FREEPORT-MCMORAN

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Shannon Cook
Site Coordinator
Division of Environmental Response and Revitalization
Ohio Environmental Protection Agency
Southeast District Office
2195 Front Street
Logan, Ohio 43138

RE: Revised Amendment No. 5 to the Interim Action Workplan
Former Satralloy Site

Dear Shannon,

On December 20, 2018, Cyprus Amax Minerals Company (Cyprus) submitted Amendment No. 5 to the Interim Action Workplan. We received comments from the Ohio EPA via email on January 15, 2019. The comments were in the form of an electronic markup of the amendment. Attached is the amendment revised to address the Ohio EPA comment.
Cyprus respectfully requests approval of this amendment. Please call me if you have any questions.

Sincerely,

Barbara K. Nielsen
Manager, Remediation Projects

1.0 DEMOLITION

1.1 Overview and Objectives

The objective of demolition will be to remove abandoned structures, and the materials and equipment currently stored inside the structures which could pose a hazard to the public. These include:

- Mill buildings
- Baghouses
- Water tank located in the upland area
- Raw materials bins and associated structures
- Administrative office
- Electrical control room and transmission towers
- The slurry tower and associated pipeline in the northern portion of the Site
- Former truck scales
- Miscellaneous scrap and debris

1.2 Regulated Materials Surveys

A regulated materials survey was performed in August 2006 (Lawhon 2007) and a supplemental survey in May 2010 (Lawhon 2010). The results of these surveys indicate that transite siding, which contains asbestos, was used extensively in both mill buildings. Lead plugs were used to cover fasteners in the siding, and paint on structural components of the mill buildings was found to contain lead. Other regulated materials identified during the survey include mercury vapor lamps, fluorescent lights and ballasts, asbestos pipe insulation, friable asbestos in the electrical control room, and small quantities of leftover process chemicals. The majority of these regulated materials were removed in previous interim action work completed in 2016.

Golder will perform an additional survey and sampling of various building materials were performed in 2018 and 2019. These events are intended to fill any data gaps which may currently exist. Data gaps may exist due to improved understanding of building fabric material construction and standard industry practice evolution between the time the original survey and sampling program was derived and conducted. It is anticipated that materials to be surveyed and sampled may include asbestos-containing materials (for ACM), concrete from elevated slabs (for polychlorinated biphenyls [PCBs], chromium, and ACM), window caulk (for PCBs and ACM), expansion joint compound (for PCBs), and paint – various colors (for PCB's). Prior work indicated that building paint contains lead. If other suspect materials are discovered during the execution of the survey, those materials will also be sampled and analyzed. These survey and sampling events will be guided by safely available access to the areas of interest within the north and south mill buildings, the former administration building and the water tank area.

1.3 Description of Demolition Activities

1.3.1 Structure Removal

1.3.1.1 Buildings

The buildings listed in Section 1.1 will be demolished, as well as any other structures located in the main plant area that may pose a risk. The initial activity will be abatement, which will consist primarily of removing any remaining mill building dust, transite siding on the buildings, and other regulated materials. Debris and similar materials on the floors of the buildings and in other locations that would interfere with structural dismantling will also be removed at this time. Abatement of regulated materials has been completed prior to demolition, to the extent feasible. During demolition, some regulated materials may be discovered hidden behind structures, so the contractor will be prepared to handle regulated materials that may be uncovered. There is some chromium-containing dust that was previously inaccessible that will be handled during demolition (which we be handled in the same manner as currently stockpiled dust), and some dust accreted on transite siding that is so firmly attached that it will most likely be disposed with the transite. All applicable regulations (including waste characterization) will be followed for the regulated materials (see Section 1.5.1).

Once abatement has progressed sufficiently, the buildings will be dismantled. All structural steel will be removed for off-Site recycling.

1.3.1.2 Concrete Slabs and Walls

Most concrete walls, above-grade foundations, and above-grade footings will be demolished to ground level. Concrete slabs at grade will in general not be removed. Clean concrete will be broken into fragments and stockpiled at the Site for further crushing. Cleaning verification procedures are discussed in Section 1.4. Some concrete walls that serve as retaining walls will be left in place. Demolished concrete will be crushed, and the product will be used on-Site as clean backfill material.

1.3.1.3 Subgrade Structures and Utilities

Open pits and similar structures in and around the mill buildings that pose a potential trip or fall hazard will be backfilled with clean crushed concrete, clean soil, lean concrete, as shown in the Drawings. The locations of these pits will be documented in case further investigation is considered necessary during the Site remedial investigation.

Stormwater catch basins, pipes, culverts and related facilities will in general be left as-is, because they may be incorporated into the final surface water management system for the Site. If a storm drain is determined to no longer be needed it will be plugged at the entry point. Safety barriers will be installed on any open catch basins or drop structures to prevent injury to personnel. Other subsurface utilities such as pipes,

electrical conduits, water lines, and the like will be cut, capped and left in place unless they pose an immediate hazard.

The demolition contractor will perform a utility location survey prior to start of field activities to verify that there are no currently active utilities at the Site, other than those installed for support of interim action activities.

1.3.1.4 Concrete Bins Behind the Mill Buildings

The vertical interior walls of the concrete bins, together with the associated overhead railroad trestle support structures, will be demolished to surrounding grade elevation. Prior to demolition, the residual materials in the bins adjacent to the North Mill Building will be moved onto the concrete apron in front of the bins. The interior walls will then be demolished to the same grade as the concrete slab. The two end bin walls will be demolished to approximately half of their height, and the remainder of the walls will be left in place as retaining walls. To decrease fall hazards, the upper approaches to the concrete bin area will be sloped back from the top of each end bin wall stabilized with appropriate BMPS. New fill will be placed in front of the bin's end walls at a 2:1 slope down to the concrete slab. Once the concrete rubble has been removed from the demolished North Mill Building bin walls, the residual materials, other than slag, will be moved back into the bin footprint. If slag is encountered, it may be relocated to the nearest outdoor pre-existing slag pile.

The slag in the concrete bins adjacent to the South Mill Building will not be moved. The bin walls will be demolished to the same grade as the surrounding grade elevation.

1.3.1.5 Buried Heating Oil Tank

A buried heating oil tank is located behind the North Mill Building. It will be removed during demolition. The steel tank will be recycled, and the residual oil also recycled/reused off-site (see Section 1.5). While this tank is not regulated under Ohio's underground storage tank program (BUSTR), the removal will be managed following BUSTR regulations (including soil sampling and analysis of the excavation).

1.3.2 Structures and Facilities to be Retained

The following structures and facilities will not be removed as part of this interim action:

- Abandoned oil and gas well pumps, tanks, and related equipment at various locations around the northern end of the Site. Any necessary actions will be determined as part of the RI/FS.
- Groundwater observation wells in the plant area. The disposition of wells will be addressed during the FS.

1.3.3 Dust Control

The demolition contractor will be responsible for dust control during the interim action activities described in this workplan, in compliance with the air permits (P0113889 for roads and parking areas; P0114196 for

concrete crushing). General nuisance dust from vehicles operating on gravel surfaces will be prevented by a light water spray. Dust generation during demolition work in or on the buildings can be controlled by working in limited locations at any one time while wetting the work area, or some combination of methods selected by the Contractor and approved by the third-party Construction Manager. Dust from concrete crushing operations will be minimized by a light water spray.

Details of dust control methods will be provided by the demolition contractor as part of his Means and Methods statements and contractor site-specific health and safety plan due before mobilization.

Water for dust control, as well as other non-potable uses, will be obtained from Cross Creek at a location approved by OEPA and stored in tanks on the Site. Water trucks will be used to distribute the water around the Site. Erosion and sediment control measures (e.g., silt fences and straw bales) will be implemented as necessary to ensure that sediment is not introduced into Cross Creek.

1.4 Cleaning

Cleaning procedures will be as described in the Project Manual (currently under preparation by Golder), performed by the Demolition Contractor, and monitored by the full time on-site third-party construction management and health and safety teams. To prepare steel for recycling, dust and flaking paint will be removed from the steel and containerized for profiling and off-site transport to a licensed disposal facility off-Site.

Concrete will be cleaned sufficiently to be used as “clean hard fill” in compliance with Ohio Administrative Code (OAC) 3745-400-05. Pilot testing of concrete cleaning has been performed, as documented in the current IA Workplan which resides with the OEPA. This testing documents that dry cleaning as previously performed during the dust abatement phase of the IA is sufficient to prepare Site concrete for use as clean hard fill.

1.5 Management of Materials from Demolition

Materials from demolition will be managed in accordance with applicable rules and regulations and as allowed by the 02(G) Exemption and the AOC policy. Disposition may include reuse, recycling, and/or disposal.

1.5.1 Off-Site Disposal

The chosen demolition contractor will construct a Waste Management Plan similar to the example incorporated in the existing IA Workplan. The Plan will be provided to the third- party construction management team for review prior to implementation of the Plan. Representative samples will be obtained of materials to be disposed off-site as wastes, and these samples will be analyzed and profiled in accordance with applicable regulations for waste characterization and disposal. No material will be disposed of by burning.

For the transite panels, dust removal techniques have been previously evaluated and were used as part of the previous work conducted in 2014. Representative samples of the transite panels with no dust removal and with varying degrees of cleaning were analyzed by the TCLP. None of the panels exceeded TCLP limits, and therefore the transite will be disposed off-Site as non-hazardous ACM waste with only as much dust removal as is considered necessary for dust control and to meet disposal facility waste acceptance requirements.

1.5.2 On-Site Material Management

1.5.2.1 Materials to be Recycled

The following materials will be managed on-Site before recycling off-Site:

- Steel
- Lead
- Copper and other non-ferrous metals

The vast majority of the material to be recycled will be steel from building structures. Abatement includes dust collection and staging. To prepare steel for recycling, the steel will be vacuumed to remove loose dust. Accreted dust on the steel will also be removed to the extent required for acceptance by the recycling facility. Abatement also includes removal of transite panels, trash, equipment, and regulated materials from the buildings. Abatement work will be completed in a building before demolition of the building. As part of demolition of the mill buildings, the steel structures will be cut, and the steel dropped or placed in and or near the building footprint. The steel will then be further cut as necessary and loaded into trucks. The trucks will carry the steel to the on-site rail spur. The steel will typically be loaded directly into rail cars for transport. Some steel may be temporarily stockpiled on one of the outside concrete pads near the east end of each Mill Building or in the rail loading area prior to transport. Loaded rail cars will be transported to an appropriate off-Site recycling facility. Lighter gauge scrap metal may be segregated and transported off-site.

Most of the lead at the Site is in the form of covers for bolts in buildings (primarily for attachment of the transite panels in the mill buildings). These bolts will be removed from the building then placed in containers as the work progresses. The individual containers will be gathered into larger units by volume (weight) containerized, manifested and transported off-site for disposal or recycling. There is some sheet lead on the foundation of the wooden water storage tank. The lead sheet will be rolled and carried to the nearest lowlands concrete pad where it will be sized for off-site transport. The demolition contractor will determine whether the lead is transported by rail or truck (if the road system leading to and from the Site is suitable for trucking).

Some copper and other non-ferrous metals may be encountered during demolition. As with the steel and lead, these metals will be collected and transported to an appropriate off-Site recycling facility.

1.6 Clean Fill

Four types of material may be used as clean fill: clean crushed concrete, imported gravel, imported stone, and selected Site soils. Crushed concrete will be obtained from building demolition, with cleaning as described in Section 1.4. Imported gravel and stone (certified clean by the source provider) may be used in some of the contractor's work. Borrow soil will be obtained from on-site areas to be depicted on the drawing set provided to the demolition contractor as part of the Project Manual . The borrow soil used as fill during interim action will have a total chromium concentration less than 230 mg/kg, a hexavalent chromium concentration less than 65 mg/kg, and no other chemicals above OEPA screening levels. The total chromium limit of 230 mg/kg is solely intended as a temporary, highly protective value being used because a Site-specific cleanup level has not yet been established. Considering the low toxicity of trivalent chromium, the Site-specific cleanup level for chromium in soil is expected to be much higher.