

**S  
A  
F  
E  
T  
Y  
  
M  
A  
N  
U  
A  
L**

**Clay Township Regional Waste District**



Revised October 2010

# TABLE OF CONTENTS

	SECTION
Appendices	I
Introduction	II
1.0 Responsibilities	1-1
2.0 Job Safety Training Program	2-1
3.0 Driver Safety Program	3-1 – 3-3
4.0 Personal Protection Equipment (PPE)	4-1 – 4-3
5.0 Work Related Injuries	5-1 – 5-3
6.0 Safety Inspections	6-1
7.0 Confined Space Entry Written Program	7-1 – 7-6
8.0 Excavation Protection (Trenching)	8-1 – 8-4
9.0 Rules on Machine Use	9-1
10.0 Working in Public Right of Way	10-1
11.0 Proper Lifting Procedure	11-1
12.0 Work Area Safety Guide	12-1 – 12-5
13.0 Respirator Protection Program	13-1 – 13-8
14.0 Bloodborne Pathogens Program	14-1 – 14-5
15.0 Energy Control Written Program	15-1 – 15-5
16.0 Arc Flash Program	16-1 – 16-7
17.0 Hazard Communications Program (HAZCOM)	17-1 – 17-5
18.0 Emergency Action Plan	18-1 – 18-4
APPENDIX	19-1

# APPENDICES

- A. Vehicle Use Acknowledgment Form
- B. OSHA Injury and Illness Incident Report (Form 301)
- C. OSHA Log of Work-Related Injuries and Illnesses (Form 300)
- D. Report of Injury Form
- E. Accident Reporting Form (in-house)
- F. Driver's Report of Accident (insurance)
- G. Refusal for Hepatitis B Vaccination
- H. Employee Exposure Incident Report to a Bloodborne Pathogen
- I. Employee Refusal of Post Exposure Medical Evaluation
- J. Lockout Checklist / Safe Startup Checklist
- K. References
- L. Revisions and Amendments
- M. Acknowledgment Form

# CLAY TOWNSHIP REGIONAL WASTE DISTRICT

## SAFETY MANUAL

### INTRODUCTION

The District is sincerely concerned with the safety and welfare of its employees and the public it serves. It acknowledges an obligation as an employer to provide the safest possible working environment for all employees. It also acknowledges as a public entity the need to provide a safe environment for the public that uses our services.

The primary purpose of this manual is to acquaint you with general safety rules and policies. It reflects the efforts of many people to establish reasonable, practical, and safe work practices to prevent accidents.

In order to perform public services without accidents, it is the responsibility of all District employees to contribute to that end. The following principles should guide our efforts:

1. Accidents can be prevented.
2. Safety is the mark of skill and good sense.
3. The District is sincerely interested in safety and is willing to pay in time and money to prevent accidents.
4. Safety is a personal responsibility, as well as a supervisory responsibility.
5. No job is so important, and no services so urgent that we cannot take time to perform it safely.
6. We owe a moral obligation to each other and to the public to do everything possible to prevent accidents.
7. Our work areas and equipment should be kept as safe and clean as possible.
8. As hazards are noticed, they should be reported to supervisory personnel as soon as possible.
9. You should report all unsafe conditions encountered during your work day.
10. You are not expected to undertake a job until you have learned how to do it safely and are authorized to do so by your supervisor.
11. All injuries must be reported immediately to your supervisor.
12. Compliance with safety rules is a condition of employment.

Safe workers benefit themselves, their families, their fellow workers, and those they serve.

This Manual shall be reviewed in its entirety annually and amended as regulations, policies, and procedures dictate.

For the simplicity, the District has used masculine pronouns in these materials. Any such reference is meant to apply equally to males and females.

## **1.0 RESPONSIBILITIES**

### **1.1 Utility Director**

The Utility Director is responsible for the safety in the organizations daily operations. However, for practical purposes, the authority for safe operations is delegated down through all management levels.

### **1.2 The Plant Supervisor, the Field Operations Supervisor and the Safety Coordinator**

These employees are key persons in the safety program. Because of their regular contact with employees, they are responsible for the safety of other employees. To discharge their responsibility, they must make certain that: each employee understands and follows established work procedures; necessary safety precautions are observed, including the use of proper safeguards and personal protective equipment; facilities and equipment are properly maintained; items that represent an accident potential are identified, reported and eliminated; and safety information is disseminated to the employees.

Management shall be receptive to safety suggestions of employees and ensure that they are forwarded to the next higher level of management for evaluation.

### **1.3 Supervisors**

Supervisors will be responsible for the maintenance of safe working conditions within their Departments. Personal leadership will be provided in interpreting safety policy and actively supporting it. This will set an example to those responsible to him/her, and give equal emphasis and weight to such factors as work production, cost and quality. Supervisors will actively support the work of the Committee, and will promptly review the feasibility of accident prevention recommendations. Programs will be established and directions issued to implement feasible recommendations.

### **1.4 Employees Responsibilities**

Employees are our first lines of defense against accidents and injuries. They are expected to follow the policies outlined in this manual. Employees are to be alert and informed at all times. Employees shall not work with judgment, perception, or reaction time impaired by alcohol, drugs, and physical or emotional problems that may present a safety risk to themselves or those around them. They are required to report all accidents, injuries, near misses and unsafe conditions and any circumstance which could affect their ability to safely perform their work, comply with the requirements of the Safety Manual, or meet the safety obligation to other Employees. It is the responsibility of each employee using the safety equipment provided to ensure that the safety equipment is functioning as intended before placing that equipment into service.

### **1.5 Disciplinary Actions**

Violations of this policy are subject to the same disciplinary action outlined in the Employee Handbook. The District reserves the right to terminate an employee for any severe or willful unsafe act. **Failure to report injuries or near misses are considered a violation of this policy and will follow the disciplinary actions as outlined in the Employee Handbook.**

## **2.0 JOB SAFETY TRAINING PROGRAM**

**2.1** Safety training will be conducted on an ongoing basis for members of the various Departments. Appropriate training will be given to all employees (new, transfer and current) on an annual basis. Specific training will be given according to the appropriate job skill areas. Additionally, training periods will be scheduled whenever a change occurs in safety procedures or equipment.

**2.2** All training activities shall be recorded through minutes and certificates. Records will be maintained at the Main Office and Maintenance Building.

**2.3** Areas of training will include but are not limited to:

- A. Orientation
- B. Confined Space Entry
- C. Fire Extinguishers
- D. First Aid
- E. Defensive Driving
- F. Personal Protection - Eye
- G. Personal Protection - Foot and Hand
- H. Personal Protection - Head
- I. Personal Protection - Ear
- J. Personal Protection - Respiratory
- K. Trenching/Excavating
- L. Welding Equipment
- M. Working in a Public Right-of-Way
- N. Right to Know - On Hazardous Materials - Material Safety Data Sheets
- O. Flammable Liquids
- P. Ladders
- Q. Proper Lifting Procedure
- R. Accident Reporting and Worker's Compensation
- S. Rules on Machine Use
- T. Emergency Action Plan
- U. Fire Prevention Plan
- V. Storage of Flammable and Combustible Liquids
- W. Lockout / Tag out
- X. Electrical safety
- Y. Bloodborne Pathogens

## **2.4 Job Safety Training Procedures**

No Supervisor should assume that a newly hired, newly assigned, or reassigned employee clearly knows all the safe job procedures. All employees shall participate in the job-specific training provided by the District.

## **3.0 DRIVER SAFETY PROGRAM**

### **3.1 Purpose**

This policy has been developed to define standards of conduct for staff who operate motor vehicles and power industrial trucks (relating to fire protection, design, maintenance, use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines) while conducting District business. The primary goal of this policy is to help prevent accidents and minimize the risk of personal injury associated with those incidents.

### **3.2 Scope**

This policy applies to individuals who, in the course of their employment, are frequently required to operate a motor vehicle, District-owned or personally owned, to conduct District business.

### **3.3 Definitions**

For the purpose of this policy, "motor vehicle operator" refers to any staff, 18 years of age or older, who frequently operates a motor vehicle while conducting District business. "Frequently" shall be defined as once a week or more. Individuals who are under 18 year of age may not operate a motor vehicle to conduct District business.

### **3.4 Policy**

**Driving History Review.** A review of the driving history of all individuals will be conducted prior to hire, transfer or promotion into a position that requires the frequent operation of a motor vehicle for District business.

**Driver's License.** All District motor vehicle operators must be in possession of a valid driver's license from the state of Indiana. They must also sign the Vehicle Use Acknowledgment Form (Appendix A) that allows the District Office to obtain state driving records. In the event that an employee's job description requires him or her to drive a "commercial vehicle," the employee will be required to obtain and maintain a valid Indiana Commercial Driver's License.

**Vehicle Operator Responsibility.** Motor vehicle operators must report all traffic citations received while on District business to their Supervisor. They must also report the onset of any physical or mental condition that may impair their ability to drive.

Motor vehicle operators are required to conduct a vehicle safety inspection prior to the operation of the vehicle. Windows and mirrors must be scraped and defrosted during inclement weather. Deficiencies or any mechanical defect that would jeopardize the safe operation the vehicle (such as a leaking gas line or overheating engine) must be corrected immediately. Vehicles found to be in unsafe condition are not to be operated until repairs are made. It is the responsibility of all motor vehicle operators to drive in a safe manner and conform to all applicable laws and regulations.

Motor vehicle operators must:

1. Wear seat belts/shoulder harnesses as provided in the vehicle.
2. Wearing radio headsets shall not be allowed while driving. The radio volume shall not interfere with hearing of traffic warning devices.

3. Cell phones shall not be used while operating a District vehicle. If the call must be taken, the employee must pull off to the side of the road and take the call.
4. Utilize mechanical and/or hand signals at all times to inform others of their intentions.
5. Ensure that the vehicle is secured when parked by:
  - Turning the ignition switch off and removing the key.
  - Making sure that vans and all other vehicles equipped with automatic transmissions are placed in "park" and that vehicles equipped with manual transmissions are placed "in gear."
  - Setting the hand brake.
  - Chocking the rear wheels of the vehicle, or turning the front wheels toward the curb when the vehicle is parked on an incline.
6. Ensure the safe transport of all materials and goods by:
  - Securely fastening all loads, regardless of weight or height, to prevent rolling, pitching, shifting or falling. No one will be allowed to physically "steady" a load while riding in the back of the vehicle.
  - Securely fastening all doors while the vehicle is in operation.
  - Securing tailgates in an upright position while the vehicle is moving, except when the load exceeds the length of the vehicle bed.
  - Affixing a red flag to the end of any load that extends two feet or more beyond the end of the vehicle.
  - Ensuring that loads do not extend beyond the width of the vehicle.
7. Ensure the safety of all passengers by:
  - Requiring them to use seat belts.
  - Not allowing passengers to routinely ride in the bed of a truck. However, when any passenger must ride in the bed of a vehicle, they must be seated at all times. **Passengers will not be allowed to sit on the tailgate or sides of the vehicle nor extend their arms or legs beyond the vehicle while it is moving.**
  - Prohibiting any passenger from riding on a trailer while it is being towed.
  - Prohibiting more than two passengers in the front seat of any vehicle unless additional seat restraints have been installed.
  - Prohibiting any passenger from riding between bucket-type seats, on the engine cowling or placing a chair between the seats while the vehicle is moving.
8. Drive defensively at all times.

**Supervisor/HR Responsibility.** Supervisors and HR are responsible for ensuring that District-owned vehicles are operated by authorized District motor vehicle operators only. HR is required to conduct an **annual** driver's license review to verify that each motor vehicle operator holds a valid license and is complying with all restrictions.

Supervisors must also:

1. Immediately notify the District Office if a vehicle operator's license has been suspended or revoked.

2. Review the Vehicle Safety Policy with each new employee before authorizing the employee to operate a District-owned vehicle.
3. Schedule additional training as required to ensure the safe operation of special purpose vehicles, such as sweepers, snow plows, ridding mowers, etc.

Safety Coordinators and HR will document all training and maintain copies.

**District Responsibility.** The District is responsible for equipping each District-owned vehicle with safety equipment necessary for safe operation during inclement weather. The District will also equip each of its vehicles with a fire extinguisher.

**Accident Reporting.** It is the responsibility of all District motor vehicle operators to report all accidents, regardless of damage. Accidents that occur on District property must be reported immediately to their supervisor. Accidents that occur off District property must be reported immediately to the appropriate law enforcement agency and to the District Office as soon as practical.

If an accident occurs on District property:

- Depending on the extent of the injuries, you may need to call emergency personnel (911).
- Assist injured persons, but **do not** attempt to move them unless a threat to life exists.
- Call or have someone call a Supervisor and provide information about the accident. **Do not** leave the scene or move the vehicle until advised to do so by a Supervisor.
- Obtain the names of witnesses, and other pertinent facts. Forward the information to HR as soon as possible. An accident report form will be placed in the glove box of all District-owned vehicles.
- Notify a Supervisor if you strike an unattended vehicle or object while on the property. **Do not** leave the scene until given permission by the Supervisor.
- Complete a written report of the accident for your Supervisor immediately.

If an accident occurs off District property:

- Contact the appropriate law enforcement agency and or emergency personnel.
- Obtain the name, address and insurance company of any and all drivers and witnesses involved in the incident.
- Request a copy of the incident report or obtain the case number associated with the accident if a copy is not immediately available.
- Report the incident to your Supervisor immediately.

**Accident Review and Driving Record:** The District Office will review each accident that involves a District-owned vehicle and each incident where a vehicle operator has been cited for a violation of Motor Vehicle Law, or the District Vehicle Safety Policy, while operating a vehicle on District business.

District will maintain a driving record on each employee driver.

## **4.0 PERSONAL PROTECTION EQUIPMENT (PPE)**

### **4.1 Inventory of PPE**

It shall be the responsibility of the Safety Coordinator to ensure an adequate inventory of PPE at all times. Employee input as to style and type of equipment shall be taken into consideration so long as proper safety protection is provided. PPE is defined in the Code of Federal Regulations (CFR), Title 29, Chapter XVII, Part 1910, 36 FR 10466, May 29, 1971, as amended.

### **4.2 PPE Requirements**

PPE is not to be used as a substitution for the elimination of unsafe acts or conditions, but rather as a supplement safety measure. When job requirements dictate the wearing of protective equipment, this requirement then becomes both a part of the accident prevention effort, and a condition of employment.

Required PPE is provided for the employees' use and safety. Each employee is expected to maintain and use this equipment. All PPE should be left at work, including boots, to reduce the risk of taking home contaminants. In instances where employees furnish their own personal equipment, the Supervisor is responsible to ensure adequacy and to ensure the equipment is properly maintained. Supervisors also have the responsibility for the proper use of PPE.

The following listing of when to use personal protection is not intended to be all-inclusive:

#### **A. Eye and Face Protection**

1. Protective eye and face equipment shall be used when there is a reasonable probability of injury that can be prevented by such equipment.
2. Goggles or face shield shall be used in the following specific instances:
  - a. When operating metal or woodworking machines.
  - b. When handling electrolyte batteries.
  - c. When working overhead.
  - d. When using striking tools such as chisels or punches.
  - e. When using power activated tools.
  - f. During jackhammer operations.
  - g. When using air to clean an area.
  - h. When using hazardous liquids.
  - i. And any other occasion as necessary.
3. Welding, sandblasting or metal cutting operations require special protective equipment.

#### **B. Foot Protection**

Many of the operations conducted by this organization expose the employee to foot injuries. Therefore, all employees engaged in field and shop work will wear work boots with a Class 75 or higher rating. All work boots shall be left at work.

#### **C. Hand Protection**

1. Gloves are required on many of the jobs performed by the various Departments. Those employees that need gloves will have a suitable pair available for use.
2. Special gloves will be used for welding or cutting operations, when handling toxic materials, and on other occasions as necessary.

#### **D. Head Protection**

Many activities performed by District employees involve working below ground level with material overhead, or working near construction machinery. Hard hats are provided to prevent head injuries: from being struck by falling objects, electrical shock, and bumps on the head

from working in confined spaces. The proper protection is provided when the head harness is adjusted so that there is approximately 1-1/2" clearance, (plus or minus 1/8"), between the skull and the inside of the hat when it is worn. When the harness becomes worn to the extent that it no longer can be adjusted to maintain that clearance, hard hats should be turned in for repair or replacement. A hard hat is a personal item and shall be for the exclusive use of the person to whom it is issued. Plastic hard hats should be kept clean, and only cleaned as per the manufacturer's specifications.

Use common sense: Always wear the hard hat where there is any overhead danger, large machinery in operation, whenever you are four feet below the surface of the ground or deeper. The hard hat is required when doing tank painting or repair, when mowing in a gang, whenever there is a bumping hazard, in a confined space, operating VAC and/or JET trucks, while working under power lines, or instructed by your supervisor.

E. Ear Protection

1. Protection against the effects of occupational noise exposure shall be used when the sound exceeds the criteria in Table 1.

Table 1 - Permissible Noise Exposure

<u>Duration per day, hours</u>	<u>Sound level, DBA Slow Response</u>
8	90
6	92
4	95
3	97
2	100
1-1/2	102
1	105
1/2	110
1/4 or less	115

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure.

In all cases where the sound levels exceed the values shown in Table 1, a continuing, effective hearing conservative program shall be initiated.

2. Examples of specific cases where hearing protection is required are:
  - a) During tasks involving the operation of jackhammers
  - b) When working around high capacity pumps
  - c) Working on or near a running generator
3. Work areas will be monitored to insure compliance with this section.

F. Respiratory Protection (Also, see Chapter 14)

1. Employees who are exposed to hazardous atmosphere that cannot be eliminated by other methods will be provided the use of respiratory equipment. The type of protective device shall be appropriate for the hazardous material involved and the extent and nature of work performed.
2. Handling toxic materials. When entering confined space such as manholes or lift station wet wells, the space shall be ventilated and tested for combustibles, toxins and oxygen deficiency.

**Note**

All employees exposed to confined space entry work shall receive specific training in working in these spaces. See Chapter 8 of this Manual for detailed information on Confined Space Entry.

G. Full Body Harness, Life Lines and Lanyards

1. Full Body Harness, lifelines, and lanyards will be used to protect employees from falls and to provide a means of rescue. An example of when this equipment would be used is when entering confined space.
2. These devices will only be used for safeguarding employees, and shall not be used for lifting equipment or materials.

## **5.0 WORK RELATED INJURIES**

Each employee has a personal responsibility to prevent accidents/injuries and to observe and practice safety rules and instructions relating to their daily work environment. Each employee should caution fellow workers when they perform unsafe work habits and remind them on the proper safety procedures. Accident/injury prevention is everyone's responsibility.

### **5.1 Emergency Medical Treatment**

If emergency medical treatment is necessary, contact 911 for medical assistance and transportation. Medical personnel are responsible for transportation decisions.

### **5.2 Non-Emergency Treatment**

First aid kits are available at the District Maintenance Building, District vehicles, and the Government Center. For non-emergency, non-life threatening treatment, injured employees should be taken to

Community MedCheck  
11911 N Meridian St, Suite 150  
Carmel, IN 46032  
(317) 621-6702

### **5.3 Follow-up Medical Treatment Work Related Injuries**

Following the accident, the injured employee shall be responsible for notifying the Supervisor on an ongoing basis of his/her condition.

### **5.4 District Reporting Procedure**

In the wastewater industry, where exposures to various microorganisms in the wastewater stream is a routine occurrence, even the most minor scratch, cut, and abrasion should immediately be reported to a Supervisor. All accidents, involving injury or not and including near misses must also be reported to supervision.

All serious accidents involving death or the hospitalization of three or more employees in the same accident will be reported to the Utility Director and to IOSHA (232-2693) within 8 hours. In less serious cases, the injury report must be presented within 24 hours.

The results of each investigation will be documented in writing and submitted to HR.

All accidents/injuries require follow-up investigations to learn of the problems in the work place that caused the injury and to avoid recurrences.

Records must be maintained in each establishment for 5 years following the end of the year to which they relate.

### **5.5 Written Documentation**

The Supervisor and the Safety Coordinator will investigate the circumstances of the accident/injury. A written report will be prepared from the accident information with complete and accurate documentation.

The District Personnel & Benefits Committee may review any accident or investigation report.

The accident report should include the following information:

1. The investigation report should include the date, time and location of the accident; describe the accident, any injury, and include as much information as can be obtained.
2. Information from the injured party, photographs, diagrams, eyewitness names, addresses, and their statements, and notes may add key details in a written report. If a police report is made, this should be included in the documentation for the accident.
3. Tell the circumstances of why this accident occurred. State the cause of the accident. Sometimes the cause of the accident will not be revealed until all the data are compiled and analyzed.
4. After the cause is determined, document a solution for avoiding future accidents. The supervisor of the area and the Safety Coordinator should make this decision and make efforts to implement the solution. Consultation with District administrators and Personnel & Benefits Committee may be needed.

## **5.6 Follow-up Report**

A follow-up report should be issued by HR within 30 days of the accident to determine if the solution to prevent further accidents was implemented and if a recurrence of the accident was preventable from the proposed solution.

## **5.7 Prevention of Accidents**

All accidents are summarized in a monthly report developed by HR from written reports and reviewed by the Board and Staff.

## **5.8 Documentation and Record Keeping**

In order to comply with city, state and federal regulations, current and accurate record keeping of all District accidents and incidents relating to safety matters must be documented and maintained by the District Office. In addition, the office keeps and maintains all records of employee training and hazard identification. All records must be maintained for their specified retention time.

## **5.9 OSHA Requirements**

OSHA required recordkeeping steps, which are performed by department Supervisors:

1. Each recordable case must be entered on OSHA Form 301 (or equivalent) within seven (7) calendar days after learning of its occurrence.
2. The Log of Work-Related Injuries and Illnesses (Form 300) is used to classify work-related injuries and note the extent and severity of each case. Logs must be maintained for five (5) years following the year to which they pertain. A log must be kept for each establishment or site. Logs must be available for inspection and copying by representatives of the Department of Labor, or the Department of Health and Human Services, or States accorded jurisdiction under the Act. Access to the log is also provided to employees, former employees and their designated representatives.

3. The Summary (Form 300A) is a separate form that shows the totals for the year in each category. A copy of the Summary must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than February 1<sup>st</sup> and remain in place until April 30<sup>th</sup> of the same year. Even though there were no injuries or illnesses during the year, zeros must be entered on the totals line, and the form posted.

## **6.0 SAFETY INSPECTIONS**

### **6.1 General**

Safety inspections are designed to uncover unsafe acts or conditions, determine their causes, and recommend action to eliminate the unsafe acts or conditions.

### **6.2 Types of Inspections**

- A. Formal Safety Inspections of the District's buildings, Plant and grounds shall be conducted on a formal basis (annually) with a follow-up correction inspection to be conducted by the Plant Supervisor and Safety Coordinator.
- B. Supervisors shall conduct informal inspections on a quarterly basis, to insure that hazards are kept at a minimum, and that safe work practices are enforced. Emphasis shall be placed upon the condition of facilities, equipment and machines, as well as the following:
  - 1. Good housekeeping.
  - 2. Use of prescribed protective equipment (PPE).
  - 3. Adequacy of job procedures.
  - 4. Qualification of drivers and condition of vehicles.
  - 5. Proper storage of flammable liquids.
  - 6. Proper guarding of open pits, tanks, etc.
  - 7. Proper maintenance of electrical equipment, power tools, and hand tools.
  - 8. Administrative compliance with this manual and other pertinent directive.

### **6.3 Documentation**

All inspections, formal and informal, will be documented by a written report. Copies of all inspections will be distributed to the Utility Director and the Safety Coordinator.

Each Supervisor will receive a copy of an inspection, formal or informal, made in his/her Department.

## **7.0 CONFINED SPACE**

### **7.1 Purpose**

The purpose of this plan is to establish a program and procedures for the safe entry into confined spaces at Clay Township Regional Waste District. The District has evaluated all of its confined spaces and has deemed them all to be Permit Required.

This program supports compliance with Occupational Safety and Health Administration Permit Required Confined Space Entry Program as found in 29 CFR 1910.146. This plan applies to all District employees. Contractors working at the District facilities will be covered by the contractor procedures of this program and will be expected to follow all requirements.

### **7.2 Definitions**

*Confined Space:* An area which:

- Has a size and shape large enough for employees to enter
- Has limited or restricted means of entrance and exit
- Is not designed for people to work in continuously

*Permit Required Confined Space:* According to the OSHA Standard, this is a space, which meets all of the above conditions and has one or more of the following hazards:

- *Atmospheric hazards*, which can be asphyxiating, toxic, flammable or explosive
- *Engulfment hazard*, which occur when someone is trapped or enveloped by a dry, bulk material such as sand, soil, or gravel
- *Configuration hazards*, in which the size or shape of the space can trap an employee or make escape or rescue difficult
- *Energy hazards*, which can happen if there is contact with electrical equipment, steam, or other sources of heat inside the space. (Equipment such as augers or mixers must be locked out)
- *Other serious hazards*, such as falls, burns, or high noise levels

*Entry into a Confined Space:* OSHA defines entry as any part of an employee's body going through the opening into the space. Even just a hand going into the space is considered entry.

*IDHL:* An OSHA hazard classification – “Immediately Dangerous To Life & Health”. Toxic atmospheres that are immediately fatal are considered IDLH.

*Intrinsically Safe:* A designation on the manufacturer's label placed on equipment, indicating that it is designed to be safely used for a specific hazard or within a specific kind of confined space.

### **7.3 Responsibilities**

The Safety Coordinator is responsible for keeping an up to date roster of those employees who have been trained on Confined Space Entry. The roster must be made available to all team members.

*The Program Administrator* is the Safety Coordinator

This person is responsible for issuing and administering this program and making sure that the program satisfies the requirements of all applicable Federal, State or Local confined space entry requirements.

#### *The Entry Supervisor*

This person is responsible for verifying the purpose for each entry into a confined space and issuing permits to protect entrants assigned to perform work. The permit will be issued according to the permit procedures listed, including the following:

- Ensuring that all assigned entrants have current training in the procedures and precautions for work to be performed
- Informing contractors of the District's confined space entry program requirements and of the potential hazards of each space to be entered
- Verifying that all entry equipment is maintained and/or calibrated according to the manufacturer's specifications and the District's preventative maintenance procedures
- Knowing how to calibrate and operate air monitoring equipment
- Understanding what airborne hazards exist or have the potential to exist at the site
- Identifying equipment and methods for testing at the site
- Determining when equipment is malfunctioning
- Provide appropriate equipment maintenance

#### *The Authorized Entrants*

These people are responsible for:

- Knowing the hazards that may be faced during entry, including information on how hazardous exposure may occur, and the signs, symptoms and severity of exposure
- Properly using any equipment needed to safely enter the space
- Maintaining communication with the attendant outside of the space, following warnings given by the attendant and exiting the space immediately when told to do so

#### *The Authorized Attendants*

This person is assigned to monitor the entrants while they are working in the space and is responsible for:

- Knowing the hazards that may be faced during entry
- Knowing symptoms and health effects if exposure occurs
- Ordering the entrants to evacuate the space if the attendant detects a new hazard or unusual behavior in the entrants
- Maintaining an accurate count of the number of authorized entrants in the space
- Remaining outside the space during entry operations until relieved by another attendant
- Maintaining communications with the authorized entrants to monitor their work activities and to alert them if evacuation is necessary
- Calling for rescue and other emergency service as soon as the attendant recognizes that the entrants may need assistance to escape from the space
- Keeping unauthorized persons from entering the space or interfering with the entry process
- Initiating or performing non-entry rescues as outlined in the rescue plan
- Performing no other activities which may interfere with the primary job of monitoring the safety and condition of those people inside the confined space

## 7.4 Program Activities

### Identifying Confined Spaces

- All permit required confined spaces and the hazards involved are identified in the confined space entry evaluation form.
- Since placing signs on all confined spaces would not be practical, confined spaces shall be identified through definition and training.
- Employees will be notified where the confined spaces are located during confined space entry training.

### Hazard Testing Before and During Entry into Confined Spaces

- All confined spaces will be tested before and during entry, using properly calibrated and approved equipment.
- The air in the confined space will be tested for oxygen levels, flammable gases and vapors, and toxic substances.
- Continuous air monitoring will be maintained for oxygen, flammable gases and vapors, and the following toxic substances HYDROGEN SULFIDE and CARBON MONOXIDE
- If the hazard level cannot be determined by testing, an Immediately Dangerous to Life and Health (IDLH) situation shall be assumed, and appropriate protective measures shall be used during the entry.

### Eliminating Hazards

- Mechanical ventilation will be provided when necessary.
- Protective equipment are to be used only when normal cleaning and ventilation procedures fail to reduce the hazard to safe levels.

### Confined Space Entry Team

- The Entry Supervisor will determine the size of the Entry Team, based on the size of the job, hazards potential or present, and or the “routineness” of the entry.
- During a confined space entry, there will always be a minimum of one attendant and one entrant.
- One attendant must be trained in First Aid and CPR.
- One attendant must be able to physically remove an injured entrant from the confined space in case of emergency, without entry to the space.

### Non-Entry Rescue

- A hoist or other mechanical device for personnel removal will be used for all spaces in excess of four (4) feet in depth.
- First aid and any necessary rescue equipment shall be readily available at the site.

### Lockout/Tagout

- Connecting pipelines will be blanked off or separated prior to entry.
- All lockout/tag out procedures shall be followed in securing electrical systems, machinery, pressure systems and rotating equipment.

#### Other

- If welding or cutting is to be performed in a confined space, local exhaust ventilation will be provided. A hot work permit will be completed and attached to the confined space entry permit.
- The MSDS for hazardous materials being used in a confined space will be incorporated in the confined space entry permit.
- Explosion-proof lighting shall be used in confined spaces unless atmospheric tests have proven that the space is non-explosive.

#### Training

- Training will be provided for all employees involved with confined space entries.
- Training will be updated as necessary to ensure safe entries.
- Training records will be maintained on forms found at the Maintenance Building.

## **7.5 Procedures for Entry**

#### Evaluate the Job

- Identify the work to be performed
- Identify who will perform the work
- Determine when the work will be performed
- Determine the type of hazards associated with the space
- Determine the type of equipment needed to control hazards
- Prepare for entry by completing the Confined Space Entry Permit

#### Brief the Entry Team

- Review the entry requirements
- Verify the rescue methods to be used and procedures to be followed
- Confirm that rescue personnel are available
- Review the communication procedures to be used
- Notify office of the specific amount of time and location for the entry.

#### Isolate the Space

- Inspect and set up safety equipment
- Initiate the appropriate lockout/tagout
- Clean and/or purge the space
- Ventilate the space when required (e.g., low oxygen)
- Initial atmospheric test should be taken every two (2) feet until the bottom of the space is reached.
- Verify atmospheric conditions according to permit

#### Perform the Work

- Continue to monitor both inside and outside the space
- Record air readings at appropriate intervals
- Attendant must stay in contact with the entrant at all times

Conclude the Entry and Debrief the Team

- Exit the space and account for all entrants
- Cancel the permit
- Notify office of canceled permit
- Provide appropriate maintenance to equipment used
- Evaluate the entry for problems or any opportunities for improvement

## **7.6 Rescue**

### **Non-Entry Rescue**

#### **Procedures:**

1. Never enter a confined space to perform a rescue. The attendant will prevent untrained and unauthorized personnel from entering the space.
2. Sound local alarm to alert employees of emergency (e.g., shout for help, contact fire and rescue, etc.)
3. Assess the emergency. Determine the type of injury to the entrant.
4. Verify that retrieving the employee will not result in inflicting additional injury to the person being rescued.
5. Retrieve injured employee using the safety retrieval system.
6. Administer First Aid/CPR as necessary. Contact outside emergency responders as necessary.
7. Terminate the confined space entry.
8. Complete company accident investigation reports and workers compensation reports for injured employees.

### **Entry Rescue by Non-Employees**

#### **Procedures:**

1. Never enter a confined space to perform a rescue. The attendant will prevent untrained and unauthorized personnel from entering the space.
2. Sound local alarm to alert employees of emergency (e.g., shout for help, contact fire and rescue, etc.)
3. Assess the emergency. Determine the type of injury to the entrant.
4. Contact Confined Space Rescue in order of appearance on the Confined Space Rescue List, which will be provided by the Safety Coordinator.
5. Delegate an employee (if available) to guide the emergency responders to the site.
6. Assist emergency responders as needed to facilitate the rescue.

## **7.7 Special Situations**

### **District Responsibilities**

When the District arranges to have employees of another employer (contractor) perform work that involves confined space entry, the District shall:

- Inform the contractors that the workplace contains permit required confined spaces and that permit space entry is allowed only through compliance with a permit space program. The Contractor may use the District's permit space program or may provide their own if the District has reviewed and approved their program.

- Apprise the contractor of the elements, including the hazards identified and the District's experience with the space that makes the space in question a permit required space.
- Apprise the contractor of any precautions or procedures that the District has implemented for the protection of employees in or near permit spaces where contractor personnel will be working.
- Coordinate entry operations with the contractor, when both the District's personnel and contractor personnel will be working in or near permit spaces.
- Debrief the contractor at the conclusion of the entry operations regarding the permit space program followed and regarding any hazards confronted or created in permit spaces during entry operations.

### **Contractors Responsibilities**

In addition to complying with permit space requirements that apply to all employers, each contractor who is retained to perform permit space entry operations shall:

- Obtain any available information regarding permit space hazards and entry operations from the District.
- Coordinate entry operations with the District, when both the District's personnel and contractor's personnel will be working in or near permit spaces.
- Inform the District of the permit space program that the contractor will follow and of any hazards confronted or created in permit space, either through a debriefing or during the entry operation.

## **8.0 EXCAVATION PROTECTION (TRENCHING)**

### **8.1 General**

The procedures in the following sections are designed to reduce the risk and severity of accidents by providing employees and Supervisors with the necessary information to prevent cave-ins through proper shielding, shoring, and sloping.

### **8.2 Definitions, Excavation Protection**

Shielding	Steel plates and bracing welded or bolted together in a box, so that a worker in a trench is guarded from any caving in of the walls.
Shoring	A framework support system of wood, metal, or a combination of both, used in the prevention of the caving in of excavation and trench walls.
Sloping	Excavating the walls of the trench at an angle, so the downward forces on the soil are never allowed to exceed the soil's cohesive strength, thus preventing a cave-in of the excavation and trench walls. This angle varies with the type of soil, the amount of soil it contains, and with surrounding conditions, especially vibration from machinery.

### **8.3 Training Guidelines for Excavation Protection Safety**

Safety training in this topic is designed to reduce the risk and severity of accidents by providing clear, concise information on safe procedures.

#### **A. Qualification of Training Personnel**

The person in charge of the field aspect of training must know the relevant aspects of safety as they relate to excavation/trenching, including the causes of cave-ins and the prevention of and protection from cave-ins.

#### **B. Training Methods**

- (1) Orientation of new employees involved in excavation. This type of training would consist of classroom sessions, along with a walk-through of typical District excavation jobs.
- (2) On-the-Job-Training. This is the second phase of training. After classroom sessions and after the trainee has gained a basic understanding of the operation and hazards involved, on-the-job instruction should include observation and closely supervised participation in actual work practices. (See Section 2.4 of this manual, for a simple outline on Job Safety Training Procedure.)
- (3) Retraining. This should be performed periodically and as frequently as needed. It is necessary for a formal retraining program to be planned so that all employees concerned may be kept abreast of changes. Retraining should also be considered necessary if a supervisor notices a weakness in employee performance.

#### **C. Training Evaluation**

The effectiveness of the training program can be determined by observing the employee to see if safe work practices are being followed, testing the employee for knowledge of the operations and hazards and by noting a reduction in the accident rate due to safe work practices and techniques which have been learned and are being practiced.

#### **D. Training Program**

The employer is responsible for ensuring that each employee is adequately trained and that the employee understands and applies safe work practices. The following are recommended areas that should be covered throughout the training:

1. Job Site

Prior to starting job, was “Holey Moley” notified and were underground services located?  
Were overhead transmission lines noted and precautions taken to avoid contact by cranes?  
Is housekeeping at job site satisfactory?  
Is storage of material and equipment satisfactory?  
Is spoil bank placed at least 2 feet from edge of excavation?

2. Excavation or Trench

If over 5-feet deep, is it sloped to the angle of repose, or shored, or is a trench box used?  
If under 5-feet deep, but soil is unstable, is it sloped, supported or shored?  
Is shoring system inspected regularly by a competent person?  
If necessary to use mud pump, is it placed downwind from the excavation?

3. Exits

If trench is 4 feet or more in depth, is ladder provided?  
Are ladders in good condition?  
Do they extend from the floor of the trench to 3 feet above the top of the excavation?  
Are ladders secured at the top?

4. Completion of Job

Is trench backfilled as the shoring is dismantled?  
Is shoring removed from the bottom up, the jacks and braces removed slowly?  
In unstable soil, are ropes used to pull out jacks or braces from above?

## **8.4 Factors That Increase/Decrease the Probability of a Cave-In**

The factors that increase or decrease the probability of a cave-in are related to the effects of soil strength and downward force. Any soil has a certain amount of cohesive strength holding particles of soil together. But where a trench or excavation has been dug, the force of gravity acts against the natural strength of the soil. When the downward pressure caused by gravity overcomes the soil strength, the trench wall caves in.

A. Soil strength can be affected by:

- Type of soil
- Moisture
- Freezing
- Recent excavation

In determining the soil strength, the first factor to consider is the type of soil. Loose grained, sandy soils have little cohesion and tend to cave into the excavation when unsupported.

A second factor affecting soil strength is moisture. Water can drastically reduce any soil’s ability to hold together, causing it to slide or cave in more easily. A trench that is safe in the morning may suddenly become unsafe in the afternoon, after a rain or a spring thaw.

While thawing weakens the soil, freezing can strengthen it. But water expands as it freezes, and this movement can affect shoring, the earth behind the trench wall, or the entire trench. Although the soil near the surface may be frozen solid, it may be mud below the frost line.

Another factor that will reduce a soil’s ability to support trench walls is a recent excavation. Soil that has never been distributed will usually have greater strength than soil that has been excavated for pipe laying, road building, or some other purpose. Generally, the more recent the excavation, the weaker the soil.

B. The downward force is affected by:

- Trench depth

- Soil weight (which is again related to moisture)
- Weight of the spoil bank
- Weight of adjacent equipment
- Vibration

Under any conditions, cave-in protection is required for trenches or excavations 5-feet deep or more. Where soil is unstable, protection may be advisable even in more shallow trenches. Wet soils can be more than twice as heavy as dry soils. Since wet soils may also have less cohesive strength, moisture from any source is a major factor affecting the likelihood of a cave-in. The weight and location of the spoil bank (the material removed from the trench) is another factor adding to the downward forces. The spoil bank, if properly placed, can easily add 50% or more to the weight of the soil subject to a cave-in. Spoil should be placed 2 feet or more away from the edge of any excavation, and it must be stored in a way that will prevent it from falling or sliding back into the excavation. Lastly, operating compacting equipment in the trench, or nearby blasting, or the presence of people and equipment near the edge of the trench can cause vibration that will loosen the soil and make a cave-in more likely.

## 8.5 Procedure

Prior to opening an excavation, determine whether underground installations (sewer, telephone, water, fuel, electric lines, etc.) will be encountered. Contact “Holey Moley” before the start of actual excavation.

Remember, when you double the trench depth, you increase the weight of earth subject to cave-in by at least a factor of four. If the trench is 5-feet deep or more, some type of cave-in protection is required, no matter what the soil condition.

There are three basic ways to prevent cave in or protect yourself from cave-ins:

- A. Sloping - Sloping requirements vary depending on the type of soil. For deep trenches, sloping will take up more room than you may have available. But it is an easy and effective protective measure for many excavations. Sloping involves excavating the walls of the trench at an angle so the downward forces on the soil are never allowed to exceed the soil’s cohesive strength.

For any section of an excavation, there will be a certain angle, called the angle of repose, where the surrounding earth won’t slide or cave back into the trench. The angle of repose varies with the type of soil, the amount of moisture it contains, with surrounding earth that won’t slide or cave back into the trench, and with surrounding conditions, especially vibration from machinery.

In all excavations, a ladder must be provided. It should be located so workers will always be able to reach one within 25 feet, and it must extend at least 3 feet above the top edge of the trench. This allows workers to exit the trench quickly in case of emergency.

Solid Rock	Compact Gravel	Average Soil	Compact Sand	Loose Sand
(90*)	½:1 (63*)	1:1 (45*)	1-1/2:1 (33*)	2:1 (26*)

- B. Shielding - Shielding involves the use of a steel box, open at the top, bottom, and ends. The box is placed into the ditch so workers can work inside it. As the work progresses, the protective box is moved or towed to provide a continuing shield from any caving in of the walls. This open-ended box is called a trench shield, a portable trench box, a sandbox, or a drag shield.

Shielding does not prevent a cave-in. The shield cannot fit tightly enough in the trench to hold up the trench walls. However, if a cave-in does occur, the worker within the shield is protected. Shielding is constructed of steel plates and bracing, welded or bolted together. It is important that the shield extend above ground level, or that the trench walls above the top of

the shield be properly sloped. A major disadvantage of the shield is that workers have a tendency to leave its protection in order to check completed work, or to help adjust pipe placement, or just to get out of the way of the job in progress. The shield only protects those workers actually within it.

- C. Shoring - The third method protecting workers in trenches is shoring. If properly installed, shoring will actually prevent the caving in of excavation and trench walls. Basically, shoring is a framework support system of wood, metal, or a combination of both.

Clay Township Regional Waste District prevents cave-ins through the use of sloping (1:1 or 45 degree angle) and shielding (a portable trench box). Inspections of excavations shall be made by the responsible supervisor.

Use the trench box in excavations of 5 feet or deeper. If the use of the box is not feasible, use the sloping method of protection.

Once a trench box is below the surface of the ground by two feet or more, slope the hole back on 1:1 or 45 degree angle.

In all excavations, a ladder will be placed in the trench.

This ladder will extend 3 feet over the top of the trench.

Employees in an excavation will wear hard hats

NOTE: All contractors and subcontractors shall comply with these District safety standards on excavations.

## **8.6 Emergency Procedure**

In an emergency

Don't work in a trench if you are alone. If a cave-in does occur, you could be trapped. Having someone nearby to dig you out or go for help can mean the difference between life and death. If, in spite of all your precautions, you are caught in a cave-in, there are a few things you can do to increase your chances of survival.

- If it looks like you are about to be buried, yell. This will increase the chances of someone will notice the cave-in and start to work getting you out immediately. It also makes it likely that someone will be watching as you go under, which could be critically important when rescuers try to find you in the dirt.
- As you go under, try to cover your face with your arms. The space between your arms and your face can help you breathe while you wait for rescuers to dig you out.
- If you are buried under very much dirt, you won't be able to dig yourself out so don't struggle. Your best course of action is to wait calmly for rescue.

## **9.0 RULES ON MACHINE USE**

- A. The machine shall never be oiled, greased, or fueled while the motor is running. The gasoline tank shall be filled from approved safety type cans or pumps.
- B. Operators shall keep other employees and bystanders a safe distance from the machine while the machine is in operation.
- C. An employee shall not attempt to clear the buckets or discharge chute while the machine is in operation.
- D. When an end-loader is being loaded by hand, the machine operator shall keep his hands and feet free of all controls except the brakes.
- E. Machines shall not be used on slopes or inclines greater than those specified in the owner's manual.
- F. Employees other than the operator shall not stand with hands or feet resting on a machine while it is running, and shall keep clear of the discharge side.
- G. All digs should be scheduled ahead with a two-day minimum to allow IUPPS (Holey Moley) time to contact the proper utilities to have the affected area marked.
- H. Machines parked or operating on streets or highways shall be protected by proper warning devices.
- I. When it is necessary to leave excavating equipment unattended, the blade, bucket, or scoop shall be lowered to the ground, and the ignition system locked.
- J. Ground openings such as trenches, shafts, and obstructions, shall be protected by suitable barricades or covers.
- K. Equipment shall be shut down and de-energized before inspection or maintenance work is started.
- L. Pressure on air tools shall be released before the equipment is left unattended.
- M. All connections to air tools shall be made secure before turning on air pressure.
- N. Compressed air at the tool shall not be turned on until the tool is under the control of the operator.
- O. All material removed from excavations shall be piled at least 2 feet from the edge of the excavation, preferably on the side next to traffic.

## **10.0 WORKING IN A PUBLIC RIGHT OF WAY**

District employees are often required to work in or along a right of way normally used for vehicle or pedestrian traffic. It is desirable that, whenever possible, some continued flow of traffic is maintained with the least possible interference to normal traffic patterns. There are two safety considerations involved:

1. Protecting employees from being struck by vehicular traffic.
2. Helping the public to safely avoid hazardous obstructions, excavations, etc. that interrupt the flow of both vehicle and pedestrian traffic.

The state highway administration has approved and issued the "Manual on Uniform Traffic Control Devices for Streets and Highways" as the national standard for all highways open to public travel. The state manual is adopted as the official manual for a uniform system of traffic control devices for the Clay Township Regional Waste District.

When road surfaces are being repaired, manholes opened, or excavations dug, it is necessary that adequate warning of the hazard be posted, that a minimum amount of the right-of-way be blocked off consistent with safety requirements, and that traffic be efficiently re-routed.

If repair work obstructs a traffic lane in a street and thus compresses several lanes of traffic into fewer lanes, warning by signs and barricades must be given to motorists well in advance of the obstruction. If manhole openings and excavations constitute a hazard to pedestrians, then adequate barricades and re-routing of walkways should be provided.

Maintenance activities may include such minor interferences as utility locates, inspections along easements, standing or slow-moving vehicles and equipment, or occasional movements into the normal right of way. The feature of simultaneous flashing of all turn signal lights should be used, augmented by oscillating rotating lights, or flashing arrow signs mounted on the vehicle. When maintenance or construction activities exceed 15 minutes duration, adequate signs and barricades should be set up.

The following safety procedures are recommended:

1. No street should be closed without proper approval of the Utility Director (or his designee), and notice given to the Police and Fire Departments.
2. If an open excavation is left in a posted traffic lane when work is stopped or suspended for any reason, signs and lighted barricades shall not be sufficient. An excavation must be covered.
3. Protection of persons working on roadway:
  - A. "Men Working" signs should be placed in advance of the work in both directions during maintenance operations. Use traffic signs, cones, and barricades to direct traffic safely around the work site.
  - B. Work should be done on one-half of the roadway at a time. All employees working in the congested or highly traveled area will wear District-approved safety vests.
  - C. A flag person should be used where the amount or speed of traffic warrants.
4. Flag Person should:
  - A. Stand near enough to the workers being protected so that there is no doubt as to his purpose.
  - B. Stay not less than 100 feet from the work crew, unless conditions make this impossible.
  - C. Stand on the shoulder adjacent to the traffic being controlled or in a barricaded lane.

## **11.0 PROPER LIFTING PROCEDURES**

Material handling causes many types of injuries such as strains, crushings, hernias, ruptures, fractures, lacerations, bruises and contusions.

Accidents of this nature can be avoided by planning ahead using mechanical equipment where possible, and thinking about the proper way to perform the task.

The single and most important preventive safety measure an employee should keep on his mind is the Four Step Lifting Process. This technique could save you pain and suffering. Therefore, it is essential that you carefully read and implement the lifting process described here:

### **1. GET READY**

- Size up the load. If it is too heavy or bulky, play it smart – get help or break the load down into smaller loads.
- Check the load and remove protruding nails, splinters, sharp edges, oil, grease, or moisture.
- If the surface is rough – wear gloves.
- Know where the load is going and where you are going to put it down.
- Be sure the path you take is clear of obstacles.

### **2. PICK IT UP**

- Get a firm footing and good balance. Place your feet shoulder-width apart.
- If the load is below waist level, bend your knees to get into position. Keep your back as straight as possible.
- Grip the load firmly.
- Lift the object to carrying position, keeping it close to the body. **LET THE LEG AND ARM MUSCLES DO THE WORK. DO NOT LIFT WITH YOUR BACK.**

### **3. CARRY IT CAREFULLY**

- Be sure you can see where you are going.
- When changing direction, **BE CAREFUL NOT TO TWIST YOUR BODY. CHANGE THE POSITION OF YOUR FEET TO TURN YOUR BODY.**

### **4. PUT IT DOWN**

- If the receiving surface is near waist high, place the load on the edge of the surface, then push it forward.
- If you lower the load to the floor, **BEND YOUR KNEES, KEEP YOUR BACK AS STRAIGHT AS POSSIBLE, AND KEEP THE LOAD CLOSE TO YOUR BODY.**

## **12.0 WORK AREA SAFETY GUIDE**

1. Abrasive Blasting
  - A. Blast cleaning nozzles shall be equipped with an operating valve which must be held open normally (deadman control).
  - B. The air for abrasive blasting respirators shall be free of harmful quantities of contaminants.
  - C. Proper eye protective equipment to prevent injury shall be provided.
2. Abrasive Grinding
  - A. All abrasive wheel bench and stand grinders shall be provided with safety guards which are strong enough to withstand the effects of a bursting wheel.
  - B. Adjustable work rest of rigid construction shall be used on grinders, with the work rest kept adjusted to a maximum clearance of 1/8 inch between rest and wheel.
  - C. All areas with bench type grinders shall be clean and well lit.
  - D. Proper eye protective equipment to prevent injury shall be provided.
3. Pneumatic Tools
  - A. Pneumatic power tools shall be secured to the hose in a positive manner to prevent accidental disconnect.
  - B. Safety clips or retainers shall be securely installed and maintained on pneumatic impact tanks to prevent them from being accidentally expelled.
  - C. The manufacturer's safe operating pressure for all fittings shall not be exceeded.
  - D. Proper eye protective equipment to prevent injury shall be provided.
4. Lifting, Rigging, and Hoisting
  - A. Use care and caution when lifting heavy tools and equipment. Inspect loads for size, shape and weight before lifting. Know the maximum load capacity of the lifting device. Never exceed the rated load capacity of the lifting equipment.
  - B. Chains, cables, ropes, hooks, and tow straps, slings, etc. shall be inspected by the employee using the equipment daily, and defective items shall be removed and repaired, or destroyed and replaced.
  - C. Cables and chains shall be free from kinks or twists.
  - D. Lift straight up. Never lift with cables from an angle.
  - E. Stand clear of suspended loads. Never stand or have a portion of the body under a suspended load.
  - F. Never place yourself between a pump cable and the well while the pump is suspended.
5. Compressed Gas Cylinders
  - A. Valve protection caps shall be in place when compressed gas cylinders are transported, moved or stored.
  - B. Compressed gas cylinders shall be secured in an upright position at all times, except when cylinders are being moved. One (1) ton chlorine containers shall be stored horizontally.
  - C. Cylinders shall be kept at safe distances or shielding from welding or cutting operations.

D. Oxygen and fuel gas regulators shall be in proper working order. Regulators shall be purged when work is completed.

6. Chlorine

General

The following safety procedures for the proper handling of chlorine in its various forms designed for municipal uses is established for the personal safety of employees and the public. Supervisors shall instruct their employees in the following reputations and shall take steps necessary to insure that the highest safety standards are observed.

A. Chlorine in Dry Form (HTH)

- 1) Cans of this chemical shall be stored in a cool, clean, safe, dry place, which is inaccessible to unauthorized employees and the general public.
- 2) HTH shall be stored in the manufacturer's container. Containers shall be reclosed after use with the original lid.
- 3) Make sure hands are absolutely dry. Wear gloves, avoid skin contact, and wash hands after using HTH.
- 4) HTH shall not be mixed with anything except water.
- 5) Measure HTH with a china, plastic, or enamel cup that is dry, clean and free from any foreign materials.
- 6) HTH shall be stored in the Chlorine Room at Pumping Station #1.

B. Chlorine Gas in Cylinders

- 1) Whether empty or full, all 150 lb. chlorine cylinders shall be stored, transported, handled and used in an upright position. All one-ton containers shall be stored in a horizontal position. UNDER NO CONDITION SHALL A 150 LB. CHLORINE CYLINDER BE PLACED IN A HORIZONTAL POSITION. THE PROTECTIVE CAP SHALL BE SECURELY TIGHTENED ON ALL CHLORINE CYLINDERS EXCEPT WHEN ACTUALLY IN USE OR BEING PREPARED FOR USE.
- 2) All cylinders, empty or full, shall be located in a cool and dry location.
- 3) In storage, 150 lb. chlorine cylinders shall be securely fastened in an upright position against a solid wall with chains firmly fastened to the wall. One ton cylinders shall be blocked to prevent rolling.
- 4) When in use at plant location, 150 lb. cylinders shall be firmly placed on a level and stable scale platform. Prior to placing on any surface, the cylinder bottoms must be checked for any unevenness that may result in tipping.
- 5) When loading or unloading or handling chlorine cylinders, employees shall take extreme care to insure cylinders are not bumped, jarred or dropped. Special attention shall be given to the proper installation of the protective cap over the valve. All hoists shall be checked for proper and safe operation before use.
- 6) Only Water Operators and Wastewater Operators may change connections on chlorine cylinders. Changing connections shall be accomplished using proper safety equipment and precautions, with standby person present.
- 7) If an employee detects free chlorine gas, he should immediately leave the building, lock the doors, shut the windows (from the outside) and call the Police Dispatcher and Fire Department. No one shall enter that building without first putting on a self-contained air pack.

- 8) If used to disinfect portions of the municipal water system, such structure will not be used for discharging water for public consumption until the Certified Operator in charge or his designee has verified the acceptable chlorine content of the water.

7. Cylinders of Compressed Gas Use in Welding

- A. Compressed gas cylinders shall be kept away from excessive heat, shall not be stored where they might be damaged or knocked over by passing or falling objects, and shall be stored at least twenty feet away from combustible materials.
- B. The valve protection cap shall be in place except when the cylinder is in use or is connected for use.
- C. Acetylene cylinders shall be stored and used in a vertical valve end up position only.
- D. In storage, oxygen cylinders shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease) by a minimum distance of twenty feet; or by a non-combustible barrier at least five feet high, having a fire resistance rating of at least half and hour.

8. Electrical

- A. Use care and caution when working around all electrical equipment. Observe “DANGER” and “HIGH VOLTAGE” signs. Stay clear of areas marked as hazardous.
- B. Only qualified and authorized personnel are to work on electrical equipment.
- C. Follow the District’s lockout/tagout procedures.
- D. Consider all electrical conductors and equipment to be “live” until positively proven to be de-energized.
- E. Do not bypass electrical safety devices.
- F. When using electrical tools in or near water, use only tools that are connected to ground fault interrupters (GFI).
- G. Remove any frayed or broken electrical cords from service.

9. Flammable Liquids

- A. Store flammable liquids only in approved sealed containers in approved flammable storage cabinets. Never store gasoline and paint together.
- B. Do not smoke, light open flames, or produce sparks in storage areas.
- C. Outside storage areas shall be protected against tampering or trespassing where necessary, and shall be kept free of weeds, debris and other combustible material not necessary to the storage, or a flammable liquid cabinet that will comply with both OSHA regulations and NFPA 30 requirements.

10. General Conditions - Housekeeping

- A. Keep all work areas including storage rooms, passageways, and exits clean and orderly.
- B. Keep tools and equipment in their proper place when not in use. Never leave tools or equipment lying around.
- C. All floor surfaces shall be kept clean, dry and free from protruding nails, splinters, loose boards, holes or projections.
- D. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places should be provided where practical.
- E. Immediately clean up all spills. Special attention needs to be given to toxic and hazardous spills.

- F. Remove ice and snow and walkways and other heavily traveled areas.
- G. Extinguish and properly dispose of cigarettes.

11. Ladders

- A. Stepladders shall be equipped with a metal spreader or locking device of sufficient size and strength to securely hold the front and back section in open position.
- B. Ladders shall be maintained in good condition, and defective ladders shall be withdrawn from service. Never use a broken or damaged ladder.
- C. Extension ladders shall be erected on a sound base at a 4-1 pitch and placed to prevent slippage.
- D. The top of a ladder used to gain access to a roof should extend at least 3 feet above point of contact.
- E. In areas containing electrical circuits, a portable, fiberglass ladder should be used.
- F. In general industry use, portable metal ladders may be used in areas containing electrical circuits if proper safety measures are considered.

12. Machinery, Fixed

- A. Machines designed for a fixed location shall be securely anchored to prevent walking or moving, or designed in such a manner that the machine will not move in normal operation.
- B. All belts, pulley, chains, flywheels, rotating or reciprocating parts within 10 feet of the floor or working platforms shall be effectively guarded.

13. Weeding, Mower, Tree Trimming and Removal

- A. Employees shall be instructed in the safe use of all equipment, both power and hand tools.
- B. Before starting power tools, make sure all guards are in place.
- C. Proper eye protective equipment to prevent injury shall be provided.
- D. Before mowing an area, inspect the area and remove stones, branches, and other foreign objects.

14. Welding, Cutting, and Heating

- A. Employees shall be instructed in the safe use of all equipment, both power and hand tools.
- B. Proper precautions (isolating welding and cutting, removing fire hazards from the vicinity, providing a fire watch, etc.) for fire prevention shall be taken in areas where welding or other "hot work" is being done. No welding, cutting or heating shall be done where the application of flammable paints, or the presence of other flammable compounds, or heavy dust concentrations creates a fire hazard.
- C. Arc welding and cutting operations shall be shielded by non-combustible or flameproof shields to protect employees from direct arc rays.
- D. When electrode holders are to be left unattended, the electrodes shall be removed and the holders shall be placed or protected so that electrical contact cannot be made with employees or conducting objects.
- E. All arc welding and cutting cables shall be completely insulated. There shall be no repairs or splices within ten feet of the electrode holder except where splices are equal to the cable. Defective cable shall be repaired or replaced.

- F. Fuel, gas and oxygen hoses shall be easily distinguishable and shall not be interchangeable. Hoses shall be inspected at the beginning of each shift and shall be repaired or replaced if defective.
- I. Proper eye protective equipment to prevent exposure to personnel shall be provided. Employees using welding equipment shall take all precautions to protect observers of the welding operations.

15. Personal Hygiene

- A. Practice good personal hygiene and safety to guard against occupationally related diseases.
- B. Wear clothes that protect the arms and legs.
- C. Avoid loose fitting clothing that could get caught in moving equipment.
- D. Do not place fingers into mouth, nose, ears, or eyes while handling wastewater, biosolids, or chemicals.
- E. Wash hands with disinfectant soap before eating, smoking, or going to the lavatory.

16. Office and Clerical Work

- A. Walk at all times. Use care when passing through doorways.
- B. Check with supervisors before using extension cords. Ensure extension cords are three-prong type and that the cords are not damaged.
- C. Keep cords away from aisle ways.
- D. Stairways and passageways should be unobstructed by any type of equipment, furniture, tools or other articles.

## **13.0 RESPIRATOR PROTECTION**

### **13.1 Introduction**

These guidelines are to insure that all employees know how to select and know how to use respirators that allow workers to breathe safely without inhaling toxic gases or particles. Respirator protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspection shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned and maintained.

### **13.2 Working with Respirators**

#### **A. Respirator Selection**

Based on the identification of the hazards and their exposures, the appropriate respiratory protection is chosen. Care needs to be taken to assure complete protection to the employee. The level of protection is only as good as the respirator selected. Selecting the proper respirator for the job, the hazard, and the person is very important, as is thorough training in the use and limitations of respirators.

#### **1. The Hazards**

There are three hazards that should be considered when selecting the proper respirator to use—they are gases and vapors, particulates, and oxygen deficiency. Particulates are a very common hazard that may be in the form of dust, fumes and mist. Dust may be created from drilling, cutting or grinding operations, or may be created from grain or fabric materials being moved around.

Fumes are created from things like metal being heated, and as the material is cooled, small particles of the substance are usually suspended into the air. Mist is another form of a particulate. Mist is composed of tiny droplets of liquids found mostly around spraying operations such as paint booths.

Gases and vapors are another type of hazard to consider when selecting a respirator. Gases and vapors tend to get into the body a lot easier than particulates because there are no natural barriers to protect against them. The air that we breathe is made of gases and vapors and substances of this form that pass into the body as easily as oxygen and, like air, are invisible. Gases can be formed as a byproduct of certain processes such as decomposing sludge in a lift station or manhole, and can give off deadly gases such as hydrogen sulfide gases, carbon monoxide and methane.

The last, and most overlooked hazard, is oxygen deficiency. Oxygen deficiency is an atmosphere that contains less than 19.5% of oxygen by volume.

#### **2. The Job**

The hazard of each job shall be analyzed prior to selecting the proper respirator. The different types of jobs to consider are working in confined spaces, welding, cutting, cleaning and painting. When working in confined spaces where oxygen deficiency and toxic gases and vapors are possible, a self-contained breathing apparatus, or supplied air respirator, shall be worn at all times. When cleaning, welding, cutting and/or painting, air-purifying respirators can be worn depending on the atmosphere in which you are working.

#### **3. The Person**

Every respirator wearer shall receive fitting instructions, including demonstrations and practice in how the respirator should be worn, how to adjust it and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a good face seal. Such conditions may be growth of beard, sideburns, a skull cap that projects under the

facepiece or temple pieces on glasses. Also, the absence of one or both dentures can seriously affect the fit of a facepiece.

The worker's diligence in observing these factors shall be evaluated by periodic check. To assure proper protection, the facepiece fit shall be checked by the wearer each time he/she puts on the respirator. This may be done by following the manufacturer's facepiece fitting instructions.

Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of the eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head.

Wearing of contact lenses in contaminated atmospheres with a respirator shall not be allowed. Systems have been developed for mounting corrective lenses inside full facepieces. When a worker must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by a qualified individual to provide good vision, comfort, and a gas tight seal.

If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece.

## B. Types of Respirators

The three basic types of respirators that will be used by the Sewer Maintenance District personnel are, dust mask (paper), half mask (cartridge) and self-contained breathing apparatus (SCBA)/supplied air respirators.

### 1. Dust Mask Respirators

This type of respirator will only be used in an atmosphere where the wearer can visibly see dust or other containments. These masks are only designed to remove dust particles that you can see. Dust masks, like all respirators, have their limitations, and it is up to the employee to understand and recognize them.

All dust masks will be located in a clean and dry location. The mask will be stored in the original container supplied by the manufacturer. This container will be clearly marked and contain valuable information on the use and care of this type of respirator. This information should be read by the user prior to using. Any mask that is found out of its container will be destroyed.

### 2. Half Mask Type Respirators

Half mask respirators are of a type that may utilize either a single or double cartridge filter. The design of this mask will cover the nose and mouth area. This type of mask must have a proper seal with the face area. Any void in the seal will let contaminates in and will greatly reduce the effectiveness of the filter. This respirator can use different types of cartridges. Before each use, the cartridge should be checked to assure it is the proper cartridge to be used. Any cartridge that is not properly labeled as to its use will be destroyed immediately.

Storage and care of this respirator is critical to its performance. The respirator will be cleaned and disinfected after each use. After cleaning, it will be sealed in a plastic bag and stored in its original or appropriate container. This container will be properly labeled with the following information: use, care, fitting and maintenance instructions. All replacement cartridges will be stored in their original containers, and these must also be labeled for their use and restrictions.

Before and after each use, the respirator will be inspected for deteriorated parts. All straps, hooks, and pliable parts will be checked for cracks and/or deteriorated parts. The cartridge mask will be inspected to assure proper fit and seal when the cartridge is

installed. If at any time a part cannot be replaced, the respirator will be destroyed and replaced.

Never, should an employee use or wear a half mask respirator that is in question. Training on the use and care will be provided by the supervisor or his representative. No employee will use a half mask respirator until they have been trained on its use and limitations.

3. Self-Contained Breathing Apparatus (SCBA)/Supplied Air Respirator (SAR)

SCBA/SAR respirators deliver a supply of safe breathing air from tank or an uncontaminated area nearby. These two types of respirators can be used in areas where there are toxic contaminants, such as gases and vapors, and oxygen deficient atmospheres.

C. Maintenance of Respirators

It is important to keep reusable respirators in as near new condition as possible to ensure that maximum protection to the user is obtained. Respirator maintenance should be performed according to the manufacturer's instructions. A written procedure should be established, enforced, and supported by management.

A program for maintenance and care of respirators shall include the following basic services:

1. Cleaning and disinfecting and inspection
2. Repair and replacement as needed
3. Storage

Equipment shall be properly maintained to retain its original effectiveness. All respirators will be inspected routinely before and after each use. A respirator that is not routinely used, but is kept ready for emergency use, will be inspected after each use, and at least monthly, to assure that it is in satisfactory working condition.

Self-contained breather apparatus will be inspected monthly. Air and oxygen cylinders will be fully charged as needed. Regulators and warning devices will be inspected monthly to see that they are functioning properly.

Respirator inspections shall include a check for tightness of the facepiece, headbands, valves, connecting tube, and canisters. Rubber or elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

A record will be kept of inspection dates and repairs made to respirators. Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to ensure that proper protection is provided for the wearer. Those used by more than one worker will be thoroughly cleaned and disinfected after each use. Respirators used for emergency use shall be cleaned and disinfected after each use.

Replacement or repairs shall be done only with parts designed for the respirator. No attempt shall be made to replace components or to make adjustments or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators should be stored for quick accessibility at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Respirators should not be stored in such places as lockers or toolboxes unless they are in carrying cases or cartons. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators

should be placed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "Use and Care" instructions usually mounted inside the carrying case lid.

#### D. Air Quality

Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high priority.

Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specifications for Grade D breathing air.

Compressed oxygen shall not be used in supplied air respirators or in open circuit self contained breathing apparatuses that have previously used compressed air. Oxygen must never be used with air line respirators.

Breathing air may be supplied to respirators from cylinders or air compressors. A receiver, hip pack tank of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in the event of cylinder or compressor failure, and alarms to indicate such failure, shall be installed in the system.

Air line couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with nonresponsible gases or oxygen.

#### E. Respirator Training

The importance of periodic training is vital in maintaining the quality of the program. The use of the respirators and their capabilities, along with their limitations, is the utmost vital portion of the training process. Without the proper training, the time and thought that went into evaluating the hazards involved can be considered a waste.

Training should be provided to all new employees or when work conditions change. When work conditions do change, then all employees need to be retrained for respiratory protection. ANSI recommends that retraining take place every 12 months.

#### F. Respirator Fitting

In conjunction with the training program, there must be a Respirator Fit Program. After all respirators have been selected, the designated employees will be fit tested. After all employees have been fit tested and evaluated, the next step is to provide training in how to select and wear the respirator on the job. The following procedures will be done in order to assure the best possible seal.

There are two types of fit testing procedures.

##### 1. Quantitative Fit Test:

Quantitative fit testing commonly uses a test chamber or booth where a stream of air containing a known concentration of a finely divided particulate aerosol (such as corn oil mist or salt) is used. The test subject, while in the chamber, wears a facepiece identical to that worn in the work place. This respirator is equipped with a probe allowing a small air sample to be continuously taken from the interior of the facepiece. This air sample is fed to an instrument that analyzes and detects concentrations less than 0.01 percent of the particulate aerosol. Any portion of the particulate aerosol which is found in the sample of the air coming from within the facepiece is called "leakage" or "penetration". This leakage is displayed on a strip chart, therefore, providing a permanent record of the test.

The advantage of quantitative fit testing is that it is regarded as the most precise means now available for fit testing. The strip chart acts as documentation, which can be stored

to provide evidence of fit. A quantitative fit test can also be used as a training tool to the wearer.

The major disadvantage to this type of test fitting is the cost may not be feasible for a small program. Also, this type of system requires a trained and experienced operator. Also, a significant amount of time is required for each fit test.

NOTE: In some cases where protection is required from some contaminants, the employer, if governed by OSHA Regulations, may not have a choice but to use quantitative fit testing.

## 2. Qualitative Fit Test

The difference, between a Qualitative Fit Test and a Quantitative Fit Test, is that the Quantitative Test can be measured. A Qualitative Fit Test requires some subjective response from the individual being tested. They utilize some type of test agent such as isoamyl acetate (banana oil), which is an organic vapor. The fit of the respirator is determined by the subject being able to detect the odor, or slight irritation, or taste.

These fit tests should be done during the fitting portion of the training program, and not at the work location. There are two other types of Qualitative Fit Testing that should be performed by the user before entering a contaminated area. These are negative pressure and positive pressure tests. The negative pressure test requires closing off the inhalation side of the air purifying respirator and inhaling lightly. There should be no airflow into the respirator detected. The positive pressure test is the complete opposite. This is performed by closing off the exhalation valve and exhaling slightly into the respirator. Again, no leakage should be noted. One, or both, of these tests are commonly recommended by the manufacturers for checking the fit of the respirator each time it is donned. The advantages to this type of testing is that they are easy to perform, they require little or no equipment, and they can be performed by relatively inexperienced people.

One of the disadvantages to this type of testing is that it requires some subjective responses from the individual being tested. The test subjects must have a thorough understanding of the test and be motivated to obtain the best possible fit.

Based on the individual being tested, determination of a pass or fail of a respirator may vary with each individual. The test does not provide documentation of the test results.

## G. Issuing of Respirators

Respirators should be issued to employees only after they have received a physical from a physician and after a fit test has been performed on the wearer. The person issuing the respirator should also be trained and educated in respiratory protection. Complete records for each wearer should be kept on file.

## H. Medical Evaluation and Surveillance

The wearing of respirators does impose additional physical and psychological stress on the individual worker. These might be in the form of increased resistance upon inhalation due to the resistance of the respirator and or added fatigue. As the work rate of the worker increases, these stresses are likely to have a more pronounced effect. Guidelines should be established by a physician and through the administrator.

An annual review of a worker's medical status must be performed. (ANSI 288.2-1980). In some instances, the potential risk to the wearer may be great enough to warrant an annual review.

# 13.3 Definitions for Respirators

**AEROSOL:** A system consisting of particles, solids or liquids suspended in air.

**AIR LINE RESPIRATOR:** A respirator that is connected to a compressed breathing air source by a hose of small inside diameter. The air is delivered continuously or intermittently in a sufficient volume to meet the wearer's breathing requirements.

**AIR PURIFYING RESPIRATOR:** A respirator that uses chemicals to remove specific gases and vapors from the air or that uses a mechanical filter to remove particulate matter. An air purifying respirator must only be used when there is sufficient oxygen to sustain life and the air contaminant level is below the concentration limits of the device.

**APPROVED:** Tested and listed as satisfactory by the Bureau of Mines, or jointly by the Mining Enforcement and Safety Administration, and the National Institute for Occupational Safety and Health.

**ATMOSPHERE SUPPLYING RESPIRATOR:** A respirator that provides breathing air from a source independent of the surrounding atmosphere. There are two types: air line and self-contained breathing apparatus.

**CANISTER (AIR PURIFYING):** A container with a filter, sorbent, or catalyst, or any combination thereof, which removes specific contaminants from the air drawn through it.

**CARTRIDGE:** A small canister.

**CHEMICAL CARTRIDGE RESPIRATOR:** A respirator that uses various chemical substances to purify inhaled air of certain gases and vapors. This type of respirator is effective for concentrations no more than ten times the threshold limit value (TLV) of the contaminant, if the contaminant has warning properties (odor or irritation) below the TLV.

**CONTAMINANT:** A harmful, irritating, or nuisance material that is foreign to a normal atmosphere.

**DEMAND:** The demand valve permits air flow only during inhalation.

**DUST:** A solid, mechanically produced particle with sizes varying from submicroscopic to visible or macroscopic.

**EMERGENCY RESPIRATOR USE:** Wearing a respirator when a hazardous atmosphere suddenly occurs that requires immediate use of a respirator either for escape from the hazardous atmosphere or for entry into the hazardous atmosphere to carry out maintenance or some other task.

**EXHALATION VALVE:** A device that allows exhaled air to leave a respirator and prevents outside air from entering through the valve.

**FACEPIECE:** The portion of a respirator that covers the wearer's nose and mouth in a quarter-mask (above the chin) or that covers the nose, mouth, and eyes in a full facepiece. It is designed to make a gas tight or particle tight fit with the face and includes the straps, exhalation valve(s), and connections for an air purifying device or respirable gas source, or both.

**FILTER:** A media component used in respirators to remove solid or liquid particles from the inspired air.

**FOG:** A mist of sufficient concentration to perceptibly obscure vision.

**FUME:** A solid condensation particle of extremely small particle size, generally less than one micrometer in diameter.

**GAS:** An aeriform fluid, which is in the gaseous state at ordinary temperature and pressure.

**HAZARDOUS ATMOSPHERE:** Any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen deficient or which contains a toxic or disease-producing contaminant exceeding the legally established threshold limit value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH).

**HEAD HARNESS:** The part of the facepiece assembly that secures the facepiece to the wearer.

**HELMET:** That portion of the respirator that shields the eyes, face, neck, and other parts of the head.

**HIGH-EFFICIENCY FILTER:** A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

**HOOD:** That portion of a respirator that completely covers the head, neck, and portions of the shoulders.

**IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH):** Any atmosphere that poses immediate irreversible debilitating effects on health.

**INHALATION VALVE:** A device that allows respirable air to enter a respirator and prevents exhaled air from leaving the respirator through the valve.

**MECHANICAL FILTER RESPIRATOR:** A respirator used to protect against airborne particulate matter like dusts, mists, metal fume, and smoke. Mechanical filter respirators do not provide protection against gases, vapors, or oxygen deficient atmospheres.

**MIST:** A liquid condensation particle with sizes ranging from submicroscopic to visible to macroscopic.

**MOUTHPIECE:** That portion of a respirator that is held in the wearer's mouth and is connected to an air-purifying device or respirable gas source, or both. It is designed to make a gas-tight or particle-tight fit with the mouth.

**NEGATIVE PRESSURE RESPIRATOR:** A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

**NON-ROUTINE RESPIRATOR USE:** Wearing a respirator when carrying out a special task that occurs frequently.

**ODOR THRESHOLD LIMIT:** The lowest concentration of a contaminant that can be detected by the olfactory sense.

**OXYGEN DEFICIENCY:** An atmosphere, which contains less than 19.5% oxygen by volume, is considered to be deficient.

**PARTICULATE MATTER:** A suspension of fine solid or liquid particles in air, such as: dust, fog, fume, mist, smoke, or spray. Particulate matter suspended in air is commonly known as an aerosol.

**PERMISSIBLE EXPOSURE LIMIT (PEL):** The legally established time-weighted average (TWA) concentration or ceiling concentration of a contaminant that shall not be exceeded.

**POSITIVE PRESSURE RESPIRATOR:** A respirator in which the air pressure inside the respirator-inlet covering exceeds the air pressure of the outside atmosphere during exhalation and inhalation.

**PRESSURE DEMAND:** Positive pressure is maintained in the facepiece.

**PROTECTION FACTOR:** The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

**RESCUE RESPIRATOR USE:** Wearing a respirator for entry into a hazardous atmosphere to rescue a person in the hazardous atmosphere.

**RESISTANCE:** Opposition to the flow of air, as through a canister, cartridge, particulate filter, orifice, valve or hose.

**RESPIRATOR:** A device designed to protect the wearer from the inhalation of harmful atmospheres. Respirators include: abrasive blasting respirators, air-line respirators, air-purifying respirators, chemical-cartridge respirators, filter respirators, full facepiece gas masks, half-masks apparatus (SCBA), and supplied-air respirators (SAR).

**RESPIRATORY PROTECTION:** Devices that will protect the wearer's respiratory system from exposure to airborne contaminants by inhalation. Respiratory protection is used when a worker must work in an area where he/she might be exposed to concentrations in excess of the allowable exposure limits.

**RESPIRATORY SYSTEM:** The breathing system that includes the lungs and the air passages (trachea or "windpipe", larynx, mouth, and nose) to the air outside the body, plus the associated nervous and circulatory supply.

**ROUTINE RESPIRATOR USE:** Wearing a respirator as a normal procedure when carrying out a regular and frequently repeated task.

**SELF-CONTAINED BREATHING APPARATUS:** A respiratory protection device that consists of a supply or means of respirable air, oxygen, or oxygen-generating material, carried by the wearer.

**SERVICE LIFE:** The period of time that a respirator provides adequate protection to the wearer—for example, the period of time that an air-purifying device is effective for removing a harmful substance from inspired air.

**SMOKE:** A system that includes the products of combustion, pyrolysis, or chemical reaction of substances in the form of visible and invisible solid and liquid particles and gaseous products in air. Smoke is usually of sufficient concentration to perceptibly obscure vision.

**SORBENT:** A material that is contained in a cartridge or canister and which removes toxic gases and vapors from the inhaled air.

**SPRAY:** A liquid, mechanically produced particle with sizes generally in the visible or macroscopic range.

**SUPPLIED AIR RESPIRATORS:** Air line respirators of self-contained breathing apparatus.

**TIME-WEIGHTED AVERAGE (TWA):** The average concentration of a contaminant in air during a specific time period.

**VALVE:** A device that controls the pressure, direction, or rate of flow of air or oxygen.

**VAPOR:** The gaseous state of a substance that is solid or liquid at ordinary temperature and pressure.

**WELDING HELMET:** A device designed to provide protection for the eyes and face against intense radiant energy and molten metal splatter in the welding and cutting of metals.

## **13.4 Rules and Regulations for Respirator Wearers:**

- A. Employees are not allowed to wear beards due to the sealing effect of the respirator to the face.
- B. Respirators shall be cleaned after each permit use.
- C. Respirators shall be inspected prior to each use.
- D. Respirators shall be repaired as needed with manufacturer's recommended parts only.
- E. Respirators shall be kept in sealed cases when not in use.
- F. Breathing air tanks shall be filled as needed.
- G. Employees shall report all defective equipment at once to their Supervisor.
- H. Employees shall wear respirators when entering confined spaces.

- I. Employees shall keep respirators and equipment in an orderly fashion.
- J. Employees shall not be allowed to wear contact lenses when wearing respirators.
- K. Employees shall test and inspect respirator equipment thoroughly on a monthly basis regardless of use or not.
- L. Employees shall take training courses for respirator use and selection.
- M. Employees shall take a physical when required by their Supervisor.
- N. Employees shall fill out and sign inspection sheets on respirators.
- O. All respirator equipment shall remain in the same compartment for easy access.
- P. Disciplinary action for violating any of these rules shall be enforced the same as for confined space rules.

## **14.0 BLOODBORNE PATHOGENS**

### **14.1 Purpose**

The District will comply with this instruction by determining exposure risks of personnel, implementing an infection control program, providing Hepatitis B vaccinations at no cost to personnel, and providing extensive training in writing and by videotape instruction.

This Program will acquaint you with the contents of the OSHA standard as it applies to Hepatitis and AIDS transmission, the use of protective clothing, and safe work practices and vaccination protocol.

### **14.2 Hepatitis Transmission**

Hepatitis B (HBV) is a virulent infectious disease which claims thousands of new cases every year. Over 1 million people in the U.S. are carriers of the disease. Hepatitis B is transmitted to workers and ancillary employees through contact with the blood and body fluids of infected items, usually through accidental needle sticks and unprotected cuts and sores.

Hepatitis B is most commonly transmitted through intravenous drug users sharing needles and sexual contact among homosexual active males and female prostitutes. These groups, historically, spread it to the community. It has infected thousands of health care employees per year, such as operating room personnel, lab workers, surgeons, dental personnel, blood bank technicians, first responders, maintenance workers and housekeeping personnel. Employees are usually infected through contact with bloodborne pathogens and accidental needle stick injuries.

Hepatitis symptoms often include jaundice, loss of appetite, nausea, and elevated liver function tests. AIDS and Hepatitis risks can be reduced or prevented in the health care setting by:

- Use of personal protective equipment (PPE) to protect against the transference of body fluids during at-risk procedures. This includes, but is not limited to gloves (of various types), masks, laboratory coats, gowns, etc.
- Using disinfectants to reduce pathogens in the environment.
- Washing hands between tasks, each time gloves are changed, and at the beginning and end of each workday.
- Using puncture-resistant sharps containers for needle disposal.

### **14.3 Hepatitis Protection**

OSHA (Occupational Health and Safety Administration) enforces the CDC (Centers for Disease Control) recommendations. OSHA requires every worker who is exposed to more than one infection risk per month to receive a Hepatitis B vaccination. The District must offer it to each of these employees at no cost to the employee. The District is charged with the responsibility of identifying, scheduling, and documenting affected employees.

An employee who refuses inoculation must sign an Informed Refusal Form (Appendix I) in the possession of the Safety Coordinator. Support documentation must be maintained in personnel records for 30 years from the date of termination of the employee.

## 14.4 AIDS Transmission

AIDS (HIV) is not as contagious as Hepatitis, but it has no vaccine for prevention. It is transmitted through body fluids so workers are exposed to it.

OSHA requires that employees be trained in prevention and be required to protect themselves during at-risk procedures.

AIDS is transmitted through blood and semen. It is most commonly seen in homosexual and bisexual men, IV drug abusers, and hemophiliacs.

AIDS is transmitted sexually and through blood exposure or parental from the mother to the child. AIDS is not transmitted through general contact with a carrier.

Symptoms of HIV infection are varied, and include fatigue, fever, weight loss, night sweats, rashes, mouth sores or pneumonia.

There is no current inoculation against AIDS! CDC recommends, and OSHA enforces, that "Universal Precautions" be instituted in all health care settings.

## 14.5 Universal Precautions

Under "Universal Precautions", blood and body fluids are considered potentially infected with AIDS virus (HIV), Hepatitis B Virus (HBV) and other bloodborne pathogens, and must be handled accordingly. Hepatitis A and C are now recognized, but little to date is known about these strains.

Universal Precautions applies to blood and body fluids containing visible blood, including cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal and pericardial fluid and amniotic fluid. They do not apply to feces, nasal secretions, sputum, sweat, tears, urging, saliva, breast milk and vomitus, unless blood is present.

The amount of blood required to constitute an infectious risk has been variously defined by OSHA, EPA and others are "substantial," "dripping" and "significant." EPA has offered an objective definition that 15 milliliters of blood (about the size of three teaspoons) must be present to be of sufficient dose to be infectious. This definition of quantity does not preclude the use of protective clothing; it only helps to define what constitutes infectious waste when disposing of blood-soaked materials. Regardless of amount, all contaminated blood is potentially infectious and dangerous.

## 14.6 Definitions of Infectious Conditions

Infection needs four simultaneous conditions to exist. If you take any condition away, the danger from infection will be reduced or eliminated. The conditions which must exist simultaneously are:

- A sufficiently large dose of contaminated blood to constitute an infectious risk.
- A sufficient virulence, to be dangerous.
- A portal of entry into a host, such as through an open cut or the nasal passages.
- A diminished resistance level in the host. For instance, if a medical worker is tired, has the flu or a cold, the host is more susceptible to infection.

Infectious diseases are prevented by using one or more of the following interventions:

- The use of gloves and masks that eliminate portals of entry.
- Regular hand washing and the use of disinfectants which remove or reduce the dose and virulence of the disease.
- Placing of sharps and needles into commercial sharps containers and the avoidance of recapping needles reduces the risk of needle stick injuries.

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

It is the responsibility of the District to provide protective clothing in all work areas and locations where infectious wastes may be generated. In each instance the District will provide protective clothing appropriate to the exposure risks in each area. The use of protective clothing is an OSHA and District requirement.

### **A. Gloves**

Two basic glove types are provided for use in District facilities.

- Utility gloves made of strong latex for use in maintenance and scrubbing work. Gloves of this type are reusable until punctured, torn, or cracked. This is the primary type of glove worn by District personnel.
- Examination gloves for more protection or for more detailed tasks.

After donning gloves, examine them for physical defects. Wear gloves whenever your hands might come into contact with blood, body fluids, or surfaces that could be contaminated by them. Discard gloves after each task. Fit gloves so they cover the cuff of your clothing if possible to reduce the area of skin exposure.

### **B. Masks**

Masks are to be worn if there is a risk of splashing or aerolization of sewage.

Masks reduce the risk of infectious droplets entering the breathing passages.

### **C. Protective Eye Wear-Goggles**

Protective eyewear, better known as goggles, protect the eyes from splashing and aerolization of body fluids and harmful chemicals. If a procedure presents a risk of splashing or if a manufacturer recommends that goggles be worn when using their product, the employee must wear goggles.

### **D. Gowns and Head Coverings**

Gowns are worn to protect street wear and the arm and neck areas from contamination. Gowns may be changed daily unless they become soiled or wet.

Head coverings must be worn whenever procedures are performed or chemicals are handled which might create splashing or aerolization. When worn they should cover the hair, ears, and parts of the neck and face.

### **E. Resuscitation Equipment**

Pocket masks, resuscitation bags and/or other ventilation devices should be used by first responding personnel. This equipment will minimize the need for emergency mouth-to-mouth resuscitation.

## **14.8 Protective Clothing Disposal**

Linens and reusable protective clothing which become soiled with body fluids shall be handled as little as possible and must be bagged at the location in leak proof bags.

When removing protective clothing apparel, avoid contamination of your exposed body parts.

## **14.9 Hand Washing - Six Occasions**

Wash hands regularly with an antimicrobial solution:

- before gloving,
- after gloves are removed,
- after each task,
- before leaving work,
- before eating and,
- after your hands have touched a potentially contaminated area.

## **14.10 Procedures if an Exposure Incident Occurs**

If an exposure incident occurs, that is, if another individual's body fluids have gained entry into an employee, an immediate report must be made to the Safety Coordinator and an Exposure Incident Form (Appendix J) completed. The affected employee must immediately report to St. Vincent's Hospital. A report must be completed by the affected employees' supervisor and filed with the District Office within 24 hours after the incident occurs.

The physician in charge will request that the source patient submit to serologic testing for HBV and HIV. Read "Follow-up Procedures After Possible Exposure to HIV/HBV, Section 5(a) (1) (d) (6)" of OSHA Inst. 2-2.44 A for procedural guidelines. This is followed by a Post-Examination process.

## **14.11 Sharps**

Puncture injuries often occur when cleaning or disposing of sharp instruments and needles. Used needles should not be shared, bent, broken, or recapped by hand, nor should used needles be removed from disposable syringes.

Sharps containers must be closely available at the location where infectious bioburden is generated. DO NOT OVERFILL SHARPS CONTAINERS.

CDC recommends, but does not require, that a disinfecting solution be used in the sharps container to break the chain of infection.

## **14.12 Housekeeping**

Many safety and health injuries occur because of inadequate cleaning, repair and maintenance. At minimum, the following housekeeping rules must be practiced.

- Clean and disinfect the general environment with a solution of at least 1 part sodium hypochlorite (bleach) to 100 parts of water, or equivalent disinfectant.
- Clean exposed equipment and environmental surfaces after contact with blood and other infectious agents, and at the end of the work shift.
- Apply hospital-level tuberculocidal disinfectant on blood spills. These disinfectants should be made available in all work settings where blood and infectious materials are handled.
- Disinfect instruments with approved disinfectants (tuberculocidal at recommended dilutions) or in autoclaves.

Place biohazard labels on sharps containers, infectious waste containers, refrigerators and holding media containing blood and other potentially infectious materials.

## **14.13 Infectious Waste**

The EPA administers infectious waste disposal policies in concert with the State Health Department. OSHA administers the regulations within the work place.

Both institutions agree that materials which are blood-soaked are considered infectious wastes. Saturated articles are to be disposed of in containers with red bag inserts and tightly fitting lids.

## **14.14 Training**

Initial training of all potentially affected employees must be accomplished within three (3) days after start of employment. District Supervisors must identify potentially affected employees. Newly hired affected employees must be advised that training is required and that they will be scheduled. District Supervisors will provide the names of the affected new employees and date of hire to the Safety Coordinator. The District will schedule, conduct, and document the training. Documentation of training will be maintained for a minimum of three (3) years in the affected employees' personnel folder.

Annual training: All affected District employees must receive annual training. It is the responsibility of Department heads to ensure that all affected employees received Bloodborne Pathogens training. Training can be scheduled with the Safety Coordinator. Documentation of training for these individuals will be forwarded to District Office.

## **15.0 ENERGY CONTROL**

### **15.1 Purpose**

The purpose of this program is to establish procedures for the safe control of energy through locking and tagging of equipment and machinery at Clay Township Regional Waste District.

This program supports compliance with the Occupational Safety and Health Administration Lockout/Tagout Standard as found in 29 CFR 1910. 147. This program applies to all District employees who are authorized to perform maintenance service activities on equipment or processes which present energy hazards and any employees who are affected by these activities.

### **15.2 Definitions**

***Affected Employees:*** An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout/tagout, or whose job requires him/her to work in an area in which such service or maintenance is being performed. Affected employees must be informed when lockout/tagout is being performed.

***Authorized Employee:*** A person who locks and tags machines or equipment in order to perform service or maintenance on that machine or equipment.

***Energy Isolation Device:*** A mechanical device that physically prevents the transmission or release of energy, including a manually operated electrical circuit breaker, a disconnect switch, a line valve, a block and any similar device used to block or isolate energy.

***Lockout:*** The process used to identify, cut off and secure all energy sources before beginning repairs, adjustments or maintenance. A lockout device is used to secure equipment or machinery in the off position, ensuring that the equipment or machinery cannot be operated.

***Lockout Device:*** A lock (either key or combination type) that holds an energy isolating device in a safe position and prevents the machine or equipment from energizing.

***Servicing and/or Maintenance:*** Workplace activities that require lockout/tagout on the equipment before beginning the activity because employees may be exposed to the unexpected energization or startup of the equipment or the release of hazardous energy. Servicing and/or maintenance includes constructing, installing, setting up, adjusting, inspecting, modifying, lubricating, cleaning or unjamming and making tool changes.

***Tagout:*** Attaching a tag to the lock on the power source that has been shut off, indicating the time, reason for the lockout and the name of the person doing the work. The tag acts as a warning not to restore energy to the equipment or machinery.

***Zero Energy State:*** All energy has been controlled in machinery or equipment.

### **15.3 Responsibilities**

*The Program Administrator* is the Safety Coordinator  
This person is responsible for:

- Issuing and administering this program and making sure that the program satisfies the requirements of all applicable federal, state or local lockout/tagout requirements
- Providing initial and annual training of employees on lockout/tagout procedures
- Maintaining the training records of all employees included in the training sessions
- Verifying through periodic audit that the energy control program effectively protects employees servicing powered equipment

*The Field Operations Supervisor and the Plant Supervisor*

These people are responsible for:

- Assuring that all employees who are authorized to service equipment within the District have received training on appropriate lockout/tagout procedures and energy control plans
- Completing energy control plans for each specific piece of equipment or process within the District
- Assuring that appropriate energy isolation devices are available for all equipment or processes within the District
- Assigning locks to authorized employees
- Coordinating activities of contractors that may affect lockout/tagout and energy control procedures within the District

Supervisors Whose Departments Contain Energized Equipment

These people are responsible for:

- Ensuring that only authorized employees service the equipment and machinery in their department

Authorized Employees

These people are responsible for:

- Complying with the District's energy control program
- Following all safe shutdown and startup procedures
- Communicating activities to all affected employees and other authorized employees
- Ensuring the security of their own lock and key

Affected Employees

These people are responsible for:

- Advising the maintenance department when equipment needs servicing
- Following the direction of the authorized employee as it affects the operation of their equipment

## **15.4 Program Activities**

General

- All equipment that contains energy of any form will be locked out prior to being serviced or maintained.
- All employees who are authorized to work on equipment or machinery in the District will follow appropriate District lockout/tagout procedures.
- Contractors who perform work on District equipment will comply with District lockout/tagout procedures.
- An energy control plan will be completed for all pieces of equipment requiring lockout. This plan will identify all energy isolation points to be locked and tagged, as well as any special information required to safely achieve a zero energy state.
- Lockout checklist and safe startup checklist (Appendix L) will be used during all service and maintenance activities to ensure the safety of both authorized and affected employees.

### Work Requiring More Than One Person

- If more than one person is required to lock or tag out equipment, each person shall place his or her own lock and tag on the energy isolation devices.
- When an energy-isolating device cannot accept multiple lock and tags, a multiple lockout device or hasp will be used.

## **15.5 Procedures**

### Step 1: Before Beginning Service to Equipment

- Identify the type and amount of energy source on the equipment
- Identify and control the possible dangers related to the energy source
- Be sure to understand the necessary steps to control the energy source
- Notify all affected employees when the equipment will be shut off for service

### Step 2: Shut Down Equipment

- Refer to manufacturer's procedures

### Step 3: Isolate the Machine or Equipment

- Shut off main breaker or control switch
- Close valves
- Disconnect process lines

### Step 4: Attach Lock and Tag

- Each Authorized Employee must attach assigned lock

### Step 5: Control Stored Energy

- Bleed electrical capacitors
- Vent or isolate pressure or hydraulic lines
- Drain tanks
- Block, clamp, or chain switches and levers that could be moved into the start position
- Clear lines that contain materials that are toxic, hot, cold, corrosive, or asphyxiating

### Step 6: Verify that the Energy State is at Zero

- Test the start switches on the equipment
- Check pressure gauges to ensure that the lines are depressurized
- Secure blocks or cribs
- Check electrical circuits to verify that the voltage is at zero energy
- Check that blanks are secure and not leaking

### Step 7: Begin Maintenance

Step 8: Safe Start Up

- Ensure machine components are operational
- Replace all safety guards
- Remove all tools from the machine area
- Remove all braces, pins, blocks, and chains
- Reconnect all pressure tubing, pipes, and hoses
- Clear work area for mechanical operation

Step 9: Remove Lockout Devices and Tags

Step 10: Notify Affected Employees

- Notify all affected employees before starting equipment

Step 11: Start Up Equipment

## **15.6 Special Situations**

***Removing Someone Else's Lock*** A lock may be removed by someone other than the employee who placed the lock only under the following conditions:

- The employee whose lock is to be removed is not available to remove the lock after servicing has been completed
- All reasonable efforts have been made to contact the employee to inform him/her that the lock has been removed
- The employee is contacted and informed that the lock is removed prior to the employee starting work on the next work shift

***Outside Contractors:*** If outside contractors will be working on equipment within the District, the Field Operations Supervisor or Plant Supervisor must make provisions to inform them of the District's lockout/tagout procedures. If the contractor's procedures are different from the District's, the Field Operations Supervisor or Plant Supervisor must make an agreement with the contractor as to which procedure will be followed. All employees working on the project must be notified of any changes in their own procedures.

*Temporary Re-activation:* If the equipment being serviced must be temporarily re-activated (for example, to test the equipment as part of installation) all startup and lockout/tagout procedures must be followed.

## **15.7 Evaluation Recordkeeping**

The OSHA Lockout/Tagout Standard requires that you keep accurate records of all energy control evaluations.

Evaluations must be done annually at a minimum and must include:

- Interviews with each authorized employee to discuss the employee's responsibilities under this written energy control program and lockout/tagout procedures
- Checks to make sure proper locks and tags are being used
- Checks to make sure all lockout/tagout procedures are being followed

## **15.8 Training Recordkeeping**

The OSHA Standard also requires that you keep accurate records of all lockout/tagout training activities. This calls for keeping a record of all participants, the training received, the date of training and who performed the training.

## 16.0 ARC FLASH

### 16.1 Purpose

The purpose of this policy is to help prevent accidental injury caused by an arc flash event and to promote safe facility practices among employees. Information relied upon in this policy are the generally accepted standards listed in the OSHA 29 Code of Federal Regulations (CFR) Part 1910, Subpart S, National Fire Prevention Association 70E-2004, Standard for Electrical Safety Requirements, IEEE Standard 1584-2002, Guide for Performing Arc Flash Hazard Calculations.

### 16.2 Roles & Responsibilities

- A. The Safety Coordinator has the responsibility to implement this arc flash policy by:
  - Identifying and scheduling training for employees in the proper use of this policy.
  - Directing supervisors and employees to endorse and comply with this policy.
  - Ensuring that protective clothing is worn, in compliance with this policy.
  - Enforcing compliance with this policy.
  - Implement hazard warning labeling in compliance with this policy.
  
- B. Supervisors have the responsibility to:
  - Ensure that all outside contractors comply with this safety policy.
  - Require and enforce compliance with this policy.
  - Ensure that hazard warning labels have been installed in compliance with this policy.
  - Ensure that lockout/tagout procedures are followed in conjunction with this policy.
  
- C. Employees have the responsibility to:
  - Understand their assigned tasks relating to potential arc flash hazards.
  - Know the consequences of non-compliance.
  - Comply with the directives of this policy.
  - Understand the hazard warning labels associated with arc flash hazards.

### 16.3 Objectives

The objectives of this policy are to establish a written program outlining minimum guidelines for the use of arc flash protection. This written program will address the following elements.

- I. What is an Arc Flash?**
- II. Can equipment be de-energized before work is conducted?**
- III. Preparing for work in an arc flash zone.**
- IV. Determining Personal Protective Equipment Risk Category.**
- V. Fire Resistant Clothing Issuance.**
- VI. Non-Compliance of Arc Flash Policy.**

**I. What is an Arc Flash?**

An arc flash is a short circuit through the air. In an arc flash incident, an enormous amount of concentrated radiant energy explodes outward from the electrical equipment, creating pressure waves that can damage a person's hearing, a high-intensity flash that can damage their eyesight, and a superheated ball of gas that can severely burn a worker's body and melt metal.

**II. Can equipment be de-energized before troubleshooting?**

The best way to prevent an arc flash incident from occurring is to de-energize equipment before beginning work. Whenever possible, equipment shall be de-energized before

beginning work. Verification of voltage must be made to ensure the equipment is truly de-energized before it is worked on. Refer to the District's Lockout/Tagout procedure.

**III. Preparing for work in an arc flash zone.**

Arc flash zones will be labeled with a standard arc flash zone hazard sign. The arc flash protection boundary is an imaginary sphere that surrounds the potential arc point within which a person could receive a second degree burn in an electrical arc flash were to occur, based upon the available energy. For purposes of District policy, the minimum arc flash protection boundary, where required, shall be a minimum, 4 feet. Arc flash PPE shall be worn while in the arc flash zone.

For systems that are 600 volts or less, the flash protection boundary shall be 4 feet based on the product of clearing times of 6 cycles (0.1 second) and the available bolted fault current of 50 kA or any combination not exceeding 300 kA cycles (5000 ampere seconds). For clearing times and bolted fault currents other than 300 kA cycles, or under engineering supervision, the flash protection boundary shall alternatively be permitted to be calculated in accordance with the following general formula:

$$\text{OR} \quad D_c = [2.65 \times MVA_{bf} \times t]^{1/2}$$

$$D_c = [53 \times MVA \times t]^{1/2}$$

**Where:**

$D_c$  = distance in feet from an arc source for a second-degree burn  
 $MVA_{bf}$  = bolted fault capacity available at point involved (in megavolt amps)  
 $MVA$  = capacity rating of transformer (mega volt amps). For transformers with MVA ratings below 0.75 MVA, multiply the transformer MVA ratings by 1.25.  
 $t$  = time of arc exposure (in seconds)

At voltage levels about 600 volts, the flash protection boundary is the distance at which the incident energy equals 5 J/cm<sub>2</sub> (1.2 cal/cm<sub>2</sub>). For situations where fault-clearing time is 0.1 second (or faster), the flash protection boundary is the distance at which the incident energy level equals 6.24 J/cm<sub>2</sub> (1.5 cal/cm<sub>2</sub>).

**IV. Determining Personal Protective Equipment Hazard Risk Category**

PPE shall be worn when any work is conducted within the arc flash zone for specific equipment. Flame retardant clothing shall be in compliance with the following NFPA 70E Table 3-3.3.9.3

Category	Cal/cm <sub>2</sub>	Clothing
0	1.2	Untreated cotton
1	5	Flame retardant (FR) shirt and FR pants
2	8	Cotton underwear, FR shirt and FR pants
3	25	Cotton underwear, FR shirt, FR pants and FR coverall
4	40	Cotton underwear, FR shirt, FR pants and double-layer switching coat and pants

FR eye protection and FR hearing protection shall be worn as part of the PPE requirement for arc flash safety.

**V. Fire Resistant Clothing Issuance**

Fire resistant (FR) Personal Protective Equipment and FR daily wear clothing will be made available by the District. Daily wear FR clothing will be issued to Qualified Persons and Occasional Users as designated by respective divisions.

Some employees with the following titles may be required to work in arc flash zones.

<u>Departments</u>	<u>Job Title</u>
Collections	Field Operations Supervisor Operations & Maintenance Technician Operations & Maintenance Specialist
Engineering	District Engineer Technical Specialist
Plant	Operations & Maintenance Specialist Operations & Maintenance Technician Plant Supervisor Pretreatment Compliance Specialist

When the employee changes job title (and no longer qualifies for FR daily wear clothing) or is no longer employed by the District, the FR daily wear clothing shall be returned to their supervisor.

Upon issuance of replacement daily wear FR clothing, the replaced garments shall be turned into their supervisor.

**VI. Non-Compliance of Arc Flash Safety Policy**

The nature and level of the hazard reflect the compliance level. Safety is a condition of employment. Non-adherence to the Arc Flash Safety Policy may result in disciplinary action.

**Definitions**

**Flash Hazard Analysis** – A study investigating a worker’s potential exposure to arc-flash energy, conducted for the purpose of injury prevention and determination of safe work practices and the appropriate levels of PPE.

**Flash Protection Boundary** – An approach limit at a distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur.

**Flame-Resistant (FR)** – The property of a material whereby combustion is prevented, terminated, or inhibited following the application of a flaming or non-flaming source of ignition, with or without subsequent removal of the ignition source.

**Flash Hazard** – A dangerous condition associated with the release of energy caused by an electric arc.

**Qualified Person** – One who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved.

**Restricted Approach Boundary** – An approach limit at a distance from an exposed live part within which there is an increased risk of shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the live part.

**Arc Rating** – The maximum incident energy resistance demonstrated by a material (or a layered system of materials) prior to break open or at the onset of a second degree burn. Arc rating is normally expressed in cal/cm<sub>2</sub>.

**De-Energized** – Free from any electrical connection to a source of potential difference and from electrical charge; not having a potential different from that of the earth.

**Energized** – Electrically connected to or having a source of voltage.

**Occasional Users** – Qualified persons who work in a limited capacity in arc flash zones, not on a daily basis.

For any other definitions concerning this policy, refer to NFPA 70E: Standard for Electrical Safety in the Workplace

## **17.0 HAZARD COMMUNICATION PLAN (HAZCOM)**

### **17.1 General**

The following Hazard Communication Program (HAZCOM) has been established to insure compliance with all directives pertinent to Code of Federal Regulations (29 CFR 1910.1200). It is the intent of this program to provide all Clay Township Regional Waste District employees with a reference guide to working with Hazardous Chemicals.

Location of Hazard Communication Plan:

The written Hazard Communication Plan is available for review by all District employees at the following central location:

Clay Township Regional Waste District's Maintenance Building MSDS Station is in the conference room. Copies of the plan may be obtained from the Safety Coordinator at the request of any employee.

List of Hazardous Chemicals:

Inventories of hazardous chemicals and materials used at the District are located at the MSDS Station. Due to the large inventory throughout the District, individual inventories per location are not attached.

Designated Personnel:

The Safety Coordinator is responsible for updating and maintaining the hazard communication program, employee training, labeling, and ensuring that MSDS forms are obtained/maintained.

Updating and Evaluating the HAZCOM Program:

At least once per year, the Safety Coordinator will review and update the program. The Safety Coordinator will access the hazardous chemicals and materials in Laboratories and work areas with the assistance of the Supervisors. The update will consist of each of the following elements of the HAZCOM program:

- Hazard assessment
- Assessment of applicable regulations
- Written plan(s)
- District Policies
- District Discipline procedures
- Training
- Inspection Audits
- Designated employee accountability

### **17.2 Employee Training**

Prior to beginning work with hazardous chemicals, each employee will be required to attend a hazard communications training class. Supervisors will ensure that new employees are trained and that the training is documented.

Training will be conducted by either the Safety Coordinator or Supervisors. After completion of initial training, it will be the responsibility of the Supervisor to train all newly hired personnel. When new chemicals or chemical products are introduced, additional training will be required. When appropriate, external agencies may be contracted to conduct training as required.

#### Initial Training:

For employees whose duties require them to work around hazardous materials, initial training shall be provided by the supervisor or by District trainer before they begin their work assignment. This training will cover the following topics:

1. Overview of Hazard Communication regulations, including employees' rights under the regulations.
2. Operations in the work area where hazardous materials are present.
3. How to read warning labels and identify the presence or release of hazardous materials.
4. Emergency procedures for spills/accidents, including fire hazards, first aid, clean-up, and disposal.
5. Location and availability of this Hazard Communication Program, including hazardous materials lists and MSDSs.
6. How to read an MSDS and use it to identify (at a minimum):
  - (a) Physical and Health Hazards
  - (b) First Aid Procedures
  - (c) Protective Measures
  - (d) Storage and Handling Procedures
  - (e) Spill Response Procedures

#### Retraining:

Additional training will be conducted by Supervisors when new chemicals are introduced into the work area. Retraining is not required if the new chemical contains hazards similar to previously existing chemicals for which training has already been conducted. Monthly safety meetings will be held and hazardous materials will be discussed.

#### Record Keeping:

The trainer will require all employees attending the Hazard Communication Course to sign a sheet verifying their attendance.

#### Training Format:

Each employee attending the safety course will receive a lecture and Audio Visual Training. Training will include the following:

- The location and availability of the written Hazard Communication Program and MSDS.
- Training on the physical and health hazards of the chemicals in the work area.
- How to reduce or prevent exposure to these hazardous chemicals through proper work practices, engineering procedures, emergency procedures and personal protective equipment to be used.
- What the District has done to reduce or prevent the workers exposure to chemicals.
- Procedures to follow if they are exposed to chemicals.
- Methods and observations used to verify the presence or release of a hazardous chemical.
- Explanation of the details of the program, labeling, the MSDS, and how employees can obtain and use appropriate information.

### **17.3 Labeling**

It will be the responsibility of the Supervisors to insure proper labeling of containers. This is to be consistent with the information contained in the appropriate MSDS.

Container Labels:

Container Labels will be in accordance with current and accepted OSHA and NFPA Standards.

Materials Received:

All containers used for chemicals are to be properly and clearly marked in English with the following:

- Contents of container
- Hazard of the specific target organ
- Name and address of the Manufacturer

#### Missing Labels:

Missing, defaced or illegible labels will be replaced immediately with clean, properly marked ones. Notices will be placed on bulletin boards that provide container labeling systems and the location of the HAZCOM program.

#### Portable Containers:

Portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer are not required to be labeled. All other portable containers are to be labeled with the content and hazard of the specific target organ.

#### Chemicals in Unlabeled Pipes:

Prior to beginning any work on unlabeled pipes, employees shall contact the Safety Coordinator. Specific training regarding potential hazards and safety precautions must be conducted. Information for the piping system which identifies the location of all pipes and their contents must be available from the Safety Coordinator.

#### Piping Contents:

The following items may be contained within piping:

- Utility Gas Lines
- Electrical Conduit
- Water Pipe
- Ferrous Chloride
- Polymer
- Sewage
- Chemicals of any Nature

## **17.4 Labeling on Shipped Containers**

It will be the responsibility of the receiver to insure that all boxes, containers, and cartons which are suspect of containing chemicals are appropriately labeled. Shipments that show damage, leaks or spills are to be refused.

#### Materials Shipped:

Any manufactured hazardous substance leaving the property must be accompanied by the data listed in *Materials Received* of this document. In addition, if a material is shipped, a MSDS is to be included. Chemical waste will be shipped via a contracted vendor, in compliance with EPA, OSHA, and DOT regulations.

## **17.5 Obtaining/Maintaining Material Safety Data Sheet (MSDS)**

#### Location:

A master file of all MSDS obtained from Chemical Manufacturers or Distributors will be maintained at the MSDS Station in the garage by the Safety Coordinator. A work area/Lab specific MSDS file of that area's hazardous chemicals will be kept within a central location of the work area or Laboratory. They will be available for review by all employees during working hours.

Hazard Determination:

MSDS will be requested for all incoming hazardous substances. Clay Township Regional Waste District will rely on MSDS furnished by the manufacturer for hazard determination.

MSDS Information:

The Safety Coordinator will ensure that all MSDS have complete information in each of the following categories:

- Identities used on label
- Chemical and Common Names
- Physical and chemical characteristics
- Physical Hazards
- Health Hazards
- Primary routes of entry
- Air exposure limits (PELs, TLVs)
- Carcinogenicity
- Precautions for safe handling
- Control Measures
- Emergency and first aid procedures
- Date of preparation of MSDS
- Name/address/phone number of MSDS preparer or distributor.

Missing MSDS:

The Safety Coordinator will contact suppliers for any missing MSDS or missing MSDS category information. Contacts will be documented. If the requested information is not received within 30 days, the District may file a complaint with OSHA, or find a new supplier. Documentation of requests will be maintained.

## **17.6 Hazardous Non-Routine Tasks**

It is District policy that no employee will begin work or project or any non-routine task without first notifying the appropriate supervisor.

Specific Training:

Any non-routine task will require specific training concerning the hazards associated with the task. This training will include information on:

- Specific Chemical Hazard
- Protective/safety measures that the employee can take.
- Measures that the District has taken to reduce hazards, to include: administrative controls, engineering controls, and personal protective equipment (PPE) required.

## **17.7 Informing Contractors**

It will be the responsibility of Supervisors to inform contractors of the hazards in the work area to which they are assigned. This is critical in any area where chemicals/compressed gases are in use or stored. Contractors are to be informed of any restrictions involving use of compressed gasses, flame, or chemicals to be utilized by the contractor as part of the job.

It is the responsibility of the Supervisors to provide contractors and their employees with the information listed below. This information will be given to the contractor's employees prior to their entering the work site.

- Hazardous chemicals what they may be exposed to on the work site
- Measures the employee may take to reduce the possible exposure
- Steps that the District has taken to reduce the risks
- MSDS for all hazardous chemicals are on file in the Maintenance Building, or in the appropriate laboratory or work area
- Procedures to follow if they are exposed
- Location of the written plan is the Maintenance Building

## **18.0 EMERGENCY ACTION PLAN**

### **18.1 Purpose**

The purpose of an Emergency Action Plan is to protect the employees from serious injury, property loss, or loss of life in the event of a major disaster. A major disaster constitutes any one of the following: major injury, fire, tornado, earthquake, flood, bomb threat, or hazardous chemical spill.

In the event of any disaster listed, this Emergency Action Plan describes the responsibilities and actions to be taken to protect all employees.

### **18.2 General Procedures**

In the event of a disaster, the warning may come from any of the following sources: commercial radio or television, messenger or police, or tornado warning siren.

The maintenance building has a weather alert monitor located in the conference room. The main office also contains a weather alert monitor.

#### A. Notification of Emergency Warning

A person receiving notification of a possible disaster or in plant emergency should immediately notify their immediate supervisor. The emergency situation should then be conveyed to all employees with the use of phone or two-way radios.

#### B. Emergency Control Committee

Each office, Plant and Maintenance Building and the Government Center, should develop an Emergency Control Committee. The committee should have three members. In the event of a disaster or immediate emergency, they are to report to a designated Emergency Control Center unless the prevailing situation dictates otherwise.

##### Responsibilities of the Emergency Control Committee

- Asses nature and extent of all emergencies
- Assume control of all emergency actions
- Assign tasks to personnel to carry out specific actions
- Order evacuation if deemed necessary
- Plan training exercises to test evacuation plan
- Instruct personnel of their duties under this plan

In any emergency situation, the ranking member of management present shall have final authority to coordinate procedures, and amend, modify or supercede any provisions of this plan in order to ensure employee safety.

### **Injuries and Illnesses**

#### A. Non Life-threatening Situation

Check for anything that might make the scene unsafe, such as spilled chemicals, traffic, fire, or downed electrical lines. If the scene is not safe, call 911 immediately. If the scene is safe, check the victim and try to determine the extent of the injuries. Most maintenance staff has been trained in first aid and CPR. If more assistance is needed **dial ( 0 )** and ask for an ambulance.

Information to know:

- Location of victim(s)
- How many victims
- Type of injury or illness
- If the victim is conscious

#### B. Life Threatening Situations

If the scene is unsafe and or a victim is known to be seriously injured, call 911 immediately. If the scene can be made safe without endangering yourself, then do so, then and only then administer first aid and CPR if necessary until help arrives.

#### **Fires**

The Maintenance Building and Government Center are equipped with fire detection devices. These devices shall be tested semi-annually by a qualified person or company. If these alarms should sound, notify all personnel, dial 911, and evacuate the building. Congregate at the evacuation point and take a roll count.

- A. If you are in the interior of the building and smoke and/or flame is detected, notify all personnel and evacuate the building. If you detect smoke or flame from the outside of a building, go to the nearest phone and call 911. Do not attempt to enter the building!
- B. If a small fire is detected and you feel that you are capable of extinguishing by use of a hand fire extinguisher and you have been trained on the use of the extinguisher, you may attempt to extinguish in this manner. If you fail to extinguish the fire in a short amount of time (i.e. thirty seconds) EVACUATE!
- C. If and only if there is time to shut off the main gas supply valve and electrical main disconnect switch, a member of the Emergency Action Control Team may do so.

#### **Tornadoes or Severe Weather**

Definitions:

**Watch:** When the National Weather Service announces that conditions exist that allow development of severe weather or tornado.

**Warning:** The National Weather Service has determined that a tornado has been sighted or that severe weather is imminent.

Procedures:

##### ***Watch***

If a severe weather or tornado watch has been issued, all staff will be notified either by phone or two-way radio. Staff out in the field shall be called into shelter. Lookouts will be posted and weather reports will be monitored.

##### ***Warning***

The Civil Defense Siren will be the District's primary means of warning all personnel. Other means shall include weather reports or posted lookouts. When a warning is sounded, TAKE COVER.

If, and only if, there is time to shut off the main gas supply valve and electrical main disconnect switch, a member of the Emergency Action Control Team may do so.

If you are in a vehicle or out in the field, find a tornado shelter or other refuge if possible. If one is not available, find a ditch or other depression in the landscape and lie down flat inside it. If you are near a highway overpass, try to hide yourself behind a piling, putting it squarely between you and the tornado.

**Seeking shelter in a confined space may be as hazardous as the tornado itself.**

### **Crimes in Progress**

If you observe a suspicious person(s), or a crime in progress, contact 911 immediately. Describe the type of action taking place. If possible, give a complete physical description of the individual(s) involved. This may include race, estimate of age, height, weight and clothing.

**DO NOT ATTEMPT TO APPREHEND OR PLACE YOURSELF OR OTHERS AT RISK**

### **Bomb Threats**

In the event of a bomb threat, which will normally be received over the phone, the following procedure should be followed:

- A. The person receiving the bomb threat should complete a report to the Utility Director as soon as possible and answer questions once the report has been turned over to the Emergency Control Committee.
  1. Commence immediate facility evacuation to outside evacuation site.
  2. Contact proper law enforcement agency
  3. Contact the Fire Department
  4. Do not permit re-entry until the building has been searched and declared safe by the bomb disposal unit.
- B. If a bomb threat is received by any other means than the telephone, the person receiving the threat should report immediately to their first-line supervisor or a member of the Emergency Control Committee.

### **Chemical Spills**

All spills of hazardous chemicals beyond maintenance clean up must be reviewed, coordinated or remedied by HAZMAT.

### **Fire Prevention and Workplace Hazards**

- A. It is the responsibility of all employees to prevent any type of fire in the building. Listed below is a list of general items to take into consideration to accomplish this objective:
  1. Extinguish all cigarettes in their proper place.
  2. Do not have an open flame around any type of chemicals, paints, solvents or flammables.
  3. Make sure all hand held torches are extinguished when not in use.
  4. Do not put any type of hot objects in trashcans (i.e. cigarette butts).
- B. Listing of some workplace hazards
  1. Flammable substances
    - a. Paint and paint solvents
    - b. Mineral Spirits
    - c. Alcohol
    - d. Propane, Oxygen, and Acetylene Tanks

- e. Hydraulic Oil
  - f. Grease
  - g. Gas and Diesel
2. Welding Operations  
All welding operations will be done in a confined area unless otherwise instructed by the Field Operations Supervisor.

#### **Control of Workplace Hazards**

- A. All flammable and combustible materials will be stored in a designated area or flammable storage area.
- B. **Good housekeeping will be the responsibility of ALL employees.**
  - 1. Waste materials are to be discarded in their proper places.
  - 2. Floors are to be swept and free of debris.
  - 3. All aisles and exits will be kept clear.
  - 4. All areas around fire extinguishers will be kept clear for access.
  - 5. All employees will know evacuation routes and exits.
  - 6. All employees will be instructed on the Emergency Action Plan.
  - 7. Emergency numbers will be posted.

#### **Maintenance of Fire Equipment and Systems**

- A. The Safety Coordinator Fire Equipment Inspections
  - 1. Maintenance Department will conduct monthly inspections of fire extinguishers and blanket locations. Any concerns should be conveyed back to the Safety Coordinator.
  - 2. An outside safety firm will run annual checks on all fire extinguishers.

## APPENDIX

- A. Vehicle Use Acknowledgment Form
- B. OSHA Injury and Illness Incident Report (Form 301)
- C. OSHA Log of Work-Related Injuries and Illnesses (Form 300)
- D. Report of Injury or Illness
- E. Accident Reporting Form (in-house)
- F. Driver's Report of Accident (insurance)
- G. Refusal for Hepatitis B Vaccination
- H. Employee Exposure Incident Report to a Bloodborne Pathogen
- I. Employee Refusal of Post Exposure Medical Evaluation
- J. Lockout Checklist / Safe Startup Checklist
- K. References
- L. Revisions and Amendments
- M. Acknowledgment Form

**DISTRICT VEHICLE USE ACKNOWLEDGMENT FORM**

**Safe Driving Requirement.** I acknowledge that I must operate any vehicle used on District business in a safe, responsible manner and in compliance with the law. I will use vehicles on District business only as authorized by my Supervisor. I will follow all applicable rules or requirements. I understand that I am subject to District disciplinary procedures for improper use of any vehicle on District business.

**Physical Condition.** I have no physical or mental condition that may impair my ability to drive. If my condition changes such that my ability to drive may be impaired, I shall notify my Supervisor immediately.

**Motor Vehicle License.** I am licensed to drive. I have attached a photocopy of my license to this form. I will promptly notify my Supervisor if my license is impounded by a police authority, suspended, revoked or expires. I authorize the District to obtain a copy of my official state motor vehicle record including the current status of my license and any traffic convictions. I further authorize the District to make this information available to the District's insurance company. I further authorize the District to obtain updates of this information during my employment.

**Accidents and Traffic Citations.** I shall report any accident involving a vehicle I am operating on District business immediately to my Supervisor. I will notify the District Office (844-9200) as soon as possible. I will complete all state, District and insurance accident forms promptly, accurately and completely. I will report any traffic citation or parking ticket I receive while using a District vehicle to my Supervisor as soon as practical. I understand that I am personally responsible for any traffic or parking fines that I may incur while driving a District vehicle.

**District Insurance.** I have been informed that any authorized driver of a District vehicle is covered by District insurance, but that it will not cover a driver who intentionally causes injury or damage.

**Employment.** I understand that my employment may be contingent upon my ability to legally operate a motor vehicle for District business as outlined in my job description.

I am 18 years of age or older and have read and fully understand the provisions of the Vehicle Safety Policy.

\_\_\_\_\_  
Print driver's full name

\_\_\_\_\_  
Driver's signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date of birth

\_\_\_\_\_  
Driver's license number

\_\_\_\_\_  
State of issuance

**IMPORTANT:** A photocopy of your driver's license must be attached to this form.  
\*\*\*\*\*







## Clay Township Regional Waste District Employee Report of Injury or Illness

Instructions: Please Print. Fill in all blanks. If a blank does not pertain to your injury or illness, write "N/A" in that blank.  
When completed, return this form to your supervisor.

Name: \_\_\_\_\_ Injury Date \_\_\_\_\_  
Job Title \_\_\_\_\_  
Supervisor's Name \_\_\_\_\_ Department \_\_\_\_\_  
Date and Time of Injury \_\_\_\_\_  
Description of Injury \_\_\_\_\_  
Task being Performed \_\_\_\_\_  
Name of Witness \_\_\_\_\_  
Was treatment by medical personnel required? Yes/No \_\_\_\_\_  
If so, Name of Doctor or Hospital \_\_\_\_\_  
How did the injury happen? \_\_\_\_\_

What caused the injury?

What could have prevented this injury?

Date and time you first sought medical attention: \_\_\_\_\_  
Were you using the required safety equipment? Yes/No \_\_\_\_\_

The information I have provided either in my own writing or verbally for the purpose of this form is true and correct. I understand that providing false or misleading information or omission of information on this report or any other form relating to this claim of injury may result in termination of my employment.

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Reader or Interpreter: \_\_\_\_\_ Date: \_\_\_\_\_  
Signature of Witness: \_\_\_\_\_ Date: \_\_\_\_\_



## Clay Township Regional Waste District Injury Investigation Report

**Supervisor's Name:** \_\_\_\_\_

**Basic Rules for Injury Investigation**

- Find the cause to prevent future injuries - Use an unbiased approach during investigation
- Interview witnesses & injured employees at the scene.
- Conduct interviews in private - Interview one witness at a time.
- Get signed statements from all involved.
- Take photos or make a sketch of the scene.
- What hazards are present - what unsafe acts contributed to injury?
- Ensure hazardous conditions are corrected immediately.

**Date & Time** \_\_\_\_\_ **Location** \_\_\_\_\_

**Tasks Performed** \_\_\_\_\_ **Witnesses** \_\_\_\_\_

**Result** (circle one) **Injury** **Property Damage** **Fatality**

**Name of Injured** \_\_\_\_\_ **Property Damage** \_\_\_\_\_

**Describe Injury Facts & Events**

Supervisor's Root Cause Analysis		<i>Check ALL that apply to this accident</i>	
Unsafe Acts		Unsafe Conditions	
Improper work technique	<input type="checkbox"/>	Poor Workstation design	<input type="checkbox"/>
Safety rule violation	<input type="checkbox"/>	Unsafe Operation Method	<input type="checkbox"/>
Improper PPE or PPE not used	<input type="checkbox"/>	Improper Maintenance	<input type="checkbox"/>
Operating without authority	<input type="checkbox"/>	Lack of direct supervision	<input type="checkbox"/>
Failure to warn or secure	<input type="checkbox"/>	Insufficient Training	<input type="checkbox"/>
Operating at improper speeds	<input type="checkbox"/>	Lack of experience	<input type="checkbox"/>
By-passing safety devices	<input type="checkbox"/>	Insufficient knowledge of job	<input type="checkbox"/>
Protective equipment not in use	<input type="checkbox"/>	Slippery conditions	<input type="checkbox"/>
Improper loading or placement	<input type="checkbox"/>	Excessive noise	<input type="checkbox"/>
Improper lifting	<input type="checkbox"/>	Inadequate guarding of hazards	<input type="checkbox"/>
Servicing machinery in motion	<input type="checkbox"/>	Defective tools/equipment	<input type="checkbox"/>
Horseplay	<input type="checkbox"/>	Poor housekeeping	<input type="checkbox"/>
Drug or alcohol use	<input type="checkbox"/>	Insufficient lighting	<input type="checkbox"/>
<b>Unsafe Acts require a written warning and re-training before the Employee resumes work</b>			
<b>Date</b>	<input type="checkbox"/>	<b>Date</b>	<input type="checkbox"/>
Re-Training Assigned	<input type="checkbox"/>	Unsafe Condition Guarded	<input type="checkbox"/>
Re-Training Completed	<input type="checkbox"/>	Unsafe Condition Corrected	<input type="checkbox"/>
Supervisor Signature	<input type="checkbox"/>	Supervisor Signature	<input type="checkbox"/>

**Supervisor** \_\_\_\_\_ **Date** \_\_\_\_\_

**Director** \_\_\_\_\_ **Date** \_\_\_\_\_

**Safety Manager** \_\_\_\_\_ **Date** \_\_\_\_\_



**Clay Township Regional Waste District**

**Supervisor/Employee Accident Reporting Form**

Date of Accident: \_\_\_\_\_ Time of Accident: \_\_\_\_\_ A.M. / P.M.

Address/Location of Incident: \_\_\_\_\_

Employee Involved (Driver): \_\_\_\_\_

Employee Position: \_\_\_\_\_ How Long in Position: \_\_\_\_\_

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

If accident is vehicular:	
District Vehicle #	CDL Holder: Yes / No
Vehicle VIN#	
List other employees in vehicle:	

**Employee Complete The Following:**

Describe how accident occurred:

List cause of accident:

What can be done to prevent similar future occurrences?

What was damaged?

Accident first reported to: \_\_\_\_\_ Date reported: \_\_\_\_\_

Were police present at the scene of the accident to obtain a report? Yes / No (circle)

Seat belt in use at time of accident: Yes/No (circle)

Were you injured as a result of accident? Yes / No (circle)

If yes, describe injury type (strain, fracture, bruise, etc.): \_\_\_\_\_ body part affected: \_\_\_\_\_

Was anyone else injured as a result of this accident? Yes / No If Yes, provide name and address below:

Name: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_

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



## Accident Reporting Form

**Supervisor Complete The Following:**

**Supervisor's account of accident:**

**Do you feel the employee did everything within reason to prevent the accident? Yes/No**

**Explain answer:**

**What immediate action was taken to prevent other occurrences?**

**Was employee injured as a result of the accident? Yes/No (circle)**

**If yes, complete the report of accident, injury or illness form**

**Provide your opinion for the estimated total cost of this accident: \$ \_\_\_\_\_**

**Provide your opinion for the estimated cost for repair/replacement of District Property: \$ \_\_\_\_\_**

\_\_\_\_\_  
**Supervisor's Name (Print)**

\_\_\_\_\_  
**Supervisor's Signature**

\_\_\_\_\_  
**Date**

**Department Head Comments:**

\_\_\_\_\_  
**Department Head Name (Print)**

\_\_\_\_\_  
**Department Head Signature**

\_\_\_\_\_  
**Date**

**Witness' Statement**

**Describe in detail what you saw:**

**What was your location in relation to the accident (ex: 5-6'away,etc.)?**

**What was the apparent cause of the accident?**

\_\_\_\_\_  
**Witness Name (Print)**

\_\_\_\_\_  
**Witness Signature**

\_\_\_\_\_  
**Date**

T:\Employee Information\Accident Reporting Form.doc

<b>DRIVER'S REPORT OF ACCIDENT</b>	
<b>ACCIDENT INFORMATION</b>	Time of Accident
Date of Accident	
Place Of Accident (Street, Highway, City, Town, State)	
Description of Accident	
<b>WITNESSES</b> (As many as possible)	
Name	Telephone Number ( )
Address	
Name	Telephone Number ( )
Address	
Name	Telephone Number ( )
Address	
<b>POLICE INVESTIGATION</b>	
Were the Police notified?	Police City & State Precinct
Police Officer's Name	Badge # Report #
Were anyone cited? No ___ Yes ___ Other Driver ___	

<b>YOUR VEHICLE INFORMATION</b>			
Year	Make	Model	Plate # State
VIN #			
Owner of Vehicle			
Owner's Address			
Driver's Name	Telephone		
Address			
Age	Social Security #	Driver's License #	State
Description of Damage			
Location of Vehicle (Name, Phone, Address)			
<b>OTHER VEHICLE INFORMATION</b>			
Driver's Name	Telephone		
Address			
Age	Social Security #	Driver's License #	State
Year	Make	Model	Plate # State
Owner of Vehicle	Owner's Address		
Insurance Company	Policy #		
Description of Damage			
Location of Vehicle (Name, Phone, Address)			

<b>INJURED PERSONS</b>			
Name	Telephone		
Address	Age	M	F
Injured was: Driver ___ Passenger ___ In Other Vehicle ___ Pedestrian ___			
Description of Injury			
Name	Telephone		
Address	Age	M	F
Injured was: Driver ___ Passenger ___ In Other Vehicle ___ Pedestrian ___			
Description of Injury			
Name	Telephone		
Address	Age	M	F
Injured was: Driver ___ Passenger ___ In Other Vehicle ___ Pedestrian ___			
Description of Injury			
<b>DAMAGE TO PROPERTY</b>			
Name	Telephone Number		
Address			
Address	Extent of Damage		
Name	Telephone Number		
Address	Extent of Damage		

## **HEPATITIS B VACCINE DECLINATION**

I understand that due to my 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 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.

---

Signature

---

Date

---

Printed Name

**Note: Maintain this record for the duration of employment plus 30 years.**

## **Confidential: Employee Exposure Incident Report Form**

Employee Name \_\_\_\_\_

Employee Address \_\_\_\_\_

Infectants Name \_\_\_\_\_

Infectants Address \_\_\_\_\_

Exposure incident circumstance (Describe what happened.)

---

---

---

Route of exposure (e.g., needle stick, splash, puncture wound, abraded skin)

---

---

Source patient's antibody status

---

Date of Incident

---

Signature

---

Title

---

Date

---

**Note: Maintain this record for duration of employment plus 30 years.**

## **Confidential: Employee Informed Refusal of Post Exposure Medical Evaluation**

I, \_\_\_\_\_, am employed by \_\_\_\_\_.  
My employer has provided me training in Bloodborne Pathogen Policies and the risk of disease transmission sanitary sewer field.

On \_\_\_\_\_, \_\_\_\_\_, I was involved in an exposure incident when I (describe incident)

---

---

---

My employer has offered to provide follow-up medical evaluation for me in order to assure that I have full knowledge of whether I have been exposed to or contacted an infectious disease from this incident.

However, I, of my own free will and volition, and despite my employer's offer, have elected not to have a medical evaluation. I have personal reasons for make this decision.

Employee Signature

---

Name

---

Address

---

Date

---

Witness

---

**Note: Maintain this record for duration of employment plus 30 years.**



## **References**

Occupational Safety and Health Standards for General Industry

Today's OSHA: Compliance Update

Safe Work Practices for Wastewater Treatment Plants

American Red Cross Standard First Aid

Comprehensive Loss Management Inc.

Lab Safety Supply Inc.

Creighton University

Town of Schererville

City of Los Angeles

**SAFETY MANUAL**  
**ACKNOWLEDGMENT FORM**

The primary purpose of this manual is to acquaint you with the District's safety rules and policies. It reflects the efforts of many people to establish reasonable, practical and safe work practices to prevent injuries.

All employees are required to comply with the safety rules printed in this manual.

After receiving and reviewing this manual, sign below then tear out this sheet and return it to your supervisor.

---

Signature

Date

