HEALTH, SAFETY & ENVIRONMENTAL HANDBOOK

2018 Edition

This handbook applies to all DTC Energy Group, Inc. personnel and will be referred to as the DTC Energy Group or DTC Health, Safety & Environmental (HSE) Handbook.

This handbook serves as a reference for minimum rules and standards at DTC Energy Group operations and facilities. The guidance in this handbook is not all-inclusive. Area and local management may adopt more stringent rules and standards to meet specific needs. Contractor rules and standards must meet or exceed the requirements of this handbook as well as any related regulatory requirements.

Compiled and revised by Luke Clausen, COO and DTC Staff for DTC Energy Group, Inc., for use while training or operating at our sites and facilities. This manual was prepared to improve safety awareness and facilitate safety training.
**Table of Contents**

HSE MISSION ........................................................................................................................................................................... 7

HSE POLICY ............................................................................................................................................................................. 7

RESPONSIBILITIES .................................................................................................................................................................... 7-9
- Management ......................................................................................................................................................................... 5-6
- Employees ............................................................................................................................................................................ 6
- Contractors .......................................................................................................................................................................... 6-7

SAFETY RULES ........................................................................................................................................................................... 7

STOP WORK AUTHORITY .......................................................................................................................................................... 7-9

FIRST AID .................................................................................................................................................................................... 10

DRUG, ALCOHOL AND FIREARM POLICY .......................................................................................................................... 11-26

SHORT SERVICE EMPLOYEES .................................................................................................................................................. 26

HAZARD IDENTIFICATION AND RISK ASSESSMENT .............................................................................................................. 27-28

PERSONAL PROTECTIVE EQUIPMENT (PPE) .......................................................................................................................... 28
- Head Protection ....................................................................................................................................................................... 29
- Eye Protection ........................................................................................................................................................................... 29
- Face Shields .............................................................................................................................................................................. 29
- Hearing Protection ................................................................................................................................................................. 29
- Hand Protection ..................................................................................................................................................................... 30
- Foot Protection ..................................................................................................................................................................... 30
- Clothing .................................................................................................................................................................................. 30
- Respiratory Protection ........................................................................................................................................................... 31

OFFICE SAFETY ........................................................................................................................................................................... 32
- Workstation Ergonomics ........................................................................................................................................................... 32

SAFETY STANDARDS .................................................................................................................................................................... 33
- Confined Space Entry .............................................................................................................................................................. 33-35
- Electrical Safety .................................................................................................................................................................... 36-40
- Energy Isolation (Lockout/Tagout – LO/TO) ........................................................................................................................................... 36-40
- Excavating and Trenching .......................................................................................................................................................... 41-43
- Fall Protection ........................................................................................................................................................................ 43-48
  - Fall Arrest Systems
  - Ladder Safety
  - Personnel Lifts
  - Scaffolds
  - Blowout Preventer (BOP) Scaffolding
  - Stairs
  - Walkway/Mud Pit Guarding & Grating/Cellar Covers
- Personnel Hoisting Operations .............................................................................................................................................. 48
- Hot Work ................................................................................................................................................................................ 49-52
  - Cutting and Welding

NCMS model: Revised March 2017
- Tagging and Flagging .......................................................... 52

MOTORIZED EQUIPMENT ................................................................................................................. 52-60
- General Precautions
- Work Zone Safety
- Vehicle Safety
- Forklifts
- Gin-Pole, Winch Truck and Crane Operations
- Taglines
- Fuel Supply and Transfer

SAFE WORK PRACTICES ................................................................................................................ 60-63
- Back Safety/Lifting ....................................................................................................................... 60
- Cable, Chain, Rope and Sling Safety .......................................................................................... 61-63
  o Inspection Process
  o General Safe Working Practices
  o Rigging Practices
  o Shackles
  o Rigging of Wire Rope Clips
- Compressed Gas Cylinders ......................................................................................................... 63-64
  o Handling Cylinders
  o Using Cylinders
  o Storing Cylinders
- Fire Prevention and Protection .................................................................................................... 64-66
  o Fire Prevention Guidelines
  o Fire Response Procedures
  o Fire Fighting Procedures
  o Iron Sulfide
- Hand Tool and Power Tool Safety .............................................................................................. 67-68
- Job Safety Analysis (JSA) .............................................................................................................. 69-70
- Sandblasting ................................................................................................................................. 70
- Severe Weather Response ............................................................................................................ 71

DRILLING, WORKOVER AND WELL SERVICE SAFETY ................................................................ 71-84
- General Precautions .................................................................................................................. 71-72
- Rig Inspections ............................................................................................................................ 72
- Rig Floor Safe Practices .............................................................................................................. 72-73
- Raising or Lowering the Derrick/Scoping Out/In the Derrick .................................................... 73
- Air and Hydraulic Hoist Operations ............................................................................................ 73-74
- Stringing up the Blocks ............................................................................................................... 74-75
- Mud Mixing Operations .............................................................................................................. 75-76
- Mud Pump Operation and Repairs ............................................................................................ 76
- Wireline Survey Operations ........................................................................................................ 77
- Slips and Elevators ...................................................................................................................... 78
- Handling Tubular Goods ............................................................................................................ 78
- Drilling Under Pressure .............................................................................................................. 79
- Nippling Up/Nippling Down ...................................................................................................... 79-80
- Pressure Testing ......................................................................................................................... 80-81
- Top Drive Operations ................................................................................................................ 81
- Wireline Operations (Logging, Coring, Perforating) ................................................................. 81-82
- Fishing/Jarring Operations ........................................................................................................ 83
- Well Servicing & Stimulation Safety .......................................................................................... 83

INDUSTRIAL HYGIENE PROGRAMS ......................................................................................... 84-98
- Hazard Communication ........................................................................................................... 84-85
- Asbestos .................................................................................................................................. 86-87
- Benzene .................................................................................................................................. 87-92
  o Tank Gauging Procedures
- Hearing Conservation .............................................................................................................. 93
- Heat Exposure ........................................................................................................................ 93
- Hydrogen Sulfide .................................................................................................................... 94-96
- Lead ....................................................................................................................................... 95
- Naturally Occurring Radioactive Material (NORM) ................................................................. 97
- Bloodborne Pathogens .......................................................................................................... 97-98
- Gas Hazards Awareness ....................................................................................................... 98

ENVIRONMENTAL PROGRAMS ............................................................................................. 99-108
- Air ......................................................................................................................................... 99-101
- Water ..................................................................................................................................... 101-104
  o SPCC
  o Stormwater
  o Wetlands
- Waste Management ............................................................................................................. 104-107
- Weed and Pest Control ......................................................................................................... 107-108

EMERGENCY ACTION PLAN .......................................................................................................... 108

ONE-CALL NOTIFICATION NUMBERS .................................................................................... 108-109

AGENCY INSPECTION PROCEDURES ....................................................................................... 109-110

INCIDENT INVESTIGATION AND NOTIFICATION PROCEDURE ........................................ 110-111

ACKNOWLEDGEMENT PAGES .................................................................................................. 112

ADDENDUM I – Emergency Action Plan .................................................................................. 114-117
ADDENDUM II – Employee Access to Workplace Medical & Exposure Records ..................... 118-119
ADDENDUM III – Behavior-Based Safety Program .................................................................... 120-121
ADDENDUM IV – Disciplinary Program ..................................................................................... 122
ADDENDUM V – CPR/AED Program .......................................................................................... 123-126
ADDENDUM VI – First Aid .......................................................................................................... 127
ADDENDUM VII – Gas Hazards Awareness .............................................................................. 128
HSE MISSION

- To promote a corporate attitude whereby ALL personnel embrace these Health, Safety and Environmental concepts as their personal responsibility and their standard of excellence.
- To foster a culture in which HSE concerns are equally important to all other business activities.
- To provide a technically sound, clear, and cost-effective HSE standard for the purpose of conducting activities in a healthy, safe and environmentally responsible manner.
- To improve HSE performance, while instilling the “Spirit of Compliance” in our personnel and associates.
- To provide the means to educate and train personnel as well as subcontractors on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL POLICY

DTC Energy Group is committed to protecting people and the natural environment in all areas where it conducts business. Implementation of this policy is a management value and is the responsibility of every employee.

It is DTC Energy Group's policy to:

- Comply with all health, safety and environmental laws and regulations.
- Cooperate with local, state and federal agencies in their inspection and enforcement activities.
- Incorporate HSE considerations in the company's planning and operational decisions.
- Develop and communicate HSE objectives throughout the company so that all employees understand their individual responsibilities and are appropriately trained in carrying out these objectives.
- Manage operations in a responsible manner and respond effectively to avoid and/or mitigate adverse HSE impacts associated with operations.
- In the event of a safety or environmental incident, report information to governmental authorities concerning the situation so as to facilitate a prompt and appropriate response to potential public inquiries. Participate in the formulation of prudent and responsible HSE laws and regulations that impact operations.
- Foster constructive working relationships with health, safety and environmental organizations and agencies.
- Commit the resources needed to implement our HSE policy.

RESPONSIBILITIES

Management will:

- Promote the concept that HSE receives equal consideration with production and profits by including HSE metrics in annual employee performance reviews and operational goals.
- Strive to provide all employees with a work environment free from unsafe conditions.
- Require that all injuries, vehicle collisions, spills/environmental releases, near misses, fires and any other unsafe conditions be promptly reported to supervision and investigated as warranted.
- Accompany injured DTC Energy Group personnel to the doctor for treatment. If management is not available, a DTC Energy Group HSE designate shall accompany the injured DTC Energy Group personnel.
- Provide employees with the appropriate tools and training to successfully complete each job safely.
- Ensure all employees and contractors are qualified to perform assigned job duties.
- Communicate to all employees and contract employees the DTC HSE policies and procedures.
- Demonstrate the level of HSE excellence expected. Lead by example.
- Require the use of necessary personal protective equipment (PPE) by all employees.
- Resolve and discuss unsafe behaviors as soon as they are observed.
- Analyze HSE performance when evaluating service contracts.
- Require routine inspections and Job Safety Analysis (JSA) to evaluate and communicate potentially unsafe conditions prior to project commencement.
- Conduct and/or assign and document periodic safety meetings.

Employee will:

- Evaluate all activities before undertaking to ensure that the operation will be safe and effective.
- Demonstrate responsibility by actively caring for the safety of fellow workers and the general public.
- Stop any task/job immediately if observing an unsafe act being performed or any unsafe condition developing. There
will be no retribution for any work stoppage that occurs due to HSE concerns.

- Report all injuries, vehicle collisions, spills/environmental releases, near misses, fires or unsafe conditions to your supervisor immediately.
- Actively coordinate and participate in regularly scheduled safety meetings and training classes appropriate to the business unit and job description.
- Share your concerns for your personal safety or lack of prior training.
- Wear the required PPE according to the job description and/or task.
- Assist in incident investigations.
- Conduct Behavioral Safety Observations or Job Safety Analyses.
- Discuss any observed unsafe condition, behavior and/or practice with fellow workers and your supervisor.
- Understand and comply with all HSE rules and policies that are applicable to the location and task.
- Follow Standard Operating Procedures (SOP’s) and Job Safety Analyses (JSA’s) to complete each task.
- Advise your supervisor of all prescription medication(s) and over-the-counter medications that may adversely affect your ability to do your job safely.
- Learn the location of all emergency equipment on the site and be familiar with its purpose and usefulness.
- Become familiar with all emergency response signals and plans.

Contractor will:

- Evaluate all activities before undertaking to ensure that the operation will be safe and effective.
- Stop any task/job immediately if an unsafe act or condition is observed. There will be no retribution for any work stoppage that occurs due to HSE concerns.
- Be familiar with the respective company’s and/or DTC Energy Group’s HSE requirements before starting any project on DTC facilities. Discuss the differences and special requirements of the various programs.
- Be responsible for the actions of employees by requiring them to be trained and follow the rules that are applicable to the job and location.
- Immediately report all injuries, vehicle collisions, spills/environmental releases, near misses, fires and unsafe conditions to the DTC Energy Group Supervisor.
- Hold pre-job safety meetings to discuss the project and anticipate HSE issues. Additionally, regular safety meetings will be conducted to review the project’s progress and HSE issues.
- Actively participate in crew pre-job and post-job safety meetings and review of Job Safety Analysis (JSA) noting hazards specific to working with third party equipment and personnel.
- Provide proof of training or other HSE documentation upon request in order to pre-qualify the contractor with DTC Energy Group.
- Conduct and document incident investigations and implement corrective measures.
- Participate in HSE reviews.
- Gain approval and/or appropriate training before operating equipment.
- Ensure equipment is maintained in a safe working condition and properly rigged prior to the start of any operation.
- Provide MSDS’s for all chemicals brought to any work site to the DTC Supervisor.
- Clean-up work areas upon completion of job. Dispose of garbage in an environmentally sound manner.

SAFETY RULES

- DTC Energy Group will enforce compliance of HSE policies and practices.
- Report all injuries, vehicle collisions, spills/environmental releases, near misses, fires, unsafe conditions and unsafe work practices to management.
- Hold a pre-job safety meeting to review procedures, equipment locations and emergency plans. Ensure all required PPE and safety and emergency equipment is readily accessible for the project.
- Seat belts are required for all occupants during the operation of any vehicle used for Company business.
- It is the driver’s responsibility to require that everyone fastens their seat belt before moving the vehicle.
- Use handrails when ascending or descending stairways.
- Operation of equipment having a “DANGER – DO NOT OPERATE” or similar warning tag is prohibited.
- Under normal operations, all operating machinery and electrical switchgear is required to have all safety guards, switches and alarms in place and functional. Lockout-Tagout controls are required if safeguards are to be bypassed in accordance with the DTC-Energy Isolation Program.
- All isolation valves upstream of pressure relief valves must be locked or sealed open.
- Finger rings, loose clothing, unsecured long hair (below collar), watches and other loose accessories shall not be worn while operating electrical equipment, while climbing ladders or when within an arm’s length of rotating machinery.
- Always use proper tools and equipment for the job. Do not use damaged or incorrect tools to perform the task. Damaged
tools are to be replaced, repaired or discarded.

- Erect barricades, flags or barricade tape around areas of hazardous work, holes, floor openings, overhead work zones and exposed energized circuits. Overhead protection may also be utilized when applicable. Excavations must be flagged, fenced or secured when left unattended.
- Fire extinguishers, including portable extinguishers, eyewash stations and self-contained breathing apparatuses should be inspected monthly, annually or as required. Alarm boxes, fire doors, First Aid kits and all other emergency equipment must be well maintained and readily accessible. Fire extinguisher training will be done on an initial basis and annually thereafter.
- Smoking on Company premises is restricted to designated areas only. Smoking is not permitted in any building or enclosed structure intended for personnel occupancy.
- No smoking within 150 feet of any well, wellhead, tank battery, oil transfer pump, production facility or other area where combustible, flammable vapors or liquids could reasonably exist.
- Do not walk or stand on storage tanks or piping unless they are equipped with properly designed walkways and fall protection barriers. Never jump from one to the other!
- Never stand in the "Line of Fire" when opening potentially pressured equipment such as pig launchers/receivers, bull plugs, valves, presses, etc.
- Non-intrinsically safe electrical equipment such as cell phones, pagers, cameras and laptop computers, etc., are not to be brought into Class I Division II areas (As defined by the National Electric Code) unless cleared by the Hot Work Permitting process.
- Do not use an air hose to blow particles off of clothing, hair or skin.
- Personnel and contractors will follow applicable sections of the Manual for Uniform Traffic Control Devices (MUTCD) to protect both workers and the public when DTC activities impact traffic flow on public roads.

**Stop Work Authority**

- Employees must receive Stop Work Authority training before initial assignment. The training must be documented including the employee name, the dates of training and subject.
- All employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSE risk exist. No work will resume until all stop work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated. Employees are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where Stop Work Authority is exercised freely.
- When an unsafe condition is identified the Stop Work Intervention will be initiated, coordinated through the supervisor, initiated in a positive manner, notify all affected personnel and supervision of the stop work issue, correct the issue, and resume work when safe to do so.
- All Stop Work Interventions shall be documented for lessons learned and corrective measures to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learnings.
- It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

**FIRST AID**

In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.

- If the need arises for the employee to be transported to the nearest clinic or hospital, an ambulance will be called or a designated person on the worksite will transport them.
- In the absence of a clinic or hospital that is reasonably close to the worksite, a person who has a valid certificate in first aid will be available at the worksite if the need arises for such care.
- First aid kits that consist of appropriate items, will be available for all employees. These will be checked monthly to ensure all items are stocked.
DRUG, ALCOHOL AND FIREARM POLICY

It is the employee’s responsibility to be familiar and comply with the Drug, Alcohol and Firearm Policy specific to the individual’s respective assignment.

This policy is the minimum standard for all employees, contractors and vendors working for DTC Energy Group.

- Personnel found possessing any firearms, weapons, ammunition, drugs, or alcohol on company property will be subject to being removed from the job site, and face disciplinary action up and including discharge.

1) PURPOSE
To ensure a safe, healthy, and productive work environment for the employees of the company, customers, and others on company or customer property. To protect company and customer property and assets, ensure efficient operations, and meet any specific requirements of customers. Company shall enforce this drug, alcohol, and contraband policy in a fashion consistent with the laws of the states in which the company employees’ are employed.

2) DEFINITIONS
   a) Company Personnel:
      All company employees, agents, subcontractors or subcontractors’ employees performing field operations work on company or customer property, or those being considered for employment by the company. This includes temporary and part-time personnel.
   b) Property or Customers Property:
      All real or tangible personal property, including facilities, buildings, vehicles, products and equipment, either owned or controlled by the company or its customers.
   c) Prohibited Substances:
      i) Illicit or un-prescribed drugs, controlled substances and mood or mind-altering substances including all forms of naturally occurring and synthetic drugs (for example: any synthetic derivative/product that produces a marijuana-type high and any herbal products not intended for human consumption);
      ii) Potentially impairing medications (e.g. may be prescription drug or over-the-counter medication or herbal medicine):
         (1) Used without a prescription, or
         (2) Used in a manner inconsistent with the prescription or directions for usage, or
         (3) Used without disclosure to company as provided by Section 3(b)(iii) of this Policy
      iv) Medical Marijuana/Recreational Marijuana – The use of marijuana for medical or recreational purposes, even if permitted by state law, regulation or ordinance, will not be considered an acceptable explanation for a confirmed positive laboratory report for marijuana and will be reported by the Medical Review Officer (MRO) as a verified positive drug test for marijuana. The company will treat marijuana like they would alcohol; they are not required to tolerate individuals being under the influence while at work, or on customer property. The company will not permit or accommodate the use, consumption, possession, transfer, display, transportation, sale or growing of marijuana in the workplace.
   d) Reasonable Suspicion:
      A belief based on objective and articulable facts sufficient to lead a supervisor to suspect use of prohibited substances.
      For the purposes of this section a supervisor is a company employee acting in an official supervisory capacity who has successfully completed drug and alcohol supervisor training as outlined in this policy.
   e) Under the Influence:
      i) The presence of a prohibited substance or metabolites of a prohibited substance in body fluids above the cut-off level established by company’s policy or other commonly accepted cut-off level;
ii) The presence of a prohibited substance that affects an individual in any detectable manner. The symptoms of influence may be, but are not limited to, slurred speech or difficulty in maintaining balance.

f) **Contraband:**
   i) Any drug or alcohol related paraphernalia used or designed for use in testing, packaging, storing, injecting, ingesting, inhaling or otherwise introducing into the human body any Prohibited Substance, or
   ii) Any paraphernalia or substance used or designed for use to dilute, substitute, or adulterate any alcohol or drug test specimen, or to otherwise obstruct the alcohol or drug testing processor

i) Firearms, ammunition, explosives, and weapons.

**g) Designated Employee Representative (DER):**
Company personnel with oversight of the company Drug and Alcohol program and authorized by the company to receive test results and make required decisions regarding test results.

**h) Disqualified:**
Company personnel are disqualified from performing work if they fail to meet or comply with, or in any way violate this policy and policy of customers.

**i) Stand Down:**
The immediate removal of company personnel from performing services for company and/or customers.

**j) Medical Review Officer (MRO):**
A licensed or certified physician, designated by the company, responsible for the review and verification of the integrity of drug testing results and for the final interpretation and reporting of drug test results.

**k) Prescription Drug:**
A regulated pharmaceutical medicine that requires physician or other qualified healthcare professional authorization before it can be obtained in the jurisdiction where company personnel are performing services for company or customers. The term is used to distinguish it from over-the-counter drugs, which can be obtained without authorization.

**l) Safety Sensitive Positions:**
Any position with job responsibilities such that a lapse by an individual in that position could increase the probability of serious injury, significant environmental or community impacts or significant damage to company or customer assets.

### 3) **PROHIBITIONS**

Unless specifically authorized in writing by the company and its customers, DTC ENERGY GROUP, INC. policy shall prohibit company personnel from the following:

a) Using, possessing, selling, manufacturing, distributing, concealing or transporting on company or customer property (including off-duty time) any of the following items:
   i) Any prohibited substance; or
   ii) Contraband (except where in violation of state law); or
   iii) Being under the influence of any Prohibited Substance.

b) Possessing or using prescription drugs or over-the-counter medication that may cause impairment, except when all of the following conditions have been met, while on company property (unless otherwise provided for under the American’s with Disabilities Act):
   i) Prescription drugs have been prescribed by a licensed physician for the person in possession of the drugs, and;
   ii) The prescription is not expired and was filled by a licensed pharmacist for the person possessing the drugs, and;
   iii) The individual notifies their supervisor that they will be in possession of, or using, impairment-causing prescription drugs or over-the-counter medication and appropriate steps are taken to accommodate the possibility of impairment, including but not limited to, removal from work for the period of possible impairment. Note: Discussions between the individual and their supervisor must be limited to the individual’s ability to perform essential job functions.
   iv) Company’s health professional has assessed the capability or fitness of personnel to perform safety sensitive duties.

c) Being under the influence of prohibited substances while performing any services for the company or their customers.

d) Switching, diluting or adulterating any urine, blood or other sample used for testing.

e) Refusing to submit to a test for alcohol or drugs.

f) Refusing to submit to an inspection as provided for in Section 5 of this Policy.
g) Being the subject of a confirmed positive alcohol or drug test.

4) ROLES AND RESPONSIBILITIES

a) Designated Employee Representative (DER):
Designated Employee Representative (DER) should be an employee within the Health, Safety, Security and Environment (HSSE) department who is authorized to receive test results and other communications, take immediate action to remove workers from a company or customer’s jobsite and make required decisions in the testing and evaluation process. Specific roles and responsibilities assigned to a DER should include, at a minimum, the following:

i) Select and contract with a laboratory or service provider, based on pre-determined criteria, to help implement all or part of the Drug, Alcohol and Contraband Program.

ii) Receive general correspondence, newsletter, and announcements from laboratories and service providers.

iii) Coordinate reasonable suspicion training for all supervisors and ensure they have signed a document acknowledging completion of the training.

iv) Schedule and coordinate drug and alcohol testing activities.

v) Maintain confidential files for the Drug, Alcohol and Contraband Program.

vi) Monitor non-negative, positive, or invalid test results and results supporting that the specimens have been adulterated or substituted to determine appropriate actions.

b) Medical Review Officer (MRO):
An MRO is responsible for receiving and reviewing laboratory test results and evaluating medical explanations for certain drug test results. Roles and responsibilities assigned to an MRO typically include the following:

i) Serve as an independent party to oversee the accuracy and integrity of the company Drug and Alcohol Testing process (DOT and NON-DOT).

ii) Review appropriate copies of chain-of-custody forms to determine if problems exist.

iii) Conduct verification interviews with workers for non-negative drug test results or results indicating that the specimen has been adulterated or substituted.

iv) Interpret drug test results to determine if a legitimate medical explanation exists for a laboratory’s confirmed positive, an invalid test result or adulterated or substituted specimen.

v) Immediately report verified positive or invalid results, results requiring immediate collection under direct observation, adulterated or substituted specimens, and other refusals to test to appropriate personnel.

vi) Report written drug test results in a confidential manner to appropriate personnel authorized to receive such information.

5) SEARCHES AND INSPECTIONS
Searches and inspections may be:

a) Conducted on company or customer property, at any time, by company or customer supervisors or authorized search and inspection specialists including scent trained animals.

b) Unannounced searches or inspections of company or customer personnel and their property, which may include, but is not limited to: wallets, purses, lockers, baggage, offices, desks, toolboxes, clothing and vehicles.

c) Employees have the right to refuse being searched or having their personal effects searched or to cooperate in the requested tests; however, refusal to allow such searches or to cooperate in such lawfully permitted searches by any employee will be cause for disciplinary action, up to and including immediate termination.

d) If discovery of Prohibited Substances or Contraband cannot be directly associated with individual company personnel, but can be reasonably associated with a defined group of company personnel (e.g. people who use one change room):

   a. Customers may conduct or require company to conduct an inspection of company personnel group’s clothing, wallets, purses, baggage, lockers, work areas, desks, tool boxes, vehicles and any other designations by customers, and/or

   b. Customers may require company to conduct Group suspicion-based testing of company personnel within this group.

6) TESTING REQUIREMENTS
Drug and alcohol testing must meet the requirements of customers:
a) Pre-Access Testing

i) All company personnel are subject to customer pre-access testing which may mandate that the employee(s) receive a negative result on a drug and/or alcohol test within a customer’s specific required amount of time preceding the employee’s first access to customer property. Note: Some customers may waive this requirement if employee(s) are currently active in a random testing pool. Annual drug and alcohol testing is also required by specific customers. Upon customer’s request, company shall so certify in writing.

ii) Company will provide no information to customers identifying individuals who have positive pre-access tests.

b) Post-Incident Testing

Retaliation against employees who report accidents is strictly forbidden. Any drug and alcohol testing under this section will be applied in a neutral fashion, to foster a safe work environment, and only to identify drug/alcohol use in the recent past. Testing under this section will not be undertaken to retaliate against employees for reporting workplace injuries. Immediately following an incident or as soon as possible; company should communicate with the customer and receive confirmation that post-incident drug and/or alcohol testing will be required.

i) Company shall remove individuals from customer property and surrender their site credentials to the customers IF; it is determined by the company or customers, from the best information available immediately following a work-related incident, that the performance of one or more company personnel contributed to the incident or cannot be completely discounted as a contributing factor to the incident.

ii) Alcohol and drug testing must be completed as soon as possible after the decision to test. If specimen collection is not completed within 2 hours, the reason for delay must be documented. Customers may request to review reasons for the delay and decide if they are acceptable. An individual so removed will be allowed to return to work on customer property only after:

1) company conducts alcohol and drug testing on the individual as soon as possible following the individual’s removal from the site, and

2) the company certifies all of the following in writing:
   (a) the test identification number
   (b) the individual’s 4 digit identifying number
   (c) the test date and time, and
   (d) a negative test result

3) On the written certification the company will include a consent signed by the individual permitting disclosure to customers of the test result.

i) If an employee who is subject to post-incident testing is conscious, able to urinate normally (in the opinion of a medical professional) and refuses to be tested, that employee shall be removed from their position and shall be subject to discipline.

For the purpose of this part “incident” means:

1) An actual event that caused:
   (a) Injury requiring medical treatment beyond first aid
   (b) Environmental impact beyond a small immediate area to:
      (i) soil/ground-water
      (ii) marine life, or
      (ii) impact to nearby habitat, wildlife, livestock, crops or fisheries
   (c) Process Safety events as determined by the responsible company or customer Supervisor
   (d) Property damage as determined by the responsible company or customer Supervisor
   (e) Motor vehicle accident (the operator of the vehicle or other individuals where there is evidence to support that they may have contributed to the incident)

   ***NOTE: Customers may define more stringent criteria Or
   (f) An event that had potential for
(i) Serious injury/fatality
(ii) Environmental impact beyond Company or Customer Premises
(iii) Property damage as determined by the responsible Company or Customer Supervisor

(2) The Company may decide not to conduct a post-incident drug and/or alcohol test if:

(a) The best information immediately available after the incident indicates that the employee’s performance could not have contributed to the incident, or

(b) Because of the time between the performance and the incident, it is not likely that a drug and/or alcohol test would reveal whether performance was affected by drug and/or alcohol use.

c) Reasonable Suspicion Testing
   i) Upon reasonable suspicion of company or customers that company personnel is under the influence of a prohibited substance while on company or customer property (refer to Attachment 3 as a guide to assess whether there is reasonable suspicion for requesting a test), company shall remove the individual(s) from customer property and surrender their site credentials to the customers. Company should conduct alcohol and drug testing on the individual as soon as possible following the individual’s removal from the site. If specimen collection is not completed within 2 hours, the reason for delay must be documented. Customers may request to review reasons for delay and decide if they are acceptable.

ii) An individual removed from company or customer property for Reasonable Suspicion will be allowed to return to work on customer property only after:

   (1) Company certifies all of the following in writing:
   a) the test identification number
   b) the individual’s 4 digit identifying number
   c) the test date and time, and
   d) a negative test result

   (2) On that written certification the company will include a consent signed by the individual permitting disclosure to customers of the test result.

d) Group Suspicion-based Testing
   i. Group Suspicion-based testing of company personnel may be required without notice on customer premises, based on evidence of Prohibited Substances or Contraband on customer premises that cannot be identified to a specific individual. Group Suspicion-based testing will be limited to the likely affected work group or work area.

   ii. Company will immediately Stand Down the company personnel.

   iii. Alcohol and drug testing specimen collection must be completed as soon as possible after the decision to test. If specimen collection is not completed within 2 hours, the reason for delay must be documented. Customers may request to review reasons for delay and decide if they are acceptable.

e) Random Testing
   If specific customers require random drug and/or alcohol testing then the following guidelines will be followed:

   i. Unless otherwise specified by a specific customer, company personnel shall be subject to:

      (1) Un-announced random testing.

      (2) Performed on a quarterly basis (at a minimum). Random tests must not be predictable.

      (3) That yields a compliance of an annualized rate as determined by the customer operator.

   ii. If required by the specific customer, a breath alcohol test will be given at the same time as the drug test.

   iii. Upon notification of being selected for a drug and/or alcohol test, company personnel must report to the collection site within 30 minutes, plus travel time. The reason for delay must be documented if unable to arrive within this time frame.

   iv. Failure to report to the collection site, refusal to test, or adulterating a specimen is considered the same as a positive test and the individual could be denied access to company or customer premises.

   v. If company personnel are not in the random pool when a random selection is made, they must complete another pre-enrollment test before being re-admitted to the random pool.
f) Wall-to-Wall Testing/Group Random Testing
Company personnel may be subject to:
   i. Un-announced en masse drug and alcohol testing.
   ii. Such tests are scheduled at the sole discretion of the customers. This includes the determination of the scope and the timing of such testing.
   iii. Such a group may include all members of the named group on site at the determined time or time period and shall not be determined in terms of named individuals.
   iv. Such groups may include, but are not limited to, all company personnel on site, or by shift, by crew, by location, by craft, by company or by another similar category, including a random selection based on site access records.

7) Fitness for Work
After a fitness for work concern is identified, and before the company can return the individual back to perform Safety Sensitive services for customers, the company’s health professional must evaluate the individual, clear them to return to work, define restrictions if applicable, and document the conclusion. A fitness for concern may be identified from such events as:
   I. MRO review of a laboratory positive test result may lead to a MRO negative determination, but the MRO may identify a fitness for work concern.
   II. A required medication disclosure by those in Safety Sensitive positions.

7) TESTING PROTOCOL:
Drug and alcohol collections, chain of custody and other related procedures shall be consistent with US DOT or industry practice. For testing purposes, substances and threshold levels will comply, at a minimum, with customer requirements.

a) Custody and Control Form (CCF)
A CCF is required for every drug test. Alcohol screening test results must be documented on either a CCF or an alcohol testing form. A CCF is required for every blood alcohol confirmation test. For confirmation alcohol tests using a breath alcohol device, result and zero blank printouts must be attached to the CCF or attached to the alcohol testing form.

b) Laboratory:
Laboratories selected for employee drug testing must be evaluated against the following criteria to help ensure that results obtained from these laboratories will be reliable.
   i) Laboratories must be certified according to local laws and regulations or industry practices for providing accurate and reliable services.
      (1) Urine samples: A laboratory must be accredited/certified by either:
         (a) Department of Health and Human Services under the National Laboratory Certification Program or Substance Abuse and Mental Health Services Administration (SAMHSA), or
         (b) College of American Pathologists Forensic Drug Testing (CAP-FDT), or
         (c) National Laboratory Certification Program (NLCP).
      (2) Hair specimens must be analyzed by a Clinical Laboratory Improvement Program (CLIP) accredited laboratory.
         Note: some customers will not allow hair testing as a means to meet their requirements.

   ii) Special handling and chain-of-custody procedures must:
      (1) be written and available, and
      (2) discuss inspecting, documenting, storing, and transporting specimens.

   ii) Laboratory management and staff must have appropriate education, experience, and qualifications.

   iii) Quality-Control procedures must be:
      (1) written and available, and
(2) include testing blank and spiked samples for verification.

v) Laboratories must be able to provide technical assistance and advice concerning drug and alcohol testing.

vi) Sample supplies appropriate to the type of specimen being collected or the test run must be readily available from the laboratory.

vi) Laboratories must be able to generate confidential and accurate reports.

c) Collection Personnel:

i) Urine specimens must be collected by personnel who have been trained and certified according to the SAMHSA/DHHS guidelines which includes:

(1) basic information,
(2) qualification training,
(3) initial proficiency demonstration,
(4) refresher training, and
(5) Error correction training.

ii) Hair specimens must be collected by personnel that have documentation supporting that they have been trained in:

(1) Equipment and procedures used in gathering and collecting hair specimens.
(2) Preparing chain-of-custody forms.
(3) Preparing the specimen for shipment, and
(4) Shipping the sample to an approved laboratory.

Note: Hair testing will only be utilized for customer compliance when the customer has authorized this testing method.

ii) Breath/Saliva testing shall be conducted utilizing devices approved by the National Highway Traffic Safety Administration or equivalent. All collection and testing procedures shall mirror as closely as possible to US DOT (Department of Transportation) protocols.

d) Alcohol:

Personnel that have a blood alcohol concentration (BAC) level:

i) Personnel that have a blood alcohol concentration (BAC) level equal to or greater than 0.02 during pre-employment confirmation testing are considered to be under the influence of alcohol and will not be eligible to perform services for certain customers.

ii) Personnel that have a blood alcohol concentration (BAC) level equal to 0.02 and less than 0.04 must be removed from performing safety or security-sensitive activities until the BAC level is below 0.02 (unless customer specifies a more stringent level) and until 8 hours have elapsed.

ii) Personnel that have a blood alcohol concentration (BAC) level equal to or greater than 0.04 have violated the Drug, Alcohol and Contraband Program and are subject to disciplinary action up to and including termination (unless customer specifies a more stringent level).

8) NON-COMPLIANCE

Company personnel will be found to be in non-compliance if they:

i) Violate any portion of this policy or the customer’s policy, or

ii) Refuse to cooperate with the searches and tests included in this policy or the customer’s policy.

9) COMPANY PERSONNEL DISQUALIFIED FROM PERFORMING SERVICES FOR CUSTOMERS

With respect to company personnel that are disqualified from performing services for customers:

i) Company shall immediately remove the individual from customer property.

ii) Company shall immediately notify the customer that the individual is disqualified from performing services.
- Company will not assign or reassign the disqualified individual to perform services for the customer or in any other facility of the customer in the future.
- Company will immediately review with customer the nature of the work previously performed by the individual.
- At customer’s request, company shall, at its sole cost and risk, inspect all work in which the individual may have participated and submit a written report to the customer that documents the inspection and any findings and the actions taken to assure all deficiencies have been corrected.

**note (Company shall comply with all applicable state and local related laws. If restrictions are placed on employers, who have individuals that violate this policy, company shall contact their customer representative for instructions pertaining to the specific individual.)

10) **SUBSTANCE ABUSE AWARENESS**
Company warrants that company personnel performing work have each been fully informed of the requirements of this policy and customer’s policy. Before beginning work on company or customer property, all company personnel must sign a written certification that they have been so informed and agree to be bound by the requirements. See Attachment 1-3.

11) **APPLICABLE LAWS**
Company shall comply with all applicable Federal, State, and local drug and alcohol related laws and regulations applicable to company personnel (e.g., DOT regulations, Department of Defense (DOD) Drug-Free Workplace Policy, Drug-Free Workplace Act of 1988, etc.).

12) **SUPERVISOR TRAINING**
Company shall provide training/education to company supervisors. The list, at a minimum, should consist of:
- Recognition of performance indicators of probable drug and/or alcohol use.
- Effects and consequences of drug and/or alcohol use to personal health, safety and the workplace.
- 60-minute training session on the specific, contemporaneous, physical, behavioral, and performance indicators of probable drug use.
- 60-minute training session on the specific, contemporaneous, physical, behavioral, and performance indicators of probable alcohol use.
- Random testing notification process.
- Post-incident testing process.
- Stand-down process.
- Disqualified individual processes, which includes flagging those individuals to ensure they won’t be sent back to work for a customer.

** Records of trained individuals (including name and date) must be maintained by the company and available to customers upon request.

13) **AUDIT**
- Company shall keep records required by this policy available for inspection by customers during the period that the company is performing work for customers and for a period of (1) years after company ceases to perform work for that customer.
  - Such records include but are not limited to:
    1. Laboratory copies of test results.
    2. Chain of custody forms.
    3. Copies of signed acknowledge/consent forms from this policy.
    4. Random testing notification.
    5. Post incident testing.
    6. Reasonable suspicion testing.
    7. Stand down procedures.
    8. TPA contact information (if used).
(9) MRO(s) name and contact information.
(10) List of collection sites.
(11) Records of personnel training and demonstrated competency in drug specimen collection and evidential breathalyzer tester.
(12) Laboratory contact information.
(13) Written procedure for ensure company personnel, who are disqualified from providing services to customers, continue to be excluded from customers locations.

ii) Records can be stored electronically as long as they are accessible upon request.

b) At their discretion, customers may perform unannounced audits of the company’s alcohol and drug program to verify that the company’s policy and its enforcement comply with these guidelines.

c) At customer’s request the company shall:

   i) Provide separate lists of company personnel (including name and 4 digit identifying number) who were eligible for customers work on a date specified by customers.

   ii) Provide customers with the following information on each alcohol and drug test conducted for each company personnel identified by customers from those lists:

      (1) Date of and type of test (e.g. random, pre-access) and;

      (2) Laboratory chain-of-custody identification number and/or test number.

d) Upon submission by customers of a list, or lists, of 4 digit identifying numbers, chain-of-custody ID numbers and test dates, the company shall obtain an agreement with any consortium, laboratory, or Medical Review Officer (MRO) providing drug and/or alcohol testing services for the company to ensure:

   i) The consortium/laboratory will verify that the tests were conducted as represented, and

   i) The consortium/laboratory or company MRO will provide a sworn statement attesting whether or not each of the tests identified by the customer can be confirmed as negative.
Acknowledgement of drug and alcohol contraband policy receipt

I hereby acknowledge that I have been provided a copy of the DTC ENERGY GROUP, INC. drug/alcohol policy requirements. I understand that disciplinary action up to and including termination, will result if I violate this policy.

I also hereby authorize and consent to disclosure by DTC ENERGY GROUP, INC. and its agents, including, but not limited to, any collecting and testing agencies, of the drug and alcohol test results and any related information to customers of DTC ENERGY GROUP, INC. and its authorized agents, assigns, or representatives.

________________________________________________________________________  ___________________________________________________________________
Employee Signature                                                   Date

________________________________________________________________________
Employee Printed Name

*** This consent form is for release of NON-DOT tests. Please follow DOT regulations if you choose to submit DOT test results in place of non-dot in order to meet the requirements of a specific client.
1. **SUPERVISOR TRAINING**
Managers and supervisors must be adequately trained in the topics listed below to ensure they effectively communicate and implement the Drug, Alcohol and Contraband Program.

- Rationale for having the Drug, Alcohol and Contraband Program.
- Requirements contained in the Program.
- Procedures for implementing the Program.
- Drug and alcohol abuse terms and symptoms.
- Reasonable suspicion that an employee is under the influence of drugs or alcohol.
- Documentation of potential drug or alcohol abuse problems.
- Protecting employee confidentiality.

Training on the recognition of performance indicators of probable drug and/or alcohol use and on its effects and consequences to personal health, safety and the workplace shall be included. It is required that each supervisor who will determine whether an employee must be tested based on reasonable suspicion, receive at least one 60-minute training session on the specific, contemporaneous, physical, behavioral and performance indicators of probable drug and alcohol use. Records of individuals trained (including name and date) must be maintained by the company and available to customers upon request.

(See Attachment 3: Supervisor Drug and/or Alcohol Checklist)

2. **EMPLOYEE EDUCATION**
Employee education opportunities must be developed to communicate the Drug and Alcohol Testing Program. Education and communication must include, but are not limited to the following topics:

- Requirements contained the Drug, Alcohol and Contraband Program.
- Types and effects of drugs, including prescription and over-the-counter medication, and alcohol on employees and the ability to perform their work safely.
- Ways to assess whether employees may have drug and alcohol dependency problems or may be under the influence of drugs or alcohol.
- Requirement to inform supervisors of reasonable suspicion of an employee being under the influence of drugs or alcohol.
- Disciplinary actions for employees failing to comply with the Drug, Alcohol and Contraband Program.
## Supervisor Drug and/or Alcohol Checklist

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Smell of alcohol on breath of person?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Speech:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Slurred?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Confused?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Fragmented?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Slow?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Unusually soft?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Unusually loud?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Disorientation – Is the contractor confused about:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Where he or she is?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï What day it is?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï What time it is?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Apparent inability to focus on work?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Unusual or unexplained resistance to authority or refusal to follow reasonable directions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Lack of motor coordination?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Mood:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Belligerent?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Moody?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Ecstatic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï More nervous than usual?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Giddy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Talkative?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Drowsy?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Skin color:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Pale?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ï Flushed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Excessive perspiration?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Excessive trips to the restroom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Bloodshot eyes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Dilated pupils?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Pinpoint pupils?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Traces of alcohol in containers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Confession by contractor that he/she was drinking alcohol or ingesting drugs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Confirmation by other contractors or employees?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Presence of substances with the appearance of drugs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Presence of drug paraphernalia?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Smell of marijuana?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Congregation of contractors in remote areas of the companies, facilities, or in areas not usually frequented by contractors?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Weariness, fatigue, or exhaustion?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Deteriorating physical appearance?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Yawning excessively?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Supervisor Drug and/or Alcohol Checklist

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Blank stare or expression?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Sudden and/or unpredictable change in energy level?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Unusually energetic?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Shaking or trembling of hands?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Sunglasses worn at inappropriate times?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Changes in appearance after lunch break?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. Withdrawal and avoidance of peers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. Complaints from co-workers?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Excessive absenteeism, especially Mondays, Fridays and days before or after holidays or paydays?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Unusually high incidence of colds, flu, upset stomach, and/or headaches?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Unauthorized or unscheduled absences?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Breathing or swallowing difficulties?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Unusual sneezing / nasal congestion?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. Needle marks on arms?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. Prolonged lunch hours?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Tardiness?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Unexplained departures from work or disappearances from the job area?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. More than average number of job-related mistakes injuries or accidents?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. Decrease in efficiency or productivity?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43. Careless operation of equipment?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44. Careless performance of job?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## SHORT SERVICE EMPLOYEES

### Definition and applicability

- For purposes of this program, the term "short service" shall mean a length of service less than six months from the date of initial employment with the Company.
- One or more experienced employees will be assigned as a mentor to the short service employee. In this role the mentor will be available to that employee to answer questions, offer guidance and advice, and generally provide the benefit of the mentor’s experience, personal support and encouragement on a personal level. Under no circumstances will the short term employee be permitted to work alone.
- Prior to starting work, the contractor shall notify the host facility (project coordinator, contractor contact, and/or on-site supervisor) if Short Service Employees are present on work crews. Short-service employees shall be visually differentiated at Company and host employer job sites and work locations by the requirement that they are provided with, and that they wear while on duty at the work location, a standardized green hardhat.
- Short Service Employees shall be monitored for compliance with health, safety, and environmental policies and procedures. Once the Short Service Employee has demonstrated competency and compliance with HSE policies and procedures, the contractor may remove the hi-visibility identifier.
- Subcontractors must manage their Short Service Employees in accordance with the requirements of the Short Service Employee program.
HAZARD IDENTIFICATION AND RISK ASSESSMENT 10 CFR 851.21(a)

Hazard Definition

- A hazard is the potential for harm (physical or mental). In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness. Identifying hazards and eliminating or controlling them as early as possible will help prevent injuries and illnesses.
- Utilize JSAs and JHAs and common sense to identify and mitigate workplace hazards. The hazard identification process should be used for routine and non-routine activities as well as new processes, changes in operation, products or services as applicable.

Hazard Categories

- **Safety hazards** can cause immediate accidents and injuries. Examples are hot surfaces, broken ladders, and slippery floors. Safety hazards can result in burns, cuts, broken bones, electric shock, or death.
- **Chemical and biological hazards** are agents that can make you sick. They can get into the body through the nose, mouth, or skin to cause harm.
- **Other hazards** are those that cannot be classified into the other categories but can cause health or safety problems for workers. This can include stress, violence, and ergonomic hazards.

Objectives of Hazard Identification

- Identify the safety and health hazards (problems) that workers are exposed to. Learn how these hazards affect their safety and health. Make a plan to reduce or get rid of these hazards and problems. Develop a sense of solidarity among the workers.

Hazard Severity Ranking

- Hazards must be ranked according to severity, based upon the likely effect, by the following criteria:
  1. Major – Death or major injury/illness causing long-term disability
  2. Serious – Injury or illness causing short-term disability
  3. Slight – All other injuries or illnesses

Hierarchy of Hazard Controls

- The first thing you need to do is eliminate the hazard. If you get rid of the hazard it will no longer pose a danger to you or your coworkers. For example, if the floor is wet and people are slipping, the best way to prevent an accident from happening is to dry that floor.
- The second thing you can do is substitute the hazard. When you can’t get rid of the hazard, then maybe you can change it to something else that will not be as dangerous. For example, you can use white vinegar to clean windows instead of using Windex.
- If you can’t eliminate or substitute the hazard, the next best thing you can do is use engineering controls or safeguarding technology. For example, if you have to use a round saw at your work and it does not have proper protective devices, what do is change it for one that has a guard that will protect you from cuts.
- And last, the least effective way of controlling a hazard is wearing personal protective equipment. If none of the strategies we have discussed are available, which means that there is no better way to control the hazard, then at least we can try to protect our bodies with PPE.
- Whichever of the available mitigation techniques is utilized it should be documented and enforced. Employees will be trained in the hazard identification process including the use and care of proper PPE.
PERSONAL PROTECTIVE EQUIPMENT

The following rules identify required personal protective equipment for ALL personnel including contractors. Loaner equipment may be provided for visitors at the location. The DTC onsite job representative should be consulted in advance to determine need and availability.

Additional information can be found in 29 CFR 1910.132 Subpart I.

General Guidelines

- DTC Energy Group will provide non-prescription safety glasses, hardhats, hearing protection and any other protective equipment that is needed for the job to DTC employees. DTC will provide FRC apparel as required by client’s contract and OSHA regulation. Training will be provided on when PPE is necessary, how to properly don, doff, adjust and wear PPE, the limitations of PPE, the proper care, maintenance, useful life and disposal of PPE. Retraining of the employee will be done when the workplace changes, the type of PPE changes or when the employee demonstrates lack of use, improper use, or insufficient skill or understanding. The training and/or retraining will be documented with the employee name, the dates of training, and the certification subject.

- A hazard assessment will be done to indicate a determination if hazards are present or are likely to be present, which necessitate the use of PPE. Assessment will be documented and include the certifier’s name, signature, date(s) and identification of hazards.

- All personal protective equipment (PPE) must meet applicable standards established by recognized governmental and/or industry groups. Defective or damaged PPE will not be used.
- Personnel handling chemicals or other agents must wear proper eye or face protection, respiratory protection, gloves and aprons. Employees are responsible for the proper use, cleaning and storage of their assigned PPE.
- Rubber gloves, rubber apron and chemical goggles will be worn when handling chemicals or hazardous materials such as acids, caustic soda and soda ash. Adequate training is required prior to handling these materials.

Head Protection
(29 CFR 1910.135 and MSHA Part 56.15002)

- Approved hardhats are to be worn in field operations and other designated areas.

- Newly acquired hardhats shall meet the minimum requirements set forth by ANSI Z89.1 1997 (Type 1 or 2 – Class E Hardhats).

- No modifications or alterations of the shell or support harness are permitted. Hardhats must be worn as designed, specifically bill forward and level. No ball caps, hoods or similar head covering under the suspension will be allowed. Winter linings are approved and should be installed so as not to interfere with the suspension as designed.

- Hardhats will not be painted. Name, title and appropriate safety stickers are allowed.
Eye Protection
(29 CFR 1910.133 and MSHA Part 56.15004)

- Safety eyewear must meet or exceed ANSI Z87.1 and be worn during field operations or as designated.
- ANSI approved eyewear is to be worn over non-ANSI approved eyewear or those not having side shields.
- Avoid the use of contact lenses while working with chemicals. If contact lenses are worn, special precautions such as wearing goggles must be taken.
- Dark-tinted glasses specifically designed for cutting will be worn by the welder at all times when using an oxygen-acetylene torch.
- Dark-shaded safety glasses are not an acceptable alternative.
- Welding helmets fitted with #10 filtered lenses will be worn by the welder. The welder’s fire-watch or work assistant will wear welders #5 filtered cutting lenses at all times when electric arc welding.
- Splash-proof chemical goggles will be worn when handling hazardous chemicals liquids or powders, or when exposed to chemical fumes. Examples include: cleaning with chemical solutions or solvents, or while handling or mixing chemicals.

Face Shields
(29 CFR 1910.133 and MSHA Part 56.15014)

- Face Shields will be worn over safety glasses any time there is exposure or flying debris or splashing particles. Examples:
  - Changing tong dies
  - Hammering on high-tensile steel (like chain links)
  - Using bench grinders or portable disk grinders
  - Chipping, filing, buffing
  - Spraying with a high-pressure paint or water gun
- Although face shield fogging is a known problem, employees are expected to stop the activity, clean the face-shield and then continue on with the activity. Fogging does not relieve the employee of the responsibility for wearing the full face shield when appropriate.

Hearing Protection
(29 CFR 1910.95 and MSHA Part 62.160)

- Hearing protection must be worn in designated high-noise areas. (85 dBA or higher).
- If the high-noise area is determined to be 115 dBA or higher, dual protection (inserts and muffs) shall be worn.
Hand Protection
(29 CFR 1910.138 and MSHA Parts 56.15006 and 15007)

- Personnel must wear hand protection appropriate for the task when performing work that may cause injury to the hands. An example would be wearing rubber gloves when handling caustic soda, acids, soda ash and lime.

- Electrical lineman’s gloves are to be worn when working on energized electrical equipment that exposes the employee to voltages greater than 50 VAC, except during diagnostic testing.

- Gloves will be replaced or tested every six months as required. Wearers of the lineman’s gloves are to test for holes or leaks before each use. Defective or damaged gloves must not be used. Any glove found defective or damaged should be destroyed and replaced immediately.

- No rings, jewelry or other personal accessories, including wrist bands, may be worn while working around electrical equipment or rotating machinery such as a drilling rig.

Foot Protection
(29 CFR 1910.136 and MSHA Part 56.15003)

- Protective footwear is required to be worn in field operations and other designated areas.

- Management may dictate the need for special requirements (i.e. defined heel, leather, canvas, etc.).

- The protective footwear must meet or exceed ANSI Z41.1 (compression and impact ratings).

- Foot protection should cover the ankles. This negates the use of steel (hard) toed tennis shoes.

Clothing
(29 CFR 1910.132 and MSHA Part 56.15007)

- Clothing will not be torn, baggy or ragged such that it may catch on machinery or create unnecessary exposure to the employee’s torso, arms or legs.

- FRC clothing must have a minimum of 4-inch sleeve covering the shoulder. The wearing of tank tops, sleeveless shirts or wearing of overalls with no shirts is prohibited.

- Pants will be full-length and made of sturdy material such as cotton.

- Pants will not be tucked inside of work boots while handling chemicals, mud mixing or welding activities.

- Short pants are prohibited unless authorized by management.

- Clothing should be washed frequently. Oil-saturated clothing irritates the skin and constitutes a fire hazard.
Flame retardant clothing (FRC) will be required for all personnel working on DTC field locations where experience and or hazard assessment has identified a risk of “Flash Fire”. FRC is not intended to be used in place of administration, engineering and work practice controls, but to provide an added margin of protection. DTC’s FRC requirements are available from our HR Representative and are based on OSHA’s.

Respiratory Protection
(29 CFR 1910.134 and MSHA Part 56.15005)

DTC Energy Group has adopted this written Respiratory Protection Policy. Respiratory protection will be provided to all employees based on hazard exposure. Hazards will be identified, and NIOSH certified respirators will be provided free to the employee based on these hazards. Any employee identified as needing respiratory protection for job responsibilities must have a medical evaluation prior to fit-testing and are required to pass this evaluation before initial use and annually. The fitness test and medical evaluation and/or questionnaire must be reviewed by a physician. Medical evaluations will be confidential, take place during normal working hours, convenient, understandable, and the employee will be provided a chance to discuss the results with the physician or other licensed health care professional (PLHCP).

Training will be provided prior to using a respirator so the employee has the understanding of respirators, fit, use, limitations, emergency situations, wearing, fit checks, maintenance and storage and other general requirements of the OSHA standard. Annual training will also be provided so that employees have a general understanding of respirator use in accordance with OSHA standards.

- All respirators used must be NIOSH certified and selected based on the hazards that the employee is exposed to.
- Tight-fitting face pieces will be fit-tested by qualitative or quantitative methods.
- Respirators will be provided in a clean and sanitary manner and must be regularly cleaned and disinfected after each use and stored in a sanitary container when not in use.
- Employees must leave the area to wash, change cartridges, or if they detect break-through or resistance.
- Dust masks are NOT permitted as respiratory protection. Dust masks are not a suitable replacement for air-purifying, half-face respirators.
- Dual cartridge respirators will be worn whenever spray-painting or by anyone working or exposed to atmospheres contaminated with harmful dusts, mists, smokes, sprays or vapors.
- Self-Contained Breathing Apparatus (SCBA’s) will be used for entering areas contaminated with toxic gases or atmospheres that are oxygen deficient.

Note: The Confined Space Entry process must be followed prior to entry.

- Air supplying respirator hoods will be used while sandblasting.
- All personnel wearing a respirator must be clean-shaven in the seal area of the respirator to ensure a proper fit and seal.
- In addition to inspections after each use, annual inspections of respirators will also be conducted.
OFFICE SAFETY

In addition to other procedures/precautions in this manual, the following safety precautions should be followed when working in an office environment. There may be other site specific procedures or requirements so check with Facility Operations Management or the Building Manager as well.

Precautions

- Each employee shall be familiar with the location of the fire alarm pull station nearest their workstation.

- Each employee must become familiar with the appropriate evacuation route for their workstation. Evacuation routes for each floor and building area are clearly marked in prominent locations.

- During fire alarms, designated Fire Wardens should make last-minute searches of their assigned areas to ensure all personnel are evacuated. Employees are expected to help the Fire Wardens by clearing the area quickly. If a Fire Warden requests you to leave an area – LEAVE the area!

- During evacuations, DO NOT USE ELEVATORS! Employees must use the stairwells, following the nearest exit signs and evacuation drawings. Check closed doors for temperature and smoke before opening.

- All passageways, entryways, aisles, storerooms, service rooms and work areas must be kept clean, orderly, sanitary and well maintained with no obstructions.

- Aisles and hallways shall remain unobstructed for evacuation and immediate access for fire response personnel and equipment.

- Flammable and combustible materials or residue in buildings or operational areas must be kept to a minimum. These materials should be stored in metal safety cans or storage cabinets that meet Underwriters Laboratories, Inc., or Factory Mutual standards.

- Material/boxes must be stacked without blocking sprinkler heads, fire exits, fire extinguishers, electrical control panels, etc.

- File drawers and desk drawers shall not be left open. Do not overload top drawers or simultaneously open multiple drawers such that cabinets may tip over.

WORKSTATION ERGONOMICS

Employees should utilize these tips to prevent stress-related injuries:

- Adjust chair height so that upper legs are horizontal and feet are flat on floor.

- Adjust chair to sit up straight and obtain proper back support.

- Avoid tilting or turning head to view the computer monitor.
• Avoid tilting your head to hold the telephone receiver on your shoulder. Employ Bluetooth whenable.

• Ensure forearms and wrists are level.

• Avoid resting hands, wrists or arms on hard or sharp edges.

• Ensure computer table is just below forearm/wrist height.

• Ensure that the workstation provides adequate legroom and a measure of privacy.

• Keep arms resting comfortably at sides and shoulders relaxed.

• Place keyboard and mouse at comfortable distance from the body.

• Place frequently used items within easy reach or positioned to provide for brief exercise.

• Place document holders at the same height and distance as the computer monitor.

• Alternate tasks to break up extended periods on the computer.

SAFETY STANDARDS

Confined Space Entry
(29 CFR 1910.146 Subpart J and MSHA Part 56.16002)

This standard establishes procedures necessary for preparation, entry and restoration of a confined space to be entered by personnel. Examples of confined spaces may include, but are not limited to tanks, vessels, underground meter boxes and valve boxes. Excavations greater than four feet deep may meet the definition of a confined space if they are to be entered by personnel. These excavations shall be entered in accordance with the Excavating and Trenching Safety Standard.

Definitions

Attendant – an individual who is stationed outside a confined space which requires a permit. An attendant is required whenever a physical hazard cannot be eliminated or when a hazardous atmosphere cannot be controlled through ventilation. The purpose of an attendant is to monitor and communicate with the entrant in the event of a developing emergency or if evacuation is required.

Confined space:
• Is large enough and so configured that personnel can bodily enter and perform assigned work.

• Has limited or restricted means for entry or exit.

• Is not designed for continuous personnel occupancy.

Entrant – An individual who is authorized by the company to enter a confined space.
Entry – Begins when any part of the entrant’s body breaks the plane of the entryway. Opening hydrocarbon vessels/tanks for gauging and inspections without breaking this plane will not require a Confined Space Permit.

Entry Supervisor – An individual responsible for determining if acceptable entry conditions are present, for authorizing entry, overseeing entry operations and for terminating entry into a permit required confined space.

Permit-Required Confined Space – A space that meets the definition above, but also contains a hazardous atmosphere which cannot be controlled, or a serious physical hazard which cannot be eliminated. An Attendant must be present, and the Attendant, Entry Supervisor and Entrant must complete and sign the Confined Space Entry Permit. A permit-required confined space may be reclassified to a non-permit confined space whenever the hazardous atmosphere can be controlled or serious physical hazard is eliminated.

The Duration of the Permit is:
- Crew change, end of shift or end of job, whichever occurs first;
- Emergency conditions will cancel the permit.

Preparation for Entry
In preparation for entry, a Confined Space Entry Permit shall be completed according to the following procedure:

1. Hazards are to be eliminated or controlled.

2. Each space must be inspected and evaluated by a qualified individual (Entrant, Attendant or Entry Supervisor) prior to entry and periodically thereafter to verify that conditions remain consistent with the permit. An evaluation will include atmospheric monitoring and a thorough assessment of physical hazards.

3. Signs and/or barricades shall be posted outside confined spaces to notify unauthorized personnel when entry is in progress. If the confined space is to be left unattended, access to the space shall be secured.

4. The confined space or vessel must be properly isolated using blind flanges, line disconnection or double block and bleed isolation, in addition to locking out and tagging. A list of all blind flanges installed, line disconnects, locked isolation valves, opened vents or other energy isolating measures is required.

5. Atmospheric monitoring for oxygen, explosive gases/vapors and toxic gases/vapors shall be performed and recorded on the Confined Entry Space Permit immediately prior to entry; after work breaks or interruptions in the work procedure; and at periodic intervals to ensure the continuing safety of workers in the space. At a minimum, the following tested atmospheric hazards shall be within these acceptable levels:
   - Oxygen = 19.5% – 23.5%
   - Lower Explosive Limit, LEL = < 10%
   - Suspected toxic air contaminants (i.e. Hydrogen Sulfide, Carbon Monoxide, etc.)

6. All practical efforts shall be made to reduce flammable gases or vapors (%LEL) as close to zero as possible in the Confined Space. If tests indicate a hazardous atmosphere, efforts to control the condition are to be
made utilizing forced air ventilation. If explosive gases or vapors are present, an explosion-proof blower or air mover is required. If other conditions exist, the space must be purged, steam washed, etc. to sufficiently free the vessel of possible contaminants.

Note: Forced air may present a hazard if iron sulfide is present (see Fire Safety).

7. Where flammable or combustible gases or liquids are present, all sources of ignition shall be eliminated or controlled.

8. Lighting equipment must be explosion-proof and have a ground fault circuit interrupter (GFCI).

9. If the confined space atmospheric tests are not within the acceptable limits or the physical hazards cannot be eliminated, the space is classified as a PERMIT-REQUIRED CONFINED SPACE and must have an Attendant and/or Entry Supervisor trained to perform these duties. The Attendant shall be stationed outside the space and remain in direct communication with the worker(s) inside. The Entry Supervisor may serve as the attendant, provided they are trained to do so.

Note: Only properly trained personnel can enter a permit-required confined space.

10. A minimum of two individuals must be present when entering a vessel.

11. Rescue equipment including lifelines, harnesses, air supply systems and hoists must be in use when entering all permit-required confined spaces. A trained rescue team is to be available onsite when personnel are required to enter a permit-required confined space.

Entry
Authorized personnel may make entry after preparation requirements have been met and a Confined Space Entry Permit has been signed, issued and posted at the space. Authorized personnel designated to enter the space must review the provisions of the permit and sign the permit.

The confined space atmosphere shall be re-tested as often as necessary during entry to ensure a safe work environment.

Restoration
When work is complete and the confined space is ready to be returned to service, the permit shall be used as a checklist for proper restoration of the space. Additional items to consider include:

- Are all personnel out of the space?
- Are all blinds removed, vents closed, etc., per the list compiled during preparation?
- Are all equipment and tools removed?
- Are all entryways and flanges closed and sealed?
- Have start-up procedures been reviewed?

Program Review
Completed permit-required confined space entry permits must be maintained at the site office for review.
SAFETY STANDARDS

Electrical Safety
(29 CFR 1910.301 Subpart S and MSHA Parts 56.12001 – 12071)

This section contains basic electrical safety practices.

Definitions

Qualified Person (OSHA) – Characterized by the person whose work requires that they become familiar with the hazards, construction, operation and maintenance of equipment that may involve potential contact with exposed energized parts, and be trained to perform the required tasks safely. A Qualified Person shall perform all equipment modifications, repairs and installations involving exposure to energized parts.

Unqualified Person (OSHA) – Persons who operate electrically powered equipment but are not trained to perform any operation or maintenance on or near any exposed energized parts.

Electrical Safety Rules

Note: The term "work on" energized equipment includes the testing of energized electrical circuits.

- Only a Qualified Person shall repair, install, troubleshoot or work on electrical circuits. All electrical circuits should be de-energized whenever possible before an employee works on or near the electrical equipment.

- Qualified employees must adhere to the approach distances in Table S5

<table>
<thead>
<tr>
<th>Voltage range (phase to phase) – Minimum approach distance</th>
<th>Minimum approach distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>300V and less…………………………………Avoid Contact</td>
<td></td>
</tr>
<tr>
<td>Over 300V, not over 750V…… 1 ft. 0 in. (30.5 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 750V, not over 2kV………1 ft. 6 in. (46 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 2kV, not over 15kV………2 ft. 0 in. (61 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 15kV, not over 37kV……3 ft. 0 in. (91 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 37kV, not over 87.5kV…3 ft. 6 in. (107 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 87.5kV, not over 121kV…4 ft. 0 in. (122 cm)</td>
<td></td>
</tr>
<tr>
<td>Over 121kV, not over 140kV…4 ft. 6 in. (137 cm)</td>
<td></td>
</tr>
</tbody>
</table>

- Unqualified employees must maintain a 10’ clearance distance.

- All employees are to be trained in the hazards of working on or near energized electrical equipment. Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.

- All electrical circuits are to be considered energized until the absence of electrical current is verified by a Qualified Person.

- An approved Energy Isolation (LO/TO) program must be utilized to isolate the energy source.
• Work on an energized circuit will only be done as a last resort when LO/TO makes the circuit unsafe or testing and troubleshooting of the circuit requires it to be energized.

• Use suitable protective equipment and tools rated for the appropriate voltage and flash hazard, including, but not limited to lineman’s gloves, mats, blankets and flash suits to provide insulation from energized circuits and arc flash.

• Un-insulated metallic items, such as rings, neck chains, watches, eyewear, etc., are not to be worn while working on or near exposed energized electrical circuits.

• Electrical interlocks must not be rendered inoperative by removal, modification or destruction. Electrical interlocks may be defeated only temporarily during the performance of a specific task and must be returned to working condition immediately thereafter.

• Blown fuses shall be replaced with equal type and interrupting rating using the appropriate fuse tool and Personal Protective Equipment.

• Fuse pullers will be used for changing electrical fuses.

• Non-conductive ladders must be used when working on or near electrical equipment or conductors. The use of metal ladders and stools is prohibited.

• Defective electrical equipment and extension cords are to be inspected and immediately removed from service if found to be unsafe until repairs or replacement can be performed.

• Portable cord and plug-connected equipment shall be inspected prior to each use and be equipped with a cord, which has ground fault protection or is double insulated.

• Lighting fixtures will be kept in working order. Broken or burned out bulbs will be replaced promptly. Vapor proof globes and guards will be placed over lights where necessary.

• Electrical equipment (including lights, radios, pagers, blowers, etc.) used within a 5-ft. radius of the well bore, shale shakers or mud pits will be explosion-proof.

• Shop lights on drop cords will NOT be lowered into the well bore for light.

• Extension cord sets are not permanent installations.

• Secure extension cords to prevent tripping hazard.

• All equipment grounding conductors shall be tested for continuity & shall be electrically continuous. Each receptacle & attachment cap or plug shall be tested for correct attachment of the equipment grounding conductors. The equipment grounding conductor shall be connected to its proper terminal:
  - Before each use.
  - Before equipment is returned to service following any repairs
  - Before equipment is used such as when a cord has been run over.
  - At intervals not to exceed 3 months,
  - Cord sets & receptacles which are fixed & not exposed to damage shall be tested at intervals not exceeding 6 months.
• Tests performed as required by this program shall be recorded as to the identity of each receptacle, cord set, & cord & plug connected equipment that passed the test and shall indicate the last date tested or interval for which is was tested. This record shall be kept by means of logs, color coding, or other effective means & shall be maintained until replaced by a more current record. These records shall be made available at the job site for inspection by the Assistant Secretary & any affected employees.

• An assured grounding program shall be established and followed if GFCI devices are not used.

• Safety grounds shall be used when working on electrical circuits and equipment.

• Non-conductive mats will be placed in front of electrical switchboards in Motor Control Centers (MCC) and maintained in clean condition.

• All voltage panels will be clearly labeled “DANGER – HIGH VOLTAGE.”

• All equipment will be properly grounded per manufacturer specifications.

**Power Lines**

• All power lines should be considered energized.

• When power lines are de-energized, they shall have safety grounds attached.

• No part of a crane, boom, mast, gin poles or machinery should be permitted within 10-ft. (3 m) of the power lines rated 50 kV or below. For energized lines rated above 50 kV, the minimum distance between power lines and the boom, mast, crane or its load must be 10-ft. (3 m) plus one half-inch (1 cm) for each kV over 50 kV.

**Energy Isolation (LO/TO)**

(29 CFR 1910.147 Subpart J and MSHA Parts 56.12016, 12017 and 14105)

This standard establishes minimum requirements for controlling energy sources during the service, repair or maintenance of machinery and equipment. These requirements will aid in preventing injury to personnel, damage to property and damage to the environment due to the unexpected energizing, start-up or release of stored energy. Sources of stored energy include electrical, mechanical (pumping units, mud pumps), hydraulic, pneumatic, compressed natural gas lines, natural gas flow lines and any other source of stored energy.

**Procedures**

Detailed written lockout/tagout (LO/TO) procedures have been developed and are available at each operating Area. It is the responsibility of Operations personnel to develop and maintain all site specific LO/TO procedures. Training will be provided for each authorized employee. Retraining will be done when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced. All training and/or retraining will be documented, signed and certified.
Annual inspections of the procedures will be done to ensure they are being followed. These inspections will be done by someone other than those actually using the lockout/tagout in progress. A certified review of the inspection including the date, equipment, employees and inspector shall be documented.

Note: Supervisors are responsible for performing and documenting the Energy Isolation (LO/TO) program at each site.

**Locks and Tags**

- **Locks**, tags and other LO/TO hardware required by this standard must be available to workers at all times. Contractors must provide their own locks, tags and other hardware when performing LO/TO.

- LO/TO locks and tags must not be used for any purpose other than LO/TO.

- Tags must include the following information:
  - condition or reason for tagging
  - date
  - equipment being tagged
  - name of person applying tag
  - DANGER – DO NOT OPERATE or similar warning

**Preparation and Installation**

- The work area and equipment should be surveyed to identify isolation points and the proper methods of energy isolation.

- The machine, equipment or process must be shut down.

- Any stored hazardous energy must be isolated and relieved by closing valves, de-energizing switchgear, opening vents, disconnecting, restraining or blinding. Reviewing the most current flow or equipment diagram will assist in locating all isolation points. Blinds shall be installed when the release of combustible or toxic liquids, vapors or gases into the work area cannot be controlled.

- **The energy source must be locked out through the use of** locks, blinds, chaining of valves, double block and bleed systems, disconnecting pipe or by other means that prevent the release of energy.

Note: Double block and bleed is a method used on process piping where block valves are closed, locked, tagged and the bleed valve located between the two block valves is locked open to vent to atmosphere. A closed valve with a body bleed does not constitute a double block and bleed.

- The lockout device should be tagged with a DANGER – DO NOT OPERATE, or other appropriate tag designed to conform to the Company’s LO/TO program.

Note: Each person doing the work shall install a lock and tag. There must be only one key for a lock or set of locks, and that one key will be held by the locking personnel until completion. The “crew lockout” method is acceptable only where it is defined in a written document and approved by HSE manager.

- The area must be cleared of personnel and tools before attempting to relieve any stored energy remaining in the equipment prior to beginning the work.

- The equipment should be energized (by starting and stopping before beginning the work). Start/jog switches should be verified they will activate equipment prior to being de-energized.
**Restoration and Removal**

- Only the person(s) originally attaching the lock and tag is authorized to remove the lock and tag. If this person is unavailable, the supervisor or his/her designee, after complete inspection of the affected area, may assume responsibility for removal of the lock and tag and notification of all parties.

- Only qualified personnel are allowed to start up machinery or equipment after it has been determined that no personnel are exposed to any hazards and all safety checks have been completed.

**Note:** In the event that shift or personnel changes occur during maintenance or repair activities, the designated DTC Energy Group site supervisor must take necessary steps to maintain the continuity of the LO/TO protection. This shall ensure the transfer of lockout/tagout devices between affected employees is correctly accomplished.

**Restoring Equipment to Service**

- All guards must be reinstalled.

- All electrical wiring must be returned to conform to electrical code requirements.

- All blind flanges or skillets must be removed and piping properly connected.

- Tools, materials and other nonessential items should be removed.

- All machine or equipment components should be inspected and verified they are operationally intact.

- Employees in the area should be notified that LO/TO devices are ready to be removed.

- Personnel should verify that all employees are safely positioned or removed from the area.

- Each lock and tag from each energy-isolating device should be removed.

**Working on Energized Electrical Equipment**

If work requires that the electrical equipment be worked on while energized (i.e. bumping motors, maintenance testing, etc.), the following procedures apply:

1. Work on energized electrical equipment will only be conducted by qualified personnel with a safety observer present.

2. Safety observer (certified in First Aid/CPR) shall maintain direct communication with worker(s) during troubleshooting and/or adjustments to exposed energized equipment.

3. Personnel shall be notified of the activities being performed, the location, equipment affected and duration of work.

4. Equipment should be marked with a "DANGER – DO NOT OPERATE" tag.

5. Employees shall refer to the Electrical Safety section of the handbook for more details regarding electrical work.

6. All affected personnel shall be notified when work is completed.
Excavation and Trenching
(29 CFR 1910.650 Subpart P and MSHA Parts 56.3400, 3401 and 3430)

This standard applies to all excavations 5-ft. (1.5 m) in depth or more and intended for worker occupancy. In addition to the following steps, a Confined Space Entry Permit may be required for personnel entry into such excavations that have the potential for hazards (i.e. atmospheres, cave-ins) which cannot be controlled, or serious safety hazards which cannot be eliminated. All excavations must meet or exceed OSHA requirements found in 29 CFR Part 1926 – Subpart P – Excavations, or MSHA Part 56 (for mining activities).

Definitions:

Benching – A method of protecting employees from cave-ins by excavating the sides of a trench to form one or a series of horizontal levels, or steps, usually with vertical or near-vertical surfaces between levels.

Competent Person – One who is formally trained and capable of identifying existing and predictable hazards, soil types in the surroundings or working conditions that are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them.

Excavation – Any man-made hole, cavity, trench or depression in an earth surface formed by earth removal.

Shoring/Trench Box – A structure such as a metal, hydraulic, mechanical or timber shoring system that supports the sides of an excavation, and which is designed to prevent cave-ins.

Sloping – A method of protecting employees from cave-ins by excavating to form sides of an excavation that is inclined away from the excavation. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure and application of surface loads.

Soil Classification System – Denotes classification used by the National Bureau of Standards (Exhibit III).

Classifications include:

- Stable Rock – Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.
- Type A Soil – A cohesive soil with an unconfined compressive strength of 1.5 tons/ft (tsf) (14.6 Mg/m2) or greater. Examples: clay, silty clay, sandy clay, clay loam, silty clay loam, sandy clay loam, caliche and hardpan. (If a soil is fissured, subject to vibration or previously disturbed, it is considered Type B or C.)
- Type B Soil – A less cohesive soil with an unconfined compressive strength greater than 0.5 tsf (4.9 Mg/m2) but less than 1.5 tsf (14.6 Mg/m2). Examples: angular gravel or crushed rock, silt, silt loam, sandy loam and dry rock that is not stable.
• Type C Soil – The least cohesive soil with an unconfined compressive strength of 0.5 tsf (4.9 Mg/m²) or less. Examples: gravel, sand, loamy sand, submerged soils or freely seeping soils and submerged rock that is not stable.

**Note:** The thumb penetration test can be performed by a Competent Person to estimate the unconfined compressive strength of cohesive soils.

Type A soils can be readily indented by thumb only with great effort.

Type B soils can be penetrated by thumb approximately halfway.

Type C soils can be easily penetrated several inches by the thumb and can be molded by light finger pressure.

**Procedure**

1. Each excavation must have someone formally trained and designated as a competent person; that person will conduct and document daily inspections (more often if needed) if personnel will be required to enter the excavation.

   Additional inspections are required after significant rainfall or freeze/thaw occurrences. Employees must be protected from water accumulation, including the use of shields.

2. No individual(s) will be permitted to enter an excavation unless it is deemed necessary.

3. Before opening any excavations, personnel shall:
   - Determine the location of utility installations, such as sewer, telephone, fuel, power lines, water lines, pipelines or any other underground installations
   - Utilize the “one-call” or appropriate notification system to contact utility companies and other affected parties. Advise of proposed work prior to the start of actual excavation. Municipalities or other regulatory agencies may require permits.

4. Excavations, 4-ft. deep or greater involving entry require ladders, steps or ramps located so that no more than 25-ft. (7.6 m) of lateral travel is required to exit the excavation.

5. The walls of the excavation are to be protected from caving-in by one of the following:
   - Shoring
   - Sloping or benching (Note: Benching is only allowed on A and B Soil.)
   - Trench boxes (shields) – if used must extend a minimum of 18 inches above the vertical side of any excavation.
Some other equivalent means approved by a registered professional engineer from the state where the excavation is located. Note: Sloping or benching for excavations greater than 20-ft. (6 m) deep must be designed by a Registered Professional Engineer.

Note: If the excavation requires a person’s head to be below ground level, appropriate precautions shall be in place to address hazardous atmospheres. If the excavation is less than 5-ft. in depth and personnel entry is necessary, cave-in protection may be required if the soil exhibits unstable soil characteristics.

### Maximum Allowable Slopes for Excavations

Soil or Rock Type Horizontal or Vertical Less than 20 ft. (6 m)
- Stable Rock (90 degrees)
- Type A 3/4:1 (53 degrees)
- Type B 1:1 (45 degrees)
- Type C 1.5:1 (34 degrees)

### Excavation and Trenching General Safety Rules

- Excavations more than 4-ft. (1.2 m) deep may be considered confined spaces and may require a permit in accordance with the Confined Space Entry Safety Standard.
- Excavated soil, materials or equipment that could pose a hazard by falling or rolling into an excavation shall be stored and/or retained at least 2-ft. (0.61m) from the edge of the excavation. If excavations endanger the stability of adjacent structures (building, walls, or other structures), support systems shall be provided.
- Soils can become unstable from heavy equipment operation in the vicinity of the excavation.
- Guardrails or barricades should be used to mark the limits of the work area. Any time a trench is left unattended in populated areas, use guardrails or barricades sufficient in size to prevent unintentional entry.
- An employee shall not be directly underneath the operating equipment while it is being lowered or raised in an excavation or trench.
- Employees exposed to public vehicular traffic must wear reflective/high-visibility warning vests.

### Fall Protection

(29 CFR 1910.23 Subpart D and 19260.501 Subpart M and MSHA Part 56.15005)

Drilling, completions and production operations are subject to the requirements of OSHA’s general industry fall protection standard of 4-ft. [29 CFR 1910.23] (see below). Construction of well pads, compressor stations, installation of pipeline and compression equipment, as well as the construction of impoundments and ponds, are subject to the requirements of OSHA’s construction industry fall protection standard of 6-ft. [29 CFR 1926.502] (see below). Fall Arrest Systems are to be used when other fall protection systems are impractical or insufficient (i.e. scaffold work requiring top and mid-rails to be removed).
• General Industry 1910.23(b) – Protection for wall openings and holes. Every wall opening from which there is a drop of more than 4 feet shall be guarded.
• Construction Industry 1926.501(b)(1) – Unprotected sides and edges. Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge with is 6 feet (1.8m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

A training program will be provided for each employee who might be exposed to fall hazards. Training will enable each employee to recognize the hazards of falling and shall train employees in the procedures to follow to minimize these hazards. Re-training shall be provided when there are deficiencies in training, the work place changes, and/or fall protections systems or equipment changes that render previous training obsolete. Written certification records will be kept showing who was trained, when and the dates of the training. The certifications must also have the signature of the person that is providing the training.

A fall protection plan will be prepared for the specified work site. The employer shall provide prompt rescue procedures in the event of a fall or shall make sure employees are able to rescue themselves.

General Requirements
• 100% fall protection must be maintained at all times while performing elevated work, to include the use of two lanyards if needed to allow the employee to remain anchored to one point while moving to the next point. This requirement does not apply to work being performed from portable ladders.
• The use of waist belts for fall arrest and non-locking snap hooks is prohibited.
• Anyone going up or down the derrick ladder will wear a full-body harness secured to an anti-fall device (Ex: static line with safety sleeve, notch rail or self-retracting lifelines). The counterweight system alone will not be considered adequate fall protection for climbing up or down the derrick ladder.
• The double-locking hook on a self-retracting lifeline will be hooked directly into the dorsal D-ring on the back of the full body harness. The retractable spool will not be hooked into a shock absorbing lanyard.
• Self-retracting lifelines that have been subjected to a load will be removed from service and forwarded to a manufacturer’s approved repair facility for overhaul and/or inspection.
• Self-retracting lifelines will be inspected every other year by the manufacturer or his designated representative. Maintenance and inspection will be documented and maintained on site.
• To minimize fall distance, the tie-off or anchor points should be at the height of the D-ring or higher.
• To minimize swing falls, tie-off or anchor points should be as close as possible to directly above the head.

Fall Arrest Systems
Fall Arrest Systems shall include:
• A full-body harness with D-ring in the middle of the back situated in-between the shoulders and a double EZ-Stop lanyard (2 lanyards)
• An appropriate anchorage attachment capable of supporting at least 5,000 lb. static load Connectors

The system may include a lanyard deceleration device, lifeline or suitable combination of these.
A fall protection plan will be prepared for the specified work site. The employer shall provide prompt rescue procedures in the event of a fall or shall make sure employees are able to rescue themselves.

**Before donning the fall arrest system, the employee shall:**

- Inspect Fall Arrest components prior to each use.
- Remove from service and destroy damaged components or equipment that has experienced a fall.
- Ensure Fall Arrest equipment is not to be used to hoist equipment/materials.

If an employee is working in an area where they could fall into and be submerged in water, an approved type 1 or type 2 life jacket or buoyant work vest must be worn, and at least one life saving skiff or boat should be immediately available.

**Ladder Safety – General**

(MSHA Part 56.11003)

- When climbing up or down any ladder, personnel should face the ladder and maintain a 3-point contact with hands free of materials.
- When the ladder is in position for use, rungs, cleats, and steps shall be parallel, level, and uniformly spaced.
- Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond the manufacturer’s rated capacity.
- Ladders shall only be used for the purpose for which they were designed. Never use a ladder in a horizontal position or as scaffolding. Do not place ladder on top of boxes, barrels, crates, etc.
- Personnel should keep body centered between the ladder side rails (or within the width of the cleats) when climbing and while working. Personnel should not overreach or lean while working from a ladder.
- All ladders must be inspected before each use. Damaged ladders should be removed from service until repaired.
- If work from a ladder is long-term in nature or requires heavy physical exertion, other methods such as scaffolds or personnel lifts should be used.
- Metal ladders must not be used for electrical work.

**Non-Self-Supporting Ladder (Portable Extension Ladder)**

- Ladder shall be positioned at a safe angle, which is typically a 4:1 vertical to horizontal ratio.
- The ladder shall be secured at the point of support to prevent movement. To accomplish this, a person will stabilize the ladder at the bottom while the climber climbs and secures the ladder at the top. If a ladder cannot be secured at the top, outriggers or another employee must stabilize the ladder while it is in use.
- A portable extension ladder must extend 3-ft. (1 m) past the point of support when accessing a working surface (i.e. roof).
**Self-Supporting Ladders (Portable Step Ladders)**
- A stepladder must be used with the spreader bars in the locked down position.
- A stepladder shall never be used as a straight ladder.
- Do not stand on the top two steps of a self-supporting ladder.

**Personnel Lifts**
- Aerial lifts may be "field modified" for uses other than those intended by the manufacturer provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and this section and to be at least as safe as the equipment was before modification.
- Boom and basket load limits specified by the manufacturer shall not be exceeded.
- Only authorized personnel shall operate an aerial lift.
- All motor vehicles shall have a reverse signal alarm or be backed up with signals from an observer.
- Personnel in a man-lift basket will maintain 100% fall protection to the basket.
- Personnel working in a man-lift basket desiring to transfer from the basket to any other elevated surface or substructure, will first tie-off to the next object before removing his lanyard from the man-lift basket.
- Personnel must work with both feet securely on the floor of the platform. Working with feet on a rail or working from a ladder placed in the personnel lift is prohibited.
- All entrance gates or chains must be in their fully closed position before moving the lift.
- Lift controls and the structural integrity of the lift shall be inspected/tested each day prior to use. These tests will be completed on a daily basis before each shift that the equipment is to be used to determine that the brakes and the operating systems are in adequate working conditions.
- Personnel should never tie off to an adjacent pole, structure or equipment while working from within the personnel basket.
- Power lines rated 50 kV. or below the minimum clearance between the lines and any part of equipment or machinery must be 10-ft.
- All personnel working from an aerial lift will be required to wear an approved fall restraint system.
- The approved fall restraint system shall be attached to the boom or basket when working from an aerial lift and it is not allowed to be attached to adjacent poles or structure.

**Scaffolds**  
(MSHA Part 56.11027)
- Training will be provided to all employees regarding hazards of working on a scaffold. These hazards include fall protection, electrical safety, falling object protection, scaffold use and load capacity.
• Retraining will be done if there are changes in the worksite that present a hazard in which the employee has not been trained on, when changes in the types of scaffolds being used, or when an employee’s work indicates that they have not retained the appropriate knowledge.

• A Competent Person must be appointed to oversee scaffolding erection and disassembly.

• Only heavy-duty pole and tube and coupler scaffolds should be used.

• Scaffolding will be kept clean and in good condition. It will be inspected prior to each rig-up for cracks or other damage.

• Unsafe equipment or conditions must be tagged out and must be complied with.

• Footing shall be sound, rigid and capable of carrying the maximum intended load. Unstable objects such as bricks, blocks or boxes must not be used.

• Scaffold heights greater than 4 times the base must be properly secured to the working structure unless otherwise noted by the manufacturer.

• When working under a scaffold, overhead protection is required.

• Working from portable ladders on the scaffold platform is prohibited.

• Appropriate guardrails shall be utilized on all scaffolds. Toe boards must be installed on platforms that are 10-ft. (3.05 m) above ground level or walkways that are 6-ft. (1.8 m) above ground level.

• Fixed or secured portable extension ladders must be used to access scaffolding if no built-in ladders are present.

**BOP Scaffolding**

• Metal-type scaffolding will be used around the BOP stack to provide a stable, non-slip working surface unless other appropriate means of fall protection are provided.

• Scaffolding will be tied on both ends to the hangers/ladders that support it to prevent side movement or vibration.

**Stairs**

• Personnel will keep one hand on the handrail at all times while climbing up or down stairs. Personnel will not try to carry things up or down stairs that require more than one hand to hold. One hand will be kept free and on the handrail at all times.

• Sliding down handrails, skipping steps or running on steps is prohibited.

• Stairs, steps and walkways will be kept free of obstructions. Stairs, steps, walkways and handrails will be kept clean of mud, grease, dirt or other slippery materials. Stairs or steps will be utilized whenever they are provided.

• Stair landings will be kept clear of slip, trip or fall hazards.

• Stairs will be bolted down or securely pinned with a pin and keeper combination so as to prevent any movement.
Walkway / Mud Pit Guarding and Grating / Cellar Covers

- Walkways and mud pit tops will be kept clear of obstructions (hoses, tools and equipment) and slip hazards at all times.

- All grating or floor plating will be kept in its proper position and secured to prevent slip, trip or fall hazards. All holes larger than 2 inches will be covered.

- All grating will be properly supported with braces.

- Sections of grating that cannot be returned to the correct position will be barricaded and flagged with caution/danger tape to reroute normal traffic until properly repaired.

- Shortcuts around fixed walkways are prohibited. All personnel will take the time necessary to use established walkways.

- Personnel will not climb outside of handrails bordering normal traffic areas to perform work or repairs unless secured with proper fall protection.

- Cellar complete with cellar ring will be installed on each well prior to moving in and rigging up.

- Cellar cover will be constructed of expanded metal and placed over the top of the cellar at the start of each new well to reduce potential fall hazards.

- Wood pallets should not be used as walking/working surfaces as they contribute heavily to slips/trips/falls and ankle injuries.

Personnel Hoisting Operations

(29 CFR 1910.68 Subpart F and 1926.552 Subpart N and MSHA Part 56, Subpart R)

Personnel hoisting will only be performed after all other alternative methods of ascending or descending (e.g., ladders, stairs, scaffolding, etc.) have been considered and personnel hoisting is determined, by the rig or location manager, to be the safest means of reaching the desired work area or for performing the task.

1. The use of screw-pin shackles or outward-opening, safety-rated “Surelock” style hooks is prohibited for use in personnel hoisting operations.

2. Personnel elevated with a hoist attached to a single-point suspension system will wear a full-body harness with permanently stitched seat – purpose-built for personnel hoisting operations and approved by the manufacturer as personal fall arrest equipment. No other full-body harness, bos’n seat, riding belt, other single-point suspension system or manufacturer’s equipment will be used for personnel hoisting.

3. For drilling operations the mechanism used to attach the harness to the hoist system will be a Bolt Type Anchor Shackle (BTAS). The BTAS used for personnel hoisting will be painted orange so as to designate it for personnel hoisting operations only. The orange BTAS will NOT be used for any other hoisting or material-handling application. The use of screw-pin shackles or outward-opening, safety-rated “Surelock” hooks is strictly prohibited.

4. The retaining mechanism used in a BTAS will be a 1-inch or larger split ring in lieu of cotter key provided by Crosby. The cotter key represents a laceration hazard.
5. Personnel elevated with a hoist will also utilize an independent means of fall arrest in the event of a hoist system failure. Example methods of independent fall arrest include:

- DBI-Sala self-retracting lifeline (Model #'s: 3403401 (50-ft), 3403501 (85-ft), 3403601 (130-ft) or 3407626 (175-ft) suspended in the derrick with self-locking snap-hook attached directly into the dorsal D-ring on the personnel hoisting harness.

- 3/8-inch static line constructed of (7x19) galvanized solid core cable with DBI-Sala swivel safety sleeve (Model # 1220368) attached to the dorsal D-ring on the full body harness using the 18-inch fall suppression lanyard stitched directly into the swivel sleeve.

6. Personnel will NOT ride the traveling blocks or drill pipe elevators at any time to or from anyplace.

7. Personnel will NOT be transported from the rig floor to the derrick board or return using a rig floor hoist or winch. Personnel needing to ascend to or descend from the derrick board will use the derrick ladder and associated ladder safety device / fall arrest system.

8. Personnel elevated with a hoist will NOT attempt to get out of the personnel hoisting assembly, full-body harness or BTAS while elevated above the rig floor. Disconnection from the personnel hoisting system may only occur at the level where the personnel hoisting activity began. Examples include: (a) at the rig floor for operations in the derrick or mast, or (b) at the drill deck or ground level for operations under the rig floor.

9. Each rig and yard operation that conducts personnel hoisting activities will develop a JSA specific for the activity of “Lifting Personnel with a Winch.” The JSA will be reviewed prior to each personnel hoisting activity.

10. Drilling operations and/or rotation of the drill string with either the kelly or top drive will be temporarily stopped any time someone is hoisted above the rig floor in a hoist.

11. Personnel will NOT be hoisted up the V-door using a hoist. Personnel will NOT be suspended on a hoist line under the rotary table.

12. Operator will never take eyes off the rider or designated flagger while elevating personnel. Only the rider or designated flagger will give hoisting signals to the Operator. Operator will NOT anticipate riders’ movements or desires.

13. Riders will have all tools secured and tied off properly prior to being elevated by the hoist. Example: grease gun, sledgehammer and wrenches.

**Hot Work**

(29 CFR 1910.252 Subpart Q)

A Hot Work Permit is required for the following maintenance/ construction operations:

- Hot work within 100-ft. of an area where combustible, flammable vapors or liquids could reasonably exist. Hot Work sources may include:
- Open flame
- Welding or burning
- Grinding
- Use of brush and armature equipment

- Welding on lines in service, hot cuts or hot-tapping requires Hot Work Permit(s).
- A Hot Work Permit is not required if the work is performed in a designated Hot Work area. Designated Hot Work areas on drilling locations should be no less than 100-ft. from the wellbore and not less than 50-ft. from vegetation or other combustible materials.

**General Hot Work Requirements**
- Cutting or welding should only be performed by qualified welders.
- Proper fire prevention equipment should be on hand before cutting or welding begins.
- When welding or cutting in a hazardous area, one person should be designated as a “Fire Watch.” This person should stand by with a fire extinguisher and be trained in its use.
- Cutting or welding on any derrick or load bearing rig structure is prohibited without appropriate approval.
- No field welding is permitted on tongs, elevators, bails, blowout preventers, choke manifold or other heat-treated equipment.
- LEL monitors must be approved and properly maintained.

**The Duration of the Permit is:**
- Crew change, end of shift or end of job, whichever occurs first;
- Emergency conditions will cancel the permit.

**Hot Work with Gas/Air Atmosphere in Vessel**

Hot Work such as flame cutting, welding, grinding and sandblasting may be done on a vessel or pipe when atmospheric gas concentrations do not exceed 10% of LEL. The atmospheric measurements will be taken with the gas monitor's probe in or as close to the vessel or pipe as possible. Personnel shall not enter the vessel or pipe to perform monitoring. See Confined Space Entry standards.

**Procedure**

1. Employee initiates the permit and submits it to the DTC Supervisor for approval.
2. The DTC Supervisor or designated Job Representative reviews the job, adds precautions such as a “Fire Watch,” O2 levels, % Lower Explosive Limit (%LEL) and qualifications of welders.

   **Note:** The Hot Work Permit requires that employees monitor for O2 and %LEL levels (other gases may apply) before the job begins. Periodic or continuous monitoring must be performed to ensure safe levels persist.

3. The Supervisor or designated Job Representative then signs the permit.
4. Workers should not be allowed in a vessel when the LEL level is in excess of 10%. This level will cause all hot work to be discontinued immediately. The permit will be cancelled and declared null and void. A new permit must be reissued prior to the restart of work after the LEL level is lowered.

5. A copy of the hot work permit is to be posted at the worksite; other copies are maintained in the office for at least 30 days or the duration of work at the site.

6. The area should be checked for changing conditions as the job is performed. This should include O₂, % LEL and toxic materials.

**Cutting and Welding**

(29 CFR 1910.252 Subpart Q and 1926.350 Subpart J and MSHA Parts 56.4600, 4603, 4604, 14213 and 15007)

- All cutting and welding equipment will be inspected prior to use.
- All ground connections should be securely made and kept in good condition to eliminate arcing.
- Oxygen and acetylene hoses should be inspected for leaks, damaged fittings, etc., on a job-to-job basis.
- Cylinders should be handled carefully. They must not be handled roughly, dropped or knocked around. They should be secured upright at all times.
- Protective caps should be placed on both full and empty cylinders while they are being moved or transported.
- The proper regulator should be attached before using gas from the cylinder.
- Oxygen cylinder fittings should be kept clean and free from oil and grease.
- Main supply valves must be closed and bled down after completing cutting operations.
- Welding leads are to be inspected daily by the welder for insulation breaks.
- Cutting torches must not be left unattended in tanks or void spaces because leaks could cause an explosion.
- When welding drive pipe or any object connected or supported by the block, a ground wire must be attached to prevent electrical arching of the drilling line, crown, block bearings, drawworks, etc.

**Remember:** Oxygen and oil or grease products DO NOT MIX, such a combination could result in a spontaneous fire or explosion. Oxygen is not to be used to clear work area or clothes.

**Tagging and Flagging**

(29 CFR 1910.147 Subpart J)

Danger tags indicate that a hazard exists and a “DANGER – DO NOT OPERATE” tag or similar wording shall be used in the following situations:
• Valves not in normal operating position
• Defective valves, equipment or tools
• Safety or emergency equipment unfit for use

Note: For equipment undergoing maintenance, personnel should refer to the Energy Isolation (LOTO) Safety Standard in the handbook and local Energy Isolation Procedures.

Procedure
1. The items listed above shall be tagged in the following manner to ensure proper attention.
2. The following shall be noted on the tag:
   - Condition or reason for tagging
   - Date
   - Equipment being tagged
   - Signature of person applying the tag
3. Tagging should be documented in the operations log or LOCKOUT/TAGOUT Log.
4. Tag should be properly attached with a nylon tie-rap.
5. If the tag is not readily visible, a flag (bright-colored ribbon) must also be attached. Flags never substitute for a tag.
6. Local personnel/supervision should be notified upon completion of the work.
7. Tags and flags should be removed after normal operating conditions are restored.

MOTORIZED EQUIPMENT
Workers who operate motorized equipment on behalf of the company are responsible for the safe operation of that equipment. Motorized equipment can include forklifts, cranes, backhoes, bulldozers, etc. The company has established the following minimum requirements for the operation of motorized equipment.

General Precautions
(MSHA Part 56 Subpart M)

• Whenever there is a safety concern, the operator will have the authority to stop and refuse to handle loads or continue operations as safety dictates.
• Only qualified personnel shall operate motorized equipment. The individual training will be specific to the type of equipment and the applicable regulatory agency requirements. Supervisory personnel should exercise extreme caution if asked to operate motorized equipment and be trained as appropriate for the task.
• All affected utilities are to be identified and notified using the One-Call system before beginning any excavation work or use of heavy equipment.
• An operator must perform a 360-degree walk-around before operating equipment.

• No equipment shall be operated when any part of that equipment can encounter overhead lines. Personnel must maintain a minimum of 10-ft. clearance from lines. (See Electrical Safety section of this handbook.)

• Before moving tall equipment, personnel should review travel route for low-hanging power lines and other low clearance structures.

• Ground personnel should maintain a safe distance from operating equipment and establish eye contact with the operator before approaching.

• When climbing onto or down from any piece of equipment, the operator must maintain 3 points (e.g., 2 hands and 1 foot) of contact with the equipment or with the equipment and the ground. The operator should not jump from the equipment to the ground.

• Personnel shall not be allowed to ride on or work off any part of the equipment unless specifically designed for personnel.

• Ground personnel shall be notified when the operator’s visibility is obstructed in any direction. Spotters should be used to assist the operator in such cases, especially when backing into congested areas or groups.

• No employee shall move or allow construction equipment and/or vehicles to be moved on any access roadway or grade unless that roadway or grade is constructed and maintained to safely accommodate the movement of the equipment and/or vehicles involved.

• All equipment shall be operated in a manner that will not cause injury to the operator or fellow workers. If conditions are present which may injure or harm a worker, – i.e. muddy conditions, lightning, mechanical problems, etc. – equipment operation must be suspended until the problem is resolved.

• Wheels of trucks and rubber-tired heavy equipment must be chocked when parked on inclined grades.

• All powered or motorized equipment shall be left in a zero energy state during breaks and at the end of the shift. All hydraulic and auxiliary power systems shall be de-energized. Buckets, lifts, forks, blades, etc., shall be lowered to the ground before being left unattended.

• No machinery or equipment shall be stored or left temporarily near a highway grade crossing in such a manner as to interfere with the sight distances of people approaching the crossing.

• Prior to beginning work, contractors must establish a designated equipment storage area that meets company and local authority approval.

Work Zone Safety
(23CFR SUBCHAPTER 924 AND 49 CFR SUBCHAPTER 571 AND MSHA PART 56.9100)

Employees in field operations are sometimes required to set up “work zones” near public roads. Drivers are to position vehicles as far off the road as possible before setting up the work zone.

These work zones shall be set up in accordance with the appropriate local, state and federal regulations. Refer to the Department of Transportation Federal Highway Administration Manual for Uniform Traffic Control Devices (MUTCD) on procedures for obtaining basic uniformity of traffic control devices. These precautions typically include setting up cones and warning signs, proper communications systems and flagging signals, reflective worker’s vests and strobe lights on vehicles. The following signs/flagging signals (Exhibit I) should be used when directing traffic in work zones.
Drivers who operate company vehicles, rental vehicles or their own vehicles on behalf of the company are responsible for the safe operation of that vehicle. Before operating a company vehicle, drivers are required to complete a safe-driving course approved by the HSE Department and become familiar with other vehicle operating policies within the company. Only authorized employees will drive a motor vehicle in the course and scope of work or operate a company-owned vehicle. The vehicle shall be used only for its intended purpose. Additionally, these rules are to be followed:

- Drivers must maintain a valid driver’s license (for the state where they reside) at all times for the type of vehicle they will be driving. Any changes in status must be reported immediately to their supervisor.
- Drivers must safely operate vehicles in accordance with all applicable laws, including DOT requirements, when applicable.
- Cell phones may be used sparingly while operating a motor vehicle if state or local laws permit.
- Vehicles are to be maintained in a safe, operating condition and any unsafe condition should be corrected.
- Vehicles left running while unattended shall be put in park with the parking brake on.
- Drivers of vehicles must require that all occupants wear seat belts before moving the vehicle.
- Drivers must report all vehicle incidents/accidents immediately, no matter how minor.
- The use, possession and distribution of illegal drugs, deadly weapons or unauthorized explosives while on
Company premises, or in Company, rental or personal vehicles on Company business is prohibited. Likewise, the consumption of alcoholic beverages or driving under the influence while operating Company, personal or rental vehicles while on Company business is prohibited.

- Drivers must conduct a 360-degree walk-around when returning to their vehicle to begin and/or continue their driving duties.
- Vehicles will be driven with headlights or daytime running lights on at all times.
- When parking, personnel should “pull through” or back into the space, unless doing so would create a hazard.
- Drivers are to obey all rules and laws, facilitating the flow of traffic and general safety, while driving.
- Barriers should be used to secure loads that may shift within the cab of vehicle.
- Personnel will NOT ride in the back of open-bed pick-up trucks or on truck runningboards.

**Safety and Emergency Equipment for Company Vehicles**

The following emergency and safety devices are required as minimum equipment to be carried in Company vehicles and maintained in an operable condition at all times. All equipment will be properly installed and secured. Supervisors may increase such equipment in accordance with driver and equipment exposure, such as tire chains, hydraulic jacks and flashlights.

**Automobiles:** 1 – First Aid Kit and related supplies

1 – 5 lb. ABC Fire Extinguisher

**P/U or Trucks:** 1 – First Aid Kit and related supplies

1 – 5 lb. ABC Fire Ext. (Minimum) *

Recommend 20 lb. Fire ext. or greater

3 – 12” x 12” Red Flags – (Min. size)*

3 – Reflective Triangles*

* Required on certain DOT Commercial Motor Vehicles.

**Forklifts**

(29 CFR 1910.178 Subpart N and MSHA Part 56.16016)
Although forklifts are indispensable tools for moving heavy objects, their operation and proper maintenance require special precautions and training. The use of forklifts is restricted to trained personnel that have been authorized by their supervisor to operate the forklift.

All forklift operators must be trained and have a skills evaluation test every three years. Training will include, but not be limited to include load capacity, operating instructions, distances, refueling, ramps, visibility and balancer and counterbalances. Refresher training is also required whenever one of the following occurs:

- The operator is involved in an incident or a near miss.
- The operator has been observed operating the equipment in an unsafe manner.
- The operator has been determined in an evaluation to need more training.
- There are changes in the workplace that could affect safe operation (i.e. different types of paving, reconfigured storage racks, new layout with narrower aisles or restricted visibility).

**Forklift Standards**

- Personnel should complete an inspection checklist before each use. This includes checking for warning and safety devices. Any deficiency must be reported to supervision.
- Seat belts shall be used when operating forklifts.
- To prevent movement, brakes should be set and the wheels blocked on a trailer or truck that is being loaded or unloaded.
- When the forklift is not in use, the forks must be positioned rack down and tips pointing toward the ground.
- Only loads within the rated capacity of the forklift should be handled.
- Loads should be carried low, with forks just off the ground and tilted slightly back.
- Do not allow any person to stand or walk under elevated forks, whether loaded or empty.
- 55-gallon drums should be moved on pallets, a drum rack, in a basket or with a drum-handling extension. Drums shall not be moved by “sandwiching or spearing” them between forks.
- Do not use a forklift to raise people for overhead work without an approved, load rated platform equipped with forklift-compatible attachments.
- Forklift shall be "shut off" before an operator exits the equipment.
Gin-Pole, Winch Truck and Crane Operations

- The surroundings must be surveyed for power lines and other obstructions prior to initiating gin-pole, crane or lifting operations.

- Gin-pole truck drivers will not drive within 10-ft. of a power line. In the event a driver contacts a power line with his gin-pole, the driver should remain in the truck and avoid touching any metal objects until power has been secured from the power lines. No one in the vicinity of the truck should touch it until the power is completely secured.

- All personnel should maintain a safe buffer zone of 10-ft. from any load that is lifted or tail-boarded on a truck or trailer.

- The winch truck operator will take signals from one designated flagger at all times.

- Anyone may signal an emergency stop during winch truck operations.

- Winch truck operators will minimize the height of suspended loads during transport. Loads will be kept close to the ground.

- Winch truck operators and swampers will not lift any load with lifting slings or rigging that creates a 45-degree or lesser angle with the load. All loads will be properly rigged prior to lifting.

- Personnel will not walk or position themselves under suspended loads or between the lifted load and the tailboard of the truck.

- Winch truck operators will not leave the winch controls while a load is suspended.

- Winch truck operators will wear the proper personal protective equipment any time they leave the cab of the winch truck.

- Cotton or leather gloves will be worn by anyone handling a winch line or wire rope sling. Use Extreme Caution!

- Personnel will stand to the side and “out of the line of fire” when releasing chainbinders.

- Only ratchet-type binders will be used by DTC trucking operations.

- Personnel releasing chain binders will ensure the object secured by the binder is stable before releasing the load. If the load is unstable, the employee will ensure the crane or gin-pole truck is tied off to the object before releasing the binders.

- Winch truck lines should not be knotted on the end.

- All loads will be tied down properly prior to transport by truck, train or other means of transportation.

- All winch hooks and headache balls will be inspected daily prior to use. Hooks without a properly working positive safety latch will be removed from service.

- Truck drivers will comply with speed limits posted on highways and lease / ranch roads. Don’t assume that any truck driver understands exactly what you want him to do. Take the time to explain carefully and give
specific if not written instructions.

**Crane Standards**

- Cranes must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the crane manufacturer’s specifications for adequate support and degree of level of the equipment are met.

- The manufacturer’s procedures and prohibitions must be complied with when assembling and disassembling the crane and must be directed by a competent and qualified person.

- The work zone shall be identified by boundaries such as flag and range limiting devices, or by defining the work zone as 360 degrees around the equipment. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line. If the equipment could get closer than 20 feet to a power line then at least one of the following measures must be taken:
  - Ensure the power lines have been deenergized and visibly grounded.
  - Ensure no part of the equipment gets closer than 20 feet to the power line.
  - Determine the line’s voltage and minimum approach distance permitted.

- A competent person must conduct a visual inspection of crane prior to shift. Equipment must be inspected monthly by a competent person. The inspection must be documented. Documentation must be retained for 3 months. (Documented monthly inspection not required if the daily inspection is documented and records retained for 3 months)

- All manufacturer procedures applicable to the operational functions of the equipment must be complied with. The operator shall have access to procedures.

- Safety measures must be used when the equipment has the potential to strike and injure an employee or pinch/crush an employee against any other object.

- Any modifications or additions that may affect the safe operation of the crane must not be made without written approval from the manufacturer or approval from a registered professional engineer.

**Taglines**

(29 CFR 1926.550 Subpart N and MSHA Part 56.16007)

- Personnel involved in material handling will work all loads with a tagline.

- Taglines will be attached to the end or corner of a load before it is lifted.

- Taglines will be constructed of sash cord, half-inch rope or 1-inch nylon strap and free of knots or hooks. Sisal rope or soft line is prohibited.

- Chains, cables and fall protection lanyards will not be used for taglines.

- Taglines will not be wrapped around the hand, wrist, waist or any part of the body.

- Taglines will be of sufficient length such that no part of the person’s body will be under the load at any time.

- Personnel will not stand on or in the eye of a tagline.

- A snub line from the load to the tail of the truck may be used in lieu of a handheld tagline to minimize swinging while transporting a load across location.
• Personnel are considered to be standing under a suspended load if close enough to touch the suspended object with their hand while it is above the waist.

Fuel Supply and Transfer

(29 CFR 1910.178 Subpart N)

• All bulk fuel supply trucks will be fitted with a bonding/grounding strap between the truck and the fuel storage tank. The truck will be chocked and grounded prior to fuel transfer. A catch bucket will be placed under the transfer pump and hose connections.

• All fuel supply equipment, including hoses, fittings and valves, will be inspected prior to transfer. Only matching fittings with good rubber gaskets will be used. Tank vent plugs will be clear.

• Fuel truck drivers will comply with all PPE standards to include wearing of hardhat, safety glasses, shirts, long pants and foot protection.

• A safety observer will be positioned near fuel transfer operations with a fully charged fire extinguisher for emergency response until the fuel transfer is complete. A safety observer will not leave the fuel transfer until the transfer is completed, secured or relieved by a qualified replacement.

• Tank readings will be taken regularly during transfer to prevent overflowing the fuel storage tank.

• Upon completion of fuel transfer, the hose will be drained in a bucket to prevent spillage.

• Any overflows or spills will be cleaned up promptly to eliminate slip hazard and minimize environmental damage.

• Fuel transfer operations will be stopped upon observing a leak. Transfer operations will not continue until the leak is repaired or eliminated.

• Gasoline powered transfer pumps will not be used to transfer fuel from truck tanks to rig storage tanks or into truck tanks.

• Explosion-proof electrical pumps may be used to transfer fuel or other flammable products.

• Fuel truck drivers will remain with their truck during fuel transfer operations.

• All smoking (including in designated smoking areas within 150 feet of fuel transfer area) will be temporarily suspended during fuel transfer operations.

• Fuel tank levels will be determined using sight-glass tubes and/or flashlights. Fuel tank levels will not be determined using a cigarette lighter, match or any other open flame as a source of light.

• Hoses used for fuel transfer will be fitted with factory-installed crimped end connections. King nipples, boss fittings and field installed end connections secured with wire, worm gear clamps or banding material are prohibited.

• Upon completion of refueling a forklift or other rolling stock, the person performing the task will ensure the isolation valve between the tank and the supply hose is fully closed and the hose and nozzle are properly stored.
SAFE WORK PRACTICES

BACK/LIFTING SAFETY
When lifting or moving loads, personnel shall assess the weight, bulkiness of the item and the route of travel. Proper lifting techniques should be used. When the load is too heavy for one person to lift, the employee shall ask for assistance or use a mechanical lifting device. Below are proper lifting techniques for employees to utilize:

- Keep feet apart – one alongside and one behind the object to be lifted. Feet should be comfortably spread to give stability.
- Keep back arched. An arched back means the spine, back muscles and body are in correct alignment.
- Grip the object with the whole hand, both the palm and fingers. Keep elbows and arms tucked to side of body. This reduces fatigue in chest and arm muscles and is the position where the most power can be generated for lifting. This position also helps control the center of gravity of the body.
- Keep head high and chin tucked in.
- Keep body weight (center of gravity) directly over feet. Start the lift with the thrust of the foot behind the object being lifted. Lift with legs and bring the load close to the body for the most efficient carrying position. Lift smoothly, without jerking or twisting.
- To raise an object above shoulder height, first lift to waist height.
- To change direction, turn the entire body, including the feet. DO NOT twist body at the waist while lifting.
- Do not carry an object that is too big to see over or around.
- For objects that are too large or bulky to be carried by one person, use proper moving equipment or get help.

Cable, Chain, Rope and Sling Safety
(29 CFR 1926.552 Subpart N and MSHA Part 56.16007)

Inspection Process

- Operations supervisors will maintain manufacturer and third-party load test records for all rigging materials in service requiring annual load tests.
- Only qualified personnel shall make inspections.
- Inspect all rigging equipment before each use.
- Cables, wire ropes, shackles, chains, slings, hooks and other devices that do not meet the inspection criteria shall immediately be removed from service. Frayed or damaged nylon slings shall be cut and discarded.
General Safe Working Practices

Employees should utilize these tips for proper cable, chain, rope and sling safety:

- Do not damage machines and any soft surfaces of the load with the lifting apparatus.
- Avoid sharp bends in slings and wire rope, and protect slings from sharp edges and abrasions.
- Avoid sudden jerks when lifting or lowering loads.
- Set loads down on proper blocking – never directly on a sling.
- Do not side load.
- Maintain an angle between the sling and the horizontal greater than 45 degrees to reduce stress on the sling.
- Do not stand or walk under suspended loads.
- Never stand or step over any line that is under stress.
- Do not leave suspended loads unattended at any time. Use tag lines of sufficient length to control the lift.
- Slings not in use must be properly stored.
- Chain hoists and snatch blocks should not be fastened to girts because bending of the girts will weaken the derrick.
- Keep hands, fingers, feet and other body parts from between the load line or sling and the load. Do not attempt to guide a load with hands on the sling.

Rigging Equipment

- Know (and reference) the safe carrying capacity of sling chains, wire rope, hoists and other lifting apparatus and do not load them beyond recommended safe working load. Load identification will be attached to the rigging.
- Immediately discard defective lifting equipment.
- Do not tie knots in sling chains, rope slings or wire cables to shorten them. Knots may decrease the rating of a line or cable by as much as 60%.
- Do not place bolts or other material between links of chain to shorten or splice it.
- Do not lift or hoist any object of unknown weight.
- Rigging equipment not in use shall be removed from the immediate work area so it does not present a hazard to employees.

Shackles

- Never replace the shackle pin with a bolt. Use only the proper size-fitting pin.
- Never use a shackle if the distance between the two eyes has spread to where the original pin can no longer
be used (i.e. the shackle bolt cannot be threaded so that it makes contact with all thread surfaces provided in the eye).

- All pins must be straight and all screw pins must be completely seated.
- Destroy all shackles that are worn in the crown area or pin by more than 10% of the original diameter.
- Do not use a screw pin shackle if the pin can roll under the load, unscrew and release the load.
- Shackle pins should be secured with safety wire to prevent the pin from unscrewing, especially when in the derrick or in other overhead work.
- Bolt Type Anchor Shackles (BTAS) should be used to secure all overhead equipment such as hoist sheaves.

**Rigging of Wire Rope Clips**

- Be sure to use the proper number of wire rope clips when attaching, and make sure they are placed so that the U-bolt is on the short or "dead" end. The saddle should be placed on the long or "live" end. ("NEVER SADDLE A DEAD HORSE") Refer to Exhibit II.
- Wire rope removed from service will be destroyed to prevent further use. Used wire rope will only be used for stripping drill pipe when it is placed inside of a bolstered tubulars basket. Used wire rope will not be used on standard drill pipe racks.
- Wire rope clamps or factory-poured swedges will be used to create an eye in wire rope rigging.
- Wire-rope clamps should be properly sized, torqued and spaced for the diameter of the wire rope used.
- Blemished, plaited eyes will not be used on any wire rope rigging.
- Protruding tails or bitter ends of wire rope strands on slings and bridles will be taped or blunted.
- Wire rope will be removed from service and not be used if there are (10) broken wires in (1) rope lay or (5) broken wires in any strand.
- Wire rope will not be used if it shows signs of excessive wear, corrosion or defect.

**Diameter of Rope Number of Clips Distance Between Clips**

<table>
<thead>
<tr>
<th>Inches</th>
<th>Number of Clips</th>
<th>Distance Between Clips</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot; Or less</td>
<td>2</td>
<td>2-3&quot;</td>
</tr>
<tr>
<td>1/2&quot; - 5/8&quot;</td>
<td>3</td>
<td>3-4&quot;</td>
</tr>
<tr>
<td>3/4&quot; - 1&quot;</td>
<td>4</td>
<td>5-6&quot;</td>
</tr>
<tr>
<td>1-1/8&quot; - 1 - 1/4&quot;</td>
<td>5</td>
<td>7-8&quot;</td>
</tr>
<tr>
<td>1 3/8&quot; Or larger</td>
<td>6</td>
<td>9&quot;</td>
</tr>
</tbody>
</table>
Compressed Gas Cylinders
(29 CFR 1910.101 Subpart H and MSHA Part 56, Subpart L)

All compressed gas cylinders shall be handled, used and stored in accordance with the HS&E Handbook and state and local regulations.
Employees should utilize these tips for proper handling of compressed gas cylinders:

- Do not accept damaged cylinders.
- Keep protective caps on cylinders when not in use.
- Keep cylinders away from direct flame, heat and sources of ignition.
- Properly secure cylinders at all times. During movement, avoid rough handling, the striking of cylinders and observe all USDOT requirements (i.e. labeling, manifest documentation, etc.).
- Cylinder contents must be properly labeled. Reject cylinders and return to vendor if not properly labeled.
- Close all valves when not in use.
- Cylinder valves must have a handle or other shutoff mechanism in place while in use.
- Regulators are to be removed from cylinders when not in use unless the regulator is designed to be capped or the cylinders are in an approved welding cart.
- Discharge leaking cylinders outdoors by opening the discharge valve slowly one fourth of a turn.
• Use proper lifting methods/devices (i.e. cradles) for cylinders. Do not lift by the valve or protective cap. Ropes and slings are not to be used for lifting cylinders.

Using Cylinders

• Never use a cylinder of compressed gas without a pressure reducing regulator connected to the cylinder valve.
• Always close the cylinder valve before attempting to stop leaks.
• Do not use oil or grease as a lubricant on valves or attachments to oxygen cylinders.
• Threads on fittings must correspond to cylinder valve outlets.
• Check valves/flame arrestors are to be utilized on fuel gas/oxygen systems.

Storing Cylinders

(MSHA Parts 56.4601, 4602, 16005 and 1600)

• Store cylinders in an upright, secured position.
• Do not store oxygen cylinders within 20-ft. (6 m) of combustible materials or fuel gases unless divided by a 5-ft. (1.75 m) fire resistant wall rated for one half-hour.
• Store empty and full cylinders separately.

Fire Prevention and Protection

(29 CFR 1910.155 Subpart L and 1926.150 Subpart F and MSHA Part 56, Subpart C)

Fire Prevention Guidelines

• Class A fire materials (paper, wood, rags, etc.) should be minimized in process areas.
• Buildings in which flammable or combustible liquids are being used must be well-ventilated at all times.
• Any fire extinguisher found discharged during monthly inspections will be removed from service and replaced immediately. The supervisor will be notified immediately upon finding a discharged extinguisher.
• Access to fire detection and firefighting equipment will be kept clear at all times. Equipment will not be obstructed with pallets, tarps, mud sacks, tools, etc.
• Smoke detectors will be present and in good working order in every living quarter/trailer. Detectors will be tested every 6 months.
• Perform required atmospheric monitoring prior to and during operations that involve opening hydrocarbon vessels or tanks. Use “snoop” suds or intrinsically safe gas detection meters when testing for gas leaks on connections. Never use an open flame.
• Use only approved cleaning solvents.
• Transport of Class II flammable liquids (such as gasoline, diesel fuel, or mixed fuel) shall be done in approved
safety cans with the contents clearly labeled.

- A safety can will mean an approved container of not more than 5 gallons capacity, having a spring-closing lid, spout cover and designed to safely relieve internal pressure when subjected to heat or flame.

- Never place portable safety cans inside passenger compartments of vehicles.

- When transferring flammable or combustible liquids from barrel, tank, line or vessel to another container, the source container and the receiving container must be electrically bonded to prevent ignition due to static electricity. Plastic cups/buckets must not be used for collection of hydrocarbon samples.

- Flammable liquid containers or aerosol cans are to be stored in flammable storage cabinets. If opened containers will not fit in the flammable storage cabinet, then remaining product must be used or appropriately discarded.

**Fire Response Procedures**

(MSHA Part 56.4330)

Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use

In the event of fire, the following procedures must be used:

- The first two minutes of a fire are the most critical for extinguishment. Assess the situation and SUMMON HELP.

- Initiate Emergency Shut Down (ESD) and/or activate alarm systems if available, evacuate and then secure the area. If working on a rig, the Driller or Tool Pusher will sound the rig alarm/horn to notify everyone on location of a fire.

- Only trained personnel are qualified to operate fire extinguishers and equipment.

- Never fight a fire if the cause or source is not known, or if it is beyond the initial stage.

- Give direction to third party firefighting agencies.

**Fire Fighting Procedures**

(MSHA Part 56.4330)

- Locate the firefighting equipment.

  **Note:** When activating a cartridge-type fire extinguisher, an employee should point the fill cap away from self or others.

- With the wind at the employee’s back, approach the fire and discharge the extinguisher at the base of the fire, sweeping the blaze while advancing.

- After the fire is extinguished or if unable to extinguish, back away facing the fire. An employee should never turn their back on a fire. Stand-by to ensure that an extinguished fire remains extinguished and there are no flashbacks.
• After discharging or using a fire extinguisher, return it for maintenance and recharging.

Iron Sulfide

• Iron sulfide is a material capable of spontaneous combustion when exposed to air. Often combustion occurs on the ground or inside structures such as columns, vessels, tanks, piping, and exchangers. Iron sulfide fires commonly occur during shutdowns, or construction activities when equipment and piping are opened for inspection or maintenance. Iron sulfide can ignite nearby flammable hydrocarbon-air mixtures.

• Deposits of iron sulfide are formed from corrosion products and may accumulate throughout a structure. Before carrying out any maintenance, construction, or similar work activities, a safe work procedure addressing iron sulfide shall be developed, communicated and implemented where iron sulfide is likely to occur. This procedure may be addressed as part of the Job Safety Analysis (JSA). Procedures shall address:
  - Removal of the combustibles (if possible); and,
  - Removal, neutralization or wetting of iron sulfide deposits; or,
  - Removal of oxygen, so that fire is unsustainable (i.e. nitrogen purging).

• Steaming, water washing; blinding and chemical injections (i.e. acid cleaning, chelating solutions, or oxidizing chemicals) are all control methods which should be evaluated prior to the start of work. Scraps and debris (such as filters) collected from structures must be kept wet or otherwise controlled to prevent fire during transportation.

  Note: Introducing fresh air into a vessel/piping via air-movers may enhance the combustion process, thus igniting flammable hydrocarbons. An evaluation for iron sulfide shall be made and a Hazard Analysis should be completed prior to the start of maintenance, construction or similar activities in areas known to contain iron sulfide.

Hand Tool and Power Tool Safety
(29 CFR 1910.242 Subpart P and 1926.300 Subpart I and MSHA Part 56, Subpart M)

• Tools will be used for their intended use only. Employees are expected to take the time necessary to get the correct tools.

• The necessary PPE will be provided which includes head, eye, hearing, hand, foot, and respiratory protection, face shields, and clothing as stated in the Personal Protective Equipment portion of the handbook. (p. 9-13)

• Tools will be inspected before using them. Tools that are in an unsafe condition will not be used. Unsafe tools will be reported to a supervisor immediately for timely repair or replacement. Only tools that are clean and in good condition will be used.

• Hammers, chisels, derrick pins, bars or similar “driving”-type tools will not be used if mushroomed or cracked. Striking tools will not be used on mushroomed hammer unions until cleaned up with a file or until
the hammer union is removed from service.

- Any hammer or axe with a cracked handle will be immediately removed from service. The handle will be replaced prior to returning the tool to service.

- Purpose-built pail lid removers will be used for removing lids from 5-gallon containers. Pocketknives and utility knives will not be used for this purpose.

- Pipe wrenches with worn heels or jaws and/or bent handles will not be used. Worn heels and jaws will be replaced prior to returning the tool to service.

- Power tools with cut or damaged cords/plugs will not be used until the cord or plug is repaired or replaced.

- Power tools will be properly grounded or manufactured with double-insulated casing.

- Power tools with trigger-locking devices that provide continuous operation are permitted, provided turnoff can be accomplished by a single motion of the same finger used to turn power on. This applies to portable drills and grinders with disks greater than a 2-inch diameter.

- If fitted with an “on/off” switch, a power tool will not be plugged into its power source until the switch is first verified to be “off.”

- Guards will not be removed from portable grinders. Handheld disk grinders without manufacturer-installed guards will not be used. Grinders shall not be used if guards are missing.

- Grinders will be fitted with disk rated at proper speeds. The rated speed of the grinder must not exceed the speed of the grinding disk.

- Grinder disks must be suited for the material to be ground. Do not grind wood with disks intended for metal objects.

- Hand-held grinder disks should be a quarter-inch or thicker. Worn or damaged disks will be replaced immediately.

- Clamps or vises will be used to hold all work dressed by handheld power tools. Employees will not attempt to hold the work using their free hand or a foot.

- Bench grinders without protective shields and adjustable tool rests will not be used.

- Bench grinder tool rests will be adjusted to one eighth-inch from the face of the grinding wheel.

- Grinding on the side of a bench-mounted grinding wheel is prohibited. The side of a grinding wheel shall not be used for grinding unless the equipment and wheel are designed for such use.

- A face-shield will be worn over standard safety glasses by anyone operating or standing near the flying debris from a portable or bench-mounted grinder.

- All adjustments to a portable grinder or other hand tool will be made before plugging the tool to its power source. No adjustments will be made without first unplugging the cord (i.e. to install a new grinding disk or to replace a drill bit in a hand drill).

- Electrical power tools will be secured by unplugging from the power supply, then wrapping up the cable. An energized extension cord or cable shall not be wrapped up.
• Hearing protection will be worn when operating electrical and air-powered hand tools.

• Pneumatic tools with trigger-locking devices that provide continuous operation are permitted, provided the hand tool is also fitted with a positive holding accessory. If the hand tool does not have the hand-hold device, the tool must be fitted with a constant pressure control switch that will shut off when pressure is released.

• Air pressure will be bled off any air-powered tool prior to disconnecting the hose.

• Air supply hoses will be properly pinned with a keeper pin at all crow’s foot connections and safety cable between hose and air supply.

• Air supply hoses will have a safety whip check (lanyard) on all quick-connect lines that is properly sized to prevent the hose from whipping in the event a quick-connect parts.

• All power tools will be unplugged or removed from their air supply upon completion of work.

• All power tools will be unplugged or removed from their air supply prior to making any adjustments to the tool.

• Tools connected to a power source will not be left unattended.

• Compressed air outlets and hoses for air-powered (pneumatic) tools will not be pointed at another person or used to clean off boots or clothing while they are being worn.

• Maintain high standards of orderliness by returning tools to their proper storage place. Tools shall not be left lying about.

Job Safety Analysis
(29 CFR 1910.132 Subpart I)

A Job Safety Analysis (JSA) is a way of studying a job in order to identify the hazards or potential accidents associated with each step of the job and to develop solutions that will eliminate, nullify or prevent such hazards. A JSA can help identify and eliminate potential accident causes. It is the responsibility of operations to develop and maintain JSA lists.

JSA Steps

There are four steps to doing a JSA:
1. Select the job to be analyzed.
2. Break the job down into steps.
3. Identify the hazards or potential accidents that could happen.
4. Develop measures to eliminate hazards.

Select the job to analyze

There are many jobs and job positions that can be hazardous to perform. To narrow the list of those that require a JSA, an employee should consider the following items to determine which to do and in what order:

• Job accident frequency – jobs that have a history of accidents are good candidates for a JSA. It is a good assumption that if a job has produced many accidents in the past five years, it is going to continue to do so.

• Job injury severity – jobs that have provided serious injuries are potential JSA candidates.
• Potential injury severity – some jobs have no injury history but have the potential to produce severe or crippling injuries or death.

• Newly established jobs – changes in tools and equipment or new machinery create new hazards, and as such are natural candidates for a JSA.

• The JSA will document the hazards and safe procedures associated with the operation hopefully preventing an accident.

**Break the job down into steps**

The major reason for breaking the job down into steps is so that each step can be examined for hazards and the potential for accidents. It permits the analysis to be done systematically, one step at a time; in the order the job is done. Each step in the job process tells generally what must be done. (Use active verbs – remove, position, tighten, etc.). The details are omitted. Hazards are not listed in this process, nor are any safety precautions.

**Identify the hazards (Potential Accidents)**

Once the job is broken down into steps, each step is studied for hazards or potential accidents. The job is to identify all the hazards, whether they are part of the job environment or surroundings, or one of the worker’s own doing. Record those hazards that are present or may occur as the job is performed. One of the best ways to identify job hazards is to observe the jobs as they are done.

Employees should ask questions similar to these as the task is being observed (this is a partial list, each situation may suggest others):

1. Could the worker be struck or make contact with anything?
2. Could the worker strike something or fall in any way?
3. Could an exposure or overexposure occur to any condition such as gas, heat, fumes, etc.?
4. Could a strain or overexertion occur?

**Develop measures to eliminate hazards**

Once all the known or observed hazards are noted, a solution should be developed for each hazard. Solutions may take any one of the following forms:

1. Job procedure solution – spell out exactly what workers are to do to accomplish the task safely.
2. Job environment solution – change some aspect of the environment to make the job safer.
3. Radical solution – a combination of the two above, but an entirely new way to do the job.
4. Reduced frequency solution – find a way to reduce the amount of repair, cleanup, wear, etc., to reduce the amount of times the task is done.

**Sandblasting**

• Hose operators will wear blasting hoods with an outside air supply. Keep the eye shield clean and free of dust, fog, etc.

• Gloves, long-sleeve shirts and proper foot protection with foot guards must be worn while sandblasting.

• Never use a sandblaster without an assistant to watch the valves and hoses.

• Workers assisting with sandblasting must also wear proper protection.

• If sandblasting where a fall hazard exists, safety harnesses and lanyards must be worn and used.

• Before using sandblasting equipment, personnel must make certain that air hose couplings are safety-clipped together. Air supply hoses will have a safety whip check (lanyard) on all quick connect lines that is properly sized to prevent the hose from whipping in the event a quick-connect part.

• Point the nozzle at the object to be blasted. Bleed the air pressure off the lines before breaking the hose.

• The nozzle shall have a fully functional dead-man switch that has not been disabled.

• Protect rotating equipment from sand intrusion.

Severe Weather Response

• For rig operations, the DTC Supervisor will shut down normal operations when the threat of lightning is imminent. The derrickman will come out of the derrick and all personnel will take cover in the top dog house or other covered shelter.

• All personnel will keep clear of all wire trays, cable entries and other electrical equipment inside the covered shelter.

• All personnel will secure normal operations and leave the work area, i.e. rig floor, to take cover in the lowest area possible (ditches) upon seeing an approaching tornado. Personnel will stay out of trailers or other temporary buildings.

• Upon notification of a severe storm and/or tornado, all normal operations will be suspended and work area will be made ready for severe weather.

• If the employee is required to respond to an emergency situation during adverse operational or weather conditions, they will exercise due caution and maintain communications with supervisory personnel or control center.

• All office personnel should refer to the office emergency action plan for exit routes; muster points and additional policies regarding severe weather.

DRILLING, WORKOVER AND WELL SERVICE SAFETY

During drilling, workover or any rig-related operation, the DTC Site Supervisor shall implement the DTC Energy Group HSE Program and will be held responsible for coordinating with the contractor's supervisor(s). The DTC Supervisor will verify that the rig crew and all service personnel are familiar with DTC Energy Group standards, rules,
policies and procedures. All visitors to drill sites shall report to the Drill Site Supervisor for orientation before access to the site is permitted. The contractor and their supervisors are responsible for implementing the safety requirements of their company as well as DTC Energy Group’s standards. Any conflict with DTC Energy Group standards or policies shall be brought to the attention of the drilling supervisor.

General Precautions

- All personnel working on DTC Energy Group locations shall use all required safety devices, safeguards and personal protective equipment.

- All vehicles other than authorized service vehicles will be parked by backing into a pre-designated area located a minimum distance of 150 ft. from the well bore.

- Rig floor must be kept clean and clear, with all tools orderly racked or stored.

- Mechanical rig equipment must not be repaired unless all power is shut down and Lockout/Tagout procedures have been implemented.

- When erecting a rig, personnel must maintain a clearance of at least 10-ft. from high-voltage lines. This clearance allows for guy wires, lines, tubing, etc.

- Every employee working more than 4-ft. above floor or ground level shall wear an approved fall arrest system (Refer to Fall Protection Std.) and will be tied off to a substantial anchorage.

- Repairs to rig components are to be performed with OEM replacements and not “like parts.”

Rig Inspections

Daily walk-around inspections of operations equipment by the DTC Site Supervisor or Representative are necessary in order to maintain a safe operation. These inspections shall be done daily. The rig site manager or designated supervisor shall perform the inspections around the rig. Any unsafe condition should be reported and corrected as soon as possible. The Rig site Manager will report any conditions which cannot be corrected immediately to the Rig Manager or higher management if necessary. Potential hazards that cannot readily be corrected by rig site personnel should be reported to the immediate supervisor. The supervisor will then initiate the necessary corrective action. Rig inspections should become part of every crew member’s daily walk-around routine for detecting and remedying any unsafe conditions.

Rig Floor Safe Practices

While ascending or descending the derrick ladder, employees must utilize both hands to climb using 3-point contact and appropriate fall protection per Fall Protection Safety Standard.

- Hand tools shall be sent up using a tag line or basket to anyone working in the derrick.

- Hand tools shall be secured to the person’s harness by a 3-ft. lanyard.

- The rig floor will be clear of personnel whenever anyone is using hand tools in the derrick. Hand tools should be sent down as soon as the job is completed using a tag line or basket.

**Note:** Tools should not be dropped and at NO TIME should a tool be thrown!
• When picking up or laying down pipe, rods, pumps, etc., with elevators, the back of the elevators must be down with the door opening between the links.

• When picking up or laying down pipe, a sling shall be used.

• Only properly trained employees shall use a hydraulic hoist. An experienced person shall be at the controls at all times during lifting operations.

• All power on hydraulic tongs shall be shut off when making repairs or adjustments. Refer to Energy Isolation (LO/TO) Safety Standard.

• Chain hoists and snatch blocks should not be fastened to girts because any bending of the girts will weaken the derrick.

• All sheaves in the derrick should be inspected and greased regularly.

Raising or Lowering the Derrick / Scoping Out/In The Derrick

• All loose equipment and cables will be secured to the derrick prior to raising or lowering. Sisal cord or soft-line is inadequate for securing objects in the derrick.

• Personnel working aloft in pin/un-pin derrick sections will keep all hands, tools and derrick pins tied off with ropes, sash cord or cable. Areas under the work will be cleared of all personnel and roped-off/taped-off to warn others.

• All loose tools and equipment that could fall as the derrick is elevated or lowered will be removed from the derrick prior to raising.

• The Rig Manager/Tool pusher and Driller will inspect all legs, braces, girts, working platforms and line configurations prior to raising the derrick for potential hazards, proper construction, potential dropped objects and signs of damage or fatigue. They will also inspect all derrick hoisting equipment, pins (all rigs) and outriggers. The Rig Manager/Tool pusher will also inspect hydraulic system for raising and lowering the derrick and outriggers.

• No one will stand under or immediately adjacent the derrick or rig floor while raising or lowering the derrick or rig floor.

• All personnel on site will maintain a safe buffer zone of 30-ft. from the rig while raising or lowering the derrick.

• Personnel will approach the rig after raising only after approval of the Rig Manager / Tool pusher.

• The rig crew will monitor all lines around the rig to ensure they do not become fouled while raising or lowering the derrick. Anyone observing a hazard has the authority to call emergency STOP until the hazard is corrected.

• No one is permitted to ride the derrick as it is being raised or lowered.

• Sheaves mounted in the derrick will be attached to the derrick using a screw-pin or bolt-type anchor shackle. Tie-wraps or cotter keys will be used to secure shackle pins.

• All keeper pins and ears will be inspected prior to raising or lowering to ensure no hazardous conditions exit.
• All derrick and sub-base pins will be fitted with closed keeper pins. Welding rods will not be used as keeper pins in derrick pins.

• The derrick stand(s) will be kept in place until the derrick is secured in a vertical position.

**Air and Hydraulic Hoist Operations**

• Personnel will not stand between the hoist and the load.

• Operators will always stand behind the hoist with one hand on the line guide and the other hand on the hoist controls (except if using a pendant control to maintain line of sight).

• Hoist operators will not leave the hydraulic hoist any time equipment or personnel are elevated.

• Hoist will be equipped with wireline guides and guards around the wireline spool.

• The hoist throttle will be operated at a slow, steady rate and returned to the neutral position when release by the operator. Line will be spooled evenly using wireline guides.

• The hoist drum brake will be set any time the load or a person is stopped insuspension.

• A single, designated flagger will be used to maintain visual contact between the load and the hoist operator.

• The hoist line will be secured to a stationary object upon completion of all hoisting.

• Hoist exhausts will be routed through the rig floor to reduce exposure to high-noise hazards. Exhausts will be secured and directed so as not to present a danger to personnel working below.

• Hoist will not be operated in neutral position allowing free-fall of the load or personnel.

• Hooks and hoisting equipment will be visually inspected prior to each use for cracks, excess wear or damage. Hazardous rigging will be taken out of service and destroyed. Lines “bird caged” on the drum will be corrected and visually inspected before lifting any loads or personnel.

• Snatch blocks or sheaves will be used to change the direction of pull on a hoist. Routing the hoist line through a shackle or over a beam is prohibited, as this produces excess wear on the wire rope.

• The working end of the hoist line will be fitted with a thimble eye and shackle. Factory-made eyes are required for hoisting personnel and are preferred over field-made eyes for lifting equipment.

• Field-made eyes will consist of a minimum of three (3) cable clamps, spaced 5-7 times the diameter of the wire rope.

• “Sureloc”-type hooks with outward opening latch and release trigger on backside of hook will **not** be used for material handling activities.

**Stringing Up the Blocks**

• Personnel will wear gloves while handling the drill line.
• Personnel will stand clear of the drill line whenever it is being pulled by the drawworks.

• Personnel standing on the crown to feed the drill line around the crown sheaves will maintain 100% fall protection.

• Personnel will keep hands clear of the sheaves and drawworks drum during string-up operations.

• The crown-o-matic/twin-stop will be tested upon completion of stringing-up or stringing-back while the derrick is in the raised position.

• Only the Rig Manager/Tool pusher, Driller or Assistant Driller (under direct supervision of the Driller) will operate the rig drawworks during stringing-up operations.

• Personnel will not climb inside the drawworks drum guard until the source of power to the drawworks has been secured, locked-out, tagged-out, tried out and chained down.

• The deadman anchor and drilling line clamp will be properly secured and torqued on both ends of the drilling line per manufacturer’s instructions. The Rig Manager/Tool pusher or Driller will inspect the clamps after final installation.

• A pipe bar will be used to guide the drill line on the drawworks drum grooves. Personnel will not place hands close to the drum to guide the drilling line.

Mud-Mixing Operations

• Employees, contractors and vendors must wear the correct personal protective equipment (PPE) at all times while mixing chemicals, which may include, but not limited to hardhats, safety glasses with non-ventilated chemical goggles, dual cartridge respirators, aprons and rubber gloves.

• Personnel engaged in chemical mixing operations will not tuck their pant leg inside of their boots while mixing chemicals.
• Personnel will study the MSDS sheet for the proper PPE and emergency response in the event of chemical exposure prior to each mixing operation.

• Caustic soda will be mixed in a caustic barrel. Only one sack of caustic will be added to the barrel at a time. Caustic will not be kicked or dumped through the mud pit grating. It will not be mixed at the mud hopper.

• Caustic soda will be added to a barrel of water. Water will never be added to caustic soda already in the barrel. The presence of water absorbs the heat from the chemical reaction and prevents explosion.

• Handling of empty caustic and/or bromide sacks will be in concordance with the MSDS sheets and will include the wearing of all PPE to prevent exposure.

• When handling or mixing chemicals that creates excessive dust, a dual cartridge respirator will be worn to prevent inhalation.

• Mud agitators will be locked-out, tagged-out and tried prior to entering a mud pit or mud tank for cleaning or repairs. The atmosphere in the pit/tank will also be checked for sufficient oxygen, explosive gases and toxic gases using a portable gas detector per Confined Space Entry procedures.

• There will be no eating, drinking or smoking in mud-mixing areas because of the potential to ingest harmful chemicals and potential for fire. Food products will not be stored in containers, lockers or plastic bags that also contain respirators or other potentially contaminated PPE in the mud-mixing area.

• Personnel will not put their head over the mud-mixing hopper in the event chemicals blow back out. Extreme care should be taken when unplugging a hopper.

• The intake pump to the hopper will be turned on first at the start of mixing operations to ensure there is not trapped pressure and to prevent mud products from being blown out of the hopper.

• Mud mixing areas will be cleaned and organized up upon completion to remove slip, trip or fall hazards.

**Mud Pump Operations and Repair**

• Mud pumps will be fitted with a relief valve (pop-off) to protect the pump and discharge lines from extreme pressure caused by valve failure, plugged bits or incorrect valve lineup. The pop-off should have the correct shear pin in lieu of nails so the valve will discharge at a pressure below the maximum allowable working pressure of the pump.

• There should be no 90-degree turns in pressure-relief lines from the mud pump. Relief lines will be anchored and hard piped. Any turns that are required must be targeted T’s.

• There will be no valves positioned between the pump discharge and the pop off.

• The driller will be notified before working on any mud pump. The power supply to the pump will be locked-out/tagged-out/tried to prevent accidental start-up of the pump during maintenance or repairs.

• The valves in the discharge manifold that connect the fluid system with that of another pump will be closed, locked and tagged to isolate the pump before work is performed.

• Personnel will verify that all pressure has been bled off the pump before starting any maintenance or repair.
• The preferred method for lifting mud pump liners will be with a hoist, chain fall or some other mechanical lifting device.

• Personnel will not place their hands or fingers inside the pump’s rod chamber with the pump in operation. Additionally, metal bars, wooden boards or other types of prying devices will not be placed on the pump’s open-rod chambers while the pump is running.

• The mud pump oiler will not be repaired or adjusted while the mud pump and oiler are operating.

• Personnel will account for all tools following a mud pump repair or maintenance and prior to removing any lock-outs (example: jack shaft wrench). All tools will be checked in and out.

• Water hose streams and paint spray nozzles will not be directed at the pump’s electric blower intake when cleaning the pump(s).

• Pulsation dampeners will be recharged with nitrogen only. The use of oxygen is prohibited.

• Proper lifting techniques will be used for handling mud pump repair parts. Personnel will avoid twisting by rotating their feet while manually handling loads.

• High-pressure mud system hoses (>1000 psi) will be safety cabled with factory made cables. Chains should not be used for this purpose.

• The top of mud pump piston pots will be safeguarded with purpose-built guards to prevent access to operating machinery and retain any flying debris in case of liner failure.

Wireline Survey Operations

• Only trained, qualified operators will operate the wireline machine.

• Personnel will keep their hands on guide handles only. All wireline machines will be equipped with guide handles and depth counters.

• Personnel will not wear loose clothing near the wire-line spool.

• The wireline spool will be operated at a slow, controlled speed.

• Rags will not be used to remove drilling fluids from the wireline.

• Wiping rubbers, hoses, ropes or other materials will be secured to a fixed object so as to avoid hand pinch points.

• Sheaves used to route the wireline will be compatible with wireline size.

• Sheaves will be securely anchored with tie wraps or cotter keys in the shackle pin and safety chained to prevent free-falling objects.

• Drill crew members will reduce the operating speed of the wireline machine 500 feet prior to the tool reaching the surface.

• Pump down head will be removed from the stump when the tool is 500 feet from the surface under normal operations.
• The wireline size will be checked for suitability prior to lifting or pulling directional tools.

• Vise grips will be used to hold the wireline when cutting so as to keep hands out of danger.

• Personnel engaged in cutting wireline will remove excess slack immediately to prevent whipping or slashing upon cutting wireline.

• Barrier/danger tape will be strung prior to the start of wireline surveys to keep personnel clear of potential hazards.

Slips and Elevators

• At least two persons should be used to lift the slips.

• Slips should be maintained with sharp dies at all times.

• Safety goggles and gloves must be worn when changing slip dies.

• The tapered sides of slips should be lubricated for easy removal from the bushings.

• Slips should not be kicked into place.

• Slip handles should be maintained to original manufacturer’s specs and replaced with original parts.

• Flexible slip handles and dumbbells on tongs are recommended to prevent potential hand injuries.

• Elevators should be maintained in good working condition.

• Personnel should check for extensive wear on the latches, latch springs, hinge pins, elevator shoulders and hobble clamps.

• Riding the elevators or blocks is prohibited.

• When latching elevators onto pipe in the rotary, one person should pull the elevators back away from the pipe on the back of the elevators as they are lowered. The handle should not be pulled down, as this will cause the elevators to close prematurely.

• As the elevators reach the "latch on" level of the pipe, the horns should then be grasped to pull elevators toward the pipe for latching.

• The person behind the rotary must release grip on the elevators as they begin to swing inward and place hands approximately 18 inches up the elevator bales or links, and then push to assist in latching the elevators onto the pipe.

• Personnel should never attempt to use the eyes of the bales to grab on and push because the elevators can be bumped riding up and injure the hands.
Handling Tubular Goods

- Tubular goods should be adequately chocked with wooden blocks or other suitable materials on level racks.
- When moving tubular goods with a hydraulic hoist, lifting lines should have two wraps around the drill pipe with the hook facing downward.
- Personnel should not walk between or beneath tubular goods that are being hoisted.
- Personnel should always roll pipe from the ends in case the pipe gets out of control. Pipe racks should be worked from the ground at all times.
- Pipe racks should be kept level and in a safe and orderly condition.
- Flagging signals should be used when moving pipe with cranes and hydraulic hoists if the operator's view is blocked.
- Tail or tag lines are required to maintain good control when lifting loads or moving drill pipe. **Note**: Knots should not be tied on the ends of tag lines because the line could get hung up between objects. This could create a "slingshot" effect to the rope when it is pulled loose by the crane.

Drilling Under Pressure

- Drill crew members should minimize exposure around and over the rotary table while making connections and pulling slips.
- Rotating head operating pressure will not be exceeded.
- Drill crew members will not put their head or body over the slips while pulling.
- Drill crew members will let the Driller pull up on drill pipe prior to grabbing the slips to allow residual torque to be released.
- Drill crew members will coordinate with the Driller and ensure pressure is off the rotating head prior to pulling it or working on or around it.
- Crude oil collecting on top of mud pits will be removed promptly to eliminate potential fire hazards.
- Rotary bushings/bowls will be kept locked while drilling under pressure.

Nippling Up / Nippling Down

- Personnel will remain out from under and between loads.
- On rigs without BOP handling tracks, the BOP stack will be picked-up, snubbed and tailed with proper rigging equipment.
- Lifting shackles will be verified to be of adequate strength before being put into service.
- All pick-up lines, eyes and shackles will be inspected for damage or fatigue prior to lifting BOP components or the entire stack. All equipment will be used properly.
• A flagman will be designated and identified by wearing an orange vest to direct the positioning of BOP winch lines and equipment.

• No one else will give signals to winch operators. All pick-up lines connected to the stack will remain shackled until the flanges have been bolted down.

• BOP’s will not be climbed on until they are on the well head flange or the flange of another BOP component.

• Fall Protection will be used if working at heights greater than 4 ft.

• Personnel will keep hands and fingers out from between BOP flanges as they are guided or aligned onto BOP stubs. Taglines and boards will be used to center the equipment over stubs.

• Drill crew members will remain clear of co-workers swinging sledgehammers to tighten or loosen nuts on BOP stubs.

• Crew members swinging a sledgehammer will ensure the area is clear below and behind him.

• All hammer wrenches will be secured with a rope to prevent striking co-workers.

• When hammering BOP bolts and nuts, the correct size tools will be used. The sledgehammer used to strike the wrenches will be the correct size and weight which allows controlled and accurate swinging.

• Hands will not be placed near the hammer wrench when struck by the sledgehammer. Tail ropes will be used to avoid mashing hands or fingers.

• If a section of the BOP is required to be picked up off the lower section in order to install or start the nuts onto the studs, a wooden board will be placed between the flanges and the weight slacked off before placing hands into this hazardous area to start the nuts (i.e. in the sloped section above the bottom flanges of the annular preventer). No personnel will place their hands in this area of a suspended load.

• All BOP nuts will be installed with the hands and fingers on the outer edge of the nut – not placed above or over the top of the nut and/or stud.

• Ensure that the nuts and bolts are the recommended size and in good condition and ready to install.

• Sledgehammers will be stored with the handle lying flat on the ground or floor. Handles will not be left standing up straight.

• Hydraulic lines will be bled to zero pressure before hammering is permitted on hydraulic unions during nipple down. Use Energy Isolation procedure to ensure energized systems are controlled.

Pressure Testing

• Personnel will remain clear of all pressured lines during BOP testing.

• Personnel will not hammer on any testing or co-flex lines until all pressure has been bled off of the line.

• Personnel will not climb on the BOP stack during BOP testing.
• Upon completion of a blind ram pressure test, pressure under the rams must be bled off, HCR valve opened and casing pressure checked before opening the tested rams.

• A pressure gauge will be installed on the choke manifold.

• Baker-lock thread compound will not be used on contractor or service company high-pressure unions.

**Top Drive Operations**

• Pre-installation, check-out and rig-up procedures will be followed. Visual system inspections will be conducted prior to operational testing.

• All personnel working around and under the top drive will be cleared away prior to operational/function testing.

• Torque tube stabilizers will be secured with a safety chain in the event the stabilizer is struck by the box end of a stand of drill pipe.

• Elevator links will be snubbed off with hoist lines prior to changing out elevators in the event the elevator links kick back due to an air bag leak. Personnel will stand alongside (not in front of) the elevator in case of unexpected movement.

• Hydraulic leaks from the top drive must be corrected immediately so as to eliminate the source of slip hazards around the rig floor.

• All hydraulic spills should be cleaned up immediately and reported to line management.

• Personnel should never wash near the top drive system motors or blowers with a high-pressure sprayer.

• Rig personnel will keep water and paint away from top drive blowers.

• Rig personnel will inspect all tie wires/safety pins daily for signs of damage or wear.

• Service loops to the top drive will be hung clear of other obstructions to prevent chaffing.

**Wireline Operations (Logging, Coring, Perforating)**

• Only essential personnel will be allowed on the rig floor while radiation sources are being installed in the logging tool, transported to/from the tools or removed from the tools.

• The drill crew and wireline crew will review contractor and DTC safety standards prior to the start of wireline operations.

• The drill crew and wireline crew will prepare or review a written Job Safety Analysis (JSA) prior to the start of the job.

• Only the drill crew will hang wireline sheaves in the derrick per the wireline foreman’s direction. All other personnel will remain clear of the rig floor while the sheave is being hung.
• Personnel will not stand under loads while they are being rigged up (e.g., wireline sheaves).

• Personnel will not walk over or near wirelines.

• The stairs next to the v-door will not be used during wireline operations. Access at the top and bottom will be barricaded during wireline operations.

• The rear wheels of the wireline truck will be chocked after it is spotted on location.

• A razor blade on a wooden block or alternative cutting tool will be used to cut prim cord. Cutting prim cord with crimping pliers or pocketknife is prohibited.

• A shot/perforating gun will not be capped or connected to the wireline during an electrical storm.

• All personnel will remain clear of the operations when the shot/perforating gun is capped and armed.

• Short-out leads will be used when connecting any shot/perforating gun to the wireline.

• The wireline will be isolated from the firing panel until the perforation assembly reaches a minimum depth of 200-ft.

• Under no circumstances will the elevators be removed or left off the drill pipe while it is being torqued in either direction or while the string shot is being fired.

• The wireline will be shorted-out, locked-out and tagged-out at 200-ft. when pulling the expended perforating gun from the well bore.

• All live explosives left in the well bore will be reported to the Operator’s representative.

• Rubber gloves and goggles will be worn while handling a chemical cutter before and after firing.

• Only one DTC Representative will be on the rig floor while raising or lowering perforating guns with the wireline. All other non-essential personnel will be removed from the rig floor.

• Welding will not be conducted during perforating operations.

• Signs or designated personnel should be posted at entrances to the location to notify visitors that explosives are in use.

• All personnel not involved in handling the explosives must be alerted to stay away from the work area and out of the perforator's line of fire.

• Personnel must turn off radio and telephone transmitters, welding machines and other electrical power sources located within 500-ft. of perforation operation and not required for handling the explosives and other necessary operations. Prior to loading the gun, the DTC Energy Group Production Supervisor should notify the supervisors of surrounding facilities that all radio transmitting equipment, including remote monitoring and control devices (RMC), are turned OFF.

• All equipment should be electrically grounded as specified by service company procedures and checks should be made for stray currents. The source of any hazardous stray currents should be located and eliminated.
• The circuit breaker switch on the unit electrical panel will be locked in the open or off position until the perforating gun is in place down-hole and ready to be fired. After firing, the switch will be returned to the open or off position and remain there.

• The top drive will be isolated (locked-out/tagged-out/tried-out) during perforating operations.

Fishing/Jarring Operations

• All non-essential personnel will remain off the rig floor and out from under the sub-base area during jarring operations.

• All personnel will remain clear of the deadline and deadline anchor.

• The drill crew will inspect the derrick, pins, keepers, draw-works and the top-drive frequently during jarring operations for potential falling objects.

• If the rig is equipped with a top-drive, the manufacturer’s checklist will be completed before the start of jarring operations.

• The Rig Manager/Tool pusher will inspect the drilling line, drill line clamp and deadline anchor (tie-down) prior to the start of jarring operations.

• The drill crew will inspect the derrick, pins, keepers, draw-works and top-drive upon completion of jarring operation for potential falling objects.

Well Servicing and Stimulation Safety

This section does not attempt to address all precautions needed in every well servicing situation, but instead provides *minimum* basic safety standards of care.

General Precautions

• Each well servicing unit should be equipped with a derrick man emergency escape device.

• Each well servicing unit should be leveled and properly secured using guy wires before work on the well begins.

• Guy wires and safety slide lines should be attached to approved anchors and flag wires and lines at head level for visibility.

• Anchors should be set and tested according to the manufacturer or regulatory guidelines.

• Adequately sized and properly located fire extinguishers must be provided.

• Backpressure valves or tubing plugs must be used when removing the production tree or mastervalve.

• Use blow out preventers (BOP’s) and test BOP accumulators after initial rig up, and then periodically during work over operations as required by DTC Energy, the Operator’s desire or government regulations.

• A quick opening, full-bore tubing valve is required.
• The derrickman specifically (or any other personnel) will not ride the blocks up or down.

• No one shall be allowed in or under the derrick while it is being raised or lowered.

• Rig pump and lines should be secured and tested before use.

• A check valve must be installed as close to the well as possible.

• A heat-fusible cap should be placed on the surface safety valve (if applicable) during well servicing operations.

• Barriers and signs should be placed to notify and prevent unauthorized personnel from entering high-pressure areas.

• When pumping heated oil under high pressure, a check valve must be installed as close to the well or flow line as possible to prevent spraying hot oil in case of a line rupture.

• Swabbing or hot oiling operations should only be performed in daylight or where adequate lighting is provided.

• A stripping-type annular preventer should be considered for situations where hydrocarbon releases may be anticipated.

• Situations that should be reviewed are well operations that may be hampered by the inability to fully circulate out hydrocarbon or excessive fluid losses.

• Equipment and personnel should be located as far as practical from the wellhead during stimulation treatments.

• While refilling propane tanks on hot oil trucks on location during hot oil operations, the driver will shut off the main burner, pilot and truck engine.

• The propane delivery truck will maintain a distance of at least 50- ft. from the hot oil truck firebox.

• When pulling polish rod, the stuffing box shall be stripped down to the lower end of the polish rod prior to laying rod down. If the box sticks on the rod and is not freed, it shall be clamped onto the rod so it cannot fall.

• When pulling stuck rods or tubing, the derrick and floor will be cleared of non-essential personnel.

• Pipe, rods or wire line should not be stripped with hands.

• When picking up or laying down tubing, rods, pumps, etc., with elevators, the back of the elevators must be down with the door opening between the links.
INDUSTRIAL HYGIENE PROGRAMS

Hazard Communication

- FR 1910.1200 Subpart Z and MSHA Part 47)
  - Each chemical container on DTC site shall have a “Hazard Communication” label on it.
  - Original manufacturer’s containers must contain the following information as a minimum on its “Hazard Communication” label:
    - Name, address and emergency contact telephone number
    - Chemical identity
    - Appropriate hazard warnings (and USDOT placarding for shipping containers) with pictures, symbols, colors and words which convey hazards of the chemical
  - Temporary use or portable containers must use an NFPA or HMIS labeling format which includes all of the following information on its “Hazard Communication” label as a minimum:
    - Name of the chemical, Hazard Class rankings (Health, Flammability, Reactivity and Special Hazards) as indicated on the chemical’s SDS
  - Exception to labeling – When an employee transfers a chemical to a portable container which is intended for immediate use during that employee’s work shift, a hazard communication label is not required. The container must, however, remain in the possession and control of the employee who made the transfer, and the product content must be identified on the container.

- Safety Data Sheets (SDS) must be accessible for each chemical in inventory on location. An updated chemical inventory list must also be maintained for each location and reviewed annually.

- Before contractors or employees begin work, DTC Energy Group’s Representative will inform and train contractor or employees of any potential chemical hazards associated with the job or chemicals stored in the affected areas. Copies of SDS for those chemicals will be made available upon request. There will also be information and training when a new physical or health hazard is introduced into the workplace.

- Third Party contractors and vendors will make DTC Energy Group aware of any potential chemical hazards associated with their work or materials being used on a DTC site or facility. Copies of SDS for those chemicals will be made available to DTC upon request.

- Prior to performing any non-routine tasks, employees must notify DTC Energy Group of such tasks so that DTC Energy Group may inform the employee about the hazards of the task and provide any additional training necessary prior to the commencement of the task.

- When work is being performed at multiple worksites, DTC Energy Group will ensure that information regarding SDSs and access to them is provided at all locations. Continuity of precautionary measures and any labeling systems used at the workplace will be maintained at each worksite.

Basic Rules and Procedures for Working with Chemicals

- The MSDS shall be referenced (prior to handling chemicals) for appropriate PPE to protect personnel.

- The MSDS shall be referenced for First Aid response actions following a chemical exposure incident to personnel.

- In case of eye contact with chemicals, promptly flush the eyes with water for at least 15 minutes, remove contaminated clothing and seek medical attention. Emergency eyewash stations or showers must be within 25-ft. of any injurious/corrosive chemical handling areas.
• Spills should be promptly cleaned up as required by the MSDS and/or local, state, or federal guidelines using appropriate PPE and following DTC guidelines. Disposal of all cleanup materials shall be in accordance with the DTC Waste Management program.

• Chemicals or materials that produce flammable or combustible fumes/vapors shall not be stored where there is risk of creating an ignition and/or heat source.

• Transfer of flammable/combustible chemicals from bulk storage containers requires the installation of bonding and grounding connectors to prevent the generation of static electricity.

• When working with flammable/combustible chemicals or where flammable/combustible materials have been stored, non-spark producing tools and explosion-proof lighting shall be used.

• Chemicals should not be smelled or tasted.

• It is prohibited to eat, drink, smoke, chew gum or apply cosmetics in areas where chemicals are present. Wash hands before conducting these activities.

• Glassware or utensils should not be used in laboratory operations to handle food or beverages.

• Food or beverages should not be in chemical storage areas or laboratory refrigerators.

• Chemicals and equipment shall be properly labeled and stored.

• No container should be received, accepted or transported which has been damaged or does not have appropriate labeling.

• Stored chemicals should be examined monthly for deterioration and container integrity.

• When chemicals are hand-carried, the container should be sealed.

• If handling volatiles it may be necessary to have some pressure relief to vent the vapors.

• Incompatible chemicals must not be stored near each other. Refer to the chemical’s MSDS for proper storage requirements.

• Spill containment devices such as containment rings or drip pans should be used to contain leaks from containers at transfer areas.

Asbestos
(29 CFR 1910.1001 Subpart Z)

General Asbestos Requirements

• Asbestos-containing material that may be encountered on DTC facilities could include transit siding/roofing, building or pipe insulation, gaskets, floor and ceiling tile, window caulking and pipe coating. These materials are assumed to be asbestos unless documentation and/or testing proves otherwise.

• Before a contractor begins work, DTC Energy Group will inform the contractor in writing of any potential asbestos hazards associated with the job. Contractors shall be licensed in the state in which the work is to be
done and shall have a formal ACM removal program which includes job procedures, training, PPE and certifications/license requirements.

- Asbestos products will not be purchased unless non-ACM products are unavailable.
- All asbestos removal (including repair/O&M jobs) will be supervised by a formally trained Competent Person. Only trained and licensed personnel (as applicable to the region) can remove ACM products.
- Eating, drinking, smoking or chewing is prohibited in any contaminated work areas.
- Contact/inhalation with ACM material can be avoided by the use of protective clothing such as gloves, coveralls, rubber boots, respirators and eye protection.
- Personnel should thoroughly wash exposed skin areas, which may have been exposed to ACM before eating, drinking, smoking or chewing.

**Benzene**  
(29 CFR 1910.1028 Subpart Z)

- Benzene may be present in natural gas, crude oils and gasoline. Exposure monitoring, engineering controls and personal protective equipment will accomplish the prevention and control of benzene exposure.

**Facts About Benzene What benzene is**

- Benzene is a chemical that is a colorless or light-yellow liquid at room temperature. It has a sweet odor and is highly flammable.
- Benzene evaporates into the air very quickly. Its vapor is heavier than air and may sink into low-lying areas.
- Benzene dissolves only slightly in water and will float on top of water.

**Where benzene is found and how it is used**

- Benzene is formed from both natural processes and human activities.
- Natural sources of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.
- Benzene is widely used in the United States. It ranks in the top 20 chemicals for production volume.
- Some industries use benzene to make other chemicals that are used to make plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of lubricants, rubbers, dyes, detergents, drugs, and pesticides.

**How you could be exposed to benzene**

- Outdoor air contains low levels of benzene from tobacco smoke, gas stations, motor vehicle exhaust, and industrial emissions.
- Indoor air generally contains levels of benzene higher than those in outdoor air. The benzene in indoor air
comes from products that contain benzene such as glues, paints, furniture wax, and detergents.

- The air around hazardous waste sites or gas stations can contain higher levels of benzene than in other areas.
- Benzene leaks from underground storage tanks or from hazardous waste sites containing benzene can contaminate well water.
- People working in industries that make or use benzene may be exposed to the highest levels of it.
- A major source of benzene exposure is tobacco smoke.

**How benzene works**

- Benzene works by causing cells not to work correctly. For example, it can cause bone marrow not to produce enough red blood cells, which can lead to anemia. Also, it can damage the immune system by changing blood levels of antibodies and causing the loss of white blood cells.
- The seriousness of poisoning caused by benzene depends on the amount, route, and length of time of exposure, as well as the age and preexisting medical condition of the exposed person.

**Immediate signs and symptoms of exposure to benzene**

- People who breathe in high levels of benzene may develop the following signs and symptoms within minutes to several hours:
  - Drowsiness
  - Dizziness
  - Rapid or irregular heartbeat
  - Headaches
  - Tremors
  - Confusion
  - Unconsciousness
  - Death (at very high levels)
- Eating foods or drinking beverages containing high levels of benzene can cause the following symptoms within minutes to several hours:
  - Vomiting
  - Irritation of the stomach
  - Dizziness
  - Sleepiness
  - Convulsions
  - Rapid or irregular heartbeat
  - Death (at very high levels)
- If a person vomits because of swallowing foods or beverages containing benzene, the vomit could be sucked into the lungs and cause breathing problems and coughing.
- Direct exposure of the eyes, skin, or lungs to benzene can cause tissue injury and irritation.
• Showing these signs and symptoms does not necessarily mean that a person has been exposed to benzene.

**Long-term health effects of exposure to benzene**

• The major effect of benzene from long-term exposure is on the blood. (Long-term exposure means exposure of a year or more.) Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells, leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

• Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

• Animal studies have shown low birth weights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.

• The Department of Health and Human Services (DHHS) has determined that benzene causes cancer in humans. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

**How you can protect yourself, and what to do if you are exposed to benzene**

• First, if the benzene was released into the air, get fresh air by leaving the area where the benzene was released. Moving to an area with fresh air is a good way to reduce the possibility of death from exposure to benzene in the air.
  - If the benzene release was outside, move away from the area where the benzene was released.
  - If the benzene release was indoors, get out of the building.

• If you are near a release of benzene, emergency coordinators may tell you to either evacuate the area or to “shelter in place” inside a building to avoid being exposed to the chemical.

• If you think you may have been exposed to benzene, you should remove your clothing, rapidly wash your entire body with soap and water, and get medical care as quickly as possible.

**Removing your clothing**

- Quickly take off clothing that may have benzene on it. Any clothing that has to be pulled over the head should be cut off the body instead of pulled over the head.

- If you are helping other people remove their clothing, try to avoid touching any contaminated areas, and remove the clothing as quickly as possible.

**Washing yourself**

- As quickly as possible, wash any benzene from your skin with large amounts of soap and water. Washing with soap and water will help protect people from any chemicals on their bodies.

- If your eyes are burning or your vision is blurred, rinse your eyes with plain water for 10 to 15 minutes. If you wear contacts, remove them after washing your hands and put them with the contaminated clothing. Do not put the contacts back in your eyes (even if they are not disposable contacts). If you wear eyeglasses,
wash them with soap and water. You can put your eyeglasses back on after you wash them.

- **Disposing of your clothes**
  - After you have washed yourself, place your clothing inside a plastic bag. Avoid touching contaminated areas of the clothing. If you can't avoid touching contaminated areas, or you aren't sure where the contaminated areas are, wear rubber gloves or put the clothing in the bag using tongs, tool handles, sticks, or similar objects. Anything that touches the contaminated clothing should also be placed in the bag.
  - Seal the bag, and then seal that bag inside another plastic bag. Disposing of your clothing in this way will help protect you and other people from any chemicals that might be on your clothes.
  - When the local or state health department or emergency personnel arrive, tell them what you did with your clothes. The health department or emergency personnel will arrange for further disposal. Do not handle the plastic bags yourself.
  - If you think your water supply may have benzene in it, drink bottled water until you are sure your water supply is safe.
  - If someone has swallowed benzene, do not try to make them vomit or give them fluids to drink. Also, if you are sure the person has swallowed benzene, do not attempt CPR. Performing CPR on someone who has swallowed benzene may cause them to vomit. The vomit could be sucked into their lungs and damage their lungs.
  - Seek medical attention right away. Dial 911 and explain what has happened.

**How benzene poisoning is treated**

Benzene poisoning is treated with supportive medical care in a hospital setting. No specific antidote exists for benzene poisoning. The most important thing is for victims to seek medical treatment as soon as possible.

**How you can get more information about benzene**

People can contact one of the following:

- Regional poison control center: 1-800-222-1222
- Centers for Disease Control and Prevention
  - Public Response Hotline (CDC)
    - 800-CDC-INFO
    - 888-232-6348 (TTY)
  - E-mail inquiries: cdcinfo@cdc.gov
- Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), [Pocket Guide to Chemical Hazards](https://www.cdc.gov/niosh/docs/2006-001/pocket/)

- Personal protective equipment (PPE) will be provided for DTC employees to prevent eye contact, limit dermal exposure and minimize the inhalation of vapors. PPE may include impermeable clothing, respiratory protection, chemical resistant gloves, safety glasses with side-shields, splash goggles, splash-proof face shield, chemical-resistant footwear and chemical-resistant apron.
• Employees potentially exposed to benzene levels of 1 ppm TWA (8-hour exposure) or 5 ppm STEL (15 minute exposure) will wear at least a half-mask respirator with appropriate cartridges.

• Food preparation, dispensing and eating are prohibited in areas where benzene containing material is handled or exposure exists.

• The use of tobacco products is prohibited in areas where benzene-containing material is handled or exposure exists.

• No skin or eye contact is allowed. If skin contact occurs, employees will immediately wash affected body parts with generous amounts of soap and water. If soap and water are not available, employee should use a waterless hand cleaner. After handling benzene-containing material, it is recommended that hands be thoroughly washed after discarding gloves.

• If clothing should become contaminated with benzene, it should be removed immediately to prevent personal exposure and the spread of contamination to vehicles, offices, shops and homes.

• Rinse the potentially exposed area with generous amounts of soap and water.

• Fire extinguishers are readily available in areas where benzene is used and stored.

**Tank Gauging Procedures**

Potential exposures to hazardous vapors and explosive gases can occur during tank gauging operations. To reduce the potential exposure, the following safe operating procedure should be followed:

1. Before gauging any tank, review and/or complete the DTC Job Safety Analysis (JSA) for this task (if applicable).

2. Read signage and warning labels to determine if the location is known to contain H2S or benzene-containing materials.

3. No smoking, open flame or spark-producing equipment (including cellular phones) may be used during gauging.

4. The Fire-Retardant Clothing (FRC) Policy shall be followed for protective clothing requirements associated with tank gauging or working in an environment with the potential for flash fire.

5. Determine the wind direction. Stand upwind, as much as possible, before opening the “thief hatch.”

6. Wait a few minutes to allow vapors and gases to vent off.

7. Thief (gauge) the tank.

8. Close the thief hatch.

**Hearing Conservation**

(29 CFR 1910.95 Subpart G and MSHA Part 62.150) Training shall be updated to be consistent with changes in the PPE and work processes that include instruction on the proper use and fit of hearing protectors.

Noise Awareness training for employees will be done before initial assignment and on an annual basis.

Employees who are exposed or potentially exposed to a time-weighted average (TWA) of 85 decibels (dBA) or greater
over an 8-hour period are deemed to be at risk. All employees will annually have audiometric testing performed. All employees will be trained on the effects of noise on hearing, the purpose, types and use of hearing protectors, the purpose of audiometric testing and an explanation of the test procedures and their results. The training will be updated consistent to changes in PPE and work processes.

All DTC Energy Group facilities shall be periodically assessed for continuous high-noise levels (85 dBA or greater). When information indicates that employee exposure may equal/exceed the 8 hr time-weighted avg. of 85 decibels, a monitoring program shall be implemented. An audiometric testing program will be established and maintained and will be available to all employees whose exposures equal or exceed these measurements. Warning signs shall be posted in areas identified as high-noise level areas. Personnel are required to wear hearing protection in high-noise level areas and during unusual operations. Extremely loud jobs such as blowing down lines or venting of air pressure may require the use of dual protection (plugs and muffls). Hearing protection will be replaced as necessary. Employees will be trained in the use, care and fitting of protectors. The employer will evaluate hearing protection for the specific noise environments in which the protector will be used.

Within 6 months of an employee’s first exposure at or above the action level, a valid baseline audiogram will be established against which future audiograms can be compared. Testing to establish a baseline shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement and employees will be notified to avoid high levels or noise. At least annually after obtaining the baseline, a new audiogram will be obtained for any employee exposed at or above an 8-hour time-weighted average of 85 decibels and will be compared to the baseline one. If a threshold shift occurs, hearing protection will be re-evaluated and/or refitted and if necessary a medical evaluation may be required.

Employees will be given an opportunity to select their hearing protection from the employer’s selection

Records of all employee exposure and audiometric measurements will be maintained.

Heat Exposure

Signs and Symptoms of Heat-Related Illnesses

Heat Cramps – Muscle cramps of the abdomen, legs or arms.

Heat Exhaustion – Profuse sweating with pale, moist and cool skin; weakness; loss of appetite; dizziness. May also have heat cramps, nausea, urge to defecate, chills, rapid breathing, tingling of the hands or feet, and confusion.

Heat Stroke – Headache, dizziness, stomach pains, confusion, weakness and sudden loss of consciousness, and may have seizures; skin is hot and may be dry; pulse and respiration are rapid and weak. Heat stroke is a medical emergency.

Basic Heat Injury Prevention

To reduce the risk of heat injury, the following procedures should be followed:

- Reduce the risk of heat-related injury by regular consumption of water and clear fluids. When possible, provide cooled water (50°F to 60°F) to promote voluntary consumption. Do not wait until thirsty to replenish fluids (especially when working in hot environments or performing strenuous work).

- Take frequent small drinks of water since they are more effective than drinking a large amount of water all at once. Larger individuals need more water.

- The use of salt tablets for replacement of salt lost through sweating is not recommended. An adequate salt intake is best achieved by eating three salt-seasoned meals per day.
• When possible, schedule heavy workloads for the cooler hours of the day, such as early morning or late evening.

• Give frequent rest periods. Lower the work rate and workloads as the heat condition increases.

• When possible, workloads and/or duration of physical exertion should be less during the first days of exposure to heat, then they should gradually increase to allow acclimatization.

• Monitor the condition of your co-workers closely and encourage them to take action if they appear to be suffering from the ill effects of heat exhaustion.

**Heat Stress Monitoring (WBGT Surveys)**

Heat stress monitoring using Wet Bulb Globe Temperature (WBGT) meters should be utilized when work factors place excessive heat load on an individual. Heat stress monitoring should be employed to determine stay times and break intervals if excessive heat is a factor. Heat load factors include:

• Ambient temperatures above 105 F° or high humidity above 90% or a combination of the two.

• Moderate to heavy work load (as defined by OSHA Technical Manual – Sect III, Chapter 4: Heat Stress) ranging from 200-500 kcal/hour.

• Wearing of PPE and/or Fire-Retardant Clothing (FRC) which reduces evaporative cooling effect.

• Salt tablets as recommended and increased water intake may be used to prevent dehydration.

• Increased work intervals with fewer breaks.

**Hydrogen Sulfide**

**Effects of Hydrogen Sulfide**

Hydrogen sulfide (H₂S) can cause loss of consciousness or death at low concentrations and may be present in some DTC operational sites (Exhibit III).

Characteristics of H₂S:

• Highly toxic, colorless gas.

• Heavier than air.

• Flammable with an explosive range from 4.3% to 46% by volume.

• Corrosive to metals and can also lead to hydrogen embrittlement and sulfide stress cracks.

• Smells like rotten eggs in low concentrations.

**Note:** Do not rely on the odor to detect H₂S since it quickly deadens the sense of smell.
Exposure Effects of H₂S

<table>
<thead>
<tr>
<th>Concentration of H₂S in Parts per Million (PPM)</th>
<th>Physical Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.003-0.02</td>
<td>Odor threshold.</td>
</tr>
<tr>
<td>Above 10</td>
<td>Prolonged exposure may be toxic.</td>
</tr>
<tr>
<td>Below 100</td>
<td>Quickly deadens the sense of smell.</td>
</tr>
<tr>
<td>Above 100</td>
<td>Considered Immediately Dangerous to Life or Health (IDLH) by NIOSH.</td>
</tr>
<tr>
<td>Above 500</td>
<td>Attacks respiratory center in brain causing loss of consciousness within 15 minutes.</td>
</tr>
<tr>
<td>Above 1000</td>
<td>Immediate unconsciousness and death if not revived promptly.</td>
</tr>
</tbody>
</table>

Exhibit III

Detection Devices

Fixed or portable H₂S monitors must be used to alert personnel who may encounter hydrogen sulfide levels beyond permissible exposure levels. Fixed or portable monitors will alarm with sound at the appropriate permissible exposure limits of 20 PPM for 1910 or 10 PPM for 1926. Fixed monitors must be used in areas where hydrogen sulfide is present in high concentrations at or above 100 PPM.

Employees will be trained on what action to take in the event of dangerous levels of H₂S being detected on the worksite.

Possible H₂S Sources may include, but are not limited to, changing out meters, blowing down separators, tank gauging, H₂S scavenger units and venting of tanks/vessels.

Respiratory Equipment

Escape units – Designed strictly for escape from a hydrogen sulfide atmosphere.

Self-Contained Breathing Apparatus (SCBA) or Supplied breathing air unit – Generally used as a work unit. Such units must have a positive pressure feature. Supplied air units must be equipped with an escape cylinder in case the air supply is interrupted.
General Requirements

- Detection equipment must be used when working in an area where there is a possibility of hydrogen sulfide gas, especially in enclosed or below-grade areas.

- A hydrogen sulfide area must not be entered without proper training (including CPR) and authorization.

- In atmospheres immediately dangerous to life or health (IDLH level of 100 ppm or greater), a standby person(s) with suitable self-contained breathing apparatus must be available for purposes of rescue.

- Personnel should never attempt to rescue a hydrogen sulfide victim without proper respiratory protection in the form of a Self- Contained Breathing Apparatus (SCBA) or an approved air line unit equipped with an escape pack.

- Iron sulfide deposits are generally found in hydrogen sulfide areas in tanks, vessels and piping. Iron sulfide may spontaneously combust when exposed to air and should always be kept wet to prevent ignition. (See Iron sulfide, under Fire Safety).

- Wind socks need to be used in areas of known H2S.

Lead
(29 CFR 1910.1025 Subpart Z)

DTC Energy Group has established a guideline to control potential exposures to lead-containing products in its facilities. Employees performing maintenance activities, which can potentially disturb lead-containing products such as paints or coatings, must meet the minimum requirements. An action level of 30 cubic micrograms per cubic meter of air as an 8-hour TWA has been established for lead.

General Lead Requirements

- Before a contractor begins work, DTC Energy Group will inform the contractor of any potential lead issues associated with the job. Contractors shall have their own program, which shall include job procedures, training, PPE, certifications/license, etc.

- Lead-containing products will not be purchased unless products not containing lead are unsuitable.

- Only trained personnel can remove lead-containing material.

- Unknown coatings shall be tested before their removal to determine safe work practices and the appropriate level of personal protective equipment required for the job, (i.e. respiratory protection and protective clothing).

- Qualitative lead test kits should be used for testing paints and/or coatings prior to work commencement.

- Before welding, cutting or hot work, coatings and/or painted surfaces should be removed within 6 inches of the weld area to prevent potential lead from being vaporized by the heat if lead is present.

- Chemical removal methods should be used when applicable to reduce potential exposures.
Naturally Occurring Radioactive Material

Naturally occurring radioactive materials (NORM) can be produced in the course of some oil and gas operations. NORM typically occurs in scale and is found in areas where large pressure and temperature changes occur, water is commingled with different pH or where water and/or particulate is removed from process equipment such as: produced water tanks, separators, coalescers, dehydrators, flow lines, tubing, pumps, filters, etc.

The NORM Management Program shall be followed by all DTC personnel to ensure that facilities are monitored to preclude personnel exposure to NORM at levels greater than or equal to (>) 50 micro-Roentgen per hour (□ R/hr) above background levels. Minimum requirements for NORM control measures are set forth in the NORM Management Program.

If the presence of NORM is suspected, DTC Energy Group personnel will reference this NORM Management Program which requires confirmatory gamma radiation surveys on the affected equipment in addition to recurrent periodic surveys of DTC facilities. If survey results show gamma radiation levels > 50 □ R/hr, (above background), the equipment and/or material shall be treated as NORM-contaminated and special labeling, stowage and disposal procedures of the NORM Management Program shall apply.

All safe work practices and personnel protection protocols shall be designated by individual Worker Protection Plans based on the activity and the specific radiation levels of a given facility. The Worker Protection Plan shall also specify site posting requirements, personnel dosimetry, additional survey requirements, and disposal of NORM contaminated materials to licensed waste facilities. Worker Protection Plans will be required when periodic surveys confirm gamma radiation levels at or above the regulatory limit of 50 □ R/hr. The Worker Protection Plan shall be submitted to the respective state’s (or local authority’s) Department of Health for review prior to personnel being exposed to NORM.

**Note:** The regulatory limit for NORM in most states is 50 □ R/hr. However, the state regulatory authority should be referenced when completing Worker Protection Plans for a geographic area.

Bloodborne Pathogens

Bloodborne pathogens are a safety risk not only in the medical field, but also with the petroleum operations industry. A common way that contamination from bloodborne pathogens may occur is when an infected worker has a blood-related injury and the person who provides assistance is not wearing the proper protective equipment. Bloodborne pathogens are microorganisms such as viruses and bacteria carried in the blood and can be transferred from one person to another if safety precautions are not taken.

- Some bloodborne pathogens can include, but are not limited to, hepatitis B virus (HBV), human immunodeficiency virus (HIV), malaria, syphilis, and brucellosis.

- “Universal Precautions” is a prevention strategy where all blood and potentially infectious materials are treated as if they were indeed contaminated, regardless of the source. Universal Precautions should be utilized in all situations where exposure may occur.

- Bloodborne Pathogens can be transmitted any time there is blood to blood contact with infected blood or infected fluids.

- Infected blood can enter your system through open sores, cuts, abrasions, acne, and any other contact with broken skin such as sunburns or blisters.
• Personal Protective Equipment (PPE) should be worn in order to create a barrier between you and potentially infected material whenever there is possible contamination.

• Personal Protective Equipment (PPE) will be provided from DTC Energy Group to all employees at no charge.

• DTC Energy Group will provide training on a yearly basis and at the time of initial assignment to prevent employee exposure. Training records will be kept for 3 years from the date of training.

• Access to a copy of the Exposure Control Plan will be available to DTC Energy Group employees.

• To prevent transmission of bloodborne pathogens, hands or other exposed skin should be washed immediately after exposure. Multiple hand and eye washing stations are made available to DTC Energy employees throughout the work sites.

• All tools, equipment and any surfaces that come into contact with blood or infectious material should be decontaminated and sterilized immediately. Equipment and tools exposed need to be cleaned and decontaminated before servicing or being put back to use.

GAS HAZARDS AWARENESS

Purpose
• It is the intention of DTC Energy Group to provide Gas Hazards Training and detection equipment that meets or exceeds all federal standards.

Scope
• This program applies to all DTC Energy Group projects and operations.
• This program supplements the DTC energy Group Respiratory Protection Program that is in place in accordance with 29 CFR 1910.134.

Training
• All affected employees will receive Gas Hazards Awareness Training before their initial assignment and annually thereafter. Training shall address, as a minimum:
  - Location of alarm stations.
  - Gas monitoring equipment – portable and fixed detection.
  - Gas alarms.
  - Gas Hazards – characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide.
  - Any plant or department specific gases of concern.
  - Signs and symptoms of overexposure.
  - Personnel rescue procedures.
  - Use and care of self-contained breathing apparatus (SCBA) – includes donning and emergency procedures (if applicable).
  - Evacuation procedures.
  - Staging areas – primary and secondary.
• Gas Hazards Awareness Training shall be documented and available for review.

Procedure
• Gas Hazards Equipment
  - Each employee shall use a portable gas monitor as required in all high gas or potentially high
hazard areas.
- The gas monitor must be calibrated prior to use per manufacturer’s recommendations and contain a current calibration sticker on the monitor providing the date of last calibration.
- Bump testing is required at the beginning of each day the monitor is in use per the requesting owner client, and manufacturer’s guidelines to ensure the monitor is functioning correctly.

- Owner Client Contingency Plans Awareness
- DTC Energy Group shall ensure all employees are aware of the owner client’s contingency plan provisions, including evacuation routes and alarms. DTC Energy Group employees shall participate in emergency evacuation drills and practice rescue procedures.

Use, Maintenance, and Care of Gas Monitors
- Only utilize monitors issued by either DTC Energy Group or made available by the owner client. No personal monitors are allowed.
- Have the gas monitor on the outside of all clothing.
- Check the calibration date prior to bump testing. If the calibration date is expired, turn the unit in immediately and do not use.
- Bump test each shift prior to using the monitor.
- Monitors are sensitive equipment – avoid physical damage and immediately report any monitor that does not appear to be performing as expected

ENVIRONMENTAL PROGRAMS

Air

The Federal and State Clean Air Acts regulate numerous construction and operational aspects of many facilities, including compressor stations, gas processing plants, and other emission sources. Under the CAA, many stationary sources of air pollution cannot legally operate until an air permit is obtained and met. A “stationary source” is any non-mobile equipment or facility that emits any air pollutant. Common stationary sources in the natural gas industry include temporary or permanent compressor engines, generators, tanks, dehydrator pumps, fire tubes, re-boilers or associated equipment, boilers and vaporizers. Stationary sources may be subject to different requirements depending on the amount and type of emission sources and the quality of the air near the source.

New Stationary Sources Requiring Construction Permits

Some new stationary sources of air pollution require a construction permit before construction commences. The HSE Department should be contacted immediately upon learning of such projects, as construction permits and permit modifications can take months to obtain. In addition, DTC Management should be notified if there are any proposed design changes to the initial design that could affect emissions, as such changes can extend the permitting process.

Proposed Stationary Source Modifications Requiring Permits

Upon “modification,” some existing stationary sources are subject to permit adjustments and/or additional air pollution control requirements. For these purposes, modification refers to any of the following situations:

- Any physical change in a source
- Any change in the operation of a source
- Any relocation of source equipment (moving equipment)
- Changes in the amount of any air pollutant (up or down)
The HSE Department should be consulted if any stationary source is modified. However, as discussed immediately below, activities classified as “routine maintenance, repair or replacements” are not considered modifications and can be performed without first contacting the HSE Department.

**Routine Maintenance, Repair, and Replacements**

“Routine maintenance, repair and replacement” activities are not considered modifications and do not require permit reviews. Detailed records shall be maintained for routine maintenance, repairs and replacement occurrences. However, such activities will be noted on project approval documents indicating that emissions were not affected. Activities that can be performed without contacting the HSE Department include, but are not limited to:

- Engine balancing
- Inspection and cleaning
- Oil changes
- Changing of filters
- Like-for-like replacement of spark plugs

**Common Activities Requiring Permit Review**

Some commonly performed activities are considered modifications and do require permit reviews. Because these activities have the potential to increase emissions, it is essential they be reviewed prior to execution. The most common activities within this category are:

- Engine repairs or overhauls involving the replacement of parts with like parts
- Changing spark plug or ignition systems types
- Changing fuel valve types
- Changing or repairing the exhaust stack or inlet filter/silencer
- Changing or modifying the unit automation and controls

If the proposed activity to be performed on a source is **not** on the above list, the HSE Department **will** be consulted before the activity is performed. In addition, the HSE Department should be consulted if there are any questions as to whether any proposed maintenance, repair or replacement activity is “routine.” Activities not listed above will require HSE clearance before the activity is performed. Personnel should contact HSE if there are any questions regarding the “routine” nature of an activity.

**Water**

The Clean Water Act created laws and regulations that require companies to control and monitor water pollutants. For the E&P industry, those pollutants can include storm water runoff, hydrocarbon spills and salt/brine water. DTC Energy Group has established Stormwater Pollution Prevention Plans (SWPPP), Reasonable and Prudent Practices for Stabilization (RAPPS) and Spill Prevention Control and Countermeasure (SPCC) plans that can be found at local facilities as warranted or required.
SPCC (40 CFR 112)

The purpose of the SPCC is to prevent the discharge of hydrocarbons into navigable waters of the United States and adjoining shorelines, and to provide plan design guidelines for containing and cleaning such discharges if they occur.

Definitions

**Harmful Quantities** – Quantities that violate applicable water quality standards, cause a sheen upon the water or adjoining shorelines, or cause a sludge deposit below the water surface or upon adjoining shorelines.

**Navigable Waters of the United States** – Includes interstate waters, intrastate lakes, rivers and streams, mudflats, sand flats and wetlands, playa lakes, dry or intermittent stream beds and all tidally influenced waters.

**Oil** – Includes oil of any kind and in any form, including petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes.

**SPCC Plan** – A Spill Prevention Control and Countermeasure (SPCC) Plan is designed to implement safety standards, fire prevention and pollution prevention rules and regulations to minimize the potential for oil discharges.

**Reportable** – Requiring National Response Center (NRC) notification – releases that impact navigable waters of the United States.

Determining Plan Necessity

- A facility, which due to its location could not reasonably be expected to discharge oil into navigable waters of the United States or adjoining shorelines, **does not need an SPCC Plan (Plan),** regardless of size.

- A facility, which due to its location could reasonably be expected to discharge oil into navigable waters of the United States or adjoining shorelines, **needs a Plan if any of the following conditions apply:**

  - The underground oil storage capacity is 42,000+ gallons
  - The total above ground oil storage capacity is 1,320+ gallons

- A facility that has experienced two reportable spills within any 12-month period needs a Plan, regardless of size or location. Such Plan will be submitted to the EPA Regional Administrator within 60 days of the second event.

- Plans are required for mobile or portable facilities, such as onshore drilling or workover rigs, barge mounted offshore drilling or workover rigs and portable fueling facilities.

**Stormwater**

If a facility or location experiences a reportable quantity release, personnel should contact the HSE Department for guidance regarding DTC’s obligations under the industrial stormwater program.
Definition

*Stormwater* – precipitation (rain, melted snow or ice) that is collected and carried through any system of pipes, ditches, channels, gutters, surface drains or any other surface runoff discharged on or off a facility or property. Stormwater cannot encounter the following without triggering permit requirements:

- Raw materials (e.g., crude oil)
- Intermediate products
- By-products or waste products

If stormwater collects oil or other contaminants, it can lead to soil or water pollution and special permitting requirements.

**Preventing Stormwater Contamination**

- Substances should never be discharged, poured, unloaded or released into storm sewers, drainage ditches, sumps or ground areas, unless allowed by a facility National Pollutant Discharge Elimination System (NPDES) (40 CFR 122) or other permit.
- If any chemicals or contaminants are discovered on the ground or in the stormwater drainage system, immediate action should be taken to clean up.
- The HSE Department should be contacted if a discharge of oil or hazardous substances has occurred in association with a stormwater event. A reportable quantity (RQ) is any amount that violates applicable water quality standards or causes a film or sheen on the water surface. The HSE Department should be contacted for guidance on water quality standards in each state.
- The oil and gas industry has a categorical exemption from the industrial stormwater permitting program. However, a permit will be required for operators of oil and gas exploration, production, processing, treatment operations or transmission facilities that experience a reportable quantity discharge of oil or a hazardous substance.

**Wetlands**

When activities occur in waters of the United States, the U.S. Corps of Engineers regulates the discharge of dredge and fill material, and the placement of structures. Some states also regulate these actions.

**Definitions**

*Waters of the United States* – Waters of the United States are broadly defined and include, but are not limited to, lakes, rivers, flood plains, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows and playa lakes.

Wetlands are defined by three indicators:

1. They support vegetation of a type typically found in saturated soil conditions.
2. They consist of hydric soils (i.e. soils that are saturated, flooded or inundated long enough by surface water or groundwater during the growing season to result in an absence of oxygen in their upper parts).

3. They are subject to wetlands hydrology, resulting in saturated soil conditions, at least seasonally.

Wetlands are difficult to identify and, generally, a wetlands expert is needed to attain a correct identification. If there is any question as to whether a site may be wetlands or waters of the United States, contact DTC Management.

**Actions Possibly Requiring a Permit**

Placement of a fill or structure in waters of the United States may require approval from the U.S. Army Corps of Engineers (USACE). Examples of actions, which when conducted in waters of the United States, requiring approval include:

- well sites (fill or structure)
- pipelines/flowlines
- bulkheads
- channel dredging (construction and maintenance)
- board roads
- dams

**Permit Approval Time**

Approval time varies depending on the nature of the action and the area impacted. Some actions covered by general or nationwide permits require no notification, provided certain conditions are met. Other actions, particularly those involving dredging or filling of a bay, lake or wetlands, are quite time-consuming – taking more than 6 months to acquire approval.

**Waste Management**

DTC Energy Group engages in responsible waste management practices in order to remain in regulatory compliance and embody good stewardship. Further process information can be found in the Waste Management Program documents. The Resource Conservation and Recovery Act (RCRA) (40 CFR 239-282) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 USC 9601) have driven the development of solid waste management laws and regulations. To meet these standards DTC Energy Group has developed guidelines which include approved waste disposal practices.

**Definitions**

*Disposal* – Discharge, deposit, injection, dumping, spilling, leaking or placing of any waste into or on land, water or air. (40 CFR 260.10). Non-hazardous oil field waste and non-hazardous waste will be disposed only at facilities approved by the HSE Department. Hazardous waste disposal will be coordinated by the HSE Department.
**E&P Exemption** – Certain wastes generated by the oil and gas exploration and production industry that have been exempted from hazardous classification under the RCRA, Subtitle C.

**Hazardous Waste** – Any waste that is listed as hazardous by RCRA, Subtitle C or that has been mixed with or exhibits the characteristics of hazardous waste.

**Hazardous Waste Characteristics** – Specific characteristics identified by RCRA in Subtitle C that cause a waste to be hazardous. A waste exhibiting any one of the following characteristics classifies it as hazardous:

1. Ignitable – liquid with flash point <140°F or non-liquid capable of causing fire when handled.
2. Corrosive – liquid with pH less than 2.0 or greater than 12.5.
3. Reactive – reacts violently with water, undergoes violent change without detonation or detonates when hit.

**Non-Hazardous Waste** – Any waste not meeting the RCRA hazardous waste characteristics and are those wastes not specifically listed as hazardous by any state or federal regulation.

**Recycled** – A waste that is used, reused or reclaimed as ingredients in industrial process to make a product or provide an effective substitute for commercial products.

**Waste** – Any discarded material that is abandoned, spilled, placed in a landfill or disposed of by burning or injecting downhole; anything that can no longer be used for its original purpose. Waste may be a solid, semi-solid, liquid or containerized gas that has been discarded, used, or is a by-product.

**General Requirements**

1. All wastes generated by Company operations will require identification and classification by appropriate operations personnel.
   - Identification and classification will include declaring the source or process generating the waste and stating whether the waste is E&P exempt. Exempt waste requires no further classification.
   - Non-exempt wastes will be classified as hazardous or nonhazardous, including methodology for determination if classified as non-hazardous.

2. The HSE Representative will prepare individual Waste Management Plans as needed for each generated waste.
   - Waste Management Plans are approved and signed by the department manager responsible for the operations generating the waste.
   - Preferred method of disposal will be stated and specific disposal site(s) identified, either on each plan by name or as an attachment to the plan in the form of an “approved” list.
   - Disposal sites will be evaluated and inspected by the HSE Department.
   - Waste will be handled and/or stored in accordance with its specific plan.
   - Waste Management Plans will identify all records/documents resulting from management of a specific waste.
• No waste may be disposed of without a plan.
  - Hazardous and non-hazardous wastes should not be commingled.
  - Material may be disposed only at a site approved by the HSE Department.
  - Recycling is preferable to disposal.

3. Non-exempt hazardous wastes require special handling. A Waste Management Plan for hazardous waste will have the signed approval of DTC Management.

**Waste Minimization, Segregation and Housekeeping**

The handling and disposal of waste adds significant expense to operations. Three strategies can reduce the expenses associated with waste management:

• Waste minimization and/or product substitution results in lower costs for storage and disposal of waste. In addition, waste minimization may be required by regulation.

• Segregation of wastes prevents unnecessary disposal of nonhazardous waste as hazardous waste.

• Good housekeeping practices provide a safe working environment and reduce overall waste.

**Waste Minimization**

Personnel should use the following strategies to minimize waste:

• Before performing work, plan ways to minimize the amount of waste that will result.

• Substitute non-hazardous material for hazardous material if the intended use is not compromised.

• Purchase products from vendors who will take back empty or unopened/unused containers or products.

• Order and use only the amount of material necessary to do the job.

• Use products completely before shelf lives expire, using the oldest products first.

• Contact other company facilities to see if they can use extra materials.

• Keep lids on product containers tightly closed.

• Recycle materials (oil, cans, glass, cardboard, etc.).

• Reuse materials, such as paint thinners or degreasers, when possible.

• Use a rag service that will pick up used rags and return clean ones.

• Do not mix wastes improperly.
• Use drop cloths or containers to prevent spills and to collect materials for reuse.

• Require contractors to minimize waste.

• Use waste material as a substitute for a commercially produced similar product when appropriate.

Segregation of Wastes

1. Do not mix waste. Mixing hazardous and non-hazardous waste can result in the entire mixture being classified as hazardous, increasing the amount of hazardous waste requiring disposal.

2. Keep any waste (e.g., soil, transformer oils, electrical switch boxes) suspected of having any concentration of poly-chlorinated biphenyls (PCBs) in separate containers.

3. Provide separate containers for wastes to be recycled (e.g., glass, plastic, batteries, used oil, and solvents).

Good Housekeeping Practices

1. All products and wastes will be correctly inventoried, clearly labeled and properly stored. If labeling is inadequate or illegible, expensive testing may be required to properly identify the material. Improper storage can result in contamination of the material, which may then require disposal through expensive hazardous waste methods.

2. Place all types of waste into appropriate containers or recycling bins.

3. Store wastes so they do not come in contact with rainwater. If possible, store wastes in a covered area, and in covered and clearly labeled containers; or cover them with a heavy tarp.

4. Secure lids on trash cans, trash bins, drums, recycling bins and other waste containers so waste stays inside. Remove funnels after use and close the drum or container.

5. Store empty product drums and/or containers as follows:

• Close lids securely.

• Place containers on wood pallets or on a rack at an angle (45-degree angle or more) to prevent the collection of rainwater and/or corrosion on the top and bottom.

• Drum storage areas will have secondary containment.

6. Keep flammable liquids (e.g., fuels, small cans of gasoline) in a designated location that is at least 50-ft. from the property/lease line and store in appropriate, labeled containers.

7. Use poly-liners, tarps or other portable containment equipment constructed of a non-reactive material to catch spills or drips that may occur.

8. Keep spill control and clean-up equipment ready and in good condition.
Weed and Pest Control
Selection of Herbicide and Pesticide

The following guidelines should be followed regarding herbicide and pesticide use:

- Do not use any herbicide or pesticide unless it is approved for use by the county in which it is used.
- Do not use any herbicide if it contains arsenic or 2-4D.
- Do not use any herbicides on any pipeline segment or company facility that is adjacent to or intersects creeks, streams, drainage ditches, rivers, livestock areas or in highly populated areas.
- Use only licensed personnel to apply herbicides or pesticides.
- Over-the-counter products, such as “Roundup,” do not require licensed applicators.
- Notify the Operator/Client of proposed herbicide and pesticide application where project approval is required.

Use of Approved Herbicides and Pesticides

1. Advise persons handling, applying or working around herbicides and pesticides, or areas where they have been applied, that the herbicides and pesticides are being used and contain hazardous chemicals.
2. Maintain a copy of the MSDS document for the herbicide or pesticide product at the site or work location where it is being used.
3. Maintain records of applicator contractor licenses on site.
4. Encourage each employee to read the MSDS document in order to become familiar with product characteristics.
5. Employees who will be handling herbicides or pesticides are required to read the MSDS document.
   - If an outside contractor is applying herbicides or pesticides, obtain a copy of the MSDS from the contractor prior to application of the substance.
   - Follow the manufacturer’s directions concerning the use and application of all herbicides and pesticides.
   - Use appropriate personal protective equipment (PPE) while working with herbicides or pesticides.
   - Ensure that empty herbicide and pesticide containers are not reused for any purpose other than the original use.
   - There may be specific landowner requirements for application of herbicides or pesticides on lands belonging to the Bureau of Land Management, the state or tribes.

Emergency Action Plan (See Addendum I)

Employees are trained to assist in a safe and orderly evacuation of other employees
- An emergency action plan must be in writing, kept in the workplace, and available to employees for review.
- An emergency action plan must include at a minimum: Procedures for reporting a fire or other emergency.
• An emergency action plan must include at a minimum: Procedures for emergency evacuation, including type of evacuation and exit route assignments.

• An emergency action plan must include at a minimum: Procedures to account for all employees after evacuation.

• The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

• The alarm system shall be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan. For those employers with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm.

• The emergency action plan will be reviewed:
  o When the plan is developed or the employee is assigned initially to a job.
  o When the employee's responsibilities under the plan change.
  o When the plan is changed.
ONE CALL NOTIFICATION NUMBERS

Before digging, drilling, or excavating, call the appropriate utility locating service.

NOTE: Calling “811” in most states will connect the caller with that state’s Buried Utility Locate Dispatch for marking underground utilities. Most “One Call” agencies require a minimum of (2) business days to locate buried utilities before mechanized digging, drilling or excavation can commence.

<table>
<thead>
<tr>
<th>State</th>
<th>Phone Number</th>
<th>State</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1-800-292-8525</td>
<td>Nebraska</td>
<td>1-800-331-5666</td>
</tr>
<tr>
<td>Arizona</td>
<td>1-602-263-1100</td>
<td>Nevada</td>
<td>1-800-227-2600</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1-800-482-8998</td>
<td>New Hampshire</td>
<td>1-888-344-7233</td>
</tr>
<tr>
<td>California</td>
<td>1-800-422-4133</td>
<td>New Jersey</td>
<td>1-800-272-1000</td>
</tr>
<tr>
<td>Colorado</td>
<td>1-800-922-1987</td>
<td>New Mexico</td>
<td>1-800-321-2537</td>
</tr>
<tr>
<td>Connecticut</td>
<td>1-800-922-4455</td>
<td>New York – exc. NYC</td>
<td>1-800-962-7962</td>
</tr>
<tr>
<td>Delaware</td>
<td>1-800-282-8555</td>
<td>North Carolina</td>
<td>1-800-632-4949</td>
</tr>
<tr>
<td>Florida</td>
<td>1-800-432-4770</td>
<td>North Dakota</td>
<td>1-800-795-0555</td>
</tr>
<tr>
<td>Georgia</td>
<td>1-800-282-7411</td>
<td>Ohio</td>
<td>1-800-362-2764</td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td>Oklahoma</td>
<td>1-800-522-6543</td>
</tr>
<tr>
<td>(excl Chicago).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicago only...</td>
<td>1-312-744-7000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>1-800-382-5544</td>
<td>Oregon</td>
<td>1-800-332-2344</td>
</tr>
<tr>
<td>Iowa</td>
<td>1-800-292-8989</td>
<td>Pennsylvania</td>
<td>1-800-242-1776</td>
</tr>
<tr>
<td>Kansas</td>
<td>1-800-DIG-SAFE</td>
<td>Rhode Island</td>
<td>1-888-344-7233</td>
</tr>
<tr>
<td>Kentucky</td>
<td>1-800-752-6007</td>
<td>South Carolina</td>
<td>1-800-922-0983</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1-800-272-3020</td>
<td>Tennessee</td>
<td>1-800-351-1111</td>
</tr>
<tr>
<td>Maine</td>
<td>1-888-344-7233</td>
<td>Texas</td>
<td>1-800-245-4545</td>
</tr>
<tr>
<td>(and)</td>
<td></td>
<td></td>
<td>1-800-669-8344</td>
</tr>
<tr>
<td>(and)</td>
<td></td>
<td></td>
<td>1-800-344-8377</td>
</tr>
<tr>
<td>Maryland</td>
<td>1-800-282-8555</td>
<td>Utah</td>
<td>1-800-662-4111</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td>Vermont</td>
<td>1-888-344-7233</td>
</tr>
<tr>
<td>in state</td>
<td>1-888-322-4844</td>
<td></td>
<td></td>
</tr>
<tr>
<td>out of state</td>
<td>1-888-344-7233</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>1-800-482-7171</td>
<td>Virginia</td>
<td>1-800-552-7001</td>
</tr>
<tr>
<td>(N. VA.)</td>
<td></td>
<td></td>
<td>1-800-257-7777</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1-800-252-1166</td>
<td>West Virginia</td>
<td>1-800-245-4848</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1-800-227-6477</td>
<td>Wisconsin</td>
<td>1-800-242-8511</td>
</tr>
<tr>
<td>Missouri</td>
<td>1-800-344-7483</td>
<td>Wyoming – call both</td>
<td>1-800-348-1030</td>
</tr>
<tr>
<td>(and)</td>
<td></td>
<td></td>
<td>1-800-849-2476</td>
</tr>
<tr>
<td>Montana</td>
<td>1-800-424-5555</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-800-551-8344</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AGENCY INSPECTION PROCEDURES

When an inspector from any federal, state or local agency with HSE jurisdiction arrives, employees having the initial contact should:

- Verify the inspector’s credentials and agency involved (local, state, tribal, federal).
- Determine basis/purpose/type of inspection.
- Notify a supervisor and the HSE Department immediately.
- As appropriate, conduct and document an HSE orientation for the facility.
- Defer inspection until supervisor arrives. If unable to contact, proceed.
- Follow all safety procedures during inspection (PPE, rules, etc.).
- Maintain detailed record of inspector’s activity.
- Record same physical measurements and take same photographs as inspector.
- Permit review of records related only to inspection.
- Avoid answering and defer question(s) that are not understood.
- Request abatement recommendations in closing conference.

Note: Employee has the right to refuse to be interviewed and the right to request the presence of a DTC representative when participating in an OSHA or MSHA inspection.

INCIDENT INVESTIGATION AND NOTIFICATION PROCEDURES

- While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method.
- Required incidents must be verbally reported to applicable regulatory agency(s) within 8 hours of their discovery. Incidents must also be reported to the client as soon as possible, or in a timely manner (within 24 hours of incident).
- Individual responsibilities for reporting and investigation must be pre-determined and assigned prior to incidents.
- Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting (Awareness, First Responder, Investigation, and training frequency) should be identified in the program.
- Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.
- Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, and physical factors such as fatigue, age, and medical conditions.
- Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment. Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed.
- Incident investigations should result in corrective actions.
- Written incident reports should be prepared and include an incident report form and a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, investigation board member names, narrative of the event, findings and recommendations. Photographs, witness statements, drawings, etc. should be included.
- Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.
Required Documentation or Notification Contacts
A. Telephone Notification 1. Immediate Supervisor
B. Incident Report (Injury, Vehicle, Occurrence or Environmental) 2. Team Leader/Manager/Director
C. Police Accident Report (If one taken) 3. HSE Representative of Opt's Mgr
   4. CEO or COO
   5. CEO or COO

Note: Contractors are required to provide a copy of the completed contractor incident report for incidents occurring on DTC locations or conducting business for DTC.

OSHA Reporting Requirements Effective 1/1/2015
1. All work-related fatalities within 8 hours.
2. All work-related inpatient hospitalizations, all amputations and all losses of an eye within 24 hours
   You can report to OSHA by
   1. Calling OSHA’s free and confidential number at 1-800-321-6742.

Only fatalities occurring within 30 days of the work-related incident must be reported to OSHA. Further, for and inpatient hospitalization, amputation or loss of an eye, these incidents must be reported to OSHA only if they occur within 24 hours of the work-related incident.

<table>
<thead>
<tr>
<th>Incident Type</th>
<th>Reporting Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Immediately</td>
</tr>
<tr>
<td>First Aid</td>
<td>A-1</td>
</tr>
<tr>
<td>Medical</td>
<td>A-1,2,3</td>
</tr>
<tr>
<td>Restriction/Job Transfer</td>
<td>A-1,2,3</td>
</tr>
<tr>
<td>Days Away from Work</td>
<td>A-1,2,3,5</td>
</tr>
<tr>
<td>Death</td>
<td>A-1,2,3,4,5,B</td>
</tr>
<tr>
<td>Fire</td>
<td>A-1,2,3,5</td>
</tr>
<tr>
<td>Vehicle Collision</td>
<td>A-1,2,3</td>
</tr>
<tr>
<td>Vehicle Collision(Third Party Injury)</td>
<td>A-1,2,3,5</td>
</tr>
<tr>
<td>Near Hit/Close Call</td>
<td>A-1</td>
</tr>
<tr>
<td>Company Property Damage</td>
<td>A-1,2,3</td>
</tr>
<tr>
<td>Spill/Release (non-reportable)</td>
<td>A-1,2,3</td>
</tr>
<tr>
<td>Spill/Release (Reportable)</td>
<td>A-1,2,3,5</td>
</tr>
</tbody>
</table>

Acknowledgement Page (duplicate form)

I acknowledge that I have received, read and understand the contents of this 2018 Health Safety & Environmental Handbook, which serves as a reference for the minimum rules and standards for DTC Energy Group Company.


Print Name


Signature of Recipient Date

Remove this page and return this page to one’s immediate supervisor. Leave a copy in your handbook for inspection purposes.
Acknowledgement Page

I ________________________________ acknowledge that I have received, read and understand the contents of this 2018 Health Safety & Environmental Handbook, which serves as a reference for the minimum rules and standards for DTC Energy Group Company.

______________________________________________

Print Name

______________________________________________  ________________

Signature of Recipient Date

Leave this copy in your handbook for inspection purposes.
Addendum I: DTC Energy Group, Inc.

EMERGENCY ACTION PLAN

Rig Name: ________________________________
Rig Location: ________________________________

EMERGENCY PERSONNEL NAMES AND PHONE NUMBERS

DESIGNATED RESPONSIBLE SUPERVISOR
Name: ________________________________ Phone: (__________)  

EMERGENCY COORDINATOR:
Name: ________________________________ Phone: (__________)  

AREA/FLOOR MONITORS (If applicable):
Area/Floor: _______ Name: _______ Phone: (__________)  
Area/Floor: _______ Name: _______ Phone: (__________)  
Name: ________________________________ Phone: (__________)  
Date_____/_____/_____

EVACUATION ROUTES

• Evacuation route maps have been posted in each work area. The following information is marked on evacuation maps:

  1. Emergency exits
  2. Primary and secondary evacuation routes
  3. Locations of fire extinguishers
  4. Fire alarm pull stations’ location
     a. Assembly points

• Site personnel should know at least two evacuation routes.
EMERGENCY PHONE NUMBERS

FIRE DEPARTMENT: _____________
PARAMEDICS: _____________
AMBULANCE: _____________
POLICE: _____________
FEDERAL PROTECTIVE SERVICE: _____________
SECURITY (If applicable): _____________

EMERGENCY REPORTING AND EVACUATION PROCEDURES

Types of emergencies to be reported by site personnel are:

- MEDICAL
- FIRE
- SEVERE WEATHER
- BOMB THREAT
- CHEMICAL SPILL
- STRUCTURE CLIMBING/DESCENDING
- EXTENDED POWER LOSS
- OTHER (specify) ____________________________

(e.g., terrorist attack/hostage taking)
CRITICAL OPERATIONS

During some emergency situations, it will be necessary for some specially assigned personnel to remain at the work areas to perform critical operations.

Assignments:

<table>
<thead>
<tr>
<th>Work Area</th>
<th>Name</th>
<th>Job Title</th>
<th>Description of Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Personnel involved in critical operations may remain on the site upon the permission of the site designated Supervisor or Emergency Coordinator.

- In case emergency situation will not permit any of the personnel to remain at the facility, the designated supervisor or other assigned personnel shall notify the appropriate ____________ offices. Once evacuation or containment is achieved, the well site supervisor shall insure that all personnel are accounted for.

The following offices should be contacted:

Name/Location: _______________________________

Telephone Number: ___________________________
The following personnel have been trained to ensure a safe and orderly emergency evacuation of other employees:

Facility:

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Responsibility</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Addendum II: DTC Energy Group, Inc.

EMPLOYEE ACCESS TO WORKPLACE MEDICAL & EXPOSURE RECORDS

OSHA Regulation 29 CFR 1910.1020

Under OSHA regulation 29 CFR 1910.1020 employees have the right to access certain records relating to their employment. In addition, such records may be accessed by the employee's legal representative, including union representatives, under certain conditions. Personal identifiers (name, address, social security number, payroll number, etc.) must be removed from records before access is granted.

Medical Records
Each employee has a right to access his/her medical records made or maintained by a physician, nurse, or other health care professional that is in the possession of DTC Energy Group, Inc. The definition of medical records includes:

- medical and employment questionnaires;
- results of medical examinations, including pre-employment, periodic, and laboratory tests;
- biological monitoring;
- medical opinions, diagnoses, progress notes, and recommendations;
- first aid records;
- prescriptions; and
- medical complaints

Exclusions to the definition include:

- physical specimens (for example, blood and urine samples) that are typically discarded;
- records relating to health insurance claims that are maintained separately from the medical program and its records and not accessible to the employer by individual employee identifiers;
- records created solely in preparation for litigation that are privileged under applicable rules of procedure or evidence; and
- records relating to voluntary Employee Assistance Programs

Exposure Records
Employees also have the right to access exposure records. This category includes any record that evidences an employee was exposed to a toxic substance or harmful physical agent in the course of employment through inhalation, ingestion, skin contact, absorption, or any other means (exposure records include either environmental and/or biological monitoring).

A toxic substance or harmful physical agent to which the employee may have been exposed includes:

- chemicals
- bacteria
- virus
- fungus

as well as physical stresses:

- noise
- heat
- cold
- vibration
- repetitive motion
• radiation
• certain atmospheric pressures

Who Has a Right to Access

The range of parties who are entitled to access includes a current employee, former employee, the legal representative of a deceased employee, or other designated representative who is given authorization by the employee.

Compliance Time Period

Once the request is made, the records must be made available in a reasonable time, place, and manner. If the record cannot be made available in 15 working days, the employer must advise the employee or representative within this period as to the reason for the delay and when the records will be made available.

Cost of Production

The employer must provide a copy of the record at no cost to the employee or representative or make available at no cost a mechanical copying facility. The employer should not allow the employee to copy the original records unless a monitor is present to observe, to ensure the records are not taken or otherwise destroyed.

Analyses of Exposure or Medical Records

The regulation also allows access to any analyses that have been made utilizing such records. This provision can be another employer pitfall because the analysis may identify safety or health hazards and constitute an admission of liability. Thus, the employer should decide whether it is prudent to even conduct such an analysis and, if so, whether it should be done at the direction of legal counsel to create legal privileges against disclosure, including attorney-client, work product, and self-critical analysis.

Employee Notification

DTC Energy Group, Inc. is required to notify all new employees of their rights under this regulation; the existence, location, and availability of any record that may be covered by the regulation; and who maintains the records. This notification shall be provided annually thereafter. Employees are entitled to a copy of the regulation upon request.

Preservation of Records

Medical and Exposure records must be preserved for the length of the employee's employment, plus thirty (30) years.

Transfer of Records

DTC Energy Group is required to transfer all records to any successor employer. If DTC Energy Group goes out of business, it will make provisions to preserve the records or transfer the records to the director of the National Institute for Occupational Safety and Health if a regulation requires it or give three months' notice to the director before disposing of the records.
Addendum III: DTC Energy Group, Inc.

BEHAVIOR-BASED SAFETY PROGRAM

A safe working environment, including commuting to and from work, contributes to the physical and emotional health as well the sense of security and well-being of our employees. This is why we have implemented a Behavior Based Safety Program. Behavior Based Safety is an approach to safety that focuses on workers' behavior as the cause of most work-related injuries and illnesses.

Program Description and Employee Responsibility

This program involves employees observing one another and providing feedback when witnessing unsafe behavior or actions that are worthy of recognition and reward. Observing and providing feedback involves the following steps.

1. Plan: determine a time and place to observe. Review the observation form.
2. Conduct the observation: Stop to observe for 15 – 30 seconds. Observe surroundings and people. Do not allow distractions. **Stop any unsafe behavior immediately.**
3. Coach: have a discussion with the observed to provide feedback for safe behavior or coach for improved performance.
4. Record: record the observed behavior, its root cause(s) record suggested action and turn in the observation card to the Safety Manager. Observations do not contain the name of the party observed except for recognition.

While observing, keep in mind the four critical errors which can lead to injury.

1. Eyes not on the task
2. Mind not on the task
3. Being in the line of fire
4. Balance/Traction/Grip errors

Always end your observation by complimenting good behaviors.

Using the BBS Observation Form as a guideline, you will be instructed in observation practices, including how to conduct the observation, how to complete the form and what the behaviors mean by the Safety Manager or the Operations Manager. All employees should be aware that they may be observed at any time.

Keep in mind that **all employees have the obligation to stop work anytime they feel that their safety or the safety of other employees is at risk**

Management Responsibilities

Both the Safety Manager and the Operations Manager are responsible for gathering the completed observation forms and performing a trend analysis. Based on the trend analysis they will present their recommendations to the Executive Committee on how to improve safety in the work environment. Those recommendations may include:

- Safety incentive programs
- Rewards programs
- Disciplinary action recommendations for repeated unsafe acts
- Environmental changes
Behavior Based Safety Observation Form

Your concerns for safety and suggestions as how to improve our safety program are important to DTC Energy Group. Use this form to submit either safety improvement input and/or a BBS safety observation. Your name is optional and the name of the person being observed is not to be used. This information will be used to continually improve our safety system and conditions.

<table>
<thead>
<tr>
<th>Improvement Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBS Observation</td>
</tr>
</tbody>
</table>

Employee/Observer Input:


Employee’s Action Taken or Recommendation:


Supervisor or Manager Action Taken:


Safety Observation S=Safe C=Concern Critical Factors

<table>
<thead>
<tr>
<th>PPE / Procedures / Methods</th>
<th>Body Position / Mechanics</th>
<th>Slips / Trips</th>
<th>Equipment / Work Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>S  C Eye &amp; Head</td>
<td>S  C Proper Position</td>
<td>S  C Proper Footwear</td>
<td>S  C MSDS if Needed</td>
</tr>
<tr>
<td>S  C Hand &amp; Body</td>
<td>S  C Ask for Help</td>
<td>S  C Aware of Hazards</td>
<td>S  C Lock Out</td>
</tr>
<tr>
<td>S  C Footwear</td>
<td>S  C Use Dolly</td>
<td>S  C Prompt Clean Up</td>
<td>S  C Tools are Safe</td>
</tr>
<tr>
<td>S  C Trained on Task</td>
<td>S  C Smaller Loads</td>
<td>S  C Tripping Hazards</td>
<td>S  C Adjacent Work</td>
</tr>
<tr>
<td>S  C Work Permit / JSA</td>
<td>S  C Don’t Twist Body</td>
<td>S  C Not Rushing</td>
<td>S  C Signage if Needed</td>
</tr>
<tr>
<td>S  C All trained in BBS</td>
<td>S  C Get Close to Item</td>
<td>S  C Step Conditions</td>
<td>S  C Spill Control</td>
</tr>
</tbody>
</table>

Observer’s feedback given to other employee:


Location: Observer Name: Date:

Promptly after observation give this form to your supervisor who will review it and who must then forward it to the DTC Energy Safety Manager for action.
Addendum IV: DTC Energy Group, Inc.

DISCIPLINARY PROGRAM

DTC Energy Group, Inc. holds each of its employees to certain safety rules and standards of conduct. When an employee deviates from these rules and standards, DTC Energy Group, Inc. expects the employee’s supervisor to take corrective action.

Some examples of these safety violations are not following verbal or written safety procedures, guidelines, rules, horse play, failure to wear selected PPE, abuse of selected PPE, etc.

Corrective action at DTC Energy Group, Inc. is progressive. That is, the action taken in response to a rule infraction or violation of standards typically follows a pattern increasing in seriousness until the infraction or violation is corrected.

The usual sequence of corrective actions includes an oral warning, a written warning, probation, and finally termination of employment. In deciding which initial corrective action would be appropriate, a supervisor will consider the seriousness of the infraction, the circumstances surrounding the matter, and the employee’s previous record.

Though committed to a progressive approach to corrective action, DTC Energy Group, Inc. considers certain rule infractions and violations of standards as grounds for immediate termination of employment. These include but are not limited to: theft in any form, insubordinate behavior, vandalism or destruction of company property, the use of company equipment and/or company vehicles without prior authorization by Executive Staff, and misrepresentations of DTC Energy Group, Inc. to a customer, a prospective customer, the general public, or an employee.

Physical inspections of work areas will be conducted to ensure compliance with safety rules and standards.
Addendum V: DTC Energy Group, Inc.

CPR/AED PROGRAM

All DTC Energy Group Consultants must be CPR and AED certified by a nationally accredited association and provide proof of certification to the DTC Human Resources Department.

CPR PROGRAM

DTC Energy Group Consultants will be familiar with and adhere to client operator and/or OSHA CPR programs and policies, whichever are more stringent. DTC Consultants will also be aware of EMS response time estimates for each wellsite.

In the event of a cardiac or breathing emergency, DTC Energy Group Consultants will provide prompt medical attention to affected personnel, ensure local EMS are notified, and send other personnel to retrieve the onsite AED.

The DTC Consultant will assess the affected personnel’s condition to determine whether CPR should be performed and perform CPR if deemed necessary, in accordance with American Red Cross’ or other nationally accredited association’s standards.

American Red Cross CPR Steps:

Before Giving CPR:

1. Check the scene and the person. Make sure the scene is safe, then tap the person on the shoulder and shout “Are you OK?” to ensure that the person needs help.

2. Call 911 for assistance. If it's evident that the person needs help, call (or ask a bystander to call) 911, then send someone to get an AED. (If an AED is unavailable, or there is no bystander to access it, stay with the victim, call 911 and begin administering assistance.)

3. Open the airway. With the person lying on his or her back, tilt the head back slightly to lift the chin.

4. Check for breathing. Listen carefully, for no more than 10 seconds, for sounds of breathing. (Occasional gasping sounds do not equate to breathing.) If there is no breathing begin CPR.

Red Cross CPR Steps:

1. Push hard, push fast. Place your hands, one on top of the other, in the middle of the chest. Use your body weight to help you administer compressions that are at least 2 inches deep and delivered at a rate of at least 100 compressions per minute.

2. Deliver rescue breaths. With the person's head tilted back slightly and the chin lifted, pinch the nose shut and place your mouth over the person's mouth to make a complete seal. Blow into the person's mouth to make the chest rise. Deliver two rescue breaths, then continue compressions.

   Note: If the chest does not rise with the initial rescue breath, re-tilt the head before delivering the second breath. If the chest doesn't rise with the second breath, the person may be choking. After each subsequent set of 100 chest compressions, and before attempting breaths, look for an object and, if seen, remove it.

3. Continue CPR steps. Keep performing cycles of chest compressions and breathing until the person exhibits signs of life, such as breathing, an AED becomes available, or EMS or a trained medical responder arrives on scene.
Note: End the cycles if the scene becomes unsafe or you cannot continue performing CPR due to exhaustion.

Post Event Procedure

Following any administration of CPR:
- Notify Operating Client
- Complete an incident report
- File a copy of incident report with DTC Energy Group headquarters

Post Event Review

Following a medical emergency requiring the administration of CPR, a review shall be conducted to learn from the experience. All key participants in the event shall participate in the review. Included in the review shall be the identification of actions that went well and the collection of opportunities for improvement as well as stress debriefing.

AED PROGRAM

DTC Energy Group Consultants will be familiar with and adhere to client operator and/or OSHA AED programs and policies, whichever are more stringent.

Location of AED

DTC Consultants will be aware of the AED location at all wellsites.

Storage

All AEDs will be stored in unlocked cabinets in locations easily accessible. These cabinets will have clear plexiglass doors with the AED symbol prominent on them. Each cabinet will have an audible alarm that sounds when the door is opened. Also, a sign will be placed above each cabinet identifying the AED location.

Associated Equipment

One set of pads will be connected to the AED at all times (if possible) and a spare set of pads will be kept in the AED case. One rescue kit will also be stored with each AED. This kit will contain latex-free gloves, a razor, one set of trauma shears, a washcloth or small towel, and a pocket facemask or other barrier device.

Authorization to Use AEDs

DTC Consultant will maintain a list of personnel authorized to use the AED. Authorized personnel will be those who have current certification in CPR and the use of AEDs from a recognized training agency. Additionally, trained and certified members of the general public are authorized to use the AED in cardiac emergencies. All trained and certified persons present on the wellsite when a cardiac emergency occurs will constitute the emergency response team ERT).

Procedure

In the event of an unresponsive individual on the grounds of the wellsite, the Operating Client is to be notified. The 911 system is to be immediately activated. At least two members of ERT shall go to the announced location of the
patient, assess the patient and if necessary begin CPR. At least one other member of the ERT shall go to the location of the AED and bring the AED to the patient. Any remaining members or bystanders should be sent to key intersections to direct emergency personnel.

Protocol for the Use of the AED

IMMEDIATELY UPON ARRIVAL, CHECK THE SCENE FOR SAFETY, AND THEN VERIFY SUDDEN CARDIAC ARREST:

- Verify unconsciousness
- If no response, call or have someone CALL 911
- Don appropriate personal protective equipment
- Verify no breathing

Perform CPR by

- Baring the patient’s chest
- Providing 30 chest compressions followed by 2 rescue breaths
- Continue compressions and breaths on a ratio of 30:2 for approximately two minutes. Count out loud: 1,2,3, etc.
- After two minutes, check for signs of circulation. If circulation is absent, continue CPR

As soon as the AED arrives:

- Place the AED near the patient’s ear
- Turn on the AED
- Prepare the patient’s chest
- Cut or tear away clothing
- If excessive chest hair, shave it
- If medication patch where pads are to be placed, remove it with gloved hand, wipe off medication and discard
- Dry the chest, if wet, or move patient to a dry area if lying in water
- If patient is lying on a metal surface, move him
- Pads should be attached at least one inch away from an implanted pacemaker/defibrillator
- Apply defibrillation pads as per diagram on machine
- Clear the patient as the AED analyzes heart rhythm and again immediately prior to shock delivery
- Deliver shock when prompted by pushing the ‘shock’ button
- Check for signs of circulation. If absent, perform CPR for two minutes
- Continue sequence of one shock and two minutes of CPR until ‘No shock’ prompt or EMS arrives. If no shock advised, check for signs of circulation
- If no circulation, continue CPR
- If circulation present, check breathing
- If no breathing, provide rescue breaths – one every five seconds
- If breathing is restored, move the victim to the recovery position.
- Do not remove pads from patient’s chest and do not disconnect pads from the AED
- When EMS arrives, the rescuer will continue the AED protocol until EMS personnel acknowledge they are assuming responsibility for patient care.

Contradictions

- The AED should not be attached to persons who are breathing, conscious, or responsive

Post Use Procedure

Following any use of the AED:

- Notify Operating Client
- Complete an incident report
• Supply any recorded data from the rescue and all electronic files captured by the AED, if requested
• File a copy of incident report with DTC Energy Group headquarters
• Restock electrode pads, batteries, razors, gloves. Inspect all supplies for any damage, expiration dates and required replacement
• Clean the AED. Inspect the exterior and connector for dirt or contamination
• Notify personnel AED is back in service

Post Event Review

Following each use of an AED by the ERT or a volunteer responder, a review shall be conducted to learn from the experience. All key participants in the event shall participate in the review. Included in the review shall be the identification of actions that went well and the collection of opportunities for improvement as well as stress debriefing.

Monthly System Check

Once each calendar month, the Consultant shall conduct and document a system check. These records shall be retained in the wellsite supervisor trailer. This check shall include review of the following elements:
• Emergency kit supplies
• AED battery life
• AED operation and status
• Pad expiration date
Addendum VI: DTC Energy Group, Inc.

FIRST AID

DTC Energy Group Inc. uses Coventry Medical Case Management for all injuries or illness. Please contact DTC Energy Group Safety Dept. ASAP should first aid be needed.

- If the need arises for an employee to be transported to the nearest clinic or hospital, an ambulance will be called or a designated person on the worksite will transport them.

- The designated person will have a valid certificate in first aid training obtained from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence.

- In the absence of a clinic or hospital that is reasonably close to the worksite, a person who has a valid certificate in first aid will be available at the worksite if the need arises for such care.

- First aid kits that consist of appropriate items will be available and easily accessible for all employees. These will be checked monthly to ensure all items are stocked.

- In cases where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities shall be provided for quick drenching or flushing of the eyes or body. All employees will be made aware of where such facilities are located and how to operate them.
Addendum VII: DTC Energy Group, Inc.

GAS HAZARDS AWARENESS

1. Gas hazard awareness training must be provided before initial assignment and annually thereafter.
2. Gas Hazard Awareness training should include at a minimum:
   a. Locations of alarm stations
   b. Gas Monitoring Equipment - portable and Fixed Detection
   c. Gas Alarms
   d. Gas Hazards - Characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide at a minimum. Hazard training must also include any plant or department specific gases of concern. Training must include signs and symptoms of overexposure
   e. Personnel Rescue Procedures
   f. Use and care of Self-Contained Breathing Apparatus (SCBA) - includes donning and emergency procedures (if applicable)
   g. Evacuation Procedures
   h. Staging Areas – Primary and Secondary
3. Gas Hazard Awareness training should be documented and available for review.
4. Each employee shall use a portable gas detector as required in all high gas hazard areas.
5. The gas monitor must be calibrated per manufacturer's recommendations and contain a current calibration sticker on the monitor providing the date of calibration.
6. Bump test are required to be completed at the beginning of each day the monitor is in use per the requesting client and manufacturer's guidelines to ensure the monitor is functioning correctly.
7. Employees will be aware of the client's contingency plan provisions including evacuation routes and alarms. Employees should participate in emergency evacuation drills and practice rescue procedures.
Addendum V111: DTC Energy Group, Inc.

INCIDENT INVESTIGATION POLICY & PROCEDURE

Purpose
The purpose of the Incident Reporting and Investigation Policy is to insure that incidents are investigated according to the injury, or injury potential of an event, in accordance with company policy and OSHA regulations. This will help to control further losses of human and material resources by identifying and correcting unsafe acts and conditions that lead to an incident.

This policy applies to any and all work-related incidents and near misses that affect company employees and others who perform work for DTC Energy Group and our customers.

Policy
All staff and others working with the company are required to report all incidents and near misses, including ergonomic issues, soft tissue damage and any signs or symptoms of musculoskeletal (MSI) injury to their supervisor or the Operations Manager. All incidents will be reported and investigated following company and regulatory requirements.

Some incidents require immediate reporting (see Definitions in the Procedures section). Incident sites should not be disturbed unless the safety of workers is at risk.

The company uses the word “incident” rather than “accident” because there is an inherent belief by many people that accidents just happen and cannot be prevented. We use the word incident because we believe that all incidents can be prevented. Belief that all incidents can be prevented will drive the level of investigation to determine causes that could otherwise be missed.

Incident reports will be reviewed by the Operations Manager and/or the Chief Operating Officer as appropriate to the severity or potential severity of the incident.

Action items from incidents will be documented and tracked for completion and follow-up using our Corrective Action Log. Implementation of action items will be monitored and reviewed by the Operations Manager. Safe work procedures will be reviewed by the Operations Manager after an incident to ensure that changes required by the investigation findings are implemented and that they meet or exceed jurisdictional requirements.

Injuries or incidents resulting from ergonomic hazards must be investigated.

Responsibilities

Management
A manager will investigate an incident reported by a direct report. A manager will participate in an investigation of an incident if the severity or potential severity requires action appropriate to the manager’s authority. All investigations requiring immediate notification to the customer or workers’ compensation will be attended by the appropriate management personnel. Copies of investigations required by the customer will be provided by the appropriate management personnel.

Supervisor
A supervisor must advise new and returning workers of the requirement to report all incidents including near misses. An annual reminder to all employees to report incidents is required. A supervisor must investigate incidents in a
manner that is timely and appropriate to the circumstances and severity of the incident. A supervisor’s incident review and signoff are a requirement.

**Worker**

A worker will report to the supervisor all incidents including near misses. A worker will attend the incident investigation unless unable to do so as a result of injury. Workers may choose to report a near miss using the company’s Incident form or reporting verbally to their supervisor, who will be responsible for completing the document.

**Procedure**

**Incident Reporting and Investigations**

DTC Energy Group has an obligation to make certain that all our employees, staff, contractors, volunteers and visitors are aware of the importance of and requirements for reporting and investigating close calls, near misses and other incidents. Investigations of close calls and near misses provide a learning and improvement opportunity to help prevent someone from being injured.

**An investigation is held to prevent recurrence, not to place blame.**

**Definitions**

**Incident:** An incident is any event that has resulted in or has the potential to result in an injury.

Incidents may include property damage, personal injury, death, close calls or near misses.

The Workers Compensation Act requires the following regarding immediate notification of incidents:

An employer must immediately notify the Workers’ Compensation Board of the occurrence of any accident that:

- resulted in serious injury to or the death of a worker
- involved a major structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system or excavation
- involved the major release of a hazardous substance
- was an incident required by regulation to be reported.

Incidents that are required to be investigated by the Workers Compensation Act:

- An employer must immediately undertake an investigation into the cause of any incident that:
  - is required to be reported
  - resulted in injury to a worker requiring medical treatment
  - did not involve injury to a worker, or involved only minor injury not requiring medical treatment, but had a potential for causing serious injury to a worker
  - was an incident required by regulation to be investigated.

**Mandatory Reporting Deadlines**

Required incidents must be verbally reported to applicable regulatory agency(s) within 8 hours of their discovery. OSHA requirements are:

- Verbally report all work-related fatalities or an incident that resulted in three or more being hospitalized within 8 hours. **Call 1-800-321-6742.**
- Within 24 hours report all work-related
  - inpatient hospitalizations
  - amputations
  - losses of an eye
Incidents must also be reported to the client as soon as possible or in a timely manner (no more than 24 hours after the incident occurred).

**Responsibilities of Managers, Supervisors and Workers**

**Incident Reporting and Investigation Procedure:**

- The incident is reported by a person to the company. (An incident involving an employee may be reported by others to the company.) The incident may be reported verbally or in writing.
- Equipment necessary to the proper investigation will be made available to the appropriate personnel.
- The incident site must be visited if possible and the site preserved until the investigation is complete, if safe to do so. Photographs, sketches and other evidence collection should be undertaken promptly. The investigator will take steps to collect, preserve and secure evidence of the cause of the incident.
- The investigator will conduct witness interviews and collect their statements.
- The direct supervisor of the employee involved or the person who reported the incident will organize and lead the investigation. The investigation must be carried out by those knowledgeable about the type of work.
- The investigation team will include those appropriate to the severity or potential severity and type of incident. The team may include people not under the scope of this policy (for example a prime contractor representative if the incident occurred on a worksite).
- The investigation will follow the Incident Investigation Template format, which includes root cause analysis.
- The investigation must be held in a timely manner. A preliminary investigation may be necessary if required attendees are not able to attend due to injury or other reasons.
- Action required as the result of an investigation will be recorded using a Corrective Action Log (CAL) format and tracked for completion by the Operations Manager.
- The Operations Manager and/or the Chief Operating Officer will evaluate any future risks that recommendations or corrective actions could create.
- The Operations Manager will monitor the effectiveness of any changes or implementations.
- The Operations Manager will communicate the recommendations and corrective actions to all relevant parties.
- All investigation reports will be forwarded to the Chief Operating Officer. The Chief Operating Officer will review the reports for completeness and determine if additional investigation or distribution is required.
- An industry safety alert will be issued through the company if findings from the investigation could help others prevent injury.

**Training**

Managers and supervisors must be familiar with this policy and associated forms. Training in the investigation process and the company’s specific policy and forms will be determined by company management and communicated to supervisors.

The requirement to report and investigate close calls and other incidents will be covered during new employee orientation.

**Review**

This policy should be reviewed at least annually, or when revision is required.

Incident investigation historical records should be reviewed annually by the Operations Manager in order to:

- confirm that action required was implemented
- determine if the action was effective in prevention of recurrence
- identify trends
- determine areas for improvement.
**Records**

Copies of incident investigations will be electronically filed on a company Intranet or kept in a secure filing area.

All recordable illnesses or injuries must be recorded on the OSHA 300 Log within seven calendar days of receiving information that the injury occurred.

Recordkeeping forms will be maintained for 5 years.

The OSHA 300A Summary will be signed by a company official (COO).

The annual OSHA 300A summary will be posted in a place visible to employees.
INCIDENT REPORT

Use this form to report any workplace accident, injury, incident, close call or illness.
Return completed form to the Operations Supervisor, or Management.

This is documenting:

[ ] Lost Time/Injury  [ ] First Aid  [ ] Incident  [ ] Near Miss  [ ] Observation

Details of person injured or involved (to be filled in by person injured / involved if possible)
Person Completing Report: ____________________________ Date: ____________________________
Person(s) Involved: ____________________________________________________________

Event Details:
Date of Event: ____________________________ Location of Event: ____________________________
Time of Event: ____________________________ Witnesses: ____________________________

Description of Events (Describe tasks being performed and sequence of events)*:
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

*If more space is required please use the back of this sheet

Was event / injury caused by an unsafe act (activity or movement) or an unsafe condition (machinery or weather)? Please explain:
__________________________________________________________________________
__________________________________________________________________________

TO BE COMPLETED ONLY IF LOST TIME/INJURY OR FIRST AID WAS REQUIRED

| Type of injury sustained: | |
| Cause of lost time/ injury or first aid: | |
| Was medical treatment necessary? | |

Signature of Employee: ____________________________ Date: ____________________________

Signature of Supervisor: ____________________________ Date: ____________________________
Addendum IX: DTC Energy Group, Inc.

RETURN TO WORK PROGRAM GUIDELINES

A. Policy Statement

It is the policy of DTC Energy Group, Inc., when possible, to modify work assignments for a limited period to assist employees who are temporarily restricted from performing their regularly assigned duties due to an on-the-job injury.

(Note: This policy should not be construed as recognition that an employee has a disability as defined by the Americans with Disabilities Act (ADA) of 1990.

B. Scope

This policy applies to all DTC Energy Group, Inc. employees.

C. Definitions

A Return to Work (RTW) (Modified Duty) position is a temporary position to which an employee is assigned when he/she is unable to return to his/her regular position following an on-the-job injury or illness. The Return to Work position temporarily addresses the restrictions placed on an individual by the employee’s treating doctor.

Employment related injury is an injury or occupational disease, which arises out of the course and scope of employment and is a compensable injury or illness, as defined under the state of Colorado Workers’ Compensation Plan.

Physician in this policy means a doctor of medicine, osteopathic medicine, optometry, dentistry, podiatry, or chiropractic who is licensed and authorized to practice as defined in the State Workers’ Compensation Rules.

D. Eligibility

To be eligible for participation in the RTW Program, an employee must provide a written statement from his/her treating physician that he/she is:

- Temporarily unable to perform his/her essential duties, following an employment related injury or illness.
- And
- Capable of carrying out work of a lighter or modified nature from his/her regular duties and is expected to return to his/her regular duties within 90 calendar days.

E. Process

1. Once notified of an on-the-job injury or illness, the Operations Manager must complete a First Report of Injury for Workers’ Compensation and inform the employee in writing of the Return to Work Program.

2. The employee must be seen and evaluated by a physician, adhering to the physician choice rules in this state, to determine if the employee is able to return to work, and if so, with or without restrictions.

At the time of the evaluation, the employee must inform the physician of the Return to Work Program, and provide him/her with a copy of the employee’s regular job description that identifies the essential functions of the job and its requirements.

3. When the employee is able to return to work with restrictions, the employee’s physician must complete the Work Status Report, indicating the specific restrictions, and the duration of those restrictions. Clarification regarding temporary restrictions may be requested of the treating physician.
4. Taking into consideration the information provided by the physician, the employee’s supervisor or manager, in consultation with Human Resource Services if available, will determine if a temporary Modified Duty assignment can be offered. It should be understood that there may be instances in which the employer will not be able to offer a Modified Duty assignment.

If the employee’s regular department is unable to meet the employees need for Modified Duty, the employee's department is responsible for payment of the employee’s salary and benefits while performing a Modified Duty position in a different department which has been able to meet the employees’ need for Modified Duty.

5. All documentation related to an incident is to be maintained by DTC Energy Group, Inc. These documents will be maintained by the Human Resources Department. Medical records are to remain confidential in accordance with the Access to Medical Records Policy.

F. Compensation

In most cases, there will not be an adjustment in the compensation of the employee that is placed in a Modified Duty position. However, the employee placed in a Modified Duty position will be paid a salary that is equivalent to the salary of other employees holding the same position.

The salary and benefits of the employee will remain the responsibility of the original employing department, including during any period of temporary placement external to the department.

G. Offer of Modified Duties Position

Once the employee has been approved to participate in the Return to Work Program, the employer must provide a Return to Work (Modified Duty) job offer letter. This letter shall include:
1. The position offered.
2. The location and duties of the position offered.
3. The wages and schedule of the position offered.
4. The duration of the temporary work assignment.
5. A statement that the employer will only assign a position/duties consistent with the employee’s knowledge and skills, and will provide training if necessary.
6. A statement acknowledging that the employer is knowledgeable about and will abide by the limitations under which the treating physician has authorized the return to work.

H. Refusal of Modified Duties Offer

An employee may choose to accept or refuse the Return to Work (Modified Duty) job offer. However, an employee who refuses a Modified Duty job offer is subject to termination. Rejection of the job offer might also result in cancellation of income benefits under Workers’ Compensation Insurance.

I. Duration of Modified Duty

A Return to Work with Modified Duty offer will be extended for an initial period not to exceed 90 calendar days. The duration of approved time will be based upon the information provided by the employee's physician. If the employee is unable to return to work at full duty after the initial approved time, he/she may request a continuation of Modified Duty not to exceed a total of 90 calendar days in a Modified Duty capacity.

An employee requesting an extension of Modified Duty, beyond the originally approved amount of time in the Return to Work with Modified Duty offer letter, must submit documentation to the employer from his/her treating
physician. This document should include what limitations continue to exist and the probable duration of those limitations.

If an employee is unable to return to work at full duty after 90 calendar days, he/she may request a continuation of Modified Duty not to exceed a total of 180 calendar days in a modified capacity. Approval beyond 90 calendar days will be based upon the assessment of the employee's ability to return to full duty within the immediate future. An employee requesting an extension beyond 90 calendar days must submit updated information from his/her treating physician.

J. End of Modified Duty

An employee who is unable to return to his/her regularly assigned duties at the end of the Modified Duty agreement may request a leave of absence through his/her employer or may elect to terminate his/her employment with the company.

Provided the employee has exhausted any entitlement under the Family and Medical Leave Act, the employer has the option to approve or deny the leave of absence request. If Leave Without Pay is denied, employment with DTC Energy Group, Inc. will be terminated.
DTC Energy Group Return-to-Work Program

DTC Energy Group, Inc. supports the practice of bringing injured employees back to work, as soon as they are medically able, to a position in our organization compatible with any physical restrictions they may have. We believe this practice serves the best interests of our employees and organization.

The prompt return of injured employees to positions within their medical restrictions will minimize the impact of work-related injuries. Coming back to work early helps employees remain functional as they recover while providing our organization with the valuable use of employees’ talents. It also helps control workers’ compensation costs.

If you are injured at work, report the injury to your supervisor immediately—no matter how minor the injury is. Your supervisor will report it to our organization’s workers’ compensation claims coordinator within 24 hours. Any questions concerning workers’ compensation should be directed to this individual.

Claims coordinator    Mylinda Troxel        Phone   (701)751-1815

Your supervisor and/or claims coordinator will help arrange for medical treatment following an injury. Prompt, quality medical treatment can be assured through the use of our primary care clinic.

Current positions may be modified to fit the medical limitations of injured employees by modifying workstations, altering specific tasks or working reduced hours. If this is not possible, temporary transitional jobs may be made available either with your department or through a temporary assignment with another department.

This return-to-work program is an important part of our organization’s commitment to manage work-related injuries in a way that’s best for our employees and for this organization.

Respirable crystalline silica
(a) Scope and application. (1) This section applies to all occupational exposures to respirable
crystalline silica, except:
(i) Construction work as defined in 29 CFR 1910.12(b) (occupational exposures to respirable crystalline silica in construction work are covered under 29 CFR 1926.1153);
(ii) Agricultural operations covered under 29 CFR part 1928; and
(iii) Exposures that result from the processing of sorptive clays.
(2) This section does not apply where the employer has objective data demonstrating that employee exposure to respirable crystalline silica will remain below 25 micrograms per cubic meter of air (25 μg/m³) as an 8-hour time-weighted average (TWA) under any foreseeable conditions.
(3) This section does not apply if the employer complies with 29 CFR 1926.1153 and:
(i) The task performed is indistinguishable from a construction task listed on Table 1 in paragraph (c) of 29 CFR 1926.1153; and
(ii) The task will not be performed regularly in the same environment and conditions.
(b) Definitions. For the purposes of this section the following definitions apply: Action level means a concentration of airborne respirable crystalline silica of 25 μg/m³, calculated as an 8-hour TWA.
Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.
Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.
Employee exposure means the exposure to airborne respirable crystalline silica that would occur if the employee were not using a respirator.
High-efficiency particulate air [HEPA] filter means a filter that is at least 99.97 percent efficient in removing mono-dispersed particles of 0.3 micrometers in diameter.
Objective data means information, such as air monitoring data from industry-wide surveys or calculations based on the composition of a substance, demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity. The data must reflect workplace conditions closely resembling or with a higher exposure potential than the processes, types of material, control methods, work
practices, and environmental conditions in the employer’s current operations.

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 particular health care services required by paragraph (i) of this section.

Regulated area means an area, demarcated by the employer, where an employee’s exposure to airborne concentrations of respirable crystalline silica exceeds, or can reasonably be expected to exceed, the PEL.

Respirable crystalline silica means quartz, cristobalite, and/or tridymite contained in airborne particles that are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality – Particle Size Fraction Definitions for Health-Related Sampling.

Specialist means an American Board-Certified Specialist in Pulmonary Disease or an American Board-Certified Specialist in Occupational Medicine.

This section means this respirable crystalline silica standard, 29 CFR 1910.1053.

(c) Permissible exposure limit (PEL). The employer shall ensure that no employee is exposed to an airborne concentration of respirable crystalline silica in excess of 50 μg/m³, calculated as an 8-hour TWA.

(d) Exposure assessment—(1) General. The employer shall assess the exposure of each employee who is or may reasonably be expected to be exposed to respirable crystalline silica at or above the action level in accordance with either the performance option in paragraph (d)(2) or the scheduled monitoring option in paragraph (d)(3) of this section.

(2) Performance option. The employer shall assess the 8-hour TWA exposure for each employee on the basis of any combination of air monitoring data or objective data sufficient to accurately characterize employee exposures to respirable crystalline silica.

(3) Scheduled monitoring option. (i) The employer shall perform initial monitoring to assess the 8-hour TWA exposure for each employee on the basis of one or more personal
breathing zone air samples that reflect the exposures of employees on each shift, for each job classification, in each work area. Where several employees perform the same tasks on the same shift and in the same work area, the employer may sample a representative fraction of these employees in order to meet this requirement. In representative sampling, the employer shall sample the employee(s) who are expected to have the highest exposure to respirable crystalline silica.

(ii) If initial monitoring indicates that employee exposures are below the action level, the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring.

(iii) Where the most recent exposure monitoring indicates that employee exposures are at or above the action level but at or below the PEL, the employer shall repeat such monitoring within six months of the most recent monitoring.

(iv) Where the most recent exposure monitoring indicates that employee exposures are above the PEL, the employer shall repeat such monitoring within three months of the most recent monitoring.

(v) Where the most recent (non-initial) exposure monitoring indicates that employee exposures are below the action level, the employer shall repeat such monitoring within six months of the most recent monitoring until two consecutive measurements, taken 7 or more days apart, are below the action level, at which time the employer may discontinue monitoring for those employees whose exposures are represented by such monitoring, except as otherwise provided in paragraph (d)(4) of this section.

(4) Reassessment of exposures. The employer shall reassess exposures whenever a change in the production, process, control equipment, personnel, or work practices may reasonably be expected to result in new or additional exposures at or above the action level, or when the employer has any reason to believe that new or additional exposures at or above the action level have occurred.

(5) Methods of sample analysis. The employer shall ensure that all samples taken to satisfy the monitoring requirements of paragraph (d) of this section are evaluated by a laboratory
that analyzes air samples for respirable crystalline silica in accordance with the procedures in Appendix A to this section.

(6) Employee notification of assessment results. (i) Within 15 working days after completing an exposure assessment in accordance with paragraph (d) of this section, the employer shall individually notify each affected employee in writing of the results of that assessment or post the results in an appropriate location accessible to all affected employees. (ii) Whenever an exposure assessment indicates that employee exposure is above the PEL, the employer shall describe in the written notification the corrective action being taken to reduce employee exposure to or below the PEL.

(7) Observation of monitoring. (i) Where air monitoring is performed to comply with the requirements of this section, the employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to respirable crystalline silica. (ii) When observation of monitoring requires entry into an area where the use of protective clothing or equipment is required for any workplace hazard, the employer shall provide the observer with protective clothing and equipment at no cost and shall ensure that the observer uses such clothing and equipment.

(e) Regulated areas—(1) Establishment. The employer shall establish a regulated area wherever an employee’s exposure to airborne concentrations of respirable crystalline silica is, or can reasonably be expected to be, in excess of the PEL. (2) Demarcation. (i) The employer shall demarcate regulated areas from the rest of the workplace in a manner that minimizes the number of employees exposed to respirable crystalline silica within the regulated area. (ii) The employer shall post signs at all entrances to regulated areas that bear the legend specified in paragraph (j)(2) of this section. (3) Access. The employer shall limit access to regulated areas to:
(A) Persons authorized by the employer and required by work duties to be present in the regulated area;

(B) Any person entering such an area as a designated representative of employees for the purpose of exercising the right to observe monitoring procedures under paragraph (d) of this section; and

(C) Any person authorized by the Occupational Safety and Health Act or regulations issued under it to be in a regulated area.

(4) Provision of respirators. The employer shall provide each employee and the employee’s designated representative entering a regulated area with an appropriate respirator in accordance with paragraph (g) of this section and shall require each employee and the employee’s designated representative to use the respirator while in a regulated area.

(f) Methods of compliance—(1) Engineering and work practice controls. The employer shall use engineering and work practice controls to reduce and maintain employee exposure to respirable crystalline silica to or below the PEL, unless the employer can demonstrate that such controls are not feasible. Wherever such feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PEL, the employer shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them with the use of respiratory protection that complies with the requirements of paragraph (g) of this section.

(2) Written exposure control plan. (i) The employer shall establish and implement a written exposure control plan that contains at least the following elements:

(A) A description of the tasks in the workplace that involve exposure to respirable crystalline silica;

(B) A description of the engineering controls, work practices, and respiratory protection used to limit employee exposure to respirable crystalline silica for each task; and

(C) A description of the housekeeping measures used to limit employee exposure to respirable crystalline silica.

(ii) The employer shall review and evaluate the effectiveness of the written exposure control plan at least annually and update it as necessary.
(iii) The employer shall make the written exposure control plan readily available for examination and copying, upon request, to each employee covered by this section, their designated representatives, the Assistant Secretary and the Director.

(3) Abrasive blasting. In addition to the requirements of paragraph (f)(1) of this section, the employer shall comply with other OSHA standards, when applicable, such as 29 CFR 1910.94 (Ventilation), 29 CFR 1915.34 (Mechanical paint removers), and 29 CFR 1915 Subpart I (Personal Protective Equipment), where abrasive blasting is conducted using crystalline silica-containing blasting agents, or where abrasive blasting is conducted on substrates that contain crystalline silica.

(g) Respiratory protection—(1) General. Where respiratory protection is required by this section, the employer must provide each employee an appropriate respirator that complies with the requirements of this paragraph and 29 CFR 1910.134. Respiratory protection is required:

(i) Where exposures exceed the PEL during periods necessary to install or implement feasible engineering and work practice controls;

(ii) Where exposures exceed the PEL during tasks, such as certain maintenance and repair tasks, for which engineering and work practice controls are not feasible;

(iii) During tasks for which an employer has implemented all feasible engineering and work practice controls and such controls are not sufficient to reduce exposures to or below the PEL; and

(iv) During periods when the employee is in a regulated area.

(2) Respiratory protection program. Where respirator use is required by this section, the employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134.

(h) Housekeeping. (1) The employer shall not allow dry sweeping or dry brushing where such activity could contribute to employee exposure to respirable crystalline silica unless wet sweeping, HEPA-filtered vacuuming or other methods that minimize the likelihood of exposure are not feasible.

(2) The employer shall not allow compressed air to be used to clean clothing or surfaces where such activity could contribute to employee exposure to respirable crystalline silica unless:

(i) The compressed air is used in conjunction with a ventilation system that effectively
captures the dust cloud created by the compressed air; or

(ii) No alternative method is feasible.

(i) Medical surveillance—(1) General. (i) The employer shall make medical surveillance
available at no cost to the employee, and at a reasonable time and place, for each employee who
will be occupationally exposed to respirable crystalline silica at or above the action level for 30
or more days per year.

(ii) The employer shall ensure that all medical examinations and procedures required by
this section are performed by a PLHCP as defined in paragraph (b) of this section.

(2) Initial examination. The employer shall make available an initial (baseline) medical
examination within 30 days after initial assignment, unless the employee has received a medical
9

examination that meets the requirements of this section within the last three years. The
examination shall consist of:

(i) A medical and work history, with emphasis on: past, present, and anticipated
exposure to respirable crystalline silica, dust, and other agents affecting the respiratory system;
any history of respiratory system dysfunction, including signs and symptoms of respiratory
disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status
and history;

(ii) A physical examination with special emphasis on the respiratory system;

(iii) A chest X-ray (a single posteroanterior radiographic projection or radiograph of the
chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16
x 17 inches) or digital radiography systems), interpreted and classified according to the
International Labour Office (ILO) International Classification of Radiographs of
Pneumoconioses by a NIOSH-certified B Reader;

(iv) A pulmonary function test to include forced vital capacity (FVC) and forced
expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry
technician with a current certificate from a NIOSH-approved spirometry course;

(v) Testing for latent tuberculosis infection; and

(vi) Any other tests deemed appropriate by the PLHCP.
(3) Periodic examinations. The employer shall make available medical examinations that include the procedures described in paragraph (i)(2) of this section (except paragraph (i)(2)(v)) at least every three years, or more frequently if recommended by the PLHCP.

(4) Information provided to the PLHCP. The employer shall ensure that the examining PLHCP has a copy of this standard, and shall provide the PLHCP with the following information:

(i) A description of the employee’s former, current, and anticipated duties as they relate to the employee’s occupational exposure to respirable crystalline silica;

(ii) The employee’s former, current, and anticipated levels of occupational exposure to respirable crystalline silica;

(iii) A description of any personal protective equipment used or to be used by the employee, including when and for how long the employee has used or will use that equipment; and

(iv) Information from records of employment-related medical examinations previously provided to the employee and currently within the control of the employer.

(5) PLHCP’s written medical report for the employee. The employer shall ensure that the PLHCP explains to the employee the results of the medical examination and provides each employee with a written medical report within 30 days of each medical examination performed. The written report shall contain:

(i) A statement indicating the results of the medical examination, including any medical condition(s) that would place the employee at increased risk of material impairment to health from exposure to respirable crystalline silica and any medical conditions that require further evaluation or treatment;

(ii) Any recommended limitations on the employee’s use of respirators;

(iii) Any recommended limitations on the employee’s exposure to respirable crystalline silica; and
(iv) A statement that the employee should be examined by a specialist (pursuant to paragraph (i)(7) of this section) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

(6) PLHCP’s written medical opinion for the employer. (i) The employer shall obtain a written medical opinion from the PLHCP within 30 days of the medical examination. The written opinion shall contain only the following:

(A) The date of the examination;

(B) A statement that the examination has met the requirements of this section; and

(C) Any recommended limitations on the employee’s use of respirators.

(ii) If the employee provides written authorization, the written opinion shall also contain either or both of the following:

(A) Any recommended limitations on the employee’s exposure to respirable crystalline silica;

(B) A statement that the employee should be examined by a specialist (pursuant to paragraph (i)(7) of this section) if the chest X-ray provided in accordance with this section is classified as 1/0 or higher by the B Reader, or if referral to a specialist is otherwise deemed appropriate by the PLHCP.

(iii) The employer shall ensure that each employee receives a copy of the written medical opinion described in paragraph (i)(6)(i) and (ii) of this section within 30 days of each medical examination performed.

(7) Additional examinations. (i) If the PLHCP’s written medical opinion indicates that an employee should be examined by a specialist, the employer shall make available a medical examination by a specialist within 30 days after receiving the PLHCP’s written opinion.

(ii) The employer shall ensure that the examining specialist is provided with all of the information that the employer is obligated to provide to the PLHCP in accordance with paragraph (i)(4) of this section.

(iii) The employer shall ensure that the specialist explains to the employee the results of
the medical examination and provides each employee with a written medical report within 30
days of the examination. The written report shall meet the requirements of paragraph (i)(5)
(except paragraph (i)(5)(iv)) of this section.
(iv) The employer shall obtain a written opinion from the specialist within 30 days of the
medical examination. The written opinion shall meet the requirements of paragraph (i)(6) (except
paragraph (i)(6)(i)(B) and (i)(6)(ii)(B)) of this section.
(j) Communication of respirable crystalline silica hazards to employees—(1) Hazard
communication. The employer shall include respirable crystalline silica in the program
established to comply with the hazard communication standard (HCS) (29 CFR 1910.1200). The
employer shall ensure that each employee has access to labels on containers of crystalline silica
and safety data sheets, and is trained in accordance with the provisions of HCS and paragraph
(j)(3) of this section. The employer shall ensure that at least the following hazards are
addressed: Cancer, lung effects, immune system effects, and kidney effects.
(2) Signs. The employer shall post signs at all entrances to regulated areas that bear the
following legend:
DANGER
RESPIRABLE CRYSTALLINE SILICA
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
WEAR RESPIRATORY PROTECTION IN THIS AREA
AUTHORIZED PERSONNEL ONLY
(3) Employee information and training. (i) The employer shall ensure that each employee
covered by this section can demonstrate knowledge and understanding of at least the following:
(A) The health hazards associated with exposure to respirable crystalline silica;
(B) Specific tasks in the workplace that could result in exposure to respirable crystalline
silica;
(C) Specific measures the employer has implemented to protect employees from
exposure to respirable crystalline silica, including engineering controls, work practices, and
respirators to be used;

(D) The contents of this section; and

(E) The purpose and a description of the medical surveillance program required by paragraph (i) of this section.

(ii) The employer shall make a copy of this section readily available without cost to each employee covered by this section.

(k) Recordkeeping—(1) Air monitoring data. (i) The employer shall make and maintain an accurate record of all exposure measurements taken to assess employee exposure to respirable crystalline silica, as prescribed in paragraph (d) of this section.

(ii) This record shall include at least the following information:

(A) The date of measurement for each sample taken;

(B) The task monitored;

(C) Sampling and analytical methods used;

(D) Number, duration, and results of samples taken;

(E) Identity of the laboratory that performed the analysis;

(F) Type of personal protective equipment, such as respirators, worn by the employees monitored; and

(G) Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.

(iii) The employer shall ensure that exposure records are maintained and made available in accordance with 29 CFR 1910.1020.

(2) Objective data. (i) The employer shall make and maintain an accurate record of all objective data relied upon to comply with the requirements of this section.

(ii) This record shall include at least the following information:

(A) The crystalline silica-containing material in question;

(B) The source of the objective data;

(C) The testing protocol and results of testing;

(D) A description of the process, task, or activity on which the objective data were based;
and

(E) Other data relevant to the process, task, activity, material, or exposures on which the objective data were based.

(iii) The employer shall ensure that objective data are maintained and made available in accordance with 29 CFR 1910.1020.

15

(3) Medical surveillance. (i) The employer shall make and maintain an accurate record for each employee covered by medical surveillance under paragraph (i) of this section.

(ii) The record shall include the following information about the employee:

(A) Name and social security number;

(B) A copy of the PLHCPs’ and specialists’ written medical opinions; and

(C) A copy of the information provided to the PLHCPs and specialists.

(iii) The employer shall ensure that medical records are maintained and made available in accordance with 29 CFR 1910.1020.

(l) Dates. (1) This section is effective June 23, 2016.

(2) Except as provided for in paragraphs (l)(3) and (4) of this section, all obligations of this section commence June 23, 2018.

(3) For hydraulic fracturing operations in the oil and gas industry:

(i) All obligations of this section, except obligations for medical surveillance in paragraph (i)(1)(i) and engineering controls in paragraph (f)(1) of this section, commence June 23, 2018;

(ii) Obligations for engineering controls in paragraph (f)(1) of this section commence June 23, 2021; and

(iii) Obligations for medical surveillance in paragraph (i)(1)(i) commence in accordance with paragraph (l)(4) of this section.

(4) The medical surveillance obligations in paragraph (i)(1)(i) commence on June 23, 2018, for employees who will be occupationally exposed to respirable crystalline silica above the PEL for 30 or more days per year. Those obligations commence June 23, 2020, for employees
who will be occupationally exposed to respirable crystalline silica at or above the action level for 30 or more days per year.

[Signature]

Chief Operating Officer  
1/2/2018

Signature  Title  Date