

Freeport-McMoRan Chino Mines Company
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Certified Mail #70160750000113394728
Return Receipt Requested

Mr. Bruce Yurdin, Director
New Mexico Environment Department
Water Protection Division
P.O. Box 5469
Santa Fe, New Mexico 87502

Dear Mr. Yurdin:

Re: Freeport-McMoRan Chino Mines Company
AOC Quarterly Report, Fourth Quarter 2016

This Administrative Order on Consent (AOC) Quarterly Report documents activities performed during the reporting period from October 1 through December 31, 2016. The report is submitted and organized as outlined in Article IX, Section E of the AOC between the New Mexico Environment Department (NMED) and Freeport-McMoRan Chino Mines Company (Chino). Chino also submits a copy of this report to the New Mexico Energy, Mineral and Natural Resources Department, Mining and Minerals Division (MMD), per its request.

AOC Activities

During the fourth quarter of 2016, the following major activities occurred:

- Chino received approval from NMED for the Revised Razorback Ridge Area Supplemental Completion Report, Interim Remedial Action, Smelter Tailings Soils Investigation Unit (STS IU).
- Chino submitted the *Annual Groundhog Mine Site IRA Monitoring Report, Hanover Whitewater Creeks Investigation Unit (HWC IU)*
- Chino performed quarterly post-remediation monitoring of the Razorback Ridge Interim Remedial Action site under the STS IU.
- Chino performed quarterly post-reclamation and remedial monitoring of the Groundhog Mine Site and the Historic Small Stockpile sites under the HWC IU.
- Chino performed quarterly post-remediation monitoring of the Hurley Railroad Site under the STS IU.
- The Community Work Group met for their annual AOC site tour on October 22nd.
- The Community Work Group met on November 15th in Bayard, NM.
- The AOC Technical Group participated in meetings and/or conference calls on October 11th, November 15th and December 13th to review the AOC progress.

Hanover/Whitewater Creeks Investigation Unit

Following NMED's 2009 approval of the *Groundhog Mine Site Interim Remedial Action (IRA) Completion Report*, Chino submitted an addendum to the completion report for the remediation of the old pipeline corridor in 2011 as well as the *Star Rock Stockpile IRA Completion Report* as part of the Historic Small Stockpiles. These stockpiles are comprised of the historical Osceolla, CB Bell, and Tenderfoot mine sites per the IRA completion report approved by NMED in 2009. Since those NMED approvals, Chino has performed quarterly post-reclamation erosion and vegetation monitoring of the sites during the series of required growing seasons defined to meet successful revegetation establishment, as well as bi-annual water quality monitoring. Chino continues to perform bi-annual water quality monitoring of the site since 2005. These survey results are included in the Groundhog Mine Site annual monitoring reports.

Chino performed the annual vegetation survey and a quantitative vegetation survey of these IRA sites in September 2015. The quantitative survey evaluated the success of the revegetation of the sites after a minimum of five growing seasons as per the IRA work plans. Chino submitted the *Vegetation Monitoring Report* which provides the quantitative survey evaluation for the IRA sites on September 30, 2016. The report is currently undergoing NMED and public review. Chino submitted the *Groundhog Mine Site Annual Monitoring Report* on October 30, 2016.

MMD has approved extension requests by Chino under Permit GR009RE for the completion of reclamation activities at the Lucky Bill Groundhog Mine No. 5 site. MMD issued permit Modification 14-1 to Revision 01-1, Permit GR009RE in a letter dated September 18, 2014 that sets June 2018 as the date for completion of closeout plan activities. This extension period is necessary for Chino to sequence the MMD reclamation process with the AOC. Additionally, in 2014 Chino submitted the *Groundhog No. 5 Stockpile Work Plan for Additional Characterization and Controls for the HWC IU* to address inadequate seepage capture at the toe of the stockpile. In June 2014, NMED approved the work plan, and Chino installed the new seepage collection system which has been performing well. Chino continues to collect samples from the engineered system. Chino revised a draft interim report from early 2016 on the geochemical evaluation in response to preliminary informal comments received from NMED in September 2016. NMED is currently reviewing the revised draft report, provided by Chino informally in early January 2017. Chino anticipates finalizing the report in first quarter 2017.

The NMED provided the revised *Ecological Risk Assessment* (ERA) report to Chino and the public for review on October 31, 2015. Chino has no further comments on the ERA. Currently, NMED's human health risk assessor is drafting an addendum to the 2008 Human Health Risk Assessment to identify any additional data gaps. This technical memorandum is anticipated to be finalized in the second quarter of 2017.

Hurley Soils Investigation Unit

There were no activities this quarter to report for the Hurley Soils Investigation Unit.

Lampbright Investigation Unit

The NMED provided a revised *Draft LIU Ecological Risk Assessment* to Chino for comment in February 2014. Chino provided comments on the draft that April. NMED anticipates responding to these comments and providing the final report to Chino and the public for review during the first quarter of 2017.

Smelter Tailings Soil Investigation Unit

Chino submitted a 5 year monitoring report to NMED and received their approval of the *Vegetation Monitoring Report for the Golf Course Interim Remedial Action, STS IU* in 2014. Chino also submitted a supplemental completion report following a second phase of the Golf Course IRA which addressed an additional 30 acres of impacted soils in the vicinity of the Hurley railroad area in 2013. As documented in this supplemental report, Chino is conducting quarterly post-remediation erosion and vegetation monitoring. These survey results will be submitted to NMED in a cumulative vegetation survey report after five years of monitoring, anticipated in fourth quarter of 2017.

Between 2013 and 2014, Chino excavated 94 acres of copper impacted soils from Razorback Ridge and from the hillside slope to the east of Razorback Ridge as part of the Lake One Closure Project. Reseeding of these acres was completed by May 2015. Chino submitted the *Razorback Ridge Area IRA STS IU Supplemental Completion Report* on October 7, 2015. As documented in this report, Chino is conducting quarterly post-remediation erosion and vegetation monitoring. NMED provided comments on the completion report in a letter dated May 26, 2016. Chino submitted the revised Razorback Ridge Completion Report and response to the NMED comments on July 1, 2016. NMED approved the revised report on November 4, 2016.

Historical tailings material located in the Apache Tejo drainage was incorporated into the STS IU by NMED in 2009. NMED requested that Chino submit an IRA work plan for Apache Tejo drainage system. Chino plans to submit a survey report and work plan after addressing site access issues.

The STS IU Pre-Feasibility Study Remedial Action Criteria (RAC) were established by NMED in letters dated September 16, 2010, and March 2, 2011. The following summarizes the activities that occurred in response to this letter:

- The 2011 feasibility study (FS) work plan initiated the following activities and processes:
 - Chino completed survey and soil sampling requirements per the FS Appendix A and B field sampling plan in late 2011.
 - Following the evaluation of the data resulting from the 2011 sampling programs, Chino developed a *Phytotoxicity and Vegetation Community Study Work Plan* to conduct seed collection and soil sampling/collection field events.
 - Following receipt of conditional approval from NMED, Chino conducted additional seed collection and vegetation survey field events during late summer of 2014. The generation of lab data under this study was completed in third quarter of 2015. Chino anticipates submitting the *Phytotoxicity and Vegetation Community Study* report by the second quarter of 2017.
 - Chino anticipates submitting the draft FS report in the latter half of 2017, following incorporation of phytotoxicity study results, as well as the pending five year monitoring reports for the amendment study and the white rain monitoring study.
- As part of the process to address RAC for surface water, Chino submitted two work plans in 2011: 1) *Application of the Hydrology Protocol to STS IU Drainages*; and 2) *Use Attainability for Stock Tanks*.
 - Chino performed field work for both of the plans in 2011 and submitted the sampling results in the *Expedited Use Attainability Analysis (UAA): Application of NMED Hydrology Protocol to STS IU Drainages* in 2012 to NMED Surface Water Quality Bureau (SWQB).
 - Chino revised the UAA based on comments received by SWQB from the public notice and resubmitted the HP report in May 2013.
 - The NMED SWQB submitted, pursuant to Subsection C, 20.6.4.15 NMAC, a request to the U. S. Environment Protection Agency (EPA) for technical approval of the UAA in a letter dated June 26, 2013.
 - EPA responded to SWQB in a letter dated June 26, 2014, providing comments on the HP Report. EPA requested additional information to be added to the HP Report. In coordination with SWQB Chino submitted a revised HP Report with responses to comments to SWQB via email on October 24, 2014.
 - SWQB petitioned the NM Water Quality Control Commission (WQCC) to accept the proposed UAA, in advance of the Triennial Review hearing that occurred in October 2015.
 - NMED commented on the *Use Attainability Analysis for Stock Tanks Work Plan* in a Notice of Disapproval letter dated June 30, 2011. Chino plans to respond to the comments when presenting the sampling results to the NMED in late 2017.
- Additionally, in support of the process to address RAC for surface water, Chino submitted for review to the NMED SWQB the *Development of Site-Specific Copper Criteria Work Plan for the STS IU* in 2011.
 - Chino performed the two phases of surface water sampling during 2011 under the approved copper criteria adjustment work plan.
 - Chino submitted a finalized interim report on the *Development of Site-Specific Aquatic Life Criteria for Copper in STS IU Drainages* study to SWQB in April 2013.
 - Chino submitted the *Revised Site-Specific Copper Toxicity Model Report* to the SWQB on October 1, 2013.
 - Chino filed a Petition to Amend the Surface Water Quality Standards (20.6.4 NMAC) and Request For Hearing with the WQCC on September 30, 2014.

- Chino filed testimonies supporting the Site-Specific Copper criteria petition with the WQCC on December 12, 2014, in advance of the Triennial Review hearing that occurred in October 2015.

On January 7, 2017 the WQCC Statement of Reason and Final Order was signed for proposed amendment to standards for interstate and intrastate waters 20.6.4 NMAC which includes Chino's site specific standard and UAA for drainages in the STSIU

Chino completed the five year phase of bi-annual sampling and monitoring of the pilot amendment study area in October 2013. The current activities associated with the study include:

- Chino conducted the five year quantitative vegetation survey in October 2013.
- The annual monitoring data were included with the five year data analysis report titled *Year 5 Monitoring Report for STS IU Amendment Study Plots*, provided to NMED for informal review in the third quarter of 2015
- Chino received comments in August 2016 from NMED following their informal review of the draft report and anticipates finalizing the report in first quarter 2017.

As part of the amendment study process, Chino has been monitoring the effects to soil pH following its *White Rain Technical Memorandum* report that documented changes in the pH of the soils plots caused by a natural event that occurred in January 2008. Chino completed the five year phase of annual sampling of soil sites in November 2014. The current activities associated with the study are as follows:

- The annual monitoring data generated from the soil samples were included in the draft *Year 5 Report on pH Monitoring to Evaluate the Effect of the White Rain on the STS IU* provided to NMED for informal review in the third quarter of 2015. .
- Chino received comments in early November 2016 from NMED following their informal review of the draft report and anticipates finalizing the report in first quarter 2017.

Community Relations

The Community Work Group (CWG) participated in their annual AOC site tour on October 22, 2016, visiting remediated sites within the STS IU. The CWG met on November 15, 2016. During that meeting, Chino presented the "*Improvements in Whitewater Creek Overtime due to Source Controls as Denoted in Paired Photos from 1995 and 2012*" for the HWC IU to the group. The CWG elected to meet again on January 10, 2017. The three local Chino AOC document repositories continue to be maintained and updated with current documentation. The online electronic document repository (<http://www.fcx.com/chino/>) is also up to date.

Next Quarter's Scheduled Activities

The following work and activities are projected for the first quarter of 2017:

- Submit the *Year 5 Monitoring Report for STS IU Amendment Study Plots*, which combines the October 2013 vegetation survey completing the five year review requirement and the annual soil sampling results.
- Submit the *Year 5 pH Monitoring Report for the STS IU*, which combines the annual soil sampling results and the final report; an analysis and summary of the 5 years of monitoring data.
- Submit the revised *Draft Ecological Risk Assessment* for the Lampbright IU for Chino and public review.
- Submit the *Interim Report for the Geochemical Evaluation of the Groundhog No. 5 Stockpile, HWC IU*.
- Quarterly inspections of interim remediation sites with the HWC IU and STS IU.
- CWG meeting January 10, 2016.
- The AOC Technical Group will meet monthly.

Personnel Changes

There were no personnel changes during the fourth quarter. However, Mr. Ned Hall was replaced as AOC Project Manager by Ms. Alicia Voss effective January 11, 2017. Mr. Hall has taken a position with Freeport-McMoRan Inc. (FCX) as Regional Environmental Manager for its copper mining operations in Arizona and New Mexico including Chino, which will allow for a smooth transition. Ms. Voss is a Remediation Manager for FCX and brings 25 years of environmental management experience to this position, including high level project, CERCLA, and remediation skills.

Problems and Solutions

There were no problems that adversely affected the AOC this quarter.

Please contact Ms. Alicia Voss at (602) 366-8049 with any questions or comments concerning this report.

Sincerely,



Sherry Burt-Kested
Manager, Environmental Services

SBK:pp
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xc (via email):

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