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**International Cyanide Management Code  
Operational Certification Audit of:**



**Coatzacoalcos  
Sodium Cyanide Production Facility**

**Summary Audit Report**

**Submitted to:  
The International Cyanide Management Institute  
1400 I Street, NW – Suite 550  
Washington, DC 20005  
USA**

*2016 Audit Cycle*



## Table of Contents

CyPlus Idesa Coatzacoalcos Sodium Cyanide Production Facility Summary .....	2
Company Names & Contact Information .....	2
Description of Operation.....	2
Audit Implementation and Conclusions.....	3
Auditor’s Finding.....	4
CyPlus Idesa Operational Certification Audit Results.....	5
1. OPERATIONS: Design, construct and operate cyanide production facilities to prevent release of cyanide.....	5
2. WORKER SAFETY: Protect workers’ health and safety from exposure to cyanide.....	8
3. MONITORING: Ensure that process controls are protective of the environment. ....	10
4. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.....	11
5. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities.....	13

# CyPlus Idesa Coatzacoalcos Sodium Cyanide Production Facility Summary

## Company Names & Contact Information

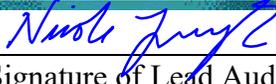
<b>Name and location of Operation:</b>	CyPlus Idesa, S.A.P.I. de C.V. Boulevard Morelos Km 4.2 Parque Industrial Petroquimico Morelos, Coatzacoalcos, Veracruz de Ignacio de la Llave, 96400 Mexico
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## *Description of Operation*

CyPlus Idesa, S.A.P.I. de C.V. is a joint venture company formed by Evonik Industries (Germany) and Grupo Idesa S.A de C.V. (Mexico). The pre-operational certification of this operation was conducted in November 2015.

CyPlus GmbH (a 100% subsidiary of Evonik Industries) and Idesa are both large companies that bring years of experience in chemical production to the joint venture. Among other things, CyPlus Idesa benefits from CyPlus' mature integrated management systems for environment, health, safety, and quality and from CyPlus sodium cyanide technology and production experience. Idesa also brings mature systems, experienced chemical operations personnel, infrastructure, and regional knowledge to the joint venture.

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CyPlus Idesa – Coatzacoalcos Facility  February 26, 2017  
Name of Operation Signature of Lead Auditor Date

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## ***Audit Implementation and Conclusions***

Solid sodium cyanide production operations, policies and procedures, and the facility were evaluated during this audit. The audit was conducted through discussions and interviews with operations personnel, senior management, operations management, engineering, and environmental, health, safety & quality (EHSQ) staff. Personnel involved in the audit were from Germany and Mexico and from CyPlus, Evonik, Idesa, and CyPlus Idesa. The auditor used the ICMI “Cyanide Production Verification Protocol” to evaluate International Cyanide Management Code (ICMC) compliance.

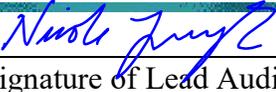
Locally defined procedures were evaluated during this audit. This ICMC compliance assessment was based on random samples of information. Interviews, observations, and a review of records and data were typical of an environmental, health and safety (EH&S) management system or compliance audit.

The CyPlus Idesa operational certification audit was performed by independent third-party auditors who are pre-approved by the ICMI as Lead Auditors for all types of International Cyanide Management Code (ICMC) audits and as technical experts for ICMC audits of cyanide transportation and production operations.

The operation transitioned from the pre-operational to operational state in a very controlled and safe manner. There have been no cyanide-related incidents, spills, or exposures.

All aspects of the cyanide operation were included in this ICMC Operational Certification Audit. The operation was found to be in FULL COMPLIANCE with ICMC Cyanide Production Operational requirements.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

## Auditor's Finding

The cyanide management practices for the CyPlus Idesa Coatzacoalcos production were evaluated for ICMC compliance using the *ICMI Cyanide Production Operational Verification Protocol*. CyPlus Idesa internal standards, policies, practices, and procedures regarding the management of the cyanide operations were reviewed.

The auditor found that the overall level of preparedness for the assessment and understanding of ICMI Cyanide Code requirements was excellent. Management systems upon which the operation is based were found to be very mature and personnel demonstrated excellent operational discipline.

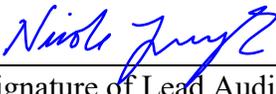
There have been no cyanide-related incidents, spills, or exposures.

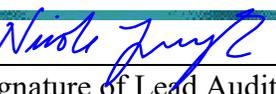
The results of this operational certification audit demonstrate that the CyPlus Idesa Coatzacoalcos production facility and all cyanide-related operations are in FULL COMPLIANCE with International Cyanide Management Code operational requirements.

Audit Company:	MSS Code Certification Service, A Division of Management System Solutions, Inc. <a href="http://www.mss-team.com">www.mss-team.com</a>
Lead / Technical Auditor:	Nicole Jurczyk E-mail: <a href="mailto:njurczyk@mss-team.com">njurczyk@mss-team.com</a>
Auditor:	<u>Bruno Pizzoni</u>
Date(s) of Audit:	November 30 thru December 1, 2016

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Certification Audit Team Leader, 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 Verification Auditors.

I attest that the Audit Reports accurately describe the findings of the certification audit. I further attest that the 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.

CyPlus Idesa – Coatzacoalcos Facility  February 26, 2017  
Name of Operation Signature of Lead Auditor Date

CyPlus Idesa – Coatzacoalcos Facility  February 26, 2017  
Name of Operation Signature of Lead Auditor Date

## CyPlus Idesa Operational Certification Audit Results

### ***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 engineering practices and quality control/quality assurance procedures.*

**The operation is**  **in full compliance with Production Practice 1.1**

*Summarize the basis for this Finding:*

CyPlus Idesa implemented quality control and quality assurance programs as part of the Coatzacoalcos production facility construction project. Leadership interviewed during the audit confirmed that the company retained all quality control and quality assurance records from the construction of the cyanide production and storage facilities.

Records were available to demonstrate that appropriately qualified personnel reviewed the facility construction process at frequent intervals and confirmed that all stages of the facility conformed to engineering plans. Extensive quality control and quality assurance records were reviewed during the audit and were found to be acceptable.

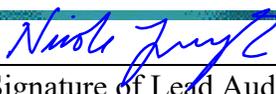
The materials of construction for the cyanide production facility are compatible with reagents that are used in the production processes. Materials of construction specifications were sampled during the audit and were found to be acceptable. Interlock information was reviewed during the audit. Controls are in place to prevent cyanide releases in the event of a power loss or equipment failure.

All production activities are done on a concrete surface. No cyanide-related activities are performed outside of the containment area. Interviews and a review of a sample of specifications and drawings confirmed that all tanks and storage vessels have tank level indicators and high-level alarms that are linked into the distributed control system (DCS). The indicators were deemed to be sufficient for preventing the overfilling of cyanide process and storage vessels.

The secondary containments for process and storage tanks and containers are constructed with materials that provide a competent barrier to leakage. Additionally, these secondary containment areas are sized to hold a volume greater than that of the largest tank, any piping draining back to the tank, and additional capacity to account for the highest possible rainfall from a severe storm event. Engineering planning information, calculations, and rainfall information were reviewed. All information was found to be appropriate and acceptable. All cyanide solution piping is located over concrete that has secondary containment.

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CyPlus Idesa – Coatzacoalcos Facility  
Name of Operation

  
Signature of Lead Auditor

February 26, 2017  
Date

*Production Practice 1.2: Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.*

**The operation is**  **in full compliance with Production Practice 1.2**

*Summarize the basis for this Finding:*

The Coatzacoalcos production and storage facilities have the necessary procedures in place for a safe and environmentally sound operation. Extensive operational and emergency response procedures have been created by CyPlus Idesa specifically for this operation. Procedures that address normal operations, upset conditions, and emergency events are addressed in the documentation.

Maintenance procedures and operational procedures were reviewed and provide information about minor process upset issues. The Civil Protection Plan describes the procedures to be followed in the event of a fire, explosion, and exposure or cyanide release. CyPlus Idesa also has an additional procedure for contingencies during upsets in its activities.

Management, engineering, and EHSQ personnel were interviewed during the audit. All personnel audited demonstrated a high level of procedural awareness. CyPlus Idesa has implemented a formal Management of Change procedure that calls for a risk analysis to be performed prior to making any changes to procedures or equipment. Several examples of when the MOC procedure was used were available for review and found to be acceptable.

A preventive maintenance program has been developed and is in use. Records for the preventive maintenance system were sampled and were found to be very complete. All procedures reviewed were found to be appropriate for the operation.

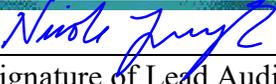
The master schedule of calibrations to be done and the calibration records were sampled during the audit. Calibrations are performed at frequencies that are consistent with manufacturer recommendations.

CyPlus Idesa has implemented procedures to prevent discharges of cyanide-contaminated water to the environment and for managing and disposing of cyanide-contaminated solids in an environmentally sound manner. Procedures were sampled during the audit and found to be acceptable.

CyPlus Idesa has implemented environmentally sound procedures for the decontamination of cyanide-contaminated solids and the proper disposal of all materials. Interviews were conducted and records were reviewed to confirm implementation of the procedures.

The warehouse building has adequate ventilation to prevent the build-up of hydrogen cyanide gas. All cyanide production and storage activities are done under a roof to prevent contact with water.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

The perimeter of the facility is completely fenced and there is 24/7 security to ensure that no unauthorized personnel access the site. CyPlus Idesa ensures that all cyanide packages are labeled in the appropriate languages for the countries through which the material is transported.

*Production Practice 1.3: Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.*

**The operation is  in full compliance with Production Practice 1.3**

*Summarize the basis for this Finding:*

CyPlus Idesa has developed a program to conduct routine inspections of all cyanide production and storage facilities including: tanks, pipelines, pumps, valves, and containments. Tanks are on a preventive maintenance program and are inspected annually. Secondary containment is inspected monthly and pipelines, pumps and valves are inspected monthly as part of the preventive maintenance program. Inspection records were available for review and found to be complete. Cyanide tanks are inspected for structural integrity and signs of corrosion and leakage. Secondary containments are assessed for their integrity, the presence of fluids, their available capacity, and to ensure that any drains are closed to prevent accidental releases to the environment. Pumps and pipelines are inspected at defined frequencies within the preventive maintenance program. Records were available to demonstrate conformance to planned arrangements.

Inspection frequencies were found to be sufficient to assure that equipment is functioning within design parameters. Pipelines, pumps and valves are inspected monthly for deterioration and leakage. Records were reviewed and found to be complete. Elevators are inspected monthly as is firefighting equipment, basic PPE and areas with CN. Showers are inspected every week. Records were available for review and found to be complete.

CyPlus Idesa documents inspections and retains records in the work order system and in hard copy. The inspections include items observed, date of inspector, name of inspector and any observed deficiencies. Corrective actions, in the event that deficiencies are observed, are also documented. This information was confirmed through interviews and a review of records. All information was found to be acceptable by the auditor.

2. **WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.**

Production Practice 2.1: *Develop and implement procedures to protect plant personnel from exposure to cyanide.*

The operation is  in full compliance with Production Practice 2.1

*Summarize the basis for this Finding:*

Procedures are in place for normal operations, abnormal operations and maintenance-related activities. A list of all operational, maintenance, and EHSQ procedures was available for review and found to be acceptable. Procedures for normal operations, abnormal operations, emergency response, and maintenance-related activities were sampled, personnel were interviewed, and records were reviewed. Implementation and compliance with procedures were confirmed through these auditing methods.

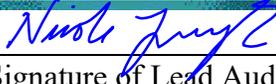
CyPlus Idesa employs a Management of Change (MOC) procedure to review proposed changes as necessary. Changes in documentation, installations and operational changes are processed using this procedure. MOC records were available for review and were found to be acceptable. Changes in documentation, installations and operational changes are processed using this procedure. CyPlus Idesa solicits worker input and considers this when developing and evaluating health and safety procedures. The facility's Safety Committee meets regularly and includes operators, supervisors, and managers. Operators are encouraged to provide feedback on procedures and changes at the facility.

Stationary and portable HCN monitors are used throughout the operation to ensure that workers are not exposed to unsafe concentrations of HCN gas or cyanide dust. HCN monitors are calibrated according to manufacturer's specifications. Records were available for review and found to be complete. Records are retained for at least one year.

With regards to ensuring safe work environments, areas of the plant and warehouse where cyanide exposure may occur were formally evaluated to ensure safe working conditions. Controls were put in place to ensure that workers are protected at all times.

CyPlus does not allow people to work alone in areas where cyanide is present. Each person in the production area is equipped with a handheld radio. Additionally, stationary two-way communication equipment is located throughout the operation. Fitness for duty medical exams are done prior to hire and on a regular basis thereafter. Interviews confirmed that the health of employees is evaluated to determine their fitness to perform their specified work tasks. Records are maintained.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

CyPlus Idesa has a defined clothing changing policy that requires operators to change clothing prior to leaving the operation. Clothing and PPE requirements are also defined for contractors and visitors.

Appropriate cyanide warning signs and PPE signs are present in all operational areas. Eating, drinking, smoking, and open flames are prohibited where there is a potential for cyanide contamination. Leadership and operators showed very good awareness of the restrictions and of the potential dangers of not adhering to those restrictions. Formal procedures prohibit eating, drinking, smoking, and open flames in the production and storage areas.

*Production Practice 2.2: Develop and implement plans and procedures for rapid and effective response to cyanide exposure.*

**The operation is  in full compliance with Production Practice 2.2**

*Summarize the basis for this Finding:*

CyPlus Idesa has drafted a comprehensive Emergency Response Plan (ERP) for rapid and effective response to cyanide exposure. The ERP was reviewed and was found to be comprehensive. It includes procedural steps to be followed in the event that cyanide is ingested, skin or eye contact made, and/or if cyanide dust or gas is inhaled.

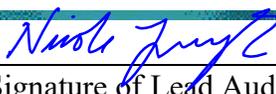
Shower / low-pressure eye wash stations are located throughout the facility. The facility also has non-acid fire extinguishers located at strategic locations. Shower / low-pressure eye stations and fire extinguishers are inspected regularly to ensure proper function.

CyPlus Idesa maintains records of all inspections. CyPlus Idesa has water, oxygen, resuscitator, antidote and a means of communication readily available for use in the plant at all times. Water pressure in the safety showers and eye wash stations is measured continuously and an alarm sounds in the control room if pressure falls below an acceptable level. The antidote available for use at the facility is Nithiodote, a kit with injectable sodium nitrite and sodium thiosulfate. Operations are only allowed when equipment is functioning. There are three designated social areas where fresh water is provided for drinking. Sanitary water is supplied with a tank on the roof. Oxygen for first aid, a resuscitator and antidote are available both in the medical office and the ambulance.

CyPlus Idesa inspects and appropriately maintains emergency response equipment and cyanide antidote to ensure availability during an emergency. The antidote is maintained according to manufacturer recommendations. Emergency response equipment inspection records were available for review and found to be acceptable.

CyPlus Idesa also contracts with the local hospital to maintain appropriate equipment and antidote. The service provider checks equipment monthly and the EHSQ staff checks the service provider's records regularly. Records were available for review and were found to be acceptable.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

Page 9 of 17

Cyanide Safety Data Sheets and first aid procedures are available to workers in the operational and storage areas of the plant in Spanish. The safety information is also published as posters at the facility. CyPlus-Idesa contracts with Evonik for the provision of SDSs and the maintenance of this information. Labeling and marking of piping shows the cyanide contents. Hazard information on tanks was reviewed and found to be acceptable. The direction of cyanide flow in pipes is also be identified.

The facility decontamination procedure requires that personnel change out of their clothing and personal protective equipment (PPE) after working in areas with the potential for contact with cyanide. CyPlus Idesa has its own on-site capability to provide first aid for many scenarios, including a potential emergency scenario involving cyanide. Procedures are in place should an exposure victim need to be transported to the hospital.

Local hospitals and medical staff have been alerted to the use of cyanide at this facility. The medical capabilities of the on-site emergency response team and the local hospitals were evaluated. The formal agreements the facility has in place with these medical facilities were reviewed and found to be acceptable.

The facility has developed instructions to transport exposed workers to locally qualified off-site medical facilities. Mock emergency drills of the site's ability to respond to exposure scenarios are conducted periodically. The ERP calls for emergency response drills, including exposure drills to be conducted each year. Once drills are complete the results are reviewed and appropriate modifications to the plan are made. Emergency response drill records from 2016 were reviewed. Lessons learned from the drill were incorporated into response planning.

CyPlus Idesa has implemented an incident investigation procedure for investigating, evaluating and reporting incidents, including cyanide exposure cases. The Incident Investigation procedure calls for the revision of the emergency response plans as necessary following a drill or actual emergency.

**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 operation is  in full compliance with Production Practice 3.1**

*Summarize the basis for this Finding:*

There is no direct discharge to surface water. The process waste water goes through the detox equipment. On-line titration measurements are made at frequent intervals to ensure complete

cyanide destruction. Wastewater discharges only to the Idesa wastewater treatment plant. CyPlus Idesa confirmed that there is no detectable level of cyanide discharged from the operation.

The groundwater results were reviewed from 5 groundwater wells that were installed in 2016. The results showed that there were no detectable levels of cyanide in groundwater under or around the site. This was done as a baseline before cyanide introduction. There have been no cyanide spills or releases at the operation.

According to interviews, CyPlus Idesa ensures that its operations remain in compliance with ICMC requirements and that its operations do not impact groundwater. In the unlikely event that impact to groundwater occurs, CyPlus Idesa will perform remedial activities to protect the groundwater's beneficial use.

Cyanide concentrations ambient air are monitored in the operation using portable and stationary HCN detectors. CyPlus Idesa limits atmospheric process emissions of hydrogen cyanide gas such that the health of workers and the community are protected.

There is no direct discharge to surface water from this operation. Groundwater sampling was performed prior to the start of operations and will continue to be monitored in the future at defined frequencies. Continuous monitoring of cyanide levels (free CN-) in process water at the discharge point after the detox area is performed to ensure that there is no impact possible from indirect discharge to surface water. Monitoring frequencies were found to be appropriate for the operation.

**4. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.**

*Production Practice 4.1: Train employees to operate the plant in a manner that minimizes the potential for cyanide exposures and releases.*

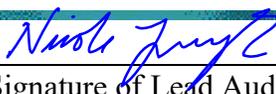
**The operation is  in full compliance with Production Practice 4.1**

*Summarize the basis for this Finding:*

CyPlus Idesa trains all personnel to ensure that they understand the hazards of cyanide. The training is given prior to working with cyanide and refreshed on an annual basis. The training is offered in Spanish and includes information on a full range of topics related to cyanide. This material is used for the cyanide safety training along with face to face training sessions that are given annually.

The training schedule was reviewed. The schedule calls for production, lab, and logistics personnel to be trained. The training schedule includes training requirements for EHSQ, maintenance,

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

administration, and production. Operators and leadership personnel were interviewed and had excellent awareness of the hazards of cyanide.

Site personnel receive training regarding the use, storage, and cleaning of the personal protective equipment (PPE) required by each activity or task. CyPlus Idesa is committed to training its workers to perform their normal production tasks with minimum risk to worker health and safety and in a manner which prevents unplanned cyanide releases. Internal training in the operational procedures was delivered to all relevant personnel prior to cyanide being introduced at the operation. The training slide deck was reviewed and is appropriately detailed. Training records were also reviewed and found to be acceptable. Personnel interviewed showed an appropriate level of understanding and awareness.

Employees receive classroom and on-the-job training in production tasks. Training and competency records (example: testing and/or supervisor reviews) are required for procedural, emergency response, and EHSQ training. Tests were available for review and found to be acceptable.

The training elements necessary for each job are identified in the training materials. The facility uses the work procedures to supplement training materials. Training is provided by appropriately qualified personnel. The training matrix was available for review and was found to be acceptable.

Experienced personnel from Evonik, CyPlus, and Idesa provide the training. The trainers are qualified engineering, operations, logistics, medical, and EHSQ personnel with many years of experience. Additionally, the Shift Supervisors and the lab personnel are trained in Germany.

CyPlus Idesa trains all personnel on cyanide awareness prior to their beginning work in the operation. Personnel are trained on job procedures in the classroom before working with cyanide. Records are retained, were available for review, and found to be acceptable.

The facility evaluates the effectiveness of cyanide training by testing and performance evaluations after the initial training sessions. Evaluation records are kept by the site, were available for review and were found to be acceptable.

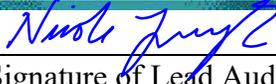
Production Practice 4.2: *Train employees to respond to cyanide exposures and releases.*

**The operation is**  **in full compliance with Production Practice 4.2**

*Summarize the basis for this Finding:*

CyPlus Idesa trains all personnel on its emergency response procedures. The Civil Protection Plan was reviewed. The Plan calls for employees to use the nearest alarm station if a release is detected. The control room is automatically made aware of the problem. The spill response procedure describes what steps need to be taken to manage a spill.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

Workers are trained to respond to potential cyanide exposures. Additionally, posters and wallet cards explain what needs to be done. Cyanide Safety training is done initially and then annually thereafter.

The surrounding industrial companies will be also informed via the CLAM (Local Mutual Aid Committee). Routine drills are performed to test response skills. The CyPlus Idesa Emergency Response Brigade has been trained to provide assistance to workers exposed to cyanide. Training for the medical staff included the use of the cyanide antidote that is maintained by the site.

Drills are conducted to test general response to chemical emergencies, including cyanide exposure. Mexican legislation requires that a record of the drill and the evaluation of the drill be made at least once per year. CyPlus Idesa processes corrective actions and revises emergency procedures as necessary following the drills or actual plan deployment. Drill results are evaluated from a training perspective to determine the need for revisions to training materials or training approaches. The plant also participates in the industrial complex drills.

The site maintains training records and evaluation results of all trained workers. Mexican legislation requires that training records be maintained on official forms. Training records will be maintained for at least as long as the employee is working at the site and fulfill all ICMI training record requirements. Records are in paper format.

**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.*

**The operation is  in full compliance with Production Practice 5.1**

*Summarize the basis for this Finding:*

CyPlus Idesa has developed emergency response procedures specific to the site to address potential releases of cyanide that may occur on site. PSP-90016 Emergency Response (Civil Protection) Plan and emergency procedures were reviewed during the audit, the documents were last revised in 2016.

The emergency plans consider the potential failure scenarios appropriate for its site-specific environmental and operating circumstances, including catastrophic release of cyanide, potential releases of cyanide from the operation, cases of fire and explosion, pipe ruptures, power outages or equipment malfunction, and overtopping of tanks, ponds or waste treatment facilities. The scenarios were found to be appropriate by the auditors.

Emergency response procedures and plans are spread out over several documents. The instructions for specific tasks and actions are listed. The ERP explains the specific actions to be taken in response to a spill including the ban of use of chemicals in surface water.

The ERP specifies the telephone numbers and the notification procedure to be followed in the event of an emergency. The neighborhood action plan from Idesa was revised and updated in 2016. The plan also includes a list of specific actions that are to be taken in the event of a cyanide exposure. The procedure for the hospital was also reviewed during this audit.

The ERP calls for the control of releases at their source. The ERP describes the necessary actions to take for release containment, assessment, mitigation and prevention.

*Production Practice 5.2:      Involve site personnel and stakeholders in the planning process.*

**The operation is                     in full compliance with Production Practice 5.2**

*Summarize the basis for this Finding:*

CyPlus Idesa involves its workforce, authorities at the adjacent facilities, and the community in the emergency response planning process. The operation joined the CLAM (Local Mutual Aid Committee) in early 2016. This organization is involved in emergency planning and includes industrial neighbors and local response agencies.

Workers participate in HAZOP Sessions from which they identify risks and control measures. CLAM involves the neighborhood in the emergency response planning process. The CLAM: Local Committee of Mutual Assistance Emergency contact list appears on Page 25. There is a dedicated radio for CLAM in the facility's control room. The availability and use of this communication equipment was observed during the audit.

The operation has provided training for local agencies such as the Red Cross, State Civil Protection Agency, Fire Department and the local hospitals in the emergency response process for the operation. Risks are communicated at periodic meetings with CLAM. The CLAM emergency plan for the industrial park is dated 2016. The risks are also communicated in the Environmental Impact Assessment (EIA) document. Records showing external responder participation in drills were reviewed during the audit and found to be acceptable.

CyPlus Idesa is committed to engaging stakeholders on a regular basis to ensure that its emergency plans remain current and address changing conditions. Interviews and a review of records were used to confirm this practice.

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Production Practice 5.3: *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

**The operation is**  **in full compliance with Production Practice 5.3**

*Summarize the basis for this Finding:*

The Civil Protection Plan designates the production supervisor as the brigade commander. The advisor staff also has authority to implement the emergency plans. This includes: Plant Manager, SHSQ Superintendent, Maintenance and Production Superintendents and alternate emergency response coordinators with explicit authority to commit the resources necessary.

Operators, management personnel and office staff are members of the site emergency response brigade. The site manager is the brigade coordinator and the responsibilities for internal and external communications in case of emergency are designated. Responsibility, authority, and duties for managing an emergency situation are clearly described in the emergency procedures.

The initial emergency response team was identified in the ERP and the team was trained by qualified personnel. The Civil Protection Plan includes the responsibilities and training needs of emergency responders. Training records were available for review and found to be acceptable.

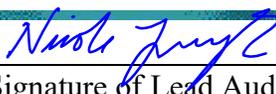
Once the emergency is communicated to the supervisor further communication is made by radio and phone. The Civil Protection Plan includes telephone numbers of the local emergency response agencies, CyPlus Idesa, CyPlus, Evonik, and Idesa representatives. The telephone list with emergency telephone numbers was found to be up-to-date. The ERP includes a list of the phone numbers of external responders, all are available 24/7.

The responsibilities, authorities and duties for managing an emergency situation are clearly described in the ERP. Emergency plans list the emergency response equipment maintained by the site. The plan includes a list of firefighting, chemical response, and medical equipment.

The emergency response equipment is inspected regularly using a checklist. Its availability and operation was confirmed during the audit. Completed checklists were available for review. Interviews were used to confirm awareness and commitment to fulfilling requirements. Showers and medical equipment are checked weekly.

The roles of outside responders, medical staff, and the industrial community are defined in the Civil Protection Plan. CyPlus Idesa has taken steps to ensure that outside entities included in the Civil Protection Plan are aware of their involvement. Interviews and a review of records were used to confirm compliance with this requirement.

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CyPlus Idesa – Coatzacoalcos Facility		February 26, 2017
Name of Operation	Signature of Lead Auditor	Date

*Production Practice 5.4: Develop procedures for internal and external emergency notification and reporting.*

**The operation is  in full compliance with Production Practice 5.4**

*Summarize the basis for this Finding:*

The ERP includes up-to-date emergency telephone numbers, the telephone numbers of the nearest hospital and local emergency agencies, as well as CyPlus Idesa emergency numbers. The plan also establishes who is responsible for calling the external responders and authorities.

The production is located within an industrial park. The CLAM Emergency Response Plan (2016 revision) points to an Operations Coordinator from CLAM who is responsible for notifications to CyPlus Idesa leadership, parent organizations, neighboring industrial partners, and authorities. Procedures also address communications with the media.

*Production Practice 5.5: Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

**The operation is  in full compliance with Production Practice 5.5**

*Summarize the basis for this Finding:*

The CyPlus Idesa ERP describes specific, appropriate remediation measures, such as recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris, and provision of an alternate drinking water supply, as appropriate. The ERP also addresses management and disposal of dangerous waste.

Emergency plans prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water. The ERP states that cyanide treatment chemicals are prohibited from being used in surface water.

Plans address the potential need for environmental monitoring to identify the extent and effects of a release, and include sampling methodologies, parameters and, where practical, possible locations.

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Production Practice 5.6: *Periodically evaluate response procedures and capabilities and revise them as needed.*

**The operation is**  **in full compliance with Production Practice 5.6**

*Summarize the basis for this Finding:*

The ERP is reviewed at least once a year and that emergency response drills are performed at least two times per year. These drills include cyanide spill and worker exposure scenarios, as well as evacuation drills. The ERP would also be reviewed, if necessary, after an accident.

Emergency response drill records from 2016 were reviewed. Both a cyanide exposure and environmental release scenario were tested. The drill results and the need for changes to the ERP following the drill were evaluated. The emergency plans were adjusted, as necessary.