Confined Space Entry Program

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1 Introduction

1.1 Purpose

This program contains requirements to ensure that all workers are protected from the hazards of entry into and work in confined spaces.

1.2 Scope

This program applies to all Phosphate Business Unit employees and contractors performing entry into and work in confined spaces on Mosaic Fertilizer property.

This program does not apply to excavations more than 4 feet deep. Entry into excavations shall be in accordance with the *EHSS-Phos Program – Trenching and Excavations Program*.

This program does not apply to spaces that were:

- previously considered to be a confined space but no longer meet the confined space definition
- modified specifically for the task or project that no longer meet the confined space definition.

Entry and work into these spaces shall be in accordance with the *EHSS-Phos Program Hazardous Work – Safe Work Permit Program*.

1.3 Definitions

Key terms used in this program are defined below:

Term	Definition
Acceptable Entry Conditions	Conditions specified on the Confined Space Entry Permit which identifies the measures taken to control the hazards associated with the Confined Space before entry may be allowed.
Atmospheric Testing	Process by which atmospheric hazards are identified and evaluated.
Attendant	A worker who is trained in the hazards of confined space and whose primary responsibility is to monitor and assist the workers in the confined space. Assistance includes maintaining communication with the workers via an adequate communication system, and if needed, calling for emergency rescue. Their location will be determined by the hazard assessment and the resulting confined space plan.
Authorized Entrant	A worker who is trained in the hazards and their responsibilities of confined space and is authorized to enter a confined space.

Term	Definition
Confined Space	Any space that has limited or restricted access, is enterable with the whole body, and is not designed for continuous human occupancy. All three items must exist to be considered a confined space. Examples include, but are not limited to: storage tanks, covered rail cars, tank cars and trucks, reactors, dryers, kilns, granulators, receivers, process vessels, bins, silos, hoppers, boilers, manholes, pipelines, dragline tub compartments, etc.
Confined Space List	List of known confined spaces that have been identified and evaluated for potential hazards associated with confined space entry.
Confined Space Entry Permit (Permit)	Form that is used to document the conditions, ensure all acceptable entry conditions have been satisfied, and control entry into a confined space.
Entry Supervisor	Trained and authorized worker who is responsible for evaluating the confined space conditions, determining if acceptable entry conditions are present, authorizing entry, overseeing entry operations, terminating entry, and cancelling the CSE Permit. An entry supervisor may serve as an attendant or authorized entrant.
Entry	Breaking the plane of the permit required confined space entry point with any body part (i.e. reaching in to swab, inspect, clean) as well as full body entry.
Equipment Owner	Worker in production, operations, maintenance, or support and is accountable for the equipment.
Functional test	Internal self-diagnostic test performed by the test instrument upon startup.

Term	Definition
Hazardous atmosphere	Atmosphere that may expose workers to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes: • Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL) • Airborne combustible dust at a concentration that meets or exceeds its LFL. This concentration may be approximated when dust obscures vision at a distance of five feet or less. • Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent • Atmospheric concentration of any substance capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects which in excess of its published dose or permissible exposure limit (PEL) • Any other atmospheric condition that is immediately dangerous to life or health (IDLH)
Hazardous conditions	Examples include, but are not limited to: hazardous materials, hot work, using combustibles, using carcinogenic liquids, engulfment, drowning, sloping floors, heat stress, oxygen consuming or displacing process, etc.
Hazardous materials	Materials that have the potential to cause injury to workers, damage to property or equipment, or an environmental concern. Examples include acids, hot scrub water, caustic, steam, ammonia, flammables, combustibles, radioactive and toxic materials, or oxidizers.
Hot work	Any temporary or permanent operation involving open flames or producing heat and/or sparks that could provide an ignition source. Examples include all potential ignition sources such as welding, burning torches, abrasive blasting, portable grinders, or any other heat or spark producing equipment that could provide an ignition source when used in a hazardous atmosphere.
Immediately dangerous to life or health (IDLH)	Any condition that poses an immediate or delayed threat to life, would cause irreversible adverse health effects, or would interfere with an individual's ability to escape unaided from a confined space.
Isolation	The lockout/tagout/tryout of equipment such that all sources of energy are physically removed or disconnected, rendering a system in safe mode. Examples include such means as blanking or blinding, misaligning or removing sections of lines, pipes, or ducts, double block and bleed, control of all sources of hazardous energy, blocking or disconnecting all mechanical linkages.

Term	Definition
Lower flammable limit (LFL)	Minimum concentration in air in which a gas or liquid will not support combustion. LFL is also known as lower explosive limit (LEL).
Matrix for final safety approval	Chart of management approval levels for performing permit required work.
Permit Required Confined Space	A confined space that contains or has a potential to contain hazardous atmospheres, engulfment hazards, converging walls, or any other recognized hazard.
Prohibited Condition	Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.
Rescue service	Workers or an outside entity that have received specialized training in confined space rescue and have been designated, evaluated, and approved by EHS.
Retrieval system	Mechanical lifting device or anchor used for non-entry rescue of persons from confined space.
Shift	Shift of the crew doing the work
Work group representative	A worker given authority to represent other workers who have been assigned tasks requiring them to work as a group.

1.4 References

The following documents are referenced in this program:

Document Title
OSHA 29 CFR 1910.146 Permit-required confined spaces
MSHA 30 CFR 56 Safety and Health Standards
EHSS-Phos Program – Hazardous Work-Safe Work
EHSS-Phos Reference – Hazardous Work-Safe Work Permit – Appendix C Matrix for Final Safety Approval
EHSS-Phos Program – Hot Work Welding Cutting
EHSS-Phos Program – Lockout-Tagout (Control of Hazardous Energy)

1.5 Documentation The following documents are required as part of this program:

Document Title	Document Id	Link / Location
Appendix A – Identifying a Confined Space	1676508	EHSS-Phos BU Livelink
Appendix B – Confined Space Entry Flowchart	693761	EHSS-Phos BU Livelink
Appendix C – Confined Space Entry Permit **See note below**	21522617	EHSS-Phos BU Livelink
Appendix D – Confined Space Atmospheric Testing Tables	693586	EHSS-Phos BU Livelink
Site Specific Confined Space List	N/A	Site Livelink
Site Specific Confined Space Procedures	N/A	Site Livelink

Note: Updated Confined Space Entry Permit includes alignment with the Hot Work Program. This updated CSE Permit will be available in 2023. The older version of the permit will remain valid into 2023, and will be replaced in the supply system via attrition.

2 Responsibilities and Training

2.1 Responsibilities The following table contains the responsibilities for specific groups / jobs as required by this program.

Group or Title	Responsibilities
Manager, Phos EHSS Project Management Office	Maintain the EHSS Phos Confined Space Entry Program
Site Leadership	Ensures this program is applied and upholds the requirements at their site
All Employees	Understand and comply with program requirements
Attendants	• Do not perform any duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants • Understand the hazards that may be faced during the entry into and work in a particular confined space, including information on the mode, signs, or symptoms, and consequences of the exposure • Maintain a continuous, accurate count and the ability to quickly identify the authorized entrants in the space

Group or Title	Responsibilities
	• Require authorized entrants to sign the permit and note entry and exit times • Remain outside the permit space during entry operations until relieved by another attendant • Cannot enter the confined space • Communicate with authorized entrants by speech, radio, or hand signals as necessary to monitor entrant status and to alert authorized entrants of the need to evacuate the space if acceptable entry conditions are not maintained • Monitor activities and conditions inside and outside the space to determine if acceptable entry conditions are maintained and it is safe for authorized entrants to remain in the space • Order the authorized entrants to evacuate the space immediately, take possession of the permit, and contact the entry supervisor if: o a prohibited condition is detected o authorized entrant is observed with behavioral effects of hazard exposure o a situation outside the space could endanger the authorized entrants o the attendant cannot effectively and safely perform all the required duties of an attendant • Take the following action when unauthorized persons approach or enter a space while entry is underway: o warns unauthorized persons that they must stay away from the permit space o advise the unauthorized persons that they must exit immediately if they have entered the permit space o notify the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space • Verifies access to suitable communication devices to contact rescue teams • Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from the permit space hazards • Remain outside the space during emergencies to provide rescuers with information such as number of authorized entrants, nature of emergency, etc. • Perform non-entry rescue if qualified but NEVER enter the permit space to attempt rescue

Group or Title	Responsibilities

Authorized Entrants	• Review permit requirements, acceptable entry conditions, and special precautions before entry
	• Verify agreement and acceptability of permit conditions by printing name and documenting time entered in “Authorized Entrants” section
	• Document exit and entry times
	• Secure the confined space as required by the EHSS – Phos Program Lock Out-Tag Out and Site specific procedures
	• Understand the hazards that may be faced during the entry into and work in a particular confined space, including information on the mode, signs, or symptoms, and consequences of the exposure
	• Wear appropriate PPE, including a safety harness and lifeline
	• Properly use equipment needed for acceptable entry conditions including:
	  ○ testing and monitoring
	  ○ ventilating
	  ○ communications
	  ○ PPE
	  ○ lighting
	  ○ barriers and shields as required
	  ○ ladders
	  ○ rescue and emergency equipment
	  ○ any other equipment necessary for safe entry into and rescue from permit spaces
	• Support emergency personnel to rescue authorized entrants
	• Prevent untrained personnel from attempting rescue
	• Monitor activities and conditions inside the space to determine if acceptable entry conditions are maintained and it is safe for authorized entrants to remain in the space
	• Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert authorized entrants of the need to evacuate the space if required
	• Alert the attendant whenever:
	  ○ any warning sign of symptom of exposure to a dangerous situation is recognized
	  ○ a prohibited condition is detected
	• Exit the confined space as quickly as possible whenever:
	  ○ an order to evacuate is given by the attendant or entry supervisor

Group or Title	Responsibilities
	○ any warning sign of symptom of exposure to a dangerous situation is recognized ○ a prohibited condition is detected ○ an evacuation alarm is activated
Contractors	• Ensure their employees have been trained in Confined Space Entry prior to commencing work in a Confined Space. • Obtain any available information regarding Confined Space hazards and entry operations from their Mosaic representative. • Coordinate entry operations with the host employer. • Inform the entry supervisor of any hazards confronted or created in Confined Spaces, either through a debriefing or during the entry operation.
Entry Supervisors	• Assume ownership of the permit • Understand the hazards that may be faced during the entry into and work in a particular confined space, including information on the mode, signs, or symptoms, and consequences of the exposure • Understand what vessels are currently permitted, who is authorized to enter, and the type of work being performed • Complete majority of the confined space entry permit by verifying that: ○ accurate and complete entries have been made on the permit ○ all required tests have been conducted ○ all procedures and equipment specified are in place before allowing entry • Verify whether acceptable entry conditions exist • Verify that rescue services are available • Identify rescue contact name and number • Verify that the means for summoning rescue services are operable • If additional approvals are required according to the Matrix for Final Safety Approval, obtain and document approval as per the Approval Matrix prior to commencing work • Review and sign the permit to authorize and accept responsibility for the entry • Notify appropriate personnel in control of operating the area that a confined space entry is in progress • Oversee entry operations • Verify that continuous monitoring is performed when required • Assure that acceptable entry conditions are maintained throughout the duration of an authorized entry

Group or Title	Responsibilities
	• Remove unauthorized individuals who enter or attempt to enter the permit space during entry operations • If acting as an attendant, monitor activities and conditions inside and outside the space to determine if acceptable entry conditions are maintained and it is safe for authorized entrants to remain in the space • Complete the permit with Work Complete or Permit Cancelled section when the work to be performed as specified on the permit has been completed and the confined space is safe to return to service • Terminate entry and cancel permit: o for failure to maintain acceptable entry conditions o when there is a change in the entry conditions specified on the permit o when a condition that is not allowed under the permit arises in or near the permit space • Close and issue new permit o At the end of 12 hours o When work is not complete (at the end of 12 hours) o At the end of shift (if less than 12 hours) • Verify methods in place to prevent unauthorized entry • Document any problems encountered during the entry at the bottom of the CSE permit • Transfer ownership of the permit by: o verifying the original entry conditions with the incoming entry supervisor o inspecting the confined space to validate the acceptable entry conditions o checking and signing the permit to transfer ownership of the permit • Inform contractors: o That all work in Confined Spaces will be performed according to Mosaic's Confined Space Entry Program and that Entry will be authorized by a Mosaic Permit o Of the hazards identified and the previous experience that make it a Confined Space o Of any precautions implemented for the protection of all employees in or near the Confined Space • Coordinate entry operations with the contractor • Debrief the contractor at the conclusion of the entry regarding the Confined Space program, any hazards confronted or created in the

Group or Title	Responsibilities
	Confined Space during the entry operation, and note the feedback on the Permit • NEVER enter the confined space to attempt rescue

Equipment Owner	• Follow directions given by the entry supervisor
	• Understand the hazards that may be faced during the entry into and work in a particular confined space, including information on the mode, signs, or symptoms, and consequences of the exposure
	• Properly isolate the space for safe entry
	• Complete appropriate sections of the confined space entry permit by verifying that:
	  ○ accurate and complete entries have been made on the permit
	  ○ all required tests have been conducted
	  ○ all procedures and equipment specified are in place
	• Verify whether acceptable entry conditions exist
	• Properly use equipment needed for acceptable entry conditions including:
	  ○ testing and monitoring
	  ○ ventilating
	  ○ communications
	  ○ PPE
	  ○ lighting
	  ○ barriers and shields as required
	  ○ ladders
	  ○ rescue and emergency equipment
	  ○ any other equipment necessary for safe entry into and rescue from permit spaces
	• NEVER enter the confined space to attempt rescue

Senior Health and Safety Managers	• Provide subject matter expertise and oversight of the implementation of the Phosphate BU program at the facility level
Site Safety Personnel	• Maintain the master copy of the Confined Space list • Initiate annual confined space review

Group or Title	Responsibilities
Operations and Maintenance Managers	• Provide site Safety the information required on the initial confined space identification and evaluation • Provide site Safety updated information to update the Confined Space list whenever there has been a change, modification, or addition to the use or configuration of a confined space that may increase or alter hazards to authorized entrants • Verify the confined space list annually • Complete site confined space field audits
Capital Engineering Project Managers	• Provide site Safety updated information on projects that will affect the use or configuration of a confined space • Notify site Safety if projects will require new confined spaces or removal of existing confined spaces.
Workgroup Representatives	• Contact the appropriate equipment owner when assigned work that requires entry into a confined space • Evaluate the acceptable entry conditions • Review the permit to ensure the safety of authorized entrants • If acceptable entry conditions are verified, sign the permit prior to entry • Verify Work Complete or Permit Cancelled section with Entry Supervisor and print name and initial to complete the permit

2.2 Initial Training

Training shall be provided so that affected employees acquire the understanding, knowledge, and skills necessary for the safe performance of their roles and responsibilities.

Training shall be provided before the worker is first assigned confined space duties and before there is a change in the assigned duties.

The elements of initial and refresher training shall be coordinated by the safety and safety training departments.

A certificate record documenting the training shall be prepared and contain the following information:

- Worker's name
- Date(s) of training
- Signature(s) of trainer(s)

2.3 Refresher training

Refresher training shall be provided to address any deficiencies observed during confined space entries, confined space debriefings, confined space entry permit reviews, annual program review, etc. Appropriate sections of the initial training may be used for the refresher training.

Retraining will be initiated and provided by management responsible for that employee or area for the following circumstances:

- When there is a change in an employee's assigned duties that will affect his responsibilities as an entry supervisor, attendant, or authorized entrant
- When there are changes in permit space procedures that present a hazard for which an employee has not been trained previously
- Whenever the facility has reason to believe there are deviations from the confined space entry procedures or that there are inadequacies in an employee's knowledge or use of these procedures

The following table lists confined space training requirements.

Group or Title	Frequency	Training
Affected Workers	Initial	• CSE Program requirements, roles, and responsibilities • CSE hazards • Site procedures
Affected Workers	Annual	Refresher Training
Confined Space Rescue Services	Initial and as needed	OSHA 146.(k)(1) requirements
Atmospheric Testing	As requested	Use of atmospheric testing equipment
Workers who calibrate equipment	Initial and as needed	Maintenance and calibration of atmospheric testing equipment

3 Hazard Identification and Control

3.1 General

	Requirement
3.1.1	All workplace areas shall be evaluated to identify confined spaces.
3.1.2	Confined spaces shall be labeled with signs posted that read “Danger – Permit Required Confined Space – Do Not Enter” or similar wording. If a label is not posted, other equally effective means shall exist to inform exposed workers.

3.1.3	Each site shall create and maintain a confined space list that documents:
	• entry points (top, side, or bottom)
	• contents or materials
	• other recognized hazards, such as:
	  ○ potential hazardous atmospheres
	  ○ potentially dangerous material buildup
	  ○ radioactive sources
	  ○ heat stress (operating temperature, typical cool-down time)
	  ○ ventilation
	  ○ sloping floors, converging surfaces, or other engulfment hazards

3.1.4	The confined space list shall be available for review and accessible to each employee.
3.1.5	Site safety shall be contacted whenever there is a question or disagreement over the conditions specified on the confined space list.
3.1.6	Temporary confined spaces created as a result of working conditions or other activities in the area may be included on the confined space list.
3.1.7	Vessels under construction shall be considered confined spaces when entry into the vessel becomes restricted due to the opening size or method needed to enter.

4 Permit Required Confined Spaces

4.1 Permit Required CSE

	Requirement
4.1.1	All confined spaces shall be considered a permit required confined space.
4.1.2	A Field Level Hazard Assessment (FLHA) shall be completed prior to confined space entry.
4.1.3	The Safe Work Permit is required for initial opening of the confined space. ***Reference:*** EHSS-Phos Program – Hazardous Work-Safe Work
4.1.4	No person, including contractor employees, shall initiate or verify a permit or enter a confined space unless they have received documented training in confined space entry.
4.1.5	A confined space entry permit shall be properly executed and completed prior to entry into any confined space.
4.1.6	A separate permit shall be properly executed and completed prior to entry for each individual confined space to be entered.
4.1.7	Site safety shall be contacted whenever acceptable entry conditions cannot be satisfied for entry into a confined space.
4.1.8	Each CSE permit is valid only while acceptable entry conditions exist.
4.1.9	Permits shall be valid for the shift of the entrants doing the work up to a maximum of 12 hours from issuance.
4.1.10	Separate permits shall be issued to each work group for specific tasks unless the hazards involved and the precautions can be listed on a single permit and apply to the job uniformly.
4.1.11	If any conditions or requirements specified on the permit are not met: • the permit shall be cancelled • all work must stop • the confined space exited Once conditions or requirements are met, another permit shall be issued prior to entry.
4.1.12	The permit shall be readily available for all workers for the duration of the entry.
4.1.13	The permit shall be protected from the work environment as necessary to preserve its legibility.
4.1.14	All writing and signatures on the permit shall be legible.
4.1.15	All entry and exit times of authorized entrants shall be noted in the Authorized Entrants section of the permit.
4.1.16	Any additional required permits shall be attached to the confined space permit.

4.2 Pre-Entry

	Requirement
4.2.1	The work group representative shall contact the appropriate equipment owner when assigned work requires entry into a confined space.
4.2.2	Entry supervisor or equipment owner from that department shall initiate the CSE permit process.
4.2.3	Entry supervisor or equipment owner shall secure and verify the acceptable entry conditions prior to entry of the confined space.
4.2.4	Entry supervisor shall identify means of rescue prior to entry of the confined space.
4.2.5	Workgroup representative shall also verify with the entry supervisor or equipment owner any time prior to entry that the confined space is isolated for entry, acceptable entry conditions are met, and all specified precautions are complete.
4.2.6	Initial atmospheric testing shall be required prior to all entries.
4.2.7	Entry supervisor or the equipment owner and the workgroup representative both shall sign the permit to verify or inspect all items in the confined space identification and acceptable entry conditions sections are complete as well as all specified precautions are in place.
4.2.8	Continuous atmospheric testing shall be conducted when required by the acceptable entry conditions on the permit.
4.2.9	Workgroup representative, authorized entrants, or attendants shall have the right to observe the atmospheric tests being conducted. This may require the repetition of tests at some later time.
4.2.10	The confined space shall be reevaluated in the presence of any authorized entrant or representative who has reason to believe that the evaluation of that confined space may not have been adequate.
4.2.11	Any condition making it unsafe to remove an entrance cover of a confined space shall be eliminated before the cover is removed.
4.2.12	A retrieval system shall be readily available in the immediate area to retrieve personnel from vertical entries into confined spaces more than 5 feet deep.
4.2.13	The following equipment shall be provided and maintained: • Communications equipment • Ladders or other equipment needed for safe entry into and exit or rescue from permit spaces
4.2.14	The entry supervisor and the workgroup representative both shall sign the permit to verify that acceptable conditions have been met and entry is authorized.

4.3 Lockout/ Isolation

	Requirement
4.3.1	Confined spaces shall be removed from service and completely isolated against the release of hazardous energy.
4.3.2	Lock-out/Tag-Out procedures shall be followed. ***Reference:*** EHSS Phos Program – Lock Out-Tag Out (Control of Hazardous Energy)
4.3.3	Material lines and material flows such as granular materials, rock, rock slurry, etc. shall be secured.
4.3.4	Radioactive sources shall be properly isolated and secured by a trained and qualified person and a survey conducted by a person certified according to the state of Florida or Louisiana radiation license.
4.3.5	Nuclear source handling procedures shall be followed.
4.3.6	Systems that have contained or could contain hazardous materials shall be isolated and secured by one of the following methods: • Completely disaligning or removing sections of lines, pipes, or ducts. • Blanking or blinding of lines. • Double block and bleed systems that require closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves. Bleed valves shall be checked for blockage and remain open throughout the duration of the entry. ***Note:*** If none of the above methods are possible, both Area Manager and site Safety approvals are required. ***Reference:*** EHSS Phos Program – Line Breaking and Equipment Opening ***Reference:*** EHSS Phos Program – Lock Out-Tag Out (Control of Hazardous Energy)
4.3.7	Knife gate valves shall be considered equivalent to a blind for isolating hazardous material lines if: • The knife gate valve shall be of the open frame type construction where the slide gate is visible at all times; or • The slide gate completely covers the bore of the pipe and the motive force for actuating the valve is disabled, locked out and pressures bled down; or • The slide gate actualizing rod is physically disconnected, and a lock placed through the connector pin hole.
4.3.8	When installing or removing a blind, the Line Breaking PPE Matrix shall be used to identify PPE requirements. ***Reference:*** EHSS Phos Reference – Line Breaking and Equipment Opening – Appendix A PPE Matrix

	Requirement
4.3.9	Methods used for securing the system shall be documented in the CSE Permit.

4.4 Atmospheric Testing

	Requirement
4.4.1	Atmospheric testing shall be used to determine if acceptable entry conditions are present immediately prior to, and during entry.
4.4.2	If a break in work activity occurs for a time of one hour or more, the area will be re-tested for explosive or oxygen deficient conditions before work is resumed.
4.4.3	The internal atmosphere of all confined spaces shall be tested with a calibrated direct reading instrument for: (1) oxygen content, (2) flammable gasses and vapors, and (3) potential toxic air contaminants, in that order, with the results recorded on the CSE permit.  ***Reference:*** Appendix D – Atmospheric Testing Tables
4.4.4	When the potential for the development of hazardous atmospheres exists in the confined space such as welding, applying adhesives, chemical residue, etc., continuous monitoring shall be required.  ***Reference:*** Appendix D – Atmospheric Testing Tables
4.4.5	Atmospheric test instruments shall be: • Used by personnel trained on that particular instrument • Calibrated per the manufacturer's recommendations • Labeled with the next calibration due date
4.4.6	A functional test shall be performed on the atmospheric test instrument prior to use.
4.4.7	The person performing the atmospheric test shall ensure that the test instruments have current calibration.
4.4.8	Instruments out of calibration shall not be used.
4.4.9	Atmospheric tests shall be conducted at various locations or levels inside the confined space without entry.
4.4.10	When entry into a space is necessary to perform initial atmospheric testing, special precautions, including continuous atmospheric monitoring, shall be taken.  ***Note:*** Steps shall be taken to assure that vessel may be tested or secured from the outside in future entries.
4.4.11	Additional approval from site safety shall be obtained when entry into a confined space is required and atmospheric test results are not within the acceptable ranges listed on the permit.

	Requirement
4.4.12	If a hazardous atmosphere is detected, each authorized entrant shall leave the space immediately. ***Note:*** The space shall be evaluated to determine how the hazardous atmosphere developed. Subsequent entry shall not be allowed until measures are implemented to protect employees from the hazardous atmosphere.

4.5 Hazardous Materials

	Requirement
4.5.1	If the confined space has not been cleaned or purged, the CSE permit shall state what contents are in the space.
4.5.2	The confined space shall be inspected for product buildup, lumps, or other overhead hazards before entry.
4.5.3	No one shall enter a confined space where there is a danger of falling materials.
4.5.4	Purging operations shall follow the written site operating procedures for purging. ***Note:*** Special precautions shall be taken when using nitrogen or other odorless asphyxiates for purging operations.

4.6 Hot Work

	Requirement
4.6.1	Hot work in confined spaces shall be performed as specified in the hot work program. ***Reference:*** EHSS-Phos Program - Hot Work Welding Cutting.

4.7 PPE

	Requirement
4.7.1	Each authorized entrant shall wear a safety harness equipped with a lifeline secured to a fixed point or retrieval device outside the confined space unless the lifelines would: • increase the overall risk of entry; **OR** • not contribute to the rescue of authorized entrants. ***Note:*** Safety harnesses shall still be worn when lifelines are omitted. Any exceptions to this requirement shall be approved by Site Safety and Area Manager/Supt and noted on the permit.
4.7.2	Additional or special PPE required shall be identified on the permit. ***Reference:*** EHSS Phos Reference – Personal Protective Equipment – Appendix A PPE Matrix for Routine Work

4.8 Barricade / Barrier

	Requirement
4.8.1	All openings into which employees, tools, equipment, or other materials could fall shall be guarded.
4.8.2	Barriers shall be provided as necessary to protect Authorized Entrants from external hazards.
4.8.3	Any open portal/doorway/manway of an unattended confined space shall be barricaded to prevent unauthorized entry by: • Red tape with a tag if no fall hazard • Hard barricade if opening presents a fall hazard over 4 feet

4.9 Lighting and Electrical

	Requirement
4.9.1	Lighting adequate for safe entry and the work to be performed shall be provided.
4.9.2	All lighting shall be equipped with guards to protect bulbs.
4.9.3	Electrical equipment used inside a confined space shall be protected by Ground Fault Circuit Interrupters (GFCI) or shall be of the approved low voltage type (12 volts). The GFCI shall be located outside the confined space.
4.9.4	Electrical equipment shall be of the approved explosion proof type, if there is a possibility of combustible vapors being present.

4.10 Ventilation

	Requirement
4.10.1	Each confined space shall be evaluated prior to entry to ensure adequate ventilation is provided for the work to be performed inside the space and to prevent: • excessive heat • accumulations of flammable vapors • toxic gases • oxygen deficiencies
4.10.2	Mechanical ventilation shall be provided when needed for all entries.
4.10.3	The following conditions shall be met when continuous forced air ventilation is used to purge a hazardous atmosphere within a space: • An employee may not enter the confined space until the forced air ventilation has purged any hazardous atmosphere. • The forced air ventilation shall be so directed as to ventilate the immediate areas where employees are and shall continue until all employees have left the Space. • The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in the space. • The atmosphere within the confined space shall be continuously monitored to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.

4.11 Rescue Services

	Requirement
4.11.1	Rescue services for each Mosaic site shall be identified and evaluated annually by the site safety department using OSHA 29 CFR 1910.146 Appendix F – Rescue Team and Service Evaluation Criteria.
4.11.2	When emergencies occur, including if a hazardous atmosphere is detected, the attendant shall order evacuation of the confined space.
4.11.3	All authorized entrants shall leave the space upon evacuation order.
4.11.4	Emergency services shall be contacted by the means specified in the CSE permit if needed.
4.11.5	Manways or openings that are intended for entry/exit shall be unobstructed.
4.11.6	Entry into spaces with an IDLH atmosphere or spaces that can quickly develop into an IDLH atmosphere shall have a rescue service standing by the confined space at all times during entry.
4.11.7	Rescue and emergency equipment shall be provided for safe entry into and rescue from permit spaces.
4.11.8	Sites shall develop and implement procedures for: • Summoning rescue and emergency services • Rescuing entrants from permit spaces • Providing necessary emergency services to rescued employees • Preventing unauthorized personnel from attempting rescue

5 Confined Space Entry Permit Completion

5.1 Work Complete or Permit Cancelled

	Requirement
5.1.1	All exit times of authorized entrants shall be noted on the CSE permit.
5.1.2	The entry supervisor and work group representative shall terminate entry and cancel the permit: • For failure to maintain acceptable entry conditions • When there is a change in the entry conditions specified on the permit • When a condition that is not allowed under the permit arises in or near the permit space
5.1.3	The entry supervisor shall verbally notify the management representative that entry is complete and that the work has been completed and the confined space is safe to return to service and return the completed permit to the management representative.
5.1.4	The entry supervisor and work group representative shall close the CSE permit: • At the end of 12 hours • If work is not complete at the end of 12 hours • At the end of shift if less than 12 hours
5.1.5	The CSE permit shall be placed into the designated file of the site filing system where it shall be retained according to the Mosaic Document and Record Control Policy.

6 Contractors

6.1 General

Contractors shall be informed that they are required to follow Mosaic's Confined Space Entry Program during Annual Site Specific training or Hazard training.

7 Program Review

7.1 General

The Confined Space Entry program shall be reviewed and revised as necessary by Safety whenever there is reason to believe that the measures taken under the program may not fully protect employees.

7.2 Events that require review

	Requirement
7.2.1	The following circumstances require a program review: • Any unauthorized entry of a permit space • Detection of a confined space entry permit hazard not covered by the permit • Detection of a condition prohibited by the permit • Occurrence of an injury or potentially serious injury during entry • Worker complains about the effectiveness of the program

7.3 Annual Site Review

	Requirement
7.3.1	Each facility shall participate in the annual review by completing the following: • Conduct a review of cancelled Permits retained from the previous 12 months • Conduct a review of documented field audits of confined space entries • Review and update the area confined space lists
7.3.2	The annual confined space program review shall be initiated by the Safety Department.
7.3.3	A report summarizing the annual review findings shall be prepared by the Safety Dept. and shall be distributed to the appropriate personnel. The report shall include a summary of the findings from both the audits and permit reviews, suggested corrective actions particularly pertaining to training and revisions to the confined space program.
7.3.4	The confined space program shall be revised, if necessary, based on the results of the annual review.
7.3.5	Any revisions to the program shall be communicated to all employees involved in Confined Space Entry and the communication shall be documented.

8 Revision Log / History

Rev. No.	Rev. Date	Revised By	Reason for Revision
0	5/14/07	Safety Dept.	Initial Issue for Mosaic
1	8/5/2011	D. Allen	Reformat for ISO
2	8/20/2012	R. Withers	Safety Dept
3	1/16/2013	R. Withers	Safety Dept
4	02/15/2019	PMO	Removed Class B Removed "Watchman" Removed periodic testing requirements
5	04/22/2019	PMO	Added revision history
NA	11/9/2021	PMO	Annual Review requirement
NA	12/1/2022	PMO	Annual review requirement
NA	11/14/2023	PMO	Annual review requirement
NA	11/14/2024	EHS PMO	Annual review requirement