REPORT

Phase 4a - Woodsmith Mine Construction Vehicle and Plant Management Plan

Woodsmith Mine Phase 4a - CVPMP

Client: Sirius Minerals PLC

Reference: 40-RHD-WS-70-CI-PL-0007 REV 0
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1 Introduction

1.1.1 In 2014 a planning application (reference NYM/2014/0676/MEIA) was submitted to North York Moors National Park Authority (NYMNPA) for permission to develop a polyhalite mine and underground Mineral Transport System (MTS). Planning permission was subsequently granted in 2015, subject to conditions, as varied in February 2018 by NYM/2017/0505/MEIA.

1.1.2 This document has been prepared on behalf of Sirius Minerals plc (Sirius Minerals) and details the requirements with respect to construction vehicles and plant for the amended Phase 4 (herein 'Phase 4a') of the development at Woodsmith Mine (see paragraph 1.1.5 below). This document is required to partially discharge condition 92 of the NYMNPA planning permission NYM/2017/0505/MEIA and has been prepared in accordance with current good practice. The planning condition states that:

"Prior to the commencement of each Phase of Construction at either Dove's Nest Farm or Lady Cross Plantation, a Construction Vehicle and Plant Management Plan (CVPM) shall be submitted to and approved in writing by the MPA. The CVPM shall include details of monitoring locations and baseline particulate emissions; predicted traffic movements into/out of the sites including levels at the A171/Mayfield junction; predicted particulate emissions from plant and HGVs during the construction period; proposed particulate control levels; proposed avoidance or mitigation measures to comply with control levels, and arrangements for monitoring over the construction period. Development shall only occur in strict accordance with the measures set out in the CVMP [sic], *unless otherwise agreed in writing with the MPA."*

1.1.3 This document is intended to be read in conjunction with the Phase 4 CVPMP (reference 40-RHD-WS-70-CI-PL-0005), and the information herein supersedes the Phase 4 documentation only where specified.

1.1.4 The specific requirements of the planning Condition NYMNPA-92 are detailed in **Table 1-1**.

Table 1-1 Condition NYMNPA-92 Construction Vehicle and Plant Management Plan

Condition NYMNPA-92	Compliance with Condition NYMNPA-92
Details of monitoring locations and baseline particulate emissions	Phase 4 CVPMP
Predicted traffic movements into/out of the sites including levels at the A171/Mayfield junction	Phase 4 CVPMP
Predicted particulate emissions from plant and Heavy Goods Vehicles (HGVs) during the construction period	Section 3 of this document
Proposed avoidance or mitigation measures to comply with control levels	Phase 4 CVPMP
Proposed particulate control levels	Phase 4 CVPMP
Arrangements for monitoring over the construction period	Phase 4 CVPMP

1.1.5 This management plan details only the Phase 4a Works at Woodsmith Mine and does not include any activities at Lady Cross Plantation, as these works are deferred. Updates to this plan will be prepared for subsequent construction phases and following any design review or method change. The NYMNPA has confirmed that it supports this approach.

1.1.6 The scope of Phase 4a described by this document is as per Phase 4 with the exception that no D-Walling will be undertaken at the MTS shaft, and instead the following activities will be implemented:

- Mobilisation to site;
- Use of a Vertical Shaft-sinking Machine (VSM) at the MTS Shaft, in place of the previously planned D-Walling machines;
- Construction of the guide wall and strand jacks for the operation;
- Installation of ancillary equipment;
- Machine setup and installation of VSM;
- Excavation to -55m below platform level (bpl);
- Excavation to -120m bpl;
- Deposition of limited extractive material from within the first 120m of the MTS shaft into earthworks bunds; and,
- Grouting of Annulus.

2 Predicted Traffic Movements Associated with Phase 4a Works

2.1 Construction phase road traffic movements

2.1.1 The anticipated traffic movements associated with Phase 4a are set out in the Phase 4a Construction Traffic Management Plan (CTMP), submitted to partially discharge planning condition NYMNPA-34 (reference 40-RHD-WS-70- CI-PL-0006), which has been updated to reflect an amended baseline.

2.1.2 The Phase 4a Works will be undertaken over a period of approximately two months, during June and July 2018. The CTMP presents the maximum daily Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs) that are permitted within the consented envelope, and describes the mechanisms by which these numbers will be achieved for each Phase of the Works, including Phases 4 and 4a. There are therefore not anticipated to be any additional daily vehicle movements associated with Phase 4a, above those presented in the Phase 4 CVPMP (reference 40-RHD-WS-70- CI-PL-0005).

2.2 On-site plant

2.2.1 The plant required for Phase 4a, in addition to that used during Phase 4, at Woodsmith Mine is detailed in **Table 2-1**.

Table 2-1 Plant Required During Phase 4a

Plant Type	Number of Units	Duration of Phase 4a That Plant Will Be Used
1MVA generator	1	100%

3 Predicted Particulate Emissions from Plant during Phase 4a

3.1 Methodology

3.1.1 Emissions associated with the additional generator were derived in the same manner as the Phase 4 CVPMP, taking into account the duration of operation of the VSM.

3.2 Emissions from the operation of the additional generator

3.2.1 The calculated particulate emissions from the additional generator are detailed in **Table 3-1**.

Table 3-1 Total PM_{10} Emissions from the additional generator required during Phase 4a

Plant	Number of Plant Items	Total PM_{10} Emission during Phase 4a (tonnes)
1MVA generator	1	0.615

3.3 Total particulate emissions generated during Phase 4a

3.3.1 The total particulate predicted to be generated during Phase 4a as a result of emissions from construction-phase traffic, NRMM and generators is detailed in **Table 3-2**.

Table 3-2 Total PM Emissions from Construction Traffic, NRMM and Generators

Source	Total PM Emission (tonnes)	
	Load Factor = 0.5	Load Factor = 0.7
Construction Traffic	0.326	0.326
NRMM and Generators	5.191	5.304
TOTAL	**5.517**	**5.63**

3.3.2 The total PM_{10} emission within the SBC area, derived from National Atmospheric Emission Inventory (NAEI) mapping, was 404.96 tonnes in 2014. Particulate emissions generated during Phase 4a will therefore contribute 1.36% to 1.39% of the total emissions, (using a load factor range of 0.5 to 0.7 respectively).

4 Mitigation Measures

4.1 Construction dust and NRMM mitigation measures

4.1.1 Details of mitigation measures to minimise construction phase dust emissions are included in the Phase 3 CEMP, which remains valid for the Phase 4 and 4a Works.

4.2 Junction and road improvements

4.2.1 There have been no changes to planned junction improvements from the Phase 4 CVPMP.