CITY OF SACRAMENTO REGULATORY COMPLIANCE PROGRAM
TOPIC: CONFINED SPACE OPERATIONS PROGRAM
EFFECTIVE DATE: 9/13/10
SUPERSEDES: N/A
SECTION: RCP #6

PURPOSE

This written regulatory compliance program specifies requirements to be followed by City employees assigned to perform permit-required and non-permit required confined space operations. The safety requirements for proper identification, assessment and entry into confined spaces identified as permit-required confined spaces are compliant with the California Code of Regulations (CCR) Title 8, Sections 5156-5158 (8CCR5156-5158) and must be strictly adhered to. Cal-OSHA compliant department-specific procedures may be applied for emergency operations conducted by the Sacramento Fire Department. Definitions of terms used in the Cal-OSHA regulations are listed in Attachment A.

1. **Evaluations and Classifications**

   a. Workplace Evaluation

      1. The Division Manager or designated person for each division will identify and evaluate known and potential confined spaces associated with division operations;

      2. The Division Manager or designated person for each division will prepare an inventory list of known confined space locations, types, and/or tasks;

      3. This evaluation and inventory list will be reviewed and updated annually.

   b. Confined Space Classifications

      Confined spaces are defined as locations that:

      1. Are large enough and so configured that an employee can bodily enter and perform assigned work;

      2. Have limited or restricted means for entry or exit; or

      3. Are not designed for continuous employee occupancy;

      4. Non-permit confined spaces are defined as confined spaces that do not contain or have the potential to contain any atmospheric hazards capable of causing death or serious physical harm;

      5. Permit-required confined spaces are defined as locations that:

         1. Contain or have the potential to contain a hazardous atmosphere;

2. Contain a material that has the potential for engulfing an entrant (e.g. liquid, soil);

3. Contain inwardly converging walls or a floor that slopes downward and tapers to a smaller cross-section where an entrant could be trapped or asphyxiated; or

4. Contain any other recognized serious safety or health hazard or have the potential for rapid change in work environment (e.g. unsafe temperature, electrical shock, hazardous chemicals).

2. **Responsibilities**

a. Environmental Health and Safety (EH&S) will:

1. Serve as a resource and support for confined space issues;

2. Maintain, revise, and distribute this program to appropriate departments;

3. Assist in developing and presenting confined space safety training; and

4. Assist departments in any additional specialty air monitoring, testing and selection of respiratory protection equipment.

b. Departments will:

1. Identify all operations that potentially involve confined space entry;

2. Determine if the confined space is a permit-required confined space;

3. Maintain a current inventory list of all known permit-required confined space locations, types, and/or tasks;

4. Ensure that a warning sign or label (temporary or permanent) is attached to the entry points of all known, permit-required confined spaces; and

5. Ensure only trained personnel are assigned to confined space operations (e.g. attendant, entrant, or entry supervisor positions) and follow all aspects of this program prior to allowing any employee to enter the confined space.

All permit-required confined spaces which are labeled must be posted. Signs will have languages similar or equal to:

DANGER
PERMIT-REQUIRED CONFINED SPACE
DO NOT ENTER UNLESS AUTHORIZED AND PROPER EQUIPMENT IS PRESENT

6. Whenever possible, permit-required confined spaces will be posted with permanent signage. Remote locations permit-required confined spaces (e.g. maintenance holes, vaults, etc.) may be temporarily posted during entry operations;

7. Ensure only trained personnel are assigned to confined space operations (e.g. attendant, entrant, or entry supervisor positions) and follow all aspects of this program prior to allowing any employee to enter the confined space.

c. Entry Supervisors will:

1. Function as the on-site work supervisor having the authority and responsibility to determine if acceptable entry conditions exist and to authorize entry into a permit-required confined space;

2. Remain on-site at the location of permit-required confined space entry operations at all times that employees are in a confined space unless duties are transferred to another qualified employee in the event that he or she must leave the worksite; and

3. Determine the appropriate type of communication system (e.g. radio, voice, etc.) to be used during confined space operations.

d. Attendants will:

1. Be assigned for all permit-required confined space operations at the entry to the confined space;

2. Know the hazards as well as the signs and symptoms of exposure associated with the assigned confined space entry operation, including the behavioral effects of hazard exposure;

3. Continuously maintain awareness of authorized entrants' activities, including an accurate count of entrants;

4. Remain outside the permit-required confined space until relieved by another authorized attendant;

5. Communicate with authorized entrants and monitor their activities;

6. Alert the authorized entrants when evacuations is necessary;

7. Summon rescue and emergency services (i.e. call 911) if authorized entrants need assistance to escape from permit-required confined space;

8. Warn against and prevent unauthorized entry into the permit-required confined space;

9. Inform the entry supervisor if unauthorized entry occurs; and

10. Perform non-entry rescues, as necessary, utilizing extraction equipment (i.e. the retrieval system or self-rescue).

e. Entrants will:

1. Follow all rules and instructions;

2. Report any accidents, injuries, or work-related problems to the supervisor; and

3. Follow job assignments as authorized entrant and/or attendant.

PROCEDURES

1. Job Planning

All potential confined spaces must be evaluated to determine if these spaces should be classified as a non-permit or permit-required space. Non-entry options for performing the work should be considered. All spaces will be considered permit-required confined spaces until the pre-entry procedures demonstrate otherwise. The following information must be obtained and evaluated prior to performing entry operations by a trained confined space entrant or supervisor.

a. Nature, type and size of the permit-required confined space including a means of exit and ventilation;

b. Hazardous sources of energy that will require lockout/tag out (e.g. isolation);

c. Chemical hazards in the permit-required confined space including hazardous atmospheres, sludge, scale, sewer grass, chemical, etc.;

d. Physical hazards including electrical, noise, heat stress, slip, trip, fall, etc.;

e. Reason for entry (i.e. nature of operations);

f. Equipment to be operated for ventilation, lighting, cleaning, air monitoring, emergency extraction, etc.;

g. Anticipated duration of the job, work crew size, etc.;

h. Determination of the appropriate type of communication system to be used during operations.

2. Air Monitoring

The air inside confined spaces must always be tested, from outside the space, and before entry into any confined space. As a minimum, the air must be tested for percent oxygen content (OXY %), percent Lower Explosive Limit (LEL %) atmospheres, and parts per million of carbon monoxide (CO) and hydrogen sulfide (H2S). Additional tests may also be specified. (Refer to Attachment B.)

a. A trained entrant or supervisor will ensure that pre-entry atmospheric testing is performed, and results are recorded on the non-permit validation form (Attachment C) or confined space entry permit (Attachment D);

b. Representative atmosphere tests will be taken from at least three (3) different levels and locations, or approximately every four feet including corners and low spots;

c. Air monitoring equipment will be maintained and calibrated following the manufacturers' recommendations by an appropriately qualified person.

3. **Non-Permit Space Entry Procedure**

For classification as a non-permit confined space, the only hazards that may be present are limited means of entry/exit or that the space is not designed for continuous human occupancy. Non-permit entry into confined spaces may be allowed only when initial air monitoring confirms a non-hazardous atmosphere. (Refer to Attachment B.)

a. A trained confined space entrant or supervisor will:

1. Conduct air monitoring to verify a non-hazardous atmosphere;

2. Verify no hazards that could produce serious injuries exist; and

3. Use the confined space non-permit entry validation form to document the pre-entry evaluation (Attachment C).

b. Mechanical ventilation may be used to reduce air contamination for non-permit entry (Yellow Zone, Attachment B). If mechanical ventilation is necessary to eliminate air contaminants, an attendant, two-way communication and continuous ventilation are required for non-permit confined space entry operations;

c. If initial air contamination is hazardous (Orange Zone, Attachment B) a permit is required.

4. **Permit Required Confined Space Entry Procedures**

Pre-entry evaluation will assess the size of the permit-required confined space, entry/exit access, chemical hazards, air quality, and work to be performed.

a. The entry supervisor must obtain the job planning information, conduct air monitoring and initiate an individual confined space entry permit for each space to record information obtained in the pre-entry evaluation (Attachment D);

b. When necessary (e.g. unusual conditions, hazardous atmospheric conditions or any significant safety concern), the entry supervisor should review the confined space entry permit with the Division Manager, EH&S staff or designated person prior to signing off on the permit before work begins;

c. The entry supervisor must review the confined space entry permit with the job site employees;

d. The confined space entry permit must be posted at the entrance to the confined space during all entries authorized by the permit;

e. The entry supervisor will ensure that all testing, ventilation, communication, lighting, barriers, ladders, and personal protective equipment required for an authorized entry is available, in good condition, and is used as required. All lighting must be explosion proof;

f. Prior to and during authorized entry, the entry supervisor must ensure the following:

1. The permit-required confined space is posted, and unauthorized entry is prohibited;

2. All hazards have been identified, evaluated and mitigated as needed;

3. Acceptable entry conditions have been reviewed (Attachment B);

4. The permit-required confined space is isolated. Note: some spaces cannot be isolated (e.g. wet wells with no isolating valves or large mains);

5. The permit-required confined space is properly ventilated;

6. The work area and confined space entry locations are marked and isolated to provide pedestrian, vehicle and/or other hazard barriers;

7. Material Safety Data Sheets (MSDS) will be posted for chemicals used in confined spaces. Supervisors should brief entrants and attendants on the content of SDS.

g. The conditions in the permit-required confined space must remain acceptable for entry throughout the entire authorized entry. Air-monitoring will be conducted continuously and results recorded every 15 minutes;

h. Permit-required confined spaces will be continuously ventilated during all entry operations to reduce to, or remain below, specified atmospheric levels of contaminants;

i. Ventilation will be positioned to blow air into, or pull air out of, the confined space as specified by the entry supervisor;

j. Ventilation will be continued for an adequate period of time before testing and entry, as well as at all times during entry;

k. The entry supervisor will assign at least one attendant outside the permit-required confined space to monitor the authorized entrant(s) and will review job tasks and safety responsibilities with both attendants and authorized entrants.

5. **Control of Hazardous Substances and Energy**

The entry supervisor will verify that all sources of hazardous substances or energy are deactivated, de-energized, are restricted from operation (locked-out and tagged-out) and are verified as de-energized prior to authorizing employee entry.

a. Any machinery or other hazard that is electrically, mechanically, chemically, hydraulically, or pneumatically supplied must be de-energized and locked out prior to entry. Pneumatically and hydraulically supplied machinery or hazards must be depressurized, and the air supply disconnected, locked out and/or tagged out;

b. Where applicable, any pipes, ducts or drains, which could introduce dangerous chemicals, pressure or water into the confined space, must be disconnected, blanked or capped. As an alternative, two consecutive shut-off valves can be closed and tagged out. Whenever possible, at least one valve should be chained and locked into the closed position;

c. Any drain valves for the confined space must be locked into the open position and tagged.

6. **Safety Harnesses, Lifelines and Extraction Equipment**

A lifeline and full body harness will be used for all permit-required confined space entry operations unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. The lifeline must be attached to a retrieval system or a fixed anchor.

A retrieval system (i.e. safety harness, lifeline and extraction device) will be used for all permit-required confined space entry operations into vertical spaces more than five feet deep. The purpose of the retrieval system is to affect non-entry rescue by the attendant in the event of a confined space emergency and to act as fall protection.

Extraction devices are primarily intended for top entry situations.

7. Shift Changes

In the event of a shift change, the initial shift personnel will exit the confined space and the existing confined space entry permit will be canceled. The shift going on-duty will follow all procedures for initial entry into a permit-required confined space. The on-duty shift entry supervisor will initiate, complete and authorize a new confined space entry permit.

8. Permit Completion Procedure

a. When the operation is complete or terminated, the authorized entrant(s) will be immediately removed from the permit-required confined space and the confined space entry permit canceled by the entry supervisor by checking the canceled box on the permit. The permit will be cancelled if any condition not allowed by the confined space entry permit arises in or near the permit-required confined space;

b. Problems encountered during entry will be noted on the confined space entry permit;

c. Following completion of each job, the confined space entry permit(s), or a copy, will be filed with the Division Manager or designated person;

d. All canceled permits will be retained for at least one year (12 months) after cancellation.

9. Respiratory Protection

Consult with your supervisor to further evaluate hazards for any air contamination that cannot be eliminated with ventilation. Consult with EH&S staff prior to using any respiratory protection equipment in a confined space. Air purifying filter cartridge respirators do not provide protection and cannot be used in oxygen deficient atmospheres (refer to Attachment B).

10. Emergency Procedures

Preparation is essential for dealing effectively with emergency situations:

a. The entry supervisor will identify how fire/rescue/paramedic services can be summoned by locating the nearest operating telephone and/or radio. The telephone and/or radio must be tested to make sure they are operating properly. The exact worksite address, cross-streets, or location where the person summoning help can be met must also be identified;

b. The attendant must be prepared at all times to act in the event of an emergency and must always be prepared to call for help. The entry supervisor and/or attendant will have immediate access to telephone or two-way radio for the purpose of requesting emergency rescue services;

c. The entry supervisor will maintain verbal communication with the attendant at all times during the entry operations;

d. The attendant must **never** enter the confined space to attempt rescue. The attendant will attempt non-entry rescue **only** by requesting the entrants to evacuate and/or activating the extrication equipment;

e. The attendant or entry supervisor will contact the Fire Department (732-0100 to connect to 911 from a cell phone) to request emergency aid. When calling for help, the following information must be furnished:

    1. Caller's name and call back phone number;

    2. Address and exact location of the confined space; and

    3. Nature of the emergency including the number of workers affected, any known hazards, and the events leading up to the emergency.

f. When emergency personnel arrive on-scene, the entry supervisor and/or attendant will:

    1. Update the rescue personnel;

    2. Have the confined space entry permit available for review; and

    3. Assist as requested.

TRAINING REQUIREMENTS

1. Any employee that enters a confined space (authorized entrant), serves as a stand-by (attendant), or supervises a job involving a confined space (entry supervisor), must receive training;

2. No employee may be assigned to evaluate the hazards of a potential confined space or work in a permit-required confined space job until trained;

3. New employee initial training will be provided on an as-needed basis by the Division Manager or designated person;

4. Employees will not be eligible for confined space work unless they attend all training lectures, participated in all training exercises and demonstrate proper use of test instruments, personal protective clothing and equipment, lifeline, harness, extraction device, ventilators and other related equipment;

5. The Division Manager or designated person, in association with the qualified trainer, will verify that the training requirements have been satisfied. Certification will be documented and include the following:

    a. Employee name;

    b. Date of certification; and

    c. Name (and initials or signature) of the trainer.

6. Training will cover the following topics:

    a. Hazards of confined space operations;

    b. Differences between non-permit and permit-required confined space;

    c. The content of this regulatory compliance program;

    d. The Cal-OSHA permit-required confined space standard;

    e. Use of the confined-space entry permit;

    f. Conditions prohibiting safe entry;

    g. Duties of the entry supervisor, attendant, and authorized entry workers;

    h. Use of test instruments, lifeline, harness, extraction device and personal protective clothing and equipment; and

    i. Emergency and rescue procedures.

7. Training will be updated:

    a. Whenever there is a change in entry procedures;

b. Whenever new hazards have been identified or there are inadequacies in an employee's knowledge and/or the use of these procedures;

c. As needed based on changes to regulations and/or procedures; and/or

d. Annual refresher training.

PROGRAM EVALUATION

1. Requirements

   a. The City of Sacramento Confined Space Operations Program will be re-evaluated annually and updated as needed.

      1. The EH&S staff will be responsible for initiating and documenting the annual program review;

      2. Entry Supervisors may participate in each annual review.

   b. Annual program review will include the following:

      1. Review of canceled confined space entry permits for the last 12 months;

      2. Review of the non-permit and permit-required confined space location/task inventories;

      3. Training records;

      4. Any known and/or documented confined space safety incidents; and

      5. Air monitoring instrument, retrieval system, safety and other equipment condition, maintenance usage, etc.

Definitions
(Attachment A)

Acceptable Entry Conditions
Environmental conditions inside a permit-required confined space where there are no atmospheric components potentially hazardous to health or safety.

Attendant
A person designated to remain outside one or more permit-required confined spaces to monitor the authorized entrants and performs all attendants' duties assigned on the entry permit.

Authorized Entrant
An employee who is authorized by the employer to enter a permit required confined space.

Buddy System
At least two persons equipped with approved respiratory equipment shall be on the job and communication shall be maintained between both or all individuals present.

Blanking or Blinding
The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

Confined Space
A space that is a) large enough and so configured that an employee can bodily enter and perform assigned work; b) has limited or restricted means for entry or exit; and c) is not designed for continuous employee occupancy such as tanks, silos, vats, vessels, boilers, compartments, ducts, sewers, pipelines, vaults, bins, tubs and pits.

Double Block and Bleed
The closure of a line, duct, or pipe by 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.

Emergency
Any occurrence or event internal or external to the permit-required confined space that could endanger entrants, or any condition not permitted on the entry permit including any failures of hazard control, monitoring, communication or lighting equipment.

Engulfment
The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

Entry
The action by which a person passes through an opening into a permit-required confined space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit (permit)
The written or printed document containing specific information that is provided by the entry supervisor to allow and control entry into a permit space.

Entry Supervisor
The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required.

Hazardous Atmosphere
An atmosphere that has the potential to cause death, incapacitation, impairment of ability to self-rescue, acute illness or delayed illness that can result in injury from one or the combined effects of the following causes:

1. Flammable gas, vapor, or mist in excess of 10 percent of its lower explosive limit (LEL);

2. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;

3. Atmospheric concentration of any substance for which a permissible exposure limit is published and which could result in employee exposure in excess of that permissible exposure limit (e.g. carbon monoxide greater than 25 ppm, or hydrogen sulfide greater than 10 ppm) or any other atmospheric condition that is immediately dangerous to life or health. (**Note**: Flammable gases may also be toxic. Decreased oxygen levels may be caused by displacement of oxygen by a toxic substance.)

Hot Work Permit
The written authorization to perform operations capable of providing a source of ignition as per the City of Sacramento's Regulatory Compliance Program No. 11.

Immediately Dangerous to Life or Health (IDLH)
Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Inerting
The displacement of the atmosphere in a permit space by a noncombustible gas to such an extent that the resulting atmosphere is noncombustible.

Isolation
The process by which a permit-required confined space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tag out of all sources of energy; or blocking or disconnecting all mechanical linkages.

Line Breaking
The intentional opening of a pipe, line, or duct that is, or has been, carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.

Non-permit Required Confined Space
A confined space that does not contain or have the potential to contain any atmospheric or other hazard capable of causing death or serious physical harm.

Oxygen-deficient Atmosphere
An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere
An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required Confined Space
A confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere;
2. Contains a material that has the potential for engulfing an entrant;
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; and
4. Contains any other recognized serious safety or health hazard.

Permit-required Confined Space Program
The City of Sacramento's overall program for controlling and, where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces, also known as Regulatory Compliance Program Number 6.

Permit System
The written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

Prohibited Condition
Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Rescue Service
The personnel designated to rescue employees from permit spaces.

Retrieval System
The equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor), used for non-entry rescue of persons from permit spaces.

Testing
The process by which the hazards that may confront entrants of a permit space are identified and evaluated.

Ventilating
The process where clean fresh air is blown into a permit-required confined space while persons are in the space.

Confined Space Acceptable Entry Condition Guide (Attachment B)

Decision	Oxygen	Lower Explosive Limits (LEL's)	Carbon Monoxide	Hydrogen Sulfide
Normal Air	**20.9%**	**0%**	**0ppm**	**0ppm**
Non-Hazardous Atmosphere **Permit may be required** **Consult with supervisor if normal atmosphere cannot be achieved**	**19.5-23.5%**	**Less than 10%**	**Less than 25ppm**	**Less than 10ppm**
Hazardous Atmosphere **Permit Required** **Entry allowed with supplied air or SCBA only. Consult with supervisor and EH&S.**	**16-19.5% OR more than 23.5%**	**10-19%**	**25-500ppm**	**10-100ppm**
No Entry Allowed	**Less than 16% OR more than 23.5%**	**More than 20%**	**More than 500ppm**	**More than 100ppm**

Mechanical ventilation may be used to achieve non-permit entry conditions only when initial air monitoring results are non-hazardous (Yellow Zone).

If air quality cannot be improved to normal with mechanical ventilation, further investigation is required to determine and address the cause of low / high oxygen or presence of other toxins.

Permit is required if initial air quality does not meet yellow zone, the cause of low/ high oxygen is unknown or other any other safety or health hazards exist.

Do not enter a confined space using respiratory protective equipment unless specifically reviewed and approved by EH&S staff.

Confined Space Non-Permit Validation
(Including entry into manholes, sumps and basins)
(Attachment C)

Confined spaces may be entered without the need for a written permit or attendant provided that the space contains no air contaminants or safety hazards. All confined spaces will be considered permit-required until the pre-entry evaluation confirms no hazardous conditions. A trained confined space supervisor or entrant must complete the following pre-entry check list to confirm the space is non-permit.

1. Have you notified the supervisor that an entry is to be made? ___Yes ___No
2. Have you verified that no hazards exist? (e.g. engulfment, electrical or atmospheric)? ___Yes ___No
3. Did you lockout and block sources of hazardous energy or substances leading to the immediate area? ___Yes ___No
4. Are there large (greater than 12 inch) or fast flowing laterals? ___Yes ___No
5. Did you survey the surrounding area to identify hazards such as drifting vapors from tanks, piping, or sewers? ___Yes ___No
6. Does your knowledge of the area indicate that it will remain free of dangerous air contaminants or engulfment hazards while occupied? ___Yes ___No
7. Has the gas detector been bump tested at the beginning of the shift? ___Yes ___No
8. Did you sample the atmosphere within the space to determine Whether hazardous air contamination and/or oxygen deficiency exists? ___Yes ___No
9. Did the atmosphere check as acceptable (no alarms)? ___Yes ___No
10. Will the atmosphere be continuously monitored while the space is occupied? ___Yes ___No
11. Have you notified your supervisor when you have exited the space? ___Yes ___No

If any questions are answered **No**, a permit entry is required. If mechanical ventilation is needed to eliminate air contaminants, an attendant and two-way communications are required.

Note: Not all laterals to sewer or storm drains require blocking, only those with known hazards or have a history of hazards.

	REQUIRED TESTS OF AIR IN THE CONFINED SPACE							REQUIRED TESTS OF AIR IN THE CONFINED SPACE					
					OTHER[1]							OTHER[1]	
TIME	LEL %	OXY %	H_2S PPM	CO PPM	PPM	PPM	TIME	LEL %	OXY %	H_2S PPM	CO PPM	PPM	PPM
Permit Required if :	Is > 10%	Is not 19.5 – 23.5%	Is not < 10 ppm	Is not < 25 ppm				Is > 10%	Is not 19.5 – 23.5%	Is not < 10 ppm	Is not < 25 ppm		

If oxygen levels are not normal (20.9%) further investigation is required to determine the cause and possible presence of toxins.

Contact your supervisor or the Safety Office (808-5278) if you have any questions.

Job Location: _____ Date: _____

Printed Name: _____

Confined Space – Entry Permit
(Attachment D)

Facility Location _____ **Date:** _____

W.O No.: _____ **Shift:** Day **Entry Duration:** _____

Address: _____

Work Plan: _____

Confined Space Description: _____

Anticipated Hazards: **Entrapment, Oxygen deficiency or enrichment, Engulfment, Flammable atmosphere, Moving equipment, Toxic atmosphere or biological hazards, and any other bad stuff down there.**

CONFINED SPACE SAFETY CHECKLIST	YES	N/A	EMPLOYEE SIGN-IN[4]
All lines leading to and from the confined space have been isolated			1. (Print Name) Signature:
Electrical service de-energized/disconnected and locked out/tagged out			
All ignition sources removed and isolated			2. (Print Name) Signature:
Ventilation equipment in use, and bonded and grounded			
Special warning signs posted			3. (Print Name) Signature:
Explosion proof lighting/electrical equipment inspected and in use			
Required personnel protective equipment inspected, in good condition, and in use			4. (Print Name) Signature:
Safety standby person trained in emergency procedures and CPR			
Emergency equipment (fire ext., first aid kit) ready for use			5. (Print Name) Signature:
Area surrounding confined space free of hazards			
Air monitoring instruments check, operating properly, and in use			6. (Print Name) Signature:
Confined space atmosphere checked prior to entry			
Continuous ventilation required for entry			7. (Print Name) Signature:

	REQUIRED TESTS OF AIR IN THE CONFINED SPACE							REQUIRED TESTS OF AIR IN THE CONFINED SPACE					
					OTHER[1]							OTHER[1]	
TIME (15 min intervals)	LEL %	OXY %	H_2S PPM	CO PPM	PPM	PPM	TIME	LEL %	OXY %	H_2S PPM	CO PPM	PPM	PPM
No entry when levels are: CALL SAFETY OFFICER	>10	<19.5 >23.5	>10[2]	>25[3]			**No entry when levels are: CALL SAFETY OFFICER**	>10	<19.5 >23.5	>10[2]	>25[3]		

SPECIAL INSTRUCTIONS: _____

Approval: _____ _____

Entry Supervisor *Division Manager or Designated Person*

[1] When appropriate, test for other toxic contaminants.

[2] PEL for H_2S.

[3] PEL for CO.

[4] Sign in following safety briefing by Entry Supervisor. All entrants and attendants must sign in.

	REQUIRED TESTS OF AIR IN THE CONFINED SPACE							REQUIRED TESTS OF AIR IN THE CONFINED SPACE					
TIME (15 min intervals)	LEL %	OXY %	H_2S PPM	CO PPM	OTHER[1] PPM	PPM	TIME	LEL %	OXY %	H_2S PPM	CO PPM	OTHER[1] PPM	PPM
No entry when levels are: CALL SAFETY OFFICER	>10	<19.5 >23.5	>10[2]	>25[3]			**No entry when levels are: CALL SAFETY OFFICER**	>10	<19.5 >23.5	>10[2]	>25[3]		