

Big Solutions Concrete Company

**806 E. WM J. Bryan PKWY
Bryan, TX**

Phone: 979 595 5820

Fax: 979 823 5751

www.BigSolutionsConstruction.com

Corporate Safety & Health Program

SAFETY AND HEALTH PROGRAM

MANAGEMENT POLICY STATEMENT

BIG SOLUTIONS CONCRETE'S objective is to provide our customers with quality services at a competitive price, and provide our employees with all the necessary tools and training to complete their job tasks safely and in a timely manner. With this in mind, we, **BIG SOLUTIONS CONCRETE** management, accept the moral and legal responsibility to provide safe and healthful working conditions for our employees by abiding by federal, state, and local codes, in addition to our company policies.

BIG SOLUTIONS CONCRETE is committed to providing you, the employee, with effective professional supervision, effective training and safe equipment with which to perform your work. The supervisor is responsible for ensuring that both he/she and his/her employees follow all safety rules, policies and procedures as outlined in the company safety and health program or as it may be amended in the future. Each supervisor will be held accountable for his/her own actions as well as the actions of his/her employees.

BIG SOLUTIONS CONCRETE considers each employee to be an important asset, and as such, the employee must also be willing to accept the responsibility to help accomplish **BIG SOLUTIONS CONCRETE's** objective. It is the employee's responsibility to adhere to the safety program and cooperate with his or her immediate supervisor. Safe work habits are a criteria for satisfactory job performance and continued employment.

BIG SOLUTIONS CONCRETE employees who fail to support the safety program will be considered to be in violation of company policy and a potential threat to the safety of others. Management is committed to safeguarding the welfare of our most valuable resource - you, our employees.

If you are aware of pertinent areas that we have not covered in this manual, please let us know so that we can address those specific requirements. The guidelines and techniques provided have proven successful in reducing both the frequency and severity of injuries and illnesses. Nationally recognized authorities in the fields of loss control and workers' compensation have contributed to the creation of this manual.

BIG SOLUTIONS CONCRETE's safety and health program relies upon the joint commitment between management and the employees, as well as an individual commitment, to minimize and eliminate hazards to the employee, our property, our customers and our community.

BIG SOLUTIONS CONCRETE has, and will maintain an open door policy for all employees to communicate with management any concerns that the employee may have relating to any aspect of employment.

Robert Muniz
General Manager

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Blood borne Pathogens	Confined Space Entry
Emergency Response Plan	Fall Protection
Lockout/Tag out	Medical Surveillance
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ATTACHMENTS

- A.** Training Matrix
- B.** Training Record
- C.** Sample Training Confirmation Card.
- D.** Safety Meeting Form
- E.** Field Safety Audit Form
- F.** Job Execution Plan Form
- G.** Bottle Watch Training Requirements
- H.** Bottle Watch Equip. Requirements
- I.** Confined Space Attendant Training Req.
- J.** Con/Space Attendant Equip. Req.
- K.** Fire Watch Training Requirements
- L.** Fire Watch Equip, Requirements
- M.** Personnel Basket Lift Plan Form
- N.** Personnel Basket Inspection Form
- O.** Daily Bump Test Logs
- P.** Trenching Excavation Inspection
- Q.** Safety Report Form
- R.** Back Ground Consent Form
- S.** Permit Request Form
- T.** Fire Extinguisher Discharge Report
- U.** Confined Space Entry/ Exit Log
- V.** Color Code Chart
- W.** Monthly Running Rope Inspection
- X.** Reasonable Cause Check List
- Y.** Disciplinary Procedure
- Z.** Incident Investigation Report
- AA.** Vehicle Accident Report
- BB.** Witness Report
- CC.** Critical Lift Form
- DD.** Aerial Lift Pre-shift Inspection
- EE.** Backhoe Pres-shift Inspection
- FF.** Boom Truck Pre-shift Inspection
- GG.** Compactor Pres-shift Inspection
- HH.** Compressor Pre-shift Inspection
- II.** Dozer Pre-shift Inspection
- JJ.** Dump Truck Pre-shift Inspection
- KK.** Generator Pre-shift Inspection
- LL.** Mobile Crane Pre-shift Inspection
- MM.** Power Ind. Truck Pre-shift Inspection
- NN.** Port. L/ Tower Pre-shift Inspect.
- OO.** Scissor Lift Pre-shift Inspection
- PP.** Skid Steer Pre-shift Inspection
- QQ.** Track Hoe Pre-shift Inspection
- RR.** Vehicle Pre-shift Inspection
- SS.** Welding Machine Pre-shift Inspection
- TT.** Horizontal Lifeline Inspection

BIG SOLUTIONS CONCRETE

SAFETY AND HEALTH PROGRAM

INTRODUCTION

CHAPTER ONE - HOW TO USE THIS MANUAL

The purpose of this manual is to provide you a useful tool for implementing and managing an effective loss control program. However strong your intentions may be, you cannot expect to see results without following the principles of loss control on a daily basis. This manual can be a very important tool, and should be placed in the hands of the right people in our organization.

Management is familiar with the principles contained herein, and wholeheartedly supports the program. The Management Policy Statement preceding this chapter should be provided at orientation to all new employees. Ongoing safety training must be a regular part of our business operations.

CHAPTER TWO - SAFETY DEFINITIONS

Defines applicable safety terms and definitions of those terms found throughout this manual.

CHAPTER THREE - SAFETY RESPONSIBILITIES

Provides an overview of management organizational responsibilities with regard to our safety program, and establishes a framework from which to organize our program.

CHAPTER FOUR - SAFETY RULES

Offers information on general safety rules applicable to all work environments. Regardless of the nature of your departments, these rules will offer valuable and relevant guidance.

CHAPTER FIVE - WORKSITE INSPECTIONS

Covers the critical functions of worksite inspections including inspection reports.

CHAPTER SIX - DRUG & ALCOHOL POLICY

Covers the procedures and protocols related to drug and alcohol screening.

CHAPTER SEVEN - TROPICAL WEATHER PLAN

Defines tropical storm watches and warnings, hurricane watches and warnings, and describes the purpose, objectives and protocols for responding to tropical storms and hurricanes.

CHAPTER EIGHT - HAZARD COMMUNICATION

Provides an overview of requirements and procedures for working safely around common hazards associated with our industry through standard training, identification and control methods.

CHAPTER NINE - EMPLOYEE TRAINING

Covers the important issues surrounding hiring and ongoing training requirements of your risk management and loss control program, including on-the-job training requirements

CHAPTER TEN - INCIDENT/ ACCIDENT INVESTIGATIONS

Outlines BIG SOLUTIONS CONCRETE's procedures involved in responding to, investigating and recording an incident and/or accident. Special notation is given regarding compliance with clients procedures.

CHAPTER ELEVEN - SAFETY MEETINGS

Describes the objectives and procedures of regular safety meetings, emergency safety meetings and safety stand downs.

CHAPTER TWELVE - RECORD KEEPING

Describes the objectives and procedures of a record keeping system of loss prevention and control documents.

CHAPTER THIRTEEN - INURIES

Describes procedures for identifying and classifying types of injuries, treatment, reporting, and record keeping requirements.

CHAPTER FOURTEEN - SUBCONTRACTORS RESPONSIBILITIES

Identifies responsibilities regarding pre-qualifications, safety requirements, quality of work, training, reporting, and record keeping. Includes subcontractor pre-qualification package.

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CHAPTER TWO - SAFETY DEFINITIONS

Accident An unplanned and sometimes injurious or damaging event which interrupts the normal progress of an activity and is invariably preceded by an unsafe act or unsafe condition or some combination thereof. An accident may be seen as resulting from a failure to identify a hazard or from some inadequacy in an existing system of hazard controls.

Appendix A Written safety plans for compliance with OSHA regulations that affect this industry.

Danger The liability or potential for producing harm.

EPA Environmental Protection Agency.

Equipment Custodian Employee assigned specific responsibility for the inspections and maintenance of a designated piece of company equipment.

Executive Committee Governing body consisting of the company president, vice-president and chief executive officer.

First Aid Case Work related injury not requiring the medical attention of a physician. On-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care even though provided by a physician or registered professional personnel.

Frequency Number of times an event occurs within a given period.

Harm Any adverse effect of an activity or condition (e.g., death, injury, illness, pain, impairment, damage).

Hazard A condition or changing set of circumstances that presents a potential for injury, illness, or property damage. The potential or inherent characteristics of an activity, condition, or circumstance which can produce adverse or harmful consequences.

Incident An undesired event that, under slightly different circumstances, could have resulted in personal harm or property damage; any undesirable loss of resources.

Incident Rate Injury/illness rate based on 200,000 employee hours (approximately the number of hours that 100 employees work in a year).

$$\frac{(\text{Number of medical treatment and lost time cases}) \times (200,000)}{\text{Total man hours worked}}$$

Lost Time Case Work related injury resulting in death, permanent disability, or the inability of the injured person to return to work on the next scheduled workday following the injury.

MSDS Material Safety Data Sheets.

Medical Treatment Case Work related injury *requiring* medical attention of a physician or by registered professional personnel under the standing orders of a physician.

OSHA Occupational Safety and Health Administration.

Principal Work Site For purposes of this safety program, principal work site will refer to any building, structure and work location owned or controlled by BIG SOLUTIONS CONCRETE. Routine customer service locations are not included as a principle work site.

Recordable Cases Every death; every nonfatal occupational illness; and those nonfatal occupational injuries which involve one or more of the following: loss of consciousness, restriction of work motion, transfer to another job, or medical treatment (other than First Aid).

Risk A measure of both the probability and the consequence of all hazards of an activity or condition. A subject evaluation of relative failure potential.

Safety A general term denoting an acceptable level of risk, of relative freedom from and low probability of harm.

Safety Committee A joint committee comprised of labor and management to focus solely on workplace safety and health issues.

Safety director The principle safety person for the company. The safety director reports directly to the president of the company.

Safety Rule Standard of acceptable behavior designed to keep the employee free from injury.

Severity Seriousness of a condition.

Supervisor Person at the first level of management, who through a direct line of authority, has the responsibility for ensuring that employees carry out the plans and policies of higher level management.

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CHAPTER THREE - SAFETY RESPONSIBILITIES

PURPOSE

The purpose for defining safety responsibilities is to spell out the lines of authority, responsibility, and accountability within **BIG SOLUTIONS CONCRETE**, for the success of the Safety and Health Program.

OBJECTIVES

1. To establish a clear line of authority which starts at the uppermost level within the organization and carries down to the lowest level.
2. To inform each level within this line exactly what their safety responsibilities are and how they should carry them out.

PROCEDURES

1. **BIG SOLUTIONS CONCRETE'S** president, through his staff, is responsible for the planning, establishment, operation, enforcement and reporting of **BIG SOLUTIONS CONCRETE'S** Safety and Health Program.
2. The position of safety director provides the cornerstone of the **BIG SOLUTIONS CONCRETE** Safety and Health Program by establishing its direction and intent. The safety director has the responsibility for, and authority to influence, the success of the entire **BIG SOLUTIONS CONCRETE** Safety and Health Program. The safety director will:
 - A. Develop and implement such programs that contribute to the control and elimination of hazards, risks, and liabilities, appropriate training for all employees at all levels, and enforcement of the companies policies via disciplinary procedures for violators of those procedures.
 - B. Actively monitor the Safety and Health Program to ensure its success, establish and/ or change policies to bring about direct procedural changes that effect positive corrective action(s) for identified safety deficiencies.
 - C. Authorize necessary budgeted expenditures for safety matters.
 - D. Delegate authority to and support the personnel whom can best manage the daily operations of a viable safety program, effect change, and ensure its success.
 - E. Work with supervisors, managers and directors making sure the necessary steps are taken in order to eliminate or control liabilities, injuries and catastrophes.
 - F. Review and analyze statistical information, such as minutes of safety meetings, accident reports, etc., with follow-up recommendations to the safety director relative to safety and health control.

- G. Provide and/or coordinate safety education activities for all supervisory and management personnel.
- H. Develop and implement written plans designed to comply with all Federal, State, Local, and client safety and environmental regulations.
- I. Make periodic audits of safety program administration according to the following guidelines: Audits are an important part of the Safety and Health program. They serve as a vehicle to measure the effectiveness of the entire effort. The focus of these audits should be a means of continual improvement, measuring the overall safety performance of an organization. Segments of the audit process will include, but may not be limited to:

- 1. Training, 2. Record keeping, 3. Employee Observation for (a) compliance (b) knowledge, 4. Management Participation, 5. Housekeeping/Vehicle Inspections, 6. Safety Meetings

Audits will be conducted every six months by the Safety Director. Departments to be audited will be chosen by random and may be scheduled or unannounced.

A Safety Audit Report will be filled out upon completion of the audit and presented to the department manager along with a Corrective Action Request form, if any non-conformances were found. All non-conformances need to be corrected and documented on the Corrective Action Request form and returned to the Safety Director within 30 days of the audit. These reports will be maintained for five (5) years from the year to which they relate.

- J. Planning improvements to existing safety and health rules, procedures, and regulations.
- K. Recommending suitable hazard elimination, reduction, or control measures.
- L. Compiling and distributing safety and health communications to the employees.

3. General Supervision and Operating Management are responsible for:

- A. Providing line supervisors with support relative to the Safety and Health Program.
- B. Development of measurement procedures whereby line supervisors can be held accountable for safety and health activities under their direct control.
- C. Maintaining an open line of communication between employees, line supervisors and general operating management relative to the free exchange of safety and health data.

4. The supervisors within the divisions of **BIG SOLUTIONS CONCRETE** will be responsible for and conduct the day-to-day administration of the **BIG SOLUTIONS CONCRETE** Safety and Health Program within their own span of control. Specifically:

- A. Implement the elements of the Safety and Health Program as developed herein.

- B. Instruct employees as to their responsibility in the safe performance of their duties and enforcing of each safety procedure, rule and regulation at all times.
- C. Make inspections of his/her immediate assigned work areas for the purpose of correcting unsafe conditions or acts and the reporting to accountable supervision of those conditions or acts which cannot be corrected within the scope of their authority.
- D. Ensure that all personnel comply with all elements of the **BIG SOLUTIONS CONCRETE** safety program, actively participate in all safety meetings, activities, and required training as established by the Safety director and written Safety and Health program.
- E. Provide tools and equipment that are in good condition and suitable for the assigned task and enforcing the wearing of personal protective equipment.
- F. Be responsible for obtaining prompt first aid/medical treatment for the injured and reporting all accidents, including near-miss incidents, to the Safety director.
- G. Will comply with federal OSHA written plans as they apply to the work activities of their department. (See Appendix A of this program for specific written plans.)

7. **Individual employees will:**

- A. Follow safety rules, policies and procedures.
- B. Report unsafe conditions and practices and make recommendations for control and/or elimination hazards
- C. Support and participate in the Safety and Health Program.
- D. Keep the work area/vehicle clean and organized. Exercise good housekeeping techniques.
- E. Request and use personal protective equipment provided for specific tasks.
- F. Report all injuries and/of accidents to their supervisor immediately, even if deemed to be minor.
- G. Not take shortcuts in their work practices. Violation of established safety rules will not be tolerated.
- H. Attend all safety meetings and take an active part in the discussions.
- I. Not start any work under unsafe conditions without first notifying their supervision.
- J. Will comply with the procedures outlined in the Standard Operating Procedures that affect their work operations. (See Appendix A of this program.)
- K. Will comply with the rules and procedures of federal OSHA written plans that affect their work operations. (See A of this program.)

SAFETY RESPONSIBILITIES - DESIGNATED AND DEFINED

- 1) Management Policy Statement
 - * Management accepts the legal and moral responsibility to provide safe and healthful working conditions for their employees.
 - * Is committed to providing the employees with good supervision, effective training, and safe equipment to perform their job.
 - * Must ensure their employees and themselves follow all safety rules, policies and procedures as outlined in the Safety and Health Program
 - * Will be accountable for their actions and the actions of their employees.
 - * Employees who fail to support the safety program will be considered to be in serious violation of company policy.

- 2) Safety Responsibilities-Management
 - * Provide line supervisors with support relative to implementing the Safety and Health Program.
 - * Develop procedures to hold supervisors accountable for safety and health activities under their control.
 - * Will maintain open communication between employees and management for the free exchange of safety and health data.

- 3) Safety Responsibilities-Safety Personnel
 - * Safety committee-support and participation
 - * Participate in training in Safety and Health Program requirements, Standard Operating Procedures and OSHA written plans.
 - * Are held accountable for Safety and Health activities under their control.
 - * Will implement the elements of the Safety and Health Program.
 - * Will provide the proper tools and PPE for the assigned tasks of their employees.
 - * Will enforce safety rules and procedures.

- 4) Worksite Inspections
 - * Will make quarterly Housekeeping inspections of their designated work area.
 - * Will ensure the Equipment/Vehicle custodians are performing daily or weekly inspections and turning in inspection reports as required by the Safety and Health Program.

- 5) Employee Training Program
 - * Will Provide training on the essential training topics for all existing employees, new hires and transfers.
 - * Will provide any special task training for their employees (such as tool use, etc.)
 - * Will provide training on the Standard Operating Procedures as they relate to specific work operations (Appendix A.)
 - * Will provide training on specific OSHA regulations which are applicable to their work operations (Appendix A.)

- 6) Accident Investigators
 - * Will conduct investigations on all near misses and accidents.
 - Will conduct investigations on all vehicle accidents and property damage.

- * Will notify the necessary people within the company of the accident and complete necessary paperwork.
 - * Will escort, or appoint someone to escort, employee to the doctor of hospital for medical treatment and/or drug and alcohol testing.
- 7) Safety Meetings
- * Will conduct weekly safety meetings for their employees.
 - * Will document the meetings of the proper forms.
- 8) Record keeping
- * Will ensure the proper forms and completed as necessary and circulated according to the "Distribution" procedures.
 - * Will keep on file as outlined in the retention guidelines.
 - * Will have available audits.
- 9) First Aid
- * Will ensure the first aid kits remain stocked.
 - * Will ensure that only trained first aid attendants will administer first aid.

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CHAPTER FOUR - SAFETY RULES

These safety rules are considered basic and are common to all safety programs. Those employees who do not comply with these safety rules may be considered undesirable for continued employment.

1. Horseplay, fighting, sleeping on the job, possession of firearms, alcoholic beverages, illegal substances, or usage of unauthorized medically prescribed drugs will not be tolerated in the work place.
2. Prior to the start of work, notify your supervisor of any permanent or temporary impairment that may reduce your ability to perform work in a safe manner. Any employee is prohibited from working in a safety sensitive position if on medication (over-the-counter or prescribed) that affects their ability to work safely or make sound safety judgments. If an employee cannot perform their duties in a safe manner, the employee can use available sick or vacation time or leave with no pay until able to resume normal duties safely.
3. Good housekeeping shall be maintained at all times. Floors, aisles, and work benches shall not be cluttered. You, as an employee, have the obligation to ensure that no action by you endangers yourself, fellow employees or results in destruction of tools, material or property.
4. Do not attempt to lift an object weighing more than can be lifted safely, by you, without assistance. Use only proper lifting techniques.
5. Supplies and materials must be stacked in an orderly and safe manner.
6. Employees should sit properly on chairs so that their body weight is evenly distributed.
7. Never tilt a chair back in order to get into a more comfortable position.
8. Desk and cabinet drawers must not be left open.
9. Razor blades, thumbtacks and other sharp objects shall not be thrown loosely into desk drawers.
10. Heavy objects such as card index files or dictionaries, etc. should not be kept on top of file cabinets or other high furniture.
11. Chairs and desks should never be used as substitute ladders.
12. Never use chairs with rollers to transport yourself from one work area to another work area.
13. Doors should be closed completely or fully opened.
14. Always walk down a corridor and keep to the right when approaching a corner of the corridor.

15. Watch for slippery substances or excessive wax on floors and report such conditions to your supervisor.
16. Never block access to exits and fire equipment.
17. Always choose personal protective equipment that provides the maximum protection to protect yourself from hazards that cannot be eliminated.
18. Operate equipment only if you are trained and authorized to do so.
19. Inspect the work station for potential hazards and ensure that equipment or vehicles are in good operating condition before using it.
20. Immediately report all accidents, injuries, near misses or property damage to a supervisor regardless of the cost or severity.
21. Do not attempt to catch any falling object.
22. Fasten seat belts before operating any motor vehicle.
23. Oily rags or waste must not be left in the building but stored in an area from the building in receptacles that are properly marked for this type of material.
24. Wear the proper clothes for the job. When working around machinery or equipment do not wear any jewelry, especially dangling, jewelry such as necklaces and bracelets.
25. No tennis shoes, deck shoes, or any other type of athletic shoes made of fabric or soft leather will be allowed for employees doing outside plant or warehouse work. A steel-toed leather boot above the ankle with slip resistant soles and a good heel are recommended for field and warehouse work. This rule also applies to any person who is subcontracted through a temporary agency. It is permissible to wear rubber boots when working in a manhole or other areas with water, or other situations where working in water is necessary, provided the rubber boots have a good heel, grip bottoms and are steel toe. The purpose for steel toe rubber boots is because rubber boots do not afford the same level of foot protection as would a leather work boot.
26. All electrical powered equipment, including electrical hand tools, shall be inspected by the approved user and must be properly grounded before using.
27. Inspect the insulation on power lines and/or cables for frayed and/or broken connections each time tools are used.
28. Violations of safety rules and general operating procedures are considered **unsatisfactory job performance** and will be treated accordingly. Refusing to use required safety equipment, failure to report accidents or the creation of an unsafe condition will subject the employee to disciplinary action up to and including termination.

29. If circumstances are such that carrying out an assigned task could obviously result in the risk of injury, you are instructed not to proceed until your supervisor is made aware of any hazards. **Do not take short cuts and/or unnecessary risks.**
30. If fellow workers are working unsafely, talk with them about it. Teach them safe methods. If they continue in an unsafe manner, you are obligated to inform your foreman or supervisor. This act may prevent an accident or save a life. **SAFETY IS YOUR RESPONSIBILITY.**
31. You are required to comply with all written and posted safety rules. Violations will result in disciplinary action: 1st Offense- Verbal Warning, 2nd Offense- Written Warning, 3rd Offense- 3 Day Suspension, 4th Offense- Termination

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CHAPTER FIVE - WORKSITE INSPECTIONS

PURPOSE

A worksite inspection program is a monitoring function conducted within an organization to locate and report existing an potential hazards which have the capacity to cause accidents in the workplace.

OBJECTIVES

1. Inspections should be viewed as fact finding (rather than fault finding) exercises with emphasis on locating potential hazards that can adversely affect safety and health.
2. Worksite inspections should be continuous by both supervisory and safety personnel.
3. All recognized hazards should be addressed when first noticed prior to work beginning. The recognition of any previously unidentified hazard by any personnel requires immediate work stoppage until all personnel are made aware of the new hazard, and until the new hazard is listed on the JEP along with appropriate PPE and control measures.

If the new hazard is IDLH, all personnel must evacuate the work area and safety stand down is in effect. Before work can begin again, a conference between safety and supervision must occur with the result being that the hazard is controlled or eliminated. Once this occurs, employees must be informed of the hazard, how it occurred, how it was identified, and how it is being controlled or eliminated.

4. Worksite inspections will include, but are not limited to:
 - A. Housekeeping;
 - B. Equipment/ Vehicles;
 - C. Rigging and Rigging Operations;
 - D. Electrical Hazards;
 - E. Chemical Hazards;
 - F. Trenching/ Excavation Hazards;
 - G. Confined Space Operations;
 - H. Fall Protection.

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HOUSEKEEPING

PURPOSE

The purpose of a housekeeping program is to provide a method for systematically identifying and eliminating safety and fire hazards, and to establish clearly defined areas of responsibility for orderliness and cleanliness throughout each work area and facility.

OBJECTIVES

1. To keep each work area and facility free from safety and fire hazards and effectively control or isolate people and property from exposure to potential hazards.
2. To inspect each work area and facility at least once per quarter for the purpose of eliminating potential safety and fire hazards.
3. To eliminate or immediately control potential safety or fire hazards at their source.
4. To document, quarterly housekeeping inspections, hazards detected, immediate temporary control taken, and actions taken to eliminate the hazards from recurring.
5. To summarize those housekeeping discrepancies thought to be a hazard which can not be eliminated and forward it to safety director..
6. To cause the manager to evaluate the supervisor's actions to detect, correct and control potential hazards.

PROCEDURES

1. The manager of each division/department will direct their supervisors to divide the grounds and facilities into specific units of housekeeping responsibility.
2. Supervisors will be responsible for continuously inspecting, identifying, and correcting conditions or practices that cause potential safety or fire hazards.
3. The supervisor will meet with the employees to explain the purpose and objectives of the program. Each employee should be encouraged to assist in identifying, eliminating or effectively controlling the potential safety and fire hazards.
4. The source of any condition or practice, including activities of outside contractors, vendors and the general public, that causes a potential hazard must be identified.
5. Immediate temporary control must be taken upon identification of a potential serious safety or fire hazard to prevent exposure to the hazard until permanent corrective action has been implemented.

6. Suggested items to look for (individual supervisors may wish to add to the list of items to check on each inspection within his/her area of responsibility):
 - * Slip or trip hazards: extension cords or torn or broken covers.
 - * Foreign materials which could cause loss of balance: food, grease, oil, liquids, mud, algae, trash, etc.
 - * Holes or protrusions: eroded, broken or sunken walking surfaces.
 - * Temporary accumulation of flammable or combustible materials.
 - * Poor materials handling practices: items not stored correctly, stacked securely.
 - * Defective emergency equipment: smoke detectors, fire extinguishers, escape routes, exit lights, etc.
 - * Lighting: bulbs burned out, adequacy of lights.
 - * Effectiveness of routine cleaning assignments: filter, vents, hoods, trashcans, etc.
 - * Climbing devices: ladders, scaffolds, ramps, handrails, toe boards, etc.
 - * Electrical or telephone wires under chair area or under floor mat.
 - * Equipment left on unnecessarily overnight
 - * Paper, plastics, etc. stored or placed on top of electrical office equipment.
 - * MSDS binder-make sure it is in a location easily visible to all employees and is kept up-to-date when notified by the safety coordinator.

INSPECTION AND MAINTENANCE OF INSPECTION RESULTS

1. The supervisor will continuously, to the extent possible, inspect his/her areas of responsibility and, at least quarterly, perform a formal housekeeping inspection using to form provided.
2. The completed **work site inspection forms** must be sent to the manager for review and their signature and then retained by the supervisor for at least one year after the year to which it relates. The surveys will be retained so that the manager or safety director can review them for trend analysis purposes.
3. Hazards not yet corrected within thirty (30) days of the inspection are to be noted and sent to the safety director.

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EQUIPMENT/VEHICLE INSPECTIONS

PURPOSE

The purpose of the equipment and vehicle inspection program is to provide a method of systematically identifying and eliminating safety hazards on all equipment and vehicles.

OBJECTIVES

1. To keep all equipment and vehicles free from safety hazards and effectively control or isolate people and property from exposure to potential hazards.
2. To establish an inspection cycle suitably matched to each piece of equipment based on its exposure, potential for injury and its use rate.
3. To inspect, based on the designated cycle, each piece of equipment for the purpose of eliminating identified safety hazards.
4. Document, on the appropriate forms, the inspection results and the necessary action required.
5. To cause the manager to evaluate the custodian's actions to detect, correct and control potential hazards and the completion of the various forms.

PROCEDURES

1. All vehicles, tools and equipment shall be inspected daily at the beginning of each shift prior to use.

NOTE: Only individuals deemed “approved drivers” are authorized to drive vehicles or operate equipment. One must possess a valid state issued drivers license to be an approved driver.
2. Each piece of equipment/ vehicle will be specifically assigned to an individual.
3. The site supervisor, will be responsible to ensure that daily inspections are being completed in accordance with BIG SOLUTIONS CONCRETE policy. Employees discovered operating equipment without having performed an inspection will be subject to disciplinary action up to and including termination..
4. All vehicles and equipment that fail to pass any daily inspection will be immediately tagged out of service, the keys will be pulled and turned into the safety representative. The vehicle or equipment shall not be operated until any mechanical deficiencies have been addressed. Employees discovered operating any equipment that should have been tagged out due to mechanical deficiency will be terminated immediately, and escorted off site

5. Site supervisor will ensure that employees complete the required inspections using the appropriate forms. For any item marked as unsatisfactory the results are to be recorded at the bottom of the inspection report and brought to the supervisor for attention. Completed inspection forms will be maintained in the equipment/vehicle folder specifically established for each piece of equipment/vehicle for the work week, and then turned into the safety department.
6. If any inspection identifies a hazardous condition, the equipment/vehicle will be tagged out from service until the hazardous condition has been fixed. The supervisor must document this and send to the safety director for record.
7. If a piece of equipment/vehicle is pulled out of service because of a hazardous defect, the supervisor need to notify the division manager and safety director immediately.
8. The results of the inspection on each piece of equipment/vehicle will be maintained in the Equipment/Vehicle folder for a period of one year following the year to which it relates.
9. SPECIAL NOTE: Although a formal Equipment/Vehicle inspection is required, all operators are to inspect all equipment/vehicles prior to use and while in use for indications of failure or impending failure. Equipment/Vehicles found to be defective will be removed from service immediately.
10. Though equipment and vehicle inspections are to be performed daily or weekly by employees, certain vehicles and pieces of equipment are inspected through contracts. Contracting the inspection of certain vehicles and pieces of equipment will satisfy the requirements of this program provided the frequency is sufficient to ensure the objectives on this program are satisfied, and the appropriate documentation is maintained in the Equipment/Vehicle folder.
11. In addition to the daily and weekly vehicle inspections performed by the site supervisor the safety director will schedule annual vehicle inspections, as required by law, and will have regular preventative maintenance performed on all vehicles such as oil changes, tire rotations and balancing, front end alignments, etc. The vehicles will also be washed periodically, however, it is the responsibility of each driver of a vehicle to keep it clean from debris inside the vehicle **at all times.**

BIG SOLUTIONS CONCRETE
CHAPTER SIX - DRUG AND ALCOHOL PROGRAM

PURPOSE

The purpose of the drug and alcohol program is to establish a systematic method of testing employees to ensure that all employees are afforded the opportunity to perform their required tasks in a safe, drug and alcohol free environment.

OBJECTIVES

1. To teach employees the hazards associated with substance abuse on the job site, test employees according to a set protocol, and inform employees of corrective actions in the case of a violation of the policy.
2. To involve employees in the drug and alcohol prevention program and to cause employees to accept their responsibilities in contributing to a drug and alcohol free workplace.
3. To provide employees information on avoiding substance abuse when found in violation of the policy.
4. To ensure that all employees are safe, and have confidence that the company will do all that it can to prevent substance abuse from causing an incident by administering the program with all due diligence.

PROCEDURES

1. The Safety director will ensure that the drug and alcohol policy is in compliance with all Federal, State, Local, and Client regulations, as well as ensuring employee protection.
2. Employees will be instructed as to their individual responsibilities regarding the companies drug and alcohol policy as part of the new hire process.
3. Supervisors and Safety Representatives will work with the Human Resources department to ensure that the companies drug and alcohol program is administrated with due diligence.
4. The company will use a third party for all testing. The company will use a local chapter of Contractors Safety Council when one is available. If a local chapter is not available then the Corporate Safety Director will find and choose an appropriate laboratory to be used.
5. All drug and alcohol screens will initially consist or a minimum of a Non Dot 10 panel rapid test and include a screen for known adulterants. Individuals that fail a pre-employment drug and/ or alcohol screen will not be hired and will be directed to contact the provider to settle any disputes regarding the results. Employees failing a drug/alcohol screen will be immediately removed from the job site, and the sample will be sent to a recognized professional lab for a forensic analysis. (NIDA Lab will be the designated lab)

6. Individuals shall not be terminated from employment on the result of a rapid test. The individual shall be placed on leave awaiting confirmation of the results via forensic analysis. If the individual is confirmed positive on the forensic test, he or she will be counseled to seek treatment, and immediately terminated. If the individual successfully completes a treatment program, the individual may be rehired at that point if a job exist, and the client allows individuals that have failed a drug and/ or alcohol screen to re-enter their facility.

Employees that are rehired after failing a drug and/ or alcohol screen will be subject to at least one random screen a month for a period of three months. Employees will be notified of this in writing prior to being re-hired, and must sign a statement acknowledging this fact. Signing the acknowledgment will constitute the employees agreement to participate with the screening protocols as laid out in this part.

If the individual passes the forensic test, the individual will be re-instated and paid for any lost time while waiting the forensic test results. If the individual chooses to quit before the results of the forensic test are complete, the company will consider the matter closed and will not notify the individual of test results.

7. Testing will be as follows:
 - a. All initial testing will consist or a ten panel rapid test.
 - b. Pre-hire drug and alcohol screens will be performed on all employees prior to employment.
 - c. Random drug screens will be performed on twenty five percent (25%) of the total workforce annually. Employees will not be informed of a random drug and/ or alcohol screen prior to it occurring. Employees will be picked up in the field and transported to and from the screening site by an authorized company representative such as a supervisor or safety representative. Employees must remain in the presence of the company escort at all times prior to submitting a sample for screening.
 - d. Post Incident drug and alcohol screens will be performed on all employees involved in an incident within 24 hours of the incident occurring. If the incident did not result in an injury that requires medical treatment from a licensed healthcare provider, then the employee will be transported by an authorized company representative to the nearest approved drug and alcohol screening facility. If the employee is transported to a medical facility due to injury, the post incident will be performed at that medical facility after any necessary medical treatment has been complete, and before the employee is discharged. If the employee is unconscious or otherwise unable to submit a sample for testing, then a blood toxicology screen will be performed instead of a urinalysis.
 - e. Reasonable Cause drug and alcohol screens will be performed on employees observed to exhibit behaviors as described on the just cause observation form. The supervisor will remove the employee from the work area and fill out the Reasonable Cause Observation form and turn it in to the site safety representative. An authorized company representative will take the employee for a drug and alcohol screen immediately. If an individual quits to avoid a reasonable cause drug screen after it has been determined that the individual may possibly be impaired, then the individual must be informed that the company suggests the individual seek

alternative transportation from the jobsite and not drive on public roads due to the possibility that he or she could pose a danger to themselves or others by operating a motor vehicle. The individual shall be made aware of the following alternatives:

- a. having another driver drive the individual home.
- b. having another person pick up the individual.
- c. using the services of a taxi. The company representative shall offer to call a taxi for the individual.

If the suggestions are refused, the individual shall be further informed that if they choose not to seek alternative transportation, authorities will be called and advised of the situation in order to prevent the possibility of the individual harming themselves or others.

- f. Refusing to submit to a drug and/or alcohol screen will be considered a failure. All failures will be reported to the client if it is required by the client within the terms of a contract/ work agreement existing between the client and BIG SOLUTIONS CONCRETE.

BIG SOLUTIONS CONCRETE

CHAPTER SEVEN - TROPICAL WEATHER PLAN

PURPOSE

The purpose of a tropical weather plan is to establish standard response procedures to ensure the safety of employees, equipment, materials, and the job site whenever tropical weather situations arise.

OBJECTIVE

The primary objective is with proper planning to complete all precautionary measures at the job site in a timely manner that leaves employees adequate time to pack their possessions and evacuate their families from their homes to a location that is safely and out of the path of any tropical weather.

DEFINITIONS

Hurricane Categories: Hurricanes are categorized by The National Weather Service. For the purpose of this procedure, hurricane categories will be the same as those established by the National Weather Service and listed below:

Category One:

Winds: 74 to 95 mph (120 to 153 km/hr)

Storm Surge: Possible storm surge 4 to 5 ft. (1.2 to 1.5m) above normal

Damage: Damage primarily to shrubbery, tree foliage, and unanchored mobile homes. No real damage to other structures. Some damage to poorly constructed signs. Low-lying coastal roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

Category Two:

Winds: 96 to 110 mph (154 to 177 km/hr)

Storm Surge: Storm surge of 6 to 8 ft. (1.8 to 2.4 m) above normal.

Damage: Considerable damage to shrubbery and tree foliage. Some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roofing materials of buildings. Coastal roads and low-lying escape routes inland cut-off by rising water two to four hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying islands required.

Category Three:

Winds: 111 to 130 mph (179 to 209 km/hr)

Storm Surge: Storm surge of 9 to 12 ft. (2.7 to 3.6 m) above normal.

Damage: Limbs torn from trees and large trees blown down. Practically all poorly constructed signs blown down, Damage to roofing materials of buildings, some window and door damage. Mobile homes destroyed. Serious flooding at coast and many smaller structures near coast destroyed. Larger structures near coast damaged by battering waves and floating debris. Low-lying escape routes inland cut-off by rising water three to five hours before hurricane center arrives. Flat terrain 5 ft. (1.5 m) or less above sea level flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences within several blocks of shoreline possibly required.

Category Four:**Winds:** 131 to 155 mph (211 to 249 km/hr)**Storm Surge:** Storm surge of 13 to 18 ft. (4 to 5.5 m) above normal.**Damage:** Flat terrain 10ft. (3 m) or less above sea level flooded inland as far as 6 miles (9.6 km). Shrubs and trees blown down, all signs down. Extensive damage to inadequately installed roofing materials, windows, and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Major damage to lower floors of structures near shore due to flooding and battering of waves and floating debris. Low-lying escape routes inland cut-off by rising water three to five hours before hurricane center arrives. Major erosion of beaches. Massive evacuation of all residences within 500 yards of shore possibly required, and of single story residences on low ground within 2 miles (3.2 km) of shore.**Category Five:****Winds:** Greater than 155 mph (249 km/hr)**Storm Surge:** Storm surge greater than 18 ft. (5.5 m) above normal.**Damage:** Shrubs and trees blown down, considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs of many residences and inadequately designed industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Major damage to lower floors of all structures less than 15 ft (4.6m) above sea level within 500 yards of shore. Low-lying escape routes inland cut-off by rising water three to five hours before hurricane center arrives. Massive evacuation of residential areas on low ground within 5 to 10 miles (8 to 16 km) of shore possibly required.**Hurricane Force Winds:** Winds that are 74 mph or greater.**Hurricane Season:** The time of year when weather conditions are right for producing a hurricane or hurricane force winds. Generally June 1st through November 30th.**Hurricane Warning:** When the National Weather Service announces a hurricane or hurricane force winds are EXPECTED in the area within 24 hours. A Hurricane Warning can remain in effect when dangerous high water and high wind conditions continue, even if wind speeds have reduce below Category 1 strength.**Hurricane Watch:** When the National Weather Service announces a hurricane or hurricane force winds are POSSIBLE in the area within 36 hours.**Tropical Depression Force Winds:** Winds that are less than 39 mph.**Tropical Storm Force Winds:** Winds that are between 39 and 73 mph.**Tropical Storm Warning:** When the National weather Service announces a Tropical Storm or Tropical Storm Force Winds are EXPECTED in the area within 24 hours. A Tropical Storm Warning can remain in effect when dangerous high water and high wind conditions continue, even if wind speeds have reduced below Tropical Storm strength.

Tropical Storm Watch: When the National Weather Service announces a Tropical Storm or Tropical Storm Force Winds are POSSIBLE in the area within 36 hours.

PROCEDURE:

The Tropical Weather Plan shall be activated whenever a tropical storm or hurricane enters into the Gulf of Mexico. At this point, BIG SOLUTIONS CONCRETE management shall initiate a mandatory storm track. The storm track of any storm may be discontinued only after the storm has made landfall.

Preparations may begin anytime BIG SOLUTIONS CONCRETE management deems it is appropriate, however, when the National Weather Service announces a Tropical Storm Watch for the coastal city or town nearest to the effected job site, BIG SOLUTIONS CONCRETE management shall initiate the following responses:

- 1) All construction activities shall stop.
- 2) All construction materials that can be moved, shall be removed from the immediate job site and returned to the company on site yard and secured.
- 3) All construction materials that cannot be moved shall be secured at the immediate job site location.
- 4) All rental tools and equipment shall be returned to vendors immediately.
- 5) All company owned equipment shall either be brought to the company on site yard or removed from the job site and transported to a pre-determined location which has been determined to provide the greatest level of protection for the equipment against high winds and high water.
- 6) All deliveries of construction materials and/or equipment shall be postponed or canceled.
- 7) On site fuel shall be dispensed into equipment and vehicles in order eliminate or reduce the volume left at the job site to a minimum.
- 8) Critical files and office equipment shall be packed and readied for transport to a pre-determined location which has been determined to provide the greatest level of protection for the items. This includes, but is not limited to: files and filing cabinets; books and isometric drawings; computers and copiers; electrical equipment such as LEL's, satellite equipment, radios and chargers.
- 9) BIG SOLUTIONS CONCRETE management will take all necessary steps to ensure payroll is received and dispensed in case employees are in need of payroll checks in order to safely evacuate.

BIG SOLUTIONS CONCRETE management should consider all factors in determining when to begin preparations. One factor would be the hurricane landfall location. Hurricanes generally produce much greater rain and flooding on the east side of the strike zone, this may become a factor in early evacuations. As a Tropical Storm Watch indicates that tropical storm conditions are possible within 36 hours, the goal is to complete the above responses within 12 hours or less of a Tropical Storm Watch being declared. If at that time, the Tropical Storm Watch is then upgraded to a Tropical Storm Warning or a Hurricane Warning, this would give employees at least 24 hours to evacuate their belongings and family.

Employees not considered essential to storm preparation or employees that have special circumstances such as evacuating elderly or special needs family members are to be dismissed as quickly as possible. The determination of employees qualified for early dismissal will be on a case by case basis. Employees will be instructed to stay in contact with their immediate supervisors to receive updates on return to work scheduling. All employees are required to make every effort to return to work in a timely manner.

If the area suffers a direct or near direct hurricane strike, communications may be difficult if not impossible for an indeterminate period of time, and the time frame for returning to work will depend on a number of variables such as: 1) wind damage to structures; 2) flooding and how quickly the flood waters recede; 3) how quickly utilities can be restored; 4) how the storm effected the job site; 5) how quickly authorities allow people to return to the area, and many other variables that may result in delays in evacuees returning home and employees returning to work. Employees should stay in contact with their immediate supervisors and provide them with contact information so BIG SOLUTIONS CONCRETE management can coordinate with employees once the crisis is over.

The following communications list should be distributed to employees prior to dismissal from the job site:

BIG SOLUTIONS CONCRETE Corporate Office.....	979 265 5176
BIG SOLUTIONS CONCRETE Field Office.....	361 987 2299
BIG SOLUTIONS CONCRETE Safety Director.....	361 746 1535
Your Supervisor.....	
Calhoun County Emergency Management.....	361 553 4400
Calhoun County Sheriffs Office.....	361 553 4600
Texas Dept of Public Safety (roadside assistance).....	800 525 5555

Local Area Media:

KVIC FM 95.1 (Victoria).....	361 576 6111
after hours	361 576 6114
KIXS & KQVT FM 107.9 / KLUB FM 106.9.....	361 573 0777
KAVU TV Channel 25 (Victoria).....	361 575 2500
news center	361 575 2525
KIOX FM X97 (El Campo).....	409 245 4642
KMKS FM 102.5 (Bay City).....	409 244 4242

Regional Media

KTRH AM 740 (Houston).....	713 212 5874
KVET AM 1300 (Austin).....	512 390 5838
KTSA AM 550 (San Antonio).....	210 224 6397

BIG SOLUTIONS CONCRETE

CHAPTER EIGHT - HAZARD COMMUNICATION

Purpose

Big Solutions Concrete is firmly committed to providing each of its employees a safe and healthy work environment, It is a matter of company policy, as well as an important public program under OSHA Big Solutions Concrete has implemented this Hazard Communication Program as outlined here.

Scope

Big Solutions Concrete (Safety Dept.) will have the overall responsibility for coordinating the program.

Purpose

The Hazard Communication regulation requires that hazards of all chemicals produced or imported into the workplace are evaluated and that information concerning their hazards is transmitted to employees through hazard communication programs. Employers are not required to evaluate chemicals if they have chosen to rely on the evaluation performed by the chemical manufacturer.

References

Title 29 Code of Federal Regulations (CFR) Part 1910.1200 and 1926.59

APPLICATION

This regulation applies to any chemical, which is known to be present in the workplace whereby employees may be exposed under normal conditions or in a foreseeable emergency.

Definitions

ACGIH - American Conference of Governmental Industrial Hygienists. An organization of industrial hygienists devoted to the administrative and technical aspects of occupational and environmental health. Each year, ACGIH publishes the Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices.

Carcinogen - a substance or agent producing or inciting cancer. These substances are listed by the National Toxicology Program (NTP) in its Annual Report on Carcinogens, the International Agency for Research on Cancer (IARC) in its Monographs, and by the Occupational Safety and Health Administration in 29 CFR Part 1926 Subpart Z, Toxic and Hazardous Substances.

Chemical - any element, chemical compound or mixture of elements and/or compounds. Examples include: cleaning compounds, lubricants, paints, fuels, welding rods, and base metals.

Consumer Products - any product or hazardous substance meeting the definition of the Consumer Product Safety Act (16 U.S.C. 2061 et seq.) and Federal Hazardous Substances Act (16 U.S.C. 11261 et seq.) respectively, where the employer can show that it is used in the workplace for the purpose intended by the chemical manufacturer or importer of the product, and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the purpose intended.

Hazardous Chemical - any chemical which is a physical hazard or a health hazard.

MSDS - Material Safety Data Sheet - a document required by the Hazard Communication Standard by which information concerning the hazards of materials and chemicals is supplied to employees who may come into contact with those materials. The content of the MSDS is specified in section (g) (2) of Title 29 CFR Part 1926.69.

OSHA - The Occupational Safety and Health Administration. A division within the Department of Labor charged with implementing the provisions of The Occupational Safety and Health Act of 1970.

PEL - Permissible Exposure Limit. Limit established by the Occupational Safety and Health Administration (OSHA) concerning the airborne concentration of a contaminant to which an employee may be exposed legally during the work shift or some portion of that shift.

TLV - Threshold Limit Values (and Biological Exposure Indices) are guidelines developed by the ACGIH to assist in the control of health hazards. The TLV's refer to airborne concentrations of substances, and it is believed represent conditions under which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

Responsibilities

It shall be the responsibility of the Site Manager and the Site Safety to ensure that the requirements of this Procedure are adhered to.

It shall be the responsibility of all supervisors to ensure that all employees adhere to the requirements of this Procedure.

It shall be the responsibility of the Site Safety professional to monitor compliance to the requirements of this Procedure and report violations of these requirements and make recommendations for corrective action.

It shall be the responsibility of all employees to practice safe work habits and comply with the requirements of this Procedure.

Procedures - The Written Plan

Each Site Manager and/or Site Safety shall develop, implement, and maintain a written site specific Hazard Communication Plan for their workplace.

The plan shall describe how:

1. The Site Manager and/or Site Safety shall maintain labels and other forms of warning on hazardous chemical located in the work place.
2. The Site Manager and/or Site Safety shall obtain Material Safety Data Sheets (MSDS's), how the information will be used, how employees will be trained on the information, and how the MSDS file will be maintained. How employees will be provided access to MSDS's will also be covered in their written program.
3. The Site Manager and/or Site Safety shall provide information and training to employees concerning the Hazard Communication Program and the hazards in their work place upon initial hire and annually. Where an employee changes jobs or a new chemical is introduced to the work site.

The plan shall also contain:

1. A chemical inventory. That is a list of the hazardous chemical known to be present in the workplace using an identity that is referenced on the appropriate MSDS. (Located in Section 10)
2. The methods the Site Manager and/or Site Safety will use to inform employees of the hazards of non-routine tasks and the hazards associated with chemical contained in unlabeled pipes and vessels in their work areas.
2. A detailed method for making chemical information available to other subcontractors and their employees on multi-employer worksites, including: the methods used to make sure MSDS's are either stored in a central location on the job site or at job office and copied and provided to other employers when needed; the methods used to inform the other employers of any precautionary measures that need to be taken to protect employees during the workplace's normal operating condition and in foreseeable emergencies; and the methods used to inform the other employers of the labeling system used in the workplace.

Labeling

All containers of hazardous chemicals in the workplace shall be labeled, tagged, or marked with the following information:

1. The identity of the hazardous chemicals contained therein; and, the appropriate hazard warnings

Note: The diamond symbol (developed by the National Fire Protection Agency, NFPA) alone provides a limited amount of information and does not satisfy the full requirements of this section. Other types of labeling systems, i.e., the HMIS label (Hazardous Materials Information System), are similar to the NFPA diamond; however, these have space on the label to include the identity of the hazardous chemical and a section where target organ information, special warnings and Personal Protective Equipment (PPE) requirements may be listed.

The manufacturer's labels and warning symbols shall not be removed or defaced unless a new label with the appropriate information is immediately affixed to the container.

MSDS File

1. An MSDS shall be requested from the manufacturer or distributor prior to ordering a chemical product. The purchasing agent (or individual responsible for ordering a material) shall forward a copy of the MSDS to the Site Manager and/or Site Safety.
2. The Site Manager and/or Site Safety professional shall review the MSDS prior to ordering the material. If the Site Manager and/or Site Safety professional provides approval for the material, then the material shall be ordered. The safety professional will supply the MSDS/Product Evaluation memo (Section 10) to the purchasing agent stating that the material has been approved and the Site Manager and/or Site Safety professional shall place the MSDS in a file or binder of approved MSDS's and maintain a copy in the job office.
3. If, based on the information in the MSDS, the Site Manager and/or Site Safety professional determines that product should not be used on the site, subcontractor project management shall be advised to find an alternative material. If an alternative material is selected then the rejected MSDS shall be placed in a file or binder for rejected MSDS's. If no suitable alternative is available, then the Site Manager and/or Site Safety professional shall provide conditional approval for the material with the understanding that the material will require special training, engineering controls, protective equipment, etc. as appropriate.
4. A request for an MSDS shall also appear on the purchase order for any hazardous chemicals other than those excluded by Title 29 CFR Part 1926.69 (b)(6)(i-xii).
5. When a material arrives on site, the MSDS shall be reviewed to ensure that it is the most recent issue. The MSDS shall be marked with the date that the material was received. A copy of the MSDS shall be maintained in the safety office master MSDS file.
6. Chemical products ordered/received by the project shall not be distributed into the workplace until receipt of the accompanying MSDS has been confirmed by the Purchasing Department.
7. Manufacturers and distributors who fail to supply MSDS's will be notified that they will no longer be considered for purchases by the project.

MSDS's shall be reviewed to ensure that they contain the required information:

1. The identity used on the label, except as provided for in trade secret exemptions; and, the chemical and common name of the hazardous components which comprise 1% or greater of the composition except that chemicals identified as carcinogens shall be listed if the concentrations are 0.1% or greater; and,
2. Chemical and common names of all ingredients which have been determined to be health hazards and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredients may be released from the mixture in concentrations which would exceed OSHA PEL's or ACGIH TLV's or could present a health hazard to employees; and,
3. The chemical and common names of all ingredients which have been determined to present a physical hazard when present in the mixture; and,

4. Physical and chemical characteristics of the hazardous chemical
5. Physical hazards of the hazardous chemical
6. The health hazards of the hazardous chemical
7. The primary routes of entry
8. The OSHA PEL and/or the most current ACGIH TLV and any other exposure limits established
9. Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Annual Report on Carcinogens or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs or by OSHA
10. Any generally applicable precautions for safe handling and use
11. Any generally applicable control measures
12. Emergency and first aid procedures
13. Date of preparation of the MSDS or the last change to it
14. The name, address, and telephone number of the chemical manufacturer, importer, employer, or other responsible party preparing or distributing the MSDS, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

If the material is no longer being used on the site, the MSDS shall be marked with the date the material was removed from service and filed or bound with other "MSDS's for materials no longer in use". These MSDS s are viewed as exposure records and shall be maintained for 30 years following completion of the project.

MSDS quality review:

If an MSDS is illegible or has pages or portions of pages missing, the MSDS must be replaced.

Trade Secrets

Manufacturers are allowed to withhold some information concerning the identity of chemicals on the MSDS if that information is classified as a Trade Secret. However, medical personnel and health care professionals have steps by which they may request the information for emergency or evaluation purposes. If assistance is required due to the trade secret provision being used on an MSDS, contact the Corporate Director of Safety.

Training

Employees shall be provided training on hazardous chemicals in their work area at the time of their initial assignment and whenever a new hazard is introduced into their work area. Employees shall be informed of:

1. The requirements of the Hazard Communication standard;
2. Any operation in their work area where hazardous chemicals are present
3. The location and availability of the written Hazard Communication Program, including the required list of hazardous chemicals and MSDS's
4. Training will be conducted in English and Spanish

Employee training shall include at least:

1. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the workplace;
2. The physical and health hazards of the chemicals in the work area;
3. The measures employees can take to protect themselves from these hazards including specific procedures implemented to protect employees from exposure to hazardous chemicals: and
4. Specific details from the project's written Hazard Communication plan, including labeling information, MSDS's, and how to use the appropriate hazard information.
5. All training must be documented. The most current training outline shall be attached to each employee's training record.
6. A written examination (English, Spanish) following the training shall serve as documentation that the employee understood the information provided during the training session.

Non-Routine Tasks

Prior to performance of non-routine tasks, a hazard assessment shall be conducted. All management personnel are responsible for contacting Site Manager and/or Site Safety professional before any non-routine task is undertaken in their respective work area or anywhere else that employees have the potential for exposure to a hazardous material. This also applies to non-routine maintenance tasks. This is necessary to evaluate and communicate hazards to the affected employees.

Non-routine tasks will vary from project to project; therefore, the details of the hazard assessment to be conducted shall be specified in the site specific written program. The written program shall also indicate the method of transmitting the information concerning the hazards to the employees involved.

Coordination With Other Contractors

Arrangements shall be established with contractors on multi-employer sites for the transfer of information concerning chemicals. The details of this arrangement shall be specified in the site specific written program.

Where the Company is the Construction Manager on a project, subcontractors will be required to prepare and implement their own Hazard Communication Program that meets all the requirements of Title 29 CFR Part 1926.69. In addition, a copy of each contractor's chemical inventory and the MSDS for each material or chemical on the inventory shall be submitted to the BIG SOLUTIONS CONCRETE Safety

Office. This will provide a centralized location from which an MSDS may be obtained. This requirement, however, in no way substitutes for the contractor's maintenance of his own Hazard Communication Program or MSDS file.

Record Retention

MSDS's will be treated as medical/exposure records and shall be maintained for the duration of the project plus 30 years.

Employee training records shall be maintained in the Project Safety Office for the duration of the project plus 30 years.

BIG SOLUTIONS CONCRETE

CHAPTER NINE - EMPLOYEE TRAINING

PURPOSE

The purpose of an employee training program is to establish a systematic method of training employees to perform the required tasks in a safe and efficient manner and to ensure that all employees receive initial and annual refresher training on specific applicable OSHA regulations. (see Appendix A of this program) and training on procedures outlined in the Standard Operating Procedures as it affects specific work operations (see Appendix A of this program).

OBJECTIVES

1. To teach employees hazard recognition and methods of corrective action.
2. To involve employees in the accident prevention program and to cause employees to accept their safety responsibility.
3. To provide employees information on accident causes, occupational health hazards, and accident prevention methods.
4. To ensure that all employees are trained in the safe operation of the equipment to which they are likely to be exposed.
5. To ensure that all employees are trained in the safe performance of the task to which they are likely to be exposed.

PROCEDURES

1. The Safety director will tailor training topics to ensure compliance with all Federal, State, Local, and Client regulations, as well as ensuring employee protection.
2. Supervisors will personally instruct each new employee on tasks that he assigns the employee to do.
3. The job superintendent, in conjunction with the supervisor, will compile a list of special operations, tasks, and/or the equipment each employee will be expected to perform and that will require certifiable training. This list should be monitored by the manager and periodically reviewed.
4. Once instructed, the supervisor will ensure that each new employee is properly trained in the special operations or tasks, or on the equipment that he/she is expected to operate or likely to operate.
5. Training received will be documented which is to be filed in the employee personnel records after initial orientation but **before** the employee starts work.

6. New employees not experienced in a operation/task of with a piece of equipment should be assigned to a specific individual for On-the-Job Training until the desired degree job proficiency is achieved. **Proficiency must be demonstrated.**
7. Continuation training for experienced employees will cover the exact same areas as new employee training. This training may be condensed or shortened as appropriate. Continuation training is required annually and will be covered each January in the departmental safety meeting.
8. Individuals previously qualified or experienced will receive full new employee training. The length of the on-the-job training period will be adjusted to account for experience **once proficiency has been demonstrated.**
9. All supervisors must constantly monitor the performance of their workers. Poor performance may be the result of inadequate training, or an indication of the need for retraining.

BUILDING AN EMPLOYEE/SUPERVISOR TRAINING GUIDE

1. ADVANTAGES OF USING A TRAINING GUIDE

- A. Instructor is able to present material in proper order.
- B. Material is emphasized in relation to its importance.
- C. Essential material is not omitted.
- D. The training is kept on schedule.
- E. Trainee confidence is enhanced.

2. GUIDELINES FOR TRAINING PROGRAM

- A. Tailor the training to fit the needs of the subject being taught.
- B. Adjust the hours of training to fit the needs of the individual department.
- C. Provide an interpreter for non-reading employees and for non-English speaking employees.
- D. Provide enough training materials and workstations so employees do not have to share.
- E. Have the employee demonstrate knowledge of the material before allowing him to progress.
- F. Observe health and safety standards in all stages of instruction.
- G. Ensure training is recorded.

BIG SOLUTIONS CONCRETE
ESSENTIAL TRAINING TOPICS
STANDARD OPERATING PROCEDURE

1. **Safety Program Components**
 - A. Rights and Responsibilities of the Employee
 - B. Authority and Responsibilities of the Supervisor
 - C. Safety Policy/Rules

2. **Hazard Recognition and Control**
 - A. Types of Hazards
 - B. Recognition/Inspection Procedures
 - C. Hazard Control Measures
 - D. Immediate Temporary Controls

3. **Emergency First Aid Procedures**
 - A. Recognizing Emergencies
 - B. Gaining Control
 - C. Emergency Care

4. **Emergency Response Procedures**
 - A. Alarm Systems
 - B. Fire Extinguisher Training
 - C. Evacuation Routes
 - D. Safe Assembly Area

5. **Personal Protective Equipment**
 - A. What to Use
 - B. When to Use
 - C. Storage Procedures
 - D. How to Check, Inspect and Maintain

6. **Materials Handling**
 - A. High Risk Jobs
 - B. Proper Lifting
 - C. Proper Rigging

7. **Slips, Trips and Falls**
 - A. Recognizing Potential Problems
 - B. Minimizing Exposure

8. **Environmental Conditions**
 - A. Outside Work
 1. Heat
 2. Cold
 3. Winds
 4. Rain/Flash Flood
 5. Hurricanes
 6. Tornados

- B. Inside Work
 - 1. Noise
 - 2. Dust
 - 3. Vapor
 - 4. Fumes

 - C. Other
 - 1. Fire
 - 2. Bomb Threats

 - D. Hazard Communication (see Appendix B of this manual)
9. **Good Housekeeping Practices**
- A. Tools and Equipment
 - B. Vehicles
 - C. Yard
 - D. Away from Facility
 - E. Office Area
10. **Safe Work From Elevations/Ladders**
- A. Preventing a Fall
 - B. Personal Fall Protection
11. **Safe Vehicle/ Equipment Operation**
- A. Daily User Inspection
 - B. Common Hazards and their Control
 - C. Rules of the Road

BIG SOLUTIONS CONCRETE OSHA REGULATIONS TRAINING

*See Appendix A of this program for written plans on the following:

1. **General Industry Regulation**

- A. Hazard Communication
- B. Personal Protective Equipment
- C. Lockout/Tagout
- D. Respirator

2. **Construction Industry Regulations**

- A. Fall Protection
- B. Scaffolds
- C. Bloodborne Pathogens
- D. Confined Space

BIG SOLUTIONS CONCRETE
EMPLOYEE / SUPERVISOR TRAINING GUIDE OUTLINE

1. **TOPIC**
Clearly and concisely identifies topic
2. **DATE PREPARED**
Record the date the guide was prepared
3. **PREPARED BY**
Record the name of who prepared the guide
4. **CONDUCTED BY**
States who will be conducting the training
5. **TIME REQUIRED FOR TRAINING**
Allow ample time for through understanding
6. **CONTENT OVERVIEW**
An overview of what will be taught to employees
7. **OBJECTIVES**
 - A. States what the employee should know or be able to do at the end on the training period
 - B. Limits the subject matter
 - C. Are Specific
 - D. Worded to stimulate thinking on the subject
8. **HANDOUTS**
Material to be given out to each employee that is specific to the training being provided
9. **OTHER MATERIALS**
Examples of equipment such as personal protective equipment or specialized equipment necessary to perform a specific job
10. **AUDIO VISUAL**
Any video material used to accomplish the training
11. **TRAINING ACTIVITY OUTLINE**
 - A. Gives scope to the subject
 - B. Tells value of the subject
 - C. Stimulates thinking in the subject
12. **ADDITIONAL TRAINING FOR SUPERVISORS**
Identifies training necessary for supervisors related to the subject matter.
13. **QUALITY ASSURANCE**
Methods used for employees to demonstrate an understanding of the information learned

BIG SOLUTIONS CONCRETE

CHAPTER TEN - ACCIDENT/ INCIDENT INVESTIGATIONS

PURPOSE

The purpose of an accident investigation is to learn all facts surrounding an accident through careful questioning and investigation of activities contributing to the event in order to prevent recurrence.

OBJECTIVES

1. To document all facts and causes of the accident.
2. To determine the actions necessary to prevent recurrence.

PROCEDURES

An accident can be defined as "A series of unplanned events that caused or could have caused personal injury or property damage". All accidents, including those occurring to non-employees, shall be investigated by the supervisor responsible for the area in which the accident occurred

The supervisor must notify the safety representative **immediately** (not to exceed 5 minutes) after the accident occurs. In the event the safety representative is not available, contact the safety director. After acquiring the necessary medical aid for the injured person through the Safety department, the supervisor shall begin investigating the accident by following these steps:

1. Immediately assemble facts surrounding the accident (time, location, names of witnesses, etc.)
2. If possible, ask the injured person to tell you what happened. **(DON'T FIX BLAME OR FIND FAULT- JUST GET FACTS).**
3. Survey the accident scene for information. (Position of equipment, presence of guards, lighting, floor surface. Take pictures if possible and if appropriate.)
4. If there are witnesses, get their account of the accident **SEPARATELY.** Have them prepare a written statement of **facts.**
5. Complete the **Accident Investigation Form.**
6. With the implementation of the Drug and Alcohol Policy, any employee involved in a work-related accident will be required to take a drug and alcohol test, regardless if the employee wants or needs medical attention or was at fault. The supervisor, or an appointee, must accompany the employee to the doctor or hospital for medical attention and/or a drug and alcohol screening. **NOTE:** Drug and alcohol testing must be done within 2 hours of the accident (In the unlikely event this time frame cannot be met, contact the safety director for approval to extend the limit). If the accident occurs after hours or on the weekend, transport the employee to the local emergency room (or the nearest medical facility if out of the area) for medical treatment and/or a drug and alcohol test.

7. If the supervisor cannot be located, the employee needs to bring him/herself to the hospital emergency room for treatment and/or a drug and alcohol test. Remember to inform the hospital that this is a work-related injury and to bill **BIG SOLUTIONS CONCRETE**, to the attention of the Human Resources department.
8. Serious Accidents/Fatalities - Serious accidents, involving a fatality or the hospitalization of three (3) or more employees, must be reported to the OSHA Area Office within eight (8) hours of the occurrence. It is the responsibility of the safety director to make sure that the appropriate company officers are informed and the OSHA notification is made in a timely manner.

ACCIDENT INVESTIGATION FORMS

Accidents do not just happen, they are generally the result of a series of events. **Accident Investigation Forms** as a tool to assist in determining the causes, and procedures necessary to prevent the recurrence of similar events. All spaces on the form are to be completed.

SUPERVISOR ACCIDENT INVESTIGATION FORM SECTION A

1. Record the date and time that the accident occurred.
2. Record the date and time that the accident was reported.
3. Record the employee's name, department and job title.
4. List the employee's immediate supervisor at the time of the accident.
5. Give the **exact** location of the accident. (Doorway in break area at commercial office, parking lot at warehouse entrance, etc.)
6. Indicate if the employee received medical treatment.
7. Indicate if employee was put on light duty or lost time and record the estimated number of work days the individual will miss, as well as the number of work days they will be on restricted duty. Also, record the name of the treating doctor. If only first aid was administered, indicate and by whom.
8. List witnesses names. If non-employees, obtain phone numbers and addresses.
9. Record what equipment the employee was using (or hallway, sidewalk, etc. if it was a slip, trip or fall).
10. Describe specifically what the employee was doing when injured.

SECTION B

Section B is the employee's description of the accident. Ask the employee to describe, in their own words, the specific details of the accident. Get information of the events leading up to the accident.

SECTION C

Most accidents occur because of a combination of an unsafe act and unsafe physical condition. Look for both, and then draw conclusions as to why the unsafe act was committed and why the unsafe condition existed.

SECTION D

Once an accident occurs, immediate action must be taken to prevent a similar event. Indicate what needs to be done and who is going to do it. Suggest what longer range action is necessary to prevent the accident. Record your comments on what could be done or told to others to prevent similar accidents in other departments, in other locations.

MAINTENANCE OF ACCIDENT INVESTIGATION FORM:

Fill in your name and title at bottom of form as the person preparing the report. Have the person reviewing the report sign and date the form also. The original form is to be sent to the safety director for review and file. Copies are to be retained by the supervisor and division manager where the accident occurred.

BIG SOLUTIONS CONCRETE

VEHICLE ACCIDENT/PROPERTY DAMAGE INVESTIGATIONS

PURPOSE

The purpose of a vehicle accident/property investigation program is to learn all facts surrounding an accident through careful questioning and investigation of activities contributing to the event in order to prevent recurrence.

OBJECTIVES

1. To document all facts and causes of the accident.
2. To determine the actions necessary to prevent recurrence.

PROCEDURES

All vehicle accidents and/or property damage, no matter how minor, shall be investigated by the supervisor responsible for that employee(s) and by the safety director.

When an employee is involved in an accident while driving a company vehicle, the following procedures must be implemented to ensure proper handling of the situation.

1. If able, employee is to notify his/her supervisor or manager immediately of the accident. If employee's supervisor or manager is not available at that time, employee is to notify the safety director in the safety department. If the safety director is also unavailable at that time, the safety director can assist the employee.

It is recommended to the employee(s) who are involved in a vehicle accident not to make any comments to anyone at the scene of the accident except the police officer who needs to make out a police report. Because of the company's exposure to issues of liability, it is necessary to guard our comments and let the proper personnel handle the media or attorneys at the present or a later time, if necessary.

2. Before leaving or while in route to the scene of the accident, the supervisor must notify the safety representative. In the event the safety representative is unavailable, contact the safety director.

3. Upon notification of the accident the employee's supervisor is to go immediately to the scene of the accident with intentions to gather the facts surrounding the accident. Once the vehicle investigation report is complete, the supervisor must distribute the report to the appropriate personnel according to the distribution instructions found at the bottom of the report.
4. If the employee(s) need **emergency** medical attention and an ambulance has not been called, the supervisor is instructed to call for an ambulance to transport employee(s) to the nearest hospital by dialing **911**. **NOTE:** It will not do any good to call for Air Med if the helicopter cannot land. There must be a suitable area nearby for it to land.

If the employee(s) need non-emergency medical attention, the supervisor must call the safety director or the safety director or someone in the Safety department to get an appointment.

The supervisor, or and appointee, must accompany the employee(s) to the hospital or doctor.

With the implementation of the Drug and Alcohol Policy, any employee driver involved in a vehicle accident will be required to take a drug and alcohol test, regardless if the employee driver needs or wants medical attention or was at fault. **NOTE:** Drug and alcohol testing must be done within 2 hours of the accident (In the unlikely event this timeframe cannot be met, contact the safety director for approval to extend the time limit).

If the vehicle accident occurs after hours or on the weekend, transport the employee to the emergency room (or the nearest medical facility) for medical treatment and/or a drug and alcohol test. If the Supervisor cannot be located, the employee needs to bring him/herself to the hospital emergency room for treatment and or a drug and alcohol test. Remember to inform the hospital that this is a work related injury and to bill **BIG SOLUTIONS CONCRETE**, to the attention of the Safety department.

When employee injuries are involved, the safety director will process the claim through the company's workers' compensation program by completing the First Report of Injury form and coordinating the information with the company's workers' compensation insurance carrier. The injured employee(s) are responsible for attending follow up doctor appointments for extended care and must forward all paperwork received from the doctor to the safety director. It is company policy for all injured employees who receive medical attention for on-the-job injuries attend follow up doctor appointments until a full active duty work release is obtained.

5. Serious Accidents/Fatalities - Serious accidents, involving a fatality or the hospitalization of three (3) or more employees, must be reported to the OSHA Area Office within eight (8) hours of the occurrence. It is the responsibility of the safety coordinator to make sure that the appropriate company officers are informed and the OSHA notification is made in a timely manner.

6. Anytime a vehicle accident occurs while on the job and in a company vehicle, **and the employee is found at fault through negligence**, the supervisor of that employee is responsible for handling progressive disciplinary action. Minimum disciplinary action will be a written counseling statement and maximum disciplinary action will be termination. The level of action to be taken will be dependant on all circumstances surrounding the accident. The safety director will review all disciplinary actions taken to assure consistency in same or similar situations.
7. If at any time an employee, supervisor, or manager is contacted by an attorney or insurance agent regarding a vehicle accident, do not attempt to answer any questions. The caller may be referred to the SAFETY DIRECTOR.

VEHICLE ACCIDENT/PROPERTY DAMAGE INVESTIGATION REPORT

SECTION A

1. Record the date and time that the accident occurred.
2. Record the name of the employee driving the company vehicle, and their date of birth and driver's license number.
3. Record the name(s) of other employee(s) involved.
4. Record the department the employee(s) work in.
5. Record the company assigned vehicle number. The facilitates in identifying the vehicle involved.
6. Describe the exact location of the accident in full detail.
7. List the names(s) to any witness(s) to the accident.
8. Indicate if employee injuries were involved. If there was, describe the injuries and the name of who was injured.
9. Indicate if employee was at fault and if employee received a police citation. If yes, what was the citation for?
10. What medical facilities were used for injuries of just for drug/alcohol testing?
11. Indicate if injured employee(s) were transported by ambulance.
12. If injured were not transported by an ambulance, what means were they transported (other company vehicle, helicopter, police car, etc.).
13. Give a description of the weather conditions at the time of the accident (such as extremely windy, drizzle, heavy raining, sunny, etc.).

14. Describe in as much detail as possible the cause of the accident. If additional room is needed, use the back of the form.
15. Describe any damage to the company vehicle, if any.
16. Indicate if a wrecker service was used. If yes, what is the name of the wrecker service.
17. What location was the company vehicle taken after the accident.
18. Indicate the branch of police who handled the accident. If no police came to the scene, indicate none.
19. Indicate the date the police report will be ready. The police officer can give you a date while at the scene.
20. Get a full description of the accident and what events lead up to the accident from the employee.

SECTION B

1. Record the full name of the other driver (if applicable).
2. Record the full name(s) of other person(s) involved (if applicable).
3. Record the proper address and telephone number of the other driver.
4. Record the proper address and telephone number of other person(s) involved.
5. Obtain the other driver's vehicle insurance company name.
6. Obtain the other driver's vehicle insurance policy number.
7. Indicate if the other driver or person(s) received any injuries.
8. Indicate if injured other driver or person(s) were transported to a medical facility and where.

SECTION C

1. Indicate if there was any property damage. If yes, describe the damage.
2. If property damage was inflicted, record the name of the owner of the property and the telephone number where this person can be reached
3. Give an estimate of the cost of the damage, if possible.

SECTION D

1. The supervisor completing the investigation form must give an opinion of how this accident could have been avoided, based on the facts of what happened.
2. The supervisor must give recommendations to his/her employees on how to avoid a similar accident. This information can be shared with other departments, if deemed necessary.
3. The supervisor must sign and date the investigation form once it is complete.
4. The supervisor must distribute the investigation form according to the distribution instructions.

MAINTENANCE OF VEHICLE/PROPERTY DAMAGE INVESTIGATION FORM

Fill in your name and title at the bottom of the form as the person preparing the report. Have the person who reviews the report (manager) sign and date the form as well. The original form is to be sent to the safety director for review and file. Copies are to be retained by the supervisor and division manager where the accident occurred.

BIG SOLUTIONS CONCRETE

CHAPTER ELEVEN - SAFETY MEETINGS

PURPOSE

The purpose of a safety meeting program is to provide a method to systematically examine work practices for potentially unsafe acts that could produce personal injury and solicit effective methods to preclude recurrence. **BIG SOLUTIONS CONCRETE**'s safety meetings are held weekly for the outside plant personnel and quarterly for office personnel. These meetings are headed by the departmental supervisor and are on department specific safety topics or focused on unsafe acts.

Once a year the safety director will provide a list of safety topics and materials to conduct safety meetings for outside plant and office areas.

The following is an outline of the objectives and procedures for departmental safety meetings:

OBJECTIVES

1. To hold a safety meeting weekly (outside) or each quarter (inside).
2. To choose, discuss, and eliminate one specific unsafe act each meeting. Safety meeting can also be used for training on new equipment an/or procedures or on department specific safety topics. (Note: Safety meetings should not be used as an opportunity for non-safety related training.)

PROCEDURES

1. PREPARATION

- A. Supervisors will conduct frequent inspections of the various areas and work practices noting any unsafe activities or tendencies that need to be eliminated or can use recent accident reports on unsafe acts or conditions. Note: All unsafe acts must be corrected immediately with the individual concerned.
- B. Select one example of unsafe behavior to be used as a safety meeting topic for the benefit of all.
- C. List the unsafe behavior of activity that should be changed.
- D. Determining the reasons the employees have for engaging in this unsafe activity. Determine what can be done to overcome each reason.

For example:

1. My employees are choosing not to wear safety glasses because they become foggy when the temperature is high.
 2. We will look at alternative choices for safety glasses and select one that is suitable for high temperature and high humidity.
- E. Determine what can be done differently to eliminate the unsafe act or condition and record it.

For example:

I will instruct the purchasing department to discontinue purchasing the present safety glasses and new alternatives will be chosen within 30 days.

2. **CONDUCT MEETING**

- A. If "Conclusion", is different as a result of the meeting, it should be changed.
- B. "Follow-up" should contain additional actions to ensure that the recommendation is implemented.

For example:

Samples of alternative safety glasses need to be obtained and given to employees so they can determine the suitability.

- C. Record additional comments, "Remarks".

For example:

Reaction to having new eye protection was positive. John Doe will test the different types of glasses.

3. **MAINTENANCE OF FORMS**

A copy of the SAFETY MEETING FORM will be sent to the safety director for his records. The supervisor conducting the meeting will retain the original.

BIG SOLUTIONS CONCRETE

CHAPTER TWELVE - RECORDKEEPING

PURPOSE

The purpose of a record keeping program is to establish a procedure for the uniform development and maintenance of loss prevention and control documents.

OBJECTIVES

1. To establish a historical data base of injury and illness accident events that is capable of trend analysis.
2. To make objective comparisons of past and present accident experience, comparisons with similar work activities, comparisons to other divisions, comparisons to State experience, and comparison to National experience of similar work activities.
3. To systematically evaluate the safety program's activities, results, and effectiveness.

PROCEDURES

1. The Occupational Safety and Health Act requires employers to maintain records of job-related injuries and illnesses. Only two forms must be maintained which are the OSHA 200 form and the OSHA 101 form (or equivalent - First Report of Injury form). The OSHA 200 form will act as a summary to satisfy employer's posting obligations (Feb.1-March 1 annually). OSHA forms and information that supports a recordable accident must be maintained for five years after the year to which it relates.
2. Other records/documents that may be generated by this safety program should be maintained for one year after the year to which it relates unless otherwise noted. Although copies of certain forms may be circulated for review, the forms should be maintained as follows:

	<u>TYPE REPORT</u>	<u>WHERE MAINTAINED</u>	<u>BY WHOM</u>
A.	<i>Inspection Reports</i>	On Site	Safety Rep.
	1. Housekeeping	Work area	Supervisor
	2. Equipment/Vehicle (1)	Equipment/Vehicle file	Supervisor

	<u>TYPE REPORT</u>	<u>WHERE MAINTAINED</u>	<u>BY WHOM</u>
B.	Accident Investigation		
	1. Non-recordable	Safety Dept.	Safety director
	2. Recordable (3)	Safety Dept.	Safety director
	3. Non-Employee	Safety Dept.	Safety director
	4. Vehicles	Safety Dept.	Safety director
C.	Safety Meeting Reports	Work Area	Supervisor
D.	Training Certification		
	1. New Employees (4)	Personnel Records	Safety director
	2. Task/Vehicle /Equipment (4)	Personnel Records	Safety director
E.	Safety Training Guide Outline - (2)	Work Area	Supervisor
F.	First Aid Logs (3)	Safety Dept.	Safety director
G.	Safety Audit Report (5)	Safety Dept.	Safety director
H.	Corrective Action Request (5)	Safety Dept.	Safety director
(1)	Any report that first identifies a hazardous condition will also be sent to the safety director for review, but will not be maintained there.		
(2)	Retain as long as still valid. Must be reviewed and updated periodically.		
(3)	Recordable accident/illness information must be retained for 5 years.		
(4)	Retain for duration of employment (The Training Certification Card will also be completed for all existing employees).		
(5)	Will be retained for five years.		

BIG SOLUTIONS CONCRETE

CHAPTER THIRTEEN - INJURIES

PURPOSE

The purpose of a first aid program is to provide rapid medical aid to any person that requires it by having a trained first aid person on duty at each work site during each shift.

OBJECTIVES

The objective of the first aid program is to provide emergency care, to prevent death or further injury, to relieve pain and to counteract shock for an injured or ill person until medical help can be obtained.

VALUE OF A FIRST AID PROGRAM

1. Confirms that **BIG SOLUTIONS CONCRETE** has a moral and legal obligation to protect employee health and well-being.
2. First aid minimizes the severity of injuries and can extend a person's life.
3. First aid minimizes infection and medical complications.
4. First aid regains control of a emergency.
5. First aid often means the difference between life and death, or temporary and permanent disability.
6. A person trained in first aid helps him/herself and renders an essential service to those he cares for.

PROCEDURES

1. In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite, which is available for the treatment of injured employees, a person e.g. site safety, foreman, who has a valid certificate in first-aid training from the American Heart Association, or equivalent training that can be verified by documentary evidence, will be available at the worksite to provide first aid.
2. First aid supplies should be easily accessible and kept in the job office. The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by the site manger/safety before being sent out on each job and at least monthly on each job to ensure that the expended items are replaced.
3. A list with telephone numbers and addresses of approved doctors, hospitals, and ambulances should be posted near all telephones, when in areas where 911 is not available.

4. Someone who completes a certified first aid or emergency response course or someone who has advanced medical training can only administer first aid. Refresher training will be required according to certification requirements. First aid training is valid for three years. It is a management decision to determine how many first aid trained individuals are required in each area.
5. Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
6. A list of trained first aid attendants will be maintained by the safety director. This list will contain training records and the date of necessary re-certification. It is the safety director's responsibility to ensure that first aid attendants remain current.
7. At least one first aid supply kit will be maintained by a designated and trained first aid attendant at each major work area. A first aid log supply inventory and reorder form should be included in each first aid box. The first aid kit will be inventoried monthly.
8. The **First Aid Log** will be completed by the first aid attendant that provides first aid care. The attendant will immediately enter the name of the person who received first aid care. The first aid logs from each kit should be closed out and forwarded by the designated first aid attendant to the safety director at the end of each month. The first aid log will be maintained for a least 5 years.
9. All employees will be instructed to:
 - A. Calmly and coherently report ALL injuries and near-miss accidents immediately to a supervisor.
 - B. **Do Not** treat any injuries unless they have been trained as a first aid attendant. (Note: If an injury is such a serious nature that it requires immediate first aid attention by an untrained employee, the advice and treatment by a trained first aid attendant should be sought as soon as possible.).
 - C. Do not attempt to perform regular job functions of abilities have been impaired by an injury.
 - D. Report any sickness to your immediate supervisor.

10. When a person is injured or ill, the trained first aid attendant must take charge, call for emergency medical assistance, if necessary, and administer first aid. The attendant must make an expeditious, but effective, examination to determine the nature of the injuries.
 - A. Less noticeable internal injuries may have also occurred. The source of the injury may provide a clue to the potential physical damage.
 - B. Unless the victim is exposed to further danger at the accident site, he/she should not be moved until the full extent of his/her injury is known, first aid has been applied and emergency transport assistance has arrived.

EMERGENCY DIRECTORY

- (1) Emergency Medical Services or EMS
Dial: 911
- (2) Life flight
- (3) All Fire Departments
Dial: 911
- (4) All Police Departments
Dial: 911

HOSPITALS

LOCAL CLINICS

BIG SOLUTIONS CONCRETE

CHAPTER FOURTEEN - SUBCONTRACTOR RESPONSIBILITIES

PURPOSE

The purpose of this section is to define subcontractors responsibilities regarding pre-qualifications, quality of work expectations and safety expectations.

OBJECTIVE

The objective of this section is to set standards for subcontractors so they will have the proper information with which to base decisions which will help eliminate miscommunications and problems at the job site, therefore bolstering the opportunity to ensure success of the job through teamwork between BIG SOLUTIONS CONCRETE and the subcontractor, quality of work, and safety on the job site for all concerned parties.

APPLICATION

This section applies to all subcontractors performing work for BIG SOLUTIONS CONCRETE in order to fulfill contractual obligations entered into by BIG SOLUTIONS CONCRETE and its client or clients.

Prior to performing work for BIG SOLUTIONS CONCRETE, all subcontractors must complete the subcontractor pre-qualification package. Pre-qualifications are an exact and necessary procedure that must be completed before BIG SOLUTIONS CONCRETE management can make a decision regarding entering into a contract or work agreement with a subcontractor.

BIG SOLUTIONS CONCRETE's pre-qualification package is straightforward and simple to complete, however, subcontractors should be aware that there may be times when additional information may be required in order to fulfill contractual obligations of a client.

If and when such a situation arises, BIG SOLUTIONS CONCRETE will make every effort to notify the subcontractor of any additional requirement in a timely manner. Additionally, BIG SOLUTIONS CONCRETE will work with the subcontractor in meeting those additional requirements whenever possible in order to meet any prior scheduling.

Subcontractors should be made to understand that BIG SOLUTIONS CONCRETE considers effective, honest communication between BIG SOLUTIONS CONCRETE and the subcontractor as both essential and necessary in order to complete the job safely, on schedule and to the satisfaction of the client.

SUBCONTRACTOR PREQUALIFICATION FORMS

The following forms: 1) Subcontractor Safety & Health Evaluation; and, any supporting documentation should be filled out in full and either mailed to: Big Solutions Concrete - 102 Oak Park Drive, Suite 106A - Clute, Texas 77531 or faxed to: 979 265 5176.

Big Solutions Concrete

Subcontractors Safety & Health Evaluation

Section I

General Information

(please print)

Company Name: _____ Principle Business: _____

Contact Person: _____ Phone: _____ Fax: _____

E-Mail: _____ Cell: _____ Web Site: _____

Statistical Data

(for last three years)

write year →	3 years prior	2 years prior	1 year prior
Insurance Experience Modification Rate:			
Number of Fatalities			
Number of Recordable Injuries			
OSHA Recordable Incident Rate			
Number of Lost Workdays			
Total Man-hours Worked			

In addition to the above information, please submit the following documents for evaluation:

1. EMR for last three years.
2. OSHA 300 logs for last three years
3. Verification of drug and alcohol screening
4. Equipment operator training and certifications
5. Written Safety & Health program table of contents

Section II

Please answer the following questions:

Has your company ever had an OSHA inspection? Yes No

If yes please explain the circumstances: _____

Has your company ever been cited by OSHA? Yes No

If yes please explain: _____

Is your company ISO certified? Yes No

Is your company a member or Contractors Safety Council? Yes No

Is your company a member of Associated Builders & Contractors? Yes No

Are your employees NCCER craft certified? Yes No

Are your employees required to take ARSC Basic Plus? Yes No

Please list any Professional Associations your company is a member of: _____

Identify Work Categories:

Please mark the categories in which your company is qualified to perform work, and attach any supporting documents such as: contractors license, professional license or other documentation to highlight your companies capabilities.

General Service Category

- | | |
|---|---|
| <input type="checkbox"/> Construction Design | <input type="checkbox"/> General Construction |
| <input type="checkbox"/> Project Management | <input type="checkbox"/> Maintenance |
| <input type="checkbox"/> Staffing/ Labor Services | <input type="checkbox"/> Other |
-
-

Category I – Mechanical

- | | |
|--|---|
| <input type="checkbox"/> Pipe Fabrication | <input type="checkbox"/> Insulation |
| <input type="checkbox"/> Pipe & Equipment Installation | <input type="checkbox"/> Painting |
| <input type="checkbox"/> Steel Erection | <input type="checkbox"/> Millwrighting |
| <input type="checkbox"/> Steel Fabrication | <input type="checkbox"/> Pressure Vessels |
| <input type="checkbox"/> Heat Exchangers | <input type="checkbox"/> Painting |
| <input type="checkbox"/> Pumps | <input type="checkbox"/> Other |

Category II – Civil

- | | |
|--|--|
| <input type="checkbox"/> Civil Engineering | <input type="checkbox"/> Civil Construction |
| <input type="checkbox"/> Concrete Structure Construction | <input type="checkbox"/> Concrete Paving & Slabs |
| <input type="checkbox"/> Road Paving | <input type="checkbox"/> Drill Shafts |
| <input type="checkbox"/> Reinforcing Ironwork | <input type="checkbox"/> Site Preparation |
| <input type="checkbox"/> Fire Proofing | <input type="checkbox"/> Other |

Category III - Industrial

- | | |
|---|--|
| <input type="checkbox"/> Industrial Building Construction | <input type="checkbox"/> Interior Sheetrock/ walls |
| <input type="checkbox"/> Overhead Door Installation | <input type="checkbox"/> Roofing |
| <input type="checkbox"/> Flooring | <input type="checkbox"/> Sprinkler Systems |
| <input type="checkbox"/> Masonry | <input type="checkbox"/> Other |

Additional Comments:

Please Answer All Questions:

Does your company have a full time safety professional? Yes No N/A

Does your company use a third party for substance screening? Yes No N/A

Does your company use a third party for substance screening? Yes No N/A

Does your company use a third party for substance screening? Yes No N/A

All documents should be submitted to:

Big Solutions Concrete
102 Oak Park Drive, Suite 106 A
Clute, Texas 77531

BIG SOLUTIONS CONCRETE
CHAPTER FIFTEEN - EMERGENCY ACTION PLAN

Purpose and Scope

- 1.0 The purpose of this procedure is to define roles and responsibilities of all BIG SOLUTIONS CONCRETE personnel during an emergency situation and any emergency response efforts in order to insure the safety and health of both BIG SOLUTIONS CONCRETE personnel and any members of the general population whom may become involved in an emergency response.
- 1.1 The scope of this procedure is to specifically define the appropriate and correct actions that should be taken by BIG SOLUTIONS CONCRETE personnel, and to specifically define inappropriate and incorrect actions that should not be taken by BIG SOLUTIONS CONCRETE personnel during and after any emergency situation.

Section II

Definitions:

- 2.0 Freeport Industrial Mechanical Company, Inc. shall hereafter be referred to as BIG SOLUTIONS CONCRETE throughout the remainder of this document.
- 2.1 Emergency response will be defined as actions taken in response to any man made or naturally occurring event which may: 1.) endanger the life, safety or health of company employees; 2.) fall under government or media scrutiny; 3.) greatly interfere with normal business operations; 4.) negatively impact BIG SOLUTIONS CONCRETE's public image, financial condition or legal status to engage in and/ or perform normal business operations.
- 2.2 BIG SOLUTIONS CONCRETE "PIC" is defined as the "Person in Charge" of all BIG SOLUTIONS CONCRETE personnel's safety and well being during the time of any emergency response operations. The designated BIG SOLUTIONS CONCRETE PIC will follow this hierarchy: The highest ranking BIG SOLUTIONS CONCRETE safety representative on the jobsite is designated PIC. If there is not a BIG SOLUTIONS CONCRETE safety representative on-site, then the highest ranking on-site BIG SOLUTIONS CONCRETE supervisor will serve as the PIC.
- 2.3 General Supervisor is defined as any on-site supervisor or department head with an area of responsibility, but not the designated BIG SOLUTIONS CONCRETE PIC and/ or the ranking supervisor.
- 2.4 Employee is defined as any temporary or permanent BIG SOLUTIONS CONCRETE personnel; any on-site current or future business partners engaged in any type of commerce with BIG SOLUTIONS CONCRETE; any on-site visitors or vendors; and any other personnel for

whom BIG SOLUTIONS CONCRETE has requested facility access thereby accepting the primary responsibility for those persons life, safety, health and general welfare.

15.0

- 2.5 Client is defined as any company which BIG SOLUTIONS CONCRETE has a contract with and performs work for.

Section III

Responsibilities:

3.0 BIG SOLUTIONS CONCRETE PIC

- 3.1 Primary responsibility of the BIG SOLUTIONS CONCRETE PIC will be to take any and all immediate action(s) as deemed necessary to protect life and neutralize any threat to the safety and health of our employees and/ or the general public.
- 3.2 The BIG SOLUTIONS CONCRETE PIC will also be responsible for coordinating all emergency response operations with the clients on-site emergency response team, and any outside support agencies responding to the event. This includes, but is not limited to:
- a. ensuring both on-site and off-site medical help is provided for any employee in need of such help
 - b. evacuation of personnel as per site procedures
 - c. relocation of personnel as per site procedures
 - d. accounting of personnel and communicating accounting of same to the appropriate client representative as per site procedures
 - e. fully cooperating and coordinating with all emergency response entities and personnel including; on-site emergency response personnel; all law enforcement authorities; ambulance; fire department, and any other civil service organizations involved in the emergency response efforts
 - f. communicating emergency response information to the appropriate BIG SOLUTIONS CONCRETE owners/ business partners. The BIG SOLUTIONS CONCRETE PIC shall communicate emergency information to the owners/ business partners as soon as possible in the following circumstances:
 - 1 Death or serious injury of an employee
 - 2 Major accident or incident
 - 3 Acts of God such as an earthquake, microburst, tsunami, tornado, hurricane or lightning strike causing damage to facilities or equipment resulting in a shut down or delay of the regular work schedule
 - 4 Any act, attempted act or threat of terrorism
 - 5 Any improper or illegal act of an employee, i.e., willful violation of civil or criminal law such as theft, workplace violence, sexual harassment, OSHA regulations, environmental law, BIG SOLUTIONS CONCRETE or Clients policies or procedures resulting in disciplinary action or termination of employment
 - 6 conditions which could endanger the life, safety or health of employees or the general public such as, toxic gas releases, spills or client employees bypassing standard operating procedures such as permitting procedures or encouraging violation of safety procedures

3.3 **BIG SOLUTIONS CONCRETE Site Safety Representative**

BIG SOLUTIONS CONCRETE Site Safety Representative will be responsible for the following:

- 3.4 communicating with the appropriate Client Representative prior to the contract beginning and obtaining a copy of the clients Emergency Response Procedures, including all pertinent phone numbers needed in order to communicate information to the Clients designated departments and people in the event of an emergency
- 3.5 gathering information on local emergency service and support agencies which normally would be involved in emergency response operations. This would include, but is not limited too;
 - a. nearest hospital emergency room and occupational medical care clinic
 - b. fire department
 - c. ambulance service
 - d. local law enforcement
 - e. med-i-vac service and location of closest landing pad for pick-up, and closest hospital with landing pad.
- 3.6 display a site specific "Emergency Contact List" in the main office at the site and keep a copy in his/ her company or personal vehicle.
- 3.7 maintaining a current sign-in and out log to be used for accountability
- 3.8 gathering and maintaining medical information from all employees on the job site via the BIG SOLUTIONS CONCRETE post employment medical disclosure form.
- 3.9 contacting the family members listed under emergency contacts on the BIG SOLUTIONS CONCRETE post employment medical disclosure form and informing them of any medical emergencies involving their family member. The only information that should be disseminated during the initial call is:
 - a. the employees name
 - b. the fact that the employee has been involved in an accident.
 - c. where the employee is being treated
 - d. the BIG SOLUTIONS CONCRETE Site Safety Representative should ask the family member if they need transportation to the treatment facility, and try to arrange transportation for them if they need it. We do not want a distraught family member to have an accident, and possibly be injured themselves while speeding towards a hospital while in an emotionally disturbed state of mind.

The BIG SOLUTIONS CONCRETE Site Safety Representative should inquire about accommodations for the family near the treatment facility, if a babysitter is needed or if arrangements need to be made to pick children up from school, if other family members or friends need to be called, etc. In short, if we have a seriously injured employee, the company shall try to assist the family of the victim in as many ways as possible in both the short term and the long term.

3.10 **BIG SOLUTIONS CONCRETE General Supervisors**

General supervisors will be responsible for the following:

15.2

- 3.11 communicating emergency information to BIG SOLUTIONS CONCRETE personnel assigned to his/ her crew and immediately evacuating those personnel from any area of potential danger.
- 3.12 communicating emergency information to the appropriate on-site client representative as soon as possible, and cooperating fully with the clients emergency response procedures.
- 3.13 requesting medical treatment for injured personnel or extraction services for personnel unable to evacuate due to injury, extenuating circumstances, environmental reasons, etc.
- 3.14 assembling personnel at the appropriate designated area, and accounting for those personnel as per site procedures.
- 3.15 communicating emergency information, and the location and status of assigned personnel to the designated on-site BIG SOLUTIONS CONCRETE PIC as soon as possible.
- 3.16 **BIG SOLUTIONS CONCRETE Employees** not in a supervisory capacity
Employees will be responsible for the following:
 - 3.17 learn and maintain knowledge of facility alarms, and evacuation procedures of facility you are working in.
 - 3.18 learn the location of windsocks, safety showers, eye wash stations and assembly points.
 - 3.19 signing in and out of the plant and any unit(s) or area(s) which requires signature for entry/ exit within the plant.
 - 3.20 following all Client and BIG SOLUTIONS CONCRETE emergency response procedures as directed by BIG SOLUTIONS CONCRETE supervisor(s) including:
 - a. stop all work activities, specifically all hot work in the event of an emergency, shut down all equipment, and exit the work area cross wind and/ or upwind to the designated assembly point if possible
 - b. once you reach an assembly point remain at assembly point until an accounting of personnel is complete and you are issued further instructions
 - c. cooperate fully with BIG SOLUTIONS CONCRETE and Client supervision, and all emergency response personnel during and immediately after an emergency

Section IV

4.0 **General Instructions for All Employees**

This section provides general instructions to all employees to be followed during and after an emergency response event.

- 4.1 always cooperate fully with emergency response team members during an emergency. This includes answering all questions verbally which are directed at you by emergency response personnel seeking information on the event in order to respond to it correctly, so always remember to limit

your answers to quick, accurate information only. Tell only what you know and what you have seen. Do not speculate on cause, fault or blame. Most importantly, never guess at anything.

15.3

Emergency response personnel need quick and accurate information in order to respond quickly and successfully. Inaccurate information could result in things like additional property damage, toxic releases, unnecessary time consuming search and rescue operations and/ or evacuations, injuries or even loss of life to facility personnel, the general population or the emergency response personnel.

- 4.2 during or after the event, NEVER consent to a formal interview, participate in an informal discussion or debriefing, give any recorded verbal or written statement(s) or answer any questions from Client representatives, attorneys or government officials without the knowledge and permission of the senior BIG SOLUTIONS CONCRETE on-site supervisor. If asked to do so, politely direct the person to refer all inquires, questions and/ or requests to the senior BIG SOLUTIONS CONCRETE on-site supervisor.
- 4.3 If approached by members of the media, during or after an event, NEVER respond to any inquiry with any answer other than politely referring the person to direct all inquires, questions and/ or requests to either the senior BIG SOLUTIONS CONCRETE on-site supervisor, BIG SOLUTIONS CONCRETE Safety Director or Mr. Robert Muniz.
- 4.4 BIG SOLUTIONS CONCRETE employees should never attempt to respond to an emergency along with any Clients emergency response team.
- 4.5 **MOST IMPORTANTLY** do not speculate to anyone, especially family members about the nature of injury(s), the condition of patient(s) and never attempt to speculate on the possible various medical outcomes of an injured person. The extent of injuries and possible outcomes can only be determined by a qualified Physician only after a thorough medical examination and diagnosis. Remember, the victims family member(s) deserve accurate information about their loved ones.
- 4.6 If at anytime you feel that you need medical attention relating to an emergency event, after the event, and after you have been accounted for and released from the jobsite, you must contact the senior BIG SOLUTIONS CONCRETE supervisor or the senior BIG SOLUTIONS CONCRETE safety representative over the jobsite you are working on to authorize the medical treatment.

Any unauthorized medical treatment sought after hours, after an emergency event in which you have been accounted for and released from the jobsite, will be considered a non-occupationally related personal injury.

NOTE: Violating any of these instructions could result in disciplinary action up to and including termination of employment.

Big Solutions Concrete Company
Emergency Action Plan
Review and Acceptance Document

I, (Print Name) _____ acknowledge that I have read the **BIG SOLUTIONS CONCRETE** Emergency Action Plan, and fully understand my role and responsibilities to be followed during an emergency, and as stated in the plan. I also acknowledge I understand that if I do not follow all instructions as laid out within the plan, I may be subject to disciplinary action up to and including termination of my employment.

Signature: _____

Date: _____

Job Description: _____

15.6

BIG SOLUTIONS CONCRETE

Appendix A

STANDARD OPERATING PROCEDURES

Abrasive Blasting

Bloodborne Pathogens

Confined Space

Electrical Safety

Emergency Response Plan

Fall Protection

Fire Safety

Hearing Conservation

Lock Out-Tag Out

Personal Protective Equipment

Respiratory Protection

Scaffolds

Trenching Excavation Plan

BIG SOLUTIONS CONCRETE

BLOODBORNE PATHOGENS

The policy of Big Solutions Concrete is to comply with the Occupational Safety and Health Administration's (OSHA's) permit Required Bloodborne Pathogens Standard. This standard requires employers to enact operational procedures that will protect employees from the hazards of exposure to bloodborne pathogens and other potentially infectious materials.

Big Solutions Concrete's Safety director will have the overall responsibility for coordinating this program and to ensure its effectiveness.

PURPOSE

The purpose is to establish mandatory practices and procedures that will protect employees of Big Solutions Concrete who in the course of their employment are periodically exposed to bloodborne pathogens.

APPLICATION

This policy applies to all Big Solutions Concrete Personnel (permanent, temporary, part-time, volunteers and sub-contractors) and all job sites where personnel may be exposed to Bloodborne pathogens.

REFERENCE

Federal Safety and Health Act-Standard 29 CFR 1910. 1030

PROCEDURE

- A. Determination of Coverage: Employees with occupational exposure as defined in the standard are covered by the standard. This determination has been made by Big Solutions Concrete and documented in the exposure control plan.

Occupational exposure is defined as reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from performance of an employee's duties. Any reasonable expectation that an employee will be exposed invokes the standard.

- B. Definitions of pertinent terms used in the standard:

Bloodborne Pathogens: Pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

Other Potentially Infectious Materials: Human body fluids includes semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

- C. Exposure Control Plan: Big Solutions Concrete has established a written Exposure Control Plan designed to eliminate or minimize employee exposure. The Exposure Control Plan contains the following elements:

1. Since each jobsite is different, each Site Supervisor and/or Site Safety will prepare an exposure control plan to determine what occupational exposure exist for employees. The exposure determination shall contain the following:
 - a. A list of all job classifications in which some or all employee(s) in these classifications have occupational exposure.
 - b. A list of all tasks and procedures related jobs where occupational exposure must be identified.
 - c. The employees performing those tasks (covered by the plan) are identified.
2. This exposure determination shall be made without regard to the use of personal protective equipment.
3. In addition to the determination of covered employees outlined above, it must include at least the following elements:
 - a. The schedule and methods of implementation for all elements of the standard, which pertain to this employer.
 - b. The procedure for the evaluation of circumstances surrounding exposure incidents, as required by the standard.
 - c. A copy of the standard with notes detailing the schedule and method of implementation of the standard in that particular workplace may be adequate for small facilities. Larger facilities may wish to incorporate the exposure control plan as one portion of the infection control plan or may otherwise develop a facility-wide program.

D. Methods of Compliance

1. Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.
2. Engineering and Work Practice Controls shall be used as a primary means of eliminating or minimizing exposure.
 - a. Engineering Controls reduce employee exposure in the workplace be either removing or isolating the hazard or isolating the worker from exposure. Engineering controls shall be examined and maintained or replaced on a regular schedule to ensure their effectiveness.
 - b. Work practice controls alter the manner in which a task is performed to make the task safer.
 - c. When occupational exposure remains after using the Engineering and Work Practice Controls the employer must provide and be sure that the employee(s) use, personal protective equipment as an additional protection

3. Hand washing Facilities and Requirements:

- a. Hand washing facilities must be readily accessible to employees.
- b. Hand washing with soap and at least tepid running water must be performed as soon as feasible to adequately flush contaminated material from the skin.
- c. The employer must ensure that hand washing is routinely performed immediately following removal of gloves and other personal protective equipment, which have been contaminated.
- d. Employers must make hand-washing facilities available at a reasonable distance from a work area where exposure may occur. Long distances, doorways, and stairs make contamination of surfaces encountered along the way more likely and are therefore not permitted by the standard.
- e. When provision of hand washing facilities is not feasible, the employer shall provide an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

4. Needles and Sharp Handling:

- a. Devices exist to provide an alternative to the use of needles for some procedures. Examples of such devices include stopcocks (on-off switched), needle-protected systems, or needle less systems to connect intravenous lines, and self-sheathing needles. Needles may be recapped only in very limited situations.
- b. Contaminated needles and other contaminated sharps shall not be bent, recapped, or removed unless the employer can demonstrate that no alternative is feasible or that such action is required by a specific medical procedure. When a procedure requires that the needle be recapped or removed the employee must use some type of device that protects the hand and allows a safe one-handed recapping method.
- c. Shearing or breaking of contaminated needles is prohibited.
- d. Disposable sharps must be disposed of as close as possible to where the sharps are used, in containers, which are kept upright and are replaced routinely to prevent overfilling. Containers must meet four criteria:
 - 1) Puncture resistant
 - 2) Closable
 - 3) Leak proof on the sides and bottom; and
 - 4) Labeled or color-coded in accordance with the standard.When moving sharps from the area of use, the container must be closed to prevent leakage and placed in a second leak proof container if leakage is possible.
- e. Reusable sharps shall be placed in appropriate containers until properly processed immediately or as soon as possible after use. The containers shall be: 1) Puncture

resistant; 2) Labeled or color-coded as required; and 3) Leak proof on the sides and bottom.

- f. Employees are prohibited from putting their hands into containers that hold contaminated sharps. If reusable sharps must be cleaned to allow complete decontamination, work practices must be adopted which eliminate the possibility of injury.

5. Surface Contamination; Droplet Spread; Mouth Pipe letting and Suctioning; Containerization and Labeling of Specimens; Decontamination of Equipment to be Serviced:

- a. Eating, drinking, smoking, applying cosmetics and lip balm, and handling contact lenses are prohibited in work areas where there is a reasonable likelihood of occupational exposure.
- b. Food and drink shall not be kept in refrigerators, freezers, shelves, cabinets or on countertops or bench tops where blood or other potentially infectious materials are present.
- c. All procedures involving blood or other potentially infectious materials shall be performed in such a manner as to minimize splashing, spraying, spattering, and generation of droplets of these substances.
- d. Mouth pipe letting/suctioning of blood or other potentially infectious materials is prohibited.
- e. Specimens of blood or other potentially infectious materials shall be placed in a container, which prevents leakage during collection, handling, processing, storage, transport or shipping.
- f. Equipment that may be contaminated with blood or other potentially infectious materials be examined prior to servicing or shipping and be decontaminated as necessary. If the employer can demonstrate that decontamination of such equipment is not feasible, a readily observable label shall be attached to the equipment prior to servicing or shipping. The label must state which portions of the equipment remain contaminated.

6. Personal Protective Equipment

When occupational exposure continues after engineering and work practice controls have been instituted, personal protective equipment (PPE) must be used. The employer must provide, at no cost to the employee, appropriate personal protective equipment.

Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth and other mucous membranes under normal conditions of use and for the duration of time which the personal protective equipment will be used.

PPE must be provided in suitable sizes and accessible locations. Training must be given as to what personal protective equipment to use, where it is kept, and how it is properly used. PPE must be cleaned, laundered, disposed of, repaired and replaced at no cost to the employee.

The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety service or would have posed as increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented by the employer in order to determine whether changes can be instituted to prevent such occurrences in the future.

a. Protective Clothing

- 1) Appropriate protective clothing, such as, but not limited to gowns, aprons, lab coats, clinic jackets, or similar outer garments shall be worn in occupational exposure situations. The type and characteristics will depend upon the task and degree of exposure anticipated. The employer is required to evaluate the task and "appropriate" personal protective clothing. This determination must be communicated to the employee, and training must take place in selection and proper use.
- 2) All personal protective equipment/clothing shall be removed prior to leaving the work area. It shall be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal. The employer is responsible for laundry and maintenance or disposal of personal protective clothing. Under no circumstances is the employee to take home personal protective equipment, which is contaminated.
- 3) If personal protective clothing and/or other clothing are penetrated by blood or other potentially infectious materials, the garments must be removed immediately or as soon as feasible.
- 4) Surgical caps or hood and/or shoe covers or boots must be worn in instances when gross contamination can reasonably be anticipated.

b. Masks, Eye Protection, and Face Shields

Masks in combination with eye protection devices, such as goggles or glasses with solid side shields, or chin length face shields, must be worn whenever splashes, spray, splatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.

c. Gloves

- 1) Gloves must be worn when it can be reasonably anticipated that the employee may have hand contact with blood, other potentially infectious materials, mucous membranes, and non-intact skin; when performing vascular access procedures; or when handling or touching contaminated items or surfaces. The exception is if an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary, then the employer must evaluate the policy; make gloves available for all employees who wish to use them for phlebotomy; not discourage the use of gloves. This exception applies only to skilled phlebotomists, and gloves must be used when the health care worker has cuts, scratches, or other breaks in his/her skin and in situations where the worker judges that hand contamination with blood will be likely.
- 2) Disposal (single use) gloves such as surgical or examination gloves, shall be replaced as soon as practical when contaminated or as soon as feasible if they are torn, punctured, or when their ability to function as a barrier is compromised. Disposable gloves shall not be washed or decontaminated for re-use.
- 3) Hypoallergenic gloves, glove liners, powder less gloves, or other alternatives must be provided for employees who are allergic to the gloves normally provided.
- 4) Utility gloves may be decontaminated for re-use if the integrity of the glove is not compromised. However, they must be discarded if they are cracked, peeling, torn, punctured, or exhibit other signs of deterioration or when their ability to function as a barrier is compromised. The employee should be trained in proper techniques of checking for punctures, tears, or other damage in the utility gloves.

d. Resuscitation devices

- 1) It is recommended that mouth-to-mouth resuscitation be minimized and used only in true emergency situations. Ventilation devices are required as PPE and must be readily accessible to employees who can reasonably be expected to resuscitate patients.
 - 2) The type of resuscitation device is not specific and should be chosen by the employer to be appropriate and protective in the situations normally encountered by the employees.
7. Housekeeping Employers must ensure that the worksite is maintained in a clean and sanitary condition. An appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed must be implemented. The term "worksite" refers to permanently fixed facilities and also covers temporary non-fixed workplaces such as ambulances, bloodmobiles, and temporary blood collection centers.

A list of disinfectants is available through the Environmental Protection Agency (EPA). It lists registered sterilants (representing the highest level of antimicrobial activity which destroys all viruses), tuberculocidal disinfectants (effective against tuberculosis bacteria and the specific viruses named on the product label as well as the hepatitis B virus), and antimicrobials with HIV efficacy claims. The disinfectant used must be listed as "tuberculocidal" at a minimum, to protect against both HIV and HBV. A solution of household bleach (containing 5 percent sodium hypo chlorite) and water (1 part bleach 10 parts water to 1 part bleach 100 parts water) is tuberculocidal and is an effective disinfectant when bleach can be used.

a. Work Surfaces

- 1) All equipment and environmental and working surfaces must be cleaned and decontaminated after contact with blood or other potentially infectious materials. The Center for Disease Control States that the HBV can survive for at least one week in dried blood on work surfaces or on contaminated needles and instruments.
- 2) Contaminated work surfaces must be decontaminated with an appropriate disinfectant:
 1. After completion of procedures;
 2. Immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and
 3. At the end of the work shift if the surface may have become contaminated since the last cleaning.
- 3) The appropriate disinfectant may vary depending on the surface and the extent of contamination. In laboratories, workers who perform multiple procedures are required only to disinfect at the end of the group of procedures, when there is visible contamination, or when leaving the worksite.
- 4) Protective work coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, must be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the work shift if they may have been contaminated since the last cleaning.
- 5) All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated must be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

b. Broken Glassware and Sharps

- 1) Broken glassware which may be contaminated may not be picked up directly with the hands. It must be cleaned up using mechanical means, such as a brush and dustpan, tongs, or forceps.
- 2) Reusable sharps that are contaminated with blood or other potentially infectious materials must not be stored or processed in a manner that requires employees to reach by hand into the containers where they have been stored. Employers must not allow any employee to reach into a container, which may contain contaminated sharps at any time. While removal of gross contamination may be necessary prior to disinfections, a means must be devised that will allow the employee responsible to do so in a safe manner.
- 3) In some cases sharps containers cannot be left in the area where they are used (prisons or psychiatric wards for example). In these cases sharps containers can be locked onto carts to transport medications and taken from one area to another. Such containers must meet all the requirements for regular sharp containers.

c. Regulated Waste

- 1) Regulated waste for the purposes of this standard refers to the following categories of waste:
 1. Liquid or semi-liquid blood or other potentially infectious materials;
 2. An item contaminated with blood or other potentially infectious materials, which would release these substances in a liquid or semi liquid state if the item is compressed;
 3. Items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling;
 4. Contaminated sharps; and
 5. Pathological and microbiological wastes containing blood or other potentially infectious materials.
- 2) Contaminated sharps must be discarded immediately or as soon as feasible in containers that are:
 1. Closable;
 2. Puncture resistant;
 3. Leak proof on sides and bottom; and

4. Labeled or color-coded in accordance with the standard.
- 3) Self-sheathing needles are considered to be sharps and must be disposed of in a sharps container. During use, containers for contaminated sharps must be:
 1. Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found for example, in laundries;
 2. Maintained upright throughout use; and
 3. Replaced routinely and not be allowed to overfill.
- 4) Sharps containers are to be replaced on a schedule that is frequent enough to prevent overfilling, and the schedule must be specified in the exposure control plan.
- 5) When moving containers of contaminated sharps from the area of use, the containers must be:
 1. Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping. Also duct tape may be used to secure a sharps container lid, but cannot be used in place of one
 2. Placed in a second container if leakage is possible. The container must be closable; constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and labeled in accordance with the standard.
- 6) Other contaminated waste must be placed in containers, which are:
 1. Closable;
 2. Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport, or shipping;
 3. Labeled in accordance with the standard; and
 4. Closed prior to removal.
- 7) If outside contamination of the container occurs, it must be placed in a second container that also meets the above criteria. Contaminated waste may be held until such time as sufficient quantity is accumulated to be disposed of, but it must be stored in a container, which will prevent leakage during the holding period.
- 8) The Disposal of regulated waste must be in accordance with applicable regulations of the local, state, and federal governments.

3. Laundry

Contaminated laundry must:

- 1) Be handled as little as possible with a minimum of agitation;
- 2) Be bagged and containerized at the location where it was used and must not be sorted or rinsed in the location of use;
- 3) Be labeled and/or color-coded in accordance with the standard unless universal precautions are taken in handling all laundry, in which case alternative color-coding is acceptable;
- 4) Be labeled or color-coded if set outside the premises, unless a laundry using universal precautions is employed; and
- 5) If wet or likely to soak through the usual laundry bag or container, be placed and transported in bags or containers which prevent soak through and or leakage of fluids to the exterior.

The employer must ensure that employees who have contact with contaminated laundry wear gloves and other appropriate PPE.

E. Hepatitis B Vaccination and Post-Exposure Evaluation and Follow up:

1. The employer must make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow up to all employees who have had an exposure incident. The employer must ensure that an accredited laboratory at no cost to the employee conducts all laboratory tests. The employer must ensure that all medical evaluations and procedures including prophylaxis are:
 - a. Made available at no cost to the employee;
 - b. Made available to the employee at reasonable time and place;
 - c. Performed under the supervision of a licensed physician or by or under the supervision of another licensed health care professional; and
 - d. Provided according to the recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place.
2. Hepatitis B Vaccination
 - a. Hepatitis B vaccination against the hepatitis B virus must be offered to all employees with reasonable anticipated exposure, regardless of the frequency of exposure. This must take place after the training described in part f and within 10 working days of initial assignment in a covered job description. The vaccination must be provided at no cost to the employee unless:
 - 1) The employee has previously received the complete hepatitis B series;

- 2) Antibody testing reveals that the employee is immune;
- 3) Medical reasons prevent taking the vaccinations.

- b. An employee may refuse the vaccination, but if he or she does so, the employer must document the refusal by having the employee sign the declination form required by the standard. Employers must make available the vaccination to those employees who initially decline the vaccination but at a later date while still covered under the standard decide to accept the vaccination. See Attachment A.

If routine booster dose(s) of hepatitis B vaccine is recommended by the U.S. Public Health Service at a future date, such boosters shall be made available:

- 1) At no extra cost to the employee;
- 2) At a reasonable time and place;
- 3) Under the supervision of a licensed physician or other licensed health care professional.

3. Post-Exposure and Follow up

Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow up, including at least the following elements:

- a. Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred.
- b. Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law.
 - 1) The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity.
 - 2) When the source individual is already known to be infected with HBV or HIV testing for the source individual's known HBV or HIV status need not be repeated.
 - 3) Results of the source individual's testing shall be made available to the exposed employee, and the employee shall be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.
- c. Collection and testing of blood for HBV and HIV serological status:
 - 1) The exposed employee's blood shall be collected as soon as feasible and tested after consent is obtained.
 - 2) If the employee consents to baseline blood collection, but does not give consent at that time for HIV serologic testing, the sample shall be preserved for at least 90 days. If, within 90 days of the exposure incident,

the employee elects to have the baseline sample tested, such testing shall be done as soon as feasible.

- d. Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service:
 - 1) Counseling; and
 - 2) Evaluation of reported illness.
- e. The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation. The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:
 - 1) A copy of the regulation;
 - 2) A description of the exposed employee's duties as they relate to the exposure incident;
 - 3) Documentation of the route(s) of exposure and circumstances under which exposure occurred.
 - 4) Results of the source individual's blood testing, if available; and
 - 5) All medical records relevant to the appropriate treatment of the employee including vaccination status, which are the employer's responsibility to maintain.
- f. The employer shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.
 - 1) The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.
 - 2) The healthcare professional's written opinion for post-exposure evaluation and follow up shall be limited to the following information:
 - a. The employee has been informed of the results of the evaluation;
 - b. The employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials, which require further evaluation or treatment.
 - 3) All other findings or diagnoses shall remain confidential and shall not be included in the written report.

- 4) HIV and HBV Research Laboratories and Production facilities includes special requirements for these facilities.
- 5) Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up includes requirements for those portions of the standard which a "Physician or other License Health Care Professional" oversees which must be provided at no cost to an employee.
- 6) Communication of hazards to employees includes mandatory labels and signs and information and training requirements.
- 7) Record keeping requirements includes medical records, training records, and storage requirements.
- 8) A Declination Form must be signed by any employee electing not to receive the hepatitis B vaccine.

F. Communication of Hazards to Employees

1. Labels

- a. Warning labels shall be affixed to containers of regulated waste, refrigerators and freezers containing blood or other potentially infectious materials.
- b. Labels shall include the BIOHAZARD symbol.
- c. These labels shall be florescent orange or orange-red with lettering or symbols in the contrasting color.
- d. Labels shall be affixed as close as possible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.
- e. Red bags or red containers may be substituted for labels.
- f. Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements.
- g. Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempt from the labeling requirement.
- h. Labels required for contaminated equipment shall be in accordance with these requirements and shall also state which portion of the equipment remains contaminated.
- i. Regulated waste that has been decontaminated need not be labeled or color-coded.

2. Signs

- a. The employer shall post signs at the entrance to the work areas in HIV and HBV Research Laboratory and Production Facilities shall bear the following legend:
 - 1) BIOHAZARD and the Biohazard symbol
 - 2) Name of the Infectious Agent
 - 3) Special requirements for entering the area
 - 4) Name, telephone number of the laboratory director or other responsible person
- b. These signs shall be florescent orange or predominantly so with contrasting lettering and symbols.

3. Information and Training

- a. All employees with occupational exposure shall participate in a training program, which must be provided at no cost to the employee and during working hours.
- b. Training must be provided at the time of the initial assignment to tasks where occupational exposure may take place.
- c. Training must take place within 90 days after the effective date of the standard.
- d. Training must take place annually thereafter.

G. Record keeping

1. Medical

- a. The employer shall establish and maintain an accurate record for each employee with occupational exposure.
- b. The record shall include:
 - 1) The name and social security number of the employee
 - 2) A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccinations.
 - 3) A copy of all results of examinations, medical testing, and follow-up procedures
 - 4) The employer's copy of the healthcare professional's written opinion
 - 5) A copy of the information provided to the healthcare professional
- c. The employer shall ensure that employee medical record are kept confidential and are not disclosed without the employee's expressed written consent.

2. Training Records

- a. Training records shall include:
 - 1) Dates of training sessions
 - 2) Contents or summary
 - 3) The names and qualifications of persons conducting the training
 - 4) The names and job titles of all persons attending the training sessions
 - 5) The training records shall be maintained for 3 years from the date on which the training occurred
- b. All records shall be made available upon request to the Assistant Secretary and the Director for examination and copying.
- c. If the employer ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, the employer shall notify the Director, at least three months prior to their disposal and transmit them to the Director to do so within the three-month period.

ATTACHMENT A

HEPATITIS B VACCINE DECLINATION
(MANDATORY)

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

Name (printed or typed)

Date

Signature

BIG SOLUTIONS CONCRETE
SCAFFOLDS
STANDARD OPERATING PROCEDURES

I. POLICY

It is the policy of Big Solutions Concrete to provide a safe work place for all employees. This is primarily achieved by the prevention of accidents and incidents, which could impact health and safety.

The Safety director will have the overall responsibility for coordinating this program for the COMPANY.

II. PURPOSE

The Scaffolds regulation has been adopted by Federal and State OSHA and implemented to prevent injuries from improper scaffolding. Further, this regulation requires that the employer train and designate a competent person who will be responsible for the design, construction and dismantling of all scaffolds.

III. APPLICATION

This regulation applies to all scaffolds.

IV. REFERENCE

Federal and (STATE) Occupational Safety and Health Act Standard 29 CFR 1926.450 through .454 and accompanying appendices, Sub-part M.

V. PROCEDURE

A company designation competent person will be responsible for implementing the Scaffolds Program for each worksite; enforcing the program and ensuring compliance with this procedure; and, monitoring for compliance with this procedure.

Scaffolds will be designed, built, and inspected by competent persons. Inadequate scaffolding is responsible for many workplace incidents. To avoid the use of makeshift platforms, each application will be carefully planned to ensure that scaffolding is used where required and that such scaffolding conforms to the applicable scaffolding erection requirements.

A. General Requirements

1. All scaffolds will be inspected by a company designated competent person at the beginning of each shift prior to use. BIG SOLUTIONS CONCRETE uses a two tag system if the scaffold is not built by BIG SOLUTIONS CONCRETE personnel. This means that the scaffold must have an erectors tag if not erected by BIG SOLUTIONS CONCRETE personnel, and a BIG SOLUTIONS CONCRETE inspection tag with the following information before it is used: 1) current date; 2) the duty rating of the scaffold; 3) a list of unfinished components; 3) name of the inspector; 4) an on site telephone number.
2. Scaffold planks should be of sound material. All scaffold planks should be inspected by the Competent Person. Planks that do not pass inspection will not be

used, they will be tagged out of service and removed from the job site before the end of the shift.

3. All scaffolding will have solid supports and will be securely braced and fastened.
4. When working platforms and scaffolding are ten feet or more above ground, railings will be provided and three-inch toeboard placed where needed.
5. Safe means will be provided for reaching working levels.
6. Lean-to scaffolds and makeshift platforms are prohibited.
7. Scaffolds will not be used for the storage of material except material for immediate use. Materials will only be placed over cross members.
8. All scaffolds will be adequately designed to carry, without failure, four times the maximum intended load. At no time will scaffold be overloaded.
9. All scaffolds must be maintained in safe condition and scaffolds damaged or weakened, from any cause, will be tagged and replaced immediately.
10. Scaffolding or staging more than six feet above the ground or floor, suspended from an overhead support, or erected with stationary supports, and mobile scaffolds must have standard guardrails and toe boards properly attached.
11. Guardrails will be two inches by four inches or the equivalent and approximately 42 inches high with a mid-rail. Supports will be at intervals not to exceed eight feet. Toe boards will be minimum of eight inches in height. Planking will be cleated or otherwise secured to prevent displacement. All platforms will be the complete width of the scaffold being erected. Scaffolds will be braced and tied off both horizontally and vertically at intervals specified in the pertinent regulations.
12. Scaffolding with any dimension of less than 45 inches will be equipped with outriggers, and guarded with standard railing at a height of four feet.
13. The Six Foot Fall Protection requirement will be followed without exception while erecting, dismantling or altering scaffolding, and while on scaffolding not meeting guarding requirements.
14. Erectors will use fall protection while erecting, dismantling or altering scaffolding. The 100% tie-off rule will be followed at all times.
15. ALL scaffolding will be equipped with a ladder for access to the work platform and all work platform guarding will be equipped with an inward-opening, self-closing gate to ensure easy and safe entry onto the work platform where feasible.
16. Each scaffold will be erected under the supervision of a competent person, and a scaffolding checklist will be completed and attached to each scaffold prior to its use. Only competent persons are to fill out and attach checklists. Scaffold erectors

will be properly trained in erection and dismantling of the specified type scaffold being utilized.

B. Mobile scaffolds (See illustration in Appendix)

1. Mobile scaffolds will be equipped with outriggers and all casters will be locked.
2. Mobile scaffolds will be guarded with standard railing regardless of height.
3. No mobile scaffolds will be constructed or used where there is a change of elevation in the floor level.
4. No employee will be transported or moved on a mobile scaffold.
5. Mobile scaffolds will be braced to square and align members.
 - a. Shall be plumb, level, and square
 - b. All brace connections shall be secured
6. Lock canisters, wheels, and pin/secure stems in legs.
7. Do not extend platforms beyond base supports unless outrigger frames/devices are used for stability.
8. Use screw jacks or equivalent to level.

C. Fabricated Frame Scaffolds (See illustration in Appendix)

1. Do not move platform to next level until new end frames are set and braced.
2. Brace frames and panels to secure vertical members.
 - a. Cross braces such length to automatically square and align vertical members
 - b. Secure all brace connections
 - c. Vertically joined by coupling or stacking pins or equivalent; locked by pins or equivalent where uplift can occur
3. Scaffolds greater than 125 feet must be designed by registered Professional Engineer.

D. Tube and Coupler Scaffolds (See illustration in Appendix)

1. Cross brace (X) scaffold ends (width) every third set of posts horizontally and every fourth level up.
2. Diagonally brace scaffold at 45° angle.
 - a. Interlock bracing end to end, as scaffold rises

- b. If scaffold length is greater than its height, repeat diagonal bracing every fifth post
 - c. If scaffold length is less than its height, zig-zag bracing to top
3. Install bracing as close as possible to intersection of bearer/runner and post.
 4. Extend bearers beyond posts and runners.
 5. Install runners along length of scaffold, on both inside and outside posts at level heights.
 6. Interlock runners to form continuous lengths, and couple to each post.
 7. Do not move platforms to next level until new bearers are set and braced.
 8. Locate bottom runners and bearers close to base.
 9. Couplers shall be made of structural metal (e.g. drop forged steel, malleable iron, or structural aluminum); use of gray cast iron for couplers is prohibited.
 10. Scaffolds greater than 125 feet high must be designed by a registered professional engineer.

E. Ladder Jack Scaffolds (See illustration in Appendix)

1. Shall not exceed 20 feet.
2. Cannot use job-made ladders.
3. Shall bear on side rails AND ladder rails.
* If bearing on rungs only, bearing area shall include a length at least 10 inches on each rung
4. Ladders shall be secured to prevent slipping.
5. Platforms shall not be bridged one to another.

F. Training Requirements

1. All employees will be trained in the use of scaffolding in accordance with OSHA, the manufacturer, the Scaffold Association and this Standard's rules, regulations and requirements.
2. Employees who work on scaffolds must be trained:
 - a. By a qualified and component person
 - b. In hazards of electricity, falls and falling objects.
 - c. How to deal with above hazards
 - d. Use of scaffold and handling of materials on scaffold
 - e. On maximum intended load and load-carrying capacity
 - f. Other pertinent areas of standard

2. Employees who erect, dismantle, move, repair, maintain or inspect must be trained:
 - a. By Competent Person
 - b. In same areas as employees who work on scaffold
 - c. Procedures for erecting, dismantling, etc., scaffold
 - d. Design criteria

BIG SOLUTIONS CONCRETE

PERSONAL PROTECTIVE EQUIPMENT (PPE) PROGRAM

I. POLICY

Big Solutions Concrete is firmly committed to provide each of its employees with a safe and healthy work environment. It is a matter of company policy, as well as an important public program under Federal/State OSHA. BIG SOLUTIONS CONCRETE has implemented this Personal Protective Equipment Program as outlined herein.

The Safety director will have the overall responsibility for coordinating the program.

II. PURPOSE

The purpose of a Personal Protective Equipment (PPE) Program is to document the hazard assessment, the measures in place and PPE in use at this company. An effective PPE program should include recognizing, evaluating, and controlling hazards. The best way to eliminate hazards is through engineering controls and other administrative controls incorporating sound work practices to provide employee safety and health in the workplace.

There are hazards, which can be addressed only by the use of Personal Protective Equipment. This policy has been designed and implemented to provide procedures for determining and clarifying the use of PPE in reducing or eliminating certain identified hazards by individual job assessment.

III. APPLICATION

This regulation applies to all activities, which require the use of PPE, and to the proper selection, training, and care of all PPE where company or individually owned.

IV. REFERENCE

Federal and (STATE) Occupational Safety and Health Act-Standard 29 CFR 1910.132 to 1910.138.

V. PROCEDURE

A. Hazard Assessment

To evaluate the need for PPE the following steps are taken every two years:

1. The Safety director will conduct a walk-through survey of workplace areas where hazards may exist. The purpose of the survey is to identify sources of hazards to employees. Consideration is given to the basic hazard categories: Heat Penetration, Harmful Dust, Compression (roll over), Light (optical), radiation, and Chemical.

During the walk-through survey the Safety director observes and records the following possible hazards on the Attachment 1 form:

- a. Sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;

- b. Sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;
 - c. Types of chemical exposures;
 - d. Sources of respirable harmful dust;
 - e. Sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;
 - f. Sources of falling object or potential for dropping objects;
 - g. Sources of sharp objects, which might pierce the feet, cut the hands or otherwise lacerate the body or its extremities;
 - h. Sources of rolling or pinching objects, which could crush the toes, hands, or arms;
 - i. Layout of workplace and location of co-workers;
 - j. Any electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas;
 - k. Sources of noise;
 - l. Fall hazards for any work performed over four feet in elevation;
 - m. Repetitive motions that can result in ergonomic disorders; and
 - n. Any other hazards.
2. Following the walk-through survey, the Safety director will organize the data and information for use in the assessment of hazards. The objective is to analyze the hazards to enable proper selection of protective equipment for each assigned job task or classification.
 3. An estimate of the potential for injuries will be made. Each of the basic hazards will be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the performance of each job task or classification.
 4. The Safety director will document the hazard assessment with a written certification that identifies the workplace evaluated, the person certifying that the evaluation has been performed, the date(s) of the hazard assessment, and that the document is a certification of hazard assessment.

B. Selection Guidelines

After completion of the hazard assessment, the general procedure for selection of protective equipment will be to:

1. Become familiar with the potential hazards and the type of protective equipment (PPE) that is available, and what it can do;
2. Compare the hazards associated with the environment;
3. Select the best available PPE, which ensures a level of protection greater than the minimum required to protect employees from the hazards;
4. Fit the user with the proper, comfortable, well-fitting protective devices and give instruction on care and use of the PPE. It is very important that the users are aware of all warning labels and limitations of their PPE.
5. It is the responsibility of the supervisor to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE. This reassessment will take place at least every six months.
6. Input to be considered in the reassessment include:
 - a. An analysis of past accidents and illnesses
 - b. Exposure levels as indicated by Industrial Hygiene Survey
 - c. Results of recent Hazard Assessments
 - d. Changes in work or shift schedules
 - e. Records of PPE training and fitting
 - f. Employee recommendations for program improvement and modification
 - g. Engineering methods to be implemented to eliminate the use of certain type(s) of PPE

C. Employee Training

1. The Safety director provides training for each employee who is required to use personal protective equipment. Training includes:
 - a. When PPE is necessary
 - b. What type PPE is necessary
 - c. How PPE is worn
 - d. What are limitations of PPE
 - e. Know proper care, maintenance, useful life, and disposal of assigned PPE
2. Employees must demonstrate an understanding of the training and the ability to use PPE properly, before they are allowed to perform work requiring the use of PPE.
3. Employees shall not perform work without donning appropriate PPE to protect them from the hazards they will encounter in the course of their assigned work task.
4. If the supervisor has reason to believe an employee who has already been trained does not have the understanding or skill required. The employee will be retrained. Circumstances where retraining may be required include changes in the workplace or changes in the types of PPE to be used which would render previous training obsolete.

Also, inadequacies in an affected employee's knowledge or use of the assigned PPE indicate that the employee has not retained the necessary understanding or skills.

5. The supervisor will certify in writing that the employee has received and understands the PPE training.

D. Cleaning and Maintenance

It is important that all PPE be kept clean and properly maintained by the employee to whom it is assigned or owns the equipment. Cleaning is particularly important for eye, face and respiratory protection where vision could be impaired and respiratory or skin diseases could be spread. PPE is to be inspected, cleaned, and maintained by employees at regular intervals as part of their normal job duties so that the PPE provides the requisite protection. Supervisors are responsible for ensuring compliance with cleaning responsibilities by employees.

For PPE in general use, the responsible supervisor is accountable for cleaning and maintenance. If the piece of PPE is in need of cleaning, repair or replacement, it is the responsibility of the employee who identifies the problem to bring it to the immediate attention of his or her supervisor or superintendent. It is against work rules to use a piece of PPE equipment that is in disrepair or not able to perform its intended function.

It is important that contaminated PPE, which cannot be cleaned or repaired, is disposed of in a manner that protects employees from exposure to hazards.

E. PPE - Specific Information

The specific PPE requirement for each department job task can be found in Attachment 2. Special information on specific PPE can be found below.

1. Eye and Face Protection
 - a. Describe the type of eye protection PPE to be routinely worn
 - b. Indicate how safety glasses, prescription and non-prescription, will be issued
 - c. Define how the company will compensate for safety glasses
 - d. Note specific PPE such as face shields, goggles and when such equipment is to be used
 - e. For welding and other light intense operations, describe the type of eye and face protection to be worn
2. Foot Protection
 - a. Describe the type of foot protection to be routinely worn
 - b. Indicate how safety shoes will be issued
 - c. Define how the company will compensate for safety shoes
3. Other Personal Protective Equipment
 - a. Describe any other personal protective equipment to be routinely worn
 - b. Indicate how this PPE will be issued

**ATTACHMENT 1
PERSONAL PROTECTIVE EQUIPMENT
ASSESSMENT AND SELECTION FORM**

BIG SOLUTIONS CONCRETE **DATE** _____
FACILITY LOCATION **ASSESSOR(S)** _____

**1. Survey (Survey a specific facility, department, work area or job for the listed hazards)
Ambient Hazards**

AREA (1) SURVEYED Noise Heat Flying Objects Dust Mist Drowning
 Light, radiation Electrical Compression Chemicals Impact Penetration

a.
b.
c.
d.
e.
f.

(1) Indicate the specific facility, department, work area or job that was surveyed for PPE requirements

II. PPE Requirements (Preliminary) - For each area surveyed. List the recommended PPE

AREA SURVEYED	PPE REQUIREMENTS
a.	
b.	
c.	
d.	
e.	
f.	

NOTES:

**BIG SOLUTIONS CONCRETE
PERSONAL PROTECTIVE EQUIPMENT
FACILITY: _____
DATE: _____**

ATTACHMENT 2 PERSONAL PROTECTIVE EQUIPMENT

DEPT.1
DEPT.6

DEPT 2
DEPT.7

DEPT.3
DEPT.8

DEPT.4

DEPT.5

SAFETY SHOES (1)

SAFETY GLASSES/SIDE SHIELDS (1)

HEARING PROTECTION (2)

RESPIRATORS (3)

DUST MASK (4)

GLOVES (5)

WELDING EQUIPMENT (6)

CLOTHING (7)

BACK BRACES (8)

- (1) Safety Shoes and Safety Glasses with Side Shields are required for all noted operations and maintenance departments
- (2) Hearing Protection is required in select, posted areas
- (3) Respirators are required in the Painting Booth, other Painting area and at specific jobs. See the PPE Safety policy for the specific type of respirator to be worn in each area.
- (4) Dust Masks should be worn during operations such as cutting, grinding, other that may create irritating dust.
- (5) Gloves should be worn to protect the hands in many job tasks. See the PPE policy for more specific information on gloves.
- (6) Welding equipment consists of welding shoes, hoods and related PPE to protect the welder. Also, screens must in place to protect other employees.
- (7) Besides welding, protective clothing is to be worn when working with or around hazardous materials.
- (8) Back braces are optional for all employees.

BIG SOLUTIONS CONCRETE

FALL PROTECTION PROGRAM

I. POLICY

It is the policy of Big Solutions Concrete to provide a safe work place for all employees. This is primarily achieved by the prevention of accidents and incidents, which could impact health and safety. The Supervisor will have the overall responsibility for coordinating this program for Big Solutions Concrete.

II. PURPOSE

This Fall Protection regulation has been adopted by Federal and (STATE) OSHA and implemented to prevent injuries associated with falls from above the ground or work level heights. Further, the regulation requires information regarding fall hazards be communicated to employees through training which includes the use of conventional and non-conventional fall protection.

III. APPLICATION

- A. This regulation applies to all employees who must perform any routine work duties six feet or more above ground level or any other lower level.

- B. This regulation does not apply to employees making an inspection, investigation, or assessment of work place conditions prior to start of construction or after construction work has been completed. It also does not apply directly to employees working in the following areas, which have their own specific requirements:
 - 1. on scaffolds;
 - 2. on certain cranes and derricks;
 - 3. steel erection work in buildings;
 - 4. in tunneling operations;
 - 5. construction of electric transmission and distribution lines and equipment; or,
 - 6. on stairways and ladders.

IV. REFERENCE

Federal and (STATE) Occupational Safety and Health Act Standard 29 CFR 1926.500 through .503 and accompanying appendices, Sub-part M.

V. PROCEDURE

A. Responsibility

The Supervisor or Site Safety will be responsible for implementing the Fall Protection Program, enforcing the program, and ensuring compliance with this procedure, and monitoring for compliance with this procedure.

Big Solutions Concrete is responsible for determining the feasibility of providing fall protection for its employees in each of the following situations:

- 1. Walking and work surfaces;

2. Unprotected sides and edges;
3. Leading edges;
4. Hoist areas;
5. Holes;
6. Form work and reinforcing steel;
7. Ramps, runways, other walkways;
8. Excavations;
9. Dangerous equipment;
10. Overhand bricklaying and related work;
11. Roofing;
12. Pre-cast concrete erection;
13. Residential construction;
14. Wall openings;
15. Walking/working surfaces not otherwise addressed; and,
16. Protection from falling objects.

In general, the height at which protection is required is six feet.

Where Big Solutions Concrete can demonstrate that it is not feasible, or creates a greater hazard, to use a guardrail, safety net, or personal fall arrest system, Big Solutions Concrete will develop and implement a fall protection plan in accordance with 29 CFR 1926.502(k). It is presumed, however, that it is normally feasible and will not create a greater hazard to implement at least one of the normal fall protection systems.

When fall protection equipment cannot be used, Big Solutions Concrete will provide a safety monitor to observe the work at all times.

B. Fall Protection Systems Requirements

Specific guidelines for each available system are as follows:

1. Guardrail Systems

- a. Height of top edge of tip rails: 42 inches +/- three inches above working level.
- b. Midrails, screens, or mesh: installed between top edge of guardrail and working surface and when there is no wall at least 21 inches high.
- c. Guardrail systems, midrails, screens, mesh and equivalent structures must be able to withstand a force of at least 200 pounds.

3. Safety Net Systems

Safety Net Systems must:

- a. Be installed no more than 30 feet below working surface
- b. Extend out from the work surface:

Distance from Working level to Net	Length Net Must Extend From the Edge of the Working Surface
Up to 5 feet	8 Feet
5 to 10 feet	10 Feet
More than 10 feet	13 Feet

- c. Be drop-tested before use, whenever relocated or repaired, and at six month intervals.
- d. Be inspected at least once a week for wear, damage, and deterioration.

4. **Personal Fall Arrest Systems**

Consists of anchorage, connectors, body belt or harness, may include lanyard, deceleration device, lifeline, or suitable combinations of these.

- a. Body belts (no longer acceptable as part of a personal fall arrest system) must be replaced by full body harness.
- b. Double-locking snap hooks must be used.
- c. Requirements for connectors used in fall arrest systems are:
 - 1) D-rings and snap hooks: Minimum tensile strength of 5,000 pounds.
 - 2) Lanyards and vertical lifelines: Minimum-breaking strength of 5,000 pounds.
- d. Each employee will be attached to a vertical lifeline capable of supporting 5000 pounds.
- e. Personal fall arrest systems must limit force on employee and limit free fall distance to six feet.
- f. Personal fall arrest systems must be inspected prior to each use.
- g. Personal fall arrest systems must not be attached to guardrail or to hoists.

5. **Positioning Device Systems**

Body belt or harness system rigged to allow an employee to be supported on an elevated vertical surface and work with both hands free while leaning.

- a. System must not allow the employee to free fall more than two feet.
- b. The system must be secured to an anchorage capable of supporting twice the potential impact of employee's fall or 3,000 pounds, whichever is greater.

- c. System must be inspected before each use for wear, damage, and deterioration.
- d. System must never be used to hoist materials.
- e. Double locking snap hooks are required.

5. Warning Line Systems

Flags or other markers set up to warn employees they are approaching the edge of a work surface where a fall hazard is present.

- a. Warning line systems must be set up around all sides of a roof work area.
- b. Requirements for roof edges and mechanical equipment:
 - 1) Must be made of ropes, wires, or chains, and supporting stanchions.
 - 2) Must be flagged at intervals of every six feet or less.
 - 3) Must have a minimum tensile strength of 500 pounds.
 - 4) Stanchions must resist force of at least 16 pounds.
- c. No employee is allowed in the area between a roof edge and a warning line unless doing roofing work in that area.

6. Controlled Access Zone

Certain work may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems, and in which access to the zone is controlled.

- a. Controlled access zones must be marked off by a control line or other means of restricting access.
- b. Controlled access zones must be flagged every six feet.
- c. Each control line must have a minimum breaking strength of 200 pounds.
- d. Control lines must be set up at least six feet and not more than 25 feet from unprotected or leading edges.
- e. In areas where bricklaying work is being performed, a controlled access zone must be marked off by a control line at least ten feet and no more than fifteen feet from the working edge. Only employees engaged in overhand bricklaying will be permitted in a controlled access zone.

7. Safety Monitoring Systems

A designated competent person (or safety monitor) is responsible for identifying fall hazards and warning employees of the hazards.

The safety monitor will be designated by the Company and will:

- a. Be competent to identify fall hazards
- b. Warn all employees of a fall hazard
- c. Be on the same surface and within the sight of employees being monitored.
- d. Be close enough to be heard by the employee(s); and,
- e. Not have other responsibilities.

No employee will be allowed in an area where an employee is protected by a safety monitoring system, other than the specific employees working on low-sloped roofs, or covered by a fall protection plan.

8. Covers

- a. Covers will be capable of supporting twice the maximum axle load of the largest vehicle expected to cross over the cover.
- b. Covers not in vehicular aisles will be capable of supporting twice the weight of employees, equipment, and materials that may cross the cover.
- c. Covers should be secure from displacement by wind, equipment, or employees.
- d. Covers should be color-coded or marked with the word "Hole" or "Cover" to provide warning.

9. Protection From Falling Objects:

- a. Toeboards are to be erected along the edge of the overhead working surface at a distance great enough to protect employees below.
- b. Toeboards are to withstand a force of at least 50 pounds.
- c. All openings in guardrails are to be small enough to prevent falling objects from passing through.
- d. During bricklaying, only masonry and mortar may be stored within four feet of the working edge.
- e. During roofing work, materials and equipment may not be stored within six feet of a roof edge unless guardrails are erected.

C. Fall Protection Plan

1. The fall protection plan is an option available only when it is not possible, or creates a greater hazard, to use other fall protection equipment. The fall protection plan must include the following:
 - a. The plan must be prepared by a qualified and competent person and developed for a specific site. Changes must be approved by a qualified and competent person.
 - b. A copy of the plan must be kept at the job site.
 - c. A competent person must supervise implementation of the plan.
 - d. The plan must list where and why conventional fall protection systems will not work.
 - e. The plan must discuss measures that will be taken to reduce the fall hazard for workers not using conventional fall protection measures.
 - f. If an employee falls, the Company must investigate the incident to determine if changes need to be made to the plan, and if so, the Company must implement those changes.
2. Fall Protection Plans must be site-specific. A site-specific plan must be designed and implemented for each construction site with a hazard deemed to require a fall protection plan.
3. A competent person is one who is capable of identifying existing predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

A. Training Requirements

Big Solutions Concrete will provide training for each employee who might be exposed to fall hazards. The training will qualify employees to recognize fall hazards and to identify procedures to minimize the hazards.

- a. Training will be conducted by a competent person qualified in the following areas.
 - 1) The nature of fall hazards in the work area.
 - 2) Correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection system(s) to be used.
 - 3) The use and operation of guardrail systems, personal fall arrest systems, and any other fall protection to be used.

- 4) The role of each employee in the safety monitoring system.
 - 5) The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.
 - 6) The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.
 - 7) The role of employees in the fall protection plan.
 - 8) The contents and intent of standards applicable to fall protection.
- b. Written certification records are to be maintained. The latest training certification is to be maintained on file in the Home Office. Certification records are to contain:
- 1) The name of the employee trained.
 - 2) Identification of the employee trained.
 - 3) The dates of the training.
 - 4) The signature of the trainer, the employer, and the employee trained.
- c. Re-training will be conducted in the following instances:
- 1) Changes in the work place.
 - 2) Changes in the type of systems or equipment being used.
 - 3) Inadequacies, which are revealed through the employee's behavior.

BIG SOLUTIONS CONCRETE

CONFINED SPACE PROGRAM

I. POLICY

The policy of Big Solutions Concrete is to comply with the Occupational Safety and Health Administration's (OSHA's) permit Required Confined Spaces Standard 1910.146. This standard requires employers to enact operational procedures that will protect employees from the hazards of entry into confined spaces.

II. PURPOSE

The purpose of this procedure is to establish mandatory practices and procedures that will protect employees of BIG SOLUTIONS CONCRETE who in the course of their employment are periodically called upon to enter and perform work in confined spaces. These practices and procedures have been designed to eliminate the potential for injury and illness that are associated with entering and working in confined spaces.

III. APPLICATION

This policy applies to all Big Solutions Concrete personnel (permanent, temporary, part-time, volunteers and sub-contractors) who, in the performance of their duties for BIG SOLUTIONS CONCRETE, may be called upon to enter a confined space.

IV. REFERENCE

Federal and (STATE) Occupational Safety and Health Act-Standard 29 CFR 1910.146.

V. PROCEDURE

A. Survey of Confined Spaces

1. BIG SOLUTIONS CONCRETE will be responsible for an initial survey and annual resurvey of all potential confined spaces in the facilities by this procedure.
2. The survey will be conducted using the Confined Space Identification form shown as Attachment 1.
3. To identify confined spaces, each potential confined space will be compared to the requirements of the confined space regulation summarized in the following three questions:
 - a. Is the space large enough for bodily entry and performance of assigned work?
 - b. Is access, entry and exit, limited or restricted for the space?
 - c. Is the space not designed for continuous human occupancy?

If the response to the above three questions is YES, then the space is a confined space. If not, then the space is not a confined space as covered by this regulation.

4. If, in addition to a positive response to the above three questions, the space also has a Hazard Potential, the space is a Permit-Required Confined Space. A Hazard Potential can consist of one or more of the following items:
 - a. Contains, or has the potential to contain, a hazardous atmosphere
 - b. Contains a material than can engulf
 - c. Has a configuration that can entrap or asphyxiate
 - d. Has any other recognized hazards
5. All possible confined spaces should then be defined as either:
 - a. Not a confined space
 - b. A Confined Space, non-permit-required
 - c. A Permit-Required Confined Space

B. Labeling and Documentation

1. Once all Confined Spaces, permit-required and non-permit-required, are identified, a list will be developed and included in this procedure as shown in Attachment 2.
2. This list will be used as part of employee training (see page 6)
3. Each Permit-Required Confined Space will be identified in the field with a sign that reads, "DANGER - PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER".

C. Entry Procedures

1. All employees are to be advised of the hazard.
2. There will be no entry into a permit-required-confined space without the proper authorization and a permit signed by a designated entry supervisor. Other required permits (HOT WORK, LOCKOUT/TAGOUT) must be also obtained prior to entry.
3. The entry permit shall be available for inspection by authorized entrants prior to their entry into the space.
4. Prior to entering the confined space, atmospheric testing equipment will be used to test in the order given for: oxygen content, flammable gases and vapors, and toxic gases. If after testing, it is determined that the level of toxic or combustible gas is too high, or the oxygen level is too low, then ventilate and test the space again.
5. A designated/authorized attendant will always be on stand-by at the top of the space in order to monitor the authorized entrant's status and to maintain contact with the authorized entrant. The designated/authorized attendant will only be responsible for the confined space he is assigned to monitor. The authorized attendant will immediately

inform the authorized entrant of any changes or hazardous conditions in and around the confined space.

6. When entering a confined space, authorized entrants shall be attached to a mechanical retrieval system, unless the retrieval system would increase the overall risk of entry or would not contribute to the rescue of the authorized entrant. The retrieval system shall be attached to an authorized entrant by means of a chest or full body harness with a retrieval line attached at the center of the back near shoulder level or above the head.
7. Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or part of a continuous system (such as a sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized. If entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working.
8. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations.
9. Employees entering a confined space shall use the necessary safety equipment (gloves, safety glasses, safety shoes, hard hat, hearing protection, respiratory protection, as necessary, determined by the job's assessment for the use of PPE).
10. When the job is completed, all materials and tools shall be removed from the space and the entry to the space closed. The Entry Supervisor will cancel the permit upon completion of the work. This permit will be kept on file for a period of one year.

D. Rescue Procedures

1. In the event of an emergency, the authorized attendant shall not enter the confined space in order to rescue the authorized entrant(s). Instead, the attendant shall use a retrieval system to make a non-entry rescue.
2. If entry of the space is necessary in order to rescue the authorized entrant(s), the authorized attendant will immediately implement the rescue procedure specified on the Entry Permit which may include calling for help, notifying the Entry Supervisor and/or notifying the local Fire/Rescue Department of the emergency.
3. The local Fire/Rescue Department will be used when compressed air cylinder breathing apparatus, stretcher and first aid supplies are needed for rescue.

E. Contractor Management

1. In the event that BIG SOLUTIONS CONCRETE hires an outside contractor to perform in areas designated as permit required confined spaces, then the department/division employing the contractor shall:
 - a. Ensure that the contractor has provided his/her employees with the training necessary to safely enter confined spaces;

- b. Provide the contractor with a list of permit-required confined spaces and inform him/her that entry is allowed only with a permit as per the Confined Space Program;
 - c. Provide an explanation of the potential hazard(s) that make the space a permit-required confined space;
 - d. Explain precautions or procedures implemented by BIG SOLUTIONS CONCRETE to protect employees or non- employees working in or near permit-required-confined spaces;
 - e. Coordinate entry operations if BIG SOLUTIONS CONCRETE employees and contractor employees are simultaneously working in or near a permit-required confined space so that they do not endanger one another; and
 - f. Talk to the contractor after entry operations have been complete about the permit required confined space program and any hazards encountered during entry.
2. The supervisor will independently and periodically monitor contractor compliance with BIG SOLUTIONS CONCRETE procedures. Any problems will be identified and immediately corrected.

F. Equipment

1. Big Solutions Concrete is responsible for providing the following equipment in order to ensure the safe entry of confined spaces:
 - a. Testing and monitoring meter;
 - b. Ventilating equipment;
 - c. Personal protective equipment;
 - d. Communications equipment;
 - e. Barriers, lighting and retrieval/rescue equipment.
2. All equipment utilized shall be tested on a routine basis to ensure proper working conditions.

G. Responsibilities

1. The supervisors of the departments or divisions affected by this policy are responsible for ensuring that its provisions are carried out within their department or division.
2. The authorized entrant is responsible for carrying out the duties listed below:
 - a. Knowing the hazards that may be faced during entry into a confined space;
 - b. Properly using all safety equipment provided by the employer;

- c. Communicating with the attendant so that he/she can effectively monitor the situation within the space;
 - d. Alerting the attendant whenever an unacceptable condition arises within the space; and
 - e. Exiting from the space whenever ordered to do so by the attendant, or when an unacceptable condition exists within the space.
3. The authorized attendant is responsible for carrying out the duties listed below:
- a. Knowing the hazards that may be faced by entrants;
 - b. Being aware of how these hazards may affect the entrant's behavior;
 - c. Identifying and maintaining an accurate count of all entrants;
 - d. Remaining outside the space until relieved by another attendant;
 - e. Communicating with entrants in order to monitor their status and any need to evacuate the space;
 - f. Continuously monitoring activities inside and outside the space to determine if it is safe for entrants to remain in the space;
 - g. Summoning rescue and emergency services when he/she determines entrants may need assistance to escape;
 - h. Preventing unauthorized persons from approaching or entering space when an entry is underway;
 - i. Performing non-entry rescues as specified in the rescue procedure; and
 - j. Performing no other duties that might interfere with their duty to monitor and protect the entrants.
4. The Entry Supervisor is responsible for carrying out the duties listed below:
- a. Knowing the hazards that may be faced by entrants;
 - b. Checking the entry permit to ensure that all tests have been conducted and equipment is in place before signing the permit and allowing entry;
 - c. Terminating the permit when the work is completed or when a condition not allowed arises;
 - d. Verifying that rescue services are available and the means for summoning rescue is operable;

- e. Removing unauthorized persons who enter or attempt to enter the space during entry operations; and
 - f. Ensuring that entry operations follow permit terms and that acceptable entry conditions are maintained.
5. The Safety director shall be responsible for designating confined spaces and for designating qualified persons to act as entrants, attendants and entry supervisors.
 6. Any manholes on site shall be considered permit-required-confined spaces. In addition, all the areas on the list attached to this policy have been designated by the supervisor, as permit required confined spaces.
 7. The supervisor shall see that all permit-required-confined spaces, with the exception of manholes in the street, have a sign that warns employees of the danger. The signs should read "Danger-Permit-Required Confined Space, Do Not Enter" or other similar words that warn the employee of the danger.

H. Training

1. Employees shall be advised of the hazards associated with working in a confined space. Entry supervisors, attendants and entrants shall receive training covering the following subjects:
 - a. Recognition of hazards present within the space;
 - b. Use of atmospheric testing equipment for those authorized to perform atmospheric tests;
 - c. Use of tripod/retrieval system;
 - d. Control of potential sources of hazardous energy (i.e., electricity, water, hydraulic and others); and
 - e. Emergency rescue methods and procedures.
2. Employees shall not be assigned to duties involving confined space entry until they have received the proper training.
3. The local Fire/Rescue Department shall practice making confined space rescues at least once every 12 months, by means of simulated rescue operations by removing dummies, mannequins or actual persons from spaces or representative spaces.
4. All Fire/Rescue personnel will receive training in the recognition of hazards present within a confined space.
5. Employees affected by this policy shall receive refresher training on an annual basis.

6. Big Solutions Concrete shall certify that the employees affected by this policy have been properly trained by keeping a record that describes the information covered during training. A copy of the record of training shall be kept on file by the affected department/division. In addition to the description of the training session, the record shall include the following information: employee's names, dates of training, and signatures or initials of trainees.

I. Program Review

1. The permit-required confined space program of BIG SOLUTIONS CONCRETE will be audited by reviewing cancelled permits on an annual basis.
2. The program will also be reviewed whenever there is reason to believe that the program does not properly protect employees. Examples of circumstances requiring review are:
 - a. Unauthorized entry,
 - b. Detection of space hazard not covered,
 - c. Detection of unacceptable entry conditions,
 - d. Injury or near miss, and
 - e. Employee complaints about program effectiveness.
3. Entry permits shall be retained for a period of one year to facilitate the review required by this policy.

Big Solutions Concrete Confined Space Identification Form

Date: _____

Location: _____

Page__ of __

Description of Potential Confined Space

Large Enough? (1)

Access Limited? (2)

Not for Continuous Occupancy? (3)

Hazard Potential? (H/E/O) (4)

Confine Space Summary (Y/N?)

Confined Space?

Permit Required?

Can Vent?

NOTES:

Large Enough? Is the space large enough for bodily entry and performance of assigned work? (Y/N)

Access Limited? Is the entry/exit limited or restricted for the space? (Y/N)

Not for Continuous Occupancy? The space is not designed for continuous employee occupancy (Y/N)

H = Hazardous Environment, E = Engulf, Entrap, or Asphyxiate, 0 = Other Recognized Hazard

DETERMINATION OF CONFINED SPACE:

1. If the answer to the first three questions is YES, then the space in question is a Confined Space. If one or more answers are NO, then it is not a Confined Space.
2. In addition, if the answer to question 4 is also YES, then the space in question is a Permit-Required Confined Space
3. If the employee can demonstrate that the only hazard posed is a potential or actual hazardous atmosphere and that continuous forced airflow is sufficient alone to maintain safe entry, than an alternate permit entry procedure can be used. See details in Federal Register or other reference material

ATTACHMENT 2
LIST OF CONFINED SPACES

LOCATION AND DESCRIPTION	CONFINED SPACE (PERMIT?)

BIG SOLUTIONS CONCRETE

RESPIRATORY PROTECTION PROGRAM

I. POLICY

Big Solutions Concrete is firmly committed to providing each of its employees a safe and healthy work environment. It is a matter of company policy, as well as an important public program under Federal/State OSHA. BIG SOLUTIONS CONCRETE has implemented this Respiratory Protection Policy as outlined herein.

The Safety director will have the overall responsibility for coordinating the program.

II. PURPOSE

BIG SOLUTIONS CONCRETE has determined that employees in the asbestos departments are exposed to respiratory hazards during routine operations. These hazards include wood dust, particulates, and vapors, and in some cases represent immediately Dangerous to Life or Health (IDLH) conditions. The purpose of this program is to ensure that all BIG SOLUTIONS CONCRETE employees are protected from exposure to these respiratory hazards

Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense at BIG SOLUTIONS CONCRETE however, engineering controls have not always been feasible for some of our operations, or have not always completely controlled the identified hazards. In these situations, respirators and other protective equipment must be used. Respirators are also needed to protect employees' health during emergencies. The work processes requiring respirator use at BIG SOLUTIONS CONCRETE are outlined in Table I in the Scope and Application section of this program.

In addition, some employees have expressed a desire to wear respirators during certain operations that do not require respiratory protection. As a general policy, BIG SOLUTIONS CONCRETE will review each of these requests on a case-by-case basis. If the use of respiratory protection in a specific case will not jeopardize the health or safety of the worker(s), BIG SOLUTIONS CONCRETE will provide respirators for voluntary use. As outlined in the Scope and Application section of this program, voluntary respirator use is subject to certain requirements of this program.

III. APPLICATION

This program applies to all employees who are required to wear respirators during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance. All employees working in these areas and engaged in certain processes or tasks (as outlined in the table below) must be enrolled in the company's respiratory protection program.

In addition, any employee who voluntarily wears a respirator when a respirator is not required (i.e., in certain maintenance and coating operations) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program (1).

Employees participating in the respiratory protection program do so at no cost to them. The expense associated with training, medical evaluations and respiratory protection equipment will be born by the company.

- Evaluating the program; and
- Updating written program, as needed.

The Program Administrator for Company is the Safety director.

B. Supervisors

Supervisors are responsible for ensuring that the respiratory protection program is implemented in their particular areas. In addition to being knowledgeable about the program requirements for their own protection, supervisors must also ensure that the program is understood and followed by the employees under their charge. Duties of the supervisor include:

- Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing, and annual medical evaluation;
- Ensuring the availability of appropriate respirators and accessories;
- Being aware of tasks requiring the use of respiratory protection;
- Enforcing the proper use of respiratory protection when necessary;
- Ensuring that respirators are properly cleaned, maintained, and stored according to the respiratory protection plan;
- Ensuring that respirators fit well and do not cause discomfort;
- Continually monitoring work areas and operations to identify respiratory hazards; and
- Coordinating with the Safety director on how to address respiratory hazards or other concerns regarding the program.

C. Employees

Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained. Employees must also:

- Care for and maintain their respirators as instructed, and store them in a clean sanitary location;
- Inform their supervisor if the respirator no longer fits well, and request a new one that fits properly; and
- Inform their supervisor or the Program Administrator of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns that they have regarding the program.

VI. PROGRAM ELEMENTS

A. Selection Procedures

1. The Program Administrator will select respirators to be used onsite, based on the hazards to which workers are exposed and in accordance with all OSHA standards. The Program Administrator will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard evaluation will include:
 - Identification and development of a list of hazardous substances used in the workplace, by department, or work process;
 - Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
 - Exposure monitoring to quantify potential hazardous exposures.
2. The results of the current hazard evaluation are the following:
(Table 3 at the end of this program contains the sampling data that this section was based on.)

Department 1: Provide information on the engineering controls in this department (e.g., ventilation), the results of air monitoring tests and the PEL or TWA levels that must be met. Indicate the types of respirators that are being made available to the employees in this department as a result of the hazard analysis.

Department 2: Provide information on the engineering controls in this department (e.g., ventilation), the results of air monitoring tests and the PEL or TWA levels that must be met. Indicate the types of respirators that are being made available to the employees in this department as a result of the hazard analysis.

Department 3: Provide information on the engineering controls in this department (e.g., ventilation), the results of air monitoring tests and the PEL or TWA levels that must be met. Indicate the types of respirators that are being made available to the employees in this department as a result of the hazard analysis.

3. Maintenance: Because of potential IDLH conditions, employees must wear a pressure demand SAR during the performance of these task.

Employees may voluntarily wear (*dust mask*) when (*working with insulation*). Although exposure monitoring has shown that exposures are kept within PELs during these procedures, BIG SOLUTIONS CONCRETE will provide respirators to workers who are concerned about potential exposures.

B. Updating the Hazard Assessment

The Program Administrator must revise and update the hazard assessment as needed (i.e., any time work process changes may potentially affect exposure). If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact his or her supervisor or the Program Administrator. The Program Administrator will evaluate the potential hazard, arranging for outside assistance as necessary. The Program Administrator will then communicate the results of that assessment back to the employees. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

C. NIOSH Certification

All respirators must be certified by the National Institute for Occupational Safety and Health (NIOSH) and shall be used in accordance with the terms of that certification. Also, all filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label. The label must not be removed or defaced while it is in use.

D. Voluntary Respirator Use

BIG SOLUTIONS CONCRETE will provide respirators at no charge to employees for voluntary use for the following work processes:

1. Working with or around insulation
2. The Program Administrator will provide all employees who voluntarily choose to wear either of the above respirators with a copy of Appendix D of the standard. (Appendix D details the requirements for voluntary use of respirators by employees.) Employees choosing to wear a half face piece APR must comply with the procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.
3. The Program Administrator shall authorize voluntary use of respiratory protective equipment as requested by all other workers on a case-by-case basis, depending on specific workplace conditions and the results of the medical evaluations.

E. Medical Evaluation

1. Employees who are either required to wear respirators, or who choose to wear an APR voluntarily, must pass a medical exam before being permitted to wear a respirator on the job. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.
2. A licensed health care professional (PLHCP) at the Local Clinic, where all company medical services are provided, will provide the medical evaluations. Medical evaluation procedures are as follows:
 - a. The medical evaluation will be conducted using the questionnaire provided in Appendix C of the respiratory protection standard. The Program Administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.

- b. To the extent feasible, the company will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire). When this is not possible, the employee will be sent directly to the physician for medical evaluation.
- c. All affected employees will be given a copy of the medical questionnaire to fill out, along with a stamped and addressed envelope for mailing the questionnaire to the company physician. Employees will be permitted to fill out the questionnaire on company time.
- d. Follow-up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by the Local physician.
- e. All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- f. The Program Administrator has provided the Local physician with a copy of this program, a copy of the Respiratory Protection standard, the list of hazardous substances by work area, and for each employee requiring evaluation: his or her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required.
- g. Any employee required for medical reasons to wear a positive pressure air purifying respirator will be provided with a powered air purifying respirator.
- h. After an employee has received clearance and begun to wear his or her respirator, additional medical evaluations will be provided under the following circumstances:
 - 1) Employee reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing;
 - 2) The medical clinic physician or supervisor informs the Program Administrator that the employee needs to be reevaluated;
 - 3) Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation; and
 - 4) A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

All examinations and questionnaires are to remain confidential between the employee and the physician.

F. Fit Testing

1. Fit testing is required for employees wearing half-face piece APRs or full face SARs.

2. Employees who are required to wear respirators will be fit tested:
 - a. Prior to being allowed to wear any respirator with a tight fitting face piece.
 - b. Annually.
 - c. When there are changes in the employee's physical condition that could affect respiratory fit (e.g., obvious change in body weight, facial scarring, etc.).
3. Employees will have a pulmonary function exam and a physical exam and be fit tested with the make, model, and size of respirator that they will actually wear.
4. Employees will be provided with several models and sizes of respirators so that they may find an optimal fit. Fit testing of PAPRs is to be conducted in the negative pressure mode.
5. The Program Administrator will conduct fit tests following the OSHA approved Bitrex Solution Aerosol QLFR Protocol in Appendix B (B4) (or alternate approved method) of the Respiratory Protection standard.
6. The Program Administrator has determined that QNFT is not required for the respirators used under current conditions at BIG SOLUTIONS CONCRETE. If conditions affecting respirator use change, the Program Administrator will evaluate on a case-by-case basis whether QNFT is required.

G. Respirator Use

Respiratory protection is required for the following personnel:

TABLE 2: BIG SOLUTIONS CONCRETE Personnel in Respiratory Protection Program

	Name	Department	Job Description	Work Procedure	Respirator
	Employee 1				
	Employee 2				
	Employee 3				
	Employee 4				

1. General Use Procedures:
 - a. Employees will use their respirators under conditions specified by this program, and in accordance with the training they receive on the use of each particular model. In addition, the respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
 - b. All employees shall conduct 2 user seal checks each time that they wear their respirator. Employees shall use either the positive or negative pressure check

(depending on which test works best for them) specified in Appendix B-1 of the Respiratory Protection Standard.

- c. All employees shall be permitted to leave the work area to go to the locker room to maintain their respirator for the following reasons: to clean their respirator if the respirator is impeding their ability to work, change filters or cartridges, replace parts, or to inspect respirator if it stops functioning as intended. Employees should notify their supervisor before leaving the area.
- d. Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the face piece-to-face seal.

2. Emergency Procedures:

- a. The following work areas have been identified as having foreseeable emergencies:

List Areas

When the alarm sounds, employees in the affected department must immediately don their emergency escape respirator, shut down their process equipment, and exit the work area. All other employees must immediately evacuate the building. BIG SOLUTIONS CONCRETE Emergency Action Plan describes these procedures (including proper evacuation routes and rally points) in greater detail.

- b. Emergency escape respirators are located:

List Areas

Respiratory protection in these instances is for escape purposes only. Company employees are not trained as emergency responders, and are not authorized to act in such a manner.

H. Respirator Malfunction

APR Respirator Malfunction:

For any malfunction of an APR (e.g., such as breakthrough, face piece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

All workers wearing atmosphere-supplying respirators will work with a buddy. Buddies shall assist workers who experience an SAR malfunction as follows:

I. IDLH Procedures

The Program Administrator has identified the following area as presenting the potential for IDLH conditions:

List Areas and Processes

J. Air Quality

For supplied-air respirators, only Grade D breathing air shall be used in the cylinders. The Program Administrator will coordinate deliveries of compressed air with the company's vendor and certify that the air in the cylinders meets the specifications of Grade D breathing air.

The Program Administrator will maintain a minimum air supply of one fully charged replacement cylinder for each SAR unit. In addition, cylinders may be recharged as necessary from the breathing air cascade system located near the respirator storage area. The air for this system is provided by BIG SOLUTIONS CONCRETE supplier, and deliveries of new air are coordinated by the Program Administrator.

K. Cleaning, Maintenance, Change Schedules, Storage, and Defective Respirators

1. Cleaning

- a. Respirators are to be regularly cleaned and disinfected at the designated respirator cleaning station located in the employee locker room.
- b. Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary, but at least once a day for workers in the asbestos departments.
- c. Atmosphere supplying and emergency use respirators are to be cleaned and disinfected after each use.
- d. The following procedure is to be used when cleaning and disinfecting respirators:
 - 1) Disassemble respirator, removing any filters, canisters, or cartridges;
 - 2) Wash the face piece and associated parts in a mild detergent with warm water. Do not use organic solvents;
 - 3) Rinse completely in clean warm water;
 - 4) Wipe the respirator with disinfectant wipes (70% Isopropyl Alcohol) to kill germs. Air dry in a clean area; and
 - 5) Reassemble the respirator and replace any defective parts. Place in a clean, dry plastic bag or other air tight container.

Note: The Program Administrator will ensure an adequate supply of appropriate cleaning and disinfections material at the cleaning station. If supplies are low, employees should contact their supervisor, who will inform the Program Administrator.

2. Maintenance

- a. Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee. Maintenance involves a thorough visual inspection for cleanliness and defects. Worn or deteriorated parts will be replaced prior to use. No components will be replaced or repairs made beyond those recommended by the manufacturer. The manufacturer will conduct repairs to regulators or alarms of atmosphere supplying respirators.
- b. The following checklist will be used when inspecting respirators:
 - 1) Face piece:
cracks, tears, or holes
facemask distortion
cracked or loose lenses/face shield
 - 2) Head straps:
breaks or tears
broken buckles
 - 3) Valves:
residue or dirt
cracks or tears in valve material
 - 4) Filters/Cartridges:
approval designation
gaskets
cracks or dents in housing
proper cartridge for hazard
 - 5) Air Supply Systems:
breathing air quality/grade
condition of supply hoses
hose connections
settings on regulators and valves
- c. Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards. Situations when this is permitted include to wash their face and respirator face piece to prevent any eye or skin irritation, to replace the filter, cartridge or canister, and if they detect vapor or gas breakthrough or leakage in the face piece or if they detect any other damage to the respirator or its components.

3. Change Schedules

- a. Employees wearing APRs or PAPRs with P100 filters for protection against wood dust and other particulates shall change the cartridges on their respirators when they first begin to experience difficulty breathing (i.e., resistance) while wearing their masks.

- b. Based on discussions with our respirator distributor about BIG SOLUTIONS CONCRETE workplace exposure conditions, employees voluntarily wearing APRs with organic vapor cartridges shall change the cartridges on their respirators at the end of each workweek to ensure the continued effectiveness of the respirators.

4. Storage

- a. Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in a plastic bag in their own locker. Each employee will have his/her name on the bag and that bag will only be used to store that employee's respirator.
- b. Atmosphere supplying respirators will be stored in the storage cabinet outside of the Program Administrator's office.
- c. The Program Administrator will store BIG SOLUTIONS CONCRETE supply of respirators and respirator components in their original manufacturer's packaging in the equipment storage room.

5. Defective Respirators

- a. Respirators that are defective or have defective parts shall be taken out of service immediately. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor. Supervisors will give all defective respirators to the Program Administrator. The Program Administrator will decide whether to:
 - 1) Temporarily take the respirator out of service until it can be repaired;
 - 2) Perform a simple fix on the spot such as replacing a head-strap; and
 - 3) Dispose of the respirator due to an irreparable problem or defect.
- b. When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of similar make, model, and size. All tagged out respirators will be kept in the storage cabinet inside the Program Administrator's office.

L. Training

- 1. The Program Administrator will provide training to respirator users and their supervisors on the contents of the BIG SOLUTIONS CONCRETE Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection standard. Workers will be trained prior to using a respirator in the workplace. Supervisors will also be trained prior to using a respirator in the workplace or prior to supervising employees that must wear respirators.

2. The training course will cover the following topics:
 - a. The Company Respiratory Protection Program
 - b. The OSHA Respiratory Protection Standard
 - c. Respiratory hazards encountered at BIG SOLUTIONS CONCRETE and their health effects
 - d. Proper selection and use of respirators
 - e. Limitations of respirators
 - f. Respirator donning and user seal (fit) checks
 - g. Fit testing
 - h. Emergency use procedures
 - i. Maintenance and storage
 - j. Medical signs and symptoms limiting the effective use of respirators
3. Employees will be retrained annually or as needed (e.g., if they change departments and need to use a different respirator). Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test. Respirator training will be documented by the Program Administrator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.

V. PROGRAM EVALUATION

The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring and a review of records.

Problems identified will be noted in an inspection log and addressed by the Program Administrator. These findings will be reported to BIG SOLUTIONS CONCRETE management, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

VI. DOCUMENTATION AND RECORDKEEPING

A written copy of this program and the OSHA standard is kept in the Program Administrator's office and is available to all employees who wish to review it.

Also maintained in the Program Administrator's office are copies of training and fit test records. These records will be updated as new employees are trained, as existing employees receive refresher training, and as new fit tests are conducted.

The Program Administrator will also maintain copies of the medical records for all employees covered under the respirator program. The completed medical questionnaire and the physician's documented findings are confidential and will remain at the division office. The company will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.

DEFINITIONS

The following definitions are important terms used in the respiratory protection standard in this section.

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

Assigned protection factor (APF) [Reserved]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Maximum use concentration (MUC) [Reserved].

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

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

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

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

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

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

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

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

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

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

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

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

This section means this respiratory protection standard.

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

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

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

Part L OSHA-Accepted Fit Test Protocols

A. Fit Testing Procedures-General Requirements

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

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

- c) Fit across nose bridge;
 - d) Respirator of proper size to span distance from nose to chin;
 - e) Tendency of respirator to slip;
 - f) Self-observation in mirror to evaluate fit and respirator position.
8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Appendix B-1 of this section or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B-1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.
 9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.
 10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.
 11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.
 12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.
 13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.
 14. Test Exercises.
 - (a) The following test exercises are to be performed for all fit testing methods prescribed in this appendix, except for the CNP method. A separate Fit testing exercise regimen is contained in the CNP protocol. The test subject shall perform exercises, in the test environment, in the following manner:
 - 1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.
 - 2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

- 3) Turning head side to side. Standing in place, the subject shall slowly turn his her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.
- 4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e. when looking toward the ceiling).
- 5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

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

- 6) Grimace. The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT)
 - 7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist.
 - 8) Normal breathing. Same as exercise (1).
- (b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

B. Qualitative Fit Test (QLFT) Protocols

1. General

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

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

2. Isoamyl Acetate Protocol

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

(a) Odor Threshold Screening

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

- (1) Three 1 liter glass jars with metal lids are required.
- (2) Odor-free water (e.g., distilled or spring water) at approximately 25 deg. C (77 deg. F) shall be used for the solutions.
- (3) The isoamyl acetate (IAA) (also known as isopentyl acetate) stock solution is prepared by adding 1 ml of pure IAA to 800 ml of odor-free water in a 1 liter jar, closing the lid and shaking for 30 seconds. A new solution shall be prepared at least weekly.
- (4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well-ventilated to prevent the odor of IAA from becoming evident in the general room air where testing takes place.
- (5) The odor test solution is prepared in a second jar by placing 0.4 ml of the stock solution into 500 ml of odor-free water using a clean dropper or pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.
- (6) A test blank shall be prepared in a third jar by adding 500 cc of odor-free water.
- (7) The odor test and test blank jar lids shall be labeled (e.g. 1 and 2) for jar identification. Labels shall be placed on the lids so that they can be peeled off periodically and switched to maintain the integrity of the test.
- (8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e. 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

- (9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.
 - (10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.
 - (11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.
- (b) Isoamyl Acetate Fit Test
- (1) The fit test chamber shall be a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. If no drum liner is available, a similar chamber shall be constructed using plastic sheeting. The inside top center of the chamber shall have a small hook attached.
 - (2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors.
 - (3) After selecting, donning, and properly adjusting a respirator. The test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well-ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.
 - (4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.
 - (5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material folded in half and wetted with 0.75 ml of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber. An IAA test swab or ampule may be substituted for the IAA wetted paper towel provided it has been demonstrated that the alternative IAA source will generate an IAA test atmosphere with a concentration equivalent to that generated by the paper towel method.
 - (6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the test exercises: or to demonstrate some of the exercises.
 - (7) If at any time during the test, the subject detects the banana-like odor of IAA, the test is failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.
 - (8) If the test is failed, the subject shall return to the selection room and remove the respirator. The test subject shall repeat the odor sensitivity test, select and put on another respirator, return to the test area and again begin the fit test procedure

described in (b) (1) through (7) above. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait at least 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

- (9) If the subject passes the test, the efficiency of the test procedure shall be demonstrated by having the subject break the respirator face seal and take a breath before exiting the chamber.
- (10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test, so that there is no significant IAA concentration buildup in the chamber during subsequent tests. The used towels shall be kept in a self-sealing plastic bag to keep the test area from being contaminated.

3. Saccharin Solution Aerosol Protocol

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

- (a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.
 - (1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts * FT 14 and * FT 15 combined, is adequate.
 - (2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.
 - (3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.
 - (4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.
 - (5) The threshold check solution is prepared by *dissolving* 0.83 gram of *sodium saccharin* USP in 100 ml of warm water. It can be prepared by putting 1 ml of the fit test solution (see (b)(5) below) in 100 ml of distilled water.
 - (6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

- (7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.
- (8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.
- (9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
- (10) The test conductor will take note of the number of squeezes required to solicit a taste response.
- (11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

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

- (12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.
 - (13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.
 - (14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at least each morning and afternoon or at least every four hours.
- (b) Saccharin solution aerosol fit test procedure.
- (1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.
 - (2) The fit test uses the same enclosure described in 3. (a) above.
 - (3) The test subject shall don the enclosure while wearing the respirator selected in section 1. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).
 - (4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

- (5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.
- (6) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.
- (7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.
- (8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section 1. A. 14. of this appendix.
- (9) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).
- (10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.
- (11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).
- (12) Since the nebulizer has a tendency to clog during use. The test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

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

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

(a) Taste Threshold Screening.

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

- (1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches (30.5 cm) in diameter by 14 inches (35.6 cm) tall. The front portion of the enclosure shall be clear from the respirator and allow free movement of the head when a respirator is

worn. An enclosure substantially similar to the 3M hood assembly, parts # FF14 and # FF15 combined, is adequate.

- (2) The test enclosure shall have a $\frac{3}{4}$ inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.
- (3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his or her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a bitter taste.
- (4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent, the test conductor shall spray the Threshold Check *Solution into the enclosure. This Nebulizer* shall be clearly marked to distinguish it from the fit test solution nebulizer.
- (5) The Threshold Check Solution is prepared by adding 13.5 milligrams of Bitrex to 100 ml of 5% salt (NaCl) solution in distilled water.
- (6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that the bulb collapses completely, and is then released and allowed to fully expand.
- (7) An initial ten squeezes are repeated rapidly and then the test subject is asked whether the Bitrex can be tasted. If the test subject reports tasting the bitter taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.
- (8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.
- (9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the Bitrex is tasted. If the test subject reports tasting the bitter taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
- (10) The test conductor will take note of the number of squeezes required to solicit a taste response.
- (11) If the Bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste Bitrex and may not perform the Bitrex fit test.
- (12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

- (13) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.
 - (14) The nebulizer shall be thoroughly rinsed in water, shaken to dry, and refilled at least each morning and afternoon or at least every four hours.
- (b) Bitrex Solution Aerosol Fit Test Procedure.
- (1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.
 - (2) The fit test uses the same enclosure as that described in 4. (a) above.
 - (3) The test subject shall don the enclosure while wearing the respirator selected according to section 1. A. of this appendix. The respirator shall be properly adjusted and equipped with any type particulate filter(s).
 - (4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer or equivalent is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.
 - (5) The fit test solution is prepared by adding 337.5 mg of Bitrex to 200 ml of a 5% salt (NaCl) solution in warm water.
 - (6) As before, the test subject shall breathe through his or her slightly open mouth with tongue extended, and be instructed to report if he/she tastes the bitter taste of Bitrex.
 - (7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of the fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test.
 - (8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.
 - (9) If every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes used initially (e.g., 5, 10 or 15).
 - (10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of Bitrex is detected. If the test subject does not report tasting the Bitrex, the test is passed.
 - (11) If the taste of Bitrex is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

5. Irritant Smoke (Stannic Chloride) Protocol

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

(a) General Requirements and Precautions

- (1) The respirator to be tested shall be equipped with high efficiency particulate air (HEPA) or P100 series filter(s).
- (2) Only stannic chloride smoke tubes shall be used for this protocol.
- (3) No form of test enclosure or hood for the test subject shall be used.
- (4) The Smoke can be irritating to the eyes, lungs, and nasal passages. The test conductor shall take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity varies, and certain individuals may respond to a greater degree to irritant smoke. Care shall be taken when performing the sensitivity screening checks that determine whether the test subject can detect irritant smoke to use only the minimum amount of smoke necessary to elicit a response from the test subject.
- (5) The fit test shall be performed in an area with adequate ventilation to prevent exposure of the person conducting the fit test or the build-up of irritant smoke in the general atmosphere.

(b) Sensitivity Screening Check

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

- (1) The test operator shall break both ends of a ventilation smoke tube containing stannic chloride, and attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute, or an aspirator squeeze bulb. The test operator shall cover the other end of the smoke tube with a short piece of tubing to prevent potential injury from the jagged end of the smoke tube.
- (2) The test operator shall advise the test subject that the smoke can be irritating to the eyes, lungs, and nasal passages and instruct the subject to keep his/her eyes closed while the test is performed.
- (3) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its irritating properties and to determine if he/she can detect the irritating properties of the smoke. The test operator shall carefully direct a small amount of the irritant smoke in the test subject's direction to determine that he/she can detect it.

(c) Irritant Smoke Fit Test Procedure

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

- (2) The test subject shall be instructed to keep his/her eyes closed.
- (3) The test operator shall direct the stream of irritant smoke from the smoke tube toward the face seal area of the test subject, using the low flow pump or the squeeze bulb. The test operator shall begin at least 12 inches from the facepiece and move the smoke stream around the whole perimeter of the mask. The operator shall gradually make two more passes around the perimeter of the mask, moving to within six inches of the respirator.
- (4) If the person being tested has not had an involuntary response and/or detected the irritant smoke, proceed with the test exercises.
- (5) The exercises identified in section I. A.14. of this appendix shall be performed by the test subject while the respirator seal is being continually challenged by the smoke directed around the perimeter of the respirator at a distance of six inches.
- (6) If the person being fit tested reports detecting the irritant smoke at any time, the test is failed. The person being retested must repeat the entire sensitivity check and fit test procedure.
- (7) Each test subject passing the irritant smoke test without evidence of a response (involuntary cough, irritation) shall be given a second sensitivity screening check, with the smoke from the same smoke tube used during the fit test. Once the respirator has been removed, to determine whether he/she still reacts to the smoke. Failure to evoke a response shall void the fit test.
- (8) If a response is produced during this second sensitivity check, then the fit test is passed.

C. Quantitative Fit Test (QNFT) Protocols

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

1. General

- (a) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly) and ensure that test equipment is in proper working order.
- (b) The employer shall ensure that QNFT equipment is kept clean and is maintained and calibrated according to the manufacturer's instructions so as to operate at the parameters for which it was designed.

2. Generated Aerosol Quantitative Fit Testing Protocol

(a) Apparatus.

- (1) Instrumentation. Aerosol generation, dilution, and measurement systems using particulates (corn oil, polyethylene glycol 400 [PEG 400], di-2-ethyl hexyl sebacate [DEHS] or sodium chloride) as test aerosols shall be used for quantitative fit testing.
- (2) Test chamber. The test chamber shall be large enough to permit all test subjects to perform freely all required exercises without disturbing the test agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the test agent is effectively isolated from the ambient air, yet uniform in concentration throughout the chamber.
- (3) When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high efficiency particulate air (HEPA) or P100 series filter supplied by the same manufacturer.
- (4) The sampling instrument shall be selected so that a computer record or strip chart record may be made of the test showing the rise and fall of the test agent concentration with each inspiration and expiration at fit factors of at least 2,000. Integrators or computers that integrate the amount of test agent penetration leakage into the respirator for each exercise may be used provided a record of the readings is made.
- (5) The combination of substitute air-purifying elements, test agent and test agent concentration shall be such that the test subject is not exposed in excess of an established exposure limit for the test agent at any time during the testing process, based upon the length of the exposure and the exposure limit duration.
- (6) The sampling port on the test specimen respirator shall be placed and constructed so that no leakage occurs around the port (e.g., where the respirator is probed), a free air flow is allowed into the sampling line at all times, and there is no interference with the fit or performance of the respirator. The in-mask sampling device (probe) shall be designed and used so that the air sample is drawn from the breathing zone of the test subject, midway between the nose and mouth and with the probe extending into the facepiece cavity at least $\frac{1}{4}$ inch.
- (7) The test setup shall permit the person administering the test to observe the test subject inside the chamber during the test.
- (8) The equipment generating the test atmosphere shall maintain the concentration of test agent constant to within a 10 percent variation for the duration of the test.
- (9) The time lag (interval between an event and the recording of the event on the strip chart or computer or integrator) shall be kept to a minimum. There shall be a clear association between the occurrence of an event and its being recorded.

- (10) The sampling line tubing for the test chamber atmosphere and for the respirator sampling port shall be of equal diameter and of the same material. The length of the two lines shall be equal.
 - (11) The exhaust flow from the test chamber shall pass through an appropriate filter (i.e., high efficiency particulate filter) before release.
 - (12) When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.
 - (13) The limitations of instrument detection shall be taken into account when determining the fit factor.
 - (14) Test respirators shall be maintained in proper working order and be inspected regularly for deficiencies such as cracks or missing valves and gaskets.
- (b) Procedural Requirements.
- (1) When performing the initial user seal check using a positive or negative pressure check, the sampling line shall be crimped closed in order to avoid air pressure leakage during either of these pressure checks.
 - (2) The use of an abbreviated screening QLFT test is optional. Such a test may be utilized in order to quickly identify poor fitting respirators that passed the positive and/or negative pressure test and reduce the amount of QNFT time. The use of the CNC QNFT instrument in the count mode is another optional method to obtain a quick estimate of fit and eliminate poor fitting respirators before going on to perform a full QNFT.
 - (3) A reasonably stable test agent concentration shall be measured in the test chamber prior to testing. For canopy or shower curtain types of test units, the determination of the test agent's stability may be established after the test subject has entered the test environment.
 - (4) Immediately after the subject enters the test chamber, the test agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half mask or 1 percent for a full facepiece respirator.
 - (5) A stable test agent concentration shall be obtained prior to the actual start of testing.
 - (6) Respirator restraining straps shall not be over-tightened for testing. The straps shall be adjusted by the wearer without assistance from other persons to give a reasonably comfortable fit typical of normal use. The respirator shall not be adjusted once the fit test exercises begin.
 - (7) The test shall be terminated whenever any single peak penetration exceeds 5 percent for half masks and 1 percent for full facepiece respirators. The test subject shall be refitted and retested.

(8) Calculation of fit factors.

- (i) The fit factor shall be determined for the quantitative fit test by taking the ratio of the average chamber concentration to the concentration measured inside the respirator for each test exercise except the grimace exercise.
- (ii) The average test chamber concentration shall be calculated as the arithmetic average of the concentration measured before and after each test (i.e., 7 exercises) or the arithmetic average of the concentration measured before and after each exercise or the true average measured continuously during the respirator sample.
- (iii) The concentration of the challenge agent inside the respirator shall be determined by one of the following methods:
 - (A) Average peak penetration method means the method of determining test agent penetration into the respirator utilizing a strip chart recorder, integrator or computer. The agent penetration is determined by an average of the peak heights on the graph or by computer integration, for each exercise except the grimace exercise. Integrators or computers that calculate the actual test agent penetration into the respirator for each exercise will also be considered to meet the requirements of the average peak penetration method.
 - (B) Maximum peak penetration method means the method of determining test agent penetration in the respirator as determined by strip chart recordings of the test. The highest peak penetration for a given exercise is taken to be representative of average penetration into the respirator for that exercise.
 - (C) Integration by calculation of the area under the individual peak for each exercise except the grimace exercise. This includes computerized integration.
 - (D) The calculation of the overall fit factor using individual exercise fit factors involves first converting the exercise fit factors to penetration values, determining the average, and then converting that result back to a fit factor. This procedure is described in the following equation:

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

Where ff_1, ff_2, ff_3 , etc. are the fit factors for exercises 1, 2, 3, etc.

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

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

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

The ambient aerosol condensation nuclei counter (CNC) quantitative fit testing.

(Port-a-count™) protocol quantitatively fit tests respirators with the use of a probe. The probed respirator is only used for quantitative fit tests. A probed respirator has a special sampling device, installed on the respirator, that allows the probe to sample the air from outside the mask. A probed respirator is required for each make, style, model and size that the employer uses and can be obtained from the respirator manufacturer or distributor. The CNC instrument manufacturer, TSI Inc., also provides probe attachments (TSI sampling adapters) that permit fit testing in an employee's own respirator. A *minimum fit* factor pass level of at least 100 is necessary for a half-mask respirator and a minimum fit factor pass level of at least 500 is required for a full facepiece negative pressure respirator. The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Port-a-count Fit Test Requirements.

- (1) Check the respirator to make sure the sampling probe and line are properly attached to the facepiece and that the respirator is fitted with a particulate filter capable of preventing significant penetration by the ambient particles used for the fit test (e.g., NIOSH 42 CFR 84 series 100, series 99, or series 95 particulate filter) per manufacturer's instruction.
- (2) Instruct the person to be tested to don the respirator for five minutes before the fit test starts. This purges the ambient particles trapped inside the respirator and permits the wearer to make certain the respirator is comfortable. This individual shall already have been trained on how to wear the respirator properly.
- (3) Check the following conditions for the adequacy of the respirator fit: Chin properly placed; Adequate strap tension, not overly tightened; Fit across nose bridge; Respirator of proper size to span distance from nose to chin; Tendency of the respirator to slip; Self-observation in a mirror to evaluate fit and respirator position.
- (4) Have the person wearing the respirator do a user seal check. If leakage is detected, determine the cause. If leakage is from a poorly fitting facepiece, try another size of the same model respirator, or another model of respirator.
- (5) Follow-the manufacturers instructions for operating the Port-a-count and proceed with the test.
- (6) The test subject shall be instructed to perform the exercises in section 1. A. 14. of this appendix.

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

(b) Port-a-count Test Instrument.

- (1) The Port-a-count will automatically stop and calculate the overall fit factor for the entire set of exercises. The overall fit factor is what counts. The Pass or Fail message will indicate whether or not the test was successful. If the test was a Pass, the fit test is over.
- (2) Since the pass or fail criterion of the Port-a-count is user programmable, the test operator shall ensure that the pass or fail criterion meet the requirements for minimum respirator performance in this Appendix.
- (3) A record of the test needs to be kept on file, assuming the fit test was successful. The record must contain the test subject's name; overall fit factor; make, model, style, and size of respirator used; and date tested.
- (4) Controlled negative pressure (CNP) quantitative fit testing protocol.

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

(a) CNP Fit Test Requirements.

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

(Note: CNP systems have built-in capability to conduct fit testing that is specific to unique work rate, mask, and gender situations that might apply in a specific workplace. Use of system default values, which were selected to represent respirator wear with medium cartridge resistance at a low-moderate work rate, will allow inter-test comparison of the respirator fit.)

- (3) The individual who conducts the CNP fit testing shall be thoroughly trained to perform the test.
- (4) The respirator filter or cartridge needs to be replaced with the CNP test manifold either. The inhalation valve downstream from the manifold either needs to be temporarily removed or propped open.
- (5) The test subject shall be trained to hold his or her breath for at least 20 seconds.
- (6) The test subject shall don the test respirator without any assistance from the individual who conducts the CNP fit test.
- (7) The QNFT protocol shall be followed according to section 1.C.1. of this appendix with an exception for the CNP test exercises.

(b) CNP Test Exercises.

- (1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject needs to hold head straight ahead and hold his or her breath for 10 seconds during the test measurement.
- (2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply for 1 minute, being careful not to hyperventilate. After the deep breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during test measurement.
- (3) Turning head side to side. Standing in place, the subject shall slowly turn his or her head from side to side between the extreme positions on each side for 1 minute. The head shall be held at each

extreme momentarily so the subject can inhale at each side. After the turning head side to side exercise, the subject needs to hold head full left and hold his or her breath for 10 seconds during test measurement. Next, the subject needs to hold head full right and hold his or her breath for 10 seconds during test measurement.

- (4) Moving head up and down. Standing in place, the subject shall slowly move his or her head up and down for 1 minute. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling). After the moving head up and down exercise, the subject shall hold his or her head full up and hold his or her breath for 10 seconds during test measurement. Next, the subject shall hold his or her head full down and hold his or her breath for 10 seconds during test measurement.
 - (5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly: by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song for 1 minute. After the talking exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.
 - (6) Grimace. The test subject shall grimace by smiling or frowning for 15 seconds.
 - (7) Bending Over. The test subject shall bend at the waist as if he or she were to touch his or her toes for 1 minute. Jogging in place shall be substituted for this exercise in those test environments such as shroud-type QNFT units that prohibit bending at the waist. After the bending over exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement.
 - (8) Normal Breathing. The test subject shall remove and re-don the respirator within a one-minute period. Then, in a normal standing position, without talking, the subject shall breathe normally for 1 minute. After the normal breathing exercise, the subject shall hold his or her head straight ahead and hold his or her breath for 10 seconds during the test measurement. After the test exercises, the test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of a respirator shall be tried.
- (c) CNP Test Instrument.
- (1) The test instrument shall have an effective audio warning device when the test subject fails to hold his or her breath during the test. The test shall be terminated whenever the test subject failed to hold his or her breath. The test subject may be refitted and retested.

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

Part II. New Fit Test Protocols

- A. Any person may submit to OSHA an application for approval of a new fit test protocol. If the application meets the following criteria, OSHA will initiate a rulemaking proceeding under section 6(b)(7) of the OSH Act to determine whether to list the new protocol as an approved protocol in this Appendix A.
- B. The application must include a detailed description of the proposed new fit test protocol. This application must be supported by either:
 1. A test report prepared by an independent government research laboratory: (e.g., Lawrence Livermore National Laboratory, Los Alamos National Laboratory, the National Institute for Standards and Technology) stating that the laboratory has tested the protocol and had found it to be accurate and reliable; or
 2. An article that has been published in a peer-reviewed industrial hygiene journal describing the protocol and explaining how test data support the protocol's accuracy and reliability.
- C. If OSHA determines that additional information is required before the Agency commences a rulemaking proceeding under this section, OSHA will so notify the applicant and afford the applicant the opportunity to submit the supplemental information. Initiation of a rulemaking proceeding will be deferred until OSHA has received and evaluated the supplemental information.

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

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

I. Facepiece-Positive and or Negative Pressure Checks

- A. **Positive pressure check.** Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.
- B. **Negative pressure check.** Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for *ten seconds*. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

II. Manufacturer's Recommended User Seal Check Procedures

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

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

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here in Appendix B2. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth in Appendix B-2, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

I. Procedures for Cleaning, Respirators

- A. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
- B. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
- C. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
- D. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:
 1. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,
 2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,
 3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.
- E. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
- F. Components should be hand-dried with a clean lint-free cloth or air-dried.
- G. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
- H. Test the respirator to ensure that all components work properly.

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

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

To the employee:

Can you read (circle one): Yes/No

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

Part A. Section 1. (Mandatory)

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

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

Part A. Section 2. (Mandatory)

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

1. Do you *currently* smoke tobacco, or have you smoked tobacco in the last month: Yes/No
2. Have you *ever had* any of the following conditions?
 - a. Seizures (fits): Yes/No
 - b. Diabetes (sugar disease): Yes/No
 - c. Allergic reactions that interfere with your breathing: Yes/No
 - d. Claustrophobia (fear of closed-in places): Yes/No
 - e. Trouble smelling odors: Yes/No
3. Have you *ever had* any of the following pulmonary or lung problems?
 - a. Asbestosis: Yes/No
 - b. Asthma: Yes/No
 - c. Chronic bronchitis: Yes/No
 - d. Emphysema: Yes/No
 - e. Pneumonia: Yes/No
 - f. Tuberculosis: Yes/No
 - g. Silicosis: Yes/No
 - h. Pneumothorax (collapsed lung): Yes/No
 - i. Lung cancer: Yes/No
 - j. Broken ribs: Yes/No
 - k. Any chest injuries or surgeries: Yes/No
 - l. Any other lung problem that you've been told about: Yes/No
4. Do you currently have any of *the following symptoms of pulmonary or lung illness*?
 - a. Shortness of breath: Yes/No
 - b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
 - c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
 - d. Have to stop for breath when walking at your own pace on level ground: Yes/No
 - e. Shortness of breath when washing or dressing yourself: Yes/No
 - f. Shortness of breath that interferes with your job: Yes/No
 - g. Coughing that produces phlegm (thick sputum): Yes/No
 - h. Coughing that wakes you early in the morning: Yes/No
 - i. Coughing that occurs mostly when you are lying down: Yes/No
 - j. Coughing up blood in the last month: Yes/No
 - k. Wheezing: Yes/No
 - l. Wheezing that interferes with your job: Yes/No
 - m. Chest pain when you breathe deeply: Yes/No
 - n. Any other symptoms that you think may be related to lung problems: Yes/No
5. Have you *ever had* any of the following cardiovascular or heart problems?
 - a. Heart attack: Yes/No
 - b. Stroke: Yes/No
 - c. Angina: Yes/No

- d. Heart failure: Yes/No
 - e. Swelling in your legs or feet (not caused by walking): Yes/No
 - f. Heart arrhythmia (heart beating irregularly): Yes/No
 - g. High blood pressure: Yes/No
 - h. Any other heart problem that you've been told about: Yes/No
6. Have you *ever had* any of the following cardiovascular or heart symptoms?
- a. Frequent pain or tightness in your chest: Yes/No
 - b. Pain or tightness in your chest during physical activity: Yes/No
 - c. Pain or tightness in your chest that interferes with your job: Yes/No
 - d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
 - e. Heartburn or indigestion that is not related to eating: Yes/No
 - f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No
6. Do you *currently* take medication for any of the following problems?
- a. Breathing or lung problems: Yes/No
 - b. Heart trouble: Yes/No
 - c. Blood pressure: Yes/No
 - d. Seizures (fits): Yes/No
8. If you've used a respirator, have you *ever had* any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)
- a. Eye irritation: Yes/No
 - b. Skin allergies or rashes: Yes/No
 - c. Anxiety: Yes/No
 - d. General weakness or fatigue: Yes/No
 - e. Any other problem that interferes with your use of a respirator: Yes/No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you *ever lost* vision in either eye (temporarily or permanently): Yes/No
11. Do you *currently* have any of the following vision problems?
- a. Wear contact lenses: Yes/No
 - b. Wear glasses: Yes/No
 - c. Color blind: Yes/No
 - d. Any other eye or vision problem: Yes/No
12. Have you *ever had* an injury to your ears, including a broken ear drum: Yes/No
13. Do you *currently* have any of the following hearing problems?
- a. Difficulty hearing: Yes/No
 - b. Wear a hearing aid: Yes/No
 - c. Any other hearing or ear problem: Yes/No

14. Have you *ever had* a back injury: Yes/No
15. Do you *currently* have any of the following musculoskeletal problems?
 - a. Weakness in any of your arms, hands, legs, or feet: Yes/No
 - b. Back pain: Yes/No
 - c. Difficulty fully moving your arms and legs: Yes/No
 - d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
 - e. Difficulty fully moving your head up or down: Yes/No
 - f. Difficulty fully moving your head side to side: Yes/No
 - g. Difficulty bending at your knees: Yes/No
 - h. Difficulty squatting to the ground: Yes/No
 - i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
 - j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

Part B.

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

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No
If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're working under these conditions: Yes/No
2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No
If "yes," name the chemicals if you know them: _____
3. Have you ever worked with any of the materials, or under any of the conditions listed below:
 - a. Asbestos: Yes/No
 - b. Silica (e.g., in sandblasting): Yes/No
 - c. Tungsten cobalt (e.g., grinding or welding this material): Yes/No
 - d. Beryllium: Yes/No
 - e. Aluminum: Yes/No
 - f. Coal (for example, mining): Yes/No
 - g. Iron: Yes/No
 - h. Tin: Yes/No
 - i. Dusty environments: Yes/No
 - j. Any other hazardous exposures: Yes/No
If "yes," describe these exposures: _____
4. List any second jobs or side businesses you have: _____
5. List your previous occupations: _____
6. List your current and previous hobbies: _____
7. Have you been in the military services? Yes/No
If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/ No

8. Have you ever worked on a HAZMAT team? Yes/No
9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications): Yes/No
If "yes," name the medications if you know them: _____
10. Will you be using any of the following items with your respirator(s)?
- HEPA Filters: Yes/No
 - Canisters (for example, gas masks): Yes/No
 - Cartridges: Yes/No
11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:
- Escape only (no rescue): Yes/No
 - Emergency rescue only: Yes/No
 - Less than 5 hours *per week*: Yes/No
 - Less than 2 hours *per day*: Yes/No
 - 2 to 4 hours *per day*: Yes/No
 - Over 4 hours *per day*: Yes/No
12. During the period you are using the respirator(s), is your work effort:
- Light** (less than 200 kcal per hour): Yes/No
If "yes," how long does this period last during the average shift: _____ hrs. _____ min.
Examples of a light work effort are *sitting while writing, typing, drafting, or performing light assembly work*; or *standing while operating a drill press (1-3 lbs.) or controlling machines*.
 - Moderate** (200 to 350 kcal per hour): Yes/No
If "yes," How long does this period last during the average shift: _____ hrs. _____ min.
Examples of moderate work effort are *sitting while nailing or filing*; *driving a truck or bus in urban traffic*; *standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level*; *walking on a level surface about 2 mph or down a 5-degree grade about 3 mph*; or *pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface*.
 - Heavy** (above 350 kcal per hour): Yes/No
If "yes," how long does this period last during the average shift: _____ hrs. _____ min.
Examples of heavy work are *lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder*; working on a loading dock; *shoveling, standing, while bricklaying or chipping castings*; *walking up an 8-degree grade about 2 mph*; climbing stairs with a heavy load (about 50 lbs.).
13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No
If "yes," describe this protective clothing and or equipment: _____
14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No
15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s): _____
17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases): _____
18. Provide the following information, if you know it, for each toxic substance that you'll *be* exposed to when you're using your respirator(s):
Name of the first toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____
Name of the second toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____
Name of the third toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____
The name of any other toxic substances that you'll be exposed to while using your respirator:

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

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

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

You should do the following:

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

BIG SOLUTIONS CONCRETE

LOCK OUT/ TAG OUT PROGRAM

I. POLICY

Big Solutions Concrete is firmly committed to providing each of its employees a safe and healthy work environment. It is a matter of Big Solutions Concrete policy, as well as an important public program under Federal/State OSHA. Big Solutions Concrete has implemented this Lock Out/Tag Out Program as outlined herein.

Big Solutions Concrete Safety Department will have the overall responsibility for coordinating the program for Big Solutions Concrete.

II. PURPOSE

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

III APPLICATION

This regulation applies to all equipment, which must be locked out or tagged out before maintenance is initiated. This minimal Lockout/Tagout Procedure is based on Attachment 1 to the Control of Hazardous Energy standard, 1910.147.

IV REFERENCE

Federal and State Occupational Safety and Health Act-Standard 29 CFR 1910.147 and 1926.417.

V. PROCEDURE

A. Personnel Affected

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

The following employees shall be instructed in the safety significance of the Lockout/Tagout Procedure and will be responsible for the safe operation of this procedure:

1. Managers

2. Supervisors

Each new or transferred affected employee and other employees whose work operations are, or may be, in the area shall be instructed in the purpose and use of the Lockout/Tagout Procedures by their Supervisor.

B. Steps to Identify and Control Hazardous Energy

Locate and identify all isolating devices to be certain which switch(s), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, or others) may be involved.

Attachment 1 contains the list of all site equipment and their energy isolating devices. This list is updated annually or as required by **Big Solutions Concrete Safety director**.

1. Notify all affected employees of servicing or maintenance required on a machine or equipment and the machine or equipment, which must be shut down prior to lockout to perform the servicing or maintenance.
2. The authorized employee shall refer to this Big Solutions Concrete procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.
3. If the machine or equipment is operating, shut it down by the normal stopping procedure using the established sequence as applicable (depress stop button, open switch, close valve, etc.).
4. De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

C. Steps to Perform Lockout/Tagout

1. Lock out the energy isolating device(s) with an assigned individual lock, the design purpose and use of which the employee shall have been trained prior to use. Lockout devices and tagout devices shall indicate the identity of the employee applying the device.
2. Lockout devices, where used, shall be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position.
3. Tagout devices, where used, shall be affixed in a manner to as to clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.

4. Where tagout devices are used with energy isolating devices and designed with the same capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.
5. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.
6. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe. Types of energy are: hydraulic pressure, springs, gravity, steam, water, and pneumatics. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation **no longer exists**.

D. Requirements for Testing Lockout/Tagout Effectiveness

1. Ensure that the equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.

CAUTION: Return operating control(s) to neutral or "off" position after verifying the isolation of the equipment.

2. The machine or equipment is now locked out, and servicing or maintenance may begin.

B. Restoring Equipment to Service

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

1. Check the machine or equipment and the immediate area around the machine or equipment to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
2. Check the work area to ensure that all employees have been safely positioned or removed from the area.
3. Verify that the controls are in neutral.
4. Remove the lockout devices and re-energize the machine or equipment.

Note: The removal of some forms of blocking may require re-energizing the machine before safe removal.

5. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready to use.

F. Inspections

The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed. An authorized employee other than the ones utilizing the energy control procedure being inspected shall perform the periodic inspection. The periodic inspection shall be conducted to correct any deviations or inadequacies identified. Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

G. Training

1. BIG SOLUTIONS CONCRETE will provide training to ensure that the purpose and function of the energy control program are understood by all employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees.

The training shall include the following:

- a. The requirements of this Safety and Health Program
- b. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control.
- c. Each affected employee shall be instructed in the purpose and use of the energy control procedure.
- d. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.
- e. When tagout systems are used, employees shall also be trained in the following limitations of tags:
 1. Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.
 2. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

3. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.
 4. Tags and their means of attachment must be made of materials that will withstand the environmental conditions encountered in the workplace.
 5. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.
 6. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.
 7. The type of locks, tags authorized, and their use.
2. Refresher training is provided at least every two years Retraining is provided whenever the information in this SOP is significantly changed.
 3. Retraining is provided whenever the information in this SOP is significantly changed. Retraining shall be provided for all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard, or when there is a change in the energy control procedures.

BIG SOLUTIONS CONCRETE

HEARING CONSERVATION

I POLICY

It is the policy of Big Solutions Concrete to provide a safe work place for all employees. This is primarily achieved by the prevention of accidents and incidents, which could impact health and safety. The Safety director will have the overall responsibility for coordinating this program for the COMPANY.

II. PURPOSE

The purpose of this Procedure is to establish the minimum requirements for developing a hearing conservation program in compliance with Title 29 Code of Federal Regulations Parts 1910.95 and 1926.52.

III. APPLICATION

This regulation applies to all BIG SOLUTIONS CONCRETE employees

IV REFERENCES

Federal and (STATE) Occupational Safety and Health Act Standard 29 CFR Title 29 Code of Federal Regulations (CFR) Part 1926.52 and Part 1910.95

V DEFINITIONS

Hearing Protective Device (HPD) - earplugs or earmuffs.

Permissible Exposure Limit (PEL) - Exposure to an equivalent time weighted average of 85 dbl measured on slow response.

Standard Threshold Shift (STS) - a change in hearing threshold relative to the base audiogram of an average of 10 dB or more at 2000,3000, and 4000 Hz in either ear. This condition may be a Temporary Threshold Shift (TTS) or a Permanent Threshold Shift (PTS).

VI RESPONSIBILITIES

It shall be the responsibility of the Safety director to ensure that the requirements of this procedure are adhered to.

It shall be the responsibility of all supervisory personnel to ensure that all employees comply, with the requirements of this Procedure.

It shall be the responsibility of the Safety director to ensure that the requirements of this Procedure are implemented, monitor performance to these requirements and provide management with feedback on noncompliance issues and methods for improvement. All employees shall be responsible for adhering to this procedure.

VII PROCEDURES

7.0 Requirements

7.01.1 Each Site Manager, with the assistance of the Site Safety director, shall develop a list of high noise activities and require the use of hearing protection for all employees engaged in those activities, regardless of the duration.

7.01.2 Each work site shall include training on the effects of noise on hearing, the proper use of hearing protection for high noise activities, and the proper use of hearing protection (including the proper method of insertion) in the new employee orientation and shall review the information from time to time in tool box meetings.

7.01.3 Employee exposure to occupational noise hazards shall be assessed.

7.01.4 Employees will be provided with protection from exposure to occupational noise in excess of the permissible levels.

7.01.5 In all cases where the sound levels exceed the permissible exposure limit, a continuing, effective Hearing Conservation Program shall be administered.

7.02. Monitoring and Hazard Determination

7.02.1 When information indicates that any employee's exposure may equal or exceed an 8 hour Time-weighted average (TWA) of 85 decibels, A weighted (dbl), a monitoring program shall be developed and implemented. This program will be used to determine which employees must be included in the Hearing Conservation Program and to select the proper hearing protective devices.

7.02.2. Monitoring will be repeated whenever a change in equipment, process, or staffing occurs such that:

7.02.2.1.1.1. Additional employees will be exposed in excess of 85 dbl as an 8 hour time weighed average (TWA); or

7.02.2.1.1.2. The attenuation provided by the hearing protective devices being used may be inadequate for the increase in the noise level.

7.02.3. In addition to requiring the use of HPD's for all operations that result in high noise levels, BIG SOLUTIONS CONCRETE will obtain information on the levels of noise in the facilities and will conduct all employees to comply with all posted requirements for HPD's.

7.03. Notification of Monitoring Results

7.03.1. The employees who are monitored will receive written notification of the results of the monitoring within 5 working days of the receipt of sampling results. The results will also be posted (by job classification, not by name) in order to notify other affected employees.

7.04. Exposure Control Methods

7.04.1. Every consideration will be given to the use of effective engineering and administrative controls to reduce employee exposure to occupational noise hazards. However, when these controls are feasible or ineffective, appropriate personal protective equipment will be provided to reduce noise levels to the permissible range.

7.05. Audiometric Testing

7.05.1. When required, employees whose exposures equal or exceed an **8 hour TWA of 85** decibels will have a baseline audiometric examination within 6 months of exposure to noise above the PEL (or within one year if a mobile test van is used) in accordance with the requirements outlined in 29 CFR 1910.95 (g)&(h). Annual audiometric examinations will be compared to the base line. The employee shall be instructed to limit occupational and non- occupational noise exposure for at least 14 hours prior to the audiometric examination. The base line audiometric examination will be conducted within six months of the employee's first exposure to noise above 85 dbl

7.05.2. Each annual audiometric examination will be compared to the base line to determine if the audiogram is valid and if a Standard Threshold Shift has occurred. If the audiometric examination indicates an STS, the test shall be repeated within 30 days to determine if the Shift is permanent or temporary.

7.05.3. Employees who suffer a Standard Threshold Shift will be refitted and retrained in the use of hearing protective devices and provided with hearing protectors offering greater attenuation, if necessary.

7.06. Hearing Protective Devices

7.06.1. The use of hearing protective devices will be required for all employees who are exposed to an average of 85 dbl or more during an 8-hour period.

7.06.2. At least three types of HPD's offering adequate selection shall be made available so that employees may select the more comfortable style.

7.07. Training

7.07.1. Each employee included in the Hearing Conservation Program will receive initial and annual training on:

7.07.1.1 The effects of noise on hearing,

7.07.1.2. The purpose of hearing protective devices, the advantages, disadvantages and attention of various types, and instructions on selection, fitting, use and care;

7.07.1.3. The purpose of audiometric testing and an explanation of the test procedures.

7.07.2. Post a copy of the OSHA standard on the project site and give a copy to employees.

7.08. Hearing Loss Prevention Procedures

7.08.1. The noise exposure monitoring and hearing conservation programs shall be evaluated annually and all deficiencies will be addressed. A schedule for correction of deficiencies will be developed and monitored to ensure continuous improvement.

8.0 Record Retention

8.01. Exposure measurements - Noise exposure measurement records shall be maintained for at least the duration of employment plus 30 years.

8.02. Audiometric tests - Audiometric test records shall be retained for the duration of the affected employee's employment plus 30 years.

8.03. OSHA 300 log - Threshold Shifts averaging 25 or more decibels at 2000, 3000, and 4000 Mhz in either ear are recordable illnesses.

9.0 CFR 1926.52 Occupational noise exposure

- (a) Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in Table D-2 of this section when measured on the A-scale of a standard sound level meter at slow response.
- (b) When employees are subjected to sound levels exceeding those listed in Table D-2 of this section, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of the table, personal protective equipment as required in Subpart E, shall be provided and used to reduce sound levels within the levels of the table.
- (c) If the variations in noise level involve maximum at intervals of 1 second or less, it is to be considered continuous.

(d) In all cases where the sound levels exceed the values shown herein, a continuing, effective hearing conservation program shall be administered.

Table D-2- Permissible Noise Exposures

DURATION PER DAY, HOUR	SOUND LEVEL dBA SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1 and ½	102
1	105
½	110
¼	115

(2)(i) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. Exposure to different levels for various periods of time shall be computed according to the formula set forth in paragraph (d)(2)(ii) of this section.

(d)

(2)(ii) $F_{\text{é}}$ = The Equivalent noise exposure factor.

T = The period of noise exposure at any essentially constant level.

L = The duration of the permissible noise exposure at the constant level (from Table D-2).

If the value of $F_{\text{é}}$ exceeds unity (1) the exposure exceeds permissible levels.

(d)

(2)(iii) A sample computation showing an application of the formula in paragraph (d)(2)(ii) of this section is as follows. An employee is exposed at these levels for these periods:

110 db A ¼ hour.

100 db A ½ hour

90 db A 1½ hours

$F_{\text{é}} = (\frac{1}{4}, \frac{1}{2}) + (\frac{1}{2}, 2) = (1\frac{1}{2}, 8)$

$$F_{\acute{e}} = 0.500 + 0.25 = 0.188$$

$$F_{\acute{e}} = 0.938$$

Since the value of $F_{\acute{e}}$ does not exceed unity, the exposure is within permissible limits.

(e) Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

BIG SOLUTIONS CONCRETE

ELECTRICAL SAFETY PROGRAM

POLICY

The policy of Big Solutions Concrete is to comply with the Occupational Safety and Health Administration's (OSHA)

1.0 Purpose

- 1.01. This Procedure gives the requirements to minimize unsafe conditions involving electrical equipment and tools, including faulty insulation, improper grounding, loose electrical connections, defective parts, ground faults in equipment, and unguarded live electrical parts. Site Safety will provide information on potential hazards of using electrical and electronic equipment. Site Safety or Manager will ensure the safety of Employees engaged in these activities

2.0 Scope

- 2.01. This Procedure applies to all Great Barrier Insulation's subcontractors performing work on any project.

3.0 References

- 3.01. Title 29 Code of Federal Regulation (CFR) Part 1926

4.0 Responsibilities

- 6.01. It shall be the responsibility of the Site Manager and Site Safety to ensure that the requirements of this Procedure are adhered to.
- 6.02. It shall be the responsibility of all supervisors to ensure that all employees adhere to the requirements of this Procedure.
- 6.03. It shall be the responsibility of the Safety director to monitor the implementation and adherence to this Procedure and report violations and/or noncompliance issues to subcontractor management for immediate corrective action.
- 6.04. It shall be the responsibility of all employees to practice safe work habits and comply with the requirements of this Procedure.

7.0 Procedures

- 7.01. General

- 7.01.1. Each Site Manager must provide a safe place to work for every employee, which includes protecting the employee from electrical hazards. Before work is begun the Site Manager shall ascertain by inquiry, direct observation, or by instrument, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. The Site Manager or Safety director shall post and maintain proper warning signs where such a circuit exists. The employer shall advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.
- 7.01.2. When an electrical ground fault occurs, the current flows through the path having minimum impedance to ground. It is imperative that an employee does not inadvertently become the conductor of the current.

7.01.3. Two approved methods of protecting the worker from a ground fault, in addition to other requirements for equipment-grounding conductors, are:

7.01.3.1. Use of ground fault circuit interrupters (GFCI)

7.01.3.2. An assured equipment grounding conductor program

7.01.4. Only one of the two methods specified in 7.01.3. can be used for personnel safety at a single location. A combination of both methods cannot be used within a single location.

7.02. Ground Fault Circuit Interrupter (GFCI)

7.02.1. Attention shall be given to proper installation and maintenance of GFCIs within the requirements of the National Electrical Code (NEC) current edition (1996). The system shall be tested prior to being put in service, and the test results shall be documented and kept on file.

7.02.2. In purchasing GFCIs, the specifications shall state that GFCIs shall meet the Underwriters Laboratories Standard 943, Ground Fault Circuit Interrupters.

7.02.3. Each circuit protected by a circuit breaker GFCI requires its own neutral conductor.

7.02.4. Receptacle-type GFCIs may be used on common neutral systems and where receptacles are more than 250 feet from the breaker.

7.02.5. A GFCI polarity tester shall be used to ensure trip current values and to test the satellite receptacles downstream from the receptacle containing a GFCI.

7.02.6. GFCIs are to be installed on circuit breakers used for construction power.

7.03. Assured Equipment Grounding Program

7.03.1. The goal of an effective program are:

7.03.1.1. To reduce the potential of injuries caused by electric shock from cord sets, receptacles, and equipment connected by cord and plug

7.03.1.2. To meet the requirements of local, state, and federal rules and regulations

7.05.2. All splices shall retain the insulation, outer sheath properties, and usage characteristic of the cord being spliced.

7.05.3. Extension cords shall not be run through windows, doorways, walls, or similar openings unless they are protected from damage.

7.05.4. When cords are to be used in wet areas or exposed to the natural elements, they shall have all connectors approved and designed for the location.

7.05.5. No receptacle or cord shall accept different voltage attachment plugs.

7.05.6. Extension cords shall be protected from damage.

7.05.7. Extension cords shall be inspected before removal from a tool crib or before use (if not stored in the tool crib). Damaged cords shall not be used.

7.05.8. All extension cords used with portable electric tools and appliances shall be of a three-wire type.

7.06. Construction Offices

7.06.1. A qualified electrician shall wire all construction offices.

7.06.2. Current OSHA and NEC codes for wiring temporary trailers/structures shall be followed.

7.06.3. All trailers shall have their frames grounded back through the service and locally grounded using ground rods and connections applicable to local conditions.

7.07. Guarding Live Parts

7.07.1. Live parts 50 volts or more shall be guarded against accidental contact by unauthorized personnel only qualified authorized persons will be authorized to work around live parts 50 volts or more.

8.0 Record Retention

8.01. A record of each monthly equipment inspection shall be kept on file in the project Site Manager or Site Safety office for the duration of the project.

9.0 Training

- 9.01 The training requirements contained in this section apply to employees who face a risk of electric shock that is not reduced to a safe level by the electrical installation requirements of 1910.303 through 1910.308.
- 9.02 Practices addressed in this section. Employees shall be trained in and familiar with the safety-related work practices required by 29 CFR 1910.331 through 1910.335 that pertain to their respective job assignments.
- 9.03 Additional requirements for unqualified persons. Employees who are covered by paragraph (a) of this section but who are not qualified persons shall also be trained in and familiar with any electrically related safety practices not specifically addressed by 29 CFR 1910.331 through 1910.335 but which are necessary for their safety.
- 9.04 Additional requirements for qualified persons. Qualified persons (i.e. those permitted to work on or near exposed energized parts) shall, at a minimum, be trained in and familiar with the following:
 - a. The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment.
 - b. The skills and techniques necessary to determine the nominal voltage of exposed live parts.
 - c. The clearance distances specified in 29 CFR 1910.333(c) and the corresponding voltages to which the qualified person will be exposed.
- 9.05 Additional training will include an clients specific Safety Lockout/Tag out Procedure

BIG SOLUTIONS CONCRETE
FIRE SAFETY PROGRAM
STANDARD SAFETY OPERATING PROCEDURE

I. POLICY

The policy of Big Solutions Concrete is to comply with the Occupational Safety and Health Administration's (OSHA's)

II. PURPOSE

The purpose is to establish mandatory practices and procedures that will protect employees of Big Solutions Concrete

III. APPLICATION

This policy applies to all Big Solutions Concrete Personnel (permanent, temporary, part-time, volunteers and sub-contractors) The Site Manager or Safety will ensure compliance.

IV. REFERENCE

Federal and State Safety and Health Act-Standard 29 CFR 1910 and 1926

V. Definitions

1. Combustible Liquid - liquid having a flash point at or above 140 °F (60°C).
2. Combustible Material - liquids, solids, or gases that are relatively difficult to ignite and that burn relatively slowly (such as paper, wood, etc.).
3. Flammable Liquid - liquid having a flash point below 140 °F and a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100 °F.
4. Flammable Material - liquids, solids, or gases that are capable of being easily ignited, burning intensely, or having a rapid rate of flame spread (usually dusts, fine powders, or substances that ignite spontaneously at low temperatures).
5. Type A Fire Extinguisher - used for extinguishing ordinary combustibles
6. Type B Fire Extinguisher - used for flammable and combustible liquids.
6. Type C Fire Extinguisher - used for extinguishing electrical fires.

VI. PROCEDURE

- A. Fire Safety Program

Local fire safety programs are established and practice fire drills are held to check on the adequacy of the provisions of the fire program and on the training of personnel. The Site Supervisor or Site Safety will conduct, in conjunction with local fire fighting activities, the following fire prevention elements.

1. Fire hazard identification and abatement.
2. Fire safety education.
3. First aid and fire suppression training that includes incipient fire fighting.
4. Operation and maintenance (as required) of building, extinguishing equipment and hand held fire extinguishers.
5. Training is accomplished on initial employment, annually or as required. IAW 29 CFR 1910.157(g).

B. Fire lanes

Means of personnel egress are clearly marked and kept free of all obstructions in case of fire or other emergency requiring egress.

C. Inspections

1. Portable fire extinguishers shall be inspected periodically throughout the year will be performed and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-1970.
2. An annual inspection will be accomplished and a record of the annual maintenance date will be retained for one year after the last entry or the life of the shell, whichever is less.

D. Smoking

1. An adequate number of approved **No Smoking** signs are posted in conspicuous places where fire or explosion hazards exist.
2. Specially designated smoking rooms or smoking areas are provided and placarded.

E. Open flames/ignition sources

Smoking shall be prohibited at or in the vicinity of operations, which constitute a fire hazard, (flammable liquids and gases) and shall be conspicuously posted: "**No Smoking or Open Flame**". Open flames or other sources of ignition are not permitted in the vicinity of Continuous fresh air or properly designed exhaust systems are provided where flammable vapors may collect.

F. Heating units

Open flame or element space heaters are not used in any part of a hangar or in any shop where a fire hazard may be created. In no case are such heaters permitted in locations at which there are concentrations of flammable liquids.

G. Containers

1. Flammable-liquid equipment such as safety cans, drip pans, bench cans, portable containers/pumps, cleaning tanks, spray gun holders, swabbing cans, faucets and safety bungs on containers, and storage cabinets must bear the approval of Underwriters' Laboratories, Inc. or Factory Mutual Laboratories.
2. Drums or other receptacles containing flammable material are kept only in locations free of sparks, flames, or other sources of ignition. These storage areas are placarded with warning and **No Smoking** signs. The applicable National Fire Code, NFPA
3. Empty flammable-liquid containers are not stored until they have been thoroughly cleansed of hazardous vapors unless storage is in accordance with the requirements for full containers. The fuel tanks of small gasoline engines are similarly cleansed before they are stored indoors.

H. Ventilation

Buildings utilizing equipment in which flammable liquids are used, stored, or handled must provide adequate natural or forced ventilation or prevent vapor concentrations.

I. Storage of Combustible Materials

1. Covered, metal containers are provided and used for storing supplies of rags, waste, and other combustible materials.
2. All used rags, waste, and other combustible material are deposited in plainly marked self-closing metal containers. Self-extinguishing types of waste receptacles meeting the standards of Underwriters' Laboratories are recommended where it is difficult or impractical to maintain covers in place.
3. Containers, approved by Underwriters' or Factory Mutual Laboratories, plainly identified, and kept separate from those mentioned in the foregoing paragraph, are used for disposal of contaminated rags.
4. Disposition of these containers is made with such frequency and in such a way that they do not become a fire hazard.
5. Outside storage of combustible materials is in accordance with the Hazardous Waste Plan and local policy.
6. No more than 25 gallons of flammable or combustible liquids shall be stored in a room outside of an approved storage cabinet.

J. Temporary buildings.

1. No temporary building shall be erected where it will adversely affect any means of exit.
2. Temporary buildings, when located within another building or structure, shall be of either noncombustible construction or of combustible construction having a fire resistance of not less than 1 hour.

3. Temporary buildings, located other than inside another building and not used for the storage, handling, or use of flammable or combustible liquids, flammable gases, explosives, or blasting agents, or similar hazardous occupancies, shall be located at a distance of not less than 10 feet from another building or structure. Groups of temporary buildings, not exceeding 2,000 square feet in aggregate, shall, for the purposes of this part, be considered a single temporary building.

K. Flame Resistant Clothing (FRC)

1. Flame Resistant Clothing will be worn by BIG SOLUTIONS CONCRETE personnel when working in any facility where a potential for injury by fire exists.
2. Flame Resistant Clothing must be worn in such a way that it provides the greatest level of protection, i.e., sleeves all the way down, zippers up and buttons buttoned. If wearing FRC shirt and pants, they shirt must be tucked into the pants. FRC clothing cannot be tucked into boots.

BIG SOLUTIONS CONCRETE
ABRASIVE BLASTING PROGRAM
STANDARD OPERATING PROCEDURE

I. POLICY

It is the policy of Big Solutions Concrete to provide a safe work place for all employees. This is primarily achieved by the prevention of accidents and incidents, which could impact health and safety. The Safety director will have the overall responsibility for coordinating this program for Big Solutions Concrete.

II PURPOSE

To establish the minimum requirements to protect employees from the hazards associated with abrasive blasting operations.

III. APPLICATION

This regulation applies to all abrasive blasting operations and personnel working with abrasive blasting.

IV. REFERENCE

Federal and (STATE) Occupational Safety and Health Act Standard 29 CFR 1910,1926 and NIOSH Pub 92.102, ANSI/Compressed Gas Association Commodity specification for Air, G-7.1-1989

V. DEFINITIONS

Crystalline Silica is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of crystalline silica. Cristobalite and Tridymite are two other forms of crystalline silica. All three forms may become respirable size particles when workers chip, cut, drill, or grind objects that contain crystalline silica.

Silicosis is a disabling, nonreversible and sometimes fatal lung disease caused by overexposure to respirable crystalline silica. Silica is the second most common mineral in the earth's crust and is a major component of sand, rock, and mineral ores. Overexposure to dust that contains microscopic particles of crystalline silica can cause scar tissue to form in the lungs, which reduces the lungs' ability to extract oxygen from the air we breathe. Typical sand found at the beach does not pose a silicosis threat.

Three types of silicosis, depending upon the airborne concentration of crystalline silica to which a worker has been exposed:

Chronic silicosis usually occurs after 10 or more years of overexposure. Chronic silicosis, the most common form of the disease, may go undetected for years in the early stages. Symptoms may be one or more of the following:

- shortness of breath following physical exertion

- severe cough
- fatigue
- loss of appetite
- chest pains
- fever

Accelerated silicosis can occur after 5–10 years of high exposures to respirable crystalline silica. Symptoms include severe shortness of breath, weakness, and weight loss. The onset of symptoms takes longer than in acute silicosis.

Acute silicosis occurs after a few months or as long as 5 years following exposures to extremely high concentrations of respirable crystalline silica. Symptoms of acute silicosis include severe disabling shortness of breath, weakness, and weight loss, which often leads to death.

VI. PROCEDURE

1.1 General

1. In order to eliminate the health hazard associated with silica based abrasives, and to minimize the generation of hazardous waste, non-mineral based abrasive blast media shall be used whenever possible, e.g., steel shot, baking soda, glass beads, carbon dioxide.
2. The safety Department with site supervisor shall conduct a review of MSDS for all abrasive blast media(s) prior to the use of the material. Blast media containing silica and/or toxic metals, such as lead and arsenic shall be used.
3. Conditional use of potentially toxic blast media may be granted by the safety Department subsequent to review of the material, its intended use, and protective measures to be employed.
4. Individuals performing the abrasive blasting and those personnel working in the vicinity of the operation who may be exposed to dust and/or rebounding blast media shall use appropriate personal protective equipment.
5. Management of spent waste blast media and blasting debris shall be in accordance with client requirements and/or Federal, State and Local regulations.
6. Waste abrasive blast media and blasting debris shall not be permitted to accumulate in or around the abrasive blasting cleaning operations. Routine clean up of debris shall be maintained during the operation. Clean up shall be accomplished using methods that minimize generation of fugitive dust and personnel contamination. Clean up should include the use of HEPA filter

vacuums and wet methods. Personnel involved with debris clean up shall use PPE and is appropriate for the task.

7. Blast cleaning nozzles shall be equipped with an operating valve which must be held open manually and will shut off automatically when released by the operator (dead-man switch). A support shall be provided to mount the nozzle when not in use.
8. Operators of the abrasive blasting equipment shall be trained and knowledgeable in the safe use and maintenance of the equipment.
9. The Respiratory equipment to be worn is the N95 NIOSH certified respirator, if respirator protection is required. **Do not** alter the respirator. Do not wear a tight-fitting respirator with a beard or mustache that prevents a good seal between the respirator and the face. Wear only a Type CE abrasive-blast supplied-air respirator for abrasive blasting. Wear disposable or washable work clothes and shower if facilities are available. Vacuum the dust from your clothes or change into clean clothing before leaving the work site shall be selected used and maintained in accordance with Title 29 CFR Part 1910.134.
10. Where feasible, abrasive blasting operations shall be conducted in an isolated area of the facility. Appropriate enclosure(s), warning barricades and signs shall be erected around the perimeter of the blasting cleaning area to minimize the hazard to facility personnel and to contain the migration of rebounding and spent abrasive blast media.
11. Where not feasible to isolate the blast cleaning operation(s), e.g., tank or vessel cleaning, every attempt shall be made to control and limited personnel access into the area of operation.
12. Provision of Grade “D” breathing air shall be verified through routine, quantitative measurement of the supplied air quality, in accordance with Title 29 CFR Part 1910.94(a)(6). Only compressors equipped and verified to supply Grade “D” breathing air shall be used to provide air to supplied air respirators. Compressed breathing air shall meet at least the requirements for Grade “D” breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
 - a. Oxygen content (v/v) of 19.5-23.5%;
 - b. Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
 - c. Carbon Monoxide (CO) content of 10 ppm or less;
 - d. Carbon dioxide content of 1,000 ppm or less; and

- e. Lack of noticeable odor.
13. Compressed oxygen shall not be used in atmosphere-supplying respirators that have previously used compressed air.
 14. Great Barrier Insulation shall ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.
 15. Cylinders used to supply breathing air to respirators shall meet the following requirements:
 - a. Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (Title 49 CFR Part 173 and Part 178);
 - b. Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements of Grade "D" breathing air; and
 - c. The moisture content in the cylinder does not exceed a dew point of -50°F (-45.6°C) at 1 atmosphere pressure.
 - d. Compressors used to supply breathing air to respirators are constructed and situated so as to:
 1. Prevent entry of contaminated air into the air-supply system;
 2. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56°C) below the ambient temperature;
 3. Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions.
 4. Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.
 - e. For compressors that are not oil-lubricated, Great Barrier Insulation shall ensure that carbon monoxide levels in the breathing air do not exceed 10 ppm.
 - f. For oil-lubricated compressors, Great Barrier Insulation shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be

monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

- g. Breathing air couplings shall be incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing airlines.
- h. Filters, and other air cleaning devices, on breathing air compressors shall be maintained in accordance with manufacturer's recommendations.
- i. Where air compressors are equipped with a receiver tank, the tank shall be in compliance with all local pressure vessel requirements.
- j. When bottled compressed air is used as a source of breathing air, the air quality shall be Grade "D" or better. Certification of air quality shall be obtained from the supplier prior to using the air.
- k. Only compressed ambient air shall be used. Blended or mixed air is not acceptable.

1.2 Implementation

1. Hazard Recognition and Exposure Assessment

- a. Prior to initiating abrasive blasting activities, an evaluation shall be made of potential hazards and of required protective controls when surface coating are known or suspected to contain hazardous components such as lead, cadmium, toxic paints or other contaminants. In such cases, spent abrasive shall be periodically analyzed to identify and quantify the contaminants present in the waste and to validate protective measures.
- b. Industrial hygiene sampling and analysis shall be used to determine the extent of exposure for employees involved with, or in the vicinity of abrasive blasting operations. Exposure monitoring should be conducted when employees are subjected to silica, metals, noise, nuisance dust, gases, and vapors that may be associated with the operation. Results of exposure monitoring shall be compared to Permissible Exposure Limits (PEL) that has been established by OSHA.
- c. Employee exposure shall be monitored in the following cases:
 - 1. Information or observation indicated the potential exposure to silica, metals, noise or other substances.
 - 2. Employees complain of airborne dust.

3. An employee complains of symptoms, which may be attributable to exposure to dust, or other substances related to the abrasive blasting operation.
4. Production, process or control changes result in an increase in the airborne concentration of dust or there is any reason to suspect an increase in the airborne concentrations of dust.

2. Medical Monitoring

Medical examinations will be available to all workers who may be exposed to crystalline silica. The examinations will be conducted before job placement and at least every 3 years thereafter. Great Barrier will report any case of silicosis to the applicable State health department and to OSHA. The examination should include the following:

1. A medical and occupational history to collect data on worker exposure to crystalline silica and signs and symptoms of respiratory disease
2. Chest X-ray
3. Pulmonary function testing (spirometry)
4. An annual evaluation for tuberculosis

3. Record Retention

- a. Contaminant exposure records shall be retained for the duration of the employee's employment, plus a period of thirty (30) years.
- b. The records shall be maintained in the Company archives with the Project records.
- c. The records shall be made available to the employee upon request.

1.3 Training

1. Employees who may be exposed to silica or other hazardous substances during abrasive blasting operations shall be informed of the potential hazards, exposure control measures, and emergency procedures prior to their assignment to such an operation.
2. Employees shall be instructed in proper housekeeping practices.
3. Employees shall be instructed on the purpose, proper use and limitations of respirators. IAW 1910.134

4. Employees shall be instructed to inform Great Barrier Insulation about the development of any signs and symptoms from exposure to silica of other hazardous substances.
5. Written exposure control procedures and health hazard information shall be made available to the employee for review, upon request.
6. Employees shall be informed of the increased risk of impaired health due to combination of smoking and silica dust exposure.
7. Material safety data sheets for silica, alternative abrasives, or other hazardous materials IAW 29 CFR 1926.59
8. HAZCOM training will be conducted IAW 1926.59 and 1910.1200 and conducted as follows:
 1. Initial training
 2. Annual refresher training
 3. New chemical/materials
9. Additional training will include Great Barriers Lockout/Tagout and Confined Space program.

Engineering Controls

1. Dust suppression procedures shall be used continuously during abrasive blast cleaning operations.
2. If applicable, when local ventilation and collection systems are used in a building, the systems shall be designed, inspected and maintained to prevent the accumulation or re-circulation of dust in the workplace.
3. Measures shall be taken to ensure any discharge will not create health hazards in the outside environment, nor violate applicable air pollution regulations.
4. When mobile equipment is operated in an area of dust exposure, controls shall be provided to protect the operator from exposure.

1.4 Personal Protective Equipment (PPE)

1. PPE for employees performing abrasive blasting shall include, but may not be limited to, the following:

Type CE abrasive-blasting respirator;
Safety boots or toe guards;
Durable coveralls able to close at the wrist, ankles, and other openings to prevent entry of abrasive dust;
Safety glasses;

Hearing protection;
Heavy canvas or leather apron;
Canvas or leather gloves, with gauntlet.

2. PPE for employees working in the vicinity of abrasive blasting operations may include, but may not be limited to the following:
 1. Air purifying respirators, equipped with HEPA filters
 2. Safety boots
 3. Durable coveralls
 4. Safety glasses
 5. Hearing protection.
3. Respiratory protection used during abrasive blasting operations shall be used in conformance with Title 29 CFR Part 1910.134 and the Great Barrier Respiratory Protection Program.

1.5 Personal Hygiene and Housekeeping Practices

1. Food, beverages, tobacco products, chewing gum and cosmetics are prohibited in abrasive blasting work areas.
2. Employees shall be provided hygiene facilities for washing hands and face prior to eating, drinking, and use of tobacco products;
3. Workers should shower before leaving the worksite
4. To the degree possible, exposed surfaces shall be maintained free of accumulations of dust, which, if dispersed, could present an inhalation hazard.
5. Dry sweeping and use of compressed air for cleaning floors and other surfaces is prohibited. Wet methods or HEPA vacuuming of surfaces shall be used.
6. Collection, packaging, and disposal of abrasive blasting wastes shall be performed in conformance with client requirements and applicable regulations.

1.6 On-Site/Facility Work Areas

1. When abrasive blasting must be performed inside a building/structure without an enclosure being provided, administrative procedures shall be implemented to control access and occupancy of the area by non-essential personnel.
2. Where administrative procedures are not feasible, appropriate respiratory protection shall be provided for all employees in the area.
3. Where feasible, portable dust/debris collection equipment shall be used during abrasive blast cleaning operations.

4. When wet blasting is employed, precautions shall be taken to eliminate electrical hazards, slipping hazards, and dust hazard after evaporation of the water.
5. If dust concentrations reduce visibility or cause discomfort to unprotected employees in the vicinity of the operation, such operations shall be discontinued until the dust has been removed. If such operations must continue, non-essential personnel shall be removed from the area, and appropriate respiratory protection provided to all employees remaining in the area – provided visibility is adequate for the performance of the work.
6. Where applicable, negative atmospheric pressure shall be maintained inside of the blasting room during blasting. The room shall have minimum exhaust capacity of one air change per minute.
7. When abrasive blasting is automated, the room shall not be entered prior to the occurrence of a minimum of six full air changes.
8. In a confined space, where abrasive blasting or a pre-existing atmosphere may cause the employee to be exposed to conditions hazardous to life and where egress may be difficult if normal body functions are impaired, the following procedures shall be followed:
 - a. Confined space procedures shall govern the work.
 - b. All access hatches, trap doors, etc., shall be opened before work is started to aid natural ventilation.
 - c. Continuous mechanical ventilation shall be applied to the space.
 - d. Other potentially hazardous materials, such as solvents, crusts of chemicals or old paint shall be considered with regard to explosion or fire potential when blasted.
 - e. Type CE abrasive blasting respirator, equipped with egress air bottle, shall be utilized for respiratory protection.
 - f. Adequate lighting, which meets the requirements of the National Electrical Code, shall be utilized.
 - g. When the space is mechanically ventilated, means shall be provided to collect dust before release to the open atmosphere.
 - h. Individuals working within confined spaces shall also comply with the applicable requirements of the company safety policy.
9. For indoor blasting performed in cabinets and glove boxes, a negative pressure shall be maintained during the operation. The enclosure shall be as complete as practical.

10. Cleaning of interior blasting cabinets and components shall utilize wet methods and/or HEPA vacuum procedures, and appropriate respiratory protections.

11. Cabinets/glove boxes shall be maintained in good repair, including all gasket openings, to minimize the escape of dust.

1.7 Off-Site/Facility Temporary Work Areas

1. When employees are exposed to dust at temporary worksites, emphasis shall be placed on portable engineering controls, respiratory protection, protective clothing, and provisions for personal hygiene and sanitation.

2. Employees shall be trained to protect themselves as well as others from dust exposure.

2.0 Waste Management

Waste abrasive blast media and debris shall be collected, packaged, transported, and disposed of in accordance with client requirements and/or applicable regulations.

BIG SOLUTIONS CONCRETE
MEDICAL SURVEILLANCE WRITTEN PROCEDURE
STANDARD OPERATING PROCEDURE

- 01.0 PURPOSE
- 02.0 SCOPE
- 3.0 ORGANIZATIONS AFFECTED
- 04.0 RESPONSIBILITIES
- 05.0 DEFINITIONS
- 06.0 KEY POINTS
- 07.0 GUIDELINES
- 08.0 TRAINING REQUIREMENTS
- 09.0 RECORD RETENTION
- 10.0 ATTACHMENTS

ATTACHMENT 1 - Decision Tree for Sampling

ATTACHMENT 2 - Incident Investigation Profile form

ATTACHMENT 3 - Employee Medical Surveillance Monitoring Log

ATTACHMENT 4 - General Notes

1.0 PURPOSE

The purpose of this procedure is to ensure medical surveillance monitoring is performed in accordance with national and industry standards.

2.0 SCOPE

Applies to medical surveillance samples collected for the purpose of protecting the health of employees.

3.0 ORGANIZATIONS AFFECTED

4.0 RESPONSIBILITIES

4.1 Safety Manager or designee

- 4.1.1 Will select the sampling method to be used.
- 4.1.2 Will ensure that appropriate sampling media is available.
- 4.1.3 Will recommend certified laboratories for analyses of samples.
- 4.1.4 Will evaluate the sampling results and make recommendations for further action as appropriate

4.2 Safety Manager or designee

Must be knowledgeable in the operation and calibration of sampling equipment. Must be meticulous in following this procedure and in documenting sampling information.

4.3 Sampled Employees

Employees must wear the sampling equipment as directed. The sampling media must not be tampered with or placed in an area or position that may cause a non-representative result.

5.0 DEFINITIONS

None.

6.0 KEY POINTS

- 6.1 Medical surveillance monitoring will be performed in accordance with the OSHA 29CFR 1910 standards

7.0 GUIDELINES

- 7.1 Determine the reason for sampling and select a method for the chemical to be sampled in accordance with Attachment 1.
- 7.2 Place the sampling equipment on the selected individuals or in the selected area. Conduct the sampling according to the selected method. Deviations from the method should be carefully documented and utilized in the Safety Manager or designee's determination: is this a valid sample?
- 7.3 The collection device must be attached to the shirt collar in a vertical position within one foot of the worker's breathing zone. Sampling tubes (charcoal, silica gel, Tenax, etc.) should be in a vertical position to prevent channeling of the air contaminant through air spaces in the sorbent. Membrane filters for dusts should be pointed downward and in a vertical position to prevent ambient dust from falling into the filter.
- 7.5 Follow up with the sampled individuals frequently to ensure the sampling equipment is being worn properly and is operating correctly. Carefully document all the activities of the sampled individuals on the form in Attachment 3.
- 7.6 Exercise care when changing media in the field to ensure the sample media is not contaminated.
- 7.7 Seal and identify media as soon as they are removed from the sampling train.
- 7.8 Information associated with the sample must be entered on the Data Sampling Collection Form. The form must be quality checked by a person different than the one who completed the form. The person performing the quality check must initial the form.
- 7.9 Store the sample media as required by the sampling method. (Chemical vapor samples must be stored in a refrigerator)
- 7.10 Select a laboratory that meets the following requirements:
 - a. is AIHA accredited for the constituent of concern
 - b. has the capability to follow the NIOSH or OSHA method selected
 - c. will provide a quality assurance/quality control data package for the constituent concern, on request

Note: The sampler must be alert to special needs or procedures, For example, is the analysis required to be completed within 24 hours of sampling? Will the laboratory accept and run samples on Saturdays? Etc?

- 7.11 Complete a lab analysis request form
- 7.12 Utilize chain-of-custody procedures:
- a. be sure that the sampler completes forms that show the identity of the carrier and the date the samples were relinquished. Specify the NIOSH or OSHA method and number on the sampling form. Specify that results are to be reported in weight units and in concentration units (we supply volume).
- 7.13 Utilize blind field blanks for 10% of the sample population for each days sampling for each chemical.
- 7.14 Carefully pack the samples with plenty of padding along with the Laboratory Analysis Request. Overnight express and a cold storage container must be utilized for chemical vapor samples.
- a. Packing material that develops or holds an electrostatic charge (such as Styrofoam or "peanuts") should not be used with particulate sampling media.
 - b. Bulk samples should not be shipped with air, wipe, or biological samples.
 - c. Liquid samples must be properly bottled and capped. The cap should then be sealed with electrical tape. Liquid samples should be packaged with materials that will absorb spilled liquids (i.e. vermiculite).
- 7.16 Employees must receive written notification of their medical surveillance monitoring results within 15 days of receiving the laboratory analysis report.
- 7.16 The Safety Manager or designee will analyze the sampling results. When results exceed the OSHA Permissible Exposure Limit, an investigation will be conducted. The recommendations of the investigation must consider re-monitoring, medical surveillance, engineering controls, and modifications in PPE.

8.0 TRAINING REQUIREMENTS

- 8.1 The Safety manager and designee are required to read and understand this procedure, as well as the laboratory requirements for handling samples.

9.0 RECORD RETENTION

9.1 Monitoring records must be maintained for length of employment plus 30 years.

10.0 ATTACHMENTS

10.1 Attachment 1 – Decision Tree for Sampling

10.2 Attachment 2 – Exposure Profile Form

10.3 Attachment 3 – Employee Medical Surveillance Monitoring Log

ATTACHMENT 1 DECISION TREE FOR SAMPLING

1. What is the purpose of taking this sample?

Diagnostic: select a method for sampling and analysis; determine the appropriate sampling campaign (number of samples and length of sampling period); understand the constraints and limitations of the selected method in determining the validity of results.

Compliance: select a method for sampling and analysis; determine the appropriate sampling campaign in accordance with regulations.

2. For the constituent of concern, analyze specific OSHA regulations for guidance or requirements on monitoring and analysis

Example: The Vinyl Chloride Standard, 29 CFR 1910.1017, requires "time weighted over eight hours," "time weighted over 15 minutes," and specific accuracy requirements "section (4)".

3. The Safety Manager or designee will select the appropriate method from NIOSH or OSHA methods.

4. If an alternate method of sampling is selected (i.e., not NIOSH or OSHA), obtain written verification that the alternate method meets accuracy and precision requirements.

- a) journal article or another company study
- b) design your own study in conjunction with an AIHA accredited lab and prepare to publish (do it right!)

5. Determine the sampling and analytical error for the method. This will be in the published method or in the OSHA chemical information manual.

6. Once the method is selected, read carefully for any special requirements (limitations on sampling, interferences, disassembly of equipment, storage and shipping.)

ATTACHMENT 2

Incident Investigation Profile (Example)

Description: Two lab technicians were exposed to .85 ppm and 11.81 ppm BTX 12-hr TWA while working in the lab.

Case #: **ER98-xxx**

Date of Exposure: 08/20/98 & 09/18/98

Date of Analysis: 08/25/98 & 09/25/98

Name:

Three year History: N/A

Title: Lab Technicians

Dept: Lab

Chemicals Involved: BTX

Route of Exposure: Inhalation

Applicable Standards, Policies: 29 CFR 1910.1028

Sample Media: Charcoal

Root Causes: Two fume extraction arms were not working adequately

Activity at Time of Exposure: Performing sample analysis on Benzene samples

PPE Worn at Time of Exposure: Safety glasses, nitrile gloves & lab coat

PPE Required by SOP for Task: Safety glasses & nitrile gloves

Exposure Avoidance Programs: SOP training, ensure fume hoods and arms are working properly

Immediate Corrective Action: Perform smoke test on fume hoods & arms. Re-monitor lab techs

IIR Recommendations: 1. Re-monitor gc/oil Lab Technician
2. Work order written to repair the fume extraction arms that a not working properly.
3. Technical to write memo requesting that btx sample frequency be lessened a all sample bombs brought to the lab for analysis must be clean or the sample bombs will be refused by technical.

S&H Recommendations: 1. Wear ½ face APR OV/AG while running BTX samples until fume arms are repaired.

OER: 01/08/

IIR: 01/08/

Supervisor:

Manager:

Director:

Corrective Action Responsibility:

Responsible Person	1. Person	2. Person	3. Person	4.	5.	6.
ADC	01/06/99	12/17/98	01/11/99			

Verification of Completion:

Verification By	1. Person	2. Person	3. Person	4.	5.	6.
Actual Completion Date	01/06/99	12/17/98	01/11/99			

ATTACHMENT 3
EMPLOYEE MEDICAL SURVEILLANCE MONITORING LOG

ATTACHMENT 4 – General Notes

For Benzene, Butadiene, or VCM monitoring use the 3M brand Model 3520 passive monitoring badge.

For Ethylene Oxide monitoring use the 3M 3551 badge.

Sample at least 25% of the employees working in the area where you have determined that sampling will be performed. Submit the samples to the accredited laboratory along with one field blank for each chemical monitored for.

Accredited Laboratory:
John Corn
Armstrong Forensic Laboratories
330 Loch'n Green Trail
Arlington, Texas 76012
817-275-2691

BIG SOLUTIONS CONCRETE
TRENCHING & EXCAVATION
STANDARD OPERATING PROCEDURE

1. Shore or slope all trenches and excavations 5 feet or more in depth to prevent cave-in.
 2. **NOTICE:** Measure all trench and excavation depths from the base of the cavity to the top of the adjacent material (spoil, dirt, rock, etc.) pile.
 3. Determine all utility installations, such as sewer, telephone, fuel, electric, water lines, etc., which are expected during excavation work, before work begins. Contact the appropriate companies or owners.
 4. In trench excavations, 4 feet or more in depth, a means of egress shall be provided to workers within 25 feet of lateral travel.
 5. Workers exposed to vehicle traffic shall be provided with and shall wear reflector or high-visibility vests.
 6. Workers are **NEVER** permitted under loads handled by lifting or digging equipment. Operators shall remain in the cabs of vehicles being loaded or unloaded.
 7. If vehicle operators do not have a clear and direct view of the edge of the excavation, a warning system shall be used (such as barricades, mechanical signals or stop logs).
 8. In excavations more than 4 feet deep where oxygen deficiency or a hazardous atmosphere exists or could be expected to exist, the atmosphere in the excavation shall be tested before employees enter.
 9. Emergency rescue equipment, such as breathing apparatus, safety harness and line, basket stretcher, etc., shall be available and attended where hazardous atmospheric conditions exist or may reasonably be expected to develop.
- 10 Employees entering bell-bottom pier holes or similar deep and confined footing excavations shall wear a harness with a lifeline securely attached.
1. Employees shall not work in excavations where there is accumulated water, or where water is accumulating, unless adequate precautions are in place to protect the employee.
 2. Provide support systems such as shoring, bracing or underpinning where excavation operations endanger the stability of adjoining buildings, walls or other structures.
 3. Always provide a support system when sidewalks, pavements, etc. are undermined.
 4. Provide adequate protection to protect employees from loose rock or soil.
 5. Materials or equipment must be kept at least 2 feet from the edge of excavations.
 6. A competent person will make daily inspections of excavations, the adjacent areas and protective systems.
 7. Provide walkways or bridges with standard guardrails where employees or equipment are required or permitted to cross over excavations.
 8. Each employee in an excavation shall be protected from cave-ins by an adequate protective system, except excavations that are:
 - a. made entirely in stable rock
 - b. less than 5 feet in depth
 - c. a competent person examines the ground and finds no indication of a potential cave-in.

8. Protective systems shall have the capacity to resist, without failure, all intended loads expected to be transmitted to the system.
10. Members of support systems shall be securely connected together to prevent sliding, falling, kick-outs or other predictable failure.
11. Removal of the support system shall slowly begin at, and progress from, the bottom of the excavation.

NEVER work on the face of sloped or benched excavation while other employees are working below, unless employees at the lower levels are adequately protected from falling, rolling or sliding material or equipment.

If the support system is designed to withstand a cave-in, and there are no indications, while the trench is open, of possible loss of soil from behind or below the bottom of the support system, excavation of material to a level no greater than 2 feet below the bottom of the support system is permitted. A competent person will examine soil to determine type. Erect support systems, if necessary, according to type.

Attachment “A”

BIG SOLUTIONS CONCRETE Training Matrix

Attachment “B”

BIG SOLUTIONS CONCRETE Personnel Training Record

Attachment “C”

BIG SOLUTIONS CONCRETE
Sample Training
Confirmation Card

Attachment “D”

BIG SOLUTIONS CONCRETE Safety Meeting Form

Attachment “E”

BIG SOLUTIONS CONCRETE Field Safety Audit Form

Attachment “F”

BIG SOLUTIONS CONCRETE Job Execution Plan Form

Attachment “G”

BIG SOLUTIONS CONCRETE
Bottle Watch
Training Requirements

Attachment “H”

BIG SOLUTIONS CONCRETE

Bottle Watch

Equipment Requirements

Attachment “I”

BIG SOLUTIONS CONCRETE Confined Space Attendant Training Requirements

Attachment “J”

BIG SOLUTIONS CONCRETE Confined Space Attendant Equipment Requirements

Attachment “K”

BIG SOLUTIONS CONCRETE

Fire Watch

Training Requirements

Attachment “L”

BIG SOLUTIONS CONCRETE

Fire Watch

Equipment Requirements

Attachment “M”

BIG SOLUTIONS CONCRETE
Personnel Basket
Lift Plan Form

Attachment “N”

BIG SOLUTIONS CONCRETE
Personnel Basket
Inspection Form

Attachment “O”

BIG SOLUTIONS CONCRETE
Daily LEL Meter
Bump Test Log

Attachment “P”

BIG SOLUTIONS CONCRETE Trenching & Excavation Inspection Form

Attachment “Q”

BIG SOLUTIONS CONCRETE Offsite Safety Report Form

Attachment “R”

BIG SOLUTIONS CONCRETE
Background Check
Consent Form

Attachment “S”

BIG SOLUTIONS CONCRETE
Permit Request Form

Attachment “T”

BIG SOLUTIONS CONCRETE
Fire Extinguisher
Discharge Report

Attachment “U”

BIG SOLUTIONS CONCRETE
Confined Space
Entry / Exit Log

Attachment “V”

BIG SOLUTIONS CONCRETE Color Code Chart

Attachment “W”

BIG SOLUTIONS CONCRETE Monthly Running Rope Inspection Form

Attachment “X”

BIG SOLUTIONS CONCRETE

Reasonable Cause

Check List for Supervisors

Attachment “Y”

BIG SOLUTIONS CONCRETE Disciplinary Procedure Form

Attachment “Z”

BIG SOLUTIONS CONCRETE Incident Investigation Report

Attachment “AA”

BIG SOLUTIONS CONCRETE Vehicle Accident Report Form

Attachment “BB”

BIG SOLUTIONS CONCRETE Witness Statement Form

Attachment “CC”

BIG SOLUTIONS CONCRETE Personnel Training Record Form

Attachment “DD”

BIG SOLUTIONS CONCRETE

Aerial Lift

Pre-Shift Inspection Form

Attachment “EE”

BIG SOLUTIONS CONCRETE

Back Hoe

Pre-Shift Inspection Form

Attachment “FF”

BIG SOLUTIONS CONCRETE

Boom Truck

Pre-Shift Inspection Form

Attachment “GG”

BIG SOLUTIONS CONCRETE Compactor Pre-Shift Inspection Form

Attachment “HH”

BIG SOLUTIONS CONCRETE Compressor Pre-Shift Inspection Form

Attachment “II”

BIG SOLUTIONS CONCRETE

Dozer

Pre-Shift Inspection Form

Attachment “JJ”

BIG SOLUTIONS CONCRETE
Dump Truck
Pre-Shift Inspection Form

Attachment “KK”

BIG SOLUTIONS CONCRETE Generator Pre-Shift Inspection Form

Attachment “LL”

BIG SOLUTIONS CONCRETE Mobile Crane Pre-Shift Inspection Form

Attachment “MM”

BIG SOLUTIONS CONCRETE
Powered Industrial Truck
Pre-Shift Inspection Form

Attachment “NN”

BIG SOLUTIONS CONCRETE
Portable Light Tower
Pre-Shift Inspection Form

Attachment “OO”

BIG SOLUTIONS CONCRETE
Scissor Lift
Pre-Shift Inspection Form

Attachment “PP”

BIG SOLUTIONS CONCRETE
Skid Steer Loader
Pre-Shift Inspection Form

Attachment “QQ”

BIG SOLUTIONS CONCRETE

Track Hoe

Pre-Shift Inspection Form

Attachment “RR”

BIG SOLUTIONS CONCRETE Vehicle Pre-Shift Inspection Form

Attachment “SS”

BIG SOLUTIONS CONCRETE
Welding Machine
Pre-Shift Inspection Form

Attachment “TT”

BIG SOLUTIONS CONCRETE Horizontal Lifeline Inspection Form