



CORPORATE EMERGENCY RESPONSE PLAN

24 Hour Emergency 1.800.760.2826

AER Emergency Contact Number: 1.800.222.6514

OGC Emergency Contact Number: 1.800.663.3456

NEB Emergency Contact Number: 1.800.387.3557

April 2017



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Revision Record

To ensure this copy of the plan remains current, record any revisions you receive on the following record form.

Revision Number	Date	Details	Signature
1	April 25	Update to section 7; Corporate Telephone Directory	
2	June 2016	Update to section 7; Corporate Telephone Directory	
3	December 2016	Update to section 7; Corporate Telephone Directory	
4	March 2017	Large scale updates to most sections. Entire CERP was reprinted and redistributed.	
5	November 2017	Update to section 7; Corporate Telephone Directory	
6	January 2018	Update to section 7; Corporate Telephone Directory	
7	April 2018	Annual update. Update to section 7; corporate telephone directory	
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Revision Update Instructions

Type of update:

- Annual
- General

Date:

Contact:

Location	Remove/Destroy Pages	Insert Pages

Revision Request Form

Revision Request Form		
Details of revision request	Person requesting revision	Submission date

Once completed, mail or e-mail this form to Harvest's Emergency Management Advisor for process.

graham.vince@harvestenergy.ca

Distribution List

Plan No.	Attention	Location	Date Distributed
Calgary 1	Spare		
Calgary 2	Doug Walker	Calgary	April 2017
Calgary 3	Greg Foofat	Calgary	April 2017
Calgary 4	Vladimir Kireev	Calgary	April 2017
Calgary 5	Russ Andrew	Calgary	April 2017
Calgary 6	Travis Henson	Calgary	April 2017
Calgary 7	Stan Bergen	Calgary	April 2017
Calgary 8	Grant Ukrainetz	Calgary	November 2017
Calgary 9	Mike Smilie	Calgary	November 2017
Calgary 10	Jeff Stephenson	Calgary	April 2017
Calgary 11	Robert Birrell	Calgary	April 2017
Calgary 12	David E. Jones	Calgary	November 2017
Calgary 13	Graham Vince	Calgary	April 2017
Calgary 14	Jim Causgrove	Calgary	January 2018
Calgary 15	Bruce Auclair	Calgary	April 2017
Calgary 16	Dan Biggs	Calgary	November 2017
Calgary 17	Paul Dhanjal	Calgary	April 2017
Calgary 18	Keith Shackleton	Calgary	April 2017
Calgary 19	Warren Johnston	Calgary	April 2017
Calgary 20	Amber Fairhurst	Calgary	April 2017
Calgary 21	Sherrie Eisner	Calgary	April 2017
Calgary 22	Paul Vander Valk	Calgary	January 2018
EOC 23	Emergency Operations Centre	Calgary	April 2017
EOC 24	Emergency Operations Centre	Calgary	April 2017
EOC 25	Emergency Operations Centre	Calgary	April 2017
EOC 26	Emergency Operations Centre	Calgary	April 2017
F1 to 50	Various Field Locations	Operations	April 2017
G1	Alberta Energy Regulator	Government	April 2017
G2	BC Oil & Gas Commission	Government	April 2017
G3	National Energy Board	Government	April 2017



EMERGENCY RESPONSE PLAN
SECTION 1.0 - INTRODUCTION

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1.0 INTRODUCTION

1.1 GOVERNANCE

It is the responsibility of Harvest's Emergency Management Advisor to ensure that this corporate emergency response plan (CERP) is reviewed on a quarterly basis and to ensure that the information contained is current. The emergency management advisor will ensure that the CERP is in compliance with all relevant regulatory and legislative requirements.

Any and all amendments and updates will be submitted to the Environmental, Health and Safety Manager for approval.

1.2 SCOPE OF THE EMERGENCY RESPONSE PLAN

This emergency response plan outlines the procedures to be followed for responding to and managing an incident involving Harvest personnel and/or properties operated or owned by Harvest.

The CERP provides common emergency response processes and procedures and with any associated Site-Specific ERP's, enables Harvest to carry out an effective response.

1.3 OBJECTIVES AND PRINCIPLES OF THE EMERGENCY RESPONSE PLAN

Harvest is committed to reacting effectively and efficiently to any incident and will maintain the safety of workers and response personnel and any members of the public who may be affected by Harvest's operations. Harvest are also committed to the protection of the environment and will do all that is possible to eliminate and mitigate any damage during an incident

This emergency response plan is a guide for effectively managing Harvest incident response operations; the intent is to ensure the key elements of an incident response are addressed in a timely manner. Harvest will ensure that the following fundamental objectives of a response are met:

- The health and safety of Harvest employees, responders and contractors is addressed.
- An effective emergency command structure is established using ICS.

- Public safety is maintained through notification, evacuation, Shelter-In-Place, air quality monitoring, EPZ isolation, ignition of gas plume.
- Government agencies and local authorities are notified in a timely manner.
- Control and containment efforts are initiated
- The combined resources of Harvest, mutual aid partners, the government and other external services are effectively utilized.
- Environmental impacts (including air/water/soil quality) are monitored and mitigated.
- Effective communication is maintained with all responders, regulatory and government agencies and members of the public affected by an incident.
- Factual information is provided to the media, the public, Harvest personnel not involved in the response and other stakeholders in a timely manner.
- Records and evidence are preserved.

To accomplish these objectives, Harvest emergency response team members must be familiar with this emergency response plan and have an understanding of how response activities will be carried out.

To support our objectives, Harvest management endorses the following principles:

- Implementation of reasonable precautions and appropriate mitigative measures to minimize the hazards and impact from incidents.
- Adequate emergency response training for Harvest responders.
- Maintenance of this emergency response plan.

1.4 ELEMENTS OF THE EMERGENCY RESPONSE PLAN

The major elements of this emergency response plan are introduced on the following pages. Specific response team duties are outlined in Section 4.0. Facility details, maps and key area contacts for properties operated and/or owned by Harvest are included in Site-Specific ERPs.

The major elements of this emergency response plan are discussed below:

- 1. Incident Command System (ICS):** Harvest has adopted the Incident Command System of emergency management. ICS is an internationally recognized, standardized, all-hazard incident management model and is based on a flexible and modular response organization providing a common framework within which people

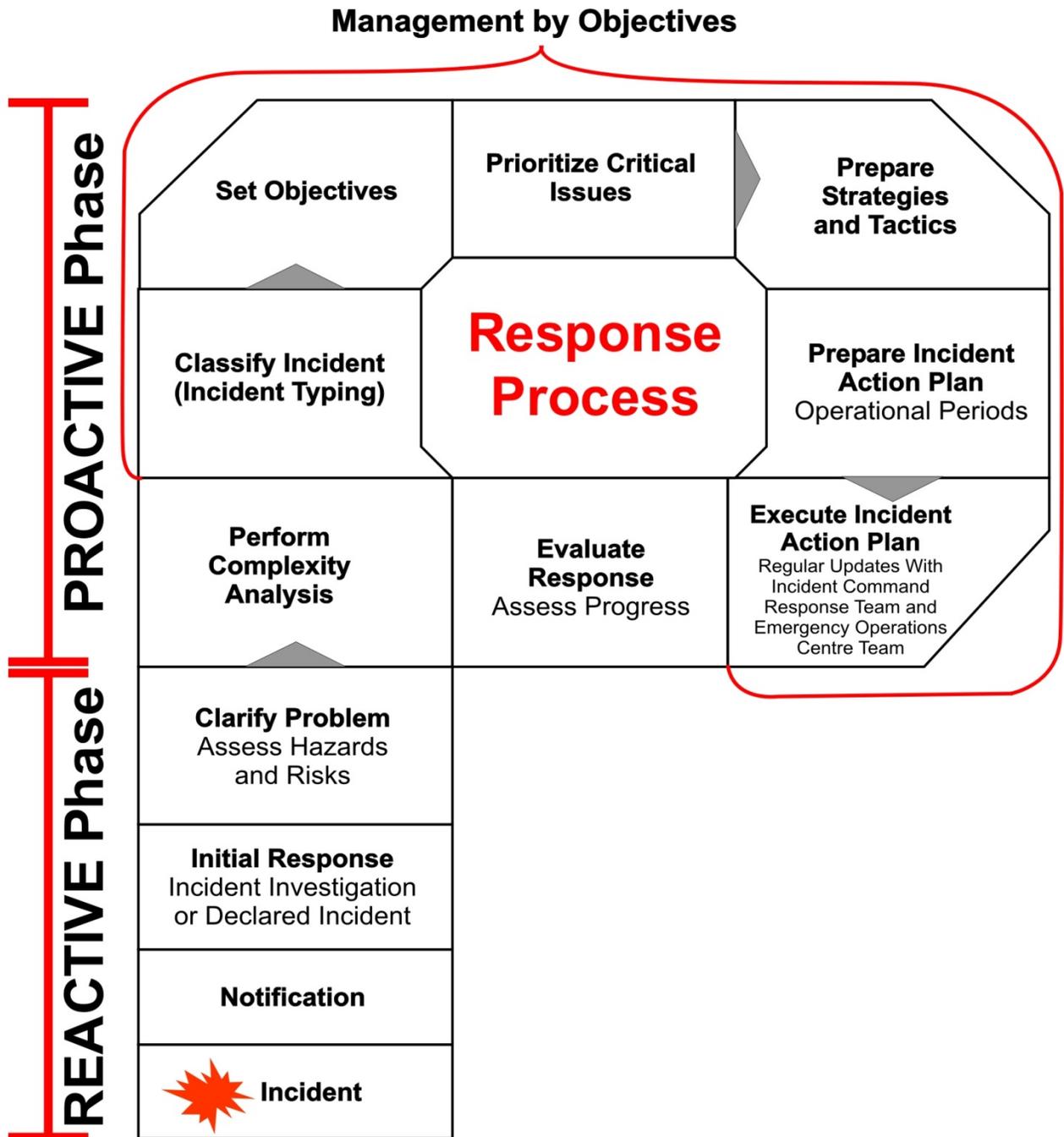
can respond effectively together. Responders may be drawn from Harvest, mutual aid partners, the government and external services that do not routinely work together. ICS is designed to give standard response procedures.

A flexible/modular organization describes the ability of the ICS structure to expand or contract based on: the complexity of the incident, the location of the incident and available resources. Only those response functions that are required for an effective response should be mobilized.

- 2. Overall Command and Authority:** The Harvest Incident Commander manages the Harvest Incident Command Response Team. Harvest's Incident Commander will ensure the response is effective and will mobilize additional response team members as required. Harvest's Incident Commander may obtain advice and support from Harvest's EOC Director and will be the company's representative in Unified Command
- 3. Unified Command:** Unified Command is a team effort process, allowing Harvest and the involved jurisdictional agencies with responsibility for an emergency, either geographically or functionally, to establish one common set of incident objectives, strategies and tactics that all can subscribe to. This is accomplished without losing or abdicating Harvest or government agency authority, responsibility or accountability.
- 4. Incident Action Plan (IAP):** Every incident will have a verbal or written Incident Action Plan that includes response Objectives, Strategies and Tactics. The purpose of an Incident Action Plan is to provide all responders with a plan that they can adhere to and is developed for a given time-frame called an "Operational Period".
- 5. Effective Span of Control:** A supervisor should manage no more than seven responders. As required, additional levels of supervision may be put in place to maintain effective span of control.
- 6. Formal Communication:** Assigning tasks, requesting additional resources and reporting the progress of assigned tasks must be accomplished through formal communication and follow unity of command (chain of command).
- 7. Informal Communication:** The ICS response organization is open for responders to freely exchange information.

1.5 RESPONSE PROCESS

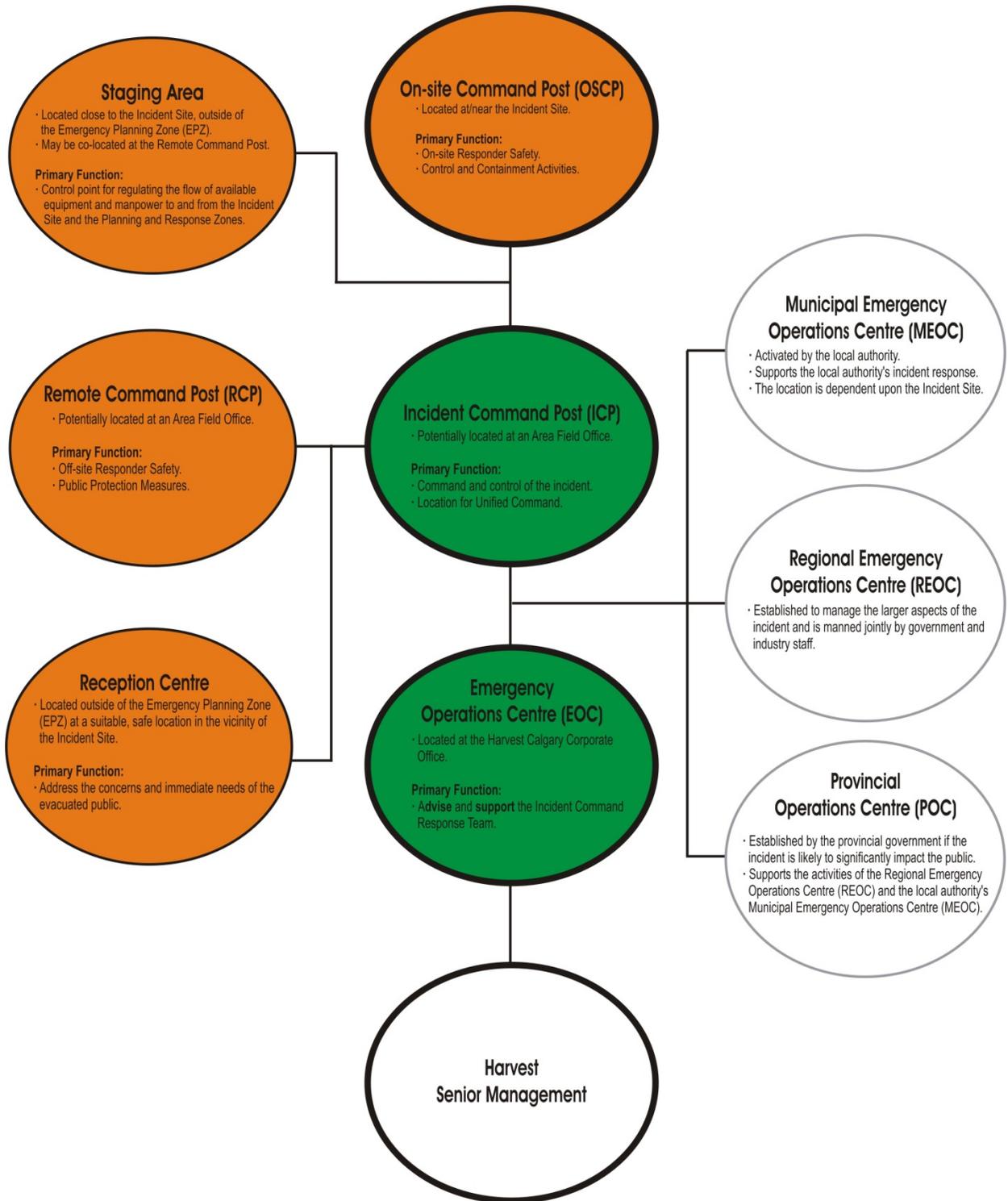
The following diagram depicts a typical Harvest response process:



Response Priorities:
Responder Safety/Public Safety/Control and Containment

1.6 INCIDENT FACILITIES

The following diagram depicts various incident facilities:



- 1 **Emergency Operations Centre (EOC)**: The Emergency Operations Centre is located in the Calgary Office and from here, the EOC Director leads the EOC Team to provide advice and support to Harvest's Incident Command Response Team. Harvest's EOC Team notifies Harvest Senior Management.
- 2 **Incident Command Post (ICP)**: Harvest's Incident Commander establishes the Incident Command Post at a suitable, safe location. The Incident Command Post should have the appropriate equipment including good communication equipment to manage the incident. During a Unified Command response, Harvest may offer its Incident Command Post as the location for Unified Command.
- 3 **Municipal Emergency Operations Centre (MEOC)**: Activated by the local authority, the Municipal Emergency Operations Centre (MEOC) supports the local authority's emergency response.
- 4 **On-site Command Post (OSCP)**: On-site responder safety and control and containment activities are directed from the On-site Command Post. The On-site Command Post could be as simple as a vehicle equipped with a cellular telephone.
- 5 **Provincial Operations Centre (POC)**: The provincial government may establish this centre if the incident is likely to significantly impact the public. The Provincial Operations Centre may be activated to support the activities of the Regional Emergency Operations Centre (REOC) and/or the local authority's Municipal Emergency Operations Centre (MEOC). The Provincial Operations Centre has the capability of accessing provincial, federal and other resources to support the emergency response. The Provincial Operations Centre may also keep elected officials informed.
- 6 **Reception Centre**: Harvest Reception Centre personnel establish the Reception Centre outside the Emergency Planning Zone (EPZ) at a suitable, safe location in the vicinity of the incident. Harvest Reception Centre personnel address the concerns and immediate needs of the evacuated public. Arrangements for alternative accommodation, reimbursement of daily expenses and temporary care of evacuated property are managed through the Reception Centre. Evacuees will not be housed at the Reception Centre.
- 7 **Regional Emergency Operations Centre (REOC)**: An operations centre established in a suitable location to manage the larger aspects of the incident and is manned jointly by government and industry staff.

- 8 **Remote Command Post (RCP)**: Harvest may establish a Remote Command Post to assist with supervising public protection measures. If established, the Remote Command Post will be set up at a suitable, safe location in the vicinity of the incident.
- 9 **Staging Area**: As required, Harvest will establish a Staging Area. The Staging Area is a control point for regulating the flow of available resources to and from the incident site and the planning and response zones. If established, the Staging Area will be located at a suitable, safe location in the vicinity of the emergency and in some cases, may be co-located with other incident facilities.

1.7 EMERGENCY PREPAREDNESS STANDARDS (UPDATES, TRAINING AND EXERCISES)

Harvest's Health and Safety Manager will ensure that this plan is maintained and all information is verified and updated as required by regulation. The names and telephone numbers in this plan must be kept current for the plan to be effective.

Emergency Response Plan Review Meetings and Response Exercises: Emergency preparedness will be reviewed regularly with Harvest personnel and contract operators. As a minimum, Emergency Response Plan Review Meetings will be conducted as required by regulation.

Harvest will document all emergency response training and exercises and all ERP Review Meetings.

Response exercises help responders to practice as part of a response team and help to determine any deficiencies in the emergency management process and procedures.

Harvest will provide 30 days advance notice of a scheduled exercise to regulatory authorities and will invite representative(s) to participate or observe.

Response exercises may involve only internal personnel or may involve mutual aid partners and government agencies. These exercises allow responders to practice their roles and identify opportunities to improve emergency preparedness. As a minimum, response training and exercises will be conducted as required by regulation.

Training and exercises may include:

- **Actual Emergency:** When adequately evaluated and documented, the response to an actual emergency can serve as effective training.

- **Orientation Exercise:** Used to introduce participants to, or refresh them on plans and procedures and is conducted through the use of lectures, panel discussions, media presentations, or talking through the various scenarios and required actions.
- **Drills:** Test a single emergency response function and often involve actual field response. Their effectiveness lies in focusing on a single or relatively limited part of the response system in order to evaluate and improve it.
- **Table-top Exercise:** These exercises are conducted in a conference room setting without the pressures and time constraints of full scale exercises. Participants discuss the responses to a prepared scenario and various theoretical inputs.
- **Functional Exercise:** Is a simulation of an emergency that includes a description of the situation, a timed sequence of messages, and communication between players and a simulation group. Participants practice coordinated, effective response in a time-pressured, realistic yet simulated emergency.
- **Communication Exercise:** During a communication exercise, responders play their roles from assigned locations using the communication equipment that would usually be deployed in a real incident.
- **Full-scale (Major) Exercise:** These exercises validate the major aspects of the company's emergency preparedness program and involve all levels of the organization and government agencies.

1.8 FACILITY MODIFICATIONS

Before any major modification is brought on-stream, relevant data about the modified facility must be added to the appropriate Site-Specific Supplemental Section. If required by regulation, Harvest will submit the modified site-specific information to the regulator for approval, prior to bringing the facility on-stream.

An emergency response plan review meeting for Harvest personnel and contract operators will be held before major facility modifications are brought on-stream. As required by regulation, government agencies will be invited to attend the emergency response plan review meeting.

1.9 MUTUAL AID

In essence, mutual aid signifies a voluntary reciprocal exchange of resources, services and assistance when one member of the coop requests it.

Harvest are members in good standing of various mutual aid coops and synergy groups; the names and scope of these Mutual Aid Coop's and the meeting minutes, where provided, can be found on Harvest's computer network. Harvest's area foremen are aware of the specific coop they are members of.

1.10 COMMUNICATION

Public Communication

It is the responsibility of the Incident Commander to ensure that members of the public are provided with the necessary information regarding any type of emergency that Harvest is experiencing. The actual contact to members of the public may be delegated to another role e.g. Public Safety, Information Officer. Information that must be passed on to members of the public is detailed in section 4.8 Public Safety Supervisor Role and Responsibility and in section 4.3 Information Officer Role and Responsibility

Field and EOC Communication

Communications between the various incident command facilities and between emergency responders will be carried out by one or normally a combination of the following methods:

- Telephone land line
- Mobile phone
- Two-Way radio
- Satellite phone
- E-mail

Some roads in Harvest's operational areas are radio controlled i.e. call-in when using this road is required. The production or site specific ERP will contain information regarding the correct frequencies and channels that must be used; if the area does not have a regulated ERP, the area foreman and lead operator will be able to provide that information.

Internal Communication

All relevant and pertinent information regarding the emergency will be disseminated to the field response team by the incident commander; any information of a delicate or private nature will be communicated to the EOC Director only by the Incident Commander.

The decision on what information is to be disseminated and to which Harvest personnel regarding an emergency situation and as to how this information is to be communicated will be made by Harvest senior management. Information may be communicated via departmental managers, Harvest intranet, Harvest's external web site or other method deemed appropriate.

Media Communication

When an incident occurs that affects responders, the health and safety of the public, the environment or causes property damage, the incident could attract media interest. It is important that Harvest addresses the media appropriately and uses media relations as a tool to provide timely public safety messages to disseminate accurate information regarding the incident while reducing the potential for any misinformation.

NOTE: All statements of news releases related to an incident must be approved by Harvest senior management in association with the incident commander.

Once approved, Harvest will coordinate media releases with the local petroleum regulatory agency prior to release to ensure consistency and accuracy of information. Information can be communicated through the designated spokesperson (Information Officer), news releases, a press conference or another effective means Harvest chooses to use.

Harvest supports cooperating with the media within a well-managed channel of communication. Only authorized spokespersons representing Harvest should communicate with the media to ensure consistent, factual and timely information is provided. Harvest have two personnel listed as the Information Officer and their names and contact details can be found in section 7.

The role and responsibilities of the Information Officer can be found in section 4.3 and media guidelines can be found in section 6.20



EMERGENCY RESPONSE PLAN
SECTION 2.0 - ALERT, LEVELS OF
EMERGENCY, PUBLIC PROTECTION
MEASURES AND RESPONDER SAFETY

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2.0 ALERT, LEVELS OF EMERGENCY, PUBLIC PROTECTION MEASURES AND RESPONDER SAFETY

ALBERTA

2.1 ALBERTA - ASSESSMENT MATRIX FOR CLASSIFYING INCIDENTS

The AER has developed an Assessment Matrix so that incidents can be classified in a consistent manner throughout the province. Harvest will adhere to the following AER Assessment Matrix for Classifying Incidents (Appendix 4, AER Directive 71 February 2017)

Rank	Category	Example of consequence in category
1	Minor	<ul style="list-style-type: none"> No worker injuries. Nil or low media interest. Liquid release contained on lease. Gas release impact on lease only.
2	Moderate	<ul style="list-style-type: none"> First aid treatment required for on-lease worker(s). Local and possible regional media interest. Liquid release not contained on lease. Gas release impact has potential to extend beyond lease.
3	Major	<ul style="list-style-type: none"> Worker(s) requires hospitalization. Regional and national media interest. Liquid release extends beyond lease—not contained. Gas release impact extends beyond lease—public health/safety could be jeopardized.
4	Catastrophic	<ul style="list-style-type: none"> Fatality. National and international media interest. Liquid release off lease not contained—potential for, or is, impacting water or sensitive terrain. Gas release impact extends beyond lease—public health/safety jeopardized.

Rank	Descriptor	Description
1	Unlikely	The incident is contained or controlled and it is unlikely that the incident will escalate. There is no chance of additional hazards. Ongoing monitoring required.
2	Moderate	Control of the incident may have deteriorated but imminent control of the hazard by the licensee is probable. It is unlikely that the incident will further escalate.
3	Likely	Imminent and/or intermittent control of the incident is possible. The licensee has the capability of using internal and/or external resources to manage and bring the hazard under control in the near term.
4	Almost certain or currently occurring	The incident is uncontrolled and there is little chance that the licensee will be able to bring the hazard under control in the near term. The licensee will require assistance from outside parties to remedy the situation.

* What is the likelihood that the incident will escalate, resulting in an increased exposure to public health, safety, or the environment?

Sum the rank from both of these columns to obtain the risk level and the incident classification

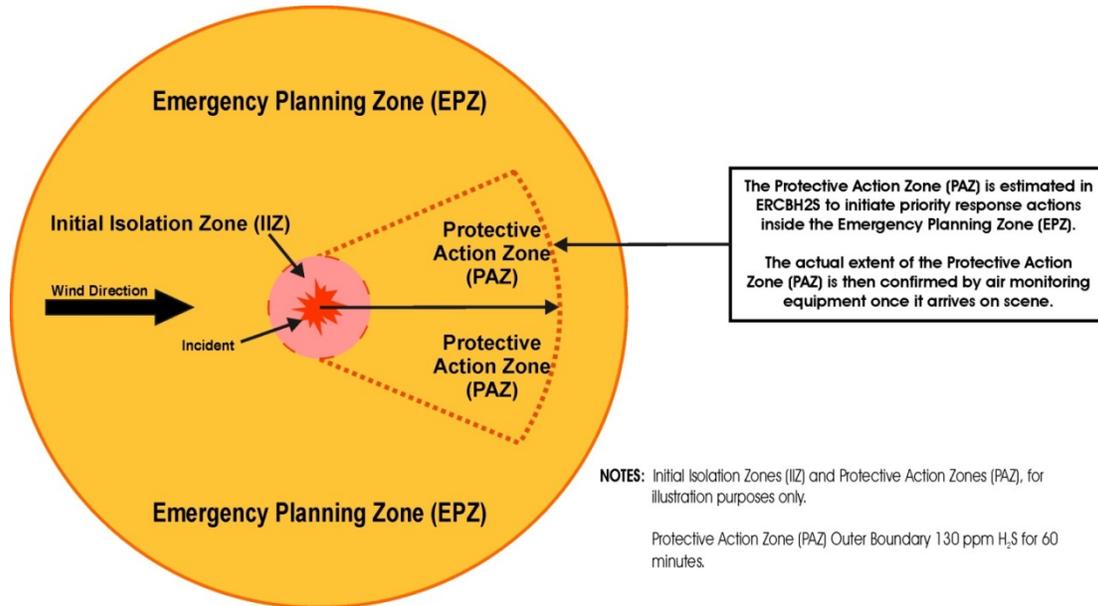
Risk Level	Assessment Results
Very low 2-3	Alert
Low 4-5	Level One Emergency
Medium 6	Level Two Emergency
High 7-8	Level Three Emergency

2.2 ALBERTA - INCIDENT RESPONSE TABLE

The AER has developed an Incident Response table so Harvest can determine the response communications, response actions and response resources (manpower and equipment) required during an alert or any level of emergency. Harvest will adhere to the following AER Incident Response table (Appendix 4, Table 4, AER Directive 71 February 2017)

Responses	Incident Classification			
	Alert	Level-1 Emergency	Level-2 Emergency	Level-3 Emergency
Communications				
Internal	Discretionary, depending on licensee policy.	Notification of off-site management.	Notification of off-site management.	Notification of off-site management.
External public	Courtesy, at licensee discretion.	Mandatory for individuals who have requested notification inside the Emergency Planning Zone (EPZ).	Planned and instructive in accordance with the specific emergency response plan.	Planned and instructive in accordance with the specific emergency response plan.
Media	Reactive, as required.	Reactive, as required.	Proactive media management to local or regional interest.	Proactive media management to national interest.
Government	Reactive, as required. Notify AER if public or media is contacted.	Notify Local AER Field Centre. Call local authority and regional health authority if public or media is contacted.	Notify Local AER Field Centre, local authority, and regional health authority.	Notify Local AER Field Centre, local authority, and regional health authority.
Actions				
Internal	On-site, as required by licensee.	On-site, as required by licensee. Initial response undertaken in accordance with the site-specific or corporate-level emergency response plan.	Predetermined public safety actions are under way. Corporate management team alerted and may be appropriately engaged to support on-scene responders.	Full implementation of incident management system.
External	On-site, as required by licensee.	On-site, as required by licensee.	Potential for multi-agency (operator, municipal, provincial, or federal) response.	Immediate multi-agency (operator, municipal, provincial, or federal) response.
Resources (Manpower and Equipment)				
Internal	Immediate and local. No additional personnel required.	Establish what resources (manpower and equipment) would be required.	Limited supplemental resources (manpower and equipment) required.	Significant incremental resources (manpower and equipment) required.
External	None.	Begin to establish resources (manpower and equipment) that may be required.	Possible assistance from government agencies and external support services, as required.	Assistance from government agencies and external support services, as required.

2.3 ALBERTA - PLANNING AND RESPONSE ZONES



Initial Isolation Zone (IIZ)

The Initial Isolation Zone (IIZ) defines an area in close proximity to a continuous hazardous release where Shelter-In-Place may provide temporary protection due to the proximity of the release.

If safe to do so, during an emergency, Harvest must attempt to evacuate the public from the IIZ.

Protective Action Zone (PAZ)

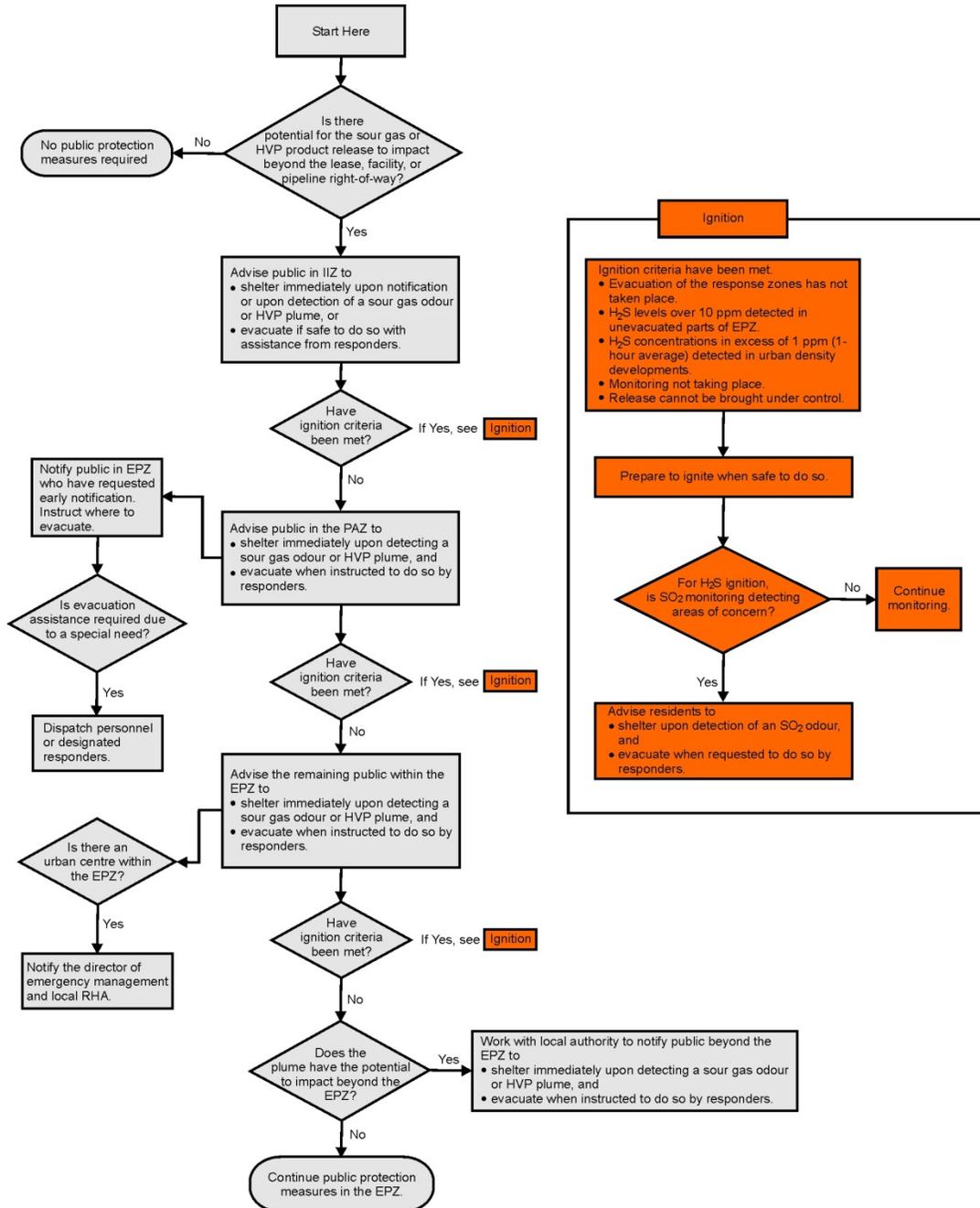
The Protective Action Zone (PAZ) defines an area downwind of a hazardous release where outdoor pollutant concentrations may result in life-threatening or serious and possibly irreversible health effects on the public. Immediately following a release of H₂S or HVP product, the approximate size and direction of the PAZ can be determined using actual conditions at the time.

Emergency Planning Zone (EPZ)

An Emergency Planning Zone (EPZ) is a geographical area surrounding a well, pipeline, or facility containing hazardous product that requires specific emergency response planning by Harvest.

2.4 PUBLIC PROTECTION MEASURES

The AER has developed a Public Protection Measures for Planning and Response Zones decision tree so Harvest can determine the appropriate public protection measures required during an alert or any level of emergency for the planning zones and the response zones. Harvest will adhere to the following AER Public Protection Measures for Planning and Response Zones decision tree (Figure 3, AER Directive 71, November 2008, including errata of November 2009):



It is Harvest's responsibility to initiate public protection measures inside the Emergency Planning Zone (EPZ) for any incident involving a release of sour gas or HVP product if there is potential for the release to impact members of the public.

Public protection may include:

- Mobilizing air quality monitoring units to ensure air quality and to track any gas plume; including SO₂ if the sour gas release was ignited
- Isolation of the hazardous area by initiating road blocks at the perimeter of the IIZ and/or EPZ

The type of public protection measure employed depends on the severity of the incident and/or on the monitored results in unevacuated areas. Harvest is responsible for ensuring that appropriate emergency response procedures are in place and can be implemented, including for areas of potential impact beyond the EPZ.

When safe to do so, evacuation should take place before a release of sour gas or HVP product has the potential to affect people in proximity to the release or as soon as possible to avoid any exposure to the hazard. If evacuation is not possible, then Shelter-In-Place can be used to protect members of the public under certain conditions.

Depending on the volume, size, duration or meteorological conditions, Shelter-In-Place may not be a viable public protection measure inside the IIZ during an H₂S release. In such a situation, the public safety aspects of Shelter-In-Place will have to be continuously re-evaluated during the incident and assisted evacuation may be necessary to protect public safety.

Shelter-In-Place (H₂S and HVP)

Shelter-In-Place is a viable public protection measure in circumstances when any one of the following conditions is met:

- There is insufficient time or warning to safely evacuate the public who may be at risk.
- Residents/public are waiting for evacuation assistance.
- The release will be of limited size and/or duration.
- The location of a release has not been identified.
- The public would be at higher risk if evacuated.

Public Protection Measures for H₂S

Evacuation is the primary public protection measure during a release of sour gas if the public can be safely removed from the area.

Evacuation begins in the IIZ and expands outward into the PAZ downwind of the release so that members of the public are not exposed to H₂S. Harvest must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S and as dictated by the specifics of the incident itself. In the absence of the ability to take monitored readings, responders should advise the public to Shelter-In-Place.

H ₂ S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place .
NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.	

Harvest can advise the public to evacuate; however, the local authority or the regional health authority (RHA) has to declare a state of local emergency before mandatory evacuation can occur. It is a regulatory requirement for Harvest to advise the public to evacuate if the need arises.

Typically, the public inside the EPZ but outside of the PAZ will be contacted and advised to Shelter-In-Place pending further instructions from Harvest and/or the local authority, depending on existing arrangements.

A shift in wind direction will require immediate re-evaluation of the PAZ and the need for additional evacuation and/or Shelter-In-Place; immediate ignition of the well may be required if ignition criteria are met. If the sour gas release has been ignited, Harvest should continue to monitor response zones for H₂S from incomplete combustion, as well as SO₂.

Public Protection Measures for HVP Product

Shelter-In-Place is one form of public protection measure for an HVP product release. Evacuation of the public should only proceed when it is safe to do so and after an assessment of:

- The size and expected duration of the release.
- Egress routes.
- Current and expected meteorological conditions.
- The potential for unexpected ignition.

For HVP product releases, the IIZ and PAZ define a region adjacent to a release where plume concentrations may fall within the upper explosive limit and lower explosive limit and where the public may be directly exposed to the flame if the plume is ignited. Inadvertent actions within this region may lead to ignition; thus, Shelter-In-Place is recommended until the position of the plume can be assessed and evacuation can take place safely.

Evacuation is recommended for cases in which the plume is visible and egress can occur in any direction away from the plume. A decision to evacuate should be made by qualified individuals with access to explosive limit monitors.

Public Protection Measures Beyond the Emergency Planning Zone (EPZ)

In the unlikely event that public protection measures are required beyond the EPZ they will take place in accordance with Harvest's arrangement with the local authority. The Petroleum Industry Incident Support Plan will also be activated by the government for a Level Two Emergency and Level Three Emergency to provide support to the incident response. Notification mechanisms as outlined in the Municipal Emergency Plan response framework may be used by the local authority to notify residents if public protection measures are required outside the EPZ. The notification mechanisms will be based on monitored air quality and other situations that might arise during the emergency. Evacuation of the area outside the EPZ is coordinated through this emergency response plan and the response framework in the local authority's Municipal Emergency Plan. The regional health authorities also have a role in evacuation in accordance with the Alberta Public Health Act, Section 52.2.

Public protection mechanisms when based on monitored air quality outside the EPZ are based on the monitored levels of H₂S/SO₂ listed below:

H ₂ S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place .
<p>NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.</p>	
SO ₂ Concentrations in Unevacuated Areas	Requirement
5 ppm (15-minute average) 1 ppm (3-hour average) 0.3 ppm (24-hour average)	Immediate evacuation of the area must take place.

2.5 ALERT

An incident that can be handled on-site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public (Appendix 1, AER Directive 71, November 2008, including errata of November 2009)

2.6 LEVEL ONE EMERGENCY

There is no danger outside the licensee's property, there is no threat to the public and there is minimal environmental impact. The situation can be handled entirely by licensee personnel. There will be immediate control of the hazard. There is little or no media interest.

EVACUATION of the Public Inside the Initial Isolation Zone (IIZ)

Once a Level One Emergency has been declared, Harvest will advise all public inside the Initial Isolation Zone (IIZ) to evacuate.

NOTIFICATION of the Public Inside the Protective Action Zone (PAZ)

Once a Level One Emergency has been declared, Harvest will notify all public inside the Protective Action Zone (PAZ), so the public may decide whether to voluntarily evacuate.

NOTIFICATION of the Public Inside the Emergency Planning Zone (EPZ) who are NOT part of the Initial Isolation Zone (IIZ) or the Protective Action Zone (PAZ)

Once a Level One Emergency has been declared, Harvest will notify all public inside the Emergency Planning Zone (EPZ) who are NOT part of the Initial Isolation Zone (IIZ) or the Protective Action Zone (PAZ), so the public may decide whether to voluntarily evacuate.

2.7 LEVEL TWO EMERGENCY

There is no immediate danger outside the licensee's property, but there is the potential for the emergency to extend beyond the licensee's property. Outside agencies must be notified. Imminent control of the hazard is probable, but there is a moderate threat to the public and/or the environment. There may be local and regional media interest in the event.

SHELTER-IN-PLACE or EVACUATION of the Public Inside the Initial Isolation Zone (IIZ)

If evacuation of the public inside the IIZ has not yet been accomplished, once a Level Two Emergency has been declared, Harvest will:

- Immediately Shelter-In-Place the public inside the IIZ.
- OR
- If safe to do so, advise all public inside the IIZ to evacuate.

SHELTER-IN-PLACE or EVACUATION of the Public Inside the Protective Action Zone (PAZ)

Once a Level Two Emergency has been declared, Harvest will advise all public inside the PAZ to:

- Immediately Shelter-In-Place upon detection of a sour gas odour or HVP plume.
- AND
- Evacuate when instructed to do so by responders involved in the emergency response. Harvest must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S listed in the table below and as dictated by the specifics of the incident itself. Harvest, as a precaution, may choose to exceed AER evacuation guidelines based on factors such as well control, weather conditions or other mitigating factors.

H ₂ S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place.
<p>NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.</p>	

**SHELTER-IN-PLACE or EVACUATION
of the Public Inside the Emergency Planning Zone (EPZ) who are NOT part of the
Initial Isolation Zone (IIZ) or the Protective Action Zone (PAZ)**

Once a Level Two Emergency has been declared, Harvest will advise all public inside EPZ who are NOT part of the IIZ or the PAZ to:

- Immediately Shelter-In-Place upon detection of a sour gas odour or HVP plume.
- AND
- Evacuate when instructed to do so by responders involved in the emergency response. Harvest must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S listed in the table below and as dictated by the specifics of the incident itself. Harvest, as a precaution, may choose to exceed AER evacuation guidelines based on factors such as well control, weather conditions or other mitigating factors.

H₂S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place.
NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.	

2.8 LEVEL THREE EMERGENCY

The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi-agency municipal and provincial government involvement is required (Appendix 1, AER Directive 71, November 2008, including errata of November 2009).

SHELTER-IN-PLACE or EVACUATION of the Public Inside the Initial Isolation Zone (IIZ)

If evacuation of the public inside the IIZ has not yet been accomplished, once a Level Three Emergency has been declared, Harvest will:

- Immediately Shelter-In-Place the public inside the IIZ.
- OR
- If safe to do so, advise all public inside the IIZ to evacuate.

NOTE: Harvest will be igniting the well if any of the ignition criteria are met (Section 5.0).

SHELTER-IN-PLACE or EVACUATION of the Public Inside the Protective Action Zone (PAZ)

Once a Level Three Emergency has been declared, Harvest will advise all public inside the PAZ to:

- Immediately Shelter-In-Place upon detection of a sour gas odour or HVP plume.
- AND
- Evacuate when instructed to do so by responders involved in the emergency response. Harvest must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S listed in the table below and as dictated by the specifics of the incident itself. Harvest, as a precaution, may choose to exceed AER evacuation guidelines based on factors such as well control, weather conditions or other mitigating factors.

NOTE: Harvest will ignite the well if any of the ignition criteria are met (Section 5.0).

H ₂ S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place.
NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.	

SHELTER-IN-PLACE or EVACUATION of the Public Inside the Emergency Planning Zone (EPZ) who are NOT part of the Initial Isolation Zone (IIZ) or the Protective Action Zone (PAZ)	
<p>Once a Level Three Emergency has been declared, Harvest will advise all public inside the EPZ who are NOT part of the IIZ or the PAZ to:</p> <ul style="list-style-type: none"> Immediately Shelter-In-Place upon detection of a sour gas odour or HVP plume. <p style="text-align: center;">AND</p> <ul style="list-style-type: none"> Evacuate when instructed to do so by responders involved in the emergency response. Harvest must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H₂S listed in the table below and as dictated by the specifics of the incident itself. Harvest, as a precaution, may choose to exceed AER evacuation guidelines based on factors such as well control, weather conditions or other mitigating factors. <p>NOTE: Harvest will ignite the well if any of the ignition criteria are met (Section 5.0).</p>	
H ₂ S Concentrations in Unevacuated Areas	Requirement
1 to 10 ppm (3-minute average)	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S must be notified.
Above 10 ppm★ (3-minute average)	Local conditions must be assessed and all persons must be advised to evacuate and/or Shelter-In-Place.
NOTE: ★If monitored levels over the 3-minute interval are declining (i.e., three readings show a decline from 15 ppm to 10 ppm to 8 ppm over 3 minutes), evacuation may not be necessary even though the average over the 3 minute interval would be 11 ppm. Licensees should use proper judgment in determining if evacuation is required.	

BRITISH COLUMBIA

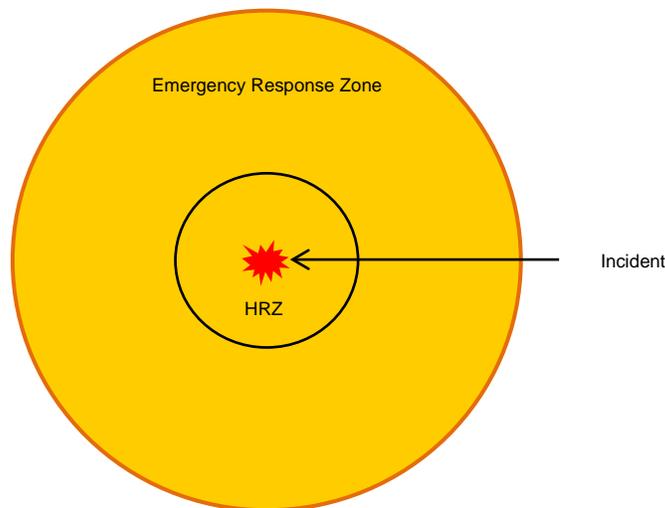
2.9 MINOR INCIDENTS AND LEVELS OF EMERGENCY

Emergency Planning Zone (EPZ)

A predetermined geographical area surrounding a well, pipeline, or facility containing hazardous product that requires specific emergency response planning.

Hazard Response Zone (HRZ)

A geographical area within which an emergency has occurred or is about to occur, and which has been identified, defined and designated to receive emergency response actions.



Utilizing the Oil and Gas Commission's (OGC's) Incident Classification Matrix, the permit holder will determine if the incident is a "Minor Incident" or a Level One, Two or Three Emergency. The following pages contain the Oil and Gas Commission's (OGC's) Incident Classification Matrix in both a table format and a matrix format.

Minor Incident

For a Minor Incident, the permit holder will submit a report within 24 hours, utilizing the Oil and Gas Commission's (OGC's) Online Minor Incident Reporting System (operated through KERMIT). Refer to Section 8.0 for an example of this online form.

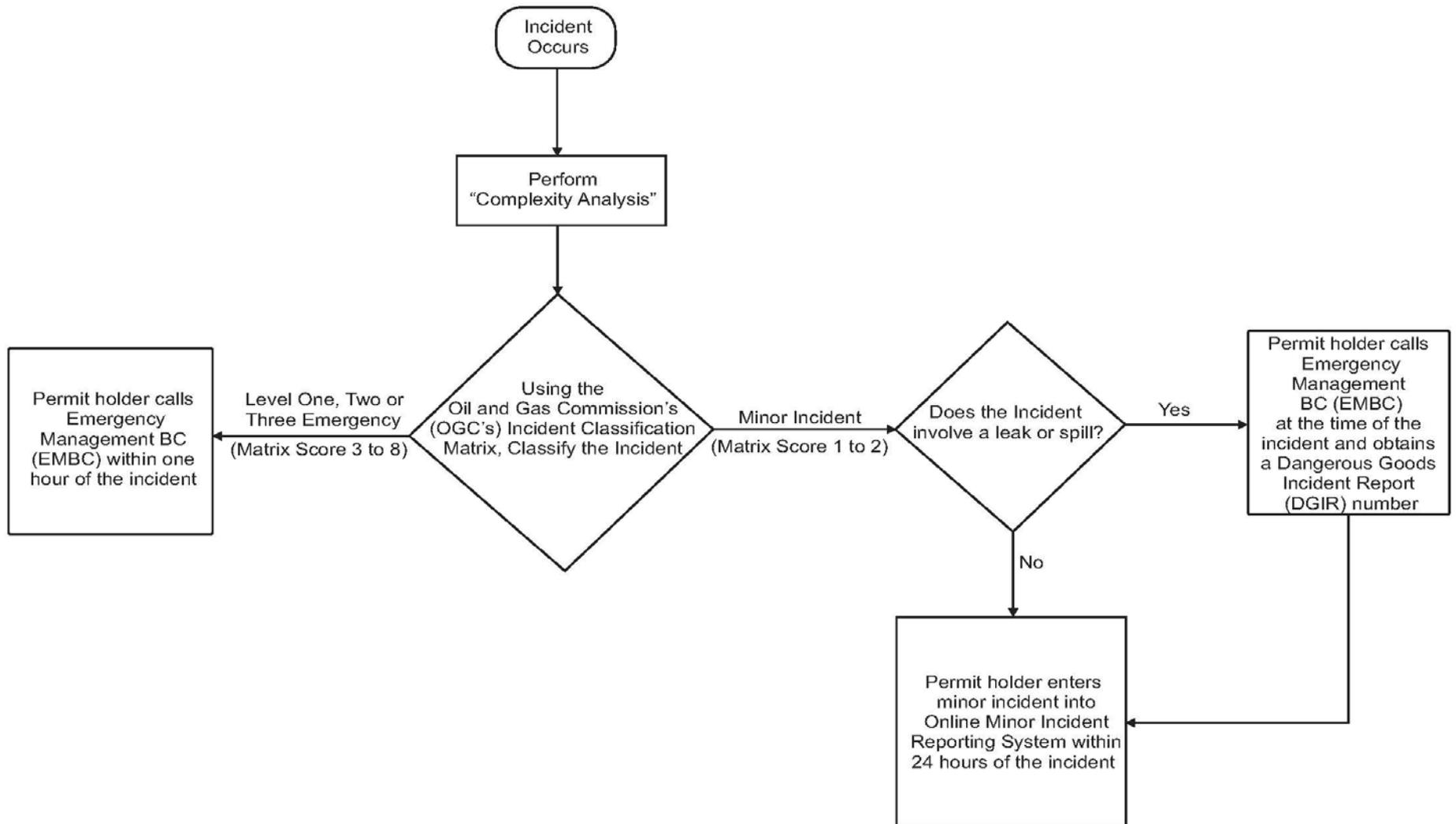
Level One, Two or Three Emergency

For a Level One, Two or Three Emergency, the permit holder reports verbally through the Emergency Management BC (EMBC) reporting line. The permit holder will complete a British Columbia - Incident Notification Report. Refer to Section 8.0

Incident Reporting Flowchart

The following page contains a flowchart outlining the process for reporting either a "Minor Incident" or a Level One, Two or Three Emergency.

Flowchart Outlining the Process for Reporting Either a “Minor Incident” or a Level One, Two or Three Emergency



Oil and Gas Commission's (OGC's) Incident Classification Matrix – Table Format

INSTRUCTIONS: START AT THE TOP AND CONTINUE DOWN UNTIL YOU CHECK OFF ANY ONE BOX IN BOTH CONSEQUENCE AND PROBABILITY TO DETERMINE THE INCIDENT CLASSIFICATION. THIS MATRIX IS REQUIRED AS AN ATTACHMENT UPON SUBMISSION OF AN INCIDENT THROUGH THE ONLINE MINOR INCIDENT REPORTING SYSTEM.

TABLE 1. CONSEQUENCE RANKING

RANK	CONSEQUENCE (any one of the following)
4	<input type="checkbox"/> Major on site equipment or infrastructure loss <input type="checkbox"/> Major act of violence, sabotage, or terrorism which impacts permit holder assets <input type="checkbox"/> Reportable liquid spill beyond site, uncontained and affecting environment <input type="checkbox"/> Gas release beyond site affecting public safety
3	<input type="checkbox"/> Threats of violence, sabotage, or terrorism <input type="checkbox"/> Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property <input type="checkbox"/> HAZMAT worker exposure exceeding allowable <input type="checkbox"/> Major on site equipment failure
2	<input type="checkbox"/> Major on site equipment damage <input type="checkbox"/> A security breach that has potential to impact people, property or the environment <input type="checkbox"/> Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property
1	<input type="checkbox"/> Moderate on site equipment damage <input type="checkbox"/> A security breach that impacts oil and gas assets <input type="checkbox"/> Reportable liquid spill or gas release on location <input type="checkbox"/> **Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations
0	<input type="checkbox"/> No consequential impacts

**** For this consequence criteria, a probability score of 2 or higher must be used.**

TABLE 2. PROBABILITY RANKING

RANK	PROBABILITY (any one of the following)
4	<input type="checkbox"/> Uncontrolled, with control unlikely in near term
3	<input type="checkbox"/> Escalation possible; under or imminent control
2	<input type="checkbox"/> Escalation unlikely; controlled or likely imminent control
1	<input type="checkbox"/> Escalation highly unlikely; controlled or imminent control
0	<input type="checkbox"/> Will not escalate; no hazard; no monitoring required

TABLE 3. INCIDENT RISK SCORE AND CLASSIFICATION

CONSEQUENCE _____ + PROBABILITY _____ = RISK SCORE _____ (this must be completed).

RISK SCORE	ASSESSMENT RESULT
Minor (1-2)	Notification Only; permit holder must notify the Commission online within 24 hours using the Form A: Minor Incident Notification Form . In addition to Form A, spills must also be reported to EMBC.
Moderate (3-4)	Level-1 Emergency; immediate notification (call EMBC)
Major (5-6)	Level-2 Emergency; immediate notification (call EMBC)
Serious (7-8)	Level-3 Emergency; immediate notification (call EMBC)

SPILL REPORTING CRITERIA

Where the permit holder holds or maintains rights, the permit holder must report to the BC Oil and Gas Commission, all spills of materials as identified below:

- A spill or release of any amount of materials which impacts water ways
- Hydrocarbons; 100 litres where the hydrocarbon contains no toxic materials and does not impact water ways
- Produced/salt water; 200 litres where the fluid contains no toxic materials
- Fresh water; 10,000 litres
- Drilling or invert mud; 100 litres
- Sour Natural gas; 10Kg or 15 m³ by volume where operating pressure is >100 PSI
- Condensate; 100 litres
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres

Please refer to the BC Environmental Management Act; [Spill Reporting Regulation](#), Schedule “Reporting Levels for Certain Substances” for determining reportable spillage amounts of other substances:

OTHER REPORTABLE INCIDENTS

The Commission’s Incident Risk Classification Matrix is designed to assist permit holders in determining which incidents must be reported. However, some incidents, which do occur, may not meet the criteria outlined in the Incident Classification Matrix but still require notification to the Commission as a minor notification. These include the following:

- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
 - pit gain of 3 m³ or greater
 - casing pressure 85% of MA
 - 50% out of hole when kicked
 - well taking fluid (LC)
 - associated spill

- general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc
- Pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only



OGC Incident Classification Matrix

		Probability					
		4	3	2	1	0	
		<input type="checkbox"/> Uncontrolled, with control unlikely in near term	<input type="checkbox"/> Escalation possible; under or imminent control	<input type="checkbox"/> Escalation unlikely; controlled or likely imminent control	<input type="checkbox"/> Escalation highly unlikely; controlled or imminent control	<input type="checkbox"/> Will not escalate; no hazard; no monitoring required	
Consequence	4	<ul style="list-style-type: none"> <input type="checkbox"/> Major on site equipment or infrastructure loss <input type="checkbox"/> Major act of violence, sabotage, or terrorism which impacts permit holder assets <input type="checkbox"/> Reportable liquid spill beyond site, uncontained and affecting environment <input type="checkbox"/> Gas release beyond site affecting public safety 	Level 3	Level 3	Level 2	Level 2	Level 1
	3	<ul style="list-style-type: none"> <input type="checkbox"/> Threats of violence, sabotage, or terrorism <input type="checkbox"/> Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property <input type="checkbox"/> HAZMAT worker exposure exceeding allowable <input type="checkbox"/> Major on site equipment failure 	Level 3	Level 2	Level 2	Level 1	Level 1
	2	<ul style="list-style-type: none"> <input type="checkbox"/> Major on site equipment damage <input type="checkbox"/> A security breach that has potential to impact people, property or the environment <input type="checkbox"/> Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property 	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
	1	<ul style="list-style-type: none"> <input type="checkbox"/> Moderate on site equipment damage <input type="checkbox"/> A security breach that impacts oil and gas assets <input type="checkbox"/> Reportable liquid spill or gas release on location <input type="checkbox"/> ** Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations 	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
	0	<ul style="list-style-type: none"> <input type="checkbox"/> No consequential impacts 	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No notification Required

The table below indicates actions that may be required to be carried out if an incident occurs.

RESPONSE ACTION CHECKLIST	
ACTIONS	CONSIDERATIONS
Investigate Situation	Request back-up. Health and safety issues including driving to location
Situation size-up	Quick and preliminary assessment of: <ul style="list-style-type: none"> • Nature of the emergency • What hazards are or may be present • What are the risks to responders and public • Do public need to be made aware or warned • Number and extent of any injuries • Has medical assistance been requested • How large is the area involved • Has the area been or need to be isolated • Wind speed and direction should be noted and documented • Is there an appropriate staging area • Resources available and resources required • Is there anything that could make the situation worse • Will the incident attract media attention
Appropriate site actions	<ul style="list-style-type: none"> • Consider Harvest's 7 emergency response steps • Activate ERP as required
ICS Roles and Responsibilities	<ul style="list-style-type: none"> • Establish command posts • Determine the Incident Action Plan • Resources available and required
Determine size of HRZ	Size of HRZ is normally pre-determined but the type of hazard, responder and public safety must be taken into account
Isolate HRZ	<ul style="list-style-type: none"> • Roadblocks • Rivers • Railways • Trails • Airstrips • NOTAM's • Closure orders
Review entities within HRZ	<ul style="list-style-type: none"> • Residents • Businesses • schools • Public facilities • Recreational areas • First Nations • Roads • Railways • Watercourses • Trappers and Grazing Leases
Determine public safety method	<ul style="list-style-type: none"> • Public notifications • Evacuation • Sheltering • Ignition: ignition criteria and ignition equipment • Air quality monitoring; how long will it take for AQM to arrive? • Rovers and Road blocks
Determine level of Emergency	<ul style="list-style-type: none"> • Establish the level using the 'Incident Classification matrix' • Confirm the level with OGC • Communicate level to all ICS response personnel
Source control/containment	<ul style="list-style-type: none"> • Spill coop's • Contract clean-up companies

	<ul style="list-style-type: none"> • Depressurizing • Shut-in and isolate • flaring
Government agencies	See appendix 1 but always contact: <ul style="list-style-type: none"> • OGC • EMBC • Local authority • RCMP local police
Media interaction	<ul style="list-style-type: none"> • Determine immediate message for responders who are approached by media personnel • Delegate the Information Officer • Inform media how to receive information • Prepare media statements in consultation with OGC

During any emergency, responders must frequently assess the potential of the emergency to affect the public. The method of protecting the public (Shelter-In-Place, evacuation and/or ignition) depends on the type and severity of the emergency.

There could be occurrences when two or even all three, methods of public protection are implemented during an emergency. The primary goal is to evacuate the public from the HRZ if safe to do so.

Shelter-In-Place

Shelter-In-Place must be considered the primary protective measure in limited circumstances when:

- There is not enough time or warning to safely evacuate the public who are potentially at risk.
- The residents are waiting to be evacuated.
- The public would be at a higher risk because of evacuation.
- The buildings are considered to be within or near to toxic or explosive gas plumes.
- Escape routes traverse the hazard.
- The duration of the release is short.
- The location of the release has not been identified.

NOTE: Shelter-In-Place should be of a short duration - several minutes to half an hour.

Harvest will maximize the safety of Sheltered-In-Place public by:

- Initiating ignition if criteria are met.
- Containing the release.
- Initiating evacuation if conditions are determined safe.

Shelter-In-Place procedures:

- Close windows and doors.
- Shut off air intake fans which exhaust outdoors (i.e. dryer, stove vents, bathroom fans, air conditioner, etc.).
- Turn off heat and hot water pilot lights.
- Extinguish fires in fireplaces.
- Wait in an interior room upstairs for further instructions.

Residents, businesses and public facilities are usually telephoned and advised to Shelter-In-Place. It is very important to reassure Sheltered public that they have not been forgotten and that Sheltering is their safest action.

Evacuation

Evacuation is the primary public protection measure if the public can be safely removed from an area during or prior to a release.

Tactical Evacuation: A measure to immediately move people to a safe location as part of emergency response operations. The local authority must be advised if tactical evacuation occurs.

Planned Evacuation: Coordinated through local government who have authority to authorise evacuation orders.

Evacuation Guidelines for H2S and SO2

H2S	SO2	Requirement
Concentrations in ppm		
1 to 10	1 to 5	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H2S or SO2, must be notified.
10 and above	5 and above	Local conditions must be assessed and all persons must be advised to evacuate or shelter.

Residents where Harvest has contact information for will be notified of the emergency and provided all necessary information. If evacuation is advised a Reception Centre may be established and evacuees will be provided with the location details or they will be requested to provide an emergency contact number if they decide to evacuate elsewhere outside the HRZ.

Residents will be asked if they require evacuation assistance and if required, Harvest will provide assistance and transportation.

If large numbers of people are required to be evacuated, Harvest will consider contacting School Bus Authorities and request use of school buses or contact a third party bus company.

If required, Rovers will drive around the area of the HRZ and advise any transients to evacuate the area; again transportation assistance will be provided if necessary. Rovers may be equipped with a bullhorn. If it becomes necessary to 'Rove' a particularly large geographical area, Harvest may consider the use of a helicopter to ensure notification to transients.

Air Quality Monitoring and HRZ Isolation

It is Harvest's responsibility to initiate public protection measures inside the HRZ for any incident involving a release of sour gas or HVP product if there is potential for the release to impact members of the public.

Apart from evacuation and shelter-in-place, public protection may include:

- Mobilizing air quality monitoring units to:
 - ensure air quality in evacuation areas
 - track any gas plume; including SO₂ if a sour gas release is ignited
 - determine if ignition criteria is met
 - determine if evacuation or sheltering criteria has been met
 - assist with determining safe road block locations
 - assist to determine if the incident can be downgraded
- Isolation of the hazardous area by establishing and managing road blocks at the perimeter of the HRZ to restrict unauthorised entry into a hazardous area

Public Communication

The Incident Commander is responsible to ensure members of the public are contacted regarding an emergency that Harvest are experiencing; this role may be delegated to the Public Safety Supervisor see section 4.8 Role and Responsibilities of Public Safety Supervisor. Information for members of the public is outlined below:

Those Entities Within the HRZ During the Incident

- Type of incident
- Status of incident
- Description of the products involved and their long term & short term health effects
- Location and proximity of the incident to the residents
- Public protection measures
- Response actions taken
- Contact number for additional information

To the General Public During the Incident

- Location of the incident
- Areas affected
- Confirmation of the response actions
- Contact number for additional information

Those Entities Within the HRZ After the Incident

- Status of the recovery
- Financial reimbursement information
- Contact number for additional information

Expanding the HRZ

Harvest in co-operation with the local authority and/or local health region/authority will expand the HRZ if downwind air monitoring results indicate H₂S or SO₂ concentrations are approaching evacuation guidelines or lower explosive limit (LEL) monitoring results or visual sightings identify that the HRZ needs to be expanded. Harvest will support the local authority and/or local health region/authority if the HRZ must be enlarged.

If a situation arises where the local authority and/or local health region/authority are unable to participate in public protection decisions beyond the HRZ, Harvest will use the tables on the following page.

NOTIFICATION AND EVACUATION GUIDELINES BEYOND THE HAZARD RESPONSE ZONE (HRZ)	
H₂S Concentrations in Unevacuated Areas	Requirement
1 - 9 ppm	Individuals must be informed about the concentrations and advised to leave. All other individuals should consider leaving the area and seek medical advice if health symptoms develop.
10 ppm or greater	Immediate evacuation of the area must take place or the release must be ignited.
NOTE: H₂S Evacuation Level - when downwind monitoring at the nearest unevacuated downwind residence, outside the HRZ, indicates a level of 10 ppm or greater, evacuation procedures will be initiated if safe to do so.	

NOTIFICATION AND EVACUATION GUIDELINES BEYOND THE HRZ	
SO₂ Concentrations in Unevacuated Areas	Requirement
1 ppm	Voluntary
2 ppm	Evacuation of the area should begin.
5 ppm	Mandatory evacuation of the area.

Alberta and British Columbia

2.10 DRILLING, COMPLETION AND TESTING AND WORKOVER/SERVICING OPERATIONAL EXAMPLES OF ALERT, MINOR INCIDENT, LEVEL ONE, TWO AND THREE EMERGENCY (ALBERTA, BRITISH COLUMBIA AND SASKATCHEWAN)

NOTES: The following “operational examples - drilling, completion and testing and testing and workover/servicing operations” have been supplied to assist Harvest in classifying an incident.

Each Operational Example **MUST** be confirmed by using the appropriate provincial incident classification protocol described within this section.

ALERT (An Alert applies to Alberta only.)
MINOR INCIDENT (A Minor Incident applies to British Columbia only.)
Drilling, Completion and Testing and Workover/Servicing Operations

- a kick
- loss of circulation

LEVEL ONE EMERGENCY
Drilling Operations

- a significant kick
- significant loss of circulation
- inability to circulate
- H₂S or abnormal amounts of soluble sulphides in the drilling fluid
- any abnormal situation that could affect well control

Completion and Testing and Workover/Servicing Operations

- inability to shut in the wellhead because of stuck wireline, endless tubing or tools straddling the master valves
- communication between the tubing and annulus, above the packer, when the well is not dead
- H₂S or abnormal amounts of soluble sulphides in the well control fluids
- any abnormal situation that could affect well control

LEVEL TWO EMERGENCY

Drilling Operations

- lost circulation with mud losses exceeding the mixing rate
- insufficient degasser capacity
- incomplete combustion of H₂S gas at the flare pit
- equipment malfunction that hinders well control while shutting in the well or circulating a kick

Completion and Testing and Workover/Service Operations

- a wellhead leak below the master valve
- a serious leak from lubricator equipment while the tubing is flowing
- communication from the sour formation to the surface casing vent
- an equipment malfunction that hinders well control while shutting in the well or circulating a kick

LEVEL THREE EMERGENCY

Drilling, Completion and Testing and Workover/Service Operations

- inability to shut in the well (This may be caused by a malfunction of the pipe rams, blind rams, annular preventer, stabbing valve or by a flow through cracks, seals or gaskets below the effective BOP equipment.)
- inability to ignite flow at the flare pit or the flare stack and the inability to shut the well in

2.11 RESPONDER SAFETY

Response personnel must stay out of the Hazardous Area until the hazards are identified and assessed, including ignition sources or vapours gathering in low-lying areas such as ditches, trenches and forested areas. The nature of a hazard will influence the responses. Therefore, the following characteristics about the hazard must be considered:

- The quantity and type of product involved.
- The potential for the situation to escalate.
- The location of the incident, the time of day and the weather conditions.
- Actual and perceived danger to responders, the public and the environment.
- The number of responders and their training.
- The availability of response equipment.
- The availability of external support (e.g. ambulances, police, fire fighters and mutual aid).

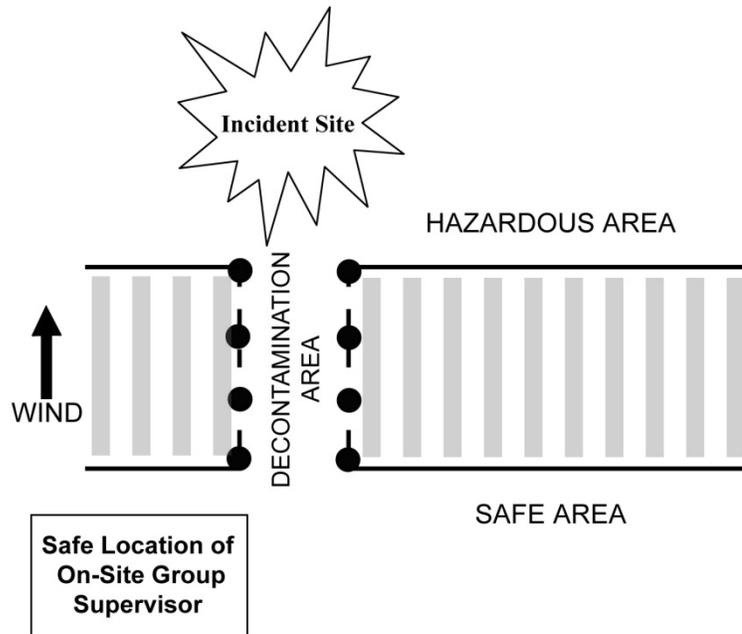
Responders must approach an incident site that may have gases or explosive vapours from an upwind or crosswind direction and should inspect the site from a distance (using binoculars if possible) if hazards have not been assessed. When on-site, responders must take the following precautions:

- Identify safe escape routes away from Hazardous Areas.
- Continue to assess the related hazards, e.g. toxic vapours, fire or explosion hazards.
- Protect themselves and others before initiating control and containment operations.
- Do not allow anyone, including first responders such as police, fire fighters or ambulance attendants to enter the Hazardous Area unless they are properly trained and equipped with personal protective equipment.
- Avoid extinguishing an ignited hydrocarbon release if the supply cannot be stopped.
- Only attempt fire control on small fires. Extensive fires or uncontrolled facility fires must be dealt with by external firefighting professionals. Responders must not attempt to battle a fire without adequate firefighting equipment, training and backup personnel.

- Advise fire authorities when a Harvest facility is threatened by an external fire. Fire authorities should also be made aware of dangerous products or flammable hazards at the facility, such as pressurized NGL vessels, chemical and fuel storage.
- Consider an outside expert when necessary. Well control, for example, is a speciality requiring specific experience, equipment and procedures.

On-site Work Areas

Harvest may choose to separate the site into three distinct areas to clearly identify the high-risk areas and to reduce the hazards to the on-site responders. The three areas could be defined as the “Safe Area”, the “Hazardous Area” and the “Decontamination Area”. THESE THREE ON-SITE WORK AREAS *MUST NOT BE CONFUSED WITH A PLANNING ZONE OR A RESPONSE ZONE*. ON-SITE WORK AREAS ARE PERTINENT TO ON-SITE RESPONDERS ONLY.



Safe Area

The Safe Area is an area verified by Harvest to be free from any hazards and must be continuously monitored and evaluated. The On-site Command Post must be located in the Safe Area.

Hazardous Area

Extreme caution and planning must be undertaken when entering the Hazardous Area and access will be strictly controlled. Only personnel with appropriate personal protective equipment, training and an understanding of the specific response and control procedures will be allowed into the Hazardous Area. An example of this strategy is confined space entry and rescue. Prior to entry into the Hazardous Area, all personnel should fully understand the goals, the method of on-site responder communication and the rescue plan.

The following guidelines help Harvest determine if an area is hazardous:

- Combustible gas reading of 10% LEL or greater.
- H₂S gas readings of 10 ppm exposure limit.
- SO₂ readings of 5 ppm or greater for 15 minutes.
- Oxygen content of less than 19.5% or greater than 22%.
- Presence of toxic concentrations of organic and inorganic vapours/gases and liquids. [Consult Material Safety Data Sheets (MSDS) for toxicity data.]
- Any area Harvest deems to be hazardous.

Harvest will consider the following on-site conditions when determining the size of the Hazardous Area:

- The location of access routes, power lines, pipelines, fire and explosion hazards.
- Areas where vapours are likely to accumulate such as downwind areas, low areas, confined spaces.
- Scene stability, e.g. steep slopes, overhanging banks, unstable soil, thin ice.
- Weather conditions.
- Properties and evacuation data for the product involved.
- MSDS sheets.

Decontamination Area

Personnel responding to hazardous substance emergencies may become contaminated in several ways:

- Contacting vapours, gases, mists or particulate in the air.
- Being splashed by materials while sampling or opening a container.
- Walking through puddles of liquids or on contaminated soil.

- Using contaminated instruments or equipment.

Decontamination is the complete or partial removal or neutralization of the harmful contamination chemicals. Some equipment will not withstand a proper decontamination process and therefore must be destroyed. Harvest must determine whether response clothing, instruments and equipment should be decontaminated or destroyed.

The Decontamination Area is usually set up in response to a hazardous material spill and when decontamination of personnel and equipment is required. The Decontamination Area buffers the Hazardous Area and the Safe Area and should be set up where they will not be affected by the on-site hazards. Any contaminated personnel and equipment leaving the Hazardous Area may need to be decontaminated before continuing to the Safe Area.

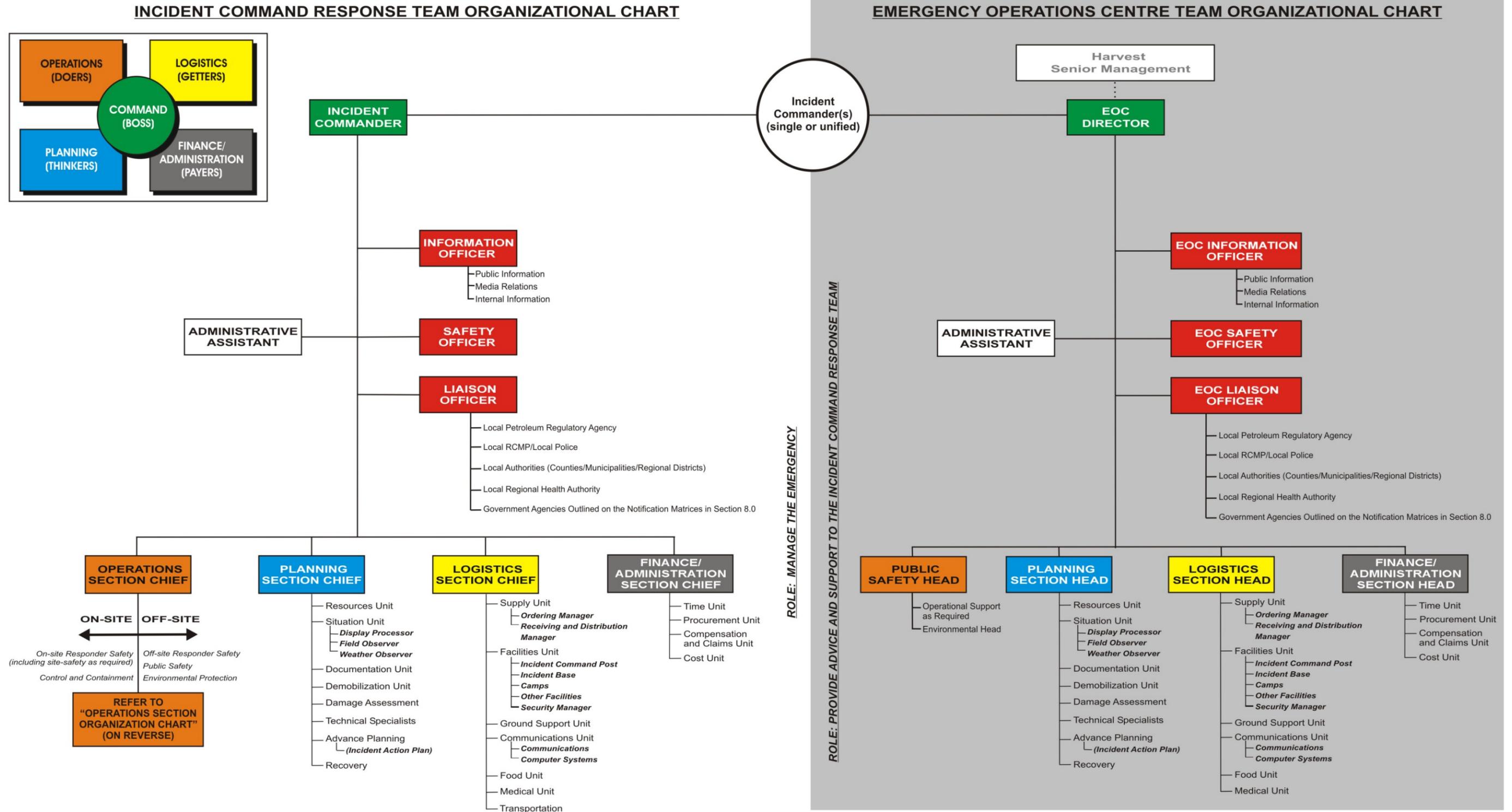
Equipment, solutions and procedures required for decontamination depend on the type and degree of contamination. All hazardous waste must be disposed of according to applicable waste management regulations.



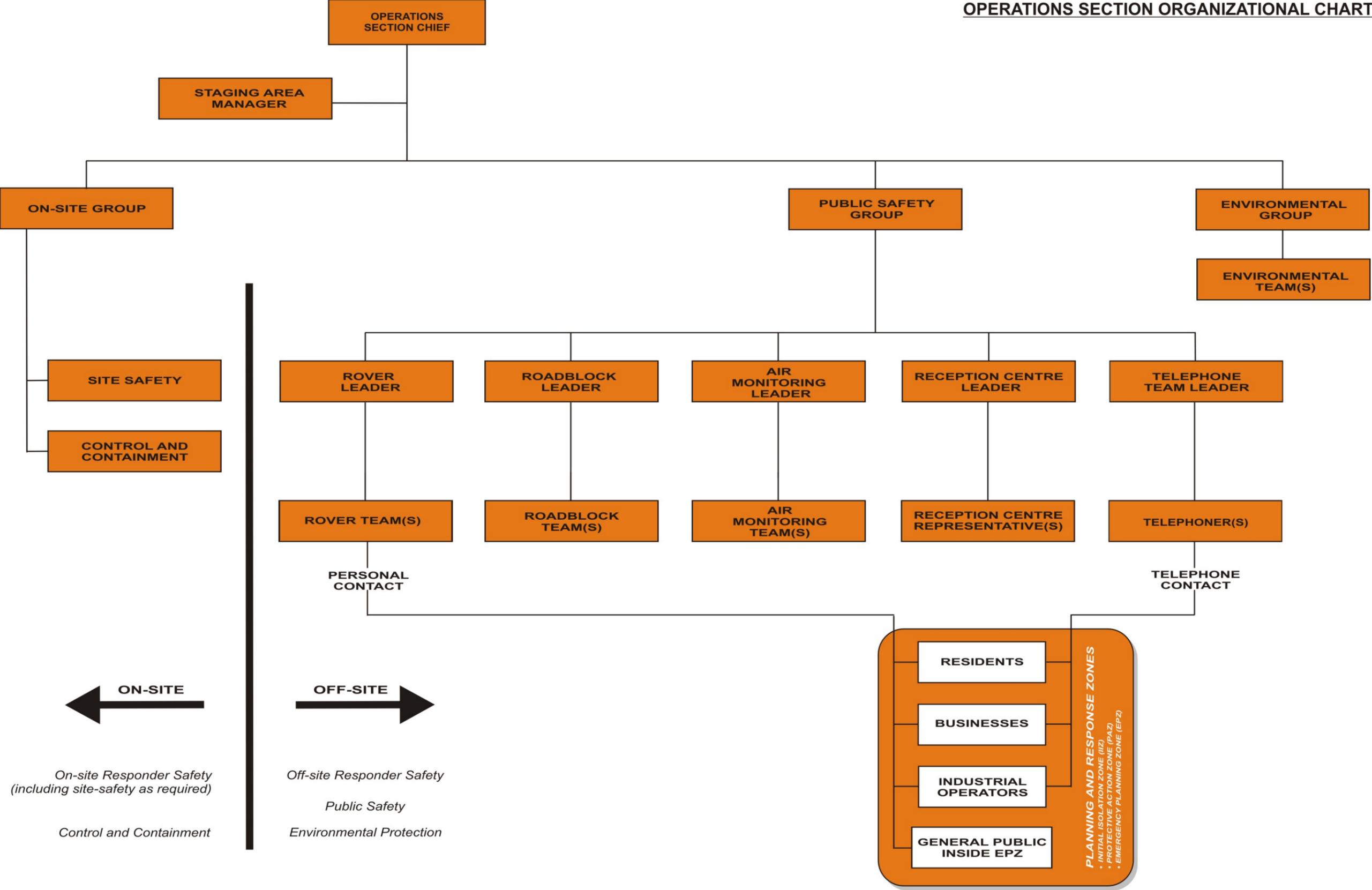
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3.1 HARVEST INCIDENT COMMAND SYSTEM ORGANIZATIONAL CHART



OPERATIONS SECTION ORGANIZATIONAL CHART





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4.0 INCIDENT COMMAND RESPONSE TEAM DUTIES

4.1 INCIDENT COMMANDER

ROLE: Leads the Incident Command Response Team to maximize responder safety, public safety and control and containment of the hazard.

Incident Investigation, Alerts and Minor Incidents

- Dispatch competent personnel to investigate the incident. Whenever possible, personnel must investigate in pairs. If only one person arrives at the emergency location, then no entry should be made until back-up arrives.
- Ensure ALL investigating personnel are made aware of potential dangers and that they have the correct personal protective equipment (PPE) including a working, four gas monitor (H₂S, CO, LEL and O₂).
- Maintain communication with the investigating personnel.
- Based on the information received from the investigating personnel and using the 'Assessment Matrix for Classifying Incidents' (Refer to Section 2.0 of the CERP), determine an Alert, Minor Incident or a Level One, Two or Three Emergency.
- If an Alert (Alberta) or Minor Incident (British Columbia) is declared, inform the appropriate regulatory agency and develop an action plan to get the incident under control.
- If a Minor Incident (British Columbia) is declared, ensure a Form A: Minor Incident Notification Form is completed.

Level One, Two or Three Emergency

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Delegate a competent person as the On-Site Supervisor.
- Ensure that the On-Site Supervisor determines a control and containment action plan and an on-site responder safety action plan.
- Ensure adequate communications are maintained between the Incident Commander and the On-Site Supervisor.
- Ensure the level of emergency is confirmed with the local petroleum regulatory agency

- In order to maintain an effective span of control, delegate, as required, the following Incident Command Response Team members:
 - Information Officer
 - Safety Officer
 - Liaison Officer
 - Operations Section Chief
 - Planning Section Chief
 - Finance/Administration Section Chief
 - Public Safety Supervisor
 - Logistics Section Chief
- Ensure that **ALL** members of the Incident Command Response Team are aware of the Level of Emergency.
- When required, determine a Staging Area and dispatch a Staging Area Manager to establish and coordinate operations at Staging Area. The Staging Area must be located, outside the Emergency Planning Zone, near the emergency site.
- Maintain contact with the Staging Area Manager.
- As required, delegate an Administrative Assistant to assist with documentation, errands and telephone calls.
- Notify the Harvest On-Call EOC Director of the emergency.

Ensure the Public Safety Supervisor Carries out the Following:

- Define the boundaries of the following:
 - In Alberta:**
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
 - In British Columbia:**
 - Hazard Response Zone (HRZ)
- Evaluate how many members of the public could be inside the planning zone and the response zones.
- Account for residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- Determine the appropriate method of public protection i.e. evacuation or shelter-in-place.

- If evacuation is the public protection method employed, the Incident Commander must ensure the security of evacuated homes. This may be by utilizing a third party security company or advice from the police/RCMP
- Determine how many roads lead into the planning and response zones.
- Develop an air monitoring strategy.
- Assess weather conditions in and around the area of the emergency. Determine if weather conditions could impact or impede emergency response efforts.
- Ensure the public outside the EPZ, who may perceive themselves to be at risk, are informed of the emergency.
- Ensure the 'Information Required For Media Personnel' form is completed and sent to the Information Officer.
- Refer all media enquiries to the Information Officer.
- If required, in conjunction with the On-site Supervisor, review Harvest's ignition guidelines (Refer to Section 5.0 of the CERP).

Security Management

- In the event of a real or perceived security threat, ensure and maintain communications with the EOC Director
- Refer to the corporate Security Management Plan (SMP) and any applicable site specific SMPs
- Ensure all appropriate emergency response plans, maps, response documentation etc. are available
- Harvest's corporate SMP process provides the flexibility needed for proactive decision making to address the security risks to Harvest. Security risk management activities should be commensurate with the type, size, location and criticality of the assets being protected. In conjunction with the EOC Director, develop a security management strategy and protocols to manage any security situation; refer to the 'Security Risk Management Process' section in the corporate SMP
- Harvest has instituted 'Minimum Operational Security Standards' (MOSS) mitigating measures to deal with potential threats. The risk matrix evaluates the likelihood of identified threats occurring, uses a documented quantitative or qualitative method to determine consequences and considers other risks associated with security stakeholders, contractors and suppliers.

Refer to the 'Risk Matrix'; the 'Probability and Consequence' table and the 'Graduated Threat Mitigation Matrix' contained within section 5 of the corporate SMP

- Ensure that procedures for ensuring the security and safety of all workers, members of the public, responders and Harvest facilities is developed, documented and disseminated to all personnel concerned
- Consider shut-down of all operations systems in the area affected and the evacuation of personnel

Post-incident Duties

- Once the situation improves, the Harvest Incident Commander is the only Harvest representative with the authority, to agree with required government representatives to downgrade or stand-down a level of emergency.

In Alberta: The Incident Commander will make the decision to downgrade or stand-down an emergency in consultation with the regulatory agency. The regulatory agency will consult with other applicable agencies and confirm with the licensee that the emergency downgrade or stand-down is appropriate.

In British Columbia: For a Level One, Two or Three Emergency, the Incident Commander will consult with the regulatory agency and Emergency Management BC (EMBC).

- Notify **ALL** response team members that the emergency has been downgraded or stood-down.
- Ensure all notified and evacuated persons are informed of the status of the emergency.
- Ensure that the incident site is not disturbed until all necessary site investigations have been completed by the police, regulatory agency, OH&S, WCB and company representatives, e.g. safety, engineering, legal and insurance and that all evidence is secured
- Gather all data related to the response and prepare post-incident reports. If required, request Harvest's EOC Director to procure personnel to conduct Critical Incident Stress Debriefing (CISD).
- Once the incident has been investigated and the report prepared, the Incident Commander should ensure that all relevant personnel are provided with an incident debrief.

- ❑ For a Level One, Two or Three Emergency or any pipeline incident in British Columbia, ensure Form D – Post Incident Report is completed and submitted.

4.2 ADMINISTRATIVE ASSISTANT

ROLE: Assists the Incident Commander with clerical duties.

Located at: Incident Command Post

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Assist the Incident Commander as necessary. This may include documenting events, completing the wall Charts and Guides, handling telephone calls and providing clerical support.
- Participate in Harvest Incident Command Response Team meetings.

Post-incident Duties

- Participate in the Post-incident Debrief held by the Incident Commander.
- Forward all data related to the incident to the Incident Commander.

4.3 INFORMATION OFFICER

ROLE: Interfaces with media involved in the emergency and provides general public statements.

If appointed, Information Officers located in the field and in the EOC should liaise with each other to ensure a coordinated media response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Even Log.
- Ensure you have sufficient information regarding the incident.
- Ensure you have a completed copy of the '**Information Required For Media Personnel**' form.

Adhere to the following media guidelines:

1. Return media calls promptly and courteously.
2. Restrict comments to facts. Do not speculate.
3. Keep messages consistent and nontechnical.
4. Co-operate with the media, but do not allow the media to endanger you or others in their quest for stories or pictures.
5. Inform the Incident Commander about the nature of any discussions with the media.

Prepare media releases and handle inquiries from the media. Coordinate actions with Harvest's Liaison Officer to ensure consistent information is given to the media, public and government agencies.

- The Incident Commander must be made aware of all media releases.
- Harvest will coordinate media releases with the provincial regulatory agency prior to release to ensure consistency and accuracy of information. Information can be communicated through written news releases, news conferences and any other effective means Harvest chooses to use.

The following information must be disseminated to the public immediately and during an incident:

Information Disseminated to the Public at the Onset of and During an Incident	
<ul style="list-style-type: none">• Type and status of incident.• Location and proximity of the incident to people in the vicinity.• Public protection measures to follow, evacuation instructions, and any other emergency response measures to consider.• Actions being taken to respond to the situation, including anticipated time period.• Contacts for additional information.• Short and long term effects of products involved• Potential effects on people and advice if people experience adverse effects	<ul style="list-style-type: none">• Description of the products involved and their short-term and long-term effects.• Effects the incident may have on people in the vicinity.• Areas impacted by the incident.• Actions the affected public should take if they experience adverse effects.

To the General Public - <i>During</i>
<ul style="list-style-type: none">• Type and status of the incident.• Location of the incident.• Areas impacted by the incident.• Description of the products involved.• Contacts for additional information.• Actions being taken to respond to the situation, including anticipated time period.

Post-incident Duties

- As required, continue media and public interaction.
- Participate in the Post-incident Debrief.
- Forward all data related to the response to the Incident Commander or the EOC Director.

4.4 SAFETY OFFICER

ROLE: Develops and recommends measures for ensuring responder safety.
Discontinues any operation which may threaten the health and safety of responders or public.
May provide advice and support to the Incident Command Response Team relating to control and containment measures.

If appointed, Safety Officers located in the field and in the EOC should liaise with each other to ensure a coordinated safety policy.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Understand the Incident Action Plan for responder safety implications.
- Develop and recommend activities at the site of the incident to maximize on-site responder/public safety and control and containment.
- Advise the discontinuation of any operation which threatens the health and safety of responders.
- Review Harvest's ignition guidelines (Refer to Section 5.0 of the CERP) and ignition decision-making authority.
- If the incident is a security issue, ensure that any procedures developed account for the health and safety of workers, responders and members of the public. Review the corporate and, as necessary, any site specific SMPs

Post-incident Duties

- As required, continue to advise and support the Incident Command Response Team regarding measures for ensuring responder safety.
- Participate in the Post-incident Debrief.
- Forward all data related to the response to the Incident Commander.

4.5 LIAISON OFFICER

ROLE: Interfaces with government agencies involved in the response.

If delegated, Liaison Officers located in the field and in the EOC should communicate with each other to ensure a coordinated response.

NOTE: Refer to the Telephone Directory of the applicable Site-Specific Supplemental Section for contact numbers for the government agencies.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Refer to Section 8 of the Corporate Emergency Response Plan and review the ‘**Notification Matrix**’ (Alberta or British Columbia as required).
- Evaluate which government agencies have jurisdiction inside the planning and response zones.
- Ensure you have as much information as possible regarding the incident e.g. an applicable Incident Notification form.
- Ensure you are aware of and confirm the level of emergency declared and that this is communicated to all government agencies.
- For the area covered by the Emergency Planning and Awareness Zones, the following government agencies will always need to be notified:
 - Provincial regulatory agency
 - local RCMP/local police
 - local authorities (counties/municipalities/regional districts)
 - local regional health authority
- Ensure that the appropriate wall charts and guides are updated with the required information.
- During any level of emergency, with the permission of the Incident Commander, invite representatives from the provincial regulatory agency, the local authority and the local regional health authority to the Incident Command Post or EOC, to observe Harvest’s response and/or to participate in a Unified Command.
- Address inquiries from and obtain information required by, the government agencies.

- Coordinate the flow of information to and from the government agencies.
- Coordinate the use of expertise and resources available through the government agencies.
- Participate in Incident Command Response Team meetings.

Post-incident Duties

- Notify all government agencies previously contacted by Harvest.
- Send an External Agency Post-incident Evaluation form to each government agency involved in the response. Follow up with each government agency to ensure each External Agency Post-incident Evaluation form is returned.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Forward all data related to the incident to the Incident Commander.

4.6 OPERATIONS SECTION CHIEF

ROLE: Manages tactical operations to implement the overall Incident Action Plan.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Ensure an appropriate Incident Notification report is completed or received from the Incident Commander.
- In order to maintain an effective span of control, as required, delegate the following Incident Command Response Team members:
 - On-Site Supervisor
 - Public Safety Supervisor
 - Environmental Team Leader
 - Staging Area
- When required, designate a Staging Area and dispatch a Staging Area Manager to establish and coordinate operations at Staging Area. The Staging Area must be located, outside the Emergency Planning Zone, near the emergency site.
- Maintain contact with the Staging Area Manager.
- Confirm that there is an adequate communication link between the Incident Command Post, the On-site Command Post, the Remote Command Post (if established) and the Reception Centre (if established).
- As required, obtain medical response personnel. Ensure that medical response teams are notified of any hazards.

Emergency Management

- In the event of a real or perceived security threat, ensure and maintain communications with the EOC Director
- Refer to the corporate Security Management Plan (SMP) and any applicable site specific SMPs
- Ensure all appropriate emergency response plans, maps, response documentation etc. are available
- Harvest's corporate SMP process provides the flexibility needed for proactive decision making to address the security risks to Harvest. Security risk management activities should be commensurate with the type, size, location and criticality of the assets being

protected. In conjunction with the EOC Director, develop a security management strategy and protocols to manage any security situation; refer to the 'Security Risk Management Process' section in the corporate SMP

- Harvest has instituted 'Minimum Operational Security Standards' (MOSS) mitigating measures to deal with potential threats. The risk matrix evaluates the likelihood of identified threats occurring, uses a documented quantitative or qualitative method to determine consequences and considers other risks associated with security stakeholders, contractors and suppliers.

Refer to the 'Risk Matrix'; the 'Probability and Consequence' table and the 'Graduated Threat Mitigation Matrix' contained within section 5 of the corporate SMP

- Ensure that procedures for ensuring the security and safety of all workers, members of the public, responders and Harvest facilities is developed, documented and disseminated to all personnel concerned
- Consider shut-down of all operations systems in the area affected and the evacuation of personnel

Ensure that the On-Site Supervisor:

- Prepares a control and containment action plan and an on-site responder safety action plan
- Reviews Harvest's ignition guidelines.

Ensure the Public Safety Supervisor Carries Out the Following:

- Define the boundaries of the following:
 - In Alberta:**
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
 - In British Columbia:**
 - Hazard Response Zone (HRZ)
- Determine the appropriate method of public protection i.e. evacuation or shelter-in-place.
- Evaluate how many members of the public could be inside the planning and response zones; account for residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- Determine if any roads lead into the planning and response zones.

- Determine if weather conditions could impact or impede emergency response efforts.
- Prepare a planning and response zone, responder safety action plan.
- Prepare a planning zone and response zones, public protection action plan.
- Ensure public transportation vehicles have been mobilized as required.
- Ensure a Reception Centre is activated as required.

In Conjunction with Environmental Team Leader

- Develop an environmental monitoring strategy e.g. ground/water monitoring
- Ensure spill response and clean-up operations have commenced as required

Post-incident Duties

- Ensure that the incident site is not disturbed until all necessary site investigations have been completed by the police, regulatory agency, OH&S, WCB and company representatives, e.g. safety, engineering, legal and insurance.
- Ensure the security of evidence prior to an investigation
- Ensure all notified, sheltered and evacuated persons are informed of the status of the emergency.
- Notify the Staging Area Manager (if delegated) of emergency stand-down.
- Gather all documentation related to the response and prepare post-incident reports. If required, request that the Incident Commander procure personnel to conduct Critical Incident Stress Debriefing (CISD).

4.7 ON-SITE SUPERVISOR

ROLE: Manages activities at the site of the incident to maximize on-site responder safety and control and containment of the incident.

- When possible, chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Establish an On-site Command Post in a safe location near to the emergency.
- Ensure there is an adequate communication link between the On-Site Command Post, the Incident Command Post and the Remote Command Post (if established).

NOTE: If communication fails or there is no communication between you and Harvest's Incident Commander or the Operations Section Chief (if delegated), you have the authority to make decisions on Harvest's behalf. This includes any decision on whether to ignite a gas release.

- As required by the Incident Commander or Operations Section Chief, assist in the development of an Incident Action Plan
- Clear non-essential personnel from the incident site.
- Manage operational tactics to implement the Incident Action Plan.
- Ensure all on-site personnel follow the appropriate safe-work procedures.
- With the assistance of the Incident Commander or Operations Section Chief, procure any necessary resources.
- Maintain frequent contact with the Incident Commander or Operations Section Chief.
- Advise medical response personnel dispatched to the On-site Command Post about potential exposures. On-site medical response personnel will require direct safety supervision.

If ignition of a gas plume should become necessary:

- In conjunction with the Incident Commander or Operations Section Chief and the Safety Officer, review Harvest's ignition guidelines (Refer to Section 5.0). Choose a qualified ignition team, discuss ignition procedures and check ignition equipment in advance of the necessity to ignite.
- Commence ignition if any of the ignition criteria are met.
- Participate in Incident Command Response Team meetings.

Post-incident Duties

- Ensure safety of personnel is maintained during clean-up operations and that hazard assessments are carried out.
- If required, request the Incident Commander to mobilize an incident investigation team.
- If an investigation team is required, ensure that the incident site is disturbed as little as possible.
- Initiate and coordinate on-site post-incident duties.
- Ensure all on-site responders DO NOT work alone on clean-up operations.
- If required, ensure that all on-site personnel and equipment are decontaminated before they leave the incident site.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all on-site response data and forward to the Incident Commander.
- As required, request the Incident Commander to procure personnel to conduct Critical Incident Stress Debriefing (CISD).

4.8 PUBLIC SAFETY SUPERVISOR

ROLE: Manages Harvest planning zone and response zones' (except for the incident site) responder safety and public protection measures to maximize public safety.

The following information must be disseminated to the public immediately and during an incident:

Information Disseminated to the Public at the Onset of and During an Incident

- | | |
|--|---|
| <ul style="list-style-type: none">• Type and status of incident.• Location and proximity of the incident to people in the vicinity.• Public protection measures to follow, evacuation instructions, and any other emergency response measures to consider.• Actions being taken to respond to the situation, including anticipated time period.• Contacts for additional information.• Short and long term effects of products involved• Potential effects on people and advice if people experience adverse effects | <ul style="list-style-type: none">• Description of the products involved and their short-term and long-term effects.• Effects the incident may have on people in the vicinity.• Areas impacted by the incident.• Actions the affected public should take if they experience adverse effects. |
|--|---|

To the General Public - *During*

- Type and status of the incident.
- Location of the incident.
- Areas impacted by the incident.
- Description of the products involved.
- Contacts for additional information.
- Actions being taken to respond to the situation, including anticipated time period.

Post-Incident Information

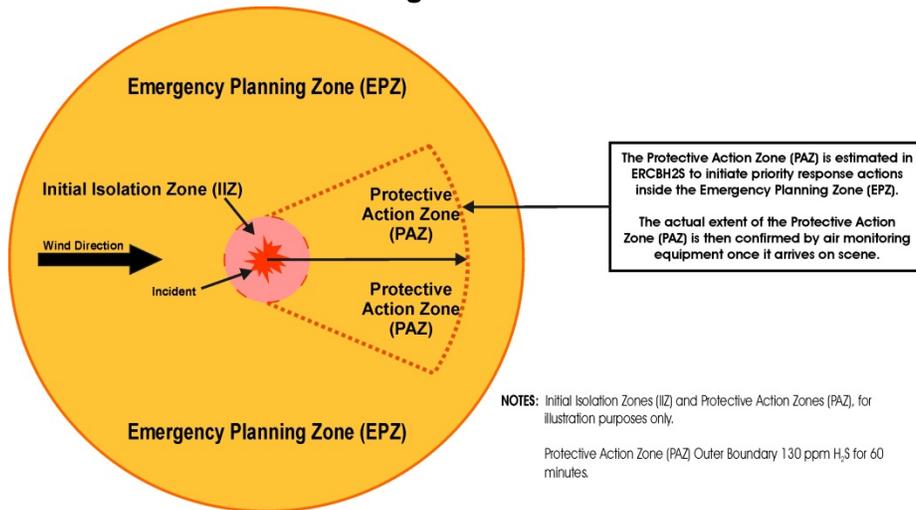
- Status of recovery
- Financial reimbursement information
- Contact number for additional information

- ❑ Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- ❑ As required by the Incident Commander or the Operations Section Chief (if delegated), define the boundaries of the following:

In Alberta:

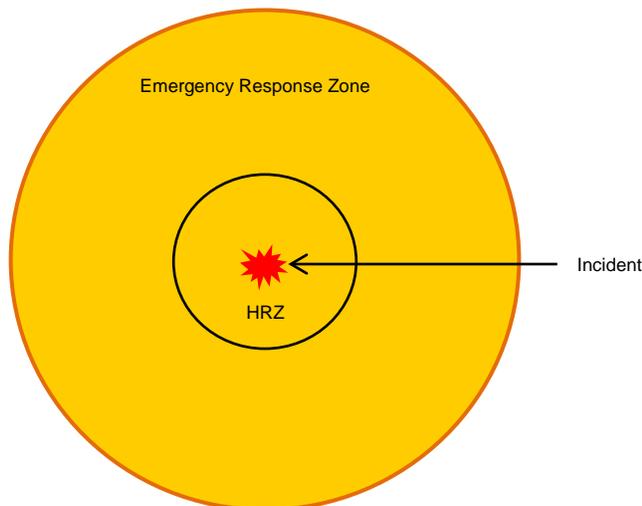
- ❑ Initial Isolation Zone (IIZ)
- ❑ Protective Action Zone (PAZ)
- ❑ Emergency Planning Zone (EPZ)

NOTE: Refer to the following schematic:



In British Columbia

- ❑ Hazard Response Zone (HRZ)



- Confirm that there is an adequate communication link between the Incident Command Post, the On-site Command Post, the Remote Command Post (if established) and the Reception Centre (if established).
- Evaluate how many members of the public could be inside the response zones.
- Account for residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- Determine the best method of public protection i.e. evacuation, shelter-in-place or ignition and confer with the Incident Commander or Operations Section Chief.
- As required, delegate a Reception Centre Representative and activate the Reception centre to receive evacuees
- Delegate a telephone team to contact entities within the EPZ
- Ensure the public outside the Emergency Planning Zone (EPZ), who may perceive themselves to be at risk, are informed about the emergency.
- When necessary, divide the planning zone and the response zones into manageable Rover Areas. Mobilize Rovers to their respective areas and ensure they provide entities within the planning and response zones with a Public Information Notice or an Evacuation Notice.

NOTE: Label each Rover Area with a letter, starting with the letter “A”. The Initial Isolation Zone (IIZ) should be a separate Rover Area and should be labeled Rover Area “A”.

- As required, ensure that public transportation vehicles (Evacuation Buses) have been mobilized.
- Determine how many roads lead into the planning zone and response zones. Number each Roadblock location and mobilize Roadblock teams to their Roadblock location.
- Assess weather conditions in and around the area of the emergency. Determine if weather conditions could impact or impede emergency response efforts.
- Develop an air monitoring strategy. Review the Air Quality Monitoring table below:

Air Quality Monitoring
Air quality monitoring is used for tracking and recording the presence and concentrations of H ₂ S during a sour gas release and SO ₂ following the ignition of the release or the presence and lower explosive limit (LEL) levels of HVP product following a release.
Air quality ng equipment is used to: <ul style="list-style-type: none"> • track the plume, • determine if ignition concentration criteria are met, • determine whether evacuation and/or Shelter-In-Place concentration criteria have been met, • assist in determining when the emergency status can be downgraded, • determine Roadblock locations, and • determine concentrations in areas being evacuated to ensure that evacuation is safe.

Air Quality Monitoring

The type of air monitoring units and the number of monitors required are based on site-specific information, including:

- access and egress points,
- population density and proximity to urban density developments, and
- local conditions.

For an Emergency Planning Zone (EPZ) that includes a portion of an urban density development or urban centre, there must be a minimum of two mobile air quality monitors:

- one to monitor the boundary of the urban density development or urban centre and
- the other to track the plume.

For an emergency involving H₂S, air quality monitoring must occur downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.

For an emergency involving HVP, air quality monitoring may occur downwind or upwind depending on how the plume is tracking, with priority being directed to the nearest unevacuated residence or areas where people may be present. Visual monitoring may also be used for HVP emergencies.

Harvest will be prepared to provide the above details on the intended use and procedures surrounding the activation of air quality monitoring equipment, such as stationary and mobile air quality monitoring units and personal handheld monitors during its response.

Harvest will provide monitored information to the local petroleum regulatory agency; the local county, municipality and/or local authority; the local health region/authority; the provincial environment authority and on request to the public on a regular basis throughout an emergency.

Note: If the incident is a security management issue, in conjunction with the Incident Commander, develop a public safety strategy. Review the corporate and, as necessary, any site specific SMPs.

Post-incident Duties

- Ensure all entities within the EPZ and all entities that were contacted are provided with an update
 - Instruct the Telephone team to contact their assigned contacts and advise them that the emergency is over.
 - Instruct the Telephone team to contact any previously contacted schools and School Bus Authorities, industrial operators, grazing lessees or trappers and advise them that the emergency is over.
- If required, assist evacuees in returning to their homes. Document each returning evacuee.
- Ensure all members of the public who have been affected by the emergency are visited by a Harvest representative to address outstanding concerns.
- If necessary, ensure that all personnel and equipment are decontaminated before they leave a planning zone or a response zone.
- Gather all emergency response data and forward to the Incident Commander.

- As required, ask the Incident Commander to arrange for Critical Incident Stress Debriefing (CISD).
- Participate in the Post-incident debrief held by the Incident Commander.

4.9 ROVER LEADER

ROLE: Leads the Rover Teams to maximize public safety.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- As required by the Public Safety Supervisor, review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
 - Confirm the level of emergency declared
- Evaluate how many members of the public could be inside the planning zone and the response zones.
- Account for residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- When necessary, divide the Initial Isolation Zone, Protective Action Zone and Emergency Planning Zone into rover areas and assign a Rover Team to each area.
- Ensure that each Rover Team understands the boundaries of the IIZ, PAZ and EPZ and that each one is equipped with:
 - An area map
 - An air quality monitoring unit
 - A communications device e.g. cell phone, radio etc.
- Instruct each Rover Team to:
 - Provide a **Public Information Notice** or an **Evacuation Notice** (as directed by the Public Safety Supervisor) to each member of the public inside their Rover area.
 - Provide evacuation assistance to any member of the public inside their Rover area who requests assistance.
 - Post a Public Information Notice or an Evacuation Notice (as directed by the Public Safety Supervisor) on all doors of each unoccupied residence and business and on each out building, and on the windshield of all unattended vehicles inside your Rover area.
 - Contact the Rover leader at regular intervals.

- Take regular air quality readings and document the results.
- Maintain a record of all contact with members of the public on a Public Notification Record.
- Where possible, maintain the security at evacuated premises and other property inside their Rover area.
- Assess the need to mobilize evacuation buses. If required, mobilize a Rover to accompany each evacuation bus.
- Regularly update the Public Safety Supervisor about Rover activities inside all planning zone and response zone and results of Rover air monitoring.

Post-incident Duties

- Direct the activities of the Rover Teams.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all Harvest emergency response data from the Rover Teams and forward to the Public Safety Supervisor.

4.10 ROVER TEAM(S)

ROLE: Rove the planning zone or a response zone to locate members of the public. Assists with the notification and/or evacuation of public inside the planning zone or a response zone.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor or the Rover Leader (if delegated) review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Review the boundaries of your rover area.
- Evaluate how many members of the public could be inside your rover area. Account for residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- Go to your assigned rover area using a safe route.
- Ensure that you are equipped with:
 - An area map. (For non-Harvest personnel, a breakout book should be provided).
 - Air quality monitoring unit
 - Communications device e.g. cell phone, radio etc.
- Confirm communications when you have reached your rover area.
- Complete and provide a **Public Information Notice** or an **Evacuation Notice** to each member of the public inside your rover area. If evacuation is the public protection method, advise the public on the safest route to evacuate.
- Provide evacuation assistance to any member of the public inside your rover area who requests assistance.
- Maintain a record of all contact with members of the public on a Public Notification Record.
- Post a **Public Information Notice** or an **Evacuation Notice** on all doors of each unoccupied residence and business and on each out building, and on the windshield of all unattended vehicles inside your rover area.

- Where possible, maintain the security at evacuated premises and other property inside your rover area.
- Take regular air quality readings and document the results.
- Assess weather conditions in and around your rover area. Determine if weather conditions could impact or impede emergency response efforts.
- Regularly update the Public Safety Supervisor or the Rover Leader (if delegated) about results of air monitoring.

Post-incident Duties

- When required, assist evacuees in returning to their property. Document each returning evacuee.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Forward your Harvest rover emergency response data to the Public Safety Supervisor or the Rover Leader (if delegated).

4.11 ROADBLOCK LEADER

ROLE: Supervise the Roadblock Teams to maximize public safety.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- As required by the Public Safety Supervisor review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
 - Confirm the level of emergency declared.
- Determine if there are roads and how many lead into a planning zone or a response zone.
- Starting at as close as possible to a 12 O'clock position on the area map, number the road block locations in a clockwise direction.
- Mobilize the required number of Roadblock Teams.
- Ensure each Roadblock team is equipped with:
 - A Roadblock kit
 - An area map
 - An air quality monitoring unit
 - A communications device e.g. cell phone, radio etc.
- Mobilize each Roadblock Team to their assigned location using a safe route.
- Instruct each Roadblock Team to confirm communication when in place.
- Instruct each Roadblock Team to advise the public not pass through the road block or to enter a hazardous area.
- Instruct each Roadblock team to document the description and license plate of any vehicle passing through their Roadblock location.
- Instruct each Roadblock Team to take regular air quality readings and document the results on an Environmental Monitoring record.
- Assess weather conditions in and around the area of the emergency. Determine if weather conditions could impact or impede emergency response efforts.
- Maintain a log of all response personnel dispatched to or arriving from a planning or response zone.

- Regularly update the Public Safety Supervisor about Roadblock activities inside the planning and response zones and results of Roadblock Team air monitoring.

Post-incident Duties

- Direct the activities of the Roadblock Teams.
- Ensure all Roadblock equipment is accounted for and demobilized.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all emergency response data from the Roadblock teams and forward to the Public Safety Supervisor.

4.12 ROADBLOCK TEAM(S)

ROLE: Man roadblock positions in order to isolate a planning zone or a response zone.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor or Roadblock Leader (if delegated) review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Ensure you are aware of your designated Roadblock location.
- Travel to your assigned location by a safe route.
- Ensure that you are equipped with:
 - A Roadblock Kit
 - An area map (for non-Harvest personnel, a breakout book should be provided).
 - Air quality monitoring unit
 - Communications device e.g. cell phone, radio etc.
- When you have reached your assigned location, confirm communications with the Public Safety Supervisor or Roadblock Leader (if delegated).
- Review the Roadblock Procedures pamphlet in the vehicle visor pack.
- Advise the public not to pass through the road block or to enter a hazardous area.

On a Roadblock Checkpoint Record, document the description and licence plate of any vehicle entering or leaving the response or planning zone. Immediately pass this information on to the Public Safety Supervisor or the Roadblock Leader (if delegated).

- Take regular air quality readings and document the results.
- Assess weather conditions in and around your Roadblock area. Determine if weather conditions could impact or impede emergency response efforts.
- Regularly update the Public Safety Supervisor or the Roadblock Leader (if delegated) about results of air monitoring.

Post-incident Duties

- Remove your Roadblock location as directed the Public Safety Supervisor or the Roadblock Leader (if delegated).
- Return the Roadblock kits to their storage location.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Forward all Roadblock emergency response data to the Public Safety Supervisor or the Roadblock Leader (if delegated).

4.13 AIR MONITORING LEADER

ROLE: Lead the Air Monitoring Teams to protect responder safety, to maximize public safety and to monitor impacts to the environment.

For an emergency involving H₂S, air quality monitoring must occur downwind of the origin of the leak with priority given to the nearest un-evacuated residence or area where people may be present.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Ensure that mobile Air Quality Monitoring equipment is dispatched to the area.
- As required by the Public Safety Supervisor review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Confirm the level of emergency declared and document it.
- If the emergency involves H₂S or HVP, ensure an appropriate air monitoring strategy is employed.
- Ensure that mobile Air Monitoring Teams are equipped with:
 - An area map
 - An air quality monitoring unit
 - A communications device e.g. cell phone, radio etc.
- Mobilize each Air Monitoring Team to their assigned Area using a safe route.
- Instruct each Air Monitoring Team to confirm communications when in place.
- Ensure good communication is maintained between yourself and the Air Monitoring Team.
- Instruct each Air Monitoring Team to take regular air quality readings and record the results on an Environmental Monitoring Record.
- Regularly update the Public Safety Supervisor about air quality in the area.
- Maintain a log of all air monitoring response personnel dispatched to or arriving from a planning zone or a response zone.

Post-incident Duties

- As directed by the Public Safety Supervisor:
 - Ensure air monitoring is continued.
- Gather all air monitoring emergency response data and forward to the Public Safety Supervisor.
- Participate in the Post-incident Debrief held by the Incident Commander.

4.14 AIR MONITORING TEAM(S)

ROLE: Gather and document data regarding air quality to maximize public safety.

For an emergency involving H₂S, air quality monitoring must occur downwind of the origin of the leak with priority given to the nearest un-evacuated residence or area where people may be present.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor and Air Monitoring Leader (if delegated) review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Ensure that you are fully aware of the area of the IIZ, PAZ and/or EPZ in which you are to monitor the air quality.
- Ensure that you are equipped with:
 - An area map
 - Air quality monitoring unit
 - Communications device
- Travel to your assigned location using a safe route.
- Confirm communications with the Public Safety Supervisor or the Air Monitoring Leader (if delegated) when in place.
- Take regular air quality readings and record the results on an Environmental Monitoring Record.
- Regularly communicate with the Public Safety Supervisor or the Air Monitoring Leader (if delegated) and provide an update on air quality readings.

Post-incident Duties

- As directed:
 - Ensure air monitoring is continued.
- Gather all air monitoring emergency response data and forward to the Public Safety Supervisor.
- Participate in the Post-incident Debrief held by the Incident Commander.

4.15 RECEPTION CENTRE LEADER

ROLE: Leads Reception Centre activities. Assist the Reception Centre Representatives to address the concerns and immediate needs of evacuated public.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Arrange to have the Reception Centre opened.
- Mobilize the required number of Reception Centre Representatives to the Reception Centre.
- Determine a Lead Reception Centre Representative as a contact point and provide the Lead Reception Centre Representative with sufficient Reception Centre Recording forms, i.e.:
 - Time and Event Logs
 - Evacuee Registration Record
 - HOC Expense Claim Form
 - School Children Registration Record
 - The appropriate provincial Health Effects of Hydrogen Sulphide (H₂S) and Sulphur Dioxide (SO₂) Forms
- Ensure good communication is maintained between yourself and the Lead Reception Centre Representative.
- Maintain a log of all Reception Centre response personnel dispatched to or arriving from a Reception Centre.
- Ensure you receive regular reports on the names and addresses of evacuees arriving at or leaving the Reception Centre.
- Regularly update the Public Safety Supervisor about Reception Centre activities.

In conjunction with the Public Safety Supervisor, review the boundaries of the following:

- Initial Isolation Zone (IIZ)
- Protective Action Zone (PAZ)
- Emergency Planning Zone (EPZ)

Direct the Reception Centre Representatives to:

- Be prepared to receive evacuees.
- Arrange for the suitable lodgings of evacuees if the incident is likely to extend over a long period of time.
- Maintain a log of all evacuees on an Evacuee Registration Record.
- Maintain a School Children Registration Record of all school children arriving at the Reception Centre from school or if dropped off by the school bus.

Children must be supervised until they can be re-united with their parents or guardians.

- Assist evacuees as required.
- Evacuees should not have to pay for out-of-pocket expenses. If necessary provide evacuees with an HOC Expense Claim Form.
- Provide regular reports on the names and addresses of arriving evacuees to the Public Safety Supervisor.
- If any evacuees arrive at the Reception Centre and then decide to leave the Reception Centre, the names and contact numbers of these evacuees must be recorded.

It is good practice and will enhance public relations if the Reception Centre Representatives or Reception Centre Leader can arrange for refreshments to be brought to the Reception Centre.

Post-incident Duties

- Direct the activities of the Reception Centre Representatives
- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all Harvest emergency response data from the Reception Centre Group and forward to the Public Safety Supervisor.

4.16 RECEPTION CENTRE REPRESENTATIVE(S)

ROLE: Address the concerns and immediate needs of evacuated public.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Arrange to have the Reception Centre opened.
- When you are in attendance at the Reception Centre, establish and maintain contact with the Public Safety Supervisor or the Reception Centre Leader (if delegated).
- Be prepared to receive evacuees.
- Ensure you have sufficient Reception Centre Recording forms, i.e.:
 - Time and Event Logs
 - Evacuee Registration Record
 - HOC Expense Claim Form
 - School Children Registration Record
 - The appropriate provincial Health Effects of Hydrogen Sulphide (H₂S) and Sulphur Dioxide (SO₂) Forms
- Maintain a log of all evacuees on an Evacuee Registration Record.
- Maintain a School Children Registration Record of all school children arriving at the Reception Centre from school or if dropped off by the school bus.

Children must be supervised until they can be re-united with their parents or guardians.

- Provide regular reports on the names and addresses of arriving evacuees to the Public Safety Supervisor or Reception Centre Leader (if delegated).
- If any evacuees arrive at the Reception Centre and then decide to leave the Reception Centre, the names and contact numbers of these evacuees must be recorded.
- Arrange for the suitable lodgings of evacuees if the incident is likely to extend over a long period of time.
- Evacuees should not have to pay for out-of-pocket expenses. If necessary provide evacuees with an HOC Expense Claim Form.
- Pass on all relevant information to evacuees regarding the response to the incident.
- Assist evacuees as required.

It is good practice and will enhance public relations if the Reception Centre Representatives or Reception Centre Leader can arrange for refreshments to be brought to the Reception Centre.

- Where necessary, in conjunction with the Public Safety Supervisor or the Reception Centre Leader (if delegated), review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)

Post-incident Duties

- Pass on all relevant information to evacuees regarding post-incident operations.
- Where necessary, arrange for assistance for evacuees to return to their homes
- Ensure that the Reception Centre is secured.
- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all Harvest emergency response data from the Reception Centre and forward to the Public Safety Supervisor or Reception Centre Leader (if delegated).

4.17 TELEPHONE TEAM LEADER

Role: Leads the Telephone Team in contacting the public inside a planning or a response zone.

NOTE: For efficiency, Telephoners should be assigned no more than five contacts each.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor or EOC Director, review the boundaries of the emergency planning and response zones.
- Determine the residents, businesses First Nations, trappers, guide/outfitters, grazing lessees, etc. that are required to be contacted.
- Mobilize the required number of Telephone Team personnel.
- Inform the Telephone Team of the location, address and safest route to the Reception Centre, (if established).
- Assign each Telephoner with a list of contacts that they are to make.
- As directed by the Public Safety Supervisor or EOC Director, instruct each Telephoner to contact their assigned contacts and recite the **Telephoner Text – Notification Message, Evacuation Message or Shelter-in-Place Message**.
- Determine if there are school children residing in the IIZ, PAZ and EPZ. As determined by the level of emergency, instruct Telephoners to contact the schools and the school bus authorities and inform them of the incident and provide the name, location and safest route to, the Reception Centre (if established).
- Regularly update the Public Safety Supervisor or EOC Director, of Telephone Team activities.

Post-incident Duties

- Direct the activities of the Telephone Team.

NOTE: Ensure the required ALL CLEAR or post-incident telephone message is communicated to the public impacted by the emergency.

- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all emergency response data from the Telephone Team and forward to the Public Safety Supervisor or the EOC Director.

4.18 TELEPHONER(S)

ROLE: Telephone the public inside a planning or response zone.

NOTE: For efficiency, Telephoners should be assigned no more than five contacts each.

- Chronologically document all actions, decisions, and requests on a Time and Event Log.
- Document all of your contacts on a Public Notification Record.
- In conjunction with the Public Safety Supervisor, EOC Director, or the Telephone Team Leader (if delegated).
 - Determine the residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees etc. that you are required to contact (inside and outside the response and planning zones).
 - Ensure you know, and confirm, which Telephoner Text Message you are required to recite i.e. Notification, Evacuation or Shelter-in-Place.
 - Determine the location, address and safest route to the Reception Centre (if established).
- As directed by the Public Safety Supervisor, EOC Director or the Telephone Team Leader (if delegated), telephone your assigned contacts and recite the **Notification Message, Evacuation Message or Shelter-in-Place message**.
- When necessary, inform your contact of the location of and safest route to of the Reception Centre (if established).

- Determine if there are school children residing in the IIZ, PAZ and EPZ. contact the schools and the school bus authorities and inform them of the incident and provide the name, location and safest route to, the Reception Centre (if established).
- Regularly update the Public Safety Supervisor, EOC Director or the Telephone Team Leader, of your activities and contacts made and those contacts that were unable to be made.

Post-incident Duties

- Only when you have been instructed to by the Public Safety Supervisor or the EOC Director, ensure that each resident on your contact list receives a telephone call to inform them that it is safe to return to their property.
- Participate in the Post-incident Debrief.
- Forward all emergency response data to the Public Safety Supervisor or the Telephone Team leader (if delegated).

4.19 ENVIRONMENTAL LEADER

ROLE: Lead the Environmental Consultant Teams to protect responder safety, to maximize public safety and to monitor impacts to the environment.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Confirm the level of emergency declared and document it.
- Ensure that environmental protection teams and clean-up equipment and is dispatched to the area when deemed safe for environmental teams.
- Gather as much information as possible regarding the environmental emergency e.g. spill response maps, photographs, diagrams, water courses etc.
- Coordinate the response of the environmental teams.
- In conjunction with the Public Safety Supervisor, the environmental teams, develop an Environmental Team safety action plan
- Maintain communications with the environmental teams.
- Ensure that environmental teams are equipped with:
 - An appropriate map
 - An air quality monitoring unit
 - A communications device e.g. cell phone, radio etc.
 - All necessary PPE, accounting for all potential hazards of the task.
- Regularly update the Public Safety Supervisor regarding environmental protection operations.
- Maintain a log of all environmental response personnel dispatched to or arriving from an area of operation.
- Delegate tasks and roles to the Environmental team.

Post-incident Duties

- As directed by the Public Safety Supervisor:
 - Ensure environmental protection is maintained.
- Gather all emergency response data and forward to the Public Safety Supervisor.
- Participate in the Post-incident Debrief held by the Incident Commander.

4.20 ENVIRONMENTAL TEAM(S)

ROLE: Gathers and documents data about potential environmental impacts to maximize to protect responder safety, to maximize public safety and to monitor impacts to the environment.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Supervisor and the Environmental Leader review the boundaries of the following:
 - Initial Isolation Zone (IIZ)
 - Protective Action Zone (PAZ)
 - Emergency Planning Zone (EPZ)
- Confirm the level of emergency declared and document it.
- Ensure that you are fully aware of the area of the IIZ, PAZ and/or EPZ in which you are to monitor the environmental impacts.
- Ensure that you are equipped with:
 - An appropriate map
 - An air quality monitoring unit
 - A communications device e.g. cell phone, radio etc.
 - All necessary PPE, accounting for all potential hazards of the task.
- Travel to your assigned location using a safe route.
- Confirm communications with the Public Safety Supervisor or the Environmental Leader (if delegated) when in place.
- Regularly communicate with the Public Safety Supervisor or the Environmental Leader (if delegated) regarding environmental protection operations.
- Carry out tasks and roles as delegated by the Environmental Leader

Post-incident Duties

- As directed by the Public Safety Supervisor:
 - Ensure environmental protection is maintained.
- Gather all emergency response data and forward to the Public Safety Supervisor.
- Participate in the Post-incident Debrief held by the Incident Commander.

4.21 STAGING AREA MANAGER

ROLE: Oversees and controls the movement of equipment, services and personnel at the Staging Area.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Establish a Staging Area, outside the Emergency Planning Zone, near the emergency site. The following criteria are helpful for choosing a suitable location.
 - Has approval been received from the landowner to use the site?
 - Is the site easy to find?
 - Is the size of the site adequate not only for equipment, but also for worker safety?
 - Is the site level and stable?
 - Are the access roads suitable for travel in adverse weather?
 - Are there any entry problems such as narrow road ways, gates, overhead power lines, buried pipelines, etc.?
 - Is communication reception adequate?
- Maintain communication with the Logistics Section Chief
- If necessary, erect directional signs to the Staging Area.
- If not evident, flag the perimeter of the Staging Area.
- Advise the Operations Section Chief or Incident Commander of the location and directions to the Staging Area.
- Ensure all responders mobilized to or dispatched from the Staging Area are competent to carry out the task they are required to do and that they have the appropriate personal protective equipment.
- Coordinate traffic and maintain a log of personnel and equipment dispatched to and from, the Staging Area.
- Obtain an office trailer and emergency lighting if required.

Post-incident Duties

- Participate in the Post-incident Debrief held by the Incident Commander.
- Forward all Staging Area data related to the incident to the Logistics Section Chief.

4.22 PLANNING SECTION CHIEF

ROLE: Gather, analyse and display all information and data pertaining to the incident. Ensure all information is current and accurate. Develop the Incident Action Plan. Prepare alternative strategies as required

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Compile the Incident Action Plan. Ensure the Incident Action Plan is reviewed by the Safety Officer (if delegated) and approved by the Incident Commander. Distribute the Incident Action Plan to the Incident Command Response Team.

NOTE: The Incident Action Plan:

- **Should specify the incident objectives**
 - **Determine the operational period (time frame) that the objectives should be completed**
 - **May be verbal or written**
- Display and keep current; charts, plot plans, surveys, maps and sketches as they are developed.
 - Ensure incident information is documented, current and accurate and disseminated to the Incident Command Response Team.
 - Document the status and location of all resources.
 - Assess the need for technical specialists (engineering, plume dispersion, environmental, well control, metal fatigue, etc.).
 - Perform a damage assessment related to the incident.
 - Assess how Harvest can recover from the incident.
 - Identify future incident resource requirements.

Post-incident Duties

- Develop a Post-incident Action Plan. Ensure the Post-incident Action Plan is reviewed by the Safety Officer (if delegated) and approved by the Incident Commander.
- Distribute the Post-incident Action Plan to the Harvest Incident Command Response Team.
- In British Columbia, for a Level One, Two or Three Emergency or any pipeline incident, ensure Form D – Post Incident Report is completed and submitted.
- Gather all documentation related to the incident.

4.23 LOGISTICS SECTION CHIEF

ROLE: Assist the Incident Command Response Team with procuring equipment, services and personnel

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- As required, support the Incident Command Response Team by procuring the following:
 - Personnel e.g. Harvest, mutual aid, safety company etc.
 - Supplies, services and equipment e.g. earth moving equipment, clean- up equipment etc.
 - Transportation for response personnel.
 - Information technology requirements e.g. communications equipment, computer systems, etc.
 - Incident Command Post support e.g. facilities, security, clerical, etc.
- As required, mobilize assistants.

Post-incident Duties

- Participate in the Post-incident Debrief held by the Incident Commander.
- Gather all emergency response data and forward to the Incident Commander.

4.24 FINANCE/ADMINISTRATION SECTION CHIEF

ROLE: Track and account for all costs associated with the incident.
Process any compensation claims.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Record active responder time for Harvest third party responders. Inform the Incident Commander about any excess hours worked.
- In cooperation with the Logistics Section, ensure all financial matters pertaining to vendor contracts are addressed.
- Provide a cost analysis.
- Handle any compensation or claim brought forward to Harvest as a result of the incident.
- Provide cost analysis data for the Harvest response. Maintain accurate information on the actual costs for all Harvest resources assigned to the incident. Analyze and prepare estimates about incident costs.
- As required, request additional finance/administration support from Harvest Emergency Operations Centre Team.

Post-incident Duties

- Gather all documentation related to the incident and pass them on to the Incident Commander or the EOC Director.

4.25 EOC DIRECTOR

ROLE: Directs the Harvest Emergency Operations Centre Team to provide advice and support to the Harvest Incident Command Response Team.

- Chronologically document all action, decisions, contacts and requests on a Time and Event Log.
- Confirm that there is an adequate communication link between the Harvest Emergency Operations Centre and the Harvest Incident Commander.
- Confirm with the Incident Commander:
 - The location of the incident
 - The level of emergency declared
 - An Incident Action Plan has been developed
 - That the action plan sets out the objectives
 - That the action plan accounts for safety of workers and public; environmental protection; control and containment
- Ensure the appropriate petroleum regulatory agency Incident Notification report is received from the Incident Commander or that one is completed in the EOC.
- If required, ensure an 'Information for Media Personnel' form is received from the Incident Commander or that one is completed in the EOC.
- As required, mobilize an Administrative Assistant to directly assist with documentation, errands and telephone calls, etc.
- In order to maintain an effective span of control, as required, delegate the following Harvest Emergency Operations Centre Team members. (Refer to the Incident Command System Flowchart in Section 3.0 for a diagram of the ICS Flowchart and Section 7.0 for EOC Team).
 - EOC Information Officer
 - EOC Safety Officer
 - EOC Liaison Officer
 - Public Safety Head
 - Planning Section Head
 - Logistics Section Head
 - Finance and Administration Head
- As required, advise and support the Harvest Incident Commander regarding:

- Contact with entities inside or outside the response and planning zones or government agency contacts.
- The Incident Action Plan
- Unified Command (if required).
- Plume ignition guidelines and procedures.
- Technical assistance e.g. engineering, plume dispersion, well control, etc.
- In conjunction with the Planning Section Head:
 - Ensure all incident information is documented, current, and accurate and is disseminated to the Harvest Emergency Operations Centre Team. Utilize the wall charts, white board and SMART board.
 - Ensure all Harvest Emergency Operations Centre Team members are documenting their actions, decisions, contacts and requests on a Time and Event Log.
 - Ensure charts, plot plans, surveys, maps and sketches are posted and maintained as the emergency develops.
- Schedule and conduct frequent Harvest Emergency Operations Centre Team meetings.
- As required, ensure Harvest's Senior Management is kept informed about the response.
- Once the situation improves, the Harvest Incident Commander is the only Harvest representative with the authority to agree with the appropriate government representative(s) to downgrade or stand-down a level of emergency.

Security Management

- In the event of a real or perceived security threat, establish the EOC and request the attendance of required personnel to deal with the situation
- Refer to the corporate Security Management Plan (SMP) and any applicable site specific SMPs
- Ensure and maintain communications with the field emergency response team Incident Commander
- Ensure all appropriate emergency response plans, maps, response documentation etc. are available
- Harvest's corporate SMP process provides the flexibility needed for proactive decision making to address the security risks to Harvest. Security risk management activities

should be commensurate with the type, size, location and criticality of the assets being protected. In conjunction with the Incident Commander, develop a security management strategy and protocols to manage any security situation; refer to the 'Security Risk Management Process' section in the corporate SMP

- Harvest has instituted 'Minimum Operational Security Standards' (MOSS) mitigating measures to deal with potential threats. The risk matrix evaluates the likelihood of identified threats occurring, uses a documented quantitative or qualitative method to determine consequences and considers other risks associated with security stakeholders, contractors and suppliers.
Refer to the 'Risk Matrix'; the 'Probability and Consequence' table and the 'Graduated Threat Mitigation Matrix' contained within section 5 of the corporate SMP
- Ensure that procedures for ensuring the security and safety of all workers, members of the public, responders and Harvest facilities is developed, documented and disseminated to all personnel concerned
- Consider shut-down of all operations systems in the area affected and the evacuation of personnel

Post-incident Duties

- Ensure all Harvest Emergency Operations Centre Team members are notified.
- Coordinate Harvest Emergency Operations Centre Team post-incident duties.
- In conjunction with the Incident Commander, prepare post-incident reports and review the appropriate regulations (regulatory, industry, safety and environmental).
- If required, procure personnel to conduct Critical Incident Stress Debriefing (CISD).
- Coordinate and carry out a Post-incident Debrief with Harvest Emergency Operations Centre Team personnel.
- Gather all Harvest Emergency Operations Centre Team data related to the response

4.26 ADMINISTRATIVE ASSISTANT

ROLE: Assists the EOC Director with clerical issues.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Assist the EOC Director as necessary. This may include documenting events, handling telephone calls and providing clerical support.
- Advise the EOC Director if assistance is required to complete your assigned duties.

Post-incident Duties

- Participate in the Post-incident Debrief held by the EOC Director.
- Forward all data related to the response to the EOC Director.

4.27 EOC INFORMATION OFFICER

ROLE: Advises and supports the Harvest Incident Command Response Team Information Officer (if established) regarding media and public statements.

If appointed, Information Officers located in the field and in the EOC should liaise with each other to ensure a coordinated media response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Ensure you receive an '**Information Required for Media Personnel**' form, from the EOC Director or the Incident Commander; or that one is completed.
- Advise and support the Incident Command Response Team Information Officer (if delegated) regarding media statements and public communication.
- If an Incident Command Response Team Information Officer has not been established, as delegated by the EOC Director, assume the role of the Information Officer.

Adhere to the following media guidelines:

1. Return media calls promptly and courteously.
2. Restrict comments to facts. Do not speculate.
3. Keep messages consistent and nontechnical.
4. Co-operate with the media, but do not allow the media to endanger you or others in their quest for stories or pictures.
5. Inform the EOC Director and the Incident Commander about the nature of any discussions with the media.

Post-incident Duties

- As required, continue to advise and support the Harvest Incident Command Response Team Information Officer regarding media and public communication and statements.
- Participate in the Post-incident Debrief held by the EOC Director.
- Forward all data related to the response to the EOC Director.

4.28 EOC SAFETY OFFICER

ROLE: Advises and supports the Harvest Incident Command Response Team Safety Officer regarding developing and recommending measures for ensuring responder safety. Discontinues any operation which threatens the health and safety of responders.

If appointed, Safety Officers located in the field and in the EOC should liaise with each other to ensure a coordinated safety policy.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Advise and support the Incident Command Response Team Safety Officer regarding:
 - The developing and recommending of activities at the site of the incident to maximize on-site responder safety and control and containment.
 - Harvest ignition guidelines (Section 5.0) and ignition decision-making authority.
- If an Incident Command Response Team Safety Officer has not been established, as delegated by the EOC Director, assume the role of the Safety Officer.
- If the incident is a security issue, ensure that any procedures developed account for the health and safety of workers, responders and members of the public. Review the corporate and, as necessary, any site specific SMPs

Post-incident Duties

- As required, continue to advise and support the Harvest Incident Command Response Team Safety Officer regarding developing and recommending measures for ensuring responder safety.
- Participate in the Post-incident Debrief held by the EOC Director.
- Forward all data related to the response to the EOC Director.

4.29 EOC LIAISON OFFICER

ROLE: Advises and supports the Incident Command Response Team Liaison Officer regarding interfacing with government agencies involved in the emergency.

If appointed, Liaison Officers located in the field and in the EOC should communicate with each other to ensure a coordinated response.

NOTE: Refer to the Telephone Directory of the applicable Site-Specific ERP for contact numbers of government agencies.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Refer to Section 8 of the Corporate Emergency Response Plan and review the '**Notification Matrix**' (Alberta or British Columbia).
- As required, advise and support the Incident Command Response Team Liaison Officer (if delegated) regarding interfacing with government agencies involved in the emergency.
- If an Incident Command Team Liaison Officer has not been delegated, as directed by the EOC Director, assume the role of the Liaison Officer.

Post-incident Duties

- As required, continue to advise and support the Harvest Incident Command Response Team Liaison Officer regarding interfacing with government agencies involved in the emergency.
- Participate in the Post-incident Debrief held by the EOC Director.
- Forward all data related to the response to the EOC Director.

4.30 PUBLIC SAFETY HEAD

ROLE: Advises and supports the Harvest Incident Command Response Team Public Safety Supervisor regarding planning zone and response zone responder safety and protection measures to maximize public safety.

If appointed, Public Safety Officers located in the field and in the EOC should communicate with each other to ensure a coordinated response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Using the area map, determine the planning and response zones.
- Determine all entities within the planning and response zones, taking into account residents, businesses, First Nations, trappers, guide/outfitters, grazing lessees, transients, highways, waterways, railroads, etc.
- Communicate and confirm your findings with the Incident Command Response Team Public Safety Supervisor.
- Support the Incident Command Response Team Public Safety Supervisor regarding:
 - Planning and response zone responder safety.
 - Protection measures to maximize public safety e.g. evacuation, shelter-in-place.
- If an Incident Command Team Public Safety Supervisor has not been established, as delegated by the EOC Director, assume the role of the Public Safety Supervisor.
- If the incident is a security management issue, in conjunction with the EOC Director, develop a public safety strategy. Review the corporate and, as necessary, any site specific SMPs

Post-incident Duties

- As required, continue to support the Harvest Incident Command Response Team Public Safety Supervisor.
- Participate in the Post-incident debrief held by the EOC Director.
- Gather all emergency response data and forward to the EOC Director.

4.31 ENVIRONMENTAL HEAD

ROLE: Advises and Supports the Environmental Team to maximize public safety and to monitor impacts to the environment.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- In conjunction with the Public Safety Head (if delegated) review the boundaries of the following:
 - Initial Isolation Zone (IIZ) (Alberta only)
 - Protective Action Zone (PAZ) (Alberta only)
 - Emergency Planning Zone (EPZ)
- Review all information regarding the environmental emergency e.g. spill response maps, photographs, diagrams, water courses etc.
- Confirm the level of emergency declared and document it.
- Establish and maintain communications with the Environmental Team Leader (if delegated).
- In conjunction with the EOC Director and the Environmental Team Leader, develop an Environmental Protection Plan and an Environmental Team safety action plan.
- Ensure that environmental protection operations have commenced.
- Regularly update the EOC Director regarding environmental protection operations.

Post-incident Duties

- As directed by the EOC Director:
 - Ensure environmental protection is maintained.
- Gather all environmental response data and forward to the EOC Director.
- Participate in the Post-incident Debrief held by the Incident Commander.

4.32 PLANNING SECTION HEAD

ROLE: Advises and supports the Harvest Incident Command Response Team Planning Section Chief regarding the gathering, analysis and displaying of all information and data pertaining to the incident. Ensure all information is current and accurate. Develop the Incident Action Plan.

If appointed, Planning Officers located in the field and in the EOC should communicate with each other to ensure a coordinated response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Ensure incident information is documented, current, accurate and disseminated to the Harvest Emergency Operations Centre Team.
- Advise and support the Harvest Incident Command Response Team Planning Section Chief regarding:
 - The compiling of the overall Incident Action Plan.
 - Technical assistance and/or technical specialists (engineering, plume dispersion, environmental, well control, metal fatigue, etc.) required for the response.
- Identifying future incident support requirements.
- Post and maintain charts, plot plans, surveys, maps and sketches as they are developed.
- Ensure all Harvest Emergency Operations Centre Team members are documenting their actions, decisions, contacts and requests on the appropriate forms.
- Participate in Harvest Emergency Operations Centre Team meetings.

Emergency Management

- Review the corporate SMP and any related site specific SMPs
- Harvest's corporate SMP process provides the flexibility needed for proactive decision making to address the security risks to Harvest. Security risk management activities should be commensurate with the type, size, location and criticality of the assets being

protected. Refer to the 'Security Risk Management Process' section in the corporate SMP

- Harvest has instituted 'Minimum Operational Security Standards' (MOSS) mitigating measures to deal with potential threats. The risk matrix evaluates the likelihood of identified threats occurring, uses a documented quantitative or qualitative method to determine consequences and considers other risks associated with security stakeholders, contractors and suppliers.

Refer to the 'Risk Matrix'; the 'Probability and Consequence' table and the 'Graduated Threat Mitigation Matrix' contained within section 5 of the corporate SMP

Post-incident Duties

- As required, continue to advise and support the Harvest Incident Command Response Team Planning Section Chief regarding compiling the overall Harvest Post-incident Action Plan.
- In consultation with the Planning Section Chief, in British Columbia, for a Level Two or Three Emergency or any pipeline incident, ensure Form D – Post Incident Report is completed and submitted.
- Participate in the Post-incident Debrief held by the EOC Director.
- Gather all Harvest Emergency Operations Centre Team data related to the response.

4.33 LOGISTICS SECTION HEAD

Role: Advises and supports the Incident Command Response Team Logistics Section Chief regarding the procurement of equipment, services and personnel.

If appointed, Logistics Officers in the field and in the EOC should communicate with each other to ensure a coordinated response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- As required, advise and support the Incident Command Response Team Logistics Section Chief regarding:
 - The procurement of equipment, services and personnel.
 - Setting up a Staging Area.
 - Harvest Emergency Operations Centre support including, facilities, security, clerical, etc.
- If an Incident Command Response Team Logistics Chief has not been established, as delegated by the EOC Director, assume the role of the Logistics Section Chief.

Post-incident Duties

- Participate in the Post-incident Debrief held by the EOC Director.
- Gather all emergency response data and forward to the EOC Director.

4.34 FINANCE/ADMINISTRATION SECTION HEAD

ROLE: Track and account for all costs associated with the incident.
Process any compensation claims.

If appointed, Finance/Administration responders located in the field and in the EOC should liaise with each other to ensure a coordinated response.

- Chronologically document all actions, decisions, contacts and requests on a Time and Event Log.
- Assist and advise the Incident Command Finance/Administration Chief (if delegated) in providing cost analysis data for the response.
- Record active responder time for Harvest Incident Command Response Team members and EOC Team members. Inform the Incident Commander or the EOC Director about any excess hours worked.
- In cooperation with the Logistics Section, ensure all financial matters pertaining to vendor contracts are addressed.
- Handle any compensation or claim brought forward to Harvest as a result of the incident.
- Provide cost analysis data for the Harvest response. Maintain accurate information on the actual costs for all Harvest resources assigned to the incident. Analyze and prepare estimates about incident costs.
- As required, request additional finance/administration support from Harvest EOC Team.

Post-incident Duties

- Participate in the Post-incident Debrief held by the EOC Director.
- Gather all documentation related to the incident and pass them on to the EOC Director



**EMERGENCY RESPONSE PLAN
SECTION 5.0 - IGNITION**

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5.0 IGNITION

5.1 IGNITION OVERVIEW

The planned ignition of a release is a method of protecting the public or the environment from a hazard.

Sour Gas Ignition

When sour gas is ignited, the H₂S is converted to SO₂ and is carried higher into the atmosphere by the heat of combustion. This causes the gases to disperse over a larger area and reduces the risk of hazardous ground level concentrations.

Natural Gas Liquid (NGL) Ignition

The hazard area created by a plume of NGL vapours can be difficult to identify and is prone to unexpected and explosive ignition. The advantages of deliberately igniting an NGL release include the following:

- The spread of NGL vapours and the associated fire hazard is reduced.
- Once ignited, the hazardous area would be contained, visible and easily identified.
- Ignited NGL vapours are far less responsive to changes in wind direction.
- Limited evacuation would be required.

However, NGL ignition may have serious consequences if gas has accumulated in basements, forests or low-lying areas.

5.2 IGNITION EQUIPMENT AND IGNITION PROCEDURES

Ignition Equipment:

An ignition team requires the following equipment:

- Flare guns with flares.
- Rescue harness (d-ring in front or safety belt with d-ring in the back) with 30 m (100 ft) flame-resistant retrieval ropes.
- Flame-resistant coveralls.
- Ear protection (ear muff or expendable).
- Hard hats (with face shields if available).
- Flame-resistant balaclava, hard hat liners or flame-resistant regular hard hat liners for use with self-contained breathing apparatus (SCBA).
- Lower explosive limit gas detector.
- H₂S/LEL gas detector (for sour gas ignition).
- SCBA
- Vehicle with communication to the Incident Command Post.

Ignition Procedures:

Ignition of a sour gas or NGL release is a hazardous procedure and should be conducted with caution by trained personnel following a written procedure. The ignition team should consist of four members and the procedure should never be attempted with fewer than two people, so that there is one person for rescue backup.

1. The On-site Group Supervisor ensures that on-site personnel have retreated to a safe upwind location.
2. The Ignition Team reviews the flare gun manufacturer's loading instructions and specifications for the flare gun and dons their protective equipment.
3. If available, the two backup personnel are positioned by a radio-equipped vehicle located at a safe distance upwind from the release. They stand by to rescue the ignition person(s) with the lanyards if necessary.
4. The ignition team, equipped with the flare gun and flares and monitoring with a lower explosive limit and H₂S gas detector, approach to within 100 metres of the suspected outside edge of the gas plume.

5. The ignition team position themselves at a location that:
 - ▶ allows for safe retreat,
 - ▶ is upwind or crosswind from the release,
 - ▶ is free of explosive mixtures, and
 - ▶ is no closer than necessary (The flare should be aimed to just reach the outside edge of the explosive gas plume.)

NOTE: A 12-gauge pistol flare has an approximate altitude of 80 m and a 4-caliber pistol flare has an approximate altitude of 120 m.
6. One ignition person loads, aims and fires the flare gun, choosing the firing position, either standing or prone, that is most comfortable and suitable for the circumstances.
7. After the gun is fired, uncovered skin should not be exposed toward the flare.
8. If the gas does not ignite, the ignition person(s) moves a few metres closer to the suspected edge of the plume (Do not move any closer to the plume than the launcher's range, probably about 60 m.) and repeats Steps 5, 6, 7 and 8.

Critical Sour Wells (Alberta)/Special Sour Wells (British Columbia) - Drilling, Completion and Servicing/Workover Operations

Ignition Equipment:

There will be two well ignition systems at the wellsite during critical/special sour operations. The primary ignition system is a self-contained flame-thrower unit with an independent fuel source. This system incorporates a remote-control panel with a time-delayed triggering device that allows for complete evacuation of the wellsite before the well is ignited. The secondary ignition system is a flare gun.

Critical Sour Wells (Alberta)/Special Sour Wells (British Columbia) Ignition

Procedures:

The On-site Group Supervisor follows the procedure below to ignite the well:

1. Ensure wellsite personnel have retreated to a safe upwind location.
2. Form an Ignition Team.
3. Ensure the Ignition Team wears personal protective equipment and wear harnesses equipped with lanyards (retrieval ropes).
4. Position the two backup personnel by a radio-equipped vehicle, located at a safe distance from the sour gas release. These personnel stand by to rescue the ignition personnel with the lanyards if necessary.
5. Once the wellsite is evacuated, the ignition personnel activate the primary ignition system by inserting the "Firefly" key into the control panel key switch and turning the key clockwise.
 - At this point, a siren and strobe light will be activated at the control panel.
 - Ignition personnel egress from the area.
 - Three minutes after the key has been turned on, the siren will silence and a pilot light will be lit at the trailer unit.

NOTE: Strobe light stays on to indicate the system is active.

- Two minutes after the pilot light has been lit, the first discharge of gel will be released through the burning pilot. The duration of this discharge is five seconds.
- The discharge will result in an 80 to 90 foot stream of burning gel being directed into the derrick, where it will splatter and fall. This will ensure ignition even if the gas release is in a horizontal direction. The residual burn time of the gel is approximately three to four minutes.
- Every three minutes after the initial discharge, another discharge will occur, until the system is emptied or manually shut off.
- Approximate number of discharges is twenty. If the well extinguishes itself, ignition will automatically re-occur for a considerable length of time.

NOTES: 1. Initial ignition can be aborted at any time by turning off the key.

2. The stream of ignited gel is under high pressure to minimize the effect of high winds.

If the primary ignition system fails, the ignition personnel proceed with the following secondary ignition system procedure:

1. The On-site Group Supervisor ensures that on-site personnel have retreated to a safe upwind location.
 2. The Ignition Team reviews the flare gun manufacturer's loading instructions and specifications for the flare gun and dons their protective equipment.
 3. If available, the two backup personnel are positioned by a radio-equipped vehicle located at a safe distance upwind from the release. They stand by to rescue the ignition person(s) with the lanyards if necessary.
 4. The ignition person(s), equipped with the flare gun and flares and monitoring with a lower explosive limit and H₂S gas detector (if appropriate), approaches to within 100 metres of the suspected outside edge of the gas plume.
 5. The ignition person(s) positions himself/herself at a location that:
 - ▶ allows for safe retreat,
 - ▶ is upwind or crosswind from the release,
 - ▶ is free of explosive mixtures, and
 - ▶ is no closer than necessary (The flare should be aimed to just reach the outside edge of the explosive gas plume.)
- NOTE: A 12-gauge pistol flare has an approximate altitude of 80 m and a 4-caliber pistol flare has an approximate altitude of 120 m.
6. One ignition person loads, aims and fires the flare gun, choosing the firing position, either standing or prone, that is most comfortable and suitable for the circumstances.
 7. After the gun is fired, uncovered skin should not be exposed toward the flare.
 8. If the gas does not ignite, the ignition person(s) moves a few metres closer to the suspected edge of the plume (Do not move any closer to the plume than the launcher's range, probably about 60 m.) and repeats Steps 5, 6, 7 and 8.

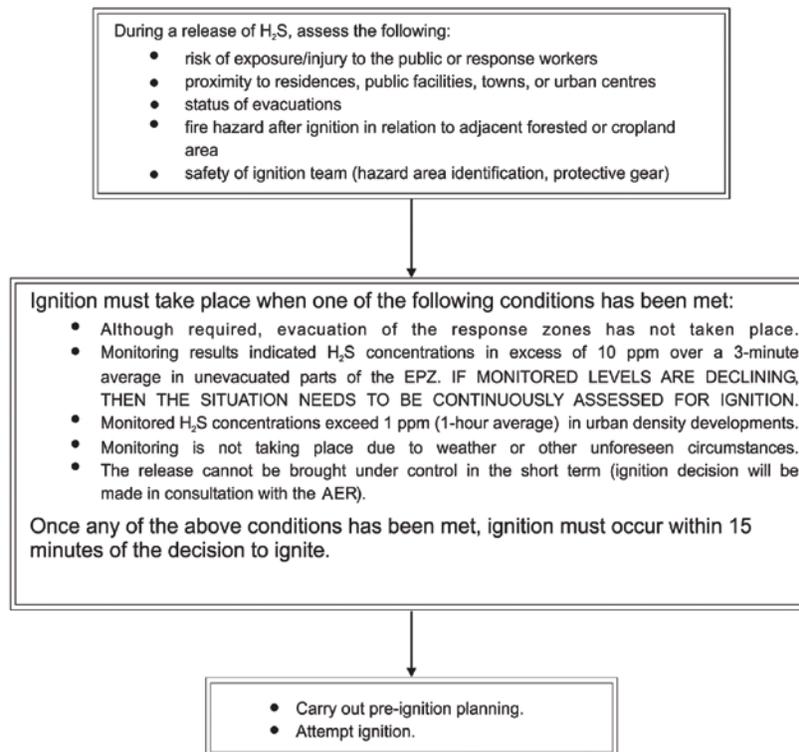
5.3 H₂S IGNITION ASSESSMENT AND CRITERIA - ALBERTA

Harvest will take immediate steps to prepare for ignition of sour gas at the earliest signs of a release or a well control problem to ensure there will be no delay

Harvest will ensure that all critical sour wells have a dual ignition system on-site during all drilling operations in the critical zones and during all completion, well testing or servicing/workover operations when the wellhead is off.

Harvest will:

- ignite a sour gas flow to the atmosphere in accordance with the Assessment and Ignition Criteria Flowchart below,
- assign the decision-making authority to ignite the release to a Harvest representative on-site.



The regulatory agency senior staff may make the decision to ignite a release if Harvest does not agree to ignite the release or is not prepared to take the necessary steps.

5.4 H₂S IGNITION CRITERIA – BRITISH COLUMBIA

In some circumstances the ignition of flammable products being released into the atmosphere may be the recommended option for mitigating the risk of human exposure to hazardous substances such as hydrogen sulfide. Before ignition of any flammable product the following should be considered:

- Safety and health risks to responders and emergency personnel
- Proximity of the release to public areas
- Availability of air monitoring equipment
- Availability of ignition equipment and competent personnel
- Detectable concentration of flammable gases near the source of the release and within the hazard response zone
- Weather conditions
- Duration of release and potential volume of gas cloud
- Impacts to livestock impacts to property or other infrastructure

Where practical, the decision to ignite a flammable product should be made in conjunction with the OGC's EOC Director; however Harvest's incident commander or on-site supervisor may make the decision when there is not enough time to consult with the OGC.

Before igniting a release of gas, Harvest must consider the following:

- What are the increased risks of a delayed ignition
- Has the perimeter of the HRZ been established
- Has the public been evacuated from the area
- Will ignition worsen the situation by endangering the public, the environment, equipment, property etc.
- Has wind speed and direction been accounted for and being monitored
- Have the results of a possible explosion been assessed



EMERGENCY RESPONSE PLAN
SECTION 6.0 - INCIDENT-SPECIFIC
RESPONSE ACTIONS
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6.0 INCIDENT-SPECIFIC RESPONSE ACTIONS

6.1 RESPONSES COMMON TO ALL INCIDENTS

Daily Emergency Preparedness Actions:

- Ensure you carry out a hazard assessment before starting work
- Identify who you would contact in the event of an emergency
- Identify egress routes and muster locations
- Ensure there is a head count obtained for all site personnel
- Identify where relevant safety equipment is located [personal protective equipment (PPE), fire extinguishers, first aid kits, etc.]
- Understand how to initiate site evacuation in the event of an alarm or incident

Common Response Actions:

1. **EVACUATE** - Get away from the immediate hazard and direct others to a safe area.
NOTE: Evacuation may not be the best method of public protection and Shelter-In-Place should be considered.
2. **ALARM** - Alert others to the danger and situation.
3. **CALL FOR HELP**- If you cannot contact your supervisor, contact the On-Duty EOC Director at **403-888-2540**.
4. **ASSESS** - Assess hazards: do not rush in and endanger yourself. Account for all personnel. Monitor air quality with personal monitors. Consider potential ignition sources and how to eliminate them.
5. **RESCUE** - Protect yourself at all times, use appropriate PPE. Remove casualty to a safe area, ensure medical aid has been called for and administer first aid.
6. **SECURE THE AREA** - Prevent unauthorized access. If possible, take steps to protect people, the environment and property.
7. **ACT AS INCIDENT COMMANDER** - Until relieved by the appropriate person.

NOTE: Remember your Primary Objectives:

**Responder/Public Safety,
Environmental Protection
Control and Containment.**

6.2 HYDROCARBON SPILL RESPONSE

Response Actions:

- Understand the type of product and the potential hazards e.g. flammable/toxic vapours, fire hazards, etc.
- Approach the site from an upwind or crosswind direction.
- Identify safe escape routes away from hazardous areas.
- Observe surrounding area for possible ignition sources; eliminate if possible.
- If possible and safe to do so, isolate or shut in the leak.
- If possible, prevent fluids from entering a waterway or other sensitive areas.
- As required, mobilize the area oil spill cooperative equipment.
- Keep unauthorized personnel away.

Note: Harvest will do everything possible to protect the environment and prevent or mitigate any harm to land, water courses and air quality

HARVET'S INITIAL SPILL RESPONSE GUIDELINES

1. ASSESS / CONTROL THE HAZARDS
2. SHUT IN THE SOURCE
3. INITIATE PRODUCT CONTAINMENT AND RECOVERY
 - a. Mobilize a vacc truck, build temporary berms, use absorbent pads, request assistance etc.
 - b. Ensure compliance with Harvest's Ground Disturbance Code of Practice.
4. ESTIMATE RELEASE VOLUME
 - a. Use the "volume estimation protocol" to assist with determining release volume.
5. NOTIFY YOUR SUPERVISOR; your supervisor will:
 - a. NOTIFY THE APPROPRIATE REGULATORY AGENCIES – based on the incident reporting matrix.
 - b. NOTIFY THE LANDOWNER (IF APPLICABLE)
 - c. NOTIFY THE EOC ON-CALL DIRECTOR **1-403-888-2540** who will then notify the ON-CALL Environment team member.

1. Based on the spill type and size, the Environment team member will decide if it is necessary to send an environmental technician to the site and will also determine if other Regulatory Agencies require notification.
 2. If a spill occurs during the night, is non-reportable, and there are no serious environmental impacts, notification can wait until daylight the following day.
6. REMOVE FREE FLUIDS FROM SURFACE
- a. Dispose of at a Harvest facility if possible or,
 - b. Haul to an approved waste disposal facility, if necessary.
 - c. Record volumes and include disposal location on Harvest incident report form.
 - d. Ensure proper Waste Manifesting documents are completed.
7. IF OPERATIONS IS HANDLING SPILL CLEANUP:
- a. Contact the Harvest environment team for guidance.
 - b. If soil is excavated, an environmental technician will sample the soil and coordinate removal to landfill.
8. COMPLETE HARVEST'S INTERNAL ROUGHNECK INCIDENT REPORT
- a. Fill in as much as you possibly can (within 24 hours) – the more information, the better
 - b. Provincial regulator reports will be completed in the Calgary office and forwarded to the appropriate field office.
 - c. All subsequent environmental reporting will be handled through the Calgary office.

PLEASE REMEMBER: Under-estimating released volumes may result in scrutiny from regulatory agencies and must be avoided. Be as accurate as possible and use the “volume estimation protocol” as a guidance tool. It is extremely important to determine if a spill is causing impacts to receptors (i.e. Water bodies) which in turn may require additional regulatory reporting. The Environment team can provide assistance to determine impacts if necessary.

VOLUME ESTIMATION PROTOCOL

1. Pace off the release area using full strides (approximately 1 meter).
2. Determine the average length and a width of the impacted area.
3. Determine average depth using a gauging stick. (1cm = 0.01m)
4. Calculate the Volume = length x width x depth (0.1 m³ = 100 L / 1 m³ = 1000L)
5. For chemical releases use tank/container volumes as an estimate of what was released.
6. For gas releases, determine volume by meter difference and/or time and piping size.

7. For releases that occur as a mist, determine length and width and use a depth of 0.0005 m in the volume calculation.
8. For releases into water, volume estimation will have to involve metering estimates for loss of product, time and piping size. The Environment team will also be able to help determine volumes.

VOLUME ESTIMATION TABLE (EXAMPLES)

Liquid Spills to Ground			
Length (m)	Width (m)	Depth (m)	Volume (m3)
5	10	0.01	0.5
5	10	0.02	1.0
10	15	0.01	1.5
10	20	0.01	2.0
25	40	0.0005 (mist)	0.5

IMPORTANT PHONE NUMBERS

EOC On Call Director	1-403-888-2540
AB Regulator	1-800-222-6514
AB TDG	1-800-272-9600
BC – Provincial Emergency Program (includes TDG)	1-800-663-3456
Sask – Regulator (includes TDG)	1-800-667-7525
	Kindersley 1-306-463-5400
	Estevan 1-306-637-4541
	Lloyd 1-306-825-6434

TDG – IMMEDIATE REPORTING QUANTITIES

1	Explosives	Any quantity that: <ol style="list-style-type: none"> a) could pose a danger to public safety or 50 kg; or b) is included in Class 1.1, 1.2, 1.3 or 1.5 and is: <ol style="list-style-type: none"> i) not subject to special provision 85 or 86 but exceeds 10kg net explosives quantity; or ii) subject to special provision 85 or 86 and the number of articles exceeds 1000.
2	Gases	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more
3	Flammable Liquids	200 L
4	Flammable Solids	25 kg
5.1	Oxidizing Agent	50 kg or 50 L
5.2	Organic Peroxide Oxidizing Agent	1 kg 1 L
6.1	Poison	5 kg or 5 L

6.2	Biohazard	Any quantity
7	Radioactive Substances	Any quantity that could pose a danger to public safety; or An emission level greater than the level established in section 20 of the <i>Packaging and Transport of Nuclear Substances Regulations</i> .
8	Corrosive Substances	5 kg or 5 L
9	Miscellaneous	25 kg or 25 L

NOTIFICATION MATRIX

INCIDENT TYPE	DETAILS	Harvest Superv	Safety or Enviro Coord	Provin Reg	Land Owner / Forestry	RCMP 911	TDG
Spills and Releases							
Unrefined - AB	>2 m ³ on lease	X	E	X	X		
Unrefined - BC	>100 L oil	X	E	X	X		
Unrefined - BC	>200 L produced water	X	E	X	X		
Unrefined - SK	>2 m ³ on lease	X	E	X	X		
Unrefined	Any volume with adverse effect	X	E	X	X		
Unrefined	Any volume off lease	X	E	X	X		
Unrefined	Pipeline failure / leak, any volume	X	E	X	X		
Unrefined – involving transport vehicle	Refer to TDG reporting quantities – on or off lease	X	S	X		X	X
Refined – involving transport vehicle	Refer to TDG reporting quantities – on or off lease	X	S			X	X
Refined	Refer to TDG reporting quantities – on or off lease	X	E	X	X		
	Sour gas release	X	S	X	X		
	Blowout	X	S/E	X	X		
UNSCHEDULED FLARING							
	Flared volume exceeds approved limits	X	E	X	X		
	Flared emitting smoke or odors	X		X	X		
	Emergency flaring exceeds 4 hours in 24	X		X	X		
	Potential to cause an adverse effect	X	E	X	X		
ODOURS/ FUGITIVE EMISSIONS							
Unrefined	Any offsite	X		X	X		

TDG Reporting Note:

Truck spills involving unrefined product (oil; produced water; emulsion) fall under class 3 – Flammable Liquids - >200L report to TDG – On or Off lease

The following section provides basic hydrocarbon spill recovery guidelines. For greater details, refer to the Western Canadian Spill Services Ltd. (WCSS) Oil Spill Contingency Plans and applicable Safety Data Sheets (SDS). Area specific WCSS plans can be found in various locations and copies of all area WCSS plans can be found in Harvest's office based in Calgary. The WCSS web site can be accessed at:

www.wcss.ab.ca

Recovery Techniques

There are two basic means of stopping the flow of petroleum products floating on water; a boom or a dam. If the stream/river is relatively large, booms are used. A dam may be constructed across the channel of a small stream with a low flow.

If the stream/river is to be boomed and Harvest do not have the appropriate equipment, the appropriate equipment should be obtained from Western Canadian Spill Services Ltd or from a third party provider. Decisions must incorporate the following considerations:

- Width of stream/river which must be boomed. (Where possible, the entire river width should be boomed.)
- Allowable boom angle based on stream current and length of boom required.
- Anchoring methods for the booms.
- Methods to lay out and deploy a boom.

If a dam is to be constructed across a small stream or channel, some allowance must be made for the flow of water past the dam. The Western Canadian Spill Services Ltd. plan provides detailed information about oil spill containment and recovery.

Containment and Storage of Product

When commercial barriers are not suitable or available, particularly in remote areas, barriers must be improvised; improvising depends on the materials at hand and the situation in which the spill has occurred. In each case, the experience and innovative ability of the personnel at the spill site is needed for the successful containment of the spill.

Tank trucks, storage tanks or an earthen pit may be used to store recovered petroleum products. An earthen pit should only be constructed when tank trucks or storage tanks cannot be used and plastic should be used to line the pit.

Disposal and Remedial Operations

Disposal of the product and site restoration actions will be determined for each site by consultation among Harvest operations personnel, provincial environmental protection agency or other environmental regulators and any external professional environmental consultants contracted by Harvest.

Specific Response Details for Containment and Recovery of Uncontrolled Fluid Releases in or Near a Flowing Water Body

Following an uncontrolled release and once safe working conditions have been established, the initial steps of the spill response process are the containment and recovery of the spilled product.

NOTE: Remember your “Primary Objectives”: Responder Safety/Public Safety; Environmental protection; Control and Containment.

In the case of a fluid release near a flowing water body, rapid containment of the spilled product is essential to prevent its entry into the watercourse and subsequent downstream migration. Like any surface water related project, spill response activities including containment, recovery and sampling plan should be presented to and approved by the provincial and federal regulators.

Effective containment techniques vary depending on the nature of the product released and the site conditions, but usually involve the construction of berms, trenches and/or bell-holes along the pathway between the contaminant source and the water body. Recovery of the spilled product with vacuum trucks is usually initiated at the same time to prevent overflowing of the containment structures and further soil contamination through infiltration. In smaller streams, inverted weirs can also be constructed. These structures allow the water to go through while capturing any free product floating on surface.

Depending on the nature of the product spilled, additional containment can be deployed along the watercourse to prevent or minimize the downstream migration of the product. For hydrocarbons, depending on their volatility, a combination of containment booms, sheen booms and adsorbent pads can be used. Containment booms trap free product floating on the water surface, while sheen booms and adsorbent pads soak up lighter end hydrocarbons. Free product trapped upstream of a containment boom can be skimmed and pumped off for disposal.

Fine particulates, released as a result of a drilling mud spill or simply from activities around a spill site, can be detrimental to aquatic life and containments such as silt fences and silt curtains are commonly used to prevent contamination of a watercourse from sediment-laden water. Silt fences, along with straw bales, are typically deployed along the banks or across drainage paths. Silt curtains are deployed across a watercourse. Products that are readily soluble in water such as methanol, produced water, corrosion inhibitor and to a lesser extent light hydrocarbons such as gasoline and condensate cannot be effectively contained once they enter a watercourse. Then, the focus of the response is on impact delineation through the implementation of a surface water sampling program.

A key component to an effective spill response is the preparedness of all proponents as the actions taken immediately following an uncontrolled release can greatly reduce its potential long-term impacts. Harvest will focus on the training of its personnel and all efforts will be made to make sure the appropriate containment equipment is readily available in the project area.

6.3 SPILL COOPERATIVE RESPONSE PLANS

Harvest is exempt from the requirement to develop its own spill response plan, purchase spill cleanup equipment and conduct an annual exercise if it is an active member in good standing of an oil spill cooperative in Alberta for the area where its operations are located. A member in good standing means that annual licensee membership fees are fully paid and that the licensee has met the obligations of that cooperative.

In Alberta, Harvest is expected to assess the risk that its operations pose to the environment and be prepared to provide effective response capability in the event of a spill, particularly into moving water. Spill preparedness requirements apply to:

- All wells (except those suspended in accordance with regulatory requirements and gas wells that produce less than 2 m³/month of hydrocarbon liquids),
- Facilities
- Pipelines transporting liquids and licensed by the regulatory authority.

Harvest has purchased copies of the WCSS Oil Spill Contingency Plans and area specific plans are kept in various field locations. Copies all the area WCSS plans are also kept in Harvest's office based in Calgary. The WCSS web site can be accessed at:
www.wcss.ab.ca

6.4 DETECTION OF AN INCIDENT

Harvest personnel may initially become aware of an incident from a wide range of detection methods and sources; detection methods may include:

- Supervisory Control and Data Acquisition (SCADA) systems
- Pressure detection systems
- Flow monitors
- Air monitors
- Visual observation
- Audible observation
- Odour

The following sources may also advise Harvest about an incident:

- Harvest field operators
- Contract personnel
- Other industrial operators
- Government agencies
- Public
- Media

As soon as Harvest is made aware of a potential incident by any method, Harvest personnel will carry out an investigation to determine the situation.

Internal and External Notification Procedures

During any level of emergency Harvest field response teams will communicate with Harvest's management team and when established, the EOC Team. It is the responsibility of the EOC Team to ensure that senior managers are made aware of and kept updated with all information regarding the emergency situation and the response progress.

Harvest will ensure that all external notifications to members of the public, other stakeholders, required government agencies and emergency response personnel will be carried out in a timely manner. (See Communication in section 1)

Specific roles and responsibilities regarding internal and external notifications/communications can be found in Section 4 of this CERP under Roles and Responsibilities.

The Notification Matrix for which government agencies must be notified (Alberta and British Columbia) can be found in section 8.

6.5 INVESTIGATION OF PUBLIC COMPLAINTS AND THREATS

Sources outside of Harvest may see or hear a problem before a company representative does; any reports, concerns or complaints raised by sources outside of Harvest must be promptly investigated.

Calls to Harvest of a complaint nature normally come through the Harvest 24 hour emergency number and will follow the normal call-down procedure i.e. whoever receives the call will speak to the caller and attempt to eliminate or mitigate the cause of the complaint; this may be achieved by a simple conversation of explanation or it may require a visit to the land owner or an investigation at the site. Unless conditions indicate otherwise, an odour complaint is not declared an emergency until the incident has been investigated and verified. However, it is essential that Harvest respond thoroughly and professionally and ensure the complaint and outcome is documented and resolved.

Threats to Harvest's operations or personnel may come in many forms; all threats to Harvest personnel, property or equipment whether direct, intimidated or perceived must be reported to the supervisor immediately and documented. Depending on the nature of the threat and investigation may need to be carried out and may require the assistance of the RCMP/Police and/or the fire department.

Procedures outlined in the Security Management Plan may need to be adopted.

6.6 FIRES OR EXPLOSIONS

Response Actions:

- Understand the type of product and its immediate hazards.
- Call the local fire department and/or a professional oilfield fire fighting organization.
- If necessary, approach the site from an upwind or crosswind direction.
- Identify safe escape routes away from hazardous areas.
- Do not extinguish burning leaks if the leak or supply to the leak cannot be stopped.
- Attempt to control small fires to prevent them from becoming large fires and ONLY when there is no danger to yourself.
- If safe to do so, initiate actions to prevent the spread of the fire, remove flammable materials, protect surrounding property, etc.
- Keep unauthorized personnel away.

6.7 ENCROACHING GRASSLAND OR BUSH FIRES

Response Actions:

- Understand the type of product and its immediate hazards.
- Establish a safe escape route if workers are still able to work at the site.
- Advise fire authorities if company property is threatened by an external fire.
- Advise first responders about potential flammable/toxic vapours, fire hazards etc.
- Determine and if necessary initiate emergency shutdown/depressurization for any facilities threatened by fire.
- Evacuate the facility before the fire reaches it.
- If necessary, review Harvest's 'Wildfire Risk Assessment Matrix' (see below)

Wildfire Risk Assessment Matrix

Control Safety Zone Analysis								
Determine area Fire Weather Index (reference ESRD)	http://wildfire.alberta.ca/fire-danger-forecasts/default.aspx				Under todays fire danger, click on 'fire danger'			
Confirm Fire Status.	http://wildfire.alberta.ca/wildfire-status/wildfire-status-map.aspx							
Identify nearest personnel and assets								
Determine safety zones on chart below.	e.g. the Fire Weather Index indicates 'High' and the Current Fire Status indicates 'Being Held'. Therefore, consider evacuation if the fire is 12 km or closer to the property.							
In your decision whether to evacuate, consider the following: the smoke hazard to personnel, wind speed and direction, how fast the fire is spreading, egress routes etc.								
Fire Weather Index								
	Poor	Low	Moderate	High	Very High	Extreme		
Out of Control (OC)	6 km	6 km	12 km	18 km	20 km	24 km	Danger Zones (EPZ)	
Being Held (BH)	3 km	3 km	6 km	12 km	15 km	18 km		
Under Control (UC)	<1 km	3 km	3 km	6 km	9 km	12 km		
Turned Over (TO)	<1 km	<1 km	3 km	3 km	4.5 km	6 km		
Manpower resources in area								
# of Multi-well batteries to shut in								
# of Compressors to shut in								
# of Flow line wells to shut in								
# of SWB to shut in								
Access restrictions								
Assess vegetation classification								
Gather most recent weather facts for area (past 24 hr and forecast for next 24hrs including temperature, wind speeds, relative humidity, precipitation in last 24 hrs)								
				http://www.weatheroffice.gc.ca/city/pages/ab-40_metric_e.html				
Risk assess exposures prior to having workers re-enter the area								
Wildfire Status Terms								
Out of Control (OC)	Wildfire is burning and is expected to keep growing							
Being Held	Given current weather conditions and resources the wildfire is not anticipated to grow past expected boundaries							
Under Control (UC)	The wildfire is contained and will be extinguished							
Vegetation Classification Chart								
Species			Flammability	Fuel Type				
Black Spruce			Extreme	C2				
Cured/dead grass and slash			Extreme	O1,S1,S2,S3				
Lodgepole or jack pine			High	C3				
White spruce			High	M1,M2				
Western Larch			Low	C1				
Young and mature aspen (has clean forest floor present)			Very Low	D1				
For further information on wildfires review the FireSmart Guidebook for the Oil and Gas Industry at the following hyperlink.								
S:\Environment, Health and Safety\Wildfire Risk Assessment								

6.8 SHUT-DOWN PROCEDURES

Most facilities are fitted with some form of automatic emergency shut-down process; shut-down procedures may be initiated either by or combination of; hi/low pressures; hi/low fluid levels; pressure or flow differentials; automatic H₂S, LEL, fire detection. All facilities have a manually operated emergency shut-down button on location and many facilities can be shut down remotely via computer or mobile phone.

Specific shut-down procedures for a specific location or facility can be found at the area field office or main battery/plant.

Personnel are made aware of site specific shut-down procedures by area supervisory personnel during the hiring process and through on-going competency training.

6.9 SWEET HYDROCARBON INCIDENT

Response Actions:

- Approach the site from an upwind or crosswind direction.
- When possible eliminate all potential ignition sources; this includes vehicles.
- Monitor the incident site for LEL, O₂ and CO.
- Assign a response zone and initiate public protection measures to a safe distance based on the type of incident and readings of LEL, O₂ and CO.
- Monitor local weather conditions.
- Isolate the area to keep unauthorized personnel away.

6.10 OUT OF CONTROL WELL

Response Actions:

- Understand the type of product and its immediate hazards, e.g. flammable/toxic vapours, fire hazards, etc. Approach the site from an upwind or crosswind direction.
- Don't approach the site without appropriate backup.
- Ensure an appropriate air monitoring strategy is employed.
- Assess the nature of the problem. Prepare appropriate responses to bring well under control.
- Keep unauthorized personnel away.
- Consider a well control expert if necessary.

6.11 HIGH VAPOUR PRESSURE RELEASE

Response Actions:

- Don't approach the site without appropriate back-up.
- When possible eliminate all potential ignition sources; this includes vehicles.
- Review the regulated site specific emergency response plan if applicable.
- Ensure you have the correct PPE for the hazards assessed.
- Understand the type of product and its immediate hazards, e.g. flammable/toxic vapours, fire hazards, etc. Extremely low temperatures exist when the liquid expands to the gaseous state. These temperatures can cause severe freezing to persons in proximity.
- Approach the site from an upwind or crosswind direction. A serious health hazard may exist due to the lack of oxygen surrounding a leak.
- Responders must be equipped with breathing apparatus and LEL monitors. The danger from fire/explosion exists when an escaping vapour mixes with air to within the upper explosive limit.
- Ensure an appropriate air monitoring strategy is employed.
- Monitor the area. Vapour may accumulate in river valleys, coulees or other low-lying areas.
- Monitor local weather conditions. Weather conditions such as temperature inversions, fog and wind will affect plume dispersions.
- Observe surrounding area for other possible ignition sources and take appropriate steps to eliminate these hazards: electrical switches, hot water heaters/house, furnaces, static electricity, arcing/sparking, etc.
- Isolate the area and keep unauthorized personnel away.

6.12 NATURAL GAS LIQUID (NGL) RELEASE

Response Actions:

- Don't approach the site without appropriate backup.
- When possible eliminate all potential ignition sources; this includes vehicles.

- Understand the type of product and its immediate hazards, e.g. flammable/toxic vapours, fire hazards, etc. Be aware that vapour plumes from an NGL release are highly flammable.
- Approach the site from an upwind or crosswind direction.
- Responders must be equipped with breathing apparatus and LEL monitors.
- Monitor the area. Be aware that most NGL fumes are heavier than air and that vapours can gather in low-lying areas.
- Isolate the area and keep unauthorized personnel away.

6.13 PRODUCT TRANSPORTATION INCIDENT

The priority of a product transportation incident is to protect the driver and the public from risk and prevent the product from impacting the environment.

The party in charge or control of the product (carrier) is responsible to remedy the dangerous occurrence; however, the ultimate responsibility remains with the shipper.

Response Actions:

- On public roadways, Harvest will work with local fire department, RCMP/police and ambulance personnel to respond to the incident.
- Call **911**.
- Secure incident site from on-coming traffic. Keep unauthorized personnel away.
- If safe to do so, provide medical aid to the driver and passengers involved in the incident.
- If possible, interview the driver and review the manifest for products, volumes and carrier company name.
- If available, review MSDS or the Transport Canada, Emergency Response Guide (ERG) for product hazards, personal protective equipment (PPE) requirements, response action and public protection measure.
- If safe to do so, assess the container integrity and secure the leak.
- If safe to do so, contain and clean up spilled product.

LPG Transportation:

- As required, mobilize the LPG Emergency Response Corp. (LPGERC). Refer to the **LPGERC pamphlet in the visor packs for the LPG Emergency Response Corp.** (LPGERC) telephone number.

6.14 SERIOUS INJURIES AND FATALITIES

Response Actions:

- When an injury or fatality occurs, it may not be necessary to declare an alert or level of emergency if the situation is an isolated incident such as a vehicle accident, however, a level of emergency may be declared if an incident generates media interest.
- Try to remain calm and not panic.
- Call 911
- All casualties must be provided with first aid/medical aid until they are pronounced deceased by a competent medical practitioner.
- As required, notify OH&S.
- Do not resume operations until the appropriate investigations have been completed and approval has been granted by the: local RCMP/local police, OH&S, WCB and/or the regulator.

6.15 NOTIFICATION OF NEXT OF KIN

Notification of an injury or fatality may be received by Harvest in any number of ways e.g. from the employee's leader, calls to Harvest's reception, to the EOC on-call number etc. Regardless of how the call was received, the Chief Executive Officer (CEO) must be notified as soon as possible, this communication is likely to come from a department manager or a VP; but it is vital that a timely and appropriate response is organized to effectively help the employee and the employee's family.

Timely communication with family members is imperative; informing family members that their loved one has been killed or injured is exceptionally difficult; Harvest must liaise with the police/RCMP as it may be a requirement that they attend or even be the persons to deliver this news; with advice from the police, it may be a good idea for a Harvest representative to accompany them. Whoever delivers the news should do so face to face; this information should never be given over the phone.

Efforts should be focused on offering support to the worker and to the family; Harvest should ensure that arrangements are made for transportation needs for family members

to and from the hospital and any other appropriate assistance that they may require; for safety reasons, family members should not have to drive themselves.

Even though assistance should be provided and support offered to the family as early as possible, it is important to remember that any representation from Harvest must wait until invited by the family to pay respects or to provide whatever support they can.

Response Actions:

- Harvest's EOC Director is responsible for ensuring the notification of next of kin is completed promptly.
- Next of kin must be notified when an employee or contractor is missing, seriously injured or dies while working for Harvest.
 - Notifications regarding Harvest employees may need to be carried out in conjunction the police department
 - Consider conducting the notification accompanied by a co-worker or a family friend.
 - Notifications regarding contractors should be made by their employers.
 - If a member of the public is injured or killed as a result of company operations, notification must be coordinated through the local RCMP/police.
 - Make the notification in person, not by telephone or through an intermediary.
 - Identify and confirm the time and location of the accident and the present location of the casualty/deceased.
 - Advise the next of kin that a senior company representative will be contacting them to discuss any immediate needs and to provide information on insurance coverage and benefits support. Follow up on this commitment.
 - Leave your name and telephone number with family members.
 - Offer assistance, such as transportation to the hospital.
- Do not leave next of kin alone. Offer to contact a neighbour, friend or relative.
- Guidelines for media notification are listed below.
 - Do not release the names of casualties or missing persons before the next of kin are notified and always seek advice from the police department
 - Keep statements to the facts and do not speculate.
 - Do not discuss potential perceptions of liability or fault.
 - Ensure the next of kin are protected from media harassment.

6.16 SEARCH AND RESCUE

Response Actions:

- Each rescue situation requires unique procedures and may require special equipment and training; depending on the incident, consider contacting emergency services.
- If an employee has failed to routinely “report in”, notify the immediate supervisor.
- The search and rescue team should ensure that their own safety is not threatened and they must keep the immediate supervisor informed at all times.
- If it becomes necessary and it is safe to do so, dispatch a search and rescue team.
- If a casualty is discovered; if it is safe for the casualty and for the rescuer to do so, initiate rescue and administer first aid as required.
- Request the attendance of emergency services crews (fire, police and EMS may all be required).
- Pass on all relevant information to emergency services crews.
- Only move the casualty if it is absolutely necessary, e.g. to give CPR, if the scene is becoming unsafe, the casualty is likely to drown, etc.

6.17 HELICOPTER LANDING PROCEDURES

Overview

These Helicopter Landing Procedures provide the typical steps to be carried out when mobilizing a helicopter for either medical or Rover support. They can be used for other situations as required.

Helicopter Air Ambulance Service

Situations including serious injuries may require the mobilization of a Helicopter Air Ambulance Service. The steps to mobilize a helicopter air ambulance are outlined below.

Step 1:

Determine the helicopter landing area coordinates (latitude and longitude). If you do not know the latitude and longitude, provide the LSD.

Step 2:

Call the Shock Trauma Air Rescue Society (STARS) at 1-800-888-4567 or #4567 (Alberta only).

NOTES: When you contact STARS, you will speak to a physician. The physician will mobilize the air ambulance based on certain criteria, e.g. the symptoms and condition of the patient, weather conditions, availability of aircraft, etc.

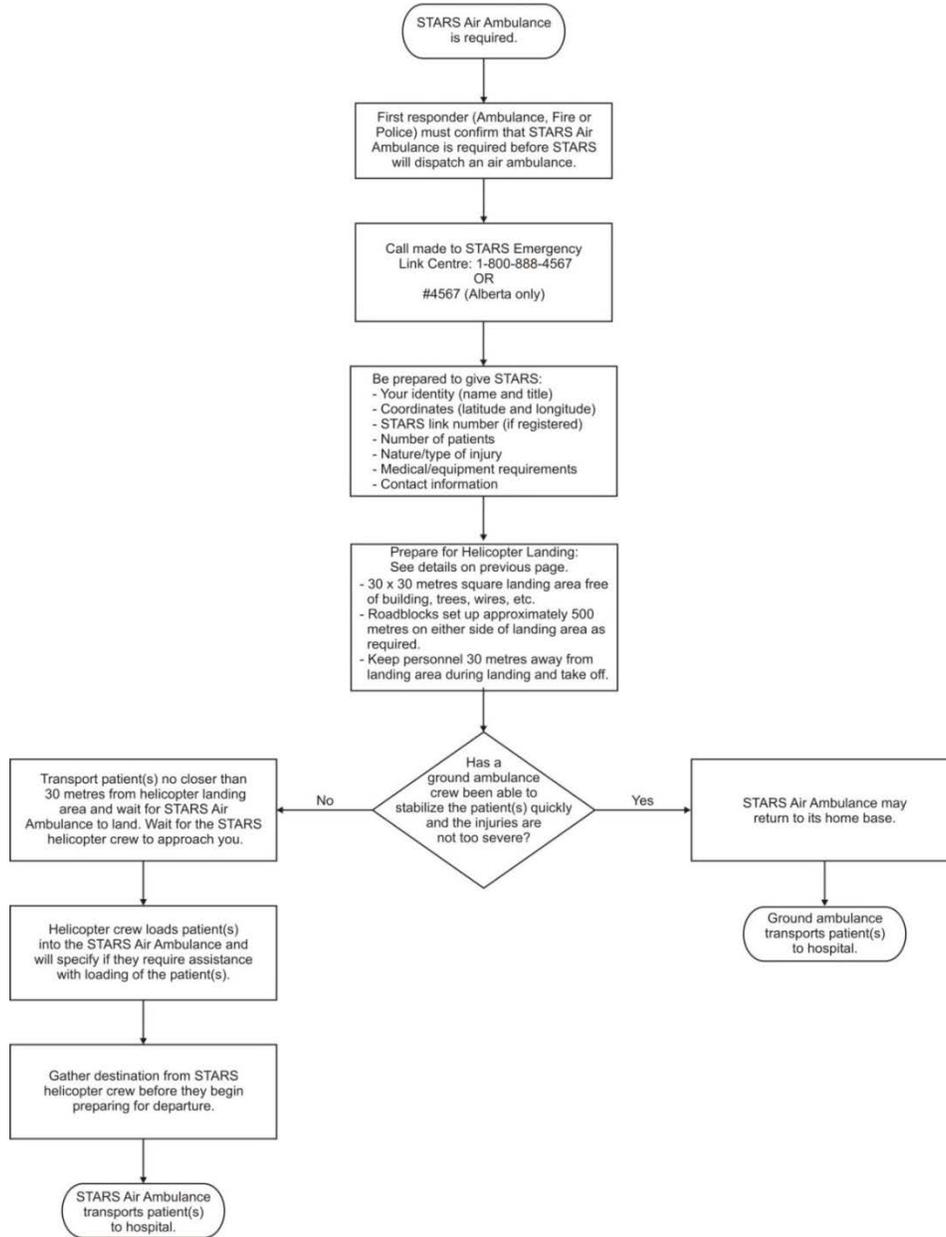
STARS may mobilize a ground ambulance if it is considered that medical aid could be provided quicker; STARS may also decide to rendezvous with a ground ambulance if it becomes necessary.

Step 3:

In preparation for helicopter landing:

- The landing area must be free of buildings, trees, wires and other obstructions.
- The landing area should be at least 30 x 30 metres square with streamers (if available) at each of the four corners. If necessary, set out flares to delineate the landing area.
- As required, set up roadblocks approximately 500 metres either side of the landing area.
- If available, erect a wind sock 5 metres off the ground about 50 metres from the centre of the landing area.
- If safe to do so and available, park emergency vehicles under wires that cross a roadway. Leave vehicle warning lights on.
- Avoid shining bright lights toward landing area.
- Keep back 30 metres back from landing area during helicopter landing and take-off.
- Do not approach the helicopter. The helicopter crew will approach you.
- Do not drive or back vehicles up to helicopter.
- No ignition sources are allowed in the area of the helicopter.

Helicopter Air Ambulance Service Flowchart:



Helicopter Rover Support

When mobilizing a helicopter for Rover duties, follow the procedures outlined below:

- The landing area must be clear of buildings, trees, wires and other obstructions.
- Select a suitable landing area for a helicopter. The landing area should be as convenient to the Incident Command Post (ICP) or Remote Command Post (RCP) as is safe.
- A local air strip is a good spot for a helicopter landing area.
- The landing area should be at least 30 x 30 metres square with streamers (if available) at each of the four corners. If necessary, set out flares to delineate the landing area.
- As required, set up roadblocks approximately 500 metres either side of the landing area.
- If available, erect a wind sock 5 metres off the ground about 50 metres from the centre of the landing area.
- Avoid shining bright lights toward landing area.
- Keep back 30 metres from landing area during helicopter landing and take-off.
- No smoking or ignition sources are allowed in the area of the helicopter.
- A Harvest representative (Rover) will accompany the helicopter to act as local area knowledge.
- Approach the helicopter only when instructed to by the pilot. Always approach a helicopter from the front, staying within the 10 and 2 o'clock position. Keep your hands down and head low.
- The Helicopter Rover must have contact with their immediate supervisor.

6.18 SITE SPECIFIC EMERGENCY RESPONSE INFORMATION

Many of Harvest's operational field areas are required under regulations to develop a production area or site specific emergency response plan; these emergency response plans contain response information including:

- o A description of the operational area
- o Directions to the area
- o Contact names and numbers of Harvest personnel, first responders, regulatory and government agencies, support agencies, contract services etc.
- o Contact names and numbers of entities that are inside the emergency planning

- and response zones
- A map of the production area
- A hazard assessment on the wells, pipelines and facilities

These production ERPs can be found at the area field office and/or the area main battery or plant. Each area foreman and lead operator is provided with a copy of the plan and it can be found on the O and S drive of Harvest's computer network system.

6.19 SAFETY DATA SHEETS

Safety data sheets (SDS) of the products that Harvest produce can be found on Harvest's intranet under the EH&S tab; a list of these substances is shown below.

Also, the SDS of a substance used by Harvest workers can be found at the location of that substance.

Harvest SDS:

- Sweet Condensate
- Sour Condensate
- Sweet Crude Oil
- Sour Crude Oil
- Sweet natural Gas
- Sour Natural Gas
- Sweet NGLs
- Sweet Water
- Sour Water
- Heavy Oil – Lloydminster
- Heavy Oil – Sylvan
- Silica Sand

6.20 HAZARD AWARENES AND RISK ASSESSMENT

Harvest has a comprehensive Environmental Health and Safety Management System (EHSMS); section 2 of the EHSMS contains the policy and procedures for hazard identification, risk assessment and putting controls in place to eliminate or reduce the hazard.

Section 3.6 of the EHSMS contains a list of tasks identified as 'high risk'; a Job Safety

Analysis (JSA) or written procedure associated with these tasks.

The JSA validation and verification procedure can be found on the O drive of Harvest's computer network.

The EHS group can assist with locating these documents if required.

Below is a copy of the Risk Assessment Steps.

Step 1 Determine Severity Category					
		People	Environment	Financial	Public
Severity Rating	Unacceptable	Lost time Injury, permanent disability or fatality	Major impact to streams, groundwater, etc. reportable to regulators	Damage or loss \$500K or more, downtime 1 month or more	ERP Level 3 Emergency, National attention, shelter in place or evacuation of multiple residences
	High	Medical treatment or restricted duty	Off lease or with adverse effect. Reportable to Regulators	Loss between \$50K - \$500K, downtime 1 week to 1 month	ERP Level 2 Emergency, Provincial attention, warnings issued to public
	Medium	First Aid Injury	On lease but reportable to regulators	Damage or loss from \$1000 to \$50K, down time 1 day to a week	ERP Level 1 Emergency, Local concern or complaint from public
	Low	No foreseeable injury	On lease release but not reportable to regulators	Damage or loss up to \$1000, down time less than 1 day	ERP Alert Level No impact to public

Step 2 Determine Probability			
Remote	Possible	Probable	Expected
Remote chance – not expected to occur in Harvest’s operations. Isolated occurrences in industry	Possibility of rare incidents. One occurrence possible in Harvest’s operations in 10 years	Probable to occur. One occurrence probable in Harvest’s operations in 2 years	Repeated occurrence expected. One or more occurrences per year in Harvest’s operations

Step 3 Determine Risk Probability					
		Remote	Possible	Probable	Expected
Severity Rating	Unacceptable	M	U	U	U
	High	L	M	U	U
	Medium	L	L	M	M
	Low	L	L	L	L

Step 4 Assign Risk Ranking	
U	Unacceptable – Work must not proceed – or if ongoing; must stop immediately until hazard controls are implemented to reduce risk to a low level.
M	Medium – Must implement hazard controls to reduce hazard to a low level.
L	Low – Some hazard control may still be justified.

6.21 POST INCIDENT

Post Incident Report

Harvest is required to prepare and submit an incident report to the regulatory agency within the required time period for any of the following occurrences:

- Any level 1, 2 or 3 emergency
- Any incident involving a pipeline
- When requested by the regulatory agency

Post-Incident Debrief

A post-incident debrief refers to a conversational session that revolves around the sharing and examining of information after an incident has occurred. It is not meant to be a negative finger-pointing exercise or to find someone to blame; it is designed to help all personnel learn and improve. It can also help reduce the potential for PTSD or other psychological issues.

The debrief must be documented and all records retained.

Below is a list of some of the considerations to take into account when carrying out an incident debrief:

- When do you do the debrief; timing is important, too soon after the incident and not all the information may be available; too late after the incident and any impact is likely to be lost
- Who carries out the briefing; it should be someone who is familiar with the incident and the response and preferably someone with experience in this kind of meeting
- Who should be included and invited to the debrief session e.g. responders, emergency services, government and regulatory agencies, third party service providers etc.
- Why is the debrief being carried out i.e. what are the objectives of the debrief
- How or why it occurred; depending on the timing of the debrief, the answers to these questions may not be apparent until an incident investigation has been completed

Some of the information to provide and questions arising from the incident may include:

- General information e.g. what occurred, date, time, location
- Was Harvest's response effective; what went well and what can we improve upon
- Were the incident objectives met
- What went well and what can we improve on e.g.

- Was there effective communications between all responders and between command posts?
- Were correct resources available
- Were emergency response procedures effective
- Were there any media issues
- Were there any organizational barriers
- What was the cost of the incident and the response
- What are the lessons learned and what is the action plan going forward

Critical Incident Stress Debriefing (CISD)

CISD is a specific technique designed to assist others in dealing with the physical or psychological symptoms that are generally associated with trauma exposure.

One method of CISD is a supportive intervention process where personnel can engage in a crisis-focused discussion of a traumatic event (critical incident); the main objective being:

1. Mitigation of the impact of a traumatic incident
2. Facilitation of the normal recovery process
3. CISD functions as a screening opportunity to identify personnel who might benefit from additional support services.

Following an incident, supervisors should be vigilant for signs and symptoms of personnel who may be suffering from stress as a result of the incident; signs and symptoms include:

Physical signs:

- Fatigue
- Nausea
- Twitches
- Visual difficulties
- Dizziness

Cognitive signs:

- Blaming others
- Confusion
- Poor concentration
- Loss of time, place or person orientation

Emotional signs:

- Anxiety
- Guilt

- Grief
- Depression

Behavioural signs:

- Withdrawal
- Emotional outbursts
- Alcohol consumption
- Erratic movements

If a supervisor knows or suspects any Harvest personnel of showing these symptoms which could indicate stress following an incident, the supervisor must contact Harvest's Human Resources as soon as possible; Harvest personnel have access to private and confidential counselling under the Employer and Family Assistance Program (EFAP).

6.22 MEDIA

Overview

When an incident occurs that affects responders, the health and safety of the public, the environment or causes property damage, the incident could attract media interest. It is important that Harvest addresses the media appropriately and uses media relations as a tool to provide timely public safety messages to disseminate accurate information regarding the incident while reducing the potential for any misinformation.

NOTES: All statements of news releases related to an incident must be approved by the Incident Commander.

Once approved by the Incident Commander, Harvest will coordinate media releases with the local petroleum regulatory agency prior to release to ensure consistency and accuracy of information. Information can be communicated through the designated spokesperson, a news release, a press conference or another effective means Harvest chooses to use.

Harvest supports cooperating with the media within a well-managed channel of communication. Only authorized spokespersons representing Harvest should communicate with the media to ensure consistent, factual and timely information is provided.

During the course of an incident, Harvest field staff may be approached by media through phone calls or on-site visits; should this occur a statement consistent with the example given below should be communicated:

Harvest's priority at this time is to maximize the safety of the public, the responders and the environment. The cause of the incident has not been confirmed and Harvest will issue a statement once the facts are known. Our media representative is _____ and is located at _____. Could I please have your name, contact number and what organization you represent and I will pass this information on.

Field Staff and Media Communication

Should media personnel arrive at the incident site, consider the following:

- The media should not be allowed into the Emergency Planning Zone (EPZ) or Hazard Response Zone (HRZ) unless authorized by the Incident Commander.
- An information centre should be set up and if so, it will be the only location where on-scene information bulletins will be issued.
- If access to the EPZ/HRZ or incident site is granted, media personnel must be escorted by Harvest personnel while on Harvest property for their safety.

General Media Guidelines - For Authorized Spokespersons

- Do not wait until contacted by the media to prepare a media statement. Gather all the facts and immediately prepare the brief media statement in the Emergency Response Plan. Refer to Section 8.0 for an example of a Brief Factual Media Statement and forward it to the Harvest media representative and the Manager of Investor Relations.
- Be cooperative, but do not allow the media to endanger you or others in their quest for information or pictures.
- Assume that all interviews, including telephone interviews, are being recorded.
- Note the reporters name, contact number and organization.
- The Incident Commander, EOC Director and Harvest's Manager Investor Relations must be informed of any discussions with media personnel.

Before an Interview with the Media

- Refer to the Brief Factual Media Statement.
- Keep in mind the journalism questions of who, what, why, where and when.
- Clarify the facts.
- Try to anticipate questions that may be asked and prepare your answer.

During an Interview

- Have the entire interview recorded or transcribed for company records. Ensure that all parties involved are made aware that the interview is being recorded.
- Take control and respond only to an orderly question and answer session.
- Listen carefully to each question and ask for clarification if necessary.
- Try to keep your answers brief.
- Provide the information about the incident as it becomes available. Do not release it 'bit by bit' if the full picture is known.
- Try to bridge from the facts to the positive steps that Harvest is taking to protect responders, the public and the environment.
- Avoid using the names of people or companies. If the names must be used, ensure that the information is correct.
- If you don't know the answer to a question say "I don't know". Do not speculate or guess. Tell the interviewer that you will get back to them with the answer.
- Do not comment on rumors or speculation.

Remember

- Do not use the phrase "No Comment".
- Do not release the names of any injured or missing persons.
- Deaths must be confirmed by a medical doctor.
- Do not make comments "off the record". Anything said to a reporter is on the record.
- Be careful of your comments and actions made after the interview, the cameras are always rolling.
- Honour your promises to the media.

Statement for Use When You Are Unaware of an Incident Affecting Harvest Assets

Refer to Section 8.0 for the Statement for Use When You Are Unaware of an Incident Affecting Harvest Assets Form.

Information Required for Media Personnel

Authorized spokesperson(s) will be appointed by Harvest’s Disclosure Committee.

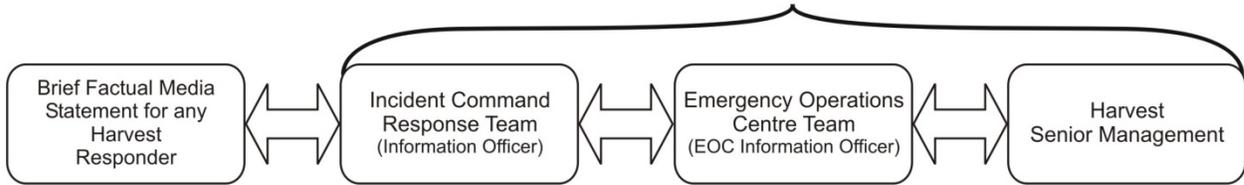
- COO, CSO, Manager of Investor Relations, General Counsel, Incident Commander.

Refer to Section 8.0 for the Information Required for Media Personnel Form.

Media Information Record

HARVEST OPERATIONS CORP. MEDIA PROCESS

Formal Media Interaction





EMERGENCY RESPONSE PLAN
SECTION 7.0 - CORPORATE
TELEPHONE DIRECTORY
CONTENTS

7.1	Harvest Operations Corp.....	1
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7.5	Regulatory agency Emergency Contacts.....	3

7.0 CORPORATE TELEPHONE DIRECTORY

7.1 HARVEST OPERATIONS CORP.

24-hour Emergency Number	1-800-760-2826
Main Calgary Office Switchboard (Daytime only)	403-265-1178
Calgary Office Fax	403-265-3490
Address	Harvest Operations Corp. 1500, 700 – 2 Street S.W. Calgary, AB T2P 2W1

7.2 HARVEST EOC ON-CALL

24-hour Emergency Number	403-888-2540
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7.3 HARVEST - EMERGENCY OPERATIONS CENTRES (EOCs)

Primary Emergency Operations Centre (EOC)

Emergency Operations Centre (EOC) Number	403-261-5196
Emergency Operations Centre (EOC) Fax	403-268-3164
Address:	Harvest Operations Corp. 1500, 700 – 2 nd Street S.W. Calgary, AB T2P 2W1

Alternate Emergency Operations Centre (EOC)

Emergency Operations Centre (EOC) Number	403-444-6940 or 403-852-1131
Behr Energy Services Fax	403-261-8965
Address:	Behr Energy Services Ltd. 750, 600 - Avenue SW Calgary, AB T2P 0S5

7.4 HARVEST - EMERGENCY OPERATIONS CENTRE TEAM

Title	Name	Telephone Numbers		
		Office	Residence	Cellular
DIRECTORSHIP				
EOC Director	Doug Walker	403.268.3167		
Alternate EOC Directors	Jim Causgrove	403.387.1202		
	Paul Vander Valk	403.387.1218		
	Doug Wakaruk	403.233.6644		
Administrative Assistant	Sherrie Eisner	403.233.6681		
Alternate Administrative Assistant				
EOC COMMAND STAFF				
EOC Information Officer	Greg Foofat	403.231.5271		
Alternate EOC Information Officer	Pending new arrival			
EOC Safety Officer	David E. Jones	403.387.1254		
Alternate EOC Safety Officer	Graham Vince	403.231.5213		
EOC Liaison Officer	Russ Andrew	403.233.6936		
Alternate EOC Liaison Officers	Warren Johnston	403.233.6921		
EOC OPERATIONS				
Public Safety Head	Graham Vince	403.231.5213		
Alternate Public Safety Head				
Environmental Head	Jeff Stephenson	403.233.6669		
Alternate Environmental Head	Robert Birrell	403.231.5608		
EOC PLANNING				
Planning Section Head	Vladimir Kireev	403.261.8213		
Alternate Planning Section Head	Travis Henson	403.387.1233		
Technical Specialists	Mobilized as required by the Planning Section Head.			
EOC LOGISTICS				
Logistics Section Head	Bruce Auclair	403.233.6656		
Alternate Logistics Section Heads	Dan Biggs	403.261.8263		
Calgary Office Receptionist	Mobilized as required.			
EOC FINANCE/ADMINISTRATION				
Finance/Administration Section Head	Grant Ukrainetz	403.387.1272		
Alternate Finance/Administration Section Head	Mike Smilie	403.387.1252		
Role Delegated as Required				
Role Delegated as Required	Paul Dhanjal	403.231.5297		
Role Delegated as Required	Keith Shackleton	403-261-8253		
Role Delegated as Required	Stan Bergen	780-559-8639		

7.5 REGULATORY AGENCY EMERGENCY CONTACTS

REGULATORY AGENCY EMERGENCY CONTACT	
Alberta Energy Regulator (AER)	1.800.222.6514
Emergency Management BC	1.800.663.3456
National Energy Board. Pipeline Emergency	819.997.7887
Facility/Operations Emergency	403.807.9473

Note: All emergencies and spills in the BC area are reported to the Oil and Gas Commission (OGC) through Emergency Management BC.

Emergency notifications to the NEB are reported through the Transportation Safety Board

Section 9 of the corporate emergency response plan (CERP) contains information on emergency response equipment required and where it may be located.

Other emergency response equipment and resources that may be required may be provided by:

- o Environmental agencies and contractors. Harvest's environmental team will be able to assist with environmental contractors contacts
- o Service providers and resource suppliers
- o Regulatory agency or local authority
- o Mutual aid coops
- o Emergency services

Contact names and numbers of the aforementioned groups can be found in the site specific/production ERP or in the area field office or main battery/plant.

WCSS area contacts can be found in the production or site specific ERP or at the following web site. <http://www.wcss.ab.ca/>

Harvest's Aboriginal and Community Affairs Representative, based in the Calgary office, must be contacted and notified of any incident that may affect First Nation's or Metis communities.

The Aboriginal and Community Affairs Representative has contact names and numbers of Aboriginal communities and will take the lead when communication is necessary.



Emergency Reporting Tab

Form No.	Description
1	Alberta First Call Communication
2	OGC Form A – Minor Incident Notification
3	OGC Form C – Emergency Incident Form
4	OGC Form D – Post Incident Report

Incident Action Plan Tab

Form No.	Description
5	Incident Action Plan

General Emergency Response Forms Tab

Form No.	Description
6	Time and Event Log
7	Environmental Monitoring Record
8	Road Block Checkpoint Record
9	Status Board
10	Issue and Resolution Board
11	Response Position Assignments
12	School Children Registration Record
13	Public Information Notice
14	Public Evacuation Notice
15	Telephoner Text – Notification
16	Telephoner Text – Shelter-in-Place
17	Telephoner Text – Evacuation
18	Public Notification Record
19	Evacuee Registration record
20	Bomb Threat Call Report
21	Expense Claim
22	Post-Incident Evaluation
23	Non-Critical Drilling, Completion & Work-over Checklist

Media Tab

Form No.	Description
24	Brief Factual Media Statement
25	Statement for Unknown Incident
26	Information Required for Media Personnel
27	Media Information Record
28	Media Enquiry Record

Alberta Tab

Form No.	Description
29	Notification Matrix
30	Health Effects of H2S and SO2
31	Spill Reporting Requirements

British Columbia Tab

Form No.	Description
29	Notification Matrix
30	Health Effects of H2S and SO2
31	Spill, Release and Minor Incident Reporting Requirements

First Call Communication



This form is to be used when taking information for spills/releases. It will assist in consistent gathering of data and should be attached to the FIS record.

General Incident Information			
AER contact:		Field centre:	
Licensee:	Caller:	Phone:	
E-mail address for release report:			
Licence #:	Pipeline line #:	Approval #:	
Incident location: ___ / ___ / ___ / ___ W ___ M			
Emergency level:			
Serious event? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, what kind of serious event? <input type="checkbox"/> Blowout <input type="checkbox"/> Explosion <input type="checkbox"/> Fire <input type="checkbox"/> Other control loss <input type="checkbox"/> Fracking <input type="checkbox"/> Casing failure			
Land type (jurisdiction): <input type="checkbox"/> Freehold <input type="checkbox"/> First Nations <input type="checkbox"/> Métis <input type="checkbox"/> CFB <input type="checkbox"/> Crown – Disposition #:			
Agencies notified:		Date:	
FIRST duty office (DO) contacted: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, date & time DO was contacted:			
DO contact name:			

Release Details			
Volumes			
Substance*	Released (m ³ /10 ³ m ³)	Recovered (m ³ /10 ³ m ³)	Disposal/storage location
* For emulsion, break down oil & water if possible.			
Description of how the release volume was determined and verified (including calculations; e.g., spill length × width × depth):			
Area affected (length × width): m ²			
How was the area affected determined? (Aerial survey, perimeter walk, range finder, samples taken, etc.):			
Who delineated the spill area (environmental technologist, operator, etc.) and what process was used?			

<input type="checkbox"/> Reminded licensee to update the AER immediately if release volumes or area changes from what was originally reported.
<input type="checkbox"/> Asked for the immediate submission of photos of the entire spill site to the AER and communicated that photos of the cleanup will need to be submitted with the release report.
Cause of release (suspected or actual):

Impact		
Release off lease? <input type="checkbox"/> Yes <input type="checkbox"/> No (pipeline right-of-way is off lease)		
If yes, was the landowner notified? <input type="checkbox"/> Yes <input type="checkbox"/> No		Name of landowner/agency:
Release within disposition boundary? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Outside disposition – was leaseholder notified? <input type="checkbox"/> Yes <input type="checkbox"/> No		Name of leaseholder:
<input type="checkbox"/> If outside disposition, reminded licensee that they will need a TFA.		
Actual incident H ₂ S concentration (if applicable):		% / ppm / mol/kmol
Nearest town:		Distance and direction to town:
Environment affected: <input type="checkbox"/> Air <input type="checkbox"/> Land <input type="checkbox"/> Water		
Distance of release to the nearest water body, watercourse, or waterway:		
How was this distance determined?		
Wildlife/waterfowl/livestock affected: <input type="checkbox"/> None <input type="checkbox"/> Habitat affected <input type="checkbox"/> Animals injured/killed		
Notes/description:		
Confirm how the release has been or will be contained:		
Confirm how the release has been or will be cleaned up:		
Evacuees (#):	People injured (#):	Fatalities (#):
Were members of the public affect? <input type="checkbox"/> Yes <input type="checkbox"/> No		
If yes, indicate if they were		
<input type="checkbox"/> notified <input type="checkbox"/> instructed to shelter in place <input type="checkbox"/> advised to evacuate		

Notes/description:

Media interest? None Local Regional National

Damage to public property? Minor/no damage Substantial (home covered in oil) Extensive (home destroyed)

Pipeline Specific

Hit? Yes No Line #: Test failure? Yes No

Normal operating pressure: kPa Maximum operating pressure: kPa

Is the pipeline shut in, depressured, and isolated? Yes No

If yes, date & time:

What is the total volume of liquid in the pipeline?

Are there isolation valves? Yes No If yes, have they been activated? Yes No

Are there any other pipelines that tie into the failed line? Yes No If yes, have they been shut in/isolated? Yes No

Reminded the company to contact the AER before excavating the pipeline.

Reminded, advised, or directed the company that the pipeline is not to be returned to service without the AER's permission.

Right-of-way (ROW)

Licensee has confirmed when the pipeline ROW and well were last checked. Date:

How was the ROW surveillance conducted (from the air, by quad, on foot, using infrared, etc.)?

Requested that daily production volumes for the well/pipeline be submitted within 24 hours.

Investigation information

What operations are currently taking place (containment, sampling, line locating, retaining contractors/consultants, pipeline excavation, repair, site access, EM survey, etc.)?



**FORM A:
MINOR INCIDENT
NOTIFICATION
FORM**

Physical Address: 6534 Airport Road,
Fort St. John, B.C. V1J 4M6
Mailing Address: Bag 2, Fort St. John, B.C.
V1J 2B0
Phone: (250) 794-5200
emp@bcogc.ca

This form is to be used for incidents which do not meet OGC Level 1, 2, or 3 Classification

*Minor incidents must be reported to the Commission within **24** hours through the Commission's [Online Minor Incident Reporting System](#), operated through KERMIT.*

MISCELLANEOUS INFORMATION		A
Risk Score: (attach risk matrix)	DGIR #:	
Incident Date (YYYY-MM-DD):	Incident Time (24 hour clock):	<input type="checkbox"/> PST <input type="checkbox"/> MST
INFORMATION OF PERSON REPORTING INCIDENT		B
Permit holder Name:	Reported by (name):	
Phone Number:	Alternate Number:	
E-mail:	Fax Number:	
INCIDENT DETAILS		C
SITE TYPE		D
<i>Select only one type.</i>		
<input type="checkbox"/> Well (Active)	<input type="checkbox"/> Well (Abandoned/Suspended)	<input type="checkbox"/> Remote Sump
<input type="checkbox"/> Battery/Plant/Facility	<input type="checkbox"/> Tank Farm/Storage	<input type="checkbox"/> Pipeline
<input type="checkbox"/> Riser (pipeline)	<input type="checkbox"/> Well (Drilling & Completions): Rig Name:	
<input type="checkbox"/> Road or Road Structure: Name:		Location on road:
<input type="checkbox"/> Other (specify):		

PROJECT (PIPELINES) (A UTM location must be filled out in the Location Section)

Project Location: NTS From _____ - _____ - _____ / _____ - _____ - _____
NTS To _____ - _____ - _____ / _____ - _____ - _____ or

DLS From _____, SEC _____, TWP _____, RGE _____ W6M
DLS To _____, SEC _____, TWP _____, RGE _____ W6M

Project # Pipeline Segment #

Pipeline Installation ID#: Installation Type:

OTHER LOCATION

*Any asset that does not apply to above such as a road, remote sump, borrow pit, etc.
(A UTM location must be filled out in the Location Section.)*

Location Type: Location Description :

LOCATION

Location of asset: NTS _____ - _____ - _____ / _____ - _____ - _____ or

DLS _____, SEC _____, TWP _____, RGE _____ W6M

UTM (NAD 83 Zone): _____ m easting _____ m northing

GPS: Latitude: Longitude:

AREA INFORMATION I

Land Type: Private Land Crown Land Field Name:

Access: ATV Helicopter Four-wheel-drive Two-wheel-drive Unknown

Name of road the asset is located on:

Km where the incident occurred:

Distance to nearest residence/public facility: Nearest City/Town/Public Camp:

CAUSE J

Check all that apply.

Third Party Manufacturing Defect Corrosion (internal, external)

Employee (procedural, behavioural) Natural (weather, flood, fire) Failure (materials, mechanical, equipment, system)

Geological Over Pressuring Equipment

Unknown at this time Explain:

Other Factors (specify):

CAUSE/REMEDIAL ACTIONS K

Describe the cause and remedial actions in more detail:

WEATHER**L**Weather Conditions: clear cloudy other (specify):Wind Direction: From: N NE NW E SE S SW WWind Strength: calm moderate strong gusty

Temperature: °C

Comments:

NOTIFICATION**M***What government agencies has the permit holder notified:* EMBC Ministry of Environment Ministry of Transportation Public Works WorkSafe BC Local Health Authority Regional/Municipal Authority RCMP Ministry of Forests, Lands and Natural Resource Operations National Energy Board Other (specify):**INFORMATION FOR SPILLS ONLY****N**Is spill off lease? Yes No

Spill Material Type:

 Acid Emulsion (oil, gas, water) Fresh Water Liquid Hydrocarbon (crude, oil, diesel, fuel)
 Methanol Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases) Non Toxic Liquids
 Salt Water Sour Natural Gas Sour Liquid < 1% only H2S) Sweet Natural Gas
 Toxic Gas Toxic Liquid (>1% different toxins Other (specify):Amount Spilled: bbl m³ litreDoes Material contain any H2S? Yes No Unknown

If Yes, how much? ppm

Has spill been cleaned up? Yes No N/A

Date of Clean Up/Proposed Clean Up: (mmm dd, yyyy) if applicable

Estimated Cost of clean-up: \$ if applicable

O**PLEASE NOTE:**

"All incidents involving a pipeline must submit a [Form D: Permit Holder Post Incident Report Form](#) within 60 days by email to EMP@bcogc.ca. A Permit Holder Post Incident Report Form may be required to be submitted for other minor incidents upon request by a Commission employee."

The form can be found on the Commission's website.

Permit Holder Post Incident Report Required: Yes No



FORM C
EMERGENCY INCIDENT FORM

BC Oil and Gas Commission
6534 Airport Road
Fort St. John BC V1J 4M6
Phone: (250) 794-5200
emp@bcogc.ca

This is an internal Commission document provided to Industry for reference purposes only.

This document outlines the information that will be requested by Commission emergency management staff following any Level 1, 2 or 3 incident, as defined in the [Emergency Management Matrix](#) available on the Commission's website.



**FORM C
EMERGENCY INCIDENT FORM**

BCOGC
6534 Airport Road
Fort St. John BC V1J 4M6
Phone: (250) 794-5200
emp@bcogc.ca

This form is to be used for emergencies which meet OGC Level 1, 2, or 3 Classification.

The emergency must be reported to the Commission within 1 hour of the incident.

Oil and Gas Commission 24 hour Emergency Number:

250-794-5200

EMBC 24 hour Emergency Number: 1-800-663-3456

MISCELLANEOUS INFORMATION

DGIR #:	Ledger Number:	Kermit Number:
Incident Date (YYYY-MM-DD):	Incident Time (24 hour clock): <input type="checkbox"/> PST <input type="checkbox"/> MST	
Received Date (YYYY-MM-DD):	Received Time (24 hour clock): <input type="checkbox"/> PST <input type="checkbox"/> MST	

INFORMATION OF PERSON REPORTING INCIDENT TO OGC

Permit holder Name:	Reported by (name):
Phone Number:	Alternate Number:
E-mail:	Fax Number:

INCIDENT DETAILS

--

LEVEL OF EMERGENCYRisk Score: (attach risk matrix) Level 1 Level 2 Level 3 Informed company they must contact the OGC to downgrade or stand down the level.**SITE TYPE (Select one only)** Well (Active) Well (Abandoned/Suspended) Remote Sump Well (Drilling & Completions): Rig Name: Battery/Plant/Facility Tank Farm/Storage Pipeline Riser (Pipeline) Road or Road Structure: Name: Location on road: Other -Specify:**INCIDENT TYPE (check all that apply)** Spill (releases and discharges) Fire/Explosion Drilling Kick Worker Injury Security (theft, threat, sabotage, terrorism) Induced Seismicity Well Bore Communication Pipeline Boring Vehicle Equipment/Structural Damage Other -Specify:**ACTIVITY (check all that apply)** Construction (road, lease, pipeline, facility) Drilling/Exploration Waste Management Processing (natural gas, petroleum liquids, other) Well Fracturing Servicing Repair Flaring (emergency) Well Testing Pressure testing Transportation Other: Specify:**CONSEQUENCE OR IMPACTS (check all that apply)(If none, leave blank)** Worker Safety (fatality, injuries) Property (government, public, private) Economic (loss of and/or damage to equipment or infrastructure, loss of production, work stoppage) Other -Specify:**AREA INFORMATION**Land Type: Private Land Crown Land Field Name:Area Type: Forest Muskeg Farmland Residential Other

Access: ATV Helicopter Four-wheel-drive Two-wheel-drive Unknown

Name of road the asset is located on:

Km where the incident occurred:

Distance to nearest residence/public facility:

Nearest City/Town/Open Camp:

CAUSE (check all that apply)

<input type="checkbox"/> Third Party	<input type="checkbox"/> Manufacturing Defect	<input type="checkbox"/> Corrosion (internal, external)
--------------------------------------	---	---

<input type="checkbox"/> Employee (negligence, procedural, behavioural)	<input type="checkbox"/> Natural (weather, flood, fire)	<input type="checkbox"/> Failure (materials, mechanical, equipment, system)
---	---	---

<input type="checkbox"/> Geological	<input type="checkbox"/> Over Pressuring Equipment
-------------------------------------	--

Unknown at this time Explain:

Other Factors -Specify:

CAUSE/REMEDIAL ACTIONS

Describe the cause and **remedial actions** in more detail:

WEATHER

Weather Conditions: clear cloudy other

Wind Direction: From: N NE NW E SE S SW W

Wind Strength calm moderate : strong gusty

Temperature: °C

Comments:

PUBLIC INJURIES / MEDICAL EMERGENCIES

<input type="checkbox"/> First Aid	<input type="checkbox"/> Hospitalization	<input type="checkbox"/> Fatality
------------------------------------	--	-----------------------------------

Other:

NOTIFICATION

What government agencies has the permit holder notified?

<input type="checkbox"/> EMBC	<input type="checkbox"/> Ministry of Environment	<input type="checkbox"/> Ministry of Transportation
<input type="checkbox"/> Public Works	<input type="checkbox"/> WorkSafe BC	<input type="checkbox"/> Local Health Authority
<input type="checkbox"/> Regional/Municipal Authority	<input type="checkbox"/> RCMP	<input type="checkbox"/> Ministry of Forest
<input type="checkbox"/> National Energy Board	<input type="checkbox"/> Other Specify:	

Permit Holder Instructed to call:

MATERIAL INFORMATION

Is spill off lease? Yes No

Spill Material Type:

Acid Emulsion (oil, gas, water) Fresh Water Liquid Hydrogen (crude, oil, diesel, fuel) Methanol Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases) Non Toxic Liquids Salt Water Sour Natural Gas Sour Liquid < 1% only H2S) Sweet Natural Gas Toxic Gas Toxic Liquid (>1% different toxins) Other

GAS

Does Material contain any H2S? Yes No Unknown N/A

If Yes, how much? _____ ppm

Gas Rate: _____ 10³m³3d or mmcf Gas Volume : _____ 10³m³ or mmscf

Can you hear/smell gas? Yes No Propane/NGLs/LPSs? Yes No

LIQUID

Does Material contain any H2S (Oil, water, condensate)? Yes No Unknown N/A

If Yes, how much? _____ ppm

Liquid Rate: _____ m³/d or BPD Liquid Volume : _____ m³ or bbls or litres

Other (Describe):

Has spill been cleaned up? Yes No N/A

Date of Clean Up/Proposed Clean Up: _____ (mmm dd, yyyy)

Estimated Cost of clean-up: \$ _____

SAFETY ISSUES

Emergency Planning Zone Size: _____ km

Are responders in danger? Unknown No Yes:

Are public in danger? Unknown No Yes

First Nations Band Affected: No Yes Name of Band: _____

Public safety actions taken:

Evacuation Sheltering (**Instruct Permit holder to contact Local Authority**)

Roadblocks Do you need or do you have a Closure Order ? (**Instruct Permit holder to contact MOT up to mile 82 on Alaska Highway or Public Works from 82 north on Alaska highway for any public roads, and the OGC for Petroleum Development Resource roads , or Ministry of Forestry for forestry roads**)

Do you need or do you have a NOTAM?

Have you conducted a Transient Survey?

Any Media Releases must be done in conjunction with OGC

Have you or do you need to dispatch a Mobile Air Quality Monitoring (**Instruct Permit holder to contact Health Authority if public are involved**)

Have you or will you need to Ignite?

Have you notified all tenure holders? Non-resident landowners/Trappers/Guide-Outfitters/Range Allotments/Grazing Lease

ASSETS

GEOPHYSICAL PROGRAM (A UTM location is required)

Geophysical #:

Program Name:

Client Name:

UTM (NAD 83): _____ m easting _____ m northing

(Place on the program that incident happened REQUIRED)

SITE (On lease equipment, wells, or facilities) Fill information in for asset with incident.

Location of asset: NTS _____ - _____ - _____ / _____ - _____ - _____ or
DLS _____, SEC _____, TWP _____, RGE _____ W6M

OGC Site #:

Site Detail (on lease equipment):

WELL

Well Authorization #:

Status of well:

Depth/Perforation: _____ m KB

Wellbore Fluid Density: _____ kg/m³

Pit Gain	m	Kill Fluid Density	kg/m ³
*SIDPP/SITP	kPa	*SICP	kPa
*RSPP	kPa	Equipment:	
Operating Pressure:	kPa	Shut In Pressure:	kPa
*SIDPP - Shut in Drill Pipe Pressure/SITP – Shut in Tubing Pressure/SICP – Shut in Casing Pressure/RSPP – Reduced Speed Pump Pressure			
FACILITIES			
OGC Facility Code # :		Equipment on Site :	
Design Capacity:		Actual Throughput:	
Operating Pressure:		Operating Temperature:	
PROJECT (PIPELINES) (A UTM location is required)			
Project Location	NTS From _____ - _____ - _____ / _____ - _____ - _____ NTS To _____ - _____ - _____ / _____ - _____ - _____ or DLS From _____, SEC _____, TWP _____, RGE _____ W6M DLS To _____, SEC _____, TWP _____, RGE _____ W6M		
UTM (NAD 83):	m easting	m northing	
(Place on Pipeline where incident happened REQUIRED)			
Project #	Pipeline Segment #		
Product:	Line Length between valves: km		
ID	mm	OD	mm
Operating Pressure	kPa	Maximum Operating Pressure	kPa
ESD or Block Valve Closure? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			

OTHER LOCATION

(Any asset that does not apply to above such as a road, remote sump, borrow pit, etc)

(A UTM location must be filled out in the Location Section.)

Location Type:	Location Description :		
Location of asset:	NTS _____ - _____ - _____ / _____ - _____ - _____ or		
	DLS _____, SEC _____, TWP _____, RGE _____ W6M		
UTM (NAD 83):	m easting	m northing	REQUIRED
GPS:	Latitude:	Longitude:	



FORM D PERMIT HOLDER POST INCIDENT REPORT

Must be submitted by the permit holder within 60 days for:

1. Level 1, 2 or 3 emergency incident*: complete Part A-P; **or**
2. **Any** pipeline incident, including a minor incident: complete Part A-U

*Note: in addition to the above a permit holder may be required to complete and submit a "Form D" when requested by a representative of the Commission.

**This report and accompanying documentation must be
emailed electronically to EMP@bcogc.ca**

DGIR #(if known)
OGC Incident #(if known)

PART A—PERMIT HOLDER

Permit holder Name	
Permit holder Address	
Contractor(s) Name(s)	
Contractor(s) Address	

PART B—TIME, WEATHER AND LOCATION OF INCIDENT

Well Authorization or Facility #:	NTS/DLS Location:
Incident Date (YYYY/MM/DD)	Incident Time Hour (24-hr system & time zone)
Duration of Incident	
Weather: Temperature °C (precipitation)	(wind speed & wind direction from)

PART C—SPILLS AND RELEASES

<input type="checkbox"/> Sweet gas <input type="checkbox"/> LVP <input type="checkbox"/> HVP <input type="checkbox"/> Toxic substance <input type="checkbox"/> Sour gas <input type="checkbox"/> Produced water <input type="checkbox"/> Oil <input type="checkbox"/> Other	
Name of product/substance	MSDS Sheet or CAS#(spills only)
Volume spilled/released m ³	Volume recovered m ³
Was there a fire? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was there an explosion? <input type="checkbox"/> Yes <input type="checkbox"/> No
Was anyone directly exposed to the spill product? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was medical treatment required? <input type="checkbox"/> Yes <input type="checkbox"/> No (if yes, complete Part H)

PART D—ORIGIN OF INCIDENT

Facility involved	<input type="checkbox"/> Pipeline <input type="checkbox"/> Tank Farm <input type="checkbox"/> Pump Station <input type="checkbox"/> Compressor Stn. <input type="checkbox"/> Regulator/Meter Stn. LNG Processing <input type="checkbox"/> Gas Plant <input type="checkbox"/> Well site <input type="checkbox"/> Other related facility (specify):			
Site Equipment involved	<input type="checkbox"/> On Lease Pipe <input type="checkbox"/> Valve <input type="checkbox"/> Pressure relief device <input type="checkbox"/> Fitting <input type="checkbox"/> Compressor <input type="checkbox"/> Pump <input type="checkbox"/> Pressure vessel <input type="checkbox"/> Tank <input type="checkbox"/> Instrumentation <input type="checkbox"/> Other (specify):			
Well site incident involved	<input type="checkbox"/> Wellhead failure <input type="checkbox"/> BOP <input type="checkbox"/> Kick <input type="checkbox"/> Drilling Equipment <input type="checkbox"/> Servicing Equipment <input type="checkbox"/> Casing <input type="checkbox"/> Other (specify):			

PART E—EQUIPMENT MALFUNCTION/FAILURE

Equipment	Manufacturer	Model #
Manufactured Date:	Installed Date:	Certification Date:

Will there be or has there been any third party analysis of equipment failure (if applicable)?

Yes No

If yes, please describe:

PART F—ESTIMATE OF TOTAL INCIDENT COST *Provide total cost estimate including repair, cleanup and restoration*

\$

PART G—REPAIR DESCRIPTION *Provide description of all necessary repairs as a result of the incident and include date of return to service*

PART H—INJURY AND FATALITY DESCRIPTIONS

Affiliation			Fatality or injury description (as per WorkSafeBC definitions)		
<input type="checkbox"/> Company employee	<input type="checkbox"/> Contractor	<input type="checkbox"/> Public	<input type="checkbox"/> Minor Injury	<input type="checkbox"/> Major Injury	<input type="checkbox"/> Fatality
<input type="checkbox"/> Company employee	<input type="checkbox"/> Contractor	<input type="checkbox"/> Public	<input type="checkbox"/> Minor Injury	<input type="checkbox"/> Major Injury	<input type="checkbox"/> Fatality
<input type="checkbox"/> Company employee	<input type="checkbox"/> Contractor	<input type="checkbox"/> Public	<input type="checkbox"/> Minor Injury	<input type="checkbox"/> Major Injury	<input type="checkbox"/> Fatality
<input type="checkbox"/> Company employee	<input type="checkbox"/> Contractor	<input type="checkbox"/> Public	<input type="checkbox"/> Minor Injury	<input type="checkbox"/> Major Injury	<input type="checkbox"/> Fatality
<input type="checkbox"/> Company employee	<input type="checkbox"/> Contractor	<input type="checkbox"/> Public	<input type="checkbox"/> Minor Injury	<input type="checkbox"/> Major Injury	<input type="checkbox"/> Fatality

IMMEDIATE INCIDENT CAUSE OF SERIOUS INJURY *(Immediate Cause—means unsafe acts or unsafe conditions)*

- | | |
|--|---|
| <input type="checkbox"/> Defective/inadequate safety devices, tools or equipment | <input type="checkbox"/> Improper operation of safety devices, tools or equipment |
| <input type="checkbox"/> Improper loading or placement | <input type="checkbox"/> Hazardous environment (gases, dust, smoke, fumes or vapours) |
| <input type="checkbox"/> Congested work area/disorderly workplace | |
| <input type="checkbox"/> Other (specify) | |

PART I—NARRATIVE OF INCIDENT *Provide a complete description of the incident, including conditions and events leading up to, and following, the incident. Attach any additional information that may supplement the narrative such as 1) drawing of the incident site; 2) photographs; 3) schematics; 4) maps; 5) reports (drilling, servicing, metallurgical, NDT, inspection, pressure test, etc.); 6) List any fluids associated to incident (environmental reports etc.) Attach additional sheets of narrative as required.*

PART L—INCIDENT CAUSES *Identify all causes contributing to the incident; more than one cause may be assigned to the incident*

- Third Party
 External Corrosion
 Internal Corrosion
 Human Error
 Over Pressuring Equipment
 Equipment Failure
 Geological
 Manufacturing Defect

Additional comments on selected basic cause:

PART M—CORRECTIVE ACTION(S) *Provide an outline of the steps taken to prevent a similar incident; OR, explain if no corrective action was necessary*

PART N—NAME OF PERSON CONDUCTING A COMPANY INCIDENT INVESTIGATION

Name	Title
Address	
Telephone number XXXXXXXXXX	Fax number XXXXXXXXXX

PART O—NAMES OF OTHER AGENCIES INVESTIGATING INCIDENT

Agency	Agency
Telephone number XXXXXXXXXX	Telephone number XXXXXXXXXX
Contact name	Contact name
Agency	Agency
Telephone number XXXXXXXXXX	Telephone number XXXXXXXXXX
Contact name	Contact name

PART P—NAME AND TITLE OF COMPANY REPRESENTATIVE FILING REPORT

Name	Title	
Signature	Company	
Address		
Date (YYYY/MM/DD HH)	Telephone number XXXXXXXXXX	Fax number XXXXXXXXXX

ADDITIONAL INFORMATION REQUIRED: PIPELINE INCIDENTS ONLY

PART Q—PIPELINE INFORMATION

Pipeline Project #

CSA Class Location 1 2 3 4

Location of Incident(s) on pipeline using Latitude & Longitude or UTM (Preferred):

PART R—IMMEDIATE CAUSE *Check all applicable causes*

Check the box for the incident cause and check one of the sub-causes as defined in CSA Z662-2007 Annex H

PRIMARY CAUSE	SUB CAUSE
<input type="checkbox"/> Corrosion	<input type="checkbox"/> Internal <input type="checkbox"/> External
<input type="checkbox"/> Cracking	<input type="checkbox"/> stress corrosion cracking <input type="checkbox"/> hydrogen induced <input type="checkbox"/> mechanical damage <input type="checkbox"/> corrosion fatigue <input type="checkbox"/> fatigue
<input type="checkbox"/> External interference	<input type="checkbox"/> third Party <input type="checkbox"/> vandalism <input type="checkbox"/> company employee or contractor
<input type="checkbox"/> Material manufacturing or construction	<input type="checkbox"/> defective weld <input type="checkbox"/> defective other joint <input type="checkbox"/> defective pipe body <input type="checkbox"/> wrinkle or buckle
<input type="checkbox"/> Weather & geotechnical failure	<input type="checkbox"/> heavy rains or floods <input type="checkbox"/> freeze-thaw <input type="checkbox"/> construction or undermining <input type="checkbox"/> earthquake <input type="checkbox"/> slope movement <input type="checkbox"/> lightning <input type="checkbox"/> wildfire
<input type="checkbox"/> Equipment malfunction/failure	
<input type="checkbox"/> Incorrect operational procedure	
<input type="checkbox"/> Other (<i>specify</i>)	

PART S—LINE PIPE DATA

Type of failure:

Nominal diameter (<i>mm</i>)	Wall thickness (<i>mm</i>)	Date of manufacture
Weld process	SMYS (<i>MPa</i>)	
Pipe specifications <input type="checkbox"/> Z 245 <input type="checkbox"/> Other (<i>specify</i>)	Pipe location <input type="checkbox"/> Below ground <input type="checkbox"/> Above ground	
Maximum operating pressure (<i>kPa</i>)	Pressure at time of incident (<i>kPa</i>)	
Latest pressure test date	Maximum test pressure (<i>kPa</i>)	Test duration (<i>hrs</i>)

PART T—CORROSION FAILURES

Corrosion location <input type="checkbox"/> Internal <input type="checkbox"/> External	Circumferential position looking downstream (0° to 360°), D 
Type of corrosion (<i>specify</i>)	
Type of coating	

PART U—FAILURES DUE TO EXTERNAL LOAD OR NATURAL FORCES

<input type="checkbox"/> Damage by operator or its contractor <input type="checkbox"/> Damage by other parties <input type="checkbox"/> Vandalism <input type="checkbox"/> Pre-loading <input type="checkbox"/> Earth movement	
<input type="checkbox"/> Lightning/Fire <input type="checkbox"/> Other (<i>specify</i>):	
Name of Contractor/Other Party	
Address	
Phone (XXXX)	Name of representative

For Commission Use Only

Incident No.

Date Received

Reviewer

Reviewer's Comments and any actions taken:

Refer to the Glossary for the definition of an Incident Action Plan.			
INCIDENT NAME			
DATE PREPARED:	TIME PREPARED:		
OPERATIONAL PERIOD - DATE:	TIME		
	FROM:	TO:	
GENERAL OBJECTIVES FOR THE INCIDENT (INCLUDE ALTERNATIVES, USE ADDITIONAL PAGES AS REQUIRED)			
1.			
2.			
3.			
4.			
5.			
WEATHER FORECAST FOR OPERATIONAL PERIOD			
GENERAL SAFETY MESSAGE			
PUBLIC SAFETY ACTIONS TAKEN/TO BE TAKEN			
<input type="checkbox"/> Notification <input type="checkbox"/> Evacuation <input type="checkbox"/> Shelter-In-Place <input type="checkbox"/> Roadblocks <input type="checkbox"/> Ignition			
PREPARED BY			
<i>(Name and signature)</i>			
REVIEWED BY (SAFETY OFFICER)			
<i>(Name and signature)</i>			
APPROVED BY (INCIDENT COMMANDER)			
<i>(Name and signature)</i>			

STATUS BOARD

INITIAL ISOLATION ZONE (IIZ) DATA (Alberta Only)

- ☞ Size of the Initial Isolation Zone (IIZ) _____
- ☞ Number of Residences _____
- ☞ Number of Businesses _____
- ☞ Number of Public Facilities _____
- ☞ Number of School Children _____
- ☞ Number of Rivers, Streams _____
- ☞ Number of Industrial Operators _____
- ☞ Number of Trappers _____
- ☞ Number of Grazing Lessees _____
- ☞ Number of Roadblocks _____

NOTE: Record the facts about the emergency.



PROTECTIVE ACTION ZONE (PAZ) INSIDE THE EMERGENCY PLANNING ZONE (EPZ) DATA (Alberta Only)

- ☞ Size of the Protective Action Zone (PAZ) _____
- ☞ Number of Residences _____
- ☞ Number of Businesses _____
- ☞ Number of Public Facilities _____
- ☞ Number of School Children _____
- ☞ Number of Rivers, Streams _____
- ☞ Number of Industrial Operators _____
- ☞ Number of Trappers _____
- ☞ Number of Grazing Lessees _____
- ☞ Number of Roadblocks _____

EMERGENCY PLANNING ZONE (EPZ) DATA

- ☞ Size of the Emergency Planning Zone (EPZ) _____
- ☞ Number of Residences _____
- ☞ Number of Businesses _____
- ☞ Number of Public Facilities _____
- ☞ Number of School Children _____
- ☞ Number of Rivers, Streams _____
- ☞ Number of Industrial Operators _____
- ☞ Number of Trappers _____
- ☞ Number of Grazing Lessees _____
- ☞ Number of Roadblocks _____

NOTIFICATION OF THE GOVERNMENT

NAME

NUMBER

Local Petroleum Regulatory Agency _____	_____
Local RCMP/Local Police _____	_____
Local Authorities (Counties/Municipalities/Regional Districts) _____	_____
Local Regional Health Authority _____	_____
Government Agencies Outlined on the Appropriate Provincial Notification Matrix in Section 8 _____	_____

NOTES:

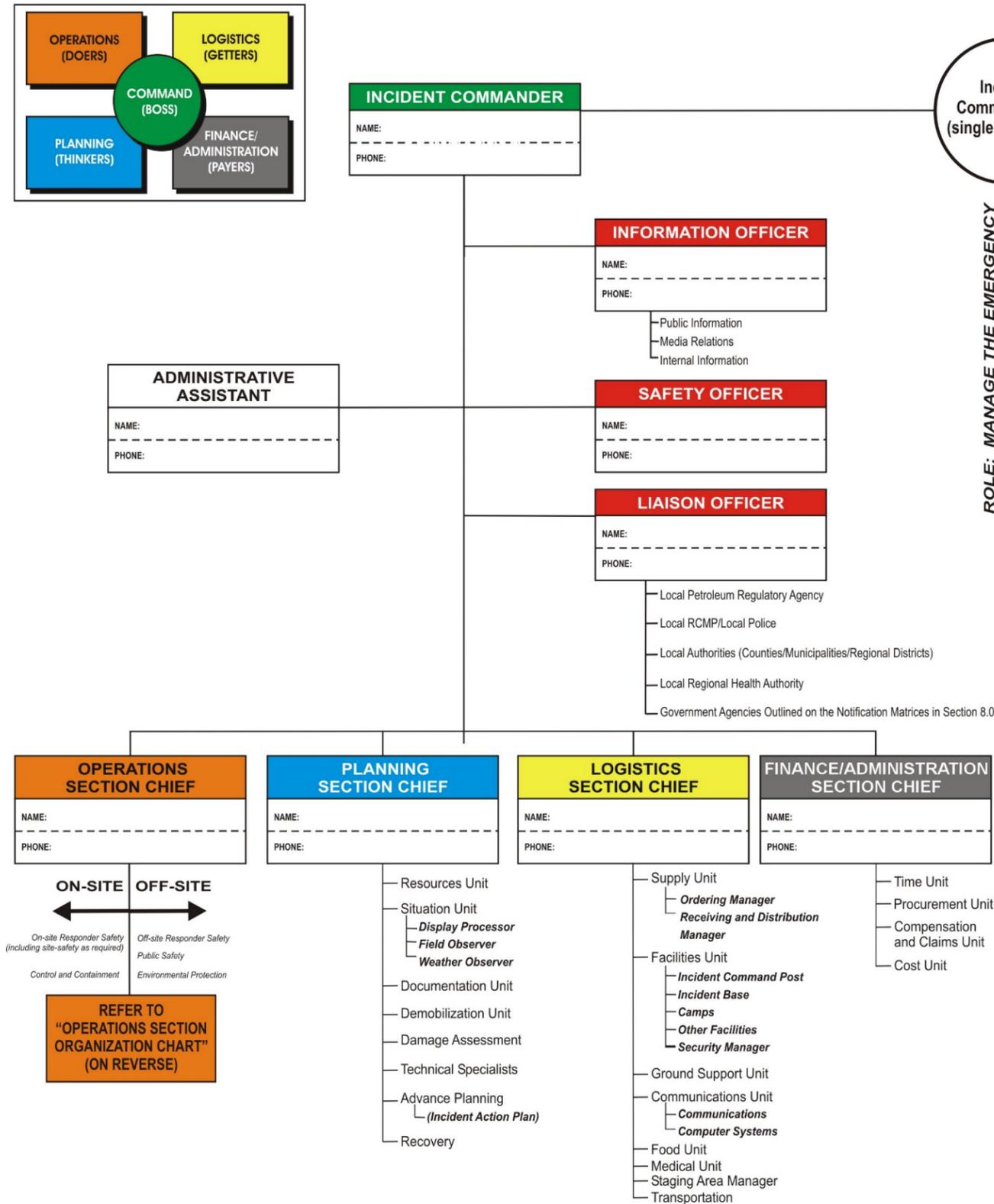
ISSUES BOARD



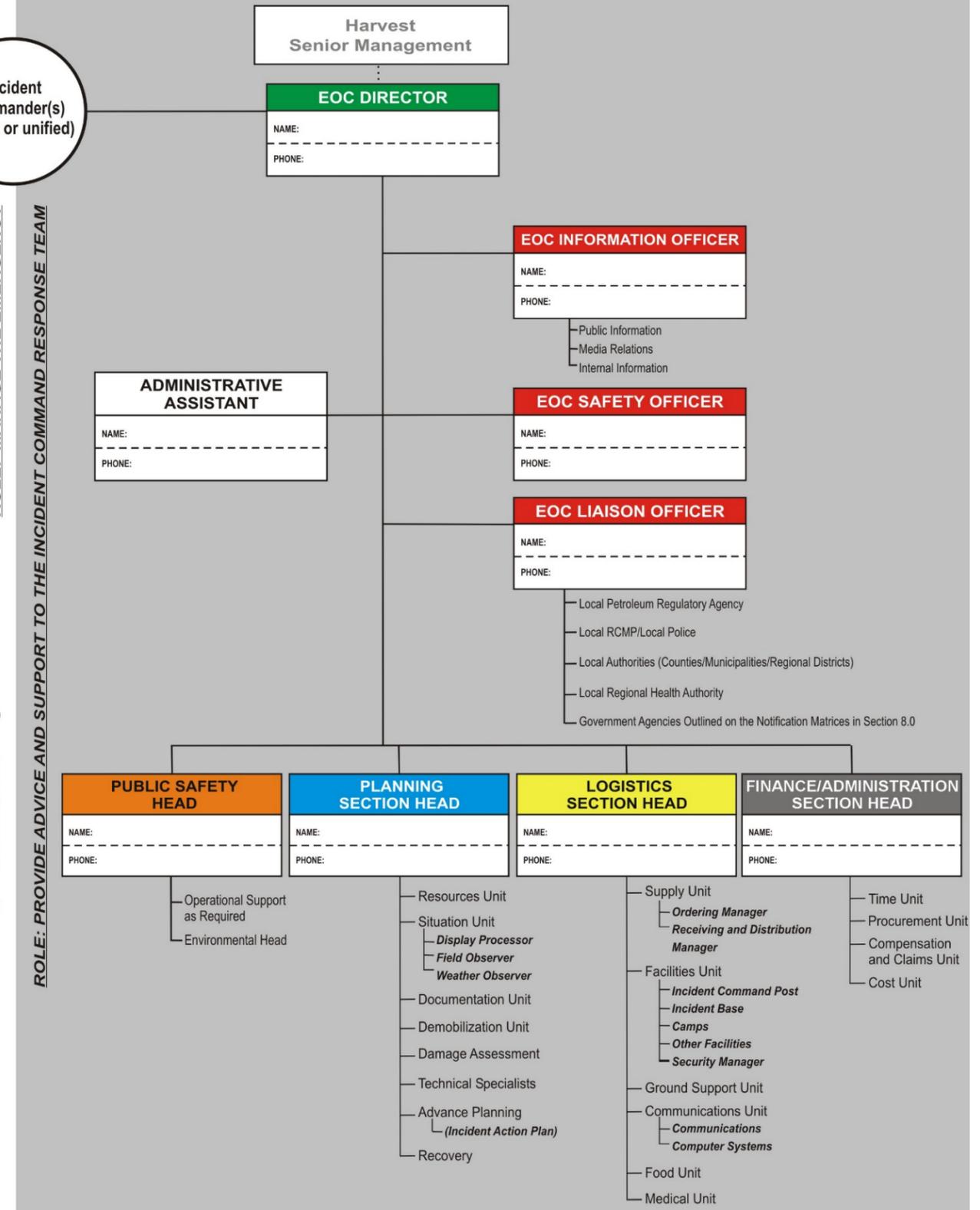
(NOTE: Record the "issues" and their resolutions that have arisen as a result of the emergency e.g. unable to locate trappers, a resident requiring evacuation assistance, seismic crew working inside the emergency planning zone.)

ISSUE	TIME ISSUE IDENTIFIED	RESPONDER(S) ASSIGNED TO RESOLVE ISSUE	RESOLUTION	TIME ISSUE RESOLVED

INCIDENT COMMAND RESPONSE TEAM ORGANIZATIONAL CHART



EMERGENCY OPERATIONS CENTRE TEAM ORGANIZATIONAL CHART

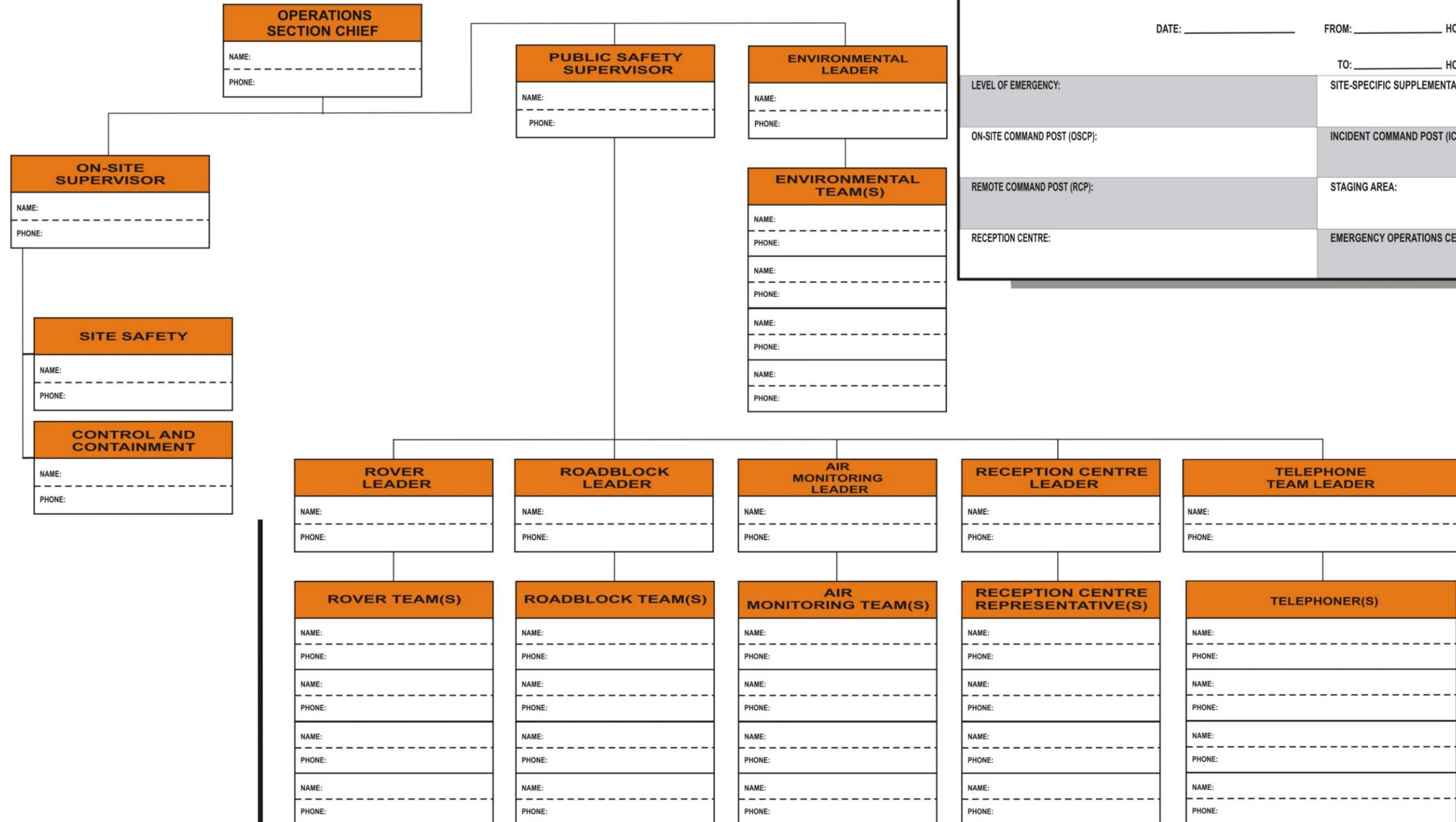


Incident Commander(s) (single or unified)

ROLE: MANAGE THE EMERGENCY

ROLE: PROVIDE ADVICE AND SUPPORT TO THE INCIDENT COMMAND RESPONSE TEAM

OPERATIONS SECTION ORGANIZATIONAL CHART



EMERGENCY STATUS	
DATE: _____	FROM: _____ HOURS
	TO: _____ HOURS
LEVEL OF EMERGENCY:	SITE-SPECIFIC SUPPLEMENTAL SECTION IN USE:
ON-SITE COMMAND POST (OSCP):	INCIDENT COMMAND POST (ICP) (REGIONAL EMERGENCY OPERATIONS CENTRE):
REMOTE COMMAND POST (RCP):	STAGING AREA:
RECEPTION CENTRE:	EMERGENCY OPERATIONS CENTRE (EOC):



RESIDENTS

BUSINESSES

INDUSTRIAL OPERATORS

GENERAL PUBLIC INSIDE EPZ

PLANNING AND RESPONSE ZONES
 • INITIAL ISOLATION ZONE (IIZ)
 • PROTECTIVE ACTION ZONE (PAZ)
 • EMERGENCY PLANNING ZONE (EPZ)

Family Name:	Family Telephone Number:
--------------	--------------------------

Student Arrival

List all students in the family arriving by school bus.

Students	Arrival Time	Signatures	
		School Bus Driver	Reception Centre Personnel
1.			
2.			
3.			
4.			

Parent Contact

Parents Contacted? Yes No Time: _____ a.m./p.m.

Contacted by: _____

Estimated Pickup Time: _____ a.m./p.m.

Temporary Care

Are care arrangements necessary? Yes No

Location of temporary care: _____

Phone Number: _____

Contact Person: _____

Student Release

List all students in the family being released to parents.

Students	Release Time	Signatures	
		Parent	Reception Centre Personnel
1.			
2.			
3.			
4.			



PUBLIC INFORMATION NOTICE

DATE: _____

PUBLIC INFORMATION NOTICE

ROVERS: Place on unattended vehicles (Ensure the notice is placed inside a plastic bag and secured to the windshield.) and give to all public inside your Rover Area when **NOTIFICATION** has been ordered. *Fill in date.*)

Harvest Operations Corp. has an emergency at its nearby oil and gas facility. **You are in no danger at this time; Harvest are notifying you for informational purposes only.**

If the conditions worsen, Harvest will initiate evacuation of the area. At that time, Harvest will need to locate anyone living, working, camping or using the area.

If you have any questions, call Harvest Operations Corp. at **1-800-760-2826**.

Thank you



EVACUATION NOTICE

DATE: _____

PUBLIC EVACUATION NOTICE

(ROVERS: Place on unattended vehicles (Ensure the notice is placed inside a plastic bag and secured to the windshield.) and give to all public inside your Rover Area when **EVACUATION** has been ordered. *Fill in date.*)

Harvest Operations Corp. has an emergency at its nearby oil and gas facility. As a safety precaution, please **evacuate** the area.

Rover as required, check one of the **two** bullets below and if required fill in the blank):

- Harvest will establish a Reception Centre at the _____, or
- The Harvest **have not** established a Reception Centre and advise any resident to seek reasonable alternate accommodation of their choice and contact the number below when they have relocated.

If you have any questions, or for assistance, call Harvest Operations Corp. at

1-800-760-2826.

Thank you



TELEPHONER TEXT - NOTIFICATION MESSAGE

- Hello this is (YOUR NAME) _____ of Harvest Operations Corp.
- Is this the (NAME) _____ residence/business at _____ (TELEPHONE NUMBER)?
- We are responding to a problem at _____ (WELL, FACILITY, ETC.) in the area.
- All efforts are being made to solve the problem.
- **You are in no danger at this time; we are notifying you for informational purposes only.**
- Do you understand this message?

NOTE: If the contact wants to voluntarily evacuate, instruct the contact to either proceed to the Reception Centre if established or seek reasonable alternate accommodation of his/her choice if no Reception Centre is established. If the contact is seeking reasonable alternate accommodation, obtain a contact telephone number where Harvest can reach him/her.

- In order to keep the phone lines open for emergency use, please do not use your telephone for non-emergency calls.
- Again my name is _____ and my phone number is _____.
- Thank you for your co-operation.

Immediately pass on all information regarding this call to the Public Safety Supervisor.

Harvest's emergency number is 1-800-760-2826.



TELEPHONER TEXT - SHELTER-IN-PLACE MESSAGE

- Hello this is (your name) _____ of Harvest Operations Corp.
- Is this the (name) _____ residence/business at _____ (telephone number)?
- We are responding to a serious problem at _____ (well, facility, etc.) in the area.
- All efforts are being made to solve the problem. However, for your safety, it is extremely important that you and those with you stay indoors until the potential hazard no longer exists, or you are advised to evacuate.
- To help us understand your immediate needs we need to know:
 - > How many people are at your location now? (adults)_____ (children)_____
 - > Is there anyone you cannot contact to get indoors? (yes/no)_____ (IF YES: Ask the contact the location of the person(s) _____.) Assure the contact that we will be sending someone to find the person(s) as soon as possible.)
- Do you have the "Shelter-In-Place" instructions previously given to you? (yes/no)_____ (IF YES: Request the contact to please follow the "Shelter-In-Place" instructions. (IF NO: Request the contact to please take the following actions immediately):
 - > Close and keep closed all windows and outside doors.
 - > Shut off air intake fans which exhausts outdoors (dryer, stove vents, bathroom fans, air condition, etc.)
 - > Turn off heat and hot water pilot lights.
 - > Extinguish fires in fireplaces.
 - > Gather everyone in an interior room upstairs and stay there.
 - > Please avoid the use of your telephone, so we can contact you again with additional information.
- A Harvest representative will come to your house as soon as the hazard has been cleared.
- Do you understand these instructions?
- We will frequently contact you about the situation.

- In order to keep the phone lines open for emergency use, please do not use your telephone for non-emergency calls.
- **If you have any questions, please call our emergency number ___-___-___ and identify yourself as a sheltered resident.**

Telephoners' Note:

If the contact is very determined to leave when you are recommending Shelter-In-Place, calmly explain that it is more hazardous to evacuate because the indoor concentrations will be significantly lower than outdoor levels.

The safest action is to remain sheltered until the hazard is removed.

Immediately pass on all information regarding this call to the Public Safety Supervisor.

Harvest's emergency number is 1-800-760-2826.

TELEPHONER TEXT - EVACUATION MESSAGE

- Hello this is (YOUR NAME) _____ of Harvest Operations Corp.
- Is this the (NAME) _____ residence/business at _____ (TELEPHONE NUMBER)?
- We are responding to a serious problem at _____ (WELL, FACILITY, ETC.) in the area.
- You are in no danger at this time, but if a sour gas release occurs, the wind will carry the gas in a _____ (NORTH, SOUTH, EAST, WEST) direction from the incident site.
- For your safety, you must leave your location immediately and go to the Reception Centre (IF ESTABLISHED) at the _____ (HALL, OFFICE, HOTEL).
- The Reception Centre is located at _____ (GIVE DIRECTIONS AND ADDRESS).
- How many people are in your location right now? _____
- Is there anyone outside that you cannot contact easily? (YES / NO)
(If **YES**, determine the location of anyone outside and assure the contact you will send someone to find them as soon as possible.)
- Do you have your own transportation? (YES / NO)
(If **NO**, assure them that you will send someone to pick them up. While they are waiting, advise them to close their windows and doors and remain indoors.)
- **Please**
 - » Leave immediately.
 - » Do not use your telephone for non-emergency use in order to keep the lines open for emergency use.
 - » If school is in session, the school buses will deliver the children to the Reception Centre (IF ESTABLISHED) when the school day is over.
- Do you understand these instructions? _____ Are you leaving immediately? _____
- Just to be sure, which way are you going to travel?
- If for some reason a problem arises and you can't leave, call me back.
- In order to keep the phone lines open for emergency use, please do not use your telephone for non-emergency calls.
- Again my name is _____ and my phone number is _____

Immediately pass on all information regarding this call to the Public Safety Supervisor.

Harvest's emergency number is 1-800-760-2826.



OPERATIONS CORP.

BOMB THREAT CALL REPORT

Date:	Prepared by:
Time:	Duration of Call:

WHEN A BOMB THREAT IS RECEIVED

Remain calm. Try to obtain as much information as possible. Listen.
 Do not interrupt the caller. Try to attract the attention of another person to alert your supervisor.
 Try to retrieve the call by pushing *69.
Exact wording of call.

QUESTIONS TO ASK

What time will the bomb explode?
Where is it?
What does it look like?
Did you place it?
Why did you place the bomb?
What is your name?
Where are you calling from?

CALLERS VOICE (CIRCLE)

Male	Female	Estimated age	Calm	Soft	Slow	Angry
Loud	Excited	Nasally	Lisp	Stutter	Laughing	Crying
Slurred	Deep	Accent (type)	Swearing	Well spoken	Incoherent	
Familiar	Additional Information:					

BACKGROUND NOISES: (DESCRIBE)

Street (vehicles)	House (dishes, T.V., etc.)	Aircraft
Motors (fans, air conditioning, etc.)	Machinery (office, factory)	PA system
Music	Animals	Other (specify)

Evacuee Information

Date	
Name	
Mailing Address	
City, Province, Postal Code	
Location of Residence, Business, etc.	
Phone	
Phone While Evacuated	
Address While Evacuated	

Expenses (Please attach all receipts)

Accommodation (if not prearranged)	\$	
Meals (if not prearranged)	\$	
Other Reasonable Daily Expenses	\$	
Other	\$	
Other	\$	
Other	\$	
TOTAL		

Evacuee's Signature			
Harvest Contact		Harvest Contact Phone Number	



EXTERNAL AGENCY POST-INCIDENT EVALUATION

Department/Agency _____ Telephone _____

Representative _____ Title _____

Incident Location _____

Type of emergency _____ Number of staff involved: _____

Duration _____ Total number of man days dedicated to response _____

Other resources used (monitoring units, aircraft, boats, buses, etc.)

What worked well during the response?

Areas for improvement?

What was the role of your department/agency during the response?

Was your department/agency able to respond effectively? Yes No

Would additional training with Harvest personnel be beneficial? Yes No

Do you have a copy of the Harvest Emergency Response Plan? Yes No

If not, do you think a copy would have been beneficial? Yes No

Return this form, your business card and any comments to:

Harvest Operations Corp.
1500, 700 – 2 Street S.W.
Calgary, AB T2P 2W1

Attention: Graham Vince

Drilling, Completion and Servicing/Workover Supplemental Checklists



WELL INFORMATION			
Well Name			
Surface Location			
Bottomhole Location			
Well Category and Type - <input type="checkbox"/> Critical/Special <input type="checkbox"/> Non-critical/Non-special			
Well Licence/Authorization Number			
H ₂ S Concentration (%)			
Type of Operation		<input type="checkbox"/> Drilling	<input type="checkbox"/> Completions
		<input type="checkbox"/> Servicing/Workover	
Will flaring occur?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are Flaring Notices required?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
Will a Notice of Commencement of Operations be delivered to area stakeholders?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
H ₂ S Release Rate (m ³ /s) - <input type="checkbox"/> wellhead ON (flow up tubing), or			
<input type="checkbox"/> wellhead OFF (flow up casing)			

EMERGENCY PLANNING AND RESPONSE ZONES INFORMATION			
Initial Isolation Zone (IIZ) (Alberta only)		km	
Protective Action Zone (PAZ) (Alberta only)		km	
Emergency Planning Zone (EPZ) (all provinces)		km	
Emergency Awareness Zone (EAZ) (BC and Saskatchewan only)		km	
Nearest surface development	km	Direction from wellsite	
Nearest urban density development	km	Direction from wellsite	
Nearest urban centre	km	Direction from wellsite	
Number of surface developments inside the Emergency Planning Zone (EPZ)?			
Has a list of surface developments inside the Emergency Planning Zone (EPZ) been compiled?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> N/A	
Number of school children living inside the Emergency Planning Zone (EPZ)?			
Has a list of entities outside the Emergency Planning Zone (EPZ) to be contacted during any level of emergency been compiled?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> N/A	

Does this Supplemental Checklist require regulatory approval?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
---	--	------------------------------	-----------------------------

Number of Mobile Air Monitoring Units Required?				
Normal Sour Operations	Alert	Level One Emergency	Level Two Emergency	Level Three Emergency
Number of Rovers Required?				
Normal Sour Operations	Alert	Level One Emergency	Level Two Emergency	Level Three Emergency

Number of Roadblocks Required to Isolate the Initial Isolation Zone (IIZ)? (Alberta only)	
Number of Roadblocks Required to Isolate the Protective Action Zone (PAZ)? (Alberta only)	
Number of Roadblocks Required to Isolate the Emergency Planning Zone (EPZ)? (All provinces)	
Telephoners Information	
Will an Automated Telephone Notification System be used for this emergency response plan?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has a Telephone List been developed for the Automated Telephone Notification System?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Number of Telephoners required for contacting the surface developments inside the Emergency Planning Zone (EPZ)?	
Number of Telephoners required for contacting the industrial operators, trappers, guides/outfitters and grazing lessees inside the Emergency Planning Zone (EPZ)?	
Number of Telephoners required for contacting the school and school bus authorities?	
Number of Telephoners required for contacting the entities outside the Emergency Planning Zone (EPZ) to be contacted during any level of emergency?	

TYPE OF SERVICING/WORKOVER OPERATION		
Wellhead ON (Flow Up Tubing)	Wellhead OFF (Flow Up Casing)	
<input type="checkbox"/> Wireline	<input type="checkbox"/> Tubing change	<input type="checkbox"/> Electric submersible pump repairs
<input type="checkbox"/> N ₂ injection	<input type="checkbox"/> Tubing repair	<input type="checkbox"/> Electric submersible pump change
<input type="checkbox"/> Acid stimulation	<input type="checkbox"/> Packer change	<input type="checkbox"/> Casing repair
<input type="checkbox"/> Swabbing	<input type="checkbox"/> Packer repair	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Coil tubing	<input type="checkbox"/> Packer relocation (re-completion)	<input type="checkbox"/> Suspending the well
<input type="checkbox"/> Batch chemical treatments	<input type="checkbox"/> Electric submersible pump install	<input type="checkbox"/> Heater string install
<input type="checkbox"/> Wellhead maintenance	<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Other (specify)		

Harvest Operations Corp.

NOTE: Refer to Section 7.0 and the appropriate Site-Specific Supplemental Section for Harvest's Emergency Telephone Numbers.

Harvest Calgary Drilling or Completion Contacts

Title	Name	TELEPHONE NUMBERS		
		Office	Residence	Cellular

Incident Command Post (ICP)

Location of Incident Command Post (ICP) _____

Telephone Number of Incident Command Post (ICP) : ____-____-____

Remote Command Post (RCP)

Is a Remote Command Post (RCP) required for this operation? Yes No

Location of Remote Command Post (RCP) _____

Telephone Number of Remote Command Post (RCP) : ____-____-____

On-site Command Post (OSCP)

Mobile Communication - On-site Group Supervisor's trailer : ____-____-____

- Safety Trailer : ____-____-____

Reception Centre

Is a Reception Centre required for this operation? Yes No

Location of Reception Centre: _____

Telephone Number of Reception Centre : ____-____-____

GOVERNMENT AGENCIES

Government Agencies Impacted by this Emergency Planning Zone (EPZ)

NOTE: Refer to the appropriate Site-Specific Supplemental Section for government agency telephone numbers.

INDUSTRIAL OPERATORS IMPACTED BY THIS EMERGENCY PLANNING ZONE (EPZ)

Company	Telephone Number	
	24-hour Emergency	

TRAPPERS IMPACTED BY THIS EMERGENCY PLANNING ZONE (EPZ)

Trapline Registration No.	Name and Address	Telephone Numbers		
		Office	Residence	Cellular

**GRAZING LESSEES/GRAZING ALLOTMENTS IMPACTED BY
THIS EMERGENCY PLANNING ZONE (EPZ)**

Grazing Lease No./Grazing Allotment	Name and Address	Telephone Numbers		
		Office	Residence	Cellular

GUIDES, OUTFITTERS AND OUTDOOR CLUBS IMPACTED
BY THIS EMERGENCY PLANNING ZONE (EPZ)

Company	Contact	Telephone Numbers		
		Office	Residence	Cellular

RIG CONTRACTOR

_____ Rig _____
 Main Office Switchboard (24 hours) : ____ - ____ - ____
 Fax : ____ - ____ - ____

WELL TESTING CONTRACTOR

_____ : ____ - ____ - ____
 Main Office Switchboard (24 hours) : ____ - ____ - ____
 Fax : ____ - ____ - ____

SAFETY CONTRACTOR

_____ : ____ - ____ - ____
 Main Office Switchboard (24 hours) : ____ - ____ - ____
 Fax : ____ - ____ - ____

ALTERNATE SAFETY CONTRACTORS

Refer to the Appropriate Site-Specific Supplemental Section.

MOBILE AIR MONITORING SERVICES

Refer to the appropriate Site-Specific Supplemental Section.

EXAMPLES OF AN ALERT AND LEVELS OF EMERGENCY

NOTE: The following “operational examples - drilling, completion or servicing/workover operations” have been supplied to assist Harvest in classifying the incident.

(In Alberta, Each Operational Example of an Alert, Level One, Two or Three Emergency MUST be confirmed to be an Alert or emergency using the AER Assessment Matrix for Classifying Incidents in Section 2.0.)

(In British Columbia and Saskatchewan, Each Operational Example of a Level One, Two or Three Emergency MUST be confirmed to be an emergency using the levels of emergency table in Section 2.0.)

Examples of an Alert

Drilling and Completion and Servicing/Workover Operations

- a kick
- loss of circulation

Examples of Level One Emergency

Drilling Operations

- a significant kick
- significant loss of circulation
- inability to circulate
- H₂S or abnormal amounts of soluble sulphides in the drilling fluid
- any abnormal situation that could affect well control

Completion and Servicing/Workover Operations

- inability to shut in the wellhead because of stuck wireline, endless tubing or tools straddling the master valves
- communication between the tubing and annulus, above the packer, when the well is not dead
- H₂S or abnormal amounts of soluble sulphides in the well control fluids
- any abnormal situation that could affect well control

Examples of Level Two Emergency

Drilling Operations

- lost circulation with mud losses exceeding the mixing rate
- insufficient degasser capacity
- incomplete combustion of H₂S gas at the flare pit
- equipment malfunction that hinders well control while shutting in the well or circulating a kick

Completion and Servicing/Workover Operations

- a wellhead leak below the master valve
- a serious leak from lubricator equipment while the tubing is flowing
- communication from the sour formation to the surface casing vent
- an equipment malfunction that hinders well control while shutting in the well or circulating a kick

Examples of a Level Three Emergency

Drilling and Completion and Servicing/Workover Operations

- inability to shut in the well (This may be caused by a malfunction of the pipe rams, blind rams, annular preventer, stabbing valve or by a flow through cracks, seals or gaskets below the effective BOP equipment.)
- inability to ignite flow at the flare pit or the flare stack and the inability to shut the well in



BRIEF FACTUAL MEDIA STATEMENT

DATE: _____

TIME: _____

MY NAME IS: _____

MY JOB TITLE IS: _____

This is the information I can give you so far:

- At (time) _____ on (date) _____
- A (gas release, leak, spill, fire, explosion) _____
- Occurred at the company's _____ site.
- Located _____ km (north, south, east, west) _____ of _____ (nearest town/city).
- (Number of personnel) _____ are being treated for injuries. The names and conditions of the injured cannot be released at this time. (Indicate if there are no injuries).
- The (well, pipeline, plant, facility) _____ has been/is being/ (shut in, isolated, still flowing) _____.
- Residents in the area have been (notified, advised to evacuate, advised to shelter-in-place) _____
_____.
- Roads leading into the specific Emergency Planning Zone (EPZ) (have been/are being) _____ isolated to prevent access by the public.
- Operations are being directed to maximize the safety of members of the public, responders and the environment
- The cause of the incident is not yet known and the estimate of any damage is not available at this time.
- As more information becomes available news releases will be issued from the company's spokesperson.

Thank you.

NOTE: Refer to the Information Officer in Section 4.0 for what information must be disseminated to the public immediately and during an incident.



STATEMENT FOR USE WHEN YOU ARE UNAWARE OF AN INCIDENT AFFECTING HARVEST'S ASSETS

If you receive a call from any person (including the general public, investors or media) who is requesting information about an incident affecting Harvest assets and you have not yet been briefed about the incident, you should obtain the following information from the caller:

- First and Last Name _____
- Company they are calling from and title/description _____
- Contact number that they can be reached _____

I am sorry but I have not been made aware of the situation that you are calling about. Can you please share a few details with me so that I can source the appropriate person to speak with here and then we can have someone call you back as quickly as possible?

Questions to ask

1. Do you know the location of the incident? _____
2. Do you know the name of the nearest Town or Village? _____
3. Do you know what has happened? _____

Harvest is committed to ensuring that all relevant facts and correct information is passed on to members of the public who may be affected, government and local authorities and the media.

If you will give me your name, contact number and organization I will pass this message on and ensure that you are contacted by a Harvest representative. If you do not receive a call within 30 minutes please call me back.

Caller's name _____

Caller's contact number _____

Caller's organization _____



**INFORMATION REQUIRED
FOR MEDIA PERSONNEL**

Date		Time	
Facility Type		LS/NTS	
Nearest Town/City (km distance N, S, E, W)			

Initial Isolation Zone (IIZ)	(Km)	Number of Residents in the Initial Isolation Zone (IIZ)	
Protective Action Zone (PAZ)	(Km)	Number of Residents in the Protective Action Zone (PAZ)	
Emergency Planning Zone (EPZ)	(Km)	Number of Residents in the Emergency Planning Zone (EPZ)	
Number of Injuries			

Incident Commander		Contact Number	
Public Protection Group Supervisor		Contact Number	
Reception Centre Representative		Contact Number	

Location of Incident Command Post	
Location of Remote Command Post	
Location of Reception Centre	

Regulatory Agency Contact Number	
Local Authority (Counties/Municipalities/Regional Districts) Contact Number(s)	
Local Regional Health Authority Contact Number(s)	

Send this information by e-mail to the EOC Director or by fax to the EOC:

EMERGENCY OPERATIONS CENTRE FAX NUMBER:

403-268-3164

MEDIA INFORMATION RECORD

Media Organization
Media Representative
Date
Time
Contact Number

Media Organization
Media Representative
Date
Time
Contact Number

Media Organization
Media Representative
Date
Time
Contact Number

Media Organization
Media Representative
Date
Time
Contact Number

Media Organization
Media Representative
Date
Time
Contact Number

Media Organization
Media Representative
Date
Time
Contact Number

Media Inquiry



Use the following prompts as a guide when responding to a call from a reporter.

1. "We have an Information Officer to answer your questions. His/Her name is _____."
2. "I'll notify our **Information Officer**, who will get back to you as soon as possible."
3. "Can I please have your contact information?"

① Date Prepared: (month, day, year)		② Time Prepared: (24-hour clock)	
③ Prepared By: (Enter name and position)			
Reporter's Name	(First)	(Last)	
Media Affiliation			
Telephone Number			
Fax Number			
Email Address			
Reporter's Stated Deadline			
Information Requested			

IMMEDIATELY deliver the completed form to the Information Officer.

Alberta (AB) Notification Requirements for Key Government Agencies and Local Resources

Agency or Resource	Lead Agencies and Priority Contacts										Supporting Agencies									
	Antinuke	Local Fire Department	Local RCMP/Local Police	Alberta Energy Regulator (AER) (1)	Alberta Municipal Affairs (AEMA)	Alberta Environmental Support and Emergency Response Team (AESERT) (1)	National Energy Board (NEB) (2)	Oil Spill Cooperative Board (OSCB) (2)	Alberta Skills, Training and Labour - Occupational Health and Safety	Alberta Transport Association (ARSA)	Alberta Municipal Affairs, Safety Services, Electrical Safety	Workers' Compensation Board (WCB)	Environment Canada	CANUTEC	Fisheries and Oceans Canada (DFO)					
Incident Type NOTE: More than one incident type may apply.	a	b	b	✓	✓	✓	c	c	d	e	f	g	h	i	j	k	l			
Sour Hydrocarbon or HVP Release	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
LVP Hydrocarbon Liquid Release	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Sweet Hydrocarbon Release	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Produced Water or Steam Release	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Toxic Material Release	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Rail or Trucking Incident	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Pressure Vessel or Piping Incident (On-site)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Fire/Explosion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Operation of Facilities Beyond Designed Limits	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Serious Injury or Death (Including Vehicle Accidents)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Motor Vehicle Accident (No Injuries)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Electrical Incident	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Security Incident	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Legend: Alberta - Updated April 2016 by Bissett Resource Consultants Ltd.

NOTE: Anytime the company contacts the public, in addition to the AER and the local authorities (counties/municipalities); it should also consider contacting the RCMP.

- ✓ Compulsory Contact
 - a) Contact the local fire department if there is a potential for secondary fires. Industry fire fighters should be mobilized to fight industrial hydrocarbon fires.
 - b) Contact the AER for incidents occurring at operations regulated by the AER.
 - c) Contact the NEB through the TSB 24-hour emergency line for incidents occurring at operations regulated by the NEB. Also complete the Online Event Reporting System (OERS) (electronically at <https://apps.neb-one.gc.ca/ERS/Contact/Edit>). Through the Energy and Environmental Emergency 24-hour Response Line, courtesy notification should be given to the AER.
 - d) Mobilize as required.
 - e) Contact Alberta Jobs, Skills, Training and Labour - Occupational Health and Safety if there is potential for serious injury or death of workers (workplace-related issues).
 - f) Contact ESRD for incidents occurring on public land.
 - g) Contact Alberta Transportation if the incident affects a one-, two-, or three-digit highway, rural roads are the responsibility of the local authority.
 - h) Contact AHS if members of the public are inside the emergency planning or response zones.
 - i) Contact WCB if the incident involves an injury or death (worker-related issues).
 - j) Contact Environment Canada for incidents involving PCBs or any spills on First Nation Lands, in national parks, in national parks, into river or lake systems having fish, or onto railway rights-of-way.
 - k) Contact CANUTEC if information about handling procedures is required for toxic material releases.
 - l) If there is a release into a water body of any substance deleterious to fish, contact the DFO (only if fish-bearing water body).
- 1) The Energy and Environmental Emergency 24-hour Response Line is the one-window reporting service for reporting incidents to the AER, Alberta Environment or Canadian Environmental Protection Act (CEPA) Reporting Requirements. The officer may provide assistance in contacting some or all of the local authorities (counties/municipalities). Refer to the AER and Canadian Environmental Protection Act (CEPA) Incident, Spill, and Release Reporting Requirements.
- 2) For incidents occurring at operations regulated by the NEB, refer to the National Energy Board (NEB)/Transportation Safety Board (TSB) Incident Reporting Requirements.

Alberta Health

Acute Exposure Health Effects of Hydrogen Sulphide and Sulphur Dioxide

ACUTE HEALTH EFFECTS OF HYDROGEN SULPHIDE (H₂S)

Concentration H ₂ S in Air (ppm)	Description of Potential Health Effects
1	A noticeable odour that may be offensive to some individuals. People may temporarily experience mild symptoms of discomfort, including nausea, headache, and irritability due to the odour. Asthma symptoms may worsen.
10-20	An obvious offensive odour. Temporary eye irritation may occur after a single exposure and last several hours. Symptoms include mild itchiness, dryness, increased blink reflex and slight watering. Some people may experience headaches, nausea and vomiting. Symptoms of asthma, bronchitis or other forms of chronic respiratory disease may worsen.
50	A strong, intense offensive odour that may irritate eyes and breathing passages. Eyes may be itchy, stinging, and red with increased blinking, tearing and tendency to rub eyes. Breathing passages could feel tingly or sting, with increased tendency to clear throat and cough. Symptoms of pre-existing respiratory disease may worsen. No permanent injury to eyes or breathing passages is expected unless exposure is prolonged. Odour-sensitive individuals may experience headaches, nausea, vomiting and diarrhea.
100	Initially there is a strong objectionable odour that lessens with prolonged exposure due to olfactory "fatigue." Eyes and breathing passages are often irritated within one hour of exposure. Eyes may be sore, stinging, burning, tearing, redness, swelling of eyelids, and possible blurred vision. Respiratory irritation may include sore throat, cough, soreness or stinging of breathing passages, and wheezing. The symptoms of asthma, bronchitis or other forms of chronic respiratory disease will worsen. Odour may cause headache, nausea, vomiting and diarrhea.
250	There may or may not be an odour present due to olfactory paralysis. Eyes and breathing passages will become irritated within minutes of exposure, and the irritation will worsen with longer exposure. The outer surface of the eyes and inner eyelids will be inflamed, red and sore. Eyes will begin watering and tearing immediately and vision may be blurred. Eyes may be permanently harmed if exposure is prolonged. Respiratory irritation will include sore throat, cough, difficulty breathing, soreness of chest, and wheezing. Asthma symptoms will worsen. People may experience "systemic" effects, including headache, nausea and vertigo depending on duration of exposure.

Concentration H ₂ S in Air (ppm)	Description of Potential Health Effects
500	No odour is present due to olfactory paralysis. Severe irritation and possible permanent injury to the eyes and breathing passages within 30 minutes of exposure. Lung and breathing passage damage may cause 'chemical pneumonia' following exposure if the exposure was prolonged. Systemic effects involving the central nervous system may occur within one hour of exposure and include headache, anxiety, dizziness, loss of coordination and slurred speech. People may lose consciousness or collapse suddenly, and die if exposure persists.
750	No odour is present due to olfactory paralysis. Central nervous system effects will be most obvious, and could include anxiety, confusion, headache, slurred speech, dizziness, stumbling, loss of coordination, and other signs of motor dysfunction. People may lose consciousness, collapse suddenly and possibly die, if exposure continues for more than a few minutes. Lung and breathing passage damage will likely cause 'chemical pneumonia' among survivors.
1000	Immediate "knock-down" and loss of consciousness. Death within moments to minutes. Immediate medical attention needed if victim is to survive.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

ACUTE HEALTH EFFECTS OF SULPHUR DIOXIDE (SO₂)

Concentration SO ₂ in Air (ppm)	Description of Potential Health Effects
0.1	Transient bronchoconstriction ¹ in sensitive exercising asthmatic individuals that ceases when exposure ceases. ²
0.3 – 1	Possible detection by taste or smell.
0.75	Transient lung function changes in healthy, moderately exercising, non-asthmatic individuals.
1 – 2	Lung function changes in healthy non-asthmatics. Symptoms in asthmatics would likely increase in severity. There may be a shift to clinical symptoms from changes detectable only via spirometry.
3.0	Easily detected odour.
6 – 12	May cause nasal and throat irritation.
10	Upper respiratory irritation, some nosebleeds.
20	Definitely irritating to the eyes; chronic respiratory symptoms develop; respiratory protection is necessary.
50 – 100	Maximum tolerable exposures for 30 – 60 minutes.
greater than 100	Immediate Danger to Life (NIOSH recommendation).

¹ At low levels, bronchoconstriction was generally observed as changes in airway conductance detectable by spirometry rather than as clinical symptoms.

² It should be noted that clinical studies on humans are generally designed to elicit a response and consequently subject study volunteers to challenging conditions such as exercising, mouth breathing, cold, dry air, etc. Real-life responses in asthmatics should be viewed as being individual-specific dependent on severity of asthma, whether the individuals are medicated or not, how cold and/or dry the air is, mouth breathing (vs. nose-breathing, which can act as an effective scrubber mechanism), and exercise.

Adapted from: Technical Advisory Committee on Public Health and the Oil and Gas Industry, Environmental Public Health Manual for Oil and Gas Activities in Alberta, 2007

For more information, please contact your nearest Environmental Public Health office.

Edmonton Main Office
Calgary Main Office
Lethbridge Main Office

780-735-1800
403-943-2295
403-388-6689

Grande Prairie Main Office
Red Deer Main Office
www.albertahealthservices.ca/eph.asp

780-513-7517
403-356-6366

5EPHD-12-001
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Alberta Energy Regulator (AER) Reporting Requirements
<p>What should be reported to the Alberta Energy Regulator (AER)?</p> <ul style="list-style-type: none"> • Release of substances regulated by the AER, e.g. unrefined products such as conventional crude oil, LPG, diluent, condensate, synthetic crude, sour gas, produced water, and other produced fluids if: <ul style="list-style-type: none"> ➢ the release is in excess of 2 m³, or ➢ any release off-lease, or ➢ there is any release from a pipeline, or ➢ any release, on- or off-lease, of any size that may cause, is causing, or has caused an adverse effect. • Pipeline breaks/failures/hits/damage. • Incidents involving oilfield wastes. • When an AER-approved facility's flared volumes exceed approved limits or when flaring occurs that results in smoke or odours, or that extends over a long duration (24 hours). • Unplanned or planned releases in accordance with AER approvals. • Odours/fugitive emissions from unrefined products in Alberta Environment/AER-approved facilities and from refined products in AER-approved facilities. • Blows/blowouts/sour gas releases/fires.
<p>When should they be reported?</p> <ul style="list-style-type: none"> • Immediately report verbally to the appropriate AER Field Centre.
Alberta Environment Reporting Requirements
<p>What should be reported to the Alberta Environment's Pollution Control Division?</p> <ul style="list-style-type: none"> • Releases of refined product, e.g. diesel, gasoline, sulphur and solvents if: <ul style="list-style-type: none"> ➢ the release meets or exceeds reporting thresholds in Table 1, or ➢ any quantity is released into a water course, groundwater or surface water, even if the release does not meet or exceed reporting thresholds in Table 1, or ➢ any quantity of a substance listed as toxic, prohibited or restricted in the Canadian Environmental Protection Act is released. • When an Alberta Environment/AER-approved facility exceeds an approval condition or when flaring has occurred that has the potential to cause an adverse effect. • Contravention of Alberta Environment approvals. • Odours/fugitive emissions from refined products in Alberta Environment/AER-approved facilities.
<p>When should they be reported?</p> <ul style="list-style-type: none"> • Report verbally to the Director of the Pollution Control Division immediately upon becoming aware of such a release at 1-800-222-6514 or 403-422-4505. (You will be provided a reference number.) • Any release that has caused, is causing or may cause an adverse effect must be reported.
<p>Written Reports:</p> <ul style="list-style-type: none"> • Provide a written report to the Pollution Control Division within 7 days (CEPA Section 201 requires a written report within 30 days.) of any verbal report of an unrefined or refined product release only if it has caused, is causing or may cause an adverse effect on the environment.

Adverse Effect - is defined by the Environmental Protection and Enhancement Act as "impairment of or damage to the environment, human health or safety, or property."

For the purpose of reporting, the industry shall use the following guidelines to assess whether the release may cause, is causing or has caused an adverse effect:

- any third party impact (off-lease), e.g. crop damage, vegetation damage and livestock impact,
- unrecovered spilled substance likely to contaminate surface or groundwater,
- contaminated groundwater and/or surface water,
- release or spill has potential for offsite odour complaints, or
- toxic or flammable release to air going offsite.

Canadian Environmental Protection Act (CEPA) Reporting Requirements

These reporting requirements are set out by Environment Canada; however, notification and reporting is through the Enforcement and Monitoring Branch of Alberta Environment.

Section 201 of CEPA requires that, when an environmental emergency occurs for any of the substances on the list established on Schedule 1 under the *Environmental Emergency Regulations*, any person who owns or has the charge, management or control of the substance immediately before the emergency shall, as soon as possible, notify an enforcement officer or any other person designated pursuant to the Regulations. In addition, this person must abide by a number of other requirements, such as taking all reasonable measures consistent with protection of the environment and public safety and providing a written report.

- A **verbal notification** is to be made by telephone **as soon as possible** in the circumstances to Alberta Environment at **1-800-222-6514** or **780-422-4505**.
- A **written report** should be made **within 30 days** (Pollution Control Division requires a written report **within 7 days**).

While the *Environmental Emergency Regulations* will not, at least initially, be specifying any environmental emergency reporting thresholds, the department considers that existing provincial reporting thresholds, if any, or alternatively those specified under the *Transportation of Dangerous Goods Act* are acceptable for the purposes of meeting obligations under the general provisions of Section 201 of CEPA (see Table 1).

Transport Canada Reporting Requirements - If a spill occurs during the transportation or handling of a Transportation of Dangerous Goods-regulated products where the volume exceeds those specified in Table 1, the spill must be immediately reported to the local police and the appropriate local authority at **1-800-272-9600 (Alberta only)**.

Fisheries and Oceans Canada (DFO) Reporting Requirements - If there is a release into a water body of any substance deleterious to fish, contact the Fisheries and Oceans Canada (DFO) (only if fish bearing water body) at **204-983-5000**.

Table 1 - Reporting Accidental Release from Transportation of Dangerous Goods Regulations

NOTE: This table applies to Alberta Environment, Canadian Environmental Protection Act and Transportation of Dangerous Goods reporting.

Primary Classification	Substance Description	Amount	Emission Level
Class 1	Explosives	Any quantity that could pose a danger to public safety or is greater than 50 kilograms.	-
Class 2	Gases	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more.	-
Class 3	Flammable liquids	200 litres	-
Class 4	Flammable solids	25 kilograms	-
Class 5.1	Oxidizing substances	50 kilograms or 50 litres	-
Class 5.2	Organic peroxides	1 kilogram or 1 litre	-
Class 6.1	Toxic substances	5 kilograms or 5 litres	-
Class 6.2	Infectious substances	Any quantity	-
Class 7	Radioactive materials	Any quantity that could pose a danger to public safety.	An emission level greater than the emission level established in Section 20 of the "Packaging and Transport of Nuclear Substances Regulations".
Class 8	Corrosives	5 kilograms or 5 litres	-
Class 9	Miscellaneous products, substances or organisms	25 kilograms or 25 litres	-

NOTIFICATION MATRIX - BRITISH COLUMBIA

NOTE: Refer to the Site-Specific Supplement Section(s) for telephone numbers and key contacts.

As of April 1 2004, all emergencies and spills are reported through the Emergency Management BC (EMBC) at **1-800-663-3456**.

INCIDENT TYPE NOTE: More than one incident type may apply to a given emergency.	AGENCY OR RESOURCE																
	Ministry of Health - BC Ambulance Services	Local Fire Department	Local RCMP/Local Police (1)	Oil and Gas Commission (OGC)	Emergency Management BC (EMBC) (2) (3)	Local Authorities (Municipality/Regional District)	Oil Spill Cooperative (WCSS)	WorkSafeBC	BC Safety Authority - Non-Government - Boats and Pressure Vessel Branch	BC Safety Authority - Non-Government - Local Health Units	CANUTEC	Fisheries and Oceans Canada (DFO)	Ministry of Forests, Lands and Natural Resource Operations (FLNR)	Ministry of Agriculture, Foods and Fisheries	Ministry of Transportation	Environment Canada	BC Ministry of Energy, Fish and Wildlife Branch
Sour Hydrocarbon Release (Uncontrolled)	a	✓	✓	✓	✓	c		d	f	g	h	i	j	k	l		
Chlorine Gas Release	a	✓		✓	✓	c		d	e	f		h	i	j	k		
Sweet Hydrocarbon Release	a	✓	✓	✓	✓	c			f	g		i	j			l	
Spills/Transportation Incidents (Unrefined Products)	a	✓	✓	✓	✓	c		d	e	f	g	h	i	j	k	l	
Spills/Rail or Trucking Incidents (Refined Products)	a	✓		✓	✓	c		d	e	f	g	h	i	j	k	l	
Serious Injury or Death (Including Vehicle Accidents)	✓	✓				✓											
Fire/Explosion		✓	✓	b	✓	✓	c				g		i			l	
Pressure Vessel or Piping Incident			✓	b			c	✓		f							
Electrical Incident			✓	b			c	✓									
Motor Vehicle Accident (No Injuries)			✓														
Security Incidents			✓														

✓) Compulsory contact

- Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.
- Contact the OGC for incidents occurring at facilities approved by the OGC.
- Refer to WorkSafeBC responsibilities in the Government Agencies Tab for reporting and investigation requirements.
- Contact the Regional Health Authority if the incident could affect the health of the public.
- Contact CANUTEC if information is required about handling procedures for toxic material releases.
- If there is a release into a water body of any substance deleterious to fish, contact Fisheries and Oceans Canada (DFO) (only if fish bearing water body).
- Request the EMBC officer to advise Ministry of Forests, Lands and Natural Resource Operations (FLNR) of incidents where a fire has resulted or there is potential for fire that could affect Crown timber.
- Request the EMBC officer to advise Ministry of Agriculture, Foods and Fisheries of incidents that affect agricultural lands and fisheries.
- Request the EMBC officer to notify Ministry of Transportation of incidents affecting major highways or rural roads.
- Request the EMBC officer to notify Ministry of Environment of any of the noted incidents.
- Request the EMBC officer to notify Environment Canada for incidents involving polychlorinated biphenyls (PCBs) or any spills on Indian lands, in national parks, into river or lake systems having fish or into railway rights-of-way.
- Request the EMBC officer to advise Ministry of Energy, Fish and Wildlife Branch for incidents occurring on public land.

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- For a fatality, request the local RCMP/local police to contact the local coroner.
- Reporting thresholds from Transportation of Dangerous Goods Regulations occurs through EMBC. The EMBC program is designed to automatically contact the appropriate government agencies. Nonetheless it is prudent, when contacting EMBC, to identify the agencies that should be advised. Refer to the Oil and Gas Commission and Canadian Environmental Protection Act (CEPA) Spill and Release Reporting Requirements in Section 8.0.
- Reporting of Canadian Environmental Protection Act (CEPA) Schedule 1 substances occurs through EMBC. Refer to the Oil and Gas Commission and Canadian Environmental Protection Act (CEPA) Spill and Release Reporting Requirements in Section 8.0.

General Health Effects Of Hydrogen Sulphide (H₂S)

BRITISH COLUMBIA

Concentration (ppm)	Effects
0.01-0.3	Odour threshold
1-5	Moderate to strong offensive odour may create nausea, tearing of the eyes, headaches or loss of sleep upon prolonged exposure-effects are moderate
10	Ceiling Limit (B.C. WCB)
20-50	Slight eye and lung irritation-may cause eye damage after several days of exposure; may cause digestive upset and loss of appetite
100	Eye and lung irritation
150	Kills sense of smell; severe eye and lung irritation
500	Serious damage to eyes within 30 minutes; severe lung irritation; unconsciousness and death within 4 to 8 hours
1000	Breathing stops within one or two breaths

Adapted from:

Canada Safety Council Data Sheet "Hydrogen Sulphide," No. B-3.

Alberta Provincial Board of Health "Guidelines for Action Regarding Hydrogen Sulphide."

National Research Council of Canada, "Hydrogen Sulfide in the Atmospheric Environment: Scientific Criteria for Addressing its Effects on Environmental Quality," publication #18467.

CHARACTERISTICS AND DANGERS OF H₂S

- Found in decaying organic matter, natural oil and gas, silos, sewers.
- Found as a gas at temperatures above -60°C.
- Colourless.
- Flammable - burns to form SO₂.
- Odour of rotten eggs at low concentrations - kills all sense of smell at higher concentrations.
- Will tend to disperse more slowly in sheltered or calm or low lying areas.
- Extremely toxic.
- At lower concentrations (20-50 ppm) irritates mucous membranes (eyes, throat, lungs), causes headache, dizziness, nausea, may cause pulmonary edema (fluid in the lungs) upon prolonged exposure.
- High concentrations (500-1000 ppm) causes paralysis of the respiratory centre in the brain - breathing stops, suffocation occurs.
- This gas is dangerous because it kills the sense of smell very quickly and one is not aware of the level of concentration that is present.

General Health Effects of Sulphur Dioxide (SO₂) ★

BRITISH COLUMBIA

Concentration (ppm)	Effects
0.13	24 hour evacuation level (MWLAP Level B criteria)
0.34	One hour average evacuation level (MWLAP Level B criteria)
2	Eight hour Occupational Exposure Limit (BC WCB)
3-5	Odour Threshold
5	15 minute Occupational Exposure Limit (BC WCB)
8-12	Throat irritation, coughing, constriction in chest, tearing and smarting of the eyes
10-50	Exposure 5-15 minutes: increased irritation of the eyes, nose, throat, choking, coughing, and in some cases, wheezing as a sign of narrowing of the airways (which increases the resistance of the air-flow)
150	Short-term endurance lost due to severe eye irritation and because of the effects on the membranes of the nose, throat and lungs
500	Highly dangerous after an exposure of 30-60 minutes
1000-2000	May be fatal with continued exposure

★ Adapted from Canada Safety Council Data Sheet "Sulphur Dioxide," No. B-4.

CHARACTERISTICS AND HEALTH AFFECTS OF SO₂

- This is a choking gas, unlike H₂S, and one wants to move to an area where the discomfort is not experienced.
- Formed by the combustion of H₂S or sulphur and is non-flammable;
- Found as a gas at temperatures above -10°C;
- Has the odour that occurs when a wooden match is extinguished;
- Highly irritating - dissolves to form sulphuric acid;
- At lower concentrations irritates the eyes, nose and throat, causes difficulty in breathing and shortness of breath;
- Causes pulmonary edema at high concentrations - may be fatal; and
- Effects on heavy smokers are more severe.

Oil and Gas Commission (OGC) and Canadian Environmental Protection Act (CEPA) Spill, Release and Minor Incident Reporting Requirements

Oil and Gas Commission (OGC) Reporting Requirements		
Spill Reporting Criteria		
<p>Where the permit holder holds or maintains rights, the permit holder must report to the BC Oil and Gas Commission (OGC), all spills of materials as identified below:</p> <ul style="list-style-type: none"> • A spill or release of any amount of materials which impacts water ways. • Hydrocarbons; 100 litres where the hydrocarbon contains no toxic materials and does not impact water ways. • Produced/salt water; 200 litres where the fluid contains no toxic materials. • Fresh water; 10,000 litres. • Drilling or invert mud; 100 litres. • Sour natural gas; 10 kg or 15 m³ by volume where operating pressure is >100 PSI. • Condensate; 100 litres. • Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres. 		
Minor Incident Reporting Criteria		
<p>The Oil and Gas Commission's (OGC's) Incident Classification Matrix is designed to assist permit holders in determining which incidents must be reported. However, some incidents, which do occur, may not meet the criteria outlined in the Oil and Gas Commission's (OGC's) Incident Classification Matrix but still require notification to the Oil and Gas Commission (OGC) as a minor notification. These include the following:</p> <ul style="list-style-type: none"> • Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances. • Major damage to oil and gas roads or road structures. • Drilling kicks when any one of the following occur: <ul style="list-style-type: none"> ➢ Pit gain of 3 m³ or greater. ➢ Casing pressure 85% of maximum allowable (MA). ➢ 50% out of hole when kicked. ➢ Well taking fluid [lost circulation (LC)]. ➢ Associated spill. ➢ General situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc. • Pipeline incidents, such as spills during construction phase, near misses from mobile or excavation equipment, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or emergency shutdown (ESD) device [see the Oil and Gas Commission's (OGC's) Pipeline Operations Manual, Section 12]. • Induced seismicity >4 on the Richter scale during oil and gas operations such as well fracturing. • Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. 		
When and How to Report		
<p>When should they be reported?</p> <ul style="list-style-type: none"> • Utilizing the Oil and Gas Commission's (OGC's) Incident Classification Matrix, if the incident receives a score of 3 to 8 (a Level One, Two, or Three Emergency), it must be reported immediately (within one hour) verbally to the Emergency Management BC (EMBC) reporting line at 1-800-663-3456. • Utilizing the Oil and Gas Commission's (OGC's) Incident Classification Matrix, if the incident receives a score of 1 or 2 (a Minor Incident), it must be reported within 24 hours, utilizing the Oil and Gas Commission's (OGC's) Online Minor Incident Reporting System (operated through KERMIT). • If the Minor Incident involves a leak or a spill, Emergency Management BC (EMBC) must also be called at 1-800-663-3456 for the Ministry of Environment to be notified. 		
Ministry of Environment Reporting Requirements		
What should be reported to the Ministry of Environment?		
1	Class 1, Explosives as defined in section 2.9 of the Federal Regulations	Any quantity that could pose a danger to public safety or 50 kg.
2	Class 2.1, Flammable Gases, other than natural gas, as defined in section 2.14 (a) of the Federal Regulations	10 kg
3	Class 2.2 Non-Flammable and Non-Toxic Gases as defined in section 2.14 (b) of the Federal Regulations	10 kg
4	Class 2.3, Toxic Gases as defined in section 2.14 (c) of the Federal Regulations	5 kg
5	Class 3, Flammable Liquids as defined in section 2.18 of the Federal Regulations	100 L
6	Class 4, Flammable Solids as defined in section 2.20 of the Federal Regulations	25 kg
7	Class 5.1, Oxidizing Substances as defined in section 2.24 (a) of the Federal Regulations	50 kg or 50 L

8	Class 5.2, Organic Peroxides as defined in section 2.24 (b) of the Federal Regulations	1 kg or 1 L
9	Class 6.1, Toxic Substances as defined in section 2.27 (a) of the Federal Regulations	5 kg or 5 L
10	Class 6.2, Infectious Substances as defined in section 2.27 (b) of the Federal Regulations	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment.
11	Class 7, Radioactive Materials as defined in section 2.37 of the Federal Regulations	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the "Packaging and Transport of Nuclear Substances Regulations".
12	Class 8, Corrosives as defined in section 2.40 of the Federal Regulations	5 kg or 5 L
13	Class 9, Miscellaneous Products, Substances or Organisms as defined in section 2.43 of the Federal Regulations	25 kg or 25 L
14	Waste containing dioxin as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment.
15	Leachable toxic waste as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	Waste containing polycyclic aromatic hydrocarbons as defined in section 1 of the hazardous Waste Regulation	5 kg or 5 L
17	Waste asbestos as defined in section 1 of the Hazardous Waste Regulation	50 kg
18	Waste oil as defined in section 1 of the Hazardous Waste Regulation	100 L
19	Waste containing a pest control product as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
20	PCB wastes as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
21	Waste containing tetrachloroethylene as defined in section 1 of the Hazardous Waste Regulation	50 kg or 50 L
22	Biomedical waste as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment.
23	A hazardous waste as defined in section 1 of the Hazardous Waste Regulation and not covered under items 1 to 22	25 kg or 25 L
24	A substance, not covered by items 1 to 23, that can cause pollution	200 kg or 200 L
25	Natural gas	10 kg, if there is a breakage in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas.

When should they be reported?

- Immediately report verbally to the **Emergency Management BC (EMBC) at 1-800-663-3456**.
- Where it is not practical to report to the Emergency Management BC (EMBC) within a reasonable time, report to the local police or nearest RCMP detachment.

Canadian Environmental Protection Act (CEPA) Reporting Requirements

These reporting requirements are set out by Environment Canada; however, notification and reporting is through the Emergency Management BC (EMBC).

Section 201 of CEPA requires that, when an environmental emergency occurs for any of the substances on the list established on Schedule 1 under the *Environmental Emergency Regulations*, any person who owns or has the charge, management or control of the substance immediately before the emergency shall, as soon as possible, notify an enforcement officer or any other person designated pursuant to the Regulations. In addition, this person must abide by a number of other requirements, such as taking all reasonable measures consistent with protection of the environment and public safety and providing a written report.

- A **verbal notification** is to be made by telephone **as soon as possible** in the circumstances to Emergency Management BC (EMBC) at **1-800-663-3456**.
- A **written report** should be made **within 30 days** to Environment Canada, Pacific and Yukon Region.

While the *Environmental Emergency Regulations* will not, at least initially, be specifying any environmental emergency reporting thresholds, the department considers that existing provincial reporting thresholds, if any, or alternatively those specified under the *Transportation of Dangerous Goods Act* are acceptable for the purposes of meeting obligations under the general provisions of Section 201 of CEPA (see Table 1).

Transport Canada Reporting Requirements - If a spill occurs during the transportation or handling of a Transportation of Dangerous Goods regulated products where the volume exceeds those specified in Table 1, the spill must be immediately reported to the local police and Emergency Management BC (EMBC) at **1-800-663-3456 (British Columbia only)**.

Fisheries and Oceans Canada (DFO) Reporting Requirements - If there is a release into a water body of **any** substance deleterious to fish, contact the Fisheries and Oceans Canada (DFO) (only if fish bearing water body) at **204-983-5000**.

Table 1 - Reporting Accidental Release from Transportation of Dangerous Goods Regulations

NOTE: This table applies to *Alberta Environment, Canadian Environmental Protection Act and Transportation of Dangerous Goods reporting.*

Primary Classification	Substance Description	Amount	Emission Level
Class 1	Explosives	Any quantity that could pose a danger to public safety or is greater than 50 kilograms.	-
Class 2	Gases	Any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more.	-
Class 3	Flammable liquids	200 litres	-
Class 4	Flammable solids	25 kilograms	-
Class 5.1	Oxidizing substances	50 kilograms or 50 litres	-
Class 5.2	Organic peroxides	1 kilogram or 1 litre	-
Class 6.1	Toxic substances	5 kilograms or 5 litres	-
Class 6.2	Infectious substances	Any quantity	-
Class 7	Radioactive materials	Any quantity that could pose a danger to public safety.	An emission level greater than the emission level established in Section 20 of the "Packaging and Transport of Nuclear Substances Regulations".
Class 8	Corrosives	5 kilograms or 5 litres	-
Class 9	Miscellaneous products, substances or organisms	25 kilograms or 25 litres	-



EMERGENCY RESPONSE PLAN
SECTION 9.0 - SAFETY EQUIPMENT
& COMMUNICATIONS

CONTENTS

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9.0 SAFETY EQUIPMENT

9.1 ERP SAFETY EQUIPMENT

The safety equipment listed on the following pages is necessary for implementing the emergency response plan, protecting workers and response personnel and maximizing public safety.

9.2 ROADBLOCK KITS

Each roadblock kit should be equipped with the following items as a minimum:

- Vehicle-mounted rotary beacon
- Stop paddle
- Flashlight
- Fluorescent vest
- Reflective road traffic triangles

NOTE: Each Roadblock person must have a map showing the planning and response zones and must have direct communication capability with the Incident Command Post, the Remote Command Post (if established) and the Staging Area (if established), e.g. radio, cellular telephone.

9.3 SAFETY EQUIPMENT LIST

ALBERTA AND BRITISH COLUMBIA

Items	On-site Command Post (OSCP)	Incident Command Post (ICP)	Reception Centre	Rover(s)	Roadblocks	Air/Environmental Monitoring Team(s) [Mobile Air Monitoring Crew(s)]
COMMUNICATION						
Cellulars and/or two-way radios	✓	✓	✓	✓	✓	✓
Battery rechargers for portable two-way radios (if in use)	As Required	As Required	As Required	As Required	As Required	As Required
Spare batteries for portable two-way radios (if in use)	As Required	As Required	As Required	As Required	As Required	As Required
FIRST AID EQUIPMENT						
First aid kits (including resuscitators)	As required, maybe provided by the safety contractors.					
IGNITION EQUIPMENT						
Flare gun and flares (for operational areas with H ₂ S or HVP products)	✓					
BREATHING APPARATUS						
Self-contained breathing apparatus (SCBA)	✓			As required based on incident type and hazard assessment		
MONITORS						
Bellows-type, each complete with H ₂ S and SO ₂ detector tubes	As required based on incident type and limitations of electronic monitors			As required based on incident type and limitations of electronic monitors	As required based on incident type and limitations of electronic monitors	
Electronic hand-held 4-gas monitors (H ₂ S, LEL, O ₂ , CO)	✓		✓	✓	✓	✓

Items	On-site Command Post (OSCP)	Incident Command Post (ICP)	Reception Centre	Rover(s)	Roadblocks	Air/Environmental Monitoring Team(s) [Mobile Air Monitoring Crew(s)]
TRANSPORTATION						
4x4 vehicle	✓		✓	✓	✓	✓
2x2 vehicle		✓				
WARNING EQUIPMENT						
Flashing beacons for vehicle roofs	✓				✓	
Flashlights complete with batteries	✓		✓	✓	✓	✓
Roadblock kits					✓	
PROTECTIVE CLOTHING						
Fluorescent vests	✓			✓	✓	✓
Hard hats	✓			✓	✓	✓
INCIDENT COMMAND SYSTEM FACILITIES						
Emergency response charts and guides		✓				
Corporate ERP & site specific ERP		✓	✓			
Area map	✓	✓	✓	✓	✓	✓
Responder roles and responsibilities	✓	✓	✓	✓	✓	✓

Note: All Harvest Harvest 4 x 4 trucks are required to carry as a minimum, a 20 lb dry powder type fire extinguisher.

Other emergency response equipment and resources that may be required may be provided by:

- Environmental agencies and contractors. Harvest's environmental team will be able to assist with environmental contractors contacts
- Third party contract service providers and resource suppliers
- Regulatory agency or local authority
- Mutual aid groups

Contact names and numbers of the aforementioned groups can be found in the site specific/production ERP or in the area field office or main battery/plant. WCSS area contacts can be found in the production or site specific ERP or at the following web site. <http://www.wcss.ab.ca/>

Procedures for Contacting Government Agencies

It is the responsibility of the Incident Commander to ensure that all required regulatory and government agencies are contacted and notified of an emergency situation; the responsibility of making the contacts may be given to the role of the Liaison Officer (see section 4.5).

If the incident is declared an 'Alert' (Alberta only), the AER must be notified as soon as possible.

If the incident is declared a level 1, 2 or 3 emergency, the regulatory agency and the local authority must be notified as soon as possible.

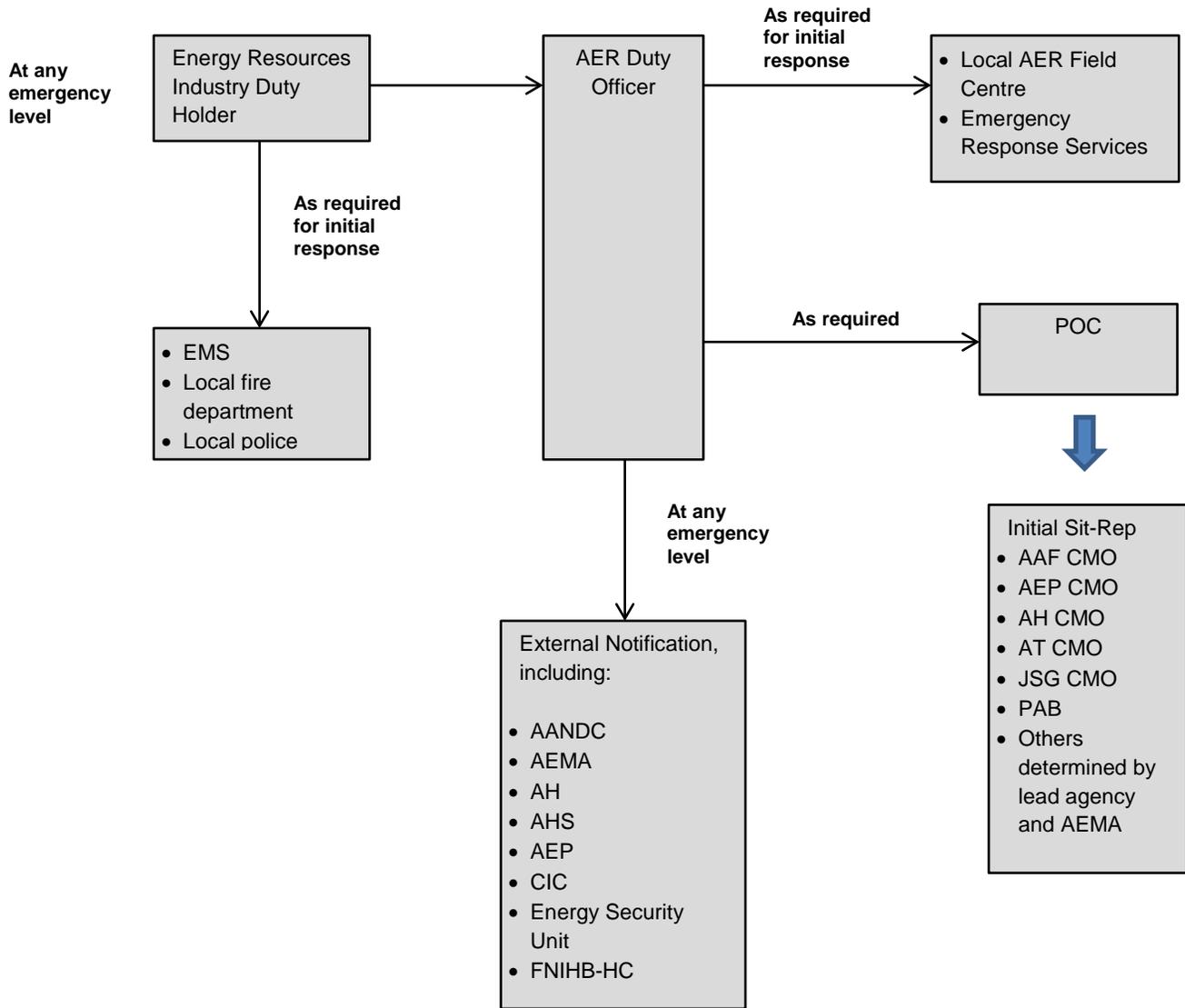
Refer to the 'Notification Matrix' in this section to determine which other agencies may be required to be contacted.

Government agencies contribute valuable support to a company during an emergency by providing advice, resources and local information. In order to avoid conflicts over authority and response priorities, company representatives need to work as a team with involved government agencies. Emergency response should achieve an integrated approach that protects the responders, the public and the environment. The extent of government support depends on the severity of the emergency and jurisdiction.

The provincial notification matrices in Section 8.0 show the notification requirements for government agencies during an emergency. Telephone numbers of key government agencies are listed in the Site-Specific Supplemental Sections.

ALBERTA

Table 2, Initial Notification Process flowchart taken from the ERIESP 2015.



Government Agency Duties

The following government agency duties are taken from the Energy Resources Industry Emergency Support Plan (ERIESP) 2015; annex A, annex B and annex C

ACTIONS BEFORE AN EMERGENCY

Agriculture

- Act as SME relating to agriculture and livestock impacts
- Act as the liaison between the farming/ranching community and the GoA

Alberta Emergency Management Agency (AEMA)

- Act as the provincial coordinating agency in energy resource industry emergency response as per the Emergency management Act
- Maintain a 24/7 duty manager system
- Assist in the planning and coordination of exercises with the AER
- Maintain emergency response resources
- Act as subject matter experts (SME)

Alberta Energy Regulator (AER)

- Confirm and act as lead GoA organization in energy resources industry emergency preparedness and response
- Set requirements for planning and responding to, energy resources industry emergencies
- Participate in exercises of the ERIESP
- Review and recommend changes to the ERIESP
- Maintain a 24/7 telephone contact where energy resources industry emergencies can be reported
- Maintain 24/7 emergency contact numbers where resources can be accessed to carry out a response
- Make the ERIESP available to stakeholders
- Communicate changes to the ERIESP with stakeholders
- Maintain emergency response resources
- Act as SME

Alberta Environment and Parks

- Maintain 24/7 contact numbers and duty officer where resources can be accessed for a response related to the ERIESP
- Maintain emergency response resources
- Act as SME

Forestry

- Maintain 24/7 contact numbers and duty officer where resources can be accessed for a response
- Maintain emergency response resources
- Act as SME

Alberta Health

- Act as SME on health effects for energy resources industry hazards
- Maintain a 24/7 e-mail contact for incident notifications

JSG (Provides intelligence and threat risk assessment in relation to human induced intentional threats/hazards in relation to critical infrastructure and key assets)

- Maintain a list of critical infrastructure and key assets in Alberta
- Maintain and regularly test the Emergency Notification System
- Maintain an awareness of threats, vulnerabilities and risks related to human induced intentional threats

Public Affairs Bureau (PAB)

- Maintain a team of public affairs personnel
- Activate crisis communications plan and crisis communications response

Alberta Transportation

- Maintain a 24/7 call centre (CIC) to receive emergency calls related to the transportation and handling of dangerous goods as well as environmental spills/releases/incidents
- Act as SME for dangerous goods incidents

ACTIONS DURING AN EMERGENCY

Agriculture

- Act as SME relating to agricultural and livestock impacts
- Act as the liaison between the farming/ranching community and the GoA during resource industry emergencies
- Provide information relating to agricultural and livestock impacts to the GoA during resource industry emergencies

AEMA

- Confirm AER has been notified
- Obtain a SitRep from the AER, AEP. Local authority etc.
- Confirm the level of emergency
- Elevate the POC as required
- Notify the appropriate provincial officials as per SOPs
- Release consolidated SitReps
- Coordinate the GoA response including requests for provincial/federal resources
- Provide on-going SitReps or briefing notes to appropriate provincial officials as requested

AER

- Receive notification of energy resources industry emergencies
- Determine the emergency level of an emergency through consultation with the duty holder
- Dispatch AER representatives as required
- Confirm that local resources have been notified as appropriate
- Monitor discharges and ensure appropriate mitigation and response actions are taken to reduce the impact of liquid releases for land based spills and to ensure water courses are protected
- Confirm or implement public safety actions to ensure the safety of the public and the environment including issuing Fire Hazard Orders or requesting NOTAMS
- As lead agency, provide coordination for departments/agencies and duty holder on site
- Request a local authority liaison officer to be present at the REOC if necessary
- Activate the ERIESP

- Advise the AEMA to escalate the POC as required
- Identify and request additional provincial resources to support the emergency response
- Initiate consolidated SitReps through AEMA
- Dispatch AER representative to the emergency location and/or the Incident Command Post
- Establish an EOC at the local AER field centre until the duty holder or local authority establishes a regional EOC
- Provide timely SitReps and reports through AEMA
- Request the deployment of other GoA representatives to be present at the REOC or ECC

AEP

- Ensure that non-energy resources industry environmental impacts are mitigated
- Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into water courses
- Provide technical assistance related to emergency drinking water supply engineering
- Notify Fish and Wildlife staff in the area of the emergency

Forestry

- Notify forestry staff in the area of the emergency
- Notify duty holder if energy resources industry infrastructure is threatened by wildfire
- Fight wildfires started as a result of the energy resources industry product release

Alberta Health

- Participate in the development of ERPs as they relate to Environmental Public Health
- Provide a single point of contact phone number for alerting AHS of an emergency
- Provide guidance in identifying suitable sites for establishing a Reception Centre
- Provide guidance on substances that may affect public health
- Monitor and assess the impact to the health system
- Record and respond to health complaints or concerns from the public during and following an incident

JSG

- Provide intelligence and threat risk assessments when appropriate and requested in relation to critical infrastructure and key assets
- Communicate with owners and operators of CI and key assets

PAB

- Confirm distribution of AER messaging
- Provide support as required

ACTIONS AFTER AN EMERGENCY

Agriculture

- Provide a summary of agriculture and livestock impacts

AEMA

- Participate in PIAs
- Complete documentation or reports in relation to the activations of the ERIESP

AER

- Conduct PIA related to the response
- Recommend any mitigation actions that may improve the coordination of the GoA response
- Establish processes to receive and address community concerns
- Communicate any changes to the ERIESP with stakeholders

AEP

- Compile and maintain environment /emergency related records
- Monitor environmental recovery as required

Forestry

- Conduct a forest impact assessment where necessary

Alberta Health

- Provide a summary of the health impacts during the PIA process

JSG

- Participate in all PIAs related to the ERIESP

PAB

- Participate in all PIAs related to the ERIESP

Tasks common to all Agencies

- Complete a PIA based on the scope of involvement and the outcome
- Integrate the PIA into internal response processes

BRITISH COLUMBIA

PETROLEUM REGULATORY AGENCY

British Columbia : Oil and Gas Commission (OGC)

The local petroleum regulatory agency will participate in the emergency response to all situations involving or threatening oilfield wells, production facilities or pipelines.

RESPONSIBILITIES

- Oversees the operator's response to an incident.
- Notified by Emergency Management BC (EMBC) of incidents within OGC's jurisdiction.
- Establishes communication with the operator.
- Confirms incident level with operator.
- Confirms downgrade of incident level.
- Issues road closure order upon request from the operator.
- Requests NOTAM order from NAV Canada upon request from the operator.
- May send an OGC representative to the Operator's On-Site Command Post (OSCP) and/or Reception Centre.
- May establish a government EOC at the OGC office (British Columbia Only).
- Confirms ignition decision with operator if time permits.
- Confirms media releases to be sent out by operator.

PROVINCIAL EMERGENCY MEASURES AND DISASTER RELIEF AGENCY

These agencies are involved in situations that have the potential to affect the health, safety and welfare of the public.

British Columbia : Emergency Management BC (EMBC)

RESPONSIBILITIES

- During any level of emergency, Emergency Management BC (EMBC) should be the first government agency to be called. All emergencies and spills are reported through EMBC at 1-800-663-3456. Upon notification, EMBC will conduct notification fan-out to meet the response objectives of the British Columbia Emergency Response Management System.
- May alert all affected municipalities and other levels of government and industry where issues of public safety are of concern.
- Maintains the provincial government's comprehensive emergency management plan and related contingency plans.
- Coordinates provincial Government resources during an emergency.
- Assists Provincial government Ministries, local government, Crown corporations and agencies with their emergency planning.
- If required, will activate one or more Provincial Regional Emergency Operations Centre's (PREOC) and/or the Provincial Emergency Coordination Centre (PECC) to coordinate provincial response and recovery activities
- During response activities, will determine if federal government support is required and will be the conduit for the province to obtain federal emergency assistance

RCMP/LOCAL POLICE

The RCMP/local police are involved with any incidents entailing traffic accidents, road closures, fatalities or criminal activity, e.g. bomb threats, looting.

RESPONSIBILITIES

- assists with isolating and securing the incident site, including traffic and crowd control
- aids with evacuations
- manages the closure of major highways
- maintains law and order

LOCAL AUTHORITIES (RURAL MUNICIPALITY/REGIONAL DISTRICT)

The local authority will usually participate in any emergency that impacts or threatens land or residents outside the confines of company property.

In British Columbia, if regional districts have not been granted the powers of a municipality under the *Emergency Program Act*, then the Emergency Management BC (EMBC) is responsible for coordinating response activities.

RESPONSIBILITIES

- implements the rural municipality/regional district disaster or emergency plan
- provides local knowledge about conditions, resources and the community
- assists with the establishment and administration of a Reception Centre if required
- ensures local emergency services are available to assist the emergency response team

REGIONAL HEALTH AUTHORITIES

Health Emergency Management BC (HEMBC) is a program under the Provincial Services Authority and provides the expertise, tools, education and support specifically for the BC health sector to effectively mitigate, prepare for, respond to and recover from the impacts of emergency events; ensuring the continuity of health services.

Role and Responsibilities

- Maintain a 24 hour emergency on-call contact number for notification and activation of the health system
- Notify and activate the appropriate health programs e.g. public health, based on the nature of the incident
- Participate with industry and local authority in the development of ERPs as they relate to the health authority
- Participate where required in training and exercises where the health authority have a role and responsibilities
- Activate emergency management plans related to ongoing provision of services
- Where necessary work with BC Ambulance Service provide information and advice to stakeholders on the existing or potential public health effects of an incident
- Provide advice and information on the best methods for monitoring health effects from an incident
- Assist in joint messaging for public information on incidents

WORKSAFEBBC

RESPONSIBILITIES

- Ensures the operator is monitoring the health and safety of all personnel in the workplace.
- Provides other services as outlined in the EMBC, British Columbia Emergency Response Management System.
- Refer to Part 4 (sub-sections 4.1 to 4.18) of the BC OHS Regulations 'General Condition'

Workmen's Compensation Act (WCA) Part 3 Division 10 - Accident Reporting and Investigation

Immediate notice of certain accidents 172

172 Immediate notice of certain accidents

- (1) An employer must immediately notify the Board of the occurrence of any accident that:
 - (a) resulted in serious injury to or the death of a worker,
 - (b) involved a major structural failure or collapse of a building, bridge, tower, crane, hoist, temporary construction support system or excavation,
 - (c) involved the major release of a hazardous substance,
 - (c.1) involved a fire or explosion that had a potential for causing serious injury to a worker, or
 - (d) was an incident required by regulation to be reported.
- (2) Except as otherwise directed by an officer of the Board or a peace officer, a person must not disturb the scene of an accident that is reportable under subsection (1) except so far as is necessary to:
 - (a) attend to persons injured or killed,
 - (b) prevent further injuries or death, or
 - (c) protect property that is endangered as a result of the accident.

Incidents that must be investigated 173

- (1) An employer must conduct a preliminary investigation under section 175 and a full investigation under section 176 respecting any accident or other incident that:
 - (a) is required to be reported by section 172,
 - (b) resulted in injury to a worker requiring medical treatment,
 - (c) did not involve injury to a worker, or involved only minor injury not requiring medical treatment, but had a potential for causing serious injury to a worker, or
 - (d) was an incident required by regulation to be investigated.
- (2) Subsection (1) does not apply in the case of a vehicle accident occurring on a public street or highway.

TRANSPORT CANADA

Transport Canada plays a key role in preventing and responding to emergencies that disrupt the national or regional transportation systems or to incidents involving the transportation of dangerous goods.

Transport Canada makes contingency plans for responding to all emergencies involving goods in transit that affect and/or require the support of any part of the national transportation system; the response is limited to providing regulatory oversight. Companies may be required to develop and maintain an Emergency Response Assistance Plan (ERAP) which serves to assist emergency responders by providing technical experts and specially trained emergency response personnel at the scene of an emergency.

NAV Canada

May issue a Notice to Airmen (NOTAM).

In Canada only Transport Canada have the authority to restrict or close airspace e.g. where a release of hazardous gas has occurred.

British Columbia Ministry of Environment

- A Ministry representative (Environmental Emergency Response Officer - EERO) will provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking the appropriate actions.
- May provide a representative to the Off-Site Command Centre (OSCC) and the OGC Emergency Operations Centre (EOC) and/or the Provincial Emergency Operations Centre (PREOC) on a 24-hour basis. In a larger scale incident, based on risk, additional ministry resources such as IMTs (Incident Management Teams) may be deployed to establish unified command and monitor, augment, or take over the response if the Responsible Party fails to take appropriate action as deemed necessary by the EERO or Provincial Incident Commander.
- May assist the RP to ensure that other required agencies and affected stakeholders are contacted.
- Monitors all discharges to the land, atmosphere and all water bodies.
- May provide assistance with hazardous waste management.
- May conduct sampling for monitoring and enforcement purposes.

British Columbia Ministry of Agriculture, Food and Fisheries

Provide advice regarding the effect of contaminants on livestock, plants, soil and the mitigation procedures.

British Columbia Ministry of Forests, Lands and Natural Resource Operations

Provide assessment of potential damage and offer advice for remedial control in areas relating to renewable resources.

Environment Canada, Meteorological Service of Canada

Provides current and potential meteorological information.

Indigenous and Northern Affairs Canada (INAC)

Would only have a role in the event of an emergency on reserve and would help to supply emergency response. INAC has been working with the government of BC and Emergency Management BC should be the first call which will trigger EMBC call-down protocol which will include INAC.

FEDERAL

NATIONAL ENERGY BOARD (NEB)

The NEB's top priority in an emergency is to make sure that people are safe and secure and that their property and the environment are protected. Any time there is a serious incident; NEB inspectors may attend the site to oversee a company's immediate response. The NEB will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the NEB will verify that the regulated company conducts adequate and appropriate clean-up and remediation of any environmental effects caused by the incident.

As lead regulatory agency, the NEB:

- Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of:
 - Emergency management
 - Safety
 - Security
 - Environment
 - Integrity of operations and facilities
 - Energy supply
- Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code or as per the National Energy Board Act or Canada Oil & Gas Operations (whichever is applicable)
- Inspects the pipe line or facility
- Examines the integrity of the pipeline or facility
- Requires that appropriate repair methods are being used
- Requires that appropriate environmental remediation of contaminated areas is conducted
- Coordinates stakeholder and aboriginal community feedback regarding environmental clean-up and remediation
- Confirms that the company is following its Emergency Procedures Manual, commitments, plans, procedures and NEB regulations and identifies non-compliances
- Initiates enforcement actions as required
- Approves the restart of the pipe line

TRANSPORTATION SAFETY BOARD (TSB)

The mandate of the TSB is to advance transportation safety in the marine, pipe line, rail and air modes of transportation by:

- Conducting independent investigations, including public enquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors.
- Identifying safety deficiencies, as evidenced by transportation occurrences.
- Making recommendations designed to eliminate or reduce any such safety deficiencies.
- Reporting publicly on investigations and on the findings in relation thereto.

As part of its ongoing investigations, the TSB also reviews developments in transportation safety and identifies safety risks that it believes government and the transportation industry should address to reduce injury and loss.

To instill confidence in the public regarding the transportation accident investigation process, it is essential that an investigating agency be independent and free from any conflicts of interest when investigating accidents, identifying safety deficiencies, and making safety recommendations. As such, the TSB is an independent agency, separate from other government agencies and departments that reports to Parliament through the President of the Queen's Privy Council for Canada. Our independence enables us to be fully objective in making findings as to causes and contributing factors, and in making transportation safety recommendations.

In making its findings as to the causes and contributing factors of a transportation occurrence, it is not the function of the Board to assign fault or determine civil or criminal liability. However, the Board does not refrain from fully reporting on the causes and contributing factors merely because fault or liability might be inferred from the Board's findings. No finding of the Board should be construed as assigning fault or determining civil or criminal liability. Findings of the Board are not binding on the parties to any legal, disciplinary, or other proceedings.

GLOSSARY

Absolute Open Flow: The maximum rate that a well can produce at the lowest possible bottom hole pressure.

AER: AER is an acronym for the Alberta Energy Regulator. The AER is the lead regulatory agency for the upstream petroleum industry in Alberta.

Alert: An incident that can be handled on site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.

Auto-ignition Temperature: The lowest temperature at which a substance will spontaneously ignite without an external source of ignition e.g. a spark or flame.

BLEVE: Boiling Liquid Expanding Vapour Explosion – an explosion caused by the rupture of a vessel containing a pressurised liquid which is above its boiling point.

Boiling Point: This is the temperature that a liquid changes to gas. LNG products change to a gas at extremely low temperatures and will absorb heat from the surrounding environment during the phase change. Therefore, caution must be used when working with LNG because contact with flesh can reduce the temperature of the flesh to the LNG boiling point and cause severe frostbite.

Closure Order: A closure order, also known as a Fire Hazard (FH) Order, An order issued by the applicable government authorities during an emergency to restrict public access to a specified area.

Critical Incident Stress Debriefing (CISD): A process between trained counsellors and those who may be dealing with physical or psychological symptoms that are generally associated with trauma exposure.

EMBC: EMBC is an acronym for Emergency Management BC. EMBC protects and improves public safety in BC by providing advisories of active emergencies, disaster readiness and recovery, fire safety and death investigation.

Emergency Planning Zone (EPZ): As defined by CSA 246.2, a predetermined geographical area surrounding a well, pipeline, or facility containing hazardous product that requires specific emergency response planning.

Emergency Planning Area: For production operations with multiple wells, pipelines and/or facilities, there will be numerous Emergency Planning Zones (EPZs). Although not defined by regulation, Harvest has chosen to define the collection of these multiple EPZs using the term “**emergency planning area**”. However, only one site-specific EPZ is involved for a particular emergency. The site-specific EPZ depends on the source and location of the emergency.

Explosive Limits: a mixture of a combustible material (fuel) as a gas or vapour with air that will burn if the fuel/air mixture is within the lower or upper explosive limits.

Fire Hazard (FH) Order: An order issued by the applicable government authorities during an emergency to restrict public access to a specified area.

Flammability Limits: See Explosive Limits above

Flash Point: The lowest temperature at which vapours over a volatile combustible substance will ignite when exposed to an external source of ignition.

Gas Plant: Facility, usually within a fenced lease site, that processes natural gas products .

Hazard Response Zone: a geographic area within which an emergency has occurred or is about to occur and which has been identified, defined and designated to receive emergency response actions.

High Vapour Pressure (HVP) Products: HVP products have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG at 100°F) and include ethane, propane, butane and pentanes plus, either as a mixture or as a single component. A leak from a vessel or pipe

containing HVP products can result in a BLEVE.

High Vapour Pressure (HVP) Pipeline: As defined by AER Directive 71, a pipeline system conveying hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kilopascals absolute at 38°C, as determined using the Reid method (see ASTM D 323).

HVP Plume Dispersion Geometry: A release of NGL product on flat terrain will form a vapour plume as it disperses. The area within or near the plume can be extremely hazardous. There are two unique features about an NGL plume:

- The downwind edge of the plume spreads out significantly forming a broad frontal edge.
- Under certain conditions, the plume will travel upwind for a short distance.

Hydrogen Sulphide (H₂S) Release Rate: The rate that sour gas escapes into the atmosphere is calculated for sour gas wells. The H₂S release rate is one input factor for calculating the planning zone and response zones.

Hydrogen Sulphide (H₂S) Release Volume: The volume of sour gas that escapes into the atmosphere is calculated for pipelines and facilities that have a defined retention volume. It is usually defined in cubic metres (m³). The H₂S release volume is one input factor for calculating the planning zone and response zones.

Incident: an unexpected occurrence or event that requires actions by emergency response personnel to prevent or minimise the impacts on people, property and the environment.

Incident Action Plan (IAP): It is essential that every incident be managed according to an action plan, called the Incident Action Plan (IAP). The Incident Action Plan (IAP) always has the following Primary Objectives: responder safety, public safety and then control and containment. For simple responses, a written Incident Action Plan (IAP) may not be required. Written Incident Action Plans (IAPs) provide:

- A clear statement of objectives, strategies and tactics.
- A basis for measuring response effectiveness and cost effectiveness.
- A basis for providing accountability.
- Incident Action Plans (IAPs) should be prepared for specific time periods called Operational Periods. (Refer to Operational Periods in this Glossary.) Incident Action Plans (IAPs) must address the situation and be attainable, measurable and flexible. Harvest will determine and mobilize the resources (manpower and equipment) required to implement the Incident Action Plan (IAP).

Incident Action Planning: Planning for future requirements and potential changes to objectives to manage the incident. Planning should be done far enough in advance to ensure that additional resources needed for the next Operational Period are available.

Incident Commander: The person in command of Harvest's Incident Command Response Team.

Incident Command System (ICS): ICS is the combination of facilities, equipment, personnel, procedures and communications operating within a common internationally recognised organizational structure with responsibility for the management of assigned resources (manpower and equipment) to effectively accomplish stated objectives, strategies and tactics pertaining to an incident.

Liquefied Petroleum Gas (LPG): LPGs are a mixture of heavier hydrocarbon gases that may include propane, butanes and pentanes plus liquids.

Local State of Emergency: A local state of emergency is authorized for a limited duration and a limited geographical area by members of the municipal authority (city,

town, municipal district or county). A local state of emergency grants extraordinary powers to the authorities such as forcibly removing public from an area or preventing public from accessing an area.

Lower Explosive Limit (LEL): The lowest concentration (percentage) of a gas or vapour in air, capable of producing a flash fire in the presence of an ignition source.

Maximum Operating Pressure (MOP): The maximum licensed operating pressure for a vessel or pipeline or a section of it.

Minor Incident: Utilizing the British Columbia Oil and Gas Commission (OGC) – Incident Classification Matrix an incident that results in a Risk Score of 1 to 2. For a Minor Incident, the permit holder will submit a report within 24 hours, utilizing the Oil and Gas Commission's (OGC's) Online Minor Incident Reporting System (operated through KERMIT).

Natural Gas Liquid (NGL): NGLs are a mixture of hydrocarbon gases that are liquefied under pressure in field facilities or a gas plant. They may include methane, ethane, propane, butane and pentane plus liquids.

Notice to Airmen (NOTAM): This is a notice issued by NAV Canada. A NOTAM restricts access to airspace in a defined area. NOTAMs are generally issued through the nearest flight service station.

OGC: OGC is an acronym for the British Columbia Oil and Gas Commission. The OGC is the lead regulatory agency for the upstream petroleum industry in British Columbia.

Odour Complaint: Someone reports an offensive odour that may be sour gas or other dangerous gas in an area near company facilities.

Oil Spill Containment and Recovery Unit (OSCAR): An OSCAR trailer contains equipment for the containment and recovery of an oil spill.

Operational Period: Incident Action Plans should be prepared for specific time periods, called Operational Periods. Operational Periods can be of various lengths, although they should normally be no longer than 24 hours. It is not unusual to have much shorter Operational Periods covering, for example, two- or four-hour time periods. Decisions on

the length of the Operational Period will be affected by:

- Length of time available/needed to achieve tactical objectives.
- Availability of fresh resources (manpower and equipment).
- Future involvement of additional government agencies.
- Environmental considerations, e.g. daylight remaining, weather, etc.
- Safety considerations.

Plume: The term plume is often used to describe the area in which hazardous gas, such as sour gas, disperses into the atmosphere from a facility, pipeline or well. Eventually, gases will dilute to concentrations that are not considered hazardous. Plumes are generally elongated (cigar-like) shapes that are oriented downwind of the point of the gas release.

SABA: SABA is an acronym for supplied air breathing apparatus.

SCBA: SCBA is an acronym for self-contained breathing apparatus.

SDS: Safety Data Sheet

Serious Injuries and Accidents: Section 18, Subsection 1 of the Alberta Occupational Health and Safety Act states that if an injury or accident described in Subsection (2) occurs at a worksite, the prime contractor or, if there is no prime contractor, the contractor or employer responsible for that worksite shall notify a Director of Inspection of the time, place and nature of the injury or accident as soon as possible.

Section 18, Subsection 2 of the Alberta Occupational Health and Safety Act states that the injuries and accidents to be reported under Subsection (1) are:

- an injury or accident that results in death,
- an injury or accident that results in a worker's being admitted to a hospital for more than 2 days,
- an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury,
- the collapse or upset of a crane, derrick or hoist, or
- the collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

Sour Gas: Natural gas, including solution gas, containing hydrogen sulphide (H₂S).

Exposure to sour gas above certain concentrations can be lethal. (Refer to the Hydrogen Sulphide Tables in Section 8.0.)

Special Needs: Individuals who are classified as special needs may be given priority when evacuation or Shelter-In-Place operations are being coordinated. Examples of individuals who are classified as special needs include:

- Children aged 5 or younger.
- Adults aged 70 and older.
- People requiring evacuation assistance (AER Directive 71).
- People requesting early notification (AER Directive 71).
- Residences, businesses or public facilities with no telephones (AER Directive 71).
- People requiring transportation assistance (AER Directive 71).
- If language or comprehension is a barrier (AER Directive 71).
- People who have specific medical needs (AER Directive 71).
- People who decline to give information during the public consultation process and any residences or businesses where contact cannot be made (AER Directive 71).

Surface Development: As defined by AER Directive 71, dwellings that are occupied full time or part time, publicly used development, public facilities, including campgrounds and places of business, and any other surface development where the public may gather on a regular basis. Surface development includes residences immediately adjacent to the Emergency Planning Zone (EPZ) and those from which dwellers are required to egress through the Emergency Planning Zone (EPZ).

Surface Improvement: As defined by AER Directive 56, a railway, pipeline, canal or other right-of-way, road allowance, surveyed roadway, dwelling, industrial plant, aircraft runway or taxiway, buildings used for military purposes, permanent farm buildings, school, or church.

Transient: Someone who is temporarily in the Emergency Planning Zone (EPZ), e.g. camper, hunter, cross-country skier.

Uncontrolled Flow: As defined by AER Directive 71, a release of product that cannot be shut off at the licensee's discretion.

Urban Centre: As defined by AER Directive 71, city, town, village, summer village, or

hamlet with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any similar development the AER may designate as an urban centre.

Urban Density Development: As defined by AER Directive 71, any incorporated urban centre, unincorporated rural subdivision, or group of subdivisions with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any other similar development the AER may designate as an urban density development.

Upper Explosive Limit (UEL): The highest concentration (percentage) of a gas or vapour in air, capable of producing a flash fire in the presence of an ignition source.

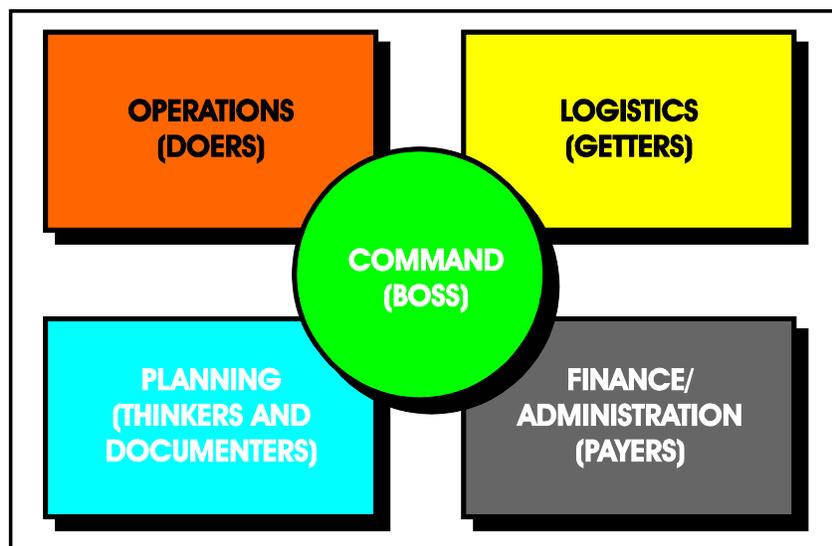
Vapour Cloud: Some natural gases are heavier than air. When these gases are released to the atmosphere they form a vapour-air plume which is colourless and has a faint gasoline odour. Depending on the product released and the atmospheric conditions, water in the mixing air may condense to form a cloud.

Incident Command System (ICS) Overview

Overview

The Incident Command System (ICS) is a comprehensive and practical emergency management system widely used by both government and industry. Common terminology has been developed to identify major management functions, personnel and responsibilities.

By adopting Incident Command System (ICS) principles and terminology, government and industry are better equipped to align in emergency response and training. The Incident Command System (ICS) is used to manage incidents of any type or size. This modular system has the flexibility to readily grow or shrink to meet the demands of the incident. The Incident Command System (ICS) five major management functions include: Command, Operations, Planning, Logistics, and Finance/Administration. Additionally specialized Command Staff functions assist the Incident Commander and include: Information, Safety, and Liaison.



Effective management of an incident incorporates the full range of activities undertaken by the Incident Commander and the Incident Command Response Team. These include the tactical (operational) on-site operations, off-site public and/or environmental protection operations and any other required Incident Command System (ICS) functions.

The Incident Command System (ICS) is capable of handling both small and large incidents, expanding or contracting based on the complexity of the incident and helps ensure the required resources (manpower and equipment) are available. A good “rule-of-thumb” is to overestimate the need for a larger response organization than to underestimate it as it is always possible to downsize resources. In plain terms: **“GET BIG FAST!”**

The Incident Commander is responsible for **ALL** Incident Command System (ICS) functions until responsibility is delegated to another responder. It is not mandatory to assign all Incident Command System (ICS) functions. Only those Incident Command System (ICS) functions required to effectively manage the incident should be mobilized.

One person may fill more than one Incident Command System (ICS) function (multi-tasking). However, within this emergency response plan philosophy, the Incident Commander and On-

site Group Supervisor functions must be filled by different responders. Additionally, within this emergency response plan philosophy, as requested by the Incident Commander; some of the Incident Command System (ICS) functions may be filled by Emergency Operations Centre (EOC) personnel.

Incident Command System (ICS) Management Functions

- Incident Commander - person in command of the incident.
- General Staff - work with the Incident Commander to manage the incident.
- Command Staff – provide specialized advice and support to the Incident Commander.

Incident Command

Incident Commander - is responsible for **ALL** Incident Command System (ICS) functions. This person may decide to perform all functions, other than the On-site Group Supervisor, or delegate authority to perform functions to other responders. Delegation does not relieve the Incident Commander from overall responsibility. Command = “Boss”.

General Staff

Operations Section - is responsible for directing the tactical operations, both on-site and off-site, to meet the incident objectives. Tactical on-site operations are physical activities conducted to directly mitigate the incident (e.g. putting out the fire, stopping the source of the spill, etc.). Tactical off-site operations are the coordination of public protection measures such as: public Transportation Assistance, Rovers, Roadblocks, Environmental Monitoring, Reception Centre and Telephoners to contact the public. Operations = “Doers”.

NOTES: The Operations Section develops from the bottom up (the required single resources to meet the complexity of the incident must be identified). An example of this is: if a response has four Roadblock Teams then a Roadblock Manager may not be required. However, if a response has 12 Roadblock Teams then, to maintain an effective span of control, two Roadblock Managers would be required).

Within the Operations Section: “Groups” are functionally based (e.g. roving, roadblocking, telephoning the public, etc.) and “Divisions” are geographically based (e.g. assigned to the east side of the river, etc.).

Planning Section - develops the Incident Action Plan (IAP) to meet incident objectives and maintains the status of incident resources (manpower and equipment). Planning is also responsible for the collection, evaluation, display, and dissimulation of incident information and incident documentation. Planning = “Thinkers and Documenters”.

Every incident will have an oral or written Incident Action Plan (IAP) that includes response objectives and strategies. The purpose of an Incident Action Plan (IAP) is to provide all Incident Command System (ICS) team personnel with direction for future actions. The Incident Action Plan (IAP), which includes the specific and measurable tactical operations to be achieved, is developed for a given time-frame called an “Operational Period”. Refer to the Glossary for more details on the Incident Action Plan (IAP) and the Operational Period.

Logistics Section - provides the support, orders the resources (manpower and equipment) and provides other services to meet the incident needs. Logistics = “Getters”.

Finance/Administration Section - provides accounting, procurement, time recording, and incident cost analysis. Finance/Administration = “Payers”.

Command Staff

Information Officer - is the point of contact for the media or other organizations seeking general information about the incident. This responder assumes the responsibility of managing Incident Command Response Team media issues and handles general public concerns that may include community relations.

Safety Officer - responsible for assessing and anticipating hazardous and unsafe conditions and develops measures for assuring responder safety. The focus is responder safety not public safety. The Safety Officer has the responsibility to stop potentially unsafe actions.

Liaison Officer - The Liaison Officer provides government agency notification and is the point of contact for ongoing communications with any involved government agencies.

Tactical Resource (Operational) Management

Tactical resources (operational) assigned to an incident are managed by one of the following three methods:

- **Single Resources** - includes both personnel and their required equipment (e.g. an on-site responder, a Rover, etc.).
- **Task Forces** - is a combination of different types and kinds of single resources assembled for a particular tactical need, with common communications and a leader (e.g. Well Control Task Force). Task forces can be pre-determined or assembled at an incident from available single resources. Span of control guidelines apply.
- **Strike Teams** - is a combination of the same types and kinds of single resources assembled for a particular tactical need, with common communications and a leader (e.g. Fire Fighting Task Force). Strike teams can be pre-determined or assembled at an incident from available single resources. Span of control guidelines apply.

Organizational Terminology

Primary Position	Title	Support Position
Incident Command	Incident Commander	Deputy
Command Staff	Officer	Assistant
Section	Chief	Deputy
Branch	Director	Deputy
Division/Group	Supervisor	N/A
Strike Team/Task Force	Leader	N/A
Unit	Leader	Manager
Single Resource	Use Unit Designation	N/A

As required any Incident Command System (ICS) responder can have a support position.

Unified Command

Establishing joint or Unified Command allows multiple companies or government agencies with responsibility for an incident to establish a common set of incident: objectives, strategies and tactics. This is accomplished without losing or abdicating company or government agency authority, responsibility or accountability.

Unified Command may be established when both a company(ies) and involved government agencies have jurisdictional or functional responsibility for the incident. This allows companies or government agencies with incident responsibility to be part of the Incident Command function.

When Unified Command is established the following applies:

- One set of objectives is developed for the incident.
- One Incident Command Post (ICP) is established.
- A collective approach is made to developing strategies.
- Information flow and coordination is improved between the company(ies) and government agencies involved in the incident.
- The company(ies) and all government agencies with responsibility for the incident have an understanding of one another's priorities and restrictions.
- No government agency's authority or legal requirements will be compromised or neglected.
- The company(ies) and each government agency are fully aware of the plans, actions and constraints of all others.
- The combined efforts of the company(ies) and all government agencies are optimized as they perform their respective assignments under a single "Incident Action Plan (IAP)".
- One Operations Section Chief has responsibility to implement the Incident Action Plan (IAP). Unity of Command (one responder reports to **only** one supervisor) must be observed.
- Duplicative efforts are reduced or eliminated, thus reducing cost and chances for frustration and conflict.
- One media release for all incident updates.

The Incident Command System (ICS) is used by many regulators, local authorities and first responders. In some jurisdictions, the local authority (or other government agencies) may activate its emergency response plan for large incidents involving multiple organizations and various response structures. When the incident is severe, activating the Municipal Emergency Operations Centre (MEOC) is a possibility. Joining of the company(ies) Incident Command Post (ICP) and the Municipal Emergency Operations Centre (MEOC) and centralizing information and resources under Unified Command is a possibility.

The development of one Incident Action Plan (IAP) during Unified Command is similar to that for single command. One important distinction is the need for each Incident Commander involved to hold a Command Meeting. The Command Meeting provides the company(ies) and each government agency an opportunity to discuss and concur on important issues prior to Incident Action Planning. The end result of a Command Meeting is that one Incident Action Plan (IAP) addresses company(ies)/multi-government agency priorities and provides tactical operations and resource assignments in a unified effort. The agenda of a Command Meeting is as follows:

- State company(ies)/government agency priorities and objectives.
- Present company(ies)/government agency limitations, concerns and restrictions.
- Develop a collective set of incident objectives.
- Establish and agree on acceptable priorities.

- Adopt an overall strategy or strategies to accomplish objectives.
- Agree on the basic organizational structure.
- Designate the most qualified and acceptable Operations Section Chief. The Operations Section Chief will be the most qualified individual and has full authority to implement the operations portion of the Incident Action Plan (IAP).
- Agree upon information/safety/liason personnel and planning, logistical and finance agreements and procedures.
- Agree on the resource ordering process.
- Agree on cost-sharing procedures.
- Agree on informational matters.
- Designate one company(ies)/government agency official to act as the Unified Command spokesperson.

Transfer of Command

Transfer of Command is the passing of Incident Command from one responder to another. Transfer of Command during an incident may take place for the following reasons:

- A more qualified person assumes command.
- The incident situation changes over time to where a jurisdictional or department change in command is required.
- It makes good management sense to perform a Transfer of Command.
- Normal turnover of personnel on long or extended incidents.

There are five important steps in effectively assuming command of an incident.

- A. The incoming Incident Commander should, if at all possible, personally perform an assessment of the incident situation with the existing Incident Commander.
- B. The incoming Incident Commander must be adequately briefed. This briefing must be by the current Incident Commander and take place face-to-face if possible. The briefing must cover the following:

Incident history (what has happened)	Objectives, strategies, tactics, and priorities	Current and future Incident Action Plan (IAP)
Resources assigned	Incident organization	Resources ordered/needed
Facilities established	Communication strategy	Any constraints or limitations
Incident potential	Delegation of authority	-

The Incident Briefing (ICS 201 Form) is designed to assist in incident briefings and Transfer of Command. It provides a written record about the incident. A completed ICS Form 201 contains:

A Map Sketch	Current Organization
Summary of Current Actions	Resource Summary

One of the features of the Incident Briefing (ICS 201 Form) is that it can be easily disassembled. This allows the required responders to receive the required response information.

The Incident Briefing (ICS 201 Form) is particularly valuable during the first Operational Period of an incident and in many cases it will be the Incident Action Plan (IAP) for the first Operational Period.

- C. After the incident briefing, the incoming Incident Commander should determine an appropriate time for Transfer of Command.
- D. Notice of Transfer of Command should be made to all incident personnel.
- E. The incoming Incident Commander may give the previous Incident Commander another assignment on the incident. There are several advantages of this:
 - Retains first-hand knowledge about the incident.
 - Allows the initial Incident Commander to observe the incident progress and to gain experience.

It should be recognized that Transfer of Command on an expanding incident is to be expected. It does not reflect on the competency of the current Incident Commander.

Implementing the Incident Command System (ICS)

Initial Incident Command System (ICS) Response Organization

GET BIG FAST! Over-mobilizing is preferable to under-mobilizing resources (manpower and equipment). It is always possible to downsize the resources (manpower and equipment).

The training and experience of the Incident Commander is a key factor in a successful response. The Incident Commander needs to be aware when a situation is becoming more complex and may require more resources (manpower and equipment). Potential to impact the public or the environment, the involvement of the media or the involvement of government agency representatives is always a good indication of increasing incident complexity.

The Incident Commander, as with all responders, should keep detailed records and documentation. Proactive mobilization of the Planning Section for documentation support can be very helpful. Personal “Scribes” are also beneficial in assisting responders with documentation. As required, “Scribes” can be assigned to any responder. Appointing a Logistics Section Chief ensures that the mobilizing of additional resources (manpower and equipment) and provision of basic needs for the responders is efficiently managed by someone other than the Incident Commander.

By mobilizing additional responders and assigning defined roles within the Incident Command System (ICS) organization, the Incident Commander can focus on the overall incident and leave the detailed response actions to other responders. This frees the Incident Commander to keep regular communication with the required responders, the company Emergency Operations Centre (EOC) and to schedule and conduct frequent Incident Command Response Team meetings (also called planning meetings, Situation Reps or Sit Reps).

Designate an Incident Command Post (ICP)

Make sure all responders know the location of the Incident Command Post (ICP). The Incident Commander is not required to have visual contact with the incident site.

Assign Incident Command System (ICS) Roles

If the Incident Commander chooses to notify impacted government agencies, manage media interaction and communicate with other key responders directly, span of control can become ineffective. Assigning responders to fill the Command Staff positions (Information Officer, Safety Officer, Liaison Officer) or General Staff positions (Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance/Administration Section Chief) can save the Incident Commander a tremendous amount of time and effort, allowing the Incident Commander to have an incident “big picture” view.

Monitor and Maintain an Effective Span of Control (1:7)

A supervisor should manage no more than seven responders. As required, additional levels of supervision will be put in place to maintain effective span of control.

Incident Command Response Team Meetings

During an incident, holding often and pre-scheduled Incident Command Response Team meetings (also called planning meetings, Situation Reps or Sit Reps) is essential. Command Staff (Information Officer, Safety Officer, Liaison Officer) and/or General Staff (Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance/Administration Section Chief) should be allowed to express their actions, concerns and requirements during these meetings. The set time for the next Incident Command Response Team meeting should be announced at the end of the current meeting.

Formal Communication

Assigning tasks, requesting additional resources and reporting the progress of assigned tasks **must** follow Unity of Command (chain of command).

Informal Communication

The Incident Command System (ICS) response organization is **open** for responders to freely exchange information (informal communication). An example of this is; as required, to exchange information, the Cost Unit Leader from the Finance/Administration Section may communicate directly with the Planning Section Chief.

Avoid Using Acronyms

During a response avoid using acronyms as all responders may not be at the same experience, technical level or have a clear understanding of the acronym.

Obtain Advice and Support from the Emergency Operations Centre (EOC)

The company Emergency Operations Centre (EOC) can be activated to provide advice and support to the Incident Commander and the Incident Command Response Team, manage corporate reputation issues and provide long-term planning support. As requested by the Incident Commander; some of the Incident Command System (ICS) functions or tasks may be assigned to Emergency Operations Centre (EOC) Team personnel.

Demobilize Incident Command System (ICS) Functions when no Longer Needed

Keeping the incident organization size proportional to the needs of the incident is recommended. Anytime an Incident Command System (ICS) position is demobilized, the responsibilities for that function go to their immediate supervisor.

Management by Objectives

In the Incident Command System (ICS), there are **five** steps to effectively Manage by Objectives (see diagram below). The Incident Commander and Planning Section Chief (if appointed) are responsible for the development of the Incident Action Plan (IAP). All responders must adhere to the Incident Action Plan (IAP).

Incident Objectives should be incorporated into the Incident Action Plan (IAP) and communicated to all responders. Incident Objectives help the response team to focus on specific goals during the Operational Period. Incident Objectives also help benchmark the effectiveness of the response. Incident Objectives state “**what**” is to be accomplished.

Strategies are the methods selected to accomplish the Incident Objectives. Strategies are the “**how**” the Incident Objectives will be accomplished.

Tactics specify how the Strategies will be executed; including implementing the tactical (operational) resources (manpower and equipment). Tactics are the “**who**” will execute the Strategies.

Follow-up is the monitoring of the planned incident actions. Adjustments to the Objectives, Strategies and/or Tactics may be required.

The Incident Command System (ICS) employs “Objectives”, “Strategies”, and “Tactics”.

The **five** Management by Objectives steps below need to take place during every response:

