

REPORT

Phase 5 - Woodsmith Mine Emissions to Atmosphere - NYMNP-91

Woodsmith Mine Phase 5 – Generator Emissions

Client: Sirius Minerals plc

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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) with respect to emission to atmosphere for Phase 5 of the development at Woodsmith Mine (see paragraph 1.1.5 below). This document is required to partially discharge Condition 91 of the NYMNPA planning permission NYM/2017/0505/MEIA and has been prepared in accordance with current good practice. The planning condition states that:

“The final specification and configuration of generators to be employed at Doves Nest Farm and Lady Cross Plantation, such to be fitted with Selective Catalytic Reduction (SCR), or other such emissions control measures as are necessary, will be submitted to the MPA for approval prior to commencement of their use. Results of air dispersion modelling will be submitted at the same time to verify that the identified configuration will lead to nutrient nitrogen and acid deposition at levels no greater than those that were demonstrated in the York Potash Environmental Statement (September 2014 as updated by the Supplementary Environmental Statement dated February 2015) as not leading to a significant effect on the integrity of the North York Moors SAC, SPA and SSSI.”

1.1.3 This document also relates to the consideration of Condition 50 of the NYMNPA planning permission NYM/2017/0505/MEIA. The planning condition states that:

“In accordance with the details in the document “York Potash Project: Habitats Regulations Assessment” prepared by Amec Foster Wheeler dated June 2015 with document reference 35190CGos064R, diesel generators installed at the Dove’s Nest Farm site during the construction period

a. shall be fitted with Selective Catalytic Reduction (SCR) abatement technology on their exhausts which shall be shown by the suppliers to achieve a reduction in oxides of nitrogen within the generator exhausts of at least 88% when compared to what would be expected without SCR; and

b. shall at all times demonstrably be operated and maintained in a way to ensure a reduction in oxides of nitrogen within the generator exhausts of at least 88% when compared to what would be expected without SCR.”

1.1.4 The specific requirements of the planning condition are detailed in **Table 1-1**.

Table 1-1: Condition NYMNPA-91 Emissions to Atmosphere

Condition NYMNPA-91	Compliance with Condition NYMNPA-91
The specification and configuration of generators and Selective Catalytic Reduction (SCR) / emission control measures.	Phase 4a Emissions to Atmosphere assessment 40-RHD-WS-70-EN-RP-0003
Confirmation that Phase 5 nutrient nitrogen and acid deposition rates are below those presented in the York Potash Environmental Statement (ES) and Supplementary Environmental Information Report (SEI).	Section 2

- 1.1.5 This assessment considers only the Phase 5 Works at Woodsmith Mine and does not include any activities at Lady Cross Plantation, as these works are deferred. Updates to this assessment will be prepared for subsequent construction phases and following any design review or method change.
- 1.1.6 Activities required for the Phase 5 Works comprise the following:
- Construction of Service Shaft foreshaft chamber to a depth of 168.7m AOD;
 - Construction of Service Shaft permanent winder foundations to a depth of 197.17m AOD;
 - Construction of Service Shaft permanent winder basement to a depth of 194.17m AOD;
 - Construction of Service Shaft permanent building foundations to 202.2m AOD;
 - Dewatering of Service Shaft foreshaft and platform to facilitate excavations;
 - Excavation and construction of a working platform area on the western edge of the Production Shaft platform, with an AOD of 203.7m; and,
 - Stockpiling of extractive material for re-use.

2 IMPACT ASSESSMENT

- 2.1.1 The Phase 4a Emissions to Atmosphere assessment (reference 40-RHD-WS-70-EN-RP-0003) considered a total onsite power usage of 4,150MW_E.
- 2.1.2 Since the Phase 4a assessment was carried out, an application made under Section 96a of the Town and Country Planning Act 1990 is being processed to enable installation and commissioning of an 11kV Northern Power Grid connection at Woodsmith Mine. Consequently, following expected approval, a number of diesel generators will be taken offline as power will be supplied from the grid.
- 2.1.3 It is proposed that the equipment considered in previous Phases with higher power demand (the bentonite plant) will be powered from the grid, and the lower demand elements (power to offices and welfare facilities, dewatering pumps, boilers and chillers) will continue to be powered by smaller generators of a similar size to those considered in previous Phases. Locations, operating hours and engine loading would be similar. The Vertical Shaft-Sinking Machine will still be powered by diesel generator, under similar conditions and location as considered in Phase 4a.
- 2.1.4 Due to the grid connection, it is anticipated that the total onsite power demand will now be less than 3MW_E. As a consequence, it can be expected that, during Phase 5, there would be a lesser impact with respect to nutrient nitrogen deposition at Ugglebarnby Moor than that reported for Phase 4a. Nutrient nitrogen deposition for Phase 4a was no greater than the impact reported in the ES and SEI, as required by the Planning Condition. Detailed dispersion modelling is therefore not considered to be required for Phase 5.
- 2.1.5 Given the levels are lower than required, additional investment in mitigation controls, including retro-fitted SCR abatement technology identified under Condition NYMNPA-50, is not necessary.

3 CONCLUSIONS/CONDITION DISCHARGE

- 3.1.1 This generator emissions assessment shows that emissions from the Phase 5 Works will result in no greater nutrient nitrogen or acid deposition at UGGLEBARNBY MOOR than assessed in the ES and SEI. The assessment thereby demonstrates that the requirements of Condition NYMNPA-91 are met. Additional mitigation controls, including those detailed in Condition NYMNPA-50, are therefore not required for Phase 5.