

The logo of the Los Angeles Unified School District is a circular emblem. It features a yellow background with a blue vertical stripe on the right side. Inside the circle, there are stylized figures of people and a building. The text "LOS ANGELES UNIFIED SCHOOL DISTRICT" is written in a semi-circle at the top, and "BOARD OF EDUCATION" is written in a semi-circle at the bottom.

# **LOS ANGELES UNIFIED SCHOOL DISTRICT**

## **Confined Space Policy and Procedures**

**Office of Environmental Health and Safety**

**333 South Beaudry Avenue, 20<sup>th</sup> Floor**

**Los Angeles, California 90017**

**(213) 241-3199**

**February 2006**

## TABLE OF CONTENTS

<b>1.0</b>	<b>OVERVIEW.....</b>	<b>1</b>
<b>2.0</b>	<b>DEFINITIONS.....</b>	<b>3</b>
<b>3.0</b>	<b>RESPONSIBILITIES.....</b>	<b>6</b>
<b>4.0</b>	<b>PROCEDURES.....</b>	<b>9</b>
	<b>ATTACHMENT 1: Responsibilities of Confined Space Entry Team Members</b>	
	<b>ATTACHMENT 2: Confined Space Entry Permit</b>	
	<b>ATTACHMENT 3: Hot Work Permit</b>	
	<b>ATTACHMENT 4: Identification and Evaluation of Confined Spaces</b>	
	<b>ATTACHMENT 5: Confined Space Inventory</b>	
	<b>ATTACHMENT 6: Confined Space Labeling and Signs</b>	
	<b>ATTACHMENT 7: Confined Space Equipment</b>	
	<b>ATTACHMENT 8: Entry Conditions</b>	
	<b>ATTACHMENT 9: Ventilation in Confined Spaces</b>	
	<b>ATTACHMENT 10: Atmospheric Testing Requirements</b>	
	<b>ATTACHMENT 11: Air Monitoring Log</b>	
	<b>ATTACHMENT 12: Rescue Requirements</b>	
	<b>ATTACHMENT 13: Confined Space Records</b>	

# CONFINED SPACE POLICY AND PROCEDURES

## 1.0 OVERVIEW

Confined spaces may present a serious risk to workers due to the potentially serious or life-threatening injuries that may occur while entering or working in confined spaces. The purpose of the District's Confined Space Policy and Procedures is to establish and provide guidance on how to work safely in these spaces. These policies and procedures were developed in accordance with Title 8, California Code of Regulations (CCR), Sections 5156 – 5159, and Section 1502, and apply to all employees, contract workers who are under the direct supervision of District personnel, and to contractors who enter District confined spaces.

There are two types of confined space per 8 CCR section 5156: those that require a permit for entry and those that can be entered without a permit. A confined space is defined as a space that has all of the following characteristics:

- Is large enough and so configured that an employee can enter and perform their assigned work.
- Has limited or restricted means for entry or exit.
- Is not designed for continuous employee occupancy.

Examples of non permit-required confined spaces are: well-ventilated vaults in which there is no atmospheric contaminant, attics in which there is no damaged asbestos, and crawlways under building in which there is no damaged asbestos, steam lines, or other hazards that could reclassify the space into "permit-required." While entry permits are not required, the California Occupational Safety and Health Administration (Cal/OSHA) requires that non permit-required confined spaces have written operating and rescue procedures.

A permit-required confined space has one or more of the following characteristics:

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

Examples of permit-required confined spaces are: sewers or spaces where hazards include engulfment, the presence of toxic gases such as hydrogen sulfide, the presence of explosive gases, and oxygen deficiency. Other permit-required confined spaces can be produced due to welding fumes, the presence of solvent vapors, or of abrasive blasting work.

The District considers all confined spaces to be permit-required until proven safe from atmospheric hazards by testing and evaluation prior to entry and determined to be safe from any other serious safety or health hazards. Other confined spaces may not require a permit, but may be turned into permit-required spaces if additional hazards are introduced.

## 2.0 DEFINITIONS

<b>Attendant</b>	An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the confined space policy.
<b>Blanking or Blinding</b>	The absolute closure of a pipe, duct, or line by the fastening of a solid plate that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, duct, or line with no leakage.
<b>Confined Space</b>	A document established by the employer, that authorizes specific employees to enter a permit-required confined space and contains requirements for operating inside the space.
<b>Combustible Liquid</b>	A liquid having a flash point at or above 100°F.
<b>Double Block and Bleed</b>	A method of closure of a line, duct, or pipe accomplished by closing and locking or tagging a drain or vent valve in the line between the two closed valves.
<b>Engulfment</b>	The surrounding and effective capture of a person by a liquid or finely divided solid substance that can 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.
<b>Flammable</b>	An aerosol, gas, liquid, or solid capable of burning.
<b>Flammable (Explosive) Limits</b>	The percent level of a flammable vapor or gas mixed in air between which a flame or an explosion will occur if an ignition source is present. The leanest mixture at which this will occur is call the <u>lower flammable limit (LFL)</u> , or <u>lower explosive limit (LEL)</u> . The richest mixture at which it will occur is the <u>upper flammable limit (UFL)</u> , or <u>upper explosive limit (UEL)</u> . The range (in percent) of vapor mixture between the lower and upper limits is known as the <u>flammable range</u> .
<b>Hazardous Atmosphere</b>	<p>An atmosphere that may expose employees to the risk of death, incapacitation, injury, acute illness, or impairment of ability to self-rescue from one or more of the following causes:</p> <ul style="list-style-type: none"><li>• Flammable gas, vapor, or mist in excess of 10 % of its lower flammable limit (LFL).</li><li>• Airborne combustible dust at a concentration that meets or exceeds its LFL.</li><li>• Atmospheric oxygen concentration below 19.5 % or above 23.5 %.</li></ul>

- Atmospheric concentration of any substance for which a Permissible Exposure Limit is published in 8 CCR, Section 5155 (Airborne Contaminants) which could result in employee exposure in excess of the permissible exposure limit.
- Any other atmospheric condition that is immediately dangerous to life or health.

**Hot Work**

Any activity involving fire-producing operations such as burning, cutting, heating, riveting, welding, or similar operations; may also include spark-producing operations such as grinding, drilling or abrasive blasting.

**Immediately Dangerous to Life or Health (IDLH)**

Any condition that:

- Poses an immediate or delayed threat to life.
- Causes irreversible adverse health effects.
- Interferes with an individual's ability to escape unaided from a permit space.

**Note:** Some IDLH materials may produce health effects that may pass without medical attention, but may be followed by sudden and possibly fatal collapse 12-72 hours after exposure.

**Inerting**

The displacement of the atmosphere in a permit space by a non-combustible gas, such as nitrogen, to such an extent that the resulting atmosphere is non-combustible.

**Isolation**

The process by which a permit 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.
- Removal or misalignment of pipe sections or ducts.
- Double block and bleed systems.
- Lockout or tagout of all sources of energy.
- Blocking or disconnection of 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 Confined Space**

A confined space that does not contain an atmospheric hazard, or have the potential to contain any atmospheric hazard capable of causing death or serious physical harm.

<b>Oxygen Deficient Atmosphere</b>	An atmosphere inside a confined space containing less than 19.5% oxygen by volume.
<b>Oxygen Enriched Atmosphere</b>	An atmosphere inside a confined space containing more than 23.5% oxygen by volume.
<b>Permit System</b>	A written procedure for preparing and issuing permits for entry and for resuming normal functioning of the permit space following termination of entry.
<b>Retrieval System</b>	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-required confined spaces.
<b>Toxic Material(s)</b>	A material in concentration or amount which exceeds applicable limits established by a regulatory standard, such as CCR § 5155, 5208, and 5209. In the absence of an applicable standard, a material that has the capacity to produce personal injury or illness through ingestion, inhalation, or absorption through any body surface.

Regulations require the following limits not be exceeded:

- Permissible Exposure Limits (PEL): Employee exposure to an airborne contaminant in a workday, expressed as an 8-hour Time Weighted Average (TWA) concentration that shall not be exceeded.
- Time Weighted Average (TWA): An employee's eight-hour exposure to airborne contaminants during a workday, as measured or calculated by the formula in Cal/OSHA regulations.
- Short Term Exposure Limits (STEL): An employee exposure to an airborne contaminant, expressed as a 15-minute time-weighted average concentration, shall not exceed the STEL at any time during the workday.
- Ceiling Limits: The maximum concentration of an airborne contaminant to which an employee may be exposed at any time.
- All Other Substances without a Ceiling Limit: Employee exposure to concentrations above the PEL shall be controlled to prevent harmful effects such as narcosis, significant irritation of the eyes, skin or respiratory tract, or chronic irreversible tissue change.

### **3.0 RESPONSIBILITIES**

District staff, contract employees, and contractors who perform confined space work shall understand and follow these procedures and related (Cal/OSHA) regulations before entering a confined space. This policy and procedure shall be placed at each Maintenance and Operations Branch office, and shall be made available to any affected employee or his/her representative for review.

#### **3.1 Employees** are responsible for:

- Recognizing hazards associated with confined spaces.
- Following procedures outlined in the Confined Space Policy and Procedures.
- Inspecting and maintaining confined space equipment.
- Performing duties in compliance with training received.
- Reporting any concerns, unsafe conditions, or difficulties regarding the Confined Space Entry Policy and Procedures to the supervisor.

#### **3.2 Confined Space Entry Team** is responsible for:

- Ensuring that the Confined Space Entry Team consists of at least four members: authorized entrant, attendant, entry supervisor, and a backup person for rescue.
- Fulfilling the duties of authorized entrants and attendants during confined space entry operations. Details of the duties/responsibilities of the entrants and attendants can be found listed in Attachment 1.

#### **3.3 Supervisors** of the Confined Space Entry Teams are responsible for:

- Defining the scope of work for every confined space entry.
- Designating Entry Team members. A supervisor may act as the Entry Supervisor, or may designate an Entry Supervisor for each job requiring one.
- Arranging for employee training and monitoring atmospheric conditions.
- Ensuring that the Confined Space Entry Team completes entry permits (Attachment 2).
- Ensuring that a Confined Space Rescue Team is available for all needed confined space rescues.
- Notifying other District staff as needed.
- Ensuring team members have necessary training to make confined space assessments.

- Labeling all permit-required confined spaces, or restricting access by other equally effective means as instructed by the Office of Environmental Health and Safety (OEHS).
- Identifying hazards for each confined space by examining past and current uses, physical characteristics and configuration, and potential hazards.
- Identifying all confined spaces which employees are required to enter and providing a current inventory to OEHS.
- Informing employees and contractors working under their supervision about the existence, location, and dangers of all permit-required confined spaces and preventing entry into those spaces by unauthorized or unqualified personnel, and documenting such communications.
- Ensuring that authorized Maintenance and Operations personnel prepare, authorize, and cancel all hot work permits (Attachment 3).
- Ensuring that prior to authorized entry into a permit space, the entry supervisor prepares an entry permit documenting that all pre-entry preparations have been completed, including the hot work permit requirements (Attachments 2 and 3).

**3.4 OEHS is responsible for:**

- Providing guidance on confined space identification and labeling.
- Maintaining the master confined space inventory.
- Evaluating and approving equipment to be used during entries.
- Ensuring that an annual review of the Confined Space Policy & Procedures is completed.
- Providing industrial hygiene support services for personnel air and sound monitoring related to confined spaces.
- Ensuring that either OEHS staff or pre-approved Maintenance and Operations personnel prepare, authorize, and cancel all hot work permits.
- Performing a hazard analysis of the permit-required confined space, to identify ventilation requirements and control measures to be implemented to ensure that entry conditions are acceptable and that hazards do not endanger the entry team.
- Stopping work when required to prevent injuries due to unsafe conditions.
- Providing information on hazardous chemicals.

**3.5 LOCAL DISTRICT FACILITIES DIRECTORS are responsible for:**

- Notifying contractors if confined spaces will be entered in the scope of work for a contract and to comply with these policies and procedures.

- Notifying contractors that confined space entries shall be coordinated between the contractor and District personnel when both may enter the space, with all employees, regardless of employer, working in the permit space implementing identical entry procedures.
- Arranging for District staff to debrief the contractor at the end of entry operations, covering the permit space procedures that were implemented as well as any hazards that were encountered during entry procedures, and any recommended changes in procedures for future operations.

**3.6 OWNER'S AUTHORIZED REPRESENTATIVES (OAR'S)** are responsible for notifying the contractor of:

- Any permit-required confined space(s) and that permit space entry is allowed only through compliance with the District's permit space policy.
- Anticipated and identified hazards, previous experience with the space, and the factors that designates it as a permit space.
- Any precautions and/or procedures that the District has implemented for the protection of employees in or near the permit spaces where contractor personnel will be working.
- Rescue and emergency procedures designated for the job.

**3.7 CONTRACTORS** are responsible for:

- Obtaining any available information regarding the worksite's permit space hazards and entry operations from the District.
- Ensuring contractor employee's compliance with Cal/OSHA regulations.
- Coordinating confined space entry operations with the District. If District and contractor employees are working simultaneously in a permit space, both the District staff and the contractor will implement the same entry procedures.
- Informing the District of the permit-required confined space policies and procedures that he/she intends to follow. If it differs from the District's permit-required confined space policy and procedures, the contractor must follow the more stringent policy and procedures.
- Obtaining information on the rescue and emergency procedures in place.

## **4.0 PROCEDURES**

### **4.1 GENERAL REQUIREMENTS OF CONFINED SPACE PROCEDURES**

#### **4.1.1 IDENTIFICATION AND EVALUATION OF CONFINED SPACES**

- Confined spaces must be identified and evaluated for hazards before allowing entry. "Entry" occurs when any part of the body enters the space.
- Attachment 4, "Identification and Evaluation of Confined Spaces," provides additional directions to the Entry Team Supervisor on requirements that must be met as part of the entry procedures.
- The Confined Space Entry Supervisor shall use these procedures for determining whether a confined space meets the criteria to classify it as a permit-required confined space. If it is determined that the work area is a permit-required confined space, these procedures shall be followed for regulating employee entry, identifying and controlling permit space hazards, and properly protecting any District or contract employee. Confined spaces may be reclassified from "non-permit," to "permit-required," or from "permit-required" to "non-permit" based on hazards present in the space. To request a reclassification, contact OEHS.
- OEHS must be notified in writing at least 24 hours prior to initiation of any permit-required confined space work and hot work in confined spaces by faxing the completed confined space entry permit, (Attachment 2), and if required, the Hot Work Permit (Attachment 3 excluding the guidance and instruction information) to OEHS at 213-241-6816, and calling an OEHS Duty Officer at 213-241-3199. OEHS must approve the confined space entry permit. An employee may enter a permit space only when the permit has been completed and approved by the entry supervisor.
- The most current District-wide confined space inventory is provided in Attachment 5. Appropriate permit-required confined space controls, work practices, and employee protective equipment (if applicable) cannot be fully implemented until all potential hazards within each space are identified as described in Attachment 5.
- Permit-required confined spaces shall be labeled as noted in Attachment 6. Labeling of non-permit spaces to inform employees of potential hazards is recommended.

- Confined space equipment shall be made available as noted in Attachment 7.

#### **4.1.2 ENTRY CONDITIONS**

Acceptable entry conditions for any permit-required confined space work will be specified as part of the entry permit prior to entry into the permit space. Acceptable entry conditions must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space. Attachment 8 lists conditions to be addressed prior to entry. Attachment 9 provides information on how confined spaces may be ventilated to help achieve entry conditions.

### **4.2 PERMIT- REQUIRED CONFINED SPACES**

#### **4.2.1 PRE-ENTRY PROCEDURES**

Before entering a confined space, the Entry Supervisor will:

- Review and approve entry permits prior to entering a permit-required confined space as detailed in Attachment 2, Confined Space Entry Permit (also noted in section 4.1).
- Sign the entry permit to authorize entry.
- Post the completed permit at the entry to the space or other visible location at the worksite, so entrants can confirm that pre-entry preparations have been completed.

#### **4.2.2 ATMOSPHERIC TESTING AND MONITORING**

Atmospheric testing is required to determine the presence of oxygen deficiency, oxygen enrichment, and explosive or toxic levels of gases. Testing shall be conducted per the requirements specified in Attachment 10, and recorded in the log on Attachment 11.

#### **4.2.3 VENTILATION**

Air contaminant hazards within a permit space may be controlled with the use of ventilation. Further details of ventilation use are provided in Attachment 9.

#### **4.2.4 PROCEDURES FOR LARGE OR CONTINUOUS SYSTEMS**

Sewers and tunnels are examples of work areas that are considered large or continuous. These spaces do not allow the space to be isolated prior to or during the permit-required work, so new contaminants may be encountered for the duration of the entry. To deal with these types of unknown conditions, the following safety procedures shall be utilized:

- Testing of the space shall be conducted prior to entry according to the procedures described in Attachment 10.
- Monitoring shall be conducted using continuous air monitoring. Once the entrants arrive at their work site, an examination of any previous monitoring data should be conducted by the entry supervisor **prior** to initiation of the scheduled work, along with pre-entry monitoring.
- Evaluating conditions in the space as noted on the Confined Space Entry Permit. If conditions exceed the acceptable levels set by the entry permit, the space shall not be entered. If conditions are exceeded during the entry, the space shall be evacuated and re-evaluated by OEHS prior to re-entry.

#### **4.2.5 RESCUE AND EMERGENCY SERVICES**

- Rapid response in emergencies and rescue ability is required to protect employees in confined spaces. Employees may self-rescue, or may be retrieved by mechanical means by attendants.
- Confined space entry rescue and emergency services will be performed by District employees trained in confined space rescue, with a “911” call also placed.
- The Entry Supervisor is responsible for ensuring that rescue services are in place during a permit-required confined space operation.
- Additional rescue requirements are listed in Attachment 12.

#### **4.2.6 ENTRY TERMINATION**

Terminate entry and cancel the entry permit when entry operations covered by the entry permit have been completed, or a condition that is not allowed under the entry permit arises in or near the permit space, such that it may affect entry.

#### **4.3 HOT WORK REQUIREMENTS/HOT WORK PERMITS**

Any time hot work is authorized within a confined space, the work must be approved by a Hot Work Permit, located in Attachment 3 (also noted in section 4.1). This must be attached to the entry permit at the confined space job site.

#### **4.4 TRAINING**

All employees involved in confined space operations must be properly trained on the hazards involved, their duties/responsibilities, completion of entry permits and entry, operating and emergency procedures. OEHS will conduct the necessary Cal/OSHA required training for affected staff. No person shall enter permit-required or non-permit confined space until the required training has been completed.

#### **4.5 POST-ENTRY REQUIREMENTS AND RECORDKEEPING**

After completion of permit-required confined space work, the Entry Supervisor shall retain the entry logs, air monitoring logs, hot work permits, and entry permits per Attachment 13.

## **Attachments**

- Attachment 1: Responsibilities of Confined Space Entry Team Members & Attendant Roster
- Attachment 2: Confined Space Entry Permit
- Attachment 3: Hot Work Permit
- Attachment 4: Identification and Evaluation of Confined Spaces
- Attachment 5: Confined Space Inventory
- Attachment 6: Confined Space Labeling and Signs
- Attachment 7: Confined Space Equipment
- Attachment 8: Entry Conditions
- Attachment 9: Ventilation in Confined Spaces
- Attachment 10: Atmospheric Testing Requirements
- Attachment 11: Air Monitoring Log
- Attachment 12: Rescue Requirements
- Attachment 13: Confined Space Records

## **ATTACHMENT 1**

### **Responsibilities of Confined Space Entry Team Members**

The Confined Space Entry Team will consist of at least four members: authorized entrant, attendant, entry supervisor and a standby person in the event an entry rescue is needed. The Entry Supervisor plans and controls the entry. The Attendant monitors operations in the space, and can order an evacuation if needed. Authorized Entrants perform work in the confined space.

#### **Authorized Entrant Responsibilities**

##### **Before You Go In:**

- Discuss your training with the Entry Supervisor.
- Discuss with the Entry Supervisor the hazards and safety measures needed for this job.
- Look into the space to make sure that valves and electrical power have been locked out.
- Discuss with the Entry Supervisor any hazardous chemicals present and their effects on your ability to self-rescue.
- Understand the requirements of the confined space entry permit, and follow them at all times.
- Check the following required equipment to ensure it is in good condition: confined space personnel-rated tripod, approved personnel-rated hoist, wire rope, equipment winch, approved lighting, approved personal protective equipment, approved spark-proof tools, ventilation equipment, communications equipment, fire extinguishers, and any other needed equipment for the particular job.
- Use retrieval systems or other methods whenever an authorized entrant enters a permit space. Retrieval systems include retrieval lines, harnesses, lifting devices, and anchors. Retrieval systems must meet the Cal/OSHA requirements noted in Title 8 CCR, Section 5157(k)(3). Authorized entrants may enter the space if other conditions indicate it is safe to do so. A chest or full-body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head shall be used. One end of each entrant's retrieval line must be attached to a mechanical device or fixed point outside the permit space so that non-entry rescue can begin as soon as the attendant becomes aware that rescue is necessary. A mechanical device must be available to retrieve personnel from vertical type permit spaces more than five feet deep.

##### **After You Go In:**

- Maintain contact with the attendant or entry supervisor.

- Exit the confined space if directed by the attendant or entry supervisor, or an alarm is activated, you recognize a warning sign of exposure to hazardous chemicals, or you observe a prohibited condition.
- Notify the attendant by shouting or by other means listed on the entry permit if self-rescue is initiated.
- Leave the permit space as quickly as possible if an “exit” order or alarm is given by the attendant or entry supervisor, any warning signs of exposure are noticed, or if a prohibited condition is noticed.
- STOP WORK if an unsafe condition occurs that could harm entrants and immediately notify the Entry Supervisor.

*Note: This sheet is a brief summary of your responsibilities provided as a reminder only. For complete details, refer to your training materials and to the LAUSD Confined Space Policy and Procedures.*

## Attendant Responsibilities

### Before Entry:

Discuss your training with the Entry Supervisor.

### After Entry:

- Monitor the entrant's communication. If contact is lost, and there are changes in the communications indicating disorientation, or other changes occur outside the space that could endanger entrants, signal the entrants to end the entry and leave the space.
- Keep an exact count of entrants in the permit space at all times on the Attendant Roster, and make sure the entry permit lists the entrant(s) by name and employee number if there are duplicate names.
- Ask the Entry Supervisor about special hazards associated with the job. Recognize the signs of chemical exposure (see Material Safety Data Sheets (MSDS) for details.)
- Provide standby help to entrants in the space. You may only leave the confined space entry point if you are relieved by another attendant, an entry supervisor, or to summon help during an emergency.
- Keep unauthorized persons out of the space, and be alert to work conditions and their possible affect on entrants.
- Give any rescue or medical personnel information about the hazards in the confined space.
- Perform no other work that could interfere with your main duty of monitoring, protecting, and assisting entrants. You can assist entrants in ways such as passing equipment into and out of the space.
- Call 911 in the event an entry rescue is initiated.
- STOP WORK if an unsafe condition occurs that could harm entrants and immediately notify the Entry Supervisor.

*Note: This is a brief summary of your responsibilities provided as a reminder only. For complete details, refer to your training materials and to the LAUSD Confined Space Policy and Procedure.*



## Entry Supervisor Responsibilities

### Before Entry:

- Define the scope of work for every confined space entry.
- Designate attendants and entrants.
- Make sure all required safety equipment is in good condition and on site.
- Notify OEHS to request reevaluation of a confined space from non-permit to permit-required when changes in the use, shape, potential hazards, or air contaminants increase the hazards to the entrants, with the intent of designating the space as permit-required based on the hazard.
- Give a brief pre-entry “tailgate training” to the attendant and entrants related to any known hazards that they may find in the permit space, and how to protect themselves including the effects of hazardous chemicals, and possible impacts on self-rescue ability. All Material Safety Data Sheets (M.S.D.S.’s) for chemicals present should be available for review. For questions, contact OEHS at (213) 241-3199.
- Notify OEHS at least 24 hours prior to the initiation of any confined space operations.
- Make sure that all Entry Team members have received all required safety training.
- Make sure all respirator wearers have received respirator fit-tests, medical exams, and are clean-shaven on the day when respirators may need to be worn.
- Verify that rescue equipment is in good working order, and that staff have been trained on its use.
- Make sure that any energy sources within the confined space are isolated in accordance with lockout/blockout policies and procedures. For additional questions, see Cal/OSHA regulations.
- Make sure acceptable entry conditions are present before a permit space entry.
- Make sure that all entries have been logged on the entry permit, all tests specified by the permit have been conducted, and that the equipment specified by the permit is in place before signing the permit.
- Sign the confined space entry permit.

### During Entry:

- Monitor atmospheric conditions for the confined space. Check with attendant for condition changes.
- Authorize entry and oversee entry operations.
- Ensure constant communication with entrants.
- Ensure that entry operations comply with the terms and conditions on the entry permit. End the entry if conditions change from those noted on the permit.
- Remove unauthorized individuals who enter or attempt to enter the permit space.
- Ensure that transfer is made to another authorized entry supervisor whenever you must leave the site, and that the terms and conditions of the permit are maintained.
- Ensure that the completed Confined Space Entry Permit is posted at the work site during the entry.
- Terminate the entry and cancel the entry permit once the job is completed.
- Stop work for any unsafe conditions.

### After Entry:

- Send original entry permits, attendant rosters, and supporting documentation to OEHS at the end of each permit entry. Maintain copies of records at the local Maintenance and Operations Branch office.
- Keep each canceled entry permit for at least one calendar year.
- Document any problems or concerns encountered during an entry operation on the entry permit.

***Note:** This is a brief summary of your responsibilities provided as a reminder only. For complete details, refer to your training materials and to the LAUSD Confined Space Policy and Procedures.*

## **ATTACHMENT 2**

### **Confined Space Entry Permit**

#### **Instructions for completing the permit**

Before authorizing entry into a permit-required space, the Entry Supervisor will document that all pre-entry preparations have been completed and that the entry conditions of the permit-required confined space are cleared for entry. These items must be entered on the permit:

- Location of the permit space to be entered.
- Purpose of the entry.
- Date and authorized time span of the entry permit.
- Names and I.D. number of authorized entrants that are in the permit space listed on the Attendant Log.
- Name of person assigned as attendant(s).
- Name of person serving as Entry Supervisor, and name of Entry Supervisor who originally authorized entry, if they are different persons.
- Hazards of the permit space to be entered.
- Measures used to isolate the permit space and to eliminate or control permit space hazards before entry.
- Acceptable entry conditions.
- Results of air monitoring results on the Air Monitoring Log (Attachment 11).
- Names of the emergency service, means to contact this service, and phone numbers.
- Name of on-site person currently first aid certified.
- List the communication procedures used by authorized entrants and attendants to maintain contact during the entry. List the safety equipment provided for personal protection, air monitoring, equipment calibration, communications, alarms, and rescue.
- List any additional permits, such as Hot Work, that have been issued to authorize work in the permit space.
- List any other information needed to ensure employee safety.

**LAUSD CONFINED SPACE ENTRY PERMIT**

**PERMIT EXPIRES AT END OF WORK SHIFT**

- (1) Date Issued \_\_\_\_\_
- (2) Facility Name \_\_\_\_\_ Location Code: \_\_\_\_\_ Street Address: \_\_\_\_\_
- (3) Entry Supervisor Name: \_\_\_\_\_ Employee # \_\_\_\_\_ Phone \_\_\_\_\_
- (4) Equipment to be worked on: \_\_\_\_\_ (5) Work to be performed: \_\_\_\_\_
- (6) Names of stand-by personnel: \_\_\_\_\_
- (7) MINIMUM REQUIREMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY (Note: Items that do not apply, mark N/A. "No" responses will prevent entry until corrected.)

Procedure & Equipment/Pre Entry Checklist	Yes	No	N/A	Procedure & Equipment/Pre Entry Checklist	Yes	No	N/A
Direct reading gas monitor calibrated and tested.				Hot work permit.			
Safety harnesses and lifelines for entry and standby persons checked & available.				Lighting (Explosion Proof).			
Hoisting/Emergency Escape Retrieval equipment checked and available.				Respirator(s) (air purifying/other).			
Communication Equipment Operational.				Fire extinguishers available and charged.			
Is SCBA available for entry and standby persons?				Secure area (post and flag).			
Protective clothing, hardhat, safety glasses, protective footwear, hearing protection available as needed for each entrant.				Standby safety personnel available.			
All electric equipment listed Class I, Division I, Group D, and non-sparking tools.				Ventilation- Mechanical-in place and functional as needed.			
Lock Out/de-energize/and re-verify energy sources have been made safe.				Ventilation- Natural Ventilation only.			
Line(s) broken/capped/blanked/disconnected/ blinded, or blocked.				Purge-Flush and Vent.			
IDLH entry- Rescue on-site on standby.							

- (8) Communication procedures and equipment:  Radio  Intercom  Air horn  Voice  Rope signals (with entry crew trained on signals to be used)  
 Other (List) \_\_\_\_\_
- (9) Entry, standby, and back up persons: Successfully completed required training? Yes No Is training current? Yes No
- (10) Atmospheric monitoring frequency to be conducted every: \_\_\_\_\_ hours (minimum is every 2 hours). Results to be recorded in Atmospheric Testing Log.
- (11) Name(s) of personnel who can provide first aid on site: \_\_\_\_\_ (13) List any other safety equipment that will be used: \_\_\_\_\_

**VERIFICATION:** We have reviewed the work authorized by this permit and the information on it. Written instructions and safety procedures have been received and are understood. Entry cannot be approved if any squares marked in the "No" column of Question 8. This permit is not valid unless all appropriate items are completed. A copy of the permit is must be faxed to OEHS 24 hours prior to job start.

Permit Prepared By: \_\_\_\_\_ Employee # \_\_\_\_\_ Date: \_\_\_\_\_ Approved By: \_\_\_\_\_ Employee # \_\_\_\_\_ Date: \_\_\_\_\_  
 (Signature of Entry Supervisor)

OEHS Approval: \_\_\_\_\_ Employee # \_\_\_\_\_ Date: \_\_\_\_\_  
 (Signature of Safety Officer)

**\*\* This permit is to be posted at the job site, with a copy sent to OEHS following job completion.**

## ATTACHMENT 3

### HOT WORK PERMIT FORM COMPLETION INSTRUCTIONS

#### Preparing for Hot Work:

- Isolate the space by blanking or disconnecting pipes and process lines, depressurizing systems, decoupling mechanical linkages and locking out electrical devices at their power source.
- Clean the space by flushing, blowing, and purging pipes and/or ducts, cleaning used containers, ventilating containers and hollow spaces.
- Ventilate the space well in advance with fresh air using local exhaust ventilation with movable hoods or fixed enclosures at the point of your work.

#### Hot Work Entry Requirements:

Once the Entry Supervisor has prepared the space, the following tasks shall be performed:

- Approval of the Hot Work entry permit for the confined space by the Entry Supervisor.
- Atmospheric testing at three levels of the space (top, middle and bottom) in the following order:
  - o **Oxygen content** – safe levels are between 19.5% - 23.5%
  - o **Flammability** – concentration of flammable gas, vapor, or mist must not be greater than 10% of the lower flammability limit (LFL).
  - o **Toxicity** – must not exceed the permissible exposure limit (PEL) for the contaminant in question. Contact OEHS for monitoring information.
- Ensure that all safety precautions have been taken and that conditions are safe.
- Notify all affected personnel of the hazards.
- Ensure that barriers and warning signs have been posted.
- Ensure that copies of the confined space entry and hot work (if required) permits have been completed and posted outside the permitted space.

#### Special Equipment:

It may be necessary to use equipment that guards against electrical shocks, fire, and explosion, such as spark resistant tools and explosion-proof lighting. List any such equipment on the entry permit.

### **Personal Protective Equipment (PPE):**

The Entry Supervisor will document on the Hot Work Permit any Personal Protective Equipment (PPE) that will be worn during the work.

### **Hot Work Permit:**

The Hot Work permit will be attached to the Entry Permit. The following information will be listed on the Hot Work Permit:

- Site or facility name.
- The date and time of the entry.
- Permit expiration date.
- The kind of work that will be done in the space.
- The names of people authorized to enter the space, serve as attendants, and the entry supervisor.
- Other items as noted on the permit.

## HOT WORK PERMIT

This form must be completed for all welding/cutting/hot work operations in confined spaces. Form is to be filed with local maintenance area with copy faxed to the Office of Environmental Health and Safety at 213-241-6816.

Date: \_\_\_\_\_

Employee(s) performing job: \_\_\_\_\_

Dates and times of job: \_\_\_\_\_

Permit Expires on: \_\_\_\_\_

Site or Facility Name: \_\_\_\_\_

Work locations at site/tasks: \_\_\_\_\_

Confined Space to be entered/Inventory #: \_\_\_\_\_

Names of people authorized to enter space: \_\_\_\_\_

\_\_\_\_\_  
Name of Confined Space Attendant

\_\_\_\_\_  
Name of Confined Space Entry Supervisor

Operational Requirements: (Check all that apply)	Yes	No	N/A
Fire watch (during activity and 30 minutes after)			
Fire extinguisher(s) type 10 ABC			
General ventilation			
Local ventilation			
Respiratory protection (Type _____)			
Confined Space Permit			
Air monitoring for toxic chemicals required			
Hearing protection required			
Pressurized cylinders secured			
Additional/other hazards			

Fire watch \_\_\_\_\_  
Name
Employee Number
Signature

(If a fire watch is required by Hot Work Permit, this job may be performed by a Confined Space Crew Member)

Supervisor Approval \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
Signature

## ATTACHMENT 4

### Identification and Evaluation of Confined Spaces

The following requirements shall be completed by the Entry Supervisor:

- Prior to initiation of any permit space work, OEHS and Maintenance and Operations personnel/Entry Supervisor will evaluate the potential hazards associated with each specific project. This will be performed to assure that entry conditions are acceptable and hazards do not endanger the entry team. Prior to working in any confined spaces, Maintenance and Operations personnel shall contact OEHS to confirm if the space is a known permit-required or non permit-required confined space. This may include, but is not limited to vaults, electrical pits, trenches, elevator pits, and crawl spaces in attics or beneath building structures.
- Prior to testing and evaluation, all confined spaces are initially considered permit-required confined spaces. Evaluations must be conducted to determine if the space can be reclassified to a non-permit required space. All evaluations must be documented and kept for review.
- Prior to entry, test conditions in the permit space, and monitor the space during entry. Entry supervisors will ensure that this testing and monitoring is completed in the permit-required confined space, including ongoing monitoring of any hazardous conditions.
- Prior to leaving the job, the Entry Supervisor shall be responsible for preparing, authorizing, and canceling all permit-required confined space permits and work.

### Permit-Required Confined Space Notification and Entry Restrictions:

- If a work site contains a permit-required space, the Maintenance and Operations area will notify all potential entrants and OEHS.
- M&O will provide employee training on the dangers of the space, and will post signs indicating, "DANGER - PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER."
- M&O will posting warning or danger signs on permit-required confined spaces or potential permit-required confined spaces to inform employees of the existence, location, and the danger posed by the permit-required confined spaces. Caution signs will be posted in areas where specific operations may be hazardous (See Attachment 6).
- OEHS and Maintenance and Operations must determine if entering the space is necessary. If entry into a permit space is not necessary, effective measures to prevent entry of employees shall be established by the supervisor. The following are suggested guidelines:
  - o The area may be closed off permanently by welding a hatch shut or bricking up an open wall.

- o If the permit space requires periodic visual inspections, use temporary measures such as locking and opening.
- o Signs must be posted per Cal/OSHA regulations for all permit-required confined spaces. It is recommended that warning signs, as shown in Attachment 6, be posted on all non-permit confined spaces and that caution signs be posted at spaces where certain work operations should be evaluated prior to work.

## **Identification and Evaluation of Confined Spaces - Alternate Entry Procedures**

Cal/OSHA regulations allow use of alternate entry procedures to enter a permit space, provided the following conditions are met:

- No other hazards exist; and
- Atmospheric hazards can be effectively removed and controlled by forced ventilation; and
- Workers can safely enter and do work in the space; and
- All testing results and monitoring data are documented, retained, and made available to each employee who enters the space.

When using alternate procedures, the following apply:

- If there is an incident where an initial entry of the permit space is needed to obtain the data required for an alternate procedures entry, then all other additional permit-required confined space procedures must be implemented.
- Only OEHS may allow the use of an alternate procedure within a permit space. This shall be documented in writing by OEHS. However, all affected branches and/or contractors will be consulted prior to implementing such a condition. This ensures that necessary information is available so entrant safety is not compromised and regulatory requirements are met.
- The inspections and air monitoring relating to the establishment of acceptable entry conditions into a permit space must be conducted within 24 hours of the entry. If this requirement is not met, the inspection will be void, the permit will not be issued, and the process will be repeated.
- Permanent reclassification of a confined space may be required in a situation where changes in the use or configuration of a non-permit confined space potentially increase the hazards to the entrants. The space must shall be reevaluated by the OEHS and possibly reclassified. It should be noted that it is the responsibility of each maintenance area to inform the OEHS of such changes.
- A permit-required confined space may be temporarily reclassified to a non-permit confined space by the Entry Supervisor and OEHS. This may be done only if the permit space poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated without entry into the space. In this case, the permit space may be reclassified as a non-permit confined space for as long as the non-atmospheric hazards remain eliminated.
- If testing procedures and inspections (documented on the entry permit) show that the hazards within the permit space have been effectively eliminated and will remain so, the permit space may then be reclassified as a non-permit confined space. ***Note:** Controlling atmospheric hazards through forced air ventilation is not an elimination process and cannot be used to satisfy this requirement.*

- To document that all hazards in a permit space have been eliminated list on the entry permit:
  - Document the date all hazard elimination is complete.
  - List the location of the space.
  - Include the signature of the person certifying that all hazards have been eliminated.
  - Ensure this information is available to all authorized entrants.
  
- In the event that a hazard develops in a space that has been classified as a non-permit space, ***each employee must immediately exit the space***, and the space must then be reevaluated.

## ATTACHMENT 5

### Confined Space Inventory

- A District-wide confined space inventory shall be conducted by Maintenance and Operations and OEHS. The inventory shall be updated once each year or when there is a significant change in conditions for an identified space.
- The identification of new confined spaces is the responsibility of the both the OEHS and Maintenance and Operations. Information on the entry permit is to be used to assess possible hazards. Specific hazards to be evaluated include:
  - o Previous materials stored or taken into the space,
  - o Planned work practices that may contribute to the generation of hazards,
  - o Mechanical hazards (such as moving equipment, electrical connections, tools, etc.),
  - o Space configuration hazards (such as restricted spaces, slopes, size, location of openings, dead ends, etc.),
  - o Chemical hazards including the type of contaminants, routes of entry and the symptoms that could result from exposure to the specific contaminants in the permit space,
  - o Electrical, noise, and heat-stress hazards,
  - o Pressure, steam, high-voltage or other hazards that require lockout/tagout procedures,
  - o Conditions outside the space that may contribute to or add to the hazards within the permit space (such as vehicle traffic, weather conditions, engulfing material, etc.),
  - o Oxygen deficient/rich atmospheres,
  - o Flammable atmospheres,
  - o Any other safety hazards.
- The latest copy of the inventory is included in this appendix. This inventory requires annual review and updating based on changes in conditions and work in the confined spaces.

**ATTACHMENT 6**

**Confined Space Labeling and Signs**

**DANGER!**

**Permit-required confined space  
Enter by permit only.**

**WARNING**

**Non-Permit confined space**

**This space may become a permit-required confined space by the use of chemicals, coatings, welding, or abrasive blasting. Evaluation by OEHS must be performed prior to work.**

**CAUTION**

**Not a confined space, operations involving the use of chemicals, coatings, welding, or abrasive blasting must be evaluated prior to work. Contact OEHS for questions.**

## ATTACHMENT 7

### Confined Space Equipment

The following equipment must be available to entrants and used if required:

- Testing and monitoring equipment for oxygen, combustible gases and vapors, toxic gases and vapors, carbon monoxide, hydrogen sulfide, LEL, and UEL.
- Ventilating equipment.
- Communications equipment, such as radios, intercoms, or air horns.
- Personal protective equipment (retrieval lines, respirators, or protective clothing).
- Lighting equipment.
- Barriers and shields.
- Ladders.
- Rescue/emergency equipment.
- Fall protection equipment

### Atmospheric Testing Equipment Use/Calibration

Before starting any atmospheric testing, the entry supervisor will perform a thorough inspection of each direct reading instrument used for the testing process. The inspection should include, but not be limited to, the following:

- Check the case, meter and attachments for cracks and/or other defects.
- Inspect the entire length of all sampling hoses for obstructions, breaches, or tightness. Be certain that all sample hoses and probes are long enough to sample the applicable area(s) within the permit space.
- Make sure the battery is functioning properly and is fully charged.
- Make sure the user is familiar with operational procedures and can interpret the results.
- Document inspection procedures on the Permit Entry Form.

- Calibrate sampling instruments following the manufacturer's written instructions. The calibration will be conducted by the OEHS staff or other designated Maintenance and Operations staff. Calibration may **not** be conducted in the atmosphere designated for entry.
- Ensure that all users are thoroughly trained on the use and limitations of each instrument.

## ATTACHMENT 8

### Entry Conditions

- Prior to entry, the Entry Supervisor must ensure that all hazardous conditions in the space are addressed by ensuring the following:
  - o Control of hazards posed by atmosphere and engulfment.
  - o Blocking, disconnection or lockout of pumps, lines, ducts, and electrical connections occurs.
  - o Surveillance of the surrounding area to observe hazards such as drifting vapors and gases.
  - o Pre-entry atmospheric testing is conducted.
  - o Rescue procedures specific to hazards in the space are in place.
- After all existing and potential hazards within a permit space have been identified; appropriate preparation of the permit space shall be conducted by the entry team. During the entire preparation phase, the Entry Supervisor will be present and will approve all activities to be performed.
- Ensure ventilation and/or cleaning occurs. In many instances, natural ventilation may maintain acceptable air quality in a permit space. However, should the space be a tank or vessel, the previous contents must be known prior to entry. If the previous contents are not known or are toxic in nature, it will be necessary to purge and/or clean the space prior to entry as follows:
  - o Cleaning

Cleaning of a permit space may involve steam cleaning, flushing with water, or blowing the space out with air. Cleaning may require a varying number of steps. The Entry Supervisor shall record the procedure and approval on the entry permit. The following procedures should be followed as a general guideline:

- Flush or blow out all pipes or ductwork leading into the space (e.g., vents, process lines, wash lines, pumps, valves, etc.) after cleaning.
- Check any ducted or piped fire extinguishers that could discharge into the space.
- Determine if a flammable or toxic hazard is present in the space. If such hazards are present, all areas immediately adjacent (spaces in all directions from a confined space, including all points of contact, corners, diagonals, decks, tank tops, and bulkheads) to the space must be cleaned, including any areas that adjoin the space along its edges or at its corners.

- Clean a sufficient distance around any surfaces where hot work will be performed. Be careful not to leave any residues that could become flammable or produce toxic emissions when heated or otherwise disturbed.
- Use extreme caution when selecting cleaning materials. Make sure they are compatible with the previous contents held within the space, and that they are on the OEHS approved chemical list.

o Purging

This technique may consist of treating the space with fresh air or displacing the atmosphere with an inert gas (e.g., carbon dioxide or nitrogen). The use of an inert gas to prepare a permit space should only be used if the previous material occupying the space is extremely flammable or reactive (e.g., methane gas). Inerting will result in an IDLH, oxygen-deficient atmosphere, which requires the use of supplied air respiratory protection (e.g., airline with a 15-minute escape bottle or a Self-Contained Breathing Apparatus) for all entrants. The following guidelines should be followed during inerting (Note: should conditions arise that were not expected, the procedure will be canceled and the space re-evaluated):

- Ensure that before introducing the inert gas into the permit space, the integrity of the space, tank, or vessel (a large open or closed-top structure used for storage or other uses) is checked to make sure it will contain the purging medium. Check valves, covers, and fasteners, making sure that all openings (except those used for applying the inert medium) are closed and secured.
- Inspect inert gas lines and tag all inert gas valves.
- Ensure that the confined space atmosphere is not vented near any occupied space and/or air intake of a HVAC system.
- Ensure that fire does not occur. Introducing inert gas into any space can generate sufficient static electricity to ignite flammable vapors still present if adequate oxygen is available to support combustion.

o Isolation

Isolation involves removal of the permit space from service and completely protects the entrant against the release of energy and material into the space. Specific isolation techniques include implementing the following:

- Blanking or blinding of a pipe, duct, or line.
- Line breaking for sections of lines, ducts, or pipes.
- Double block and bleed closure.

- Blocking or disconnecting all mechanical linkages.
  - Lockout/blockout procedures for all potential energy sources. Specific Cal/OSHA regulations govern these procedures. If an uncontrolled hazard exists prior to entry into a permit space, the entry cannot proceed until that hazard is controlled to the specifications for safe entry as outlined in the entry permit. For assistance in implementing lockout/blockout procedures, contact OEHS.
  - Proper isolation technique, observing and approving the procedure and documenting the accuracy of the implemented procedure on the entry permit shall be completed by the Entry Supervisor.
- Ensure that there are no other uncontrolled hazards prior to entry into a permit-required confined space.

## ATTACHMENT 9

### Ventilation in Confined Spaces

This section describes how to select, and safely use ventilation within a permit space.

#### Ventilation Device Selection

Selecting the appropriate ventilation equipment for a permit space will be done by the entry supervisor, considering the following factors:

- A sufficient volume of air is needed to ventilate the space. This will depend upon the shape of the space, contaminants present, and the length of the ventilation duct run needed to provide fresh air to the space. In case of questions, contact OEHS.
- The type of contaminant will determine whether there is a potential for explosive atmospheres, which would require explosion proof and spark resistant equipment.
- The need for portable generator, and location of generator exhaust. (**Note:** No gasoline powered equipment shall be used underground)
- Sources of clean air.
- Potential contaminants generated by work activities within the space.
- Ventilation equipment commonly used includes fans, air ducting, and a simple device to monitor airflow.

#### Ventilation Safety

Ventilation can eliminate atmospheric hazards from confined spaces. Ventilation is NEVER a substitute for atmospheric testing. Atmospheric testing is critical in identifying the hazards to be controlled, the type of ventilation to use and the degree of ventilation required to ensure entrant safety. Other safety measures the entry supervisor needs to follow are the following:

- Ventilate with only fresh air and not with pure oxygen. Using pure oxygen creates an explosive atmosphere.
- Be sure tools or electrical ventilation equipment are spark proof, intrinsically safe and grounded or bonded if fire hazard is present. If a ground fault circuit interrupter is required, make sure that a second power supply source is available to ensure continuous ventilation, should the breaker trip in the original power source.
- Ensure the intake for the makeup air is located in a place free from any flammable or toxic materials. Locate the exhaust outlet in a place where contaminants cannot threaten other workers or cannot be drawn back into the permit space that is being ventilated.

## Ventilation Techniques

A sufficient amount of clean and breathable air must be provided wherever an entrant is working within a permit space. In order to achieve this, the ventilation system must circulate a constant flow of fresh air through all areas of the space.

- If natural ventilation is inadequate, air moving equipment (i.e. fans, blowers) should be used. This equipment should have adequate pressure to push the air far enough to ventilate the entire space, and more than one device may be required. Review the manufacturer's specifications for the proposed units to ensure they are adequate.
- Locate the air inlets and outlets properly. Incoming fresh air and outgoing exhaust should move through separate openings. If the space has only one opening or the openings you have do not allow adequate airflow, installing ductwork will help allow the air to be directed to all parts of the space being ventilated. If the scope of work generates contaminants from a single point, local exhaust ventilation should be used whenever possible to remove contaminants.

## ATTACHMENT 10

### Atmospheric Testing Requirements

The atmosphere of a confined space should be evaluated using equipment that is sensitive and specific to identify and assess hazardous atmospheres that may exist or arise within an individual permit space. Atmospheric testing will be conducted by Maintenance and Operations personnel. The internal atmosphere shall be tested using a calibrated direct-reading instrument. **The entry permit shall identify the contaminants for the specific permit space.**

#### Duration of Testing

The entry supervisor will specify on the entry permit the frequency and duration of tests to be conducted for the permit space. Measurement of values for each atmospheric test should be made for at least the minimum response time of the test instrument, as specified by the manufacturer.

#### Order of Testing

Testing must be performed in the sequence of:

1. Atmospheric Hazards
2. Oxygen
3. Combustible vapors
4. Toxic gases or vapors

Testing is required in this order based on potential hazard ranking, and applies to both direct reading and other instruments.

#### Excavations

Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation shall be tested before employees enter excavations greater than 4 feet in depth. When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, testing must be conducted as often as necessary to ensure that the atmosphere remains safe.

#### Stratified (layered) Atmospheres

Monitoring in stratified atmospheres can pose special concerns because significant differences may exist in the atmospheric conditions as you enter a permit space. An example of this would be accessing a tank from a hatch mounted on the top of the tank when the work is being performed on the bottom of the tank. In order to properly assess the atmospheric conditions for a vertical or horizontal entry, the atmosphere shall be tested a distance of approximately 4 feet in the direction of travel and to each side. In the case of a vertical entry middle, top, and bottom layers will be tested each 4 feet.



## ATTACHMENT 12

### Rescue Requirements

A means to rescue employees from confined spaces is required for each entry. The District uses self-rescue, and an off-site rescue service. Any change in rescue procedures will require consultation with OEHS, and revision of these policies and procedures.

#### Non-Entry Rescue of Personnel in Confined Spaces

- Self-Rescue is the preferred rescue technique, if possible, where the entrant(s) rescues themselves with no other entrants needed. Non-Entry rescue is used to assist in removing an entrant from the space. The attendant may perform a rescue from outside the confined space only by using the equipment provided. Such equipment may include tripod-mounted hoists attached to lifelines and safety harnesses worn by the authorized entrants.
- If the attendant determines that entrants need to escape from a confined space, the attendant initiate rescue. All entrants must be trained in confined space rescue techniques.
- “911” should be called.

#### Medical Information

If an entrant is exposed to a chemical substance, the Material Safety Data Sheet (MSDS) must be kept at the worksite and MSDS information be made available to the medical facility treating the exposed entrant.

#### **The Entry Supervisor shall determine if:**

- The space contains obstructions or turns that prevent pull on the line from being transmitted to the entrant.
- The entrant risks injury because of contact with projections in the space.
- Use of an air-supplied respirator puts an entrant at risk of airline entanglement with the retrieval line.

In the event that any of the above conditions exist, the entrant may not be required to use a retrieval system, as it would increase the overall risk of entry, and the issue will be referred to OEHS for review. OEHS will specify the use of a retrieval system on the entry permit.

## **ATTACHMENT 13**

### **Confined Space Records**

The following records shall be retained:

- **Confined Space Inventory**

The Office of Environmental Health and Safety (OEHS) will maintain a master inventory of identified non-permit and permit-required confined spaces, as supplied by Maintenance and Operations. This inventory will be available on the OEHS website at <http://www.lausd-oehs.org/>. Information should include location, description of area, status (permit-required/non-permit required) and a unique identification number.

- **Confined Space Entry Permits and Related Information**

A completed, signed, and dated Entry Permit Attendant Rosters, and Atmospheric Testing Logs must be kept on-site at all permit-required confined space entries. A copy of the permit will be forwarded to OEHS and kept on file for a minimum of 5 years. The original permit shall be kept on file by the Maintenance and Operations District to which the permit was issued.

- **Equipment Calibration/Direct Read Instrument Data Form**

Prior to monitoring any confined space activities, testing personnel must conduct calibration of any monitoring equipment used. The date of the last calibration shall be noted on Attachment 11.

- **Training Records**

An original copy of the record will be maintained by the local Maintenance and Operations office, with a copy of all training forwarded to OEHS within 30 days after training is completed. OEHS will maintain training records for affected personnel for the duration of the employee's employment.

**DISCLAIMER**

**These policies and procedures are written for use by the Los Angeles Unified School District. Any other use is solely at the user's discretion. LAUSD disclaims any liability for the use of these procedures other than for LAUSD purposes.**

Confined Space Policy and Procedure LAUSD

Revision: #30 02-02-06

Author: Jay Brakensiek

Reviewer: Yi Hwa Kim

Typing/Formatting: Bernadette Hinkson Powell/Martha Morales/Maria Thorpe (Attachment 2,  
Page 2 only)