



**LAMAR UNIVERSITY**

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM™

# Confined Space Program

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## SUMMARY

The purpose of the Lamar University Confined Space Program is to provide a safe work environment in confined spaces, understand safe work practice procedures, have available personal protective equipment, and receive appropriate training. This Program will provide departments with an effective written program for confined space entry with the minimum safety requirements in accordance with the confined space standards of ANSI/ASSP Z117.1, OSHA 1910.146, and OSHA 1926.1200.

## SCOPE

This program applies to all Lamar University (LU) personnel entering confined spaces.

This program also provides minimum requirements and direction for outside contractors entering confined spaces on any Lamar University campus. Contractors may utilize their own Confined Space Program, but it must be at least as stringent as the Lamar University program. Contractors utilizing their own Confined Space Program must have a copy of their program and procedures available on the jobsite.

## REFERENCE REGULATIONS AND POLICY:

OSHA 1910 Subpart J 1910.146 Permit-Required Confined Spaces

OSHA 1926 Subpart AA Confined Spaces in Construction

OSHA 1910 Subpart Q Welding, Cutting, and Brazing

OSHA 1926 Subpart J Welding and Cutting

Confined Spaces: ANSI/ASSP Z117.1-2016

[OSHA's Permit-Required Confined Spaces Booklet](#)

[OSHA's Decision Flow Chart](#)

[Lamar University Comprehensive Safety Manual & Plan](#)

## ACRONYMS

AGC – Additional General Conditions

ANSI – American National Standards Institute

ASSP – American Society of Safety Professionals

OSHA – Occupational Safety & Health Administration

UGC – Uniform General Conditions

## DEFINITIONS

*Acceptable Entry Conditions* – the conditions that exist in a permit-required space to allow safe entry and work within the space.

*Attendant (Spotter)* – person stationed outside one or more permit spaces who monitors the authorized entrants and performs attendant's duties assigned in this policy.

*Authorized Entrant* – Personnel who have completed training and are authorized by the employer to enter a permit space.

*Blanking or Blinding* – the absolute closure of a pipe, line, or duct by fastening a solid plate (such as a

spectacle blind or a skillet blind) completely covering the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate. This involves installing a blank between flanges with a leak-proof gasket at a point in the conducting line as close to the confined space area as possible. The blank or blind should be marked identifying its purpose.

*Cardiopulmonary Resuscitation (CPR)* – a combination of rescue breathing and chest compressions delivered to victims thought to be in cardiac arrest.

*Combustible Gas* – airborne concentration of gas or vapor which may present the risk of fire or explosion if an ignition source of sufficient energy is introduced. This term is synonymous with "flammable vapor" and "explosive gas."

*Confined Space* – a space that meets all of the following criteria:

- Is large enough and so configured that an employee can bodily enter and perform assigned work;
- Has limited or restricted means for entry and exit, e.g., tanks, tunnels, vessels, silos, storage bins, hoppers, vaults, and pits; and
- Is not designed for continuous employee occupancy.

*Control of Hazardous Energy (CoHE)* – a procedure used to control hazardous energy whereby a lock and/or tag device is used to hold an energy-isolating device (such as a switch, valve, etc.) in the "off" or safe position. When only tagging is possible, department safety representative must pre-approve this activity.

*Department Safety Representative* – designated departmental employee that serves as the safety representative.

*Double Block and Bleed* – the closure of a line, duct, or pipe by closing and locking and tagging two in-line valves and by opening and locking and tagging a drain or vent valve in the line between the two closed valves. When only tagging is possible, the departmental safety representative must pre-approve this activity.

*Engulfment* – the surrounding or capture of a person by a liquid or finely divided (flowable) solid substance that can cause asphyxiation, drowning, or can exert enough force on the body to cause death by strangulation, constriction or crushing.

*Entry* – means the action by which a person passes through an opening into a permit-required confined space. Entry includes ensuing work activities in that 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* – written authorization for entry into a "confined space;" means the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in APPENDIX A.

*Entry Supervisor* – means the person (such as the employer, foreman, or crew chief) 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. NOTE: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

*Hazardous Atmosphere* – an atmosphere that may expose personnel to the risk of death, incapacitation, and impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

- Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL).
- Airborne combustible dust that is at or approaching its lower flammable limit. This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.
- Atmospheric oxygen concentration below 19.5% or above 23.5%.
- Any chemical or substance present which may be at concentrations capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects and is above the regulatory limit.
- Any other atmospheric condition that is immediately dangerous to life or health (IDLH).

*Hot Work Operations* – cutting, welding, brazing, torch soldering, high speed metal grinding, or use of an open flame.

*Hot Work Permit* – a separate type of Lamar University permit used when hot work operations will be performed. See Lamar University Hot Work Permit Program.

*Immediately Dangerous to Life or Health (IDLH)* – means 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.

*Intrinsically Safe (Equipment)* – is defined as equipment and wiring which is incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration. (ANSI/ISA RP12.06.01-1995 (R2002))

*Line breaking* – means 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.

*Local exhaust ventilation* – this is designed to capture contaminants at or near their point of generation using hoods or enclosures with duct work connected to an exhaust fan.

*Lower Explosive Limit (LEL)* – lowest concentration at which a gas or vapor can ignite and can be used interchangeably with LFL (Lower Flammable Limit). Concentrations below this level are too lean to burn.

*Mechanical dilution ventilation* – mechanically-induced air movement that brings in "fresh" outdoor air and removes the "contaminated" indoor air.

*Non-Permit Confined Space* – confined spaces that do not contain or, have the potential to contain, any hazard capable of causing death or serious physical harm.

*Oxygen Deficient Atmosphere* – means an atmosphere containing less than 19.5 percent oxygen, by volume.

*Permit-Required Confined Space* – a confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere. When assessing the potential for a hazardous atmosphere, consideration must be given to portals of entry from other areas, such as pipes, ducts and vents.
- 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 which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard that may have an immediate effect or inhibit the employee leaving the space unaided. Examples include: exposed electrical parts, extreme temperature.

*Self-Contained Breathing Apparatus (SCBA)* – An atmosphere-supplying respirator in which the source of air is contained with the respirator independent of any other source.

*Upper Explosive Limit (UEL)* – the highest concentration at which a gas or vapor can ignite and can be used interchangeably with UFL (Upper Flammable Limit). Concentrations above this level are too rich to burn.

*Work Induced Hazard* – hazard created due to nature of work, e.g., welding (generates fumes) and painting (generates solvents in the atmosphere).

## **PROGRAM RESPONSIBILITIES**

### Supervisors, Project Managers

- Being familiar with the Lamar University Confined Space Program and attend training in confined spaces.
- Ensuring that personnel are informed and trained about confined space entry requirements and procedures as outlined here, the hazards associated with confined spaces, applicable regulations and safety standards, and prudent safety practices to protect themselves and their fellow workers.

- Monitoring the need for additional or refresher training for personnel based on changes in assigned duties, changes in confined spaces, changes in the LU confined space program or deficiencies in the employee's knowledge. This responsibility is shared between the supervisor and the department safety representative.
- Monitoring the need for additional or refresher training for personnel based on changes in assigned duties, changes in confined spaces, changes in the LU confined space program or deficiencies in the employee's knowledge. This responsibility is shared between their supervisor and the departmental safety representative.
- Providing and ensuring good working condition of personal protective equipment and equipment needed to safely access a confined space.
- Informing outside contractors of all permit-required confined spaces they will be working in and use the Contractor Notification Form in Appendix E of this program to identify all potential hazards associated with the space prior to performing work.

#### Employees and Students

- Complying with this Program and any other safety recommendations made by the supervisor and the department safety representative.
- Conducting assigned tasks as an entrant, attendant or entry supervisor in a safe manner upon receiving confined space training.
- Inspecting prior to use and wearing appropriate personal protective equipment, and only using equipment (such as air monitoring equipment) in which formally trained.
- Reporting any job-related injuries, illnesses, or unsafe working conditions to the supervisor and department safety representative.

#### Lamar University Police Department (LUPD)

- Respond to calls from Attendants
- Communicates location and conditions to EHS & Risk Management (409-880-7115) and Beaumont Fire (409-980-8311) when rescue is needed.

#### EHS & Risk Management

- Assisting departments in implementing an effective program in their workplace.
- Providing training in all aspects of this program and maintain records of this training.
- Monitoring the need for additional or refresher training for personnel based on changes in assigned duties, changes in confined spaces, changes in the LU confined space program or deficiencies in the employee's knowledge.



- Coordinating confined space rescue drills with the Beaumont Fire Department.
- Reviewing and revising the Confined Space Program and completed entry permits annually to assure personnel are fully protected. The review will include prior experiences in confined spaces, any problems that occurred, as well as changes in the use or configuration of confined spaces.
- Conducting a periodic survey of confined spaces around campus to ensure all confined spaces have been identified and labeled appropriately, and to ensure hazards associated with the confined spaces are understood.
- Retaining permits, which are required to be held for one year, documenting and addressing any problems with appropriate management personnel.
- Providing LUPD with a map and list of all permit-required confined spaces.
- Reviewing and approving the type of respiratory protection to be worn as well as other PPE to be worn during initial entry of a confined space.
- Assisting in initial evaluation of a space and the potential hazards and control methods implemented.

## **ENTRY TEAM RESPONSIBILITIES**

### Entry Supervisor

Entry Supervisors are primarily responsible for ordering entries into permit-required spaces and ensuring all proper procedures contained in this manual are followed. Entry Supervisors are specifically responsible for:

- Knowing the hazards that may be faced during entry, including signs, symptoms, and consequences of exposure.
- Conducting pre-planning meetings within the permit-required confined space entry team.
- Completing a Confined Space Entry Permit. (See Appendix A)
- Verifying that all Confined Space Entry Permit requirements have been properly addressed before entry.
- Authorizing entry by signing Confined Space Entry Permit.
- Verifying that rescue services are available and can be summoned.
- Removing unauthorized individuals from the entry area.
- Closing out and canceling the permit if unacceptable conditions arise during entry or if assigned work has been completed.

- Submitting cancelled permits to the departmental safety representative or EHS & Risk Management.
- Ensuring that the terms of the Confined Space Entry Permit are followed and that acceptable entry conditions are maintained.

#### Authorized Entrant

Authorized Entrants are those required to enter the permit-required spaces and perform necessary duties. Authorized Entrants are responsible for:

- Knowing the hazards that may be encountered during entry, including information on the signs, symptoms or consequences of exposure.
- Knowing the proper use of equipment required for entry, including; monitoring, ventilation, PPE, lighting equipment, barriers/shields, safety equipment for entry and egress, and rescue and emergency equipment.
- Communicating with the Attendant.
- Alerting Attendant if warning signs or symptoms of exposure are detected, or if a prohibited condition occurs.
- Exiting the space if the Attendant orders evacuation, warning signs or symptoms of exposure are detected, a prohibited condition occurs, or if an evacuation alarm is activated.

#### Attendant

Attendants are individuals who are stationed outside permit-required confined spaces to monitor Authorized Entrants, as well as perform required duties. Specifically, Attendants are responsible for:

- Knowing the hazards that may be encountered during entry, including information on the signs, symptoms or consequences of exposure.
- Knowing behavioral effects of hazard exposure, such as those from heat or chemical exposure. Example effects include slurred speech and/or physical impairment.
- Maintaining an accurate count of Entrants and ensuring permit correctly identifies exactly who is in the space.
- Remaining outside the permit space during entry until relieved by another Attendant.
- Communicating with Entrants to monitor status and alert them of the need to evacuate the space.
- Monitoring activities inside and outside the space to identify potential hazards to the Entrants and call for evacuation if conditions are unsafe. (i.e., prohibited condition is detected, behavioral effects of hazard exposures to Authorized Entrants are detected, and conditions outside the confined space change such that Authorized Entrants are endangered, or the Attendant cannot

perform all duties required).

- Performing no other duties that may interfere with the Attendant's ability to monitor the Authorized Entrant.
- Summoning rescue and other emergency services as soon as it is determined that the Entrants may need assistance to escape. LUPD emergency number is 409-880-7777.
- Removing or preventing unauthorized personnel from entering the permitted space.
- Performing non-entry rescues.

## **PROCEDURES FOR LAMAR UNIVERSITY PERSONNEL**

Only Lamar University personnel that have received Confined Space Entry training may enter permit-required confined spaces or serve as an Attendant, Entry Supervisor, or Entrant.

### General Requirements

Ensure all necessary precautions are taken to address site health and safety concerns, including:

- Eliminate any condition making it unsafe to remove an entrance cover (such as high temperature and pressure) before removing the cover. Conditions may allow the cover to be loosened gradually to release the pressure. Ventilation may be needed during this process.
- Guard entrance when ground level entrance covers are removed. The opening will be guarded by a temporary barrier to prevent accidental falls and protect entrants from foreign objects dropping into the space.
- Ensure all equipment is in good repair and functioning properly prior to entering the permitted confined space.
- Arrange for access if none is in place. Ensure extension ladders used are long enough to protrude 3ft. past the landing.
- Provide a first aid kit at the site ready for use.

### Identification

If a space meets the definition of a confined space but does not have signage in place, contact EHS & Risk Management (409-880-7115) or your departmental safety representative for assistance.

Previously identified and evaluated confined spaces will have signage reading "DANGER CONFINED SPACE AUTHORIZED PERSONNEL ONLY" posted at or near the entrance.

### Evaluation

All spaces must first be evaluated using the Confined Space Evaluation Form in Appendix C to determine if a permit is required.

A confined space with no existing or potential hazards can be entered and work performed without an

entry team in place. The supervisor or a coworker should be notified prior to entry and again once work is complete.

A confined space with existing or potential hazards requires a permit; the following steps and procedures must be utilized:

1. Identify the space.
2. Evaluate the space, monitor hazardous atmospheres, and implement controls for identified hazards.
3. Establish confined space entry team consisting of trained entry supervisor, entrant, and attendant, and identify responsibilities for each team member.
4. Establish appropriate means of communication.
5. Plan for evacuation and rescue.
6. Document all conditions by filling out the permit completely.
7. Gather and inspect equipment, tools, and PPE to be used in the space.
8. Review all information on the permit with confined space entry team prior to commencing work.
9. Enter the space and perform work.
10. Exit space and remove any confined space equipment.
11. Cancel/close the permit.

Use the Confined Space Permit in Appendix A to document hazardous atmospheres and/or conditions.

A permit-required confined space can be reclassified to a non-permit space if there are no existing or potential hazardous atmospheres and all hazardous conditions have been eliminated or isolated prior to entry into the space. If entry is necessary to eliminate the hazards, that work must be performed under a permit. Once the hazard has been eliminated, the space may be reclassified as a non-permit space for as long as the hazards remain eliminated. All spaces being reclassified must be communicated to your departmental safety representative or EHS & Risk Management (409-880-7115 or [riskmanagement\\_ehs@lamar.edu](mailto:riskmanagement_ehs@lamar.edu)) prior to entry into the space.

Previously reclassified confined spaces must be treated as a permit-required space and evaluated for reclassification each time it is entered.

If hazards arise in a reclassified space, entrants of the space must exit and reevaluate the space to determine if the new hazards can be controlled, or if the space needs to be reclassified as permit-required.

[OSHA's Decision Flow Chart](#) for permit-required confined space classification has been included to use as a guide.

Review existing data and permits for previously identified and evaluated confined spaces to assist in determining existing and potential hazards.

Examples of hazardous atmospheres found in confined spaces can include:

- Oxygen less than 19.5%
- Oxygen greater than 23.5%
- Flammable vapor greater than 10% LFL
- Dust greater than LFL
- Dust obscures vision at a distance of 5 feet

- Carbon monoxide greater than 35 ppm
- Hydrogen sulfide greater than 10 ppm

**NOTE: An attendant is always required, even if any atmospheric hazards have been controlled or eliminated.**

Examples of hazardous conditions found in confined spaces can include:

- Engulfment
- Converging walls
- Exposed mechanical energy or moving parts
- Electrical
- High pressure tanks, pipes, vessels
- High temperature tanks, pipes, vessels
- Extreme ambient temperature
- Hazardous material
- Slips, trips, and falls
- Inadequate lighting
- Noise greater than 85 dBA
- Hot work

**NOTE: Indicate all control measures implemented on the Permit.**

**NOTE: If there is a potential for exposure to contaminants not listed, appropriate monitoring for those contaminants should be discussed with your departmental safety representative or EHS & Risk Management.**

Monitoring Hazardous Atmospheres

When it has been determined, by reviewing previous data or an evaluation by the entry supervisor, that there is a potential hazardous atmosphere, test the air in the space to determine if acceptable conditions exist before entry is made using the following procedure:

1. Ensure personnel performing monitoring have received confined space training.
2. Ensure that the monitoring equipment has been calibrated according to the manufacturer's instructions and your department's procedures.
3. Monitor remotely at multiple heights in the space for:

Order:	Test for:	Acceptable Level:
1	Oxygen (O2)	Between 19.5% - 23.5%
2	Combustible Gas (LFL)	<10%
3	Hydrogen Sulfide (H2S)	<10 PPM
4	Carbon Monoxide (CO)	<35 PPM

4. Do not enter the space if it is determined that unacceptable air quality exists. Implement appropriate control measures outlined in the next section, and re-test to ensure acceptable entry conditions are obtained.

- Record initial readings prior to entry. Continue monitoring throughout work, and document any changes in atmospheric conditions.

### Implementation of Control Measures

Use the most effective feasible option to determine the best method for controlling hazards in the confined space. The following table was developed as a guide:

Hazard	Most Effective ◀			▶ Least Effective
	Elimination/Substitution	Engineering	Administrative	PPE
Oxygen Deficient/Enriched	Remove or replace the source causing a change in oxygen levels	Ventilation	Develop written standard operating procedure for performing work without entry	Supplied Air Respirator or Self-Contained Breathing Apparatus
Flammable	Remove items (liquids, gases, dust) causing flammable atmosphere from the space	Ventilation	Develop written standard operating procedure for performing work without entry	Supplied Air Respirator or Self-Contained Breathing Apparatus
Obstructed Egress	Remove obstructions when unnecessary	Redesign to clear path	Develop written standard operating procedure for performing work without entry	None available
Extreme Ambient Temperature	Introduce conditioned or heated air into the space	Use fans or warmers	Limit the amount of time spent in the space for each worker	Cooling towels, breathable clothing, jackets, layered clothing
Structural	Re-engineer the space	Install barriers	Situational awareness	Gloves, safety shoes, fall protection
Engulfment	Drain or empty substance causing engulfment hazard	Protective shielding systems	CoHE Procedures	None available
Convergent	Re-engineer the space	Use chicken ladder	Establish access and egress plan	None available
Mechanical	Remove mechanical equipment	Use guards	CoHE Procedures	None available
Electrical	Removing any exposure to voltage	Encapsulate electrical conductors with non-conductive material	CoHE Procedures	Electrical rated gloves, hard hat, safety shoes
High pressure	Re-engineer the space	provision of anti-	CoHE Procedures	None available

tanks, pipes, vessels		whip socks/sleeves segregation plates or barriers, anti-abrasion/ diffusion covers		
High temperature tanks, pipes, vessels	Remove the source of high temperatures	Introduce conditioned air and/or fans, radiant shielding systems, ensure properly insulated, allow to cool before working	CoHE Procedures, rest/water/shade	Thermo-resistant clothing, gloves, safety shoes
Hazardous Material	Properly remove the hazardous material	Install barrier, ventilation,	CoHE Procedures, develop written standard operating procedure for performing work without entry, job rotation, situational awareness	Eye protection, face protection, safety shoes, gloves, skin and clothing protection, possibly a respirator
Slips, trips, & falls	Remove items or re-engineer space to eliminate slip, trip, and fall hazards	Cord covers, hole covers, guardrails	Clean space, warning lines, signage	Safety shoes, fall protection
Inadequate lighting	Install permanent lighting	Use temporary lighting	Develop written standard operating procedure for performing work without entry	None available
Noise	Turn off or remove noise producing equipment	Install sound barriers, equipment covers	Job rotation to reduce exposure to noise	Hearing protection
Hot work	Re-engineer space so that hot work is not needed	Ventilation	Develop written standard operating procedure for performing work without entry	Eye protection, face protection, long sleeves and pants, possibly a respirator

### Evacuation and Rescue Plan

Under the following circumstances, all entrants must leave the confined space immediately:

- a. If a hazardous atmosphere is detected, i.e., if the audible/visual alarm on the air monitor activates, or there is any other indication of a problem.

- b. Entrant(s) are displaying signs and symptoms of possible exposure to a hazardous atmosphere or feel that they may become incapacitated in anyway.
- c. Conditions in the space change that would require re-evaluation of the potential hazards. That is, the conditions listed on the Permit are no longer in place.
- d. Whenever an attendant is no longer capable of effectively performing their assigned duties.
- e. Whenever the entrants are notified to evacuate by the attendant, Entry Supervisor, or by evacuation alarm.
- f. Whenever communication with the attendant is disrupted.

### Rescue

Rescue measures may be necessary if the authorized entrant in the confined space becomes incapacitated and is unable to exit the space without assistance. Under these circumstances the authorized entrants or the attendant at the site should follow these procedures:

- a. At the first indication of a problem, contact LUPD by calling (409) 880-7777 and requesting assistance from Beaumont Fire Department by calling (409) 980-8311.
- b. If the problem is due to an atmospheric hazard and the entrants are wearing retrieval harnesses, the attendant and/or other authorized personnel present should attempt to activate the retrieval system to remove the entrant from the space. If the lifting device fails to lift the entrant out of the space, the attendant should wait outside the space for help to arrive.

**NOTE: Under no circumstances should the attendant enter the confined space to attempt rescue.**

- c. If it can be established that the entrant is incapacitated due to causes not related to the atmosphere in the space (such as a fall or other injury), they should not be moved until the appropriate rescue personnel arrive and direct the removal. First aid, if appropriate, should be rendered. Do not initiate first aid procedures if doing so could result in injury to either the entrant or the attendant.
- d. LUPD will contact EHS & Risk Management and the Beaumont Fire Department (BFD). The personnel at the scene should keep LUPD advised as to the nature of the emergency so that appropriate notification can be made at the earliest time possible.
- e. Response personnel (BFD) have been trained in confined spaces and will review the Permit and understand the hazards of the space and condition of the entrants before taking any action. Additional air monitoring may also be conducted by the rescue personnel. Rescuers must ensure they are properly protected before beginning rescue operations and be equipped with SCBAs.

When an injured entrant has been exposed to a substance for which a Safety Data Sheet (SDS) or other information is available, that SDS or other information will be provided to response personnel and the



medical facility treating the exposed entrant.

### Establish Communication

Decide how entrants will maintain constant communication with each other and with attendants on the outside of the space. Indicate on the Permit the method(s) of communication to be used. If the planned communication method is disrupted, entrants will immediately evacuate the space until the problem is corrected.

Communication may be voice, radio, hand signals or life lines, etc., or a combination of, as long as it enables the attendant to monitor the entrant and communicate the need to evacuate the space. Make sure communication devices are labeled as “intrinsically safe” when there is a potential for a flammable/combustible atmosphere.

### Hot Work Permit

When hot work will be conducted in a confined space, the Entry Supervisor will contact EHS & Risk Management and follow the procedures for the Confined Space Program as well as the procedures in the Lamar University Hot Work Program.

### Closeout and Cancellation of the Permit

At completion of the work, the Entry Supervisor will closeout and cancel the Permit by signing on the line indicated. The Permit will be forwarded to the Departmental Supervisor or Foreman who will send a copy to EHS & Risk Management or their departmental safety representative within a week of completion of work.

All canceled permits will be kept on record for a period of one year. Any problems encountered during entry or work in a confined space will be noted on the Permit so that EHS can investigate and make appropriate revisions to the Confined Space Program.

## **PROCEDURES FOR OUTSIDE CONTRACTORS**

Contractors are required to comply with all applicable state and federal regulations as per the UGC / AGC and contract specifications.

### Notification Procedures

When outside contractors will perform work that involves known permit-required confined space entry, the University is required to inform the contractor of the following:

1. The location of any applicable permit-required confined spaces.
2. The hazards identified and why the University classifies it as a permit-required space.
3. Precautions or procedures that the University has in place to protect nearby personnel.
4. The regulatory requirement that the contractor comply with the OSHA Confined Space Entry

regulation.

The notification requirements can be accomplished by using the Contractor Notification Form in Appendix E of this Program.

#### Coordination with LU Authorized Entrants

If University personnel will be working in or near the permit spaces(s) where the contractor will be working, then the University and the contractor will coordinate entry operations. EHS & Risk Management representation may be requested for this meeting. Issues to be addressed during these discussions include:

1. What permit system will be used.
2. Scheduling of entry into the space.
3. Procedures that will be used to evaluate the hazards and implement controls.
4. Establishment of lines of communication between the contractor and University personnel working in the area.
5. Review of evacuation and rescue plan.

#### Contractor Confined Space Program

The contractor will inform the University representative of the confined space program that will be used. If the contractor encounters or creates any hazards during the entry operation, this information will be communicated to the University representative.

#### Debriefing

At the conclusion of the entry operation, the University representative and the contractor will hold a debriefing where they will share information about any problems encountered during the work. The University representative may request EHS & Risk Management representation at this meeting. EHS will make any necessary changes to the program based on information obtained at the debriefing.


#### **RELATED DOCUMENTS**

[EHS Respiratory Protection](#)  
[Lamar University Health & Safety Manual](#)

**DOCUMENT MANAGEMENT**

<b>Date</b>	<b>Document Change</b>	<b>Author and Approver(s)</b>
03/2022	Document Created	Gary Rash, Robert Wagner, David Martin

APPENDIX A

		<b>EHS &amp; RISK MANAGEMENT</b> <b>Confined Space Entry Permit</b>		
Date/Time Issued:		Location:		
Date/Time Expires:		GPS Coord. :		
Purpose for Entry:				
Employees Entering:				
<b>Yes</b>	<b>No</b>	<b>EXPECTED HAZARDS</b>		
<input type="checkbox"/>	<input type="checkbox"/>	Hot Equipment		
<input type="checkbox"/>	<input type="checkbox"/>	Corrosive Materials		
<input type="checkbox"/>	<input type="checkbox"/>	Flammable Materials		
<input type="checkbox"/>	<input type="checkbox"/>	Open Drain		
<input type="checkbox"/>	<input type="checkbox"/>	Spilled Liquid		
<input type="checkbox"/>	<input type="checkbox"/>	Standing Water		
<input type="checkbox"/>	<input type="checkbox"/>	Pressure Systems		
<input type="checkbox"/>	<input type="checkbox"/>	Spark Producing Operations		
<input type="checkbox"/>	<input type="checkbox"/>	Welding, Brazing, Open Flame		
<input type="checkbox"/>	<input type="checkbox"/>	Drifting Vapors from Adjacent Sources		
<input type="checkbox"/>	<input type="checkbox"/>	Other:		
<b>PROHIBITED CONDITIONS:</b>				
<b>PRECAUTIONS TAKEN</b>				
		<b>Yes</b>	<b>No</b>	<b>N/A</b>
Has the procedure been approved by EHS & Risk Management?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has all testing/monitoring equipment been tested/calibrated?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the space tested for flammable, O2 and toxins? (Attach Air Sample Data)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were hazards pertaining to the space explained?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were emergency and rescue procedures explained?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are hazardous lines isolated, disconnected, blinded or blocked off?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all electrical switches locked and tagged?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is communication equipment available/procedures explained?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is lighting, ladders, barrier/shields, or other necessary equipment available?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the tripod, rescue lines, and harnesses/safety belts available?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is necessary protective equipment available?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is purging and ventilation required?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is forced air equipment working properly and from a clean supply?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has forced air been supplied for the required time before entry?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have other documents (Hot Work/LOTO/Fire System Shutdown) been completed? (If required)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**APPENDIX B**

**Air Sampling Data**

Sampling Equipment Used: \_\_\_\_\_

Serial #: \_\_\_\_\_ Last Calibration Date: \_\_\_\_\_

Used By: \_\_\_\_\_

**\*\*CONDUCT AIR SAMPLING IN THE ORDER DEPICTED BELOW\*\***

Time	Oxygen %			Flammability (% LEL)			Hydrogen Sulfide			Carbon Monoxide					
	T	M	B	T	M	B	T	M	B	T	M	B	T	M	B
1.															
2.															
3.															
4.															
5.															
6.															
7.															
8.															

**T = Top M = Middle B = Bottom**

**Values:** Oxygen (O<sub>2</sub>) – greater than 19.5%, less than 21 %  
 Flammability less than 10% LEL  
 Hydrogen Sulfide (H<sub>2</sub>S) – less than 10 ppm  
 Carbon Monoxide (CO) – less than 25 ppm

**Description of Air Sampling Area:**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

EHS & Risk Management Representative: \_\_\_\_\_ Phone: \_\_\_\_\_

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

*I certify that the above conditions are accurate and entry is only for the stated purpose, time, and identified employees. If any question in the "Precautions Taken" section was answered "No" the permit will not be approved until the identified problem is corrected.*

Entry Supervisor: \_\_\_\_\_ Phone: \_\_\_\_\_

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

**Current Entry Supervisor:** \_\_\_\_\_

**Current Attendant(s):** \_\_\_\_\_

**LAMAR UNIVERSITY  
CONFINED SPACE EVALUATION FORM**

SPACE LOCATION: \_\_\_\_\_

SPACE DESCRIPTION: \_\_\_\_\_

Complete this form for any space which may be considered a confined space.

A confined space is defined as having those all characteristics listed in #1 through #3 below.

- YES**     **NO**    1. Is the space large enough and shaped so an employee can enter and work?
- YES**     **NO**    2. Does the space have a limited or restricted means for entry or exit?
- YES**     **NO**    3. Is the space **NOT** designed for continuous employee occupancy?

If the answers to all questions #1 through #3 above are "YES", then the space is a Confined Space.

Continue with questions A through E below to determine if and what type of permit is required to enter.

**YES**     **NO**    A. Does the space contain, or have the potential to contain, a hazardous atmosphere, i.e., oxygen deficiency, flammable vapors, toxic gases or dusts, etc., or pipes, ducts, vents or other entry points for potentially hazardous substances, or will volatile chemicals be used, or will painting or other work that could create a breathing hazard be performed?  
*Specify potential or known hazards:* \_\_\_\_\_

**YES**     **NO**    B. Does the space contain a material with the potential for engulfment of a worker, e.g., grain, sand or water?  
*Specify potential or known hazards:* \_\_\_\_\_

**YES**     **NO**    C. Does the space have an internal shape such that a worker could be trapped or suffocated by inwardly converging walls, floor or ceiling?  
*Specify potential or known hazards:* \_\_\_\_\_

**YES**     **NO**    D. Does the space contain other recognized safety or health hazards, such as: *(check all that apply)*

- \_\_\_ mechanical hazards;
- \_\_\_ exposed or vulnerable electrical wires or energized equipment;
- \_\_\_ gas or chemical lines
- \_\_\_ special hazards related to elevation or falling; or
- \_\_\_ temperature extremes/heat stress

*Specify potential or known hazards:* \_\_\_\_\_

**YES**     **NO**    E. Will welding, cutting, torch work, or other hot work be performed?  
*Specify potential or known hazards:* \_\_\_\_\_

- If you answered "NO" to all questions A through E, then the space is a **Non-Permit Required Confined Space**.
- If you answered "YES" to question A, then classify the **Permit** as either **General** or **Hazardous**, depending on the ability to adequately ventilate the space.
- If you answered "YES" to question B, C or D, then classify the **Permit** as a **General** if the hazards can be controlled.
- If you answered "YES" to question E, then classify the **Permit** as **Hot Work** & also issue a **Hot Work Safety Permit**.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Department: \_\_\_\_\_

*Refer questions to EHS&Risk Management (409)880-7773*

## APPENDIX D

### TUNNEL LOCATIONS

- South Tunnel #1 – Runs from the bottom of Mary & John Gray Library to junction off at the Texas Academy of Leadership in the Humanities going east to west. Going east it ends at the Speech and Hearing Building. Going west it ends behind Combs Hall
- South Tunnel #2 – Runs from under the Mary & John Gray Library approximately 1200 yards. It shares same entrance as South Tunnel #1. It runs north towards the Carl Parker building and then turns west toward LUPD, down the side of Communications building.
- North Plant Tunnel #3 – This tunnel has two separate entrances, not connected. The south side leads to the back side of Chemistry. The north entrance travels to the north face of the Chemistry, HHPA, Biology, Mamie McFaddin Ward and Art.
- Lucas Tunnel #4 – Tunnel runs from Carl Parker and branches off to the south toward Lucas.

**APPENDIX E**

# Lamar University

## Contractor Confined Space Entry Notification Form

In compliance with OSHA 1910.146(c)(8), when the contractor's work may involve entry into permit required confined spaces, the University of Texas at Austin must notify the contractor and inform them of the hazards associated with these spaces.

In the scope of this project, the workplace contains confined spaces and entry is allowed only through compliance with a confined space entry program. Prior to entry, the contractor must submit a copy of their confined space entry program to the safety representative of the hosting department.

**Specific Location of the Permit Required Confined Space(s) e.g., building, street, cardinal direction, type of space, etc.:**

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**Atmospheric Hazards (existing or potential):**

- Oxygen (O<sub>2</sub>) content less than 19.5% or greater than 23.5%
- LEL greater than 10%
- Hydrogen sulfide (H<sub>2</sub>S)
- Carbon monoxide (CO)
- Other toxic gases or vapors
- Combustible dusts
- Work induced hazards, e.g., welding, hot work, painting the use of chemicals, etc.

**Health and Safety Hazards:**

- Mechanical
- Electrical
- Engulfment
- Entrapment
- Slip/ Trip /Fall
- Fire/Burn
- Heat Stress or Cold
- Other (Specify) \_\_\_\_\_

Describe any precautions Lamar University will utilize to protect nearby LU staff:

---

Will LU personnel also be working in the confined space?  Yes  No  
*If "yes", a meeting to coordinate entry activities is required.*

At the conclusion of the entry operations the contractor is required to discuss with the LU representative the procedures followed and any hazards found or created during entry operations. Copies of permits used will be given to this representative and forwarded to the department's safety representative.

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LU Representative (print and sign)

---

Contractor Representative (print and sign)

Contractor Company Name and Address \_\_\_\_\_

Job or P.O. Number

Date



## APPENDIX F

### APPLYING FOR CONFINED SPACE PERMIT

- Click on the Confined Space Entry Request Form [link](#) and copy the link.
- Paste the link into a web browser.
- Complete the brief request form and click the Update Permit Request button. The form allows document upload if needed. Requestor should complete the request form no fewer than 7 days before work is scheduled to start.
- Lamar University EHS & Risk Management will receive the request form and initiate an inspection of the confined space (see Appendix A and Appendix B).
- The requestor will be notified of the inspection findings and presented with the permit.