Climax Molybdenum
A Freeport-McMoRan Company

COLORADO OPERATIONS
Henderson Mine
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Empire, CO 80438
Phone (303) 569-3221

May 11, 2022

Via Email

Mr. Peter Hays
Division of Reclamation Mining and Safety
1313 Sherman St., Rm. 215
Denver, CO 80203

RE: Climax Molybdenum Company, Henderson Operations Permit No. M-1977-342, Response to MNGW-1 Low pH Status Update Review Follow-up Memo from DRMS

Dear Mr. Hays:

Climax Molybdenum Company's (CMC) Henderson Mine is providing this submittal in response to the additional comments in your October 25, 2021 memo related to low pH measurements at point of compliance well MNGW-1. The DRMS comments and Henderson's responses are provided below.

DRMS Comment #1: *Please provide an explanation why there were so few (8 in total) pH exceedances between June 1995 and June 2011 compared to June 2011 to present (Figure 7, Ajax and Clear Creek Associates 2021). The Division recognizes the increase sampling frequency however there is trend of rarely exceeding the standard to consistently exceeding the standard. What can account for this change at the site?*

Response: In response to this question, Henderson conducted additional graphical analyses of MNGW-1 and No Name Gulch (NNG) sampling results. Attachment A.1 shows the period of record for MNGW-1 and NNG. The NNG water chemistry data set is limited to sporadic measurements prior to 2013. Henderson conducted pH surveys at multiple locations in the upper and lower reaches of NNG in 2013 and 2017. Attachment A.2 is a graph that plots pH measurements in NNG with distance from the top of the drainage. The graph shows that the pH in all locations along NNG in 2017 was lower than in 2013; however, with only two periods of data, it is not possible to determine a potential trend or cause. Henderson believes that additional data, such as supplemental sampling surveys along NNG, are needed to better evaluate any trends and understand the factor(s) causing the pH levels measured in NNG and MNGW-1. The two datasets between 2013 and 2017 support the idea that ambient acidic conditions have exhausted an existing alkaline buffer capacity supplied by surrounding rock and soil. Henderson's analysis of NNG and MNGW-1 will continue with additional evaluations that are planned for summer 2022. The results and our analysis will be presented in a future submittal.

DRMS Comment #2: *A review of aerial imagery, Google Earth Pro, the Division noted in 1999 the glory hole had not fully developed and by 2009 it appears the hole had developed and by 2011 there were visible subsidence fractures along the NNG, as the glory hole expanded, and the other drainages leading to MNGW-1. Please comment on the subsidence of the glory hole leading to an increase in preferential weathering of material that drains down Red Mountain to MNGW-1 causing a decrease in measured pH.*

Response: Henderson recognizes the northern extent of the glory hole expanded in the 2009-2011 period; however, we do not observe subsidence fractures in the vicinity of NNG. The western extent of the glory hole, which is nearest to the upper reaches of NNG, has been in the current location since at least 1999. Henderson does not believe the development of subsidence fractures and the surficial

development of the glory hole could have affected the chemistry of runoff reporting to NNG. Also, once a subsidence fracture forms and the glory hole develops, water inside the area would drain into the glory hole itself. Therefore, there should not be any substantial runoff from subsidence fracture areas to the NNG drainage or other drainages off Red Mountain.

DRMS Comment #3: *In section 5.3 #3 of TR-16 it states "Henderson will notify DRMS and initiate timely discussions with DRMS on the appropriate actions to be implemented." The Division does not agree, at this time, that returning to tri-annual monitoring is appropriate without discussing possible mitigation alternatives. Please provide a discussion of possible mitigation alternatives.*

Response: Consistent with Henderson's prior notice and DRMS's confirmation email of November 16, 2021, Henderson is continuing monthly pH monitoring at MNGW-1 and NNG-50 (when flowing). As noted in our response to DRMS comment #1, additional data are needed to understand the factors influencing pH in MNGW-1 and NNG. This includes, for example, additional pH surveys along NNG. A discussion regarding the basis for mitigation (if appropriate) and possible alternatives will be developed following assessment of the additional data and identification of the factors influencing pH changes in NNG and MNGW-1.

If you have any questions regarding this submittal, please feel free to contact me at (720) 942-3255.

Sincerely,

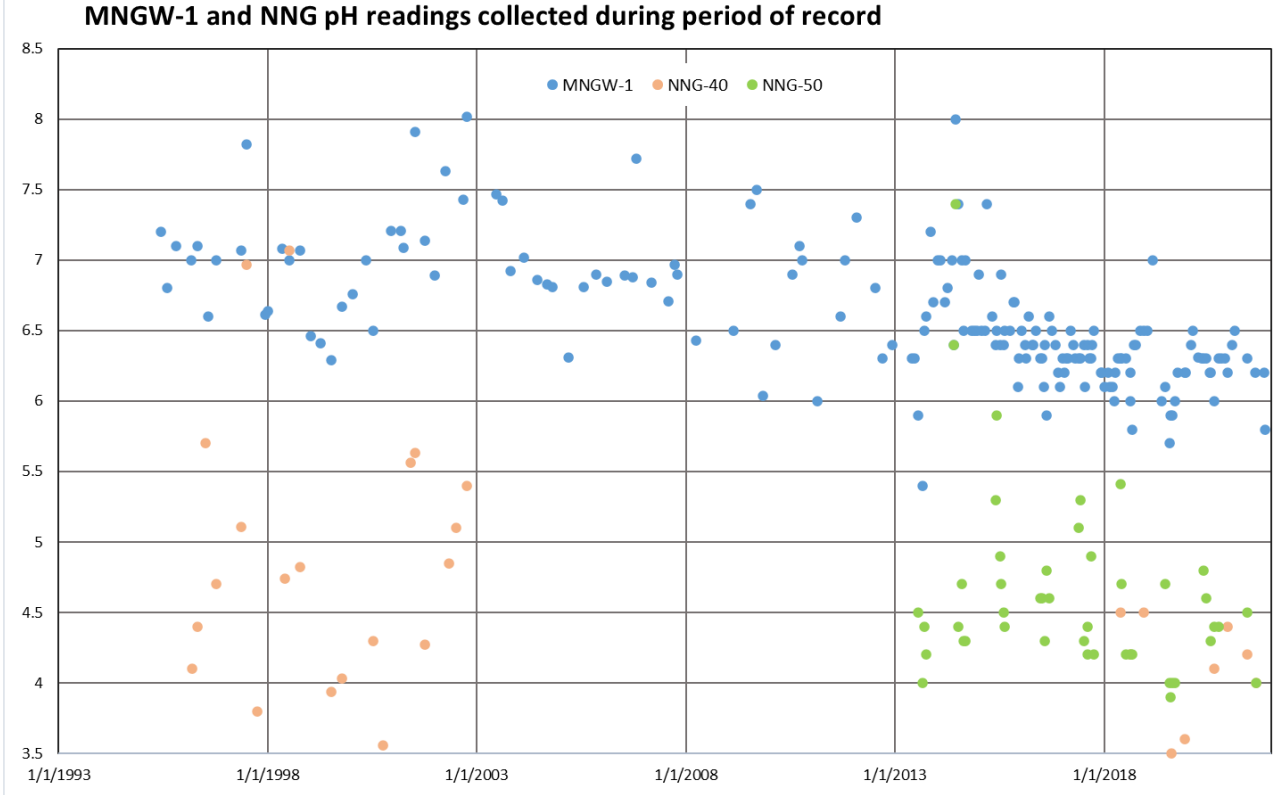
Miguel Hamarat
Environmental Manager
Climax Molybdenum Company
Henderson Operations

Attachments:
A. Graphs of pH Measurements

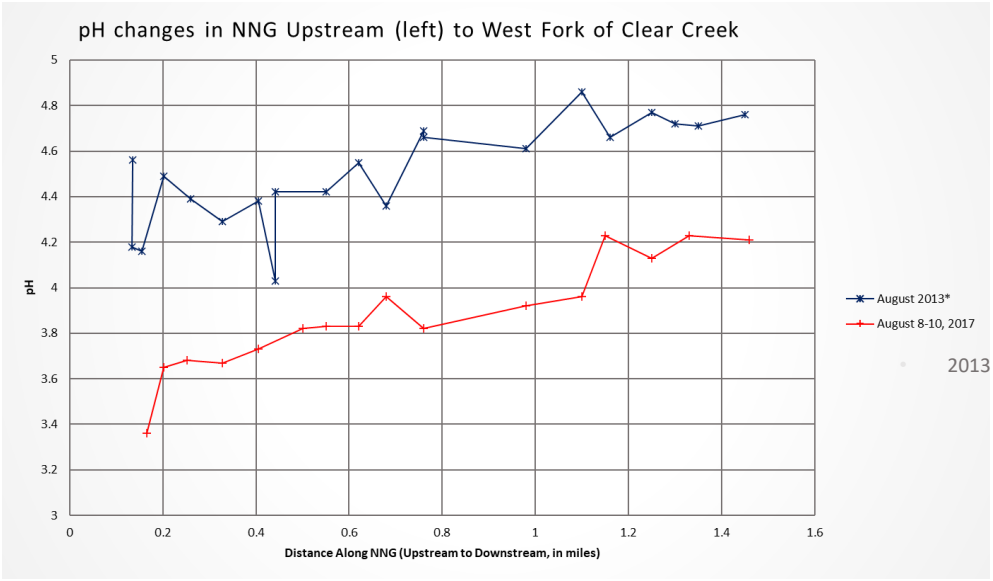
cc (via email)
P. Lennberg, DRMS
G. Niggeler, Climax
B. Bates, Climax

Attachment A

Graphs of pH Measurements



Attachment A.1



Attachment A.2