AMERICAS

Health, Safety, and Environmental Plan (HSEP) Template

This template should be used for creating a HSEP. At a minimum, a HSEP should address any pertinent topics listed within this document.

Company Name:	**WSP USA**

Overview:

This Project Health, Safety, and Environmental Plan (Project HSEP) has been prepared by WSP, USA Inc., (WSP) on behalf of Cyprus Amax Minerals Company (Cyprus Amax), a wholly owned subsidiary of Freeport-McMoRan Inc., for use during field activities at the former Satralloy Site (the Site).

Project Name / Location / Summary	
Former Satralloy Site Wide Activities	4243 County Road 74 Mingo Junction (Cross Creek Township), Jefferson County, Ohio 43938

The purpose of this Project HSEP is to establish overall Health, Safety, and Environmental (HSE) procedures and the minimum requirements to be implemented for protecting the health and safety of site personnel and the environment when conducting field projects.

This Project HSEP incorporates the requirements and expectations according to the Cyprus Amax Contractor Health, Safety, and Environmental Manual (Contractor Health, Safety and Environmental Manual) and applicable Cyprus Amax Policies; available on the FCX Supplier Portal Website (i.e., Policy Documents section of https://www.fcx.com/suppliers/tools-for-suppliers). This Project HSEP was also prepared in accordance with the applicable requirements established by the Occupational Safety and Health Administration (OSHA), including but not limited to 29 CFR 1910.120 and 29 CFR 1926.65.

The Site consists of approximately 333.5-acres of land and includes a former ferrochromium alloy processing plant. The Site is bordered on the west, south, and east by Cross Creek, a perennial stream which discharges into the Ohio River. Access to the Site is via County Road 74. The area surrounding the Site is predominantly rural, with residential, commercial, and light industrial development located along County Road 74. The adjacent towns of Kolmont and New Alexandria consist of residential, commercial, and light industrial development. A site location map is provided as Figure 1.

The topography of the Site is approximately 500 feet above the lowland plain adjacent to Cross Creek. The eastern portion of the Site consists of a relatively flat lowland area including the former ferrochromium alloy processing plant. The western portion of the Site is an upland plateau that was used for process material (e.g., slag) disposal, from the former ferrochromium alloy processing plant.

The northern portion of the Site consists of a heavily wooded upland plateau, underlain by the former Kolmont Number 1 Coal Mine, a partially collapsed room-and-pillar mine that was operated by the Wayne Coal Company until at least 1929, and slag disposal from the former ferrochromium alloy processing plant. Immediately north of the Site is the Gould's Railroad tunnel, an operational tunnel, originally constructed in 1864, which was modernized to eliminate clearance restrictions in the 1950s.

Former structures on the Site included two production mills, with associated baghouses for air pollution control during operation, bins utilized for unloading rail cars, an electrical building, a pump house, and an administration building. The alloys produced in the former ferrochromium alloy processing plant were made from chromium ores that were smelted and refined in electric-arc furnaces. In addition to the former structures, overhead piping was used to transport slag from the processing operations to upland areas. Slag was pumped as slurry through the piping or was hauled via truck to other areas of the site. The ore and additional raw materials were transported to the site via railcar and freight trucks. A railroad heading and secondary access roads are also present at the Site. A rail spur was installed as part of interim action.

Applicability/HSEP Location

This Project HSEP applies to all site personnel. Each contractor is responsible for developing a HSEP that incorporates this Project HSEP and outlines the procedures which will be implemented during the contractor's field tasks. This Project HSEP is also the WSP HSEP; WSP provides the engineering and environmental consulting services for the Site. Allied Security Forces provides site security. A printed copy of this Project HSEP will be maintained at the WSP site office trailer.

Contractors performing short duration/temporary activities at the Site may work under this Project HSEP under the direction of the Health and Safety Officer (HSO). Safety and environmental risk assessments must be prepared and submitted to the HSO for acceptance by Cyprus Amax. This alternative of using the Project HSEP must be approved by the HSO and Cyprus Amax Health and Safety Representative (CAHSR) before work is initiated and applies to activities such as surveying, fence repair and utility work (e.g., telephone and electricity installation for trailers, removal of power lines, etc.).

Contractor Project Personnel and Coordination (Key Personnel)

	Title / Position	Name	Phone Number	Email
1	WSP Project Director	Steve Anderson	856-357-6665	steve.anderson3@wsp.com
2	WSP Project Manager	Brent Barbich	856-361-3046	brent.barbich@wsp.com
3	WSP Construction Manager	Cameron Beul	406-559-6855	cameron.beul@wsp.com
4	Project Health and Safety Officer (HSO)	Rich Pletz	309-253-4578	rich.pletz@wsp.com

	Responsibilities	Lines of Authority
1	The WSP Project Director is the key point of contact for Cyprus Amax and is accountable for overall delivery of the project, providing oversight, support, and guidance to the project team. Quality in delivery is a key focus area, which includes prioritization of health and safety.	Reports to Cyprus Amax Manager, Remediation Projects
2	The WSP Project Manager has the overall responsibility for implementation of the project and has the authority to take necessary actions to provide a working environment that is safe for project personnel and protects the environment.	Reports to Cyprus Amax Manager, Remediation Projects and WSP Project Director Manager
3	The WSP Construction Manager is the most senior role on-site, responsible for safe delivery of the field activities and has the authority to take necessary actions to provide a working environment that is safe for project personnel and protects the environment.	Reports to Cyprus Amax Manager, Remediation Projects and WSP Project Manager
4	The HSO is the on-site individual responsible for on-Site coordination of health and safety matters and has broad authority to assure that activities are conducted to protect human health and the environment. The HSO will be available to assist in health and safety matters if a contractor Site Safety Officer is unavailable and will have the authority to take whatever actions may be necessary to provide a safe working environment for project personnel.	Reports to Cyprus Amax Health and Safety Representative (CAHSR) and WSP Project Manager

Cyprus Amax Minerals Project Personnel and Coordination (Key Personnel)

	Cyprus Amax Minerals Company Title / Position	Name	Phone Number	Email
1	Cyprus Amax Manager, Remediation Projects	Barbara Nielsen	602-366-8270 (o) 480-313-2895 (c)	bnielsen@fmi.com

	Cyprus Amax Minerals Company Title / Position	Name	Phone Number	Email
2	Cyprus Amax Project Manager (CAPM)	Jordan Sisson	520-437-8678	jsisson@fmi.com
3	Cyprus Amax Health and Safety Representative (CAHSR)	Jason Pingel	480-637-1846	jpingel@fmi.com
4	Cyprus Amax Industrial Hygiene	Tim Gustafson	520-651-5458	tgustafs@fmi.com

	Responsibilities	Lines of Authority
1	The Cyprus Amax Manager, Remediation Projects has overall responsibility for the Site. This individual is the official point of contact for all communications with Ohio Environmental Protection Agency (OEPA), although may authorize direct contact by other members of the project team as appropriate	Reports to Director, Remediation Projects
2	The CAPM will ensure that all project and regulatory requirements are met.	Reports to Cyprus Amax Manager, Remediation Projects
3	The CAHSR will have responsibility for reviewing, auditing, and monitoring health and safety at the Site. The CAHSR will be the official point of contact with Cyprus Amax for health and safety related issues and incidents. The CAHSR will be available to assist and provide advice regarding the Contractor Health, Safety and Environmental Manual and other Cyprus Amax safety policies and practices.	Reports to Cyprus Amax Health and Safety Manager
4	The Cyprus Amax Industrial Hygiene provides support to the project related to worker exposure and other industrial hygiene related items.	Reports to Cyprus Amax Health and Safety Manager

Subcontractor(s)
(All contractors must be pre-qualified by FCX prior to working on site/project)[1].

Site contractors and subcontractors must comply with this site-wide Project HSEP or a proprietary site-specific Health and Safety plan that meets or exceeds the standards established in this Project HSEP. The list of approved subcontractors is maintained on-site**.**

Check box if HSE Plan will apply to subcontractor	Date subcontractor pre-qualified	Subcontractor Company Name
☐		

[1] The FCX Global Supply Chain Representative should be contacted with any questions.

Scope of Work

Activities included in this Project HSEP are anticipated to include, but are not limited to:

- Consolidation of materials at the site,
- Improvements to site roads,
- General clean up and disposal of debris and trash,
- Clearing and grubbing,
- Earthwork,
- Excavation, and
- Hauling.

Site investigation activities are anticipated to include, but are not limited to:

- Site visits,
- Drilling,
- Surface soil sampling,
- Subsurface soil sampling,
- Surface water sampling,
- Sediment sampling,
- Groundwater sampling,
- Biological sampling (aquatic and terrestrial), and
- Groundwater well plugging and abandonment.

Constituents of potential concern and known concentration ranges are listed in Tables 1 through 5.

Expectations

Contractor HSEP

Contractors are responsible for designating a Site Safety Officer (SSO), and for implementing the requirements of this Project HSEP, to include any additional requirements specific to the activities and/or tasks being performed by the contractor in the Contractor HSEP (CHSEP). The CHSEP, at a minimum, should be consistent with, and meet the standards established in this Project HSEP. Contractors may be required to prepare a Task Specific Health and Safety Plan (THASP) for review by WSP if the scope of work is not covered within this Project HSEP. Contractors are to follow the CHSEP and/or the Project HSEP, whichever is more stringent.

The contractor supervisor is responsible for implementing environmental protections associated with their work. Each contractor is responsible for providing supervision of its employees, as defined by Occupational Health and Safety Administration (OSHA) and will provide qualified personnel and/or competent persons as required by applicable regulatory standards. Additionally, the CAPM may require the contractor to designate a different individual responsible for these protections.

Each contractor shall have its subcontractors working under the Contractor HSEP, or have their subcontractors prepare an HSEP compliant with this Project HSEP and all requirements as provided in the Contractor Health, Safety and Environmental Manual (CHESM) (https://www.fcx.com/suppliers/tools-for-suppliers).

Contractor Reporting to Cyprus Amax

Contractors will be responsible for managing, recording, and reporting any injury or incident involving its employees as required by OSHA and/or other applicable regulatory standards. All contractors shall provide recordkeeping and reporting to Cyprus Amax per Section 3.0 of the CHSEM.

Standards of Conduct

Contractors are obligated to follow, at minimum, all responsibilities and expectations as outlined in the CHSEM, the Cyprus Amax Health, Safety and Environmental policies, and this Project HSEP. Contractors must remain in compliance with all applicable federal, state, and local regulatory standards, with the most stringent standard being implemented. Failure to adherence to Cyprus Amax Health, Safety and Environmental policies may result in immediate removal from the Site, and/or other disciplinary proceedings.

The Project HSEP presents requirements and guidelines for work at the Site and compliance with OSHA including Hazardous Waste Operations and Emergency Response (HAZWOPER). All work conducted at the Site must comply with all applicable

federal, state, and local regulatory standards. Contractors must comply to the more stringent policy where differences in detail or requirements exist between the CHSEM, site-specific requirements, and trade standards/practices.

All contract personnel engaged in on-site activities shall read and/or receive training on the applicable CHSEP. Contractors will provide their employees and subcontractors (if they fall under the primary CHSEP) with applicable training ensuring employee understanding, including relevant supporting documents, such as company policies and procedures and the CHSEM. All contract personnel must sign the Project HSEP Acknowledgement Form or a CHSEP indicating that they have received all information and understand the respective HSEP.

All contract personnel must receive Site Orientation Training provided by CAHSR or designate. All OSHA and other applicable training documentation (including any respirator fit testing, medical surveillance, etc., as applicable) must be verified by the contractor and then reviewed and approved by CAHSR prior to reporting for work. Personnel who have any questions or concerns regarding implementation of this program are encouraged to request clarification through their SSO.

If any employee feels unsafe due to a condition or situation, even if perceived, the employee is expected to use stop work authority with no reprisal. If review of concern with field supervision and SSO/HSO prove that all risks have been eliminated or mitigated as low as reasonably possible, work may resume. Any changes must be documented on the Job Hazard Analysis (JHA); the Contractor SSO or HSO must update tasks on the approved Safety Risk Assessment, as applicable.

In situations where an unexpected hazard is found or a risk level increases, work must be immediately stopped. The affected SSO and/or the HSO must conduct a field hazard and risk review with the field supervisor or delegate to ensure proper controls have been implemented. Applicable documents (JHA, permits, etc.), must be updated and communication of changes must be provided to all affected employees before work can resume.

Any revision of the CHSEP and procedures will require authorization from the HSO with concurrence from the WSP Project Manager, CAHSR, CAPM, and/or Cyprus Amax Environmental Representative. **At no time can a high-risk task be performed on-site.** The proper controls must be put in place to eliminate the hazard(s) or mitigate the hazard and risk level as low as reasonably possible, reducing the risk to a medium or minimal risk task.

Unsafe work practices or procedures are never justified by extenuating circumstances (e.g., budget, time constraints, equipment breakdown, changing or unexpected conditions). Under stressful circumstances all project personnel are expected to focus on safe production and using proper resources to avoid hasty and unsafe decisions. All Site personnel must always place safety first.

Site Specific Responsibilities

The following responsibilities are in addition to the CHSEM, federal, state, and local regulatory standards and Cyprus/Amax Policies.

- All personnel are expected to complete site-specific training as outlined in this Project HSEP.
- Any incident (injury, near miss, property damage, environmental spill, or release) must be immediately reported to the SSO as described in this Project HSEP.
- Fieldwork employees shall remain in teams of two or more people (buddy system); variations shall be approved by the HSO.
- Oversight personnel (e.g., OEPA Site Coordinator, Cyprus Amax representatives, WSP Project Manager) and security personnel shall use the buddy system and must always have a second person in line-of-sight or communication contact with routine check-in to a specified contact.
- OEPA and/or Ohio Department of Natural Resources (ODNR) representatives must be escorted by CAPM or designate when on-site. Unaccompanied movement between work areas will be permitted if:
  a.) Foot traffic between areas should be accomplished in no more than 10 minutes.
  b.) Individual informs security of departure location, direction of travel, and destination.
  c.) Individual informs security of arrival at destination.
- Site activities shall be performed during daylight hours unless adequate artificial lighting is provided. Artificial lighting must comply with 29 CFR 1926.65(m).
- All personnel (i.e., visitors, vendors, and contractors) are required to sign in and out of with the Site security services (FCX-07 Property Entry, Surface Mines North America Operations https://www.fcx.com/sites/fcx/files/documents/suppliers/property_entry_guidelines.pdf).
- No unauthorized removal of materials.
- The contractor must maintain decontamination areas. This includes proper disposal and change out of water, scrubbing/cleaning devices and other materials and tools as described in this Project HSEP.
- Smoking is allowed in designated areas only. Signage must be posted and in accordance with all applicable laws and

standards. An appropriate receptacle must be in designated area(s) and must be maintained regularly. Cigarette butts must be properly disposed.

- Weapons Policy as outlined in the CHSEM must be followed.
- Horseplay is not permitted (riding on buckets, aggressively operating utility terrain vehicles, jumping from equipment railing to ground, using equipment in a playful manner, rough housing with others, etc.).
- Wear cut-resistant gloves and heavy clothing when handling or working around sharp debris.
- Visitors must be escorted while on-site, and must receive Site Specific Training, and comply with the CHSEM, and FCX-07 Property Entry, Surface Mines North America Operations. Cyprus Amax must be notified in advance of a visitor's arrival to provide approval. This does not include vendors or delivery personnel that only enter the Support Zone
- Prior to the delivery of any hazardous material to the Site, approval must be requested by using the Materials Request and Approval Process (MRAP), which is completed electronically. A copy of the MRAP is provided in Appendix A. This process may take up to two weeks to complete; contractors should plan accordingly.
- The Project/Task Manager and each contractor has the responsibility and accountability for planning, leading, and controlling the safety performance of their staff.
- Multi-purpose (ABC) dry chemical fire extinguishers shall be maintained where required by the CHSEM.
- Pay attention to your surroundings. Be alert to changes in exposure indicators, such as perceptible odors.
- Be alert to the symptoms of fatigue and heat/cold stress and their effects on the normal caution and judgment of personnel.
- Always follow proper hygiene. Wash hands before eating, drinking, or using tobacco products.

Fatigue Management

Contractors shall establish a Fatigue Management Plan specific to their operational needs for the project. Refer to FCX-HS10 Working Hours and Fatigue Management Policy (found on https://www.fcx.com/suppliers/tools-for-suppliers) for expectations and guidelines.

Drug and Alcohol Policy

The Site operates under the Cyprus Amax drug policy (refer to the CHSEM). Contractors with drug and alcohol programs must have a written program that is consistent with federal, state, and local regulatory standards. The program must also meet or exceed the requirements of the CHSEM. The program shall be made available to the HSO upon request and must be reviewed by CAHSR. Contractors without written programs shall notify the HSO in writing of their lack of a drug and alcohol program. Contractors without a drug and alcohol program shall work with the HSO to accomplish the objectives of a program. Drug testing shall cover, at a minimum, the drugs specified in the CHSEM.

Personnel entering the Site shall not be under the influence of any drug, including prescription medication that will adversely affect their working ability, alertness, or coordination in accordance with the CHSEM. All contractors shall train their supervisors how to conduct inspections to recognize the signs and symptoms of substance abuse, actions to take where reasonable suspicion of a drug or alcohol affected worker is observed and the resources to conduct drug or alcohol testing for cause or reasonable suspicion.

Workers producing positive test results will not be allowed to work at the Site for a period of three years from the positive test date as described in the CHSEM. In addition to initial or pre-employment drug screening, contractors shall maintain an ongoing drug and alcohol program to ensure a drug-free workforce and workplace, including random drug screening compliant with the Cyprus Amax Drug Policy.

The following activities will not be tolerated:

- Personnel under the influence of drugs or alcohol while on-site, including prescription drugs covered by the Cyprus Amax Drug Policy.
- The use of illegal drugs or alcohol while on-site.
- The possession of illegal drugs or alcohol on-site.
- The distribution of illegal drugs or alcohol on-site.
- The presence of illegal drugs or alcohol in vehicles, or on-site.

Fighting or Physical Assault Rule

Fighting, physically confronting, and/or intimidating others is not permitted on-site. Individuals are not to physically retaliate against an assault. Individuals found in violation of this policy may be immediately escorted off the Site.

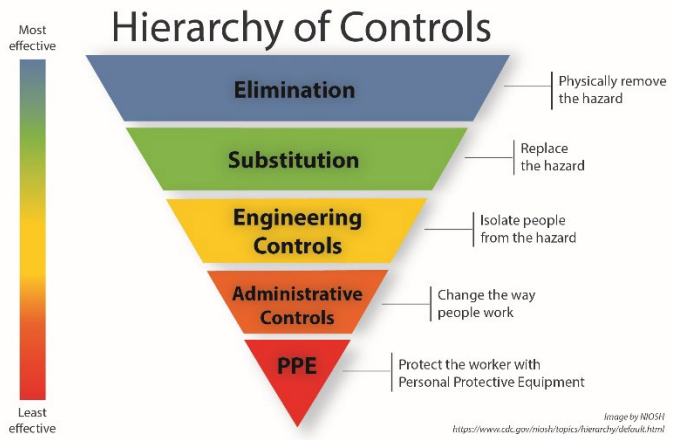
Management of Change

This Project HSEP must be reviewed annually and revised as necessary, to include any planned future remediation activities, changes in the Site characterization, and/or the Site conditions. The CAPM and CAHSR will review and approve all revisions to this Project HSEP.

Risk Management

Fatal Risk Management
Identify all FRM's associated with the scope of work.

Risks to personal Safety, Health, Environment and Property will be assessed by contractors and subcontractors prior to initiating work activities. A hierarchy of controls to risks will be applied with elimination of the hazard as the highest priority, followed by a substitution that reduces the hazard, then implementing engineering controls and administrative controls. Personal Protective Equipment (PPE) is the least effective method of hazard control but will be implemented when other methods of control are not feasible to implement or do not sufficiently reduce the hazard risk.



All contractors will receive risk management training as part of the Contractor Orientation Training.

Risk Assessment

HSE Risk assessments are used to evaluate each task and all non-routine tasks. During the development of a risk assessment, the health and physical risks, physical hazard assessments, chemical exposure hazards (including the signs and symptoms of overexposure, procedures to follow in the case of over-exposure to hazardous chemicals), and the necessary PPE to be utilized during performance of each task is identified for each hazardous material involved in the task. Tasks will also be evaluated for the potential impact to the environment (e.g., potential environmental impacts to surface water, groundwater, vegetation, and wildlife; air emissions; waste that will be generated, etc.), and the appropriate control. Requirements for the identification of and protection from environmental risks are found in Section 6.0 of the Contractor Health, Safety and Environmental Manual.

Fatal risk management is an integral part of the risk assessment. Contractors will identify all the potentially fatal risks listed below for the work to be performed and the controls for the proper mitigation of each risk.

 **Vehicle Collision or Rollover** ☒	 **Falling Objects** ☒	 **Vehicle Impact on Person** ☒	 **Fall from Heights** ☒	 **Entanglement and Crushing** ☒	 **Uncontrolled Release of Energy** ☒
 **Lifting Operations** ☐	 **Fire** ☒	 **Exposure to Electrical Hazards** ☒	 **Exposure to Hazardous Substances – Chronic** ☒	 **Exposure to Hazardous Substances – Acute** ☒	 **Confined Space** ☒
 **Blasting** ☐	 **Drowning** ☒	 **Ground Failure** ☒	 **Rail Collision** ☒	 **Rail Impact on Person** ☒	 **Underground Rock Fall** ☐
 **Underground Hazardous Atmosphere** ☐	 **Underground Inrush** ☐	 **Personnel Hoisting** ☐	 **Contact with Molten Material** ☐	 **Interaction with Aircraft** ☐	 **Maritime** ☐

Identify all Environmental Significant Risks (ESR) associated with the scope of work.

 **Improper Material/ Waste Management** ☒	 **Catastrophic or Chronic Release to Groundwater** ☒	 **Catastrophic Release to Surface Waters** ☒	 **Air Releases** ☒	 **Wildlife Mortalities** ☒

Describe the hazards and risks associated with each operation or process conducted and how they will be managed. Include ALL relevant health and safety hazards and environmental and property loss risks (e.g., confined spaces, working at heights, hazardous energy, silica, dust, constituents of potential concern, chemical hazards, biological hazards, radiological hazards, potential environmental impacts to surface water, groundwater, vegetation and wildlife, air emissions, waste that will be generated, etc.) Describe the controls used to mitigate any unacceptable risks using the hierarchy of controls (e.g., guarding, water sprays, utility locate, lift plans, confined space permits, secondary containment, surface water protection and runoff controls, spill response kits, inspections, etc.).
Attach Risk Assessment as Needed.

An overall risk assessment is provided in Appendix B.

An HSE Risk Assessment must be completed by each on-site contractor describing hazards that are specific to their operations and must include all components required by Cyprus Amax risk assessment matrix. The HSE Risk Assessment is completed by the contractor leadership and then approved by the CAHSR and Cyprus Amax Environmental Representative. The Safety and Environmental Risk Assessment is an active document that should be used to add additional tasks or revise existing tasks throughout the project.

An HSE Risk Assessment can be completed in table or text format so long as it meets the requirements of the CHSEM. All relevant HSE hazards must be included in the CHSEP and the contractor's approved HSE Risk Assessment document. Risk Assessment training and an electronic version of the contractor's initial HSE Risk Assessment will be completed and approved before writing the CHSEP.

All contractors must understand and consider the Project HSEP identified hazards, risk levels and implemented controls in addition to their HSE Risk Assessment and CHSEP required for operations. A hard copy of the approved HSE Risk Assessment related to this Project HSEP will be referenced in each CHSEP. The electronic copy of the HSE Risk Assessment approved by Cyprus Amax will be maintained by the SSO for each contractor.

Job Hazard Analysis

The job hazard analysis (JHA) identifies and documents the potential hazards of each step for specific tasks required to accomplish a phase of work and will identify measures for the elimination or control of those hazards.

Primary and subcontractor fieldwork will begin by reviewing the related task Risk Assessment and complete an accompanying JHA. A copy of the JHA is provided in Appendix C. Guidelines for developing a JHA include the following:

- Project personnel who have the knowledge of the tasks and who will be performing the work should help the HSE personnel create the task-specific safety and environmental risk assessment.
- JHA's are to be created in the field by all personnel who will be performing the work and reviewed in the field by the HSO and SSO.
- List information on the JHA that is directly applicable to the task, avoiding general information that addresses project-wide concerns that are already covered in this Project HSEP.
- All employees assigned to the task, or assigned later while the task is being performed, must be made knowledgeable of all JHA information, and then sign and date the document.
- Supervisors, HSO and the affected SSO are responsible for verifying the JHAs are complete, effective and being followed.

Once developed, accepted and/or updated, a HSE risk assessment and associated JHA should be reviewed at the daily safety meeting or as part of the work plan review prior to initiating the specified activity or task. The HSO and affected SSO are responsible for verifying in the field that the risk assessments and JHA's are being followed and are effective.

Hazard Communications

Hazards at the Site, both physical and chemical, are communicated with all Site personnel in the following ways:

- **Site and Visitor Orientations:** Prior to entering an Exclusion Zone at the Site, all personnel and visitors attend a Site Orientation that describes overall Site conditions and the contents of this Project HSEP.
- **Contractor Health, Safety, and Environmental Plans:** Each contractor must prepare a Contractor HSEP and train its personnel on the content of its HSEP.
- **Safety and Environmental Risk Assessments**: All personnel who will perform the task will be trained on the risk assessment and associated JHA prior to performing the task. For more information on risk assessments and JHAs see Sections 8.1 and 8.2.
- **Site Meetings:** There may have multiple contractors working together; daily safety and coordination meetings will be held to ensure that all contractors are provided with an understanding of the hazards associated with planned site activities. The required meetings and their content are described in this HSEP.
- **Unidentified Hazards:** When a contractor identifies a new hazard, the SSO for the contractor shall immediately notify the HSO. The HSO will evaluate potential hazards and instruct the contractor to develop an appropriate safety and environmental risk assessment and JHA for the situation. When new hazards are identified, training will be conducted with affected personnel.

Each contractor shall establish a written hazard communication plan that is included in their HSEP that meets or exceeds the Cyprus Amax Liability Management Hazard Communication Program. Refer to Appendix D for the Hazard Communication Program. Contractors may also opt to implement Cyprus Amax's Hazard Communication Program by advising the SSO and CAHSR in writing that they will follow all requirements of that document (and must reference it in their HSEP).

At the time of initial assignment, or within one day of a new hazard being identified, all affected personnel will attend a safety meeting that is led by the SSO and includes the following information:

- Approved hazardous chemicals present at the Site.
- Physical and health risks of the hazardous chemicals or unknown conditions.
- The signs and symptoms of overexposure.

- Procedures to follow in the case of over-exposure to hazardous chemicals.
- Location of the Safety Data Sheets (SDS) file and Written Hazard Communication Program.
- How to determine the presence or release of hazardous chemicals in the work area.
- How to read and maintain labels and review SDSs to obtain hazard information.
- How to reduce or prevent exposure to hazardous chemicals using control procedures, work practices, and PPE.
- Hazardous, non-routine tasks to be performed.
- How to manage unlabeled containers or piping.

Underground and Aboveground Utilities

Underground and aboveground (overhead) utilities (gas lines, electric lines, communication lines, process lines, etc.), including utilities that are confirmed to be de-energized or no-longer-in-service, shall be located and identified prior to any excavation, drilling, crane operation or other site activity where utilities may pose a work hazard. As the anticipated location of the utility is approached, manual means of excavation shall be used to determine the actual location of the utility. Cyprus Amax utility location policies and procedures must be followed in addition to the local and state law requirements (See SOP-01-20 Working Near Overhead Power Lines FCX-13 Utility Location (Blue Stake) Policy [https://www.fcx.com/sites/fcx/files/documents/suppliers/blue_stake_policy.pdf], and SOP-01-13 Liability Management Utility Locate.

Contractors are responsible for identifying underground and overhead utilities following all policy requirements before any excavation or other invasive work begins. Individuals found in violation of any Cyprus Amax HSE policy will be immediately escorted off the Site.

Documentation of permits and inspections must be retained in accordance with FCX-HS01 Administrative Requirements Policy (Dept. of Occupational H&S Policy Administration https://fcx.com/sites/fcx/files/ documents/suppliers/blue_stake_policy.pdf)

Vehicles and Heavy Equipment

Vehicles and heavy equipment are to be managed in accordance with the FCX policy for equipment operation (https://www.fcx.com/sites/fcx/files/ documents/suppliers/interaction_heavy_mobile_equipment.pdf) and other requirements of the CHSEM and applicable laws and regulations that include, but not limited to, safety and training requirements.

Heavy equipment and vehicles are *not* allowed on Site without an initial Cyprus/Amax inspection and approval. The HSO and CAHSR must be notified when any additional equipment is added or changed after the project has started. Cyprus Amax reserves the right to inspect equipment prior to the acceptance onto the Site and any time during use of the equipment on property.

Other policies that may apply include (but are not limited to):

- FCX-HS04 Control of Hazardous Energy Policy (https://www.fcx.com/sites/fcx/files/documents/suppliers/lototo_policy.pdf)
- FCX-HS10 Working Hours & Fatigue Management Policy (https://www.fcx.com/sites/fcx/files/documents/suppliers/WorkingHours-Fatigue%20Mgmt-Policy.pdf).

A pre-operational inspection of equipment must be conducted and documented by the operator prior to operation. Refer to Appendix E for a copy of the inspection forms. Each contractor/subcontractor form must meet or exceed inspection forms or use them, in addition to the contractor's corporate document requirements. Inspection documents must be filled out legibly, including the name of the operator, date, specific equipment identification number, etc. Equipment must be routinely maintained and removed from service if an inspection identifies a needed repair or is determined unsafe.

Competency

All contractors should have defined competency requirements required to perform the operator's role. All personnel working at the Site will perform activities that they are trained for and competent in. Personnel shall not perform tasks that are outside of their education and experience.

Over-the-Road Vehicles

Operators of over-the-road vehicles on the Site such as haul trucks and water trucks must possess a valid commercial driver's license (CDL) if a CDL is normally required when operating such vehicles on public roads. Haul vehicles shall have documentation of annual inspections in accordance with Department of Transportation requirements outlined in 49 CFR 396 (Inspection, Repair and Maintenance). The contractor shall ensure that haul trucks are not loaded beyond the truck/trailer manufacturer's recommendations.

Utility Task Vehicles

Motorized utility task vehicles (UTVs)shall meet the requirements of all relevant OSHA standards, manufacturer's specifications, and any other standards that apply or exceed these standards:

- The vehicle must be equipped with a rollover protective structure, seatbelts, headlights, brake lights, side or rearview mirrors, and a high-visibility flag extending a minimum of four feet above the roll bar.
- Vehicles must be inspected prior to operation.
- Operators must receive documented training prior to operating UTVs.
- Operators are required to comprehend the guidelines of the vehicle operator's manual and comply with the manufacturer's recommendations for operation.
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Railroad Safety

All railroad safety rules must be followed. Contractors involved with the industrial railroad must receive training per the FCX – 22 Industrial Railroad Policy (https://www.fcx.com/sites/fcx/files/documents/suppliers/industrial_ railroad_policy.pdf). and in accordance with all federal, state, and location laws and regulations. In addition, all requirements set forth by Wheeling & Lake Erie Railroad (WLER) must be strictly followed.

The rail spur from the main rail line to the plant area of the site is used to transport heavy equipment and other materials (e.g., crushed rock, demolition debris and other waste for off-site disposal and recycling) to and from the Site. Trains operating on the rail spur are expected to run at low speed but will be ascending and descending a steep slope along a narrow, winding alignment. Equipment and materials will be loaded and unloaded at the spur terminus. Equipment, material, and debris loading and unloading activities shall be conducted in accordance with the requirements (including required PPE) set forth by WLER and FCX-22 Industrial Railroad Policy, which will be included in the applicable contractor's Safety Risk Assessment.

WLER shall be notified when it is necessary to operate the switches. Exclusion zones will be established near the switches to prevent rail cars or locomotive to set at these locations. WLER train operators will be familiar with these constraints as a matter of their normal job responsibility; this information will be provided to project workers to ensure that WLER operators are not directed to perform activities in contradiction to these responsibilities. A yellow-painted cross tie will be used to identify foul points. A white painted crosstie may be used to identify culvert locations.

A permanent derailer has been installed just outside of the loading area. The derail has a blue flag next to it, signaling train crews that there are personnel and/or equipment working on or near the track and railcars. This derail shall be locked out by the Qualified Person (WLER), who will be responsible for clearing the rail cars and track in the loading area prior to unlocking the derail and giving access to the WLER train crews. The derail shall be restored to the derailing position immediately following the departure of a train and before personnel and equipment are allowed back in the loading area.

Material Handling and Storage

All material shall be stored in a manner to prevent blowing, falling, sliding, or collapsing. Housekeeping will be maintained at all times in accordance with all federal, state, and local regulations in addition to the FCX-HS29 Standard Safety Requirements Policy. (https://www.fcx.com/sites/fcx/files/documents/ suppliers/standard_safety_policy.pdf).

- Walkways and aisles kept clear.
- All trash must be discarded in proper receptacles. All indoor and outdoor trash receptacles will be maintained to ensure that waste does not overflow overflowing. Site areas, including the parking lot must be routinely maintained (including cigarette butts). Trash must be cleared from truck beds/cabs and equipment daily.
- All project waste items will be properly disposed of (oil, filters, batteries, etc.).
- Laydown areas shall be orderly.
- Material shall be stored on level ground, and the boundaries of laydown areas shall be identified.
- Material shall not be stored within 10 feet of roof edges.
- Poles, pipe, and other stock that may roll shall be managed in accordance with FCX-HS24 Round Stock Management Policy. (https://www.fcx.com/sites/fcx/ files/documents/suppliers/standard_safety_policy.pdf).
- Nails (screws, etc.) shall be removed from lumber that is to be reused. Nails in scrap lumber that will not be reused shall be bent back. Nails may be left as-is in lumber that will not be managed, or to which personnel will not be exposed.
- No material, tools, or equipment shall be leaned against other objects or walls unless they are secured from movement.
- Personnel moving material by hand shall use proper lifting techniques and gloves.

Hand Tools

- All tools shall be kept clean and in good condition and properly stored.
- Tools shall not be altered, and they shall be used only for their intended purposes.
- Guards shall not be removed from tools, and all potential pinch points, open drums, and fly wheels shall be guarded.
- All tools shall be inspected before used with special attention to power cords and the condition of all operating parts.
- Any damage to a tool requires that the tool where repairs can be made under the manufacturer's specifications, must be removed from use until properly repaired.
- Instruction manuals (owner's manuals) shall be available, and personnel shall be trained in the safe operation of all tools they use.
- Power tools shall be equipped with constant pressure switches that will shut the tool off when the switch is released.
- All power tools and electrical equipment shall be double-insulated or be equipped with grounding plugs per the manufacturer's specifications.
- Approved Ground Fault Circuit Interruption (GFCIs) shall be used for 120-volt, single-phase, 15- and 20-ampere receptacle outlets in areas that are not part of the permanent wiring of the building or structure. Receptacles on the ends of extension cords are not part of the permanent wiring and, therefore, must be protected with GFCIs whether the extension cord is plugged into permanent wiring. However, GFCI's are not required on portable or vehicle-mounted generators of 5kW capacity or less if the output is a two-wire, single-phase system and the circuit conductors are insulated from the generator frame and all other grounded surfaces.
- Bench-mounted and floor-mounted tools shall be secured.
- Tools that come equipped with handles shall be used with the handles installed.
- Impact tools shall be free of mushroomed heads and cracks.
- Work benches and sawhorses shall be provided by the contractor when needed.
- Defective tools shall not be used. When a defective tool is identified, the tool shall be taken out of service immediately by tagging, destroying, or removal.

Hand-held equipment presents a potential hazard to the operator. Types of equipment that may be used for construction activities include saws, drills, hammers, cutting torches, welding equipment, chain hoists, and the like. Safety requirements for using hand-held equipment will be established in the contractor's HSE Risk Assessment and CHSEP for these activities and shall follow industry standards, manufacturer's recommendations, and good practice.

Burning and Welding

The FCX-HS06 Hot Work Policy (https://www.fcx.com/sites/fcx/files/documents/policies/hot_work_policy.pdf) must be followed any time a process can be a source of ignition when flammable or combustible materials are present or can be a fire hazard regardless of the presence of flammable/combustible materials in the workplace. Any contractor using such equipment shall include a fire prevention plan in their CHSEP. Personnel with incidental use of such equipment shall ensure that the equipment is used away from potentially ignitable material. Cutting torches shall be used within a restricted area to protect other personnel. If a Hot Work Permit is required, air monitoring and/or fire watch is required per the FCX-HS06 Hot Work Policy.

Hot work permits must be obtained from and approved by the contractor SSO. Contractor shall ensure that FCX-HS33 Metal Fume Control Policy (https://fcx.com/sites/fcx/files/ documents/suppliers/metal-fume-control.pdf) is observed when conducting hot work activities. To protect workers from chronic and acute health hazards, metal fume exposures must be controlled by local exhaust ventilation and/or respiratory protection (see FCX-HS33 Metal Fume Control Policy, Control Level Chart).

A hot work permit is required for hot work operations unless working in an area designated as fire safe, such as a welding shop. A fire safe area can only be designated by the CAHSR or delegate. Hot work permits are valid only for one work shift and one task.

Compressed Cylinders

In addition to the FCX-HS29 Standard Safety Requirements Policy, and the FCX-HS06 Hot Work Policy, all other applicable Cyprus/Amax policies (https://www.fcx.com/suppliers/tools-for-suppliers), federal, state, and local laws and regulations must be followed:

- Heat and ignition sources.
- Power tools and cutting torches are anticipated for use at the Site during interim action and may be used at other times.
- Proper transportation and storage of compressed cylinders.

Cranes

The FCX-HS32 Crane and Rigging Policy (https://fcx.com/sites/fcx/files/documents/suppliers/crane-rigging.pdf), must be followed when using cranes and rigging equipment for the movement or adjustment of objects by hoisting. All applicable laws and standards in accordance with OSHA 1926 Subpart CC Crane and Derricks, American Society of Mechanical Engineers, or ASME, and all other federal, state, local and regulatory agencies apply to crane use on Site (i.e., Boom truck, Lattice boom, telescopic boom, etc.).

Confined Space

Contractors shall have a Confined Space entry program which meets or exceeds the requirements of FCX-HS05 Confined Space Policy (https://fcx.com/sites/fcx/files/documents/suppliers/confined_ space_policy.pdf). Each contractor SSO is responsible for overseeing implementation of their program.

Potential Biological Hazards

In-depth information is provided during site-specific and Contractor Orientation Training prior to working at a Cyprus/Amax project site.

The use of insect and tick repellents should be considered, such as diethyl-meta-toluamide (DEET). Also consider treating items such as boots, pants and socks with products containing 0.5% permethrin or purchase permethrin-treated clothing and gear. Workers collecting environmental samples for laboratory analysis should consult with the HSO and PM for approval to use chemical controls, such as repellants and pesticides.

Infection

Contact with solid waste, debris, or other materials can lead to infected cuts. When the skin is abraded or cut, personnel shall follow first aid procedures for disinfection of cuts and abrasions and notify their SSO immediately.

Ticks

The Site contains ticks, which can transmit Rocky Mountain Spotted Fever and Lyme Disease. All workers should routinely check for ticks. Light colored clothing should be worn, and any openings (shirt and pant cuffs) should be secured to inhibit tick movement from clothing to skin.

Mosquitoes

Mosquito bites can cause serious diseases, such as West Nile virus. In the U.S. West Nile virus is the most common disease spread by mosquitoes. West Nile virus can result in flu-like symptoms or cause serious illnesses that affect the brain, even resulting in coma and paralysis. In rare cases, it can even cause death. Wear long-sleeve shirts, long pants, and high boots. Tuck shirts into pants and pants into socks to cover gaps in your clothing where mosquitoes can get to your skin.

Venomous Spiders

In Ohio, two main groups of spiders pose a potential hazard to humans, the brown recluse spiders, and the black widow spiders. These species have been found previously in or near buildings. Though uncommon to find, the black widow spiders occur primarily outdoors and are not aggressive unless confined or disturbed.

Poisonous Plants

Skin-sensitizing (poisonous) vegetation, such as poison ivy or poison sumac, produce a bumpy, swollen rash at the point of contact. Both poison ivy and poison sumac are common on the Site. This rash is easily spread by the plant's oils. All personnel shall be able to identify poisonous plants at the Site and shall avoid contact with such plants. In the case of inadvertent or unavoidable contact, wash affected area(s) including tools and clothing as soon as possible. Avoid scratching the rash. Severe exposure may necessitate evaluation by a medical professional.

Venomous Snakes

Ohio has three species of venomous snakes, two of which have rattles at the end of the tail (Eastern Massasauga and Timber Rattlesnake). The third species, which is more likely to be encountered at the Site, is the Copperhead, a pit viper that is not a rattlesnake. Characteristics of these venomous snakes are:

- Head is distinctly triangular.
- Pupils are elliptical (not round).
- Pits as well as nostrils are present on the head.
- Undivided scales are present on underside of tail.

If a snake has bitten someone, follow the emergency procedures described in the Project HSEP. Contact your SSO and the HSO

as soon as possible. Responding quickly in this type of emergency is crucial. Personnel performing field operations, particularly in remote areas or adjacent to bodies of water, shall wear work boots that lace above the ankle.

Mammals

The Site may harbor mammals that are infected with rabies or the hantavirus. Wild animals most frequently infected with rabies include rodents, skunks, raccoons, foxes, and bats; however, any warm-blooded animal could be infected.

Personnel should be alert to these animals, particularly around holes in the ground. The best precaution is to observe all wild animals from a safe distance. Anyone that has directly contacted a bat should consider being evaluated for rabies. Deer and raccoon are regularly observed at the Site. Any trash (especially food waste) that is stored outside is required to have a locking lid.

Bears have been observed on-site. If a bear is encountered, immediately vacate the area, and notify your SSO. Slowly and calmly back away while avoiding direct eye contact and wave your arms. Unless the bear is acting predatory, do not fight; fighting can cause the bear to act more aggressively toward you and trigger an attack. If the bear makes physical contact with you, fall to the ground, lie on your stomach, and cover your head and neck with your hands. If the attack persists fight back.

Insect Bites and Stings

Insects, including bees, wasps, hornets, yellow jackets, and chiggers can be a problem for most people with no major reactions to the venom. However, some people are especially sensitive to bee stings or may even develop a life-threatening allergic reaction. Prompt life saving emergency care is necessary. Hornet, wasp, and yellow jacket nests have been previously identified and exterminated on-site. Avoid scented toiletries when outside. Sodas and other sugary types of liquids should be sealable (i.e., screw on caps) and thrown away completely sealed.

People with previous reactions to bee, wasp, hornet, fire ant, or yellow jacket stings, should consider carrying a bee-sting kit (e.g., Epi-Pen or Ana-Kit) and inform their co-workers and their SSO. If an Epi-Pen or similar device is to be used, initiate a **MAYDAY** per the Emergency Plan in the Project HSEP as the victim must be immediately transported to an emergency medical facility as additional treatment may be required to control the allergic reaction.

Weather and Other Environmental

Be aware of the effect of inclement weather (e.g., rain, snow, ice, extreme heat/cold temperatures, lightning, etc.). Consider these hazards when developing the JHA and prepare to suspend activities and seek shelter as conditions warrant.

Heat Stress

Weather conditions affecting site personnel include high temperatures resulting in increased risk of heat stress. Frequent rest in a cool, shaded area with sufficient fluids, such as water or sports drinks, and appropriate clothing (light-colored, lightweight clothing) will minimize the risk. Personnel should monitor fluid intake to avoid dehydration; and encourage co-workers to drink fluids. Overhydration due to drinking too much water causes water toxicity, an electrolyte imbalance that can cause symptoms ranging from nausea and headache to unconsciousness and coma.

The following three conditions of heat stress could occur during tasks in periods of high ambient temperature:

- ***Heat Syncope:*** If a person has been standing still for a long period of time, a sudden fainting spell could occur. Recovery is typically instantaneous, but injury may occur from a fall. If these symptoms occur, remove outer clothing, provide cool (not cold) water to drink, and rest in a cool environment. Contact the SSO of the affected contractor immediately. Any person who loses consciousness should be evaluated by a medical professional.
- ***Heat Exhaustion***: Heat exhaustion is characterized by profuse sweating, clammy skin, dizziness, confusion, and light-headedness. If these symptoms occur, proceed to the nearest air-conditioned location, drink liquids (water and/or a sports drink), and rest until the symptoms pass. Contact the SSO of the affected contractor immediately. Any person who loses consciousness or has an altered mental status should be evaluated by a medical professional.
- ***Heat Stroke:*** Heat stroke is often a fatal condition. The individual stops sweating, and the core body temperature rises rapidly. The face and upper chest are bright red or bluish in color. Convulsions may occur as the body temperature rises. Disorientation, collapse, and unconsciousness also may occur. Note that sunburn and previous sweat may mask these symptoms. If heat stroke is suspected, follow emergency protocol per in this HSEP immediately. Remove excess clothing and cool the person by sponging with cool or lukewarm water. Never place ice on the person or throw water on the individual. Contact the SSO of the affected contractor and the HSO as soon as possible.

Measures for preventing heat stress:

- Identify and evaluate all activities that may result in excess heat stress.
- Minimize heat disorders using engineering controls, training, work practices, acclimatization, and other protection

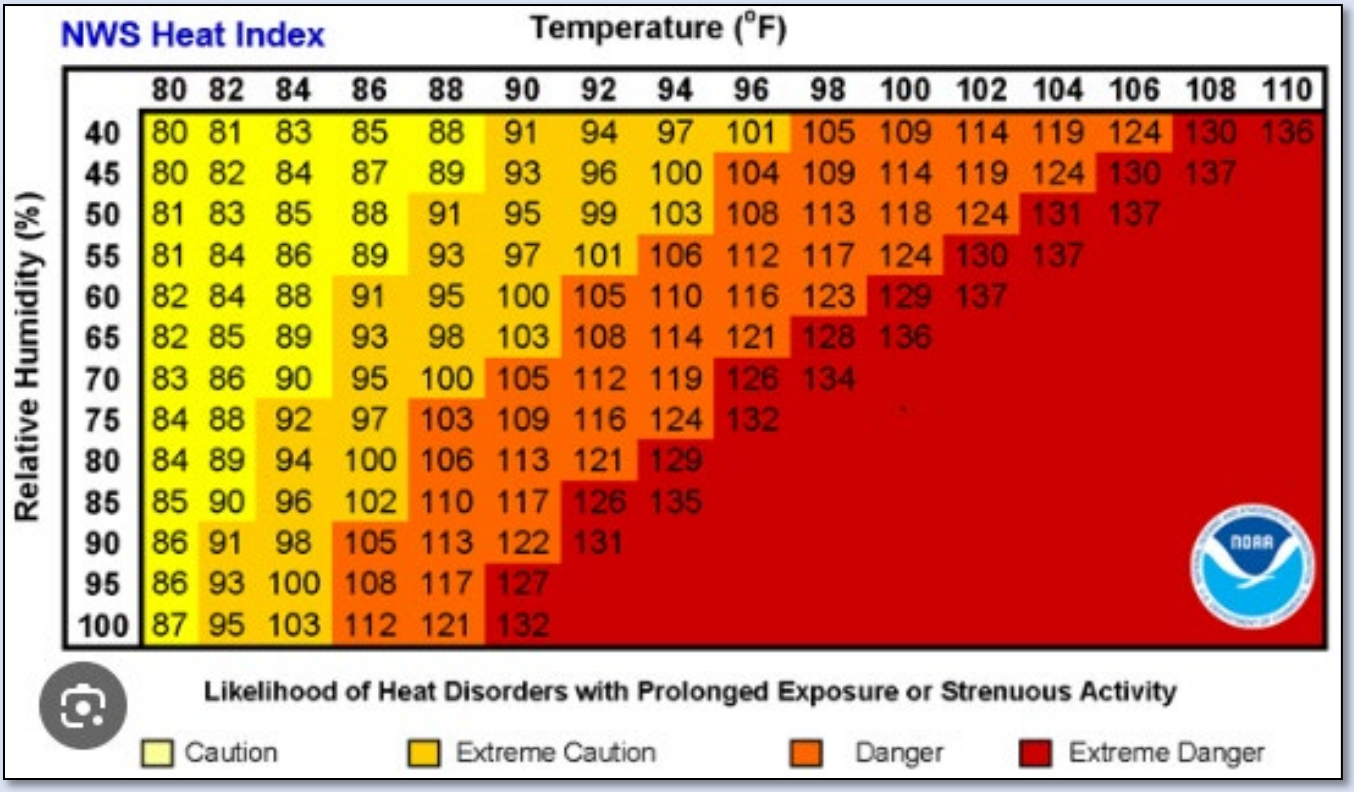
measures, such as providing plenty of fluids, limiting amount of time in direct sun or in respirators, taking frequent breaks, etc.

- Prepare for the hot weather season and use hot weather alert procedures.

Measures for reducing chances of heat stress:

Increase the frequency and duration of rest breaks.

- Schedule tasks to avoid heavy physical activity during the hottest parts of the day.
- Provide cool drinking water or an electrolyte-replacement drink and encourage its consumption.
- Use additional workers for the job or slow down the pace of the work.
- Everyone should understand the signs and symptoms of heat stress. If heat stress is suspected, the affected person shall be given a rest period. A rest period shall consist of a continuous time of at least five minutes, preferably in a shaded area. The person shall not be assigned to other work during this rest period.
- Utilize the National Weather Service (NWS) Heat Index table below to evaluate the dangers of elevated temperature and relative humidity.



Cold Stress and Hypothermia

Personnel should protect themselves from the cold by wearing appropriate clothing, including an outer water and wind-proof protective shell. Dressing in layers allows the individual to adjust clothing as weather conditions change, or as physical activity warms the individual; such adjustments can prevent the person from getting wet from perspiration and becoming more susceptible to hypothermia. Personnel should monitor fluid intake to avoid dehydration and encourage co-workers to drink fluids. Overhydration due to drinking too much water causes water toxicity, an electrolyte imbalance that can cause symptoms ranging from nausea and headache to unconsciousness and coma.

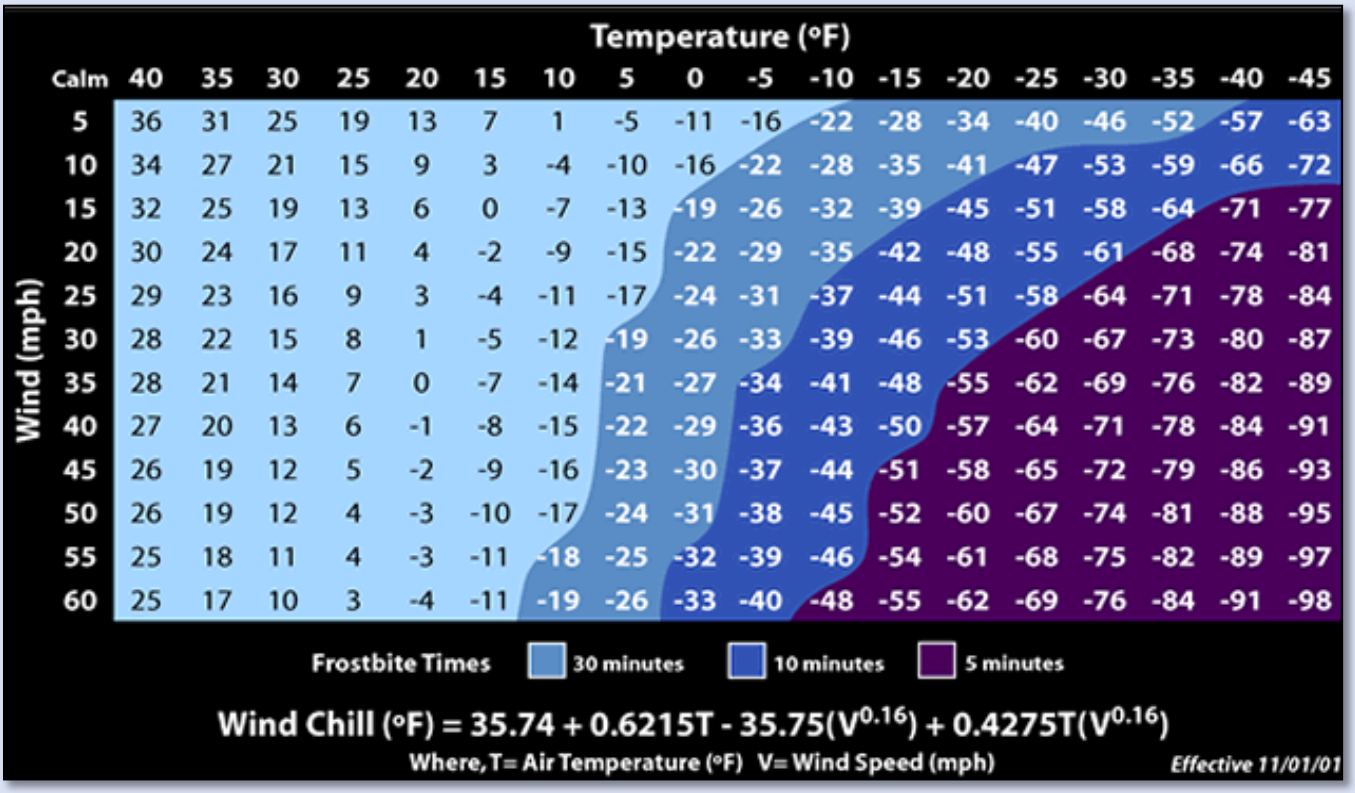
***Hypothermia*:** Wind and wetness increase the chances of hypothermia because they lower body temperature faster than it can be generated. Signs of hypothermia include clumsiness, tiredness, reluctance to keep moving, irrationality, confusion, muscle stiffness, uncontrolled shivering (once shivering stops, the individual is critical and subject to collapse). Look for signs of hypothermia in your co-workers when weather conditions present a hazard, and retreat to a heated vehicle or building, as necessary. If hypothermia is suspected, call mayday and follow the Emergency Plan in this HSEP immediately. Contact the SSO of the affected contractor and the HSO as soon as time permits. Note: Hypothermia can occur during warm weather if personnel are exposed to water, wind, or other conditions that accelerate the loss of body heat.

Six main factors involved in causing cold stress:

- Temperature,
- Humidity,
- Movement of air,
- Radiant temperature of the surroundings,
- Clothing, and
- Level of physical activity.

Measures for reducing chances of cold stress:

- Dress appropriately for expected weather conditions. Dress in a minimum of three layers (a skin layer to absorb moisture and keep the skin dry, an insulating layer, and an outer protective layer).
- Change into dry socks as necessary, because perspiration held by the socks prompts cooling of the feet. Should clothing become wet, it is imperative that the person change into dry clothes before resuming work.
- Avoid vasoconstrictors (constrict blood vessels), including tobacco products, which constrict blood vessels and can accelerate the onset of frostbite.
- Avoid touching cold metal with bare skin.
- Keep active.
- Use shelter where available.
- Utilize the table below to evaluate the danger associated with wind chill.



Lightning

Lightning typically occurs during thunderstorms and similar intense rainfall events. Hazards associated with lightning include direct electrocution, burns, and flying debris in the vicinity of the lightning strike. Although lightning typically strikes the highest objects in the area and is preferentially attracted to good conductors (such as metal poles), it is unpredictable. Consequently, **a potential lightning hazard shall be assumed whenever thunderstorms are occurring at, or in the vicinity of the Site**.

Procedures for personnel working out-of-doors when a potential lightning hazard exists:

- Notify your SSO when lightning or thunder is observed, because thunder may not be heard by personnel wearing hearing protection and lightning is obstructed by Site features such as trees or buildings.
- During drilling or excavation activities, stop work. Lower the mast of the drill rig, if possible. Move to an appropriate

shelter, such as the office trailers, or into a pickup truck or car until the hazard is no longer present.

- During investigation and sampling activities in remote areas accessible only by foot, immediately move to lower ground to the extent possible and proceed to a suitable shelter or vehicle. Avoid traversing along high points, such as ridges, and open areas.
- During other construction activities, stop work in accordance with the CHSEP covering the specified activity.
- Seek safe shelter when you first hear thunder, see dark threatening clouds developing overhead or see lightning. Count the seconds between the time you see lightning and hear the thunder. Stay in safe shelter if that time is less than 30 seconds.
- Do not resume work activities until 30 minutes after you last hear thunder or see lightning and you are authorized by the SSO.
- Always consider weather conditions and possible changes before starting work and throughout the day.
- When a safe location is not nearby:
- Do ***not*** seek shelter under tall, isolated trees. The tree may help you stay dry but will significantly increase your risk of being struck by lightning.
- Do ***not*** seek shelter under partially enclosed buildings.
- Stay away from tall, isolated objects. Lightning typically strikes the tallest object. That could be you in an open field or clearing.
- Know the weather patterns of the area and know the daily weather forecast. If there is a high chance of thunderstorms, curtail your outdoor activities.
- Wet ropes can make excellent conductors. Do ***not*** keep ropes attached to you; the electrical current can travel along the rope, especially if it is wet.
- Stay away from metal objects, such as fences, poles, and backpacks. Metal is an excellent conductor. The current from a lightning flash will easily travel for long distance.

Off-Site Transportation

Travel to and from the Site for personnel and certain equipment, materials, and waste products requires use of public roadways. The roads to the Site are narrow, winding, steep, can be in poor condition, and cross several bridges that are in poor, and deteriorating, condition. Heavy and large loads to and from the Site shall be evaluated for transportation via rail.

Public roads should only be used for personnel transport, shipment of selected equipment, and materials (e.g., wastewater from portable toilets, and small tools, consumables, and parts needed on an emergency basis). Any loads proposed for transport on public roadways shall be subject to review by an engineer to evaluate the load weight and vehicle configuration.

Potential public roadway routes to the Site from Steubenville include (Figure 1):

- County Road 74 (CR74): South on State Route 7 (SR7) from Steubenville to Mingo Junction, then west on CR74 from Mingo Junction to the Site.
- Scott Featner Road: South on SR7 from Steubenville to the intersection with State Route 151 (SR151), then west on SR151 to the east side of New Alexandria, north on Scott Featner Road to the intersection with SR74 in Kolmont, then west to the Site.
- Chappel Hill Road: South on SR7 from Steubenville to the intersection with State Route 151 (SR151), then west on SR151 to New Alexandria, north on Chappel Hill Road to the intersection with SR74, then east to the Site.
- County Road 28 (CR28): South on SR7 from Steubenville to the intersection with Lincoln Avenue, then south on Coal Hill Road and CR28 to the intersection with CR74 in Gould, then west to the Site.

The CR74 route from Steubenville is the most direct and the road is in fair condition but crosses two bridges with physical constraints. Bridge Number1, over Cross Creek near Gould, is a new, one-lane temporary structure with tight approaches. Bridge #2, over Cross Creek near Kolmont has been replaced. The Scott Featner Road route is less direct, includes road segments that are narrow, winding, steep, and in poor condition, and utilizes Bridge Number2 over Cross Creek near Kolmont described above.

The Chappel Hill Road route is the least direct, includes road segments that are narrow, winding, steep, and in poor condition, utilizes bridges over Cross Creek (Bridge Number 3) and McIntyre Creek (Bridge Number 4) that are in unknown condition, and passes through a tunnel with constrained approaches. If there are signs of ice on SR151 when approaching Chappel Hill Road, do not to take this route to the Site. Do not drive on Chappel Hill Road if there is a potential for encountering ice on this roadway.

Air Quality

On December 5, 2023, the OEPA Division of Air Pollution Control issued a Permit to Install and Operate (Permit Number P0134193). Per the permit, a Site-Specific Work Practice Plan was developed to minimize fugitive dust from:

- Roadways and parking areas from vehicle traffic
- Storage piles/accumulation areas during slag consolidation

The work practices in the plan include daily inspections, observations of equipment, vehicles, and storage piles, and taking corrective actions to control visible dust emissions (e.g., application of water on roadways). Inspection logs will be maintained in the construction office, and will be periodically scanned and archived electronically, after which hardcopies can be discarded.

Air Monitoring

Air monitoring may be required during invasive work. When required, specific monitoring procedures will be developed and implemented. Exposure monitoring activities and specific exposure limits must be detailed in the safety risk assessments and associated JHAs.

With the concurrence of the HSO, exposure monitoring may be discontinued after representative initial monitoring is conducted and worker exposures are shown to be adequately controlled using engineering controls, work procedures, and/or PPE. If work activities change so that the initial monitoring is no longer representative of worker exposure, monitoring must be reinitiated.

Personnel air monitoring will be conducted by contractors when specified in the CHSEP and JHAs. Invasive activities have the potential for exposures to metals and particulates. Specific exposure limits must be defined in each contractor HSEP.

Visual observations will be used to evaluate the effectiveness of dust controls. Decisions to implement more aggressive controls or stop work will be based on the visual dust action levels. Visible dust observations and actions will be documented at least two times per day in each active work area, once in the morning and once in the afternoon, and whenever increased dust controls or stop work are warranted. An estimate of wind speed and direction, and time and initials of the observer will be recorded with each documented, visible dust observation.

Visual Dust Action Levels

Condition	Action
No visible dust. OR Brief visual dust isolated to immediate vicinity of work.	No additional dust controls are required. Periodically document observations and controls in place (at least two times/day per work area – once in the morning and once in the afternoon).
Lingering visual dust isolated to immediate vicinity of work. OR Lingering dust clouds isolated to the Site.	Increase dust controls. Document observations and actions taken and re-assess.
Dust clouds leaving the Site.	Stop work. Document observations and actions taken to eliminate dust clouds leaving the Site before continuing and reassessing.
Sustained wind speeds exceed twenty-five miles per hour.	Stop work.

Water Quality (Surface and Groundwater)

Potential impacts to surface water from Site activities include surface runoff of disturbed soils and material piles and from leaks or spills from equipment and on-Site dispensing and storage of diesel fuel in above ground storage tanks. The site operates under the Ohio EPA General Construction Permit OHC000006 and Ohio EPA's Multisector General Permit OHR000007. Stormwater Pollution Prevention Plans (SWPPPs) were developed to comply with each permit and include conducting best management practices (BMPs), monitoring and sampling. Best management practices include, but not limited to erosion control measures, run on, and run off control, housekeeping, surface water protection, spill prevention, and dust control measures.

Cyprus Amax and the Contractor are responsible for advising employees and subcontractors working on this project of the requirements in the General Construction Permit and the Multisector General Permit and their respective SWPPP. Emphasis is placed on ensuring that Site personnel do not damage BMPs and do not introduce pollutants into surface water. BMPs are identified in the Spill Prevention, Control and Countermeasure (SPCC) Plan for the storage of oils and diesel fuel. Personnel who handle fuels and oils shall be trained on BMPs identified in the SPCC plan.

Contractors will provide and maintain adequate secondary containment for hazardous chemicals, petroleum related products, and process solutions that could damage the environment. Contractors will provide and maintain appropriate spill kits in work areas where petroleum products or hazardous materials are used. Contractors will prevent discharges to stormwater

conveyances sewers and not add, disturb, or modify stormwater controls or outfalls without prior written approval. Inspections required by SPCC plans shall be documented and retained.

Waste Management

Certain waste materials present at the Site (e.g., slag and other mill wastes related to historical Site activities) are being managed on-site under a consent order with OEPA. In addition to these historical Site-related wastes that are being managed on-site, other types of waste materials (e.g., hazardous chemicals, petroleum-related products, solid waste) will be disposed of off-Site. Off-Site waste disposal will be performed as directed by Cyprus Amax's Environmental Waste Department. Waste materials for off-site disposal, including used spill kit materials, will be properly labeled, accumulated, and disposed of in accordance with applicable federal, state, and local regulations. Contractors will coordinate disposal activities with the CAPM.

Spill Containment Program

Each contractor must include a task-specific Spill Containment Program complying with all applicable regulatory requirements. Secondary containment requirements are described in the Site's SWPPP and in SPCC plans when quantities of Site petroleum storage tank capacity exceed 1,320 gallons. Chemicals will be stored on secondary containment pallets or similar containment structures to capture potential leaks or spills.

Spill kits with sufficient materials to isolate the entire volume of any potential hazardous material or petroleum product will be maintained at locations where hazardous chemicals and petroleum products are stored. All spills must be reported to the CAHSR and the CAPM as soon as possible.

Land Disturbance (Including Reclamation Area)

Site activities include the following land disturbances and rehabilitation:

- Clearing trees and grubbing,
- Clearing the area for the consolidated stockpile,
- Develop borrow areas,
- Remove slag, impacted native soil, material from the "actively managed piles", and other non-hazardous waste encountered during slag removal,
- Place slag and other non-hazardous waste removed materials in a consolidated stockpile in the Former Mine Area,
- Cover the stockpile with a 2-foot soil cap and revegetate the surface,
- Cover identified buried slag that was impracticable to move to the stockpile (i.e., left in place) with at least 2 feet of clean soil and revegetate,
- Install fencing around the consolidated stockpile, and
- Construct permanent surface water drainage facilities to prevent erosion of the consolidated stockpile.

Restoration activities will include:

- Regrading, stabilization, soil amendments, reforestation, and seeding,
- Restore slag removal and soil borrow areas to provide positive drainage, minimize future erosion, and accommodate potential future Site uses. This includes stabilization per the General Permit for Discharges of Storm Water Associated with Construction Activity (OHC000005) (Construction Stormwater Permit) and the construction SWPPP for the Site, and
- Construct wetlands in the former north lowland slag area and in the former south lowland slag area.

Details of Site activities and rehabilitation are included in the Satralloy Site Slag Removal Interim Action Work Plan.

Biodiversity

Biological and bio-criteria assessments have been conducted at the Site. The assessment identified negligible risk to Cross Creek. The plan for Site restoration of habitats is provided in Amendment No. 10 to the Interim Action Workplan. Contractors will take measures to prevent impact to surrounding areas outside of the design areas through sediment and erosion controls and keeping equipment and materials with the designated areas.

Tree clearing activities will be performed from October 15 through March 31 to avoid adverse impacts to bat populations that could potentially be present in this area.

Water Usage

Groundwater will be used for the office trailer restrooms, portable toilets, and decontamination activities. Bottled drinking water will be provided for personnel consumption. Potable water will be provided for hand washing stations. Non potable water

sources will be labeled to indicate they are not suitable for consumption.

Sanitation

Facilities

Restrooms are located at the Site office trailers. During major activities at the Site, the contractor will provide portable toilets and washing facilities at suitable locations.

Personal Hygiene

Personnel shall thoroughly wash hands and, if necessary, face before eating, smoking, or putting anything in their mouth, and before leaving the Site.

Eating, drinking, chewing gum or tobacco, and smoking are permitted only in areas designated by the SSO. Under no circumstances will these activities be permitted in the immediate vicinity of any invasive activities (i.e., in the Exclusion Zone or Contaminant Reduction Zone).

Training

Contractors shall submit documentation to the HSO that indicate that their personnel (including subcontractors) have the required HSE training and certifications. Training will include environmental review, spill response, and regular Emergency Plan rehearsal. Personnel must be trained to the level required by the work, their job function, and responsibilities, and those that are not, cannot participate in or supervise field activities. Each contractor must specify in its HSEP where training documentation will be stored and made available upon request.

The contractor is responsible to review the Project HSEP with all employees and subcontractors. This review will be documented and submitted to the Cyprus AMAX Project Manager and HSE Representatives.

General Training

Personnel conducting work activities with the potential for contact with impacted soil (including slag and other processed byproducts), water, and/or air will be trained in accordance with 29 CFR 1910.120, including respiratory protection, personal protective equipment, decontamination, hazard recognition, construction site safety, and the proper calibration and use of the field monitoring instruments required for an assigned task. Previously trained personnel shall have completed appropriate refresher courses as detailed in 29 CFR 1910.120(e).

Contractors working at the Site shall have at least one person trained in basic or advanced first aid and CPR (including AED operation).

Personnel who operate specialized equipment (e.g., drill rigs, backhoes) shall be qualified and trained by their employer(s) to operate such equipment. Documentation (certificates) of current training shall be stored on-site and made available to the HSO on request.

Some non-invasive activities (e.g., site meetings, supply delivery, surveying activities) will not involve personnel exposure or the reasonable possibility of personnel exposure to chemical hazards, and in these cases, 40-hour HAZWOPER training may not be required. After consultation with CAHSR, the HSO may allow exceptions to 40-hour HAZWOPER training requirements on a case-by-case basis.

Site Health, Safety, and Environment Training

Visitors

A visitor is someone coming to the Site who does not perform work, such as regulating agency representatives or others who have been approved by Cyprus Amax to come as a one-time or occasional visit. All visitors, including regulating agency representatives are required to always have an escort. Visitors will not be allowed in areas where potential exposure to contaminants of concern could occur without the HAZWOPER training outlined in the HSEP.

A vendor is defined as delivery personnel (such as UPS/FedEx, beverage vendors, paper product vendors). Vendors do not perform any work outside of what has been authorized by Cyprus Amax. Vendors are never allowed in the exclusion zone unless an emergency exemption by Cyprus Amax has been made.

Visitors are required to sign in and out with security on every visit; depending on their activity, vendors may also need to sign in and out, as decided by the CAHSR or CAPM. Visitors must receive initial Site-Specific Hazard Training. Vendors entering the Support Zone may need this training, as decided by the CAHSR or CAPM. This training provides a review of Site hazards, Site-specific safety rules, and other important topics that each person must know and understand to be at the Site. Site Hazardous Training is required on an annual basis and will be documented with a signed and dated roster. Personnel receiving this training

will be given a training card.

Site Workers

Contractors and employees working on the Site are trained to the level required by the work, their job function, and responsibilities. Contractor Orientation Training is provided to all personnel prior to working on the property. In addition, Site-Specific Hazard Training and a HSEP review shall be provided by the respective contractor. This training provides a review of Site hazards, Site-specific safety rules, and other important topics that each person must know and understand to be at the Site. Site Hazard Training is required on an annual basis and will be documented with a signed and dated roster. Personnel receiving this training will be given a training card. The HSEP Acknowledgement Form in this HSEP must be signed and dated by each employee and retained by the respective contractor.

Other applicable training must be verified by Cyprus Amax for all personnel prior to performing any work on property.

Personal Protective Equipment

The following minimum Personal Protective Equipment (PPE) requirements apply to all Site personnel. PPE Standard Level of Protection will be used to designate the required level(s) of PPE. The alphabetical designations "B," "C, and "D" refer specifically to varying levels of protection. The required levels of protective equipment and upgrade criteria for each work task are specified below. The wearer shall inspect all equipment and clothing prior to use. Damaged or faulty protective equipment will be rejected and disposed of properly (anticipated to be non-contaminated waste).

Each contractor shall specify the PPE level required for each task in accordance with their Safety Risk Assessment and field situations identified on JHA. Everyone is responsible for ensuring appropriate inspection and upkeep of his/her equipment.

Standard Protection Levels

Level D

- Standard work clothes (long pants and shirt),
- No sleeveless shirts,
- Safety-toed boots,
- Safety glasses with side shields,
- High visibility and reflective safety vest or equivalent shirt,
- Hard hat,
- Hearing protection (during drilling and other noise producing activities), and/or
- Other protective clothing as required for the task.

Level C

Level D plus items below

- Full or half-face air-purifying respirator with appropriate cartridges for the task, and
- Chemical protective clothing as necessary

Level B

- Positive pressure, full-face, self-contained breathing apparatus (SCBA), or positive pressure supplied air respirator with escape SCBA,
- Chemical-resistant clothing as appropriate,
- Safety-toed boots,
- Safety glasses with side shields,
- High-visibility reflective safety vest or equivalent shirt,
- Hard hat, and
- Hearing protection (during drilling and other noise producing activities),

Level A

Level A (maximum protection) is not expected to be needed at this Site.

Minimal PPE Requirements for Tasks

The minimum level of PPE required for non-invasive site activities outside the Support Zone, including site reconnaissance, will be Level D. The need for further upgrading will be determined on the Safety Risk Assessment for each task and the field JHA.

This includes personal air monitoring as needed. Personnel should make sound task-specific judgments during the implementation of the work and use a higher degree of clothing protection if needed to improve personal hygiene (use gloves or Tyvek in dirty conditions).

Respirator Fit Test Requirements

Should respirator use become necessary, respirator medical clearance and fit test documentation for all site personnel using respirators shall be maintained by the contractor's SSO. Respirator fit testing shall meet the requirements of OSHA 1910.134 Appendix A. Any facial hair that would interfere with the proper fit of such equipment must be removed.

Hearing Protection

Use hearing protection in situations where noise could pose a health hazard. Hearing protection will be worn if noise levels are at or above those levels identified by OSHA. A good rule of thumb is that if it is necessary to shout to communicate at a distance of three feet over continuous noise, hearing protection should be worn. Likewise, impact noises from activities that are loud enough to cause discomfort can indicate the need for hearing protection.

If hearing protection is required, the worker will be enrolled in a hearing conservation monitoring program pursuant to OSHA requirements. Notify the SSO of noise level concerns, in or around work areas or equipment, where noise monitoring may be needed.

High Visibility and Reflective Vests

Employees and contractors are required to wear high visibility (brightly colored) and reflective vests (or equivalent as approved by the HSO), when on the ground around heavy equipment or light vehicles. Areas such as shops, parking lots for personal vehicles, secured perimeters and other designated areas may be excluded depending on a task Risk Assessment and JHA.

- Safety vest material must be non-flammable when performing hot work.
- Must not be loose enough to get caught or entangled in machinery or equipment.
- Must maintain visibility and reflectiveness or must be replaced.

Communications

Prior to initiating field activities, all personnel shall become familiar with the communications equipment and procedures at the Site. There is no telephone land line at the Site. Cell phones often work at the Site, although service can be unreliable (especially in the hilly areas). Internet service is available in the site office trailers and via Wi-Fi hotspots brought to the Site. Contact numbers for key Site personnel and emergency services are available in the trailers and provided in this HSEP.

Radio Communications

If a contractor uses radios to conduct fieldwork for the project, personnel shall be familiar with the radio channel to reach their SSO, the common emergency radio channel, and must also understand the limitations of cellphone service at the Site. Detailed radio communication expectations will be included in the contractor's HSEP.

English shall be used in FCC regulated radio communications. For crews with another primary language, they may have a dedicated radio/frequency that allows them to clearly communicate with another. If this condition exists, one or more members of the crew shall be able to communicate to "outside" crews in English on the Site radio channel(s). This is necessary in the event of emergencies, work coordination, and for general instructions.

Emergency radio communication procedures are provided in the Emergency Plan of this HSEP and shall be followed by all contractors on-Site.

Cell Phone Communications

The contractor must understand the limitations of cellphone service on-site and in the Site office trailers. Cell phones are not to be used while driving a vehicle, operating equipment, or while walking in work zones. A hardcopy version of the contact and emergency phone numbers must be kept at the worksite for immediate reference. Detailed cell phone communication procedures must be included in the contractor's own HSEP. Each contractor shall communicate its Communication Plan with the HSO and security upon mobilization to the Site.

Site Health, Safety and Environmental Meetings

The HSO and SSOs shall conduct HSE meetings as discussed in this section.

Daily Afternoon Safety and Coordination Meetings

When multiple contractors are working on the Site, the HSO shall attend the daily safety and coordination meetings conducted by one or more representative of each contractor (to include SSOs) and will document the meeting in the contractors' daily

notes. These meetings shall cover as appropriate:

- Safety share.
- Weather-related safety issues.
- Unusual Site conditions/areas.
- Coverage of all work activities to be conducted by all contractors working at the Site.
- Preparation of JHA for the tasks to be completed (if applicable) for the day.
- Any changes that occurred while team was off rotation, including changes to task-specific Exclusion Zones, Contaminant Reduction Zones, and Support Zones.
- Safety problems and issues.
- Changes to materials being used by Site field investigation team or subcontractors (i.e., additional SDS available)
- Changes to this HSEP or the Contractor HSEP.
- Stop work.
- Discussion regarding Site communications.
- Daily travel patterns.
- Establishing muster areas for the day based on daily activities.
- MRAP update.
- Blue Stake update.

Daily HSE Meeting

The HSO shall conduct a daily HSE meeting attended by all field personnel and contractor SSOs before beginning fieldwork. These meetings shall be documented in the HSO's field notes. The topics to be covered will be determined by the task activities in compliance with CAHSR requirements.

Weekly HSE Meetings

At minimum, the contractor supervisor will hold a weekly HSE meeting. This can be during a weekly project call with CAMC. Pertinent information such as health and safety regulatory information, health and safety information provided by CAMC, communications of workplace incidents, environmental protections, etc. shall be discussed. These meetings must be documented and the records available to CAMC.

Monthly HSE Meetings

Each contractor will hold a documented monthly HSE meeting where the Contractor's management and their employees will attend. Project-relevant health, safety and environmental issues and topics such as CAMC communications, safety statistics, safety, and environmental incidents, and Site-specific HSE concerns will be discussed. The CAPM and their representatives shall be invited to attend.

Medical Surveillance

Personnel who are engaged in activities on the Site and:

- May wear a respirator for 30 days or more a year, OR
- May be exposed to arsenic, asbestos, chromium, lead, respirable crystalline silica, or other health hazardous substances at or above an action level of ½ the American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Value (TLV), without regard to the use of respirators, for 30 days or more a year, shall meet, the medical surveillance requirements of 29 CFR 1926.65(f) and all other applicable OSHA standards (e.g., 29 CFR 1910.1018, 29 CFR 1926.1101, 29 CFR 1926.1126, 29 CFR 1926.62, 29 CFR 1926.1153).

Supplemental tests may be conducted as part of the worker's medical surveillance based on exposure and determined by a licensed medical professional (see below). Frequency of testing may include a baseline examination with subsequent follow-up exams.

Supplemental Tests (where applicable based on anticipated or measured exposures)	
Type of Surveillance	**Surveillance Method**
Arsenic – elemental and soluble	Per 29 CFR 1910.1018 and 29 CFR 1926.1118
Asbestos	Per 29 CFR 1926.1101
Chromium (VI)	Per 29 CFR 1910.1026 and 29 CFR 1926.1126
Lead	Per 29 CFR 1910.1025 and 29 CFR 1926.62
Respirable Crystalline Silica	Per 29 CFR 1926.1053

Personnel working on the Site who will never enter the Exclusion Zone are exempt from the medical surveillance requirement without prior authorization by Cyprus Amax (e.g., supply or mail delivery).

Personal and Environmental Monitoring

Site Monitoring and Action Levels

Potential inhalation exposures will be evaluated by air monitoring for anticipated Site COPCs, and additional parameters as determined by the contractor's SSO, when performing various construction or investigation activities.

Practices used to minimize potential airborne exposure when performing these activities shall include:

- Standing upwind of the field activity.
- Minimize generation of dust.
- Use wetting methods to reduce dust generation.
- Standing away from visible aerosols (e.g., water spray or gases from boreholes) until they have dissipated, and air monitoring confirms that conditions have stabilized.
- Recognizing potential warning properties of contaminants and of dust that may be present during field activities (e.g., odor, irritation, nausea, etc.).
- Wearing appropriate PPE such as half-face respirators fitted with P100 replaceable filter cartridges.

Personal Air Monitoring

Personal air monitoring is the preferred method to determine a worker's exposure. In this method the air sample is collected within the breathing zone of worker. The breathing zone is defined as being within a one-foot radius of nose and mouth.

Personal air monitoring shall be conducted any time there is a significant potential for worker exposure to Site COPCs and other health hazards (e.g., during invasive and high energy activities). Initial monitoring will be conducted to determine compliance with the lesser of the appropriate 8-hour time-weighted average (TWA), TLV from the American Conference of Governmental Industrial Hygienists (ACGIH), or the Occupational Safety and Health (OSHA) action level or permissible exposure limit (PEL), and will represent worst-case, full-shift personal exposures. Monitoring may be limited to a representative sample of exposed workers who the employer reasonably believes could be exposed to the greatest airborne concentrations of dust in the workplace (e.g., open-cab equipment operators) and at least one sample for each other job classification in each work area with the highest exposure level.

As needed (e.g., due to significant potential worker exposure), a monitoring plan will be developed and conducted under the direction of a Certified Industrial Hygienist (CIH) and interpreted by a CIH. Samples will be collected using sound industrial hygiene practices and appropriate OSHA or NIOSH analytical methods and analyzed by an AIHA-accredited laboratory. Exposure and action levels will be described in the monitoring plan.

During non-invasive activities of short duration, personal air monitoring is not required. Field personnel shall make themselves aware of any conditions that would indicate potential airborne chemical exposure (e.g., odor, visible plume, or smoke, non-aqueous liquids) and other activities that may be underway at the Site that may affect conditions. If such indicators are encountered, discontinue work, and contact the SSO of the affected contractor.

Combustible Ground-Releasing Gases

Under certain conditions coal seams can generate large volumes of methane gas, which may exist in the subsurface. Digging or drilling can pose asphyxiation, fire, and explosion hazards. If drilling in or otherwise disturbing coal strata, a direct-reading, multi-gas meter (i.e., oxygen, combustible gas, and hydrogen sulfide detector) shall be used to monitor combustible gas concentrations in the work zone twelve inches above ground surface of disturbed coal seams and in the borehole during drilling. The instrument calibration shall be checked daily. A TLV PEL have not been established for methane, although NIOSH and OSHA consider ten percent of the Lower Explosive Limit (LEL) to be an action level in confined spaces; a five percent value shall be used to trigger action for this project unless approved otherwise by the SSO of the affected contractor and the HSO. No hot work shall be performed if the combustible gas concentration is five percent or greater of the LEL.

Project Access and Control

The Site boundaries have been established using a variety of methods, including signage, installation of fencing, and guard rails. The Site is patrolled 24 hours/day, seven days/week by security personnel.

Site Security Personnel

The Site security personnel have training in first aid, emergency response coordination, and law enforcement. All visitors are

required to sign in with Site security. All visitors shall be escorted around the Site by the HSO, the CAHSR, CAPM, or their designee. OEPA personnel will be escorted by the CAPM or designate. Visitors shall park in the Support Zone parking lot (Figure 2).

All contractor personnel shall also sign in with Site security. Contractors and subcontractors will park in the designated area of the Support Zone parking lot and enter and leave the Site through the security checkpoint where a guard will obtain name and arrival time for each person entering the Site. The system works in reverse when a person leaves the Site. The purpose of this procedure is to allow rapid identification of the personnel on the Site in an emergency and for verifying all personnel are authorized to be on site for overall security. The only exception to this policy is when WSP, contractors, and subcontractors are required to bring a vehicle into the Exclusion Zone to complete required work tasks.

Site Work Zones

Site conditions will change over time (e.g., Site conditions have been significantly changed by interim actions). Each contractor shall establish work zones and access controls in its Contractor HSEP appropriate for the contractor's activities. The default Support Zone and Exclusion Zone are shown on Figure 2. In addition, task-specific Site Safety Zones shall be established in Contractor HSEPs as further discussed below. Contractors shall make each other aware of the various Site Safety Zones in use through the daily meetings as described in this HSEP.

Invasive Activities

During invasive activities (e.g., excavating, drilling) Site Safety Zones will be established, if needed, by the appropriate SSO in consultation with the HSO to protect Site workers not involved in the invasive activity. At a minimum, the safety zones include an Exclusion Zone, Contaminant Reduction Zone (CRZ) and a Support Zone. An Exclusion Zone will generally be set to provide an approximate the height of the mask/boom or thirty-foot buffer (GeoProbe) from the invasive activity. Exposed materials such as cuttings will be contained or covered, if necessary, based on Site conditions, to prevent dispersion by wind or water. The limits of the Exclusion Zone will be marked with fencing, high visibility flagging tape, traffic cones, or similar devices.

Personnel will exit an Exclusion Zone through a CRZ. The CRZ will be used for decontamination of both personnel and equipment. It shall be configured to allow the decontamination of the field crew while upwind of the Exclusion Zone whenever practical. The SSO of each contractor will ensure that all personnel entering the Exclusion Zone wear the required protective equipment and that upgraded level of protection equipment is readily available.

Non-invasive Activities

All personnel conducting non-invasive activities must be mindful of and adhere to the safety zones established for other Site activities as well as their own.

Standard Operating Procedures (SOPs)

Contractors are obligated to follow this HSEP (or their approved HSEP) including referenced documents such as the Contractor Health, Safety and Environmental Manual, all applicable Cyprus Amax Policies and procedures (https://www.fcx.com/suppliers/tools-for-suppliers). Contractors shall have SOPs that at a minimum meet the Contractor Health, Safety and Environmental Manual, all applicable Cyprus Amax Policies, and Procedures, as well as all applicable federal, state, and local laws and regulations.

The contractor's HSEP will reference SOPs that are relevant to their activities and include those that are standardized and include an implemented checklist.

The standards of conduct and policies include, but are not limited to, the following:

- Drug and Alcohol Policy (see Section 8.0 of the Contractor Health, Safety and Environmental Manual https://www.fcx.com/suppliers/tools-for-suppliers).
- Background Check and Site Access (see Contractor Health, Safety and Environmental Manual).
- Fighting or Physical Assault Rule in this HSEP.
- Lockout/Tagout/Tryout Policy (FCX HS04 Control of Hazardous Energy Sources https://www.fcx.com/sites/fcx/files/documents/suppliers/lototo_policy.pdf).
- Permit Required Activities (i.e., Confined Space Entry, Hot Work, Digging, Trenching or Utility Location) (see Tools for Suppliers Website for H&S Policies https://www.fcx.com/suppliers/tools-for-suppliers).
- Restricted Area Access/ (see FCX-HS19 Flagging Barricading Policy https://www.fcx.com/sites/fcx/files/documents/suppliers/flagging_barricading_guideline.pdf)
- Fall Protection (see FCX HS02 Working at Heights Policy https://www.fcx.com/sites/fcx/files/documents/suppliers/working_at_heights_policy.pdf).

- Failure to follow safety procedures while operating equipment (see FCX-23 Interaction with Heavy Mobil Equipment – Surface https://www.fcx.com/sites/fcx/files/documents/suppliers/interaction_heavy_mobile_ equipment.pdf).
- Inappropriate removal, alteration, or bypass of a safety guard.
- Interfering with radio communications.
- Cell phone use while operating equipment/vehicles.
- Other Cyprus Amax HSE policies.

Decontamination Procedures

Decontamination will involve two phases:

- The first phase will consist of gross decontamination of personnel and equipment (e.g., removal of mud by dry brushing or scraping), and will take place adjacent to the location of each invasive activity.
- The second phase will be completed prior to leaving the Exclusion Zone and entering the Support Zone and shall include any necessary additional decontamination.

Final decontamination areas will typically have the following materials and tools:

- A general wash water source,
- 2 wash tubs (1 wash, 1 rinse),
- Scrub brushes,
- Seating to facilitate boot removal if required,
- Hand soap,
- A portable water source for skin wash, and
- Receptacle to dispose of used cleaning materials and disposable products.

Heavy equipment leaving the Site shall be decontaminated by dry methods or washing on a decontamination pad to remove visible soil, mud, and other debris that could otherwise leave the Site. Loose soil shall be removed by dry or wet brushing, HEPA vacuuming, wiping, scraping, shaking, patting, water washing, or other physical means.

Monitoring equipment, sampling tools, and hand tools shall be decontaminated as needed using methods appropriate for the type of equipment. Potentially contaminated equipment shall be wrapped in plastic during on-site transport to avoid the potential for spreading contamination.

Disposable PPE shall be placed in an appropriate container. These containers shall be labeled and placed in a secure area of the Site for temporary storage, and ultimately disposed of at a suitable permitted facility in compliance with applicable regulations.

Decontamination liquids are normally disposed in the Exclusion Zone or in the vehicle decontamination area. However, obtain permission of the HSO before doing so.

Clothing that is visually free of loose soil may be worn off-site. It is recommended that personnel have a change of clothing and shoes for wearing off-Site.

Delineated Site work zones will be maintained and communicated to Site workers during the length of the project.

Other Miscellaneous Plans/Tools, etc.

In addition to the Cyprus Amax Contractor Health, Safety and Environmental Manual and all applicable Cyprus Amax Policies located on the FCX Supplier Portal Website (i.e., Policy Documents section of https://www.fcx.com/suppliers/ tools-for-suppliers), the following are relevant documents as it pertains to measures taken to protect the health and safety of personnel and the surrounding environment:

- Former Satralloy Site Slag Removal Interim Action 90% Design Submittal, dated September 2023
- Amendment No. 10 to the Interim Action Workplan (rev) Former Satralloy Site, dated January 25, 2024
- Storm Water Pollution Prevention Plan for the General Construction Permit, OEPA Permit Number OHC000006, dated January 2024
- Storm Water Pollution Prevention Plan for the Industrial Storm Water General Permit, OEPA Permit Number OHR000006, dated April 11, 2023.

Incident Notification, Reporting, and Investigation

If an incident occurs (i.e., occupational injury/illness, near miss, property damage, or environmental spill or release), the HSO shall be notified and the appropriate action shall be completed as determined by the WSP Project Manager, HSO, and contractor SSO in consultation with each other. This must also be reported to the CAHSR and the CAPM immediately. If the incident exceeds reportable quantities, the appropriate regulatory agency will be notified by Cyprus Amax only within the required reporting period. An Incident Report Form is provided in Appendix F.

Report all incidents to Cyprus Amax no matter how minor. For any incident, Cyprus Amax Incident Report and supporting documentation (see paragraphs below) will be provided to the CAHSR within the timeline provided in this HSEP. If there are questions as to what is considered an incident the HSO, SSO and or WSP Project Manager will contact the CAHSR or the Cyprus Amax Environmental Representative for further guidance.

A Witness Statement Form provided in Appendix F must be legibly filled out by eyewitnesses (includes all possible witnesses, regardless of Site role).

Witness documents, along with incident photos will be gathered by the affected SSO and submitted with the initial Incident Report to the CAHSR no later than the end of shift on the day the incident occurred. The report will be forwarded to the HSO as soon as possible for further investigation or follow-up.

A final report will be provided to the CAHSR within 24 hours of the incident, unless otherwise approved by the CAHSR due to extenuating circumstances.

Any company requiring use of its own internal reporting documentation must also complete and submit Cyprus Amax reporting documents. Contractor companies are only required to submit Cyprus Amax reporting documents and photos to the CAHSR.

The HSO will coordinate incident reporting to Cyprus Amax. The HSO shall notify the CAHSR verbally as early as possible with a subsequent confirming email. A final report will be provided to the CAHSR within 24 hours of the incident, unless otherwise approved by the CAHSR due to extenuating circumstances.

For environmental incidents and releases, the contractor will notify the CAPM and WSP Project Manager. The contractor will follow the same incident notification, reporting, and investigation procedures previously in this section.

At minimum, incident reporting must be conducted according to the applicable regulatory agency and Cyprus Amax requirements (See OSHA Regulated Sites and Incident Investigation of Contractor Health, Safety and Environmental Manual).

Emergency Plan

Prior to starting work on the Site, all personnel shall familiarize themselves with the Emergency Plan (this section), Communications procedures in this HSEP, the Contractor Health, Safety and Environmental Manual, and emergency provisions in accordance with the Contractor's health and safety plan. All site personnel must also know where to locate emergency phone numbers for medical facilities as well as any other applicable contact numbers.

Each contractor has the responsibility to develop and maintain a current Emergency Response Plan consistent with the emergency response requirements of this section and the Contractor Health, Safety and Environmental Manual. Each contractor shall coordinate its Emergency Response Plan with the HSO upon mobilization to the Site. Upon declaration of a Site-wide emergency such as weather, fire, or chemical release, the alarm and assembly procedures shall be implemented immediately. Muster stations shall be established by each contractor during morning safety meetings for work locations associated with that day's activity.

Each contractor shall conduct regular rehearsals of its Emergency Response Plan at a frequency specified in contractor's Emergency Response Plan.

The Site security have training in first aid, emergency response coordination, and law enforcement.

If an accident occurs or an unanticipated, potentially hazardous situation arises such as explosion, vapor release, unusual or excessive odors, Site personnel shall cease operations, move away to a safe area, and contact their SSO.

Prior to starting work on the Site, personnel shall familiarize themselves with the communications plan in this HSEP. If radios are in use, personnel shall be familiar with the radio channel to reach their SSO, the common emergency radio channel, and phone numbers for medical facilities. In the event of a serious emergency (e.g., medical problems beyond routine first aid and fire), contact will announce **MAYDAY** on the radio and inform the Site of the nature of the emergency. Site security will initiate 9-1-1 for emergency services. When help arrives, site personnel shall defer all emergency response authority to appropriate responding agency personnel. Site personnel shall provide all necessary assistance to emergency personnel.

As soon as time permits, the HSO shall notify the following about the emergency: the CAHSR, CAPM, and the WSP Project

Manager.

The HSO or SSO will function as the Emergency Response Coordinator for all emergencies on the Site, assisted by other site personnel as appropriate. Site security will coordinate site access for off-site emergency authorities arriving at the Site and help direct them safely to the incident scene.

Emergency Communications

Radio communication channels are discussed in the communications section of this HSEP. The dedicated emergency radio channel (i.e., Channel 2 Talk Around) shall be used during emergencies, and non-incident related communications shall be minimized.

Emergency notification shall be as follows:

1) The individual discovering the emergency shall immediately radio **Mayday-Mayday-Mayday** to inform Site personnel that there is an emergency, and provide the following information:
    - Your name
    - Nature of the emergency (hazardous materials spill, fire, etc.)
    - Exact location of the emergency
    - Nature of any injuries (under no circumstances identity of the victim over the radio).
    - Additional personnel needed
2) The security personnel will then announce that there is an emergency over all other active radio channels, starting with **Mayday-Mayday-Mayday-**
3) Where a call to 9-1-1 is necessary, the call will be made by security personnel (who have direct radio communications with the 9-1-1 center).
    - Fire: First response will come from Hillendale Fire Department; second response will come from New Alexandria Fire Department.
    - EMS: First response will come from Hillendale Fire Department; second response will come from Mingo Junction Fire Department.
    - Wintersville and Brilliant fire departments will be the next to serve if Hillendale, New Alexandria and Mingo Junction are not available.

The Site address to provide to first responders (first aid, law enforcement, fire department, or other rescue organizations) is:

- The Former Satralloy Site located in Mingo Junction on County Road 74 south of the Kolmont Community Church.
- The mailing address for the Site is 4243 County Road 74, Mingo Junction, Ohio 43938.

Prior to taking a WSP employee to a medical facility, TriageNow should be contacted at 877-311-0038, except when transported by emergency responders.

Medical Emergency Response Plan

Other than removal of outer protective garments and gross contamination (e.g., mud), immediate emergency treatment of injuries should take precedence over personal decontamination. Should any person on the Site be injured or become ill, initiate the following emergency response actions, and notify the HSO and their SSO as soon as possible:

1. If able, the injured person should proceed to the nearest available source of first aid. If the injured party is extremely muddy, remove outer garments and, if necessary, wash the injured area with soap and water. If the -injury- involves a potential overexposure to hazardous gases or vapors (headache, dizziness, nausea, disorientation), get the victim to fresh air and seek medical attention as soon as possible.

   If the injury involves foreign material in the eyes, immediately flush the eyes with emergency eye wash solution and/or rinse with copious amounts of potable water for at least fifteen minutes. Obtain or administer first aid as required. If further medical treatment is required, seek professional medical assistance as discussed below.
2. If EMS or a hospital engages in the medical response, notify them of any potential contamination from the Site. Include a copy of a safety data sheet for chemical exposure of a known chemical.
3. If the victim is unconscious or unable to move, or if there is any evidence of spinal injury, *do not move the injured person, unless necessary to save his or her life,* until the nature of the injury has been determined. If necessary, administer rescue breathing and/or CPR, control severe bleeding, and *immediately* seek medical assistance.

4. If further medical treatment is required and:

    a. <u>The injury is not severe;</u> the injured party may be taken to the hospital by private automobile. TriageNow should be contacted at 877-311-0038 before taking a WSP employee to a medical facility (i.e., when an injury is not severe).
    b. <u>The injury is severe</u>, immediately call Site security. Site security will request the appropriate emergency services.

    In both cases, if decontamination is not undertaken, appropriate precautions should be taken to avoid transfer of contaminants to vehicles and other facilities. This can be done by covering the vehicle's interior with a clean plastic sheeting or blanket. A victim should never be wrapped in plastic sheeting. A victim can be placed in a clean Tyvek suit for transport.

5. An individual designated by the SSO of the affected contractor shall accompany any injured person taken to the hospital to ensure prompt and proper medical attention. The accompanying person should notify the hospital or medical facility of the potential contaminates that may be on the injured person. The accompanying person should take a copy of the chemical SDS (if applicable) to the hospital. After proper medical treatment has been obtained, the designated companion should notify the SSO of the affected contractor and prepare a written report. If any personnel are injured at the Site, all available technical information and supporting documentation needed shall be provided to any treating physicians, health care workers, or health care facilities.

When emergency first responders arrive at the Site, security personnel will guide them to the location of the incident as directed by the HSO.

For a medical emergency, the first responder will likely be from the Hillendale Fire Department Emergency Medical Services (EMS) located at 2709 Wilson Ave Steubenville, Ohio 43952. Emergency Services (fire/rescue, EMS, and law enforcement) are managed by the Jefferson County 9-1-1 Center who will dispatch the appropriate responders. Note the non-emergency telephone number listed for the local fire department and EMS may not be answered 24/7, therefore all emergency calls are to be placed directly to 9-1-1 or the 10-digit phone number for the 9-1-1 center (740) 266-4252. EMS personnel will make the decision on Site if an airlift medical evacuation is required. The EMS personnel have radio and phone contact with the medevac service located at the Lifeline Hospital in Steubenville Ohio.

Fire and Explosions

Dry chemical (ABC) fire extinguishers are effective for fires involving ordinary combustibles such as wood, grass, flammable liquids, and electrical equipment. They are also appropriate for fires in their incipient stages and small, localized fires such as a drum of burning refuse, a small burning gasoline spill, a vehicle engine fire, etc. No attempt should be made to use these extinguishers for well-established fires or large areas or volumes of flammable liquids.

In the case of fire, prevention is the best contingency plan. There shall be no smoking on the Site except in pre-designated areas. In the event of a fire, trained personnel shall attempt to extinguish the fire only if it is in an incipient stage with on-Site fire extinguishers.

In the event of a fire or explosion:

1. If the situation can be readily controlled with available resources ***<u>without jeopardizing the health and safety of site personnel</u>***, take immediate action to do so. If not:
2. Isolate the fire to prevent spreading, if possible.
3. Clear the area of all personnel working in the immediate vicinity.
4. Immediately notify SSO and Site Security (or the Fire Department by calling 9-1-1).

Catalytic converters on the underside of vehicles can be sufficiently hot to ignite dry grass. Personnel should avoid driving over dry grass that is higher than the ground clearance of the vehicle and be aware of the potential fire hazard posed by the catalytic converter. ***<u>Never</u>*** allow a running vehicle to sit in a stationary position or park a vehicle over dry grass or other combustible materials.

Chemical Exposure First Aid

In an event of exposure to chemicals through inhalation:

1. Move the victim to an up-wind location for fresh air.
2. Initiate CPR to revive the victim, if necessary.
3. Contact EMS, if necessary

Exposure through dermal route (including eyes):

1. Wash the affected area with copious fluids for at least fifteen minutes.

2. If irritation persists, seek professional medical care.

Ingestion:

1. Contact the National Poison Control Center for advice.
2. Contact Site security, EMS (9-1-1), or transport the victim to the hospital immediately. Take a copy of this HSEP to the hospital, if readily available.

Notify your SSO as soon as possible of any exposure incidents. Check the SDS of the chemical for first aid measures.

Unforeseen Circumstances

The HSE procedures specified in this plan are based on the best information available at the time. Unknown conditions may exist and known conditions may change. This plan cannot account for every unknown or anticipate every contingency. Should personnel suspect or encounter areas of substantially higher levels of contamination, or should any situation arise which is obviously beyond the scope of the safety procedures specified herein, work activities shall be halted pending discussions with the SSO of the affected contractor(s) and the HSO, and implementation of appropriate protective measures.

Accident and Incident Reports

If an incident or accident occurs (including near misses), the HSO shall be notified and the appropriate action shall be completed as determined by the WSP Project Manager, HSO, and contractor SSO in consultation with each other. Eyewitnesses, if possible, should complete a summary report along with assistance from the affected SSO. The report will be forwarded to the HSO as soon as possible for further investigation or follow up.

The HSO will coordinate incident reporting to Cyprus Amax. The HSO shall notify the CAHSR verbally within 24 hours with a subsequent confirming email. A completed “Incident Reporting Form” must be provided to the CAHSR within 24 hours.

Directions to Hospital

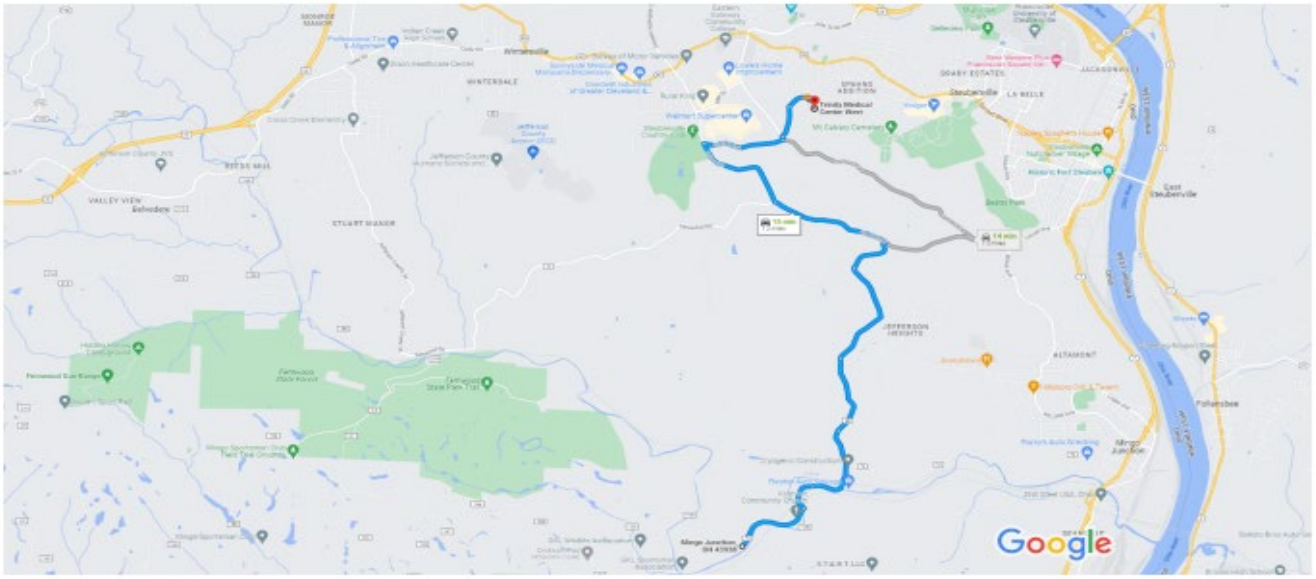
The nearest hospital is the Trinity Medical Center West at 4000 Johnson Road, phone (740) 264-8000.

Directions (closest route):

When leaving the Site turn left onto County Road 74 to the #2 Bridge – 0.5 miles.
Turn left after the bridge staying on County Road 74 – 0.8 miles.
At the T-intersection go straight onto County Road 28/Goulds Road – 2.6 miles.
At the end of County Road 28/Goulds Road, turn left on Coal Hill Road – 1 mile.
At the stop sign, turn right on Lovers Lane – 0.9 miles.
Turn right on Sinclair Avenue – 0.7 miles.
Turn left onto John Scott Highway – 0.1 miles.
Turn right onto Lauretta Drive – 0.3 miles.
Turn slight right onto St. Charles Drive – 0.2 miles.
Turn right onto Johnson Road (stay on Johnson Road) – 0.2 miles.
Follow signs to the Emergency Room

Google Maps

Mingo Junction, Ohio 43938 to Trinity Medical Center West, 4000 Johnson Rd, Steubenville, OH 43952 Drive 7.2 miles, 15 min



Additional Medical Facilities

Additional medical facilities closer to the Site than the Trinity Medical Center available for less serious injuries are listed below. TriageNow should be contacted at 877-311-0038 prior to taking a WSP employee to one of these facilities.

Trinity Express Care
150 Main Street
Steubenville, OH 43953
740-346-3702

MedExpress
218 Three Springs Drive
Weirton, WV 26062
304-723-3627

Emergency Phone Number for Site is 480-647-7212 or Initiate MAYDAY Procedure over the Radio

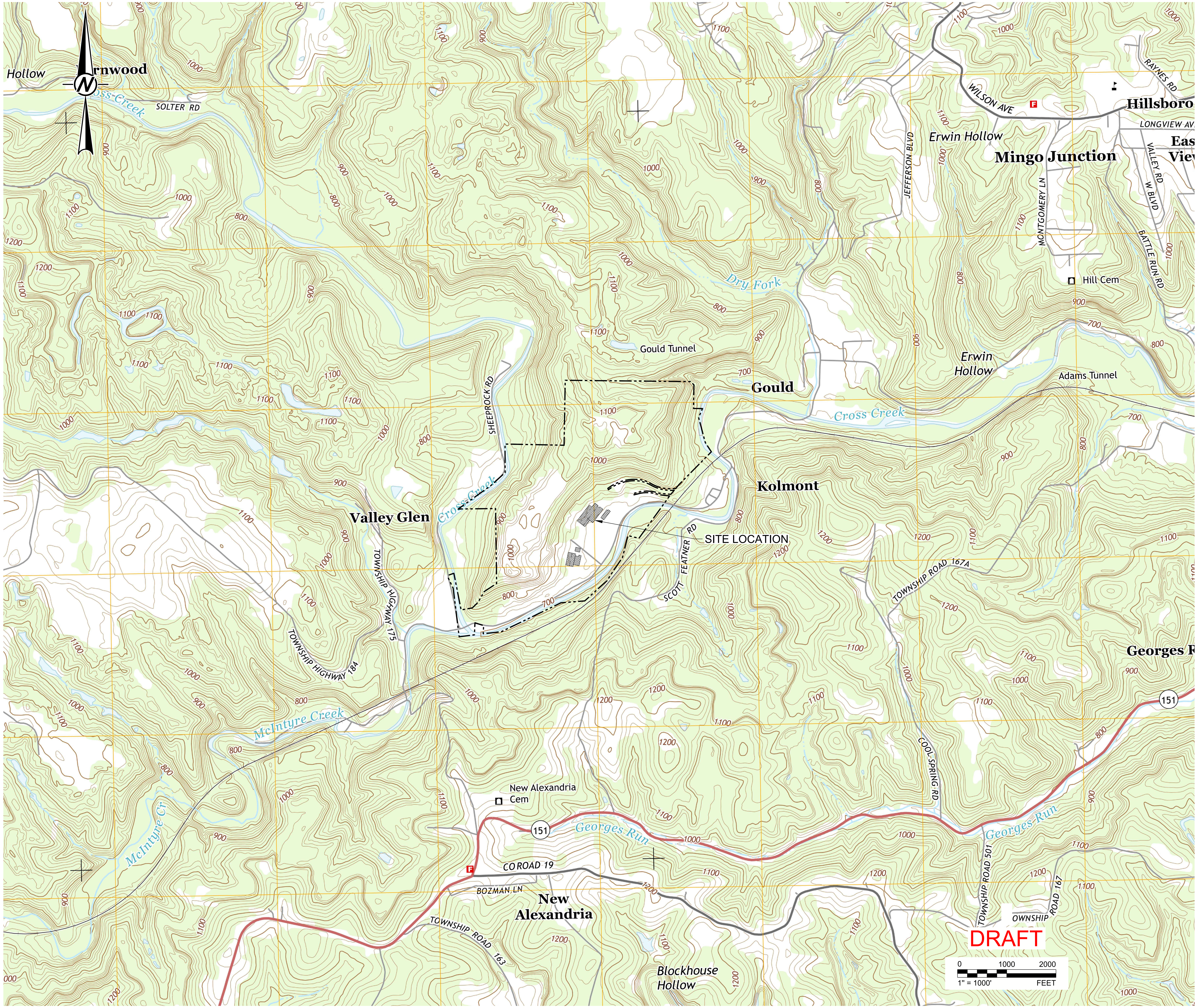
Agency	Address	Phone
Police, Fire or Medical Emergency		911
National Poison Control Center		800-222-1222
Lifeline/Trinity Medical Center West	4000 Johnson Road Steubenville, OH 43952	740-264-8000
Hillendale Fire Department and EMS	2709 Wilson Avenue Steubenville, OH 43952	740-283-1141
Mingo Junction Fire Department	501 Commercial Street Mingo Junction, OH 43938	740-535-9165
Ohio EPA Emergency Response Hotline		800-282-9378

Name	Title	Address	Phone	E-Mail
Site Security Cell Phone		4243 County Road 74 Mingo Junction, Jefferson County, Ohio	480-647-7212	
Ohio EPA				
Kevin O'Hara	OEPA Site Coordinator	2195 Front Street Logan, OH 43138	740-380-5244 (o)	kevin.ohara@epa.ohio.gov

Contractor Acknowledgement – Key Personnel		
Note: All contractor and subcontractor employees must acknowledge (sign off) that they have read and understand the HS&E Plan. A separate acknowledgement form may be used.		
Date	Print Name	Signature

FCX Acknowledgement		
FCX acknowledges they have reviewed and accepted this HSE Plan		
Date	FCX Project Manager / CCS – Print Name	Signature
Date	FCX Environmental – Print Name	Signature
Date	FCX Health & Safety – Print Name	Signature

FIGURES



OHIO

REFERENCE(S)

1.) MAP TAKEN FROM U.S.G.S. 7.5 MINUTE QUADRANGLE OF STEUBENVILLE WEST, OHIO, DATED 2013.

CLIENT
CYPRUS AMAX MINERALS COMPANY

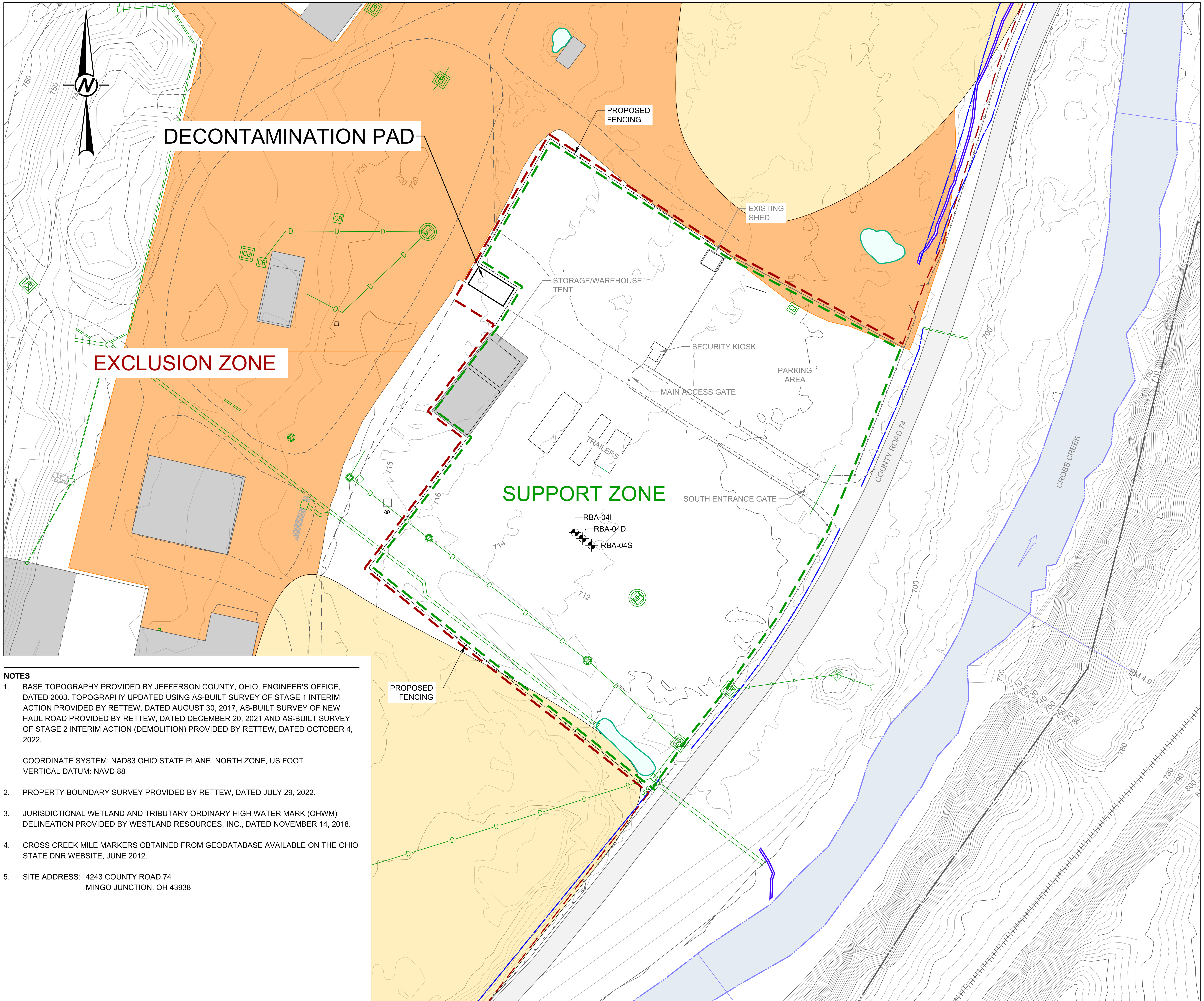
PROJECT
FORMER SATRALLOY SITE
SLAG REMOVAL INTERIM ACTION
JEFFERSON COUNTY, OHIO

TITLE
SITE LOCATION

CONSULTANT		
wsp	YYYY-MM-DD	2024-04-08
	DESIGNED	VMN
	PREPARED	REDMOND
	REVIEWED	BB
	APPROVED	RSA

PROJECT NO.	PHASE	REV.	FIGURE
31404505	036	A	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



NOTES

1. BASE TOPOGRAPHY PROVIDED BY JEFFERSON COUNTY, OHIO, ENGINEER'S OFFICE, DATED 2003. TOPOGRAPHY UPDATED USING AS-BUILT SURVEY OF STAGE 1 INTERIM ACTION PROVIDED BY RETTEW, DATED AUGUST 30, 2017, AS-BUILT SURVEY OF NEW HAUL ROAD PROVIDED BY RETTEW, DATED DECEMBER 20, 2021 AND AS-BUILT SURVEY OF STAGE 2 INTERIM ACTION (DEMOLITION) PROVIDED BY RETTEW, DATED OCTOBER 4, 2022.

   COORDINATE SYSTEM: NAD83 OHIO STATE PLANE, NORTH ZONE, US FOOT
   VERTICAL DATUM: NAVD 88

2. PROPERTY BOUNDARY SURVEY PROVIDED BY RETTEW, DATED JULY 29, 2022.
3. JURISDICTIONAL WETLAND AND TRIBUTARY ORDINARY HIGH WATER MARK (OHWM) DELINEATION PROVIDED BY WESTLAND RESOURCES, INC., DATED NOVEMBER 14, 2018.
4. CROSS CREEK MILE MARKERS OBTAINED FROM GEODATABASE AVAILABLE ON THE OHIO STATE DNR WEBSITE, JUNE 2012.
5. SITE ADDRESS: 4243 COUNTY ROAD 74
   MINGO JUNCTION, OH 43938

CLIENT
CYPRUS AMAX MINERALS COMPANY

PROJECT
FORMER SATRALLOY SITE
SLAG REMOVAL INTERIM ACTION
JEFFERSON COUNTY, OHIO

TITLE
ZONE MAP

CONSULTANT
wsp

YYYY-MM-DD	2024-04-08
DESIGNED	VMN
PREPARED	REDMOND
REVIEWED	BB
APPROVED	RSA

PROJECT NO.	PHASE	REV.	FIGURE
31404505	036	A	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

TABLES

TABLE 1
EXPOSURE LIMITS FOR CONSTITUENTS OF POTENTIAL CONCERN

SUBSTANCE (CAS No.)	EXPOSURE LIMIT (8-hour TWA unless noted)		NIOSH IDLH	SUBSTANCES ON SITE
	OSHA PEL	ACGIH TLV		
Aluminum (7429-90-5)	5.0 mg/m^3 (respirable dust)	1.0 mg/m^3 (R)	---	Slag Baghouse Dust Soil Surface Water
PCB (42%: 53469-21-9) (54%: 11097-69-1)	1.0 mg/m^3 (42% chlorine)	1.0 mg/m^3 (42% chlorine)	5 mg/m^3 Ca	See Table 3
	0.5 mg/m^3 (54% chlorine)	0.5 mg/m^3 (54% chlorine)		
Arsenic (7440-38-2)	0.01 mg/m^3	0.01 mg/m^3	5 mg/m^3 Ca	Slag Baghouse Dust Soil
Asbestos (1332-21-4)	0.1 $fiber/cm^3$	0.1 $fiber/cm^3$	---	See Table 3
Barium (7440-39-3)	0.5 mg/m^3	0.5 mg/m^3	50 mg/m^3	Railroad ties
Chromium (III) (7440-47-3)	Use OSHA value per FMI policy: 0.5 mg/m^3	0.003 mg/m^3	25 mg/m^3	Slag Baghouse Dust Soil Surface or Groundwater
Chromium (VI) (18540-29-9)	Use OSHA value per FMI policy: 0.005 mg/m^3	0.0002 mg/m^3	15 mg/m^3 Ca	Slag Baghouse Dust Soil Surface or Groundwater

TABLE 1
EXPOSURE LIMITS FOR CONSTITUENTS OF POTENTIAL CONCERN

SUBSTANCE (CAS No.)	EXPOSURE LIMIT (8-hour TWA unless noted)		NIOSH IDLH	SUBSTANCES ON SITE
	OSHA PEL	ACGIH TLV		
Cobalt (7440-48-4)	0.1 mg/m^3	0.02 mg/m^3 - (I)	20 mg/m^3	Slag Baghouse Dust Soil
Iron Oxide (1309-37-1)	10.0 mg/m^3	5.0 mg/m^3- (R)	2500 mg/m^3	Building debris
Lead (7439-92-1)	0.05 mg/m^3	0.05 mg/m^3	100 mg/m^3	Painted surfaces
Manganese (7439-96-5)	5.0 mg/m^3	0.02 mg/m^3- (R) 0.01 mg/m^3 - (I)	500 mg/m^3	Slag Baghouse Dust Soil
Methane	---	---	---	Possibly Sub-Surface (due to coal seams)
Mercury (7439-97-6)	0.1 mg/m^3	0.025 mg/m^3- TWA (skin)	10 mg/m^3	See Table 3
Nickel (7440-02-0)	1.0 mg/m^3	0.1 mg/m3 - (I) (soluble inorganic compounds) 0.2 mg/m3 - (I) (insoluble inorganic compounds) 1.5 mg/m3 (elemental)	10 mg/m^3 Ca	Surface Water
Silica (as respirable dust) (14808-60-7)	0.05 mg/m^3	0.025 mg/m^3	25 mg/m^3 (cristobalite) Ca	Intrusive Activities and Demolition

TABLE 1
EXPOSURE LIMITS FOR CONSTITUENTS OF POTENTIAL CONCERN

SUBSTANCE (CAS No.)	EXPOSURE LIMIT (8-hour TWA unless noted)		NIOSH IDLH	SUBSTANCES ON SITE
	OSHA PEL	ACGIH TLV		
Thallium (7440-28-0)	0.1 mg/m^3 (None-solids/dust)	0.02 mg/m3- TWA (skin)	15 mg/m^3 (None-solids/dust)	Slag Surface Waters Cross Creek
Respirable Particulates	5 mg/m^3	3 mg/m^3	---	Intrusive Activities and Demolition

Notes:
ACGIH = American Conference of Governmental Industrial Hygienists

TABLE 2
SLAG AND SOIL COPC CONCENTRATIONS

PARAMETER	EPA RSL (mg/kg)		SLAG AND SOIL SAMPLES (mg/kg) (a-b)		
	RESIDENTIAL	INDUSTRIAL	LOW	AVERAGE	HIGH
Arsenic	0.68	3	**0.76**	***11.4***	***490***
Chromium, total - excluding slag piles (c)	0.3 (d)	6.3 (d)	***1.3***	***1,404***	***70,600 (e)***
Chromium, total - slag piles	0.3 (d)	6.3 (d)	***127***	***1,970***	***18,000***
Chromium, hexavalent	0.3	6.3	0.01	***11.6***	***270***
Iron	55,000	820,000	127	20,700	83,000
Lead	400	800	<0.24	49.9	***2,020***
Manganese	1,800	26,000	13	2,000	***61,900***
Vanadium	390	5,800	<0.47	24.5	170

Notes:

Data from Remedial Investigation, Golder 2006-2015

USEPA November 2015 Regional Screening Levels (RSL) for direct contact with soils for a residential or industrial property.

Footnotes:

a. Bold and shaded = exceeds USEPA Residential Direct Contact RSL.

b. Bold, shaded, and italics = exceeds USEPA Industrial Direct Contact RSL.

c. Total Chromium Results from all soil, dust and surface slag samples except slag piles sampled during mineralogy study.

d. RSLs are for hexavalent chromium; values are total chromium (primarily trivalent).

e. One total chromium detection (70,600 mg/kg in N. Mill Building Floor); all others less than 10,000 mg/kg.

f. Slag sample hexavalent chromium detection limits elevated due to matrix interference; highest RL listed.

TABLE 3
SITE SURFACE WATER COPC CONCENTRATIONS

PARAMETER	EPA RSL (ug/L)	SITE SURFACE WATER SAMPLES (ug/L) (a)		
		LOW	AVERAGE	HIGH
Aluminum	20,000	ND	7,590	**67,800**
Arsenic	10 (MCL)	ND	4.46	**14.7**
Chromium, total	100 (MCL)	ND	65.3	**696**
Chromium, hexavalent	0.035	ND	45	**830**
Iron	14,000	ND	5,040	**83,100**
Lead	15 (MCL)	ND	2.77	**35.3**
Manganese	430	ND	**4,550**	**47,600**
Nickel	390	ND	113	**796**
Thallium	2 (MCL)	ND	4.22	**55.0**
Bis(2-ethylhexyl)phthalte	6 (MCL)	ND	1.4	**6.9**

Notes:

Data from Remedial Investigation, Golder 2006-2015

USEPA November 2015 Regional Screening Levels (RSL) for potable tap water; Maximum Contaminant Limit (MCL) where noted.

Footnotes:

a. Bold, shaded = exceeds USEPA RSL or MCL.

TABLE 4
CROSS CREEK COPC DATA

PARAMETER NAME	EPA RSL (ug/L)	SITE SURFACE WATER SAMPLES (ug/L) (a)		
		LOW	AVERAGE	HIGH
Outfall Locations (GC- and SC- Locations)				
Arsenic	10.0 (MCL)	<0.4	2.1	**13**
Chromium, hexavalent	0.035	<2.0	**282**	**2600 (b)**
Thallium	2.0 (MCL)	<0.14	0.44	<2.0
In-Stream Locations (CCW Locations)				
Arsenic	10.0 (MCL)	<0.4	3.1	5.4
Chromium, hexavalent	0.035	<1.9	**2.2**	**11**
Thallium	2.0 (MCL)	<0.14	1.6	**6.4**

Notes:

Data from Remedial Investigation, Golder 2006-2015

USEPA November 2015 Regional Screening Levels (RSL) for potable tap water; Maximum Contaminant Limit (MCL) where noted.

Footnotes:

a. Bold, shaded = exceeds USEPA RSL.

b. Hexavalent chromium result during a stormwater event

TABLE 5
EXPOSURE INFORMATION

SUBSTANCE	SYMPTOMS OF ACUTE EXPOSURE
Polychlorinated Biphenyls (PCBs)	Irritation of eyes, skin
Aluminum	Irritation to eyes, skin and respiratory system.
Arsenic	Ulceration of septum, dermatitis, gastrointestinal distress, peripheral neuropathy, Respiratory irritation, hyperpigmentation of skin.
Chromium (most common in trivalent form, but also can be in more toxic hexavalent form)	Eye irritation, sensitization dermatitis. Hexavalent chromium (Cr+6) is considered a known lung carcinogen. Irritation of the nose, throat and lungs to damage to the mucous membranes of the nasal passage, damage to eyes and skin if in high concentrations.
Iron	Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis (siderosis). Respiratory problems.
Lead	Weakness, lassitude, insomnia, facial pallor, tremor, constipation, abdominal pain.
Manganese	Affects respiratory system, CNS, blood and kidneys. Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dysp, rales, flu-like
Mercury	Irritation of eyes, skin, cough, chest pain, Inhalation difficulty, tremor, insomnia, irritability, headache, fatigue, weakness.
Nickel	Dermatitis, allergic asthma, pneumonia, nasal cavities, lungs, skin. Lung and nasal cancer.
Petroleum Hydrocarbons	Eye, skin, respiratory system irritation
Thallium	Nausea, diarrhea, abdominal pain, vomiting, ptosis, strabismus; peri neuritis, tremor; rester tight, chest pain, pulmonary edema; covulsions, chorea, psychosis; liver, kidney damage; alopecia; pares legs. Affects eyes, respiratory system, CNS, liver, kidneys, GI tract, body hair.

TABLE 5
EXPOSURE INFORMATION

SUBSTANCE	SYMPTOMS OF ACUTE EXPOSURE
Vanadium	Irritation of eyes, skin, throat; green tongue, metallic taste, eczema; cough; fine rales, wheez, bronchitis, dyspnea.
Cement	Eye and skin, irritation, chemical burns.
Elevated pH	Severe irritation or burning of the eyes. Severe irritation of the skin especially in the presence of moisture. Severe irritation of gastrointestinal tract if swallowed. Severe irritation of the respiratory system. Long-term exposure can cause permanent damage. May aggravate existing disorders of the eyes, skin, gastrointestinal tract.

APPENDIX A

MATERIALS REQUEST AND APPROVAL (MRAP)

FREEPORT-McMoRan
Resource Management

Instructions Regarding Environmental, Health & Safety Product Approval for FCX Projects

Material Request Approval Process (MRAP): This product approval process is conducted electronically through the comply-plus web page https://fcx.complyplus.com, You will need a username & password, which will be assigned to you by FCX personnel. In no case shall a new chemical be purchased and brought on site until a Safety Data Sheet (SDS) [Not a Material Safety Data Sheet MSDS)], and a Material Request Approval Form (attached) has been submitted and approved by the Health & Safety and Environmental Departments. SDSs must be available for all hazardous products/chemicals used on site in compliance with MSHA's Hazard Communication Standard: 30 CFR Part 47, and OSHA's Hazard Communication Standard: 29 CFR 1910.1200.

Step 1:

- To obtain a username and password for MRAP, email the following information to the FCX Health & Safety representative assigned to your project:
  a. First and Last Name
  b. Company Name
  c. Address
  d. Telephone Number
  e. Email address
- Put "MRAP - Request for a username and password" in the subject line of your email.

Step 2:

- The FCX Health & Safety representative will forward the information to Rob McLain (rmclain@fmi.com) and identify the site/project. Once this information is received by Rob, you will be sent a username and password.

Step 3:

- Complete one copy of the form below for each chemical or material that will be brought onto the project site.

Step 4:

- Contact the FCX Health & Safety representative and he/she will walk you through submitting an electronic request for product approval. Make sure you have the completed form and Safety Data Sheet (SDS) available (5 MB max. size).

NOTE: ALLOW A MINIMUM OF ONE WEEK FOR PRODUCT APPROVALS

FREEPORT-McMoRan
Resource Management

MATERIAL REQUEST APPROVAL FORM

REQUESTER'S INFORMATION

Division (if FMI) or Contractor's Business Name: _____

Phone #: _____ **email:** _____

Site/Project Identification: _____

Site Supervisor (if FMI) or Contractor's Site Supervisor: _____

MANUFACTURER INFORMATION

Product Name: _____ **Manufacturer's Name:** _____

Common Name: _____

From whom will you purchase this product? _____

PROCESS DESCRIPTION

Describe the work activity & process in which this material will be used (include any waste generated; rags, absorbent, waste product, etc.):

_____

_____

Will the product be sprayed or otherwise aerosolized? ☐ **Yes** ☐ **No**

Quantity used at one time? _____ **Where will the product be used?** _____

Will the product be used in a confined space? ☐ **Yes** ☐ **No**

How often will the product be used?: _____ **How long will the product be used?:** _____

Will the product be mixed or added to other chemicals/products? ☐ **Yes** ☐ **No**

If yes, what chemicals/products? _____

Where will the product be stored? _____ **Quantity stored on site?** _____

Are substitutes available? ☐ **Yes** ☐ **No** **If yes, describe:** _____

What are the physical hazards of the product - see Section 2 of SDS (check all that apply)?: ☐ **None**

☐ **Explosive**	☐ **Oxidizing Gas**	☐ **Pyrophoric Liquid**
☐ **Flammable Gas**	☐ **Oxidizing Liquid**	☐ **Pyrophoric Solid**
☐ **Flammable Aerosol**	☐ **Oxidizing Solid**	☐ **Self-Heating Chemical**
☐ **Flammable Liquid**	☐ **Gas Under Pressure**	☐ **Organic Peroxide**
☐ **Flammable Solid**	☐ **Self-Reactive Chemical**	☐ **Corrosive to Metals**
☐ **Combustible Dust**	☐ **Pyrophoric Gas**	☐ **Chemical Which in Contact with Water, Emits Flammable Gases**

FREEPORT-McMoRan
Resource Management

What are the health hazards of the product - see Section 2 of SDS (check all that apply)?: ☐ None

☐ Acute Toxicity
☐ Skin Corrosion/Irritation
☐ Serious Eye Damage/Eye Irritation
☐ Respiratory or Skin Sensitization
☐ Germ Cell Mutagenicity
☐ Carcinogenicity
☐ Reproductive Toxicity
☐ Specific Target Organ Toxicity (Single Exposure)
☐ Specific Target Organ Toxicity (Repeated or Prolonged Exposure)
☐ Aspiration Hazard
☐ Simple Asphyxiant

Are there other hazards not listed above (describe)? _____

What are the possible routes of exposure?: ☐ Inhalation ☐ Skin/eye contact ☐ Ingestion

How will you prevent inhalation exposure?:

☐ Use in a closed system ☐ Use outdoors or in a well ventilated area ☐ Use respiratory protection
☐ Use under local exhaust ☐ Use wet or wet while using ☐ NA
☐ Other (describe): _____

How will you prevent skin/eye contact?: ☐ PPE ☐ Other (describe):_____

Personal protective equipment (PPE) to be used (check all that apply)

Eye/face protection	Hand protection	Body protection
☐ Safety glasses with side shields	☐ Nitrile	☐ Standard work clothing
☐ Chemical splash goggles	☐ Neoprene	☐ Lab coat
☐ Face shield	☐ Butyl	☐ Chemical resistant apron
☐ Other (describe): _____	☐ Leather	☐ Chemical resistant body cover
	☐ Other (describe):_____	☐ Other (describe): _____

Respiratory protection

☐ Disposable (dust mask)	☐ Full-face	☐ Tight-fitting PAPR
☐ ½ mask	☐ Loose-fitting PAPR	☐ Supplied-air

Cartridge type (describe): _____

If respiratory protection is specified, do you have an FMI-approved written Respiratory Protection Program?

☐ Yes ☐ No

I fully understand that I must use this product only for its intended purpose and strictly in accordance with all Manufacturers' guidelines. Failure to do so could result in serious harm to myself, others or the environment.

Requestor Signature_____ **Date** _____

Submit the information above electronically, with no blank entries, and the respective Safety Data Sheet to the complyplus web page https://fcx.complyplus.com. You will need a username & password, which will be assigned to you by FCX personnel.

APPENDIX B

OVERALL SITE RISK ASSESSMENT

Project Name	Former Satralloy Site Mingo Junction, Ohio		**Date Submitted**	4/1/2024
Contract Company	WSP		**Project Kick Off Date**	1/9/2024
Company Proj Manager	Brent Barbich		**Company Safety Officer**	Rich Pletz
FMI Project Manager	Jordan Sisson		**Division/Location**	Steubenville Ohio
General Site-Wide Activity	Fatal/Environmental Risk	Critical Controls	Description of Controls	Critical Control Verification, Notes
Mobilization: Driving to and from site	Vehicle Collision or rollover	Operator competency; Vehicle Daily Inspection; Fit for Work; Fatigue Management	WSP or contractor internal training program for safe driving. Seatbelts, headlights, no cell phone use, no eating or drinking and follow posted speed limit Working Hours & Fatigue Management Policy FCX-HS10	Complete daily vehicle inspection. Review controls in project start up meeting. Require contractors to have a safe driver program and Follow fatigue management.
	Vehicle Impact on Person	MSHA Horn Policy, watch road conditions, pedestrians and other drivers.	Use MSHA horn policy when starting vehicle to leave site. One honk to start, two honks to go forward and three honks when backing up. Keep alert of other drivers and watch for pedestrians and bicyclist on roads.	MSHA horn policy will be included in the Site orientation. Share with team road conditions and construction on roads leading to the sit.
Equipment fueling on site (UTV)	Environmental (Spills, releases)	Automatic shutoff, No topping off, stay at pump while fueling	Spill response kit in area near AST and spill training for UTV operators.	HSO site inspections. Emergency spill planning with training. Periodic review of controls in daily safety meetings.
	Fire	Proper training and awareness. Fire extinguisher training.	Shut off equipment prior to refueling, scan area of sources of ignition. Know where fire extinguisher is located, site personnel must have fire extinguisher training.	Follow safety signs and do not refuel equipment unless you have had fire extinguisher training. Review HSEP for emergency action for fire.
Decontamination	Hazardous Substances Chronic	HSEP requirements for correct level of PPE HSEP decontamination procedures	Safety glasses, gloves and additional coveralls or apron as needed when decontaminating equipment used in exclusion zone. Wash hands and face before eating or drinking.	JHA review. Decon procedure review. HSO observations.
Site inspections and driving on site	Entanglement and crushing	Guards-Barriers-Barricades	**Interaction with Heavy Mobile Equipment - Surface Road Design, Light Vehicles & Ground Personnel FCX-23** Stay outside barricaded or designated exclusion areas during heavy equipment work. Stay at least 300 feet away from wood chipping and grubbing. Never approach heavy equipment in operation. Stay out of operator's blind spots. Never park in work zones. Make radio and eye contact with operator.	JHA review. Discuss simultaneous operations and traffic routes in morning meting. HSO site observations.
	Ground Failure	Guards-Barriers-Barricades	Never park or walk on slopes. Inspect area before entering. Do not stand on spoil piles.	JHA review of current work activities

Project Name	Former Satralloy Site Mingo Junction, Ohio		**Date Submitted**	4/1/2024
Contract Company	WSP		**Project Kick Off Date**	1/9/2024
Company Proj Manager	Brent Barbich		**Company Safety Officer**	Rich Pletz
FMI Project Manager	Jordan Sisson		**Division/Location**	Steubenville Ohio
General Site-Wide Activity	Fatal/Environmental Risk	Critical Controls	Description of Controls	Critical Control Verification, Notes
Site inspections and driving on site	Vehicle Impact on Person	Traffic Control Plan	**Interaction with Heavy Mobile Equipment - Surface Road Design, Light Vehicles & Ground Personnel FCX-23** Never approach heavy equipment in operation. Stay out of operator's blind spots. Make eye contact with operator before entering area. Hardhat, safety glasses, hi-vis vest/coat at all times. Contact equipment operator by radio prior to entering work zones. Heavy equipment have the right away. Announce on radio when going up the hill or down. Stay outside of barricaded or designated work areas.	Periodic review of controls in daily safety meetings. Discus daily work task and traffic routes in morning meeting.
	Vehicle Collision or rollover	Traffic Control Plan	**Interaction with Heavy Mobile Equipment - Surface Road Design, Light Vehicles & Ground Personnel FCX-23** Never approach heavy equipment in operation. Stay out of operator's blind spots. Make eye contact with operator. Positive radio contact while traveling inside exclusion zone. Established light vehicle routes. Always wear seatbelts. Keep of of slopes with UTV or vehicles. Wear proper PPE when operating UTVs.	Periodic review of controls in daily safety meetings.
	Hazardous Substances Chronic	Dust control and exposure measures	Site conditions will be visually monitored daily for the potential for dust exposure and work will be stopped if visible dust exceeds allowable amount in the HSEP. Follow decon procedures and wash hands/face before eating or drinking. Do not eat in the exclusion zone.	Daily site dust monitoring observations. Dust control by contractor.
	Falling Objects	Guards-Barriers-Barricades	Stay outside barricaded or designated work areas during heavy equipment work. Stay at least 300 feet away from wood chipping and grubbing. Hardhat, safety glasses, hi-vis vest/coat. Do not walk under elevated loads or under heavy equipment booms.	Periodic review of controls in daily safety meetings.
Stormwater Sampling	Drowning	Falling while sampling on steep creek slopes. Slipping from shore into water. Falling into rushing water.	Do not sample when creek slope is unstable or muddy. Do not traverse steep banks, find a better access to waters edge. Use sampling pole to eliminate entry into water. Wear proper fitting personnel floatation device (PFD) if within 6 foot of waters edge . Where the danger of drowning exists, depth of water and/or current, a throw ring buoy with 90 foot of line will be required. If rescue can not be done by entering water, a rescue skiff will be required.	HSO observation, resampling meeting to discuss sampling activates. Follow the JHA and if conditions exist where drowning may be possible postpone work until safer conditions are present.

Project Name	Former Satralloy Site Mingo Junction, Ohio		**Date Submitted**	4/1/2024
Contract Company	WSP		**Project Kick Off Date**	1/9/2024
Company Proj Manager	Brent Barbich		**Company Safety Officer**	Rich Pletz
FMI Project Manager	Jordan Sisson		**Division/Location**	Steubenville Ohio
General Site-Wide Activity	Fatal/Environmental Risk	Critical Controls	Description of Controls	Critical Control Verification, Notes
Stormwater Sampling	Vehicle Impact on Person	Vehicle Parking / Off Road	Park off road where possible and walk to sampling site off the road. When parking off road is not available, park vehicle on road shoulder and use strobe flasher on top of the vehicle. Set cones up behind vehicle. Wear proper PPE including hi-vis vest/coat with reflective stripes.	JHA review prior to sampling. HSO observations.
	Vehicle Collision or rollover	Operator competency; Vehicle preoperational Inspection; Fit for Work; Fatigue Management	Internal training program for safe driving; **Working Hours & Fatigue Management Policy FCX-HS10** Seatbelts, headlights, no cell phone use, no eating or drinking and follow posted speed limit	JHA review prior to sampling. HSO observations.
Drilling/Well Decommissioning	Entanglement and crushing	Guards-Barriers-Barricades	**Interaction with Heavy Mobile Equipment - Surface Road Design, Light Vehicles & Ground Personnel FCX-23** Stay outside barricaded areas during heavy equipment work. Keep at a minimum the height of the tower away from the rig when in use. Driller should test safety devices on rig every day before use. All team members should know where safety devices are located and how to operate them in an emergency. Never approach heavy equipment in operation. Stay out of operator's blind spots. Make eye contact with operator before approaching rig and the rig should be shut down.	JHA review. Daily prework safety discussion. HSO site observations.
	Falling Objects	Guards-Barriers-Barricades	Stay outside barricaded or marked areas during drilling work. Drilling rig daily safety inspection check.	discuss exclusion zones daily or as conditions change. HSO verifies inspection completed.
	Contact with Electricity	Blue Stake Permit. LOTOTO	**Blue Stake Policy FCX-13** Conduct LOTOTO if working near utilities. Check for overhead utilities as well as underground. Always boom down before moving rig.	Site Task Manager or SSO verifies permit in place.

Project Name	Former Satralloy Site Mingo Junction, Ohio		**Date Submitted**	4/1/2024
Contract Company	WSP		**Project Kick Off Date**	1/9/2024
Company Proj Manager	Brent Barbich		**Company Safety Officer**	Rich Pletz
FMI Project Manager	Jordan Sisson		**Division/Location**	Steubenville Ohio
General Site-Wide Activity	Fatal/Environmental Risk	Critical Controls	Description of Controls	Critical Control Verification, Notes
Sampling	Entanglement and crushing	Ensure operating equipment are aware you are in the work area collecting samples.	**Interaction with Heavy Mobile Equipment - Surface Road Design, Light Vehicles & Ground Personnel FCX-23** Never approach heavy equipment in operation. Discuss sampling work plan before with site operations. Plan sampling event around site work so there is not a simultaneous operation. Stay out of operator's blind spots. Make eye contact with operator. Hardhat, safety glasses, hi-vis vest/coat.	HSO site observations. Daily JHA review. Discuss work task in daily safety meeting.
	Contact with Electricity	Blue Stake Permit	Sampling work does not begin until Blue Stake Permit has been issued and reviewed by the sampling team.	Site Task Manager or SHO verifies permit in place.
	Hazardous Substances Chronic	Dust control measures, exposure to potential contaminated soil or groundwater.	Site conditions will be daily monitored for the potential for dust exposure and work will be stopped if visible dust exceeds allowable amount in the HSEP. Wear proper PPE when sampling. Wash hands and face before eating and drinking.	HSO and site Manager daily dust monitoring during activity
	Ground Failure	Guards-Barriers-Barricades	During observations, do not stand on any disturbed soft ground, on spoil piles or on the edge of an excavation.	Daily JHA review of current work activities

Fatal/Environmental Risks	Critical Controls							
Confined Space	Atmospheric Monitoring	Energy Isolation-LOTOTO	Entry Permit Execution					
Contact with Electricity	Access Control	Electrical PPE	Non conductive tools and equipment					
Drowning	Access Control	Access Integrity	Barriers and Segregation	Flotation devices	Rescue Plan			
Entanglement and crushing	Blocking for Maintenance work	Energy Isolation-LOTOTO	Guards-Barriers-Barricades					
Environmental (Spills, releases)	LOTO	Secondary Containment	Bleeding/Blocking	Pressure Verification	Berms	Spill Kit	Spill Response Plan	MRAP Process
Hazardous Substances Acute	Access control	Alarm Systems	Engineered Controls	Handling Requirements	Loading/Unloading Protection	Mechanical Integrity of Storage and Distribution	PPE	
Hazardous Substances Chronic	Access control	Handling Requirements	PPE	Engineered Controls				
Fall from heights	Fall Protection System	Leading Edge/ Open hole protection	Fixed Work Platform	Mobile Work Platform	Scaffold			
Falling Objects	Barriers and Segregation	Integrity of Overhead Structures and Equipment	Securing devices	Work Area Management				
Fire	Alarm System	Evacuation Plan	Fire Suppression Systems	Hot Work Permit Execution	Rescue Systems	Segregation and Storage		
Lifting Operations	Barriers and Segregation	Mechanical Integrity of Lifting Equipment	Lifting Execution					
Ground Failure	Geotechnical Inspection and Monitoring	Slope Plan Execution	Awareness and Reporting	Excavation-Trenching Execution				
Rail Collision	Operator Competency	Fit for Work and Fatigue Management	Positive Communication System	Access Control	Scheduling-Separation and Traffic Control	Signaling and Signage		
Rail Impact on Persons	Access Control	Equipment Maintenance	Positive Communication System	Securing Rolling Stock	Segregation	Signaling and Signage		
Uncontrolled release of energy	Energy Isolation-LOTOTO	Guards-Barriers-Barricades	HDPE Management	Hose Coupling Lock System	Relief Valves	Tensioned Line Management	Tire Management	
Vehicle Collision or rollover	Operator Competency	Fit for Work and Fatigue Management	Vehicle Preoperational Inspection	Positive Communication System	Access Control	Segregation	Signage and Demarcation	Road Design and Maintenance
Vehicle Impact on Person	Vehicle Preoperational Inspection	Positive Communication System	Segregation	Signage and Demarcation	Fundamentally Stable Parking			

Project Name			Date	
Contract Company			Project Kick Off Date	
Company Proj Manager			Company Safety Officer	
FMI Project Manager			Division/Location	
Activity	Fatal Risk	Critical Controls	Description of Controls	Critical Control Verification, Notes
Set up Infrastructure- offices-storage- Connex	Uncontrolled release of energy	Energy Isolation-LOTOTO	Isolation devices Proper training Utility identification-Blue stake Permits completed	Site spot audits Check for understanding of training by asking employees
Receive Materials/ unload trucks	Lifting Operations/ Vehicle Impact on Person	Barriers and Segregation	360 degree barricading. Adequate notification - signage and tags. Exclusion zone large enough to protect people in the event of a load falling. Team equipped with audible warning devices. Only authorized personnel permitted within the barricaded area.	Signage and barricading Setting spotter responsibility and training observation of tasks Review of JRA
Receive Materials/ Pipe Handling	Vehicle Impact on Person/ Uncontrolled release of energy	Barriers and Segregation/ Lifting operations/Mechanical Integrity of Lifting Equipment	Compliance with Rolling stock policy. Erect segregation for unloading zones. Maintain distances.	Review FMMO rolling Stock handling permit with work team Observe execution of activity Review/ provide feedback for risk assessment Check equipment pre-op inspections
Receive materials/ Escort truck into work zone	Vehicle Impact on Person	Positive Communications System/ Operator Competency	Required equipment for communications operational and in use. Positive communication protocols followed./ Operator AND Spotter competency Proof of current operator task training. 100% seatbelt usage.	Signage and barricading Setting spotter responsibility and training observation of tasks Review of JRA
Receive materials	Vehicle collision/rollover	Barriers and Segregation	Segregation - Appropriate barriers, barricades, berms, road dividers, etc. in place. Segregation controls visible, secure and in place while personnel are following segregation rules.	Signage and barricading Setting spotter responsibility and training observation of tasks Review of JRA
Earth work/ grading, cutting ditches, making cuts & fills	Vehicle collision-rollover Vehicle Impact on person	Positive communication/ Equipment swing radius barricading	Positive communications system Required equipment for communications operational and in use radios. Positive communications protocols - establish work zone access and radius. Ground track hoe buckets/ receive verbal (radio) communication *prior to enter excavation radius* Blue Stake	Signage and barricading Set spotter responsibility and training Task observation Review of JRA/ permits
Lifting / Placement of retention plates	Lifting Operations	Integrity of lifting equipment/ Lift plans/	Exclusion zone perimeter demarcation. Rigging inspections Lift plans, tag lines long enough to keep people out of exclusion zones. Demarcation of lift routes and zones Execution of lifts	Observation of execution and critical control implementation / Ensure understanding of critical controls
Enter Vault	Confined Space/ entering vault for demolition	Attendants/ Training/ Air monitor systems/rescue plan	bump- record-/ calibrate monitors/ assigned trained personnel/ Proper completion of Confined space permit	Check for understanding of policy / roles /responsibilities. Interval monitoring. Check calibration of air monitoring equipment JRA discussion

APPENDIX C

EXAMPLE JOB HAZARD ANALYSIS

FREEPORT-McMoRan COPPER & GOLD

Job Hazard Analysis (JHA)

Managing Risk

(page 1 of)[1]

Title of the Job or Operation:	Location/Project:	Date:
General Description of the Work to be Performed[2]**:**	**JHA Completed By:** _____ **Type of Work:** ____ **Routine** ____ **Non-Routine** **Permit(s) Required :** ____**YES** _____**NO**	

*All employees have the right and responsibility to "STOP WORK" anytime there is an unsafe act or condition. If conditions or task(s) changes, stop and update/review the JHA.

Task(s)	Job Task or Activity	Potential Hazards	Recommended Control(s)
1			
2			
3			
4			
5			
Employee Signature(s)			
Supervisor's Approval Signature and Date:			

Note: (1) Use additional pages of this form if additional space is needed to evaluate additional tasks & hazards.
(2) Work to be performed as described in this JHA shall not begin without Supervisory review & approval.

APPENDIX D

CYPRUS AMAX LIABILITY MANAGEMENT HAZARD COMMUNICATION PROGRAM

FREEPORT-McMoRan

Resource Management		GUIDELINE NO.	RM - 01
		REVISION NO.	
		SUPERSEDE	
Hazard Communication Program		**TASK CLASSIFICATION**	☐ Highly Critical ☐ Critical ☐ Non-Critical
APPROVAL DATE – 3/13/17	**ORIGINAL DATE –** 7/20/16	**RELEVANT SOPS –** MRAP	

1. Background

Chemical exposure may cause or contribute to many serious health effects such as heart ailments, kidney and lung damage, sterility, cancer, burns, and rashes. Some chemicals may also be safety hazards and have the potential to cause fires, explosions and/or other serious accidents.

To ensure that employees know about the hazards of chemicals to which they are exposed and how to protect themselves, the Mine Safety and Health Administration (MSHA) and the Occupational Safety and Health Administration (OSHA) each issued a Hazard Communication Standard, also known as "The Right to Know" or "The Need to Know" standard.

Under the Standard, chemical manufacturers and importers are required to evaluate and classify the hazards of each chemical they produce or import and communicate this hazard information to the user through labels and safety data sheets (SDSs). Previously, they were required to determine and communicate this hazard information to the user through labels and material safety data sheets (MSDS's). FCX is required to:

- Identify and list the hazardous chemicals in the workplace;
- Ensure that all containers of hazardous chemicals are labeled and that SDSs are available for each chemical;
- Communicate hazard information to employees through labels, SDSs and formal training programs, and
- Provide an up-to-date written Hazard Communication Program.

2. Purpose

The purpose of this Program is to provide structured guidance for FCX Resource Management & Reclamation Services sites to reduce chemically-related illnesses and injuries at work and achieve compliance with the FCX Health and Safety Management System (HSMS) and MSHA and OSHA standards.

3. Who's Covered?

3.1 FCX Resource Management employees at MSHA and OSHA sites are covered by this Program if they:

- Work in a non-laboratory workplace where any known hazardous chemical is kept or used, and
- May be exposed to any hazardous chemical under normal working conditions or in a foreseeable emergency

3.2 FCX Resource Management employees who work with hazardous chemicals in laboratories at OSHA sites are governed by a different OSHA standard written specifically for laboratory workers (29 CFR 1910.1450 - Occupational Exposures to Hazardous Chemicals in Laboratories).

3.3 Contractors working on FCX projects or sites must follow the requirement of this Program or have a program that meets or exceeds the Program's requirements.

4. Responsibilities

Health and Safety are line-management functions. The core of the document is color-coded as below to clearly identify who is responsible for the various aspects of the Program:

4.1 Site Management is ultimately responsible for implementation of the Hazard Communication Program, including ensuring that those under their control have the authority and resources to implement the Program, and for ensuring that areas under their charge are in compliance with the Program.

4.2 First-line Supervision is operationally responsible for implementation of the Program.

4.3 Employees are responsible for following rules and working safely.

4.4 Health & Safety is a technical resource and service provider to line-management.

5. Explanation of Key Terms

5.1 Article - a manufactured item other than a fluid or particle: which is formed to a specific shape or design during manufacture; which has end use function(s) dependent in whole or in part upon its shape or design during end use; and which under normal conditions of use does not release more than minute or trace amounts of a hazardous chemical and does not pose a physical hazard or health risk to employees.

5.2 Globally Harmonized System of Classification of Labeling of Chemicals (GHS) - an international approach to hazard communication, providing agreed criteria for classification of chemical hazards, and a standardized approach to label elements and safety data sheets (SDSs).

5.3 Hazardous chemical - any chemical which is classified as a *physical hazard* or a *health hazard*.

5.4 Health hazard - a chemical which is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); aspiration hazard, or simple asphyxiant (see Attachment 8.1 for detailed explanations of these hazards).

5.5 Physical hazard - a chemical that is classified as posing one of the following hazardous effects: *explosive*; *flammable* (*gases, aerosols, liquids, or solids*); *combustible dust; oxidizer* (*liquid, solid or gas*); *self-reactive*; *pyrophoric* (gas, *liquid or solid*); *self-heating*; *organic peroxide*; *corrosive to metals*; *gas under pressure*; or *in contact with water emits flammable gas* (see Attachment 8.1 for detailed explanations of these hazards).

5.6 Safety Data Sheets (SDSs) – documents that explain in detail the hazards of chemicals and how they can be used safely. SDSs are recent replacements to formerly-used Material Safety Data Sheets (MSDSs). The information in the two documents is largely the same except SDSs are required to be presented in a standardized format (see Attachment 8.4 for more information).

6. How it Works

6.1 List of Hazardous Chemicals

6.1.1 **Site management** is responsible for ensuring that a current list of all hazardous chemicals is kept on site. The list must include the product identifiers for the hazardous chemicals as they appear on the labels and SDSs

6.1.2 **First-line Supervision** is responsible for ensuring that the list is entered into the IHS Comply Plus centralized database for reporting capabilities to check current inventories against regulatory lists and provide less hazardous substitutes. The list should be periodically checked against the current hazardous chemical inventory and updated, as necessary.

6.1.3 Before purchasing or bringing any hazardous chemical on-site, **employees** must request prior approval using the Materials Request and Approval Process (MRAP) through the IHS Comply Plus System (refer to the Resource Management Material Request Approval Process SOP #01-19).

6.2 Labels and Other Forms of Warning

Previously, all hazardous chemicals received from manufacturers, importers, or distributors were required to be labeled, tagged, or marked with at least the identity, appropriate hazard warning and name and address of the chemical manufacturer, importer, or other responsible party. Effective June 1, 2015, labels must be consistent with the Globally Harmonized System of Classification of Labeling of Chemicals (GHS) and include: product identifier; signal word; hazard statement(s); pictogram; precautionary statement(s), and name, address, and telephone number of the chemical manufacturer, importer, or other responsible party (see Sample GHS Label in Attachment 8.2). Effective December 1, 2015, distributor will no longer be allowed to ship containers labeled by the chemical manufacturer or importer unless it has a GHS label. In practice, OSHA is allowing manufacturers and product formulators of mixtures that have made reasonable and good faith efforts to meet the effective date but, due to circumstances outside of their control, have not been able to do so, will be allowed a reasonable time period to come into compliance. For this reason, either style of label is

acceptable on hazardous chemical mixtures until further compliance directives are issued by OSHA.

6.2.1 **Employees responsible for receiving hazardous chemical shipments** must verify proper GHS labels before releasing any container for use (with the one exception relating to mixtures described above).

6.2.2 In the workplace, **first-line supervisors** are responsible for ensuring that all hazardous chemicals remain properly labeled while in their work area of charge. Hazardous chemicals must be labeled, tagged or marked with their original label, as shipped, OR with product identifier and words, pictures or symbols, or combination thereof, which provide at least the general information regarding the hazards of the chemical, which in conjunction with the SDS and other information and training, provide employees with the specific hazards of the chemicals.

6.2.3 Portable containers into which hazardous chemicals are transferred from labeled containers, and which are under the control, and intended only for the immediate use, of only the employee who performs the transfer, are not required to be labeled.

6.3 Safety Data Sheets (SDSs)

Effective June 1, 2015, chemical manufacturers, importers, or distributors are required to provide SDSs for each hazardous chemical to downstream users. MSDSs should no longer be provided and SDSs should be consistent with the GHS. In practice, OSHA is allowing manufacturers and product formulators of mixtures that have made reasonable and good faith efforts to meet the effective date but, due to circumstances outside of their control, have not been able to do so, will be allowed a reasonable time period to come into compliance. For this reason, either MSDSs are SDS for mixtures are acceptable in the workplace until further compliance directives are issued by OSHA.

6.3.1 **Site management** is responsible for ensuring that SDSs for all hazardous chemicals present on site (with the one exception relating to mixtures described above), are available for review by all employees during each work shift through the IHS Comply Plus System with backup in case of system failure (HIS or FCX). Acceptable backup includes hardcopy binders in each location where hazardous chemicals are used/stored; hardcopy files in the safety/security office, or on flash drive.

6.3.2 **Employees responsible for receiving hazardous chemical shipments** are responsible for requesting SDSs from manufacturers and distributors who continue to provide MSDSs instead of SDSs, or to replace existing MSDSs with SDSs.

6.4 Employee Training and Information

6.4.1 **First-line supervisors** are responsible for ensuring that hazard communication training is provided to their employees before they are assigned to work in areas

where the possibility of exposure to hazardous chemicals exist, and whenever a new hazardous material is introduced into their workplace.

6.4.2 **Health & Safety** is available to provide general information and training on:

- Categories of hazards (e.g., flammability, carcinogenicity);
- Details of the Hazard Communication Program, including its availability, an explanation of the labeling requirements, SDSs, how to obtain and use the appropriate hazard information, and
- The methods and observations that may be used to detect the presence or release of hazardous chemicals.

6.4.3 In addition to providing the above general Hazard Communication training to their employees, **First-line supervisors** are also responsible for providing the following additional site-specific information and training:

Additional **information** for employees must include:

- All operations and locations in the work area where hazardous chemicals are present, and
- The location and availability of the list of hazardous chemicals used in the area and SDSs.

Additional **training** for employees must include:

- The chemicals hazards in the assigned work area;
- How to protect against such hazards. Included must be specific FCX rules and procedures concerning work practices, emergencies, and care and use of protective equipment.

6.5 Hazardous, Non-Routine Tasks

6.5.1 **First-line supervisors** planning to do non-routine tasks involving the use of hazardous chemicals (jobs that are not routine for an employee because of infrequency, location, or type - for example: cleaning of tanks) must perform a risk assessment in consultation with **Health & Safety** prior to the commencement of work.

6.5.2 **First-line supervisors** must ensure that employees are informed of the hazards and required control measures, including safe work practices and proper personal protective equipment.

6.6 Chemicals in Unlabeled Pipes

6.6.1 Piping systems containing hazardous chemicals are not required to be labeled under the Hazard Communication standard. However, **First-line supervisors** are responsible for informing their employees of the hazards associated with chemicals in unlabeled pipes in their work area.

6.6.2 If piping systems are labeled, they should be labeled in accordance with: *ASME A13.1-2007, Scheme for the Identification of Piping Systems*. Contact the Industrial Hygienist for details.

6.7 Informing Contractors

FCX employees who oversee outside contractors are responsible for ensuring that contractors are provided with the following information:

- A list of hazardous chemicals to which contractor employees are likely to be exposed to while on the job site;
- Measures that contractor employees may take to lessen the risk of exposure;
- Steps FCX has taken to lessen the risks;
- The location and availability of SDSs for hazardous chemicals to which contractor employees are likely to be exposed, and
- Procedures to follow if contractor employees are exposed.

6.8 Contractors Informing FCX Employees

FCX employees who oversee outside contractors are responsible for requiring and training contractors to request prior approval to bring any hazardous material on-site (consumer commodities in consumer quantities are exempt) using the Materials Request and Approval Process (MRAP). Contractors must not be allowed to bring hazardous chemicals on FCX sites without prior approval.

6.9 FCX Chemical Manufacturers and Distributors

6.9.1 **Site management** is responsible for ensuring that GHS-compliant SDSs and labels are created and available for all hazardous chemicals manufactured at FCX sites and distributed off-site. SDSs and labels are created by completing and submitting an SDS and Label Development/Revision Form (submission instructions are on the form).

6.9.2 **First-line supervisors** are responsible for ensuring that chemical distributors and downstream users are provided an SDS with their initial shipment, and with the first shipment after an SDS is updated. The SDS must either be provided with the shipped containers or sent to the distributor or user prior to the shipment. SDS must also be provide to distributors or downstream users upon request.

6.9.3 **First-line supervisors** are responsible for ensuring that each container of hazardous chemicals leaving an FCX site is properly labeled. For solid metal, solid wood, or plastic items that are not exempted as articles due to their downstream use, the label may be transmitted to the user at the time of the initial shipment, and need not be included with subsequent shipments to the same downstream users unless the information on the label changes. The label may be transmitted with the initial shipment itself, or with the SDS that is to be

provided prior to or at the time of the first shipment.

7. Program Review

Health and Safety is responsible for reviewing the Program annually to ensure that it is effective in reducing chemically-related illnesses and injuries at work. Appropriate changes will be made as warranted.

8. Records

Document	Responsible for Control	Records Retention
Safety Data Sheets	**Site management**	Permanent on IHS Comply Plus
Training Records	**First-line supervisors** / **Health and Safety**	Duration of employment + 10 years

9. References

9.1 Freeport-McMoRan Health and Safety Management System

9.2 29 Code of Federal Regulations 1910.1200 – OSHA Hazard Communication Standard

9.3 30 Code of Federal Regulations Part 47 – MSHA Hazard Communication Standard

9.4 Globally Harmonized System of Classification and Labelling of Chemicals (GHS) 3rd revised edition

10. Attachments

10.1 Hazardous Chemical Definitions

10.2 Sample GHS Label

10.3 GHS Pictograms and Hazards

10.4 Safety Data Sheet (SDS) Format

11. Documentation of Review and Change

All Changes, modifications and /or revisions must be documented on the table below.

Date	Description of Changes to Document	Responsible Person
3-13-17	Section 1. Background, paragraph 3 (sentence added) Previously, they were required to determine and communicate this hazard information to the user through labels and material safety data sheets (MSDS's).	Frank Demer

Attachment 10.1

HAZARDOUS CHEMICAL DEFINITIONS

Physical Hazards

Explosive: An *explosive* chemical is a solid or liquid chemical which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings (e.g., black powder, nitroglycerin, trinitrotoluene or TNT, lead azide, potassium picrate).

Flammable Gases: A *flammable gas* means a gas having a flammable range with air at 20◦C (68◦F) and a standard pressure of 101.3 kPa (14.7 psi) (e.g., propane, acetylene, natural gas hydrogen).

Flammable Aerosols: *Aerosol* means any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, and fitted with a release device allowing the contents to be ejected as particles in suspensions in a gas, or as a foam, paste, powder, liquid or gas. Aerosols are considered flammable if they contain flammable liquids, flammable liquids or flammable solids (e.g., spray paints, lubricants, solvent-based cleaners).

Flammable Liquids: A *flammable liquid* means a liquid having a flash point of not more than 93◦F (199.4◦F) (e.g., diesel, acetone, lacquer thinner, petroleum distillates, kerosene, oils, gasoline).

Flammable Solids: *Flammable solid* means a solid which is a readily combustible solid, or which may cause or contribute to fire through friction (e.g., zinc powder, sulfur, benzoyl peroxide, picric acid, paraformaldehyde).

Combustible Dust: *Combustible dust* means a combustible particulate solid that presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations, regardless of particle size, shape or chemical composition (e.g., flour, grain dust, metal dust, sugar, wood dust).

Oxidizing Gases: *Oxidizing gas* means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does (e.g., oxygen, chlorine, nitrous oxide).

Oxidizing Liquids: *Oxidizing liquid* means a liquid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (e.g., nitric acid, bromine, hydrogen peroxide).

Oxidizing Solids: *Oxidizing solid* means a solid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material (e.g., ammonium nitrate, calcium hypochlorite, potassium dichromate).

Self-Reactive Chemicals: *Self-reactive chemicals* are thermally unstable liquid or solid chemicals liable to undergo a strongly exothermic decomposition even without participation of oxygen (air) (e.g., methyl acrylate, vinyl acetate, epoxides, organic peroxides).

Pyrophoric Gas: *Pyrophoric gas* means chemical in a gaseous state that will ignite spontaneously in air at a temperature of 130oF (54.4◦C) or below (e.g., silane, arsine, diborane). Pyrophoric Liquids: *Pyrophoric liquid* means a liquid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air (e.g., tert-butyllithium, triethylaluminum).

Pyrophoric Solids: *Pyrophoric solid* means a solid which, even in small quantities, is liable to ignite within five minutes after coming into contact with air (e.g., white phosphorus, lithium, potassium).

Self-Heating Chemicals: A *self-heating chemical* is a solid or liquid chemical, other than a *pyrophoric liquid or solid*, which, by reaction with air and without energy supply, is liable to self-heat (e.g., linseed oil, other seed oils, rosewood oil).

Organic Peroxides: *Organic peroxide* means a liquid or solid organic chemical which contains the bivalent –O-O- structure and as such is considered a derivative of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals (e.g., methyl ethyl ketone peroxide, benzoyl peroxide).

Corrosive to Metals: A chemical which is *corrosive to metals* means a chemical which by chemical action will materially damage, or even destroy, metals (e.g., hydrochloric acid, nitric acid, potassium hydroxide).

Gases Under Pressure: *Gases under pressure* are gases which are contained in a receptacle at a pressure of 200 kPa (29 psi) (gauge) or more, or which are liquefied or liquefied and refrigerated (e.g., nitrogen argon, oxygen ammonia, liquid nitrogen, hydrogen, Freon, air).

Chemicals Which in Contact with Water, Emit Flammable Gases: *Chemicals which, in contact with water, emit flammable gases* are solid or liquid chemicals which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities (e.g., calcium carbide, sodium metal).

Health Hazards

Acute Toxicity: *Acute toxicity* refers to those adverse effects occurring following oral or dermal administration of a single dose of a substance, or multiple doses given within 24 hours, or inhalation exposure of 4 hours (e.g., paint thinner, xylene, phenol, sodium cyanide).

Skin Corrosion/Irritation: *Skin corrosion* is the production of irreversible damage to the skin (e.g., strong acids such as sulfuric acid and muriatic acid, strong alkalis such as sodium hydroxide and cement, phenol). *Skin irritation* is the production of reversible damage to the skin (e.g., weak acids, weak alkalis, solvents, detergents, disinfectants, oils).

Serious Eye Damage/Eye Irritation: *Serious eye damage* is the production of irreversible tissue damage in the eye, or serious physical decay of vision (e.g., strong acids such as sulfuric acid and muriatic acid, strong alkalis such as sodium hydroxide and cement,

phenol). *Eye irritation* is the production of reversible damage in the eye (e.g., weak acids, weak alkalis, solvents, detergents, disinfectants, oils).

Respiratory or Skin Sensitization: *Respiratory sensitizer* means a chemical that will lead to hypersensitivity of the airways following inhalation of the chemical (e.g., isocyanate paints, soldering resins, formaldehyde). *Skin sensitizer* means a chemical that will lead to an allergic response following skin contact (e.g., isocyanate paints, epoxies, formaldehyde, quaternary ammonium disinfectants, chromium).

Germ Cell Mutagenicity: A *germ cell mutagen* is a chemical that may cause permanent changes in the amount or structure of the genetic material (i.e., genetic defects), which can be passed on to offspring (i.e., heritable changes) (e.g., formaldehyde, coal tars and pitches).

Carcinogenicity: *Carcinogen* means a substance or a mixture of substances which induce cancer or increase its incidence (e.g., silica or sand and asbestos, which cause lung cancer, some wood dusts, such as oak and beech, which cause nasal cancer, and benzene, which causes leukemia).

Reproductive Toxicity: *Reproductive toxicity* includes adverse effects on sexual function and fertility in adult males and females, as well as adverse effects on development of the offspring (e.g., lead, mercury, chlorinated solvents and pesticides, polychlorinated biphenyls or PCBs, toluene).

Specific Target Organ Toxicity (Single Exposure): *Specific target organ toxicity – single exposure,* means specific, non-lethal target organ toxicity arising from a single exposure to a chemical (e.g., solvents, which affect the central nervous system).

Specific Target Organ Toxicity (Repeated Exposure): *Specific target organ toxicity – repeated exposure,* means specific, non-lethal target organ toxicity arising from a single exposure to a chemical (e.g., silica or sand, asbestos and chromium, which affect the lungs, and lead, which affect blood forming cells, the central nervous system and kidneys).

Aspiration Hazard: *Aspiration hazard* means the danger of drawing liquid or solid chemical into the lungs leading to sever acute effects such a chemical pneumonia, varying degrees of pulmonary injury or death. Aspiration can occur through the mouth or nose, or indirectly from vomiting (e.g., gasoline, kerosene, turpentine).

Simple Asphyxiant: *Simple asphyxiant* means a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death (e.g., argon, nitrogen, helium).

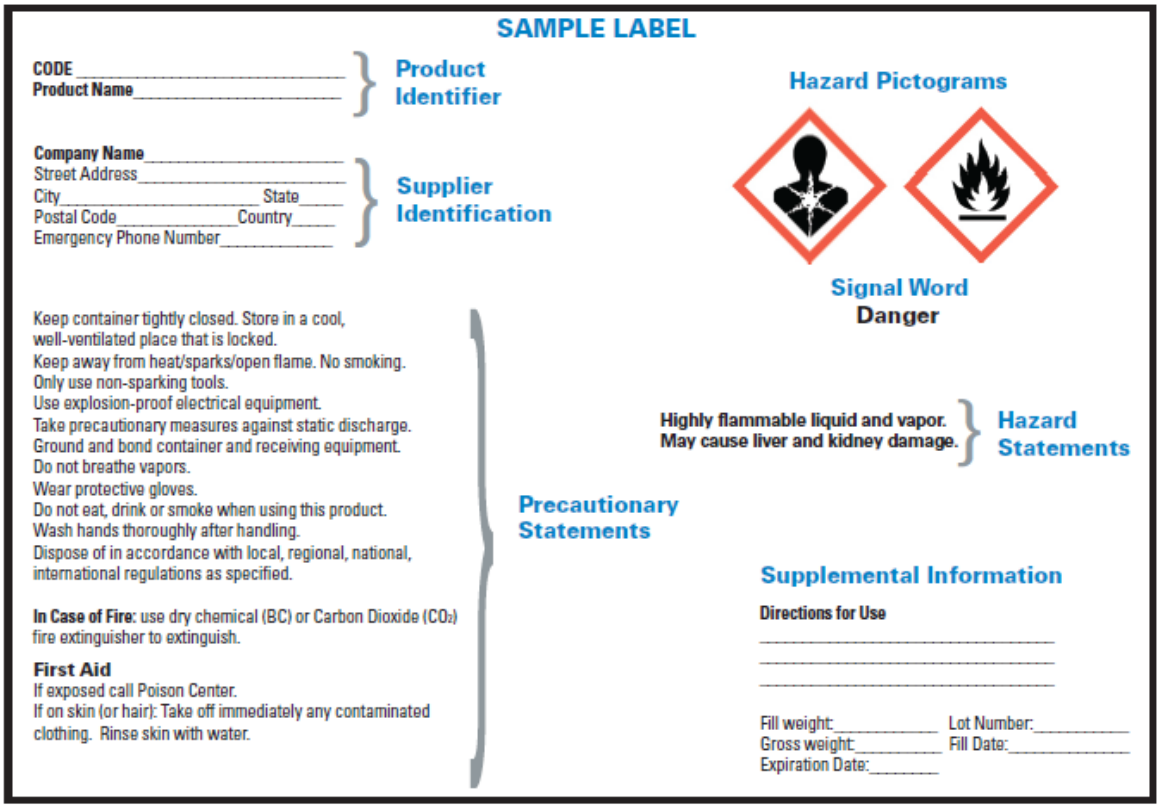
Hazards Not Otherwise Classified

Hazards not otherwise classified means an adverse physical or health effect identified through evaluation of scientific evidence during the classification process that does not meet the specified criteria for the physical and health hazard classes.

Attachment 10.2

SAMPLE GHS LABEL

As of June 1, 2015, all hazardous chemical labels will be required to have the product identifier and supplier information and GHS-standardized: pictograms (see Attachment 8.3 GHS-Standardized Pictograms and Hazards); a signal word, and hazard and precautionary statements. Supplemental information can also be provided on the label, as needed.



Attachment 10.3

GHS PICTOGRAMS AND HAZARDS

Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame**  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark**  • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder  • Gases Under Pressure	**Corrosion**  • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals	**Exploding Bomb**  • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle  • Oxidizers	**Environment** (Non-Mandatory)  • Aquatic Toxicity	**Skull and Crossbones**  • Acute Toxicity (fatal or toxic)

Attachment 10.4

SAFETY DATA SHEET (SDS) FORMAT

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*
Section 13, Disposal considerations*
Section 14, Transport information*
Section 15, Regulatory information*

Section 16, Other information, includes the date of preparation or last revision.

*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12–15.

APPENDIX E

EXAMPLE PREOPERATIONAL INSPECTION FORM

Resource Management
Contractor Equipment Safety Inspection

Inspection Date_____ Unit #_____

Equipment Type_____ Company:_____

What to look for	OK	B/O*	NA	Comments
Cab Glass and Mirrors - No cracks or damage that effect operators vision				
Lights and backup alarm - All lights functioning and backup alarm (if equipped) working				
Steering Linkage - No visible damage, cotter pins in place, nuts tight				
Suspension - No visible damage that effects safe operation				
Tires, wheels and lug nuts - Overall good condition of tires, appropriate tread remaining, wheels in good condition, no broken, loose or missing lug nuts. DOT Tire requirements 4/32nd inch tread depth steering tires, 2/32nd for any other wheel position, does not apply to heavy equipment.				
Tracks - Overall good condition, appropriate tightness and not excessively worn				
Undercarriage - No visible damage that effects operation				
Frame - No visible damage that effects operation				
Engine Compartment - No visible damage, loose wires, fluid caps in place and tight, appropriate guarding in place				
Fluid levels/Leaks - No substantial fluid leaks				
Exhaust System - no exhaust leaks or visible damage that effects safe operation				
Handrails and steps - Secure, appropriate heights				

Fire Extinguisher - Mounted, Inspected, Operational				
What to look for	**OK**	**B/O**	**NA**	**Comments**
Fire Suppression system - Inspected, no visible damage				
Blade/Boom/Ripper Assembly - No visible damage that effects safe operation				
Outriggers - No visible damage that effects safe operation, pads/cribbing available as needed				
Hydraulic Hoses - No leaks or damage, whip checks where needed				
Safety Decals - Present, legible condition				
ROPS Certification - Present, Legible Condition				
Housekeeping - Cab clean and free of debri or obstructions				
Seat - Functional and no damage that effects safe operation				
Seatbelt - No frays, cuts or damage, functioning condition, Cat Seatbelts expire afte 3 years of installation date, 5 years after manufacture date.				
Controls Function/Labeled - Functional and no damage that effects operation				
Gauges and warning lights - Functional and no damage that effects safe operation				
Steering Function - Functional and no damage that effects safe operation				
Brake Test (Air Brakes 7 Step) - Brake test according to manufacture instructions				
Parking Brake - Brake test according to manufacture instructions				
Operators Manual - Present, legible condition, correct to specific machine				
Operator Qualification - Documented				
Certifications - DOT Certified or Crane/Lift Inspections if required.				

***Equipment marked B/O will be taken out of service until proper repairs are made.**

Inspector Signature_____Date_____

Drill Rig Inspection Checklist

Date:_____ Model:_____

Inspector(s)_____ Company:_____

Does the Drill Rig Pass Inspection? YES NO (Circle one)

OK/BO/NA	Pipe Rack Area
	End properly chocked
	Layers of pipe chocked
	Pipe rack level and even with catwalk
	Pipe tubs in good condition
	Derrick stand in good condition and provided with ladder
	Sufficient lighting
	Housekeeping
OK/BO/NA	**Floors, Stairs and Handrails**
	Floor holes covered
	Stair level and secured with bolts
	Stair step treads non-skid
	Stair free of obstruction
	Rails on stairs and rig floor, toe boards present
	Housekeeping
OK/BO/NA	**Electrical and Generator**
	All wires off the ground and properly secured or buried
	Receptacles and plugs in good condition
	all lights equipped with globe guards
	Generators grounded
	Electrical controls marked
	Control box covered in place
	Generator skid door props open properly
	Electrical tools ground
	Cords ground check and in good condition
	High voltage signs present and legible
	Housekeeping
	No splices in electrical wiring less than 12 gauge
OK/BO/NA	**Rig Floor and Engine Area**
	Guards in Place
	Slip dies sharp; keepers used
	Housekeeping
	Engine area free of grease and oil
OK/BO/NA	**Cathead, Drum and Hoist**
	Sufficient Lighting
	Hoist line in good condition and spooled with line guide

OK/BO/NA	Tongs
	Handle safety pin in place; not bolts or nuts
	Dies sharp and keepers installed
	Tong body and jaws in good condition
OK/BO/NA	**Personal Protective Equipment**
	Safety goggles and face shield provided
	Hard hats serviceable and being used
	Hearing protection available and being used
	Fall Protection
	Hard hats used by visitors
	Safety shoes being worn
OK/BO/NA	**Safety Equipment and Warning Signs**
	Emergency Stops Functional
	Fire extinguisher charged, tagged and at proper location, inspection current
	Warning signs on fuel tanks
	Vessels labeled including HAZCOM
	High voltage signs present
	No smoking signs present
	PPE signs present
	Authorized personnel signs present
	Hearing protection signs present
	All signs legible
OK/BO/NA	**Hand Tools**
	Tools stored correctly, clean and serviceable
	Driving face of hammers, chisels, etc free of broken faces and mushroomed heads
	Wooden handles sound and secure
	Wooden handles free of tape and paint
OK/BO/NA	**Miscellaneous**
	All ladders Inspected and stored safely
	U-Bolts of all clamps installed correctly
	LPG storage tanks located safe distance from rig and lines buried
	Unsafe acts observed, are they being discussed with supervision and crew?
	Did consultant request a safety meeting or safety training conducted?

Comments:

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Emergency Drill/Event Evaluation Form

*For actual incidents and drills

Date of Evaluation: _____ Time (Start): _____

Event time span (Start to Finish): _____

Location: _____

Type of Drill/Event (Fire, Tailings Dam Failure, Chemical Spill, etc.): _____

Emergency Response Organizations Involved: _____

Was this Drill/Event announced or unannounced?_____

Group Involved: _____

Number of Persons Involved (document individual names on next page roster): _____

Was the Drill/Event safe and efficient? (Did everyone get out in a reasonable amount of time)?

_____

_____

Brief Summary:

_____

_____

_____

_____

_____

_____

Recommendations for Improvement:

_____

_____

_____

_____

*Must have documentation to support follow-up of all action items

Roster:

Name	Payroll #
1	
2	
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LIGHT DUTY VEHICLE
Pre-Operation Inspection

THIS FORM IS FOR THE FOLLOWING VEHICLES ONLY:
1 ton and below, non-air brake equipment.

OPERATOR NAME (print)	
EMPLOYEE ID	
DATE	**SHIFT: DAY ☐ NIGHT ☐**
VEHICLE #	**MILEAGE**

Before commencing your inspection, ensure the vehicle is in a safe place: Check for traffic, wildlife, uneven ground, and other unsafe conditions.

NOTE: If any items in BOLD CAPITAL LETTERS are found to be defective, the vehicle cannot be operated.

GENERAL	**OK**	**BO**	**N/A**
Housekeeping			
Secure Cargo			
INTERIOR	**OK**	**BO**	**N/A**
A/C / HEATER / DEFROSTER			
BRAKES (INCLUDING PARKING BRAKE)			
Grab Handles			
HORN			
PANELS, GAUGES AND KNOBS			
SEATBELTS			
STEERING			
EXTERIOR	**OK**	**BO**	**N/A**
Overall Condition (Dents, Cracks, Damage, Visible Leakage)			
DOORS			
Grab Irons and Steps			
GLASS			
BRAKE LIGHTS, HEAD LIGHTS, REVERSE LIGHTS, TAIL LIGHTS, TURN SIGNALS			
MIRRORS			
TIRE AND WHEEL COMPONENTS			
WINDSHIELD WIPERS			
AS NEEDED* / IF INSTALLED**	**OK**	**BO**	**N/A**
2 Way Radio*			
BACK UP ALARM*			
BUGGY WHIP*			
Fire Extinguisher**			
FLASHING LIGHTS / AMBER LIGHTS**			
Wheel Chocks*			

COMMENTS / OBSERVATIONS

APPENDIX F
INCIDENT REPORT AND WITNESS STATEMENT

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Incident Report

Employee Involved		Department		People Soft	Date of Hire
Supervisor's Name		Date of Incident	Time A.M. P.M.	Date Reported	Time A.M. P.M.
Regular Job Title	Overtime	Shift Started	Shift length {hrs.}	Hours into rotation	Total hours this rotation:
Mining Experience: Please indicate total in years and months for: In Industry: At Site: In Job:					

Near Miss ____ Bodily Injury_____ Property Damage Theft_____ Fire_____

Injury or Illness ***(Briefly describe.)***		
Part of body affected. (When applicable, indicate right or left.)	Equipment involved	Equipment Number
Name of safety representative contacted.	Estimated cost of damage/fire.	
Did employee go to industrial doctor or hospital? Facility:		
	Estimated value of stolen item.	

Description. *Describe clearly how the incident occurred*

Exact location of incident. (*Attach diagram if necessary.*)

Witnesses (*Attach statements.*)

Employee Signature	Date
Supervisor Signature	Date

Will this incident need further investigation at this time? Yes_____ No ____

If yes, please complete a *Root Cause Analysis*.

- Please send a copy of this report to: Superintendent - H&S Department - Human Resources – Leave Coordinator

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Witness Statement

Print Name	Phone #	PS#
Date of Incident:	Timea.m.p.m.	
Location of Incident:		
What Happened: (include names, equipment numbers, and use a time line- the sequence of events as they happened.)		

Signature:	Date: