

CITY OF ASHEBORO

SAFETY POLICY

MANUAL

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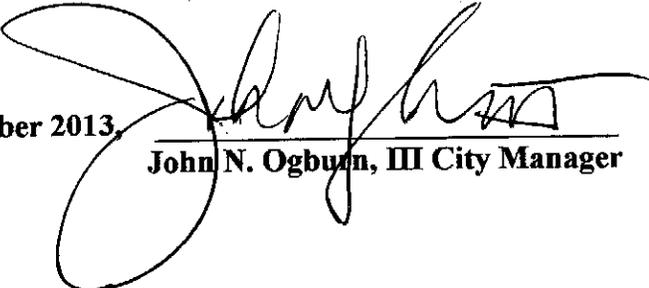

John N. Ogburn, III City Manager

TABLE OF CONTENTS

	<u>Tab #</u>
Section I: General Policy	1
Section II: Safety Rules and Procedures	2
Section III: Respiratory Protection Policy	3
Section IV: Bloodborne Pathogens Policy	4
Section V: Confined Spaces Policy	5
Section VI: Hazard Communication Program	6
Section VII: Lockout/Tagout Program	7
Section VIII: Guidelines For Prescription Safety Glasses	8
Section IX: Procedures for Work Related Accidents and Injuries	9
Section X: Hearing Conservation Program	10
Section XI: Hot Work Policy	11
Section XII Distracted Driving Prevention Policy	12

Section I: General Policy

1.0 STATEMENT OF POLICY

- 1.1 The City Manager considers accident prevention to be one of the prime functions of each and every employee of the City of Asheboro. It is not only the job of the supervisor, but equipment operators, truck drivers, drafters, pipe layers --- every person who works for the City, no matter in what capacity. Each Department Head is responsible for safe working conditions at all his facilities and job sites. The City has designated the Safety Coordinator to assist the department heads in securing an effective program.
- 1.2 The primary reason for an accident prevention program is the human side. It is painful to get hurt. It is no fun being in the hospital or home under a doctor's care while an injury heals. The City needs you here on the job and your family expects you to come home safe and sound every day after work.
- 1.3 Therefore, in recognition of the extreme importance of accident prevention, the basic prevention as outlined in this manual shall be applied throughout the entire City. It shall be the responsibility of each supervisor, not only to inform each of his employees that accident prevention is an essential part of the job, but also to see that the policies of this manual are strictly followed.
- 1.4 This policy is to serve in conjunction with safety policies that are incorporated in the individual departments standard operating procedures.

2.0 DEFINITIONS

The following terms and definitions of terms are applicable to these safety rules.

Approved - Acceptable to management

Authorized Person - One who has the authority to perform specific duties under certain conditions.

Excavations - Any opening such as holes, trenches, ditches or tunnels made in the ground, street or sidewalk in connection with company work.

Manhole - A subsurface enclosure, which personnel may enter. It is used when installing, operating and maintaining underground equipment.

May - Indicates discretionary provisions

Safety Committee - Employee representatives from each division assembled to discuss and review safety practices and procedures.

Shall - Indicates necessary provisions essential for protection of life and property.

Supervisor - Person directly in charge of the work force.

Unsafe Conditions - Dangerous, hazardous, defective, or unusual conditions, which could cause accidents.

Vault - An enclosure above or belowground, which personnel may enter. It is used for installing, operating and maintaining equipment.

Workmen's Compensation Form #19 - A form required under the provisions of the Workers' Compensation Act reporting an employee injury to the North Carolina Industrial Commission.

3.0 RESPONSIBILITIES

3.1 Responsibilities of the Department Heads

- (A) The Department Head must be sincerely interested in safety, express a willingness to cooperate in safety activities and actively support and direct the program. Success in accident prevention requires coordinated cooperative action and the Department Head must take the lead and set the pace. Mere approval is not enough. Without maximum participation by the Department Head, no accident prevention program will ever fill its potential.
- (B) He/She shall inform all levels of supervision that accident prevention is an essential part of their jobs.
- (C) He/She shall make prompt decisions on accident prevention problems referred to him or her by the Safety Coor. and whenever possible, give facts supporting his decision.
- (D) He/She shall support the Safety Committee and support a representative serving on the Safety Committee when asked to serve, and also a committee within the department, to coordinate with the Safety Coor. their safety program.

3.2 Responsibilities of the Safety Coordinator

- (A) Develops and directs a safety program for all City employees, within the requirements of Federal and State Law and City policies to reduce the probability of loss of manhours and materials due to accidents.
- (B) Makes recommendations to management for removal of hazardous conditions, etc., as a result of job site and facility inspections.
- (C) Responsible for handling employees' claims involving Workers' Compensation and maintaining and posting adequate accident records.
- (D) Act in an advisory capacity on all matters pertaining to safety.
- (E) Responsible for all OSHA Recordkeeping

3.3 Responsibilities of the Superintendents and Supervisors

As part of his or her operating duties, the Superintendent is responsible for control of accidents. Accidents result from wrong methods - wrong methods are inefficient methods, and methods are immediately under the control of the Superintendents and Supervisors. They have the following responsibilities:

- (A) Strive for safe working conditions under your control.
- (B) In accidents requiring a doctor's treatment, it shall be the responsibility of the Supervisor of the division involved to make a thorough investigation and complete an accident injury report within 24 hours.
- (C) The supervisor shall evaluate the qualifications of all drivers and operators in their division. No person shall be allowed to operate a vehicle or piece of equipment until they have been instructed in the correct method of operation and has the proper license.
- (D) Special attention shall be given to the newer or less experienced employees to assure that safe working habits are being developed.
- (E) Ensure that upon return to work a person involved in a lost time accident is given clearance by the Human Resources Department.
- (F) Coordinate and cooperate with all persons in Human Resources.
- (G) Supervisors shall ensure that all employees understand the proper method of carrying out any work task instructed to perform. Tailgate sessions before each job are encouraged.

3.4 Responsibilities of the Employee

- (A) It is the responsibility of each employee to follow all safety regulations as set forth, to ensure his or her safety and the safety of others who work with him or her.
- (B) It shall be the responsibility of the employee to report any injury no matter how slight, immediately, to the immediate Supervisor. Failure to report injuries promptly may result in disciplinary action.
- (C) The City shall maintain proper first aid supplies on each vehicle so that minor injuries may be treated on the job site. First aid shall only be administered to another individual by those people who have been properly trained to do so.
- (D) Before an employee may return to work after an absence due to an accident, the supervisor must assure Human Resources has cleared the employee. The City has the right to request a physical examination from the City Nurse and/or a doctor designated by the City at the City's expense in order to ensure that the employee is physically fit to return to work.
- (E) Human Resources will schedule all appointments to medical facilities for work related injuries (the only exception is life-threatening injuries).
- (F) It is the responsibility of each employee to report any unsafe condition to his or her supervisor. If the employee is not satisfied with the response of his/her supervisor, he/she should report the condition to the Safety Coordinator.

3.5 Accident investigation

- (A) Accident investigation shall be performed by the immediate supervisor and/or the Human Resources Department. Human Resources may also involve the city's Accident Investigation Committee. Any accident involving death, permanent disability, temporary disability, hospitalization, medical treatment, loss of work time by city employee, damage to or destruction of any property or injury to a visitor shall be investigated.
- (B) The purpose of accident investigation is to prevent the reoccurrence of accidents by identifying contributing causes, determining corrective measures necessary to eliminate causes, and disseminating information on accident prevention to all employees. Accurate, complete accident reports are essential to identify and remedy causes. Copies of accident investigations shall be forwarded to the Safety Coordinator.
- (C) The accident investigation shall be initiated as soon as possible after the occurrence of the accident.

3.6 Self Inspections

- (A) The purpose of self-inspections is to identify hazardous work conditions and materials or methods that may result in an accident so that these hazards can be corrected. Each activity and facility shall be inspected not less than once every three months. The department head is responsible for preparing an inspection schedule for all activities of his/her department. The department head shall also designate inspectors for their department and have them use a department inspection checklist to record their findings. Upon completion of the inspection the checklist, violations should be transferred to the City's Inspection Report. This Inspection Report will furnish the department head with violations found, recommendations for abatement of violations and abatement dates. The inspectors shall have the department head sign the report and the inspector will maintain a copy. The department head shall take whatever corrective action deemed appropriate to abate the violations. The department head will keep a copy of the report for his/her records and forward the original copy to the Safety Coordinator.

GUIDELINES FOR DETERMINING ABATEMENT DATES IS ON THE FOLLOWING PAGE

GUIDELINES FOR DETERMINING ABATEMENT DATES

- 1- IMMEDIATE HAZARDS - MUST BE CORRECTED WITHIN 8 HOURS.

- 2 MODERATE HAZARDS - MUST BE CORRECTED WITHIN 10 WORKING DAYS.

- 3 - IF PARTS AND/OR EQUIPMENT MUST BE ORDERED - 30 WORKING DAYS.

- 4 - ANY VIOLATION THAT CANNOT BE CORRECTED WITHIN 30 WORKING DAYS MUST BE APPROVED BY THE SAFETY COORDINATOR.

4.0 ORGANIZATION AND FUNCTION OF THE CITY EMPLOYEES SAFETY COMMITTEE

4.1 Membership: (To be rotated on a periodic basis)

- (A) The Human Resources Director, Safety Coordinator, and City Nurse to be permanent members.
- (B) All areas of the City shall be represented. In large departments, there may be two or more representatives.

4.2 Meetings shall be held on a regularly scheduled basis.

4.3 Minutes:

- (A) Minutes of all meetings shall be taken.
- (B) Permanent records of minutes shall be retained by the Safety Coordinator.

4.4 Activities:

- (A) Review accidents and corrective action taken.
- (B) Review inspection reports for recommendations.
- (C) Review accident data.
- (D) Have outside speakers, films, etc.
- (E) Monthly safety inspections and recommendations.

5.0 HOUSEKEEPING

5.1 Good Housekeeping is a must in accident prevention and is directly related to health and sanitation.

5.2 Each employee is responsible for keeping his respective work area in a clean and orderly condition.

5.3 Exits shall be kept unobstructed so personnel may be evacuated from any structure in case of an emergency.

5.4 Tools, air hoses, and materials shall not be left on the floor and must be returned to their proper storage areas. All rags, discarded parts, and cleaning materials shall be kept in a storage receptacle.

5.5 All stairways and halls shall be kept free of storage or miscellaneous materials.

5.6 File cabinets shall be opened one drawer at the time and shall be closed when not in use.

6.0 GENERAL SAFETY

- 6.1 Do not clean or adjust machinery while in motion (see 6.10).
- 6.2 No running, horseplay, shouting, playing, scuffling, fighting, or other disorders shall be participated in by any employee while on duty on City property.
- 6.3 No machine guards are to be changed or adjusted except by proper authorization.
- 6.4 All job sites shall be okayed and checked for safety by an authorized person as the work progresses.
- 6.5 When any trouble, electrical or mechanical, develops, the operator shall not attempt to make repairs himself (unless he is qualified), but shall notify his supervisor and shut down the machine or equipment until repairs are made.
- 6.6 Do not "play" with compressed air. Never blow air on anyone, as air might enter the body and death result. Do not try to clean your clothes with air. All compressed air used for cleaning shall be below 30 p.s.i.
- 6.7 Do not permit unqualified fellow workers to remove dust or dirt from your eyes. Report to the city nurse. If not available, the Safety Coordinator will refer you.
- 6.8 It is the duty of each employee to immediately report to his supervisor or Safety Coordinator any dangerous or defective tools, machinery, vehicles, or appliance or any condition, which appears dangerous. Under no circumstances shall anyone start a machine, throw a switch, or open or close a valve bearing **DANGER** tags. It shall be the responsibility of the individual placing the tag to authorize its removal.
- 6.9 "No smoking" signs shall be observed rigidly.
- 6.10 All machines are to be stopped and proper lockout procedures followed during adjustments or repairs.
- 6.11 Do not ride on any truck-side toolbox, lift trucks or bush hogs at any time.
- 6.12 The use of welding equipment and gas cylinders shall be in accordance with OSHA standards.

7.0 MATERIAL HANDLING

- 7.1 Whenever possible employees shall notify their supervisors for assistance when they are required to handle heavy or bulky material. Fork lifts, conveyors, and hand trucks shall be used whenever possible.

- 7.2 The following is recommended for the safe operation of lift trucks:
- (A) The licensed driver of any vehicle is immediately responsible for its operation and condition. If the vehicle is considered unsafe to operate, the operator shall immediately advise his supervisor. Action shall be taken to ensure the corrections or adjustments are made.
 - (B) When not loaded, run with forks no more than 2-4 inches above the ground and always sound horn when approaching a blind area.
 - (C) If any driver has an accident which might include running over the foot of another employee, hitting a walk, doorways, or support beams, the driver is required to stop the lift truck and report the accident to his supervisor. He shall also fill out an accident report.
 - (D) The only employee allowed on the lift is the driver. All drivers shall have proper training and be authorized operators before they may operate a lift truck.
 - (E) While loading or unloading trailers with a forklift, wheel chocks are to be placed under both rear wheels of the trailer.
- 7.3 All materials shall be stacked in such a manner that the materials shall not overturn or cause excessive strain on any one employee.

8.0 FIRE PREVENTION

- 8.1 Fire extinguishers shall be placed throughout each facility on each major piece of equipment and on all vehicles.
- 8.2 Ready access to the fire extinguishers shall be maintained. Only individuals who have been properly trained in the operation of fire extinguishers shall use them. Monthly Inspections shall be done on all portable fire extinguishers and documented.
- 8.3 All fire extinguishers and fire equipment shall be kept in good working order at all times. When a fire extinguisher is used, it shall be replaced promptly with a fully charged extinguisher.
- 8.4 If you have a radio or if there is one in your immediate area, notify the Fire Department of all fires that you observe.
- 8.5 Dial 911 to report a fire by telephone. You must dial 9 for outside line in some buildings.

9.0 PERSONAL PROTECTIVE EQUIPMENT

- 9.1 Loose clothing shall not be worn and excessive long hair shall be tied or in a net when working around moving or revolving equipment.
- 9.2 Ear protection shall be required when operating any machinery or equipment with excessive noise. The City furnishes this equipment.

- 9.3 Safety glasses or goggles are required for designated jobs. The City shall furnish these. Your supervisors shall notify you when they are needed.
- 9.4 Employees exposed to the likelihood of head injury shall wear hard hats. The City shall furnish these.
- 9.5 All city employees shall wear OSHA or ANSI approved vests or clothing while working in the streets, highways, or within 2 feet of a street or highway.

10.0 SAFETY EQUIPMENT

- 10.1 All safety equipment shall be inspected and replaced on a regular basis as needed.
- 10.2 All safety equipment provided by the City shall be utilized. Every employee shall have with him the safety equipment necessary for the job he is doing.
- 10.3 It is the responsibility of every employee to report defective or inoperative, or worn safety equipment immediately.

11.0 CITY VEHICLES

- 11.1 Operators of City vehicles shall observe and adhere to all applicable State traffic laws and City ordinances.
- 11.2 All operators of City vehicles shall make a daily check of the vehicle to which they are assigned to ensure that the vehicle is in safe operating condition, and shall report all defects to their supervisor.
- 11.3 All motorized equipment shall be taken to the City garage as required for a preventive maintenance and safety check.
- 11.4 Backing, whenever possible shall be done with the assistance of another person.
- 11.5 Personnel shall never ride in or on any vehicle except in properly assigned places.
- 11.6 Mounting or dismounting a moving vehicle is prohibited.
- 11.7 Keys shall be removed from all vehicles when left unattended.
- 11.8 Performing work underneath jacked vehicles without blocking of the axle or axles is prohibited.
- 11.9 Drink bottles or miscellaneous articles not pertaining to the job are prohibited in the cabs of vehicles.

12.0 Safety Program Enforcement

12.1 Disciplines

- (A) It is recognized that some City employees shall violate work rule/policies and commit unsafe acts that may or may not result in an accident causing injury or damage. As result, each violation or action shall require immediate corrective action by supervisors and administrators. It shall be emphasized that safe work rule/policies and driving procedures must be enforced for the protection of the employee and the City.
- (B) The cost of the accident shall not dictate the corrective action to be administered. Management shall discourage any implication that it is acceptable to have an inexpensive accident, but it is unacceptable to have an expensive accident to occur. The same action that causes little accidents also cause big accidents, therefore the **Emphasis** is placed on **Accident Prevention**.
- (C) Careful consideration has been given to a wide range of City employees whose job classifications include the responsibility of operating motor vehicles and motorized equipment. It has been determined, therefore, that all employees who operate a vehicle or other equipment, are obligated to take the necessary precautions to avoid accidents and injuries. Distinctions shall not be made as to the frequency and distance that a vehicle or other equipment is operated.
- (D) The fact that one job classification requires more driving or operating hours than another job classification is not adequate justification to provide different expectations for safe motor vehicle and motorized equipment operation. Although one job classification may require a more highly skilled operator than another, it is the supervisor's responsibility to enforce the applicable safety rules and review each employee's previous accident record to determine the need for additional training.

12.2 Disciplinary actions

- (A) All disciplinary actions shall follow the rules and guidelines set forth in the City of Asheboro Personnel Policies And Procedures Manual, Article XI.

TABLE OF CONTENTS

Section II: Safety Rules and Procedures	PAGE
Objective and Responsibility	1
General Rules and Procedures for Municipal Employees	2
Safety Rules and Procedures for Fire Department	5
Safety Rules and Procedures for Police Department	6
Safety Rules and Procedures for Maintenance/Garage Shop	7
Safety Rules and Procedures for Sanitation Department	8
Safety Rules and Procedures for Street Department	15
Safety Rules and Procedures for Parks and Recreation	16
Safety Rules and Procedures for Water Resources	17
Safety Rules and Procedures for Special Equipment	19
Safety Rules for Special Use of Traffic Cones	20

SECTION II: SAFETY RULES AND PROCEDURES

1.0 OBJECTIVE AND RESPONSIBILITY

- 1.1 Safety rules and procedures shall be developed and monitored by each department. The department heads, supervisors and employees shall all contribute to this task for their respective area. The attached rules and procedures provide a starting point.

**GENERAL RULES AND PROCEDURES
FOR MUNICIPAL EMPLOYEES**

These general rules and procedures apply to all departments.

1. Good housekeeping shall be maintained throughout all operations.
2. All employees shall be properly trained before they are allowed to assume routine duties and shall not attempt to lift an object where proper lifting techniques are not used.
3. Employees shall be trained in proper lifting techniques and body mechanics.
4. Hard hats shall be provided for and used by all employees exposed to overhead hazards (Electrical Class B hard hats required).
5. Eye and ear protection shall be provided for and used by all employees exposed to related hazards, i.e. grinding, cutting, chipping, welding, battery charging, jack hammering, etc.
6. Caution signs shall be posted in shop areas and on major mobile equipment warning that eye protection be worn where eye hazards exist.
7. Facilities shall be available to employees who may be exposed to injurious or corrosive materials for quick drenching or flushing of the eyes or body.
8. Employees shall be required to wear only appropriate footwear as determined by the Department Head.
9. All employees shall be provided with and required to wear gloves when conditions dictate their need.
10. First aid kits shall be available to employees at all times. Employees not properly trained in first aid shall not treat other individuals.
11. Designated employees shall be properly trained in the use of first aid procedures.
12. Water coolers shall be available at job sites away from the shop area.
13. All mobile equipment shall be inspected before starting each shift.
14. Employees working near vehicular traffic shall be provided with and required to wear approved clothing i.e. reflective vest.

15. A sufficient number of fluorescent plastic cones, signs, and warning devices shall be available and used when work activities are near vehicular traffic.
16. All gasoline, which is transported in vehicles, shall be contained in NFPA approved safety containers.
17. Hand rails shall be installed on all permanent stairs leading to overhead storage areas.
18. Standard guardrails and toe boards shall be installed along the front of overhead storage areas.
19. Overhead cranes and hoist shall be equipped with a hook safety latch mechanism and labeled with maximum safe load limit.
20. Adequate overhead and roll protection shall be installed on mobile equipment.
21. Hand carts, hoist, dollies or other devices shall be used for lifting or moving heavy objects or materials.
22. Guards and safety devices shall be kept in place and in working condition on all equipment, tools, etc.
23. All flat belts, V-belts, chains, and sprockets, which offer employee exposure, shall be properly guarded.
24. All hand tools shall be inspected to ensure their safe working condition.
25. All electric fans shall be equipped with proper guarding.
26. Bench grinders shall be securely mounted, equipped with protective eye shields and a properly adjusted tool rest, and have an adequate guard over the end spindle.
27. All tools and electric equipment shall be either double insulated or equipped with three-prong plugs to ensure proper grounding.
28. Adequate portable lighting shall be available for use during emergency situations.
29. An evacuation plan shall be developed and posted in every public building.
30. All electric switch boxes and electric panels shall be closed and properly marked.

31. **NO SMOKING** signs shall be located in appropriate areas and followed by all employees and visitors, i.e. storage areas for compressed gases or combustible/flammable materials, refueling pumps and battery charging areas.
32. All compressed gas cylinders shall be properly stored in a proper condition.
33. All flammable or combustible materials shall be properly stored and grounded.
34. There shall be an adequate number of properly located fire extinguishers that are inspected monthly by the occupants of the area.
35. All exit signs shall be properly marked and free of obstructions.
36. All employees shall wear seat belts in vehicles that are so equipped.
37. Whenever two employees are available, one shall assist the other in backing all city vehicles.

SAFETY RULES AND PROCEDURES FOR FIRE DEPARTMENT

1. All firefighters shall be required to submit to a physical examination on an annual basis.
2. All firefighters shall be properly trained in the performance of their duties prior to being allowed to perform actual fire fighting activities.
3. All firefighters shall be fully trained in the use of personal protective equipment.
4. All firefighters shall wear NFPA approved protective equipment and clothing during training sessions and fire fighting.
5. The SCBA shall be inspected and maintained in accordance with manufacturer's specifications.
6. All firefighters shall wear a self-contained breathing apparatus when entering a potentially hazardous area.
7. Wheel chocks shall be used anywhere except on apparatus floor when provided.
8. The department shall participate in a comprehensive preplanning system in determining hazardous chemicals, explosives and other dangerous materials.
9. Drivers shall be trained in safe defensive/emergency driving techniques.
10. All combat vehicles shall be inspected at the beginning of each shift.
11. All vehicles shall be inspected by a qualified mechanic on at least an annual basis.
12. All firefighters shall comply with NC traffic laws, rules and regulations while operating department vehicles.
13. All drivers shall use proper warning lights and siren when responding to an emergency call.
14. All firefighters shall wear proper personal protective equipment during an emergency response.
15. The department prohibits horseplay while on duty.
16. All firefighters shall be trained in proper lifting techniques and body mechanics and shall not attempt to lift an object where proper lifting techniques cannot be used.
17. Smoke detectors shall be installed adjacent to the sleeping quarters in the fire station.

SAFETY RULES AND PROCEDURES FOR POLICE DEPARTMENT

1. All candidates for employment as sworn law enforcement personnel shall be administered through a physical examination prior to employment.
2. This pre-employment examination may include a stress type electrocardiogram when deemed necessary by the examining physician and approved by City Officials.
3. All officers shall submit to a physical examination on an annual basis.
4. All officers shall be properly trained and supervised in the safe performance of their duties prior to being allowed to perform routine activities.
5. The department shall have written guidelines that the employee is required to be familiar with pertaining to their scope of operations, i.e. apprehension, search, handcuffing, weapons handling, high speed pursuits, etc.
6. The department prohibits horseplay involving officers while on duty.
7. Officers shall be required to use seat belts or safety harnesses while driving official vehicles routinely.
8. Supervisors shall inspect the officer's vehicles monthly.
9. All vehicles shall be inspected by a qualified mechanic on at least a quarterly basis.
10. The department shall have a policy of transporting shotguns securely in a vehicle.
11. Officers shall be required to qualify with the firearms used and with live ammunition on at least an annual basis.
12. The qualifying exercise shall include night firing.
13. The officer shall be required to use his duty weapon and ammunition while qualifying.
14. Officers shall be provided with bulletproof vests that shall be worn at all times the officer is on duty, except when specifically authorized by the Chief of Police.
15. Officers involved in directing traffic shall be provided with approved reflective vest and/or reflective wands, flares, etc.
16. All police officers shall be trained to respond to the release of hazardous substances in accordance with OSHA 1910.120

SAFETY RULES AND PROCEDURES FOR MAINTENANCE/GARAGE SHOP

1. An adequate protective cage shall be used when changing split rim tires or filling tires.
2. An adequate exhaust ventilation system shall be installed in areas designated for vehicular repair and used when a vehicle engine is operated for more than 60 seconds.
3. A designated area shall be used for changing automotive type batteries that has a no smoking sign and is clear of all spark-producing devices.
4. Approved safety lights shall be used for drop cords while working under vehicles.
5. All welders shall be properly grounded, located in a dry area, and equipped with properly insulated terminals.
6. Safety devices shall be used to prevent the dump and bodies' falling while maintenance is being performed.
7. All items or materials shall be stacked in a safe manner.

GENERAL SAFETY RULES AND PROCEDURES FOR SANITATION DEPARTMENT

1. Adequate handrails and foot platforms shall be provided on all sanitation vehicles.
2. All sanitation trucks shall be thoroughly cleaned inside and out at least weekly or more often as per. the Standard Operating Guidelines for the equipment that they operate.
3. Adequate backup alarms shall be installed on all mobile equipment.
4. A standard policy that prohibits employees from mounting or dismounting from a moving vehicle shall be enforced.
5. Trucks can only be stopped in the road for no more than 15 min. for pickups. If more time is needed or there is a sight distance problem flaggers shall be used. Contact your supervisor if you need any help.
6. Sanitation workers shall be provided with animal repellent.
7. Sanitation workers shall be equipped with and required to wear gloves and brightly colored clothing (i.e. reflective vest) that are approved by the department.
8. Sanitation trucks shall keep warning lights flashing during rounds.
9. All drivers and operators are required to follow Standard Operating Guidelines for the equipment that they operate, (see Rules & Procedures for Special equipment).

STANDARD OPERATING GUIDELINES FOR AUTOMATED COLLECTION TRUCKS

1. Truck driver shall complete vehicle pre-inspection checklist prior to leaving yard.
2. Truck driver to engage hydraulics.
3. Leave yard and go to first site, truck shall not exceed posted speed limit.
4. Truck to stop at first site and turn on safety lights (strobe lights).
5. Operator to visually inspect area for overhead and ground hazards.
6. Dump can.
7. Move to next pickup site.
8. When truck is loaded operator is to go to dump site and dump truck.
9. When cleaning out behind packer blade driver shall cut off truck engine to disable hydraulics.
10. Truck is to be washed inside and out on Tuesday and Friday or the last day it will be operated of each week and before being worked on in the shop.
11. Truck is to be dumped and left full of fuel.

STANDARD OPERATING GUIDELINES FOR FRONTLOADING COLLECTION TRUCKS

1. Truck driver shall complete vehicle pre-inspection checklist prior to leaving yard.
2. Truck driver to engage hydraulics.
3. Leave yard and go to first site, truck shall not exceed posted speed limit.
4. Truck to stop at first site and activate parking brake and safety lights (strobe lights).
5. Operator to visually inspect area for overhead and ground hazards.
6. Dump dumpster.
7. Move to next pickup site.
8. When truck is loaded operator is to go to dump site and dump truck.
9. When cleaning out behind packer blade driver shall cut off truck engine to disable hydraulics.
10. Truck is to be washed inside and out on Tuesday, Friday or the last day it will be operated of each week and before being worked on.
11. Truck is to be dumped and left full of fuel.

STANDARD OPERATING GUIDELINES FOR REARLOADER OPERATIONS

1. Truck driver to complete vehicle pre-inspection checklist prior to leaving yard.
2. Leave yard and go to site, truck shall not exceed posted speed limit
3. Truck shall stop at site and activate parking brake and safety lights (strobe lights).
4. Operator to exit truck and go to rear of truck and visually inspect area for overhead and ground hazards. If driver gets out of truck safety cone must be put out.
5. Operator to check communications with truck driver.
6. Truck driver to engage hydraulics.
7. Operator to visually inspect area for overhead and ground hazards.
8. Load cargo and pickup safety cone if it has been put out.
9. Truck shall not to exceed posted speed limit, and never to exceed 20 mph or travel more than 2 city blocks during pickup operation with operator or operator's on back of truck.
10. Move to next pickup site.
11. When truck is loaded operator or operator's to return to truck for trip to dump site.
12. Truck to be dumped on Friday and washed inside and out and left full of fuel.

STANDARD OPERATING GUIDELINES FOR KNUCKLEBOOM LOADER

1. Truck driver shall complete vehicle pre-inspection checklist prior to leaving yard.
2. Leave yard and go to first site, truck shall not exceed posted speed limit.
3. Truck shall stop at first site and activate parking brake and safety lights (4 way-flashers & strobe lights).
4. Loader Operator to exit truck and enter loader operator's compartment or catwalk.
5. Loader operator to apply safety belts and check communications with truck driver.
6. Truck driver to engage loader hydraulics.
7. Loader operator to visually inspect area for overhead and ground hazards.
8. Loader operator to engage loader hydraulics.
9. Loader operator to activate stabilizers too proper loading position.
10. Load cargo as per Service Bulletin No. 104 on next 2 pages.
11. Return boom to travel position after completing loading operations.
12. Deactivate stabilizers and return to travel position.
13. Loader operator to disengage loader hydraulics and/or speed control.
14. Truck not to exceed posted speed limit, and never to exceed 20 mph or travel more than 2 city blocks during pickup operation with operator in loader operator compartment or catwalk.
15. Move to next pickup site.
16. When trailer is loaded the operator is to exit operator compartment and/or catwalk and return to truck cab for trip to dump site.
17. Truck is to be dumped and left full of fuel.

SERVICE BULLETIN No. 104

October 14, 2005

Subject: Safe Operation Procedures for Petersen Lighting Loader ® Grapple Trucks

Problem: Improper Stowage of Boom and Bucket for Travel

It has come to our attention that user/operators of Petersen Grapple Trucks are improperly stowing their boom and bucket for travel. Specifically, they are overloading the dump body, and then traveling with the bucket on top of the load. This is an unsafe practice, and could result in a serious safety hazard.

Petersen's Owner's Manual instructs the user/operator to: 1) load the front of the dump body first; 2) not allow trash to hang over sides or back of dump body; 3) leave room in the dump body to stow the bucket. To remind you of these instructions, we are providing you with the following instructions and illustrations regarding the safe procedure for stowing the boom and bucket for travel.

It is imperative that your users/operators review this important safety information. Never assume that the users/operators are already aware of these instructions and/or procedures.

1. The boom and bucket must be stowed inside the dump body below the legal height limit of 13'6" with the boom tip, and at least ½ (one half) of the bucket, below the top of the body sides.

Failure to follow these instructions could allow the boom to slew (swing) and the bucket to fall outside of the body. Loss of boom control with the bucket outside of the dump body could result in damage to objects in the vicinity of the grapple truck, and/or serious injury or death to people in the vicinity of the grapple truck.

User/operators should never permit the boom and/of bucket to hang outside of the dump body during travel. The boom and bucket must be stowed as stated above and as illustrated on the attached page, anytime they are not being used for loading or dumping purposes.

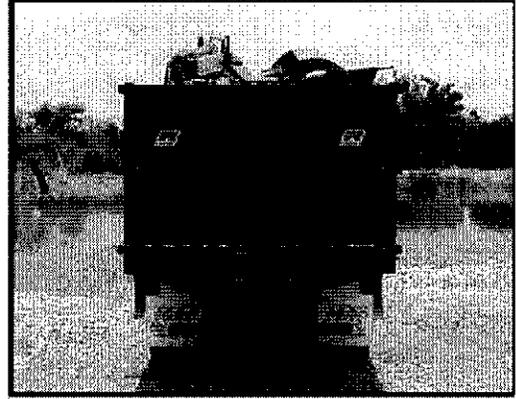
2. Do not overload the dump body. The debris loaded into the dump body must be confined within the dump body, and allow room to stow the boom and bucket. It is recommended that you load the dump body from the front (bulkhead) to the rear, thereby allowing room in the rear of the dump body to stow the bucket properly when the operator is finished loading. Peterson recommends deploying the load cover when stowing the bucket for travel. Never allow debris to hang outside of the dump body, as it could create a safety hazard.

CORRECT METHODS OF STOWING THE BOOM & BUCKET



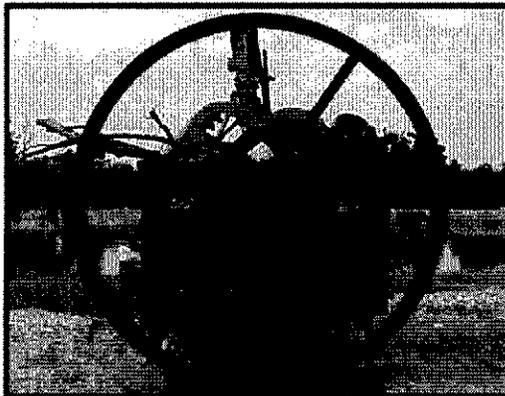
- BUCKET OPEN AND AT REST ON DUMP BODY FLOOR.

NOTE: FOR ILLUSTRATION PURPOSES REAR DUMP BODY DOORS ARE SHOWN OPEN. REAR DUMP BODY DOORS MUST BE CLOSED AND LOCKED EXCEPT WHEN DUMPING THE LOAD

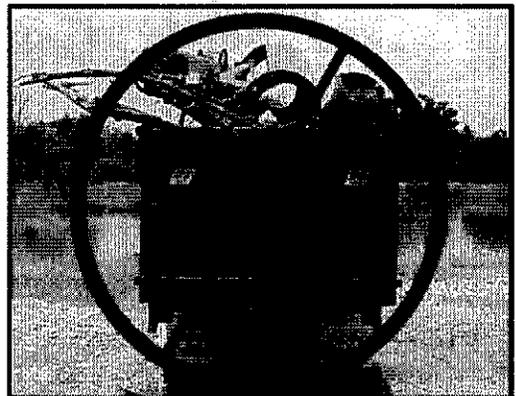


- BUCKET ROLLED OVER WITH JAWS TO RIGHT REAR OF DUMP BODY
- BOOM AT SAFE TRAVEL HEIGHT & BOOM TIP BELOW TOP OF BODY SIDES
- MORE THAN 1/2 OF BUCKET MUST BE BELOW TOP OF BODY SIDES
- LOAD COVER DEPLOYED

INCORRECT WAYS OF STOWING THE BOOM & BUCKET



- BUCKET NOT CONFINED INSIDE OF DUMP BODY
- DEBRIS HANGING OUTSIDE OF DUMP BODY
- BOOM OVER LEGAL HEIGHT OF 13 FT. 6 IN.



- BOOM OVER LEGAL HEIGHT OF 13 FT. 6 IN.
- BUCKET NOT CONFINED INSIDE OF DUMP BODY
- DEBRIS HANGING OUTSIDE OF DUMP BODY

SAFETY RULES AND PROCEDURES FOR STREET DEPARTMENT

1. Supervisors shall be provided with and required to use appropriate equipment to determine the amount of toxic or flammable gases in confined underground areas.
2. Management shall follow standard procedures for entering confined spaces and underground areas, as outlined in Confined Space policy.
3. Employees shall be properly trained in the use of detection and preventative maintenance equipment.
4. Supervisors shall ensure that the equipment is used properly.
5. Sides of trenches more than five (5) feet deep shall be properly shored, braced, and sloped.
6. An adequate means of exit shall be provided (ladder) in trenches of four or more feet in depth.
7. All excavated materials shall be stored at least two (2) feet from the trench.
8. Adequate backup alarms shall be installed and in use on all mobile equipment over 3/4 ton.
9. Management shall ensure that all workers are properly trained in the use of their respective equipment.
10. All vehicles shall be equipped with adequate warning lights that are used at the work site location.
11. Employees shall be equipped with and required to wear gloves and brightly colored clothing (i.e. reflective vest) approved by the department.

**SAFETY RULES AND PROCEDURES
FOR PARKS AND RECREATION DEPARTMENT**

1. Comply with rules and regulations established by the North Carolina Department of Health and Natural Resources governing Public Swimming Pools.
2. Comply with chemical hazard control laws and material safety data sheets.
3. Provide written hazard communication program to Fire Department, Rescue Squad and employees that may come in contact with hazardous chemicals.
4. All chemicals shall be properly stored and labeled in a dry location free of petroleum products. Employees shall be properly trained in use of these chemicals.
5. The Chlorine Storage room shall be equipped with an adequate exhaust fan with a switch located outside the room.
6. Personal protective equipment such as gloves, respiratory masks, etc shall be worn when using appropriate chemicals.
7. Employees involved with the use of respiratory protective equipment shall be properly trained and fit tested.

**SAFETY RULES AND PROCEDURES
FOR WATER RESOURCES**

1. Employees involved with the use of respiratory protective equipment shall be thoroughly trained and fit tested.
2. Respiratory protective equipment shall be inspected and maintained in accordance with the manufacturer's specifications.
3. An entry permit is required to enter all confined spaces; all manholes are confined spaces and breaking the plane is entering the confined space.
4. Equipment shall be provided and maintained to detect flammable or toxic gases and the amount of oxygen in confined areas.
5. All supervisors shall follow up to ensure that the equipment and safety procedures are used.
6. Employees shall be trained in use and maintenance of safety equipment.
7. All toxic, corrosive, caustic materials and chemicals shall be properly stored, handled, and labeled. Employees shall be properly trained in the use of these materials and chemicals.
8. All involved employees shall comply with the Laboratory Chemical Hygiene Plan.

**SAFETY RULES AND PROCEDURES
FOR WATER RESOURCES**

Training shall consist of the items listed below. The training includes the review of written programs, hands on demonstrations of knowledge, videos, annual retraining for specific programs, and testing. The purpose of the training is for preventing or minimizing the consequences of accidents and ensuring safe practices.

- | | |
|-------------------------------|--------------------------------|
| Accident Investigation | Eye Protection |
| Equipment Grounding | Hot Work |
| Bloodborne Pathogens | Eyewash/Safety Shower |
| Housekeeping | Proper Lifting |
| Compressed air | Exotox |
| Laboratory Standard | Respiratory Protection Program |
| Confined Space | Fall Prevention |
| Power Operated Hand Tools | Ladder Use |
| Lockout Tagout | Safety Policy Manual |
| Electrical Safety | Footwear |
| Machine Guarding | Scaffolding |
| Emergency Action Plan | Hand Protection |
| Personal Hygiene | Hazard Communication |
| Personal Protective Equipment | Trenching and Shoring |
| Hearing Conservation | Fire Extinguisher |
| CPR/First Aid | |

SAFETY RULES AND PROCEDURES FOR SPECIAL EQUIPMENT

(THE BUCKET TRUCK)

1. Truck driver to complete vehicle inspection checklist prior to leaving the yard.
2. Leave yard and go to first site.
3. Truck to stop at first site and activate parking brake and safety lights.
4. Truck driver to engage hydraulics.
5. Operator to activate stabilizers to proper loading position.
6. Operator to enter bucket operator's compartment.
7. Operator to visually inspect area for overhead and ground hazards.
8. Perform task.
9. Return boom to travel position after completing operations.
10. Deactivate stabilizers and return to travel position.
11. Truck driver to disengage hydraulics.
12. Move to next site.

NOTE:

- * Operator may stay in bucket in a crouched position during transportation if the truck does not exceed 20 mph. while traveling from site to site on a smooth paved surface.
- * If truck is to exceed 20 mph. or is off paved surfaces traveling from site to site the bucket operator is to exit the bucket and return to the truck for transportation

TRAFFIC CONE POLICY

PURPOSE:

The purpose of this policy is to ensure that city employees driving city-owned vehicles are aware of their surroundings at all times. The risk of injuring an individual and/or damaging property will be reduced if drivers more carefully assess the area around them for potential hazards before operating a vehicle in reverse.

DEFINITIONS:

- (1) The term "vehicle" means a city-owned motor vehicle registered with the North Carolina Division of Motor Vehicles that is equal to or larger than a single axle pickup truck, specifically including by way of illustration and not limitation sport utility vehicles and vans.
- (2) The term "pick-up and delivery mode" means a vehicle is making frequent stops as part of a service route or in response to a call for immediate service/assistance from the public. Notwithstanding the preceding sentence, a vehicle will not be deemed to be in "pick-up and delivery mode" as defined by this policy if the driver of the vehicle cannot proceed to the next destination without backing the vehicle. Examples of a vehicle in a "pick-up and delivery mode" include by way of illustration and not limitation water meter readers stopping to read a meter without the possibility of backing up and brush/trash collection without the possibility of backing up.

PROCEDURE:

When the operator of a vehicle exits the vehicle, a cone shall be placed one foot (1') to two feet (2') behind the left side of the vehicle's rear bumper. Before moving the vehicle, the cone shall be retrieved and the area and vehicle shall be inspected for hazards and/or loose equipment.

Vehicles shall carry at least one (1) thirty-six inch (36") traffic cone in the vehicle. The vehicle operator shall be responsible for ensuring that the vehicle he or she operates is equipped with the required cone, and the driver shall also be responsible for retaining and maintaining in good condition the traffic cone(s) provided for the vehicle.

EXCEPTIONS:

- (1) Unmarked police vehicles are not subject to this policy.
- (2) Vehicles parked within the shop doors at Fleet Maintenance are not subject to this policy. This exception is applicable only if the vehicle parked within the shop doors at Fleet Maintenance is backed by a driver who receives the assistance of a second city employee.

TRAFFIC CONE POLICY

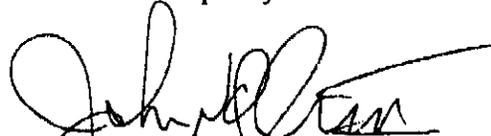
- (3) Drivers of vehicles that are otherwise subject to this policy do not have to place a cone in accordance with the above-stated procedure when the vehicle is operating in the following situations:
- (a) Responding to a situation involving a potential threat to life or property.
 - (b) Functioning in the pick up or delivery mode.

INTERPRETATION:

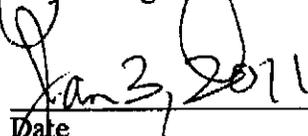
If a question pertaining to the interpretation of this policy arises, the question shall be immediately referred to the Safety Coordinator for resolution.

EFFECTIVE DATE:

This policy shall take effect and be in force from and after February 1, 2011.



John N. Ogburn, III
City Manager



Date

CITY OF ASHEBORO
Respiratory Protection Program

Table of Contents

I	RESPIRATORY PROTECTION PROGRAM PURPOSE	1
II	SCOPE AND RESPONSIBILITIES.....	1
III	DEFINITIONS.....	1-4
IV	RESPIRATOR SELECTIONS.....	5
IV (A)	SELECTION PROCEDURE CHECKLIST	5
IV (B)	SELECTING RESPIRATORS FOR IDLH ATMOSPHERES.....	5
IV (C)	SELECTING RESPIRATORS FOR ATMOSPHERES NOT IDLH	6
V	RESPIRATOR TYPES AND USES.....	7-8
VI	MEDICAL EVALUATIONS.....	9
VI (A)	FOLLOW- UP MEDICAL EXAMINATIONS.....	10
VI (B)	ADDITIONAL MEDICAL EXAMINATIONS.....	10
VII	FIT TESTING PROCEDURES	11-12

VIII	PROPER USE PROCEDURES.....	12
IX	FACE SEAL PROTECTION.....	12
X	CONTINUING RESPIRATOR EFFECTIVENESS.....	12
XI	PROCEDURES FOR IDLH ATMOSPHERES.....	13
XII	PROCEDURES FOR INTERIOR STRUCTURAL FIREFIGHTING.....	13-14
XIII	MAINTENANCE AND CARE PROCEDURES.....	14
XIV	CLEANING AND DISINFECTING.....	14
XV	STORAGE.....	15
XVI	INSPECTION.....	15-16
XVII	REPAIRS.....	16
XVIII	DISCARDING OF RESPIRATORS.....	16
XIX	AIR QUALITY PROCEDURES.....	16-17
XX	CYLINDERS USED TO SUPPLY BREATHING AIR TO RESPIRATORS.....	17
XXI	COMPRESSORS.....	17
XXII	BREATHING AIR COUPLINGS.....	17
XXIII	BREATHING GAS CONTAINERS.....	18
XXIV	FILTERS,CARTRIDGES,AND CANISTERS.....	18

XXV TRAINING18-19-20

XXVI PROGRAM EVALUATION20

EFFECTIVE DATE & SIGNATURE PAGE21

EXHIBITS.....22

EXHIBIT # 1 REFERENCES23

**EXHIBIT - 2- OSHA APPENDIX A TO § 1910.134: FIT TESTING PROCEDURES
(MANDATORY)24-46**

**EXHIBIT -3- APPENDIX B-1 TO § 1910.134: USER SEAL CHECK PROCEDURES
(MANDATORY).....47-48**

**EXHIBIT - 4- APPENDIX B-2 TO § 1910.134: RESPIRATOR CLEANING
PROCEDURES (MANDATORY)49-51**

**EXHIBIT -5- APPENDIX C TO SEC. 1910.134: OSHA RESPIRATOR MEDICAL
EVALUATION QUESTIONNAIRE (MANDATORY)52-61**

**EXHIBIT -6 - APPENDIX D TO SEC. 1910.134 (MANDATORY) INFORMATION FOR
EMPLOYEES USING RESPIRATORS WHEN NOT REQUIRED UNDER THE
STANDARD62-63**

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Section III Respiratory Protection Program

I Purpose

This document provides information and guidance necessary to ensure that the respiratory protection program of the City of Asheboro is consistent with Occupational Safety and Health Administration (OSHA) standards. This document outlines the city's respiratory protection program, delineates responsibilities, provides selection criteria in determining respiratory protection needs, and lists currently approved respiratory protective devices used in the City of Asheboro. This policy meets all the requirements set forth by 29 CFR 1910.134.

II Scope and Responsibilities

This document is applicable to all City of Asheboro personnel who are performing duties requiring the use of respiratory protection to prevent unnecessary exposure to airborne concentrations of toxic materials equal to or greater than the permissible limits established in existing occupational safety and health standards or criteria.

The Safety Coordinator is the Program Administrator for the City of Asheboro. The Safety Committee members, Division Directors, Department Heads and Supervisors and employees are expected to fully comply with and take a positive active role in implementing this respiratory protection program.

III Definitions

Air-purifying respirator means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

Assigned protection factor (APF) means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees when the employer implements a continuing, effective respiratory protection program as specified by this section.

Atmosphere-supplying respirator means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

Canister or cartridge means a container with a filter, sorbent, or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

Respiratory Protection

Demand respirator means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

Emergency situation means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

Employee exposure means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

End-of-service-life indicator (ESLI) means a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Escape-only respirator means a respirator intended to be used only for emergency exit.

Filter or air purifying element means a component used in respirators to remove solid or liquid aerosols from the inspired air.

Filtering facepiece (dust mask) means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

Fit factor means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit test means the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual. (See also Qualitative fit test QLFT and Quantitative fit test QNFT.)

Helmet means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

High efficiency particulate air (HEPA) filter means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100, and P100 filters.

Hood means a respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life or health (IDLH) means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

Interior structural firefighting means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage. (See 29 CFR 1910.155)

Loose-fitting facepiece means a respiratory inlet covering that is designed to form a partial seal with the face.

Maximum use concentration (MUC) means the maximum atmospheric concentration of a hazardous substance from which an employee can be expected to be protected when wearing a respirator, and is determined by the assigned protection factor of the respirator or class of respirators and the exposure limit of the hazardous substance. The MUC can be determined mathematically by multiplying the assigned protection factor specified for a respirator by the required OSHA permissible exposure limit, short-term exposure limit, or ceiling limit. When no OSHA exposure limit is available for a hazardous substance, an employer must determine an MUC on the basis of relevant available information and informed professional judgment.

Negative pressure respirator (tight fitting) means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen deficient atmosphere means an atmosphere with oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) means an individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by 29CFR 1910.134(e).

Positive pressure respirator means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

Powered air-purifying respirator (PAPR) means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

Pressure demand respirator means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

Qualitative fit test (QLFT) means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative fit test (QNFT) means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering means that portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

Self-contained breathing apparatus (SCBA) means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

Service life means the period of time that a respirator, filter or sorbent or other respiratory equipment provides adequate protection to the wearer.

Supplied-air respirator (SAR) or airline respirator means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user.

This section means this respiratory protection standard.

Tight-fitting facepiece means a respiratory inlet covering that forms a complete seal with the face.

User seal check means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

IV Respirator Selection

Respirators are selected on the basis of respiratory hazards to which the worker is exposed and workplace and user factors that affect respirator performance and reliability. All selections are made by the Safety Coordinator and Division Directors / Department Heads.

The Safety Coordinator and Division Directors / Department Heads will develop detailed written standard operating guidelines governing the selection of respirators using 29 CFR 1910.134(d) and the following NIOSH guidelines. Detailed guidelines will be included as appendices to this respirator program. Outside consultation, manufacturer's assistance, and other recognized authorities will be consulted if there is any doubt regarding proper selection.

The City of Asheboro's selection procedures includes coverage of the following OSHA requirements:

IV (A) Selection Procedure Checklist When selecting any respirator in general

- 1) Select and provide respirators based on respiratory hazard(s) to which a worker is exposed and workplace and user factors that affect respirator performance and reliability.
- 2) Select a NIOSH-certified respirator. (NIOSH stands for the National Institute for Occupational Safety and Health)
- 3) Identify and evaluate the respiratory hazard(s) in the workplace, including a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form. Consider the atmosphere to be immediately dangerous to life or health (IDLH) if you cannot identify or reasonably estimate employee exposure.
- 4) Select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

IV (B) When selecting respirators for IDLH atmospheres:

- 1) A full facepiece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
- 2) A combination full facepiece pressure demand supplied-air respirator Self-contained breathing apparatus (SAR) with auxiliary self-contained air supply.
- 3) Provide respirators NIOSH-certified for escape from the atmosphere in which they will be used when they are used only for escape from IDLH atmospheres.
- 4) Consider all oxygen-deficient atmospheres to be IDLH. Exception: If we can demonstrate that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges specified in Table II of 29 CFR 1910.134 (i.e., for the altitudes set out in the table), then any atmosphere-supplying respirator may be used.

IV (C) When selecting respirators for atmospheres that are not IDLH:

- 1) Provide a respirator that is adequate to protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonably foreseeable emergency situations.
- 2) Select a respirator that meets or exceeds the required level of employee protection by using the assigned protection factors (APFs) listed in §1910.134 Table 1. [Effective Nov. 22, 2006]
- 3) For combination respirators (e.g., airline respirators with an air-purifying filter, ensure that the APF is appropriate to the mode of operation in which the respirator is being used. [Effective Nov. 22, 2006]
- 4) Select a respirator for employee use that maintains the employee's exposure to the hazardous substance at or below the maximum use concentration (MUC), when measured outside the respirator. [Effective Nov. 22, 2006]
- 5) Do not apply MUCs to conditions that are immediately dangerous to life or health (IDLH); instead use respirators listed for IDLH conditions in §1910.134(d)(2). [Effective Nov. 22, 2006]
- 6) Set the MUC at the lower limit when the calculated MUC exceeds the IDLH level for a hazardous substance or the performance limits of the cartridge or canister. [Effective Nov. 22, 2006]
- 7) Select respirators appropriate for the chemical state and physical form of the contaminant.
- 8) For protection against gases and vapors, provide:
- 9) An atmosphere-supplying respirator, or
An air-purifying respirator, provided that: (i) The respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or (ii) If there is no ESLI appropriate for conditions in our workplace, implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. Describe in the respirator program the information and data relied upon and the basis for the canister and cartridge change schedule and the basis for reliance on the data.
- 10) For protection against particulates, provide:
- 11) An atmosphere-supplying respirator; or
- 12) An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR 84; or
- 13) For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

V Respirator Types

Only NIOSH-certified respirators are selected and used. Where practicable, the respirators will be assigned to individual workers for their exclusive use.

Air-purifying respirators, which remove contaminants from the air.



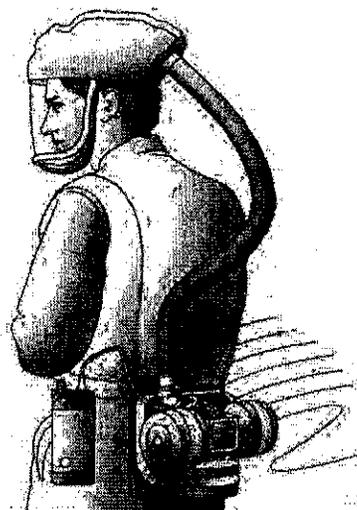
**Half mask/Dust mask
(Elastomeric)**
APF=10
Needs to be fit tested



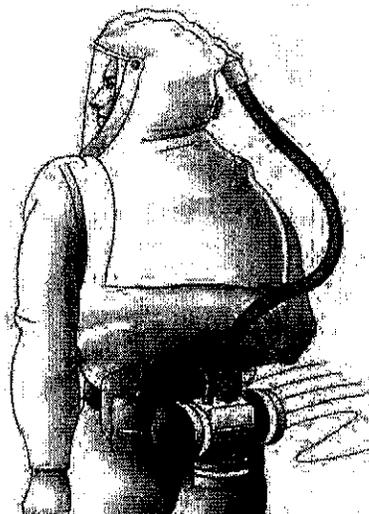
Half mask (Elastomeric)
APF= 10
Needs to be fit tested



Full facepiece
APF = 50
Needs to be fit

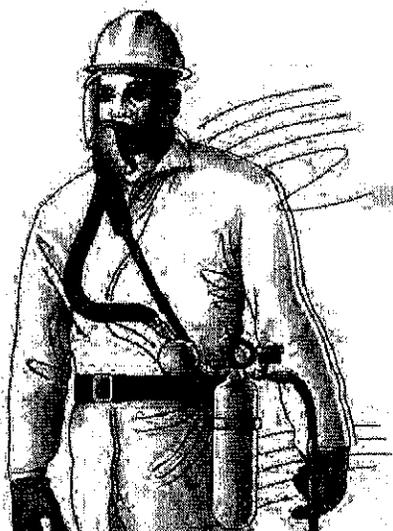


**Loose-Fitting Powered
Respirator (PAPR)**
(PAPR)
APF= 25



**Hood Powered Air-Purifying
Air-Purifying Respirator**
APF= 25

Atmosphere-supplying respirators, which provide clean air from an uncontaminated source.



**Full Facepiece Supplied-Air Respirator (SAR)
Blasting**
With an auxiliary Escape Bottle
APF=1,000
APF = 10,000 (if used in "escape" mode)
Needs to be fit tested



**Full Facepiece Abrasive
Continuous Flow**
APF= 1,000
Needs to be fit tested



**Full Facepiece Self-Contained
Breathing Apparatus (SCBA)**
Pressure demand mode is APF=10,000
Needs to be fit tested

VI Medical Evaluations

A medical evaluation to determine whether an employee is able to use a given respirator is an important element of an effective Respiratory Protection Program and is necessary to prevent injuries, illnesses, and even, in rare cases, death from the physiological burden imposed by respirator use.

The City of Asheboro employee's will not be assigned to tasks requiring use of respirators nor fit tested unless it has been determined that they are physically able to perform the work and use the respirator.

The City Nurse will perform medical evaluations using a medical questionnaire found in Sections 1 and 2, Part A of Appendix C of 29 CFR 1910.134.

All medical questionnaires and examinations are confidential and handled during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire is administered so that the employee understands its content. All employees are provided an opportunity to discuss the questionnaire and examination results with the City Nurse or other licensed health care professional (PLHCP).

Before any initial examination or questionnaire is given, we supply the City Nurse with the following information so that he/she can make the best recommendation concerning an employee's ability to use a respirator:

- 1) Type and weight of the respirator to be used by the employee;
- 2) Duration and frequency of respirator use (including use for rescue and escape);
- 3) Expected physical work effort;
- 4) Additional protective clothing and equipment to be worn;
- 5) Temperature and humidity extremes that may be encountered.

Once the City Nurse determines whether the employee has the ability to use or not use a respirator, he/she sends to the Safety Coordinator and Division Director / Department Head:

- a) Limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;
- b) The need, if any, for follow-up medical evaluations; and
- c) A statement that the City Nurse has provided the employee with a copy of the PLHCP's written recommendation.

VI (A) Follow-up medical examination:

A follow-up medical examination will be provided if a positive response is given to any question among questions 1 through 8 in Section 2, Part A of Appendix C of 29 CFR 1910.134 or if an employee's initial medical examination demonstrates the need for a follow-up medical examination. Our follow-up medical examination includes tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, the city will provide a powered air-purifying respirator (PAPR) if their PLHCP medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then we are no longer required to provide a PAPR.

VI (B) Additional medical examinations:

The City Nurse provides additional medical evaluations if:

- 1) An employee reports medical signs or symptoms that are related to ability to use a respirator;
- 2) A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated;
- 3) Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or
- 4) A change occurs in workplace conditions (e.g., physical work effort, protective clothing, and temperature) that may result in a substantial increase in the physiological burden placed on an employee.

Medical examinations are provided by contacting the City Nurse.

Contact the City Nurse for a copy of your confidential medical evaluation or questionnaire.

VII Fit Testing Procedures

It is axiomatic that respirators must fit properly to provide protection. If a tight seal is not maintained between the facepiece and the employee's face, contaminated air will be drawn into the facepiece and be breathed by the employee. Fit testing seeks to protect the employee against breathing contaminated ambient air and is one of the core provisions of our respirator program.

In general, fit testing may be either qualitative or quantitative. Qualitative fit testing (QLFT) involves the introduction of a gas, vapor, or aerosol test agent into an area around the head of the respirator user. If that user can detect the presence of the test agent through subjective means, such as odor, taste, or irritation, the respirator fit is inadequate.

In a quantitative respirator fit test (QNFT), the adequacy of respirator fit is assessed by measuring the amount of leakage into the respirator, either by generating a test aerosol as a test atmosphere, using ambient aerosol as a test agent, or using controlled negative pressure to measure the volumetric leak rate. Appropriate instrumentation is required to quantify respirator fit in QNFT.

The City of Asheboro makes sure those employees are fit tested at the following times with the same make, model, style, and size of respirator that will be used:

- 1) Before any of our employees are required to use any respirator with a negative or positive pressure tight-fitting facepiece;
- 2) Whenever a different respirator facepiece (size, style, model, or make) is used;
- 3) At least annually;
- 4) Whenever the employee reports, or our company, PLHCP, supervisor, or Program Administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight; and
- 5) When the employee, subsequently after passing a QLFT or QNFT, notifies the company, Program Administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable. That employee will be retested with a different respirator facepiece.

Employees must pass one of the following fit test types that follow the protocols and procedures contained in 29 CFR 1910.134 Appendix A:

- (A) QLFT (Only used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less. May be used to test tight-fitting atmosphere-

- supplying respirators and tight-fitting powered air-purifying respirators if tested in the negative pressure mode); or
- (B) QNFT (May be used to fit test a tight-fitting half facepiece respirator that must achieve a fit factor of 100 or greater OR a tight-fitting full facepiece respirator that must achieve a fit factor of 500 or greater OR tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators if tested in the negative pressure mode).

VIII Proper Use Procedures

Once the respirator has been properly selected and fitted, its protection efficiency must be maintained by proper use in accordance with 29 CFR 1910.134(g). The City of Asheboro ensures with written procedures that respirators are used properly in the workplace.

The City of Asheboro uses the following checklist to ensure that proper use procedures include coverage of OSHA requirements:

IX Facepiece Seal Protection

- 1) Do not permit respirators with tight-fitting facepiece to be worn by employees who have:
 - a) Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or
 - b) Any condition that interferes with the face-to-facepiece seal or valve function.
- 2) If an employee wears corrective glasses or goggles or other personal protective equipment, ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.
- 3) For all tight-fitting respirators, ensure that employees perform a user seal check each time they put on the respirator using the procedures in 29 CFR 1910.134 Appendix B-1 (User Seal Check Procedures) or procedures recommended by the respirator manufacturer that you can demonstrate are as effective as those in Appendix B-1.

X Continuing Respirator Effectiveness

- 1) Appropriate surveillance must be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, reevaluate the continued effectiveness of the respirator.
- 2) Ensure that employees leave the respirator use area

- a) To wash their faces and respirator facepiece as necessary to prevent eye or skin irritation associated with respirator use; or
 - b) If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or
 - c) To replace the respirator or the filter, cartridge, or canister elements.
- 3) If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, replace or repair the respirator before allowing the employee to return to the work area.

XI Procedures for IDLH Atmospheres

Ensure that:

- 1) One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- 2) Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;
- 3) The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- 4) The employer or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;
- 5) The employer or designee authorized to do so by the company, once notified, provides necessary assistance appropriate to the situation;
- 6) Employee(s) located outside the IDLH atmospheres are equipped with Pressure demand or other positive pressure self-contained breathing apparatuses (SCBAs), or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either:
 - a) Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
 - b) Equivalent means for rescue where retrieval equipment is not required under the bullet item above this one.

XII Procedures for Interior Structural Firefighting

In addition to the requirements set forth in the row above for Procedures for IDLH Atmospheres, in interior structural fires, ensure that:

- 1) At least two employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times;
- 2) At least two employees are located outside the IDLH atmosphere; and
- 3) All employees engaged in interior structural firefighting use SCBAs.

Notes:

- a) One of the two individuals located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as this individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.
- b) Nothing in this Proper Use Procedures section is meant to preclude firefighters from performing emergency rescue activities before an entire team has assembled.

XIII Maintenance and Care Procedures

In order to ensure continuing protection from respiratory protective devices, it is necessary to establish and implement proper maintenance and care procedures and schedules. A lax attitude toward maintenance and care will negate successful selection and fit because the devices will not deliver the assumed protection unless they are kept in good working order.

XIV Cleaning & Disinfecting

The City of Asheboro provides each respirator user with a respirator that is clean, sanitary, and in good working order. We ensure that respirators are cleaned and disinfected using the procedures below:

- 1. In Appendix B-2 of 29 CFR 1910.134. See this attached appendix.
- 2. Recommended by the respirator manufacturer. See these attached procedures. These procedures are of equivalent effectiveness as Appendix B-2 of 29 CFR 1910.134.

The respirators are cleaned and disinfected at the following intervals:

Respirator type:	Are cleaned and disinfected at the following interval:
Issued for the exclusive use of an employee	As often as necessary to be maintained in a sanitary condition
Issued to more than one employee	Before being worn by different individuals
Maintained for emergency use	After each use
Used in fit testing and training	After each use

XV Storage

Storage of respirators must be done properly to ensure that the equipment is protected and not subject to environmental conditions that may cause deterioration. We ensure that respirators are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they are packed or stored in containers to prevent deformation of the facepiece and exhalation valve. In addition, emergency respirators are kept accessible to the work area; stored in plastic bags that are clearly marked as containing emergency respirators; and stored in accordance with any applicable manufacturer instructions.

XVI Inspection

In order to assure the continued reliability of respirator equipment, it must be inspected on a regular basis. The frequency of inspection is related to the frequency of use. Here are our frequencies for inspection:

Respirator type:	Inspected at the following frequencies:
All types used in routine situations	Before each use and during cleaning
Maintained for use in emergency situations	At least monthly and in accordance with the manufacturer's recommendations, and checked for proper function before and after each use
Emergency escape-only respirators	Before being carried into the workplace for use

Any one of our respirator inspections includes a check:

- 1) For respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- 2) Of elastomeric parts for pliability and signs of deterioration.
- 3) For self-contained breathing apparatus, in addition to the above, monthly, we maintain air and oxygen cylinders in a fully charged state and recharge when the pressure falls to 90% of the manufacturer's recommended pressure level and determine that the regulator and warning devices function properly.

Also for respirators maintained for emergency use, we certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator. See attached documentation. This information shall be maintained until replaced following a subsequent certification.

XVII Repairs

Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

- 1) Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and only with the respirator manufacturer's NIOSH-approved parts designed for the respirator;
- 2) Repairs must be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and
- 3) Reducing and admission valves, regulators, and alarms must be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

XVIII Discarding of respirators

Respirators that fail an inspection or are otherwise not fit for use and cannot be repaired must be discarded by turning into Division Director / Department Head and following City Polices for Disposal of equipment.

XIX Air Quality Procedures

When atmosphere-supplying respirators are being used to protect employees it is essential to ensure that the air being breathed is of sufficiently high quality. The City's procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators include coverage of the following OSHA requirements for Compressed Air, Compressed Oxygen, Liquid Air, and Liquid Oxygen Used for Respirators:

- 1) Compressed and liquid oxygen must meet the United States Pharmacopoeia requirements for medical or breathing oxygen.
- 2) Compressed breathing air must meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
 - a) Oxygen content (v/v) of 19.5-23.5%;
 - b) Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
 - c) Carbon monoxide (CO) content of 10 parts per million (ppm) or less;
 - d) Carbon dioxide content of 1,000 ppm or less; and
 - e) Lack of a noticeable odor.
- 3) Ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.
- 4) Ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

XX Cylinders Used to Supply Breathing Air to Respirators:

- 1) Cylinders must be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR 180).
- 2) Cylinders of purchased breathing air must have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air.
- 3) The moisture content in the cylinder must not exceed a dew point of -50 deg. F (-45.6 deg. C) at 1 atmosphere pressure.

XXI Compressors:

- 1) Ensure that compressors used to supply breathing air to respirators are constructed and situated so as to:
 - a) Prevent entry of contaminated air into the air-supply system;
 - b) Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56 deg. C) below the ambient temperature;
 - c) Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters must be maintained and replaced or refurbished periodically following the manufacturer's instructions; and
 - d) Have a tag containing the most recent change date and the signature of the person authorized by the City to perform the change. The tag must be maintained at the compressor.
- 2) For compressors that are not oil-lubricated, ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
- 3) For oil-lubricated compressors, use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply must be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

XXII Breathing Air Couplings:

Ensure that breathing air couplings are incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance must be introduced into breathing air lines.

XXIII Breathing Gas Containers:

Use NIOSH-approved breathing-gas containers, marked and maintained in accordance with the Quality Assurance provisions of the NIOSH approval for the SCBA as issued in accordance with 42 CFR 84.

XXIV Filters, Cartridges, and Canisters:

Ensure that all filters, cartridges and canisters used in the workplace are labeled and color-coded with the NIOSH approval label and that the label is not removed and remains legible.

XXV Training

The most thorough respiratory protection program will not be effective if employees do not wear respirators, or if wearing them, do not do so properly. The only way to ensure that our employees are aware of the purpose of wearing respirators, and how they are to be worn is to train them. Simply put, employee training is an important part of the respiratory protection program and is essential for correct respirator use.

The City of Asheboro's training program is two-fold; it covers both the:

1. Respiratory hazards to which our employees are potentially exposed during routine and emergency situations, and
2. Proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance.

Both training parts are provided prior to requiring an employee to use a respirator in our workplace. However, if an employee has received training within 12 months addressing the seven basic elements of respiratory protection (see "Seven basic elements" below) and The City of Asheboro and the employee can demonstrate that he/she has knowledge of those elements, then that employee is not required to repeat such training initially.

Yet, we do require all of our employees to be retrained annually and when the following situations occur:

- a) Changes in the workplace or the type of respirator render previous training obsolete;
- b) Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- c) Any other situation arises in which retraining appears necessary to ensure safe respirator use.

Seven basic elements of respiratory protection:

Our employees shall be trained sufficiently to be able to demonstrate knowledge of at least these seven elements:

1. Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
2. What the limitations and capabilities of the respirator are.
3. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions.
4. How to inspect, put on, remove, use, and check the seals of the respirator.
5. What the procedures are for maintenance and storage of the respirator.
6. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.
7. The general requirements of 29 CFR 1910.134.

The basic advisory information on respirators, as presented below is provided by our Safety Coordinator or Division Director / Department Head in any written or oral format, to employees who wear respirators when such use is not required by the regulations or by the city:

Information for employees using respirators when not required under the standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or

statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.

3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

XXVI Program Evaluation

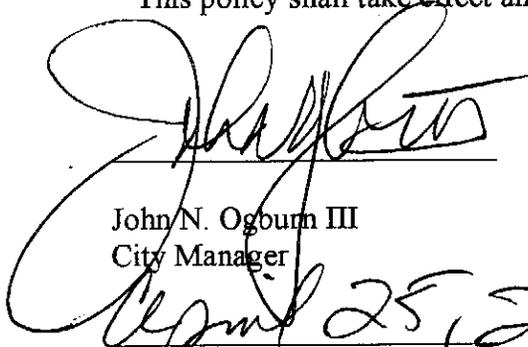
It is inherent in respirator use that problems with protection, irritation, breathing resistance, comfort, and other respirator-related factors occasionally arise in most respirator protection programs. Although it is not possible to eliminate all problems associated with respirator use, we try to eliminate as many problems as possible to improve respiratory protection and encourage employee acceptance and safe use of respirators. By having our program administrator (Safety Coordinator), thoroughly evaluate and, as necessary, revise our Respiratory Protection Program, we can eliminate problems effectively.

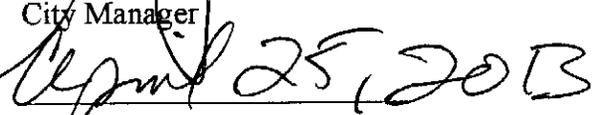
The City of Asheboro program evaluation is performed yearly by The Safety Committee, involves the following:

1. Conducting evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.
2. Regularly consulting employees required to use respirators to assess their views on program effectiveness and to identify any problems. Any problems that are identified during this assessment must be corrected. Factors to assess include, but are not limited to:
 - a) Respirator fit (including the ability to use the respirator without interfering with effective workplace performance)
 - b) Appropriate respirator selection for the hazards to which the employee is exposed
 - c) Proper respirator use under the workplace conditions the employee encounters
 - d) Proper respirator maintenance.

Effective Date:

This policy shall take effect and be in force from and after April 25, 2013



John N. Ogburn III
City Manager


Date

Exhibits

Exhibit # 1

Exhibit # 1-References

The following documents are helpful references:

- 29 CFR 1910.134, Respiratory Protection, and Appendices,
- 42 CFR 84, Approval of Respiratory Protective Devices,
- ANSI Z88.2, Respiratory Protection,
- NIOSH Guide to Industrial Respiratory Protection-1987 (however, this may be out of date),
- NIOSH Guide to the Selection and Use of Particulate Respirators Certified Under 42 CFR 84 (4/23/96).

Exhibit # 2

Exhibit - 2- OSHA Appendix A to § 1910.134: Fit Testing Procedures (Mandatory)

Appendix A to § 1910.134: Fit Testing Procedures (Mandatory)

Part I. OSHA-Accepted Fit Test Protocols

A. Fit Testing Procedures -- General Requirements

The employer shall conduct fit testing using the following procedures. The requirements in this appendix apply to all OSHA-accepted fit test methods, both QLFT and QNFT.

1. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.
2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.
3. The test subject shall be informed that he/she is being asked to select the respirator that provides the most acceptable fit. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.
4. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.
5. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in the following item A.6. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.
6. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:
 - (a) Position of the mask on the nose
 - (b) Room for eye protection
 - (c) Room to talk
 - (d) Position of mask on face and cheeks

Respiratory Protection

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

- (a) Chin properly placed;
- (b) Adequate strap tension, not overly tightened;
- (c) Fit across nose bridge;
- (d) Respirator of proper size to span distance from nose to chin;
- (e) Tendency of respirator to slip;
- (f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Appendix B-1 of this section or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B-1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14. Test Exercises.

(a) Employers must perform the following test exercises for all fit testing methods prescribed in this appendix, except for the CNP quantitative fit testing protocol and the CNP REDON quantitative fit testing protocol. For these two protocols, employers must ensure that the test subjects (*i.e.*, employees) perform the exercise procedure specified in Part I.C.4(b) of this appendix for the CNP quantitative fit testing protocol, or the exercise procedure described in Part I.C.5(b) of this appendix for the CNP REDON quantitative fit-testing protocol. For the remaining fit testing methods, employers must ensure that employees perform the test exercises in the appropriate test environment in the following manner:

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (*i.e.*, when looking toward the ceiling).

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)

(7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.

(8) Normal breathing. Same as exercise (1).

(b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocols

1. General

(a) The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QLFT equipment is kept clean and well maintained so as to operate within the parameters for which it was designed.

2. Isoamyl Acetate Protocol

Note: This protocol is not appropriate to use for the fit testing of particulate respirators. If used to fit test particulate respirators, the respirator must be equipped with an organic vapor filter.

(a) Odor Threshold Screening

Odor threshold screening, performed without wearing a respirator, is intended to determine if the individual tested can detect the odor of isoamyl acetate at low levels.

(1) Three 1 liter glass jars with metal lids are required.

(2) Odor-free water (e.g., distilled or spring water) at approximately 25 deg. C (77 deg. F) shall be used for the solutions.

(3) The isoamyl acetate (IAA) (also known as isopentyl acetate) stock solution is prepared by adding 1 ml of pure IAA to 800 ml of odor-free water in a 1 liter jar, closing the lid and shaking for 30 seconds. A new solution shall be prepared at least weekly.

(4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well-ventilated to prevent the odor of IAA from becoming evident in the general room air where testing takes place.

(5) The odor test solution is prepared in a second jar by placing 0.4 ml of the stock

Respiratory Protection

solution into 500 ml of odor-free water using a clean dropper or pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.

(6) A test blank shall be prepared in a third jar by adding 500 cc of odor-free water.

(7) The odor test and test blank jar lids shall be labeled (e.g., 1 and 2) for jar identification. Labels shall be placed on the lids so that they can be peeled off periodically and switched to maintain the integrity of the test.

(8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e., 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, and then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

(9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

(10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.

(11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

(b) Isoamyl Acetate Fit Test

(1) The fit test chamber shall be a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. If no drum liner is available, a similar chamber shall be constructed using plastic sheeting. The inside top center of the chamber shall have a small hook attached.

(2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors.

(3) After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well-ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

(4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.

(5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material, folded in half and wetted with 0.75 ml of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber. An IAA test swab or ampule may be substituted for the IAA wetted paper towel provided it has been demonstrated that the alternative IAA source will generate an IAA test atmosphere with a concentration equivalent to that generated by the paper towel method.

(6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the test exercises; or to demonstrate some of the exercises.

(7) If at any time during the test, the subject detects the banana-like odor of IAA, the test is failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

(8) If the test is failed, the subject shall return to the selection room and remove the respirator. The test subject shall repeat the odor sensitivity test, select and put on another respirator, return to the test area and again begin the fit test procedure described in (b) (1) through (7) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait at least 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

(9) If the subject passes the test, the efficiency of the test procedure shall be demonstrated by having the subject break the respirator face seal and take a breath before exiting the chamber.

(10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test, so that there is no significant IAA concentration buildup in the chamber during subsequent tests. The used towels shall be kept in a self-sealing plastic bag to keep the test area from being contaminated.

3. Saccharin Solution Aerosol Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly,

parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The threshold check solution is prepared by dissolving 0.83 gram of sodium saccharin USP in 100 ml of warm water. It can be prepared by putting 1 ml of the fit test solution (see (b)(5) below) in 100 ml of distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

(7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

Note to paragraph 3. (a): If the test subject eats or drinks something sweet before the screening test, he/she may be unable to taste the weak saccharin solution.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste

for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in 3. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected in section I. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.

(6) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is

failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

(12) Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

4. Bitrex™ (Denatonium Benzoate) Solution Aerosol Qualitative Fit Test Protocol

The Bitrex™ (Denatonium benzoate) solution aerosol QLFT protocol uses the published saccharin test protocol because that protocol is widely accepted. Bitrex is routinely used as a taste aversion agent in household liquids which children should not be drinking and is endorsed by the American Medical Association, the National Safety Council, and the American Association of Poison Control Centers. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste Threshold Screening.

The Bitrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of Bitrex.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.

(2) The test enclosure shall have a 3/4 inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check Solution into the enclosure. This Nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand.

(7) An initial ten squeezes are repeated rapidly and then the test subject is asked whether

Respiratory Protection

the Bitrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the Bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex and may not perform the Bitrex fit test.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.

(b) Bitrex Solution Aerosol Fit Test Procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure as that described in 4. (a) above.

(3) The test subject shall don the enclosure while wearing the respirator selected according to section I. A. of this appendix. The respirator shall be properly adjusted and equipped with any type particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt (NaCl) solution in warm water.

(6) As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she tastes the bitter taste of Bitrex.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the test subject does not report tasting the Bitrex, the test is passed.

(11) If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

5. Irritant Smoke (Stannic Chloride) Protocol

This qualitative fit test uses a person's response to the irritating chemicals released in the "smoke" produced by a stannic chloride ventilation smoke tube to detect leakage into the respirator.

(a) General Requirements and Precautions

(1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).

(2) Only stannic chloride smoke tubes shall be used for this protocol.

(3) No form of test enclosure or hood for the test subject shall be used.

(4) The smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.

(5) The fit test shall be performed in an area with adequate ventilation to prevent

exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

The person to be tested must demonstrate his or her ability to detect a weak concentration of the irritant smoke.

(1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.

(2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.

(3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

(1) The person being fit tested shall don the respirator without assistance, and perform the required user seal check(s).

(2) The test subject shall be instructed to keep his/her eyes closed.

(3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.

(4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.

(5) The exercises identified in section I.A. 14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke, directed around the perimeter of the respirator at a distance of six inches.

(6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test

procedure.

(7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test, once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.

(8) If a response is produced during this second sensitivity check, then the fit test is passed.

C. Quantitative Fit Test (QNFT) Protocols

The following quantitative fit testing procedures have been demonstrated to be acceptable: Quantitative fit testing using a non-hazardous test aerosol (such as corn oil, polyethylene glycol 400 [PEG 400], di-2-ethyl hexyl sebacate [DEHS], or sodium chloride) generated in a test chamber, and employing instrumentation to quantify the fit of the respirator; Quantitative fit testing using ambient aerosol as the test agent and appropriate instrumentation (condensation nuclei counter) to quantify the respirator fit; Quantitative fit testing using controlled negative pressure and appropriate instrumentation to measure the volumetric leak rate of a facepiece to quantify the respirator fit.

1. General

(a) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly and ensure that test equipment is in proper working order.

(b) The employer shall ensure that QNFT equipment is kept clean, and is maintained and calibrated according to the manufacturer's instructions so as to operate at the parameters for which it was designed.

2. Generated Aerosol Quantitative Fit Testing Protocol

(a) Apparatus.

(1) Instrumentation. Aerosol generation, dilution, and measurement systems using particulates (corn oil, polyethylene glycol 400 [PEG 400], di-2-ethyl hexyl sebacate [DEHS] or sodium chloride) as test aerosols shall be used for quantitative fit testing.

(2) Test chamber. The test chamber shall be large enough to permit all test subjects to perform freely all required exercises without disturbing the test agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the test agent is effectively isolated from the ambient air, yet uniform in concentration throughout the chamber.

Respiratory Protection

- (3) When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high efficiency particulate air (HEPA) or P100 series filter supplied by the same manufacturer.
- (4) The sampling instrument shall be selected so that a computer record or strip chart record may be made of the test showing the rise and fall of the test agent concentration with each inspiration and expiration at fit factors of at least 2,000. Integrators or computers that integrate the amount of test agent penetration leakage into the respirator for each exercise may be used provided a record of the readings is made.
- (5) The combination of substitute air-purifying elements, test agent and test agent concentration shall be such that the test subject is not exposed in excess of an established exposure limit for the test agent at any time during the testing process, based upon the length of the exposure and the exposure limit duration.
- (6) The sampling port on the test specimen respirator shall be placed and constructed so that no leakage occurs around the port (e.g., where the respirator is probed), a free air flow is allowed into the sampling line at all times, and there is no interference with the fit or performance of the respirator. The in-mask sampling device (probe) shall be designed and used so that the air sample is drawn from the breathing zone of the test subject, midway between the nose and mouth and with the probe extending into the facepiece cavity at least 1/4 inch.
- (7) The test setup shall permit the person administering the test to observe the test subject inside the chamber during the test.
- (8) The equipment generating the test atmosphere shall maintain the concentration of test agent constant to within a 10 percent variation for the duration of the test.
- (9) The time lag (interval between an event and the recording of the event on the strip chart or computer or integrator) shall be kept to a minimum. There shall be a clear association between the occurrence of an event and its being recorded.
- (10) The sampling line tubing for the test chamber atmosphere and for the respirator sampling port shall be of equal diameter and of the same material. The length of the two lines shall be equal.
- (11) The exhaust flow from the test chamber shall pass through an appropriate filter (i.e., high efficiency particulate filter) before release.
- (12) When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.
- (13) The limitations of instrument detection shall be taken into account when determining the fit factor.

(14) Test respirators shall be maintained in proper working order and be inspected regularly for deficiencies such as cracks or missing valves and gaskets.

(b) Procedural Requirements.

(1) When performing the initial user seal check using a positive or negative pressure check, the sampling line shall be crimped closed in order to avoid air pressure leakage during either of these pressure checks.

(2) The use of an abbreviated screening QLFT test is optional. Such a test may be utilized in order to quickly identify poor fitting respirators that passed the positive and/or negative pressure test and reduce the amount of QNFT time. The use of the CNC QNFT instrument in the count mode is another optional method to obtain a quick estimate of fit and eliminate poor fitting respirators before going on to perform a full QNFT.

(3) A reasonably stable test agent concentration shall be measured in the test chamber prior to testing. For canopy or shower curtain types of test units, the determination of the test agent's stability may be established after the test subject has entered the test environment.

(4) Immediately after the subject enters the test chamber, the test agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half mask or 1 percent for a full facepiece respirator.

(5) A stable test agent concentration shall be obtained prior to the actual start of testing.

(6) Respirator restraining straps shall not be over-tightened for testing. The straps shall be adjusted by the wearer without assistance from other persons to give a reasonably comfortable fit typical of normal use. The respirator shall not be adjusted once the fit test exercises begin.

(7) The test shall be terminated whenever any single peak penetration exceeds 5 percent for half masks and 1 percent for full facepiece respirators. The test subject shall be refitted and retested.

(8) Calculation of fit factors.

(i) The fit factor shall be determined for the quantitative fit test by taking the ratio of the average chamber concentration to the concentration measured inside the respirator for each test exercise except the grimace exercise.

(ii) The average test chamber concentration shall be calculated as the arithmetic average of the concentration measured before and after each test (i.e., 7 exercises) or the arithmetic average of the concentration measured before and after each exercise or the true average measured continuously during the respirator sample.

(iii) The concentration of the challenge agent inside the respirator shall be determined by one of the following methods:

(A) Average peak penetration method means the method of determining test agent penetration into the respirator utilizing a strip chart recorder, integrator, or computer. The agent penetration is determined by an average of the peak heights on the graph or by computer integration, for each exercise except the grimace exercise. Integrators or computers that calculate the actual test agent penetration into the respirator for each exercise will also be considered to meet the requirements of the average peak penetration method.

(B) Maximum peak penetration method means the method of determining test agent penetration in the respirator as determined by strip chart recordings of the test. The highest peak penetration for a given exercise is taken to be representative of average penetration into the respirator for that exercise.

(C) Integration by calculation of the area under the individual peak for each exercise except the grimace exercise. This includes computerized integration.

(D) The calculation of the overall fit factor using individual exercise fit factors involves first converting the exercise fit factors to penetration values, determining the average, and then converting that result back to a fit factor. This procedure is described in the following equation:

$$\text{Overall Fit Factor} = \frac{\text{Number of Exercises}}{1/ff_1 + 1/ff_2 + 1/ff_3 + 1/ff_4 + 1/ff_5 + 1/ff_6 + 1/ff_7 + 1/ff_8}$$

Where $ff_1, ff_2, ff_3, \text{ etc.}$ are the fit factors for exercises 1, 2, 3, etc.

(9) The test subject shall not be permitted to wear a half mask or quarter facepiece respirator unless a minimum fit factor of 100 is obtained, or a full facepiece respirator unless a minimum fit factor of 500 is obtained.

(10) Filters used for quantitative fit testing shall be replaced whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media.

3. Ambient aerosol condensation nuclei counter (CNC) quantitative fit testing protocol.

The ambient aerosol condensation nuclei counter (CNC) quantitative fit testing (Portacount™) protocol quantitatively fit tests respirators with the use of a probe. The probed respirator is only used for quantitative fit tests. A probed respirator has a special sampling device, installed on the respirator, that allows the probe to sample the air from inside the mask. A probed respirator is required for each make, style, model, and size that

Respiratory Protection

the employer uses and can be obtained from the respirator manufacturer or distributor. The CNC instrument manufacturer, TSI Inc., also provides probe attachments (TSI sampling adapters) that permit fit testing in an employee's own respirator. A minimum fit factor pass level of at least 100 is necessary for a half-mask respirator and a minimum fit factor pass level of at least 500 is required for a full facepiece negative pressure respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Portacount Fit Test Requirements.

(1) Check the respirator to make sure the sampling probe and line are properly attached to the facepiece and that the respirator is fitted with a particulate filter capable of preventing significant penetration by the ambient particles used for the fit test (e.g., NIOSH 42 CFR 84 series 100, series 99, or series 95 particulate filter) per manufacturer's instruction.

(2) Instruct the person to be tested to don the respirator for five minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is comfortable. This individual shall already have been trained on how to wear the respirator properly.

(3) Check the following conditions for the adequacy of the respirator fit: Chin properly placed; Adequate strap tension, not overly tightened; Fit across nose bridge; Respirator of proper size to span distance from nose to chin; Tendency of the respirator to slip; Self-observation in a mirror to evaluate fit and respirator position.

(4) Have the person wearing the respirator do a user seal check. If leakage is detected, determine the cause. If leakage is from a poorly fitting facepiece, try another size of the same model respirator, or another model of respirator.

(5) Follow the manufacturer's instructions for operating the Portacount and proceed with the test.

(6) The test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(7) After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried.

(b) Portacount Test Instrument.

(1) The Portacount will automatically stop and calculate the overall fit factor for the entire set of exercises. The overall fit factor is what counts. The Pass or Fail message will indicate whether or not the test was successful. If the test was a Pass, the fit test is over.

(2) Since the pass or fail criterion of the Portacount is user programmable, the test

operator shall ensure that the pass or fail criterion meet the requirements for minimum respirator performance in this Appendix.

(3) A record of the test needs to be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style, and size of respirator used; and date tested.

4. Controlled negative pressure (CNP) quantitative fit testing protocol.

The CNP protocol provides an alternative to aerosol fit test methods. The CNP fit test method technology is based on exhausting air from a temporarily sealed respirator facepiece to generate and then maintain a constant negative pressure inside the facepiece. The rate of air exhaust is controlled so that a constant negative pressure is maintained in the respirator during the fit test. The level of pressure is selected to replicate the mean inspiratory pressure that causes leakage into the respirator under normal use conditions. With pressure held constant, air flow out of the respirator is equal to air flow into the respirator. Therefore, measurement of the exhaust stream that is required to hold the pressure in the temporarily sealed respirator constant yields a direct measure of leakage air flow into the respirator. The CNP fit test method measures leak rates through the facepiece as a method for determining the facepiece fit for negative pressure respirators. The CNP instrument manufacturer Occupational Health Dynamics of Birmingham, Alabama also provides attachments (sampling manifolds) that replace the filter cartridges to permit fit testing in an employee's own respirator. To perform the test, the test subject closes his or her mouth and holds his/her breath, after which an air pump removes air from the respirator facepiece at a pre-selected constant pressure. The facepiece fit is expressed as the leak rate through the facepiece, expressed as milliliters per minute. The quality and validity of the CNP fit tests are determined by the degree to which the in-mask pressure tracks the test pressure during the system measurement time of approximately five seconds. Instantaneous feedback in the form of a real-time pressure trace of the in-mask pressure is provided and used to determine test validity and quality. A minimum fit factor pass level of 100 is necessary for a half-mask respirator and a minimum fit factor of at least 500 is required for a full facepiece respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) CNP Fit Test Requirements.

- (1) The instrument shall have a non-adjustable test pressure of 15.0 mm water pressure.
- (2) The CNP system defaults selected for test pressure shall be set at -- 15 mm of water (- 0.58 inches of water) and the modeled inspiratory flow rate shall be 53.8 liters per minute for performing fit tests.

(Note: CNP systems have built-in capability to conduct fit testing that is specific to unique work rate, mask, and gender situations that might apply in a specific workplace. Use of system default values, which were selected to represent respirator wear with

Respiratory Protection

medium cartridge resistance at a low-moderate work rate, will allow inter-test comparison of the respirator fit.)

(3) The individual who conducts the CNP fit testing shall be thoroughly trained to perform the test.

(4) The respirator filter or cartridge needs to be replaced with the CNP test manifold. The inhalation valve downstream from the manifold either needs to be temporarily removed or propped open.

(5) The employer must train the test subject to hold his or her breath for at least 10 seconds.

(6) The test subject must don the test respirator without any assistance from the test administrator who is conducting the CNP fit test. The respirator must not be adjusted once the fit-test exercises begin. Any adjustment voids the test, and the test subject must repeat the fit test.

(7) The QNFT protocol shall be followed according to section I. C. 1. of this appendix with an exception for the CNP test exercises.

(b) CNP Test Exercises.

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject needs to hold head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply for 1 minute, being careful not to hyperventilate. After the deep breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during test measurement.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his or her head from side to side between the extreme positions on each side for 1 minute. The head shall be held at each extreme momentarily so the subject can inhale at each side. After the turning head side to side exercise, the subject needs to hold head full left and hold his or her breath for 10 seconds during test measurement. Next, the subject needs to hold head full right and hold his or her breath for 10 seconds during test measurement.

(4) Moving head up and down. Standing in place, the subject shall slowly move his or her head up and down for 1 minute. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling). After the moving head up and down exercise, the subject shall hold his or her head full up and hold his or her breath for 10 seconds during test measurement. Next, the subject shall hold his or her head full down and hold his or her breath for 10 seconds during test measurement.

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song for 1 minute. After the talking exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(6) Grimace. The test subject shall grimace by smiling or frowning for 15 seconds.

(7) Bending Over. The test subject shall bend at the waist as if he or she were to touch his or her toes for 1 minute. Jogging in place shall be substituted for this exercise in those test environments such as shroud-type QNFT units that prohibit bending at the waist. After the bending over exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.

(8) Normal Breathing. The test subject shall remove and re-don the respirator within a one-minute period. Then, in a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement. After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of a respirator shall be tried.

(c) CNP Test Instrument.

(1) The test instrument must have an effective audio-warning device, or a visual-warning device in the form of a screen tracing, that indicates when the test subject fails to hold his or her breath during the test. The test must be terminated and restarted from the beginning when the test subject fails to hold his or her breath during the test. The test subject then may be refitted and retested.

(2) A record of the test shall be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style and size of respirator used; and date tested.

5. Controlled negative pressure (CNP) REDON quantitative fit testing protocol.

(a) When administering this protocol to test subjects, employers must comply with the requirements specified in paragraphs (a) and (c) of Part I.C.4 of this appendix ("Controlled negative pressure (CNP) quantitative fit testing protocol"), as well as use the test exercises described below in paragraph (b) of this protocol instead of the test exercises specified in paragraph (b) of Part I.C.4 of this appendix.

(b) Employers must ensure that each test subject being fit tested using this protocol follows the exercise and measurement procedures, including the order of administration, described below in Table A-1 of this appendix.

Table A-1. -- CNP REDON Quantitative Fit Testing Protocol

Exercises ⁽¹⁾	Exercise procedure	Measurement procedure
Facing Forward	Stand and breathe normally, without talking, for 30 seconds.	Face forward, while holding breath for 10 seconds.
Bending Over	Bend at the waist, as if going to touch his or her toes, for 30 seconds.	Face parallel to the floor, while holding breath for 10 seconds
Head Shaking	For about three seconds, shake head back and forth vigorously several times while shouting.	Face forward, while holding breath for 10 seconds.
REDON 1	Remove the respirator mask, loosen all facepiece straps, and then redon the respirator mask.	Face forward, while holding breath for 10 seconds.
REDON 2	Remove the respirator mask, loosen all facepiece straps, and then redon the respirator mask again.	Face forward, while holding breath for 10 seconds.

¹ Exercises are listed in the order in which they are to be administered.

(c) After completing the test exercises, the test administrator must question each test subject regarding the comfort of the respirator. When a test subject states that the respirator is unacceptable, the employer must ensure that the test administrator repeats the protocol using another respirator model.

(d) Employers must determine the overall fit factor for each test subject by calculating the harmonic mean of the fit testing exercises as follows:

$$\text{Overall Fit Factor} = \frac{N}{\left[\frac{1}{FF_1} + \frac{1}{FF_2} + \dots + \frac{1}{FF_N} \right]}$$

Where:

N = The number of exercises;

FF1 = The fit factor for the first exercise;

FF2 = The fit factor for the second exercise; and

FFN = The fit factor for the nth exercise.

Part II. New Fit Test Protocols

A. Any person may submit to OSHA an application for approval of a new fit test protocol. If the application meets the following criteria, OSHA will initiate a rulemaking proceeding under section 6(b)(7) of the OSH Act to determine whether to list the new protocol as an approved protocol in this Appendix A.

B. The application must include a detailed description of the proposed new fit test protocol. This application must be supported by either:

1. A test report prepared by an independent government research laboratory (e.g., Lawrence Livermore National Laboratory, Los Alamos National Laboratory, the National Institute for Standards and Technology) stating that the laboratory has tested the protocol and had found it to be accurate and reliable; or

2. An article that has been published in a peer-reviewed industrial hygiene journal describing the protocol and explaining how test data support the protocol's accuracy and reliability.

C. If OSHA determines that additional information is required before the Agency commences a rulemaking proceeding under this section, OSHA will so notify the applicant and afford the applicant the opportunity to submit the supplemental information. Initiation of a rulemaking proceeding will be deferred until OSHA has received and evaluated the supplemental information.

[63 FR 20098, April 23, 1998; 69 FR 46993, August 4, 2004]

Exhibit # 3

Appendix B-1 to § 1910.134: User Seal Check Procedures (Mandatory).

Appendix B-1 to § 1910.134: User Seal Check Procedures (Mandatory)

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturer's recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

I. Facepiece Positive and/or Negative Pressure Checks

A. *Positive pressure check.* Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

B. *Negative pressure check.* Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

II. Manufacturer's Recommended User Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

[63 FR 1152, Jan. 8, 1998]

Exhibit # 4

Appendix B-2 to § 1910.134: Respirator Cleaning Procedures (Mandatory)

Appendix B-2 to § 1910.134: Respirator Cleaning Procedures (Mandatory)

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B-2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning Respirators

A. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

B. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

C. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.

D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

E. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

F. Components should be hand-dried with a clean lint-free cloth or air-dried.

Respiratory Protection

- G. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

[63 FR 1152, Jan. 8, 1998]

Exhibit # 5

Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation
Questionnaire (Mandatory).

Respiratory Protection

Appendix C to Sec. 1910.134: OSHA Respirator Medical Evaluation Questionnaire (Mandatory)

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee:

Can you read (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male/Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
 - a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
 - b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s): _____

Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you *ever had* any of the following conditions?

a. Seizures: Yes/No

b. Diabetes (sugar disease): Yes/No

c. Allergic reactions that interfere with your breathing: Yes/No

d. Claustrophobia (fear of closed-in places): Yes/No

e. Trouble smelling odors: Yes/No

3. Have you *ever had* any of the following pulmonary or lung problems?

a. Asbestosis: Yes/No

b. Asthma: Yes/No

c. Chronic bronchitis: Yes/No

d. Emphysema: Yes/No

e. Pneumonia: Yes/No

f. Tuberculosis: Yes/No

g. Silicosis: Yes/No

h. Pneumothorax (collapsed lung): Yes/No

i. Lung cancer: Yes/No

j. Broken ribs: Yes/No

k. Any chest injuries or surgeries: Yes/No

l. Any other lung problem that you've been told about: Yes/No

4. Do you *currently* have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath: Yes/No

b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No

c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No

d. Have to stop for breath when walking at your own pace on level ground: Yes/No

e. Shortness of breath when washing or dressing yourself: Yes/No

f. Shortness of breath that interferes with your job: Yes/No

g. Coughing that produces phlegm (thick sputum): Yes/No

h. Coughing that wakes you early in the morning: Yes/No

i. Coughing that occurs mostly when you are lying down: Yes/No

j. Coughing up blood in the last month: Yes/No

k. Wheezing: Yes/No

l. Wheezing that interferes with your job: Yes/No

m. Chest pain when you breathe deeply: Yes/No

n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you *ever had* any of the following cardiovascular or heart problems?

a. Heart attack: Yes/No

b. Stroke: Yes/No

c. Angina: Yes/No

d. Heart failure: Yes/No

e. Swelling in your legs or feet (not caused by walking): Yes/No

f. Heart arrhythmia (heart beating irregularly): Yes/No

g. High blood pressure: Yes/No

h. Any other heart problem that you've been told about: Yes/No

6. Have you *ever had* any of the following cardiovascular or heart symptoms?

a. Frequent pain or tightness in your chest: Yes/No

b. Pain or tightness in your chest during physical activity: Yes/No

c. Pain or tightness in your chest that interferes with your job: Yes/No

d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No

e. Heartburn or indigestion that is not related to eating: Yes/No

d. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you *currently* take medication for any of the following problems?

a. Breathing or lung problems: Yes/No

b. Heart trouble: Yes/No

c. Blood pressure: Yes/No

d. Seizures (fits): Yes/No

8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

a. Eye irritation: Yes/No

b. Skin allergies or rashes: Yes/No

c. Anxiety: Yes/No

d. General weakness or fatigue: Yes/No

e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use

Respiratory Protection

either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever lost* vision in either eye (temporarily or permanently): Yes/No
11. Do you *currently* have any of the following vision problems?
 - a. Wear contact lenses: Yes/No
 - b. Wear glasses: Yes/No
 - c. Color blind: Yes/No
 - d. Any other eye or vision problem: Yes/No
12. Have you *ever had* an injury to your ears, including a broken ear drum: Yes/No
13. Do you *currently* have any of the following hearing problems?
 - a. Difficulty hearing: Yes/No
 - b. Wear a hearing aid: Yes/No
 - c. Any other hearing or ear problem: Yes/No
14. Have you *ever had* a back injury: Yes/No
15. Do you *currently* have any of the following musculoskeletal problems?
 - a. Weakness in any of your arms, hands, legs, or feet: Yes/No
 - b. Back pain: Yes/No
 - c. Difficulty fully moving your arms and legs: Yes/No
 - d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
 - e. Difficulty fully moving your head up or down: Yes/No
 - f. Difficulty fully moving your head side to side: Yes/No
 - g. Difficulty bending at your knees: Yes/No
 - h. Difficulty squatting to the ground: Yes/No

Respiratory Protection

- i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
- j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (e.g., in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures: _____

Respiratory Protection

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat):
Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

a. HEPA Filters: Yes/No

b. Canisters (for example, gas masks): Yes/No

c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

a. Escape only (no rescue): Yes/No

b. Emergency rescue only: Yes/No

c. Less than 5 hours *per week*: Yes/No

d. Less than 2 hours *per day*: Yes/No

e. 2 to 4 hours *per day*: Yes/No

f. Over 4 hours *per day*: Yes/No

Respiratory Protection

12. During the period you are using the respirator(s), is your work effort:

a. *Light* (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of a light work effort are *sitting* while writing, typing, drafting, or performing light assembly work; or *standing* while operating a drill press (1-3 lbs.) or controlling machines.

b. *Moderate* (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of moderate work effort are *sitting* while nailing or filing; *driving* a truck or bus in urban traffic; *standing* while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; *walking* on a level surface about 2 mph or down a 5-degree grade about 3 mph; or *pushing* a wheelbarrow with a heavy load (about 100 lbs.) on a level surface. c. *Heavy* (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of heavy work are *lifting* a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; *shoveling*; *standing* while bricklaying or chipping castings; *walking* up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment: _____

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

Respiratory Protection

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the second toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

Name of the third toxic substance: _____

Estimated maximum exposure level per shift: _____

Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998; 76 FR 33607, June 8, 2011]

Exhibit # 6

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using
Respirators When Not Required Under the Standard

Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

[63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]

Blood borne Pathogens

Exposure Control Plan

CITY OF ASHEBORO



11/29/2011

Table of Contents

Exposure Control Plan Purpose	Page 1
Administrative Duties	Page 1 & 2
Employee Exposure Determination	Page 2 & 3
Methods of Implementation and Control	Page 4
Universal Precautions	Page 4
Exposure Control Plan	Page 4
Engineering and Work Practice Controls	Page 4
Hand Washing Guidelines	Page 5
Disposable Glove Guidelines	Page 5
Other Precautionary Guidelines	Page 6
Procedure for Cleaning up Body Fluid Spills	Page 6
Procedure for the Cleaning of Equipment and Facilities	Page 6
Personal Protective Equipment (PPE)	Page 7
Housekeeping	Page 7
Laundry Procedure	Page 7 & 8
Labels	Page 8
Hepatitis B Vaccination	Page 8
Hepatitis B Vaccine Declination (Mandatory)	Page 9
Emergency Exposure Procedures	Page 10
Post-Exposure Evaluation and Follow-up	Page 10 & 11

Information Provided to the Healthcare Professional	Page 11
Healthcare Professional's Written Opinion	Page 11 & 12
Procedure for Evaluating the Circumstance Surrounding an Exposure Incident	Page 12
Employee Training	Page 12
Recordkeeping	Page 12
Medical Records	Page 13
OSHA Recordkeeping	Page 13
Sharps Injury Log	Page 13
Definitions	Page 14 & 15
Policy Effective Date	Page 15

Exposure Control Plan (ECP) for Blood borne Pathogens

Purpose

CITY OF ASHEBORO is committed to providing a safe and healthy work environment for our entire staff. In pursuit of this endeavor, the following exposure control plan (ECP) is provided to eliminate or minimize occupational exposure to blood borne pathogens in accordance with OSHA standard 29 CFR 1910.1030, "Occupational Exposure to Blood borne Pathogens."

The ECP is a key document to assist The City of Asheboro in implementing and ensuring compliance with the standard, thereby protecting our employees. This ECP includes:

- Determination of employee exposure;
- Implementation of various methods of exposure control, including:
 - Universal precautions,
 - Engineering and work practice controls,
 - Personal protective equipment, and
 - Housekeeping
- Hepatitis B vaccination;
- Post-exposure evaluation and follow-up;
- Communication of hazards to employees and training;
- Recordkeeping; and
- Procedures for evaluating circumstances surrounding an exposure incident.

The methods of implementation of these elements of the standard are discussed in the subsequent pages of this ECP.

Administrative Duties

The City Nurse and Safety Coordinator are responsible for the implementation of the ECP. City Nurse and Safety Coordinator will maintain, review, and update the ECP at least annually, and whenever necessary to include new or modified tasks and procedures.

Those employees who are determined to have occupational exposure to blood or other potentially infectious materials (OPIM) must comply with the procedures and work practices outlined in this ECP.

City of Asheboro will maintain and provide all necessary personal protective equipment (PPE), engineering controls (e.g., sharps containers), labels, and red bags as required by

the standard. The City of Asheboro will ensure that adequate supplies of the aforementioned equipment are available in the appropriate sizes.

The City Nurse will be responsible for ensuring that all medical actions required are performed and that appropriate employee health records are maintained. .

The Safety Coordinator will be responsible for training, documentation of training, and making the written ECP available to employees, OSHA, and NIOSH representatives.

Employee Exposure Determination

The following is a list of job classifications in which some employees at our establishment have occupational exposure. Included is a list of tasks and procedures, or groups of closely related tasks and procedures, in which occupational exposure may occur for these individuals:

All personnel subject to the City of Asheboro Personnel Policies and Procedures manual are covered by the standard. How the provisions of the standard will be met for these personnel is described in this ECP, if applicable.

Human Resources

The City Nurse & First Aid Certified Employees

Tasks

*CPR
First Aid
Vaccinations
Drawing Fluids*

Protection Barrier

*Resuscitation Mask
Gloves
Gloves
Gloves*

Facilities Maintenance Department

All Employees

Tasks

*CPR
First Aid*

Protective Barrier

*Resuscitation Mask
Gloves*

Fire Department

All Employees

Tasks

*CPR
First Aid*

Protection Barrier

*Resuscitation Mask
Gloves*

Police Department

All Employees

Tasks

*Restraining suspects
First Aid
Accident/Crime Scene Investigation*

Protection Barrier

*Gloves - if blood visible
Gloves
Gloves, and/or masks*

Cultural & Recreation

All employees

Tasks

First Aid

CPR

Protection Barrier

Gloves

Resuscitation Mask

Public Utilities

Operations, Environmental Service, Fleet Maintenance, Street, Water & Sewer Maintenance

Tasks

CPR

First Aid

Sewer Line Maintenance

Pump Station Maintenance

Protection Barrier

Resuscitation Mask

Gloves

***Gloves, Masks,
Protective eyewear,***

***Gloves, Protective
Masks***

Environmental Services

Tasks

Refuse Collection

Protection Barrier

Gloves (special),

Protective eyewear

Water Resources

All Employees

Tasks

CPR

First Aid

Sewer Line Maintenance

Pump Station Maintenance

Lab/Chemist Procedures

Protection Barrier

Resuscitation Mask,

Gloves

Gloves, Masks

Protective eyewear

Protective Gloves, Masks

Methods of Implementation and Control

Universal Precautions

All employees will utilize universal precautions, treating all potential infectious material as though it is truly infectious.

Exposure Control Plan

Employees covered by the blood borne pathogens standard receive an explanation of this ECP during their initial training session. It will also be reviewed in their annual refresher training. All employees have an opportunity to review this plan at any time by reviewing the City of Asheboro Safety Manual located in their department and available on-line at The City of Asheboro web site under the Human Resources Department.

The City Nurse and Safety Coordinator, in conjunction with the Safety Committee are responsible for reviewing and updating the ECP annually or more frequently if necessary to reflect any new or modified tasks and procedures that affect occupational exposure and to reflect new or revised employee positions with occupational exposure.

The review and update of such plans must also:

- Reflect changes in technology that eliminate or reduce exposure to blood borne pathogens; and
- Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

Engineering and Work Practice Controls:

Universal precautions shall be observed by all employees to prevent contact with blood or other potential infectious materials (OPIM). Engineering and work practice controls shall be utilized to eliminate or minimize workplace exposures. Where the potential for occupational exposures remains after implementation of these controls, personal protective equipment should also be provided.

Hand Washing Guidelines:

Hand washing should be done frequently by employees and shall be required (i.e. after use of toilet and after contact with any body fluids, etc.) The best method of hand washing involves the use of soap and water. Where soap and water are not available, waterless antiseptic cleanser or antiseptic towelettes may be used. Hand washing is the single most important means of preventing the spread of infection. Wash Hands as follows.

- Wash any exposed skin with antibacterial soap immediately after exposure.
- While scrubbing, be gentle with any scabs or sores.
- Wash all surfaces including back of hands, wrist, between fingers, and under fingernails.
- Wash hands immediately after removing gloves or other personal protective equipment.
- Dry hands thoroughly with a paper towel and dispose in appropriate container.

Disposable Glove Guidelines:

Disposable gloves shall be worn if the employee has a cut or open lesion on the hands or where there may be contact with body fluids or infectious materials.

When removing protective gloves after they have been contaminated, use the following procedure for safe removal.

- With your gloved dominant hand, grasp the other gloved hand at the wrist or palm and pull away from the hand.
- Pull the glove the rest of the way off.
- Holding the removed glove balled up in the palm of your gloved hand, insert two fingers of your non-dominant hand under the cuff of the remaining glove.
- Remove the glove by stretching it up and away from the hand and turning it inside out as you pull it off.
- Dispose of glove in a biohazard container.

Other Precautionary Guidelines

All cuts and open wounds shall be covered following basic First Aid procedures. Protective coverings, bandages, etc. shall be worn by all employees who may have an "occupational exposure." Others should not share disposable items. Disinfectants may be utilized where hand washing is impractical. Hand soap and disposable towels, tissue or gloves shall be available to employees who may have an occupational exposure to blood or other potentially infectious materials. Soiled surfaces with blood or other potentially infectious material shall be promptly cleaned with disinfectant. All items used in cleaning (i.e. rags; sponges, etc.) are to be properly disposed of after each use. Vehicle or equipment seats shall be wiped with a disinfectant after seats are soiled by participant.

Procedure for Cleaning up Body Fluid Spills:

Wear disposable gloves, which should be discarded following cleanup. Clean and disinfect soiled area immediately using paper towels, soap and water. Disinfect area with a 10% bleach solution (about 1- 3/4 cup of household bleach to 1 gallon of water). Clothing soaked with another's blood or body fluids should be isolated and washed separate from other clothing. Following an exposure to blood or other potential infectious materials, visibly contaminated paper towels and disposable gloves should be placed in a red plastic bag, secured and disposed of in a designated regulated waste disposal site for removal by the City of Asheboro's designated vendor.

Procedure for the Cleaning of Equipment and Facilities:

Housekeeping workers should wear appropriate personal protective equipment including general-purpose utility gloves during all cleaning of blood or other potential infectious materials during decontamination procedures. Initial clean up of blood or other potential infectious materials should be followed with the use of approved disinfectant germicidal spray or 10% bleach solution. All materials used in clean up must be disposed of properly.

Sharps disposal containers are to be inspected and maintained or replaced by The Safety Coordinator every 3 months or whenever necessary to prevent overfilling.

The City of Asheboro identifies the need for changes in engineering control and work practices through consultation with staff. The need for new procedures or new products is to be reviewed and evaluated in consultation with the Safety Committee.

The Safety Coordinator will ensure effective implementation of these recommendations.

Personal Protective Equipment (PPE)

PPE is provided to each of our employees at no cost. Training is provided by Safety Coordinator or competent person in the use of the appropriate PPE for the tasks or procedures employees will perform.

The types of PPE available to employees are as follows:

- Gloves
- Eye Protection, Safety Glasses, Goggles or Face Shields
- Respirator Masks
- Lab Aprons, Jump Suits, Tyvek Suits.

PPE is located at each facility and may be obtained through the department head or their designee.

Each employee using PPE must observe the following precautions:

- Never use damaged PPE.
- Never take contaminated PPE home.
- Always clean or dispose of contaminated PPE following previous guidelines.

Housekeeping

Regulated waste is placed in containers that are closable, constructed to contain all contents and prevent leakage, appropriately labeled or color-coded (see Labels section), and closed prior to removal to prevent spillage or protrusion of contents during handling.

Contaminated sharps are discarded immediately or as soon as possible in containers that are closable, puncture-resistant, leak proof on sides and bottoms, and labeled or color-coded appropriately. Sharps disposal containers are available in all departments.

Bins and pails (e.g., wash or emesis basins) are cleaned and decontaminated as soon as feasible after visible contamination.

Broken glassware that may be contaminated is picked up using mechanical means, such as a brush and dustpan.

Laundry Procedure

Laundry contaminated with blood or OPIM will be handled as little as possible. Such laundry will be placed in appropriately marked bags (biohazard labeled or color-coded red)

Laundering will be performed by their departments contracted services.

The following laundering requirements must be met: If an offsite facility is used to clean contaminated laundry and Universal Precautions are not used by the facility, contaminated laundry must be placed in bags or containers that are labeled or color coded.

Labels

The Department designee will ensure warning labels are affixed or red bags are used as required if regulated waste or contaminated equipment is brought into the facility. Employees are to notify the Safety Coordinator if they discover regulated waste containers containing blood or OPIM, contaminated equipment, etc., without proper labels.

Hepatitis B Vaccination

The City Nurse will provide training to employees on hepatitis B vaccinations, addressing the safety, benefits, efficacy, methods of administration, and availability.

The hepatitis B vaccination series is available at no cost after training and within 10 days of initial assignment to employees identified in the exposure determination section of this plan. Vaccination is encouraged unless:

1. Documentation exists that the employee has previously received the series,
2. Antibody testing reveals that the employee is immune, or
3. Medical evaluation shows that vaccination is contraindicated.

However, if an employee chooses to decline vaccination, the employee must sign a declination form. Employees who decline may request and obtain the vaccination at a later date at no cost. Documentation of refusal of the vaccination is kept at Medical Office.

Vaccination will be provided by The City Nurse at The Health Clinic.

City of Asheboro

Hepatitis B Vaccine Declination (Mandatory)

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Signed: _____ *(employee signature)*

Date: _____

Emergency Exposure Procedure

Should an exposure incident occur, the employee shall contact their immediate supervisor and be sent to the “Randolph Hospital Emergency Room” without necessary delay. Supervisor needs to contact City Nurse or Safety Coordinator.

1. Administer first aid (Wash wound , or exposed skin or mucous membranes)
2. Notify immediate supervisor.
3. Document and if possible secure source information or material.
4. Proceed to Randolph Hospital Emergency Room for evaluation and baseline testing following their exposure guidelines. Decide after evaluation there with the doctor if taking medication to prevent HIV is indicated or if getting Hepatitis B immune globulin is indicated.
5. Workers Comp drug testing will be performed at Randolph Hospital.
6. Visit for review of hospital labs and follow up labs at White Oak Urgent Care in Asheboro. Decide with that provider about the schedule of test to be done, and review if Hepatitis B vaccination is indicated.(Usually retesting at 2 months, 6 months and perhaps 12 months is recommended.)
7. Schedule follow up review of incident and additional training with City Safety Coordinator.

Post-Exposure Evaluation and Follow-up

Following a report of an exposure incident, the City Nurse shall ensure that the exposed employee has a confidential medical evaluation and follow-up, including at least the following elements:

- Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;
- Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law;

The source individual’s blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, the employer shall establish that legally required consent cannot be obtained. When the source individual’s consent is not required by law, the source individual’s blood shall be tested and the results documented.

When the source individual is already known to be infected with HBV or HIV, testing for the source individual’s known HBV or HIV status need not to be repeated.

Results of the source individual’s testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations

concerning disclosures of the identity and infectious status of the source individual.

- Collection and testing of blood for HBV and HIV serological status;

The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.

If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident, the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

- Post-exposure prophylaxis, when medically indicated, as recommended by the US Public Health Service;
- Counseling; and
- Evaluation of reported illnesses.

Information Provided to the Healthcare Professional.

The City Nurse shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation, and shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

- A copy of this regulation;
- A description of the exposed employee's duties as they relate to the exposure incident.
- Documentation of the route(s) of the exposure and the circumstances under which the exposure occurred;
- Results of the source individual's blood testing, if available; and
- All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

Healthcare Professional's Written Opinion

The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to:

- Whether Hepatitis B vaccination is indicated for an employee,
- If the employee has received such vaccination.

The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

- That the employee has been informed of the results of the evaluation; and
- That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

All other findings or diagnoses shall remain confidential and shall not be included in the written report.

Procedures for Evaluating the Circumstances Surrounding an Exposure Incident

The City Nurse and Safety Coordinator with guidance from the Safety Committee will review the circumstances of all exposure incidents to determine if any new methods of protection or technology improvements are needed.

If it is determined that revisions need to be made, The City Nurse / Safety Coordinator will ensure that appropriate changes are made to this ECP. Changes include: Evaluation of safer devices, adding employees to the exposure list.

Employee Training

Each employee who has an occupational exposure to blood borne pathogens shall receive training conducted by the Safety Coordinator, or Instructor(s) that meets these guidelines:

- Certification by the National Safety Council or equivalent.
- Includes training on the epidemiology, systems, and transmission of blood borne diseases.
- Covers the City of Asheboro's Exposure Control Plan

Training materials are available at the Human Resources Department or Employee Health Clinic.

Recordkeeping

Training Records

Training records are completed for each employee upon completion of training. These documents will be kept at Human Resources Department.

The training records include:

Dates of Training Sessions
Summary of training Instructor Qualification
Signatures of Attendees

Medical Records

Medical records are maintained for each employee with occupational exposure in accordance with 29 CFR 1910.1030, "Access to Employee Exposure and Medical Records."

The City Nurse is responsible for maintenance of the required medical records. These confidential records are kept at the Medical Department for at least the duration of employment plus 30 years.

OSHA Recordkeeping

An exposure incident is evaluated to determine if the case meets OSHA's Recordkeeping Requirements (29 CFR 1904). This determination and the recording activities are done by The City Nurse and Safety Coordinator.

Sharps Injury Log

The City Nurse establishes and maintains a sharps injury log to record percutaneous injuries from contaminated sharps. The information in the sharps injury log is recorded and maintained. This protects the confidentiality of the injured employee. Our sharps injury log contains:

Type of device involved in incident:
Department where exposure occurred:
Description of Incident:

Logs are maintained by the City of Asheboro.

- **Definitions:**

Blood borne Pathogens- means pathogenic microorganism that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Contaminated – means the presence of the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Exposure Incident (or significant exposure) – means a specific eye, mouth, or other mucous membrane, non-intact skin, or Parenteral contact with blood or other potentially infectious materials that result from performance of an employee’s duty.

HBC – Hepatitis C virus

HBV - Hepatitis B virus

Hepatitis B Titer – a blood test used to determine a person’s immunity to Hepatitis B virus infection.

HIV – human immunodeficiency virus

Occupational Exposure – means reasonably anticipated skin, eye, mucous membrane, or Parenteral contact with blood or other potentially infectious materials that may results from performance of an employee’s duties.

Other Potentially Infectious Materials – means

- Blood
- Semen
- Vaginal secretions
- Saliva that may contain blood
- Cerebrospinal fluid
- Synovial fluid
- Pleural fluid
- Any body fluid where blood is visible
- Any body fluid that cannot be identified

Parenteral – a piercing of mucous membranes or skin barrier by means of a needle stick, human bite, cut and /or abrasion.

Regulated Waste – means a liquid or semi-liquid or other potential infectious materials, contaminated items that would release blood or other potential infectious materials in a liquid or semi-liquid state if compressed, items that are caked with dried blood or other

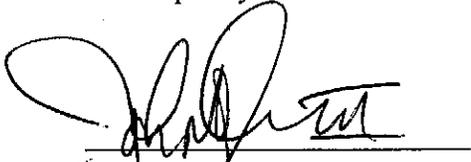
infectious material that are capable of releasing these material during handling; contaminated sharps, pathological and microbial wastes containing blood and other potential infectious materials.

Source Individual - means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

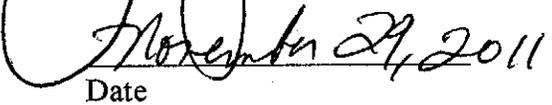
Universal Precautions - is an approach to infection control which requires that all human blood and certain other body fluids are treated as if known to be infectious for HIV, HBV, HCV and other blood borne pathogens.

Effective Date:

This policy shall take effect and be in force from and after November 29, 2011



John N. Ogburn III
City Manager



Date

Table of Contents

Section V: Confined Space Policy	PAGE
I. SCOPE AND APPLICATION	2
II. COORDINATION	2
III. DEFINITIONS	2
IV. GENERAL REQUIREMENTS	6
A. Permit-Required Confined Spaces (PRCS)	6
B. Alternate Procedures for Entering Permit Confined Spaces	6
C. Changes in Space Use or Configuration	7
D. Confined Space Reclassification	8
E. Contractors	8
V. PERMIT-REQUIRED CONFINED SPACE PROGRAM	9
A. General	9
B. Equipment	10
C. Evaluating Permit Space Conditions	11
D. Attendants	11
E. Entrants	12
F. Entry Supervisor	12
G. Testers and Monitors	13
H. Permit System	14
I. Training	15
J. Rescue and Emergency Services	16

K. Permits and Forms 17

VI. REFERENCES AND SOURCES OF INFORMATION 17

Appendices

- A Permit-Required Confined Spaces Inventory
- B Certification for Permit-Required Confined Space Entry
- C Certification for Reclassifying Confined Spaces
- D Confined Space Entry Permit

This Permit-Required Confined Space (PRCS) Program is provided to protect authorized employees who must enter confined spaces and may be exposed to hazardous atmospheres; engulfment in materials; conditions which may trap or asphyxiate due to converging or sloping walls; or contains any other safety or health hazard.

Many workplaces contain confined spaces, not designed for human occupancy, which due to their configuration hinder employee activities including entry, work, and exit. Asphyxiation is the leading cause of death in confined spaces. Also, there have been cases when employees entering confined spaces were harmed, ground-up by augers, crushed, or battered by moving parts inside vessels, mixers, etc. The nature of confined spaces can cause toxic vapors to become highly toxic and harmful and in some cases immediately dangerous to life and health (IDLH) unless adequate precautions are taken.

The Occupational Safety and Health Administration (OSHA) has estimated that at least 62 fatalities at 12,643 injuries and illnesses occur annually due to confined space hazards. These deaths, and injuries, and illnesses can be prevented by implementing and maintaining an effective confined space entry program.

This PRCS Program describes the measures necessary (1) to prevent unauthorized entry into permit-required confined spaces, (2) identify and evaluate permit space hazards, and (3) implement the means, procedures, and practices necessary for safe entry operations.

I. Scope and Application

This Permit-Required Confined Space (PRCS) Program covers all employees who enter permit confined spaces and contains the practices and procedures for their safe entry.

II. Coordination

The PRCS coordinator is Safety Coordinator who is responsible for maintaining a current copy of the program and making it available to all employees. Specific questions about the program and interpretations should be directed to the PRCS Program coordinator.

III. Definitions

Acceptable entry conditions means the conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.

Attendant means an individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant's duties assigned in the employer's permit space program.

Authorized entrant means an employee who is authorized by the employer to enter a permit space.

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

Confined space means 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 (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
- C. Is not designed for continuous employee occupancy.

Double block and bleed means the closure of a line, duct or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.

Emergency means any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.

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

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

Entry permit (permit) means the written or printed document that is provided by the employer to allow and control entry into a permit space and that contains the information specified in paragraph (f) of this section.

Entry supervisor means the person (such as the employer, foreman, or crew chief) responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section.

Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also the duties of entry supervisor may be passed from one individual to another during the course of an entry operation.

Hazardous atmosphere means an atmosphere that may expose employees to the risk of death, incapacitation, impairment or ability to self-rescue (that is, escape unaided from a permit space) injury, or acute illness from one or more of the following causes:

- A. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
- B. Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less.

- C. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- D. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, *Occupational Health and Environmental Control*, or in Subpart Z, *Toxic and Hazardous Substances*, of this part and which could result in employees exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment or ability to self-rescue, injury or acute illness due to its health effects is not covered by this provision.

E. Any other atmospheric condition that is immediately dangerous to life or health;

Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communications Standard, 1910.1200 of this part, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

Hot work permit means the employer's written authorization to perform operations (for example, riveting, welding, cutting, burning and heating) capable of providing a source of ignition.

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

Note: Some materials - hydrogen fluoride gas and cadmium vapor, for example - may produce immediate transient effects that, even if severe, may pass without medical attention, but are followed by sudden, possibly fatal collapse 12-72 hours after exposure. The victim "feels normal" from recovery from transient effects until collapse. Such materials in hazardous quantities are considered to be "immediately" dangerous to life or health.

Inerting means the displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.

Note: This procedure produces an IDLH oxygen-deficient atmosphere.

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

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

Non-permit confined space means 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-deficient atmosphere means an atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen enriched atmosphere means an atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required confined space (permit space) means a confined space that has one or more of the following characteristics:

- A. Contains or has a potential to contain a hazardous atmosphere;
- B. Contains a material that has the potential for engulfing an entrant;
- 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.

Permit-required confined space program (permit space program) means the employer's overall program for controlling, and, where appropriate, for protecting employees from, permit space hazards and for regulating employee entry into permit spaces.

Permit system means the employer's written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.

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

Rescue service means the personnel designated to rescue employees from permit spaces.

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

Testing means the process by which the hazards that may confront entrants or a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space.

Note: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to and during entry.

IV. General Requirements

This PRCS program covers the safety requirements, including a permit system, for employees to enter confined spaces, designated as permit-required confined spaces (permit spaces) which:

- * Pose special dangers for entrants;
- * Have configurations hampering efforts;
- * Which require protection for entrants from serious hazards including atmospheres, which are or may be:
 - Toxic,
 - Explosive, or
 - Asphyxiating; and
- * Which have other hazards.

A. Permit-Required Confined Spaces (PRCS)

The workplace has been evaluated to identify the permit-required confined spaces. See Appendix A for a complete list of all the PRCS's.

B. Alternate Procedures for Entering Permit Confined Spaces

Alternate procedures are used for entry into permit spaces under the following conditions:

1. The only hazard posed is an actual or potential hazardous atmosphere;
2. It has been demonstrated that continuous forced air ventilation alone is sufficient to maintain safety for entry;
3. Monitoring and inspection data has been developed that supports only an atmospheric hazard and continuous forced air ventilation alone maintains safety;
4. If an initial entry is necessary, an entry permit is used.
5. Entry into the permit space complies with the following.
 - (a) Any conditions making it unsafe to remove an entrance cover is eliminated before the cover is removed.
 - (b) When entrance covers are removed, the openings are promptly guarded by a railing, temporary cover, or other temporary barrier that will prevent an accidental fall through the opening and that protects each employee working in the space from foreign objects entering the space.

- (c) Before an employee enters the space, the internal atmosphere is tested, with a calibrated direct-reading instrument, for the following conditions in the order listed:
 - (1) Oxygen content,
 - (2) Flammable gases and vapors, and
 - (3) Potential toxic air contaminants.
- (d) There is no hazardous atmosphere within the space whenever any employee is inside the space.
- (e) Continuous forced air ventilation is used as follows:
 - (1) No employee enters the space until the forced air ventilation has eliminated any hazardous atmosphere;
 - (2) The forced air ventilation is directed so as to ventilate the immediate areas where an employee is or will be present within the space and continues until all employees leave the space;
 - (3) A clean source of forced air supply is used for ventilation which does not increase the hazards in the space.
- (f) The atmosphere within the space is continuously monitored to ensure that the continuous forced air ventilation is preventing the accumulation of a hazardous atmosphere.
- (g) If a hazardous atmosphere is detected during entry:
 - (1) Each employee leaves the space immediately;
 - (2) The space is evaluated to determine how the hazardous atmosphere developed; and
 - (3) Measures are implemented to protect employees from the hazardous atmospheres before any subsequent entry.
- (h) The space is verified for safe entry and that the necessary protective measures described above have been taken through a written certification. See Appendix B.

C. Changes in Space Use or Configuration

When there are changes in the use and configuration of a non-permit confined space that might increase the hazards to entrants, the space is reevaluated and, if necessary, reclassified as a permit-required confined space.

D. Confined Space Reclassification

A permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

1. If the space poses no actual or potential atmospheric hazards and the hazards are eliminated without entry, and as long as the non-atmospheric hazards remain eliminated.
2. Entry into the space to eliminate the hazards is under an authorized permit and testing and inspection during the entry demonstrate the hazards were eliminated without requiring continuous forced air ventilation.
3. A certification is documented showing the hazards were eliminated.
4. If hazards arise within a permit space that has been declassified to a non-permit space, each employee must exit the space and the space is reevaluated to determine if it must be reclassified as a permit space.

E. Contractors

In some cases contractors and other non-employees may enter permit spaces to perform work. When contractors and others enter permit spaces the following procedures are followed:

1. They (contractors) are informed that the workplace contains permit spaces and that they must follow a permit space entry program per OSHA standard 29 CFR 1910.146 and use an authorized permit for entry.
2. Apprise the contractor of the elements, including the hazards identified and the experience with the space making it a permit space;
3. Apprise the contractor of the precautions or procedures implemented for protection of employees in or near permit spaces; and
4. Debrief the contractor at the conclusion of the entry regarding the permit space program followed and regarding any hazards confronted or created in the space(s) during entry operations.
5. All contractors performing permit space entry are required to:
 - (a) Obtain and use the available information provided;
 - (b) Coordinate entry operations with other working in or near permit spaces; and
 - (c) Inform the host employer during debriefing or entry of the permit space program that will be followed, and any hazards confronted or created in the space(s).

V. PERMIT-REQUIRED CONFINED SPACE PROGRAM

A. General

This permit-required confined space program is designed to prevent unauthorized entry into permit-confined spaces, identify and evaluate hazards and establish procedures and practices for safe entry including testing and monitoring conditions. The program requires for an attendant stationed outside permit spaces during entry; procedures to summon rescuers and prevent unauthorized personnel from attempting rescue; and a system for preparing, issuing, using and canceling entry permits. It also includes procedures for entry operations and canceling entry permits and review of the permit program at least annually and additionally as necessary.

The following measures have been implemented as necessary to prevent unauthorized employee entry into permit spaces.

1. All affected employees have been informed through initial safety training about the characteristics and presence of permit spaces.
2. Some permit spaces are also posted with danger signs to supplement the safety training. However, the posting of danger signs is not all inclusive and each employee must know what a permit space is, the usual hazards involved, and what precautions are required to ensure safe entry so they can help ensure their own protection.

The following means, procedures, and practices necessary for safe permit space entry operations have been implemented:

(1) Acceptable Entry Conditions

All permit space entrants protected from atmospheric hazards including oxygen deficiency (less than 19.5%) or increased oxygen concentration (greater than 23.5%), toxic materials (above the exposure limit), flammable gases and vapors, asphyxiating, and engulfment, configuration or any other recognized hazards.

(2) Isolating the Permit Space

All hazardous energy sources associated with permit spaces which may expose entrants to potential injury are isolated, locked out and/or tagged out prior to entry:

(3) Purging, Inerting, Flushing, or Ventilating Permit Spaces

All permit entry spaces are thoroughly purged, inerted, flushed, and/or ventilated as necessary to ensure the elimination and/or control of all hazards, which may cause entrants injury and/or illness.

(4) External Hazards

Pedestrian, vehicle, or other barriers are provided as necessary to protect entrants from external hazards.

- (5) **Verifying Acceptable Conditions**
Conditions in permit spaces are tested and monitored throughout entry as necessary to ensure that they are acceptable for the duration of the authorized entry.

B. Equipment

The following equipment is provided at no cost to employees, maintained properly, and used properly to ensure the safety of employees entering permit spaces.

- (1) **Testing and monitoring equipment**
Neotronics, Exotox, Model 50, four gas monitor
- (2) **Ventilating equipment**
General, GP8H, Gasoline powered blower
- (3) **Communications equipment**
Ropes , Two-way Radios (radios to be used only in non flammable atmospheres, unless certified as intrinsically safe.)
- (4) **Personal protective equipment**
Safety Shoes, Rubber Boots, Hard Hats, Hearing Protection, Gloves, Protective Clothing, SCBA.
- (5) **Lighting equipment**
2124-ASTM 3 cell lights for type I & II locations or equivalent.
- (6) **Barriers and shields**
Cones, Barricade Tape, etc.
- (7) **Ingress and egress equipment**
Ladders
- (8) **Rescue and emergency equipment**
Unihoist, MSE Retractable Lifeline, MSE Tripod, Full Body Harness.
- (9) **Other equipment**
Saddle Vents (manhole), 25ft. sections of 8in. ducting

C. Evaluating Permit Space Conditions

Permit space conditions are evaluated (tested/monitored) when entry operations are conducted as follows:

(1) **Testing and Monitoring**

The entry conditions in the permit space are tested to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a sewer), in such case, pre-entry testing is performed to the extent feasible before entry and entry conditions are continuously monitored in work areas.

The tests and monitoring are conducted in permit spaces continuously and logged on the permit at least every two hours to determine if acceptable entry conditions are being maintained during the course of entry operations.

When conducting tests for atmospheric hazards, oxygen tests are conducted first, then combustible gases and vapors, and then for toxic gases and vapors. The tests are conducted in order to ensure that test instruments function properly since an oxygen deficient atmosphere may adversely affect the test results.

D. Attendants

(1) General

At least one attendant is required outside the permit space into which entry is authorized for the duration of the entry operation.

(2) Duties

All attendants are required:

- (a) To know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- (b) To be aware of possible behavioral effects of hazard exposure in entrants;
- (c) To continuously maintain an accurate count of entrants in the permit space and ensure a means to accurately identify authorized entrants;
- (d) To remain outside the permit space during entry operations until relieved by another attendant (once properly relieved, they may participate in other permit space activities including rescue if they are properly trained and equipped).
- (e) To communicate with entrants as necessary to monitor entrant status and alert entrants of the need to evacuate;
- (f) To monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the entrants to immediately evacuate if: the attendant detects a prohibited condition, detects entrant behavioral effects of hazard exposure, detects a situation outside the space that could endanger the entrants; or if the attendant cannot effectively and safely perform all the attendant duties;
- (g) To summon rescue and other emergency services as soon as the attendant determines that entrants need assistance to escape the permit space hazards;
- (h) To take the following action when unauthorized persons approach or enter a permit space while entry is underway:
- (1) Warn the unauthorized persons that they must stay away from the permit space,

- (2) Advise the unauthorized persons that they must exit immediately if they have entered the space, and
- (3) Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;
 - (i) To perform non-entry rescues as specified by that rescue procedure and entry supervisor; and
 - (j) Not to perform duties that might interfere with the attendant's primary duty to monitor and protect the entrants.

E. Entrants

(1) General

All entrants must be authorized by the entry supervisor to enter permit spaces, have received the required training, use the proper equipment, and observe the entry procedures and permit. The following entrant duties are required:

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

F. Entry Supervisors

(1) General

Entry supervisors are responsible for the overall permit space entry and must coordinate all entry procedures, tests, permits, equipment and other relevant activities. The following entry supervisor duties are required:

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

- (b) Verifies, by checking that the appropriate entries have been made on the permit, all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;
- (c) Terminate the entry and cancel the permit when the entry is complete or there is a need for terminating the permit;
- (d) Verify that rescue services are available and that the means for summoning them are operable;
- (e) Remove unauthorized persons who enter or attempt to enter the space during entry operations; and
- (f) Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space, that entry operations remain consistent with the permit terms and that acceptable entry conditions are maintained.

G. Testers and Monitors

(1) General

The accuracy of testing and monitoring equipment may be significantly affected under certain conditions of humidity, pressure, or temperature or by the presence of interfering chemicals. However, if the equipment is properly selected, calibrated, and maintained and operated by well-trained employees, the confined space testing and monitoring needs can be effectively met. All persons performing tests and monitoring for permit space entry have been properly trained in the use of and limitations of the following testing and monitoring equipment.

(Neotronics, Exotox model 50, four gas monitor. Refer to operations manual and/or training video for proper use)

(2) Procedures for Atmospheric Testing

Atmospheric testing is required for two distinct purposes: evaluation of the hazards of the permit space and verification that acceptable entry conditions for entry into that space exist.

- (a) **Evaluation Testing:** The atmosphere of a confined space should be analyzed using equipment of sufficient sensitivity and specificity to identify and evaluate any hazardous atmospheres that may exist or arise, so that a appropriate permit entry procedures can be developed and acceptable entry conditions stipulated for that space. Evaluation and interpretation of these data, and development of the entry procedure, is performed by, or reviewed by, a technically qualified professional (e.g., OSHA consultation service, or certified industrial hygienist, registered safety engineer, certified safety professional, etc.) based on evaluation of all serious hazards.

- (b) **Verification Testing:** The atmosphere of a permit space which may contain a hazardous atmosphere is tested for residues of all contaminants identified by evaluation testing using permit specified equipment to determine that residual concentrations at the time of testing and entry are within the range of acceptable entry conditions. Results of testing (i.e., actual concentration, etc.) are recorded on the permit in the space provided adjacent to the stipulated acceptable entry condition.
- (c) **Duration of Testing:** Measurement of values for each atmospheric parameter are made for at least the minimum response time of the test instrument specified by the manufacturer.
- (d) **Testing Stratified Atmospheres:** When monitoring for entries involving a descent into atmospheres that may be stratified, the atmospheric envelope is be tested a distance of approximately 4 feet (1.22m) in the direction of travel and to each side. If a sampling probe is used, the entrant's rate of progress is slowed to accommodate the sampling speed and detector response.

H. Permit System

(1) General

The entry permit is a vital part of the permit space entry program which documents that the required measures have been taken to ensure entrant safety. All pertinent safety requirements must be recorded on the permit including the isolation, ventilation, tests and monitoring, personal protective equipment and other equipment necessary for entrant safety.

(2) Requirements

The following requirement must be recorded (documented) on the entry permit. See Appendix D for permit.

- (a) Permit space to be entered, purpose of the entry, and the date and authorized duration of the entry permit;
- (b) Names of authorized entrants;
- (c) Current attendants' names;
- (d) Entry supervisors' name (signature), including original authorizing supervisor,
- (e) Hazards of the space;
- (f) Measures used to isolate the space and to eliminate or control the space hazards, before entry;
- (g) Acceptable entry conditions;
- (h) Results of initial and periodic tests accompanied by the names, or initials, of the testers and time of the tests;
- (i) Available rescue and emergency services and how to summon them;

- (j) Communication procedures used by entrants and attendants to maintain contact during entry;
- (k) Equipment, such as personal protective equipment, alarm systems and rescue equipment, to be provided;
- (l) Any other pertinent information necessary to ensure entrant safety; and
- (m) Additional permits, such as hot work, that have been issued to authorize work in the space.

Note: All copies of the permit will stay on site and be displayed in a manner to make it available to all employees involved in the operation until the work is completed and/or the permit is canceled. All canceled permits must be retained for one year and a copy of all canceled permits shall be sent to the Safety Coordinator as soon as feasible after it has been canceled.

(3) Contractors

All contractor entry into permit spaces must comply with all sections of this procedure.

I. Training

(1) General

All entry supervisors, attendants, and entrants are properly trained initially and refresher training provided when duties and space hazards change or whenever an evaluation determines inadequacies in the employees' knowledge. The training provides employees with the necessary understanding, skills and knowledge to safely enter, work in and exit permit spaces. All training is documented with the employees' names, signature or initials of the trainer and training date.

(2) Requirements

Specific training requirements include, but are not limited to:

- (a) Each affected employee is trained;
- (b) Training is provided:
 - (1) Before employee is first assigned permit space entry duties;
 - (2) Whenever there is a change in permit space operations that present a new hazard unknown by the employee;
 - (3) Whenever there is reason to believe either there are deviations from the entry procedures or inadequacies in the employees' knowledge or use of the procedures;

- (c) The training establishes employee proficiency in the required duties and introduces new or revised procedures, as necessary;
- (d) The training is certified and contains each employee's name, signatures or initials of the trainers, and training dates.
- (e) The training certification is available for inspection by employees and their authorized representatives by contacting the Safety Coordinator at 225 E. Academy Street.

J. Rescue and Emergency Services

(1) General

Rescue and emergency services are provided by On Site crews using the **Non Entry Method** and Off-Site by the Ash-Rand Rescue Squad.

(2) Off-Site Rescue Services (if used by employer)

The following off-site rescue and emergency services have been contacted and approved to provide rescue and emergency services for permit confined spaces.

In the event of an emergency, if the on site supervisor does not have access to a telephone they should radio their base station and instruct them to call **911**. If the crew is working after hours or at any other time when there is no one manning their base station and the crew does not have direct access to a telephone, the Entry Supervisor will establish an effective line of communications with the off-site rescue services **prior to entry into a Permit Required Confined Space**.

(3) Non-Entry Rescue

Retrieval systems and methods have been developed for entrants to use when entering permit spaces, when the equipment does not increase the overall risk of entry and would not contribute to the rescue of the entrant. The systems are:

A Tripod and/or a Unihoist system equipped with a Retractable Lifeline type wench and all entrants hooked to this lifeline by means of a full-body harness.

- (a) Each authorized entrant uses a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, or above the entrant's head.
- (b) Retrieval lines are attached to a mechanical device or a fixed point outside the space so rescue can begin immediately after the rescuer becomes aware that rescue is necessary.

- (c) Mechanical devices are available to retrieve entrants from vertical type permit spaces more than 5 feet deep.
- (d) Material Safety Data Sheets (MSDS) or similar written information is kept at the worksite when entrants are exposed to substances requiring such information so it can be made available to the medical facility treating exposed entrants.

Note: The Off-Site Rescue Service shall be called as soon as possible when a Non-Entry Rescue is initiated.

K. Permits and Forms

1. Appendix A - Permit-Required Confined Spaces Inventory
2. Appendix B - Certification for Permit-Required Confined Space Entry
3. Appendix C - Certification for Reclassifying Confined Spaces
4. Appendix D - Confined Space Entry Permit

VI. REFERENCES AND SOURCES OF INFORMATION

- U.S. Department of Health, Education, and Welfare. Public Health Service. Center for Disease Control. National Institute for Occupational Safety and Health. "Criteria for a Recommended Standard. Working in Confined Spaces", DHEW (NIOSH) Publication No. 80-106. Cincinnati: NIOSH, December 1979 (Ex. 13-9).
- U.S. Department of Labor. Occupational Safety and Health Administration. Directorate of Policy. "Selected Occupational Fatalities Related to Toxic and Asphyxiating Atmospheres in Confined Work Spaces as Found in Reports of OSHA Fatality/Catastrophe Investigation", Washington, D.C., July 1985 (Ex. 13-15).
- U.S. Department of Labor, Occupational Safety and Health Administration. Directorate of Technical Support. "Selected Occupational Fatalities Related to Fire and/or Explosion in Confined Work Spaces as Found in Reports of OSHA Fatality/Catastrophe Investigation", Washington, D.C., April 1982 (Ex. 13-10).
- National Safety Council, Accident Prevention Manual, 10th Edition, Part 1, Pages 7 and 8, Part 4, Page 91, and Part 14, Page 431
- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) Standards for the construction Industry, 29 CFR 1926.20 (b)(6)(i) and (ii).

CITY OF ASHEBORO
Hazard Communication Program

Table of Contents

I	HAZARD COMMUNICATION PROGRAM PURPOSE	1
II	LIST OF HAZARDOUS CHEMICALS	1
III	CHEMICAL HAZARD CLASSIFICATIONS.....	2
III A	OBTAINING & MAINTAINING (SDSs).....	2
III B	ACCESSING MSDS ONLINE.....	2
III C	ALTERNATIVE ACCESS TO (SDSs)	3
IV	LABEL AND OTHER FORMS OF WARNING	3
V	TRAINING	3-4
VI	TRAINING CONTENT	5
VII	HAZARDS OF NON ROUTINE TASKS	6
VIII	MULTI EMPLOYER FACILITIES.....	6
VIII	ADDITIONAL INFORMATION	6
	HCS PICTOGRAMS & HAZARDS.....	7
	SAMPLE LABEL.....	8
	HAZARD COMMUNICATION SAFETY DATA SH	9-10

Hazard Communication Program

I Purpose

The City of Asheboro is complying with the requirements of OSHA's Hazard Communication Standard 29 CFR 1910.1200 by compiling a list of hazardous chemicals, using safety data sheets (SDSs), ensuring that containers are labeled and providing other forms of warning, and training our employees. In addition, we share information with other employers involved in a specific project so that they may keep their employees informed.

This program applies to all work operations in the City of Asheboro where employees may be exposed to hazardous chemicals under normal working conditions or during an emergency situation. Under this program, our employees will be informed of the contents of the Hazard Communication Standard and the hazards of chemicals with which they work, safe handling procedures, and measures to take to protect themselves from these chemicals, among other training elements.

The Safety Coordinator has overall responsibility for the program, reviewing and updating the program is done with the Safety Committee, as necessary. Copies of this written program may be obtained from the Safety Coordinator who keeps the program in the Safety Policy Manual and online. All employees, or their designated representatives, may obtain further information about this written program, the Hazard Communication Standard, applicable SDSs, and our chemical list from the Human Resources Department.

II List of Hazardous Chemicals

The City's "chemical inventory" is a list of product identifiers of hazardous chemicals known to be present at our workplaces. Anyone who comes in contact with the hazardous chemicals on the list needs to know what those chemicals are and how to protect themselves. That is why it is so important that hazardous chemicals are identified, whether they are found in a container or generated in work operations (e.g., welding fumes, dusts, and exhaust fumes). The hazardous chemicals on the chemical inventory can cover a variety of physical forms including liquids, solids, gases, vapors, fumes, and mists.

The Safety Coordinator updates the hazardous chemical inventory as necessary, when new chemicals are purchased and Division Directors, Department Heads and Supervisors forward the new SDSs to the Human Resources Department.

III Chemical Hazard Classification

Safety Data Sheets (SDSs)

SDSs are fact sheets for chemicals that pose a physical or health hazard in the workplace. These sheets provide our employees with specific information on the chemicals in their work areas.

A. Obtaining & Maintaining (SDSs)

The Safety Coordinator along with Division Directors, Department Heads and Supervisors are responsible for obtaining and maintaining the SDSs and will contact the chemical manufacturer or vendor if additional chemical information is needed. SDSs for new products or reordered products shall be sent to the Safety Coordinator.

The procedure followed if the SDS is not received with the first shipment is as follows:

1. Contact the chemical supplier and request the SDS and forward it to the Safety Coordinator.

SDSs are kept readily accessible to all employees during each work shift at the following location(s):

B. Accessing MSDS Online

MSDS-Online, Employees may obtain access to them by using any computer in the workplace with internet capability by the following:

1. <http://www.msdsonline.com>
2. Click on the login Box in the top right hand corner.
3. In the Username type "asheboro" all lower case.
4. In the Password block enter "msds" in lower case.

Each SDS is provided in English and includes the sections required by OSHA in the order listed in the Hazard Communication Standard. The procedure we use to update these SDSs when new and significant health information is found, all chemicals that are purchased requires a SDS and after review of the revision date it will be added to the Hazard Chemical list. MSDS-Online also updates when chemical companies revise their SDSs

C. Alternative Access to SDSs

OSHA allows SDSs to be kept in any form, as long as the information is provided for each hazardous chemical and is readily accessible during each work shift to employees when they are in their work area(s). Therefore, we have taken advantage of this flexible OSHA provision for alternatives to SDSs in the workplace. Our alternative(s) includes:

- a) MSDS Online Backup file (No Internet Needed)
- b) Departments can print out their SDS's and have them in a book and will be responsible for maintaining their books.

IV Labels and Other Forms of Warning

In most cases, hazardous chemical containers at the workplace must be clearly labeled, tagged, or marked in accordance with the Hazard Communication Standard, either with:

1. The product identifier, signal word, hazard statement(s), pictogram(s), and precautionary statement(s); or
2. The product identifier and words, pictures, symbols, or combination thereof, which provide at least "general" information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the Hazard Communication Program, will provide employees with the "specific" information regarding the physical and health hazards of the hazardous chemical.

While not required for in-house labeling, the name and address of the manufacturer, importer, or other responsible party may also be found on the label, tag, or marking because shipped containers of hazardous chemicals must bear this information. Hazards not otherwise classified, if any, do not have to be addressed on a container but must be addressed on the SDS.

Because the product identifier is found on the label, the SDS, and our chemical inventory, the product identifier links these three sources of information, permitting cross-referencing. The product identifier used by the supplier may be a common or trade name, a chemical name, or a number. Employees should be aware that label information can be verified by referring to the corresponding SDS.

Division Directors, Department Heads and Supervisors are responsible for ensuring that all hazardous chemicals in containers at the workplace have proper labels or other forms of warning that are legible, in English (although other languages may also be included), and displayed clearly on the container or readily available in the work area throughout each work shift, as required. This person will update labels, as necessary, also ensures that newly purchased chemicals are checked for labels when containers are received.

Division Directors, Department Heads and Supervisors are responsible for ensuring the proper labeling, tagging, or marking of any shipped containers leaving the workplace. These labels, tags, or marks must provide not only the product identifier, signal word, hazard statement(s), pictogram(s), and precautionary statement(s) but also the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party.

A poster is displayed to inform employees about the Hazard Communication Standard. It is located in all departments on the work place bulletin boards.

If employees transfer chemicals from a labeled container to a portable, secondary container that is intended only for their IMMEDIATE use, no labels, tags, or markings are required on the portable container. Otherwise portable containers must be labeled, tagged, or marked in accordance with our in-house labeling system for workplace containers.

If a label is missing or unreadable it must be corrected immediately and the Supervisor notified.

The in-house labeling system we use for workplace container labeling is generated from MSDS-online.

V Training

Everyone who works with or is potentially "exposed" to hazardous chemicals on the job will receive initial training on the Hazard Communication Standard and the safe use of those hazardous chemicals before starting work. "Exposure" means that "an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and includes potential (e.g., accidental or possible) exposure." Whenever a new chemical hazard is introduced or an old hazard changes, additional training is provided. All training is conducted by the Safety Coordinator or other Competent Person.

Effective information and training is a critical part of the Hazard Communication Program. Employees shall be trained to read and understand the information on labels and SDSs, determine how the information can be obtained and used in their own work areas, and understand the risks of exposure to the chemicals in their work areas, as well as ways to protect themselves. Our goal is to ensure employees know that they are exposed to hazardous chemicals, have the skills to read and use labels and SDSs, and understand how to appropriately follow the protective measures we have established. Employees are urged to ask Division Directors, Department Heads and Supervisors questions for greater comprehension.

As part of the assessment of the training program, The Safety Coordinator asks for input from employees regarding the training they have received and their suggestions for improving it. In this way, we hope to reduce any incidence of chemical-related illness or injury.

VI Training Content

The training program emphasizes these elements:

1. Summary of the Hazard Communication Standard.
2. What hazardous chemicals are present in operations in employee work areas?
3. Chemical and physical properties of hazardous chemicals (e.g., flash point, reactivity, etc.) and how to detect the presence or release of these chemicals (including chemicals in unlabeled pipes).
4. Physical hazards of chemicals (e.g., potential for fire, explosion, etc.).
5. Health hazards, including signs and symptoms of overexposure, associated with exposure to chemicals and any medical condition known to be aggravated by exposure to them.
6. Any simple asphyxiation, combustible dust, and pyrophoric hazards, as well as hazards not otherwise classified, of chemicals in work areas.
7. Any steps the city has taken to reduce or prevent exposure to hazardous chemicals, such as engineering controls.
8. Procedures to protect against hazards and exposure (e.g., work practices or methods to assure proper use and handling of chemicals and any required personal protective equipment and its proper use and maintenance).
9. Procedures for reporting and responding to chemical emergencies.
10. How to read and use both the workplace labeling system and labels received on shipped containers.
11. The order of information found on SDSs and how to read the information and what it means.
12. How to access SDSs and the written Hazard Communication Program, including the chemical inventory.

New employees are trained at the time of New Employee orientation; there will also be specific training on hazardous chemical at the Water Plant and Wastewater Treatment Plant. Employees are trained when a new hazard is introduced by Job Hazard Reviews and Chemical Hygiene Plan for Water Quality.

City of Asheboro Training logs are signed by employees upon completion of their training and are maintained by the Human Resources Department.

VII Hazards of Non-routine Tasks

Periodically, employees are required to perform non-routine tasks that involve hazardous chemicals. When employees will be required to perform hazardous non-routine tasks, such as job reassignments, that have the potential to expose employees to hazardous chemicals, Employees are inform of these hazards by reviewing Job Hazard Analysis with employees.

VIII Multi-Employer Facility

When contractors or any other employers' workers will be working at this workplace, the Division Directors, Department Heads and Supervisors will:

1. Provide the other employer(s) with SDSs for any of our hazardous chemicals to which their employees may be exposed, this will be done in pre construction meetings.
2. Relay to other employer(s) all necessary in-house labeling system and precautionary information for normal operations and foreseeable emergencies.

Moreover, it is the responsibility of Department Heads and Supervisors to obtain from each contractor or other employer the appropriate hazard information on chemicals they bring on-site, including SDSs, the labeling system used, and the precautionary measures to be taken in working with or near these chemicals.

VIII Additional Information

As stated earlier, all employees, or their designated representatives, may obtain further information on this written program, the Hazard Communication Standard, applicable SDSs, and the chemical inventory from The Human Resources Department or Safety Coordinator.

HCS Pictograms and Hazards

<p>Health Hazard</p>  <ul style="list-style-type: none"> ▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> ▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> ▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> ▪ Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> ▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> ▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> ▪ Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> ▪ Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> ▪ Acute Toxicity (fatal or toxic)

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE

Product Name

SUPPLIER IDENTIFICATION

Company Name

Street Address

City

State

Postal Code

Country

Emergency Phone Number

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.

Keep away from heat/sparks/open flame. No smoking.

Only use non-sparking tools.

Use explosion-proof electrical equipment.

Take precautionary measure against static discharge.

Ground and bond container and receiving equipment.

Do not breathe vapors.

Wear Protective gloves.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

Dispose of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO₂) fire extinguisher to extinguish.

First Aid

If exposed call Poison Center.

If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS



SIGNAL WORD

Danger

HAZARD STATEMENT

Highly flammable liquid and vapor.

May cause liver and kidney damage.

SUPPLEMENTAL INFORMATION

Directions for use

Fill weight:

Lot Number

Gross weight:

Fill Date:

Expiration Date:

Hazard Communication Safety Data Sheets

The Hazard Communication Standard (HCS) requires chemical manufacturers, distributors, or importers to provide Safety Data Sheets (SDSs) (formerly known as Material Safety Data Sheets or MSDSs) to communicate the hazards of hazardous chemical products. As of June 1, 2015, the HCS will require new SDSs to be in a uniform format, and include the section numbers, the headings, and associated information under the headings below:

Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use.

Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.

Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.

Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.

Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.

Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.

Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.

Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).

Section 9, Physical and chemical properties lists the chemical's characteristics.

Section 10, Stability and reactivity lists chemical stability and possibility of hazardous reactions.

Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.

Section 12, Ecological information*

Section 13, Disposal considerations*

Section 14, Transport information*

Section 15, Regulatory information*

Section 16, Other Information, includes the date of preparation or last revision.

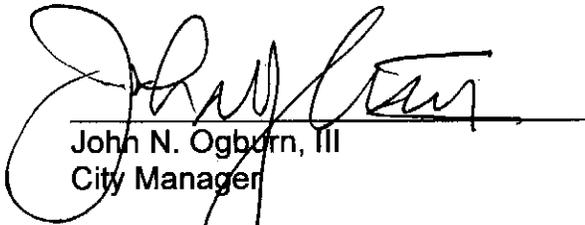
*Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15 (29 CFR 1910.1200(g)(2)).

Employers must ensure that SDSs are readily accessible to employees.
See Appendix D of 1910.1200 for a detailed description of SDS contents.

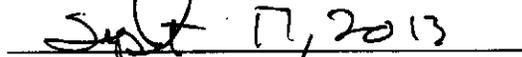
For more information: www.osha.gov

EFFECTIVE DATE:

This policy shall take effect and be in force from and after September 17, 2013,



John N. Ogburn, III
City Manager



Date

TABLE OF CONTENTS

SECTION VII: Lockout/Tagout Program		PAGE
Purpose		1
Scope		1
Compliance		1
Procedure		1
Restoring Equipment To Service		3
Additional Information		3
Training		5
Periodic Inspection	5	

**THE CITY OF ASHEBORO'S
POLICY FOR
LOCKOUT TAGOUT
1910.147**

I Purpose

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

II. Scope

This Standard is intended to apply to all city employees, contractors, sub-contractors, visitors or any other person who while on city property is required to be on, in, or near any piece of equipment system or part whose movement, whether intentional or not, could cause under even remote circumstances, an injury or loss to personnel or property. This standard applies to hydraulic, pneumatic, mechanical, electrical systems, or other energy.

III. Compliance

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize or use that machine or equipment.

Willful violation of these procedures may result in immediate discharge.

IV. Procedure

This standard provides city employees with the means to protect themselves by locking out machines or equipment where the unexpected movement or charging of an electrical conductor can result in injury to themselves or co-workers. No job is too small to neutralize, disconnect, lock out and tag out all power sources.

Lockout/Tagout should be carried out:

- (A) While making adjustments.
- (B) While performing maintenance.
- (C) While Troubleshooting, etc.
- (D) If in doubt "Lockout".

A proper lockout should block, de-energize and neutralize all possible sources of motion or energy.

IN order to ensure proper lockout and tagout, the following steps shall be followed.

- (1) **Notify** all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the service or maintenance.
- (2) **Identify all energy sources:** electrical, hydraulic, pneumatic, gravity, mechanical, etc.
- (3) If the machine or equipment is operating, **shut it down** by the normal stopping procedure (depress the stop button, open switch, close valve, etc.).
- (4) **De-activate** the energy isolating device(s) so that the machine or equipment is isolated from the energy source.
- (5) **Lockout** the energy isolating device(s) with assigned individual lock(s). Attach your padlock and/or multiple lockout device in the proper position to the valve, wheel, disconnect switch, etc. to prevent anyone from accidentally turning the power on. Sign, date and attach a lockout tag to the lock or multiple lockout device.
- (6) **Stored or residual energy** (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

- (7) **Test equipment.** Depress the start button at the point of operation to verify neutralized power. Test the electrical current. Operate valves. Check for personnel in the danger zone. When work must be done on any electrical circuit, you must test with a voltage tester to assure current is disconnected from the switch, motor, appliance, or fixture. Check the test instrument on a known source to assure reliability. **Do Not** use screwdrivers or other metal tools to test for current flow.
- (8) The machine or equipment is **now locked out.**

Restoring Equipment To Service.

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps shall be taken.

- (1) Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.(Are guards in place? Have braces, pins, blocks been removed? Have pipes, tubing, hoses been reconnected?)
- (2) Check the work area to ensure that all employees have been safely positioned or removed from the area.
- (3) Verify that the controls are in neutral.
- (4) Remove the lockout devices and reenergize the machine or equipment.

NOTE:

The removal of some forms of blocking may require reenergization of the machine before safe removal.

- (5) Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Additional Information

Each employee who is authorized to work on equipment, should have one padlock for lockout of the energy source to the equipment. Padlocks shall never be traded or loaned to another employee. Keys shall never be loaned or given to another employee for the removal of another's padlock. All individuals, who are to work on a piece of equipment, shall attach his or her personal padlock and Tag to the energy disconnect involved. Each tag **must indicate Employee's Name and the Date.**

In the event that another person is going to perform the work on the equipment that would require locking out, that person shall attach their own lock and lockout tag to the multiple lockout devices already in use. This will ensure prevention of starting equipment until all persons are clear.

When the disconnect switch is visually obscured from the job area and testing of the machine by "jogging" or other means is required, workers must work together under the protection of fellow workers and relay operating signals during the test period. Many employers use 2-way radios to provide a safe method of communication.

If jobs should carry over to another shift, the new employees' padlocks are snapped onto the disconnect switch **BEFORE** the old locks are removed. If any unusual situations arise during the lockout procedure, the supervisor should be notified.

The person in charge shall be notified when work is completed and the lockout procedure can be concluded. All workers involved in the job on the deactivated equipment and involved in the lockout procedure should remove their own lock prior to the startup of the equipment. The tag should be removed by the person who attached it to the disconnect.

NOTE: Never trust local (point of operation) stop-start switches as the point for the lockout. There may be more than one stop-start location, such as a control room, and someone may still be able to jog the equipment. The personal padlock must lock out the main disconnect switch.

Additional tags shall be located in an accessible place as designated by the department head.

V Training

Training shall be provided to ensure that the purpose and function of the energy control program are understood by all authorized employees and that the knowledge and skills required for safe application, usage, and removal of the energy controls are acquired by all authorized employees.

- (1) When tag out systems are used, employees shall also be trained in the limitations of tags.
- (2) Retraining shall be provided for all authorized and affected employees when:
 - (A) There is a change in job assignments.
 - (B) There are change/changes in machines, equipment, or process that presents a new hazard.
 - (C) There are change/changes in the energy control procedures.
 - (D) When a periodic inspection reveals the need.
 - (E) When the supervisor has reason to believe that inadequacies or deviations in the employee's/employees' knowledge.

VI Periodic Inspection

The supervisor or appointed official shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed.

- (1) The inspection shall be conducted by an authorized employee other than the one/ones utilizing the energy control procedure being investigated.
- (2) The periodic inspection shall be conducted to correct any deviations or inadequacies identified.
- (3) Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.
- (4) Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in the procedure.

The authorized inspector shall certify that the periodic inspections have been performed. The certification shall identify the machine or equipment in which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

TABLE OF CONTENTS

SECTION VIII: Guidelines For Prescription Safety Glasses	PAGE
Guidelines	1
Notes	1

**The City of Asheboro's
Guidelines for
Prescription Safety Glasses**

O.S.H.A Eye and Face Protection, 1910.133, (3), states that persons whose vision requires the use of corrective lenses in spectacles, and who are required by this standard to wear eye protection, shall wear goggles or spectacles of one of the following types:

- (i) Spectacles whose protective lenses provide optical correction.
- (ii) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.
- (iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.

The City of Asheboro is thereby adopting the following guidelines in reference to this standard:

- (1) If an employee falls into this category and is required to wear safety glasses 50% or more of a normal work shift the city shall provide them with prescription safety glasses.
 - (a) The employee shall get an Authorization Form from the Human Resources Department, have it signed by his/her Department Head. This form will authorize the employee to bill his/her department up to \$205.00 on the purchase of prescription safety glasses.
 - (b) The employee shall take this Authorization Form to Randolph Opticians, (we have negotiated with several other Optical Centers and have received the best prices from there).
 - (c) The City of Asheboro will allocate funding for one pair of prescription safety glasses every two years to employees meeting this criteria.
 - (d) The employee shall be responsible for the care of his/her glasses and any needed repairs shall be at the employee's expense. However, if the need for the repair is a direct result of a work-related incident the Department Head may authorize payment. NOTE: simple adjustments will be made at Randolph Opticians free of charge

NOTE:

The city is not required to furnish Eye Exams. The employee shall furnish Randolph Opticians with his or her prescription and their safety glasses shall be made accordingly.

Safety Glasses with removable **shields** will be allowed, however it is the employee's responsibility to have shields in place any time they are on the job. Department heads have the responsibility of strictly enforcing this. Prescription Sunglasses shall not be allowed, unless prior approval is obtained from the Human Resources Director.

- (2) If the employee falls into this category and is required to wear safety glasses less than 50% of a normal shift, he or she shall be provided with approved goggles that can be worn over corrective spectacles.
- (3) Goggles that incorporate corrective lenses mounted behind the protective lenses would be used in specialized situations. Some examples of these special situations would be inside self-contained breathing apparatus masks, welding masks, etc.

Safety Glasses are not effective on all jobs, (i.e. grinding, operating chain saws, welding, etc.) more adequate protection should be worn for these jobs.

REMEMBER, YOU ONLY GET ONE PAIR OF EYES; LETS TAKE CARE OF THEM.

If you have any questions or concerns about these guidelines Contact the Safety Coordinator.

TABLE OF CONTENTS

SECTION IX: Procedures for A Work Related Accident/injury	PAGE
Procedures for Accident or Injury Accident/Incident Report Form	1 Appendix

Procedures for Work Related Accidents or Incidents

These procedures are to be used to insure that the accident/incident can be reported and/or investigated promptly, the employee can be treated promptly, that Workers' Compensation and/or Liability Insurance claims can be correctly filed and compensated and that drug testing procedures can be complied with. It is the Department Head's responsibility to ensure these procedures are followed.

1. The employee must notify his/her supervisor immediately, after all workplace accidents, incidents or injuries (**if immediate supervisor can not be notified in a reasonable time go up the chain of command until you have notified someone**). This notification is the employee's responsibility and failure to do so could result in denial of claims and/or disciplinary action to be taken.
2. If the Injury is life threatening the supervisor should take emergency measures, (i.e. call 911 or take the employee to the emergency room). Notify the Safety Coordinator Monday – Friday 8:00 am to 5:00 pm or after hours by cell phone. The supervisor should complete Accident/Incident report and submit it to Human Resources department no later than the next workday. The city nurse and/ or designee will do follow-up treatment. **NOTE: If there is a fatality or if three or more employees are seriously injured at the same work site notify the Safety Coordinator immediately!**
3. If the Accident/Incident is serious, but not life threatening (one that requires treatment other than first aid or may result in lost workdays) the supervisor or designee shall bring the employee to the Human Resources department, Monday – Friday. If after hours on weekends or holidays take the employee to First Care. If First Care is closed take the employee to the Emergency Room. The supervisor should complete Accident/Incident report and submit it to Human Resources department no later than the next workday.
4. If the injury is minor (can be treated with first aid or requires no treatment) the supervisor should see that the employee is treated and complete the Accident/Incident report and forward it to Human Resources department no later than the next work day after the accident/incident. Remember that only a properly trained person should do first aid. If no one is there to do first aid, the employee may be sent to the Human Resources Office, 225 East Academy Street, during normal working hours.
5. Supervisors should use their own discretion if the accident/incident occurs after normal working hours and after attempts to reach Human Resources failed. Remember to follow up by sending the Accident/Incident report to Human Resources no later than the next workday.
6. If a minor injury should progress to the point of needing treatment other than first aid, the employee should call Human Resources and set up an appointment to see the city nurse for treatment and/or referral. The employee will be sent for a post accident drug test at this time if one has not been previously done for this incident.

7. Holders of Commercial Driver's License (CDL's) must comply with the City's Substance Abuse Policy. **If the Driver receives a Moving Traffic Violation or if there is a Fatality as a result of the accident notify the Safety Coordinator immediately!**

If Property damage results from any accident/incident the supervisor should submit an Accident/Incident report no later than the next workday. Have any claimants call the Safety Coordinator. If the accident involves a motor vehicle immediately call the police so that a police report can also be obtained. Property damage does not require a Drug Test unless: 1 – The employee is the holder of a Commercial Driver's license and they receive a moving violation or if there is a fatality. 2 – The supervisor feels the employee is acting in an irrational way or manner.

NOTE: DO NOT hold AN ACCIDENT/INCIDENT REPORT longer than the next workday, awaiting signatures. REMEMBER NOTIFICATION in accordance with the policy is our goal.

On Worker's Compensation

The Industrial Commission's Form 19 will be completed at the Human Resources office.

DO NOT give the name of our Group Insurance carrier or Group Insurance cards for Workers' Compensation claims. Instruct the medical provider to send bills to The City of Asheboro, 225 East Academy Street, attention Human Resources Director.

Do Not put any prescriptions for a workers' compensation claim on your Group Insurance drug card.

On Property Damage

Check to see if everyone is OK.

If auto accident contact the police and remain on the scene until they arrive.

Do not talk about who is at fault.

Our Insurance Company is **Interlocal Risk Financing Fund of North Carolina.**

Submit an Accident/Incident report to the Human Resources Department no later than the next workday.

Have the Claimant contact the Safety Coordinator.

TABLE OF CONTENTS

SECTION X: Hearing Conservation Program	PAGE
Hearing Conservation Program	1
Noise Exposure Measurement	1
Employee Education	2
Personal Hearing Protection	3
Audiometric Testing Program	3
Engineering and Administrative Noise Controls	3
Management Commitment	4

HEARING CONSERVATION PROGRAM

Hearing conservation is an important aspect of the overall safety and health program. Workplace noise can cause hearing loss, create physical and psychological stress, and contribute to accidents by making it difficult to communicate. An estimated 14 million employees throughout the United States are exposed to hazardous noise.

Fortunately, noise exposure can be controlled. Every effort is made to use quieter processes, machinery, and equipment. When feasible engineering controls do not reduce the noise level to or below the OSHA permissible exposure limit (PEL) of 90 dB, proper hearing protectors are used. Also, all employees exposed to noise levels above 85 dB are included in a hearing conservation program. There are many reasons for providing an effective hearing conservation program, including:

- protecting the organization's most important resource - employees,
- providing a safe and healthful workplace, and
- complying with governmental regulations.

Management, supervisory, and employee commitment to hearing conservation and positive attitude are important aspects of the overall hearing conservation program. The key elements of the organization's hearing conservation program are:

1. Noise exposure measurements,
2. Engineering and administrative noise exposure control,
3. Personal hearing protection,
4. Audiometric testing and follow-up, and
5. Education.

2. Noise Exposure Measurement

The success of the city's hearing conservation program depends on an accurate knowledge of the existing noise environment. Accurate surveys define areas within acceptable guidelines for noise exposure and those areas where potentially harmful noise exposure exists. Effective noise exposure measurement prevents possible loss of hearing by detecting work areas where employees must wear hearing protectors and must be tested. Therefore, the city conducts detailed noise surveys using sound level meters that meet the appropriate ANSI standard and are calibrated acoustically before and after each survey. The initial area survey was performed using measurement techniques prescribed in the OSHA regulations. Measurements are made at employees' normal working positions. This procedure allows an accurate estimation of the employees' daily exposure except in instances where an employee is required to move from one working location to

another in his/her daily routine, or when an employee's instantaneous noise exposure levels vary markedly during the shift because of machine cycling. In these cases, noise dosimetry is performed. Follow-up measurements are made whenever changes in work practices or methods may change workplace noise exposures. The results of all measurements are recorded, and employees are notified of their exposure level.

Noise exposure measurements have been completed and are available for review.

3. Employee Education

The City of Asheboro recognizes the need for a strong educational program. Therefore, The City of Asheboro properly educates its noise-exposed employees. At least annually, all new employees and those with a time-weighted average exposure level of 85 dBA and above are reminded of the need for an effective hearing conservation program. The educational program consists of an initial presentation by city personnel concerning the need for an effective hearing conservation program. During this program an explanation of city policy relative to the requirements of wearing hearing protective devices is given. All employees are encouraged to ask questions concerning the program. Topics covered include the effects of noise on hearing, the purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on the selection, fitting, use, and care of protectors. The purpose and procedures of audiometric testing are also discussed.

The City of Asheboro recognizes the need for continuing education in the implementation of any safety program and, therefore, will regularly remind employees of the necessity for preserving their hearing. This is achieved by posting educational materials at appropriate locations. All areas where hearing protection is required are posted with appropriate signs in order to alert employees to the need for wearing protective devices.

Employees not exposed to noise levels exceeding the accepted guidelines are encouraged to participate whenever possible in the educational programs provided.

The City of Asheboro recognizes the fact that a loss of one's ability to hear can occur from many causes other than industrial noise exposure, and that for this reason all employees benefit from the educational programs described above. Since the hearing conservation program described in this plan protects employees' hearing from potentially-harmful environments and could possibly alert them to potentially-harmful physical disorders, the program is considered an additional benefit program for employees.

The Educational Phase begins when employees are hired and continues annually thereafter.

4. Personal Hearing Protection

Until such time as engineering and/or administrative controls reduce the amount of noise exposure to or below the allowed limits, appropriate personal hearing protective devices are made available and issued to noise-exposed employees. It is recognized that the use of these devices is considered a temporary solution to the problem of overexposure until feasible controls are provided.

As with all safety equipment, the wearing of hearing protection in required areas is mandatory. All supervisors properly enforce hearing protection requirements. Continuing failure of an employee to properly wear the protection provided could result in the termination of employment with the city.

The individual responsible for issuing and fitting hearing protection has been trained by and is under the supervision of an audiologist or physician.

Fitting and issuing of hearing protective devices begins when employees are hired.

5. Audiometric Testing Program

The objective of the hearing conservation program developed by The City of Asheboro is the preservation of the hearing of its employees. In order to achieve this goal, an effective audiometric testing program has been implemented. This program includes audiograms at time of hire, an initial survey of the existing work force whose exposures equal or exceed a TWA of 85 dBA in order to establish baselines, and termination audiograms when possible. All employees exposed to levels equal to or exceeding a TWA of 85 dBA receive an annual audiometric test.

The success of the hearing conservation program with regard to each individual employee is evaluated by comparing annual audiograms to the baseline audiogram. Audiogram review is performed by an audiologist or physician, and recommendations regarding the audiometric results are followed. This procedure, among others, helps to determine the effectiveness of the hearing protection program, and, as a result, ensures the protection of employees' hearing.

Initial testing of current employees has been completed, and testing of new employees is conducted when they are hired. Annual testing is conducted for all employees whose 8-hour TWA exposure level is 85 dBA or higher.

6. Engineering and Administrative Noise Controls

The City of Asheboro recognizes the desirability of controlling the existing noise levels by engineering and/or administrative controls. Therefore the feasibility of such controls is carefully considered. Due to the complexity of some machinery used by the city and in view of economic limitations, some noise levels cannot currently be reduced to below acceptable limits. In those cases, suppliers of machinery purchased which produces noise levels exceeding the accepted guidelines have been notified of the high noise levels directly by the city or indirectly through the appropriate association(s) of which this city is a member. The supplier has been requested to redesign machinery where possible to

meet the defined regulations. As an interim solution, the city has considered possible redesign of existing machinery, the building of partial or total enclosures, and other engineering noise control procedures for reducing the existing noise levels, where such procedures are deemed technologically and economically feasible.

Within the limitation of work schedules and employee skills and training background, administrative controls have been considered. Where feasible, over-exposed employees are moved to other areas having noise levels below the required levels. In addition, operational procedures are modified as necessary so that during any one twenty-four hour period the allowed exposure times will not be exceeded.

Engineering and administrative controls are being considered and implemented where feasible on a continuing basis.

7. Management Commitment

As indicated by the program described above, it is the full intent of The City of Asheboro to protect and preserve the hearing of its employees. This city routinely reviews the program developed and outlined in this compliance plan and attempts within the city's financial and technical capability to improve the program where feasible.

If and when the work area noise levels are reduced below the accepted guidelines, the city reserves the right to terminate any or all of the phases of the program described herein.

Table Of Contents

Section XI: Hot Work Policy	Page
Regulation Reference	1
Training	1
Performance Evaluation	2
Current Welders and Cutters	2
Compressed Gas Cylinders	3
Gas Welding and Cutting	4
Arc Welding and Cutting	6
Fire Prevention	7
Ventilation	8
PPE	8
Confined Spaces	9
Flammable, Toxic, or Hazardous Materials	10
Electrical Equipment	10
Fall Protection	10
Inspections	10
Maintenance	10
Signs and labels	11
Recordkeeping	11
Hot Work Equipment	App A
Inspection Forms	App B

Welding & Cutting Procedures

These written Welding & Cutting Procedures establish guidelines to be followed whenever any of our employees work with welding and cutting equipment at this company. The procedures here establish uniform requirements designed to ensure that welding and cutting safety training, operation, and maintenance practices are communicated to and understood by the affected employees. These requirements also are designed to ensure that procedures are in place to safeguard the health and safety of all employees.

It is our intent to comply with the requirements of 29 CFR 1926.350 through.354. These regulations have requirements for welding and cutting operations. We also comply with applicable requirements of:

Standard or Regulation:	Name:
ANSI Z49.1-1967	Safety in Welding and Cutting
CGA Pamphlet P-1-1965	Safe Handling of Compressed Gases
29 CFR 1926, Subpart D	Occupational Health and Environmental Controls
29 CFR 1926, Subpart E	Personal Protective And Life Saving Equipment
29 CFR 1926.406(c)	Electrical Specific Purpose Equipment and Installations
49 CFR 192	Minimum Federal Safety Standards for Gas Pipelines
49 CFR 171-180	Hazardous Materials Regulations

Administrative Duties

The City of Asheboro Safety Coordinator is responsible for developing and maintaining the written Welding & Cutting Procedures. These procedures are kept at the following location: In each Safety Manual.

Welding and Cutting Equipment

Our company uses the following welding and cutting equipment:
See Attached List in Appendix.

Training

It is the policy of the CITY of ASHEBORO to permit only trained and authorized personnel to operate welding and cutting equipment. The Safety Coordinator will identify all new employees in the employee orientation program and make arrangements with department management to schedule training.

The following person(s) will conduct initial training and evaluation: Each Department head shall designate a welding competent person to do all training. This instructor(s) has the necessary knowledge, training, and experience to train new welding and cutting equipment operators.

Initial Training

Our most widely used method of training is on the job. All welders and cutters are trained and tested on the equipment they will be operating before they begin their job.

During training, CITY OF ASHEBORO covers the operational hazards of our welding and cutting operations, including:

- Hazards associated with the particular make and model of the welding and cutting equipment;
- Hazards of the workplace; and
- General hazards that apply to the operation of all or most welding and cutting equipment.

Each potential welder or cutter who has received training in any of the elements of our training program for the types of equipment which that employee will be authorized to operate and for the type of workplace in which the welding and cutting equipment will be operated need not be retrained in those elements before initial assignment in our workplace if CITY OF ASHEBORO has written documentation of the training and if the employee is evaluated to be competent. Training is done in-house.

Performance Evaluation

Each certified welder or cutter is evaluated on an ongoing basis to verify that the welder or cutter has retained and uses the knowledge and skills needed to operate safely. Department's designated trainer does this evaluation. If the evaluation shows that the welder or cutter is lacking the appropriate skills and knowledge, the welder or cutter is retrained by our instructor(s). When a welder or cutter has an accident or near miss or some unsafe operating procedure is identified, we do retraining.

Current Welders and Cutters

Under no circumstances may an employee operate welding or cutting equipment until he/she has successfully completed this company's welding and cutting training program. This includes all new welders and cutters regardless of claimed previous experience. All employees have a general obligation to work safely with and around welding and cutting operations.

Operating Procedures

Welding and cutting can create certain hazards that only safe work practices can prevent. That is why we have created a set of operating procedures. Our operating procedures follow:

Compressed Gas Cylinders

- Handling, storage, and use of compressed gases around the workplace represent a number of hazards. Questions are resolved through supervisors or designated trainers. Approved practices include:
- Keep valve protection cap in place at all times when a cylinder is not in use. Use care in handling and storage of cylinders, safety valves, relief valves, etc., to prevent damage.
- When cylinders are hoisted, secure them on a cradle, sling board, or pallet.
- Move cylinders by tilting and rolling them on their bottom edges. Care in handling is required.
- Secure cylinders in an upright position at all times, especially when moving them by machine.
- Use carriers or carts provided for the purpose when cylinders are in use. When in use, isolate cylinders from welding or cutting or suitably shield them.
- Care will be taken to prevent them from becoming part of an electrical circuit.
- Maintain a distance of at least 20 feet or provide a non-combustible barrier at least five feet high in separating fuel gas cylinders from oxygen cylinders.
- This applies to indoor and outdoor storage.
- The supervisor will designate: - Well-ventilated storage areas for cylinders inside buildings. Care will be taken to keep storage areas out of traffic areas or other situations where they could be knocked over, damaged, or tampered with. - Locations for fuel gas and oxygen manifolds in well-ventilated areas.
- Before a regulator is removed, check that the valve is closed and the gas released from the regulator.
- Keep cylinders, cylinder valves, couplings, regulators, hoses, and apparatus free of oily or greasy substances.
- Keep empty compressed gas cylinders appropriately marked and their valves closed.
- Store full and empty cylinders apart.
- Group cylinders by types of gas. Use old stock before newer stock.

Prohibited practices include:

- Use of valve protection caps for lifting cylinders.
- Use of damaged or defective cylinders. The Department Head will provide appropriate tags and designate a suitable storage area for these cylinders.
- Use of wrench or hammer to open cylinder valves.

- Attempting to repair a cylinder valve. The supplier should be contacted.
- Use of a magnet or choker sling when hoisting cylinders.
- Taking oxygen, acetylene, or other fuel gas or manifolds with these gases into confined spaces.
- Using cylinders as rollers or supports.

Gas Welding and Cutting

A. Safe practices in using fuel gas include:

1. Before a regulator to a cylinder valve is connected, "crack" the valve to clear it of dust or dirt. Stand to one side of the outlet, not in front of it. Do not do this where the gas would reach welding work, sparks, flame, or other possible sources of ignition.
2. Open cylinder valves slowly to prevent damage to the regulator. For quick closing, do not open valves on fuel gas cylinders more than 1 1/2 turns. When a special wrench is required, leave it in position on the valve stem while the cylinder is in use. In the case of manifold or coupled cylinders, make sure at least one such wrench is always available for immediate use.
3. Do not place anything on top of a fuel gas cylinder, when in use, which may damage the safety device or interfere with quick closing.
4. Do not use fuel gas directly from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator.
5. Before a regulator is removed from a cylinder valve, always close the cylinder valve and release the gas from the regulator.
6. If gas leaks around the valve stem, close the valve and tighten the gland nut. If this doesn't work, do not use the cylinder. Properly tag it and remove it from the work area.
7. If fuel gas leaks from the cylinder valve and the gas cannot be shut off, properly tag and remove the cylinder from the work area. If a regulator will effectively stop a leak through the valve seat, the cylinder can be used.
8. Do not use oxygen for personal cooling, cleaning off of surfaces, ventilation, or blowing dust from clothing.
9. Do not weld or cut an acetylene or oxygen pipeline, including the attachment of hangers or supports, until the line has been purged.
10. Only use pressure-reducing regulators for gas and pressures for which they are intended.
11. Do not attempt to repair a regulator or parts of a regulator. Have a skilled mechanic do so.

B. Safe practices in using manifolds include:

1. Do not place fuel gas and oxygen manifolds in enclosed spaces.
2. Do not place oxygen manifolds in an acetylene generator room.
3. Use manifolds and their parts only for the gas (es) for which they are approved.
4. Do not alter or substitute manifold hose connections to allow interchange between fuel gas and oxygen manifolds and supply header connections. Keep hose connections free of grease and oil.
5. Cap manifold and header hose connections when not in use.
6. Do not place anything on top of a manifold, when in use, which will damage the manifold and interfere with quick closing of valves.
7. Install approved flash arresters between each cylinder and the coupler block when acetylene cylinders are coupled.
8. Manifold acetylene and liquefied fuel-gas cylinders only in a vertical position.

C. Safe practices in using hoses include:

1. Make sure fuel gas hose and oxygen hose are easily distinguishable from each other, by different colors or by surface characteristics readily distinguishable by the sense of touch. Do not allow use of a single hose with more than one gas passage.
2. Do not interchange hoses, including use of adapters, between fuel gas and oxygen sources.
3. When parallel sections of oxygen and fuel gas hose are taped together, do not cover more than four inches out of 12 inches with tape.
4. Inspect all hose at the beginning of each working shift. Do not use defective hose.
5. Hose subjected to flashback, or with evidence of severe wear or damage, must be tested to twice the normal pressure to which it is subject, but in no case less than 300 p.s.i. Do not use defective hose, or hose in doubtful condition.
6. Use only hose couplings that cannot be unlocked or disconnected by means of a straight pull without rotary motion.
7. Do not store gas hose in unventilated boxes.
8. Keep hoses, cables, and other equipment clear of passageways, ladders, and stairs.
9. Clamp or securely fasten hose connections in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but in no case less than a pressure of 300 p.s.i. Oil-free air or an oil-free inert gas shall be used for the test.

- D. Safe practices in using torches include:
 - 1. Clean clogged tip openings only with suitable cleaning wires, drills, or other devices designed for such purposes.
 - 2. Inspect at the beginning and end of each shift for leaking shutoff valves, hose couplings, and tip connections. Do not use defective torches.
 - 3. Light only with friction lighters or other approved devices. Do not use matches or hot work.
- E. Safe practices in using regulators and gauges include:
 - 1. Make sure oxygen and fuel gas pressure regulators, including their related gauges are in proper working order.
- F. Keep oxygen cylinders and fittings away from oil or grease. Oxygen shall not be directed at oily surfaces, greasy clothes, or within a fuel oil or other storage tank or vessel.

FOR CONSTRUCTION:

- A. Safe practices in using compressed gases and torches include:
 - 1. Cracking cylinders and attaching regulators according to industry practice.
 - 2. Putting caps on header hose connections and manifolds when not in use.
 - 3. Keeping all hoses, regulators, cylinders, valve protection caps, couplings, apparatus, and torch connections free of grease and oil, especially those involving oxygen.
 - 4. Using fuel gas hose and oxygen hose of different colors.
 - 5. Inspections: * All hoses before every shift; * All torches. Only devices designed for the purpose will be used to clean torch tips.
 - 6. Use only friction lighters to ignite torches.
 - 7. Removal of torches and hoses and positive shut-off of gas sources from confined spaces when leaving a confined space project for any substantial period of time.
- B. Prohibited practices include:
 - 1. Interchange of hoses, including use of adapters, between fuel gas and oxygen sources.
 - 2. Placement of anything on or near a manifold or cylinder top that may interfere with the prompt shut-off in case of an emergency.
 - 3. Taping more than four inches out of every 12 inches in joining fuel gas and oxygen hoses.
 - 4. Using defective hose or torches.
 - 5. Use of oxygen for personal cooling, cleaning off of surfaces, ventilation or blowing dust from clothing.

Arc Welding and Cutting

- A. When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.
- B. Do not dip a hot electrode into water.
- C. Use holders, cable, and other apparatus specifically designed for the purpose, matched to the job and other components and in good repair.

- D. When leaving electrode holders unattended, electrodes must be removed and holders placed so that accidental electrical contact is not made.
- E. Use non-combustible or flameproof screens to protect employees and passersby from arc rays wherever practicable.
- F. Keep chlorinated solvents at least 200 feet from an inert-gas metal-arc welder or provide adequate shielding. Surfaces prepared with chlorinated solvents will be thoroughly dry before welding.
- G. Workmen assigned to operate or maintain gas-shielded arc welding equipment shall be acquainted with the requirements of American Welding Society, A6.1-1966, Recommended Safe Practices for Gas-Shielded Arc Welding.
- H. Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.
- I. Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines.
- J. There shall be no leaks of cooling water, shielding gas, or engine fuel.
- K. It shall be determined that proper switching equipment for shutting down the machine is provided.
- L. Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed.
- M. Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel,

Fire Prevention

- A. The supervisor will use this guide to assess fire hazards at the workplace:
 - 1. If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.
 - 2. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.
 - 3. If the requirements stated in the two boxes above cannot be followed then welding and cutting shall not be performed.
- B. Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks that might drop through the floor. The same precautions shall be observed with regard to cracks or holes in walls, open doorways, and open or broken windows.
- C. Suitable fire extinguishing equipment shall be provided and maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.

- D. Before cutting or welding is permitted, the individual responsible for authorizing cutting and welding operations shall inspect the area. He shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.
- E. Special precautions shall be taken for floors covered with combustible materials; combustibles within 35 feet of the work area; ducts that might carry sparks; combustible walls; combustibles on the other side of a noncombustible wall; combustible coverings; pipes in contact with combustible walls; storage of readily ignitable materials; drums, barrels, tanks, other containers that may contain flammable materials; pipes leading to a drum or vessel; and all hollow spaces, cavities or containers.
- F. Cutting or welding shall not be permitted in the following situations:
 - 1. In areas not authorized by management.
 - 2. In sprinkled buildings while such protection is impaired.
 - 3. In the presence of explosive atmospheres, or explosive atmospheres that may develop inside unclean or improperly cleaned tanks or equipment that have previously contained such atmospheres, or that may develop in an area.

Ventilation

- A. The supervisor will determine the number, location, and capacity of ventilation devices.
- B. Ventilation will be sufficient to protect passersby as well as the welder.
- C. Oxygen shall never be used for ventilation.
- D. Don't rely on general ventilation as the only means of protection when air contaminants are toxic.
- E. Where ventilation is not sufficient to provide clean, respirable air, respirators will be specified according to specifications applicable to your facility and policies.

Personal Protective Equipment

- A. Proper eye protection i.e., helmets, hand shields, goggles, and spectacles, must be provided.
- B. Proper protective clothing must be provided.
- C. First-aid equipment shall be available at all times.
- D. Airline respirators will be provided for confined space jobs when sufficient ventilation cannot be provided without blocking the exit.
- E. When known or unknown toxic materials are present in a job, respirators will be provided that match the hazard for all employees. The hazards include zinc or zinc-bearing base or filler metals, lead base metals, cadmium-bearing filler metals, chromium-bearing or chromium-coated metals, mercury, nitrogen dioxide, and beryllium. Due to beryllium's extreme danger, both ventilation and airline respirators will be used.

- F. Where screens are not sufficient to protect welders and passersby from arc radiation, the company will provide eye protection with appropriate helmets, filter lens goggles, or hand shields. The helmets and shields will be maintained in good repair.
- G. When a toxic preservative is detected on a surface in a confined space, airline respirators will be provided (or the toxic coating will be stripped from at least four inches around the heated area).

Confined Spaces

- A. Evaluate the space, the hazardous atmosphere, the floor surface, and the interior surface for flammability, combustibility, or toxic fumes that could result from the welding process.
- B. Perform atmospheric testing for oxygen deficiency, and for toxic and flammable or combustible gases before and during entry. If the tests show that flammable or combustible gases are present, the space must be ventilated until safe to enter. If the atmosphere is toxic and cannot be cleared through ventilation, appropriate respiratory equipment must be used. All energy sources that could cause employee injury must be disconnected and locked in the "off" position before entry.
- C. Ventilation must be provided. Confined spaces such as manholes, tunnels, trenches, and vaults, are particularly hazardous working areas made more dangerous by welding.
- D. Gas cylinders and welding machines shall be left on the outside of the confined space. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.
- E. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to maintain communication with the welder at all times and be capable of putting rescue operations into effect.
- F. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.
- G. In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable the torch and hose shall also be removed from the confined space.
- H. After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

Flammable, Toxic, or Hazardous Materials

- A. The Department Head will designate a competent person to test the flammability of unknown coatings.
- B. When a coating is found to be highly flammable, it will be stripped from the area to prevent fire.

Electrical Equipment

- A. Approved safe practices include:
 - 1. Do not arc weld while standing on damp surfaces or in damp clothing.
 - 2. Properly ground, install, and operate equipment.
 - 3. Do not use defective equipment.
 - 4. Use well-insulated electrode holders and cables.
 - 5. Insulate yourself from both the work and the metal electrode and holder.
 - 6. Don't wrap a welding cable around your body.
 - 7. Wear dry gloves and rubber-soled shoes.
 - 8. Do not use damaged or bare cables and connectors.
 - 9. In case of electric shock, don't touch a victim. Turn off the current at the control box and then call for help. After the power is off, you may perform cardiopulmonary resuscitation (CPR) if necessary.

Fall Protection

- A. A welder or helper working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished by the use of railings, safety belts, lifelines, or some other equally effective safeguards.
- B. Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.
- C. Maintain a clear welding or cutting area to prevent slips, trips, and falls.

Inspections

A number of inspections are required under the welding and cutting regulations. To make inspections efficient, we have compiled a list of inspection items to be checked before welding or cutting: See Appendix

Maintenance

Any deficiencies found in our welding and cutting equipment are repaired, or defective parts replaced, before continued use. However, no modifications or additions that affect the capacity or safe operation of the equipment may be made without the manufacturer's

written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, must be changed accordingly. In no case may the original safety factor of the equipment be reduced.

While defective parts may be found, we prefer to invest time and effort into the proper upkeep of our equipment, which results in day-to-day reliability. Keeping up with the manufacturer's recommended maintenance schedules, and completing the proper records, will also increase our welding and cutting equipment's longevity.

Employees doing welding or cutting operations follow(s) the manufacturer's operator instruction manual for daily or weekly maintenance.

Periodic maintenance (those completed monthly or less frequently) is done by a factory-trained-expert, or a dealer.

Signs and Labels

Our company posts signs as follows: Caution or Warning or Danger Keep Away

We use the following labels: Caution or Warning

Recordkeeping

Each Department Head is responsible for maintaining the following records: Inspections, maintenance, and training. These records are maintained in place designated by department head for 3 years.

Appendix A

List of Hot Work Equipment from each Department

Appendix B

Hot Work Inspection Forms

Distracted Driving Prevention Policy

PURPOSE: The City of Asheboro has enacted a Distracted Driving Prevention Policy that is designed to lessen the risk to life and property by preventing employees operating the city's fleet of motor vehicles and municipal equipment from engaging in distracted driving. The city's mission to provide municipal services in a safe, effective, and cost-efficient manner is advanced by keeping the hands of drivers on the wheel and their eyes on the road.

RULE: Subject to the definitions and exceptions stated herein, city employees are prohibited from **using hand-held electronic communications devices** of any kind while driving a motor vehicle or a piece of municipal equipment that is owned or leased by the City of Asheboro. Additionally, city employees, while driving a motor vehicle or a piece of municipal equipment that is owned or leased by the City of Asheboro, are prohibited from using **either a hand-held or hands-free electronic communications device** to read an electronic mail or text message transmitted to the device or stored within the device; provided that this specific prohibition does not apply to any name or number stored in the device nor to any caller identification information.

DEFINITIONS:

- (A) The term "using hand-held electronic communications devices" means (1) using at least one hand to hold a communications device, including two-way radios, to conduct voice communication or to listen to a voice mail message; (2) entering numbers, text, or any other kind of data by pressing more than a single button; or (3) reaching for a communications device in a manner that requires a driver or operator to maneuver so that he or she is no longer in a seated driving position and properly restrained by a seat belt that is adjusted in accordance with the vehicle manufacturer's instructions.
- (B) The term "driving" means operating a motor vehicle or any piece of municipal equipment on a public vehicular area or on a public or private highway/street, including while temporarily stationary on one of the listed areas due to traffic, a traffic control device, or other momentary delays. The term "driving" does not include operating a motor vehicle or piece of equipment when the driver has moved the vehicle to the side of, or off, a highway, street, or a public vehicular area and has halted in a location where the vehicle or piece of equipment can safely remain stationary and be deemed to be lawfully parked or stopped.

Distracted Driving Prevention Policy

EXCEPTIONS:

- (A) Communications or data entry conducted by firefighters or sworn law enforcement officers when such activity is deemed by their respective department heads to be essential to the performance of the assigned duties of the public safety officials.
- (B) Emergency voice communications, not emailing or texting, between any driver and law enforcement officials or other emergency services personnel. This exception shall be interpreted very narrowly and only applies to genuine emergencies that involve an imminent threat to life and/or property.

SUPPLEMENTARY GUIDANCE:

- (A) Hands-free use of mobile telephones is allowed. For example, so long as a driver can initiate, answer, or terminate a call by touching a single button on the device, earpiece, steering wheel, or instrument panel, a mobile telephone can be used by the driver. Dialing a number and any other form of data/text entry that requires more than a single push of a button in order to perform a function is prohibited.
- (B) A driver can use a mobile telephone and push-to-talk mobile communications equipment, such as a two-way radio, so long as the driver does not reach for, dial, adjust, or hold the device, or a part thereof, in his or her hand while driving and the driver is able to touch the button to operate the mobile telephone or push-to-talk feature of the device from the normal seated position with the safety belt fastened.
- (C) A driver can use a 311 data recorder to enter data with a single push of a button so long as the driver can push the required button from the normal seated position with the safety belt fastened. Drivers are prohibited from switching between screens unless they have pulled to the side of the street or road and come to a complete stop in a location where the vehicle can safely remain stationary.

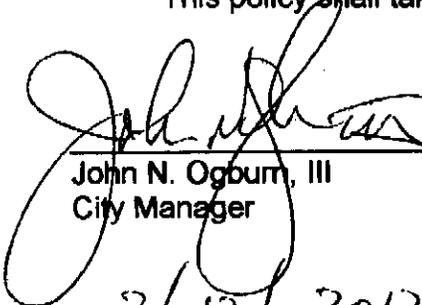
INTERPRETATION:

If a question pertaining to the interpretation of this policy arises, the question shall be immediately referred to the Safety Coordinator for resolution.

Distracted Driving Prevention Policy

EFFECTIVE DATE:

This policy shall take effect and be in force from and after April 2, 2012.



John N. Ogburn, III
City Manager

3/13/2012

Date