

The following Oil & Gas Field Safety Guidelines are provided as a template for units that have the potential to experience wildland fires in or near oil/gas operations. Preplanning and coordination are required to ensure this template matches the concerns and processes of individual fire management units.

Oil & Gas Field Safety Guidelines for Incident Management Teams

(ENTER UNIT or FIRE LOCATION) has many localities where oil and gas production activities have significantly increased in recent years. The number of oil and gas facilities, associated personnel, and support services has added a new dimension to wildfire suppression within (ENTER UNIT or FIRE LOCATION). Oil and gas facilities have hazards that pose significant threats to wildland firefighters. Fire suppression operations in oil & gas fields pose different safety concerns and hazards that will dictate different tactics and mitigation measures. Please consider the following guidelines when in oil and gas areas:

- Dispatch Centers and Fire Management staff will have current oil and gas development maps and be familiar with current oil and gas policies identifying the procedures to take in the case of a wildfire in the oil and gas field. When wildfires are in or near an oil and gas field, the Agency Administrator, or their representative, will provide an oil and gas subject matter expert, or an oil and gas Resource Advisor(s) (READs), to notify the Incident Management Team (IMT) and all responding resources of the risk associated within the fire's location and surroundings.
- Oil and gas READs are experts in the field of oil and gas operations. Oil and gas READs serve as a liaison between the Incident Management Team, fire management, industry, and the Agency Administrator(s). Oil and gas READs will be used to advise IMTs and Agency Administrators on safety and risk management.
- Oil and gas READs will notify the owner of the oil and gas facility and its location, and coordinate between the IMT and local energy company personnel.
- Oil and gas READs, in coordination with IMT Plans personnel, will identify the known oil and gas facilities involved within the incident and the incident planning area. Additionally, the IMT will work with the oil and gas READs to determine facilities that could become involved in the fire with continued incident growth. Oil and gas READs will determine what safety concerns are associated with these identified sites. Oil and Gas Field infrastructure hazards may be different than common wildland fire hazards.
- Oil and gas READs will identify whether the oil and gas operators in that area have been contacted.
- Oil and gas READs, in coordination with industry personnel and IMT Safety personnel, will ensure traffic control is addressed, using agency and local law enforcement when necessary.
- Oil and gas READs, in coordination with industry personnel and IMT Safety personnel, will evaluate whether decontamination procedures need to be established for the incident in the event firefighters are exposed to industry haz-mat.
- The IMT, in coordination with law enforcement and the oil and gas READs, will develop evacuation procedures for industry personnel who may potentially be threatened.
- IMT's are encouraged to consider staffing an oil and gas Liaison Officer (LOFR) position on their team if the impact to oil and gas infrastructure and production is significant or may become significant.

Duties to consider for an IMT oil and gas LOFR:

- Coordinate with the Emergency Management Director for the county to facilitate the early establishment of communications with industry operators.
- Bring oil and gas site managers into the fold early and maintain constant communications with them. Include them in team planning meetings.
- Collaborate with industry personnel in incident decisions, keep them abreast of the situation as it develops, and provide a feeling of access to the management of the incident.
- Communicate to the IMT and firefighters industry concerns, hazards, and processes involved with shutting down production and returning to production.
- The key is preplanning, communication and collaboration; engagement by the oil and gas companies is essential.

By delegation, IMT's will provide the following oil and gas field safety guidelines to all incident personnel through daily briefings and the Incident Action Plan (IAP):

- The large, open spaces created by well pads and rights-of-way make convenient and tempting areas for firefighting operations, staging areas, and safety zones. But the presence of hazardous materials, high pressure pipelines and industrial equipment can create a dangerous environment for untrained personnel. Hazards may involve HAZMAT.
- Typically 4-anchors are installed on each oil and gas location for rig-line attachment. They are not always readily visible, are fairly low to the ground, and may tear up the bottom of your vehicle.
- When oil and gas sites are well maintained and fully functional, they are relatively fire resistant locations and can withstand the high temperatures associated with wildland fires.
- Not all oil and gas sites are well maintained however, and noxious and flammable gases can be present around the well site. If these gases are ignited, a potential flare-up or explosion could occur.
- Open pits/dumps should be avoided as they could contain discharging gas and/or fracking material. Fracking fluids may produce methane gas or contain other flammables.
- When driving on a well pad, avoid backing up around production equipment. Park in such a way that allows full vision of surrounding hazards and avoids the need for backing.
- Toxic and harmful gases, such as hydrogen sulfide (H₂S), may be present in harmful concentrations around well sites and well equipment. Known locations of these areas may or may not have been mapped. These gases may or may not have a smell, are heavier than air, and sink to low areas. Avoid low areas during calm, windless periods. Specific H₂S procedures shall be developed if that hazard is present.
- If dozer operations are likely, ensure your line supervisor has coordinated with the IMT Safety Officer and/or agency oil and gas READ, and appropriate utility representative. Do not assume that pipelines are buried deeply or are directly under their markers. Dozer operators and bosses need to be extremely cautious.
- Wildland firefighters will not engage in suppressing oil and gas facilities that have caught fire. They are untrained to do so. This will be handled by the agency or vendor having jurisdiction, (e.g. structural fire department, oil and gas company, etc.).
- Fires on oil and gas locations usually require foam fire retardant to be effective. If a tank of oil ignites, it becomes nearly impossible to put the fire out. Under these circumstances wildland firefighters must evacuate the area. If the fire is near equipment, buildings, or piping, evacuate the area.

- Communicate the threat of oil and gas facilities being impinged by fire to your line supervisor.
- Help the IMT recognize hazards such as: untrained and unequipped oil and gas personnel suppressing fire, heavy equipment working around pipelines, personnel, and emergency vehicles.
- If equipped with a gas monitor, remember to turn it on 5 miles prior to reaching a suspected H₂S or CO₂ area. Monitors calibrate to the ambient air around them.
- Be honest, if you see serious safety concerns, insist on mitigation actions, or move your firefighters/crew to a safe location.
- The safety of firefighters is the first priority. Only engage the wildland fire when it has been determined it is safe to do so. If conditions warrant, disengage from the fire.
- In addition to Hydrogen Sulfide (H₂S), which is addressed in the 2013 Red Book, (ENTER UNIT or FIRE LOCATION) also has the following compounds of concern located in oil and gas fields: (ENTER LOCAL COMPOUNDS OF CONCERN; example - Methane (CH₄), Benzene (C₆H₆), Carbon Dioxide (CO₂), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Hydrogen Cyanide (HCN)).

Interagency Standards for Fire and Fire Aviation Operations

The *Interagency Standards for Fire and Fire Aviation* (Red Book) for 2013 provides general guidance on industrial and natural occurring hazardous exposures, Chapter 7, page 19:

Recognizing there may be unique/are specific hazardous exposures; the following standards apply to all hazards;

- Identify unit-specific environmental hazards;
- Develop Risk Assessments/Job Hazardous Analyses (RA/JHAs) for those hazards;
- Develop and provide specific training and standard operating procedures (SOPs);
- Provide briefings/training for those who may be exposed;
- If exposure is suspected, immediately disengage and leave the area; and
- Seek immediate medical attention if exposure symptoms occur.

There is also specific guidance for responding to wildland fires in or near oil and gas operations, Chapter 7, pages 20 and 21:

For those offices with oil and gas operations within their fire suppression jurisdiction, the following is the minimum standard operating procedures to help ensure the health and safety of wildland firefighters:

- Firefighters shall receive annual oil and gas hazard recognition and mitigation training;
- Local unit shall complete a JHA/RA for wildland fire suppression activities in oil and gas areas and provide a copy with a briefing to all local and incoming resources;
- Establish Response Protocols which includes notification procedures to respective oil and gas company(s);
- Ensure oil and gas resource advisors are consulted;

- Ensure that at least one member of each squad or engine crew is knowledgeable in the use and data interpretation of the Hydrogen Sulfide gas monitor. Training on the device will include at a minimum:
 - Equipment charging and maintenance of sensors;
 - Startup, zeroing, calibration and bump testing procedures as recommended by the manufacturer; and
 - How the monitor elicits a warning alarm (visual, auditory, vibration).
- Understand Peak Reading, Short Term Exposure Limits (STEL), and Time Weighted Averages;
- Understand how to set the monitors alarm threshold;
- The monitor's alarm shall be set at the current American Conference on Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (10 39 PPM 2008) and STEL (15 PPM 2008);
- If hydrogen sulfide gas (H₂S) is encountered, immediately disengage and leave area; and
- Do not establish incident base camps or staging areas in or near oil and gas operations.

The following websites provide additional information and training resources:

- http://www.nifc.gov/wfstar/library_misc.html
- <http://iirdb.wildfirelessons.net/main/Reviews.aspx>
- www.nfpa.org/assets/files/pdf/Sup10.pdf