



Site Safety and Health Plan

Incident Free Operation

NAME

Address #1

Address #2

SCOPE

FASTTECH J/N

DATE

APPROVALS

Prepared by:

Scott Happ
Fueling and Service Technologies, Safety Manager

Reviewed and Approved by:

NAME
Fueling and Service Technologies, Project Manager

EMERGENCY CONTACTS

In the event of any situation or unplanned occurrence requiring outside assistance or support services, the appropriate contact(s) from the list below should be made. The Field Team Leader will have a radio or a mobile phone. Field workers' names and cell phone numbers will be recorded on Page V of this Health and Safety Plan, "Project Contacts." In addition, cell phones should be programmed with important emergency phone numbers for easy access.

Ambulance/Fire Emergency Landline 911

Security EmergencyLandline 911 or Cell 911

Hospital Phone Number

Chem-trec (Emergency Chemical Spill Response Information)800-424-9300

Fueling & Service Technologies Inc. Emergency 800-788-8815

Fueling & Service Technologies, Inc. Medical Records.....800-883-0352

NEAREST EMERGENCY ROOM

NAME
Street Address
City, State and Zip Code
Phone Number

HOSPITAL ROUTE MAP

GOOGLE MAP

NEAREST OCCUPATIONAL CLINIC

NAME
Street Address
City, State and Zip Code
Phone Number

OCCUPATIONAL CLINIC MAP

Google Map

FASTECH PROJECT CONTACTS

NAME On Site Foreman CELL PHONE NUMBER	NAME FASTECH Project Manager CELL PHONE NUMBER
Scott Happ FASTECH Safety Manager (714) 397-6689	Tim Caldwell FASTECH Manger (714) 686-7374

INCIDENT COMMUNNICATION CHART

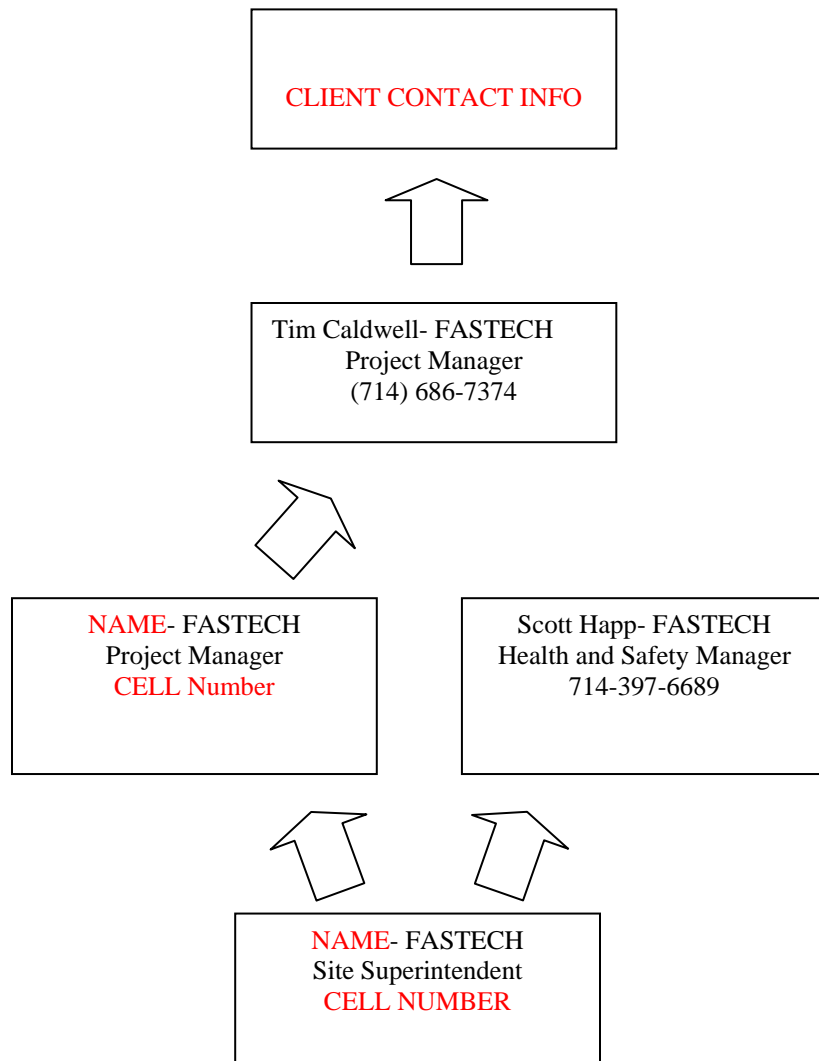


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SECTION 1 PURPOSE AND POLICY

1.1 Introduction

This Health & Safety Plan (HASP) establishes personnel protection standards and mandatory safety practices and procedures for the field activities. The HASP assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise during site activities. It is the objective of this plan to establish procedures that will ensure Incident Free Operation (IFO) during field activities.

All site personnel (*Fueling & Service Technologies, Inc., and subcontractors*) shall use this HASP as the primary source of information on health and safety matters. This HASP will be kept on site during field activities.

FASTECH has implemented Behavioral Based Safety programs. The procedures for the specific program being used at the site are included in this HASP as needed. Major aspects of the programs will deal with job safety or hazard analyses, field observations and how to investigate near losses and incidents.

The Site Health & Safety (H&S) Officer will conduct a pre-mobilization briefing on the contents of this HASP for all site personnel involved in the covered activities. All such personnel must sign the Plan Acceptance Form in Appendix A acknowledging that they have attended the pre-mobilization meeting, and have read and understood this HASP and will abide by its contents.

The Site Safety Officer or designee will conduct daily “tailgate” health & safety meetings to discuss work to be performed that day and the potential hazards that will be monitored during the work. The Daily Field Safety Form in Appendix A will be completed and signed by all personnel after the “tailgate” meeting and before commencing the day’s activities. The Field Team Leader or the Site Safety Officer will maintain a copy of the form and transmit it to the Project H&S Officer at the end of each day.

1.2 Regulatory Framework

This plan and all site activities will be in compliance with the requirements of the California and Federal Hazardous Waste Operations and Emergency Response Standards (29 Code of Federal Regulations [CFR] 1910.120) and Title 8 California Code of Regulations [CCR] 5192.

1.3 Modifications to the HASP

Although the HASP focuses on the specific site conditions described here, it must remain flexible because conditions may change and unforeseen situations may arise that require deviations from the original Plan. This flexibility allows modification of the HASP by the Project or Site Manager, Field Team Leader, Site Safety Officer, and Health & Safety Officer to take into account changing site conditions such as new data on chemical hazards, weather, and modifications to the scope of work.

Addendums to the HASP, as needed, will be clearly displayed in the Appendices. Changes to the HASP must be approved by the Health & Safety Officer and the *Project or Site Manager*. If unanticipated field conditions are encountered on site that is not addressed in this HASP, these conditions shall be immediately reported to the Field Team Leader, the Site Safety Officer, and

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Project H&S Officer. If necessary, any field activities shall be halted until the HASP has been amended to reflect changed conditions and reviewed and approved by the Health & Safety Officer and *Project or Site Manager*.

1.4 Stop Work Authority

All site personnel are empowered, expected, and have the responsibility to stop work if any person's safety or the environment are at risk. NO repercussions will result from this action.

Site or project conditions that are possible reasons to stop work and to consider modifications to the HASP include:

- Site temperatures outside the range predicted in this HASP (possibly resulting in greater risk of heat or cold stress)

- PPE breakthrough or unexpected degradation

- Unexplained, elevated readings on an organic vapor monitor

- Changes in activities that are unplanned

- Observation of activities that are deemed unsafe

This list is not comprehensive and should be used only as guidance (also refer to Section 6, for emergency response procedures).

If you or your company is discouraged from exercising the "Stop Work Authority" or if there are penalties for doing so, then you and your company should report this action to the OE/HES Manager at 925.842.0623.

1.5 Contractor / Subcontractor Coordination

Certain activities performed at may require the use of another contractor and/or subcontractor. All contractors and subcontractors will be provided with a copy of this HASP, which they must adopt. This plan is applicable to the other contractors/subcontractors insofar as Fueling & Service Technologies, Inc. employees will be directing the work of contractors/subcontractors performing this work.

In addition, other contractors/subcontractors will prepare their own HASP, which must meet or exceed the requirements of this HASP, for activities specific to their portion of the work or that are not covered by this plan. The other contractors/subcontractors HASP will be reviewed by the *Project or Site Manager* and Project H&S Officer prior to commencement of field activities. Any plan not acceptable to the *Project or Site Manager* and Health & Safety Officer will be rejected, and contractors/subcontractors will not proceed unless the plan is amended as required. Field supervisors will adopt and comply with the contractors/subcontractors HASP insofar as they will be directing the contractors/subcontractors work.

1.6 Drug and Alcohol Policy

While it is not the intent of the Company to infringe upon the private lives of our employees, management has the responsibility to provide a safe and hazard free work environment. Additionally, the Company has an obligation required by its customers to promote a safe and drug-free expectation of all employees. FASTECH has been certified by the National Compliance Management Service (NCMS) in order to maintain business operations with our customers. The NCMS acts as agent for our customers to ensure that all contractors (including FASTECH) are meeting expectations regarding safety. Failure to comply with the requirements of the NCMS would place FASTECH in jeopardy of losing its business. Therefore, all employees are expected to arrive at work fit for duty and unimpaired by the use or consumption of either alcohol, illegal drugs or controlled substances, and are expected to remain so for the entire work period. All employees working in safety sensitive positions are subject to random drug/alcohol screenings as required by the NCMS at any time during their employment, as allowed by law.

No employee may enter Company premises, or a company job site, while either under the influence or impaired by, or have in his/her possession any intoxicating beverage or behavior altering substance of any kind. Likewise, the use, sale, transfer or possession of alcohol, illegal drugs or controlled substances on the job, on Company property, at job sites, in Company vehicles, at Company sponsored meetings, or in personal vehicles while on Company business is prohibited. In addition, employees are strictly forbidden to arrive or return to work from breaks or meal periods impaired by alcohol or drugs to adversely affect work performance or present a safety hazard of any kind.

Employees using medication prescribed by a licensed physician may be required to provide management with proof that such medication was prescribed. Management will have sole discretion as to whether or not it will be safe for those employees to remain on duty.

All employees are subject to the provisions of this policy, and, as determined appropriate by management, vendors, suppliers, contractors or subcontractors performing work or supplying products or services to the Company on its property or job sites may also be subject to the policy. Any such person determined to be engaged in a prohibited activity set forth within this policy during working time, while on Company property, at job sites, or in a vehicle on Company business will be removed from the premises, shall not be permitted to return without written permission of the Company and may be subject to disciplinary action up to and including termination. Such persons may also be required to submit to a drug/alcohol test and may not be permitted to return to work pending the results of the test. As a condition of employment, employees must agree to abide by the terms of this policy.

The Company reserves the right to conduct reasonable searches of employees or their personal effects, including, but not limited to vehicles, desks, lockers, lunchboxes, purses and baggage located in or brought onto Company property or Company work sites for the purpose of enforcing this policy.

Management reserves the right to require and conduct drug or alcohol tests when, at its sole discretion, reasonable cause exists that an employee is under the influence of drugs, controlled substances, or alcohol. Alcohol and/or drug screening may also be required for all employees in safety sensitive positions following any serious work-related accident. A medical facility which

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is knowledgeable in the proper chain-of-custody protocol and uses a National Institute on Drug Abuse (NIDA) approved laboratory for all drug/alcohol testing will be used.

Employees whose work comes under the jurisdiction of the Drug Free Workplace Act, Department of Defense, or Department of Transportation regulations are subject to random drug testing as allowed by law. In addition, employees are required to notify the Company of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such a conviction. The Company shall, in turn, notify the contracting agency within ten (10) days of receiving notice of such conviction.

Any employee who refuses to cooperate in searches of any kind or drug/alcohol testing may face disciplinary action up to and including termination. Further, any employee who provides the Company or the medical facility where testing occurs with false information or knowingly misleads the Company or the medical facility during a search, investigation, or testing, may be subject to disciplinary action up to and including termination.

Employees who voluntarily come forward to management, prior to a situation requiring testing and who cooperate with the Company with regard to treatment, may not be subject to disciplinary action. An employee who requests a leave of absence to enter a drug or alcohol rehabilitation program will be reasonably accommodated with an unpaid leave of absence, as required by law, to enroll in such a program if such an accommodation is not an undue hardship on the Company. Employees voluntarily entering a drug or alcohol rehabilitation program may be required to provide medical validation of satisfactory completion of the program. Employees returning to work following satisfactory completion of a rehabilitation program may be subject to drug or alcohol tests without prior notice for up to one (1) year following the return date. A recurrence of a positive drug or alcohol test following return to work may lead to disciplinary action up to and including termination.

Nothing in this policy prohibits the Company from taking disciplinary action against employees, up to and including termination, whose conduct may have been caused by alcohol, drug or controlled substance abuse, even if the employee requests time off for rehabilitation.

1.7 General Safety Rules

Please observe the following Rules:

1. Smoking is prohibited on all FASTECH job sites as it presents a hazard when smoking around bulk flammable materials. FASTECH must meet or exceed its clients' safety concerns, as such; a zero tolerance policy towards smoking on job sites has been adopted. Working on the same level as our clients, violations of the policy will be dealt with severely. Employees that violate this policy will be terminated immediately. FASTECH and its clients have made this policy in order to limit their liability and to provide a safe work environment by prohibiting smoking on their sites.

2. Notify your supervisor of any emergency situation. If you are injured or become sick at work, no matter how slightly, you must inform your supervisor IMMEDIATELY.

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3. Understand your job fully and follow instructions. If you are not sure of the safe procedure, do not guess . . . ask your supervisor.
4. Use, adjust and repair machines and equipment only if you are trained and qualified.
5. Get help when lifting or pushing heavy objects.
6. The use of alcoholic beverages, illegal or controlled substances or the abuse of legal prescription drugs during working hours will not be tolerated. The possession of alcoholic beverages, illegal or controlled substances on the Company's property or at job sites is strictly forbidden.
7. Know the locations, contents and use of first aid and firefighting equipment. Any use of fire extinguishers must be reported immediately to the Health & Safety Manager and the extinguisher turned in for refill.
8. When the job requires it, employees must wear safety glasses, hard hats, lumbar support belts and earplugs that are provided by the Company.
9. Each employee is responsible for knowing OSHA rules as outlined in the IIPP materials provided.

You must take the responsibility to report any health or safety hazards, including violations of safety procedures, to your immediate supervisor. Remember, if you have an accident or injury, you must report it immediately to your supervisor. Failure to observe safety procedures may lead to disciplinary action up to and including termination.

1.8 Housekeeping

During site activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials.

Trash- Will be collected in a roll off bin and disposed of as needed.

Used PPE- Will be collected in a 55 gallon drum and disposed of as needed.

Concrete and Asphalt- Will be stock piled and trucked off to a city approved recycler.

Soil- Will be stock piled in accordance with AQMD rule 1166 on plastic and covered with plastic. Soil will be then trucked to an appropriate landfill.

SECTION 2 SITE DESCRIPTION AND SCOPE OF WORK

2.1 Site Description

Current site consists of _____

2.2 Site Map

Please see site map with approved permits and drawings

2.3 Scope of Work

Fueling and Service Technologies, Inc will conduct the following:

FILL IN SCOPE OF WOK HERE

SECTION 3 PROJECT TEAM ORGANIZATION AND RESPONSIBILITIES

3.1 Health & Safety Officer

The Health & Safety Officer is responsible for ensuring that activities conducted are performed in conformance with this HASP and applicable contractors/subcontractors HASP(s). He/she has

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the authority to stop work if actions or conditions are judged unsafe or not in conformance with the HASP(s), including, but not limited to, inadequate or improper use of required PPE. Should unexpected conditions arise during fieldwork that warrant changes to this or other HASP(s), those changes must be reviewed and approved by him/her.

The responsibilities of the Health & Safety Officer will be:

- Establish and direct the safety program

- Assure all personnel assigned to the site have the proper training for their assigned tasks

- Conduct pre-mobilization health and safety training for field team members

- Advise and consult with the Site Safety Officer and *Project or Site Manager* on all matters related to the health and safety of those involved in site operations.

He/she will maintain documented proof of the following requirements:

- Participation in medical monitoring for each Field Team Member

- Compliance with HAZWOPER and, if applicable, CPR/First Aid training requirements for each Field Team Member

- Certification for Respirator Usage, as required, for Field Team Members.

3.2 Site Safety Officer

The Site Safety Officer is responsible for ensuring that day-to-day on-site activities are performed in conformance with this HASP and applicable contractors/subcontractors HASP(s). He/she has the authority to stop work if actions or conditions are judged unsafe or not in conformance with the HASP(s), including, but not limited to, inadequate or improper use of required PPE. An appropriate person will serve as the alternate Site Safety Officer when the primary Site Safety Officer is not on site.

The responsibilities of the Site Safety Officer will be:

- Assure that appropriate personnel protective equipment is available and is properly utilized by all on-site contractor personnel

- Assure that personnel are aware of the provisions of this plan and are instructed in the work practices necessary to ensure safety and the procedures for dealing with emergencies

- Assure the completion of the Briefing Acknowledgment Form (see Appendix A) by all personnel prior to their going on site, and ensuring that they understand the provisions of the form

- Conduct tailgate H&S meetings as required by this HASP

- Assure that personnel are aware of potential hazards associated with the site

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Monitor the safety performance of all personnel to ensure that the required work practices are employed

Immediately stop work and correct any work practices or conditions that may result in injury or unsafe conditions

Conduct safety inspections and complete appropriate forms weekly (see Appendix A)

Follow and implement the Behavioral Based Safety program (see Appendix E)

Prepare accident/incident and near loss reports (see Appendix E)

Consult with the Health & Safety Officer.

He/she will maintain documented proof of the following requirements:

- Copies of the Briefing Acknowledgement Form
- Minutes of tailgate H&S meetings
- Copies of safety construction inspections
- Copies of accident/incident and near loss reports
- Records of any decisions or changes made from consultations with the Project H&S Officer.

3.3 Field Workers

All field workers, including contractors/subcontractors, are responsible for their personal health and safety and the safety of their co-workers. All field team members are responsible for reading and complying with this and other project HASP(s). As required by this HASP they are responsible for becoming aware of any hazardous site conditions, wearing the appropriate PPE, paying attention at all times, and stopping work and reporting any unsafe working conditions to the Site Safety Officer or Field Supervisor. No person shall perform an activity that he or she believes may endanger his or her health and safety or the health and safety of others. Everyone has the responsibility to stop work in the face of unsafe working conditions or practices.

3.4 Other Contractors and Subcontractors

The other contractor/subcontractor's site supervisors will report to the Field Supervisor. The other contractor/subcontractor's site safety representatives will report to the Site Safety Officer. All safety representatives and officers will collaborate to ensure this and other applicable HASPs are complied with and followed.

SECTION 4 TRAINING AND MEDICAL MONITORING REQUIREMENTS

4.1 General Training

All workers at the site will have received a general safety orientation for the site, including, but not limited to, a review of the contents of this Health and Safety Plan. All workers will have received API training and OSHA 40 hr. Hazwoper training. If required by site conditions, all workers involved in field operations will have received at least OSHA 10-hour health and safety training that meets the requirements of 29 CFR 1910.120. Field workers and other contractors/subcontractors must have completed an 8-hour refresher training course during the past 12 months if the 40-hour training course was received prior to the past 12 months. No person shall work alone in a field operation.

At all times, there will be at least one person trained in First Aid/CPR

The Field Supervisor and the Site Safety Officer must have completed an 8-hour Supervisory training course in addition to the above training requirements, when required by site conditions. Health and safety personnel working at the site will be familiar with the operation, calibration and limitations of all field monitoring equipment.

Field workers who may need to wear respirators during site activities will receive instructions, demonstration and practice on how the respirator should be worn, how to adjust it, and how to determine if the respirator fits properly, as described in the Respiratory Protection Program for their company. Certification of fit-testing will be provided to the Project H&S Officer before respirator usage is implemented.

4.2 Site-Specific Training

The Fueling & Service Technologies, Inc. Health & Safety Officer, On-Site Safety Officer, and Project Manager will participate in a pre-job H&S briefing prior to mobilization. The briefing will cover the contents of this HASP including roles and responsibilities, job hazard analysis and safe work practices. The site's emergency response and evacuation practices will be reviewed in detail.

Prior to the start of any site activities, The Site Safety Officer or designee will conduct a daily "tailgate" health and safety meeting to discuss the work to be performed that day and the potential hazards that will be monitored during the work. The Site Safety Officer or his/her designee will note the topics covered during the daily "tailgate" training on the Daily Field Safety Form.

The Site Safety Officer or his/her designee will also ensure the site specific Behavioral Based Safety Program is implemented according to the procedures outlined in Appendix D. Furthermore, during construction activities, the Site Safety Officer will conduct weekly safety inspection.

4.3 Medical Monitoring

Employees will participate in medical surveillance as required by 29 CFR 1910.120. Participation will be based on the following:

- All employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year;
- All employees who wear a respirator for 30 days or more a year or as required by 1910.134;
- All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation;

Note: Fueling & Service Technologies, Inc. employees are not members of HAZMAT teams.

SECTION 5 SITE HAZARD ANALYSIS

Potential chemical and non-chemical hazards associated with fieldwork are covered in this section.

5.1 Chemical Hazards

The properties and potential health hazards associated with each of the known contaminants are listed in Appendix C. Note that the potential health hazards in the table are those expected from exposure to elevated concentrations, such as pure product. Concentrations at the site are expected to be in the parts per billion to parts per million ranges (with the exception of a few inorganic compounds).

Unprotected site workers could be exposed to chemicals via inhalation of volatiles or dust, dermal contact, and incidental ingestion of contaminated material. Administrative and engineering controls shall be used to minimize exposures (*e.g.*, wetting soil to reduce dust). Site workers shall wear the personnel protective equipment (PPE) prescribed in Section 7 of this HASP as protection from these potentially harmful exposures.

Materials of trade (*e.g.*, reagents, compressed gases, preservatives, decontamination solutions) can be hazardous if stored or handled improperly. MSDSs shall be maintained on site for all of these chemicals. Such materials that might be used include isobutylene for calibrating the PID, and hexane for decontamination when sampling for petroleum hydrocarbons. If these materials are transferred to another container, the container will be properly labeled according to the OSHA HAZCOM requirements.

The U.S. Department of Transportation (DOT) might define some chemicals brought to the site as hazardous materials. All workers who ship the materials or transport them by road must receive training in shipping dangerous goods. All hazardous materials that are shipped (*e.g.*, via Federal Express) or are transported by road must be properly identified, labeled, packed, and documented by trained workers. Contact the Field Supervisor or the Health & Safety Manager for additional information.

5.2 Non-Chemical Hazards

The three broad categories of non-chemical hazards include safety, physical, and biological hazards. The anticipated hazards and the required controls to reduce or eliminate these hazards include:

Table 5-1 Safety Hazards

- | | |
|--|--|
| • Slip, trips and falls | • Fire |
| • Sharp objects | • Entanglement |
| • Construction and heavy equipment hazards | • Poor lighting |
| • Overhead utilities | • Flying debris/objects (line-of-fire) |
| • Buried utilities | • Electrical or other energized equipment |
| • Suspended loads | • Visible lightning |
| • Back strain or injury | • Pinch points (<i>e.g.</i> , cuts to hands, crushed fingers or toes) |
| • Vehicle traffic | • Soft ground conditions |
| • Dike stability | • Working on/near water |

Table 5-2 Physical Hazards

- | | |
|------------------------|------------------|
| • Noise | • Heat stress |
| • Low light / darkness | • Cold stress |
| • Muscle strain | • Wet conditions |

Table 5-3 Biological Hazards

- | | |
|------------------------------------|---|
| • Insect stings (wasps, bees) | • Poisonous plants (<i>i.e.</i> , poison oak, ivy, or sumac) |
| • Arthropod bites (spiders, ticks) | • Mosquitoes |
| • Loose or feral animals | • Snakes and other poisonous animals |

5.3 Hazard Analysis and Mitigations by Task

Safety, physical, and biological hazards can be mitigated by the use of proper work procedures and controls, safety equipment (*e.g.*, hard hat, safety glasses, steel-toed/shanked shoes, protective gloves), good communication among all on-site personnel, and being alert to potential hazards.

5.4 High Risk Activities

All high risk activities are covered by the Permit to Work associated with the task. Job Safety Analysis will also be used as a tool for review and mitigating the hazards.

Heavy Equipment and Vehicle Operations

Heavy equipment may produce hazardous noise and pose a potential hazard to pedestrians and workers. When in motion, heavy equipment could strike equipment, other vehicles, overhead power lines, or workers.

In order to assure that all equipment used on site presents no unwarranted safety hazards, the owner of each piece of heavy equipment must perform a safety evaluation and certification in accordance with the procedures and requirements found in S3NA-309-PR Mobile or Heavy Equipment. The owner/vendor supplying the heavy equipment must complete the S3NA-309-FM1 Certification Form for Machinery and Mechanized Equipment and then submit the completed form to the CM prior to the equipment's use onsite. Each operator must complete the S3NA-309-FM2 Heavy Equipment Pre-Operations Inspection Checklist daily and submit the completed form(s) to the CSSO at the end of the week/month.

Heavy equipment and site vehicles present serious hazards site personnel. Blind spots, failure to yield, and other situations may cause heavy equipment/vehicles to come into contact with personnel. To reduce the possibility of contact between equipment/traffic and personnel, always adhere to the following:

- Personnel must wear a high-visibility, reflective safety vest at all times when working near heavy equipment and/or other vehicle traffic.
- Personnel must always yield to equipment/vehicle traffic and stay as far as possible from all equipment/vehicle traffic. Always maintain eye contact with operators.
- When feasible, place barriers between work areas and equipment/vehicle traffic.
- Always ensure that reverse warning alarms are working and louder than surrounding noise. Personnel must report inoperative reverse warning alarms.
- Confirm Daily Equipment Safety Inspections are being performed and that documentation is filed at the site.
- During hoisting or lifting operations, utilize a spotter to assist with the position and moving of the suspended load and to aid in the communication with the operator.

Heavy equipment safety establishes the minimum safety requirements for the use or operation of heavy/mechanized equipment at the various sites. These procedures were established to ensure the safety of site personnel working near operating heavy/mechanized equipment and vehicles, operators, and visitors. This procedure requires that all personnel working on/visiting the project sites, where heavy equipment operations are ongoing, must maintain visual communication with equipment operators. All equipment must be inspected and certified to be in safe working condition before the equipment can work at the site using an approved certification or inspection form for machinery and mechanized equipment and operators must perform daily pre-operational inspections to ensure the mechanized equipment continues to operate safely. Inspections should

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also correspond to the manufacturer's recommendations and Federal Regulations 29 CFR 1926.600-604.

All heavy equipment operators must have the specific equipment training to operate onsite. The NCCCO requires operators on all cranes (rubber tired, tracked and stationary) to have current certification with the National Commission for the Certification of Crane Operators (NCCCO). In addition to crane operators being certified, powered industrial truck (fork lift) operators must be licensed per Federal Regulations 29 CFR 1926.600-602 (Subpart O) and 29 CFR 1910.178.

Cutting

Concrete surfaces may be removed by wet cutting or impact break-up. All concrete saws will utilize a wet-method to minimize the amount of concrete dust generated, all saws will be inspected prior to use, and all saws will utilize a guard system to prevent projectile material from leaving the immediate area. Hearing protection and additional eye/face protection (face shield used in conjunction with safety glasses) will be required during this activity and a barricade system will be used to prevent unauthorized personnel from entering the area.

Welding/Torch Cutting

Welding or torch cutting or brazing activities will be necessary to install new structural steel, and/or removal of steel-reinforced rebar concrete. These operations will be performed frequently and will be long-duration activities. Hot work permits will be obtained prior to initiating welding, cutting, or brazing activities. If welding activities must be performed outdoors, then appropriate welding shields will be employed to protect bystanders from an accidental exposure to a welding flash or arc. The specific Hot Work requirements are identified in Section 4.6.

Excavation and Trenching

The primary hazard of trenching and excavation is employee injury from collapse. Soil analysis is important in order to determine appropriate sloping, benching, and shoring. Additional hazards include working with heavy machinery; manual handling of materials; working in proximity to traffic; electrical hazards from overhead and underground power-lines; underground utilities, such as natural gas; and around existing underground tanks.

Because of their inherent dangers, entry into trenches and excavations shall not be performed if there are means other than entry to perform the work. Where entry into trenches and excavations is necessary, strict adherence to the procedures specified in 29 CFR 1926.650 (Subpart P - Excavations) is extremely important and will not be deviated from. A "Competent Person" must be present during all work which involves entry by contractor personnel into trenches or excavations greater than five (5) feet in depth. A "Competent Person" must be qualified per 29 CFR 1926.32(f).

All openings on site will be temporarily covered when not in immediate use as well as at the end of each day in accordance with OSHA Regulations. Coverings must be capable of supporting the weight of an average person and must be marked with "**Hole**", "**Opening**", or "**Do Not Stand**", and secured to prevent being displaced by the wind or other inadvertent means.

General Electrical Hazards

Electrical and powered equipment may be used during a variety of site activities. Injuries associated with electrical and powered equipment include electric shock, cuts/lacerations, eye damage (from flying debris), and burns. To reduce the potential of injury from the hazards associated with electrical and powered equipment, always comply with the following:

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- Use ground fault circuit interrupters (GFCIs) when using electrical powered tools/equipment. GFCIs prevent electrical shock by detecting the loss of electricity from a power cord and/or electrical device.
- Confirm that generators are properly grounded, including the use of a grounding rod driven to a depth of 3 feet.
- Wear ANSI-approved (Z87.1) safety glasses. Face shields may be required to provide additional face protection from flying debris.
- Wear appropriate work gloves. Work gloves may reduce the severity of burns and cuts/lacerations.

All temporary electric installations (site trailer, subpanels) will comply with OSHA (29 CFR 1926, Subpart K, and 29 CFR 1910, Subpart S) guidelines. Only qualified and competent individuals (licensed electrician) will provide electrical service/servicing. Refer to S3NA-302-PR Electrical, General, for additional requirements and information.

Use lockout/tag-out procedures when performing maintenance or repairs on equipment.

It is the responsibility of Contractors to verify that all remediation equipment is locked out before employees perform any maintenance or repair work on the system. The source must be locked out; it is not enough to push the power switch to off and disconnect the breaker. Anyone can re-engage power under these circumstances. Locking out the power source is the only way to guarantee that the power will not be inadvertently reactivated.

A lock-out/tag-out kit will be located at the site for the duration of the project. The kit includes standard locks, keys, and lock-out notices.

5.5 Waste Management

Trash- Will be collected in a roll off bin and disposed of as needed.

Used PPE- Will be collected in a 55 gallon drum and disposed of as needed.

Concrete and Asphalt- Will be stock piled and trucked off to a city approved recycler.

Soil- Will be stock piled in accordance with AQMD rule 1166 on plastic and covered with plastic. Soil will be then trucked to an appropriate landfill.

SECTION 6 EMERGENCY RESPONSE PLAN

All site activities present a degree of risk to on-site personnel. During routine operations, risk is minimized by establishing good work practices, staying alert and using proper personal protective equipment. Unpredictable events such as physical injury, chemical exposure, or fire may occur and must be anticipated. First aid kits and portable fire extinguishers will be kept on site during all fieldwork.

6.1 Guidelines for Pre-Emergency Planning and Training

Workers must read this HASP and familiarize themselves with the information in this chapter. Before any field work, the field workers should review the HASP and its emergency response

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procedures. Workers shall have a copy of the emergency contacts and phone numbers immediately accessible on site and know the route to the nearest emergency medical services (see the front of this HASP). In addition, task-specific overviews and any addendums/revisions to this HASP will be kept current in the front of this document. Posting of emergency contact information will be done at a conspicuous place on the property. If there is not a building where the emergency information can be posted, the site safety officer will determine an appropriate location and notify all personnel working on the site of its location.

In addition, all workers must be familiar with site safe work practices and evacuation procedures included in the site specific training (Section 4.2). Furthermore, any and all incidents such as near misses/losses, injuries, accidents, and related investigations must be reported per the requirements of FASTECH's Behavioral Based Safety program.

6.2 Emergency Recognition and Prevention

Emergency conditions are considered to exist if:

Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on site.

A condition is discovered that suggests the existence of a situation more hazardous than anticipated.

Some ways of preventing emergency situations are listed below.

Workers should remain close together to assist each other during emergencies.

During operations, on-site workers act as safety backup to each other. Off-site personnel provide emergency assistance.

All field workers should make use of their senses to alert themselves to potentially dangerous situations that they should avoid, *e.g.*, presence of strong and irritating or nauseating odors, odors different from those normally encountered at the site.

Workers should practice unfamiliar operations before doing the actual procedure in the field.

Field workers shall be familiar with the physical characteristics of investigations, including:

- Wind direction in relation to contamination zones
- Accessibility to co-workers, equipment, and vehicles
- Communications
- Areas of known or suspected contamination
- Site access and egress
- Nearest water sources.

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Workers and equipment in the work area enclosure should be minimized, consistent with effective site operations.

Work areas for various operational activities must be established.

In the event that any member of a field work team experiences any adverse effects or symptoms of exposure while on the scene, or organic vapors and combustible vapors exceed the action limits, the entire field team will immediately halt work and act according to the instructions provided by the Site Safety Officer.

The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated will result in the evacuation of the field team and reevaluation of the hazard and the level of protection required.

6.3 Personnel Roles, Lines of Authority, and Communication Procedures during an Emergency

All personnel should know their responsibilities during an emergency; know who is in charge during an emergency, and the extent of their authority. This section outlines worker roles, lines of authority, and communication procedures during emergencies.

In the event of an emergency at the site, the Site Safety Officer will assume control and will be responsible for on-site decision-making. This individual has the authority to resolve all disputes about health and safety requirements and precautions. He/she will also be responsible for coordinating all activities until the ambulance, rescue, fire personnel, *etc.* arrives on site.

The Site Safety Officer will ensure that other contractors/subcontractors Safety Officer(s), the Health & Safety Officer, the Fueling & Service Technologies, Inc. Project Manager, and the FASTECH Project or Site Manager are contacted as soon as possible after the emergency occurs. The Site Safety Officer and other on-site personnel will have an established line of communication for emergency calls and reports (e.g., radio, cell phone, etc.).

6.4 Evacuation Routes and Procedures, Safe Distances, and Places of Refuge

In the event of an on-site emergency, employees will evacuate the area as instructed by the Site Safety Officer, transport injured personnel, or take other measures to mitigate the situation. The *site-specific evacuation location* will be the on-site place of refuge during an emergency. Should conditions warrant or as directed by the Site Safety Officer, site personnel should use the shelter-in-place facility as a secondary place of refuge. Field workers will identify evacuation routes to the evacuation locations before initiating work. Section 9 includes evacuation procedures if personnel are working on FASTECH Sites.

In the event of an off-site emergency, remain on site until instructions to relocate are given. If wind conditions or the nature of the emergency make the site-specific location building unsafe as a place of refuge, the Site Safety Officer will consult with the Project Manager and make the decision to relocate.

Off-site emergencies at the *site location* are indicated by verbal notification. If verbally notified, work will stop immediately, equipment will be de-energized and/or secured as necessary for

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safety reasons and personnel will go immediately to the site staging area. Personnel will follow the emergency decontamination procedures described in Section 6.5 before entering the evacuation location. Personnel will follow the directions of the Site Safety Officer, who will determine the nature of the emergency and appropriate steps to take.

6.5 Decontamination of Personnel During an Emergency

Uninjured employees that are required to evacuate a contaminated area in an emergency situation should follow the decontamination procedures described in Section 10 of this HASP, if possible. If the emergency precludes following the procedures in Section 10 (*i.e.* the emergency presents an immediate threat to employee health and safety), then at a minimum, personnel should move into a safe area and remove protective equipment. Care should be taken to minimize contamination of the safe area and personnel. Contaminated clothing should be placed in plastic garbage bags or other suitable containers for later drumming and disposal. Employees should wash or shower as soon as possible.

If a member of the field team is injured or exposed to chemicals, the emergency procedures outlined in Section 6.7 below should be followed.

6.6 Emergency Site Security and Control

For this project, the Site Safety Officer and/or the Project Safety Officer will maintain a list of personnel who are on site and who are in the work area. This list will be compiled on the Daily Field Safety Form (Appendix A) that will be completed during the daily “tailgate” meetings. The names and cell phone numbers of the field crew will also be written on Page V of this HASP. In an emergency situation, all personnel will be evacuated except rescue and response personnel who are needed to attend to the injured.

6.7 Procedures for Emergency Medical Treatment and First Aid

6.7.1 Chemical Exposure

In the event of chemical exposure (skin contact, inhalation, ingestion) the following procedures should be implemented:

Another team member (buddy) should remove the individual from the immediate area of contamination.

Precautions should be taken to avoid exposure of other individuals to the chemical.

If the chemical is on the individual’s clothing, the clothing should be removed if it is safe to do so.

If the chemical has contacted the skin, the skin should be washed with copious amounts of water, preferably under a shower.

In case of eye contact, emergency eyewash should be used. For site work activities with a high splash potential, a portable eyewash station will be located at the site. Eyes should be washed for at least 15 minutes.

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If necessary, the victim should be transported to the nearest hospital or medical center (refer to Hospital Location Map of this HASP). The Project Manager and Site Safety Officer should be notified as soon as possible. If necessary, an ambulance should be called to transport the victim.

6.7.2 Personal Injury

In the event of personal injury:

Field team members trained in first aid can administer treatment to an injured worker.

If the injury is more serious than a first-aid case, the victim should be transported to the nearest hospital or medical center. If necessary, an ambulance should be called to transport the victim.

The Site Safety Officer is responsible for completing an Incident Report Form, appropriate Behavioral Based Safety forms and submitting them to the H&S Officer and the Site Manager.

6.7.3 Fire or Explosion

In the event of a fire or explosion, personnel will evacuate the area immediately and administer necessary first aid to injured employees. First aid kits will be kept on site during field work as a part of the field H&S kit, along with a fire extinguisher, which is available for small fires. Personnel will proceed to a safe area, contact the Site Safety Officer (see emergency contact numbers at the front of this HASP), and phone 911. Upon contacting 911, state your name, nature of the hazard (fire, high combustible vapor levels), the location of the incident, and whether there were any physical injuries requiring an ambulance. Do not hang up until 911 has indicated that they have all of the information they require.

6.7.4 Emergency Contact

Emergency phone numbers and a map to the hospital are found at the front of this HASP.

6.8 Incident Reporting and Investigation

Personnel will report all “incidents” to the Project Manager, Site Safety Officer and the Project H&S Officer. Incidents include both accidents where a personal injury or other loss (*e.g.*, property damage, release) has occurred *and* events that had the potential to cause a personal injury or other loss, but did not (*e.g.*, “near losses”). In the event an accident occurs, the Site Safety Officer will complete an Incident Report Form, appropriate Behavioral Based Safety forms and submit them to the Project H&S Officer. The Fueling & Service Technologies, Inc. Project Manager will be responsible for all record keeping requirements.

All incidents will be investigated by, at least, the Site Safety Officer and H&S Officer to determine their root cause. Corrective actions will be taken to address the safety issue before work recommences. The HASP will be modified, if necessary, as described in Section 1

6.9 Safety Audits

FASTECH will perform weekly safety audits.

SECTION 7**LEVELS OF PERSONAL PROTECTION REQUIRED FOR SITE ACTIVITIES**

Personal protective equipment (PPE) that will be required on site during the field activities is described in this section. Additional PPE may be required depending on other permit requirements (excavation, safe entry) requirements (see Section 9) and/or field conditions.

7.1 Dermal Protection

Minimum dermal protection for all field team members will be Level D, which includes standard work clothes that include sleeved shirts, long pants, approved safety glasses with side shields or “wrap around” protection, hardhat, and steel-toed/shanked leather work boots. For specific tasks, Level D dermal protection shall be upgraded as follows:

All personnel who perform sampling or monitoring activities shall wear inner surgical-style nitrile and outer chemical-resistant nitrile gloves. For groundwater sampling only, outer gloves may be removed to assure adequate dexterity when handling sampling containers. If surgical-style nitrile gloves become wet they should be dried immediately. Surgical-style gloves should be changed frequently to assure their integrity.

Steel toed/shanked neoprene or rubber boots or over boots shall be worn when in wet/muddy areas.

Uncoated Tyvek[®] suits shall be worn over standard works clothes as described above whenever contact is likely with contaminated soils, poisonous plants, or stickers.

Water impermeable (e.g., Saranex[®]) coveralls shall be worn when sampling surface water, and whenever contact is likely with wet contaminated soils, groundwater, sediments or surface water.

Safety vests must be worn when working around heavy equipment or vehicles.

Hearing protection will be worn when working around construction, heavy, or other equipment or tools or whenever conversations cannot be held at distances of 3 feet or less without shouting.

Certain activities, such as hand excavation of contaminated soils, may require Level C dermal protection. Dermal protection for Level C includes the following items to supplement Level D protection: impermeable suit (e.g. coated Tyvek[®] or Saranex[®] suit), impermeable boots (e.g. coated Tyvek[®] or Saranex[®] booties), and nitrile gloves. Particular tasks to be performed in Level C dermal protection can be upgraded as described above for Level D.

7.2 Respiratory Protection

Level D - No respiratory protection.

Level C - Full-face piece air purifying respirator (APR) equipped with a cartridge (NIOSH approved) to be determined based on the hazards present, as appropriate.

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Level B - is not expected to be needed for these operations.

7.3 Health and Safety Equipment

The on-site field team will have the health and safety equipment noted below readily available during site activities.

Copy of the HASP(s)

Radio or cell phone

First-aid kit

Fire extinguisher (type A-B-C)

Paper towels and hand soap

Traffic safety vests (for work around heavy equipment)

Work gloves (when handling equipment)

Nitrile outer gloves (minimum glove required while working on site)

Perimeter fencing and barricade tape and/or barricades .

Liquids to drink (water).

Organic vapor monitor equipped with a PID (with 10.6 eV lamp) (during intrusive work and sampling)

PPE as appropriate to Task as described in Sections 7.1 and 7.2

Water for decontamination

SECTION 8 DUST CONTROL

8.1 Dust Suppression

Water will be used at the primary method of Dust Suppression on the site.

SECTION 9 SITE CONTROL MEASURES

9.1 Site Access

This site is an existing **DESCRIBE SITE**. Prior to starting a field event the Project Manager, Site Manager and Site Safety Officer will be notified and discuss the work to be conducted. *See example form on next page. Sign in sheet is in the Site Sign In Binder.*

9.2 Permits

Prior to starting any field activities, appropriate approvals and permits should be obtained. Any field activities, independently of its size, will require a Fueling & Service Technologies, Inc. Work Permit. Additional permits may be required depending the site; operating facilities may have several permit procedures. Some of these include, but are not limited to, a soil excavation permit, hot work permit, confined space entry permit, and other state or local permits.

9.3 Work Zones

Prior to starting any field activities, an area in which work will be conducted will be classified as the works zone. The work zone will be properly protected, barricaded, or cordoned off in order to maintain a clear and distinct separation from work activity and non-work activity areas

9.4 Traffic Hazards

Transportation incidents and workers struck by vehicles or mobile equipment account for many fatal constructions work injuries. Workers in highway construction activities and in areas where there are moving vehicles and traffic are exposed to those moving hazards. Work zones will be utilized to move traffic in an approved direction and are typically identified by signs, cones, barrels and barriers.

High visibility vests should be required when working in /around traffic hazards.

APPENDIX A- FORMS

10.1 Site Sign In Sheet



Site Sign In Sheet

[illegible]

10.2 *Daily Tailgate Meeting & Work Clearance Form*

Site Safety and Health Plan

 <p>Construction Maintenance Compliance Testing Car Washes</p>	<p>Health, Safety and Environment</p> <p>FASTECH</p> <p>Daily Tailgate Meeting & Work Clearance Form</p>	<p>Issue: July 8, 2011 Revision: June 13, 2014</p> <p>Do NOT pre-populate any fields</p>

Job Location:		Date:	
FASTECH Site Supervisor:		FASTECH Project Manager:	

List activities to be performed today:	
Permitted Activities (specific permit to be completed):	<input type="checkbox"/> Not Applicable <input type="checkbox"/> Confined Space Entry <input type="checkbox"/> Excavation/Trenching <input type="checkbox"/> Hot Work <input type="checkbox"/> Working at Heights (greater than 6 feet) <input type="checkbox"/> Hoisting/Rigging (any lifting with equipment, excluding drill rigs)

Emergency Staging Location:		Spill Kit Location (As required):	
First Aid Kit/Eye Wash Location:		Fire Extinguisher Location:	
Emergency cut-off switches:		Designated Cell Phone Use Area(s)	

Has the Site Manager / Owner been notified of our activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Was the Site Manager / Owner present during pre-work site walk?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is a fuel delivery scheduled for today?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Have all personnel reviewed and understand the site specific HASP?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
Does each activity have a Job Safety Analysis (JSA)?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have JSAs for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Have JSAs been reviewed by all affected personnel on-site?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
Has a site walk been performed to identify additional hazards?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
Have any newly identified hazards been documented on the JSA?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/ mitigation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Have equipment checks (Lock out tag out, etc.) been completed, documented, and reviewed?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all members of the work team have API Safety Keys?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the FASTECH Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
If permits are required, have they been reviewed and permit conditions understood by the Team?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
If Drilling, did driller physically point out all pinch points to entire team (FASTECH and all subs)?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
If Drilling, has the driller & crew agreed the audible and visible signals for "all clear" prior to engaging controls?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A

* If No, then work cannot be performed until corrective action is completed and documented.

Title of JSAs reviewed today:	
All personnel are wearing (regardless of activity):	<input type="checkbox"/> Hard Hat <input type="checkbox"/> Safety Glasses/Face Shields <input type="checkbox"/> Safety Vest <input type="checkbox"/> Steel-Toed Boots <input type="checkbox"/> Gloves (appropriate for task) <input type="checkbox"/> Hearing Protection See JSA for additional task specific PPE requirements.

Other Items Discussed Today:	Stop Work Authority & Obligation
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	<p>* All employees will stop the job any time anyone is concerned or uncertain about safety.</p> <p>* All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the JSA.</p> <p>* All employees will be alerted to any changes in personnel or conditions at the worksite.</p> <p>* All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the JSA as needed.</p>
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FASTECH VEHICLE SAFETY RULES	
I will wear my seatbelt at all times when I am in a moving vehicle, regardless of speed, distance, or direction (forward or reverse).	<input type="checkbox"/> Yes
I will not use a cell phone in any way or for any purpose while driving (e.g., talk, text, hands free).	<input type="checkbox"/> Yes
I will obey the speed limit at all times. Unless otherwise posted, the onsite speed limit is _____ mph. Follow specific on site traffic routes, if applicable.	<input type="checkbox"/> Yes
I will stop or park a vehicle in a manner to avoid backing, where possible.	<input type="checkbox"/> Yes
I will place a traffic cone in front of and behind the vehicle when parking in a non-designated parking spot.	<input type="checkbox"/> Yes
I will complete a 360-degree walk around of the vehicle immediately prior to backing to determine potential obstructions and a safe exit route, even if parked in a designated parking spot.	<input type="checkbox"/> Yes
I will use a spotter with pre-agreed hand signals and maintain eye contact throughout the backing process, if you must back a vehicle anywhere on site (other than from a designated parking spot).	<input type="checkbox"/> Yes
I will not climb on to any part of a vehicle that is greater than 6-feet above the ground without fall protection.	<input type="checkbox"/> Yes

AIR MONITORING EQUIPMENT LOG						
Type (i.e. PID, LFG, multi-gas, etc.)	Manufacturer	ID/Serial Number	Zero Cal (Pass/Fail)	Calibration Gas	Span Cal (Pass/Fail)	Date of Last Calibration/Service

(Field calibration is to be conducted daily, prior to start of work unless otherwise specified by the equipment manufacturer.)

<p>SITE WORKERS (including FASTECH Contractors and Subcontractors): By signing here, you are stating the following:</p> <p>* You have been involved in reviewing the JSAs and understand the hazards and control measures associated with each task you are about to perform.</p> <p>* You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).</p> <p>* You understand the Safe Life Saving Rules and are aware that tasks or work that is not risk-assessed shall not be performed.</p> <p>* You are aware of your authority and obligation to 'Stop Work'.</p> <p>* You understand and will follow the FASTECH Vehicle Safety Rules while on site, and that failure to comply with any Rule may be cause for negative consequences, up to and including dismissal from working on site or the potential for your company to be banned from working on future FASTECH projects.</p> <p>I arrived and departed fit for duty:</p> <p>* You are physically and mentally fit for duty.</p> <p>* You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.</p> <p>* You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the FASTECH Site Supervisor.</p> <p>* You signed-out uninjured unless you have otherwise informed the FASTECH Site Supervisor.</p>

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 <p>Construction Maintenance Compliance Testing Car Washes</p>	<p>Health, Safety and Environment</p> <p>FASTECH</p> <p>Daily Tailgate Meeting & Work Clearance Form</p>	<p>Issue: July 8, 2011 Revision: June 13, 2014</p> <p>Do NOT pre-populate any fields</p>

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITORS (attach additional Site Visitor sign-in/out sheets if needed)				
Name	Company Name	Arrival Time	Departure Time	Signature

SITE REPRESENTATIVE Sign In/Out (operating sites only, and signature must be requested. If the operator refuses to sign, note this on the Form)			
Sign In: I have discussed this Job Clearance Form with the contractor		Sign Out: I have discussed this Job Clearance Form with the contractor	
Site Representative Name	Site Representative Signature	Site Representative Name	Site Representative Signature

(Write "NA" if Site Representative is not present or declines to sign)

Complete the following once field activities for the day have been concluded:		
Has the Site Manager/Owner conducted a post-work site walk and are they happy with the way you left the site (including the location of waste drums and/or equipment)?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If no, provide details:
Were there any Incidents, Near Misses, Potential Incidents, or Positive Interventions today?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any "Stop Work" interventions?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
At the conclusion of the day, I certify that the job site is being left in a safe condition and there were no reports of injury or first aid.	<input type="checkbox"/> Yes <input type="checkbox"/> No	FASTECH Site Supervisor Signature:

NOTES/DETAILS

10.3 *Confined Space Entry Permit*



Fuelling & Service Technologies
 Confined Space Entry
 Permit Number _____

Section A – To be completed by Permit Requester
 Section B – To be completed Permit Issuer
 Section C – To be completed by relevant parties as indicated
 Section D – Gas Testing Results

SECTION A	Project Number		Control Number:	
	Permit Valid From (Date / Time)		Permit Valid To (Date / Time)	
	Permit Requester:		Company:	
	Facility:		Number of Workers:	
	Job Site Location:		Equipment Number:	
	Description of work:			
	List Types of Tools & Equipment Required:			
General Safety Precautions				
SECTION B	Training Verification <i>The following persons successfully completed required training and training is current for the space to be entered</i>			
	Position	Training Completed		Name & Title
		YES	NO	
	Entry Supervisor	<input type="checkbox"/>	<input type="checkbox"/>	
	Entry Attendant	<input type="checkbox"/>	<input type="checkbox"/>	
	Entrant	<input type="checkbox"/>	<input type="checkbox"/>	
	Entry Supervisor Name	Entry Supervisor Signature		Date
	Equipment & Precautions			
	Yes	No	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Note: Before an employee enters the space, the internal atmosphere shall be tested with a calibrated direct-reading instrument for oxygen content, flammable gases and vapors, and for potential toxic air contaminants, in that order. Forced air ventilation will be used. At least one attendant is provided outside the permit space into which entry is authorized for the duration of entry operations. The HASP will be reviewed by all on-site employees for procedures on contacting, notifying and summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue prior to beginning any Confined Space Entry work.				
Work Area Isolation & Traffic Control				
Yes	No			
<input type="checkbox"/>	<input type="checkbox"/>	Level 1 (Use a minimum of four cones or delineators per work area)		
<input type="checkbox"/>	<input type="checkbox"/>	Level 2 (Barrier tape on delineators with flags and the use of field vehicles)		
<input type="checkbox"/>	<input type="checkbox"/>	Level 3 (Plastic Security Fencing and/or Type 2 or 3 barricades)		
<input type="checkbox"/>	<input type="checkbox"/>	Level 4 (DOT signage and protection devices per Manual on Uniform Traffic Control Devices (MUTCD))		
List additional hazards, equipment or site precautions, special requirements or instructions:				
Approvals				
OS U	Form Acceptance I understand that this Form will be in effect until job completion, but will not extend beyond the end of the shift (not to exceed a 12-hour			

Site Safety and Health Plan

	<i>period), in which the Form was issued.</i>	
	Permit Holder:	Date:
	<i>if all requirements and conditions of this Form remain in effect, the work can be performed safely.</i>	
	Permit Issuer:	Date:
	Permit Approver (if required)	Date:
	Form Closure <i>All work has been completed in accordance with this Permit and the site has been left in a safe and satisfactory condition. I understand that by signing below this Form will be closed and no longer valid.</i>	
	Date:	Date:
	Permit Holder:	Permit Issuer:
	Title	Title
	Company	Company
Signature	Signature	



Fueling & Service Technologies
Confined Space Entry
Permit Number _____

SECTION D – Gas Test Results

Gas Test Results

Record test results for Hot Work and Confined Space Entry on the relevant permit form.

- ☐ Gas Test Frequency Rate - Once Per _____ Minutes

[illegible]

10.4 *Excavation Permit*



Fuelling & Service Technologies Excavation

Permit Number _____

Section A – To be completed by Permit Requester
Section B – To be completed Permit Issuer
Section C – To be completed by relevant parties as indicated

SECTION A	Project Number	Control Number:
	Permit Valid From (Date / Time)	Permit Valid To (Date / Time)
	Permit Requester:	Company:
	Facility:	Number of Workers:
	Job Site Location:	Equipment Number:
	Description of work:	
	List Types of Tools & Equipment Required:	
SECTION B	<p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> Excavations deeper than 4 feet</p> <p><input type="checkbox"/> <input type="checkbox"/> Excavation or drilling within 10 feet of a buried high-pressure gas line</p> <p><input type="checkbox"/> <input type="checkbox"/> Excavation or drilling within 3 feet of a buried active product line or active electrical line</p> <p><input type="checkbox"/> <input type="checkbox"/> Work involving equipment (such as a pulling unit, mast truck, backhoe or excavator) within 15 feet of active overhead electrical line or pole supporting an electrical line</p>	
	General Safety Precautions	
	<p>Equipment & Precautions</p> <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Piping verified and marked</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Electric Cables verified and marked</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Utilities (e.g. piping) verified and marked</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Piping Isolation required</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Electric Cables Isolation required</p> <p><input type="checkbox"/> <input type="checkbox"/> Underground Utilities (e.g. natural gas) Isolation required</p> <p><input type="checkbox"/> <input type="checkbox"/> Above Ground Services (e.g. electrical) have been identified</p> <p><input type="checkbox"/> <input type="checkbox"/> Above Ground Services Isolation required</p> <p><input type="checkbox"/> <input type="checkbox"/> Barricades erected to prevent unauthorized access required</p> <p><input type="checkbox"/> <input type="checkbox"/> Safe Access into / from Excavation required to be provided</p> <p><input type="checkbox"/> <input type="checkbox"/> Excavation to be Shored / Sloped / Benched as required (to be based on soil survey)</p> <p><input type="checkbox"/> <input type="checkbox"/> Verification that Excavation will not affect any work in progress</p> <p><input type="checkbox"/> <input type="checkbox"/> Precautions have been taken to prevent cave-in when personnel must enter excavations deeper than 4 feet</p> <p><input type="checkbox"/> <input type="checkbox"/> Precautions have been taken when excavating or drilling within 10 feet of a buried high-pressure gas line</p> <p><input type="checkbox"/> <input type="checkbox"/> Precautions have been taken when excavating or drilling within 3 feet of a buried active product line or active electrical line</p> <p><input type="checkbox"/> <input type="checkbox"/> Precautions have been taken for work involving equipment (such as a pulling unit, mast truck, backhoe or excavator) within 15 feet of active overhead electrical line or pole supporting an electrical line</p>	
	<p>Work Area Isolation & Traffic Control</p> <p>Yes No</p> <p><input type="checkbox"/> <input type="checkbox"/> Level 1 (Use a minimum of four cones or delineators per work area)</p> <p><input type="checkbox"/> <input type="checkbox"/> Level 2 (Barrier tape on delineators with flags and the use of field vehicles)</p> <p><input type="checkbox"/> <input type="checkbox"/> Level 3 (Plastic Security Fencing and/or Type 2 or 3 barricades)</p> <p><input type="checkbox"/> <input type="checkbox"/> Level 4 (DOT signage and protection devices per Manual on Uniform Traffic Control Devices (MUTCD))</p>	

Approvals	
SECTION C	Form Acceptance <i>I understand that this Form will be in effect until job completion, but will not extend beyond the end of the shift (not to exceed a 12-hour period), in which the Form was issued.</i>
	Permit Holder: _____ Date: _____
	<i>If all requirements and conditions of this Form remain in effect, the work can be performed safely.</i>
	Permit Issuer: _____ Date: _____
	Permit Approver (if required) _____ Date: _____
	Form Closure <i>All work has been completed in accordance with this Permit and the site has been left in a safe and satisfactory condition. I understand that by signing below this Form will be closed and no longer valid.</i>
	Date: _____ Date: _____
	Permit Holder: _____ Permit Issuer: _____
	Title _____ Title _____
	Company _____ Company _____
Signature _____ Signature _____	

10.6 *Hot Work Permit*



Fuelling & Service Technologies

Hot Work

Permit Number _____

Section A – To be completed by Permit Requester

Section B – To be completed Permit Issuer

Section C – To be completed by relevant parties as indicated

SECTION A	Project Number					Control Number:				
	Permit Valid From (Date / Time)					Permit Valid To (Date / Time)				
	Permit Requester:					Company:				
	Facility:					Number of Workers:				
	Job Site Location:					Equipment Number:				
	Description of work:									
	List Types of Tools & Equipment Required:									
General Safety Precautions										
SECTION B	Gas Test Results Record test results for Hot Work and Confined Space Entry on the relevant permit form. <input type="checkbox"/> Gas Test Frequency Rate - Once Per _____ Minutes <input type="checkbox"/> Continuous Gas Test Required Throughout Job									
	Date	Time	% LEL	% O2	Other	Results	Other	Results	Instrument	Gas Tester
	Equipment & Precautions Yes No <input type="checkbox"/> All provisions and requirements specified on the associated General Work Permit met <input type="checkbox"/> Equipment to be positively isolated (e.g., blinded, electrical breaker removed, etc.) <input type="checkbox"/> Approved Fire Watch at job site (Must observe site for 30 minutes after completion of Hot Work) <input type="checkbox"/> Fire Extinguisher(s) located at job site <input type="checkbox"/> Spark containment <input type="checkbox"/> All surface drains covered within 15 meters (50 ft) of job site <input type="checkbox"/> 35 Feet from any fuelling system components <input type="checkbox"/> Special PPE equipment and/or clothing as listed - List item(s) below <input type="checkbox"/> Fire hose / water hose on site <input type="checkbox"/> Respiratory protection as listed - List type required below <input type="checkbox"/> Area to be barricaded with warning signs installed <input type="checkbox"/> Approved 2-way radio on site <input type="checkbox"/> Additional instructions, conditions and/or requirements listed below met <input type="checkbox"/> Adequate ventilation provided when welding in confined spaces (See Confined Space Specialty Form) <input type="checkbox"/> Piping on which hot work is being performed is isolated with either blanking/blinding, air gapping or double blocked and bled <input type="checkbox"/> Atmospheric testing is conducted to ensure that the hot work area is at 0% LEL Note: Hot work must begin within 30 minutes after the hot work permit is issued, or revalidated if greater than 30 minutes has elapsed.									
Work Area Isolation & Traffic Control Yes No <input type="checkbox"/> Level 1 (Use a minimum of four cones or delineators per work area) <input type="checkbox"/> Level 2 (Barrier tape on delineators with flags and the use of field vehicles) <input type="checkbox"/> Level 3 (Plastic Security Fencing and/or Type 2 or 3 barricades) <input type="checkbox"/> Level 4 (DOT signage and protection devices per Manual on Uniform Traffic Control Devices (MUTCD))										
List additional hazards, equipment or site precautions, special requirements or instructions:										

Approvals			
SECTION C	Form Acceptance <i>I understand that this Form will be in effect until job completion, but will not extend beyond the end of the shift (not to exceed a 12-hour period), in which the Form was issued.</i>		
	<table border="1"> <tr> <td>Permit Holder:</td> <td>Date:</td> </tr> </table>	Permit Holder:	Date:
	Permit Holder:	Date:	
	<i>If all requirements and conditions of this Form remain in effect, the work can be performed safely.</i>		
	<table border="1"> <tr> <td>Permit Issuer:</td> <td>Date:</td> </tr> </table>	Permit Issuer:	Date:
	Permit Issuer:	Date:	
	<table border="1"> <tr> <td>Permit Approver (if required)</td> <td>Date:</td> </tr> </table>	Permit Approver (if required)	Date:
	Permit Approver (if required)	Date:	
	Form Closure <i>All work has been completed in accordance with this Permit and the site has been left in a safe and satisfactory condition. I understand that by signing below this Form will be closed and no longer valid.</i>		
	<table border="1"> <tr> <td>Date:</td> <td>Date:</td> </tr> </table>	Date:	Date:
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<table border="1"> <tr> <td>Title</td> <td>Title</td> </tr> </table>	Title	Title	
Title	Title		
<table border="1"> <tr> <td>Company</td> <td>Company</td> </tr> </table>	Company	Company	
Company	Company		
<table border="1"> <tr> <td>Signature</td> <td>Signature</td> </tr> </table>	Signature	Signature	
Signature	Signature		

APPENDIX B

HEAT AND COLD STRESS HAZARDS

Site Safety and Health Plan

Table B-1 Heat Stress Symptoms, Treatment and Prevention

Heatstroke and Heat Hyperpyrexia	
Symptoms	Heatstroke: (1) hot dry skin; red, mottled, or cyanotic; (2) high and rising core temperature, 40.5°C or over; (3) brain disorders; mental confusion, loss of consciousness, convulsions, or coma, as core temperature continues to rise. Fatal if treatment delayed. Heat Hyperpyrexia: milder form; core temperature lower; less severe brain disorders; some sweating.
Treatment	Heatstroke: immediate and rapid cooling by immersion in chilled water with massage, or by wrapping in wet sheet with vigorous fanning with cool dry air. Avoid overcooling. Treat shock if present. Heat hyperpyrexia: less drastic cooling required if sweating still present and core temperature <40.5°C.
Prevention	Medical screening of workers. Selection based on health and physical fitness. Acclimatization for 8 to 14 days by graded work and heat exposure. Monitoring workers during sustained work in severe heat.
Heat Syncope	
Symptoms	Fainting while standing erect and immobile in heat.
Treatment	Remove to cooler area. Recovery prompt and complete.
Prevention	Acclimatization. Intermittent activity to assist venous return to heart.
Heat Exhaustion	
Symptoms	(1) Fatigue, nausea, headache, giddiness; (2) skin clammy and moist, complexion pale, muddy, or with hectic flush; (3) may faint on standing, with rapid thready pulse and low blood pressure; (4) oral temperature normal or low but rectal temperature usually elevated (37.5 to 38.5°C). Water-restriction type: urine volume small, highly concentrated. Salt-restriction type: urine less concentrated, chlorides less than 3 g/liter.
Treatment	Remove to cooler environment. Administer salted fluids by mouth or give intravenous infusions of normal saline (0.9 percent) if patient is unconscious or vomiting. Keep at rest until urine volume and salt content indicate that salt and water balances have been restored.
Prevention	Acclimatize workers using a breaking-in schedule for 1 or 2 weeks. Supplement dietary salt only during acclimatization. Ample drinking water to be available at all times and to be taken frequently during workday.
Heat Cramps	
Symptoms	Painful spasms of muscles used during work (arms, legs, or abdominal). Onset during or after work hours.
Treatment	Salted liquids by mouth, or more prompt relief by intravenous infusion.
Prevention	Adequate salt intake with meals. In un acclimatized men, provide salted (0.1 percent) drinking water.

Heat Rash

Symptoms	Profuse tiny raised red vesicles (blister like) on affected areas. Pricking sensations during heat exposure.
Treatment	Mild drying lotions. Skin cleanliness to prevent infection.
Prevention	Cooled sleeping quarters to allow skin to dry between heat exposures.

Heat Fatigue — Transient

Symptoms	Impaired performance of skilled sensorimotor, mental, or vigilance tasks, in heat.
Treatment	Not indicated unless accompanied by other heat illness
Prevention	Acclimatized and training for work in the heat.

Table B-2 Cold Stress Symptoms, Treatment and Prevention

Frostbite	
Symptoms	Pale, waxy-white, hard, numb skin and tissue.
Treatment	<p>Move person to warm, dry area. Remove wet or tight clothing that may cut off blood flow to the affected area.</p> <p>DO NOT rub the affected area. Gently place the affected area in a warm (105°F) water bath and monitor the water temperature to slowly warm the tissue. Warming takes about 25-40 minutes.</p> <p>After the affected area has been warmed, it may become puffy and blister, and have a burning feeling or numbness. When normal feeling, movement, and skin color has returned, the affected area should be dried and wrapped to keep it warm</p> <p>If there is a chance that the affected area may get cold again, do not warm the skin; this can cause severe tissue damage.</p> <p>Seek medical attention as soon as possible.</p>
Prevention	Dress appropriately. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (i.e., polypropylene). Take frequent breaks in warm, dry shelters. Change wet clothes as soon as possible. Perform work during the warmest part of the day. Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
Impending Hypothermia	
Symptoms	Skin may become pale, numb, and waxy. Muscles become tense. Fatigue and weakness begins to show. Body's core temperature drops to or below 95°F.
Treatment	<p>Move the person to a warm, dry area. DO NOT leave the person alone. Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.</p> <p>Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.</p> <p>Have the person move their arms and legs to create muscle heat. If they are unable to do so, place warm bottles or hot packs in the arm pits, groin, neck, and head areas DO NOT rub the person's body or place them in a warm water bath – this may stop the heart.</p>
Prevention	Dress appropriately. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (i.e., polypropylene). Take frequent breaks in warm, dry shelters. Change wet clothes as soon as possible. Perform work during the warmest part of the day. Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
Mild Hypothermia	

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Symptoms	Uncontrolled shivering begins. The individual is still alert, but movement becomes less coordinated and some pain and discomfort exists. The body's core temperature drops to 93.2°F.
Treatment	<p>Call for emergency help (ambulance or 911).</p> <p>Move the person to a warm, dry area. DO NOT leave the person alone.</p> <p>Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.</p> <p>Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.</p> <p>Have the person move their arms and legs to create muscle heat. If they are unable to do so, place warm bottles or hot packs in the arm pits, groin, neck, and head areas DO NOT rub the person's body or place them in a warm water bath – this may stop the heart.</p>
Prevention	Dress appropriately. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (i.e., polypropylene). Take frequent breaks in warm, dry shelters. Change wet clothes as soon as possible. Perform work during the warmest part of the day. Avoid exhaustion or fatigue because energy is needed to keep muscles warm.

Severe Hypothermia

Symptoms	The skin becomes cold and may appear bluish in color. The individual is weak and uncoordinated. Speech is slurred, and the victim appears exhausted, denies problem, and may resist help. Gradually, there is a loss of consciousness, with little or no breathing occurring. The individual may be rigid and appear dead. Body's core temperature drops below 87.8°F.
Treatment	<p>Call for emergency help (ambulance or 911).</p> <p>Check for pulse and breathing. If neither is present, begin CPR and mouth-to-mouth resuscitation. Continue until medical help arrives. Never give up on a victim.</p> <p>Move the person to a warm, dry area. DO NOT leave the person alone.</p> <p>Remove any wet clothing and replace with warm, dry clothing or wrap the person in blankets.</p> <p>Have the person drink warm, sweet drinks (sugar water or sports-type drinks) if they are alert. Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.</p> <p>Have the person move their arms and legs to create muscle heat. If they are unable to do so, place warm bottles or hot packs in the arm pits, groin, neck, and head areas DO NOT rub the person's body or place them in a warm water bath – this may stop the heart.</p>

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Prevention Dress appropriately. Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (i.e., polypropylene). Take frequent breaks in warm, dry shelters. Change wet clothes as soon as possible. Perform work during the warmest part of the day. Avoid exhaustion or fatigue because energy is needed to keep muscles warm.

**APPENDIX C
HEALTH HAZARD QUALITIES
OF CHEMICAL HAZARDS**

Site Safety and Health Plan

Table C -1 Health Hazard Qualities of Chemical Hazards

Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
Acetone	1,000 (2,400 mg/m ³)	1,000 (2,400 mg/m ³)	2,500 [10% LEL]	NA	9.69	Colorless liquid with a fragrant, mint-like odor. Irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis.
Aldrin	0.25 mg/m ³	0.25 mg/m ³	0.25 mg/m ³	0.017	NA	White crystalline solid with a mild chemical odor. Binds to soil and can become airborne with soil disturbance. Irritation eyes, nose, throat; headache, dizziness, nausea and vomiting, loss of coordination, coma, respiratory depression.
Ammonia	50 (35 mg/m ³)	25 (18 mg/m ³)	300	NA	10.18	Colorless gas with a pungent, suffocating odor. Irritation eyes, nose, throat; dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema; pink frothy sputum; skin burns, vesiculation; liquid: frostbite.
Antimony	0.5 mg/m ³	0.5 mg/m ³	50 mg/m ³			Noncombustible solid in bulk form, but a moderate explosion hazard in the form of dust when exposed to flame. Causes irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; unable to smell properly.
Arsenic (Inorganic, as As)	0.01 mg/m ³ [29CFR 1910.1018] ^{r/} [8 CCR 5214] ^{g/}	0.01 mg/m ³	5 mg/m ³	NA	NA	Silver-gray or tin-white, brittle, odorless solid. Causes ulceration of the nasal septum, dermatitis, gastrointestinal disturbances, nervous system degeneration, respiratory irritation, skin spots, and lung and lymphatic cancer. Mutagen, experimental teratogen, and carcinogen.
Barium (soluble compounds as Ba)	0.5 mg/m ³	0.5 mg/m ³	50 mg/m ³	NA	NA	White, odorless solid, although appearance and properties vary with specific compounds. Irritates eyes, skin, and upper respiratory tract. Causes skin burns, gastroenteritis, muscle spasms, potassium decrease, slow pulse, and momentary arrhythmia.
Benzene	1 [29 CFR 1910.1028] ^{r/} [8 CCR 5218] ^{g/}	0.5 [skin]	500	4.7	9.24	Colorless to light-yellow liquid (solid<42°F) with an aromatic odor. Eye, nose, skin, and respiratory system irritant. Causes giddiness, headaches, nausea, staggered gait, fatigue, anorexia, exhaustion, dermatitis, bone marrow depression, and leukemia. Mutagen, experimental teratogen, and carcinogen.
Beryllium	0.002 mg/m ³	0.002 mg/m ³	4 mg/m ³	NA	NA	Hard, brittle, gray-white, metallic solid. Irritates lungs, skin, eyes, and mucous membranes. Causes berylliosis, anorexia, low-weight, weakness, chest pain, coughing, blue skin, clubbed fingers, pulmonary insufficiency, dermatitis, and lung cancer. Mutagen and carcinogen.
Biphenyl	0.2	0.2	100	NA	7.95	Colorless to pale-yellow solid with a

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Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
	(1 mg/m ³)	(1 mg/m ³)	mg/m ³			pleasant, characteristic odor. Irritation eyes, throat; headache, nausea, lassitude (weakness, exhaustion), numb limbs; liver damage.
Cadmium (dust)	0.005 mg/m ³ ^{n/} [29CFR 1910.1027] ^{r/} [8 CCR 1532 & 5207] ^{g/}	0.01 mg/m ³ ^{i/} 0.002 mg/m ³ ^{h/}	9 mg/m ³	NA	NA	Silver-white, blue-tinged, lustrous, odorless, metallic solid. Causes pulmonary edema, shortness of breath, coughing, chest tightness/pain, loss of sense of smell, chills, muscle aches, headaches, nausea, vomiting, diarrhea, mild anemia, and prostatic and lung cancer. Also attacks kidneys. Mutagen, experimental teratogen, and carcinogen.
Carbon Disulfide	20 (30) [ceiling] (100) [30-min max peak]	1 (3 mg/m ³) [skin]	500	NA	10.08	Colorless to faint-yellow liquid with a sweet ether-like odor. Dizziness, headache, poor sleep, lassitude (weakness, exhaustion), anxiety, anorexia, weight loss; psychosis; polyneuropathy; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; kidney, liver injury; eye, skin burns; dermatitis; reproductive effects.
Chlordane	0.5 mg/m ³	0.5 mg/m ³	NA	NA	NA	Amber, viscous liquid with a mild, pungent odor. Headaches, irritability, confusion, weakness, vision problems, vomiting, stomach cramps, diarrhea, and jaundice have occurred in people who breathed air containing high concentrations of chlordane or accidentally swallowed small amounts of chlordane. Large amounts of chlordane taken by mouth can cause convulsions and death.
Chromium (metal)	1 mg/m ³	0.5 mg/m ³	250 mg/m ³	NA	NA	Blue-white to steel gray, lustrous, brittle, hard, odorless, metallic solid. Irritates eyes, skin, and respiratory system. Causes lung fibrosis.
Chromium (II) and (III) Compounds (as Cr)	0.5 mg/m ³	0.5 mg/m ³	250 mg/m ³ (I I) 25 mg/m ³ (III)	NA	NA	Properties vary with compound. Irritates eyes and causes sensitization dermatitis.
Chromium (VI) (water soluble compounds)	0.5 mg/m ³	0.05 mg/m ³	15 mg/m ³	NA	NA	CrO ₃ occurs as dark red, odorless flakes or powder, often used in solution as H ₂ CrO ₄ , which may burst a sealed container due to CO ₂ release. Properties vary with compound. Causes eye, respiratory, and skin irritation. Causes nasal septum perforation, eye injury, conjunctivitis, skin ulcers, sensitization dermatitis, blood cell disorders, liver and kidney damage, and lung cancer. Mutagen and carcinogen.
Cobalt metal (dust and fumes as Co)	0.1 mg/m ³	0.02 mg/m ³	20 mg/m ³	>1 mg/m ³ ^{v/}	NA	Odorless, silver-gray to black, magnetic, somewhat malleable, hard, solid metal. Causes coughing, shortness of breath, wheezing, decreased pulmonary function,

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Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
						dermatitis, low-weight, fibrosis, asthma, and respiratory hypersensitivity. Fumes cause metal fume fever. Suspected carcinogen.
Copper (dust and mists as Cu)	1 mg/m ³	1 mg/m ³	100 mg/m ³	NA	NA	Reddish, lustrous, malleable, and odorless, solid metal. Irritates eyes, nose, skin, and pharynx. Causes a metallic taste, nasal perforation, nausea, vomiting, and dermatitis. In animals, causes anemia and lung, liver, and kidney damage. Experimental teratogen.
DDT	1 mg/m ³	1 mg/m ³	500 mg/m ³	NA	NA	White, crystalline solid with no odor or taste. Nervous system effects including excitability, tremors, and seizures.
Dieldrin	0.25 mg/m ³	0.25 mg/m ³	0.5 mg/m ³	0.041	NA	White crystalline solid with a mild chemical odor. Binds to soil and can become airborne with soil disturbance. Irritation eyes, nose, throat; headache, dizziness, nausea and vomiting, loss of coordination, coma, respiratory depression.
Endrin	0.1 mg/m ³	0.1 mg/m ³	NA	0.018	NA	White or colorless solid. Central nervous system effects including headaches, dizziness, nervousness, confusion, nausea, vomiting, and convulsions.
Ethylbenzene	100 (435 mg/m ³)	100 (435 mg/m ³)	800 [10% LEL]	NA	8.76	Colorless liquid with an aromatic odor. Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma.
bis-(2- Ethylhexyl)phthala te	5 mg/m ³	5 mg/m ³	5,000 mg/m ³	NA	NA	Colorless, oily liquid with a slight odor. Eyes, respiratory system, central nervous system, liver, reproductive system, gastrointestinal tract.
Fluorene	0.1 (0.2 mg/m ³)	0.1 (0.2 mg/m ³)	25	NA	15.70	Nonflammable gas, but an extremely strong oxidizer. Irritation eyes, nose, respiratory system; laryngeal spasm, wheezing; pulmonary edema; eye, skin burns; in animals: liver, kidney damage.
Gasoline	NA	NA	NA	NA	NA	Clear liquid with a characteristic odor. Irritation eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid); possible liver, kidney damage; [potential occupational carcinogen].
Heptachlor	0.5 mg/m ³	0.5 mg/m ³	NA	0.3 mg/m ³	NA	White powder with camphor (mothball) odor. Central nervous system effects including dizziness, confusion, or convulsions.
Hydrogen Sulfide	20 (50) [10-min max peak]	10 (15 mg/m ³) [10-min]	100	0.00001- 0.8 ^{k/}	10.46	Colorless gas with strong odor of rotten eggs. Rapidly fatigues sense of smell. Irritates eyes and respiratory tract. Causes interrupted breathing, coma, convulsions, conjunctivitis, eye pain, tearing, visual intolerance to light, corneal vesicles, dizziness, headaches, fatigue, irritability,

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Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
Isophorone	25 (140 mg/m ³)	4 (23 mg/m ³)	2,000	NA	9.07	insomnia, and gastrointestinal disturbances. Colorless to white liquid with a peppermint-like odor. Irritation eyes, nose, throat; headache, nausea, dizziness, lassitude (weakness, exhaustion), malaise (vague feeling of discomfort), narcosis; dermatitis; in animals: kidney, liver damage.
Isopropyl benzene	50 (245 mg/m ³)	50 (245 mg/m ³)	900 [10% LEL]	NA	8.75	Colorless liquid with a sharp, penetrating, aromatic odor. Irritation eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma.
2-Methyl phenol	5 (22 mg/m ³) [skin]	2.3 (10 mg/m ³)	250	NA	8.93	White crystals with a sweet, tarry odor (a liquid above 88°F). Irritation eyes, skin, mucous membrane; central nervous system effects: confusion, depression, respiratory failure; dyspnea (breathing difficulty), irregular rapid respiration, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage.
4-Methyl phenol	5 (22 mg/m ³) [skin]	2.3 (10 mg/m ³)	250	NA	8.97	Crystalline solid with a sweet, tarry odor (a liquid above 95°F). Irritation eyes, skin, mucous membrane; central nervous system effects: confusion, depression, respiratory failure; dyspnea (breathing difficulty), irregular rapid respiration, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage.
Lead	0.05 mg/m ³ [29 CFR 1910.1025] ^{r/} [8 CCR 5198] ^{g/}	0.05 mg/m ³	100 mg/m ³	NA	NA	Heavy, ductile, bluish-gray, soft metal. Irritates eyes. Causes weakness, exhaustion, insomnia, facial pallor, anorexia, low-weight, malnutrition, constipation, abdominal pain, gastritis, colic, constipation, gingival lead line, anemia, wrist and ankle paralysis, joint pains, tremors, low blood pressure, and kidney disease. Mutagen, experimental teratogen, and suspected carcinogen.
Mercury (alkyl as Hg)	0.01 mg/m ³ 0.04 mg/m ³ [ceiling]	0.01 mg/m ³ [skin]	2 mg/m ³	NA	NA	Appearance and odor vary depending on the specific compound. Silver-white, heavy, odorless, liquid or tin-white ductile, malleable, soft, solid metal. Causes skin tingling, incoordination, joint dysfunction, visual and hearing disturbances, spasticity, jerking limbs, dizziness, salivation, tearing, nausea, vomiting, diarrhea, constipation, skin burns, emotional disturbances, kidney injury, and possible teratogenic effects.
(alky)	0.01 mg/m ³ [ceiling]	0.05 mg/m ³ [skin]	10 mg/m ³	NA	NA	
(elemental and inorganic)	0.025 mg/m ³ [vapor] [skin]	0.025 mg/m ³ [inorg] [skin]	10 mg/m ³	NA	NA	

Site Safety and Health Plan

Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
Methane	NA	NA	NA	NA	NA	Colorless, odorless, tasteless gas. Simple asphyxiant, which diminishes the amount of oxygen in the air that is breathed. Causes rapid respiration, air hunger, diminished mental alertness, impaired muscular coordination, faulty judgment, depressed sensations, emotional instability, fatigue, nausea, vomiting, collapse, unconsciousness, convulsions, deep coma, and death. Dangerous fire and explosion hazard when exposed to hear or flame.
Methylene chloride	25	50		160-620		Colorless liquid with mild, sweet odor. Irritation skin. If you breathe in large amounts of methylene chloride you may feel unsteady, dizzy, and have nausea and a tingling or numbness of your finger and toes. A person breathing smaller amounts of methylene chloride may become less attentive and less accurate in tasks requiring hand-eye coordination.
Molybdenum (soluble compounds as Mo)	5 mg/m ³	5 mg/m ³	1,000 mg/m ³	NA	NA	Appearance and odor vary with specific compound. In animals, irritates eyes, nose, and throat, and causes anorexia, incoordination, shortness of breath, anemia, and kidney disorders. Mutagen and experimental teratogen.
Naphthalene	10 (50 mg/m ³)	10 (50 mg/m ³)	250	NA	8.12	Colorless to brown solid with an odor of mothballs. Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage.

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Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
Nickel metal and other compounds (as Ni)	1 mg/m ³	0.015 mg/m ³	10 mg/m ³	NA	NA	Metal: Lustrous, silvery, odorless solid. Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]
Octane	500 (2350 mg/m ³)	75 (350 mg/m ³) (385) [ceiling] (1,800 mg/m ³) [ceiling 15-min]	1,000 [10% LEL]	NA	9.82	Colorless liquid with a gasoline-like odor. Irritation eyes, nose; drowsiness; dermatitis; chemical pneumonitis (aspiration liquid); in animals: narcosis.
Selenium	0.2 mg/m ³	0.2 mg/m ³	1 mg/m ³	0.0002 mg/m ³ ^{n/}	NA	Amorphous or crystalline, red to gray solid. Irritates eyes, skin, nose, and throat. Causes visual disturbances, pallor, nervousness, depression, headaches, chills, fever, shortness of breath, bronchitis, metallic taste, garlic breath, gastrointestinal disturbances, dermatitis, brittle hair and nails, and eye and skin burns. In animals, causes cirrhosis and localized death of liver tissue, and kidney and spleen damage. Experimental teratogen and questionable carcinogen.
Silver (metal dust and soluble compounds, as Ag)	0.01 mg/m ³	0.01 mg/m ³	10 mg/m ³	NA	NA	Metal: White, lustrous solid. Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance.
Thallium (soluble compounds, as Tl)	0.1 mg/m ³ [skin]	0.1 mg/m ³ [skin]	15 mg/m ³	NA	NA	Appearance and odor vary depending upon the specific soluble thallium compound. Nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs.
Toluene	200 (300) [ceiling] (500) [10-min max peak]	100 (375 mg/m ³)	500	NA	8.82	Colorless liquid with sweet, pungent, benzene-like odor. Irritates eyes and nose. Causes fatigue, weakness, dizziness, headaches, hallucinations or distorted perceptions, confusion, euphoria, dilated pupils, nervousness, tearing, muscle fatigue, insomnia, skin tingling, dermatitis, bone marrow changes, and liver and kidney damage. Mutagen and experimental teratogen.
Toxaphene	0.5 mg/m ³	0.5 mg/m ³	200 mg/m ³	0.14	NA	Amber, waxy solid with turpentine odor. High doses can cause lung, nervous system, and kidney damage.
Trichloroethylene	100 ^{n/}	50 ^{n/}	NA	100	NA	Colorless liquid with mild, sweet odor and sweet, burning taste. Breathing small amounts may cause headaches, lung

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Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
						irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage. Drinking large amounts may cause nausea, liver damage, unconsciousness, impaired heart function, or death. Drinking small amounts for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear. Skin contact for short periods may cause skin rashes.
1,2,4-Trimethylbenzene	NA	25 (125 mg/m ³)	NA	NA	8.27	Clear, colorless liquid with a distinctive, aromatic odor. Irritation eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, fatigue, dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid).
1,3,5-Trimethylbenzene	NA	25 (125 mg/m ³)	NA	NA	8.39	Clear, colorless liquid with a distinctive, aromatic odor. Irritation eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid).
Vanadium (dust)	0.5 mg V ₂ O ₅ /m ³ [ceiling] [resp]	0.05 mg V/m ³ [15- min]	35 mg/m ³			Yellow-orange powder or dark-gray, odorless flakes dispersed in air. Irritation eyes, skin, throat; green tongue, metallic taste, eczema; cough; fine rales, wheezing, bronchitis, dyspnea (breathing difficulty).
Xylene (o-, m-, and p-isomers)	100 (435 mg/m ³)	100 (435 mg/m ³)	900	0.05-200 ^{f/}	8.56 8.44 (p)	Colorless liquid with aromatic odor. P-isomer is a solid <56°F. Irritates eyes, skin, nose, and throat. Causes dizziness, drowsiness, staggered gait, incoordination, irritability, excitement, corneal irregularities, conjunctivitis, dermatitis, anorexia, nausea, vomiting, abdominal pain, and olfactory and pulmonary changes. Also targets blood, liver, and kidneys. Mutagen and experimental teratogen.
Zinc (zinc oxide)	5 mg/m ³ ^{m/} (10 mg/m ³) ^{s/}	5 mg/m ³ ^{m/} (15 mg/m ³) ^{s/} [ceiling]	500 mg/m ³	NA	NA	Fine, white or yellowish, odorless particulate. Irritates respiratory system. Causes metallic taste, cough, chills, fever, tight chest, headaches, rales, blurred vision, muscle aches, nausea, vomiting, dry throat, weakness, lower back pain, exhaustion, fatigue, vague discomfort, shortness of

Site Safety and Health Plan

Compound	PEL ^{a/} (ppm)	TLV ^{b/} (ppm)	IDLH ^{c/} (ppm)	Odor Thresho ld ^{d/} (ppm)	Ionization Potential ^{e/} (eV)	Physical Description/Health Effects/Symptoms ^{f/}
						breath, and decreased pulmonary function. Fumes cause metal fume fever. Mutagen and experimental teratogen.

a/ PEL = Permissible Exposure Limit. OSHA-enforced average air concentration to which a worker may be exposed for an 8-hour workday without harm. Expressed as parts per million (ppm) unless noted otherwise.

b/ TLV = Threshold Limit Value - Time-Weighted Average. Average air concentration (same definition as PEL, above) recommended by the American Conference of Governmental Industrial Hygienists (ACGIH), 2001 *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices*.

c/ IDLH = Immediately Dangerous to Life or Health. Air concentration at which an unprotected worker can escape without debilitating injury or health effects. Expressed as ppm unless noted otherwise. IDLH values are published in the *NIOSH Pocket Guide to Chemical Hazards*, June 1997.

d/ When a range is given, use the highest concentration.

e/ Ionization Potential, measured in electron volts (eV), used to determine if field air monitoring equipment can detect substance. Values are published in the *NIOSH Pocket Guide to Chemical Hazards*, June 1997.

f/ Olfactory fatigue has been reported for the compound and odor may not serve as an adequate warning property.

g/ Refer to expanded rules for this compound in Title 8 of the California Code of Regulations

h/ Respirable fraction.

i/ Total dust.

j/ (ceiling) = Ceiling concentration which should not be exceeded at any time.

k/ Based on exposure limits for petroleum distillates (petroleum naphtha).

l/ Irritation threshold.

m/ Based on fume.

n/ NIOSH recommends reducing exposure to the lowest feasible concentration, and limiting the number of workers exposed.

o/ Based on selenium oxide.

p/ Indicates that the IDLH value was based on 10% of the lower explosive limit for safety considerations, even though relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations (*NIOSH Pocket Guide to Chemical Hazards*, June 1997).

q/ Based on dust.

r/ Refer to expanded rules for this compound in the Code of Federal Regulations.

s/ Total dust containing no asbestos and less than 1% crystalline silica.

t/ Descriptions and toxic properties reflect chemicals in their concentrated or pure form. Chemical concentrations at the site are mostly expected to be in the parts per billion or parts per million range.

u/ Based on coal tar pitch volatiles

APPENDIX D
EVACUATION MAP

INSERT MAP HERE

APPENDIX E JOURNEY MANAGEMENT PLAN

Journey Management Plan for Non-Professional Drivers

This Journey Management Plan (JMP) is intended for non-professional drivers in passenger vehicles or company vehicles for trips to job sites.

Preplanning

- Ensure the vehicle has been maintained per the manufacturer's requirements and that tires have proper pressure and are in good condition and your vehicle fluid levels (wiper, oil, steering, washer fluid, etc) are of proper level.
- Check the weather forecast and make alternate arrangements if it may not be safe to travel
- Plan your primary and backup routes and identify safe rest stops as needed.
- Get a good night's rest and do not take any medication that can affect your driving
- Identify any emergency numbers or contacts
- Ensure you have an emergency/safety car kit

Departure

- Perform walk-around inspection of the vehicle, tires and ensure proper condition
- Put on your seatbelt
- Turn on the headlights
- If in use, set any navigation aids and do not make adjustments, or look at a map while the vehicle is moving
- If a navigation aid (GPS) is used, it must be mounted and should have voice guided directions, preferably audible vs. visual

During the trip

- Do not exceed the speed limit or safe driving speed
- Do not use mobile phones or other devices that can distract your attention
- Do not allow unauthorized passengers into the vehicle
- If at any time you become drowsy or tired, stop and get necessary rest before resuming the trip

Specifics

- Start Location: _____ Departure
Time _____
- Destination Location: _____ Arrival
Time _____

Employees cannot exceed 10 hours of driving, or a combination of work/drive of 14 hours in one day and must make alternative arrangements with their Project Manager.

I have read and understand what I must do to adhere to this Journey Management Plan:

Name: _____

Date: _____

Employees

Signature: _____

—

APPENDIX F PROGRAMS



Fueling and Service Technologies

SUBCONTRACTORS POLICY

12.1 Introduction

It is the responsibility of each Subcontractor to adhere to the requirements of this plan. Each Subcontractor shall incorporate safety into the planning of each task, assure the safety of their personnel, provide all safety devices necessary for their employees, establish a safe and drug-free work environment, and confirm that their equipment meets the applicable safety standards. Each Subcontractor is responsible for any actions of their personnel that may endanger or otherwise expose other participants to potential hazards on the project site.

The Subcontractor will be solely responsible for all construction means, methods, techniques, sequences and procedures. This includes all safety precautions and programs in connection with the work, as well as coordinating all portions of the work. Each lower-tier subcontractor is likewise required to be responsible for all safety precautions and programs in connection with the work under the Subcontractor's contractual agreement.

Each Subcontractor will submit a written safety program in compliance with the Project safety requirements for review. This safety program will meet or exceed all applicable Project safety requirements. Accident prevention is a continuing process, not a fixed program. The Project recognizes that Subcontractors may have their own specific safety requirements. It is, therefore, each subcontractor's responsibility to identify to the Project how their programs will comply with the guidelines set forth in this plan before beginning work on the project site.

While it is the responsibility of each individual to work safely, it is ultimately each Subcontractor's management's responsibility to see that all safety and health policies and practices are followed and enforced. Active participation by each subcontractor's personnel in safety and health programs established for the Project is mandatory. Each Subcontractor's line management must demonstrate to their employee's complete support and continuing involvement in all safety, and health policies and efforts.

Failure to fully carry out the responsibility to work safely and participate in the safety and health programs can result in removal of individuals from the Project at the direction of the Project Manager.

Safety is not to be compromised for production. Safety must be considered an integral part of the planning process. The Project's goal, along with the each subcontractor's goal, is to eliminate accidents. Each Subcontractor's line management is charged with the responsibility for developing, implementing, and enforcing the Safety and Health programs and policies established for the Project.

12.2 Subcontractor's Safety and Health Program

A written safety program that complies with the requirements of this Plan must be submitted within five calendar days after award for review and approval by the Project Manager.

Each Subcontractor will budget to establish and maintain a safety and health program that meets or exceeds the requirements contained in this Plan and the applicable sections of 29 Code of Federal Regulation (CFR) 1926.

Each Subcontractor is solely responsible for carrying out their safety and health program. Therefore, the Project requires that each Subcontractor designate a competent on-site employee to carry out this responsibility. Along with the Subcontractor's line managers, this employee is directly responsible for ensuring that the Subcontractor's program and employee actions comply with the minimum safety standards required by this document.

12.2.1 Personnel Experience, Knowledge, and Skill

Each Subcontractor must commit to using a workforce on the Project that has the ability to do work safely and efficiently. Each individual associated with the Project shall possess the experience, knowledge, skills, and abilities necessary to discharge his or her responsibilities. Line managers must ensure that their workers are competent to

Site Safety and Health Plan

safely accomplish the work through the hiring and training processes. Line management must ensure that training and qualification requirements are flowed down to their personnel, and are responsible for their performance.

12.2.2 Equipment and Machinery

Subcontractor employees shall be trained in the operation, inspection, and maintenance of the equipment; and the safety features and procedures to be utilized during operation, inspection, and maintenance of the equipment. This training shall be based on the equipment operating manual and the hazard analysis for the activity.

12.2.3 Workers

All employees and on-site subcontractors are responsible for becoming knowledgeable of and maintaining awareness of the hazards associated with their work, for contributing to the formulation of hazard controls, and for conducting their work safely in accordance with those controls. They are encouraged to identify ES&H issues in their workplace, to work with their management to provide input for improvements and to resolve concerns, and to exercise stop-work authority in cases of imminent danger to health and safety of workers or the public, or threat to the environment.

12.3 Subcontractor Responsibilities

12.3.1 Expectations

The safety procedures established for the Project are based on anticipated work activities. Future work activities may require the development of additional safety procedures or clarification of existing policies and procedures. It is the responsibility of each employee to work in a safe manner. However, it is ultimately the Subcontractor's line management's responsibility to see that all safety and health rules and practices are followed.

Safety is never to be sacrificed for production. The safety goal for this Project is to eliminate the actions that cause accidents or illness.

Each Subcontractor has the explicit responsibility to perform work in accordance with this plan. Subcontractors' line managers are accountable for fulfilling the responsibilities listed in this section, in addition to compliance with their own company requirements and attending meetings to discuss or resolve safety issues. A Subcontractor with 40 or more total employees on-site must have a dedicated safety representative assigned to the site full time to carry out the duties described below. A Subcontractor with fewer than 40 employees on-site must delegate these duties to an on-site supervisor (who will be referred to as a safety designee).

12.3.2 Field Manager or Supervisors

Each Subcontractor's Field Managers and Supervisors have the responsibility for overall training, control, and conduct of personnel on their crew. As first-line supervisors, their role in the safety and health program is crucial because they set standards by which their employees work.

The field supervisors' responsibilities include, but are not limited to:

- Conducting task-specific safety training,
- Conducting daily safety inspections,
- Conducting safety sampling,
- Conducting toolbox safety meetings
- Keep the Project Manager apprised of any safety-related problems that have or may develop.
- Conduct investigations of all accidents and incidents and submit reports to the Project Manager.
- Compile OSHA statistical information and report this information to the Project

Site Safety and Health Plan

12.4 Orientation

12.4.1 Introduction

All personnel will be required to attend the Project orientation provided by the Project Manager before working at the Project site. This shall include each Subcontractor's Owners and Officers.

Each Subcontractor's Manager shall ensure that their employees are briefed on what they can expect and what is expected of them on this project site.

Newly employed, promoted, and/or transferred personnel shall be fully instructed in the safety practices required by their assignments. All employees must receive orientation prior to starting work. Visitors must also receive orientation prior to leaving the office areas or be escorted while on the site. The initial indoctrination is to be performed by the Subcontractor's safety designee or dedicated safety representative. The orientation is required before an employee can enter the Project site or begin work.

In addition to the Subcontractor's safety and health policies, the orientation must include:

- Employee safety requirements and policies specific to the Project;
- Site-specific safety and health requirements ;
- Permitting procedures (if applicable), including work permits, hot work permits, etc.;
- Hazard communication on a multi-employer work site;
- Emergency and medical procedures; and
- Other topics as circumstances require.

All employees will complete an Orientation Acknowledgment form at the end of the orientation. A copy will be submitted to the Project in order for the employee to obtain approval to enter the Project site or begin work.

12.4.2 Contractual Requirements

Fueling & Service Technologies, Inc. is committed to providing a safe workplace for the workers assigned to the Project, promoting high standards of employee health, and fostering productivity that satisfies their Quality expectations. Consistent with the intent and spirit of this commitment, the Project has established a substance abuse testing specification for the Project with the goal of maintaining a work environment that is free from the effects of the use of illegal drugs and alcohol.

This specification is not intended as a substitute for the Subcontractor's complete written substance abuse policy. Normally, such policies include other important features, including, but not limited to, an employee education and awareness program, a supervisor-training program, and an employee assistance program.

All Subcontractors must have and enforce a written Substance Abuse Program incorporating the testing requirements, term, and conditions set forth in this plan. This plan is applicable to all employees, current and prospective, in order to be eligible to perform work at the project site. The Subcontractor must comply with this plan. Suppliers, vendors, and visitors are subject to confirmation of their abstinence from the possession or use of substances indicated in this plan. A copy of the substance abuse program must be submitted to the Project for approval prior to commencement of work on the project site.

The Substance Abuse Program must apply to the employees of the Subcontractors and subcontractors of any tier working on the project site. This includes workers, new hires, replacement workers, and supervisory personnel. No employee or prospective employee of a Subcontractor shall be permitted to work on the project site unless such employee has submitted to testing as required by this plan and unless the results of such testing are negative as hereinafter defined. Subcontractor must provide the Project with a Monthly Summary Report of the Substance Abuse Program compliance.

All Contractors must train their respective employees in methods that will allow them to recognize substance abusers. Supervisory employees of the Subcontractor or its subcontractor shall be trained to take action, and to confront a substance abuser in a manner consistent with generally accepted safety training procedures.

Site Safety and Health Plan

The costs of implementing the Substance Abuse Program shall be borne by each respective Subcontractor affected by this plan.

The Project reserves the right to audit any substance abuse program required by this plan to verify compliance results within 24 hours of the Project's notification of intent to audit. The Project shall have free right of access to all relevant records of the subcontractor and their subcontractor's and suppliers for this purpose, provided such record disclosures are within the scope of guidelines pertaining to confidentiality of employee records.

The Contractors' pre-engagement employees who receive a positive test result shall immediately leave the project site. Transportation of employees receiving a positive test result is the direct responsibility of the employing Subcontractor. Furthermore, pre-engagement employees receiving a positive test result shall not be permitted to return to the project site earlier than 90 days from the date of the positive test. At that time the employee may begin the process outlined by this specification again.

If a current employee testing positive qualifies and successfully completes the Subcontractor assessment/substance abuse treatment program, a program approved by the Project, the employee will be exempt from the 90-day requirement if said employee agrees to the following:

- Submit to substance abuse testing as described in this specification and receive a negative test result; and
- Agree to random substance abuse testing not to exceed one test per 500 work hours over a 3-year period from the date of return to the project site.

12.5 Short Service Employee

Short Service Employees (SSEs) must be oriented to the company under close supervision, and should receive regular retraining. They also need a mentor, or an experienced employee that the new employee can assist, observe, question and emulate, and who will in turn provide feedback and direction.

Preparation for dealing with Short Service Employees must begin in the Human Resources Department. Human Resources must inform the superintendents of new SSEs assigned to their job at least 24 hours in advance. This will allow the superintendent to allot time for the SSEs orientation and assign them a supervisor to meet with at least one hour prior to the start of each shift.

You will also need a Short Service Employees Designation System. The purpose is to make the SSE more visible to other workers on the jobsite. This will encourage them to observe the SSE worker more closely in critical situations. Some methods might include:

- A hardhat of highly visible color
- Highly visible hardhat stickers
- An orange highway worker's vest
- Other approved system

The supervisor's responsibilities are slightly more complicated than just leading a craftsman. He will personally conduct a site orientation and set performance goals before they are allowed to start work. He must approve of and utilize the approved SSE Designation System and assign each SSE a mentor. The supervisor would be well advised to meet with the mentors at the end of each shift to review the performance of the assigned SSEs.

The mentor must follow his supervisor's directions regarding assigned SSEs. He should take the time to review the Job Hazard Analysis for each critical task to be performed that day. His main job is to closely observe the SSE for application of safety techniques to craft skill and provide a high level of direction in the form of hands-on suggestions and other performance feedback. He will also meet with the supervisor to review the performance of the SSE.

For this to work, the Short Service Employee must make every effort to assist, observe, question and emulate his or her mentor. It will tough for self starters, but they must refrain from performing non-assigned tasks and always use the SSE Designation System. Wearing the appropriate Personal Protective Equipment (PPE) and following the safety policy will often be the biggest challenge. Those who can demonstrate ability and competency in the assigned tasks will be gratifying, but rare.

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In the safety profession, we say, "What gets measured is what gets done." In managing Short Service Employees, supervisors must measure the critical tasks, those which are essential functions, more frequently. They are sufficiently important to the time line, or are non-typical for the company; which creates unfamiliarity with the procedures. Of course, any task which may present a significant risk of accident or injury must also be covered fully.

The best beginning for your Short Service Employees is the Safety Council's Basic Orientation Plus and our corresponding computer and web based training. In today's world, most people learn better from computers than from any other source. Let the Safety Council help bring your new ones up to speed.

Fueling and Service Technologies

SHORT SERVICE EMPLOYEE GUIDELINE

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SHORT SERVICE EMPLOYEE (SSE) FORM

Short Service Employee form must be completed and submitted to the FASTECH Project Manager for approval at least 24 hours prior to the arrival of the SSE to the Job Site.

Contractor Name: _____ Request Date: _____

Site and Number: _____

Site Address: _____

SSE Name: _____

Date of Employment: _____ Years Experience: _____

Current Job Title: _____ Experience in Present Position: ____ Yrs ____ Mos

1. Is the SSE in compliance with the Substance Abuse Program? _____ Yes ____ No

2. Have the QSE policies been reviewed with SSE? _____ Yes ____ No

By Whom? _____

3. Who has been assigned as the SSE Mentor? _____

Mentor's experience in present position (yrs & mos.): _____

4. List all of the training you provided for the SSE: List previous special training:

SSE(s) is identified by: ☐ High Visibility Orange Hard Hat ☐ Approved Visitor Color Hard Hat
☐ SSE Orange Baseball Cap (Must Comply With SSE Expectation)

SSE Crew Requirements:

☐ Single person crew - can not be a SSE _____
Site/Location Contractor Supervisor

☐ 2 to 4 person crew - no more than 1 SSE per crew _____
Site/Location Contractor Supervisor

☐ 5 or more person crew - no more than 20% per crew _____
Site/Location Contractor Supervisor

☐ Exceeding 20% per crew _____
Site/Location Contractor Supervisor

☐ Approved Variance Form by FASTECH Business Unit Manager Attached

Date Variance Form approved: _____

SSE Review and Approval:

Contractor's Management Date: _____

FASTECH Project Manager Date: _____

FASTECH Business Unit Office Manager Date: _____



Fueling & Service Technologies, Inc. Incorporated

FIXED OPEN BLADE KNIFE EXCEPTION PERMIT

Introduction

A permit to utilize a Fixed Open Blade Knife (FOBK) is a formal safety control system designed to prevent accidents, injury to employees, contractors and third parties as well as to property. The permit sets out the work to be done and the precautions to be taken.

Procedure

1. The permit must be completed by the designated safety officer, following discussion and liaison with the person responsible for the task.
2. Only persons competent to carry out work should be issued a permit.
3. All persons affected either directly or indirectly by the permit must be advised in advance of the work commencing.
4. A permit is issued for a designated task and cannot be passed from one person to another.
5. Where two permits are issued, the parties responsible must liaise with one another.
6. Managers and/or staff may not permit any contractor to undertake FOBK work without evidence of an approved FOBK permit. If in doubt, contact the designated safety officer.

Date:

Job No.

Organization:

Permit No.

Work Site (Project Location):

Work Type:

FIXED OPEN BLADE KNIFE EXCEPTION PERMIT

For each task identified, assure that the appropriate HASP, JSA, MSDS, and IIPP are attached, available and have been reviewed.

Task Requiring Use Of
FOBK

Reason for Using FOBK

Trainer

*I have reviewed the work to be performed.
I ACCEPT AND AGREE to the terms and conditions of the permit.*

Applicant: _____ Title: _____

FASTECH PM Approval Name: _____

FASTECH PM Approval Signature: _____ Date: _____

FASTECH Safety Officer: _____ Date: _____

I understand that this Form will be in effect until job completion, but will not extend beyond the end of the shift (not to exceed a 12-hour period), in which the Form was issued.

Name: _____ Title: _____

Company: _____ Department: _____

Signature: _____ Date: _____

Linde Safety Plan
Public Fuelling of Hydrogen Powered Fuel Cell Vehicles
California

Issue 001

Knut Nerheim

Linde SHEQ

Hydrogen Regulations, Codes & Standards

Safety Plan: Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

Linde Gas



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Safety Plan: Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

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1 Scope of Work

Linde has developed a series of standard fuelling station systems to support a broad range of hydrogen powered vehicles to provide fuelling of hydrogen fuel cell vehicles to support the deployment of FCVs. The key vehicle fuelling safety systems are built into each Linde compression, storage and dispensing system (CSD) and all safety systems are verified during shop inspection, during commissioning on-site, and at prescribed station service intervals.

Each station system is inspected, labelled and listed at point of manufacture and each installation site is reviewed to verify that site conditions are suitable to support deployment of fuel cell vehicles, bulk hydrogen storage systems and accept delivery of compressed or liquid hydrogen to support the expected fuelling demand.

2 Organizational Safety Information

2.1 Linde Policies and Procedures

The Linde Group is a leading world class industrial gas and engineering company with almost 48,000 employees working in more than 100 countries worldwide. The strategy of The Linde Group is geared towards sustainable earnings-based growth and focuses on the expansion of its international business with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment—in every one of its business areas, regions and locations across the globe. Linde is committed to technologies and products that unite the goals of customer value and sustainable development.

The Linde Group today has a strong focus for projects that will supply an expanding range of new alternative fuel delivery systems deploying in the next 10 years to reduce our world's reliance on petroleum fuels over the first quarter of the 21st century. Linde is an active participant in public initiatives and partnerships to develop hydrogen as a motor fuel, delivering chemical energy to a developing fleet of fuel cell vehicles that bring high performance, zero emission electric vehicles in our cities. Linde is a leading supplier of hydrogen and hydrogen vehicle fuelling technology, and a common chemical energy carrier that can be fabricated from any form of fossil or renewable energy.

To support the risk management associated with Linde's large portfolio of complex projects, industrial products and services, Linde maintains an integrated management system to ensure the effective and efficient control of all business activities. This system creates a unified approach to process safety, risk management and employee training known as LiMSS. The requirements of Linde's management systems are documented in the LiMSS Library, which is available to all employees as an electronic reference library through the Linde Group intranet. The Linde Group's LiMSS system is comprised of three distinct parts: the LiMSS Library, Traccess and Audit Manager. The LiMSS Library houses electronic copies of Linde's reference materials, procedures and standards. Traccess is the Linde learning management system, and stores both the individual's learning profile and training history. Linde Audit manager evaluation programs track and cover all stages of the audit cycle, and tests employee and location compliance against the best practices defined in the LiMSS Library material.

Safety Plan: Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

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Linde has developed a process safety management program managed by the Linde safety, health, environment and quality (SHEQ) organization with a range of risk assessment processes and tools used to measure and manage the risks associated with hazardous activities. These include: bow-tie analysis, causal tree analysis, due diligence, engineering management of change (EMOC), environmental impact review, failure mode and effects analysis (FMEA), fault tree/event tree analysis, hazard and operability (HAZOP) study, LiMSS audits, layer of protection analysis (LOPA), lone worker assessment, major hazards review program (MHRP), off-site consequences analysis (OCA), permit to work (PTW), project risk review (PRR), project safety review (PSR), Pre-Start-up Safety Review (PSSR) and quantitative risk assessment (QRA).

Linde is proud to be a participating member of the American Chemistry Council's Responsible Care ® Program, a global, voluntary initiative developed autonomously by the chemical industry for the chemical industry. As a Responsible Care ® Company, Linde is committed to continuous improvement of our performance in the fields of environmental protection, occupational safety and health protection, plant safety, product stewardship as well as to continually improve the dialog with our neighbours and the public, independent from legal requirements. Responsible Care Management System (RCMS) is an integrated health, safety, security and environmental management system based on the guiding principles of Responsible Care and the Plan-Do-Check-Act continual improvement cycle. Responsible Care Management System drives results in seven key areas: community awareness and emergency response; security; distribution; employee health and safety; pollution prevention; process safety; and product stewardship

To support outdoor fuelling of hydrogen powered fuel cell vehicles, Linde North America has developed a proprietary outdoor fuelling safety management system. At its core is Linde's use of recognised compressed hydrogen vehicle technical standards from SAE, CSA and others and proprietary expertise and dispenser fuelling protocols that have been used by Linde for hydrogen vehicle development projects for almost a decade.

The Linde outdoor hydrogen vehicle fuelling protocol manages the compression and dispensing of hydrogen to the FCV and utilizes layered risk mitigation system including technologies such as Linde Section Control™ continuous leak testing system that is built into all of the Linde fuelling station equipment designs.

Safety Plan: Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

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2.2 Linde commitment to Safety, Health, Environment, and Quality (SHEQ)

At the Linde Group, we do not want to harm people or the environment. To achieve this vision, we, The Linde Group, are committed to the following:

- Safety, health, care for the environment and quality are a pre-requisite to any business we undertake
- We all take a personal responsibility for SHEQ
- Managers at all levels demonstrate visible leadership
- We apply this policy in our day to day behaviour and decisions
- SHEQ is 100% of our behaviour, 100% of the time

We strive to be leading in SHEQ to meet the following objectives:

- Zero incidents
- Zero harm to communities in which we do business
- Safe, secure and healthy working conditions for all our people and all that work with us
- Supplying safe, compliant and environmentally responsible products and services
- Prevention of pollution to the environment
- Responsible use of natural resources
- Research, development and promotion of technologies, products and services that are sustainable with regard to SHEQ
- Satisfy customer needs and expectations

The Linde Group will

- Comply with all applicable legal, regulatory, internal and industry requirements
- Pro-actively identify, eliminate or minimize potential sources of harm or risk arising from all our activities
- Continuously improve our performance to achieve our objectives
- Share our knowledge and experience in safety, health and care for the environment
- Show our accountability for our performance by regularly measuring, reviewing and reporting
- Require our contractors and partners to manage in line with this policy
- Expect our clients and suppliers to cooperate actively in achieving our objectives
- Provide training, standards, equipment and support to ensure compliance with this policy
- Maintain open communication with our local communities and stakeholders

This policy is a key part of The Linde Group's overall strategy and is reviewed on a regular basis by The Linde Group executive management board.

Safety Plan: Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

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2.3 Hydrogen Experience

Linde's history with hydrogen production and hydrogen application technologies dates back to 1906 when Linde engineers first began to develop a commercial industrial process to separate and purify the constituents of water-gas into hydrogen and carbon monoxide, which became essential feedstock's for the emerging chemicals industry. One hundred years later, hydrogen is safely used in nearly all areas of industry, commerce, science and research, and is important for metals and semi-conductor processing, in gasoline, clean diesel fuel and plastics production, in the manufacturing of electronic components and solar cells. In addition to these historical applications, hydrogen is being proven today as an environmentally friendly chemical energy carrier (fuel) for fuel cell vehicles.

Linde has designed and installed hundreds of hydrogen vehicle fuelling systems to support a wide range of vehicles including buses, light duty road vehicles, and hydrogen fuelled road vehicles from a number of OEMs, factory floor and airport utility vehicles and forklift trucks with hundreds of thousands of fuelling events over the past 10 years.

The Linde outdoor protocol implements the risk mitigation strategy known as Linde Section Control system to actively manage potential leaks in all equipment, outdoor hydrogen lines all the way to the distributed dispenser nozzles.

3 Fuelling Station Project Safety

3.1 Identification of Safety Vulnerabilities (ISV)

The major hazards of hydrogen vehicle fuelling station projects are the flammable nature of hydrogen and the stored energy contained in the station side high pressure storage vessels and the transfer of pressurized hydrogen to the FCV.

The flammable risks associated with the use of hydrogen are managed by site layout of bulk storage and compressor system modules and components, use of the Linde proprietary Section Control leak prevention system, certified components built into the system design, use of certified replacement parts and management of the fuelling station system service program.

The management of the risks associated with hydrogen supply to the distributed H₂ outdoor vehicle fuel dispensing points is based on standard industrial practice, NFPA-55, CGA H-3, CGACGA-H5, NFPA-52 and NFPA 2 technical standards for hydrogen vehicle fuelling, DOT regulations, and the ASME boiler and pressure vessel codes

The risks associated with dispensing hydrogen to vehicles are managed by compliance with advanced technology addressed in NFPA-55 and NFPA 2, and the suite of SAE hydrogen vehicle fuelling standards such as SAE J-2600 covering nozzle and receptacle, hydrogen vehicle dispenser performance standards established by SAE J-2601, and fuel quality standards set by SAE J-2719

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3.2 Risk Management Plan

The management of the risks associated with hydrogen supply to the H35 and H70 vehicle fuelling station is based on standard industrial practice, NFPA 55, NFPA 2, DOT regulations, and the ASME boiler and pressure vessel codes

Linde's outdoor vehicle fuelling system projects feature an integrated, standard fuelling station design that has been subjected to a comprehensive FMEA study to evaluate and risk rank mechanical system integrity and a HAZOP study of the operational and service procedures typical in a standard installation. All Linde fuelling station systems are inspected and certified as fit for purpose at the point of manufacture by a by qualified "listing" third party.

Linde and other stakeholders including vehicle suppliers, hydrogen suppliers and station equipment/technology suppliers are supporting the current efforts at the SAE Fuel Cell Safety Committee at CSA-America to develop component standards for hydrogen dispenser systems, and at NFPA to develop fuelling station installation standards.

Linde follows SAE 2600 as the recognized technical standard for mechanical specifications for the nozzle and receptacle, including type test specifications and related technical standards. The SAE J2600 standard for fuelling hardware has been available in draft or TIR format for a number of years and now includes performance testing for the nozzle, receptacle and mechanical hardware keys. This standard prevents vehicles with 25 MPa receptacles from fuelling with 35 or 70 MPa nozzles, but allows for 70 MPa vehicles to fuel at dispensers with 70, 35 or 25 MPa nozzles.

Linde follows SAE 2601 as the recognized technical performance standard for 70 MPa fast fill dispensers. The Linde IC-90 hydrogen fuelling station will provide both 35MPa and 70MPa fuelling vehicles with a normal H70 consumer capacity at SAE 2601-A standard performance level.

Linde follows SAE 2719 as the recognized fuel quality standard hydrogen and California regulations for hydrogen sold as a motor fuel. The hydrogen product to be supplied to the Linde station equipment will be generally known as commercial grade 4.5 (99.995%) liquid hydrogen, a supply grade proven (on previous DOE Tech Validation Projects) be more than sufficient to enable the station to meet SAE J-2719 TIR specifications (measured at the dispenser). Linde is supportive of the work progressing at SAE and ASTM regarding hydrogen product quality, testing, and sample collection to evaluate the full range of the SAE J-2719 guideline

Linde implements *Continuous Leak Testing* in all our station systems. Testing of all of the lines to the dispenser fuelling nozzle, flex hose and vehicle connected to the dispenser is performed before, during and after each fuelling sequence. Leak testing is accomplished by sequencing multiple closed valves in a series and monitoring pressure drop (decay) and integrity of the various nodes, including the pipe to the dispenser, the dispenser and hose, nozzle / vehicle receptacle interface, and vehicle connections from the receptacle to on-board tank.

3.3 Operating Procedures

Linde supplied bulk hydrogen storage systems including liquid hydrogen storage tanks, compressed tube trailers and high pressure storage tanks are located according to standard Linde industrial hydrogen practice, NFPA-55,

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CGA document H-5-2008 "Installation Standards for Bulk Hydrogen Supply Systems, and the requirements of local building codes.

Emergency Shut-Down. The Linde fuel cell vehicle fuelling systems are equipped with a comprehensive emergency shut down (ESD) system and integrated control system that incorporates inputs from:

- E-Stops located through the storage and dispensing areas.
- Continuous leak tightness testing of key sections of the hydrogen supply system.
- LEL meters and thermal sensors in the compression and storage compartments.
- PLC monitored fuelling event anomalies.

Linde dispensers are an integrated part of the fuelling station control system. If there is a minor leak in the hydrogen supply system or at the dispenser nozzle/vehicle receptacle interface, such as a complete, or partial, hose break during a fuelling event, the Linde Section Control™ continuous leak tightness detection system will shut the entire system down. Linde systems feature numerous normally closed automatic hydrogen supply valves and each dispenser nozzle. All automatic hydrogen supply valves are linked to the ESD system.

3.4 Equipment and Mechanical Integrity

Each **Linde** fuelling station is tested on the production line for system integrity and a functional shop performance test prior to shipment. At site installation, all phases of installation require pressure testing of all interconnecting piping, and a full system leak test is conducted prior to introduction of hydrogen during system commissioning.

Mechanical integrity of the installed Linde dispensing system is continuously evaluated by the imbedded Linde Section Control™ continuous leak testing system that monitors all aspects of the fuelling station integrity. This includes: lines between the system enclosures, fuelling nozzle, flex hoses and vehicles connected to the dispensers. Leak testing using Linde Section Control is performed before, during and after each fuelling event.

During commissioning, the Linde Section Control system is used along with commissioning tools and procedures to validate system integrity at start up where system controls are fine tuned to accommodate site specific design features and normal supply system pressure. During commissioning all safety system components are either; (1) visually inspected, or, (2) performance tested. All critical safety set-points are documented "locked as installed", and changes are controlled through the Linde EMOC process.

3.5 Management of Change Procedures

Linde hydrogen vehicle fuelling stations are subject to the Linde engineering management of change (EMOC) process, which is designed to ensure that no changes are made to plant, equipment, control systems, process conditions or process/process equipment operating procedures without authorization from a responsible person.

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Maintenance and service of Linde fuelling station systems must be performed by qualified and trained Linde personnel and is managed by the **Linde** permit-to-work process for repairs & maintenance

4 Communications plan

4.1 Driver Training

All users of the Linde Fuelling System will be trained on the proper and safe fuelling of the fuel cell vehicle. The user of Linde public dispenser systems will receive step by step fuelling instructions on a video screen mounted on the dispenser face. Some station operators may require that FCV drivers will be required to sign off that they have received appropriate training and are qualified to fuel their FCV with a Linde fuelling station.

4.2 Employee Training

Linde employees are trained, and certified before they are released to work unsupervised. Linde Management Practices include LiMSS chapter training on such subjects as hydrogen and high pressure cylinder filling safety, risk analysis tools and risk mitigation strategies and best practice for installation of application equipment and cryogenic supply systems at customer locations. In accordance with the employee participation guidelines set forth in OSHA's process safety management (PSM) requirements, the American Chemistry Council's Responsible Care® program and Linde's safety health and environmental quality (SHEQ) policies, periodic audits and reviews are conducted to verify the effectiveness of employee training and facility compliant with performance standards and Linde best operating practices

Linde's best operating procedures are documented in the LiMSS Library, which is available to all employees as an electronic reference library through the Linde Group intranet.

Linde employs a contractor safety program for managing contractors when Linde contracts work out to others too perform.

4.3 Safety Reviews

Linde's hydrogen fuelling system projects feature an integrated, standard fuelling station design that has been subjected to a comprehensive FMEA study and a HAZOP study of a typical installation. All Linde fuelling station systems are inspected and certified at point of manufacture by a qualified "listing" third party. All Linde fuelling station system installation plans are reviewed by the project team and the local AHJ

Linde uses a Stage Gate process to manage project risk reduction on each fuelling station project

4.4 Safety Events and Lessons Learned

Linde utilizes a major incident report (MIR) bulletin system and database incorporating investigation reports and lessons learned to document and learn from incidents of a technical nature, as well as loss of product property

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damage or significant personal injury. These incidents are shared with personnel in the Group via email and the Linde Group intranet site to develop and sustain a "corporate memory" and institutionalize Linde best operating practices.

4.5 Emergency Response

Linde supports the efforts of the California Fuel Cell Partnership (CaFCP) and the companies deploying fuel cell vehicles to develop community outreach and first responder training. At each location the local emergency response teams will be apprised of the new hydrogen vehicle fuelling station to be operating in the local community. Linde will work closely with the CaFCP and local authorities to develop community awareness of the use of hydrogen as a motor fuel and the range of emergency response that may be required in the event of a road accident involving a FCV or an abnormal event at the fuelling station.

Linde - US maintains a national operations center (NOC) in Stewartsville, NJ. The NOC staff is trained and provides support during security related situations. The national operations center is staffed 24 hours a day, seven days a week and is the central management hub for product delivery, problems resolution and emergency support

Linde fuelling station operating conditions are monitored 24 hours a day. Initial calls are transmitted locally to the nearest Customer Service Technician with support from Regional Supply Staff. Additional support is provided, as needed, by Region North America Hydrogen Fuelling Team Technical Experts as well as Linde Group Hydrogen Fuelling Technical Specialists (i.e. ATZ). Further, all product delivery and emergency response and support is coordinated by the NOC. Coordinators at the Linde NOC will work with local emergency responders in the event of significant product releases or safety events. Lastly, Linde will establish a comprehensive preventative maintenance plan for each facility. Local technicians, and authorized contractors, will routinely make service calls coordinated with the Linde NOC.

4.6 Transportation and site security

Linde performs periodic Security Vulnerability Assessments (SVAs) to comply with the American Chemistry Council's Responsible Care™ Security Code. These assessments are included in Audit Manager and are part of the regular audit scope. Linde has developed and incorporated driver security guidelines and added these guidelines to the Driver Handbook.

Linde performs risk assessments of liquid hydrogen product delivery supply chains as required and considers such factors as:

- Mode of transportation
- Material hazards and quantities
- Proximity to large public areas, significant landmarks
- Weather , traffic conditions and road maintenance projects

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4.7 Self-Audits

Linde has established an audit process designed to ensure compliance with SHEQ Policy, Linde standards, legislative requirements and relative national standards. This audit process includes the hydrogen vehicle fuelling stations owned or operated by Linde

5 Regulations, Codes and Standards

Construction and operation of Linde hydrogen vehicle fuelling stations will meet applicable International, National, and Model Building Codes and standards. The following is a list of regulations, codes and standards Linde references for the construction and operation of the hydrogen fuelling station.

5.1 National Codes and Technical Standards

- NFPA 55 Compressed Gases and Cryogenic Code, 2010 Edition
- NFPA 2 Hydrogen Technologies Code, 2011 Edition
- ASME B31.3 Process piping
- NFPA 70 (NEC) National Electrical code
- CGA G-5.5 Hydrogen Vent Systems
- CGA H-3 Cryogenic Hydrogen Storage
- CGA H-5 Hydrogen Fuelling Station
- SAE J-2601 Draft Global Technical Standard – H2 Vehicle Fuelling Interface, 2010 Edition

5.2 Model Building and Fire Codes

- International Building Code (IBC.)
- International Fire Code (IFC)
- International Mechanical Code (IMC)

5.3 Local California Building Codes

- 2007 California Building Code (CBC.) based on the 2006 International Building Code (IBC.)
- 2007 California Mechanical Code (CMC.) based on the 2006 Uniform Mechanical Code,
- 2007 California Plumbing Code (CPC.) based on the 2006 Uniform Plumbing Code,
- 2007 California Electrical Code (CEC.) based on the 2005 National Electrical Code (NEC.)
- The current State of California Energy and Accessibility Standards