

June 25, 2020

Ms. Joey Pace
Arizona Department of Environmental Quality
Voluntary Remediation Program
1110 W. Washington, St
Phoenix, Arizona 85007

RE: Conditional No Further Action Report for the Verde Central Voluntary Remediation Program (VRP) Site; near Jerome, Arizona; ADEQ VRP Site Code: 508483-00

Dear Ms. Pace:

Freeport Minerals Corporation (FMC) is requesting a Conditional No Further Action (CNFA) determination from the Arizona Department of Environmental Quality (ADEQ) for portions of the historical Verde Central Mine Site (Site). AECOM Technical Services, Inc. (AECOM) has prepared this Conditional No Further Action Report on behalf of FMC to provide the information required for a No Further Action determination in accordance with the Arizona Revised Statutes (A.R.S.) §49-181(A).

The Site is a small inactive historical copper mine that operated for a short duration from 1928 to 1930. It is located on Highway 89A approximately 0.7 miles south of Jerome, Arizona. The Site is comprised of the following features: a mine rock stockpile, miscellaneous residual mine materials from milling operations, and the foundation of a former mill. FMC is seeking a CNFA on approximately 6.7 acres of the property where residuals from former mining activities are present, as shown on Figure 1.

This request is for a "Conditional" No Further Action determination because remediation levels will be met through institutional and engineering controls, and post-remediation care obligations such as monitoring or maintenance of engineering controls will be performed, as required by Arizona Revised Statute (A.R.S.) §49-181(D). Attachment 1 provides ADEQ's letter of conditional approval of FMC's Site Characterization Report (and Risk Assessments) and approval to proceed with a request for No Further Action.

The seven requirements for a No Further Action determination as specified in the A.R.S. §49-181(A) are provided below.

A.R.S. §49-181(A.1) A description of the specific contaminants for which a no further action determination is being sought.

AECOM conducted Site characterization activities on behalf of FMC in accordance with the ADEQ approved *Revised Work Plan*, dated December 18, 2013 and the *Revised Sampling and Analysis Plan*, dated December 27, 2013. Site characterization included collecting shallow soil samples, shallow sediment samples from Hull Canyon Wash, and surface water samples from Hull Canyon Wash on the few occasions when water was flowing in the wash. Visible mining residuals were targeted for sampling. The samples were analyzed for a wide variety of metals and organic constituents as described in the *Site Characterization Report (with Human Health and Ecological Screening Level Risk Assessments)*, dated April 17, 2020. In addition, several soil samples were

collected in areas unimpacted by historical mining operations to assess native background soil concentrations.

The human health risk assessment (HHRA) included comparisons of sample analytical results to generic human health screening levels to identify direct contact and leaching to groundwater chemicals of potential concern (COPCs) in soil, sediment, and surface water. Antimony, arsenic, cadmium, copper, and lead were identified as COPCs in soil and sediment, and these metals are the specific contaminants for which a CNFA determination is being sought. A summary of the soil/sediment analytical results for samples collected in areas disturbed by mining are shown on Table 1 with applicable screening levels. Although copper did not exceed the soil screening levels shown in Table 1, it did exceed the screening criteria for synthetic precipitation leaching procedure and is thus considered a COPC as discussed in the *Human Health Risk Assessment*, dated April 17, 2020.

Table 1. List of CNFA Constituents

COPC	Lowest Soil Concentration (mg/kg)	Highest Soil Concentration (mg/kg)	Soil Screening Levels		Site-Specific SRL (mg/kg)	Basis for Site-Specific SRL
			Minimum GPL (mg/kg)	Non-Residential SRL (mg/kg)		
Antimony	<4.8	42	35	410	18,000	HI=1
Arsenic	19	430	290	10	2,300	TRL = 10 ⁻⁵
Cadmium	<0.48	65	29	510	27,000	HI=1
Copper	64	24,000	NE	41,000	1,800,000	HI=1
Lead	5.7	1,200	290	800	18,000	(a)

(a) - The SRL for lead was evaluated separately, as presented in Section 6.3 of the HHRA (Appendix G of the 2020 Site Characterization Report). The Preliminary Remediation Goal developed for lead using the Adult Lead Model (ALM) and based on a 10 microgram per deciliter target blood lead level is listed here.

COPC - chemical of potential concern

GPL - Groundwater Protection Level

HI - hazard index for noncancer effects

NE - not established

Non-residential SRL - SRL from Appendix A of Chapter 7. Department of Environmental Quality Remedial Action of Title 18. Environmental Quality. 1996.

Site-Specific SRL - SRL calculated in human health risk assessment

SRL - Soil Remediation Level

TRL - target risk level for cancer effects

A.R.S. §49-181(A.2) A description of the actions taken to achieve remediation levels or controls determined in accordance with Section 49-175, subsection B.

As part of the HHRA, site-specific soil remediation levels (SRLs) for the five COPC metals were developed based on a target cancer risk level of 1 x 10⁻⁵ and a target hazard quotient (HQ) of 1, as shown in Table 1, in accordance with standard risk assessment protocol accepted by ADEQ and the United States Environmental Protection Agency. The HHRA assumed an exposure pathway for a current/future adolescent trespasser, given that the Site is rarely visited and has a locked gate, fencing, and No Trespassing signs.

In the area for which the CNFA determination is being requested (Figure 1), the five COPC metals exceed residential and non-residential soil screening levels. Therefore, FMC intends to use engineering and institutional controls to continue to restrict residential and recreational use of portions of the property. FMC will record in Yavapai County an institutional control that consists of a restrictive

covenant that is labeled "declaration of environmental use restriction" (DEUR) pertaining to the area of the property necessary to protect the public health and the environment, thus meeting soil remediation standards of A.R.S. §49-152(C).

A.R.S. §49-181(A.3) A description of any soil, water, or soil and water treatment systems used as part of the remediation.

Not applicable.

A.R.S. §49-181(A.4) Whenever institutional or engineering controls are placed on the site:

(a) A demonstration that any engineering control or combination of engineering controls has been constructed, is functioning, and will be maintained

The Site is an abandoned mine in a remote area surrounded by steep slopes. No industrial or maintenance workers are present on Site and no industrial entities are in the area. The site is accessed from a dirt road off Highway 89A. There is a locked metal gate at the head of the dirt road with barbed wire fencing along the property adjacent to the road to inhibit unauthorized access to the site. Several "No Trespassing" signs are posted visibly from the highway. The site is inspected periodically by FMC staff to assess the condition of the property and the controls in place. No vandalism has been observed on the Site and the controls in place are maintained. Also, the local police periodically patrol the area surrounding the Site. FMC will continue periodic Site inspections.

(b) A description of the proposed land use for the site and a demonstration that the use will not compromise the integrity of the engineering controls and will be in accordance with any institutional controls.

FMC has no plans to use, develop, or sell this small roadside site, and will continue to limit access by the gate, fencing, and signage. The DEUR will prohibit residential and recreational use and require that property access restrictions are continued to limit potential trespassers. The property will be inspected by FMC periodically to confirm that signage, fencing, and the locked gate are in place and in good working order.

A.R.S. §49-181(A.5) If postremediation monitoring is proposed, a description of the type of monitoring, monitoring locations, contaminants to be monitored, monitoring frequency and sampling procedures.

Not applicable.

A.R.S. §49-181(A.6) A description of community involvement activities undertaken to meet the requirements of section 49-176.

During the planning stages of initial site characterization, FMC conducted community involvement activities and notified the general public of site characterization sampling activities in advance of performing site work. URS (now AECOM) published a notification for a public meeting in the Verde Valley Independent on June 25, 2014 and July 4, 2014. The notice advertised a public meeting that was held on July 7, 2014, at the Lawrence Memorial Hall on Hull Avenue in Jerome. The public meeting notice was also posted on a notice board at the Jerome U.S. Post Office. At the public meeting, FMC and their consultants answered the public's questions related to the project. Copies of the following documents were provided at the public meeting and to the Jerome Public Library:

- *Frequently Asked Questions Sheet*
- *Project Fact Sheet*

- *Revised Project Work Plan, Verde Central Mine Voluntary Remediation Project, prepared by URS (now AECOM) for FMC, December 18, 2013.*
- *Revised Sampling and Analysis Plan, Verde Central Mine Voluntary Remediation Project, prepared by URS (now AECOM) for FMC, December 27, 2013.*

An additional Public Notification will be published in two consecutive editions of the Verde Valley Independent in June to July, 2020 for a combined public comment period for the Site Characterization Report (and Risk Assessments) and the request for a CNFA determination for the historical Verde Central Mine. The Public Notification is provided in Attachment 2 of this document. The public comment period will extend 45 days from the date of the first publication. The following documents will be available for public review on ADEQ's website at <http://www.azdeq.gov/notices>, and at the ADEQ Records Center (see Attachment 2 for more detail):

- *Site Characterization Report (with Human Health and Screening Level Ecological Risk Assessments), prepared by AECOM for FMC, Verde Central Mine, April 17, 2020.*
- *This Conditional No Further Action Report for the Verde Central Voluntary Remediation Program (VRP) Site; near Jerome, Arizona, Verde Central Mine, prepared by AECOM for FMC, June 23, 2020.*

A.R.S. §49-181(A.7) A list of permits under this title obtained for the remedial action or held by the applicant pertaining to the Site.

Not applicable.

In accordance with A.R.S. §49-176(A)(3), FMC will notify the following stakeholders of the public notice and comment period:

Arizona Game and Fish Department – PEP@azgfd.gov
Arizona Department of Transportation – dmiller5@azdot.gov
Arizona Department of Water Resources – lmcbride@azwater.gov
City of Jerome - c.gallagher@jerome.az.gov

FMC appreciates ADEQ assistance with the Verde Central VRP project and consideration of our request for a Conditional No Further Action (CNFA) determination. If you have any questions, please contact Jennifer Laggan (FMC) at (303)249-4273 or jlaggan@fmi.com.

Sincerely,

AECOM



Mary C. Stauffer
Project Manager

cc: File

Enclosures:

Figures



Ms. Joey Pace
June 25, 2020
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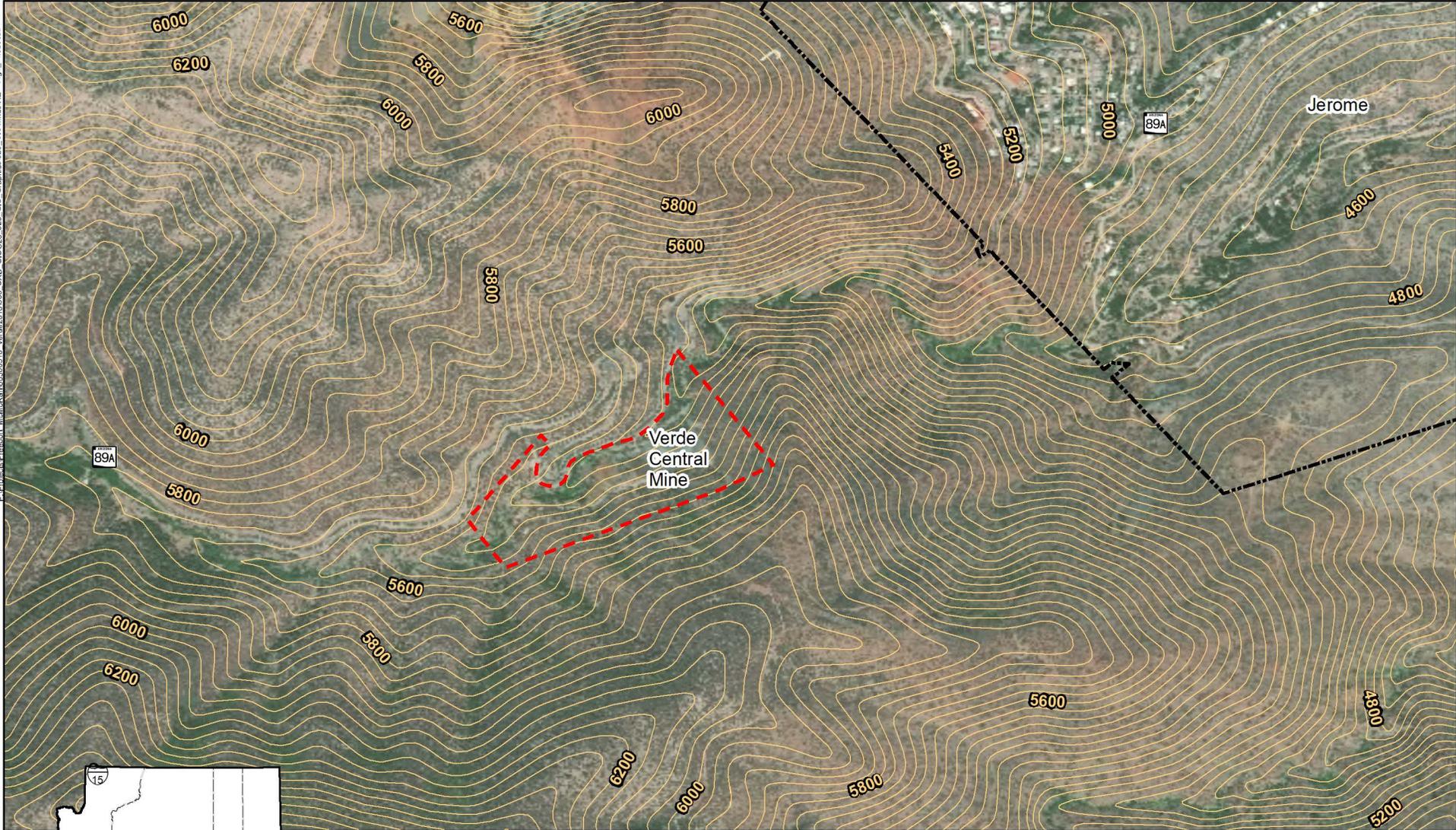
1. Site Location Map
2. Site Features Map

Attachments

1. ADEQ Letter of Conditional Approval of the Site Characterization Report (and Risk Assessments) and to Proceed with Request for No Further Action
2. DRAFT Public Notification for Review of Site Characterization Report (and Risk Assessments) and Request for No Further Action

FIGURES

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LEGEND

-  Verde Central Mine Site
-  Town Boundary
-  USGS Elevation Contour

Base Map: ALRIS 2016
 Project Area: URS 2007
 Elevation Contours: U.S. Geologic Survey DEM
 Imagery: Source: Esri, DigitalGlobe, GeoEye,
 Earthstar Geographics, CNES/Airbus DS, USDA,
 USGS, AeroGRID, IGN, and the GIS User
 Community

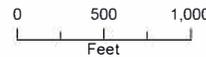
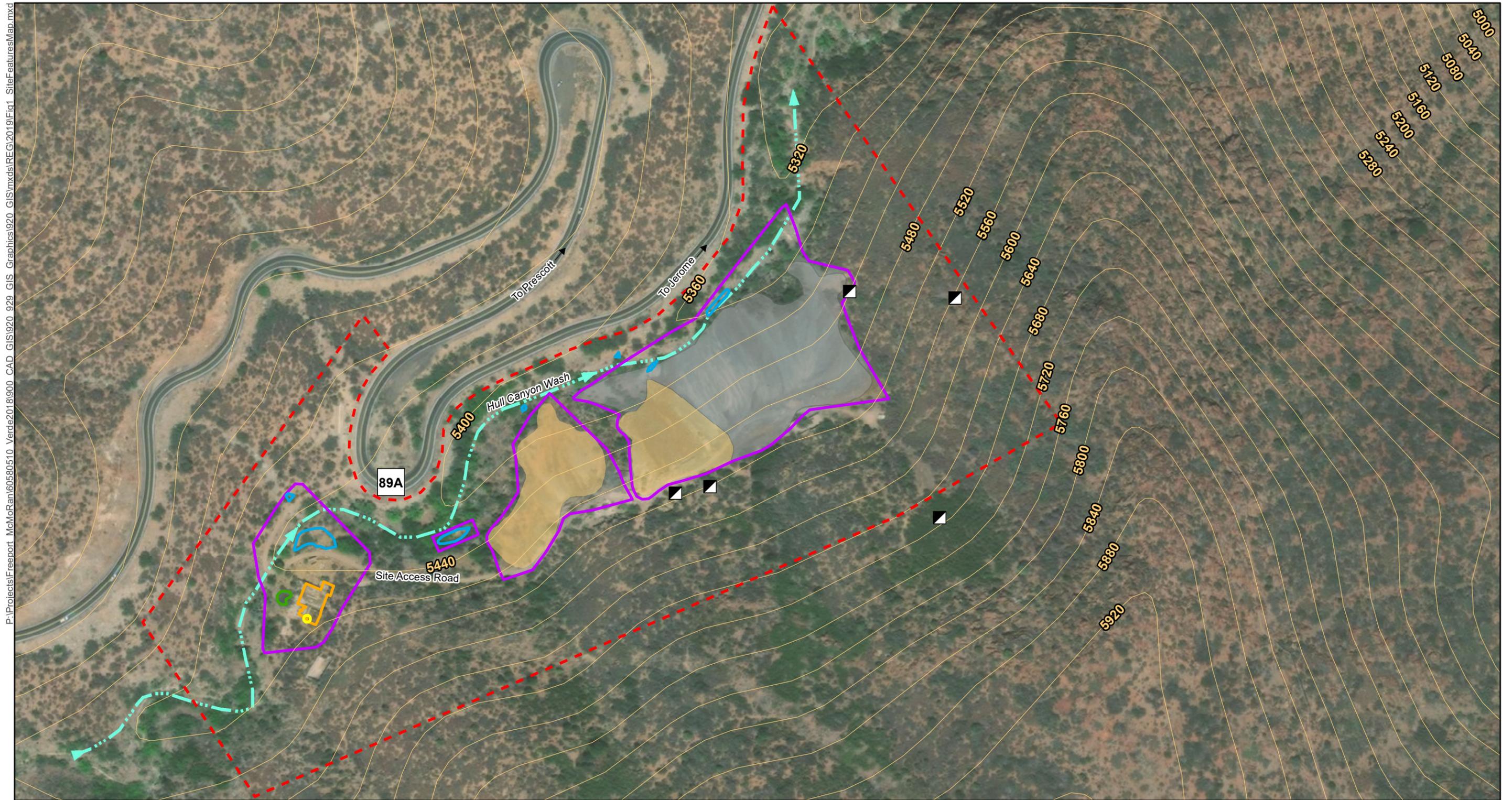


Figure 1

Site Location Map

Freeport Minerals Corporation

Verde Central Mine, Near Jerome, Arizona



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LEGEND

Mine Features

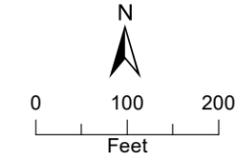
- - - Verde Central Voluntary Remediation Site
- Boundary of Declaration of Environmental Use Restriction (DEUR)
- Closed Mine Shaft or Adit
- Approximate Extent of Waste Rock Stockpile
- Approximate Extent of Low-Grade Ore Rock Stockpile

- Mill Building Foundation
- Tailing ¹
- Waste Concentrate ¹
- High Grade Ore ¹
- USGS Elevation Contour

¹ The extent of tailing, waste concentrate, and high grade ore shown above was estimated during planning stages of the project.

General Features

- ▶ Ephemeral Stream Bed



Hydrology and Mine Features: URS 2008
 Elevation Contours: U.S. Geological Survey DEM
 Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 2
Site Features Map
 Freeport Minerals Corporation
 Verde Central Mine, Near Jerome, Arizona

ATTACHMENT 1



Douglas A. Ducey
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Misael Cabrera
Director

May 6, 2020
VRP 20-157

Ms. Jennifer P. Laggan, P.G.
Freeport Minerals Corporation
Remediation Projects
333 N. Central Avenue
Phoenix, AZ 85004

RE: **Conditional Approval of *Site Characterization Report (SCR/HHRA/SLERA)***
Verde Central Mine
0.7 mile southwest of Jerome; State Highway 89A
VRP Site Code: 508483-00

Dear Ms. Laggan:

The Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP), in conjunction with The Fehling Group, LLC (TFG), has completed its final review of the April 17, 2020 *Site Characterization Report (SCR)*, inclusive of the associated *Human Health Risk Assessment (HHRA)* and *Screening Level Ecological Risk Assessment (SLERA)*. AECOM prepared the documents on behalf of Freeport Minerals Corporation (FMC), for the Verde Central Mine Site located outside of Jerome, Arizona (the Site). The SCR was developed to summarize the administrative and field activities completed to satisfy the requirements of Arizona Revised Statutes (A.R.S.) §§ 49-175 and 49-176. FMC used the results of site-specific sampling activities to develop and support the conclusions of the HHRA and SLERA, and to develop site-specific remediation goals.

The VRP conditionally approves the SCR/HHRA/SLERA, contingent upon the 45-day public comment period required pursuant to A.R.S. § 49-176(A)(3).

HOW TO PROCEED

Pursuant to A.R.S. § 49-176(A)(3)ⁱ, the next step after conditional approval of the SCR/HHRA/SLERA is for FMC to publish a notice to provide the public 45 days to comment on the document. However, since FMC will soon be seeking a Conditional No Further Action (CNFA), which also has a 45-day notice periodⁱⁱ associated with it, the VRP and FMC have agreed to combine the notice periods together to run concurrently. As such, FMI should now prepare and submit to the VRP a *Request for Conditional No Further Action (CNFA Report)*.

ⁱ For remediation levels or controls selected pursuant to A.R.S. § 49-175 that require an institutional or engineering control to satisfy A.R.S. § 49-152, a Volunteer shall provide the public an opportunity to comment on the document for a period of forty-five days after notice is published in a newspaper of general circulation.

ⁱⁱ Pursuant to A.R.S. §§ 49-176(B) and 49-181(C)(1) and (C)(2)

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FMC should submit the following information in the CNFA Report:

1. A summary that adequately addresses the seven requirements listed in A.R.S. § 49-181(A). All seven requirements must be addressed in writing. If a component is not applicable to the Site, state “not applicable” for that statutory requirement.
2. A general site location map underlain by a topographic base layer.
3. A scaled, clearly defined, and labeled map of the CNFA boundary area(s). The CNFA will only be applicable for the areas of the Site for which the SCR/HHRA/SLERA evaluated risk to all relevant receptors (ie: exposure areas).
4. A digital CNFA boundary map. Instructions for preparing the digital submittal are located on the ADEQ VRP website.
5. A list of the contaminants for which the CNFA is sought. Only the contaminants addressed in the SCR/HHRA/SLERA may be included. The list shall be presented in a table, with a column illustrating the highest concentration remaining onsite and the established excessive lifetime cancer risk and/or hazard index for each contaminant.
6. A draft CNFA Public Notice and the name of the newspaper where the notice will be published. **The public notice must be written to notify the public of the availability to comment on both the SCR/HHRA/SLERA and the CNFA Report.**
7. A list of stakeholders who have been identified to receive direct notice of the public comment period. Pursuant to A.R.S. § 49-176(A)(3), this list shall include, but is not limited to, affected water providers, affected well owners, local government agencies, adjacent residents (or other directly affected land users such as owners of a right-of-way), and the Arizona Department of Water Resources. In addition, ADEQ has identified the Arizona Game and Fish Department as a stakeholder for the comment period.

Upon receipt of the CNFA Report:

- The VRP will review the CNFA Report pursuant to A.R.S § 49-181(B).
- The VRP will review the draft Public Notice (which shall include mention of the availability to comment on both the CNFA and the SCR/HHRA/SLERA) and will provide either comment or approval for publication.
- Once the draft Public Notice has been approved by the VRP, it must appear for at least one day in a daily local newspaper of general circulation, or for two days in weekly newspaper of general circulation. The public will have 45 days to provide written comments to FMC and/or ADEQ. **The VRP must be notified at least 3 days in advance of the date(s) of publication.**

Upon completion of the public comment period:

- With regards to the CNFA Report, the Volunteer must provide the VRP with a *Public Comment Notification Letter* addressing any comments received, or indicating if no comments were received. The Volunteer must also provide the VRP with the newspaper Affidavit of Publication, as well as a wet-signature *Certification for No Further Action Form* (located on the ADEQ VRP website). The certification form must be signed by the Volunteer of Record (Ms. Jennifer P. Laggan).
- With regards to the SCR/HHRA/SLERA, FMC must address any comments received in a Responsiveness Summary that will be reviewed by the VRP and, once approved, included as

an appendix to the final SCR/HHRA/SLERA. If no comments are received, the April 2020 version of the SCR/HHRA/SLERA will stand as the final document.

- Once all of the required documentation is received by the VRP, the documents will be reviewed, and if no modifications are required, the VRP will issue a CNFA.

Please note, FMC should work with the Declaration of Environmental Use Restriction (DEUR) Program throughout the CNFA process to facilitate recording of the Institutional Control DEUR. This includes completion and submittal of the New DEUR Questionnaire, and submittal of specific documents, which serve as exhibits to the DEUR. As a reminder, the DEUR must be recorded with the Yavapai County Recorder's Office before the VRP will issue the CNFA. FMC should contact the DEUR Coordinator, Caitlin Burwell, at 602-771-4122 with all DEUR-related questions.

If you have any questions, please feel free to contact me via email at pace.joey@azdeq.gov or telephone at 602-771-4818.

Regards,



Ms. Joey Pace, Project Manager
Voluntary Remediation Program

cc: Mary Stauffer, AECOM – *sent via email*

ATTACHMENT 2

**NOTICE OF 45-DAY PUBLIC COMMENT PERIOD
VERDE CENTRAL MINE
VOLUNTARY REMEDIATION PROGRAM SITE
COMBINED COMMENT PERIOD FOR SITE CHARACTERIZATION REPORT/RISK
ASSESSMENT AND REQUEST FOR NO FURTHER ACTION DETERMINATION**

Pursuant to Arizona Revised Statutes (A.R.S.) § 49-181(A), Freeport Minerals Corporation (FMC) is requesting a No Further Action (NFA) determination from the Arizona Department of Environmental Quality (ADEQ) for portions of the property located 0.7 mile southwest of Jerome on State Highway 89A in Arizona. The “Site” is known as the Verde Central Mine Voluntary Remediation Program (VRP) Site. The Site is a small inactive historical copper mine that operated for a short duration from 1928 to 1930. It is comprised of the following features: a mine rock stockpile, miscellaneous residual mine materials from milling operations, and the foundation of a former mill.

The Site is currently managed under the ADEQ VRP (Site Code 508483-00). FMC sampled exposed mine rock, tailing, and mill wastes resulting from historical mining and analyzed the samples for metals and select organic compounds to assess whether the material poses an unacceptable risk to human health and the environment. Also, FMC sampled and analyzed surface water in Hull Canyon Wash when it was flowing. Several metals were identified as contaminants of potential concern by comparing the analytical results to conservative benchmark screening levels assuming the land would be used for residential and nonresidential purposes and as ecological habitat. Regulatory closure of the Site is based on a risk evaluation for the intended future property use. Institutional controls will be placed on the property to prevent uses that would pose an unacceptable risk to human health. Access to the Site will be limited by a locked gate, fencing, and No Trespassing signs. A Declaration of Environmental Use Restriction (DEUR) will be recorded for the property to prohibit residential and recreational use of those portions of the property where historical mining remnants exist, or approximately 6.7 acres of the Site.

Pursuant to A.R.S. §§ 49-176(A)(3), 49-176(B), 49-181(C)(1) and 49-181(C)(2), ADEQ requires a public comment period for the following reports:

- The April 17, 2020 *Site Characterization Report (SCR)*, inclusive of the associated *Human Health Risk Assessment (HHRA)* and *Screening Level Ecological Risk Assessment (SLERA)*, and
- The June 2020 *Conditional No Further Action Report*.

These reports are available online at <http://www.azdeq.gov/notices>, and at the ADEQ Records Center, 1110 W. Washington St., Phoenix, AZ (602) 771-4380, or (800) 234-5677, ext. 602-771- 4380; please call for hours of operation and to schedule an appointment.

PARTIES WISHING TO SUBMIT WRITTEN COMMENTS regarding either report may do so to ADEQ, Attention: Joey Pace, Voluntary Remediation Program, 1110 W. Washington St., Phoenix, AZ 85007 or pace.joey@azdeq.gov; or Attention: Jennifer Laggan, Freeport Minerals Corporation, 333 N. Central Ave., Phoenix, AZ 85004 or jlaggan@fmi.com and reference this listing. Comments must be postmarked or received by ADEQ or by **August 17, 2020**.

Dated this 28th day of June 2020 and 1st day of July 2020.

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: 7-1-1 for TDD; (602)

771-2215 for Disability Accessibility; or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4322 or bingham.ian@azdeq.gov.

ADEQ tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con Ian Bingham, Title VI Nondiscrimination Coordinator al (602) 771-4322 o bingham.ian@azdeq.gov.