HEALTH, SAFETY & ENVIRONMENTAL MANUAL	12.11.2 Confined Spaces – Critical Task Procedure					
	Initial HIRA Score:	20	Residual HIRA Score:	10	Critical Task: **Yes**	
	Program: **11.2**					
	Revision Number: **R0**		Number of Pages: **8**			
	Revision Date:	Approval Date: 10/01/2024	Effective Date: 10/01/2024		SIGNATURE:	

CRITICAL TASK PROCEDURE

Procedures

REFER TO CONFINED SPACES PROGRAM FOR ADDITIONAL MANDATORY INFORMATION

PART 1- CONDUCT AN ASSESSMENT OF THE SPACE

If there are questions regarding whether the space being entered is a confined space, the supervisor on the project can use the "Confined Space Evaluation Guideline". If it is determined that the space is a confined space, then the "Confined Space Entry Permit" must be completed.

Confined space means a fully or partially enclosed space,

a) that is not both designed and constructed for continuous human occupancy, **AND**
b) in which atmospheric hazards may occur because of its construction, location or contents or because of work that is done in it.

PART 2 – COMPLETE THE CONFINED SPACE ENTRY PERMIT and if necessary, the COORDINATION DOCUMENT

The purpose of the entry permit is to communicate to workers the hazards that have been identified and the controls that are in place, before any worker enters or performs related work in the space.

- A copy of the "Confined Space Entry Permit" must be kept at the project and submitted to the supervisor when work is complete.
- If J-AAR is the Constructor on the project, the "Coordination Document" must be completed and kept at the project as needed. It is used when any subcontractors are working within or performing related work in the same confined space.
- If J-AAR is not the Constructor, but will be entering confined spaces, all confined space documents must be given to the Constructor prior to entry so they can coordinate the work.
- All workers entering or performing related work at the confined space, must review the permit.
- The entry permit must be reviewed and signed by a competent person (supervisor) to verify it is accurate and complete.

Conduct a Hazard Assessment

- A person who has adequate knowledge, training and experience related to confined spaces must complete the hazard assessment.
- Use the section on the entry permit to identify hazards that may be present and list the corresponding controls.

Identification of the potential atmospheric or physical hazards must be done taking into consideration the previous contents of the space, the tasks within the space and the potential for the sudden release of air contaminants from sources in proximity to the space.

CRITICAL TASK PROCEDURE

The hazards may include:

- Oxygen deficiency / oxygen enrichment
- Flammable, explosive or combustible agents
- Toxic fumes, gases, or vapours
- Residual chemicals / materials
- Ignition hazards including hot work
- Chemical hazards
- Biological hazards from animals, sewage, other agents
- Electrical hazards including live lines, cables
- Moving parts of equipment
- Flowing water or liquid that can cause drowning, entrapment.
- Vehicle and equipment traffic around confined space.

Controls may include:

- Ventilation and purging with proper equipment like blowers.
- Lockout and tagout for electrical equipment
- Exposed moving parts must be guarded.
- Continuous air monitoring
- GFCI's
- Rescue equipment
- Traffic control, signs, barricades
- PPE

When the assessment is complete, the qualified person must sign and date the permit.

Test the Atmosphere inside the Space

The air inside a confined space must be tested by a person with adequate knowledge, training and experience before any person is allowed to enter it. The person testing the confined space must accurately assess the readings displayed by the gas monitor.

Gas monitors must be calibrated according to manufacturer specifications. Currently they are calibrated every 30 days. Please confirm that your monitor has been calibrated. If not, immediately inform your supervisor and DO NOT use the monitor until it is properly calibrated.

- A qualified person shall bump test the gas monitor before each day's use to ensure it is in good working order. Workers will be trained in bump test procedures according to manufacturer

instructions. Also ensure the 3 warning devices (audible alarm, lights, vibration) are working properly at start-up.

- Record the results of the bump test on the confined space entry permit.
- If the bump test FAILS, it must NOT be used. Immediately report the failure to your supervisor.

Record the results of the testing on the Confined Space Entry Permit

- Each atmospheric test in the confined space must be promptly recorded on the "Confined Space Entry Permit" form. Each entry shall include the time and location of each test, as well as the actual instrument readings for each parameter.
- If the atmospheric levels are unacceptable for entry, list any actions taken to control the hazard including ventilation and purging.

Levels must be maintained for the following:

Oxygen (O_2)	19.5% - 23%
Lower Explosive Limit (LEL)	less than 25% for inspection less than 10% for cold work **less than 5% for hot work
Carbon Monoxide (CO)	TWA 25ppm, STEL 100ppm
Hydrogen Sulfide (H_2S)	TWA 10ppm, STEL 15ppm

****Hot Work**

Hot work must also include all of the following provisions:

- Flammable gases maintained below 5% LEL
- O_2 levels remain below 23%
- Atmosphere is monitored continuously and;
- Alarm and exit procedures are in place if the LEL exceeds 5% and the O_2 exceeds 23%.

Biological or Chemical Agents: Exposure to atmospheric contaminants does not exceed any applicable limit set out in Regulation 833 of the Revised Regulations of Ontario, 1990 (Control of Exposure to Biological or Chemical Agents)

"Purging" involves removing contaminants inside the confined space by displacement with air to achieve acceptable atmospheric levels. For example, if a confined space originally contained a toxic gas, air would be blown into the space to reduce the concentration of the toxic gas to below the appropriate atmospheric exposure level.

After the contaminants have been removed ("purged"), the confined space may be ventilated.

CRITICAL TASK PROCEDURE

"Ventilation" means the continuous provision of fresh air into the confined space by mechanical means to maintain acceptable atmospheric levels. It must be continued while work is being carried out within the space, to maintain an acceptable oxygen concentration, to provide protection in case of accidental release of chemicals, to remove contaminants generated by the work performed, or to cool the enclosure.

Ventilation involves displacing air and diluting it through the introduction of fresh air (forced air) or the continuous removal of contaminants by local exhaust ventilation for point sources. To ensure adequate ventilation, the points of air supply and exhaust must be separated as far as possible. Openings must be provided for the entry of clean replacement air or to allow the exhaust of air. Pure oxygen must not be used to ventilate a confined space.

A qualified worker must test the air quality and be reasonably sure the atmospheric conditions of the space are safe and will remain safe for the remaining duration of work to be performed before the entrant can enter the confined space again. If not, entry is not permitted.

When the testing is recorded, the qualified person must sign and date the permit.

Test the space continuously to ensure it remains free of hazards.
Monitor the air within confined spaces continuously while work is being done. The gas monitor shall remain activated inside the confined space for as long as workers remain inside.

Provide an Attendant
An attendant is a worker who is trained in the hazards of confined spaces and whose primary responsibility is to monitor and assist workers in the confined space. The attendant must have adequate knowledge, training and experience.

If one or more workers are inside a confined space, there must be an attendant nearby prepared to respond if there is an emergency. The attendant must:

- Be in contact with the worker(s) inside the confined space at all times. Identify the means of communication.
- Be assigned and stationed outside the confined space. Not be assigned other duties.
- Prevent unauthorized entry.
- Not enter the space to rescue a worker.
- Have required awareness and working at heights training.
- Be trained in the use of the gas monitor and rescue equipment.
- Initiate an adequate rescue in case of an emergency according to the onsite rescue plan.
- Inspect all rescue equipment.

CRITICAL TASK PROCEDURE

- **Not in any circumstances, ever enter the confined space, while acting as attendant.**

Entrants

- Ensure that you have reviewed, signed, and dated the entry permit.
- Ensure that you have the required training to enter the space.
- Have suitable PPE for the task.
- Ensure the safety harness has been inspected.
- Be trained in the use of the gas monitor and rescue equipment.
- Immediately exit the confined space upon alarm or when ordered by the attendant.
- Complete the entrant's log on the entry permit for each entry/exit.
- Smoking shall not be allowed inside a confined space.

Exit from the confined space if hazardous atmosphere develops or alarm condition develops.

If a gas monitor detects unsafe atmospheric levels, the work must be stopped, and all workers exit the space until the area is properly ventilated or workers are provided with suitable respiratory protection.

Coordination Document

When J-AAR, as Constructor, has multiple employers entering or performing related work in or around the same confined space(s), a Confined Space Coordination Document must be prepared.

If J-AAR is not the Constructor, but will be entering confined spaces, all confined space documents must be given to the Constructor prior to entry so they can coordinate the work.

The Confined Space Coordination Document is intended to advise all employers of potential or existing hazards that may result from the work that will be performed by each employer.

Responsibilities

The J-AAR supervisor shall complete the coordination document and:

- verify that all employers have completed and submitted a proper entry permit.
- verify that all employers have made a copy of the permit readily available to all workers.
- verify that all employers have required training for their workers.
- verify all employers are aware of other employer's activities in the confined space(s).
- verify all employers are aware of the hazards identified in the assessments.
- verify all hazardous conditions have acceptable controls.
- verify that an approved rescue plan is in place for all workers.

CRITICAL TASK PROCEDURE

A copy of the Confined Space Coordination Document shall be:

- provided to each employer whose workers will enter or perform work related to the confined space(s), along with a copy of the confined space entry permit(s) posted in a conspicuous location to be seen by all workers.

Supervisor (Competent Person)

- Ensure that you have reviewed and signed the Confined Space Evaluation Guideline (if applicable), Confined Space Entry Permit, On-Site Confined Space Rescue Plan and Coordination Document (if applicable).
- Before allowing entry into the confined space, review with all relevant workers the information in all the documents.
- React immediately and appropriately to any emergency.
- Submit copies of all permits and documents to the office.

PART 3- ON-SITE CONFINED SPACE RESCUE PLAN

Planned rescue procedures must be capable of being implemented immediately by an adequate number of persons at any time from outside of the confined space.

The “On-Site Confined Space Rescue Plan” must be completed and signed by the attendant, rescue team members and the supervisor at the time the Confined Space Permit is completed.

The attendant will ensure:

- rescue team members are identified.
- at least one member of the rescue team is trained in Standard First Aid / CPR
- all rescue equipment is inspected and ready for use. Tripods and SRL’s require annual certification by a professional. Check that inspection tags are current before use.
- the means of summoning help is available and tested.

The supervisor will:

- review the rescue plan and verify it is acceptable.
- sign and date the plan.

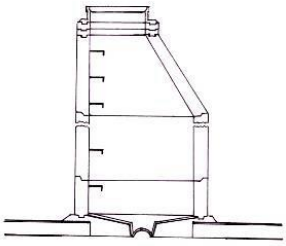
Calling 911 is not a satisfactory rescue procedure, however, is necessary if a rescue is required.

A single attendant cannot normally rescue an entrant without the aid of a tripod or other mechanical tool or equipment.

CRITICAL TASK PROCEDURE

WARNING: Never enter an unsafe confined space to rescue a worker. Many workers trying to save their co-workers have only become victims themselves. Call for emergency help.

TYPE OF SPACE: MANHOLE



Type of Extraction: Vertical
Type of Communication: Verbal/Visual
Rescue Equipment Required:

- Confined Space attendant
- Air monitor
- Tripod
- SRL
- 5-point harness for entrant

Content dependent: Tyvek suit, rubber boots, face shield

Equipment Setup
A tripod shall be erected directly above the opening to the manhole. The SRL shall be attached to the tripod after being thoroughly inspected. Attach the winch to the entrant's harness D-ring.

Rescue Procedure
Self-Rescue: Entrant is not injured or impaired in any way and can exit unaided.

Non-Entry Rescue
Entrant is unable to self-rescue due to injury or impairment. Attendant can utilize tripod and SRL to bring entrant to surface. Assistance may be required to safely lift entrant onto the ground. First aid response may be required. A supervisor shall be notified immediately.

In Event of Emergency
If required, call 911 for fire and ambulance assistance.
If a rescue is performed, the site supervisor shall be notified immediately.

HEALTH, SAFETY & ENVIRONMENTAL MANUAL	12.11.2 Confined Spaces – Critical Task Procedure				
	Initial HIRA Score:	20	Residual HIRA Score:	10	Critical Task: **Yes**
	Program: **11.2**				
	Revision Number: **R0**		Number of Pages: **8**		
	Revision Date:	Approval Date: 10/01/2024	Effective Date: 10/01/2024	SIGNATURE:	

CRITICAL TASK PROCEDURE

Job Hazard Risk Assessment

Initial HIRA Score	Hazards	Controls	Residual HIRA Score
20	Lack of Training	• Specialized training is required for entry/work in a confined space, ensure workers involved are competent before commencing work. • Work at Heights is mandatory training as the entrant must wear fall protection equipment	10
20	Lack of Inspection	• J-AAR's confined space evaluation guideline may be completed prior to work commencing. • A confined space entry permit, including hazard assessment, must be completed before entry	10
20	Lack of/inadequate Equipment	• Rescue equipment must be made available and kept with the attendant/kept available at all times during the operation. • Required PPE must be established before work commences. • Equipment must be inspected before work commences. • Rescue team/procedures must be established before work commences.	10
20	Exposure to Atmospheric/chemical Hazards	• Constantly monitor the space for atmospheric hazards • Provide adequate ventilation if possible. • Ventilate space if required with blower.	10