



HSE EMPLOYEE HANDBOOK

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Welcome

Welcome to Calfrac Well Services.

Our HSE Employee Handbook provides an overview of CWS Health, Safety and Environmental Policies and Procedures and outlines our HSE Management System. For more information on our policies and procedures please visit the HSE SharePoint Site.

Calfrac's license to operate is based on safety and service quality. CWS strives to continually improve our safety performance and is proud of our total safety efforts. We hope that you will join us in continually improving our safety performance by following all HSE procedures and participating in the various HSE programs. Following the HSE procedures and working safely is considered a condition of employment. If you are ever in doubt about whether a work task is safe, or unsure of how to do it; ask your supervisor. While keeping yourself safe, you are also expected to watch out for your coworkers and intervene if they are not working safely. Safety is a team effort at Calfrac.

Read this CWS HSE Handbook and keep it with you for reference. You are required to sign the acknowledgement form in the back of this book and return it to your local management. Once again, welcome, and we expect that you are committed to and will assist us in achieving our goal of zero harm to people, property and the environment.

Fernando Aguilar

Chief Executive Officer

Rod Kuntz

Vice President – Health, Safety & Environment



1 Purpose

The purpose of the HSE Employee Handbook is to provide guidance with an overview of CWS HSE policies and procedures.

2 Scope

This HSE Employee Handbook is for and applies to all CWS employees..

3 Health and Safety

3.1 CWS Management Responsibilities

Implement and maintain the HSE Management System and its accompanying policies and procedures in their areas of responsibilities.

Encourage employee involvement in HSE by demonstrating management commitment and leadership.

Ensure that all employees are accountable to the HSE Management System.

Accountable for all aspects of the HSE performance, including compliance with applicable regulatory requirements.

Ensure proficient and trained supervision is on site for all operations.

Provide a safe and healthful work environment by overseeing the development of documented site specific procedures and working instructions as needed to comply with the HSE Management System.

Ensure that all employees receive adequate training and are qualified to perform their work. Ensure that all training remains current.

Report and investigate all incidents, including development of corrective action and tracking of these actions to closure.

Ensure that appropriate level of action takes place for all nonconformances.

This may include immediate control, a sufficient temporary control, or stoppage of work.

Ensure all reviews are conducted with all employees and HSE responsibilities are a part of this periodic review.

Participate in hazard assessments, incident investigations, HSE safety meetings, and routine HSE audits.

3.2 CWS Supervision Responsibilities

Maintain a safe worksite by ensuring that all workers know their job responsibilities and are properly trained to perform their tasks on and off location.

Ensure all inexperienced workers are adequately supervised for the work they are performing.

Conduct pre-shift safety meetings that will include covering JSA's.

Ensure that regulatory requirements are adhered to.

Ensure that all required safety equipment (including Personal Protective Equipment (PPE) per the CWS PPE Hazard Assessment) is available before work begins and is used as required.

Ensure that all equipment is maintained in a safe operating condition and utilized in the manner for which it was designed.

Ensure that all accidents and incidents are reported to management and the HSE department immediately.

Conduct preliminary site incident investigations and assist HSE to ensure follow-up action has been identified and implemented.

3.3 CWS Employee Responsibilities

Minimize the risks of incidents by knowing and following the HSE operational procedures and applying sound judgment to eliminate unsafe acts/conditions in the workplace.

Actively participate and comply with all company policies, procedures, regulations, and safe work instructions.

Be fit for work.

Refuse to perform work when unsafe conditions exist and refuse to perform work if the employee feels it could lead to injury or illness to themselves or others.

Recognize and report all potential deficiencies, hazards, unsafe work practices, accidents, injuries and illness to the immediate supervisor.

3.3 CWS Employee Responsibilities (cont'd)

Participate in applicable HSE training offered by the company, either on or off the worksite.

Use and maintain the required safety equipment and follow the CWS PPE Hazard Assessment.

Be familiar with the location, type, and operation of emergency equipment at each job site.

Complete incident reports with the supervisor as well as assisting in investigations

3.4 New Hire Orientation (OaTS) and Training

All CWS employees are required to attend new hire orientation called Orientation and Training School (OaTS). OaTS is a several day course that covers operating practices, regulatory requirements, HSE and HR policies and procedures, hazard identification and correction, incident reporting and emergency response.

Training is executed using several proven techniques. CWS uses instructor led training, in classroom exercises, competence and performance evaluation, hands on field exercises and Learning Management System training.

OaTS is the first training employees experience but it is not the last. Ongoing training and refresher training are a requirement at CWS. Training and education in areas of Operations and HSE will be provided. Employees will be exposed to service line training, equipment operation, and other ongoing educational courses.

Competency will be verified and records shall be maintained regarding training courses.

3.5 Short Service Employees

Short Service Employees are new employees to CWS. After completion of the OaTS program employees will continue to receive training through mentoring and on the job training. This will include the Short Service Employee Procedure and the CERT Program. New employees will be identified with bright fluorescent lime green band sticker placed around the entire hard had just above the brim their hard hat.

The SSE program is focused on the first three months (as a minimum) employment of the person, ensuring the employee understands and absorbs key Calfrac work ethics and occupational health and safety culture and habits. The assigned mentor will be responsible to mentor and provide guidance to the new employee to ensure he/she develops the correct, and safe working habits.

The CERT program is focused on Operator progression, learning to operate and maintain one piece of equipment at a time. Learning consists of online technical information as well as comprehensive hands-on training on the equipment. The Supervisor is then responsible to assess the Operator and sign off on his/her competency on that particular piece of equipment.

3.6 Substance Abuse

CWS recognizes that the use of illegal drugs and other mood altering substances, the inappropriate use of alcohol and the misuse of medications may have serious adverse effects on employees' health, safety and job performance and may have a serious negative impact on other employees, customers or the community. We recognize that most employees and contract workers are operating in a safety sensitive work environment.

Therefore appropriate measures are necessary to ensure the safe and successful business conduct throughout our operations.

The following are strictly prohibited while on company business, premises, and worksites, and while operating company vehicles or equipment:

- The use, possession, distribution, offering or sale of illegal drugs or other mood altering substances, or drug paraphernalia.
- Reporting to work or being at work while under the influence of illicit drugs.
- The use, possession, distribution, offering or sale of alcohol beverages.
- Reporting for duty or remaining on duty under the influence of alcohol from any source.
- Misuse or abuse of prescription drugs.
- The possession of prescribed medications without a legally medically obtained and current prescription.

3.7 Counseling/Discipline

CWS management and supervision are responsible for administering employee counseling and/or employee discipline.

Employee counseling will be administered in a constructive manner intended to motivate the employee toward correcting the issue and will outline what is expected of the employee.

3.7 Counseling/Discipline (cont'd)

Counseling or discipline may include verbal reprimands, written warnings, suspension, and demotion depending on the severity of the offense. If deemed necessary employees may be terminated for severe offenses. For example, termination may result for not following HSE policies, procedures or work instructions as safety is a condition of employment.

3.8 Reporting Safety Concerns

CWS takes pride in maintaining a safety conscious work environment. An important part of this process is having employees continually evaluate their work areas for HSE issues.

When an employee observes a HSE issue they are encouraged to correct and report the issue. Reporting safety concerns may be done to their immediate supervisor.

3.9 Stop/Pause Work

All employees have the right to a safe and healthy workplace. If a safety issue arises work may have to be paused until the issue is addressed.

Depending on the severity of the issue work may have to be stopped and shall not resume until it is safe to do so. Employees have the right to stop/pause work and the immediate supervisor shall be notified when this occurs.

3.10 Incident Reporting

All employees are responsible and accountable for reporting ALL incidents, near misses/near hits and hazards, no matter how minor they are. Incidents shall be reported to your supervisor IMMEDIATELY.

- All near misses/near hits are situations where only good fortune or correct actions/avoidance prevented the situation from resulting in a real incident. In a near miss/near hit there is no actual loss.
- All occupational injury/illnesses, no matter how minor must be reported.
- All motor vehicle incidents (MVI), no matter how minor must be reported. An incident qualifies as an MVI if the Calfrac vehicle is moving with a driver at the wheel. If the vehicle is parked and struck by someone/something else, it should be reported as a Property Damage incident.
- All chemical spills and/or any environmental incident must be reported, no matter how minor.

- All property damage incidents must be reported, no matter how minor. These include situations such as a parked vehicle being damaged, theft, facility loss, product damage (not as a result of a MVI or other incident), and equipment damage (damaged iron, etc.).

3.11 Emergency Response Plans

All CWS locations (offices, facilities, locations) will have an emergency response plan (ERP) in place. Priorities during an emergency event are always life safety, incident stabilization, and then property/environmental conservation in that order.

Employees are required to know their role and follow ERP's. Plans will include evacuation routes, muster points, as well as emergency contact numbers for CWS, police, fire, and medical emergencies.

Employees are required to participate in emergency drills that are conducted on a routine basis.

3.12 Hazard Identification – Haz ID

Hazard Identification (Haz ID) is a program that is used by all Calfrac employees to identify and correct hazards in the work areas. The goal is to correct hazards immediately. Haz ID cards may only be documented and completed by employees that are trained in the procedures. Cards are then submitted to supervisors and followed up on if necessary.

3.13 Safety Observations

Management and supervisors will be responsible for conducting safety observations of employees to identify and record both safe and unsafe work behaviors. This will include giving positive reinforcement to those employees that are performing their job tasks safely, resulting in continued correct behaviors. The "unsafe" or "at-risk" behaviors that are observed will be corrected in a positive, constructive manner to encourage correct safe work behaviors.

The safety observations will be recorded on a designated card by the person conducting the observation. The cards will be documented and turned in. This is to be done so that management can perform statistical analysis on the program. Trends need to be analyzed and improvements will be made through action plans that are communicated with employees.

Employees that are engaged as a part of an observation shall be open and talk with management and supervisors regarding the observation.

3.14 Job Safety Assessment - JSA's

JSA's are a secondary tier to risk assessment. They are a proactive approach to evaluating and controlling job hazards. Since JSA's are proactive the process needs to be applied and communicated before job task begins.

The JSA's process is broken down into three basic steps which are identifying the basic job steps, identifying the hazards associated with those steps, and identifying the controls used to mitigate the hazards.

JSA's shall be completed at the beginning of the shift and at the following stages throughout the day:

- Pre-convoy
- Lease access/Rig in
- Pre-job/Pre-pump
- Post job/Rig out

JSA's shall be communicated to the employees and all meeting shall be documented.

3.15 Corrective Action

Identified hazards will have corrective action plans developed that, when implemented, will prevent reoccurrence of that type of hazard. Corrective action will be documented and all data and corrective action plans will be tracked to completion.

Action plans can either involve correction or corrective action. Correction plans are typically directed to the immediate causes and, in most cases, will remedy that problem very quickly. They do not necessarily prevent recurrence. Corrective action plans should be linked to the root causes and should address procedure/system/process changes that need to be made and which will eliminate the underlying hazards.

Corrective actions regarding hazards, observations, and incidents shall be communicated back to the employees so that employees know that the issues were addressed and closed out.

3.16 Management of Change

Management of Change (MOC) will be initiated to any permanent or temporary physical alteration that deviates from the design intent, any deviation from the documented safe operating limits or procedures, any change in process outside the design specification, any change in management system, or a significant change in organization or personnel that leads to a loss or transfer of people with particular knowledge or experience. Examples of work that would require the application of the MOC:

- Changes in the use of new equipment or new materials.
- Changes in the introduction of a new chemical in the workplace.
- Changes in operating conditions outside normal operating design.
- Changes in operations procedure, sequence, or change in steps that may increase the risk level of the operation or introduce a new type of risk to the operation.
- Changes to any safety equipment, safety related device, safety system, emergency escape route, etc.

The Pressure Exclusion Zone Procedure consists of establishing a perimeter around all high pressure areas on location and defining requirements to enter. Contractors are not permitted in the pressure Exclusion Zone while there is pressure on any treating line. Contractor access to the exclusion zone may only be given by CWS supervision once zero pressure has been confirmed.

3.17 Safety Meetings

CWS management and supervision will hold safety meetings on a routine basis. This will include performing the JSA meetings on a daily basis.

Weekly safety meetings shall be held and may cover refresher training, as well as topics of concern or special emphasis. Employees are required to attend, participate, and sign in on the attendance record. 3rd parties on location that may have independent operations in which the events of any one operation may impact HSE or another operation shall attend CWS safety meetings. Communication shall be planned and discussed with all affected 3rd parties. It is the responsibility of supervision to coordinate communication with 3rd parties.

3.18 Weather Conditions

Severe weather conditions must always be a concern due to location of CWS operations and work performed in remote locations. Weather must be monitored by management and supervision and employee safety will be the priority in arising weather conditions. Types of weather conditions to be monitored are lighting, winter weather, floods, high winds, and tornadoes.

3.19 Lockout/Tagout – LOTO and Electrical Safety

To prevent injuries due to unexpected operation/activity of an energy source, lock out – tag out (LOTO) procedures must be adhered to.

A LOTO system shall be used for the purpose of controlling the release of energy or hazardous materials. Safe procedures shall be used for the protection of personnel in, on, or around machines, equipment or process lines during repair, maintenance, and operation where unexpected energization, start up or release of stored energy or hazardous materials could occur and cause injury or loss. A combination of a lock and tag stating “DO NOT OPERATE” is required for this purpose to prevent movement of the control device.



Only authorized and licensed personnel or contractors may work on electrical equipment. Safety equipment should be used when working with high voltages and any source of power that could energize a system should be locked out before work is started.

3.20 Confined Space Entry

A confined space is defined as one that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- Has limited or restricted means for entry or exit (examples: tanks, vessels, silos, storage bins, hoppers, vaults, pits); and
- Is not designed for continuous employee occupancy.

There are many confined spaces that exist within CWS operations. All confined spaces shall be identified and classified by HSE. The location and the hazards of the spaces shall be communicated to all employees. Employees are not permitted entry to any confined space unless they have been trained in the specific procedures.

Confined space entrants, attendants and entry supervisors are required to be trained in their specific responsibilities and shall follow all procedures that are outlined on the confined space entry permit.

3.21 Hazardous Materials – SDS/MSDS

All hazardous materials that are located within CWS operations must be classified, labeled, and inventoried. Every chemical/ material within CWS must have a Safety Data Sheet (SDS) or a Material Safety Data Sheet (MSDS).

Hazards regarding those chemicals will be listed on a SDS/MSDS and those hazards must be communicated to employees in the form of training.

Employees are required to select the proper secondary container and ensure that all containers are properly labeled. When the hazardous material is finished being used it will be stored properly in the correct location.

All procedures regarding handling, use, storage, first aid, and PPE shall be done in accordance the SDS/MSDS.

3.22 Exposure to Health Hazards

H2S

Employees are required to be trained and hold valid H2S certification before attempting to work on a worksite with a potential H2S exposure. Where pre-planning suggests an H2S hazard, use suitable precautions and PPE. If the presence of H2S is suspected, evacuate upwind and only re-enter when declared safe to do so.

0.13 ppm	Can be smelled
10 ppm	Occupational Exposure Limit allowable for 8 hours work
20 ppm	Maximum permissible exposure level. Workers must wear breathing apparatus
20 - 50 ppm	Exposure for one hour may cause inflammation of the cornea and lining of eyelid and eye
50 ppm	Lengthy exposure may result in severe irritation of nose, throat and lungs
100 ppm	Lose sense of smell in 2 to 15 minutes. Immediate Danger to Life and Health (IDLH)
250 ppm	Prolonged exposure may cause lung tissues to swell and fill with water
1000 ppm	One breath may paralyze the respiratory system and result in coma and death

Bloodborne Pathogens

Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Other potentially infectious materials may be other human body fluids.

Employees that are trained in first aid will use the proper PPE if they are providing first aid including eye protection, gloves, protective clothing, and mouth guard if needed. Any employee that is unexpectedly exposed to bloodborne pathogens or other bodily fluids must notify their supervisor immediately.

Silica

A large amount of sand containing silica is used in the hydraulic fracturing process and is also referred to as proppant. It is CWS policy to control employee silica exposures through engineering controls when feasible. Types of controls that may be used depending on the circumstances are vacuum systems, filters, skirting, misting systems and enclosed systems.

Exposure zones will be set up to restrict employee access to these areas. The minimum requirement is that employees inside these zones will wear an approved respirator with a P100 air purifying cartridge.

3.23 Personal Protective Equipment – PPE

CWS utilizes the hierarchy of controls: elimination, substitution, engineering controls, administrative controls and PPE. When other controls are not feasible CWS shall provide all required PPE at no cost to the employee. Note: Safety toed work boots and prescription safety glasses have specific reimbursement policies.

Employees are required to properly wear PPE according to the PPE Hazard Assessment



Hand Protection

Protective gloves are needed for handling of acid, chemicals, solvents, CO₂, N₂, Var-sol, paints, welding and grinder. The company will provide appropriate gloves for acid/chemical handling.

Metacarpal gloves are required when working in areas where the potential for pinch points, stuck bys, or caught between exist.



Protective Footwear

Proper and appropriate approved safety toed work boots shall be worn on all work sites and in the facilities. Boots must be:

- A minimum of 6" from heel (should provide ankle support)
- Have a steel shank
- Fully laced up
- Oil and acid resistant

3.23 Personal Protective Equipment – PPE (cont'd)



Head Protection

Hard hats will be worn and made of non-conducting high impact plastic.

- Green for Employees
- White for Supervisors and Managers
- Grey for Trainers

Approved bump caps must be worn in the yard or during maintenance operations. If an overhead hazard exists, for example, during overhead crane operations, then hard hats must be worn. Bump caps are not allowed at the well site.



Hearing Protection

Whenever noise hazards exist, all company personnel will wear approved hearing protection, as supplied (a minimum of 24N.R.R). In high noise areas (N2 pumpers, CO2 transfer), both ear plugs and muffs are to be worn (Double Hearing Protection).

Where high noise levels (> 85 dB) have been identified, appropriate steps should be taken to minimize the hazard:

- All personnel should be informed about the hazards associated with excessive noise exposure and the reasons for wearing the hearing protection.
- Personal protective equipment should have a noise reduction rating (N.R.R.) of at least 24 dB.
- No person is permitted to enter a designated area without wearing hearing protection.
- All new hires are required to take a baseline audiometric test and annually to determine if there has been a significant shift.



Eye Protection

Approved protective eyewear, or goggles, will be worn in the facilities and work sites. Dark tinted safety glasses cannot be worn in reduced light conditions (evening, cloudy, fog) or when working in the facilities. If wearing prescription eyewear, safety lenses and frames with side shields are required.

Contact lenses are allowed to be worn while working in the field or shop. They are NOT PPE and must be worn in conjunction with appropriate eye protection.



Face Protection

Face shields are to be used in conjunction with safety glasses/goggles while:

- Grinding
- Welding
- Using compressed air
- Transferring fluids (N₂, CO₂, HCL)
- Chemical handling when required by SDS / MSDS



Respiratory Protection

Employees exposed to concentrations of an air-borne contaminant in excess of an applicable exposure or excursion limit, or in an oxygen deficient atmosphere, must wear respiratory protection devices appropriate to the hazard.

This could include a filtering face piece (dust mask) mask, half face APR, full-face APR, Powered Air Purifying Respirator (PAPR) or supplied air respirators.

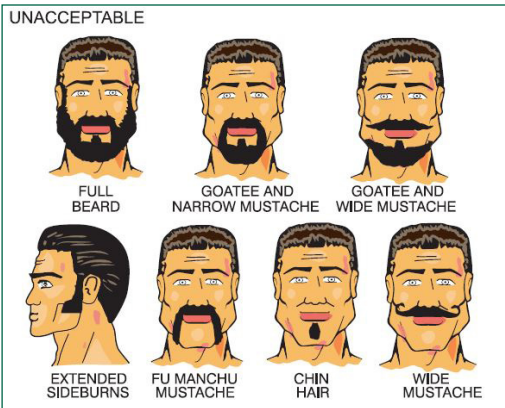
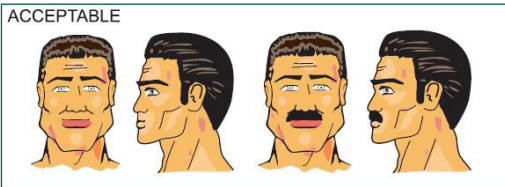
Working conditions, circumstances and employee designation will dictate which employees are required to use respiratory protection equipment. Employees who are required to wear respiratory protection for regular or scheduled work, must be clean-shaven as part of their regular duties and be fit tested to ensure a seal is made.

Respiratory Protection (cont'd)

Employees who are required to wear respiratory protective equipment will be trained in the proper use, selection, limitations, storage and maintenance of the respirator.

Calfrac will provide on a routine basis:

- A medical evaluation to determine the employee's ability to use a respirator by a physician or other licensed health care professional (PLHCP).
- Qualitative Fit test.
- Pulmonary Function Test (Spirometry) by a physician or other licensed health care professional (PLHCP).



Protective Clothing










CWS will provide fire retardant clothing to be worn on all well sites, in the yard and shop while conducting operations/procedures for CWS. Other specialized protective clothing will be worn in accordance with potential hazard as identified in the product SDS / MSDS (e.g. full wet suits for acid work, balaclavas for cold environment). Heavy welder coveralls are to be worn when welding or using a cutting torch.

3.24 Journey Management and Vehicle Safety

All drivers/operators are expected to drive defensively, lawfully, under control and in compliance with regulatory requirements and the requirements specified in this manual. Drivers/operators are expected to be alert, constantly watching for other vehicles, bicycles, pedestrians, animals, changing road and weather conditions and to constantly adjust driving practices to make allowances for the conditions.

- Seat belts must be worn by all occupants at all times.
- Drivers are to report fines and warning citations involving a company vehicle immediately.
- Drivers must take planned rest stops and never drive fatigued.
- Drivers must be trained and qualified to operate a CWS vehicle.
- Drivers are not allowed to use cell phones and they must be turned off while driving.
- Drivers are to minimize driving distractions such as adjusting radios while driving.
- CWS and legal speed limits must be followed.
- All drivers are to follow worker's guide to hand signals for directing vehicles when vehicle backing is required.
- Chains are not to be used for towing, only straps may be used.
- Convoy pre-trip meetings must be held.
- Convoy routes must be planned out in advance to the trip.
- Headlights are to be on during driving.
- Proper spacing between vehicles must be maintained during driving.
- Passing is not allowed while driving in a convoy.
- Drivers must be physically fit to drive.

3.24 Journey Management and Vehicle Safety (cont'd)

<h1>HAND SIGNALS</h1>		FOR DIRECTING VEHICLES
← TURNS →		DISTANCE TO STOPPING POINT
 <p>Point one arm to indicate the direction to turn.</p>	 <p>Bend monitoring arm repeatedly toward head to indicate continued turning.</p>	 <p>Face palms forward, with hands above head. Bring elbow forward and hands together.</p>
FORWARD	PROCEED SLOWLY	BACKWARD
 <p>Always face palms in direction of desired travel.</p>	 <p>Then bend both arms repeatedly toward head and chest, and then extend.</p>	 <p>Point at the driver and gain eye contact.</p>
STOP	EMERGENCY STOP	
 <p>Cross both arms above head.</p>	 <p>Start with hands clasped over head. Extend downward repeatedly until vehicles stops.</p>	
		 <p>Turn and extend arms in desired direction.</p>

3.25 Industrial Equipment

There are many different types and styles of industrial equipment at CWS. Forklifts, skidsteers, manlifts and other industry specific equipment are examples of industrial equipment.

Employees must be trained and authorized to operate any of this industrial equipment.

3.26 Compressed Gas Cylinder Safety

Compressed gas cylinders will be properly handled, stored, and maintained. Cylinders will be clearly and properly marked according to regulations. All cylinders will be returned to the storage area after use. Cylinders should be stored in an upright position and secured to a stationary structure with a chain. Do not store near flammable substances such as oils or volatile liquids. Isolate cylinders from energy sources. Ensure that indoor storage is well ventilated and not artificially heated.
















Protective caps will be placed over the valves when not in use or when being transported by any means.

3.27 Crane Safety and Rigging Safety

The Crane Safety Manual will be used by all employees who erect, use, operate, and disassemble CWS cranes. All employees that work in the vicinity of cranes shall abide by the policies and procedures set in Crane Safety Manual.

- Crane operations must be supervised by a competent and qualified person.
- Cranes will only be operated by certified and licensed employees.
- The site where cranes will be operated will be evaluated for hazards including electrical hazards, ground conditions, pinch points, and other conditions within the swing radius of the crane that may be hazardous.
- A JSA must be completed and communicated with employees that are working around crane operations before any crane may be operated.
- Only qualified riggers and signal persons may be used as defined in the Crane Safety Manual.
- Cranes will be inspected daily, monthly, and annually according to manufacturer's specifications.
- Critical lifts must have a documented lift plan and permit in place.

- Lifts must not be made until the weight of the lift is identified and the weight is confirmed to be within the crane and rigging capacity.
- Taglines are required on every pick where uncontrolled pivoting could occur.

			
<p>STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.</p>	<p>EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.</p>	<p>RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.</p>	<p>DOG EVERYTHING – Hands held together at waist level.</p>
			
<p>HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.</p>	<p>RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.</p>	<p>LOWER – With arm and index finger pointing down, hand and finger make small circles.</p>	<p>LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.</p>
			
<p>SWING – With arm extended horizontally, index finger points in direction that boom is to swing.</p>	<p>RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.</p>	<p>EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.</p>	<p>USE MAIN HOIST – A hand tape on top of the head. Then regular signal is given to indicate desired action.</p>
			
<p>LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.</p>	<p>MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.</p>	<p>USE AUXILIARY HOIST (whipline) – With arm bent at elbow and forearm vertical, elbow is lapped with other hand. Then regular signal is used to indicate desired action.</p>	

3.28 Strains and Sprains Prevention

Strains and sprains are injuries that occur to the muscle, tendons, and/or ligaments that result in weakness, bruising, swelling, and/or spasms. Employees will perform the following items to help prevent strains and sprains:

- Lift correctly by bending at the knees, lifting with leg strength, not the back.
- Carry loads close to the body and close to waist level.
- Get help carrying heavy loads.
- Change work positions frequently.
- Stretching at the beginning of the shift and throughout the day aids in muscle strains prevention.
- Avoid awkward body positions, static positions, and repetitive motions.
- Avoid overexertion while lifting, pulling, pushing, reaching, or gripping.

3.29 Ladders and Elevated Platforms

Only approved ladders are acceptable for use at Calfrac facilities and all ladders should be equipped with non-slip feet. Ladders shall be properly secured and have the proper load bearing capacity.

All extension ladders should have suitable extension hooks. Only wooden or fiberglass ladders may be used when working with electrical equipment. Under no circumstances may metal ladders be used in this service. Employees should always:

- Inspect the ladder for damage before use.
- Use 3 points of contact while ascending and descending a ladder.
- Work with the confines of the ladder.
- Never try to carry materials up the ladder.
- Set the ladder up on level ground.
- Never stand on the top three rungs of an extension ladder
- Never stand on the top two rungs of a step ladder.
- Defective ladders shall be removed immediately.

When in use, the ladder should extend a minimum of 3 feet/1 metre above any working platform or landing and should always be securely attached to prevent any movement. It should be positioned in such a way that it is at least one quarter of its height from the base of the structure against which it rests (4:1 rule).

3.29 Ladders and Elevated Platforms(cont'd)

All CWS facilities and CWS mobile equipment that have elevated platforms that are 4 feet/1.2 metres must have standard guardrails, midrails, and toeboards.

Operators of ladders and aerial platforms must be trained and must follow all procedures regarding inspection, use, and fall protection.

3.30 Tools and Equipment

No employee will use any tool or equipment without the proper training in the correct use of that tool or equipment. Ensure that all tools and equipment are in good working order and are suitable for the job. Tools or equipment that are defective should be tagged "DO NOT USE" and should not be used until repaired.

3.31 Fall Protection

All CWS employees at all locations that perform any duties on an elevated work surface where there is a fall hazard of 6 feet/1.8 metres or more to a lower level must utilize one of the following means of fall protection:

- Perform the work from the ground.
- Perform the work using positive means of fall protection such as standard rails, midrails, and toeboards.
- Perform the work using an active system such as travel restraint system, harness, lanyard, retractable, and anchor point.

All fall protection must meet regulatory requirements and be inspected before use. Manufacturer's recommendations must be followed.

Note: where more stringent regulatory requirements apply those requirements shall be followed. e.g. fall protection at 4 feet in the US.

3.32 Scaffolding

CWS does not erect, use, or dismantle scaffolding. Employees may encounter scaffolding at a jobsite. Before accessing a scaffold employees will look for a tag at the entryway identifying that the scaffold has been inspected, approved, and tagged "approved for use". Employees should not use a scaffold if it has a red tag or the green/yellow tag has expired.

3.33 Fire Prevention and Protection

To reduce the potential for fires the following should be followed:

- Suitable containers will be provided for waste materials and these containers regularly emptied and their contents properly disposed of. Oil, grease, and combustible liquids shall be stored in well ventilated areas or properly constructed fire lockers well away from ignition sources.
- Oily, soaked rags will be placed in metal containers.
- Wiping and cleaning rags shall not be placed near engine exhausts or other sources of ignition.
- Employees that work in the facilities and on location must be familiar with the operation of fire suppression equipment. Employees should also be familiar with inspection, maintenance and recharge procedures for Calfrac fire suppression equipment.
- Fire extinguishers shall be placed at the driver's side front or staggered front and rear of each unit prior to commencing the well treatment to provide emergency egress of anyone caught beside the pumps in an emergency situation.
- Drivers are to visibly inspect fire extinguishers on their unit as part of pre-trip inspections.
- Any transferring of flammable liquids must utilize grounding/bonding wire to prevent the ignition of flammable vapors caused from static electricity.

3.34 Hot Work

Temporary hot work operations involving open flames or producing heat and/or sparks require that the CWS permit be completed before the operations begin. This includes oxygen/acetylene cutting, brazing, grinding, soldering and welding.

- Flammables and combustibles need to be removed from the area.
- 30 minute fire watch must take place after operations are complete.
- Ensure fire extinguishers are located in the immediate area.
- Ensure area is inspected and good housekeeping exists.
- Ensure that a controlled area is established.

3.35 Radiation Safety

Any employee who is to operate a radioactive device requires radiation safety training and must be familiar with and have access to the company "Radiation Safety Manual". All employees working with densitometers are required to take a radiation for authorized user course. All employees who work in proximity to a densitometer are required to take a radiation awareness course. A Radiation Safety Officer (RSO) will conduct radiation device inspections by leak testing annually. Qualified RSOs are the only individuals permitted to ship or receive radioactive devices.

3.36 Machine Guarding

Safeguards are usually supplied with and installed on equipment from the manufacturer and shall not be removed except for maintenance, repair, testing or adjusting. Before any guard is removed from rotating equipment, it should be locked out and tagged in accordance with the lockout procedures.

When any cleaning, adjusting, or maintenance work is completed, any removed guards must be replaced prior to the unit being returned to operations.

3.37 Fatigue

Fatigue is a feeling of exhaustion caused by mental or physical exertion and can be aggravated by a short-term lack of sleep (e.g. an extended workday at a well site), or by accumulated sleep debt (e.g. multiple work days with inadequate sleep between shifts). CWS and the Department of Transportation require that the on-duty schedule is strictly adhered to. Employees shall always be permitted at least a full 8-hour rest period between shifts.

4 Environment

4.1 Chemical Inventory and Handling

Chemical Inventory and handling will be in accordance CWS procedures and with section 3.21 of this handbook.

HF Chemical Disclosure

CWS green initiative is to use environmentally sustainable products in the hydraulic fracturing process. All chemicals that are used in the hydraulic fracture process are disclosed in accordance with regulatory requirements.

4.2 Spill Prevention and Notification

Spills are prevented by making sure all equipment is well designed, operated properly, inspected and maintained. In the event of a spill and/or any environmental incident, no matter how minor, it shall be reported to your supervisor immediately.

Above Ground Storage Tanks- SPCC Plans

CWS SPCC Plans address the following areas:

- A description of the facilities location, proximity to navigable waterways, and use of oil.
- Spill history at the facility.
- Potential spill volumes of the various oil tanks located at the facility.
- Spill response procedures.
- Loading and unloading procedures.
- Fire response procedures.
- Emergency phone numbers.
- Notification requirements.
- Training requirements.

Copies of the SPCC Plan for each location are located on the HSE SharePoint site. Locations of oil sources are listed in Aboveground Storage Tank locations.

Employees will be trained and must follow all procedures outlined in the SPCC Plans.

4.3 Waste Management

Non Hazardous

As a part of doing business CWS generates industrial waste. It is CWS's goal to reduce, reuse, and recycle all waste through proper management.

Every effort will be made to recycle waste such as paper, plastics, glass, used oil, used electronics, and other miscellaneous debris wherever possible.

4.3 Waste Management (cont'd)

Hazardous

Hazardous waste will be identified and shall be properly disposed of/recycled in accordance with all regulatory requirements. These types of waste include:

- Listed wastes.
- Waste that has characteristics of hazardous waste (ignitability, corrosivity, reactivity, or toxicity).
- Universal waste (batteries, devices containing mercury, fluorescent bulbs).
- Mixed wastes.

4.4 Storm Water

Regulations prohibit discharges of pollutants into the waters. Stormwater discharges associated with industrial activity are primarily generated when precipitation from rain and snowmelt events flow over soil or paved areas and does not get absorbed into the ground.

As the runoff flows over the soil or paved areas, it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if best management practices (BMP's) are not utilized.

CWS uses a wide variety of site-specific BMP's in the facilities and at the well site including spill prevention procedures, secondary containment, grading, berms, liners, erosion and sediment control devices, check dams, good housekeeping and slit fencing.

Employees shall be provided with necessary information, training, and equipment as specified in Storm Water Management Plans (SWMP) or Stormwater Pollution Prevention Plans (SWPPP) and BMP maintenance to ensure that storm water runoff pollution is kept to a minimum. All BMP's shall be inspected and maintained to prevent adverse effect to water quality.

4.5 Emergency Planning

At Calfrac Well Services, our goal is the protection of our employees, the general public, and the environment from harm. The environment and the ecosystems are very fragile. In the event of an uncontrolled release, Calfrac will ensure elimination or mitigation of all environmental damage.

Furthermore, the key to limiting damage is prevention. This is conducted by jobsite and facility inspections, audits of crews and equipment, training, good housekeeping, and general observations of areas that could be impacted if an uncontrolled release occurs.

5 Miscellaneous HSE Rules

5.1 Suitable Clothing

Employees should be fully clothed. Pants should cover the legs and shirts should cover the arms and button to wrist. No nylon or synthetic fiber clothing will be worn under the coveralls. Hoodies are not permitted in field and facility locations due to reduced peripheral vision, lack of being fire retardant, and potential entanglement.

Clothing that is loose, ragged or torn, or neckties shall not be worn near rotating or moving equipment.

Rings shall not be worn in the facilities or at the well site where work is being performed. Loose jewelry that may get caught on an object shall not be worn in the facilities or at the well site.

5.2 Smoking

Smoking in the facilities and at the well site is only permitted in designated areas. When traveling in company vehicles, if there is non-smoking person in the vehicle, the vehicle will be designated as a non-smoking vehicle. Crew vans/buses are non-smoking vehicles at all times.

5.3 Housekeeping

Poor housekeeping can prevent employees from performing and getting the work done safely. The following general housekeeping practices must be applied to all areas within CWS:

- Garbage, scrap, and other trash materials are to be disposed of in proper containers.
- Access to fire extinguishers, emergency eyewashes and showers will be kept free of obstructions.

5.3 Housekeeping (cont'd)

- Entry/Exits ways will not be blocked and remain free from any obstructions.
- Material and equipment will be stored only in appropriate storage locations.
- Equipment is to be kept clean and in good working condition.
- Individual work areas are to be kept clean to insure that work activities may proceed in an orderly and efficient manner.
- Shelved items must be placed in an orderly manner and arranged so that the items cannot easily fall while nearby items are being retrieved.

5.4 Exclusion Zone Safety

The Pressure Exclusion Zone Procedure consists of establishing a perimeter around all pressure areas on location and defining requirements to enter. No one is permitted in the Exclusion Zone while there is pressure on any treating line unless they are listed on the Exclusion Zone Permit.

The Exclusion Zone shall be clearly identified using cones, barricades, and ribbon at required distances. Only designated employees will be permitted in the Exclusion Zone and the Exclusion Permit shall be completed by supervision and communicated with employees before entry into the zone. Treating lines shall not be worked on or broken until the designated Supervisor has verified zero pressure on those treating lines and has given the crew permission to commence work in the Exclusion Zone.

5.5 Working Alone

CWS requires that all employees are closely observed and supervised, no exceptions. CWS understands that due to certain circumstances employees may need to work in remote locations by themselves. The following are the requirements to be exempt from this policy.

- A documented risk assessment must be performed by management.
- Effective communication must be maintained between management and the employee and communication intervals shall be met.

If effective communication cannot be maintained, the employee will not work alone.

5.6 Workplace Violence and Harassment

CWS has a no tolerance for violence in the work place policy. Employees that engage in any acts of violence in the workplace, or threaten acts of violence in the workplace will be immediately terminated. Discussions of violence or joking about violence will not be tolerated.

- Violence includes (but is not limited to):
- Physically harming another
- Shoving
- Pushing
- Intimidating
- Coercing
- Brandishing weapons
- Threatening or talking of engaging in those activities

5.7 Horseplay

Horseplay is rough or boisterous play or practical jokes that occur at the workplace. Horseplay can be activities such as joking that includes physical contact, playing around, racing, grabbing, foolish vehicle operation, and social pressure to participate in unsafe acts, harassment, and unauthorized contests. Employees are prohibited from engaging in horseplay.

5.8 Knife Safety

Knives without a locking or a fixed blade will not be allowed in CWS facilities or well sites. Only approved knives may be used such as a safety utility knife. Using a knife in place of side cutter is not permitted. When using a safety utility knife to open sacks, hand and body positioning is very important. Always draw the blade away from your body.

5.9 Cell Phone Use

Cell phones (and any other mobile device) SHALL NOT be used by any employee while they are engaged in work and/or operating equipment associated or related to any CWS operations.

Exception: The Supervisor in charge of the treatment may be allowed to maintain his/her cell phone in the operating condition, but to be used only for client contact; urgent contact with Calfrac designated personnel regarding a change in the treatment design, or for emergency purposes.

Handbook Acknowledgement Form

I have received a copy of CWS Employee Handbook and I understand that I am responsible for reading the policies and practices described within it.

I understand that this CWS HSE Employee Handbook C-ML 14.0-0005 Rev 5.0 replaces any and all prior HSE Employee Handbooks, policies and practices of CWS.

I understand that the policies, procedures, and rules contained in this HSE Employee Handbook may be added to, deleted or changed by CWS at any time. I understand that neither this HSE Employee Handbook nor any other written or verbal communication is intended to, in any way, create a contract of employment.

I understand I am an employee-at-will. If I have any questions regarding the content or interpretation of this HSE Employee Handbook, I will bring them to the attention of my Supervisor. I understand that this HSE Employee Handbook is only an overview of CWS Health, Safety and Environmental policies and outlines our HSE Management System and that I shall read and follow all policies and procedures that are outlined in the CWS HSE SharePoint Site.

Name (please print): _____

Signature: _____

Employee ID# _____ Date: _____