

REPORT

Phase 3 - Woodsmith Mine Protected Species Management Plan - Bats

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 consent was subsequently granted in 2015 subject to conditions.
- 1.1.2 This document has been prepared on behalf of Sirius Minerals plc (Sirius Minerals) and details a Protected Species Management Plan (PSMP) for bats for the Phase 3 (see Paragraph 1.1.3 below) Works at Woodsmith Mine (formerly known as 'Dove's Nest Farm'). This document is required to partially satisfy the requirements of condition 52 of NYMNPA planning permission NYM/2014/0676/MEIA. It has been prepared in accordance with current good practice and in line with all relevant environmental legislation. This planning condition states that:

Table 1-1 Condition NYMNPA-52 Protected Species Management Plan - Bats

Condition	Compliance with Condition NYMNPA-52
Protected Species Management Plans (PSMPs) shall be submitted to the MPA [Mineral Planning Authority] prior to the commencement of Preparatory Works which shall not commence until the PSMPs have been agreed in writing by the MPA	This document for bats during the Phase 3 works and is ongoing throughout Phase 3.
The agreed details shall subsequently be followed unless modifications are agreed in writing with the MPA.	
The PSMPs may establish a programme of submissions to the MPA such that details are approved prior to works affecting different species and areas of the sites, shall concern protected species affected directly by works at the Dove's Nest Farm and Lady Cross Plantation sites, shall detail minimum requirements for mitigating or compensating for effects on protected species, shall require all licences that may be required in respect of effects on or re-location of protected species and their habitat to be obtained and complied with, and shall include but not be limited to consideration of the following <ul style="list-style-type: none"> a. Bats (all species) b. Badger c. Adder d. Common lizard particularly at western side of Lady Cross Plantation e. Other protected reptiles f. Water vole g. Common Crossbill h. Goshawk 	This PSMP relates to bats only.

- 1.1.3 The Phase 3 Works comprise the following:
- General site clearance including demolition of all farm buildings and sheds, and localised tree and scrub clearance, as shown on drawing 40-ARI-WS-71-CI-DR-1051.
 - Excavation and construction of the south western extension of the upper tiered working platform at around 203m AOD, as shown on drawing 40-ARI-WS-71-CI-DR-1053.
 - Excavation and construction of the Platform for the Construction Welfare Facility, Parking Area and Concrete Batching Plant, as shown on drawing 40-ARI-WS-71-CI-DR-1053.

- Construction of temporary and permanent soil mounds, including the basal liner for a future storage facility in the northeast corner of the site for non-hazardous non-inert spoil and three topsoil, subsoil and inert material storage bunds in the southwestern area of the site, as shown on drawings 40-ARI-WS-71-CI-DR-1053 and 40-ARI-WS-71-CI-DR-1055, with earthworks volumes presented in 40-ARI-WS-71-CI-DR-1054.
 - Construction of surface water drainage, a temporary surface water attenuation pond and temporary wetland in the southern area and two permanent attenuation ponds and two wetland areas in the north eastern area, as shown on Drawing 40-ARI-WS-71-CI-DR-1050;
 - Construction of a spring and groundwater drainage layer in the north eastern area, discharging into a wetland area, as shown in drawing 40-ARI-WS-71-CI-DR-1080.
 - Installation and commissioning of temporary dewatering as shown in drawing 40-ARI-WS-71-CI-DR-1058.
 - Erection on site of the Concrete Batching Plant as shown in drawing 40-ARI-WS-71-CI-DR-1050, complete with reticulated water supplies and tanks.
 - Construction of the drilling platform and temporary saline lagoon area for the groundwater reinjection well as shown in drawing 40-ARI-WS-71-CI-DR-1057.
 - Establishment of construction welfare and security facilities - complete with hook-up of power, communications & water supplies and new waste water collection facilities as shown on drawing 40-ARI-WS-71-CI-DR-1050.
- 1.1.4 The Phase 3 Works are proposed to start in June 2017. Drawing 40-ARI-WS-71-CI-DR-1050 shows the details of these works.
- 1.1.5 This PSMP provides the necessary information relating to bats to guide working practices on site during the Phase 3 Works. This Plan, together with similar PSMPs for badger (b.), reptiles (c. and e.) and birds (g. and h.), provides a suite of documents containing the information required by Planning Condition 52 to partially discharge this condition as it relates to the scope of the Phase 3 works. A PSMP has not been provided for water vole (f.) as the ecological surveys undertaken to date have confirmed their absence. This approach has been discussed and agreed with the NYMNP and Natural England.
- 1.1.6 Survey findings to date confirm that no other protected species are present on site and further PSMPs are not necessary. This has been confirmed by the NYMNP. Should additional species subsequently be identified, the 'precautionary method of working' would apply and additional plans can be prepared as necessary.
- 1.1.7 This PSMP follows the format of the document submitted for the Phase 2 Works. It will be updated if anything during that Phase requires it.

2 Legislation afforded to bats

2.1.1 **Table 2-1** provides a summary of the relevant legislation afforded to bats.

Table 2-1 *Summary of legislation afforded to bats*

Species	Legislation (England)	Offences	Licensing procedures and guidance (England)
Bats European protected species	Conservation of Habitats and Species Regulations 2010 (as amended) Reg 41	Deliberately ¹ capture, injure or kill a bat; deliberate disturbance ² of bats; or damage or destruction of a breeding site or resting place used by a bat (The protection of bat roosts is considered to apply regardless of whether bats are present)	A Natural England (NE) licence in respect of development is required in England if a roost will be affected by the proposed works.
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or disturb ³ a bat in such a place	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.

3 Surveys undertaken to date

3.1 Dusk (emergence), dawn (re-entry) and transect surveys

3.1.1 A preliminary daytime walkover survey of Woodsmith Mine was undertaken by Paul Chester & Associates (PCA) in 2014. Details of the findings of this survey are provided in the ES/SEI. In summary, this survey assessed the quality of the habitats for bats and included the identification of key potential foraging habitats, flight corridors and the potential for, or confirmed presence of, bat roosting sites. Further bat surveys (i.e. dusk and dawn surveys and monthly activity transect surveys) were carried out between May and September 2012 and 2014 in accordance with industry guidance at that time (i.e. Bat Conservation Trust, 2012, English Nature, 2004 and the Bat Mitigation Guidelines IN136, Natural England, 2006). Details are contained in the ES/SEI and are summarised in **Section 4.1** of this document.

¹ Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing

² Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

³ Lower levels of disturbance not covered by The Conservation of Habitats and Species Regulations 2010 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

3.2 Static detector and evening capture survey

- 3.2.1 The 2012/2014 emergence/re-entry bat surveys identified bats emerging from a gap between the brickwork and boarding of the flat roofed sections of the dormer windows located on the western side of the main farmhouse building within the Woodsmith Mine site. The farmhouse was therefore confirmed as a summer roosting site, with the potential to also be a maternity roosting site due to the number of bats recorded during in the summer (i.e. peak numbers recorded in June and July). In order to confirm this conclusion, further bat surveys were undertaken using a combination of automated bat detectors (e.g. Anabat) and suitably positioned observers.
- 3.2.2 Further surveying failed to confirm whether it was a maternity roosting site, and therefore a mist netting survey was carried out (by a suitably qualified ecologist) in August 2015 to determine bat population age structure and correctly classify the roost. Full details of this survey and its findings are reported separately (EcoSurv, 2015) and summarised in **Section 4** of this document.

4 Key survey findings

4.1 Dusk (emergence) and dawn (re-entry) surveys

- 4.1.1 The 2014 preliminary daytime inspection of the Main Farmhouse at Woodsmith Mine noted the building to be in good condition and of traditional stone construction, with a pitched pan tile roof. The building was noted to originally be a single storey dwelling although it has since had the loft converted. No evidence of bats was recorded during the 2014 internal/external survey, however communication with the previous owners of the Mine site had reported a small number of bats (likely to be 1-3 individuals) as being present. Consequently a suite of dusk/dawn surveys were undertaken between April and September 2014. Bats were noted to emerge from a gap between the brickwork and boarding of the flat roofed section of the dormer window at the front of the main farmhouse. It was therefore confirmed that a bat roost was present within this structure, although the nature and status was yet to be determined but it was envisaged to be a common pipistrelle maternity roost.

4.2 Activity transect surveys

- 4.2.1 The suite of 2014 monthly activity transect surveys recorded bat activity at a number of locations within the Woodsmith Mine site, particularly along the boundaries where it connects within the wider area. The dominant species being common pipistrelle *Pipistrellus pipistrellus*, although occasional brown long-eared *Plecotus auritus* and Daubenton's *Myotis daubentonii* bats were also recorded.

4.3 Static detector and evening capture survey

- 4.3.1 The surveys undertaken at the beginning of the 2015 bat breeding season identified (by the field surveyor) a maximum occupancy of the confirmed roost of 16 individual bats. These were confirmed to be common pipistrelles by the recorded sonograms from the static detectors.

- 4.3.2 A single evening capture exercise (scope and methodology of which was agreed with NE and NYMNPA ecologist) utilising a static hand net was undertaken on 10th August 2015. Bats were observed exiting the roost site from 21:20, approximately 30 minutes after sunset. The first two bats were allowed to exit. The subsequent bat to emerge was captured in the net and identified as a juvenile male common pipistrelle bat. The presence of this young bat, along with the time of year of the survey and the surveyor's experience, is considered to provide conclusive proof that this structure is a maternity roost for common pipistrelle bats (EcoSurv Ltd, 2015).

5 Mitigation

5.1 Demolition of buildings and roost

- 5.1.1 The Phase 3 Works at Woodsmith Mine requires the demolition of all existing farm buildings, including the demolition of the main farmhouse. As the main farmhouse is a confirmed maternity roost used by common pipistrelle bats, the demolition of this building is subject to a Bat European Protected Species Licence (EPSL), issued by Natural England.
- 5.1.2 The works to the main farmhouse (i.e. the removal of the roof) to render it unsuitable for roosting bats will be undertaken at the beginning of October 2017 and will be completed by the end of that month. Once the roof has been removed, the building will be allowed to weather for a minimum of 48 hours, denying roosting opportunities for bats, before its final demolition.
- 5.1.3 To ensure no bats remain within the roost after the breeding (maternity) season, the roost site will be checked by a licensed bat ecologist (using an endoscope) prior to the roof strip. The roof strip will be undertaken by hand under the direct supervision of a licenced ecologist removing all tiles, areas of lead flashing, wall boards etc. Wall tops will be exposed and potential crevices for roosting bats will be fitted with one way valves that will allow bats to exit but deny return.
- 5.1.4 Although bat presence is highly unlikely, the Bat EPSL approved by Natural England permits the taking (capture) of up to 10 bats as a precaution. It should be noted that this document is written for commencement of the Phase 3 works, by which point the Bat EPSL will have been granted.
- 5.1.5 Any bats will be removed from the structure by hand and by the licenced ecologist. They will be taken to the nearest mitigation roost location (i.e. bat box, see below) and allowed to enter the roost. In the event that a bat is found during a period of inclement weather, the bat will be removed from the site, fed and cared for by the licenced ecologist, and released to one of the suitable bat boxes when the weather conditions are deemed suitable.

5.2 Mitigation and Good practice measures

- 5.2.1 As the demolition of the main farmhouse building will lead to the loss of a confirmed bat roost, new replacement roosting sites (i.e. bat boxes) of equivalent size and quality will be installed prior to works commencing. These bat boxes will be located outside of the area of works and within suitable trees in the adjacent woodland.
- 5.2.2 Nine bat boxes with 25-35mm crevices will be located within the semi-natural broadleaved woodland adjacent to the existing farm buildings. This woodland has been assessed as suitable in line with industry guidance, and provides an ecological corridor suitable for foraging habitats along Sneaton Thorpe Beck.

- 5.2.3 Annual maintenance inspections of these bat boxes will be undertaken for a period of 10 years. Where required, bat boxes identified as being of poor quality will be replaced. This programme of regular maintenance is required to ensure its operation, in accordance with the Bat Mitigation Guidelines (English Nature, 2004) and as secured by the Bat EPSL.
- 5.2.4 A five-year monitoring programme will also be implemented, commencing in the 2018 breeding season and for a total of five seasons following demolition of the main farmhouse. Monitoring will entail a programme of activity and passive surveys during the maternity season at the mitigation roost site/s. This will involve four visits per year between May – September and cover the major construction and disturbance phase within the site. Surveyors will use suitable bat detectors and recording equipment both at the roost location/s and around the perimeter of the works area. If it is found that a bat box is not being utilised, a replacement bat box will be installed around any areas of bat activity identified. This will ensure the existing bat population is supported and maintained.
- 5.2.5 The following measures will also be adhered to during all of the Phase 3 works within and around the main farmhouse area to safeguard the protection of bats using the wider area for foraging and/or commuting purposes. These are:
- All staff working on site will be required to attend a tool box talk about the potential presence of bats. Elements of this will include what constitutes signs of bat presence, the probable location of bats their legal status and the penalties should a contractor or his agents deliberately injure or kill a bat.
 - All construction lighting will be directed away from the standalone roosts. All of the lighting requirements for the proposed works will be designed in accordance with guidance from the BCT's Interim Guidance Note on Artificial Lighting and Wildlife (BCT, 2014).
- 5.2.6 Mitigation and monitoring requirements described here are included in the Construction Environmental Management Plan (NYMNPA-93).

6 Summary

- 6.1.1 A suite of bat surveys were undertaken during 2014 and 2015. The findings of which have confirmed a common pipistrelle maternity roost within the main farmhouse at Woodsmith Mine. A daytime visit of the main farmhouse was also undertaken in 2017 to inform the bat mitigation licence.
- 6.1.2 The demolition of the buildings within Woodsmith Mine will be undertaken as part of the Phase 3 Works and the confirmed bat roost will be lost. Mitigation measures that will be employed at Woodsmith Mine as part of the Phase 3 Works (and as set out in the Bat EPSL) are summarised below.
- Tool box talks will be provided to all site personnel prior to the commencement of any works at or around the main farmhouse.
 - The lighting requirements for the Phase 3 Works will be designed in accordance with guidance from the BCT's Interim Guidance Note on Artificial Lighting and Wildlife (BCT, 2014).
 - The installation of new standalone roosting sites (i.e. bat boxes) within an area of semi-natural broadleaved woodland adjacent to the existing farm buildings, but outside of the working areas.

- Sensitive demolition of the main farmhouse building under ecological supervision during October 2017. This will be covered by the Bat EPSL.
- A five-year monitoring programme, commencing in the 2018 breeding season, for the five seasons following demolition.
- Annual maintenance inspections of all bat boxes for a 10 year period, following their installation.

6.1.3 It is considered that through the approved Bat EPSL and the implementation of the mitigation measures outlined in this document, the site will be managed to ensure the local bat population is supported and maintained.

7 References

Bat Conservation Trust (BCT), 2014. Artificial lighting and wildlife. Interim Guidance: Recommendations to help minimise the impact artificial lighting.

Bat Conservation Trust (2016). Bat Surveys good practice guidelines, 3rd Edition.

EcoSurv Ltd (2015) Bat Hand-netting at Dove's Nest Farm to Confirm Roost Status, August 2015

English Nature (2004) Bat mitigation guidelines.

Natural England (2006) IN136 Bat Mitigation Guidelines Advice Note.

Royal HaskoningDHV (2014) York Potash Project Mine, MTS and MHF Environmental Statement, September 2014

Royal HaskoningDHV (2015) York Potash Project Mine, MTS and MHF Environmental Statement: Supplementary Environmental Information, February 2015.