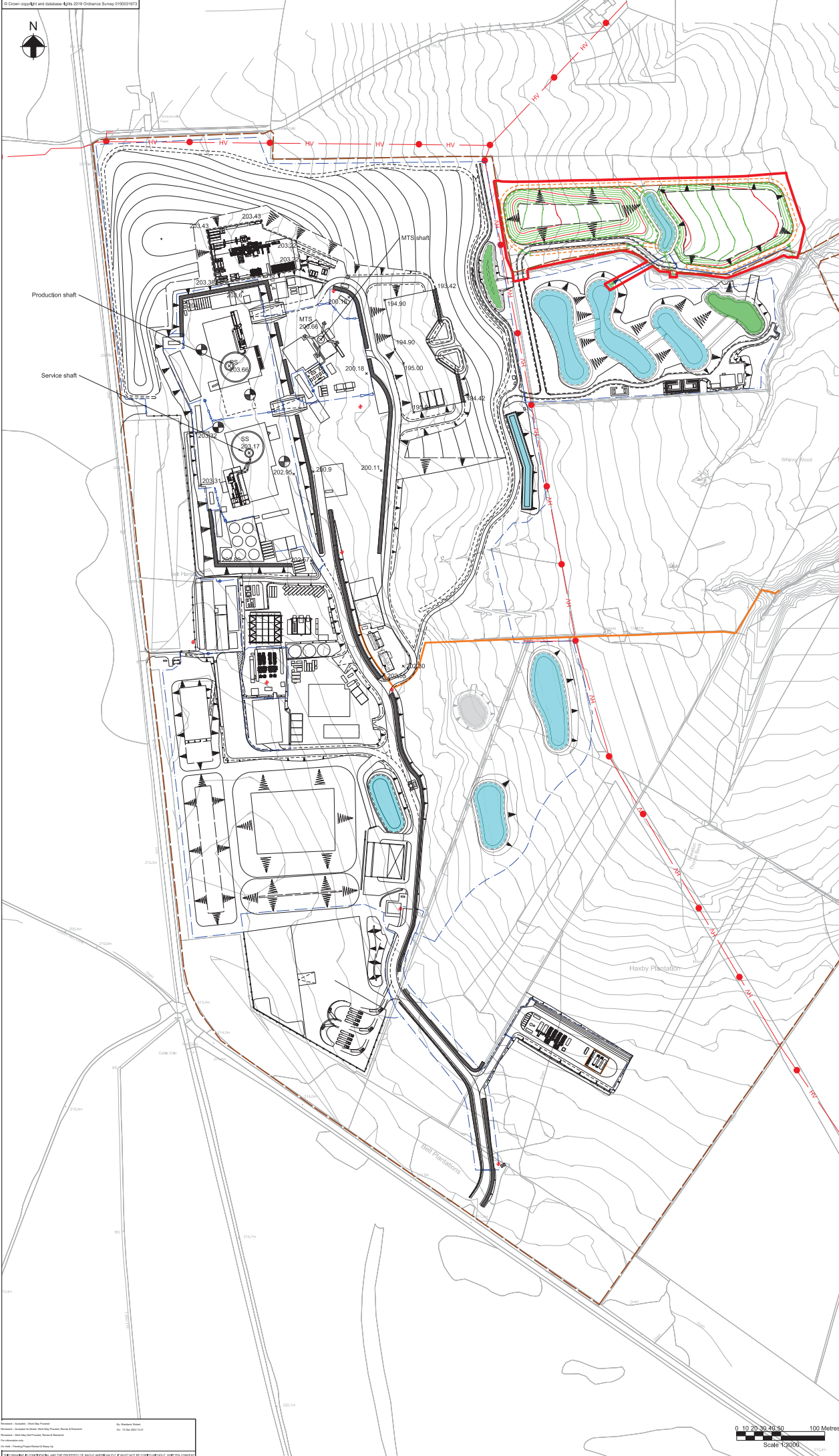
- The sensitivity of the landscape or visual receptor to change;
- The magnitude of the change that would occur as a result of the proposal; and
- The duration and reversibility of impacts. For physical landscape features this includes consideration of whether the change is irreversible or reversible over the short term (0-5 years), medium term (5-15 years) or long term (15 years plus).

3 Impact Appraisal

The proposals will create an undulating landform which is natural in appearance. In the context of the landscape from viewpoint 11 (**Appendix B**), the more distant views towards Woodsmith Mine and the Application Site are composed of rolling fields and hills. Due to the local topography and vegetation, the stripped field is not visible. The stockpiles are only slightly visible above the existing vegetation line, and they visually form a continuation of the current Woodsmith Mine landforms and therefore do not change the existing landscape or view character. From viewpoint 12, looking directly west towards the Application Site, the stripped field and stockpiles are visible. However, the stripped field does not appear visually out of character with the foreground moorland. The stockpiles are also consistent with the surrounding undulating landscape. Their relatively low height means that they are not prominent within the view and they merge with the surrounding landscape features.

Whilst the Application Site is located within the North York Moors National Park, which is a highly sensitive setting with respect to landscape and visual changes, the magnitude of change from the two viewpoints is considered to be low, as the natural landform merges with the existing landscape features and character. The physical landscape features would be present over the short term (0-5 years) and the land would subsequently be restored to its existing use; therefore, any landscape or visual changes are temporary and reversible. Temporary lighting may be required during the construction of the stockpiles; however, lighting will be kept to a minimum and will be used to illuminate only the areas required for safe working practices, and will be switched off when not in use. As such, the visual effects of lighting will be minimal. Once the stockpiles are constructed, there will be no lighting within the Application Site. Given the above, it is considered that the proposals would give rise to a negligible impact on landscape character and visual receptors, and therefore are not significant.

Appendix A Location Plan



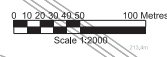
- Notes:
1. For proposed general arrangement refer to drawing 40-ARI-WS-7100-CI-22-01103.
 2. For the existing layout refer to drawing 40-ARI-WS-7100-CI-22-01105.
- Key:
- Planning Boundary
 - - - Land ownership boundary

0	07/12/22	KK	JD	CW
For Planning				
A	01/11/22	KK	JD	CW
For Review				
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Drawing Title: **Woodsmith Mine Temporary Earthwork Storage Bund Location Plan**

SCALE: 1:2000
Job No: 253285



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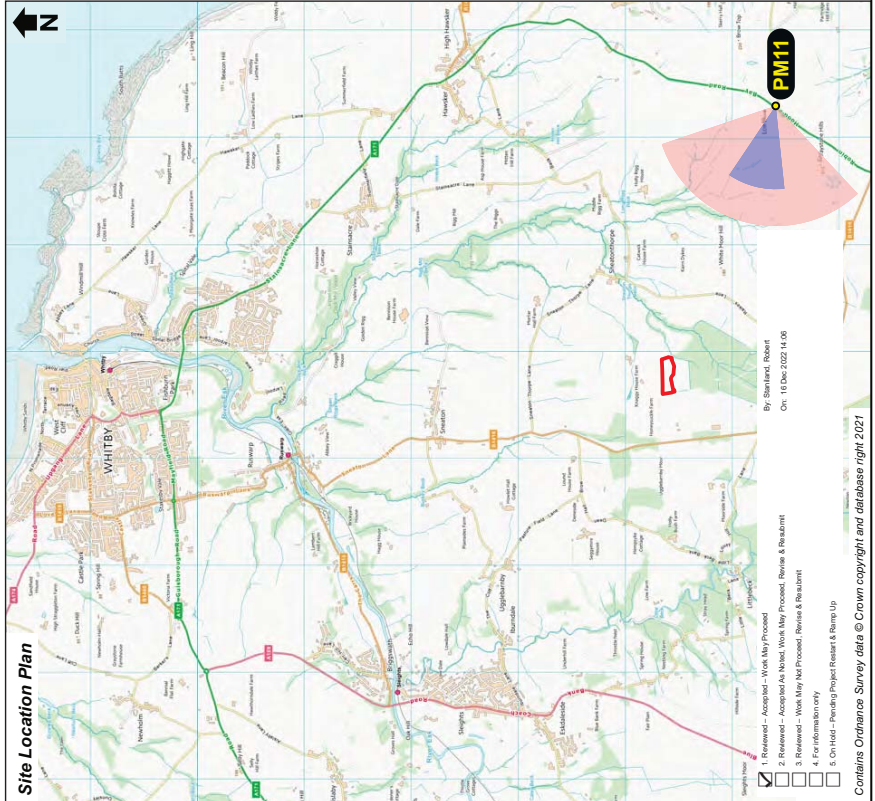
Appendix B Photomontages



View 11: Location and Panoramic Context

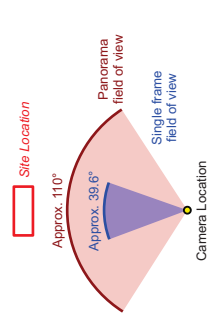
Central image as used on subsequent pages

Site Location Plan



Notes
 The above panoramic image has been digitally merged together from multiple photographs. It shows the broader context of the single frame image shown on the following pages.
 The horizontal field of view of the panoramic image has been shown below the image as degrees offset from the view centreline.
 The horizontal extent of the single frame image is shown by the dashed box.

Grid references: E492280 N504582
Elevation: 213m AOD
Direction of centre of view: 284°
Horizontal field of view: Approx. 110°
Distance to site boundary: 2390m
Camera body: Canon Powershot SX540HS
Lens: 24mm wide
Camera height above ground level: 1.7m
Time and date of photo: 3:44pm, 14/06/2022
Weather conditions: Cloudy, clear visibility



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02	08/11/2022	WAG	SME	BMA

AngloAmerican
 Anglo American Woodsmith Limited
 Woodsmith House, 10000 Woodsmith Way, Woodsmith, VA 22091
 T: +1 540 312 8100 F: +1 540 312 8101 W: www.angloamerican.com

WOODSMITH PROJECT
 CONSTRUCTION PHASE
 TEMPORARY STOCKPILES LVIA
PHOTOMONTAGE VIEW 11
 FROM ROBIN HOOD'S BAY ROAD
 SCALE @ A3: N/A

Worley
 WOODSMITH PROJECT
 Package No: P09002
 DRG No: 7200-WOB-PA-31-00001
 REV: B

**View 11:
View With
Stripped Field
(no visible difference)**

Grid reference: E492280 N504582
 Elevation: 213m AOD
 Direction of centre of view: 284°
 Horizontal field of view: Approx. 110°
 Distance to site boundary: 2390m

Camera body: Canon Powershot SX540HS
 Lens: 24mm wide
 Camera height above ground level: 1.7m
 Time and date of photo: 3:44pm, 14/06/2022
 Weather conditions: Cloudy, clear visibility

Correct Viewing Distance
 Print at A3 sheet size, view with both eyes at 500mm distance to form a representation of the real scene.

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 Anglo American Woodsmith Limited
 Woodsmith Road, Woodsmith, South Wales
 E: 44 (0) 1753 830011 W: www.angloamerican.com

WOODSMITH PROJECT
 CONSTRUCTION PHASE
 TEMPORARY STOCKPILES LVIA

PHOTOMONTAGE VIEW 11
 FROM ROBIN HOOD'S BAY ROAD

SCALE @ A3: N/A
 CONT No:



Package No:
 P0902

DRG No:
 7200-WOB-PA-31-00002

REV
B



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By: Stephanie Robert
 On: 10 Dec 2022 14:07

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View 11: View With Stockpiles

Grid reference: E492280 N504582
 Elevation: 213m AOD
 Direction of centre of view: 284°
 Horizontal field of view: Approx. 110°
 Distance to site boundary: 2390m

Camera body: Canon Powershot SX540HS
 Lens: 24mm wide
 Camera height above ground level: 1.7m
 Time and date of photo: 3:44pm, 14/06/2022
 Weather conditions: Cloudy, clear visibility

Correct Viewing Distance
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AngloAmerican
 Anglo American Woodsmith Limited
 Woodsmith Road, Woodsmith, South Wales
 T: +44 (0) 1752 830011 W: www.angloamerican.com

WOODSMITH PROJECT
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PHOTOMONTAGE VIEW 11
 FROM ROBIN HOOD'S BAY ROAD

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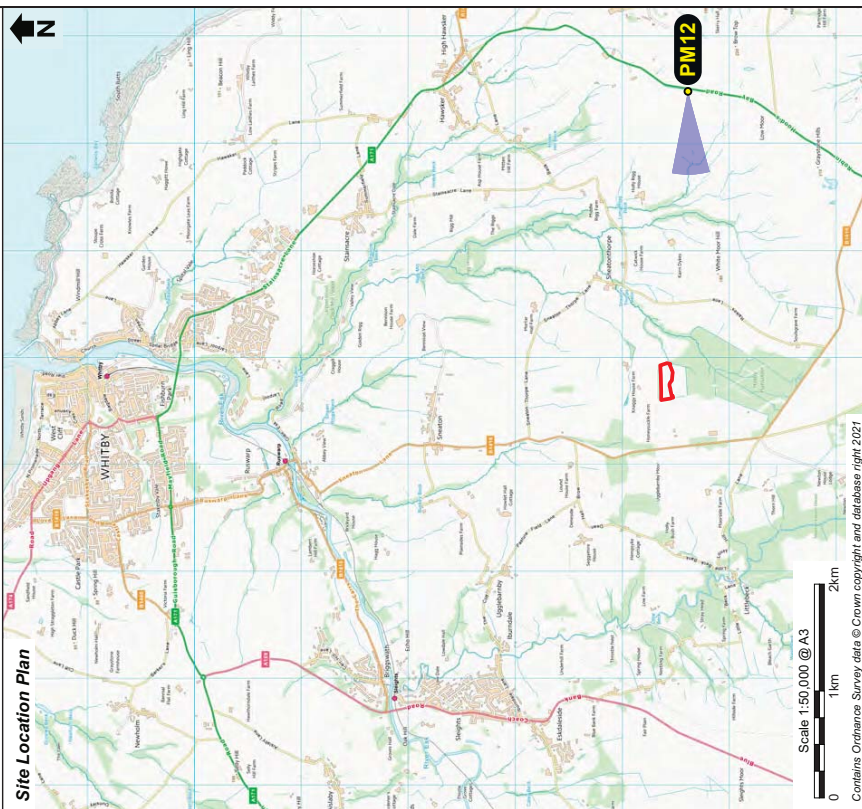
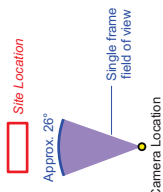
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 Horizontal field of view: Approx. 26°
 Distance to site boundary: 2560m

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 Lens: 150mm
 Camera height above ground level: 1.5m
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 Weather conditions: Dry & cloudy, clear visibility

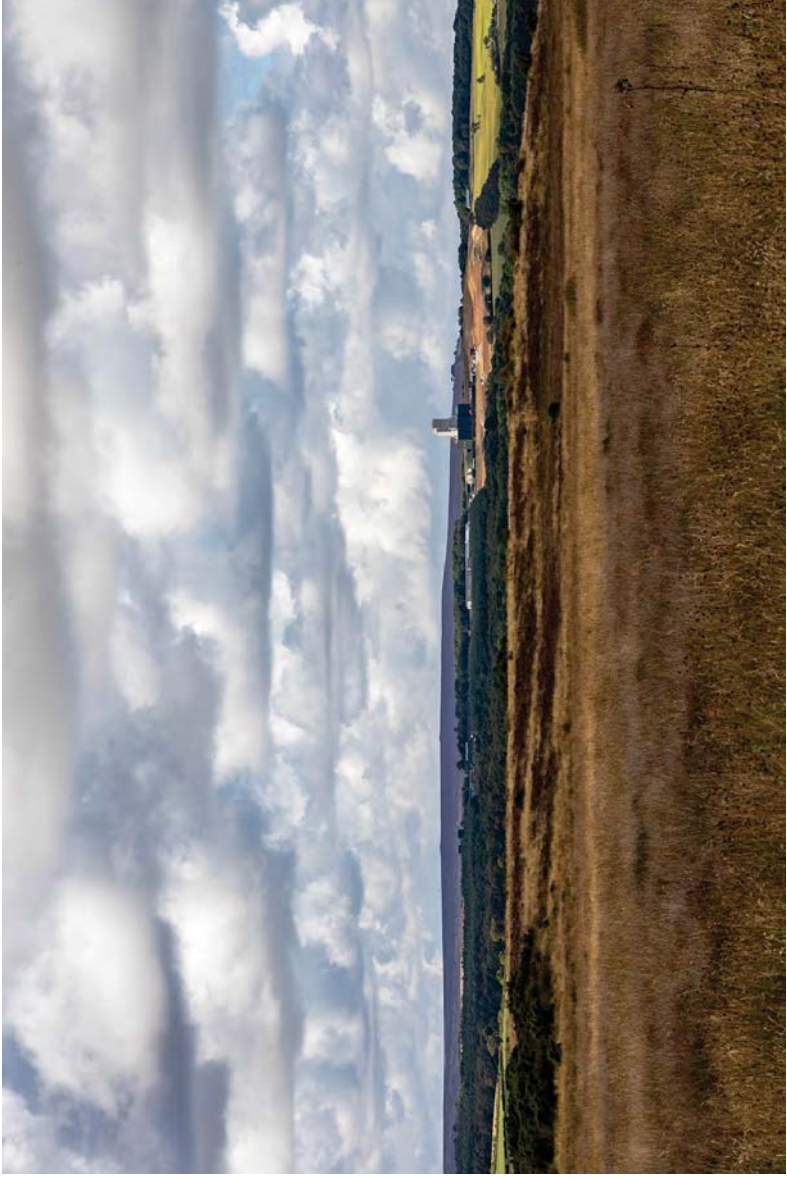
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View 12: Existing View



BIPLA	23/11/2022	WM	SME	BMA
Revision Description		WAG	SME	BMA
ANFR	08/11/2022	WM	SME	BMA
Revision Description		WAG		
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AngloAmerican
 Anglo American Woodsmth Limited
 Woodsmith Road, Llanelli, Carmarthenshire, SA31 3YU
 T: +44 (0)1792 430201 W: www.angloamerican.com

WOODSMITH PROJECT
 CONSTRUCTION PHASE
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PHOTOMONTAGE VIEW 12
 FROM ROBIN HOOD'S BAY ROAD

SCALE @ A3: N/A
 CONT No:

Package No: P0902
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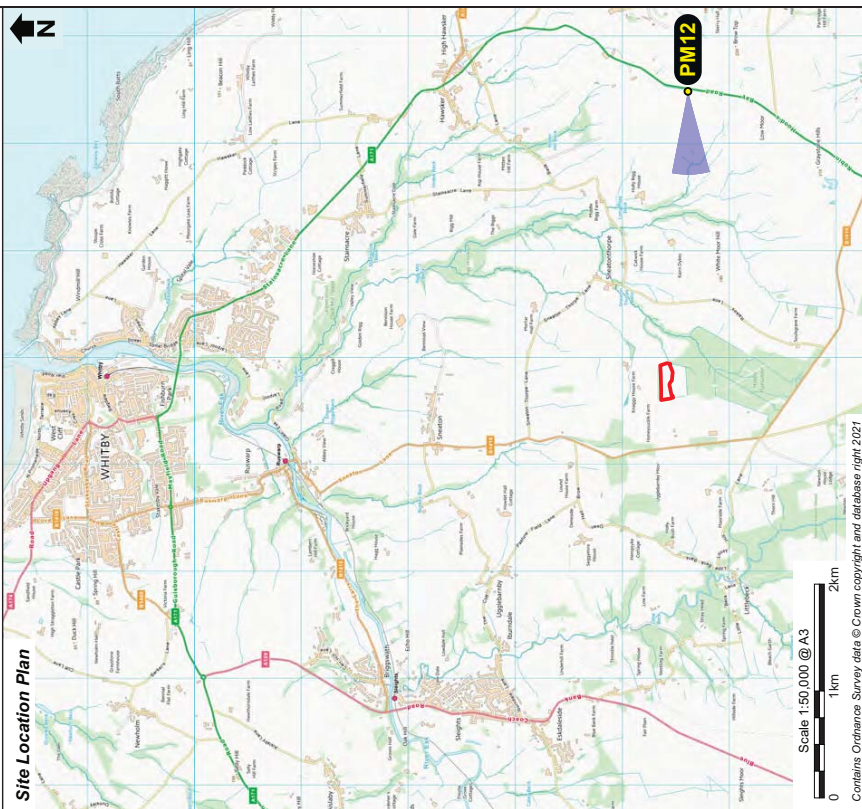
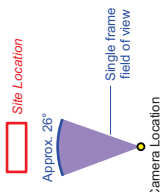
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Grid reference: E492500 N605394
 Elevation: 198m AOD
 Direction of centre of view: 268°
 Horizontal field of view: Approx. 26°
 Distance to site boundary: 2560m

Camera body: Canon 5D, Mark IV
 Lens: 150mm
 Camera height above ground level: 1.5m
 Time and date of photo: 4pm, 25/08/2022
 Weather conditions: Dry & cloudy, clear visibility

Correct Viewing Distance
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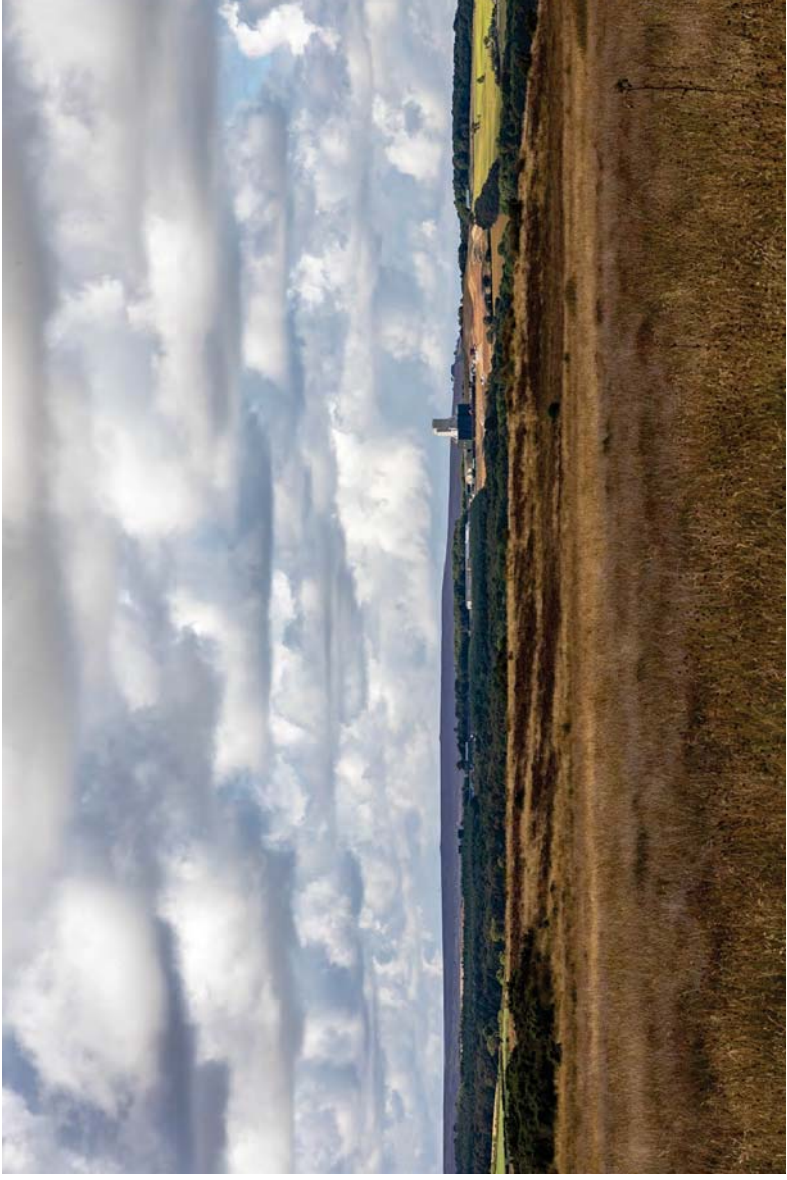


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By: Stephen, Roberts
 On: 10 Dec 2022 14:11

View 12: View With Stripped Field



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 Anglo American Woodsmith Limited
 Woodsmith Road, Whiteley, Warrington, Cheshire, WA14 8JL, UK
 Tel: +44 (0) 1753 630201 Fax: +44 (0) 1753 630200
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PHOTOMONTAGE VIEW 12
 FROM ROBIN HOOD'S BAY ROAD

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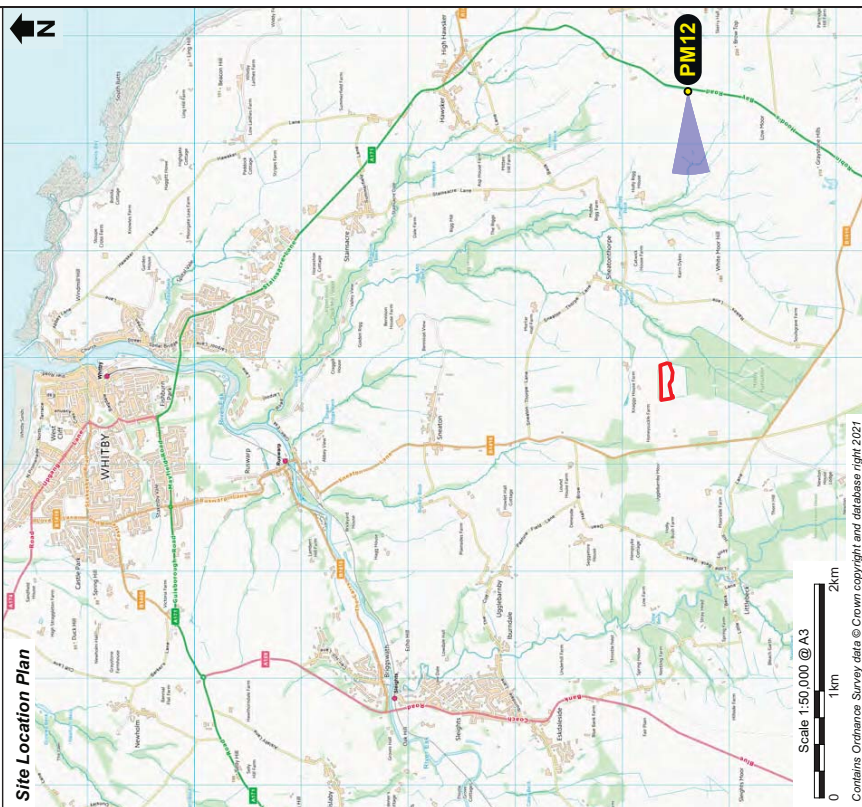
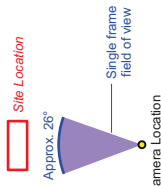
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Grid reference: E492500 N505394
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 Direction of centre of view: 268°
 Horizontal field of view: Approx. 26°
 Distance to site boundary: 2560m

Camera body: Canon 5D, Mark IV
 Lens: 150mm
 Camera height above ground level: 1.5m
 Time and date of photo: 4pm, 25/08/2022
 Weather conditions: Dry & cloudy, clear visibility

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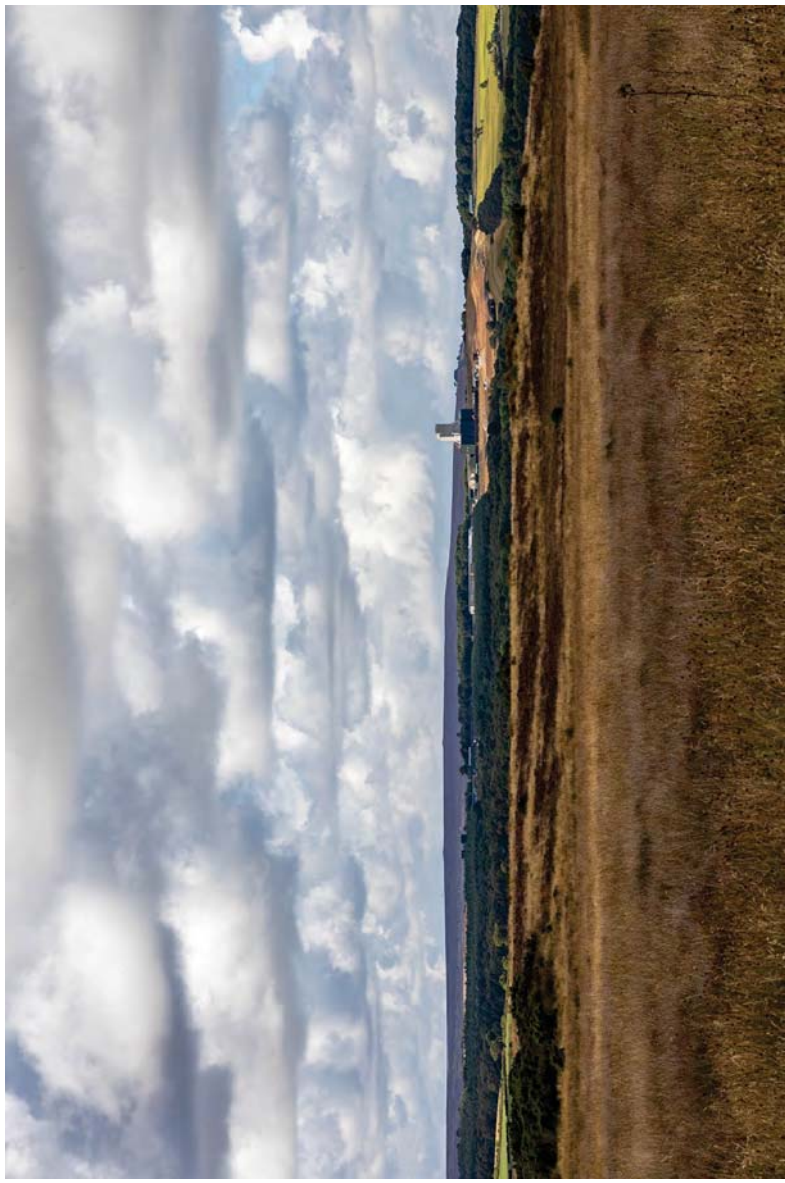
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View 12: View With Stripped Field & Stockpiles



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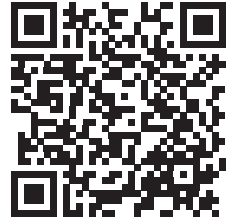
WOODSMITH PROJECT
 CONSTRUCTION PHASE
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PHOTOMONTAGE VIEW 12
 FROM ROBIN HOOD'S BAY ROAD

SCALE @ A3: N/A
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 REV: B



Project Title / Facility Name:

Woodsmith Project

Document Title:

Temporary Earthworks Storage Bunds Surface Water Drainage Strategy

NYMNP
A
12/01/2023

Document Review Status

- | | | |
|-------------------------------------|--|-----------------------|
| <input checked="" type="checkbox"/> | 1. Reviewed – Accepted – Work May Proceed | By: Charlotte Bell |
| <input type="checkbox"/> | 2. Reviewed – Accepted As Noted, Work May Proceed, Revise & Resubmit | On: 20 Dec 2022 09:45 |
| <input type="checkbox"/> | 3. Reviewed – Work May Not Proceed, Revise & Resubmit | |
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| <input type="checkbox"/> | 5. On Hold – Pending Project Restart & Ramp Up | |

Rev.	Revision Date (dd mmm yyyy)	Reason For Issue	Prepared by	Verified by	Approved by
1	19-Dec-2022	Planning	PLA		
0	16-Dec-2022	Planning	PLA		
A	13-Dec-2022	Planning	PLA		

Document ID:

40-ARI-WS-7100-CI-RP-01011

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Anglo American

Woodsmith Mine

Temporary Earthwork Storage Bunds

Surface Water Drainage Strategy

Reference: 40-ARI-WS-7100-CI-RP-01011

1 | 19 December 2022

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 253285-00

Ove Arup & Partners Limited

Admiral House Rose Wharf

78 East Street

Leeds

LS9 8EE

United Kingdom

arup.com

Document Verification

Project title Woodsmith Mine
Document title Temporary Earthwork Storage Bunds
 Surface Water Drainage Strategy
Job number 253285-00
Document ref 40-ARI-WS-7100-CI-RP-01011
File reference

Revision	Date	Filename	40-ARI-WS-7100-CI-RP-01011_A_PLA_2022-12-13
Rev A	13 Dec 2022	Description	For comment

	Prepared by	Checked by	Approved by
Name	Daniel Beech	Julia Dutton	Chris Williams
Signature			

Revision	Date	Filename	40-ARI-WS-7100-CI-RP-01011_0_PLA_2022-12-16
Rev 0	16 Dec 2022	Description	For Planning

	Prepared by	Checked by	Approved by
Name	Daniel Beech	Julia Dutton	Chris Williams
Signature			

Revision	Date	Filename	40-ARI-WS-7100-CI-RP-01011_1_PLA_2022-12-19
Rev 1	19 Dec 2022	Description	For Planning

	Prepared by	Checked by	Approved by
Name	Daniel Beech	Julia Dutton	Chris Williams
Signature			

Issue Document Verification with Document

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1. Introduction

1.1 Overview

This document has been prepared on behalf of Anglo American and details the surface water drainage strategy to accompany a Planning Application for the temporary storage of earthworks on an adjacent agricultural field to the Woodsmith Mine site. The Woodsmith Mine was granted planning permission under NYM/2014/0676/MEIA, as subsequently varied by NYM/2017/0505/MEIA [1].

1.2 Site and location

The Woodsmith Mine site is located approximately 5km south of Whitby bounded by the B1416 to the west. The site is located in the River Esk catchment, at the very upper reaches of the Sneaton Thorpe Beck.

The proposed site for the temporary storage of earthwork materials is located adjacent to Woodsmith Mine to the northeast of the mine site and adjacent to the Woodsmith Mine drainage attenuation ponds and wetland. The site forms an existing grassed agricultural field.

The location of the site is shown on drawing 40-ARI-WS-7100-CI-22-01106, included in Appendix A.

1.3 Surface water drainage strategy

The surface water drainage strategy is based on two construction stages / scenarios with different drainage outfall locations as defined below:

Scenario 1: takes into consideration the initial stages of construction, including stripping topsoil from the site and forming surface water drainage management features (including swales and attenuation features). This phase also includes the placement in temporary storage mounds topsoil and subsoil from the Woodsmith Mine site.

During the placement of materials, the site will predominantly be unvegetated. The catchment area has the potential for high impermeability and runoff from the bunds with the potential for high traces of silt and sediment particles flowing into the perimeter swales.

Once the temporary bunds are vegetated and the potential for silt laden material is minimised, it is proposed to outfall the surface water runoff from the site directly into Sneaton Thorpe Beck (Scenario 2). In the interim, and to prevent discharge from the bunds negatively impacting the water quality within Sneaton Thorpe Beck all surface water from the mounds will be discharged into the main Woodsmith Mine attenuation ponds via a series of perimeter swales, silt fences, check dams, an additional attenuation pond and pumped connections.

Run-off from the topsoil bund will be pumped from the swales lowest point to the proposed attenuation pond. Surface water discharged to the Woodsmith Mine attenuation ponds will be treated via the existing surface water treatment facility before being discharged into Sneaton Thorpe Beck via the existing wetland.

Scenario 2: assumes that the temporary earthwork bunds are vegetated and the potential for silt laden material is minimised. The catchment area for both bunds during this phase will have lower impermeability (30%) and runoff will have lower sediment content and volume and therefore treatment by water treatment facility is not required and can be discharged / outfalled directly into Sneaton Thorpe Beck.

Scenario 2 will only be implemented once the turbidity and siltation of surface water has been recorded at acceptable levels for discharging directly into Sneaton Thorpe Beck. The option to revert to Scenario 1 will also be retained if required.

1.4 Other documents key to this report

BWB prepared the Baseline Surface Hydrology report, (reference: LDT/2021/BSH) [2] for the Woodsmith Mine site Planning Application. This has been used to inform the surface water drainage (SWD) design.

The SWD design follows the principles set out in the Surface Water Drainage Design Parameters report, (reference: LDT/2021/SWDS) [3] and the Surface Water Drainage - Design Basis Report for Dove's Nest Site, (reference: REP-P2-CD-001) [4].

The design has been developed in parallel with the general arrangement for the site which is shown on 'Temporary Earthwork Storage Bund Proposed General Arrangement' drawing 40-ARI-WS-7100-CI-22-01103 in Appendix B.

Drawings which show the proposed works include Temporary Earthwork Storage Bund Proposed Cross Section (drawing 40-ARI-WS-7100-CI-10-01104), Temporary Earthwork Storage Bund Existing Layout (drawing 40-ARI-WS-7100-CI-22-01105), and Temporary Earthwork Storage Bund Location Plan (drawing 40-ARI-WS-7100-CI-22-01106) included in Appendix B.

1.5 Design guidance

The design standards and guidance used in the SWD design for the site include:

- Design and Construction Guidance for foul and surface waters offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code"), 2021.
- BS EN 752 Drains and sewer systems outside buildings.
- DEFRA, Rainfall run-off management for developments – Report SC030219.
- Technical Guidance to National Planning Policy Framework (NPPF).
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2. Surface water drainage scheme

2.1 Design principles

2.1.1 General arrangement

The general arrangement for the proposed Temporary Earthwork Storage Bund, drawing 40-ARI-WS-7100-CI-22-01103 is included in Appendix B.

2.1.2 Drainage features

A drainage plan for the proposed works, drawing 40-ARI-WS-7100-CI-22-01103 is included in Appendix B. The drainage plan shows the principle drainage infrastructure for the drained areas including silt fences, swales, ditches, check dams, carrier pipes, attenuation pond, pumped connection, manholes, overflow weir, penstock, and outfalls.

2.2 Surface water drainage catchments/sources

During the works to form the permanent landscape screening bunds on Woodsmith Mine there will be a requirement to provide temporary earthwork stockpiles consisting of topsoil and subsoil bunds within the redline boundary as shown on Figure 1. The surface water drainage catchment areas for the temporary earthwork stockpile area is considered in two different scenarios.

2.2.1 Scenario 1

During Scenario 1, the earthwork bunds will be under construction and the site will consist predominantly of non-vegetated ground. The drainage catchment area will consist of an 80% impermeable area where high level of sediments are anticipated from the surface water run-off.

2.2.2 Scenario 2

Scenario 2 assumes the bunds are vegetated, and therefore allows for a 30% impermeable catchment area for the temporary earthwork stockpile bund. At this stage, the catchment area from both bunds will have lower sediments in surface water runoff.

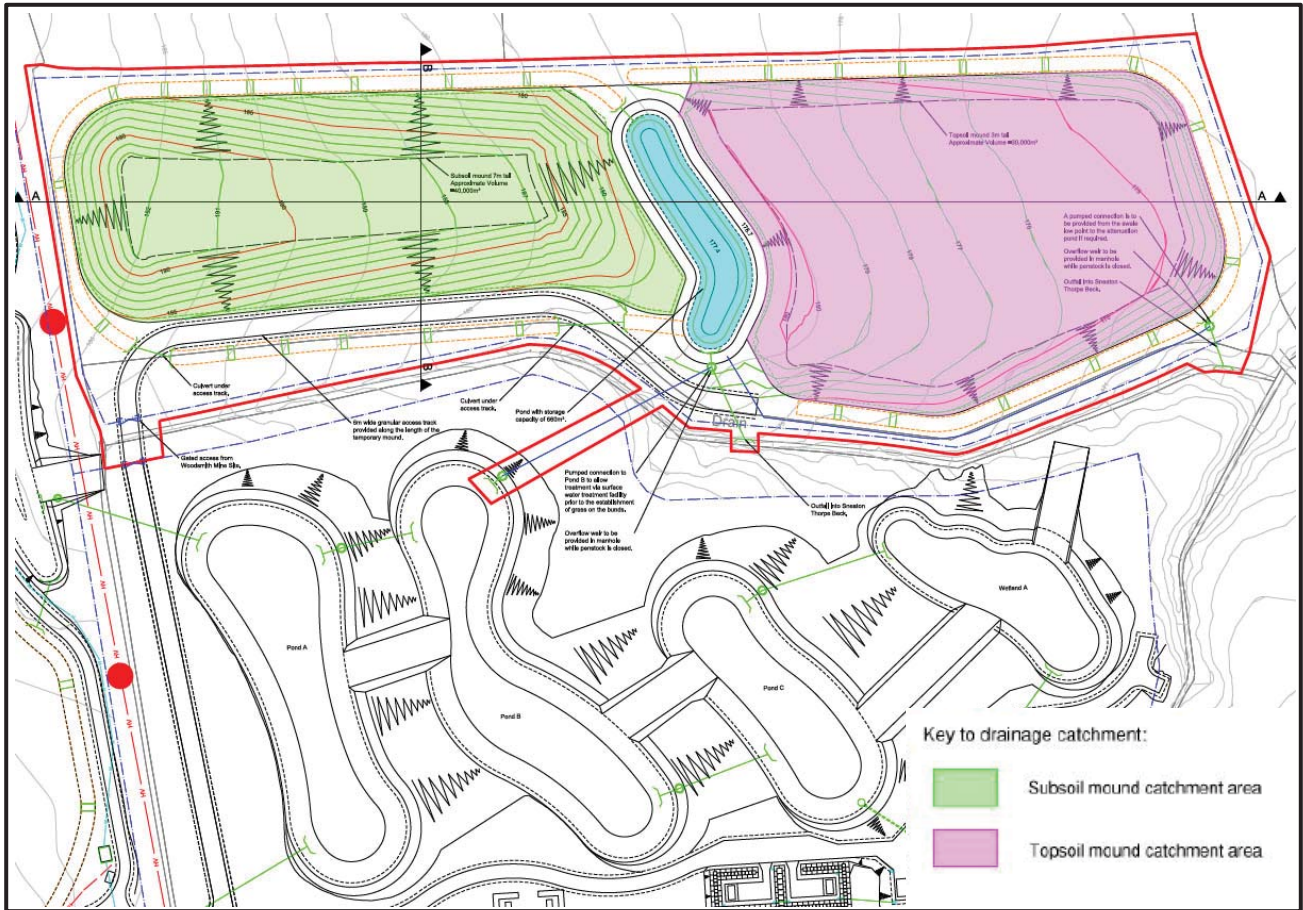


Figure 1 Proposed temporary earthwork storage bund catchment areas

2.3 Flood risk / surface water drainage attenuation

2.3.1 Overall Strategy

Scenario 1

During Scenario 1, the catchment area is made up of an 80% impermeable area. Surface water runoff will be pumped from the proposed attenuation pond to the existing ponds within the adjoining Woodsmith Mine. Here, the water will be treated to remove sediments before being discharged into Sneaton Thorpe Beck.

To minimise the discharge of silt from the catchment area to the natural water course of Sneaton Thorpe Beck, surface water will be collected via perimeter swales and check dams surrounding the bunds. Surface water will then be pumped from the lowest point of the swales into the proposed attenuation pond. Surface water will then be pumped from here into the Woodsmith Mine attenuation ponds to be treated via the existing surface water treatment facility prior to outfall into Sneaton Thorpe Beck. Silt fences will also be constructed at the base of all bunds to help minimise the amount of silt entering the drainage network.

Scenario 2

During Scenario 2, the catchment area will be vegetated and assumes a 30% impermeable area resulting in a reduced run-off volume and improved surface water quality. At this stage, there will be two outfalls to Sneaton Thorpe Beck labelled as Outfall A and Outfall B as shown on drawing 40-ARI-WS-7100-CI-22-01103 included in Appendix B.

Outfall A is located at the downstream of the proposed attenuation pond, where the source of surface water is derived from the vegetated subsoil and topsoil mounds. The proposed discharge rate at Outfall A is 1.0 l/s and is controlled by a vortex flow control device.

Outfall B is located at the southeast and lowest point of the drainage system. This outfall will discharge surface water from the swale collected from the vegetated topsoil mound. In this scenario the discharge rate at Outfall B is 5.6 l/s.

The proposed discharge rate for both outfalls is 6.6 l/s. Due to the larger available attenuation volume, Outfall A has a restricted discharge rate of 1.0 l/s. This is to allow Outfall B to discharge at a much higher rate of 5.6 l/s to minimise the attenuation storage required at this location where space and level constraints make provision of attenuation storage more challenging. The total discharge rate for the site is restricted to 6.6 l/s which reflects the greenfield run-off rate as calculated in Table 1 below.

Table 1 Allowable discharge rate calculation

QBar Greenfield run off rate	Drained Area (ha)	Allowable discharge rate	Proposed discharge rate
6.5 l/s/ha	1.8ha	6.5 l/s/ha x 1.8ha = 11.7 l/s	6.6 l/s

2.3.2 Attenuation pond

The proposed attenuation pond, as shown in Figure 1, is provided between the subsoil and topsoil mounds and receives runoff mainly from the earthwork bunds. The pond will provide 600m³ of storage volume.

The attenuation pond has been sized such that the greenfield run-off rate is not exceeded during the 1-in-20-year return period critical duration rainfall event when discharging directly to Sneaton Thorpe Beck (Scenario 2). As agreed in the main Woodsmith Planning Application, (reference: NYM/2014/0676/MEIA) [1], the longest return period storm event considered during construction works is 1 in 20. The discharge from the Woodsmith Mine main wetland during Scenario 1 does not exceed the allowable rate for the full scheme identified in this planning application.

The drainage network has been designed such that no surface water flooding occurs during the 1-in-20-year return period critical duration rainfall event in both Scenarios. If a rainfall event exceeds the design capacity, an emergency overflow is incorporated to allow water to discharge from the pond without compromising its integrity. This is achieved by the width and gradient of the overflow and the provision of erosion protection on the overflow.

During the construction phase, the discharge rate from the site is limited to the QBar greenfield run-off rate for return periods up to the 1-in-20-year rainfall event for the critical duration. The method of calculating QBar is detailed in the BWB Baseline Surface Hydrology report, (reference: LDT/2021/BSH) [2]. Although the BWB report does not include the area considered within this strategy, the same value for QBar has been utilised due to the proximity of the sites.

2.3.3 Swales with check dams

Swales are used to collect surface water run-off at the toe of the temporary earthwork bunds. All swales will incorporate check dams at regular intervals to help attenuate the run-off flow and capture sediments before entering the pond or discharge to local ditch. The provision of swales has not been modelled in the MicroDrainage and hence provides a worst-case model.

2.3.4 Flow controls

Discharge flow controls are placed downstream of the outfall from the attenuation pond and the lowest point within the topsoil bund swale to ensure that the maximum allowable rate of discharge of 6.5 litres per second per hectare is not exceeded in Scenario 2.

In Scenario 1 flow control devices are provided in the same locations as Scenario 2 with pumps used to limit the rate of discharge to the main Woodsmith attenuation ponds to ensure that the allowable discharge rate through the wetland is not exceeded.

These include flow control devices such as overflow weir, vortex flow control, and pumps.

2.4 Surface water drainage quality

2.4.1 Attenuation pond

To ensure sufficient surface water attenuation is available to meet the requirement to restrict flows from the site to the green field run-off rate, the following pond capacity is proposed for the site.

Table 2 Attenuation pond capacity

Pond	Construction Phase	
	Total capacity (m3)	SW Flood Attenuation Capacity (m3)
E	600	600

2.4.2 Additional sediment control

Besides the attenuation pond, swales and check dams, there will be further sediment control techniques and features such as silt fences provided at the toe of the temporary earthwork storage bunds. All surface water will be pumped from the attenuation pond to the main Woodsmith Mine attenuation ponds during Scenario 1 to enable drainage to be discharged via the surface water treatment facility.

2.4.3 Surface water treatment facility

Following the establishment of vegetation on the earthwork bunds, it is proposed to outfall surface water drainage directly into Sneaton Thorpe Beck. However, prior to the establishment of vegetation on the bunds, a pumped connection from the attenuation pond to Woodsmith Mine is incorporated allowing collected runoff to be treated via the existing site surface water treatment facility before being discharged into Wetland A and subsequently Sneaton Thorpe Beck.

3. Modelling / calculation results

3.1 Calculation methodology

The site layout for the proposed Temporary Earthwork Storage Bund has been assessed and the required attenuation volumes calculated.

The allowable rates of discharge from the pond have been calculated based on the QBar greenfield run-off rate for the total contributing area as explained above.

During the construction phase, a 1- in- 20 year return period design storm with no climate change allowance has been applied to a MicroDrainage model of the proposed network. Simulations have been undertaken using a range of durations from 10 minutes to seven days to determine the critical duration for each part of the network to ensure no flooding occurs offsite from the networks and the attenuation is sufficient.

3.2 Design principles

For the impermeability values used in the design for the surface water drainage strategy, refer to Table 2. These values are conservative and have been derived using the Surface Water Drainage Design Parameters report, (reference LDT/2021/SWDS) [3], which is in accordance with BS EN 752.

Table 3 Specific impermeability for different area types

Area	Percentage Impermeable
Not Vegetated Landscaped Bunds (temporary)	80%
Vegetated Landscaped Bunds	30%

In this surface water drainage strategy, non-vegetated landscaped bunds (temporary) and vegetated landscaped bunds are adopted in assigning the impermeability percentage of the catchment areas. Only surface water run-off is to be directed to the attenuation ponds, other sources of water, such as groundwater and wastewater, will not discharge to the attenuation ponds.

During scenario 1, the design is based on 80% of impermeability of catchment area which is not vegetated landscaped bunds.

During scenario 2, the design adopted vegetated landscaped bunds for its impermeability area of 30%.

The discharge rate from the attenuation pond will be limited to the theoretical QBar greenfield run-off rate return periods up to the 1 in 20-year event for the critical duration. This is in accordance with the sustainable drainage principles outlined in the Surface Water Drainage Design Parameters report, (reference: LDT/2021/SWDS) [3] and has been agreed by the Environment Agency in a letter dated 13th March 2014 (reference: RA/2014/127863/01-L01).

3.3 Calculation results

The Micro Drainage model outputs in Appendix C demonstrates that the requirements of each scenario can be met.

The critical 1 in 20 year return period storm discharge rates for each scenario are shown in Table 4 below.

Table 4 Modelled Discharge Rates

Scenario	Outfall	Discharge Rate (l/s)	Maximum allowable rate (l/s)
1	Main Woodsmith Mine	169.8	212.6
2	A	1.0	11.7
	B	5.6	

3.3.1 Run-off rates

The allowable QBar greenfield run-off rate is 6.5l/s/ha, based on the Baseline Surface Hydrology report [2].

The flow rate is controlled by flow control devices at the outlets of the attenuation pond. Table 5 summarises the modelling outputs in Appendix C.

Table 5 Summary of modelled run-off rate

Catchments	Catchment area (subsoil and topsoil mound)
Gross area drained	1.8 hectares
Greenfield Run-off rate (allowable rate of discharge)	6.5 l/s/ha
Maximum modelled rate of discharge	11.7 l/s

3.3.2 Volume of Attenuation

A summary of the MicroDrainage modelling results is shown in Table 4 and the modelling outputs are shown in Appendix C.

	Proposed attenuation pond (Pond)
Volume used in MicroDrainage model	600m ³
Volume provided by proposed construction phase design	600m ³

The attenuation pond provided for the proposed works will have sufficient storage volumes to attenuate surface water run-off to the allowable rate of discharge.

3.3.3 Overtopping

Scenario 1

During Scenario 1, collected surface water from the subsoil and topsoil mounds will be pumped into the Woodsmith Mine attenuation ponds. As a result, there will be additional surface water discharge volume in the Woodsmith Mine attenuation ponds drainage network. A 20.0 l/s base flow has been applied to Woodsmith Mine attenuation Pond B which receives the additional discharge from the proposed attenuation pond within MicroDrainage to conservatively model the effect that this additional volume of water will have. The modelling shows that the return period storm event at which the main Woodsmith Mine ponds begin overtopping remains the same as previously modelled and agreed through the Woodsmith Mine Conditions Discharge Phase 16.

Scenario 2

In Scenario 2, the modelling does not identify any overtopping or flooding on the site up to a 1 in 20 year return period storm event.

3.4 Silt removal

As stated in the Surface Water Drainage Design Parameters report, (reference: LDT/2021/SWDS) [3] for the Woodsmith Mine, a minimum of three stages of treatment have been provided to minimise the risk of sediments entering the tributaries of Sneaton Thorpe Beck. The proposed work incorporates swales and check dams, silt fences, filter drains, infiltration to ground, attenuation pond, surface water treatment facility and wetlands from the Woodsmith Mine.

3.4.1 Scenario 1

In Scenario 1, collected run-off will be pumped to Woodsmith Mine for surface water treatment. The treatment to remove silt occurs in the surface water treatment facility, which is designed to meet the following performance requirements prior to discharge of the treated water to Sneaton Thorpe Beck:

1. Total Suspended Solids (TSS) <50mg/l, and
2. Turbidity: 50FTU, and
3. pH STB2,3A & 4A = 5.7 to 8.9

3.4.2 Scenario 2

Scenario 2 does not involve any surface water treatment facility as the run-off will have less amount of sediments thus the surface water treatment is not required. However, swales, check dams, silt fences and attenuation pond are placed to ensure surface water run-off will be filtered prior to discharge to Sneaton Thorpe Beck. Water quality will be monitored, and Scenario 2 will only be implemented once the following requirements are met:

1. Total Suspended Solids (TSS) <50mg/l, and
2. Turbidity: 50FTU, and
3. pH STB2,3A & 4A = 5.7 to 8.9

3.5 Outfall velocities

3.5.1 Scenario 1

Appendix D contains an assessment of the existing tributaries of Sneaton Thorpe Beck downstream of the site. The assessment demonstrates that a maximum allowable velocity of 1.2m/s would be appropriate for these tributaries.

With the additional discharge via the Main Woodsmith Ponds to Sneaton Thorpe Beck at 169.8 l/s the maximum velocity of the discharge is calculated to be at 0.2 m/s this is much lower than the allowable rate of 1.2m/s and it therefore acceptable.

3.5.2 Scenario 2

Appendix D contains an assessment of the existing tributaries of Sneaton Thorpe Beck downstream of the site. The assessment demonstrates that a maximum allowable velocity of 1.2m/s would be appropriate for these tributaries.

There are two outfalls to be used for the proposed work, as shown in the Temporary Earthwork Storage Bund Proposed General Arrangement in Appendix B.

Outfall A discharges surface water from the proposed attenuation pond during Scenario 2. The calculation shows that the maximum velocity discharging in the critical storm event is 0.1 m/s. This is less than the allowable discharge rate of 1.2m/s and therefore is considered acceptable.

Outfall B only drains the catchment from the topsoil bund. The calculations show that the maximum velocity discharging in the critical storm event is 0.9 m/s. This is less than the allowable discharge velocity of 1.2m/s and therefore is considered acceptable.

4. Surface water management and maintenance plan

The following section provides a surface water management plan for constructing the temporary earthwork storage bunds. There are a range of methodologies for managing sediment contaminated surface water run-off, with the method used being dependent on the volumes of surface water run-off and the levels of sedimentation in which for this case dependable on the scenarios mentioned before. During Scenario 1, higher sediment contaminated surface water run-off is present due to the high impermeability of the earthwork surface for both bunds. In scenario 2, the earthworks surface is vegetated, a lower sediment content is expected. The surface water drainage general arrangement is shown on drawing 40-ARI-WS-7100-CI-22-01103 in Appendix B. This drawing shows the location of the main drainage network and the features to manage sediment.

4.1 Design principles

Surface water run-off from the temporary earthwork bunds will be controlled by the aid of swales to temporarily retain and convey runoff with check dams placed at every height difference interval of the perimeter swales to reduce velocity of the flow while also retaining runoff and trap sediments. Runoff will flow into the attenuation pond which further reduces flooding risk and will reduce discharge and pollution load from surface water.

In Scenario 1, surface water from the attenuation pond will be pumped into the Woodsmith Mine attenuation ponds to allow for treatment via the existing surface water treatment facility before being discharged to the tributaries of Sneaton Thorpe Beck.

In scenario 2, surface water collected from the subsoil bund will be collected in the proposed attenuation pond before discharging directly into Sneaton Thorpe Beck. Surface water from the topsoil bund will be collected at the lowest point of swales and discharged into Sneaton Thorpe Beck. There will be silt fences positioned downstream of both bunds to intercept, slow and treat any water that seeps over the edge of the swales to mimic a more 'natural' response and avoid surface water 'sheeting' off the slopes.

4.2 Discharge Monitoring

The discharge from the attenuation pond will be monitored for suspended solids in accordance with the Groundwater and Surface Water Monitoring Scheme, using a combination of visual monitoring and turbidity meter monitoring in accordance with the Groundwater and Surface Water Monitoring Scheme. If the trigger levels are exceeded the appropriate plan of action will be implemented in accordance with the remedial action plan. Depending on the results a number of options are available:

- The penstock on the attenuation pond can be temporarily closed or partially closed to temporarily reduce the flow to the watercourse and increase the retention time to allow the sediments to settle out. This will be particularly effective for short intense storms. These temporary measures can be put in place without compromising the overall drainage strategy. This would be actively managed so that the pond is empty before the next storm event occurs.
- Additional treatment such as hay/heather bales and silt fences could be put in place in the tributaries of Sneaton Thorpe Beck downstream of the outfall locations but still within the site boundary. An experienced drainage engineer or geomorphologist is to supervise the placement of these features to maximise sediment removal. These additional treatments will be readily available and stored local to the beck, should the need arise.
- An environmentally friendly coagulant can be used in specific check dams upstream of the silt removal facility to promote flocculation of the finer particles within the storage areas and speed up the settling rate.

In addition to inspections of the discharges, regular monitoring of the tributaries of Sneaton Thorpe Beck will be undertaken, as detailed in the Groundwater and Surface Water Monitoring Scheme, to ensure that the discharge is not causing discoloration, erosion of the bank or disturbance of the bed of the watercourse. Records of all monitoring will be kept along with actions that were taken in the event of issues arising.

During scenario 1, a high level of suspended solids is anticipated mainly from the subsoil bund, discharge monitoring priority will be allocated for this area. High traces of silt contributed from the runoff of subsoil catchment area needs to be captured and removed to ensure the swales and check dams work especially during heavy rainfall. With the surface water treatment facility provided in Woodsmith Mine attenuation ponds, run-off discharge quality to meet the required silt quality performance prior to discharge into Sneaton Thorpe Beck.

During scenario 2, although with lower level of suspended solids and sediments, a focus on discharge monitoring should also be allocated to ensure discharge quality are within the acceptable quality limits prior to release into Sneaton Thorpe Beck.

4.3 Maintenance and Inspection

During the works of the temporary earthwork storage bunds, grass seeding needs to be done as soon as practicable to ensure that sediment laden surface water run-off is minimised. Erecting silt fences at source around these earthwork bunds, in combination with swales and check dams is the main method to prevent siltation getting into the drainage system. Silt fences are to be installed to manufacturer's recommendations.

Silt fences and check dams will be monitored through regular surveys. If silt builds up and 30% of the available storage is used up, then scraping, dredging, or emptying and re-profiling will be undertaken to ensure the full storage volume is maintained.

The silt removal facility and attenuation storage will be monitored through regular surveys. If silt builds up to a depth of 200mm then scraping, dredging, or emptying and re-profiling will be undertaken to ensure the full storage volume is maintained.

All check dams are to be regularly inspected, and any silt build up behind the dam will be removed to ensure that full storage volume and the effectiveness of the check dams are not compromised.

Throughout the Works, the surface water drainage system will be inspected daily to ensure that it is in good working order and when necessary, all pipework, swales, and other drainage elements, such as the flow control devices, shall be cleaned out to guarantee unobstructed flow and prevent build-up of sediment. Any extracted sediment will be redistributed thinly over the works area to dry out and become integrated into the landscaping.

Due to the nature of the works, and the scenarios, the drainage arrangements will alter during construction and as a result, the Surface Water Management Plan will be a live and flexible document. While the attenuation pond will be sized to take account of storm events, the flexibility of the Plan will also allow rapid response to weather conditions and unexpected events.

5. Conclusions

This report and design demonstrate how the surface water drainage will be managed on the site of the proposed temporary earthwork storage bunds. The proposed arrangements will ensure that the site is not at risk of flooding and does not impact on flood risk elsewhere.

The Micro Drainage model outputs demonstrate that the design described in this report meets the requirements set out in document. The discharge rates from the developed areas have been limited to the QBar greenfield run-off rates and the volume of attenuation provided is sufficient to attenuate flows up to the 1-in-20-year return period event.

The design complies with the sustainable drainage strategy. An appropriate attenuation pond is proposed, and the calculations demonstrate that the provision for sediment removal is sufficient prior to discharging to the watercourse and that the outfall velocity is appropriate to minimise the impact on the receiving water body.

The construction of the two additional outfalls into Sneaton Thorpe Beck will be subject to receipt of Land Drainage Consent.

References

- [1] North York Moors National Park Authority planning permission NYM/2014/0676/MEIA.
- [2] Baseline Surface Hydrology, Ref LDT/2021/BSH, Revision F, BWB, 11/09/2014.
- [3] Surface Water Drainage Parameters, Ref LDT/2021/SWDS, Revision D, BWB, 12/09/2014.
- [4] Surface Water Drainage – Design Basis Report for Dove’s Nest Site, REP-P2-CD-001, Rev 3, Arup, July 2014.
- [5] Highway Improvement 2: Dove’s Nest Farm, Welfare Access B1416. Technical Note, TN-P10-DNF-CH-001, Rev A, Arup, November 2016.
- [6] NYMNPA 60 and 79 Surface Water Drainage Scheme, 40-ARI-WS-71-PA-RP-1050, Rev 0, Arup, April 2017.
- [7] Wastewater Management Strategy, 40-ARI-WS-7100-CI-RP-01002, Rev 0, Arup, August 2018.

Appendix A

Appendix B

Notes:

- For cross sections refer to drawing 40-AR-WS-7100-CI-1041104.
- For the existing layout refer to drawing 40-AR-WS-7100-CI-2241105.
- For the location plan refer to drawing 40-AR-WS-7100-CI-2241106.

Key:

- Planning Boundary
- Major Contour (5m)
- Minor Contour (1m)
- Pumped connection
- Culvert Pipe
- Sewer with check dams
- 2.4m high black weld mesh fence
- Silt fence

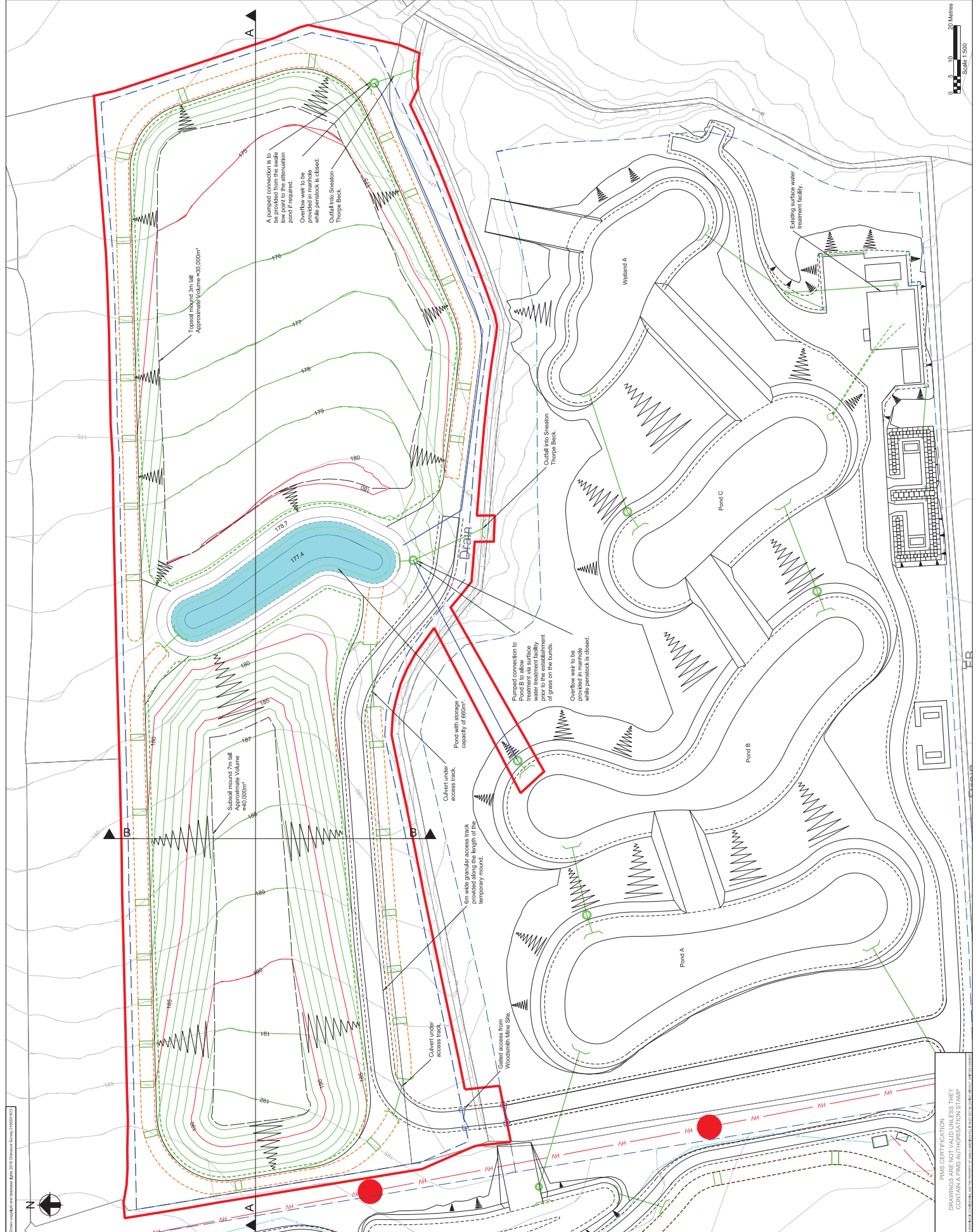
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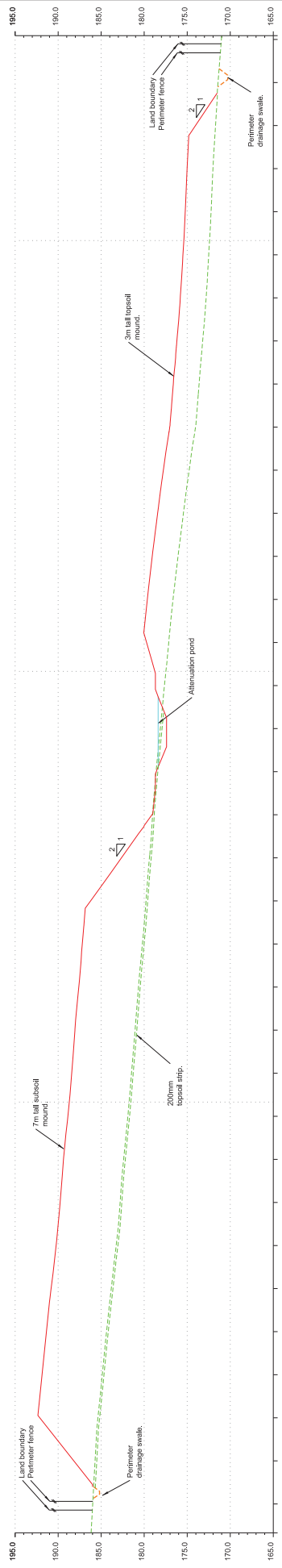
Woodsmith Mine
 Temporary Earthwork Storage Bund
 Proposed General Arrangement

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ARUP

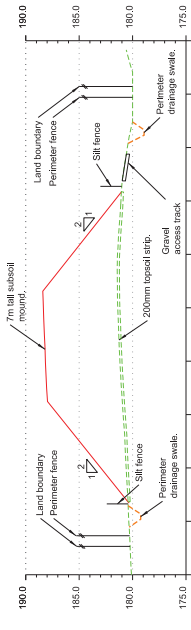
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 REV: 0



Key:
— Proposed layout
- - - Existing terrain



Section A-A
Scale H 1:500 V 1:250



Section B-B
Scale H 1:500 V 1:250

REV	DATE	BY	CHKD	APPRO
0	07/12/22	KK	JD	CW

For planning

REV	DATE	BY	CHKD	APPRO
A	01/11/22	EC	JD	CW

For Review



Project: Woodsmith Mine
 Title: Temporary Earthwork Storage Bund
 Proposed Cross Sections

Job No: 253285
 Scale: As shown



Draw No: 40-ARI-WS-7100-CI-0-41104
 Rev: 0



- Notes:
- For proposed general arrangement refer to drawing 40-ARH-WS-7100-CI-22-41105.
 - For the location plan refer to drawing 40-ARH-WS-7100-CI-22-41106.
- Key:
- Planning Boundary

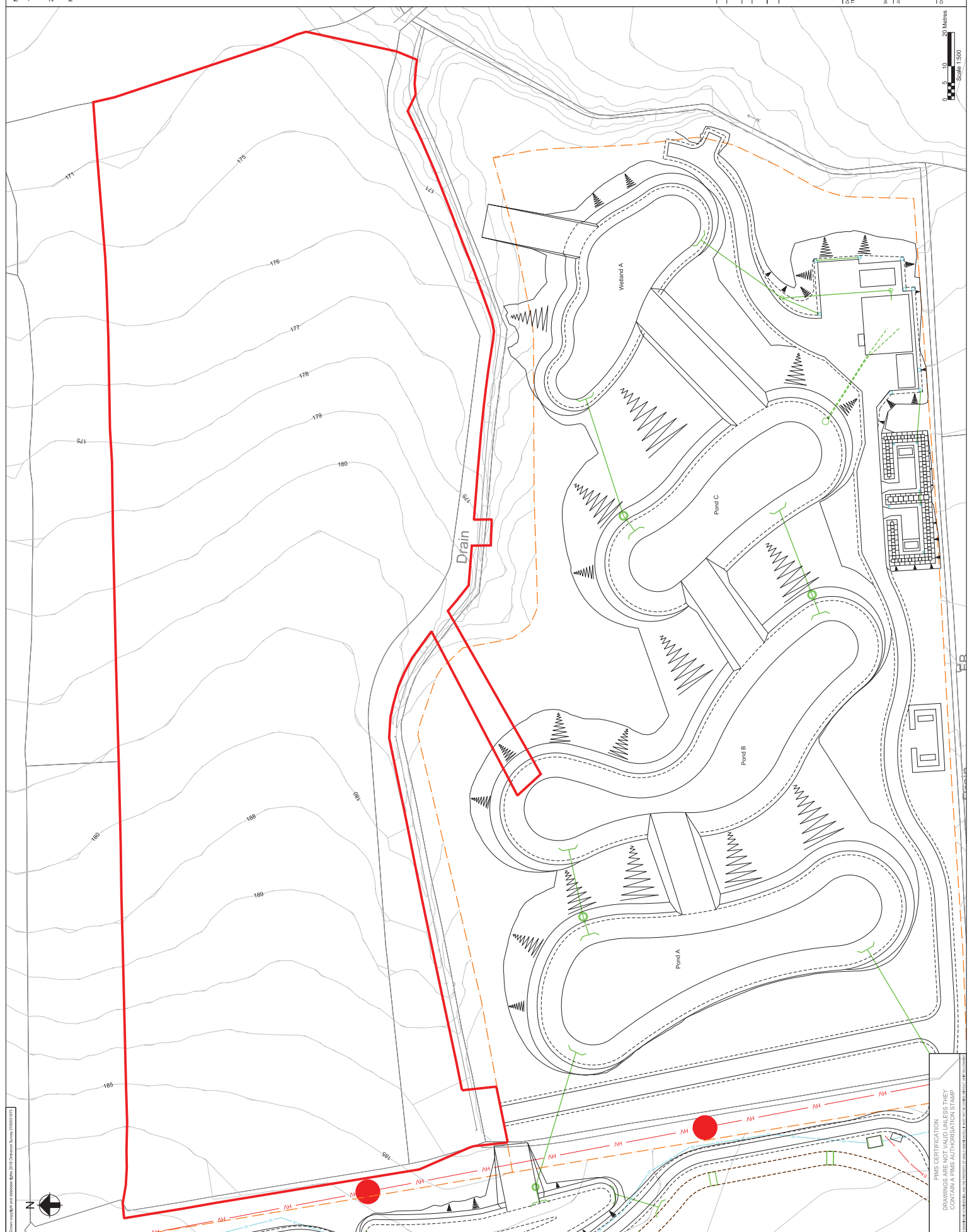
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For Review				



Project: Woodsmith Mine
 Title: Temporary Earthwork Storage Bund
 Existing Layout

SCALE @ A1: 1:500
 Job No: 253285

ARUP
 DWS No: 40-ARH-WS-7100-CI-22-41105
 REV: 0



Appendix C

C.1 Scenario 1

The Arup Campus

Blyth Gate

Solihull B90 8AE

Date 01/12/2022 13:36

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XP Solutions

Designed by Aufa.Amri

Checked by

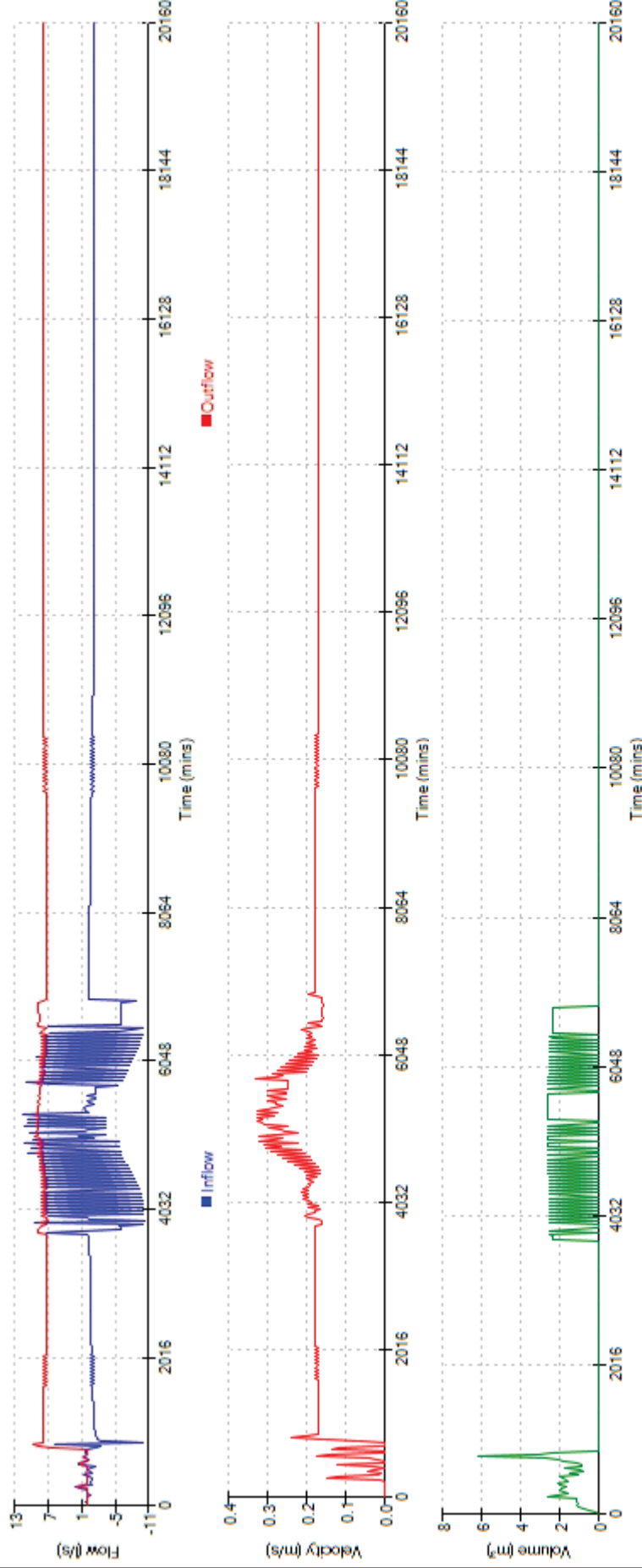
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Graphs for Pipe S4.016 US/MH S48 (Storm)

10080 minute 6 year Summer I+0%

Status: SURCHARGED



The Arup Campus

Blyth Gate

Solihull B90 8AE

Date 08/12/2022 16:18

File WS-Phase 16 2022-04.MDX

XP Solutions

Designed by Aufa.Amri

Checked by

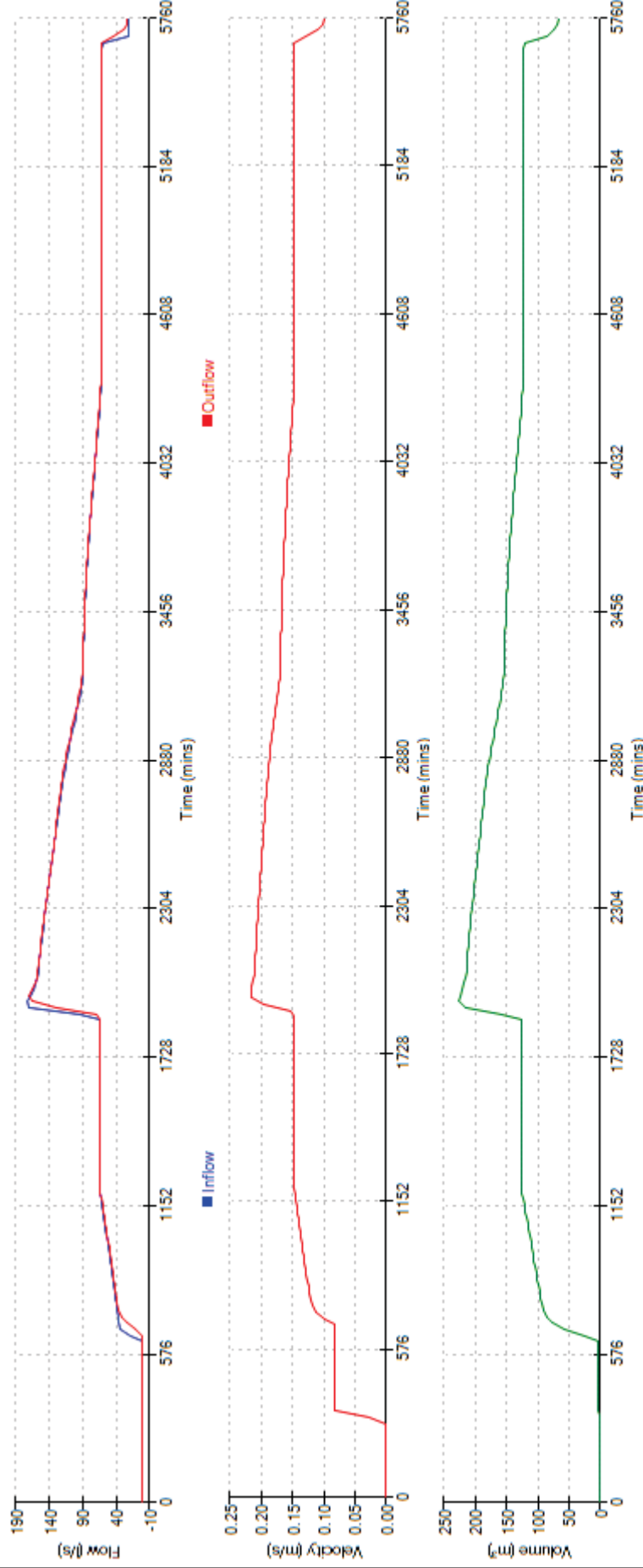
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Graphs for Pipe PH3-N-1.039 US/MH_PH3-N-1016 (Combined Networks)

2880 minute 20 year Winter I+0%

Status: FLOOD RISK*



C.2 Scenario 2

The Arup Campus

Blyth Gate

Solihull B90 8AE

Date 01/12/2022 13:11

File 20221128 30% Parker Field Analysis.MDX

XP Solutions

Designed by Daniel.Beech

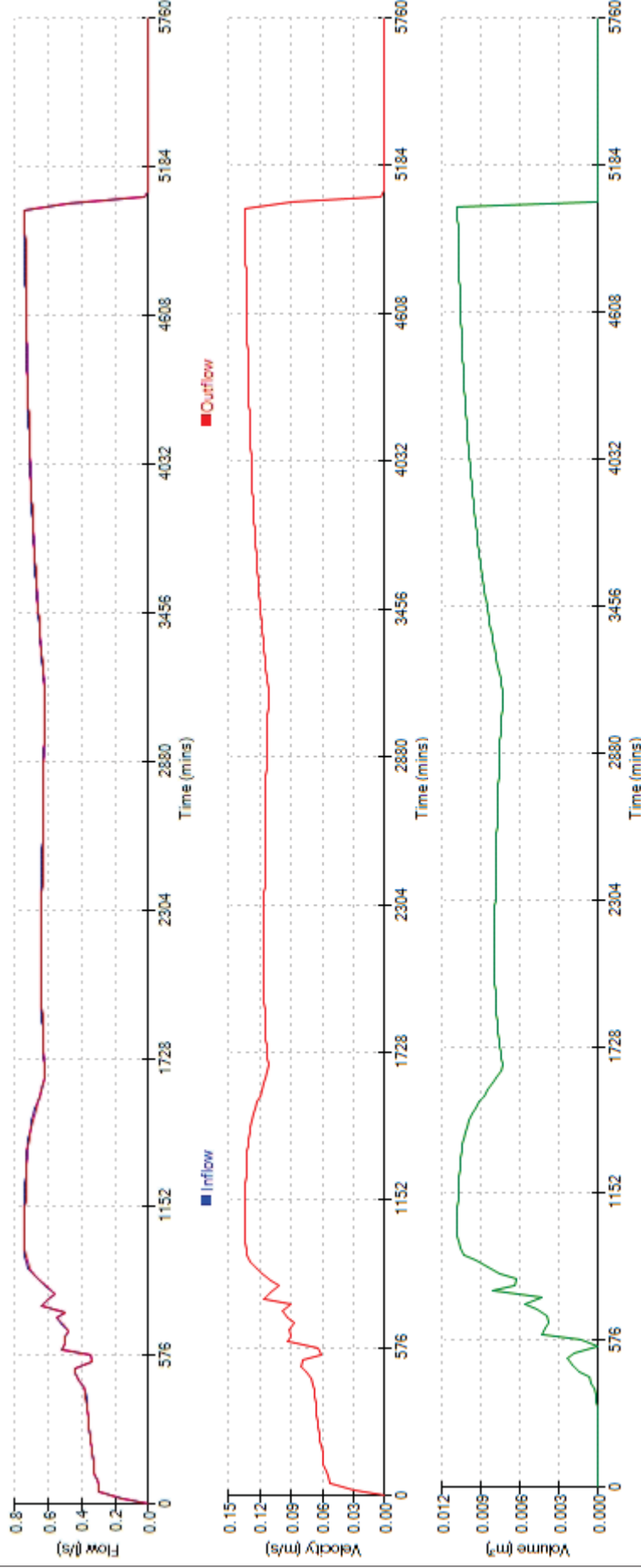
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Graphs for Pipe S4.016 US/MH S48 (Storm)
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Status: OK



The Arup Campus

Blyth Gate

Solihull B90 8AE

Date 01/12/2022 13:10

File 20221128 30% Parker Field Analysis.MDX

XP Solutions

Designed by Daniel.Beech

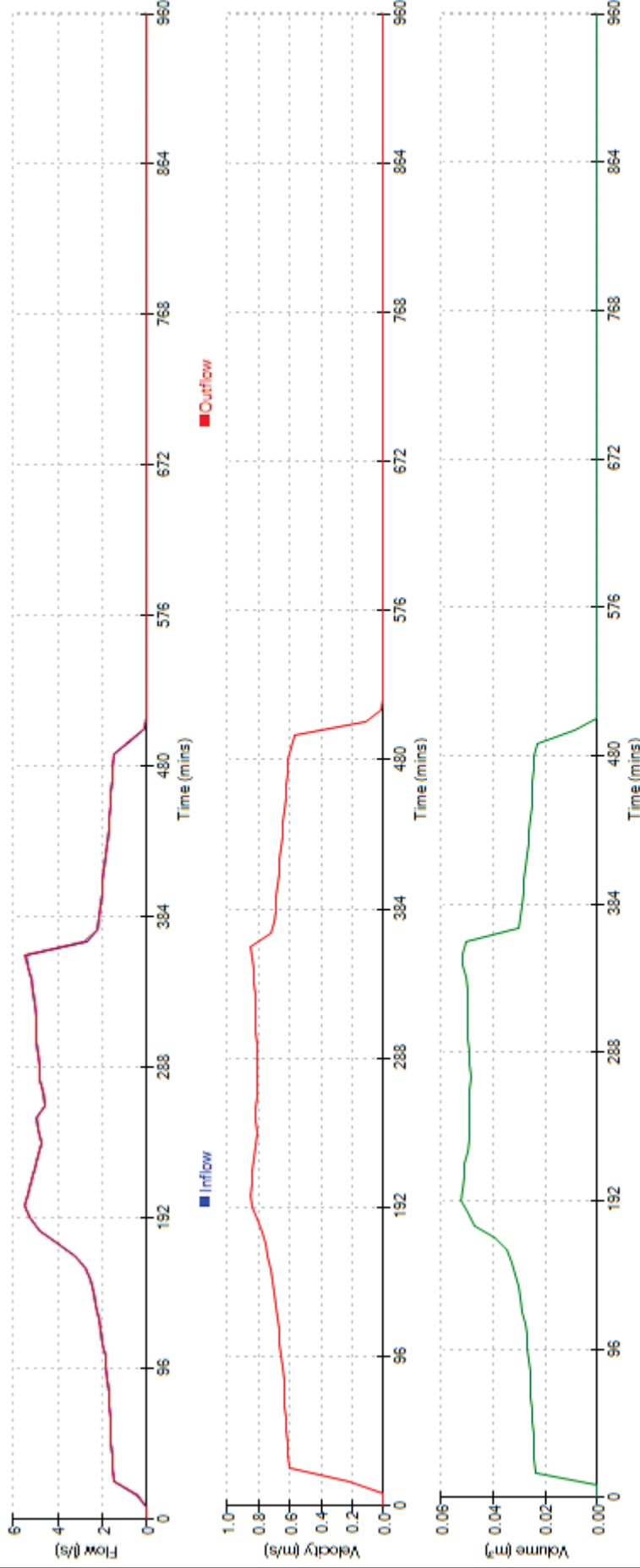
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Graphs for Pipe_S6.008_US/MH_S51 (Storm)
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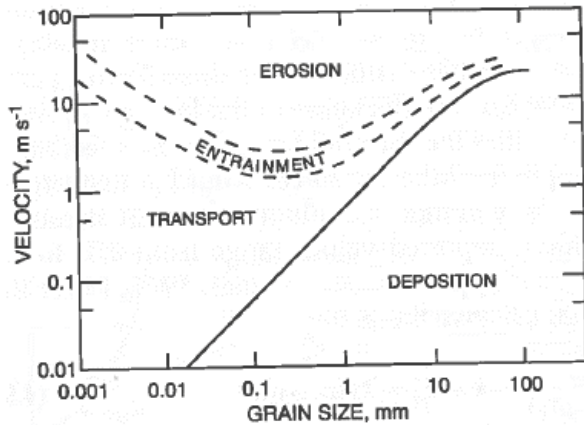
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Appendix D

Determination of a maximum velocity to discharge surface water into Sneaton Thorpe Beck tributaries.

The textbook “Fluvial Forms and Processes, A New Perspective” contains a graph that gives some basic limiting velocities for sediment erosion and entrainment based on various grain sizes.



The graph shows that no grain sizes are entrained into the flow until velocities are greater than 1m/s.

Using Ordnance Survey maps, topographic surveys and contours produced from lidar, Sneaton Thorpe Beck tributaries have an average gradient of approximately 1 in 20.

The tributaries of Sneaton Thorpe Beck are small. The photograph below shows the typical size of the tributaries downstream from the site. The width of the tributaries have been estimated at approximately 1m wide.



Flow monitoring has been undertaken at a number of locations on Sneaton Thorpe Beck. The monitoring data gives typical depths of flow at three monitoring points on the beck over a 4 month period. During rainfall events the depths at these monitoring points increases to about 200mm. The depths of the water in the beck will be dependent on the geometry at any specific location, but the data offers a guide to allow us to undertake some calculations. If we consider that the depth data only covers a 4 month period, we would expect increased depths during higher return period rainfall events.

Using the above information a manning’s calculation was undertaken to give an indication of typical velocities in the existing beck during rainfall events:

Manning’s “n” has been estimated using (Chow, 1959):

3a. Mountain Streams, no vegetation in channel, banks usually steep, with trees and brush on banks submerged. Bottom: gravels cobbles and few boulders: normal n = 0.040

Slope: 1 in 20

Width of base = 1m

Depth of flow = varies

Manning’s Equation

$$V = \frac{R^{2/3} S^{1/2}}{n}$$

V is average velocity (m/s)

R = hydraulic radius (m)

S = energy slope (m/m)

n = Manning’s roughness coefficient

Depth of flow (mm)	Velocity (m/s)
100	1.07
200	1.53
300	1.83
400	2.05

This table gives indicative average velocities in the tributary of Sneaton Thorpe Beck downstream of the outfall during rainfall events.

The results suggest velocities ranging from about 1 m/s to 2m/s would be expected during rainfall events. Velocities nearer the upper end of this range would be expected for large storm events such as a 1 in 20year return period event.

In an email from the Environment Agency on the 18th February 2016 contained guidance notes with typical outfall structures that contained limits to the exit velocities. These were 1.2m/s for a typical outfall without a stilling basin and 1.8m/s for outfalls with a stilling basin.

Using the information above, a conservative maximum discharge velocity to set for the outfalls from the site is 1.2m/s for return periods up to the 1 in 20 year return period event.



Project Title / Facility Name:

Woodsmith Project

Document Title:

**PLANNING APPLICATION FOR TEMPORARY SOIL STORAGE STOCKPILES -
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)**

NYMNP
12/01/2023

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REPORT

Woodsmith Mine - Planning Application for Temporary Soil Storage Stockpiles

Construction Environmental Management Plan

Client: Anglo American PLC

Reference: 40-RHD-WS-70-EN-PL-0059 REV 0

Revision: 00/Final

Date: 15 December 2022

HASKONINGDHV UK LTD.

Westpoint
Peterborough Business Park
Lynch Wood
Peterborough
PE2 6FZ
United Kingdom
Industry & Buildings
VAT registration number: 792428892

+44 1733 3344 55 **T**
email **E**
royalhaskoningdhv.com **W**

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Appendices

Appendix A – Anglo American Community and Stakeholder Engagement Framework

Appendix B – Anglo American Complaints Procedure

1. Introduction

1.1 Purpose of Document

1.1.1 This Construction Environmental Management Plan (CEMP) has been prepared on behalf of Anglo American Woodsmith Ltd. (Anglo American) as part of a planning application for the temporary stockpiling of topsoil and subsoil on land adjacent to Woodsmith Mine, Sneatonthorpe (as described in paragraph 1.1.4 below).

1.1.2 Woodsmith Mine was granted planning permission in 2014 (reference NYM/2014/0676/MEIA), and the permission was subsequently varied in 2017 (reference NYM/2017/0505/MEIA). The mine is currently under construction, and the planning conditions on the permission are discharged in a phased manner. Condition NYMNPA-93 of the Woodsmith Mine permission requires a CEMP to be produced; although the Application Site is lies outside the Woodsmith Mine boundary, for consistency the structure of this CEMP mirrors the requirements of the planning condition where relevant to the proposed Works, and many of the principles and environmental management approaches being applied to the Woodsmith construction operations will be replicated for the Application Site. The environmental aspects of relevance to the proposed Works and where they are set out within this CEMP are shown in the table below.

1.1.3 This CEMP details how the Works will be planned, monitored and managed in an environmentally responsible manner. It outlines the management framework for the environmental requirements, commitments, and performance targets associated with the planning and implementation of the Works and how they integrate with the existing site practices at Woodsmith Mine.

1.1.4 The Works to be undertaken as part of this planning application are as follows:

- Installation of access between Woodsmith Mine and the Application site;
- Construction of temporary haul road;
- Installation of temporary drainage features, including attenuation pond, swales and silt netting; and
- Temporary stockpiling of topsoil and subsoil.

Table 0-1 Condition NYMNPA-93: Construction Environmental Management Plan

NYMNPA-93	Compliance with Condition NYMNPA 93
<p>Prior to the commencement of each Phase of Construction in accordance with the approved Phasing Plan at either Dove's Nest Farm or Lady Cross Plantation, an updated CEMP shall be based on the approved Construction Method Statement (CMS) and shall be submitted to and approved in writing by the MPA in consultation with the Environment Agency in respect of the area concerned. The CEMP shall include details of:</p>	<p>This CEMP covers the Works required for the temporary stockpiling Works</p>
<p>The size, location and design of any site compounds, including how any potentially polluting materials will</p>	<p>Sections 3.2, 3.4, 11 and drawing 40-ARI-WS-7100-CI-22-01106 General Arrangement</p>

NYMNP-93	Compliance with Condition NYMNP 93
be stored to minimise the risk of pollution	
An Incident Response Plan to deal with any pollution that may occur during the course of construction	Section 12
A protocol to deal with contaminated ground, should this be encountered, to ensure protection of water resources	Section 9
Details of how surface water run off shall be passed through a settlement facility or settlement facilities prior to being discharged into any watercourse or soakaway	Section 8 and 40-ARI-WS-7100-CI-RP-01011 Drainage Strategy
Plant and wheel washing including that it shall only be carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain and that washings shall be collected in a sump, with settled solids removed regularly and water recycled and reused where possible	Section 3.5
A scheme for the recycling/disposing of waste resulting from demolition and construction works;	Not applicable to the proposed Works
Storage of waste not covered by the Mine Waste Directive	Section 11
Measures to control the glare from on-site lighting	Section 3.3
Measures to manage deliveries by HGV including routing and timing for deliveries and details of the penalty system for breaches of the agreed control	Section 4
Temporary traffic management;	Not applicable to the proposed Works
The provision of a Dust Management Plan relating to Phase 1 of the construction period (earth works and bund formation) and Polyhalite handling and stockpiling to include dust generation modelling so as to identify sensitive receptors; likely dust generation and its disposition during the construction Phases and operation over time and under different weather conditions; the avoidance and mitigation measures required to ensure dust deposition levels at the sensitive receptors are maintained at the residual levels identified in the approved EIA, and monitoring arrangements. The Dust Management Plan must comply with the criteria set out in the 'Dust and Air Emission Mitigation Measures' best practice guidance for control of dust on construction sites from the Institute of Air Quality Management 2012. The monitoring arrangements will include dust deposition or dust flux or real-time PM ₁₀ continuous monitoring locations; baseline dust monitoring at least three months before construction commences;	Section 6

NYMNP-93	Compliance with Condition NYMNP 93
daily on-site and off-site inspections at monitoring locations with results recorded in a log to be made available to the MPA on request, and more frequent monitoring during periods of high dust generation;	
In the event that there is insufficient clay within the Lady Cross Plantation site to form the 1m deep basal layer beneath the spoil storage area, a contingency plan to address the importation of clay, including the source, quantity and quality of such material, and how adverse effects on the water environment would be avoided;	Not applicable to the proposed Works
How the requirements of the approved CEMP will be disseminated to all relevant staff/contractors throughout the construction period	Section 2.2
The location of the site notice board;	The proposed Works will be undertaken adjacent to and accessed via the main Woodsmith Mine site and therefore there will be no dedicated site notice board.
A scheme for parking, loading, unloading during construction	Section 4
A scheme for security and lighting during construction	Section 3.1 and 3.3
A protocol for the replenishment of tanks and containers including that all refuelling of vehicles, generators, plant and equipment shall be supervised and shall take place within a suitable bunded, impervious hardstanding	Section 11.2
Contingency proposals for if fuel cannot be delivered for the generators, e.g. due to adverse weather;	40-RHD-WS-70-EN-PL-0014 – Woodsmith Mine Phase 3 CEMP
How those artificial or historically straightened ephemeral surface water channels referenced in sections 15.7.22-15.7.24 of chapter 15 of part 2 of the ES are to be retained wherever possible, and enhanced to increase their capacity (e.g. through the introduction of meanders) and to increase their ability to capture sediment (e.g. through suitable planting);	Not applicable to the proposed Works
Proposals/contingency plans for waste not managed as part of the Mine Waste Permit comprising the storage and management of temporary mining waste stored on-site for less than three years (e.g. Pyritic Mudstone); non-inert and non-hazardous materials stored for less than one year, and unexpected hazardous waste stored for less than six months, including measures to prevent the dispersal of dust, leachate and surface water runoff	Not applicable to the proposed Works
A Precautionary Method of Working for Site Clearance (PMWSP) which shall be submitted to and	Section 7

NYMNP-93	Compliance with Condition NYMNP 93
<p>agreed in writing by the MPA prior to commencement of Preparatory Works and shall be adhered to thereafter. The PMSWP shall set out proposals for tree clearance and the demolition of structures and shall include that between March and September each year surveys of areas to be cleared should occur no less than 48 hours before clearance occurs so that occupied wild bird nests can be identified and prevented from being destroyed;</p>	
<p>Alarms fitted to mobile plant and vehicles for the purposes of warning pedestrians of their movements</p>	<p>40-RHD-WS-70-EN-PL-0014 – Woodsmith Mine Phase 3 CEMP</p>

2. Environmental Management Framework

2.1 Structure and Responsibilities

2.1.1 This CEMP addresses those environmental matters within the responsibility of Anglo American and the Contractors engaged on its behalf to deliver the earthworks. While overall accountability for compliance with environmental and approvals requirements will remain with Anglo American, the Contractors working on site are responsible for undertaking the construction activities in line with the requirements of this CEMP as well as all legal and other requirements imposed via permits and licences. All Contractors delivering these Works confirm that this is the case.

2.2 Training, Awareness and Competence

Internal Communication

- 2.2.1 All staff and sub-contractors working on Site will be required to attend a Site Induction prior to commencing work. This will cover the key environmental aspects relating to the project and the roles and responsibilities of individuals.
- 2.2.2 Toolbox talks will be undertaken by the Environmental Manager or other nominated personnel throughout the project. The aim will be to communicate information to all staff and serve to educate, prompt and remind them of their responsibility to protect the environment during construction activities.
- 2.2.3 Monthly progress meetings will be used to disseminate the results of monitoring and audit reports. At these meetings, a review of the environmental performance throughout the site to date will be undertaken and any improvements required during the construction phase will be identified.

External Communication

- 2.2.4 Anglo American will lead communication with members of the public, including adjacent landowners, local residents and businesses in line with the Community Stakeholder and Engagement Framework (CSEF) (**Appendix A**).

- 2.2.5 The CSEF includes provision for a quarterly Liaison Group Forum meeting, which are open to members of the public to attend. These Liaison Group Forum meetings provide a mechanism to explain project updates and to exchange feedback on all project matters, including environmental aspects. The CSEF was established as a Condition of the Woodsmith site construction activities, but matters associated with the Application Site will be included for the relevant period.

Traffic Management Liaison Group

- 2.2.6 A Traffic Management Liaison Group (TMLG) has been convened to oversee the implementation of a Construction Traffic Management Plan (CTMP) which was produced as part of planning condition NYMNPA-34 on permission NYM/2017/0505/MEIA, monitoring and enforcement of construction traffic movements. As noted in **Section 4**, all workers will be sourced from the existing workforce and there are not expected to be a significant number of additional vehicle movements associated with the Works. As such, the requirements of the Woodsmith Mine CTMP will also be applied to the proposed Works, and therefore the Works will be covered within the scope of the TMLG. The TMLG will facilitate liaison between Anglo American, planning authorities, highways authorities, and other key stakeholders in relation to the transportation aspects of the construction and operation of the project.
- 2.2.7 Full details of the remit of the TMLG, its membership and its operation can be found in the CTMP produced for Phase 4 of the Works at Woodsmith Mine (reference 40-RHD-WS-70-CI-PL-0004).

2.3 Monitoring of Compliance

- 2.3.1 All construction and installation activities for the Works will be supervised by the Contractors' site management with the support of members of their teams daily, using the same procedures as detailed in the Woodsmith Mine Phase 4 CEMP (40-RHD-WS-70-EN-PL-0023).

2.4 Complaints Procedure

- 2.4.1 The implementation of the systems and procedures to protect the environment will effectively reduce or remove the risk of an environmental incident and/or exceedance of established thresholds. However, complaints may still be received and in this event the Complaints Procedure, provided as **Appendix B**, will be implemented.

3. Description of Site

3.1 Fencing and Security of the Site

- 3.1.1 A perimeter fence will be installed around the red line boundary as shown on drawing 40-ARI-WS-7100-CI-22-01106 General Arrangement. The fencing will tie in with the existing Woodsmith Mine perimeter fence, and a gated access will be included in the south-west corner where the temporary haul road is located.

3.2 Site Layout and Compounds

3.2.1 The existing Woodsmith Mine welfare facilities will be utilised throughout the proposed Works. There will be no additional welfare, offices or construction compounds established as part of the proposed Works.

3.3 Lighting

3.3.1 The proposed Works will be illuminated through temporary, task-specific directional lighting, where required. No permanent lighting columns will be installed.

3.3.2 All exterior lighting will apply the following principles:

- Directional tower lighting with directional lanterns will be used, with lights directed down towards the area required to be lit and away from any areas of concern (e.g. roads);
- Lighting will be kept as low as safe and practicable, to a maximum height of four metres, for the Works taking place and for the specific use of areas of the site;
- Lighting will consist of 3000K LEDs to minimise impacts upon bats;
- Lights will be switched off when not in use; and
- The lights will be sensitively positioned and shielded, pointing into site and away from Whitby and the A171 to minimise light emission.

3.4 Materials Storage

3.4.1 All plant and materials will be stored on the existing Woodsmith Mine site and would be subject to the same controls and containment methods to prevent impacts on the environment.

3.5 Wheel Washing Facilities

3.5.1 Any deliveries required for the proposed Works would be routed via the Woodsmith Mine site and would stay on existing hardstanding areas. Upon leaving the site, HGVs would travel through the wheel washing facilities provided on the access road to the main Woodsmith Mine site, and the existing water management methods used at Woodsmith Mine will therefore be employed, as described in the Woodsmith Mine Phase 5 CEMP (40-CAR-WS-8300-PA-MS-00001).

3.6 Site Housekeeping

3.6.1 The implementation of a good site housekeeping policy is key to reducing the likelihood of accidents and environmental pollution incidents. The same standard of good housekeeping measures currently employed at Woodsmith Mine will also be applied to the proposed Works, as detailed in the Woodsmith Mine Phase 4 (40-RHD-WS-70-EN-PL-0023) and Phase 5 (40-CAR-WS-8300-PA-MS-00001) CEMPs.

4 Traffic

4.1 Construction Traffic Management Plan (CTMP)

4.1.1 To manage the potential impacts of the traffic associated with the construction works at Woodsmith Mine, a series of Construction Traffic Management Plans (CTMPs) have been submitted to NYMNP and North Yorkshire County Council (NYCC) for each relevant phase of work. At the time of drafting this CEMP, the works at Woodsmith Mine are progressing to Phase 16.

4.1.2 The proposed Works would utilise workers from the existing Woodsmith Mine workforce, and therefore will comply with the requirements of the latest CTMP. The Application Site will also be accessed only via the Woodsmith Mine site.

4.1.3 There are two CTMPs that are valid for the management of site traffic, namely:

- Phase 13 CTMP (reference 40-RHD-WS-70-EN-PL-0047) – this CTMP includes measures to assist employees in safely travelling to Woodsmith Mine during periods when the UK Government may require/advise upon precautions in relation to Covid-19; and
- Phase 14 CTMP (reference 40-RHD-WS-70-EN-PL-0050) – this CTMP includes travel planning measures (e.g. vehicle sharing and bus/minibus transfer from Park and Ride sites) applicable to periods where advice/guidance in relation to Covid-19 is relaxed.

4.1.4 Any traffic associated with the proposed Works would be managed via the Phase 14 CTMP. Should the situation deteriorate (in relation to Covid-19) before or during the proposed Works, it would be proposed to agree with the Traffic Management Liaison Group the timing and scale of travel planning measures that may need to be suspended. The targets, measures, and monitoring processes outlined in the Phase 13 CTMP would form the basis of any agreement.

4.1.5 The proposed Works are expected to require fewer than 10 abnormal indivisible load (AIL) deliveries for delivery and removal of additional plant. The routing and timing of these AIL deliveries will be subject to separate agreement with the local highway authorities and police through the established Electronic Service Delivery for Abnormal Loads system (ESDAL) process.

5. Noise and Vibration

5.1.1 A noise and vibration assessment has been undertaken and is included in a Noise and Vibration Assessment Report (40-RHD-WS-70-EN-NT-0003). It includes details of the noise sensitive receptors, noise levels associated with the Works and the mitigation measures to be implemented.

6. Air Quality and Dust Management

- 6.1.1 The dust management measures developed to reduce the impact of construction at Woodsmith Mine on air quality will also be applied to the proposed Works. The soil stockpiles will be seeded at the earliest opportunity which will significantly minimise the potential for wind whipping. Dust management measures are set out in the Woodsmith Mine Phase 5 CEMP (40-CAR-WS-8300-PA-MS-00001).

7. Nature Conservation

7.1 Protected Species and Precautionary Method of Working for Site Clearance

- 7.1.1 Precautionary Methods of Working will be applied during the proposed Works to ensure that there are no impacts to protected species, in accordance with Protected Species Management Plans previously prepared for Woodsmith Mine (40-RHD-WS-70-EN-PL-0010 Ph3 PSMP for reptiles, 40-RHD-WS-70-EN-PL-0012 Ph3 PSMP for birds, 40-RHD-WS-70-EN-PL-0042 Ph11 PSMP for badgers and 40-RHD-WS-70-EN-PL-0043 Ph11 PSMP for bats). This includes directing construction lighting into the site and away from any areas of habitat.
- 7.1.2 Vegetation clearance will be undertaken under supervision of a suitably qualified ecologist, as detailed in the Ecological Survey and Assessment report (40-PCA-WS-8323-EN-AS-00001).

8. Hydrogeology, Water Quality and Drainage

- 8.1.1 There will not be any interaction with groundwater during the proposed Works.
- 8.1.2 Surface water drainage will be installed to control runoff and manage silt mobilisation. An attenuation pond and surface swales will be constructed, which will include silt fences and check dams to control silt. If required, water will be pumped from either the swales to the attenuation pond, and/or from the attenuation pond to one of the settlement ponds within the existing Woodsmith Mine site for treatment through the surface water treatment system before discharge to Sneaton Thorpe Beck. This will ensure that the compliance levels set out within the Groundwater and Surface Water Monitoring Scheme submitted to partially discharge condition NYMNPA 46 of NYM/2017/0505/MEIA, and the Discharge Permit (EPR-MB3399VR) are adhered to.

9. Contaminated Land

- 9.1.1 As only topsoil will be stripped for the proposed Works, the potential for encountering contaminated land is low. However, if unexpected contamination is found on site, Works will cease and the areas will be fenced off and marked as potentially contaminated. Any material that has already been extracted from the area will be segregated and stored on an impermeable membrane and covered to prevent contaminated run-off or will be stored in

sealed containers. A comprehensive programme of materials testing will be undertaken to determine the nature, if any, of the contamination; remediation, if required, will be undertaken. Detailed records of the areas of contamination, the volumes excavated, the location and nature of storage and all materials testing undertaken, as well as the results of the testing, will be held on site for inspection.

10. Archaeology

10.1.1 A Heritage Technical Note (reference 40-COT-WS-83-PA-TN-0001) was produced as part of the planning application for the proposed Works. A review of existing historic environment data, previous desk-based studies and archaeological fieldwork and an updated search of data held by the North York Moors National Park Historic Environment Record was undertaken, and it was concluded that the potential for encountering archaeological remains is negligible to low. However, should any archaeology be encountered, the principles outlined in the Woodsmith Mine Phase 3 Written Scheme of Investigation (WSI) (40-COT-WS-70-EN-PL-0002) will be applied.

11. Materials and Waste

11.1 Materials and Waste Storage

11.1.1 As noted in **Section 3.4**, all materials will be stored on the main Woodsmith Mine site. Wastes will be stored in the same manner as at Woodsmith Mine and collected for disposal at the appropriate facilities.

11.2 Fuel Oil Storage and Refuelling on Site

11.2.1 Refuelling will be supervised at all times. Appropriate pollution mitigation measures (including drip trays and spill kits) will be employed.

11.2.2 Fuel will be stored on the main Woodsmith Mine site in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001. All static fuel tanks and bowsers will be integrated bunded tanks. These will have a primary container manufactured with integral secondary containment that holds a minimum of 110% of the volume of the inner tank.

11.3 General Management of Non-Extractive Waste

11.3.1 The management of non-extractive wastes will be as per the main Woodsmith Mine site, as set out in the Phase 4 Woodsmith Mine CEMP (40-RHD-WS-70-EN-PL-0023).

12. Incident and Emergency Planning

12.1.1 In the event of an incident, the actions that will be taken to minimise the risk of pollution incidents occurring on site and the actions to be taken in the event of a pollution incident will be as per the main Woodsmith Mine site. Details are set out in the Phase 3 Woodsmith Mine CEMP (40-RHD-WS-70-EN-PL-0014).

Appendix A Anglo American Community and Stakeholder Engagement Framework



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COMMUNITY AND STAKEHOLDER ENGAGEMENT FRAMEWORK (CSEF)

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Community and Stakeholder Engagement Framework

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Community and Stakeholder Engagement Framework

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Community and Stakeholder Engagement Framework

1 Purpose and Scope

1.1 Background

The Company takes its responsibility to the local area very seriously and is committed to taking an active and positive role in the local community. This means minimising the potential adverse impacts on people living and working in the area, making a meaningful contribution to the social and economic well-being of the area, keeping the community informed as the project develops and responding quickly to questions and concerns.

There is widespread interest in the Company's Woodsmith Project (the Project) at local, regional and national levels. This is demonstrated by the ongoing media and stakeholder enquiries, as well as the levels of participation during the planning consultations and at Company events.

Anglo American (the Company) successfully engaged the community and other key stakeholders during the planning period and has continued to do so beyond, gaining widespread support for the Project. This has helped to provide the Company with a social license to operate. Maintaining this throughout the construction period is important to the successful delivery of the Project and is a key objective of the Company's board and management team.

1.2 Purpose

This Community and Stakeholder Engagement Framework (CSEF or the Framework) aims to set out a clear communications approach during the construction period which, when implemented correctly, can help to maintain the Project's social license to operate.

1.3 Scope

The Framework sets out an approach to community and stakeholder communications during the construction period. It outlines the overall strategy, identifies the main stakeholder groups and details the engagement objectives and activities. Stakeholders have been identified as those groups in the local area who have the potential to be impacted by construction, and as such does not include wider corporate stakeholders such as investors or customers.

The Framework sets out the roles and responsibilities of the Company and the principle construction contractors for implementing and managing its delivery.

1.4 Standards and compliance

The Framework is in compliance with planning obligations relating to community and stakeholder engagement including: producing a communications plan; the establishment of the Liaison Group Forum and Traffic Management Liaison Group; notification to neighbours of construction activities, particularly in relation to noise; dealing with complaints and initiatives to promote local benefits.

It is not within the scope of this plan to include engagement with the planning authorities and other statutory bodies in relation to the compliance with planning obligations and further environmental requirements, other than those specifically regarding community engagement.

1.5 Document review

The Company is committed to regularly reviewing its approach. This is the fifth time this document has been updated since the off-site highways improvement works were undertaken on the main transport route and construction started at Woodsmith, Ladycross Plantation, Lockwood Beck and Wilton. The principles of the Framework therefore remain unchanged, with the addition of the good practice learnt over the last five years.

The Framework will be reviewed on annual basis by the General Manager External Affairs and Corporate Relations Director, in consultation with the land, environment and planning team, and updated as necessary. It will be distributed to the list shown in section 1.6. Lessons learnt will be adopted into the working practices of the social performance team under the direction of the Corporate Relations Director.

1.6 Distribution list

- North York Moors National Park Authority
- North Yorkshire County Council
- Principle contractors

2 Engagement Strategy

2.1 Rationale

The strategy is based on the principle that the local community and key stakeholders should be kept informed of developments and in advance of them occurring. The failure to communicate often leads to a communications vacuum and this in turn leads to misinformation and rumours which is unhelpful for all stakeholders.

Similarly, providing channels for feedback to the Company in the first instance, including direct contact with the community relations team, allows local people or spokespeople to be engaged in matters that might affect them. Since construction started on the off-site highways works over five years ago, the vast majority of questions or concerns about the Project have come directly to the Company. This demonstrates the importance of developing and maintaining relationships 'on the ground'.

Keeping people informed is not just about notification of physical activities during the construction period, but is also about allowing a channel for feedback that might raise an issue or local knowledge that the Company or its contractor teams were not aware of. It also enables a channel to promote the benefits of the Project as well as engaging in other positive public relations activities.

Any materials that are prepared for public consumption to explain parts of the construction work are designed and drafted in a manner that promotes the understanding of works or issues in as clear and straightforward manner as possible.

2.2 Approach

1. Conduct pre-briefings for key events or activities

Providing clear information before each phase of works commences at the Project sites detailing what construction will involve, when it will take place and the measures to limit impacts. Since

construction started this has included newsletters, mailouts, direct face-to-face meetings, drop-in events, public meetings, press releases and notices in the local media.

2. Have effective ongoing management of local communications

Providing ongoing updates about construction progress and establish mechanisms that enable concerns to be raised and acted upon. This includes participation in the various liaison groups and clear processes to manage incoming queries or complaints. These have worked well since construction started. The Company also operates a 24-hour community helpline.

3. Community benefit initiatives

Undertaking and promoting regular initiatives that deliver community benefits such as education schemes and employment and business opportunity information sessions. These have been ongoing since construction started and have been well received by the community.

Further details on the methodology for pre-briefings, ongoing management and community benefits initiatives are available in sections 4.2 – 4.4.

3 Stakeholder Identification

Stakeholder groups have been identified and engaged as the Project has developed and can be broadly categorised as follows:

1. Site neighbours

Residential neighbours and/or landowners, businesses and organisations close to the individual construction sites. This also includes those directly affected in other areas such as those living close to key transport corridors or junctions. Approximately 70 households have been identified as 'site neighbours' to the Woodsmith, Ladycross Plantation and Lockwood sites and regular contact has been maintained since construction commenced. In addition, links with the neighbourhood of Dormanstown have been established since construction commenced at the Wilton site.

2. Community representatives

This group includes elected representatives of the community including parish and town councils, local authority officers and councillors, and local MPs.

3. Interest groups

Business networks, environmental bodies, other local clubs and groups.

4. Education Institutions

This includes local schools, colleges, universities and other training providers.

5. Media

A wide range of online, print and broadcast outlets and journalists are considered key stakeholders.

6. General public

The wider public as accessed through media channels, the website, social media or site signage etc.

A register has been developed for each Project site for of these broad groups, which is reviewed and updated. Stakeholder engagement takes into account the needs of vulnerable and disadvantaged groups, making sure that information about the Project is accessible and people are able to contact the

Company and receive a prompt response. This is ensured by utilising a broad range of engagement channels, as set out in section 4, and holding public events in accessible venues.

4 Engagement Methodology

This section sets out how community and stakeholder communications will be handled.

4.1 Identify stakeholders

The broad stakeholder groups have been identified, together with specific stakeholders relevant to each of the construction sites that are most likely to be impacted by the works. This includes landowners and local residents in close proximity to the sites.

4.2 Pre-briefings for key events

Before each phase of construction starts, or before a specific construction activity that has the potential to impact stakeholders, it is important to provide information to the local community. For the purpose of this Framework these stages are defined as “construction events” (these are listed in Appendix 1). Each construction event triggers the requirement for pre-briefing activities. The level of pre-briefing activity will vary, taking into account the extent of the local impact anticipated.

The pre-briefing information will include details about what construction will involve and how people can contact the Company if they have questions or concerns. Reassurance will be given that measures will be taken to limit adverse impacts to an acceptable level and that planning conditions and other requirements are in place to ensure that this happens. As a minimum, the pre-briefing activities will include:

- Letters – Letters and or emails should be sent to those that are likely to be immediately affected. This might include neighbouring residents or households and businesses on access routes. As a courtesy, the same information will be sent to the local Parish Council, borough and county councillors covering those areas.
- Visits and phone calls – In addition to letters, affected households and businesses will be visited, or at the very least receive a telephone call.

For construction activities that are more significant, in terms of their potential for stakeholders to be affected, the Company will use the following pre-briefing methods. The precise details and extent of pre-briefing will be a matter of judgement and as a result of discussions between the contractor and the Company and, where appropriate, the planning authorities. Activities may include:

- Newsletter / Leaflet – A short summary newsletter or leaflet about the works will be made distributed, including local noticeboards and community facilities.
- Exhibitions / Open days – In the case of certain key events, such as the main shaft sinking, it will be appropriate to inform local residents and the wider general public through open days prior to works starting. This includes further information on exhibition boards and will be attended by key personnel from the Company and contractors, who are be able to respond to queries and provide reassurance on potential concerns. Ten of these sessions have taken place since construction started.

- Press release – If appropriate (often where a wider audience is potentially affected or interested in the works planned) then a press release will be prepared detailing the key facts. Any press release needs to be signed off by the Company in a timeframe that makes sure newspaper deadlines are met. Where possible, coverage should always appear in the week prior to the proposed activities beginning. The local media has been particularly useful in instances where the community beyond the immediate site neighbours could be affected, such as public highways disruption.
- Website updates – Details of key events are uploaded to the Company website. Some works may also require more detailed information and documents to be uploaded.
- Social media updates – The Company will control its social media accounts. As above, the contractor will be expected to provide the relevant details to the Company in a timely fashion so the relevant information can be released through its social media channels.
- Stakeholder briefings – In some circumstances specific stakeholders will be individually briefed to inform them of key events. This may include elected representatives, local authority officers or interest groups. The Company will take the lead on such matters and will involve contractors where appropriate.

4.3 Ongoing management

Local residents and stakeholders will continue to be engaged throughout construction (i.e. general updates in addition to those covered under ‘key events’ in appendix 1). This will enable the Company to provide regular updates of the Project’s progress, and that it is being delivered in accordance with planning consents and any other Company commitments. Alternatively, if the Project is not progressing as expected it is important that stakeholders are provided with an explanation and reassurance that corrective measures will be implemented.

In addition, on-going engagement will include a range of communication channels that enable stakeholders to raise issues and ask questions and for the Company to respond to these.

4.3.1 Liaison Group Forum

The Liaison Group Forum (LGF) was established prior to the commencement of construction and has met quarterly. It is chaired by the Company and its membership includes representatives from the National Park Authority, parish and town councils and wider community stakeholder representation as appropriate. The meetings take place in community venues, such as village halls, close to the Woodsmith site and are open to the general public to attend and to ask questions.

The purpose of the group is to facilitate liaison between local stakeholders about construction, providing updates about progress, and to enable issues and concerns to be raised and resolved.

4.3.2 Industrial Business Group

The Industrial Business Group (IBG) was established to facilitate liaison between the businesses based at Wilton International and residents from the neighbourhoods in close proximity of the site.

Meetings are held bi-monthly and attended by the major businesses on the site, local councillors and residents. The Company joined the group once construction started on the Wilton site.

4.3.3 Traffic Management Liaison Group

The purpose of this group is to facilitate liaison between local authorities and other interested stakeholders in regard to construction traffic. The group, which meets quarterly, oversees the management and monitoring of the Construction Traffic Management Plan (CTMP) and is chaired by the Company. The meetings take place after the LGF meetings, on the same day and venue, with traffic issues raised by the LGF addressed by the group.

There is representation from the National Park Authority, highways authorities, local authorities, the police and other stakeholders as invited.

4.3.4 24-hour community helpline

To ensure that there are accessible points of contact for the local community and wider stakeholders a 24-hour community helpline has been established, which is delivered by a specialist contractor. In addition there is a community email address, which is managed by the Company.

4.3.5 Regular briefings and updates

Key individuals and organisations are regularly briefed and updated. Similarly to pre-briefings for key events, updates are communicated through the following channels:

- Public meetings and presentations – Parish council and town council meetings are regularly attended, together with presentations to local interest groups.
- Site visits and meetings – visits to the Project sites for key stakeholders have been an effective way to communicate site activity and progress. In addition, drone footage of the project sites is regularly used to show progress and is used in Project presentations and on the Company's website.
- Press releases – the print and broadcast media are utilised extensively to communicate with the wider community and at a regional and national level.
- Newsletters, website and social media – regular updates produced throughout construction via the website, leaflets, newsletters, social media and publications relating to specific issues, such as careers. Videos, including footage of the sites and interviews with key Project personnel have also been an effective tool.

4.4 Community benefit initiatives

The Company has made a number of commitments to benefit the local area during construction such as providing employment and supply chain opportunities, training schemes, school outreach programmes and funding community projects. It is important that these are implemented and widely promoted so that the community and stakeholders are aware that the Company's commitments are being delivered. The activities and initiatives, some of which are planning obligations in the S106 agreements, are outlined below:

- Funding to Scarborough Borough Council and Redcar and Cleveland Council to identify and prepare local people for employment opportunities.
- Funding to raise awareness of science, technology, engineering and maths (STEM) related careers in schools in North Yorkshire and Redcar and Cleveland.

- Targets specified in the S106 agreement - take on 50 apprentices, recruit 15 local students on the Company's Undergraduate Programme and train 300 adults.
- Quarterly employment opportunity sessions to promote job opportunities to local people and meet the buyer events for local businesses.
- Education outreach initiatives, careers events and presentations.
- Funding community projects through the Woodsmith Foundation.

4.5 Dealing with complaints

The Company aims to respond promptly to complaints and concerns, ensuring that issues are investigated and resolved as quickly as possible. The Company's approach is detailed in its Complaints Procedure – see Appendix C.

5 Roles and Responsibilities

This section provides a framework that identifies responsibilities for the delivery and management of community and stakeholder engagement, focusing on roles of the Company and the principle construction contractors. The Company will be responsible for all community and stakeholder engagement during construction, supported by each construction contractor as required.

5.1 Anglo American

The Company will be responsible for:

- Identifying key stakeholders likely to be impacted by the works.
- Undertaking pre-briefing activities before construction starts such as:
 - Open Days / exhibitions as appropriate.
 - Producing information outlining what is involved, impacts and mitigation, contact information, etc.
 - Direct correspondence with neighbours and landowners about construction events
- Liaison with the planning authorities and community representatives, including chairing the Liaison Group Forum and Traffic Management Liaison Group.
- Media relations.
- Manage the complaints procedure.
- Producing project newsletters, social media and updating the website.
- Direct engagement and briefings with key stakeholders including local residents, community representatives and interest groups.

5.1.1 Social performance team

The Company's social performance team is responsible for implementing the Framework in liaison with others in the Company as appropriate.

The Company's Corporate Relations Director has overall responsibility for all company communications and external relations. The Corporate Relations Director chairs the Liaison Group Forum.

The General Manager External Affairs, reporting to the Corporate Relations Director, manages the implementation of the approach detailed in the Framework. The Local Liaison Officer, Social Programmes Manager and Education Programme Manager report to the GM External Affairs, and are further supported by the EA to the Corporate Relations Director.

The social performance team work closely with other departments in the Company in the implementation of the Framework, particularly the land, environment and planning team as well as the project development team. They assist in providing relevant information, investigating and resolving complaints, and attending Company events and public meetings as required. The Company's Logistics Manager chairs the Traffic Management Liaison Group.

5.2 Construction Contractors

Having developed and maintained positive relationships with key local stakeholders since the Project was launched in 2011, Anglo American takes the lead role in all community and stakeholder engagement. Each of the construction contractors will be required to support the Company's stakeholder engagement approach as follows:

- Provide expected durations of phases or work, their potential impact on the local community and mitigation measures where required.
- Provide details of any expected public transport diversions, delays, planned road closures, impacts on highways, interrupted access for residents/ businesses, or other expected community disruption.
- Participate in employment opportunity sessions, meet the buyer events, and education outreach events as required.
- Cooperate with Anglo American in media events and provide information to the Company for publications, the website, newsletters, etc.
- Adherence to Anglo American's communications protocols and guidelines.
- Attend the liaison groups, parish/town council meetings and assisting Anglo American as required.
- Ensure that all sub-contractors comply with stakeholder and community relations requirements.

Appendix A – Construction Events

The following provides a list of construction events which trigger the requirement for pre-briefing activities, as outlined in section 4.2. The list is not exhaustive and there may be other events or activities not listed here that could be classified as construction events as a result of discussions between the Company and its contractors.

The construction events for the purposes of this Framework are:

- Any significant geotechnical investigation or drilling works
- Main Woodsmith Mine shaft sink
- Main Lockwood Beck shaft sinking
- Main Ladycross Plantation shaft sinking
- MHF construction
- Harbour construction
- Other construction activities with the potential to affect stakeholders including site neighbours or road users in regard to noise, light, disruption to the public highway, etc. Examples include an abnormal load arriving to site or a short period of piling.

Appendix B – Engagement Activities Summary

The table below provides an ‘at a glance’ overview of the main community and stakeholder engagement activities, together with the respective roles of Anglo American and contractors.

	Pre-briefing activities	Ongoing management	Community benefit initiatives
Anglo American	<ul style="list-style-type: none"> Establish Liaison Group Forum and Traffic Management Liaison Group Project update newsletter Media, website update, social media Briefings with site neighbours, landowners, community representatives and other key stakeholders as identified Produce leaflet detailing upcoming construction activities Send letters to stakeholders likely to be immediately affected Hold public open days / exhibitions 	<ul style="list-style-type: none"> Chair Liaison Group Forum and Traffic Management Liaison Group Attend the Industrial Business Group Manage 24-hour community helpline and cropnutrients.info@angloamerica.n.com Attend parish and town council meetings quarterly Regular updates to site neighbours, landowners, community representatives and interest groups Site visits Media, website update, social media Manage complaints procedure 	<ul style="list-style-type: none"> Training targets and promotion of initiatives funded by the S106 Promote activities of the Sirius Minerals Foundation Organise meet the buyer events Organise regular employment opportunity sessions Deliver education outreach programmes
Construction Contractor	<ul style="list-style-type: none"> Provide information to Anglo American to be used in leaflets, letters, web content, etc., as required Attend public open days/exhibitions and meetings with stakeholders as required 	<ul style="list-style-type: none"> Attend liaison groups, parish council and other meetings as required Provide information to support ongoing community and stakeholder relations Participate in media events as required Adherence to complaints procedure, media protocol and crisis response procedure 	<ul style="list-style-type: none"> Involvement in community benefit initiatives as required

Community engagement is tracked across these three elements. Activities and complaints are reported in the Company’s annual Responsible Business Report. Minutes of the Liaison Group Forum, which includes community engagement as a standing agenda item, are published on the Company’s website.

By being proactive in building and maintaining relationships in the community, the Company is always receiving feedback about its performance. This helps to inform the Company on what it could be doing better, enables it to respond quickly to concerns and pre-empt them in the future and is an important part of annual review of the Framework.

Appendix C – Complaints Procedure

This procedure outlines the Company's standards in handling complaints and the process of managing complaints from receipt through to resolution. The procedure has been updated to take into account the lessons learnt during the first two years of construction.

1 Standards for Handling Complaints

- All complaints will be treated seriously, fairly and with courtesy;
- Complaints will be responded to quickly – we will acknowledge a receipt of a complaint straight away wherever possible;
- We will investigate and aim to resolve complaints within a maximum of three days, making sure that initial feedback is provided within one day; and
- We publish information about complaints, with the identity of the complainant kept confidential, to the Liaison Group Forum and in the Company's annual Responsible Business Report.

2 Stages of the Complaints Procedure

2.1 Receipt of complaint

The vast majority of complaints are received directly by the Anglo American community relations team through a variety of channels, e.g. directly to a team member, via the general cropnutrients.info@angloamerican.com email, social media, parish council meetings or the 24-hour community helpline. Relationships with the regulatory authorities are well established and complaints received by them are forwarded to the Company's community relations team to investigate.

The team aim to acknowledge a complaint straight away and ascertain the relevant details as soon as possible.

Occasionally a complaint is made directly to a Project site. In this instance the community relations team will be informed and further communication with the complainant managed by them.

2.2 Investigation

In all cases the community relations team will notify the Anglo American site manager, the environment team and the logistics team (where complaints are related to traffic). The site manager will lead the investigation, delegating where appropriate and liaise with the relevant contractor. All relevant personnel will be kept updated.

If remedial action is required this will be implemented as quickly as possible in consultation with the environment and planning team, community relations team and others as appropriate.

2.3 Feedback

The community relations team will feedback to the complainant within a maximum of three days, with initial feedback given within one day. Further details will be sought from the complainant if required.

The complainant will be given the details of any remedial action taken and have the opportunity to discuss the outcome of the investigation with the community relations team, who will involve others as appropriate. If further relevant information comes to light, the complaint will be investigated again.

2.4 Log and Review

Complaints are logged and reported to the next Liaison Group Forum (LGF) meeting. The minutes of LGF meetings are published on the Company's website.

Complaints are reviewed to establish whether action can be taken to reduce the likelihood of similar complaints in the future, and whether the way in which the complaint was dealt with could be improved.

Appendix B Anglo American Complaints Procedure



Project Title / Facility Name:

Woodsmith Project

Document Title:

COMPLAINTS PROCEDURE

Document Review Status

- 1. Reviewed – Accepted – Work May Proceed
- 2. Reviewed – Accepted As Noted, Work May Proceed, Revise & Resubmit
- 3. Reviewed – Work May Not Proceed, Revise & Resubmit
- 4. For information only
- 5. On Hold – Pending Project Restart & Ramp Up

1	17-Dec-2020	Use	IFU	HillVic	ParsoMat	EdmunGar
0	28-Mar-2019	Use	IFU	HillVict	ParsoMat	EdmunGar
A	22-Mar-2019	Review	IFR	HillVict		
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Complaints Procedure

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Revision	Date	Prepared by	Approved by	Reason for Issue
0	22/03/2019	M. Parsons	G. Edmunds	Issued for Use
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Complaints Procedure

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2.2	Investigation.....	2
2.3	Feedback	2
2.4	Log and Review	3

Complaints Procedure

This procedure outlines the Company's standards in handling complaints and the process of managing complaints from receipt through to resolution. The procedure has been updated to take into account the lessons learnt during the first three and half years of construction.

1 Standards for Handling Complaints

- All complaints will be treated seriously, fairly and with courtesy;
- Complaints will be responded to quickly – we will acknowledge a receipt of a complaint straight away wherever possible;
- We will investigate and aim to resolve complaints within a maximum of three days, making sure that initial feedback is provided within one day; and
- We publish information about complaints, with the identity of the complainant kept confidential, to the Liaison Group Forum.

2 Stages of the Complaints Procedure

2.1 Receipt of complaint

The vast majority of complaints are received directly by the Woodsmith community relations team through a variety of channels, e.g. directly to a team member, via the general Crop Nutrients email, social media, parish council meetings or the 24-hour community helpline. Relationships with the regulatory authorities are well established and complaints received by them are forwarded to the Company's community relations team to investigate.

The team aim to acknowledge a complaint straight away and ascertain the relevant details as soon as possible.

Occasionally a complaint is made directly to a Project site. In this instance the community relations team will be informed and further communication with the complainant managed by them.

2.2 Investigation

In all cases the community relations team will notify the Woodsmith site manager, the environment team and the logistics team (where complaints are related to traffic). The site manager will lead the investigation, delegating where appropriate and liaise with the relevant contractor. All relevant personnel will be kept updated.

If remedial action is required this will be implemented as quickly as possible in consultation with the environment and planning team, community relations team and others as appropriate.

2.3 Feedback

The community relations team will feedback to the complainant within a maximum of three days, with initial feedback given within one day. Further details will be sought from the complainant if required.

The complainant will be given the details of any remedial action taken and have the opportunity to discuss the outcome of the investigation with the community relations team, who will involve others as appropriate. If further relevant information comes to light, the complaint will be investigated again.

2.4 Log and Review

Complaints are logged and reported to the next Liaison Group Forum (LGF) meeting. The minutes of LGF meetings are published on the Company's website.

Complaints are reviewed to establish whether action can be taken to reduce the likelihood of similar complaints in the future, and whether the way in which the complaint was dealt with could be improved.