ICMI Production Verification Protocol (Revision June 2021)

Summary Audit Report

Cyanco Winnemucca Production Audit

2022 Re-Certification Audit

Submitted to:

The International Cyanide Management Institute
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USA

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Operation General Information

Operations Audited:	Cyanco Winnemucca Production Plant 5505 Cyanco Drive Winnnemucca, NV 89445
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Company Background Information

Cyanco maintains its international headquarters in Sugar Land, Texas and its production facilities in Winnemucca, Nevada and Alvin, Texas. Distribution terminals, interim storage, and office locations are maintained in several locations in the United States and Canada.

The Cyanco Winnemucca Plant has been in operation since 1990 and originally produced only sodium cyanide solution. Since the previous re-certification audit in 2019, the plant capabilities were expanded to also produce sodium cyanide solid briquettes in 2021. The product is delivered to gold mining customers in the western US from Winnemucca by truck in bulk tankers and Solid-to-Liquid (SLS) ISO tanks. The operation also ships product by rail in liquid rail cars and solid sparger cars to customers in Canada and other U.S. destinations via its Canadian Distribution Center in Cadillac, Quebec (Canada) and the Cheyenne Distribution Center in Wyoming (United States). Both distribution centers have been audited to the ICMI (International Cyanide Management Institute) Production Protocol separately and maintain individual Cyanide Code certifications.

Cyanco was an early adopter of the International Cyanide Management Code (Cyanide Code) and was first certified in October 2006. Re-certification audits were performed approximately every 3-4 years since that time.

Description of the Operation

Cyanco's sodium cyanide production facility is located approximately 7 miles west of Winnemucca, Nevada. The facility focuses on making 30% aqueous solution sodium cyanide and solid briquettes specifically for use in the gold mining sector.

Cyanco started producing sodium cyanide solution in 1990 in Winnemucca, Nevada. The plant was

constructed for the purpose of providing sodium cyanide to the mining industry in northern Nevada. The plant is a zero-discharge facility. The original plant was designed to produce 28 million pounds of product annually. A second unit was added in 1997. The Winnemucca Plant produces a 30% sodium cyanide solution using the Andrussow process. Oxygen, methane, and ammonia are combined over a platinum catalyst where they form hydrogen cyanide gas (HCN). The HCN gas is then scrubbed using sodium hydroxide (50% caustic soda) to form liquid sodium cyanide.

In 2019 Cyanco started building a solid briquette production operation at the Winnemucca Plant. This production operation went commercially online in 2021. This is the first Cyanide Code certification audit of the Winnemucca solid sodium cyanide plant.

The Cyanco Plant currently ships sodium cyanide solution and solid sodium cyanide briquettes in bulk shipment quantities. There are no packaging operations at this plant, only loading operations for liquid rail cars, Department of Transportation (DOT) liquid tankers, solid sparger rail cars, and solid-to-liquid (SLS) ISO tanks. The plant ships throughout North America using Cyanide Code-certified supply chains and distribution terminals. Cyanco contracts the truck delivery of the cyanide solution to the TransWood Winnemucca Terminal, a certified Cyanide Code Signatory company. The terminal is located several miles from the production facility. The rail cars are loaded directly on the Cyanco rail spurs within the plant secure perimeter.

Cyanco also produces solid sodium cyanide at a production facility in Alvin, Texas. This re-certification audit is limited in scope to the Winnemucca sodium cyanide production facility.

This operation was confirmed to be in **FULL COMPLIANCE** with the International Cyanide Management Code.

Auditor's Finding

The cyanide management practices for Cyanco were evaluated for Cyanide Code compliance using the 2021 version of the *ICMI Cyanide Production Verification Protocol.* Cyanco internal standards, policies, practices, and procedures regarding the management of the cyanide operations were reviewed.

The results of this re-certification audit demonstrated that Cyanco Winnemucca production activities are in **FULL COMPLIANCE** with International Cyanide Management Code requirements.

Compliance Statement

This operation has not experienced any compliance issues during the recertification period.

This operation experienced one "significant cyanide incident", as defined by ICMI, during the previous three-year audit cycle which is discussed in this report under production practice 5.4.

Auditor Information

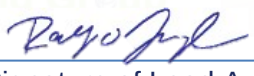
Audit Company:	CN Auditing Group www.cnauditing.com
Lead / Technical Auditor:	Ralf Jurczyk, Ph.D. E-mail: rj@cnauditing.com
Dates of Audit:	July 18-20, 2022

Auditor Attestation

I attest that I meet the criteria for knowledge, experience, and conflict of interest for a Cyanide Code Certification Lead Auditor, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Certification Auditors.

I attest that this Detailed Audit Report accurately describes the findings of the re-certification audit. I further attest that the re-certification audit was conducted in a professional manner in accordance with the International Cyanide Management Code *Cyanide Production Verification Protocol* and using standard and accepted practices for health, safety, and environmental audits.

Cyanco Winnemucca Production Audit		November 9, 2022
Name of Operation	Signature of Lead Auditor	Date

Cyanco Winnemucca Production Audit		November 9, 2022
Name of Operation	Signature of Lead Auditor	Date

Principles and Standards of Practice - Cyanide Production Verification Protocol

Principle 1 | OPERATIONS

Design, construct and operate cyanide production facilities to prevent release of cyanide.

Production Practice 1.1

Design and construct cyanide production facilities consistent with sound, accepted engineeringpractices and quality control/quality assurance procedures

During the construction of the cyanide production and storage facilities, quality control (QC) and quality assurance (QA) programs were implemented. This was confirmed during the original Cyanide Code audit for solution production lines and during this audit for the solid sodium cyanide production line that started operations during this recertification period. The first commercial shipments of solid cyanide briquettes were made in May 2021. QA, QC, and MOC (Management of Change) records were retained from all plant construction and expansion activities. Appropriately qualified personnel reviewed the facility construction and provided documentation that the facility was built as proposed and approved.

During previous audits interviews and a review of available engineering and inspection approvals were used to confirm that appropriately qualified personnel were involved with the specification and final approval of the solution production operation. Interviews with engineers and personnel in charge of the solid sodium cyanide expansion were interviewed and project records were reviewed during this audit.

Approximately 300 Management of Change (MOC) records were on file from the recertification period. These records were sampled**,** and confirmation was made that process requirements had been met.

The auditor also reviewed records and certifications from professional engineers and appropriately qualified environmental, health, and safety professionals. The records were found to be complete and acceptable.

Materials of construction used for the production, storage, and loading facilities are compatible with reagents used and processes employed. This was confirmed during the audit. Cyanco maintains documentation showing approved materials for construction and maintenance activities. Records from the facility were reviewed to confirm that construction materials match those called for in the specifications. No deficiencies were noted.

As stated in previous recertification audit reports, Cyanco has automatic shutdown systems that will initiate if any of a series of process conditions is met. These conditions include excessive temperatures at the catalyst, low pressure or flow of incoming raw materials, and other potentially serious process conditions. The control room is manned 24 hours a day /7 day a

week. The system is designed so that in the event of a power failure or process upset, the default settings on the process equipment go to a “safe” position to prevent releases.

The interlock system is tested at least annually for multiple failure modes. Records were available for the recertification period and were found to be acceptable. The flow of solids stops in the event of a power outage. A process hazard analysis (PHA) was reviewed for the solids production line and there were no unacceptable risks identified. Personnel showed good awareness of instrumentation and emergency shut-down systems.

All process equipment and tanks are built on concrete that is designed to prevent seepage to the subsurface. Processes and tank storage areas are also within a secondary containment area that have process sumps that collect rainwater and any potential spills. The process sumps are either made of stainless steel or are lined with concrete. Loading, production, and storage areas are lined with an industrial engineered polymer material. The concrete surfaces throughout the facility were checked by the auditor and found to be in acceptable condition. Cyanco engaged a professional inspection company in November 2021 to inspect all concrete surfaces and secondary containment areas. Inspection records confirmed that no concrete deficiencies exist at the facility that would suggest that there would be a loss of containment in the event of a release.

The facility employs methods and devices to prevent the overfilling of cyanide process and storage vessels. Process indicators, ultrasonic high-level indicators and high-level alarms are placed in tanks and monitored continuously in the solution production control room, which controls 90% of all level indicators. There are also devices in place that control volume and temperature in the storage vessels to avoid releases from the cyanide storage tanks. The plant has flow control for water. The reactor and the boilers have interlock systems to detect high temperatures above range.

The operation has implemented procedures for routine testing and maintenance of the instrumentation installed on the cyanide process and storage vessels to ensure that the instrumentation is functioning properly to prevent overfilling.

All process instrumentation for the production and storage of cyanide at Cyanco has an annual preventive maintenance (PM) inspection to verify instrument span and functional test at a minimum. Some instruments are tested as frequently as every six months. All PMs are recorded in Cyanco’s database system.

Control Room Operators were interviewed to confirm that the alarms are being monitored.

Secondary containment areas for process and storage tanks are constructed of materials that provide a competent barrier to leakage. They are of sufficient size to hold a volume greater than that of the largest tank or vessel within the containment area, any piping draining back to the tank, and have additional capacity to allow for a storm event.

All process and storage tank equipment is located within lined concrete secondary containment areas. Each of the secondary containment areas also has a lined (or stainless steel) sump. Liquids in the sumps are pumped to a tank that is designated for the material. The capacity of each of the secondary containment areas is sufficient to hold a volume that is greater than that of the largest

tank, a storm event, and any piping that might drain back into the tank. The drawings for the tanks were approved by a professional engineer. All loading, production, and storage areas are lined with an industrial engineered Geotech 30 mil polymer PVC material.

Spill prevention and containment measures are provided for all cyanide solution pipelines. Pipelines are over concrete or are managed with appropriate spill prevention programs. Cyanide-bearing pipelines are made of carbon or stainless steel and are part of the mechanical integrity program with defined intervals of inspection and thickness testing. Cyanide piping that is not over secondary containment areas is double piped with a PVC pipe surrounding the carbon steel pipe which would drain back into the secondary containment area in the event of a leak. Pipes, tanks, and process equipment are checked daily for the presence of residue and for leaks. Process equipment and piping is also inspected through a more formal inspection process on a quarterly basis.

There is no storage of solid sodium cyanide. Solids are bulk loaded directly into rail sparger cars and Solid to Liquid System (SLS) ISO tanks. ISO tanks are chemical transportation tanks that are built based on ISO standards that are issued by the International Organization for Standardization. Production areas were observed to have sufficient ventilation to prevent the build-up of hydrogen cyanide gas and cyanide dust. Stationary and personal cyanide monitors were also in use throughout the operation.

All cyanide solution is stored in outdoor tanks, with atmosphere vents at top and overflow which allow for adequate ventilation to prevent the build-up of hydrogen cyanide gas.

The site has a secure fenced perimeter and access is prohibited. A gate crosses the main access road and visitors must be checked in via an intercom system. A chain link fence surrounds the plant. Closed circuit TV surveillance cameras are in operation in the perimeter of the plant. Security was found to be acceptable.

There are no incompatible materials stored near the cyanide solution tanks.

The solution tanks have air vents to the atmosphere. Atmospheric monitoring is done in accordance with permit requirements to ensure that atmospheric levels remain within permitted levels. The pH in the cyanide solution is maintained at greater than 12.5 to prevent HCN formation. Any tank that needs to be entered for maintenance purposes is drained, cleaned out, and properly ventilated prior the commencement of work. Cyanco follows a rigorous Confined Space Entry Permit process that includes testing of the tank air quality and manager-level approvals prior to each tank entry.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 1.1?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

During this recertification audit Cyanco was found to comply with all applicable elements of Production Practice 1.1. Cyanco facilities have been designed, constructed, and operated to prevent cyanide releases.

Production Practice 1.2

Develop and implement plans and procedures to operate cyanide production facilities in amanner that prevents accidental releases.

Cyanco has plans or procedures that describe the standard practices necessary for its safe and environmentally sound operation. The procedures use an effective tabular single statement format with the action verb bolded to make the document easier to use. Standard Operating Procedures (SOPs) have been developed and implemented in the plant for those activities requiring risk controls. The procedures address operations and maintenance activities under normal, upset, and emergency conditions. The auditor reviewed a sample of SOPs.

Procedures for upset and contingency conditions are in place and are available at the point of use at the operation. Standard operating procedures are used to systematically shut-down the production operations if there is an upset condition. Operations personnel were interviewed, and their awareness level of emergency and contingency procedures was very good. The solution control room is always manned. The control room operators showed very good knowledge of control systems, alarm systems, and shut down procedures.

The facility has a Management of Change (MOC) procedure that is used to identify risks when site operating practices change from those of the initial design to any part of the operation. The procedure requires a review and sign-off by an environmental, health, and safety professional, in addition to other signoffs. Approximately 300 MOCs were processed during the recertification period. Records were reviewed and were found to be complete.

The Management of Change procedure requires sign-off by environmental and safety personnel, prior to implementation of proposed process and operational changes and modifications. Cyanco's MOC process requires that the Environmental Health and Safety (EHS) Manager approve all changes regardless of scope.

Preventive maintenance programs are implemented at the plant, all maintenance activities are documented for equipment and devices related to cyanide production and handling. Process equipment, tanks, and piping that contain cyanide are included in the mechanical integrity program. Maintenance procedures exist and a database is used to manage work orders and maintain records to show that required maintenance and calibrations were completed. Records were reviewed in the database system and in maintenance reports from shut down events. The online system is fully implemented and has access to all maintenance registers. Maintenance registers show, among other items, work order number, equipment number and description, work order description, priority**,** and date.

Inspectors are trained and qualified internally to perform inspections against API (American Piping Institute) technical criteria and guidelines. Preventive maintenance includes, among other items, annual inspection of all external pipelines and periodic tests of pipelines and critical equipment to assess integrity, and corrosion.

Process parameters are monitored with the necessary instrumentation. Instruments are

calibrated according to manufacturer's recommendations. Interviews and a review of records confirmed that the process control equipment is continuously monitored by Control Room Operators and is inspected / calibrated regularly by the maintenance department. The work orders direct users to refer to the equipment manual for proper calibration or to set equipment to a determined point. Records were reviewed in the maintenance database system and in maintenance reports from shut down events. Records were found to be complete and acceptable.

Procedures to prevent unauthorized/unregulated discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area are implemented. As stated in the previous recertification audit report, the Cyanco facility is designed to be a "zero discharge" facility, meaning that no process water or water collected in the secondary containment areas can be discharged to the environment. All process, loading, and storage equipment is in lined concrete secondary containment areas that are equipped with lined concrete or stainless-steel sump pit systems. The sumps are piped into the T660 tank that is specifically designated to accept water from the sumps and pipe clean-outs. The cyanide-containing water is mixed back into the process.

It is highly unlikely that water containing cyanide or cyanide solution will be discharged to the environment at this facility because of the many engineering design safeguards in place, most specifically the design of the facility piping. Procedures were found to be acceptable. Truck loading and cyanide sampling activities were observed during the audit and all precautions called for by procedures were followed. Field Operators were interviewed, and training records were reviewed during the audit. Awareness of the need to follow procedures and prevent cyanide discharges to the environment was very good.

The facility has environmentally sound procedures for the disposal of cyanide and cyanide contaminated solids. The Hazardous Waste Management Policy and the Solid Waste Procedure describe in detail the different disposal methods used for the disposal of contaminated solids. Contaminated dirt and sludge are sent to a gold mine customer as a "product" so that the cyanide can be recycled. Other contaminated solids are treated as hazardous waste and are disposed of accordingly. Contaminated uniforms are laundered on-site.

Cyanco manages any waste streams of cyanide or cyanide contaminated solids in the following manner. Where possible, Cyanco recycles any excess or customer returned cyanide solutions within the production process. This recovery is considered reuse for intended purpose as the solution is part of the inherent process. When cyanide bearing dirt is collected on-site or removed from sumps or tanks, this material is sold to the customer as cyanide product through beneficial use practices established through the US EPA (Environmental Protection Agency). When cyanide bearing solids are not capable of being sold to the customer, they are disposed of through an US EPA permitted Treatment, Storage, and Disposal Facility (TSDF). Final disposal methods are incineration and landfill using a Land Disposal Restriction approved landfill.

Packaging is not used by this operation; the cyanide solution is only shipped to customers via Department of Transport (DOT) approved tanker trucks and Federal Railroad Administration

(FRA) approved rail cars that are specifically designed for this type of transport. Solid cyanide is also shipped in only bulk quantities, either by rail hopper car or truck tank trailer. Cyanco has custom engineered tanks and trailers for the safe transport of sodium cyanide. The solution tankers have unique internal valves and safety features to ensure that in the rare event of a truck turn over, no sodium cyanide solution will be released into the environment. Rail cars and trucks dispatched from this operation pass through the United States, Canada, and Mexico. Proper placards are used, and proper shipping requirements (such as truck weight limits) are observed for all jurisdictions through which the rail cars and trucks must pass.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 1.2?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 1.2. Cyanco has developed and implemented plans and procedures to operate cyanide storage facilities in a manner that prevents accidental releases.

Production Practice 1.3

Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

Cyanco Plant operators conduct routine visual inspections of tanks for structural integrity, signs of corrosion and leakage twice a shift (four inspections daily). Every five years tank wall thickness is tested. Thickness testing inspections of process equipment, tanks, and piping containing cyanide are performed according to API (American Piping Institute) guidance at defined frequencies as part of the mechanical integrity program. Results are sent to the engineering department for analysis. These tests are performed internally.

The auditor sampled wall thickness tests performed during the recertification period. The auditor also reviewed examples of the Maintenance Area reports “Tank External Inspection Report” performed during the recertification period. Records were found to be acceptable.

Secondary containment areas are inspected quarterly for their integrity, the presence of fluids and their available capacity. The inspections also ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment. The auditor reviewed Quarterly Inspection records for the recertification period. A formal inspection was also done of secondary containments and concrete in November 2021. Records were found to be acceptable

and indicate that the facility is being properly maintained.

Pipelines, pumps, and valves are inspected for deterioration and leakage on a regular basis. Like tank inspections, these inspections are conducted by the plant operators twice a shift (four inspections daily). Thickness testing inspections of process equipment, tanks, and piping containing cyanide are performed according to API (American Piping Institute) guidance at defined frequencies as part of the mechanical integrity program.

A review of records and results of interviews confirmed that tanks, valves, pipelines, and secondary containment areas are routinely inspected. Operators were interviewed and the inspection sheets from field rounds and sump / drain inspections were reviewed.

Cyanco maintains its own bulk transportation equipment (rail sparger cars, truck tankers, rail tank cars, and SLS ISO tanks). Equipment is inspected according to regulatory requirements. Equipment is inspected at least every three years and thickness testing is done every 10 years. Rail cars are inspected by authorized rail inspectors. Records were sampled and found to be complete.

Inspection frequencies were deemed to be sufficient to ensure that equipment is functioning within design parameters. In addition to regular inspections, equipment shutdowns during which more extensive inspection and testing is performed, are conducted at least annually. Transportation equipment is inspected in accordance with the U.S. Department of Transportation (DOT) and U.S. Federal Railroad Administration (FRA) requirements.

Inspections are documented in the preventive maintenance database and show the date of the inspection, the name of the inspector, and any observed deficiencies. An overall action list is generated from the quarterly equipment inspections. Issues that are readily resolved are noted as such in the inspection records. A printout of maintenance records for the certification period was available for review during the audit. Work orders are opened for issues that require corrective maintenance actions. Inspection records and records of resulting corrective measures were reviewed and were found to be acceptable.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 1.3?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 1.3. Cyanco has developed and implemented procedures to inspect cyanide storage facilities to ensure their integrity and prevent accidental releases.

Principle 2 | WORKER SAFETY

Protect workers' health and safety from exposure to cyanide.

Production Practice 2.1

Develop and implement procedures to protect facility personnel from exposure to cyanide.

Cyanco has developed an extensive number of procedures to minimize worker exposure during normal plant operations from receipt of raw materials through finished product packaging and shipping. Worker exposure to cyanide is minimized through properly engineered systems, the use of detailed standard operating procedures, and proper use of Personal Protective Equipment (PPE) where necessary.

Standard Operating Procedures (SOPs) have actions verbs indicating one step at a time. Operators and maintenance personnel were interviewed. Personnel showed good knowledge of SOP requirements associated with different types of tasks, including the need to decontaminate equipment prior to performing maintenance.

The facility has developed SOPs for non-routine and emergency operations to be performed by trained personnel wearing protective gear that is inspected regularly. Emergency procedures are defined in the site emergency response plan. Shut down procedures that are used for emergency and non-emergency situations.

Maintenance procedures exist for repetitive tasks that have the potential for worker exposure to cyanide. PPE requirements and safety precautions are defined. Decontamination of equipment for maintenance is completed as per the site decontamination policy. Hazardous and non-routine tasks such as confined space entry require the use of work permits to ensure that they are only performed safely. These types of hazardous tasks are performed during daytime operating hours and with close supervision.

Cyanco solicits worker input during the review and development of health and safety procedures. Regular safety meetings are held**,** and employees participate in the process hazard analysis (PHA) process. Employees also participate in the review of proposed process and operational changes and modifications for their potential impacts on worker health and safety which include the necessary worker protection measures. These practices were confirmed through interviews and a review of records.

The Management of Change (MOC) and Pre-Start-Up-Safety Review (PSSR) procedures are used to evaluate the potential safety, health, and environmental impact of proposed and implemented operational changes and modifications. PSSRs are used prior to putting new equipment on-line or in service.

Extensive MOC and PSSR records for changes made to the operation during the recertification

period were reviewed during the audit. Engineering personnel were interviewed and the need to follow MOC and PSSR procedures was well understood.

Operational areas and tasks where the risk of cyanide exposure may be elevated to 4.7 ppm or above, including the new solid cyanide production area, have been identified through industrial hygiene studies. PPE and cyanide monitoring requirements have been defined. Exposure risks at this operation include the potential exposure to cyanide dust, cyanide solution, hydrogen cyanide gas during some maintenance activities such as confined space entry, and potential exposure to hydrogen cyanide gas during sampling. PPE requirements are clearly defined for all tasks. Enclosed spaces in which cyanide is handled have stationary HCN monitors that are monitored by the control room operator.

Atmospheric levels of HCN gas are tested prior to any confined space entry or similar maintenance activity. Administrative controls such as safe work permits are used for these types of tasks to ensure that the area is safe, and that proper PPE is being utilized.

The facility uses stationary and personal monitoring devices to confirm that controls are adequate to limit worker exposure to hydrogen cyanide (HCN) gas and sodium cyanide dust to 4.7 parts per million or less.

Stationary HCN monitors are used in areas that have the potential for having elevated cyanide levels, for example, near the reactor and in the solid cyanide production area. HCN monitors have an alarm point set at 4.7 ppm. The alarms are monitored in the control room.

Portable HCN multi-gas monitors are available for use. In addition to the stationary monitors in the production areas, there are two fixed atmospheric HCN monitors located on the plant perimeter, one at the northeast side of the plant and the other on the south side. Both are monitored from the control room. These monitors take continuous measurements to ensure adherence to permit requirements and the protection of human health.

At this operation 4.7 ppm alarm requires that personnel evacuate the area and assess the situation remotely via cameras. If a person needs to evaluate the situation, they use a self-contained breathing apparatus (SCBA) and enter the area with another person with an SCBA as back-up. The 10-ppm alarm is only for the perimeter alarms that are mandated by Cyanco's operating permit. This requirement states that if 10 ppm is reached at the fence line, they are to alert the Humboldt County Sheriff via automated phone call.

Cyanco maintains, tests**,** and calibrates the cyanide monitoring equipment as directed by the manufacturer. The stationary HCN monitors are part of the computerized maintenance system that ensures they are maintained, tested, and calibrated monthly and more extensively maintained on a quarterly basis.

The personal HCN monitors are bump tested every day before use with an automatic bump tester and calibrated every 30 days with the automatic calibration equipment. Once calibrated, the monitor sends an email to the Environmental, Health and Safety (EH&S) Manager and Maintenance Area. Records were available to show that necessary calibrations had been completed per manufacturer recommendations during the recertification period.

Cyanco uses the buddy system for all tasks that are potentially hazardous. Personnel who are in the process area are always in radio contact with the control room operator. Truck and rail loading operations use a modified buddy system. The control room operator is in visual contact with the field operator via video camera and is in constant radio contact as well. The control room operator participates actively in the loading of the trucks or rail car and can shut down the loading operation and call for help in the event of an emergency.

The facility evaluates its employees' health upon hire and periodically thereafter. Health exams are used to evaluate the employee general health and confirm fitness for duty. Personnel who may need to wear respirators undergo fit testing to confirm that they can safely do so. An annual spirometry test is performed for who wear respirator protection.

The facility has a clothing change policy for employees, contractors**,** and visitors to areas with the potential for cyanide contamination of clothing. Confirmation was made during the audit of the clothing change policy for employees. It is detailed in the Safety Manual – General Safety Rules and at the Personal Protection Procedure. Employees are issued uniforms that must stay at Cyanco. These uniforms are not to be worn home, they are to remain at the facility and be laundered at the plant. The auditor confirmed clothing is washed on-site. Procedures state that dirty contaminated clothes are a menace and are to be changed and decontaminated. Workers must take a shower upon removing contaminated clothing before putting on fresh clothing.

Visitor PPE requirements are limited to hard hat, side shield safety glasses and safety shoes for general operations areas. SM-15 (Safety Manual: Personal Protection) does call for the washing of hands after being in chemical areas. The Contractor Safety Requirements and Hazard Training procedure states that any clothing that comes into contact with chemicals must be decontaminated prior to leaving the facility.

Warning signs that advise workers of potential hazards due to the presence of cyanide and that suitable personal protective equipment must be worn are posted in appropriate locations in the production areas. There is also signage throughout the facility reminding personnel that eating, drinking and smoking is prohibited in the process areas. Other signs limit access to the production area and require that visitors enter through the main office.

Eating, drinking, smoking, and having open flames are prohibited at the plant where there is a potential for cyanide contamination. Employees showed very good awareness of the restrictions and of the potential dangers of not following the rules. Eating is allowed in a designated lunchroom area and in offices. Smoking is restricted to a designated smoking area. Employees showed good operational discipline and followed plant safety rules.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 2.1?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with applicable elements of Production Practice 2.1. Cyanco has developed and implemented procedures to protect plant personnel from exposure to cyanide.

Production Practice 2.2

Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

Cyanco maintains a written Emergency Response Plan (ERP). The ERP is reviewed at least once every recertification period, with its most recent revision having occurred in 2022 following the on-site audit. Appendix E of the ERP is entitled “First Aid for Cyanide Exposure”. This section provides details on what response actions are necessary if there is a cyanide exposure.

Showers, low-pressure eye wash stations and non-acidic fire extinguishers are located at strategic locations in the facility. They are maintained and inspected on a regular basis. Industrial combination shower/low-pressure eye wash stations are located throughout the facility. The plant has heated and unheated portable unit shower/eye stations. ABC dry chemical fire extinguishers are in the production areas and any areas that potentially have cyanide in them. Safety showers and eyewash stations are tested weekly. Fire extinguishers and fire suppression systems are tested monthly. Additional emergency response equipment is also inspected monthly.

The auditor reviewed examples of completed inspection forms for safety showers and low-pressure eye stations during the certification period. Records were found to be complete and acceptable.

The facility has water, oxygen, resuscitator, antidote, and a means of communication readily available at strategic points in the plant. The antidote on hand is a CyanoKit (hydroxocobalamin) and maintained in the control room. The antidote was in date at the time of the audit. The ERP calls for oxygen to be administered until an external emergency responder (Humboldt Hospital Ambulance Corps) can arrive at the site and administer the antidote.

Oxygen is maintained in the control room and the emergency response trailer. The antidote and oxygen are checked as part of the monthly inspection.

The plant has a primary well and a back-up well which pumps continually to the water line. The back-up well has a propane powered emergency engine in case of a power outage.

The plant has two-way radios and cellphones for emergency communication.

Cyanco inspects its first aid equipment regularly to ensure that it is available when needed.

Workers in charge of inspections are electronically notified on a tablet when it is time to perform an inspection.

First-aid and emergency response equipment is stored and tested as directed by their manufacturers and replaced on a schedule that ensures they will be effective when used. Emergency equipment is inspected monthly. Additionally, interviews with operators indicate that safety showers are tested prior to drawing cyanide samples and certain other activities. This practice is also documented in the Cyanide sampling procedure.

Emergency response equipment is stored and tested according to manufacturer's recommendations. Cyanide antidote Cyanokit is stored centrally in the control room. Much of the emergency response equipment is stored in trailers that are parked next to the Transportation and Emergency Response office. The equipment is in an acceptable location for the plant and is available for immediate deployment in the event of an on-site or off-site emergency.

SDSs (Safety Data Sheets) are available to workers in the control room, on the company SharePoint intranet, and on the Cyanco public website. All employees speak English. The SDS Cyanco® Sodium Cyanide Solution, Mining Quality 23-32% is dated April 9, 2019. The solid sodium cyanide SDS was most recently updated in 2018. SDS sheets are also available on the Cyanco website in English, Spanish, French, Portuguese, and Dutch.

Storage tanks, process tanks, containers and piping containing cyanide are properly identified to alert employees of their contents. All piping observed during the audit was very well marked and showed the direction of flow.

The facility has decontamination procedures for employees, contractors and visitors leaving areas with the potential for skin exposure to cyanide. The operation also has a clothing change policy for employees, contractors**,** and visitors to areas with the potential for cyanide contamination of clothing. Procedures state that dirty contaminated clothes are to be changed and decontaminated. Workers must take a shower upon removing contaminated clothing before putting on fresh clothing.

Visitor PPE requirements are limited to hard hat, side shield safety glasses and safety shoes for general operations areas. SM-15 (Safety Manual: Personal Protection) does call for the washing of hands after being in chemical areas. The Contractor Safety Requirements and Hazard Training procedure states that any clothing that comes in contact with chemicals must be decontaminated prior to leaving the facility.

Employees and supervisors demonstrated a very good understanding of the decontamination policy and the need to take safety precautions.

Cyanco has its own on-site capability to provide first aid or medical assistance to workers exposed to cyanide. The plant has an Emergency Response Team (ERT) that provides first aid assistance to workers who may have been exposed to cyanide. All employees receive training in cyanide safety which includes first aid procedures for cyanide exposure. All employees in process areas are trained to administer oxygen. All administrative employees and at least 95% of plant personnel are trained in First Aid and CPR (Cardiopulmonary resuscitation). Cyanco relies on external emergency medical personnel (ambulance) to administer the antidote that is maintained onsite.

Two complete first aid bags are available. One is in the control room and the other is in the emergency trailer. These bags contain among other items, oxygen, blood pressure monitor, resuscitator**,** and CPR equipment. The ERT also has protective suits available for chemicals emergencies such as encapsulated B type suits.

The facility has developed procedures to transport exposed workers to a locally available qualified offsite medical facility, the Humboldt General Hospital. Section 13.2 of the Emergency Response Plan (ERP) calls for the decontamination of a cyanide exposure victim prior to transport. The plant has been in contact with the local hospital, Humboldt General Hospital. The plant is confident that hospital personnel can treat cyanide exposure victims. The hospital is a ten-minute drive away. The operation is in a mining community and local hospitals and emergency personnel are qualified to treat cyanide exposure victims. The ERP states to call 911 in case of an accident so an ambulance will be dispatched.

The plant has made formal agreements with emergency service providers and re-affirmed those agreements to treat potential cyanide exposure patients. Affirmations letters detailing emergency response support agreement were most recently signed in 2022 from the Humboldt General Hospital Emergency Services Chief, Humboldt County Manager, and the Winnemucca Rural Fire Department Fire Chief.

The operation is confident that the medical facility has adequate, qualified staff, equipment**,** and expertise to respond to cyanide exposures. The operation is in a mining community and local hospitals and emergency personnel are qualified to treat cyanide exposure victims.

Communication and training is done at least once every three years with local emergency responders and the Humboldt Hospital.

Cyanco maintains an Incident Investigation Procedure (PO-21). Examples of incident investigations for cyanide-related events were available for review. Incident investigations following high cyanide level alarms in the new solids production area were available for review. Appropriate investigation of cause was determined and corrective actions, such as improved ventilation, cleaning, housekeeping standards, were implemented.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 2.2?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 2.2. Cyanco has developed and implemented procedures for rapid and effective response to cyanide exposure.

Principle 3 | MONITORING

Ensure that process controls are protective of the environment.

Production Practice 3.1

Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The facility does not discharge to surface water. The nearest surface water is the Humboldt River which is located about one mile south of the plant.

The facility also does not have any indirect discharge to surface water, the operation is a “zero discharge” facility.

Groundwater wells upgradient and downgradient are monitored on a quarterly basis.

Groundwater monitoring data was reviewed during the audit. Three monitoring wells are located at the site. Monitoring well #1 is up-gradient of the production area, well #2 and well #3 are down gradient of the production area. No cyanide has been detected in the wells.

The facility does not discharge to surface water. The nearest surface water is the Humboldt River which is located about one mile south of the plant.

Total cyanide concentrations in groundwater are not detectable and are therefore lower than compliance points under, and downgradient, of the facility. These levels are also below levels that are protective of identified beneficial uses of the groundwater.

Beneficial uses, as outlined in the site well permits, are for industrial and domestic sanitation. There is also an allowance for water to be used for irrigation, the immediate downgradient use. The analyses performed are for total cyanide. The results from the recertification period did not show any detectable cyanide. The limit of detection for the water analysis is 0.1 mg/l, half of the U.S. Environmental Protection Agency (EPA) drinking water Maximum Contaminant Level Goal (MCLG) of 0.2 mg/l.

Quarterly monitoring of groundwater according to the site BWPC (Bureau of Water Pollution Control) permit was reviewed. Three groundwater monitoring wells are located at the site and include downgradient well sample locations. The auditor reviewed groundwater monitoring analytical records from the recertification period. The data indicate that there is no detectable cyanide in the groundwater.

Cyanco limits atmospheric process emissions of HCN gas and cyanide dust such that the health of workers and the community is protected. Stationary atmospheric cyanide monitors CEM (Continuous Emissions Monitoring System) are used to perform air monitoring at the site perimeter, as required by the site air quality permit.

The amount of cyanide released to the atmosphere is a calculated value using an emissions

factor together with production volumes. No air permit excursions have happened since the previous Cyanide Code audit. Air and groundwater monitoring was done in accordance with state permitting requirements and was found to be appropriate.

Fixed cyanide monitors in the process areas are used at the site. They are all monitored by the control room operator via alarms. The alarms are part of the Distributed Control System (DCS).

Monitoring is conducted at frequencies adequate to characterize the medium being monitored and to identify changes in a timely manner. Groundwater is monitored quarterly. Air is continuously monitored at the site perimeter and is annually measured at the stack. Emission reports are also calculated quarterly based on production volumes. All monitoring is done in accordance with permit requirements and was deemed to be acceptable by the auditor.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 3.1?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Principle 4 | TRAINING

Train workers and emergency response personnel to manage cyanide in a safe andenvironmentally protective manner.

Production Practice 4.1

Train employees to operate the facility in a manner that minimizes the potential for cyanide exposures and releases.

The facility trains its workers to understand the hazards of cyanide and refresher training is conducted annually. Cyanco has a Training Policy and a formal training program that includes cyanide safety training prior to the start of work and training on the following topics: personal protective equipment (PPE) use, Stop Work Authority, incident reporting and investigation, hazard communication, portable HCN gas monitors, first aid, waste management, and emergency response procedures. New workers are required to complete four days of classroom training before going into operational areas where cyanide is present. A total of 80 hours of classroom and on-the-job training is done prior to being asked to work independently in the production area. The training program includes cyanide hazards and safety precautions. The training program is

well organized, and records are maintained in electronic format.

The plant has a training system that is used to track training compliance of personnel. The auditor reviewed samples of training records including completed tests from the recertification period. Coming Due and Overdue reports were also reviewed. Employees that are more than 30 days overdue for training are removed from their role by the Plant Manager until the training is complete. Records were readily available and well-organized. No problems were noted during the audit.

The facility trains its workers in the use of personal protective equipment on when and where this equipment is required, as part of the classroom safety training and again during the on-the-job training done by supervisors. Tests are given and employees are observed to confirm that they thoroughly understand PPE requirements and the proper use requirements prior to starting work in an area with potential exposure to cyanide.

Refresher training in PPE is provided annually. Records were available during the audit for review.

The facility trains employees to perform their normal production tasks with minimum risk to health and safety and in a manner that prevents unplanned cyanide releases. Employees are trained to perform normal production tasks on each SOP of their job assignment to minimize risks to personal safety and the environment. Personnel are trained procedure by procedure and tests are given to confirm competence.

On-the-job training is given with supervision by experienced workers. Safe operating procedures and cautionary statements can be found throughout the documents used to operate the plant.

On-the- job training has these phases: a) read the SOP; b) Perform the job with the instructor; c) Do the work with an observer d) Pass a test. Operators interviewed were aware of the SOPs that pertained to their jobs. Tests and training records were sampled for personnel new to the operation during the recertification period. New workers are required to complete four days of classroom training before going into operational areas where cyanide is present. Records showed that employees had received appropriate training.

The plant follows established U.S. Occupational Health and Safety Administration (OSHA) Process Safety Management (PSM) regulations regarding re-training frequency on process-related operating procedures. Employees are re-trained at least every three years on normal production tasks and are re-tested to confirm continued competence. Cyanide safety training and emergency response training is refreshed every year. Records were reviewed and were found to be acceptable.

The training elements necessary for each job are identified in the training plan. A training curriculum exists for each job type. The Safety Technician manages all safety-related training requirements. The Shift Supervisor ensures that personnel are given on-the-job training on specific job tasks and that tests are given. The identification and fulfillment of safety training needs was found to be very strong.

Training is provided by appropriately qualified personnel. Experienced employees, professional trainers, or supervisors administer training to employees. The supervisor leads the training and

then it is continued by an experienced operator. Trainers were found to be appropriately qualified and competent.

The effectiveness of cyanide related training is tested using a written test. Based on the tests results, Cyanco determines if employees must be retrained or if they can be authorized to work independently. Depending on the training topic, a skill demonstration may also be requested by the trainers. An electronic system is used to assign and track the completion of training. Paper records are retained for the testing results. Training records and test results from the recertification period were available for review and found to be complete.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 4.1?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 4.1. Cyanco trains its employees to operate the storage and transferring facilities in a manner that minimizes the potential for cyanide exposures and releases.

Production Practice 4.2

Train employees to respond to cyanide exposures and releases.

Cyanco trains its workers in the procedures to be followed in the case of a cyanide exposure or if a cyanide release occurs. This is part of the cyanide safety training and the training on the Emergency Response Plan (ERP). Each SOP indicates the necessary pre-requisite training. The facility trains workers in HAZOP (Hazard and Operability) awareness and operation. If there were a cyanide exposure, there is a detailed decision tree instruction to explain what steps need to be taken if the person is conscious versus unconscious. If a worker were to discover a cyanide release, they know they must either immediately report it and/or activate the alarm system. Emergency response drills are also conducted to ensure that the Emergency Response Team fully understands its responsibilities and refreshes its skills. Interviews were conducted and training materials were reviewed. Operators showed a good level of awareness of what steps to take if a cyanide release were to be discovered.

Cyanco trains its workers to respond to worker exposure to cyanide and cyanide releases. Routine drills are used to test and improve their response skills. The plant performed several mock drills during the recertification period to test and improve employee response skills.

Employees are trained on how to respond to a worker exposure to cyanide and cyanide releases and drills are conducted annually to ensure that the Emergency Response Team refreshes its skills.

Detailed training records are retained in each employee file documenting the training they have received and including the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials. Training tests records were sampled during the audit. Records are maintained for at least as long as the employee works at the site. All records pertaining to cyanide safety were sufficiently detailed to be found compliant to Cyanide Code and internal requirements.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 4.2?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 4.2. Cyanco trains its employees to respond to cyanide exposures and releases.

Principle 5 | EMERGENCY RESPONSE

Protect communities and the environment through the development of emergency response strategies and capabilities.

Production Practice 5.1

Prepare detailed emergency response plans for potential cyanide releases.

Cyanco has developed an Emergency Response Plan (ERP) to address potential releases of cyanide that may occur on site or may otherwise require response. Cyanco maintains a detailed emergency preparedness program and ERP to address the potential release of cyanide during an on-site incident. Off-site or transportation-related incidents are also addressed in the plan. Detailed response actions for transportation incidents, however, are contained in the Cyanco Global Transportation Emergency Response Plan (GTERP). The GTERP was audited in detailed during the certification audit of the Cyanco North American Rail and Truck Supply Chain.

The site ERP is reviewed at least once each recertification period, and revised as necessary, with the most recent revisions made in 2022 following the on-site audit. The statements throughout this section of the report reflect the evaluation of the revised ERP that was submitted after the on-site audit.

The ERP considers the potential failure scenarios appropriate for its site-specific environmental and operating circumstances, including release of hydrogen cyanide (HCN). According to the ERP and interviews, it is highly unlikely that catastrophic levels of HCN could be released from the production facility due to the construction of the plant and design of the process. The ERP was updated to reflect that the Winnemucca Plant now produces solid sodium cyanide briquettes, in addition to sodium cyanide solution.

Emergency response plans are general in nature, but address actions to be taken in the event of a release either inside or outside secondary containment during production (pipe, tank, valve-related incidents), packaging, storage, loading and unloading operations. Fire and explosion scenarios and require actions are also detailed in the ERP. Specific actions are included in the ERP for power outages and equipment failures.

There are no ponds or waste treatment facilities, but actions required to respond to a potential overtopping of tanks or transportation equipment is addressed through the generic “on-site response” procedure in section 15 of the ERP.

The ERP was found to have an acceptable level of detail to address relevant emergency scenarios.

Specific response actions were detailed in the ERP for relevant emergency scenarios, including the evacuation of site personnel. It was deemed to be highly unlikely that the plant could potentially impact the community, especially due to the remote location of the plant and the

absence of waterbodies. Notification procedures for the county and the local hospitals, etc. are, however, included in the ERP.

Appendix E of the ERP is entitled “First Aid for Cyanide Exposure” and offers general information regarding response actions for cyanide exposure incidents. Cyanco maintains a Cyanokit but relies on external emergency responders to administer the antidote. First Aid in the form of oxygen therapy is given by site personnel until an ambulance arrives.

The ERP provides information regarding the control of a cyanide release at its source, containment, assessment, and mitigation. Future prevention of releases is the topic of the ERP review process and the periodic emergency response drills.

In addition, Cyanco has a detailed accident investigation procedure that requires identifying the root cause of the accident and establishing corrective and preventive actions to prevent accident recurrence.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.1?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.1. Cyanco has prepared detailed emergency response plans for potential cyanide releases.

Production Practice 5.2

Involve site personnel and stakeholders in the planning process.

The facility has involved its workforce and stakeholders, including potentially affected communities, in the emergency response planning process. The Cyanco Emergency Response Plan (ERP) has been developed with input from employees. Comments are considered for inclusion in the program with respect to their applicability with regulatory and company standards. Employees are asked for feedback on the ERP during the revision process and are involved in the emergency response program by being active emergency response team members.

Cyanco Environmental, Health, and Safety (EH&S) staff are involved in the Local Emergency Planning Committee (LEPC) in Winnemucca. The EH&S Manager regularly meets with stakeholders. Records of community and emergency planning activities were available for the recertification period, most recently from 2022 interactions with stakeholders. Stakeholders

include professionals from Humboldt General Hospital, mining customers, Humboldt County School District, Humboldt County Commission, Bureau of Land Management, and the City of Winnemucca. Records from the recertification period, most recently in 2022 were available for review during the audit.

The facility has made potentially affected communities aware of the nature of the risks associated with accidental cyanide releases and consulted with them regarding the communication and response actions. The operation has regular communication with stakeholders to ensure that the ERP addresses current conditions and risks.

The facility has involved local response agencies as outside responders and medical facilities in the emergency planning and response process. Emergency planning activities included meetings and communications with professionals from Humboldt General Hospital, mining customers, Humboldt County Commission, Bureau of Land Management, and the City of Winnemucca.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.2?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.2. Cyanco has developed procedures for internal and external emergency notification and reporting.

Production Practice 5.3

***Designate appropriate personnel and commit necessary equipment and resources for* emergency response.**

The Emergency Response Plan designates primary and alternate emergency response coordinators with explicit authority to commit the resources necessary to implement the ERP.

The Control Board Operator is the Incident Commander during any emergency until relieved by a Lead Operator or an authorized member of management. The Emergency Response Team is formally appointed and trained. The emergency response team members are identified the ERP Team Contact section of the ERP.

Training requirements for the Emergency Response Team are defined in a training matrix entitled “Safety Training Requirements” in the “Emergency Response Team Handbook.” All Emergency Responders receive formal hazardous materials training and training in the Cyanco

Emergency Response Plan. For chemical releases, the Hazardous Materials Technician would play a primary role. This individual is required to take a 24-hour certified emergency response training course. Safety training at Cyanco was found to be well organized and records were readily retrievable in a computer database and in hard copy files.

The ERP includes call-out procedures and 24-hour contact information for the coordinators and response team members. Emergency Response Members also stated that all emergency numbers are programmed into their cell phones.

The duties and responsibilities of the team members and the emergency coordinators are clearly defined in the ERP. Cyanco's safety manual outlines the requirements and defines how the emergency response team will respond to emergencies outlined in the ERP. Emergency Response Team members were interviewed, and awareness of roles and responsibilities was very good.

The Emergency Response Plan references emergency response equipment that is maintained at the facility. A table in section 15.6 of the ERP lists out the equipment and the schedule of inspection. The inspections are done using an inventory checklist with sufficient detail to perform the monthly and quarterly inspections of the equipment. Records were available for the recertification period and emergency equipment was suitably maintained.

The ERP includes procedures to inspect the emergency response equipment to assure its availability when required. The Emergency Equipment is inspected regularly, on a monthly or quarterly basis, depending on the type of equipment. Most of the equipment is maintained in either an emergency response trailer or and emergency response storage room at the site. Some of the medical response equipment is maintained in the Control Room. Equipment was found to be well organized and in very good condition.

The ERP describes the role of outside responders, medical facilities, and communities in emergency response procedures. Call numbers for outside responders are contained within the ERP in Appendix A and the roles of external responders are detailed in response agreements. The external responder roles are common for the United States and the formal emergency response training given to the site personnel by an external training provider includes information regarding interactions with external responders. Cyanco also participates in combined drills with the transportation company, mine sites and local responders to ensure that roles between organizations are understood.

Cyanco has requested that local emergency response agencies be called upon in an emergency onsite. Since these agencies have specialized training in fire, medical response transportation and law enforcement, they will be utilized to respond according to their training. If an offsite emergency requires Cyanco's personnel expertise, those personnel will be made available in a support/liaison role pursuant to their level of training.

Emergencies occurring during transport may require the involvement of outside agencies and response personnel. Cyanco has a contract in place with Garner Environmental Services, Inc. (GESI) specific to off-site sodium cyanide response. Cyanco management will determine if a given incident requires activating the Cyanco Global Transportation Emergency Response Plan

(GTERP). Garner contact information is included in Appendix A of the Emergency Response Phone List. If a cyanide tanker is involved in an accident, the Cyanco management staff together with GESI and TransWood will determine the level and extent of the response.

The facility confirmed that outside entities included in the ERP are aware of their involvement and that they are included in mock drills or implementation exercises, when possible. Drills are performed with the transportation company, mine customers, and outside responders to ensure that all entities understand their role in responding to an emergency. Cyanco re-affirms the agreements to respond and treat potential cyanide exposure victims with its external emergency responders at least once every three years. The most recent affirmation letters from the community (county, hospital, and fire department) were available for 2022.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.3?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.3. Cyanco has developed procedures for internal and external emergency notification and reporting.

Production Practice 5.4

Develop procedures for internal and external emergency notification and reporting.

The ERP includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities for emergencies, as appropriate. Phone numbers for local response agencies are available in Appendix A the Emergency Response Phone List.

The ERP includes procedures and contact information for notifying potentially affected communities of an incident and response measures and for communication with the media. The ERP has a list of external stakeholders that need to be notified depending on the nature of the emergency. The call list includes numbers for regulatory agencies in Winnemucca, Nevada, and surrounding states. Appendix B of the ERP – Media Relations and Crisis Communications – gives additional guidance and information with regards to communication with external stakeholders.

The ICMI significant cyanide incident criteria were added to the ERP Appendix A Reporting Matrix with the instructions that ICMI must be notified within 24 hours if there is a significant cyanide incident.

There was one on-site liquid product spill to containment in 2022 that met the ICMI definition of "Significant Cyanide Incident". Cyanco notified ICMI, as required. A full incident investigation was performed with corrective actions to prevent recurrence. The spill was completely contained within secondary containment and there were no injuries, exposures, or off-site impacts. There were no regulatory reporting requirements associated with this contained spill.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.4?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.4. Cyanco has developed procedures for internal and external emergency notification and reporting.

Production Practice 5.5

Incorporate remediation measures and monitoring elements into response plans and account forthe additional hazards of using cyanide treatment chemicals.

The ERP describes specific remediation measures for recovery and neutralization of solutions and solids, decontamination of soils or other contaminated media, management and disposal of spill clean-up debris. The need to include a provision for an alternate drinking water supply was not deemed necessary. There are no surface or ground water vulnerable locations near this site. It is a very arid, desert-like area.

Section 15.4 of the ERP, Release of Cyanide to Soil or Water, discusses the steps to be taken in the event of a cyanide release to ground or water. Decontamination, recovery, and disposal of soil and solids is discussed. The ERP also lists the name and telephone number of a commercial remediation management contractor who would be called to assist with any large-scale remediation effort. The hazards associated with a cyanide release to water are also discussed in the ERP.

Decontamination of surfaces, soil, and equipment is done using hydrogen peroxide solution, as described in the site decontamination policy. Spills inside containment are managed using

existing transfer infrastructure to collect the cyanide back into storage before any decontamination of contaminated surfaces. This ensures that the maximum amount of cyanide can be recovered instead of needing to be disposed of as hazardous waste. The storage and handling for the hydrogen peroxide is defined in the procedure. The procedure is detailed and described the mixing, ratio, and safe handling considerations.

In the event of a spill, the contaminated materials are collected into drums until samples show that cyanide is no longer detectable. Procedures detail the sampling and analytical methods to be used. Contaminated material is offered to customers to be used on their leach pads. Contaminated waste which is not suitable for the customer use is managed by an external contractor that is authorized for hazardous waste transport and disposal by incineration. Waste handling procedures are in place to ensure proper handling. Interviews with personnel confirmed that there is very good understanding at the site as to how cyanide waste is to be managed.

The remediation management contractor procedure was reviewed. The document includes language that addresses decontamination, management, and disposal of cyanide-contaminated materials. The ultimate destination for the materials is under the control of Cyanco, as per the procedures summarized above.

The ERP prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water or that could reasonably be expected to enter surface water. Section 15.4 of the ERP prohibits the use of sodium hypochlorite and other treatment chemicals in surface water.

The ERP does allow consideration of chemical detoxification if the water body is contained. Interviews clarified that this was meant to allow for the decontamination of water in a ditch or similar situation.

The ERP addresses the need for environmental monitoring to identify the extent and effects of a release, and includes sampling methodologies, parameters, and possible locations. Section 15.4 of the ERP explains the methods that would be used to determine the extent of contamination in soil.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.5?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.5. Cyanco has incorporated response plans and remediation measures monitoring levels that account for the additional hazards of using cyanide treatment chemicals.

Production Practice 5.6

Periodically evaluate response procedures and capabilities and revise them as needed.

The ERP includes provisions for reviewing and evaluating its adequacy on a periodic basis, and at least once per recertification period. The ERP also calls for review and revision following drills and incidents, as appropriate.

Mock emergency drills are conducted periodically as part of the ERP evaluation process. Cyanco conducts periodic emergency drills, holds drill critiques, and evaluates the need for further training or adjustment to the emergency procedures.

Cyanco's intent is to conduct emergency drills each year, however this was challenging during the COVID pandemic years. Records were available to show that both spill and human exposure drills with external stakeholders were conducted during the recertification period. Emergency Team meetings and training exercises were done via web meeting in 2020, via tabletop in 2021, and through a physical drill in June 2022. The June 2022 drill was a full-scale emergency response drill that simulated the entire emergency response process, including the response steps that would be taken is a cyanide spill were accompanied by cyanide exposure to a worker. Furthermore, the drill was conducted together with local emergency responders and agencies.

The emergency plans were evaluated and revised as necessary in response to drill critiques and incidents during the recertification period. The most recent revisions to the ERP were processed in 2022.

There are provisions to evaluate the ERP after any emergency that required its implementation, for revising it as necessary after drills and actual emergencies.

Cyanco conducts emergency drills, holds drill critiques, and evaluates the need for further training or adjustment to the emergency procedures. Records were available to show that drills with external stakeholders were conducted. The emergency plans were evaluated and revised as necessary in response to drill critiques and incidents during the recertification period.

Finding: Is the operation in full compliance, substantial compliance, or non-compliance with Production Practice 5.6?

☒ Full Compliance ☐ Substantial Compliance ☐ Non-Compliance

Cyanco complies with all applicable elements of Production Practice 5.6. Cyanco periodically evaluates response procedures and capabilities and revises them as needed.