# CONFINED SPACE ENTRY PROGRAM

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Section 1. Program Statement

1.1 Confined Space Program

Sonic Drilling Ltd

1.2 Purpose

The purpose of this program is to provide specific procedures/safe work practices for employees required to enter confined spaces. These procedures/practices will be implemented in compliance with all applicable provincial and federal regulations pertaining to confined space entry.

1.3 Objectives

The objectives of the Confined Space Program on Sonic Drilling Ltd Projects include:

- To comply with all provincial and federal regulations regarding confined spaces.
- To assess the feasibility of reducing the total number of confined spaces.
- To limit the number of confined space entries.
- To identify, evaluate, and eliminate potential hazards within the confined spaces prior to entry.
- To establish and implement a permit system for entry into confined spaces.
- To train employees who may work in confined spaces on proper procedures and entry techniques.

Section 2. Regulations/References

2.1 Regulations

Many publications and associated policies and guidelines, pertaining to the Confined Spaces Program as well as excerpts and summaries of the Workers Compensation Act, are available on the WorkSafeBC web site www.worksafebc.com.

The Occupational Health and Safety Regulation pertaining to the Confined Spaces Program is also available on the web site: WorkSafeBC.com; Ref - Regulation “Part 9”.

Section 3. Responsibilities/Resources Employed

3.1 Safety Manager

The Health & Safety Manager serves as the first contact for issues concerning the company confined space program. The Health & Safety Manager (or other qualified person assigned by him/her), is responsible for establishing a written Confined Space Program that includes evaluations of the confined spaces entered by employees of Sonic Drilling Ltd. This person must also be notified to review and evaluate any confined space program used by contractors, trades or sub-trades prior to any work in a confined space on any Sonic Drilling Ltd project(s).

He/she is responsible for establishing and maintaining a training program that will provide exposed employees with the understanding, knowledge, and skills necessary for safe and proper work in confined spaces. The Health & Safety Manager shall review the Confined Space Program, at least once per year, and shall revise the program as necessary to ensure that employees participating in entry operations are protected from confined space hazards.

The Health & Safety Manager is available to provide training on proper confined space entry techniques, recommend safety equipment, and assist in confined space evaluations.
3.2 Area Supervisors

The area supervisor will be responsible for identifying workers that may be expected to enter confined spaces, ensuring that these workers receive required training before entering the spaces, and ensuring that their subordinates follow established entry procedures.

3.3 Entry Supervisors

Entry Supervisors are the persons responsible for determining if acceptable entry conditions are present at the confined space where entry is planned, authorizing entry, supervising entry operations, and terminating entry when required. Entry supervisors shall be trained on necessary skills and responsibilities.

Entry Supervisors for this facility are listed below:
1) 
2) 
3) 
4) 

3.4 Trained and Authorized Attendants and Entrants

Trained and authorized attendants and entrants are responsible for working in and around confined spaces according to guidelines and work practices established by the safety manager.

Authorized entrants are also responsible for refusing to work in confined spaces until an entry supervisor has deemed entry to be safe and has given approval for entry, or if a hazard is identified while working in the confined space. The authorized attendants shall attend only one confined space entry at any one time, and shall not perform any other duties.

Authorized Entrants are:
1) 
2) 
3) 
4) 
5) 

Authorized Attendants are:
1) 
2) 
3) 
4) 
5)
3.5 Training Frequency

Confined Space training will occur: before initial assignment to jobs that would require entry into confined spaces; when there is a change in assigned duties; when a change in permit space operations create a new hazard; whenever an employee deviates from established procedure; and when inadequacies in an employee's knowledge is identified.

The confined space training will include all Supervisors, attendants, and entrants. Confined space training will establish employee proficiency in the duties required by the confined space standard. Training documents will include the employee's name, signature of the trainer, and the dates of the training.

3.6 Training Content

The training programs established for __________________________ (Company) include:

1. Confined space identification
2. Identification and evaluation of permit space hazards
3. Proper gas meter operation
4. Safe entry techniques
5. Attendant and entrant responsibilities
6. Communication techniques
7. Rescue procedures
8. Ventilation techniques
9. Supervisory responsibilities
10. Permit completion/cancellation techniques
11. Location of permit spaces

A copy of the established training program can be obtained from the Health & Safety Manager.

Section 4. Confined Space Locations

4.1 Inventory

An in depth inspection of __________________________ (Project) was conducted and all areas that contained potential confined spaces were assessed. A confined space assessment form (Appendix B) was used to classify all confined spaces. When performing confined space evaluations, air monitoring and inspections will be conducted from outside the space. If evaluations cannot be performed from outside the space, the space will be entered through permit procedures. All confined space locations and classifications are listed below:

Location: (Classification (non-permit/permit-required))

1)
2)
3)
4)
5)
6)
4.2 Reclassification of Permit Required Confined Spaces

When a Permit Required Confined Space is to be reclassified to a “non-permit” status, the safety manager will issue a written certification that contains the date, the location of the space, and the signature of the person making the determination that all hazards have been eliminated. The certification shall be made available to each employee entering the space or to that employee's authorized representative. This documentation must be completed each time a permit-required confined space is reclassified, and remains in effect only as long as all of the hazards remain eliminated. This reclassification procedure is contained in the confined space assessment form (Appendix B), of this program.

Section 5. Entry Permits

5.1 Permit Required Spaces

Some confined spaces located at _______________ (Project) that meet the definition of a Permit Procedure confined space. The information necessary to design a permit for permit required space entry is included at the end of this program (Appendix C).

5.2 Permit Requirements

The entry supervisor shall prepare an entry permit that contains at least all of the information listed in Appendix C. The permit shall be made available to all supervisors, entrants, attendants, authorized employee representatives, and rescue personnel. The permit must remain posted outside of the permit space entry portal, and remain there for the duration of the authorized entry. Any changes of personnel (supervisors, attendants, entrants), or testing and monitoring data shall be added to the permit. At the end of the authorized entry or after entry operations have been completed, the entry supervisor shall cancel the permit and maintain all cancelled permits for at least one year. A new and updated permit shall be developed, implemented, and maintained for each permit space entry.

Section 6. Prevention of Unauthorized Entry

6.1 Posting of Confined Spaces

All Permit-Required Confined Spaces that can be readily labeled are posted in a manner designed to inform employees of the existence/location of the dangerous space.

The signs read as follows:

**DANGER! PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER!**

If posting danger signs cannot be used to inform the exposed employees, use any other effective means to warn of the existence, location, and the danger posed by the permit spaces.

6.2 Other Necessary Precautions

If it is concluded that posting and training are inadequate to prevent unauthorized entry into permit spaces, covers, guardrails, fences, locks or other methods of restricting access shall be implemented.
Section 7. Entry Procedures

7.1 Entry Procedures

Site specific entry procedures have been developed for each confined space entered by ______________________ (Company). The site-specific entry procedures are located in Appendix D.

The following list identifies the minimal means, procedures, and practices necessary for safe permit space entry operations:

1. Identify and evaluate permit space hazards.
2. Control hazards and specify acceptable entry conditions.
3. Allow authorized entrants or employee authorized representative observe monitoring and testing.
4. Isolation of the permit space.
5. Purge, inert, flush, or ventilate the permit space as necessary to eliminate or control atmospheric hazards.
6. Provide barriers to confined spaces that protect entrants from hazards created by pedestrians, vehicles, or other external factors.
7. Verify that conditions within the permit space are acceptable throughout the duration of the authorized entry.
8. After authorized entry has concluded, or entry operations have been completed, the permits shall be cancelled and the permit space isolated from unauthorized entry.

7.2 Review of Entry Operations and Procedures

_______________________ (Company) shall review entry operations, procedures, and cancelled entry permits at least annually. Additionally, a review shall be conducted if there is reason to believe that the measures taken under ______________________ (Company) permit space program may not provide affected employees with the necessary protection. The review and revisions shall correct any deficiencies found to exist under the prior entry operations and procedures. Circumstances that require the review of the permit space program are listed below:

1. Unauthorized entry of a permit space;
2. A detection of a permit space hazard not covered by the permit;
3. The detection of a condition prohibited by the permit;
4. The occurrence of an injury, or a near-miss during entry operations;
5. The change in the use or configuration of a permit space; and
6. Employee complaints about the ineffectiveness of the permit space program.

7.3 Confined Space Equipment

When necessary the following equipment will be provided, and properly maintained. ______________________ (Company) will ensure that employees required to work in or around confined spaces will properly use the following equipment:

1. Testing and monitoring equipment;
2. Ventilation equipment;
3. Communication equipment;
4. Personal protective equipment;
5. Lighting equipment;
6. Barriers and shields;
7. Equipment necessary for safe ingress and egress;
8. Rescue and emergency equipment; and any other equipment necessary for safe entry into and rescue from permit required spaces.
7.4 Evaluation of Permit Space Conditions

When conducting permit space entry operations __________________________ (Company) will ensure that the following evaluation of permit space conditions is conducted:

1. Test conditions of the permit space prior to any authorized entry. If the space can not be isolated (large size, or portion of continuous system), conduct pre-entry testing as is feasible, and maintain continuous monitoring of the areas occupied by authorized entrants.

2. Test and monitor the permit space as necessary to ensure that acceptable entry conditions are maintained during the course of entry operations.

3. When testing for atmospheric hazards the testing shall be conducted in the following order:

   a. Oxygen;
   b. Combustible gases and vapors; and
   c. Toxic gases and vapors

4. Allow authorized entrant or employee’s authorized representative observe pre-entry and subsequent testing or monitoring data.

5. Re-evaluate the permit space if authorized entrant or employee’s authorized representative feel that the evaluation of the permit space was inadequate.

6. Immediately provide each authorized entrant or employee’s authorized representative the results of any testing or monitoring.

7.5 Confined Space Hazard Identification and Evaluation

<table>
<thead>
<tr>
<th>Confined Space Location:</th>
<th>Hazard Type(s):</th>
<th>Control Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) ____________________</td>
<td>_______________</td>
<td>________________</td>
</tr>
<tr>
<td>2) ____________________</td>
<td>_______________</td>
<td>________________</td>
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<td>3) ____________________</td>
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<td>4) ____________________</td>
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<td>5) ____________________</td>
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<td>6) ____________________</td>
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<tr>
<td>7) ____________________</td>
<td>_______________</td>
<td>________________</td>
</tr>
<tr>
<td>8) ____________________</td>
<td>_______________</td>
<td>________________</td>
</tr>
</tbody>
</table>
7.6 Number of Attendants Required

Acceptable conditions do not exist, and authorized entry is not permitted, unless there is at least one attendant stationed immediately outside the permit space to be entered.

7.7 Multiple Employers/Contractors

_______________________ (Company) shall inform all other affected outside employers and contractors of the permit space locations and permit space hazards at ________________ (Project).

All affected outside employers and contractors will be educated on the confined space program and confined space requirements of ______________________ (Company). Multiple permit space entries conducted by outside employers and contractors shall be reviewed and coordinated prior to authorized entry by any party.

_______________________ (Company) shall not enter into any binding business agreement with contractors or employers that do not meet the confined space program and training requirements.

Section 8. Rescue Procedures

8.1 Rescue Plan

A rescue plan shall be developed for each type of permit-required confined space at the site. Whenever feasible, the rescue plan will specify methods that do not involve entry by rescuers into the confined space. The attendant and/or the Entry Supervisor are responsible for preventing unauthorized persons in attempting a rescue inside the confined space.

8.2 Rescue Equipment

All necessary rescue equipment to effectively conduct the rescue shall be provided and in proper working condition prior to entry into the space.

8.3 Rescue Practice

At least annually, designated rescuers shall practice making a rescue using either a manikin or an actual entrant, from a space similar to the one being entered. If the space has not been entered for more than one year, the rescue practice will be conducted prior to entry.

8.4 Rescue Plan and Entry Permit

The entry permit shall verify that:

1. rescuers have been notified;
2. rescuers are physically located so they can effect a successful and timely rescue at any point during the entry;
3. rescuers have been trained on rescue from the particular space being entered;
4. all required rescue equipment is immediately available.

8.5 Offsite Rescue Services

Prior to a decision to use an off-site service to provide rescue, verification shall be made that the off-site rescue services complies with all requirements of this section.
### Section 9. Entry Equipment

#### 9.1 Available Equipment

The following equipment is available for confined space work/entry and is located [ENTER STORAGE AREA FOR CONFINED SPACE EQUIPMENT].

#### Equipment list

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
APPENDIX A
CONFINED SPACE EVALUATION FORM

CONFINED SPACES ARE DEFINED AS:
An area, other than an underground working, that

1. is enclosed or partially enclosed,
2. is not designed or intended for continuous human occupancy,
3. has limited or restricted means for entry or exit that may complicate the provision of first aid, evacuation, rescue or other emergency response service,
4. is large enough and so configured that a worker could enter to perform assigned work.

PERMIT-REQUIRED CONFINED SPACES ARE DEFINED AS HAVING ONE OR MORE OF THE FOLLOWING:

1. Contains or has a potential to contain a hazardous atmosphere.
2. Requires lockout or isolation procedures to be followed, or in which there is a hazard of entrapment or engulfment.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls, or by a floor, which slopes downward and tapers to smaller cross-section.
4. Contains any other recognized serious safety or health hazard.

Confined Space Entry Decision Flow Chart (Attachment A)

If you have an…

**ENCLOSED SPACE**

Is the space labeled as PERMIT-REQUIRED?
If yes, then complete the
CONFINED SPACE ENTRY PERMIT.

If the space is NOT labeled answer the following questions

1. Can it be bodily entered?
2. Does it have a restricted or limited means of entry or egress?
3. Is it unsuitable for continuous occupancy?

If the answer to ALL of these questions is **YES**, then it is a…

CONFINED SPACE
AND YOU MUST COMPLETE THIS FORM.

Send copies of your Confined Space Entry Permit to site supervisors and/or Safety Managers for review.
## APPENDIX B

### CONFINED SPACE ASSESSMENT FORM

Name of Evaluator  ________________________________________________
Work Area Assessed  ________________________________________________
Date of Assessment  ________________________________________________

<table>
<thead>
<tr>
<th>Confined Space Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Area was not designed for continual worker occupancy</td>
</tr>
<tr>
<td>YES ☐ NO ☐</td>
</tr>
<tr>
<td>2. Area can be bodily entered and assigned work performed</td>
</tr>
<tr>
<td>YES ☐ NO ☐</td>
</tr>
<tr>
<td>3. Area has limited and/or restricted means of access and egress</td>
</tr>
<tr>
<td>YES ☐ NO ☐</td>
</tr>
</tbody>
</table>

If you answered **yes to all of the above** you have met the criteria of a confined space, and must proceed to the next section.

<table>
<thead>
<tr>
<th>Permit-Required Confined Space Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The area contains or has the potential to contain a hazardous atmosphere</td>
</tr>
<tr>
<td>YES ☐ NO ☐ If yes, explain and document in “Confined Space Hazard Identification and Evaluation” Pg 8</td>
</tr>
<tr>
<td>2. The area contains a material that has the potential to engulf an entrant (water, grain, sand, etc)</td>
</tr>
<tr>
<td>YES ☐ NO ☐ If yes, explain and document in “Confined Space Hazard Identification and Evaluation” Pg 8</td>
</tr>
<tr>
<td>3. The area has an internal configuration, inwardly converging walls or a floor that slopes downward and tapers to a smaller cross section</td>
</tr>
<tr>
<td>YES ☐ NO ☐ If yes, explain and document in “Confined Space Hazard Identification and Evaluation” Pg 8</td>
</tr>
<tr>
<td>4. The area contains any other recognized serious safety and health hazards (electrical, thermal, mechanical, physical, chemical, etc)</td>
</tr>
<tr>
<td>YES ☐ NO ☐ If yes, explain and document in “Confined Space Hazard Identification and Evaluation” Pg 8</td>
</tr>
</tbody>
</table>

If you answered **yes to any one or more of the above** you have met the criteria of a permit-required confined space. Permit-required spaces must be identified with the appropriate signs, and implement measures to prevent unauthorized entry (locks, bolts, etc). If employee entry is required a confined space entry program and training program must be developed and implemented.

### Reclassification of Permit Required Confined Space

A space classified by the employer as a permit-required confined space may be reclassified under the following procedures:
1. If the permit space poses no actual or potential atmospheric hazards and if all the hazards within the space are eliminated without entry into the space, and the non-atmospheric hazards remain eliminated.
2. The employer shall document the basis for determining that all hazards in a permit space have been eliminated, through a certification date, the location of the space, and the signature of the person making the determination. The certification shall be made available to each employee entering the space or to that employee’s authorized representative.
3. If hazards arise within a permit space that has been declassified to a non-permit space, each person must immediately exit the space. The employer shall then reevaluate the space and determine whether it must be reclassified as a permit space.

### Classification of Work Space

- ☐ Permit-required confined space
- ☐ Non permit-required confined space (does not contain hazards capable of causing serious harm or death)
- ☐ Enclosed space
APPENDIX C
CONFINED SPACE ENTRY PERMIT

There is not a standard format for a Confined Space Entry Permit. It can be formatted using any method as long as the permit is legible to all exposed employees, can be posted at the confined space entrance, and contains all of the following information.

All Permit-Required Confined Space (PRCS) Permits shall list the following:

1. The permit space to be entered.
2. The purpose of entry.
3. Date and authorized duration of the permit.
4. Authorized entrants (by name).
5. Authorized entrants (by name).
6. Current entry supervisor (by name). With space for name or initials of original entry supervisor who originally authorized entry.
7. Hazards of permit space to be entered.
8. Measures used to isolate permit space and eliminate or control hazards before entry.
9. Acceptable entry conditions (site specific).
10. Results of initial pre-entry testing and necessary periodic testing, accompanied by the names or initials of the testers and date/time of the testing. (Note: When testing for atmospheric hazards, test first for oxygen, next for combustible vapors and gases, and then for toxic vapors or gases.)
11. The rescue plan to be used for this space. Verify that all required elements of the rescue plan are in place.
12. The procedures used to maintain communications between authorized entrants and attendants.
13. List of equipment required to maintain compliance. (Example: PPE, testing equipment, communications equipment, alarm systems and rescue equipment).
14. Additional necessary information (site specific) that will ensure employee safety.
15. Any additional permits that have been issued to authorize work in the permit space. (Example: hot work)
APPENDIX D
SITE-SPECIFIC ENTRY PROCEDURES

PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURE

This procedure is an outline only. It does not include all required information for confined space entry. All persons entering confined spaces or monitoring entrants in confined spaces must be trained and follow the procedures on this document and sign the entry program contained in this form.

DEFINITION: A permit required confined space is a space in which there are existing or potential atmospheric or physical hazards which could incapacitate an entrant, a space in which hazards cannot be determined prior to entry, or a space in which hot work is performed.

1. Entry teams must consist of a minimum of two people, an attendant and the entrant. Attendants and entrants must be trained on confined space entry.

2. Hazards assessment and testing must be performed by an individual familiar with the hazards of the space. This person becomes the entry supervisor and must sign the entry form.

3. The entrant(s) and attendant(s) must be briefed on emergency procedures.

4. All entrants in permit required confined spaces must wear a body harness connected to a retrieval apparatus. This requirement can only be waived by Sonic Drilling Ltd.

5. Communication equipment to contact the rescue service must be on site. The designated rescue agency “on site” should be established. The designated rescue agency “off site” should be documented.

6. An instrument capable of measuring oxygen, lower explosive gas levels, hydrogen sulfide and any other toxic substance to which the entrant might exposed must be on site. The instrument must be calibrated frequently enough to ensure proper function.

7. If possible, atmospheric testing must be done prior to removing manhole cover. If this is not possible, move the manhole cover the minimum distance needed to insert monitoring probe.

8. Atmospheric testing shall be continuous if an atmosphere in excess of 20% of the lower explosive limit (LEL) could develop and readings recorded every two hours on the entry permit.
9. The oxygen level must be measured first and be at least 20.5% for entry to be allowed.

10. The LEL (lower explosive limit) is measured second and cannot exceed 5% for entry to be allowed.

11. The hydrogen sulfide reading is measured last and cannot exceed 5 ppm for entry to be allowed.

12. The space must be free of physical or mechanical hazards such as entrapment, engulfment or other recognized hazard which could incapacitate an entrant or appropriate safety precautions taken to prevent injury to the entrant.

13. Lockout/tagout procedures must be performed on all pipes that could discharge into the confined space and all forms of exposed hazardous energy.

14. The material safety data sheet must be on site for any chemicals used and appropriate monitoring equipment used to monitor the atmosphere.

15. Work using flame or generating sparks is defined as hot work and a permit is mandatory when performing this type of work in a confined space. See your supervisor or CSO.

16. All contractors entering confined spaces on Sonic Drilling Ltd property must have and follow an appropriate confined space entry program.
Definitions

A. **ACCEPTABLE ENTRY CONDITIONS** - conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space can safely enter and perform work.

B. **ATTENDANT** - an individual stationed outside the permit-required confined space who had specific training and monitors the authorized entrants inside the space.

C. **AUTHORIZED ENTRANT** - employee who is authorized to enter a permit-required space.

D. **BLANKING OR BLINDING** - absolute closure of a pipe, line, or duct by fastening across its bore a solid plate that completely covers the bore and can withstand the maximum upstream pressure.

E. **CONFINED SPACE** - a space that meets all the following criteria:

   1) is large enough and so configured that an employee can bodily enter and perform assigned work;
   2) has limited means of entry and egress;
   3) is not designed for continuous employee occupancy; and

Examples may include tanks, silos, boilers, pits, bins, manholes electrical vaults, degreasers, and hoppers.

F. **ENGULFMENT** - surrounding and effective capture of a person by a liquid or finely divided solid substance (i.e sand, corn grain, sawdust etc).

G. **ENTRY** - a person's intentional passing through an opening into a permit-required confined space.

H. **ENTRY PERMITS** - a written or printed document that allows and controls entry into a permit space.

I. **ENTRY SUPERVISOR** - person responsible for:

   1) determining if acceptable conditions are present before entering a permit space;
   2) for authorizing entry;
   3) coordinating and supervising all entry operations; and
   4) terminating entry.
J. **HAZARDOUS ATMOSPHERE** - an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following causes:

1. Flammable gas, vapor or mist in excess of 10 of its Lower Flammable Limit (LFL).
2. Airborne combustible dust at a concentration that meets or exceeds its LFL.
3. Atmospheric oxygen concentration below 19.5 percent or above 23.3 percent
4. Atmosphere concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational Health and Environment Control, or in Subpart Z, Toxic and Hazardous Substances, of 29 CFR 1910 and which could result in employee exposure in excess of its dose or PEL.
5. Any other atmospheric condition that is immediately dangerous to life or health.

K. **HOT WORK PERMIT** – employer’s written authorization to perform operations (for riveting, welding, cutting, burning, and heating) capable of providing a source of ignition.

L. **IMMEDIATELY DANGEROUS TO LIFE OR HEALTH (IDLH)** - any condition that poses an immediate threat to life, or a delayed threat to life, or that would cause irreversible adverse health effects, or interfere with an individual's ability to escape unaided from a permit space.

M. **ISOLATION** - process by which a permit space is removed from service and completely protects against the release of hazardous energy or material into the space.

N. **LOWER EXPLOSIVE LIMIT (LEL)** - the lowest concentration of gas or vapor, expressed in percent by volume in air, that burns or explodes if an ignition source is present at room temperature.

O. **LINE BREAKING** - 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 death or serious physical harm.

P. **NON PERMIT CONFINED SPACE** - A confined space that does not contain or have the potential to contain an atmospheric hazard or any other serious safety or health hazard.

Q. **OXYGEN DEFICIENT ATMOSPHERE** - an atmosphere containing less than 19.5% oxygen.
R. **OXYGEN ENRICHED ATMOSPHERE** - an atmosphere containing more than 23.5% oxygen.

S. **PERMISSIBLE EXPOSURE LIMIT (PEL)** - the airborne concentration of a hazardous material that must not be exceeded over a specified time or instantaneously. This value is established by the Occupational Safety and Health Administration (OSHA).

T. **PERMIT-REQUIRED CONFINED SPACE** - a confined space that has one or more of the following characteristics:

1) Contains or has a reasonable potential for hazardous atmospheres.
2) Contains a material that has the potential for engulfment.
3) Is internally configured so an employee could become trapped or asphyxiated by inwardly converging walls or a floor that slopes downward into a smaller cross-section.
4) Contains any other recognized serious safety or health hazard.

U. **PROHIBITED CONDITION** - any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

V. **RESCUE SERVICE** - personnel designated to rescue employees from permit spaces.

W. **RETRIEVAL SYSTEM** - equipment used for a non-entry rescue of persons from permit spaces (i.e., tripod).

X. **TESTING** - process by which hazards that may affect entrants of a permit space are identified and evaluated.

Y. **THRESHOLD LIMIT VALUE (TLV)** - the airborne concentration of a hazardous material that should not be exceeded over a specified time or instantaneously. This value is established by the American Conference of Governmental Industrial Hygienists (ACGIH).

Z. **WELDING/CUTTING PERMIT** - written authorization to perform operations that can provide a source of ignition (e.g., welding, cutting, burning, or heating) or a hazardous atmosphere.
# CONFINED SPACE ENTRY PERMIT

*This permit is valid for 8 hours only.*

<table>
<thead>
<tr>
<th>Location and description of confined space</th>
<th>Permit Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of entry</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Date of entry</strong></td>
<td>Date of Expiry</td>
</tr>
<tr>
<td><strong>Other permits required</strong> (hot work, line breaking, other)</td>
<td>Time of entry</td>
</tr>
<tr>
<td><strong>Entry supervisor (print)</strong></td>
<td>Time of expiry</td>
</tr>
<tr>
<td><strong>Attendants (print)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Known and potential hazards in space**

**Describe acceptable entry conditions**

## Precautions

*(Check and explain where required)*

- Pre-entry briefing on specific hazards and control methods
- Notify contractors of permit and hazard conditions
- Verify adequate confined space training
- Notification to effected depts/persons of service interruption
- Hot work permit required?
- Lines blocked or broken
- Ventilation Air flush (preliminary or continuous) (Mechanical or Natural Air)
- Communication method (radio, rope signals, visual hand signals, verbal)
- Lighting (hazardous location rated or standard)
- Drain space
- Traffic barriers/entrance covers / signage
- Other (specify)

## Operational and protective equipment

*(Check and explain where required)*

- Ladder
- Full body harness
- Lifeline
- Tripod/hoist
- Area security (warning signs, barricades)
- Ventilation fan or blower
- Fire extinguisher
- SCBA
- Coveralls
- Face/eye protection
- Footwear
- Gloves (impervious, chemical, leather, other)
- Air purifying respirator (specify cartridge type)
- Head protection
- Fall protection equipment
- Communication
- Radiation dosimeter(s)
- Hearing protection
- Respirator
- Other (specify)

## Rescue Procedures and Equipment

- **Non-entry** rescue procedure and equipment in place
  (Attendant will extract entrant without entering space)
  **OR**
- **Entry** rescue service and equipment ready to effect a timely rescue
  (considering hazards in space)

**List rescue equipment:**

**Notes:**

**Notes:**
Air monitoring data

Attendant air sampling required (continuously or every ______ minutes)

<table>
<thead>
<tr>
<th>Test For:</th>
<th>Acceptable Values</th>
<th>*Pre-Entry Time/Results</th>
<th>Break Time/Results</th>
<th>Break Time/Results</th>
<th>Break Time/Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>19.5% min – 23% max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Hydrogen Sulfide (H₂S)</td>
<td>Less than 10 ppm</td>
<td></td>
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</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>Less than 35 ppm</td>
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<tr>
<td>Other</td>
<td></td>
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</tr>
</tbody>
</table>

Test Location

Purpose of Entry (complete back of form for details)

Dimensions of Space: Depth: Width: Length:

Sampling Equipment Date Calibrated: *Pre-Entry Measurements performed by Entry Supervisor/Lead Worker: Date:

Authorized Entrants:

1 Time In Time Out Time In Time Out

2

3

4

Work Authorization

Building/area/facility manager or designee (print) Date Time

Permit authorization (must be signed before entry)

Competent entry supervisor’s signature Date Time

(Signature certifies that precautions and equipment are in place, atmospheric testing shows air acceptable for entry, permit is complete)

Permit cancellation (must be signed after work is completed)

Competent entry supervisor’s signature Date Time

POST PERMIT AT JOB SITE UNTIL JOB IS COMPLETED

IN CASE OF EMERGENCY, CALL 911

Instructions

A confined space entry permit must be completed for all permit-required confined space (PRCS) entries.

Permit numbering scheme: building number - space number - ddmmyy

Example: 081-03-240109

1) Contact a competent entry supervisor prior to entry to assist in space preparation and permit completion.
2) Review the confined space profile and requirements in the Sonic Drilling Ltd CS program.
3) Complete the entry permit.
4) Prepare the space for entry according to the permit.
5) The competent entry supervisor must review the permit for accuracy and completeness, determine if acceptable entry conditions are present, do a hazard assessment, authorize entry, and oversee entry operations and termination.
6) Verify that qualified and trained rescue services are equipped and ready to perform a timely rescue, considering the hazards potentially present in the permit space.