CONFINED SPACE PROGRAM

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The State University of New York at Fredonia *Environmental Health & Safety & Sustainability Department*		
Title: Confined Space - Written Permit Space Program		
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1.0 POLICY

The State University of New York at Fredonia and its associated work places have confined spaces that, due to various chemical and physical properties, may cause death or serious injury to employees who may enter them. This Confined Space Entry Program is developed and established to identify, evaluate, and control such spaces, and more importantly, to detail procedures and responsibilities for entering and working within confined spaces.

Adherence to the policies and directives contained in this program is mandatory for all supervisors and employees of this campus. Supervisors and employees failing to follow this program are subject to disciplinary actions and/or dismissal.

This program was created in accordance with the Occupational Safety and Health Administration's (OSHA) Permit-Required Confined Spaces Standard, Title 29, Code of Federal Regulations 1910.146.

2.0 DEFINITIONS

Confined Space - A space that:

(a) Is large enough and so configured that an employee can bodily enter and perform assigned work; ***and***
(b) Has limited or restricted means for entry or exit; ***and***
(c) Is not designed for continuous employee occupancy.

Permit Required Confined Space (PRCS) - A confined space that:

(a) Contains or has a potential to contain a hazardous atmosphere; ***or***
(b) Contains a material that has the potentials for engulfing an entrant; ***or***
(c) 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; ***or***
(d) Contains any other recognized serious safety or health hazard.

Acceptable Entry Conditions - The conditions that must exist in a permit space to allow entry and to ensure employees can safely enter into and safely work within a permit required confined space.

Acute exposures - Exposures, which occur for relatively short periods of time, generally minutes to 1-2 days. Concentrations of toxic air contaminants are high relative to there protection criteria. In addition to inhalation, airborne substances might directly contact the skin, or liquids and sludges may be splashed on the skin or into the eyes, leading to toxic effects.

Atmosphere - Refers to the air within a confined space. It should be clean, breathable air with enough oxygen for personnel to be able to enter the area, work and breathe.

Attendant - An individual stationed outside the permit-required confined space who is trained as required by this program and who monitors the authorized entrants inside the permit-required confined space and performs all attendant's duties assigned in the SUNY Fredonia Confined Space Entry Program.

Authorized Entrant - An employee who is trained as required by this program and is authorized by SUNY Fredonia to enter a permit-required confined space.

Ceiling Level - The maximum airborne concentration of a toxic agent to which an employee may be exposed for a specified period of time, usually 15 minutes. At no time must the exposure level exceed the ceiling concentration as listed in 29 CFR Part 1910 Sub Part Z.

Combustible Dust-A dust capable of undergoing combustion or burning when subjected to a source of ignition.

Contaminant- Any organic or inorganic substance, dust, fume, mist, vapor, or gas, the presence of which in air can be harmful to human beings.

Entry - The action by which a person passes through an opening into a permit required confined space. Entry is considered to occur as soon as any part of the entrant's body breaks the plane of an opening into the space. **NOTABLE EXCEPTION:** With the approval of the Department Supervisor, you may reach into a space, and not bodily enter (say to adjust a valve), and do so without an entry permit being required as long as there is NO risk of falling into or otherwise entering the permit space.

Entry Permit - The written or printed document provided by SUNY Fredonia to allow and control entry into a permit space.

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

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 on or more of the following conditions:

(a) Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit (LFL);
(b) Airborne combustible dust present at a concentration that meets or exceed its LFL. (This may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less);
(c) Atmospheric concentration of any substance for which a dose or permissible exposure limit (PEL) is published in OSHA standards; ***or***
(d) Any other atmospheric condition that is immediately dangerous to life or health.

Hot Work - Any work involving burning, welding, riveting, or similar fire-producing operations, as well as work which produces a source of ignition such as drilling, abrasive blasting and space heating. Permits for ***Hot Work*** must be obtained in accordance with SUNY Fredonia's safety and health programs.

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

Inerting- Displacement of the atmosphere by a non-reactive gas (such as Nitrogen) to such an extent that the resulting atmosphere is non-combustible. *Inerting an atmosphere produces an IDLH oxygen-deficient atmosphere.*

Irritant - Any substance that will induce a local inflammatory reaction on immediate, prolonged, or repeated contact with living tissue.

Isolation - A process whereby the confined space is removed from service and completely protected against the inadvertent release of material by the following: blanking off (skillet-type metal blank between flanges), misalignment of sections of all lines and pipes, a double block and bleed system, electrical lock-out of all sources of power, and blocking or disconnecting all mechanical linkages.

Lower Explosive Limit (LEL) - The minimum concentration of a combustible gas or vapor in air (usually expressed in percent by volume at sea level), which will ignite if an ignition source (sufficient ignition energy) is present.

Non-Permit Confined Space - A confined space that does not contain, or with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Oxygen Deficiency - Refers to an atmosphere with a partial pressure of oxygen (Po2) less than 132 mm Hg. Normal air at sea level contains approximately 21% oxygen at a Po2 of 160 mm Hg. At an altitude of 5,280 feet, normal air contains approximately 21% 02 at a P02 of 132 mm Hg. *An oxygen-deficient atmosphere is one with less than 19.5% Oxygen.*

Oxygen-Enriched Atmosphere - Any oxygen concentration greater than 25% (Po2 - 190 mm Hg) at normal atmospheric pressure. *An oxygen-enriched atmosphere is one with greater than 23.5% Oxygen.*

Permissible Exposure Limit (PEL) - The maximum Eight-Hour, Time-Weighted Average of any airborne contaminant to which an employee may be exposed. At no time must the exposure level exceed the Ceiling concentration for that contaminant as listed in 29 CFRPart 1910 Subpart Z.

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

Purging - The method by which gases, vapors, or other airborne impurities are displaced from a confined space. For example, an atmosphere may be purged of a hazardous airborne contaminant by forced ventilation - followed by atmospheric or environmental testing to ensure effectiveness.

Testing-The process by which the hazards are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

3.0 RESPONSIBILITIES

3.1 OVERALL PROGRAM RESPONSIBILITY

This program is intended to provide requirements for safe work practices in these identified confined spaces. Compliance with this program is required for all SUNY Fredonia employees and Contract Personnel. The Environmental Health & Safety &Sustainability Department along with Supervisors in Facilities Services and ITS will be responsible for ensuring maintenance and service personnel comply with the requirements of this program. A thorough review of this program is conducted as needed and modifications are incorporated as necessary. A copy of the OSHA 29 CFR 1910.146 Permit Required Confined Space Entry Standard is available at the EH&S&S office for review.

In addition, SUNY Fredonia will:

(a) Evaluate the work place and identify Permit Required Confined Spaces (PRCS's). These spaces have been identified and are inventoried in Appendix A of this document.
(b) Inform exposed employees of the existence, location of, and the danger posed by the permit space by posting danger signs and by informing all SUNY Fredonia employees who may enter confined spaces of confined space locations during training. Each employee is provided with a copy of SUNY Fredonia's Confined Space Inventory during training. Employee training includes descriptions of the potential consequences - injury and illness up to and including death - of entering a confined space and not following required procedures.
(c) Determine if employees will or will not enter permit required spaces. If not, take effective measures to prevent employees from entering the permits spaces accidentally.
(d) Provide and document training for entrants, attendants, and entry supervisors.
(e) Designate the appropriate supervisor(s) as entry supervisor(s).
(f) Provide all specified equipment required for entry in a permit required confined space as outlined in this and OSHA 1910.146 at no cost to the employees, maintain that equipment properly, and ensure that employees use that equipment properly.
(g) If necessary, reclassify a non-permit confined space as a permit space when there are changes in use or configuration.

3.2 EMPLOYEE RESPONSIBILITIES

Employees will:

(a) Not enter any PRCS unless specifically authorized by an entry supervisor and only in full accordance with this program and the OSHA Standard;
(b) Attend and complete any scheduled training required by his/her supervisor and this program;
(c) When selected as an entrant, attendant, or entry supervisor, perform those duties as outlined in this program.

3.3 CONTACT FOR RESCUE SERVICES

The Director of EH&S&S will ensure that rescue and emergency services that may be called for employees entering confined spaces that require entry rescue have been informed of any permit-required confined spaces at SUNY Fredonia and have been given access to spaces for drills, training, etc.

3.4 CONTRACTOR RESPONSIBILITIES

All individuals who hire contractors who may enter these spaces and administer contracts with those contractors are responsible for informing contractors of the locations of these spaces and any known actual or potential hazards. When new spaces are created, a hazard evaluation is conducted, the space is classified, and, if appropriate, posted and added to the inventory. If conditions change within a confined space that previously was not considered permit-required confined space, the space is re-evaluated to determine its classification. The responsible individual will:

a) Inform the contractor that the workplace contains permit spaces and that permit space entry is allowed only through compliance with a permit space program meeting the requirements of 29 CFR 1910.146. The program will be the responsibility of the contractor.
b) Apprise the contractor of the elements, including the hazards identified with the space that make the space in a question a permit space.
c) Apprise the contractor of any precautions or procedures that SUNY Fredonia has implemented for the protection of employees in or near permit spaces where the contractor personnel will be working.
d) Coordinate entry operations with the contractor, when both SUNY Fredonia personnel and contractor personnel will be working in or near permit spaces per the requirements of this program.
e) Debrief the contractor at the conclusion of the entry operations regarding any hazards confronted or created in permit spaces during entry operations.
f) Use and ensure completion of the contractor entry/debriefing form in Appendix D.

4.0 CONFINED SPACE LOCATIONS

4.1 EVALUATION OF THE WORKPLACE

SUNY Fredonia has evaluated the workplace and determined that Permit-Required Confined Spaces do exist.

Evaluation of new areas or re-evaluation of existing areas will be performed by the Director of EH&S&S.

4.2 IDENTIFIED PERMIT-REQUIRED SPACES

Refer to appendix A

5.0 PREVENTION OF UNAUTHORIZED ENTRY

5.1 NOTIFICATION OF HAZARDS

Exposed or potentially exposed employees will be notified of PRCS using the following methods:

a) Posting of danger signs at PRCS, where feasible. Signs will state "DANGER - PERMIT REQUIRED CONFINED SPACE. DO NOT ENTER"
b) PRCS training will be provided for new employees prior to exposure and annual refresher training will be provided to all exposed or potentially

exposed employees. Training will include the location of PRCS and their specific hazards as well as training in non-entry rescue and applicable first aid procedures.

5.2 PREVENTION OF UNAUTHORIZED ENTRY

Only employees properly trained and authorized for entry by SUNY Fredonia may enter PRCS's. PRCS's will be protected from unauthorized entry, where feasible, by specialized equipment under management's control and/or posting of signs in the area.

6.0 PERMIT REQUIRED CONFINED SPACE ENTRY PROCEDURES

All permit required confined spaces will be identified and evaluated by EH&S&S or a third party specializing in confined spaces and approved by EH&S&S in conjunction with Facilities Services supervisors. Exposed employees will be informed of such spaces through posting with warning signs or other equally effective means, such as facility maps or training.

Only trained and qualified employees will be authorized as permit space entrants, attendants, or entry supervisors.

No employee shall enter a permit space without having a properly completed entry permit signed by an entry supervisor.

6.1 ENTRY PERMIT PROCEDURES

(a) Entrants will obtain an entry permit from their entry supervisor prior to entry of the space.
(b) The entrant will accomplish all pre-permit actions required for entering the space, such as atmospheric testing, hazard control/elimination actions, have all required equipment on hand, provide for attendant and rescue services, etc.
(c) Complete all applicable items on the permit.
(d) Only an authorized entry supervisor may sign the permit. If any item on the permit is checked as "NO" (meaning not yet completed or available), the permit will not be signed.
(e) After permit approval, entry may proceed. A copy of the entry permit will be placed outside the confined space until appropriate personnel have canceled the permit.
(f) The entry supervisor, upon completion of the work, will cancel permits, or when any prohibited condition arises. Permits cannot just be let to expire. Cancelled permits must be kept for the annual review.

6.2 TESTING AND MONITORING

(a) Test the space as necessary to determine if acceptable entry conditions exist before beginning entry operations. Initial testing of the atmosphere must be done from outside the confined space prior to any entry. If isolation of the space is infeasible because the space is large or part of a continuous system (such as a sewer), entry conditions will be *continuously* monitored where entrants are working.
(b) Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
(c) When testing for atmospheric hazards, test for oxygen, then for combustible gases

and vapors, and then for toxic gases and vapors. Parameters for non-hazardous atmospheres are:

- Oxygen between 19.5 and 23.5 percent;
- Flammability less than ten percent of the lower flammability limit (LFL);
- Toxicity less than the permissible exposure limit (PEL).

(d) An authorized attendant must be present and monitoring the entry at all times. The attendant will not be assigned any other duties that may interfere with his attendant duties.

(e) Equipment required for permit required confined space entry includes that equipment required for testing and monitoring; ventilating, communications between the entrant and attendant, and for summoning rescue; personal protection; lighting; barriers/shields for openings; means of ingress and egress; and any other equipment necessary for safe entry and rescue.

6.3 RESCUE AND EMERGENCY SERVICES

Non-Entry Rescue

(a) Non-entry rescue is the preferred method for rescue of personnel from a permit-required space. *Employees will not enter a permit space for rescue unless they have been specifically trained and equipped for such rescue.*

(b) To facilitate non-entry rescue, a retrieval system with approved equipment shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase overall risk of entry or would not be of value to any rescue. Retrieval system requirements are:

- Each entrant shall use a chest or full body harness with a retrieval line attached at the center of the back near shoulder level, or other appropriate point.
- Other end of retrieval line shall be attached to a mechanical device such as a tripod with a mechanical winch or fixed point outside of the permit space enabling immediate use. A mechanical device will be used to retrieve personnel from vertical type permit spaces more than 5 feet deep.
- If injured entrant is exposed to any substance with a required SDS or similar document, that SDS or document will be made available to the medical facility treating the entrant.

(c) If rescue should become necessary, the attendant will:

- Notify and summon University Police.
- Attempt to retrieve the entrant from the space using **non-entry** rescue procedures to the extent possible by the circumstances;
- If entrant(s) are successfully retrieved from the space, provide first aid to the best of your ability;
- Monitor the situation and be ready to give rescuers information on the number of victims and their status, what hazards, chemical types, concentrations, etc. are present.

Entry Rescue

a) It is the intent of SUNY Fredonia to prohibit entry by university personnel into entry rescue required confined spaces under all circumstances. A third party employer contracted to do applicable work within the space will enter these spaces and it will be their responsibility to provide entry rescue services. SUNY Fredonia will share all information available on the confined space to be entered including but not limited to the requirement for entry rescue from the space. If SUNY Fredonia should approve university personnel to enter rescue required confined spaces, a designated third party rescue team, hired by the university will be on site during entry. Each designated rescue team member will be trained on:

- Use of personal protective and rescue equipment necessary for making the rescue from the permit space;
- Performance of assigned rescue duties and also the training required of authorized entrants;
- Basic first-aid and cardiopulmonary resuscitation (CPR). At least one member of the rescue team will hold current certification in first aid and CPR.
- Each rescue team member will practice making permit space rescues at least once every 12 months, by means of simulated rescue operations and in spaces representative of the types of permit spaces from which rescue is to be performed.

6.4 PROGRAM REVIEW

Cancelled entry permits will be retained on file for at least one year. The Permit Space Program will be reviewed within one year of each entry using these cancelled permits to revise the program as necessary to ensure employees are protected from permit space hazards. A single review covering all entries in the preceding year may be conducted.

7.0 CONFINED SPACE HAZARDS

There are numerous hazards associated with confined spaces. These hazards can be divided into two (2) major categories - **health hazards** and **physical hazards.** The following details the kinds of hazards potentially present in identified confined spaces at SUNY Fredonia.

7.1 Health Hazards

Hazardous atmospheres are a major concern when entering confined spaces. In order for entry to be safe, breathable air must be free from harmful chemicals and have more than 19.5% oxygen (outdoor air should have roughly 21%). If there is not enough oxygen present or if chemicals are present, a hazardous atmosphere may exist. Hazardous atmospheres that may be present within a confined space can be divided into four (4) categories: ***flammable and explosive, toxic, irritating and/or corrosive and asphyxiating.***

I. Flammable Atmospheres:

The following are examples of flammable atmospheres which could exist in a confined space. There are a number of reasons why the atmosphere in a confined space may become explosive or flammable. SUNY Fredonia may not have all (or any) of the following types of explosive or flammable atmospheres within the facility's designated confined spaces. However, this information is supplied as reference for continued evaluation of these spaces.

a. Confined spaces that contain chemicals which are explosive or volatile such as Gasoline or Diesel Fuel, have the potential for these chemicals to give off explosive vapors.
b. A confined space that has an oxygen level above 23.5% makes it an oxygen enriched atmosphere. In oxygen-enriched atmospheres, the potential for explosion increases when other explosive chemicals are present. This may be caused by chemical reactions involving an oxidizing agent. Oxidizers, by their nature, give off oxygen during chemical reactions.
c. Often when chemicals are stored in tanks, the walls will absorb some of the chemicals. After the tank has been emptied, the chemicals will permeate out of the walls in a process called **desorption.** This desorption may create sufficient vapors in the space to have an explosive atmosphere. Steel tanks, such as gasoline and propane tanks, will often display this desorption trait.
d. Solvents used to remove petroleum sludge in a tank are often explosive. The vapors given off by this product can lead to an explosive atmosphere if not controlled. It is important to ensure that the space is properly ventilated to avoid this problem.
e. When powdered chemicals or grains are loaded or unloaded, high quantities of dust may be generated. If the dust is combustible and uncontrolled, it may cause an explosion. It is essential to use proper loading/unloading measures
to reduce the dust levels.
f. Some confined spaces may contain pyrophoric material that will ignite explosive vapor in the presence of air. Therefore, a qualified person should consider the potential for the presence of pyrophorics prior to ventilation. Potentially explosive atmospheres must be carefully monitored with intrinsically safe instruments. Such instruments do not introduce an ignition source and will not cause an explosion in explosive atmospheres. Before any work is conducted in a confined space, the area must be ventilated. Ventilation must be constant throughout the work process. It is important to provide enough ventilation to work in the space safely and to prevent the outside area from accumulating explosive vapors. In addition, all ignition sources must be eliminated prior to and during work in these types of atmospheres. Bonding and grounding should be used to eliminate static electricity. All electrical equipment must be grounded to prevent sparking and arcing. Extra care must be used if hot work is to occur in the confined space. Only properly trained and experienced personnel will be allowed to perform hot work in confined spaces.

II. Toxic Atmospheres

Toxic atmospheres may be produced by products that are solids, liquids or gases. These chemicals, in addition to the chemicals found on soiled rags and clothing, may cause toxic atmospheres to develop in enclosed spaces. Circumstances which may produce a toxic atmosphere are:

a. The product stored in the container is a toxic material.

b. Organic materials such as sewage give off Hydrogen sulfide when they decompose. Hydrogen sulfide (H_2S) is a colorless gas with an odor of Sulfur. H_2S is highly toxic and small quantities can cause severe illness or death.

c. The removal of sludge from tanks is a common practice. Often the sludge is volatile. Volatile means that the product releases vapors readily. The actual process of cleaning out the

sludge can cause an increase in volatile vapors in the confined space.

d. Welding or cutting processes give off metal fumes. These metal fumes may be toxic and can build up inside a confined space.

e. Chemicals used in confined spaces will often have their own hazardous characteristics. These characteristics are often magnified in a confined space. The use of these products for cleaning can result in a toxic atmosphere.
Care must be taken to fully identify the contents of a confined space. Additionally, the products to be used in the space must be identified to ensure that they can be safely used. Complete atmospheric testing must be completed prior to entry. Never rely on your sense of smell as the sole detection device of toxic atmospheres. Carbon monoxide, among other gases, is toxic, colorless, and odorless and will not be detected by the human senses.

III. Irritant (Corrosive) Atmosphere:

Irritants are classified into two groups - **primary** and **secondary** irritants. Safety Data Sheets of materials found at the SUNY Fredonia facility should be consulted for irritating or corrosive effects prior to any entry.

a. Primary irritants cause violent surface-irritating effects on skin tissue and the respiratory tract without causing other bodily health effects (systemic toxic effects). Selection of proper personal protective equipment will prevent exposure to these products. *Examples of primary irritants are Chlorine, Sulfuric acid, Hydrofluoric acid, Ozone, Ammonia, Sulfur dioxide, and Nitrogen dioxide.*

b. Secondary irritants cause systemic toxic effects as well as surface irritation. These products will cause long-term health effects if personal protective equipment and clothing is not worn. *Examples of secondary irritants include Carbon tetrachloride, Benzene, Trichloroethane, Trichloroethylene, and Ethyl chloride.* Prolonged exposure to irritating atmospheres may cause damage to the respiratory system and other vital organs. Proper selection and use of personal protective clothing will reduce exposure to these products.

IV. Asphyxiating Atmosphere:

Oxygen constitutes approximately 21% of normal air. If oxygen levels drop below **19.5%,** the atmosphere is considered to be oxygen-deficient or asphyxiating. In this environment, normal body functions begin to shut down. At an oxygen level of less than 16%, death will occur. The reduction of oxygen within a confined space may be the result of either consumption or displacement.

a. Consumption of oxygen may occur when welding, heating or cutting procedures take place in a confined space. Bacterial action in the decomposition or fermentation of organic matter and the rusting of metal will consume all oxygen present. The breathing process of workers within the confined space may also deplete the oxygen supply. *The more people working within a confined space, the faster the oxygen is consumed.*

c. Displacement of oxygen by another gas in a confined space may be accomplished naturally or by physically feeding another gas into the space. Displacement of oxygen may take place naturally in sewers, storage bins, wells, and tunnels. This displacement is caused by the presence of other gases like Hydrogen sulfide and Carbon monoxide. Gases such as Nitrogen, Argon, and Helium are sometimes used as inerting gases. An inerting gas is used to displace an explosive atmosphere with a non-explosive atmosphere. Extreme care must be followed when using these "non-toxic", colorless, and odorless gases. Gases with these properties are very dangerous

asphyxiants and monitoring of the O_2 content of a confined space must be conducted continuously when they are in use.

7.2 **PHYSICAL DANGERS**

The physical dangers within a confined space range from hazards associated with equipment within the space to physiological health hazards from heat and noise. The following section describes some of the hazards associated with working within a typical confined space. SUNY Fredonia has a variety of confined spaces throughout the campus. Each has been evaluated for physical dangers unique to that space.

I. Mechanical Hazards:

Mechanical and electrical equipment are the cause of numerous injuries in confined spaces. All electrical and mechanical machinery must be disconnected and/or locked out from their power source. Piping must be blanked and/or disconnected and valves must be locked in the closed position. All pipes must be inspected for leakage before entry can be made (for example: inspecting pipes leading into the confined space, or using a flashlight to examine interior pipes from the outside). These procedures will prevent the entry of dangerous chemicals or vapors within the confined space while work is taking place. Properly locked-out and tagged-out machinery will prevent other personnel in the area from activating the electrical or mechanical process within the confined space. Follow the procedures outlined in the SUNY Fredonia Lockout/Tagout Program whenever equipment must be rendered inoperable.

II. Communication Problems:

Due to the configurations of many confined spaces, it is very difficult for the attendant to keep visual contact with workers inside. If communication is lost, the worker inside will not be able to notify the attendant of an injury. Communication must be maintained at all times. An alternate system must be established in the event that hand and arm signals or normal voice cannot be used. Intrinsically safe radios, alarms, and rope signals can be used.

III. Noise:

Noise within a confined space makes communication difficult and increases the risk of hearing loss. Machinery outside of the confined space or activities inside the confined space, for example, sandblasting or jack hammering, will cause vibration and noise at high decibels. Hearing protection must be used to prevent permanent hearing loss. At the same time, a communication system must be maintained between the workers inside the space and the attendant.

IV. Stress

There are two types of thermal stress - **hot** and **cold.** Workers may be subjected to very warm temperatures within a confined space. This heat is caused by the use of personal protective clothing and/or the product and location of the space. Heat stress can be reduced by proper ventilation, frequent rest periods and drinking ample water.

Similar dangers exist in a cold environment. When the body temperature decreases, a worker is susceptible to frostbite and hypothermia. Frequent breaks to warm up and donning the proper clothing will help prevent cold stress.

At SUNY Fredonia, during the cleaning process and ventilation of the confined space(s) with outside ambient air - care should be given to location of the intake so as to not introduce further contaminants (Carbon monoxide for example) into the atmosphere. In addition, due to

weather conditions - air temperature in the work space(s) should be evaluated as determined in the most recent ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.

V. Vibration

Work within a confined space that requires pneumatic tools, e.g., chippers or jackhammers, may cause vibration injuries to the hands and fingers. Specially designed gloves are to be worn to minimize the vibration to the hands and arms.

VI. Slips and Falls

Very often the interior of a confined space is not flat. There are sumps, baffies, scaffolding and surface residues or sludges, which can lead to slips, trips, or falls. Proper foot protection and careful movement in the space will help to prevent injury. During the cleaning, re-lining and inspection of tanks at SUNY Fredonia, surfaces may be (or become) wet and slippery - often personal protective equipment such as boots/gloves or suits may increase slips, trips, or falls.

8.0 DUTIES OF ENTRANT, ATTENDANT, AND ENTRY SUPERVISOR

8.1 DUTIES OF THE ENTRANT

(a) Know the hazards that may be faced, including the mode, signs or symptoms, and consequences of the exposure;
(b) Properly use equipment as required;
(c) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to alert entrants of the need to evacuate the space;
(d) Alert the attendant whenever the entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or detects a prohibited condition;
(e) Exit from the permit space as quickly as possible whenever:
- An order to evacuate is given by the attendant or the entry supervisor, or an evacuation alarm is activated.
- The entrant recognizes any warning sign or symptom of exposure to a dangerous situation, or detects a prohibited condition.

8.2 DUTIES OF ATTENDANT

(a) Know the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.
(b) Is aware of possible behavioral effects of hazard exposure.
(c) Continuously maintain an accurate count and identity of authorized entrants.
(d) Remain outside the permit space during entry operations until relieved by another attendant.
(e) Communicate with entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate.
(f) Monitor activities inside and outside space to determine if safe for entrants to remain in space and orders evacuation when necessary.
(g) Summon rescue and emergency services when assistance for emergency exit from permit space is necessary.

(h) Take the following actions when unauthorized persons approach or enter a permit space while entry is underway:
    - Warn them to stay away or exit immediately if they have entered.
    - Inform the entrants and entry supervisor if unauthorized persons enter the permit space.

(i) Perform non-entry rescues as specified by company procedure.

(j) Perform no duties that might interfere with their primary duty to monitor and protect authorized entrants.

8.3 DUTIES OF ENTRY SUPERVISOR

(a) Know the hazards that may be faced during entry, including the mode, signs or symptoms, and consequences of the exposure.

(b) Verify that acceptable conditions for entry exist before endorsing the permit and allowing entry to begin.

(c) Terminate the entry and cancel the permit when entry operations are complete or a prohibited condition arises.

(d) Verify that rescue services are available and the means for summoning them are operable.

(e) Remove unauthorized individuals who enter or who attempt to enter the permit space.

(t) Determine whenever responsible and at appropriate intervals, that acceptable entry conditions are maintained.

9.0 TRAINING

Only trained and qualified employees may be authorized as entrant, attendant, entry supervisor, or non-entry rescue team members. The training will establish proficiency in the duties required by this program so that the employee acquires the understanding, knowledge, and skill necessary for the safe performance of his/her duties.

Training must be completed before employee is assigned duties under this program, before there is a change in assigned duties and, whenever a supervisor has reason to believe that there are deviations from permit space entry procedures or inadequacies in the employee's knowledge or use of this program.

Supervisors will certify that this training has been accomplished. The certification will contain the employee's name, signature, or initials of the trainers, and the dates of training. The certification will be kept on file.

10.0 ALTERNATE ENTRY PROCEDURES

Alternate entry procedures may be used when the **only** hazard is an actual or potential hazardous atmosphere. If alternate entry procedures are used, no permits are needed, no attendant or supervisor is required, and rescue provisions need not be used. Training and a written certification are required.

10.1 CONDITIONS TO BE MET TO QUALIFY FOR ALTERNATE PROCEDURES:

(a) The only hazard posed by permit space is an actual or potential hazardous atmosphere.
(b) Continuous forced air ventilation alone is sufficient to maintain safe permit space.
(c) Monitoring and inspection data that supports above demonstrations have been developed and documented.
(d) If initial entry is necessary to obtain above data, it shall be performed in accordance with this program.
(e) Documented determinations and supporting data will be made available to entrants.

10.2 ENTRY MUST BE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:

(a) Any condition making it unsafe to remove an entrance cover shall be eliminated before removing the cover. When entrance covers are removed, the opening shall be promptly and effectively guarded.
(b) Before entry, the internal atmosphere shall be tested with a calibrated direct-reading instrument, for the following conditions in the order given:

- Oxygen content: 19.5-23.5%
- Flammable gases and vapors:<= 10% ofLEL
- Potential toxic air contaminants: <PEL

(c) There may be no hazardous atmosphere within the space whenever any employee is inside the space.
(d) Continuous forced air ventilation shall be used as follows:

- Entry not permitted until hazardous atmosphere is eliminated.
- Ventilation shall be directed to immediate areas where employees are or will be present and will continue until all employees have left the space.
- Air supply shall be from a clean source and may not increase hazards in the space.

(e) Atmosphere within the space shall be periodically tested as necessary to ensure that ventilation is adequate. If hazardous atmosphere is detected during entry:

- Each employee shall leave the space immediately.
- The space shall be evaluated to determine how the hazardous atmosphere developed.
- Measures must be taken to protect employees from the hazardous atmosphere before any subsequent entry.

(f) The entry supervisor will verify that the space is safe for entry and that all of the above requirements have been met. Such verification will be in writing to include the date, locations of the space, and the signature of the person providing the certification, and shall be made available to each employee before entry.

11 PERMIT SPACE RECLASSIFICATION

A permit space may be reclassified as a non-permit space:

(a) If there are no actual or potential atmospheric hazards and if all hazards within the permit space are eliminated without entry, space may be reclassified for as long as the non-atmospheric hazards remain eliminated.

(b) Hazards may be eliminated by such actions as purging or inerting tank/vessels of contaminants, emptying material from hoppers/bins, use of campus lockout/tagout procedures for electrical or mechanical hazards. The control of atmospheric hazards through forced air ventilation does not constitute elimination of that hazard (it only controls the hazard; the preceding Alternate Entry Procedures must be used in such cases).

(c) If entry is required to eliminate hazards, it shall be according to regulations and the space may be reclassified for as long as the hazards remain eliminated.

(d) Entry supervisors will certify in writing that all hazards in permit space have been eliminated and make this document available to each entrant.

(e) If hazards arise in declassified permit space, employee (s) shall exit and the employer shall determine whether to reclassify the space.

NOTE: *A combination of reclassification procedures and alternate entry procedures (e.g. using lockout/tagout to eliminate a physical hazard, the continuous forced air to control an atmospheric hazard)* ***may not*** *be used together. Situations as such must be entered under the permit program.*

12. WRITTEN PERMIT

The following information must be included in the written permit. The permit must be a use a standardized format for each entry.

1) The permit space to be entered.

2) The purpose of the entry.

3) The date and the authorized duration of the entry permit.

4) The authorized entrants within the permit space, by name or by such other means.

5) The personnel, by name, currently serving as attendants.

6) The individual, by name currently serving as entry supervisor, with the space for signature and initials.

7) The hazards of the permit space to be entered.

8) The measure used to isolate the permit space and to eliminate or control the permit space hazards before entry.

9) The acceptable entry conditions.

10) The results of initial and periodic tests, with the names or initials of the testers and when the tests were done.

11) The rescue and emergency services that can be summoned and the means for summoning them.

12) The communications procedures used by authorized entrants and attendants to maintain contact during the entry.

13) Equipment (such as personal protective equipment, testing, communications, alarm

system, and rescue equipment) to be provided for compliance with this section.

14) Any other information whose inclusion is necessary in order to ensure employee safety.

13.0 RECORDKEEPING

The Director of EH&S&S will keep on file for at least one year, copies of:

1. All entry permits;

2. Training of authorized entrants, attendants, supervisors, and;

3. Any documentation of non-compliance with permit and other health and safety issues in order to facilitate the review of the confined space program. Copies of all training documentation must be forwarded to the Environmental Health & Safety & Sustainability Office.

In addition, documentation of all environmental and atmospheric testing as applicable to the confined space entry permit system is also maintained as part of this program.

Appendix A

Confined Space Inventory

RECLASSIFICATION POSSIBLE
PERMIT REQUIRED CONFINED SPACES

1910.146 (7) states that a space classified as a permit-required confined space may be re-classified as a non-permit required confined space under the following procedures:

(i) 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.
(ii) SUNY Fredonia's procedure for re-classification is followed.

IF THE ABOVE CONDITIONS CANNOT BE MET – THESE SPACES WILL REMAIN PERMIT-REQUIRED CONFINED SPACES WITH *ENTRY RESCUE REQUIRED*

ELEVATOR PITS:

Carnahan Jackson Center – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Carnahan Jackson Center – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Chautauqua – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Eisenhower – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Erie – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Fenton – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Grissom – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Hemingway – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Houghton – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Igoe – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Jewett – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Mason – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Maytum – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Maytum – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

McEwen – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Nixon – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Rockefeller – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Rockefeller – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Rockefeller – Elevator Pit (Stage)
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Rockefeller – Elevator Pit (Stage)
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Science Center 1 – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Science Center 2 - Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Steele – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Thompson – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Thompson – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

University Commons 1 – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

University Commons 2 – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

University Commons 3 – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Village Center – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Williams Center – Elevator Pit
Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

Williams Center – Elevator Pit

Elevator pits may be entered to perform repairs. Entry rescue required due to inability to use non-entry rescue through entry opening.

PERMIT –REQUIRED CONFINED SPACES

ENTRY RESCUE REQUIRED UNDER ALL CIRCUMSTANCES
[Fredonia employees never enter these spaces.]

CRAWL SPACES:

Andrew's Complex – Ceiling Crawl Spaces
The ceiling spaces are self-contained with no ventilation and contain sewer and water lines and water pumps. Non-entry rescue would be impossible and entry rescue would be extremely difficult. Entry in these spaces is to be evaluated on a case by case basis with the understanding that if rescue cannot be accomplished, the space cannot be entered.

Gregory – Abandoned Crawl Space
This crawl space is abandoned and the door is severely rusted. Piping in the crawl space is also rusting leading to a potential oxygen deficiency. Entry rescue would be required due to piping obstructions.

Igoe – Crawl Space (abandoned conveyor)
Sewer gases may be emitted from the drains in the area. Complaints of sewer gas odor from staff working in photo lab. Detected methane during survey. The crawlspace is accessed through a half-door under table. These were piping obstructions to make non-entry rescue difficult. Entry rescue is required.

Igoe – Crawl Space (abandoned conveyor)
Sewer gases may be emitted from the drains in the area. Complaints of sewer gas odor from staff working in photo lab. Detected methane during survey. The crawlspace is accessed through a half-door under table. These were piping obstructions to make non-entry rescue difficult. Entry rescue is required.

Igoe – Crawl Space (abandoned conveyor)
Sewer gases may be emitted from the drains in the area. Complaints of sewer gas odor from staff working in photo lab. Detected methane during survey. The crawlspace is accessed through a half-door under table. These were piping obstructions to make non-entry rescue difficult. Entry rescue is required.

Igoe – Crawl Space (abandoned conveyor)
Sewer gases may be emitted from the drains in the area. Complaints of sewer gas odor from staff working in photo lab. Detected methane during survey. The crawlspace is accessed through a half-door under table. These were piping obstructions to make non-entry rescue difficult. Entry rescue is required.

Mason – Pipe Chase
Entry to this pipe chase is through a full-size door on the 2nd floor. The flooring in the pipe chase consists of 2X boards laid on the building frame. Entry rescue would be required.

PERMIT-REQUIRED CONFINED SPACES

NON-ENTRY RESCUE POSSIBLE
BUT
ONLY UNDER CONDITIONS IDENTIFIED

(Entry under conditions not listed below would require entry rescue)
[Fredonia employees never enter these spaces.]

SIGNAL AND POWER MANHOLES:

Alumni – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Alumni – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Alumni – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Alumni – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Alumni – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Alumni – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Andrew's Complex – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Andrew's Complex – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Andrew's Complex Parking – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Andrew's Complex Parking – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Baseball Field – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Baseball Field – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Field – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Heating Plant – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Heating Plant – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Heating Plant – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Central Heating Plant – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Chautauqua – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Chautauqua – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Cranston – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Cranston – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Cranston – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Cranston – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Dods – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Dods – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Dods - Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Dods – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Eisenhower – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Eisenhower – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Fieldhouse – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Fieldhouse – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Fine Art Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Fine Art Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Gregory – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Houghton – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Houghton – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Jewett – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Jewett – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Jewett – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Jewett – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Lake Way Drive – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Lake Way Drive – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Mason – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Mason – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Mason – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Mason – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Maytum – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Maytum – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

McGinnies – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

McGinnies – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Nixon – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Nixon – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Reed – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Reed – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Reed – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Reed – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Ring Road – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Ring Road – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Rockefeller Arts Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Rockefeller Arts Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Rockefeller Arts Center – Signal Manhole
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Rockefeller Arts Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Rockefeller Arts Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Rockefeller Arts Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Power Manhole

Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Science Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Substation – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Thompson – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Thompson – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Track – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Track – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village - Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

University Village – Power Manhole

Williams Center – Signal Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

Williams Center – Power Manhole
Manholes entered to perform maintenance and utility work for signal systems. Non-entry rescue is possible by the manhole, but entry away from the manhole will require entry rescue.

PERMIT-REQUIRED CONFINED SPACES

NON-ENTRY RESCUE REQUIRED
[Fredonia employees never enter these spaces.]

LoGrasso – Water Meter Pit
Pit is entered in order to read water meter. There were no visible obstructions, thus non-entry rescue can be performed.

Soccer Field – Sprinkler Pit
The top of the sprinkler pit can be opened to make an open ended pit. The pit is entered to operate sprinklers. There were no visible obstructions to prevent non-entry rescue.

Track – Sprinkler Pit
The top of the sprinkler pit can be opened to make an open ended pit. The pit is entered to operate sprinklers. There were no visible obstructions to prevent non-entry rescue.

Various – Storm water Manhole
Unknown if entry is performed. There were no visible obstructions, thus non-entry rescue can be performed.

Various – Sanitary Sewer Manhole
Unknown if entry is performed. There were no visible obstructions, thus non-entry rescue can be performed.

NON-PERMIT REQUIRED CONFINED SPACES UNDER GIVEN CONDITIONS

(PERMIT REQUIRED IF WORK ACTIVITIES CREATE A HAZARD IN THESE SPACES – (i.e. – welding/cutting, flammable liquid use, excessive dust, energized parts/systems, high temperature, etc.)

Andrews Complex – High-Temp Water Service Pit
No standing water observed. The pit drain cover is cleaned and piping repairs are performed as required. It is a confined space, but is not permit-required for standard entry operations.

Gregory – Abandoned Steam Tunnel
Height of tunnel is approximately 4 feet; has limited means of egress. It has the same ventilation as the rest of the crawl space. It is not a permit-required confined space.

Jewett Hall – High-Temp Water Service Pit
No standing water observed. The pit drain cover is cleaned and piping repairs are performed as required. It is a confined space, but is not permit-required for standard entry operations.

Maytum/Reed – Tunnel
Utilities are contained in piping with low likelihood of failure, there are no visible hazards, and there is airflow through the tunnel from the Reed basement.

Various Buildings (except Gregory) – Crawl Spaces
Crawl spaces are ventilated and utilities are contained in piping with low likelihood of failure. There were no visible hazards present.

Various Buildings (except Mason) – Pipe Chases
Ventilation was detected flowing from pipe chases. There were no visible hazards present.

NOT CONFINED SPACES PER FEDERAL REGULATIONS

Mason – Attic
The attic is designed for human occupancy and does not meet OSHA's definition of a confined space.

Thompson – Crawl Space/Basement
This is a basement, not a crawl space, and does not meet OSHA's definition of a confined space.

Various Buildings (e.g., Thompson Hall) – Air Intakes
The air intakes are accessible through standard doors and there are no obstructions to egress. They are open to the outside and wind flow was felt while standing in the intakes. These are intakes do not meet OSHA's definition of a confined space.

Various Buildings (e.g., Thompson Hall) – Air Ductwork
The ductwork is accessible through a normal size door and there are no obstructions to egress. There are no visible hazards, and fresh air is flowing in from outside. These air intakes do not meet OSHA's definition of a confined space.

Various Buildings – Fan Rooms
These rooms are designed for human occupancy and do not meet OSHA's definition of a confined space.

PERMIT-REQUIRED CONFINED SPACES NOT ENTERED

IF THESE SPACES ARE ENTERED AT A FUTURE DATE THE WILL BECOME ENTRY RESCUE, PERMIT REQUIRED CONFINED SPACES.

SANITARY AND STORM SUMPS:

Alumni – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Butler – Sewer Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Disney – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Disney – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Dods – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Fenton – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Grissom – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Grissom – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Hendrix – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Hendrix – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Houghton – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Houghton – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Igoe – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Igoe– Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Jewett – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Mason – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Mason – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Mason – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Mason Recital – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Mason Recital – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Mason Recital – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Mason Recital – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Maytum – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

McEwen – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

McEwen – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

McGinnies – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Nixon – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Nixon – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Rockefeller - Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Rockefeller - Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Rockefeller – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Rockefeller – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Rockefeller – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Schulz – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Schulz – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Thompson – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Thompson – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Thompson – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Thompson – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Williams Center – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Williams Center – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

Williams Center – Sanitary Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for sewer gas and low oxygen levels. Pumps are unplugged from outside the space.

Williams Center – Storm Sump
Pumps can be pulled without entering sump, thus sumps are not entered. Non-entry rescue would be possible. Potential for storm water contaminants and low oxygen levels (low risk). Pumps are unplugged from outside the space.

CRAWL SPACES:

Andrew's Complex – Ceiling Crawl Spaces
The ceiling spaces are self-contained with no ventilation and contain sewer and water lines and water pumps. Non-entry rescue would be impossible and entry rescue would be extremely difficult.

Dods – Crawl Space (Abandoned Pool)
The pool was covered over by a floor making an air-tight crawl space. There is no perceived need for entry, but if entry occurs, there is a potential that extended work will reduce the oxygen content.

Appendix B

Blank Confined Space Survey

Form

FREDONIA
STATE UNIVERSITY OF NEW YORK

CONFINED SPACE EVALUATION

Building: _____

Locations within the building: _____

Location Name: _____

Evaluation Date: _____

Evaluated By: _____ Title: _____

1. Is this a confined space as defined by 1910.146 (b): _____

Confined space means a space that:

Is large enough that an employee can bodily enter and perform assigned work **AND**	
Has limited or restricted means of entry or exit **AND**	
Is not designed for continuous employee occupancy	

2. This space contains or has the potential to contain a hazardous atmosphere as defined in 1901.146(b): _____

Hazardous atmosphere means 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:

Flammable gas, vapor, or mist in excess of 10% of its lower flammable limit.	
Airborne combustible dust at a concentration that meets or exceeds its LFL.	
Atmospheric oxygen concentration below 19.5% or above 23.5%	
Atmospheric concentration of any substance for which a dose or PEL is published and which could result in employee exposure in excess of its published dose or PEL.	
Any other atmospheric condition that is immediately dangerous to life or health.	

3. Is this space a Permit-Required Confined Space as defined by 1910.146(b): _____

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

Contains or has the 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 which slopes downward and tapers to a smaller cross-section	
Contains any other recognized serious safety or health hazard. (List work to be done in this space such as welding, cutting, soldering or other hot work, etc.)	

Appendix C

Blank Confined

Space Entry Permit

FREDONIA
STATE UNIVERSITY OF NEW YORK

CONFINED SPACE ENTRY PERMIT

LOCATION: _____ DATE: _____

Description of confined Space: _____ TIME: _____

Purpose of Entry: _____ EXPIRATION: _____

Person in Charge of Work: _____

Authorized Entrant (s): _____

Attendant: _____ Backup Person: _____

Successfully Completed Training	Yes No (Circle One)	Yes No (Circle One)
Successfully Completed First Aid	Yes No (Circle One)	Yes No (Circle One)

SPECIAL REQUIREMENTS

	YES	NO
Lockout De-Energize		
Lines Broken – Capped or blanked		
Ventilation		

HAZARDOUS WORK

	YES	NO
Burning		
Welding		
Brazing		

Purge – Flush & Vent			Open Flames		
Secure Area			Non Sparking Tools		
			Burning/Welding Permit		
			Other		

HAZARDS EXPECTED

	YES	NO		YES	NO
Corrosive Material			Cleaning (Ex: Chemical or water lance)		
Hot Equipment			Non-Spark Producing Operations		
Flammable Materials			Spilled Liquids		
Toxic Materials			Pressure Systems		
Drains Open			Other		

VESSEL CLEANED

Deposits _____
Method _____
Inspection _____
Neutralized With _____

Fire Safety Precautions:
_____
_____
_____

PERMIT VALID FOR 8 HOURS ONLY. ALL COPIES WILL REMAIN AT JOBSITE UNTIL JOB IS COMPLETED.

PERSONAL SAFETY

	YES	NO		YES	NO
Respirators			Lighting (Explosive Proof)		
Protective Clothing			Communications		
Head, Hand, & Foot Protection			Buddy System		
Shields			Standby Person		
Lifelines			Emergency Egress Procedures		
Full Body Harness			Emergency Escape Retrieval Equipment		
Fire Extinguishers					

TEST(S) TO BE TAKEN

	Permissible	Reading and Time

	Entry Level							
% of Oxygen	19.5% to 23.5%							
Carbon Monoxide	+35 PPM							
Hydrogen Sulfide	+10 PPM * 15 PPM							
Sulfur Dioxide	+ 2 PPM * 5 PPM							
Ammonia	* 35 PPM							
Hydrogen Cyanide	(Skin) * 4 PPM							
Lower Flammable Limit	Under 10 %							

*** Short-term exposure limit: Employee can work in the area up to 15 minutes.**
\+ 8 hr. Time Weighted Avg.: Employee can work in area 8 hrs (longer with appropriate respiratory protection).

Note: Continuous/periodic tests shall be established before beginning job.
Any questions pertaining to test requirements contact Safety Office or the Industrial Hygienist.

INSTRUMENTS USED: _____ CALIBRATION DATE: _____

Communication Style: (Verbal, Radio, Tapping, or etc.)

Remarks: _____

Test Performed By: _____
SIGNATURE

AUTHORIZATIONS:

Entry Supervisor: _____

Entry and Emergency Procedures Understood:

Attendant _____
Rescue _____
Telephone_____

Original to Entry Supervisor
Retain for 1 year

Appendix D

Outside Contractor Protocol & Space

Entry/Debriefing Form

FREDONIA
STATE UNIVERSITY OF NEW YORK

CONTRACTOR ENTRY/EXIT DEBRIEFING FORM

Please print clearly

Part A: Complete and return to SUNY Fredonia personnel PRIOR to beginning confined space work.

Contractor Company Name: _____

Address:_____

_____

Phone Number: _____

Name of Contractor Employee completing this form: _____

Permit space entered: _____ Date(s) of entry:_____

SECTION 1: ENTRY REQUIREMENTS (Place a check after each item completed. All items must be checked prior to entry into the permit space.)

You and your employees have been informed that the area you are working in contains confined spaces and you have received a copy of Fredonia's confined space inventory	
You nor your employees will enter a permit confined space on campus without following a confined space entry program that is compliant with all applicable sections of 29 CFR 1910.146	
You, as the contractor, are responsible for administering your own permit space entry programs for your employees entering permit spaces at Fredonia	
SUNY Fredonia personnel have apprised you and your employees of the elements, including	

hazards identified and the campus experience with the space	
SUNY Fredonia personnel have apprised you and your employees of any precautions or procedures used by campus personnel for the protection of campus employees in or near permit spaces where work is being performed	

SECTION 2: SIMULTANEOUS ENTRY REQUIREMENTS

Will you be simultaneously entering the permits pace with SUNY Fredonia Personnel? YES / NO

If yes, have you coordinated entry operations with SUNY Fredonia supervisory personnel? YES / NO

SIGNATURE: _____ DATE:_____

Part B: Debriefing after permit entry is completed. Complete and return to SUNY Fredonia personnel after confined entry work is completed.

List any hazards discovered while in the permit space:

List any hazards created while in the permit space:

Signature of individual completing this form: _____

Date:_____

Give the completed form to SUNY Fredonia
Facilities Services for filing with completed
confined space entry permits

Appendix E

Blank Confined Space Reclassification

Form

FREDONIA
STATE UNIVERSITY OF NEW YORK

1. Give a copy of this completed form to all employees entering the space defined below.
2. Give the completed original form to your supervisor for filing with completed confined space entry permits.

PERMIT SPACE RECLASSIFICATION FORM

PERMIT SPACE LOCATION: _____

PURPOSE OF ENTRY: _____

ENTRY DATE: _____ TIME OF ENTRY: _____

NAME OF PERSON MAKING THIS DETERMINATION: _____

Place your initials after each item below certifying that the criteria has been met. If all criteria can be met then the space may be reclassified as non-permit required during the period of entry stated above. (NOTE: Even though the space has been reclassified an attendant shall be at the space monitoring the entrant and space conditions at all times)

CONDITION	INITIALS
The permit space poses no actual or potential atmospheric hazards.	
All non-atmospheric hazards can be eliminated during entry into the space.	
Entrants, attendants, and entry supervisors have been trained.	

What tasks are to be performed during the entry operation?

_____

_____

List the hazards that were present in the space and eliminated:

_____
_____
_____
_____

List the controls used to eliminate the hazards:

_____
_____
_____
_____

Signature: _____ Date:_____

Appendix F

Blank Confined Space Alternate Entry Form

FREDONIA
STATE UNIVERSITY OF NEW YORK

ALTERNATE ENTRY PROCEDURE FORM

Permit Space Location: _____ Date: _____

List the size (volume) and configuration of the space:

_____

_____

What tasks are to be performed during entry:

_____

_____

Have entrants, attendants, and entry supervisors been trained? ☐ Yes ☐ No
(**If no, entry is prohibited**)

Is atmospheric testing equipment calibrated? ☐ Yes ☐ No
Date of calibration: _____

Is a hazardous atmosphere the only hazard of concern? ☐ Yes ☐ No
If no, alternate procedures **cannot** be used.

Is continuous forced air ventilation provided? ☐ Yes ☐ No
If no, explain why: _____
If yes, explain capacity (in cfm) air exchange rate: _____

State the minimum ventilation duration prior to allow entry (in minutes): _____

Note: Refer to information on ventilation systems and appropriate calculations. Conduct pre-entry atmospheric testing and continue to ventilate the space during the entry operation.

ATMOSPHERIC TEST RECORD

SUBSTANCE	ACCEPTABLE LEVEL	READINGS	DATE/TIME
Oxygen	19.5% - 23.5%		
Explosive (gas/vapor)	<10% LFL		
Explosive Dust	<LFL (5ft visibility)		
Carbon Monoxide	50ppm		
Hydrogen Sulfide	10ppm		
Name:		Signature:	

Name of person completing this form: _____ Signature: _____

Appendix G

Personal Protective

Equipment

PERSONAL PROTECTIVE EQUIPMENT

The selection of proper protective clothing is very important for work in confined Spaces. Proper selection and use of protective clothing will help prevent injuries and illnesses. This selection process should bring together many factors - the type of work, chemicals involved, physical hazards, size of opening to the confined space, size of the workers and quality of the personal protective equipment itself.
The following discusses categories of personal protective equipment (PPE) that may be needed for confined space entry work. The Supervisor in charge of filling out the permit should consider all of the above factors to determine the most appropriate PPE for each confined space.

1. Eye Protection:

In confined space work, the eyes are exposed to a variety of hazards such as dust, flying objects, splashing of corrosive liquids, welding sparks, arcs and harmful radiation. OSHA requires that eye and face protection be designed to meet the performance requirements set forth in American National Standards Institute (ANSI) Z87.1, Practice for Occupational and Educational Eye and Face Protection. Eye protection should be chosen to protect the worker during specific job tasks. Welders should have protective hoods with tinted lenses to prevent arc burns. Splash goggles should be worn when the danger of splash exists.

2. Hearing Protection:

Working at noise levels above 85 decibels can cause hearing loss. Hearing protection must reduce the decibels down to safe levels. There are three (3) basic types of hearing protection:

a. Disposable, pliable material such as foam plugs.
b. Ear plugs which are specifically designed for the wearer.
c. Cup-type ear protectors that are worn with a band over the head, or are attached directly to a hard hat. Contractor personnel must provide their employees with appropriate hearing

protection devices in accordance with their Program. Levels of noise should be evaluated at commencement of activities.

3. Body Protection:

Protective clothing must be selected to provide both chemical protection and physical hazard protection. Suits must be selected using compatibility charts to ensure adequate chemical protection. Durability and dexterity must also be considered to ensure that the worker can perform the job task safely. The Department Supervisor will review environmental conditions and determine the appropriate level of protective equipment and clothing. Attendants and other personnel indirectly involved with the confined space entry (not directly involved with entry operations) must also wear personal protective equipment such as boots, long sleeved shirts) work pants, eyewear, hard hats, etc.

Note: Protective clothing and equipment may be more susceptible to flame, sparks or heat and its use in potentially explosive or explosive atmospheres should be evaluated thoroughly. During welding activities, caution should be exercised to prevent bodily harm. Boots worn beneath protective clothing must meet minimum ANSI guidelines.

4. Respiratory Protection:

NOTE: SUNY Fredonia personnel cannot enter a confined space that requires respiratory protection or contains a hazardous condition as determined by testing without compliance with 29 CFR 1910.134 (Respiratory Protection).

Personnel donning any form of respiratory protection must be deemed medically and physically fit and capable of wearing respiratory protection.
The level of respiratory protection must be based on levels of contaminants such as, but not limited to, VOCs and oxygen levels. In addition, the level of respiratory protection for inspection activities must also be evaluated prior to entry. To ensure that any mechanical ventilation of the space used is suitable, environmental conditions must be evaluated prior to entry to determine the appropriate level of respiratory protection.

Note: Filter-type (air-purifying) respirators are of no value in an oxygen-deficient atmosphere. National Institute for Occupational Safety and Health (NIOSH) approved self-contained oxygen or air-supplied respiratory equipment is required in oxygen-deficient atmospheres. Respiratory protection must be thoroughly evaluated and inspected for proper operating conditions prior to donning and tank/confined space entry. Negative-pressure respiratory protection is only utilized when and where appropriate as determined by environmental monitoring. Cartridges for use with negative-pressure, air-purifying respiratory protection are selected based upon the contaminant present in the space.

5. Lifelines and Harness:

There are three (3) types of lifeline/harness assemblies that can be used to assist with rescue/retrieval of injured employees. These include:

a. Full-body harness - This is the most preferable device to use. This system lifts from the center of the harness so the possibility of injury is minimized. Additionally, this device will help maintain the victim in an upright position. Activities involved with tank entry must be performed utilizing a full-body harness and lifelines. Means of retrieval must be performed utilizing mechanical systems attached to either a beam above the tank or the floor.

b. Wristlets - This device is used when the space has a narrow opening. The victim is lifted by the wrists so that the shoulders pass through the opening without getting stuck. This device is often used in combination with a full-body harness so that injuries to the arms, back and neck can be avoided.

c. Safety belt with D rings - This device is not the first choice. This device pulls from the waist and there is no control over the arms or legs. The victim is subject to back injuries when pulled while wearing this device.

This device will not be available for use at SUNY Fredonia.

NOTE: Under the OSHA confined space standard, each person entering a hazardous atmosphere within a permit-required confined space must have a lifeline. This lifeline must be attached to a harness assembly, which will allow the attendant to quickly remove entry personnel from the space. The attendant is also responsible for keeping the lines from tangling and keeping close communications with the entry personnel. Some type of retrieval device, such as a winch or tripod pulley, must be available to assist the attendant in lifting or pulling workers out of the space.

6. Buddy System:

At SUNY Fredonia, the buddy system is a standard safety practice that must be followed while working in a confined space. This does not necessarily mean there must be at least two people inside the confined space. If only one person is necessary, the entry person should consider the attendant as his/her buddy.

7. Communication:

A system of communication between the entry personnel and the attendant must be established. Verbal and/or visual communication must be maintained at all times. A warning alarm signaling hazardous conditions must be implemented in order to let entry personnel know to leave the confined space immediately. A communication system must be established between the attendant and the contact for a rescue team.

Appendix H

Confined Space

Work Practices and Procedures

CONFINED SPACE WORK PRACTICES AND PROCEDURES

Before work can take place within a confined space, preliminary procedures must take Place:

I. Permitting

Entry into a permit-required confined Space is only performed once a permit has been Completed. Appendix C contains the "Permit Form" which must be filled out and signed every time a permit-required confined SUNY Fredonia personnel enter space. The permit is an authorized approval specifying the location of the confined space, the type of work to be done, and that a qualified person has evaluated the atmosphere and hazards.
Only the Entry Supervisor can issue the permit. The permit reviews that the following items have been completed:

1. Location and description of the work to be done.

2. Hazards that may be encountered.

3. Isolation procedures have been accomplished including:

    a. Blanking and/or disconnecting of piping
    b. Electrical Lockout and Tagout
    c. Mechanical Lockout and Tagout

4. Clothing and equipment has been selected and is compatible with the hazardous atmospheres within the space. This selection should include consideration of the following types of equipment to used:

   a. Personal protective equipment
   b. Safety harness and lines
   c. Tools
   d. Approved electrical equipment

5. Atmospheric test readings have been taken including:
   a. Oxygen levels
   b. Flammability and/or explosive levels
   c. Toxic substance levels

6. Continuous monitoring while work is being performed.

7. All personnel involved with the work in the confined space have been properly trained.

8. All personnel understand the hazards involved with the work.

9. Attendant(s) is specifically named on the permit.

10. Written Emergency Procedures and locations of First Aid and rescue equipment have been prepared

11. Procedures to provide pedestrian, vehicle, or other barriers necessary to protect authorized entrants and to prevent unauthorized entry have been conducted.

The confined space permit must be dated and will be valid for one work shift only. Work that requires more than one shift to complete must receive an authorized permit for each shift.

At completion of work, the permit must be cancelled by the Entry Supervisor and filed with the Department Supervisor.

The permit must be posted close to the entrance in plain view and a copy must be filed with the Department Supervisor. In addition as stated previously in this document, the space must be posted with a sign indicating that it is a permit-required confined space and only authorized employees are allowed to enter.

II. Review of Hazards

All personnel involved with confined space entry work must review existing and expected hazards before work begins. All hazards must be reviewed and the measures used to control these hazards must be explained. This discussion should include any additional site-specific information and designated job duties such as:

1. Entry Team
2. Attendant
3. Supervisor
4. EH&S&S Director and Department Director (if applicable)

III. Isolation Procedures

The confined space must be completely isolated from all other systems and equipment before entry is to be performed. Measures must be taken to prevent the entry of hazardous substances via pipe lines. The method used must prevent the entry of solid, liquids or vapors. There are three (3) common methods of isolation.

1. The first method involves the disconnecting and removal of pipefittings closest to the confined space. The end of the pipeline is capped and misaligned, if possible. The pipe leading into the confined space should be drained and blanked (capped). Both procedures prevent product from coming in contact with workers inside and outside the space.

2. The second method of isolation involves inserting a full-pressure blank between flanges leading to the confined space. Again, the piping from the blanked flange to the space must be drained.

3. The third method of disconnecting is Lockout/Tagout. Stored energy, whether it is in electrical or mechanical form, can be very dangerous within a confined space. Some spaces move as a whole and some having moving parts within them. Lockout procedures must be in effect if work is to be done in this type of space.

Note: Any company or employee who performs servicing and maintenance of machines and equipment must comply with OSHA standard 29 CFR 1910.147, "The control of hazardous energy" (Lockout/Tagout).

IV. Cleaning and Purging Techniques

When isolation and Lockout/Tagout procedures have been completed, the confined space may require cleaning and purging. Many factors affect the efficiency of the cleaning process:

1. The contents of the confined space;
2. Decomposition products or chemical reactions that may change the atmosphere;
3. Scale or sludge that has built-up on the walls and floor;
4. The configuration of the space, such as baffles or sumps; or,
5. The size and location of manholes, doorways, vents.

Due to the variety of confined spaces at SUNY Fredonia, specific cleaning and purging techniques will be discussed during the meeting prior to commencement of activities.

V. Ventilation Techniques

There are two (2) ways to ventilate a confined space - natural ventilation and mechanical ventilation.

1. Natural Ventilation consists of opening doors, hatches, manways, and side covers to allow the natural air currents to ventilate the confined space. The exchange of gases and vapors is unpredictable and the direction of these escaping vapors may cause hazardous atmospheres in the adjacent work areas. This method is not recommended as there may be limited access or incomplete distribution of air. However, if the sole atmospheric danger is a low oxygen content, natural ventilation may be effective. Proper oxygen monitoring must be performed to establish the effectiveness of natural ventilation.

2. Mechanical Ventilation is accomplished by directing a flow of air into the space by the use of a blower unit and hosing. All mechanical/electrical equipment used for ventilation should be grounded and, in the case of explosive or combustible atmospheres, should be explosion-proof (intrinsically safe). The following precautions are recommended:

   a. Exhausted air must be directed to an area where it can be dispersed without causing harm to other employees or work processes.

   b. The mechanical exhaust system should be kept in operation during the entire work period to ensure that the air in the space remains safe.

   c. Ventilation must maintain the lower explosive limit (LEL) below 10%, the oxygen above 19.5% and the contaminants below Permissible Exposure Limits (PEL). If the oxygen and other levels cannot be maintained, no entry must be made. If, at any time, during entry, the LELs rise higher than 10%, and/or the oxygen levels go below 19.5% or above 23.5%, and/or the PEL of any contaminant is reached, all entrants will leave the space immediately. At this time, a more effective ventilation method must be addressed.

   d. The space shall be adequately purged or ventilated for a minimum of 15 minutes. If conditions warrant, deviations from this procedure require approval by the Department Supervisor.

   e. If the conditions warrant, the space should be continuously ventilated while work is being performed.

   f. These ventilation requirements shall apply to all permit required confined spaces.

VI. Testing

The following testing procedures shall apply to all permit required confined spaces:

1. Confined spaces which have been identified to have the potential to contain an atmosphere that is immediately dangerous to life or health (IDLH) require that continuous monitoring of 0_2 levels, explosive gas levels and toxic substances levels is performed.

2. All tests must be conducted by a qualified person and recorded in a log. In addition, all instruments must be calibrated in accordance with the manufacturer's guidelines.

3. Equipment used for continuous monitoring of gases and vapors must be direct reading instruments with audible alarms to warn of hazardous constituents or atmospheres.

4. When tests indicate the concentration of explosive gases is 10% or greater, no entry is permitted.

5. Hot Work is only permitted in the confined space when explosive gas levels do not exceed 8%. When tests indicate levels of toxic contaminants are above Permissible Exposure Limits (PELs), respiratory protection is required. See additional requirements in Section IX below.

6. Entry should not be made to a confined space with oxygen readings below 19.5%.

7. Entry should not be made to a confined space with oxygen readings above 23.5% unless ventilation techniques can be used to reduce oxygen levels to approximately 21%.

8. Employees must ensure that the monitor is in good working order before a test is made. The calibration kit shall be used in testing the instrument at least monthly or according to manufacturer guidelines if they are more restrictive

9. The monitor should remain in the test mode as long as the entrant is in the hole. The long distance probe should be used in the high temperature water holes or any other confined space that has an elevated temperature atmosphere.

10. Any permit space requiring work before entry, (i.e. purging, heat dissipation, or water removal shall be tested initially for combustible and toxic gases and to determine oxygen level and tested again prior to entry.

11. Considerations for manholes:

    a. Every time a manhole is opened it shall be tested to determine whether combustible gas or toxic gases are present and to determine the oxygen level.

VI. Tools and Equipment

The type of tools to be used within the confined space will depend on the type of work, which

needs to be accomplished. Air-operated pneumatic tools are preferable over electrically driven tools because they are less likely to ignite an explosive atmosphere. When the use of portable electrical tools in unavoidable, they must be used with ground-fault circuit interrupters and be fully grounded.
Temporary lights should be explosion-proof and have guards to prevent contact with bulbs. Equipment must be suitable for use with the products in the space. For example, very acidic or alkaline solutions may oxidize and corrode metal tools. Safety Data Sheets should state what the chemical will react with.

VIII. Other Precautions

1. When necessary for the protection of entrants, permit spaces shall be protected with applicable guards such as manhole guards and warning devices for pedestrians and vehicles. Guards shall be set up at permit spaces before the space is opened for entry.

2. Never enter a permit required confined space until it has been tested.

3. Where there is a tent placed over a manhole opening because of inclement weather, roll or tie up the skirts of the tent before the initial purging of the manhole. Provide an open area around the bottom of the tent roughly the same size or larger than the area of the manhole opening for circulation and dissipation of possible gas accumulation. After the initial purging of the manhole, the tent skirts can be lowered but should be arranged to permit unrestricted circulation from the tent.

4. A hot work permit must be obtained if hot work is to be performed in permit required confined space. All SUNY Fredonia hot work procedures must be followed. No ignition source shall be brought near a confined space or taken into the space.

IX. HOT WORK IN CONFINED SPACES

Hot work procedures must be followed along with permit space entry procedures when operations may cause a source of ignition to a material or substance or create a work induced hazard by ignition within ALL confined spaces.

Additional requirements list below shall also be followed:

1. A pre-entry briefing will be held by the Entry Supervisor.
2. Pre-entry atmospheric testing must be conducted. If the LEL is greater than 8% hot work must not be conducted until the level can be lowered to 8% or less.
3. Ventilation is required. Fans/ventilators shall be used at the point of entrance of the confined space, and adjacent to the work area. If the exhaust is not through alternate access, necessary precautions will be taken so the exhaust is not affecting another work party that may be in the area.
4. If adequate mechanical ventilation cannot be provided, the space shall not be entered.

Appendix I

Non-Entry Rescue Procedures

Non-Entry Rescue Procedures·

The configuration of the confined space will dictate specific rescue procedures to be followed in case of an emergency. SUNY Fredonia does not have an in-house rescue team, however, there are a few rules that should be followed in an emergency.

During the safety discussion prior to commencement of the confined space entry, rescue procedures and locations of retrieval devices must be selected. The following are basic rescue procedures that shall be followed in the event that a rescue from a confined space is necessary.

1. The attendant must not enter the confined space for the purpose of rescuing entry personnel.

2. The attendant will notify the employer that a rescue team is needed without leaving the work area.

3. The attendant will attempt to retrieve personnel with the safety equipment

provided, such as, hoists or a block-and-tackle device for lifelines.

4. If the attendant is successful in retrieving the entrant from the confined space, he/she shall administer, if necessary, first aid to the best of their ability and capability until rescue personnel arrive.

Note: Under no circumstances are SUNY Fredonia personnel to attempt a rescue by entering a confined space. Such procedures will be provided by outside services.

Appendix J

Training

CONFINED SPACE ENTRANTS, ATTENDANTS, AND ENTRY SUPERVISORS SHALL BE TRAINED IN THE FOLLOWING:

- The general requirements of 29 CFR 1910.146 Permit Required Confined Spaces
- All applicable training requirements listed in 29 CFR 1910.146
- SUNY Fredonia's Employees Handbook for Confined Space Entry, which includes:
    - Location of SUNY Fredonia's written Confined Space Program
    - SUNY Fredonia's confined space inventory
    - Space evaluation requirements
    - Consequences for not following confined space procedures
    - Hazards found in confined spaces
    - Entrant, Attendant, and Entry Supervisor duties
    - Work Practices and Procedures for confined space entry
        - Permitting
        - Communication of Hazards
        - Isolation Procedures
        - Cleaning and Purging
        - Ventilation Techniques

        - Atmospheric Testing
        - Tools and Equipment
        - Other Precautions
        - Hot Work in Confined Spaces
    - Alternate Entry Procedures
    - Reclassification of Permit Space Procedures
    - Non-entry rescue procedures
    - Personal Protective Equipment
    - Contractor Protocol
    - Blank Confined Space Entry Permit
    - Blank Confined Space Survey Form
- Standard First Aid
- Adult CPR
- Non Entry Rescue Hands-On Training

Appendix K

Completed Confined Space Survey Forms

CONFINED SPACE SURVEY

Department: _____ Individual(s) completing survey: _____ Date of survey: _____

Building	Location within building	Location Name	Is this a confined space? *Check the box below if ALL three of the conditions listed in #1 below apply*					Does the space contain or have the potential to contain a hazardous atmosphere, as defined in #2 below? *Check each of the box(es) below that may apply*				**Comments.** *Note whether Fredonia employees, contractors, or both will enter the space. List reason for entry into the space, work that may be conducted in space (e.g. welding or other hot work; use of solvents).*	If it is a permit space, is it posted with a sign?
			Flammable gas, vapor, or mist >10% of its lower flammable limit (LFL)	Airborne combustible dust > its LFL	Oxygen concentration <19.5% or >23.5%	Concentration of any substance which could result in exposure > PEL (or published dose)	Any other atmospheric condition that's immediately dangerous to life or health (IDLH)	Does it contain or have the potential for a hazardous atmosphere?	Does it contain a material (liquid or finely divided solid) with a potential for engulfing the entrant?	Does it have an internal configuration so 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?	Does it contain any other recognized serious safety or health hazard(s) (e.g. mechanical or electrical hazards, high temperature or pressure lines, etc)?		

1. **Confined Space:** a) Is large enough that an employee can bodily enter and perform assigned work; and b) Has limited or restricted means for entry or exit; and c) Is not designed for continuous employee occupancy.
2. **Hazardous Atmosphere:** a concentration of any substance that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to the health effects of the substance.

Appendix L

Program Update and Distribution

CONFINED SPACE PROGRAM DISTRIBUTION LIST

1. Kevin Cloos – Director of Facilities Services
2. Tim Bentham – Assistant Director of Facilities Services
3. Steven Rieks – Director of ITS

UPDATES AND REVISIONS

4/3/06: reviewed
5/06: revised and distributed
6/06: Entry rescue spaces – wording updated. Revised and distributed
1/2019: Heavily revised and distributed

Appendix M

MANHOLE DIAGRAMS


manhole drawings.pdf