

Wendy Strangeway

From: Rob Smith
Sent: 22 March 2018 12:10
To: Planning
Subject: FW: Sirius Minerals Response to MOD Letter dated 21.12.2017
Attachments: 40-SMP-AUT-LE-0084 NYMNPA Response to MOD Letter dated 21.12.2017.pdf

Please log in for 2017/0533/cvc,thanks.

Rob Smith
Senior Minerals Planner

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From: Angela Samuels
Sent: 22 March 2018 11:07
To: Rob Smith
Cc: Robert Staniland; Clare Louise Hetherington
Subject: Sirius Minerals Response to MOD Letter dated 21.12.2017

Hi Rob

Please find attached letter from Sirius Minerals in response to the Ministry of Defence letter dated 21 December 2017.

This email is copied to Clare Hetherington for quickness.

If you have any questions, please do not hesitate to contact us.

Best regards

Angela Samuels
 Project Administrator – Health, Safety & Environment

Sirius Minerals Plc
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Our Ref: 40-SMP-AUT-LE-0084

Mr Rob Smith
Senior Minerals Planner
North York Moors National Park Authority
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22 March 2018

Dear Rob

Re: Application for verification check of conditions 14 & 15 of planning approval NYM/2014/0676/MEIA at Woodsmith Mine (Formerly Dove's Nest Farm & Haxby Plantation), Sneatonthorpe - Response to Ministry of Defence letter dated 21 December 2017

Thank you for forwarding the Ministry of Defence's ('MOD') letter of 21 December 2017 (MOD ref 407/FYLD/03) regarding the abovementioned planning application. This letter provides Sirius Minerals response to each of the points raised. For clarity, the MOD's questions are highlighted in bold and Sirius Minerals response to each of these questions set out directly below.

Sirius Minerals fully supports the MOD's suggestion that whilst the additional information discussed below is being agreed, the Authority discharge planning application NYM/2017/0533/CVC.

1. Monitoring Methodology

- i) **It is recommended that the stated accuracy of SML's proposed GNSS survey technique is specified and agreed with MOD, both in terms of horizontal and vertical accuracy in relation to SSPAR infrastructure at RAF Fylingdales.**

Sirius Response:

Sirius Minerals can confirm that the proposed subsidence monitoring strategy relies on Interferometric Synthetic Aperture Radar (InSAR) data obtained from the European Space Agency Sentinel Program along with data obtained from more traditional survey techniques such as GNSS, supplemented by Levelling and Traversing data as necessary.

Static GNSS observations with dual frequency receivers with a minimum of six satellites, a GDOP of three or less and normal ionospheric activity will achieve a horizontal (plan) accuracy of 5mm + 1ppm, and vertical (height) accuracy of 10mm + 1ppm. The additional ppm error is a function of distance from the reference station against which the position is derived. Sirius Minerals are proposing to install a series of continually operating GNSS reference stations, including one at RAF Fylingdales, to reduce the additional error. Given the size of the RAF Fylingdales site this additional error should never exceed 1.5mm when the monitoring data is processed against the continually operating reference station we intend to install on site. Therefore, the maximum anticipated error will be 6.5mm in plan and 11.5mm in elevation.

- ii) **Notwithstanding i) above, it is recommended that the monitoring stations at RAF Fylingdales are surveyed annually using precise levelling surveying techniques as a cross check to the GNSS survey data. The frequency of this cross check survey should be reviewed and agreed annually.**

Sirius Response:

Precise levelling and a closed loop traverse will be carried out during the installation of the monitoring points at RAF Fylingdales to confirm the accuracy of the GNSS derived positions in relation to one another.

This levelling work will initially be carried out on annual basis, with the frequency of this work reviewed in conjunction with the MOD, once sufficient data has been collected.

2. Monitoring Equipment

- i) **MOD requires a copy of the specification for the proposed surveying equipment to be provided by SML (GNSS / GPS and Precise Levelling equipment). On receipt of same the MOD will review the specification to ensure that the surveying equipment selected will provide the accuracy / precision required (refer to section above) and that it is suitable for use at the RAF Fylingdales facility.**

Sirius Response:

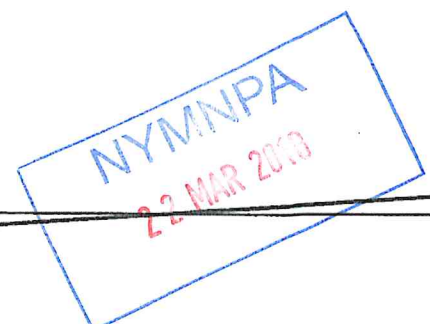
Discussions are currently ongoing with a number of surveying equipment suppliers. Once a preferred supplier has been identified, full details of the proposed surveying equipment will be provided to the MOD for its agreement.

3. Monitoring Locations

- i) **The proposed number of monitoring locations (12 no.) should be supplemented by two further locations north of F5 to provide be basis for a north-south profile to be constructed from the dataset. The requirement for monitoring locations within the RAF Fylingdales site, if any, will be confirmed by MOD to SML. As proposed by SML a site meeting should be arranged between MOD and SML to discuss and agree the number and location of the monitoring stations.**

Sirius Response:

Sirius Minerals would be happy to discuss this matter in further detail with the MOD during the suggested site meeting.



4. Monitoring Stations

- i) Cast in site concrete monitoring stations (refer to Figure 3-7 of the strategy report) are considered to be appropriate for the subsidence monitoring programme at RAF Fylingdales. SML should provide a detailed monitoring station installation method statement to MOD for review and agreement prior to commencement of the installation works. Following installation an Installation Report should be provided by SML to MOD (refer to Item 6 below).

Sirius Response:

Sirius Minerals will provide a detailed monitoring station installation method statement for the MOD to review and agree prior to installation commencing. An installation report shall also be provided upon completion of the works.

5. Monitoring Frequency

- i) A quarterly monitoring frequency (i.e. every 3 months) is considered appropriate for the subsidence monitoring programme at RAF Fylingdales. MOD will require monitoring of these stations to commence as soon as the monitoring stations are installed to provide a robust baseline dataset in advance of commencement of mining operations.

Sirius Response:

Sirius Minerals agrees to the above, however we believe that the results of the baseline monitoring and location of planned mining activities should be used to establish the frequency of future monitoring and reporting. Any extension to the quarterly interval would be agreed in advance with the MOD.

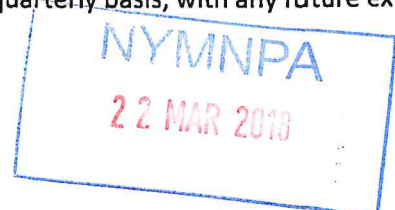
6. Reporting

- i) The proposed quarterly reporting (i.e. after each quarterly round of monitoring) is considered appropriate for the subsidence monitoring programme at RAF Fylingdales. In addition to the quarterly monitoring reports MOD would also request that SML also prepare and submit the following reports to fully document the implementation of the subsidence monitoring programme at RAF Fylingdales:
- Monitoring Station Installation Report
 - Subsidence Monitoring Protocol (setting out details of the final approved subsidence monitoring programme and including access / notification procedures etc.)
 - Baseline Monitoring Reports (quarterly from the date of installation of the monitoring stations to the commencement of mining operations)

Sirius Response:

Sirius Minerals agrees to the production of a Monitoring Station Installation Report, Subsidence Monitoring Protocol, and Baseline Monitoring Report for RAF Fylingdales.

As requested, the baseline Monitoring Report will be submitted on a quarterly basis, with any future extension to this reporting period agreed with the MOD.



7. **Timeline**

- i) **The overall timeline appears to be reasonable but needs to be updated to reflect the final approval date for the Subsidence Monitoring Programme. MOD would request that SML provide a detailed programme for the RAF Fylingdales site for review and agreement by MOD, once the Subsidence Monitoring Programme is approved.**

Sirius Response:

As suggested, once the Subsidence Monitoring Programme has been agreed, the high-level timeline will be updated to reflect the final approval date. Detailed schedules will also be shared with the MOD as part of the Installation Method Statement submission.

Notwithstanding the additional information which is to follow, we trust that the above responses addresses each of the comments raised in the MOD's letter of 21 December 2017 and demonstrates Sirius Minerals ongoing commitment to work positively with the North York Moors National Park Authority and the MOD on matters relating to subsidence at the RAF Fylingdales Site.

In the meantime, should you wish to discuss this, or any other matter relating to the above, please do not hesitate to contact me directly on 01723 470010 or matt.wilmot@siriusminerals.com.

Yours sincerely


Matt Wilmot
Chief Mine Planning Engineer

Distribution:

Clare Hetherington - MOD

