

# British Columbia Core Ekwan/Sierra Ojay Emergency Response Plan

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# **Revision History**

This Emergency Response Plan is effective February 19. 2021. The company's Emergency Response Program Coordinator is responsible for updating this plan annually or as required. Any errors or omissions in the plan should be brought to their attention.

**Date of Update Inserted Into ERP:** 

Signature:

Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
			Foreword	Cover Revision History Distribution List
			Section 1 – Initial Response	Internal Notification Flowchart / Externa Notification Flowcha
February 19 <sup>th</sup> , 2021	February 19 <sup>th</sup> , 2021	Annual Update	Section 2 – Roles & Responsibilities	Company Phone Lis
			Section 4 – Emergency Response Procedures	Alberta Spill Reportin Chart and BC Spill Reporting Chart
			Section 5- External Agencies	All
			Area Specific Information	All
			Foreword	All
			Section 1 – Initial Response	Internal Notification Flowchart / Externa Notification Flowchar ICS 201 Form
		Annual update, incorporated Ojay Site	Section 2 – Roles & Responsibilities	Company Phone Lis
ebruary 19 <sup>th</sup> , 2020	February 19 <sup>th</sup> , 2020	Section, added Alberta reporting information due to Ojay operations in Alberta, changed	Section 4 – Emergency Response Procedures	Alberta Spill Reportir Chart and BC Spill Reporting Chart
		company name from Ikkuma to Pieridae throughout	Section 5- External Agencies	All
			Section 6 - Forms	ICS 201 Form
			Appendices	Appendix A – ERP Revision Form (pg. 7
			Area Specific Information	All



ERP Revision Due Date: February 19. 2022								
Date of Revision	Date of Issue	Section	Affected Pages					
June 5 <sup>th</sup> , 2018		Noted ERP updates (RH) Added additional copies (DL)	Revision History / Distribution List	Revision History / Distribution List				
	June 5 <sup>th</sup> , 2018	Update Gas Plant Information Move NAV Canada to Lead Agencies Updating Access Map directions Updating EPZ Calc tables (removing Husky from names) Area Map (removed compressor station)	Area Specific Information	All				
February 19 <sup>th</sup> , 2018 February 19 <sup>th</sup> , 2018		New Field ERP Manual	All	All				

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# **Distribution List**

Manual #	Туре		Туре		Confidential	Area Operations	Title / Agency	Name
51860	Binder	ler USB Confidential		Calgary	SVP Drilling, Completions & HSE	Yvonne McLeod		
51861	Binder	USB	Non-Confidential	Calgary	Senior Engineering Technician	Petra Struck		
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51863	Binder	USB	Confidential	Calgary	HSE & R Manager	Leighanne Mohr		
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# 5 Hard Corporate Manuals

# 5 Digital Corporate Manuals

	Field								
51865	Binder	USB	Confidential*	Northern Field Operations	Northern Foothills Foreman	Josh Storle			
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51872	Binder	USB	Non-Confidential	Ekwan/Sierra	Contract Operator	Greg Webb			
51873	Binder	USB	Non-Confidential	Ojay	Contract Operator (CNRL)	Matt Lorincz			
51874	Binder	USB	Non-Confidential	Ojay	Contract Operator (CNRL)	Jim Jung			

### 10 Hard Field Manuals

### 10 Digital Field Manuals

	External										
51875	Binder		Confidential*	H₂Safety Library							
51876	Binder	Web	Confidential*	OGC - Fort St. John	ER & Safety	ER & Safety					
51877	Binder	USB	Confidential*	Calgary	Canada Energy Regulator (CER)	Secretary of the Board					
51878	Binder		Non-Confidential	EMBC	Regional Manager	Heather MacRae					
		USB	Non-Confidential	Northern Rockies	Emergency Operations Coordinator	Erin La Vale					
		USB	Non-Confidential	Peace River Regional District	General Manager of Community Services	Trish Morgan					
		USB	Non-Confidential	M.D. of Greenview	Regional Fire Chief	Wayne Brown					
		USB	Non-Confidential	Alberta Health Services - Z5 North	Director of Enviromental Services	Shane Hussey					
		USB	Non-Confidential	RCMP - Northern Rockies / Fort Nelson	NCO in Charge	NCO in Charge					
		USB	Non-Confidential	RCMP - Grande Prairie	NCO in Charge	NCO in Charge					

<sup>4</sup> Hard External Manuals

<sup>7</sup> Digital External Manuals



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# **Table of Contents**

# **Foreword** Cover Page Revision History .......1 Table of Contents......5 **Section 1: Initial Response** A1 Initial Emergency Report Form Five Step Initial Response Guide Step 1 - Level of Emergency Step 2 - Internal Notification Step 3 - External Notification Step 4 - Incident Briefing Step 5 - Public Safety Section 2: Roles and Responsibilities **Field Response Team Key Response Personnel General Safety Equipment and Resource Lists** Operator, Truck & Other Safety Equipment **Response Team Structure** Quick Reference Guide – Emergency Support Team (EST) Field Response Team - Command Staff Command Staff Roles Chart

# Finance / Admin. Section Roles Chart Field Response Team – Public Safety Staff

Public Safety Staff Roles Chart

Field Response Team – General Staff
Operations Section Roles Chart
Planning Section Roles Chart
Logistics Section Roles Chart

Air Monitors Module

Reception Centre Rep Module

Roadblocks Module

Rovers Module

Telephoners Module

# **Ongoing Response**

Planning "P"

Five Step Ongoing Response Guide

**Objectives Meeting** 



# Section 2: Roles and Responsibilities, continued

Tactics Meeting
Planning Meeting

**Operations Briefing** 

# **Response Team Phone List**

<b>^</b> 4:	_	_		•	
Section	٠.	Commi	unications	X.	Media
OCCHOIL	υ.		uiiicalioiis	•	IVICUIU

Media Relations and Generic Media Statement	1
Generic Media Statement	1
Media Management	1
On-Site Media Spokesperson	2
Managing the Media On-Site	2
Internal Communication	3
Communicating With the Public	3
Information Disseminated to the Public	3
Preparing a Preliminary Media Statement	4
Section 4: Emergency Response Procedures	
Public Protection Measures	1
Shelter-in-Place	1
Evacuation	1
Ignition	2
Road and Airspace Closures	2
Establishing and Isolating a Perimeter	3
Public Protection Measures Flowchart	4
H₂S / HVP Ignition Procedure	5
Spill Response	1
BC Petroleum Release Reporting Requirements Chart	1
AB Petroleum Release Reporting Requirements Chart	3
Spill Response Guidelines	5
Spill Control Points	7
Action	7
Recovery Techniques	8
Containment and Storage of Product	8
Disposal and Remedial Operations	8
Western Canadian Spill Services (WCSS)	8
Post-Incident	1
Call Down Notification	
Public Care and Assistance	1
Clean-up and Repair	2
Third Party Investigations	2
Review and Debriefing	3
Critical Incident Stress Debriefing (CISD)	3
Post-Incident / Accident Investigation	4



# Section 4: Emergency Response Procedures, continued Medical Emergencies ......1 Responder Safety ......1 Site Safety......1 Missing Persons ......6 Fire / Explosion .......1 Response Actions Based on Type of Fire ......4 Transportation Incidents......1 Emergency Response Assistance Canada (ERAC) plan ......4 CANUTEC – Canadian Transport Emergency Centre ......4 Dangerous Goods References .......5 TDG Reportable Quantities......5 Road Trailer Identification Chart .......9 Table of Markings, Labels and Placards......11 TDG 30 Day Follow-up Report Form .......13 Weather and Natural Disasters.....1 ......4 Thunderstorm and Lightning Safety......6 Winter Storms: Blizzards, Freezing Rain, Heavy Snow, Blowing Snow......7 After a Disaster 9 Security Incidents......1 Responding to Threats......1 Vandalism ......8 Terrorism......8



# Section 4: Emergency Response Procedures, continued

nal Encounters	1
irst Responders to Animal Attacks	1
ears	
ougars	
arge Hooved Animals (Ungulates)	
attle Snakes	
/olves	8
ees and Wasps	9
piPens	

# **Section 5: External Agencies**

**Provincial Notification Matrix** 

Provincial Lead Agency Roles

**Government Consultation Summary** 

Specific Government Agency Roles

**Health Services** 

Local Authority

**Provincial Supporting Agency Roles** 

Federal Agency Roles

# **Section 6: Forms**

Documentation During and After an Incident

Form Descriptions

# **Incident Command System (ICS) Forms**

ICS 201 Incident Briefing

ICS 202 Incident Objectives

ICS 203 Organization Assignment List

ICS 204 Assignment List

ICS 207 Incident Organization Chart

ICS 208 Safety Message / Plan

ICS 209 Incident Status Summary

ICS 211 Check-In / Out List

ICS 214 Activity Log

ICS 215 Operational Planning Worksheet

ICS 215A IAP Safety Analysis

ICS 221 Demobilization Checkout

ICS 230 Meeting Schedule

ICS 231 Meeting Summary

ICS 233 Incident Open Action Tracker



# Section 6: Forms, continued

# **Emergency Forms**

- A1 Initial Emergency Report Form
- A2 Odour Complaint Script
- A3 Regulatory First Call Communication
- A4 Incident Action Plan (IAP) Checklist
- A5 Air Monitoring Log
- A6 Threatening Call / Bomb Threat
- A7 STARS Landing Zone Card

### **Resident Forms**

- **B1** Reception Centre Registration Log
- **B2** Resident Compensation Log
- **B3** Resident Contact Log
- **B4** Roadblock Log
- **B5** Evacuation Notice
- B6 Early Notification / Voluntary Evacuation Phone Message
- B7 Shelter-In-Place Phone Message
- **B8 Evacuation Phone Message**

### **Media Forms**

- C1 Preliminary Media Statement
- C2 Media Contact Log
- C3 Government Agency Contact Log
- C4 Media Centre Site

# **Appendices**

Appendix A: ERP Scope, Training and Plan Maintenance	1
Scope	1
Plan Objectives	
Purpose	
HSE Policy	
Training Requirements	
Plan Maintenance	6
Appendix B: Incident Command Post (ICP)	
Communication Methods Between Command Posts - Alberta	
Communication Methods Between Command Posts – British Columbia	10
ICP Activation and Setup	11
Appendix C: Toxic Gases	
Hydrogen Sulphide (H <sub>2</sub> S)	13
Sulphur Dioxide (SO <sub>2</sub> )	
Appendix D: Key Elements of the Incident Command System (ICS)	
Management by Objectives	
Unity and Chain of Command	
Organizational Flexibility	
Span of Control	



# Appendices, continued 25 Common Terminology 25 Incident Action Plan (IAP) 25 Integrated Communications 25 Establishment and Transfer of Command 26 Resources Management 26 Summary of Responsibilities 26 Appendix E: Land Descriptions 27 Dominion Land Survey (DLS) System 27 National Topographic System (NTS) 28 Appendix F: ERP Reference Material 29 Acronyms 29 Glossary of Terms 30



# **Section 1: Initial Response**

A1 Initial Emergency Report Form

Five Step Initial Response Guide

Step 1 – Level of Emergency

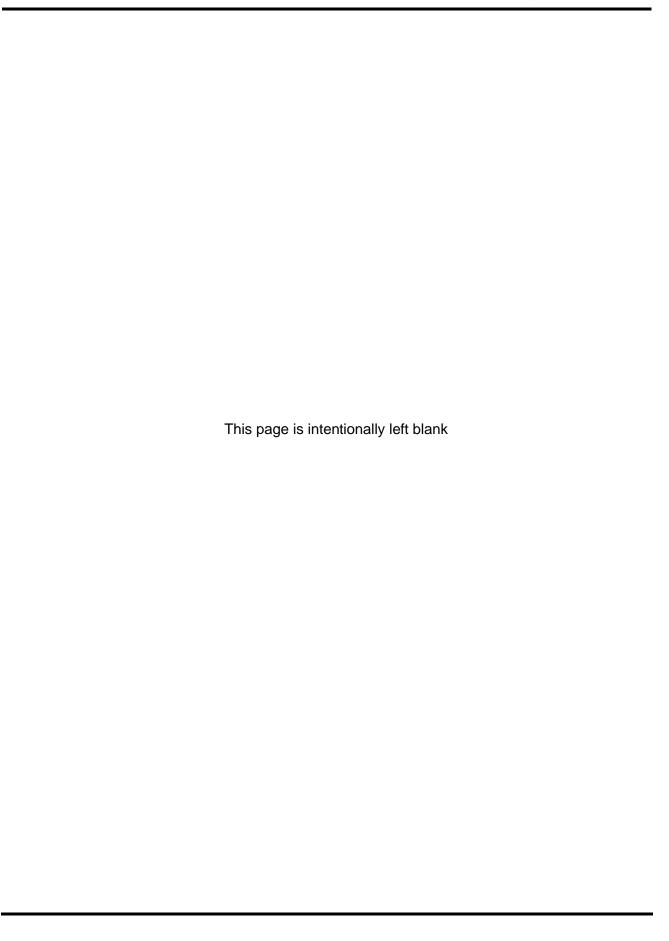
Step 2 – Internal Notification

Step 3 – External Notification

Step 4 - Incident Briefing

Step 5 – Public Safety





# **A1 Initial Emergency Report Form**



# **First On-Scene Actions**

	☐ Get to a safe	,								
Evacuate	·									
		ind if a release is upwind	d from you.							
Alarm		orn or whistle, or call by	radio							
		emergencies, call 911.	144101							
Assess	☐ Take head co	ount, locate any casualtie	es. Consider all of the ha	azards.						
	☐ Fill out inform	ation below to complete	assessment.							
Protect	☐ Put on breath	ing apparatus before at	tempting rescue.							
Rescue	☐ Remove viction	m to a safe area.								
First Aid	☐ Follow the sta	andard first aid protocols	at worksite. (CPR, etc.)							
Medical Ai	d ☐ Arrange trans	sport of casualties to me	dical aid.							
Wedical Al		mation to Emergency Me	edical Services (EMS).							
In all dans D	atalla –									
Report taker	etails To be completed by the	e person involved or notified	Date / Time							
Neport taker	1 by		Date / Time							
Name of per	son calling		Caller Telephone							
Incident Loc	ation	(LSD / NTS	)							
Event Summ	nary		,							
Agencies Notified	☐ Yes Who? ☐ No									
Event	☐ Incident contained or o	controlled	☐ Intermittent control pos	sible						
Status	☐ Imminent control poss		☐ Incident is uncontrolled	<u> </u>						
Site Type	☐ Well ☐ Pipeline	☐ Tank Farm/Storage	☐ Battery/Plant/Facility	Other						
				□ Security (theft, threat,						
	☐ Sour Gas Release	☐ Sweet Gas Release	☐ Pipeline Break	terrorism)						
Incident Type	☐ Sour Gas Release ☐ Loss of Containment	☐ Sweet Gas Release ☐ Fire/Explosion	☐ Pipeline Break ☐ Worker Injury/Fatality	• ,						

# **A1 Initial Emergency Report Form**



Impacts										
Public Health ar	nd Sa	afetv			☐ Could	l be jeopar	dized	☐ Is jeopard	dized	
Public Protection			es Tak	en	□ Notific		Evacuation			□ Roadblocks
Worker Injuries					☐ First A	Aid 🗆	Hospitaliz	red □ Fatality	□0	ther
Distance to near	est s	urface	develo	pment		km	Distanc	e to nearest urbar	centre	km
Details					I		L			
Release Impact		0	n-Lease	e 🗆 C	off-Lease	Product_			Amour	nt
Gas Readings		H <sub>2</sub> S_		SO <sub>2</sub>		LEL	O <sub>1</sub>	ther	<u> </u>	
Distance to near	est w	aterc	ourse			km	Weathe	er Conditions		0° 360° N
Details									31 N	
Media Involvement? Details		⁄es	□No	Regu	llator vement?	□Yes	□No	Public Affairs/Commu Relations Issue	270° W SS 222	WSW ESE SE
Notes / Instruc	tior	s Pr	ovided	l:						

Distribute this completed report to all Key Response Personnel

Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.

# First **On-Scene Actions**

**Evacuate** Alarm **Assess Protect** Rescue First Aid **Medical Aid** 

Refer to A1 Initial **Emergency Report** 

# Step 1 - Level of Emergency

Determine Level of Emergency:

- □ Alert / Minor
- □ Level 1 Emergency
- □ Level 2 Emergency
- □ Level 3 Emergency

Use the following resources:

- Section 1: Initial Response (Level of Emergency)
- The Emergency Assessment SmartPhone App. (Search H<sub>2</sub>Safety or Emergency Assessment in the App Store).



Note: The OGC and the AER state that the licensee must use either the Incident Classification Matrix (BC) or the Assessment Matrix for Classifying Incidents (AB) to determine the Level of Emergency. If the incident overlaps more than one level, always choose the highest level.

# **Step 2 - Internal Notification**

- □ Follow the Internal Emergency Notification Flowchart to determine who needs to be notified.
- □ Relay the information in the completed **A1** Initial Emergency Report Form.
- □ Mobilize internal resources to the site, to the Incident Command Post (ICP), to the Corporate Emergency Operations Centre (CEOC), or place them on standby as required.

Use the following resources:

- Section 1: Initial Response (Internal Emergency Notification Flowchart)
- Section 2: Roles & Responsibilities (Response Team Phone List)
- Section 6: Forms (A1)

# Refer to Ongoing Response in Section 2: Roles & Responsibilities

# Step 3 - External Notification

- □ Follow the External Emergency Notification Flowchart to determine which external agencies need to be notified.

- □ Health Authority / Health Services
- □ Regulatory agency to confirm the Level of Emergency □ Air Monitoring (at all levels of emergency)
- □ Local Authority (Cities, Towns, Villages, Counties, M.D.s, R.D.s, R.M.s, Special Areas, Reserves, etc.)
- Use the following resources:
- Section 1: Initial Response (External Emergency Notification Flowchart)
- Section 5: External Agencies (Provincial Notification Matrix)
- Area Specific Information (White tabs)

# Step 4 - Incident Briefing

Complete an ICS 201 Incident Briefing Form:

- □ Define incident details and an operational period (page 1).
- Establish the On-Site Command Post (OSCP) and ICP.
- □ Document current incident objectives, strategies and tactics (page 2).
- □ Prioritize objectives (page 2).
- □ Define initial Incident Command Structure (page 3).
- □ Identify required resources and when they'll be available (page 4).

Use the following resources:

- Section 1: Initial Response (ICS 201)
- Section 6: Forms (ICS 201)

# Step 5 - Initiate Public Safety

### **Public Protection Measures**

- □ Determine the hazard area; start with Emergency Planning Zone (EPZ) as
- □ Identify the affected surface developments and area users. (Houses, businesses, guides/outfitters, trappers, schools, other oil and gas
- □ Determine the appropriate public protection measure for the affected surface developments and area users. (Evacuation, shelter-in-place and/or
- □ Coordinate evacuation outside of the EPZ with the local authority, if
- □ Utilize broadcast media to notify public outside of the EPZ in immediate evacuation situations.

Use the following resources:

- Section 1: Initial Response (Public Protection Measures Flowchart)
- Section 4: Emergency Response Procedures (Public Protection Measures)
- Area Specific Information (Map / EPZ calculation tables)

# Rovers

- □ Dispatch Rovers to patrol the EPZ.
- □ Follow safety procedures and have appropriate PPE.
- Search the EPZ for transients.
- □ Assist residences that require evacuation assistance.
- □ Investigate surface developments that are identified as vacant or those who were unable to contact.
- □ Post notices on all outside doors of empty surface developments, vehicles,
- □ Record all contacts, communications and monitoring readings using the following forms: ICS 214, A5, B3 & B5.
- □ Monitor and record air quality readings using the following forms: ICS 214 & A5. (Smoke, plumes, wind, etc.)

**Air Monitors** 

□ Dispatch Air Monitoring personnel to the nearest residence / public facility

□ Monitor and record air quality readings using the following forms: ICS 214

□ Provide status updates to the Public Safety Group Supervisor at

• Section 2: Roles & Responsibilities (Air Monitors)

□ Provide status updates to the Public Safety Group Supervisor at established intervals.

Use the following resources:

- · Section 2: Roles & Responsibilities (Rovers)
- Section 6: Forms
- Area Specific Information (Map)

& A5. (Smoke, plumes, wind, etc.)

# **Telephoners**

- □ Establish a Telephoner Team to notify residents to evacuate or shelter-in-
- □ Notify special needs residents at a Level 1 Emergency and provide the option to evacuate voluntarily.
- □ Follow-up phone calls to address resident inquiries.
- □ Record all phone calls and communications using the following forms: ICS 214, B3, B6, B7, & B8.
- □ Regularly provide status updates to the Public Safety Group Supervisor.

Use the following resources:

- Section 2: Roles & Responsibilities (Telephoners)
- · Section 6: Forms

# Roadblocks

- □ Follow safety procedures to safely establish roadblocks wherever a road intersects with the EPZ and advise vehicles to reroute.
- □ Record all vehicle encounters and air monitoring readings. Complete the following forms: ICS 214, A5, B3 & B4.
- □ Gain permission from the Public Safety Group Supervisor for response vehicles to enter the hazard area.
- □ Provide status updates to the Public Safety Group Supervisor at established intervals.

Use the following resources:

- Section 2: Roles & Responsibilities (Roadblocks)
- Section 6: Forms
- Area Specific Information (Map)

□ Follow safety procedures and have appropriate PPE.

downwind of the incident.

established intervals.

Section 6: Forms

Use the following resources:

# **Reception Centre Rep**

- ☐ If residents are evacuated, dispatch a Reception Centre Representative to the reception centre location.
- □ Meet and register evacuated residents.
- □ Record contact information for those who choose to stay elsewhere. Complete the following forms: ICS 214, B1, B2 & C2.
- □ Regularly provide status updates to the Public Safety Group Supervisor (those who have arrived and those who have not yet arrived).

#### Use the following resources:

- Section 2: Roles & Responsibilities (Reception Centre Rep)
- · Section 6: Forms

#### Note: Initial Response takes place over a single operational Step 3 period (optimally 8 to 12 **External Notification** . 95% of all hours). incidents will be Step resolved within the first Step 2 operational period. Internal Notification Step 1 Level of Emergency First On-Scene

Reactive Phase

Step 5

**Public Safety** 

Step 4

Incident Briefing

Actions

Response

Initial

# Five Step Initial Response Guide







# **Incident Classification Matrix**

**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 <u>Online Minor Incident Reporting System</u>.

# **Table 1. Consequence Ranking**

Rank	Consequence (any one of the following)
4	<ul> <li>□ Major on site equipment or infrastructure loss</li> <li>□ Major act of violence, sabotage, or terrorism which impacts permit holder assets</li> <li>□ Reportable liquid spill beyond site, uncontained and affecting environment</li> <li>□ Gas release beyond site affecting public safety</li> </ul>
3	<ul> <li>□ Threats of violence, sabotage, or terrorism</li> <li>□ Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property</li> <li>□ HAZMAT worker exposure exceeding allowable</li> <li>□ Major on site equipment failure</li> </ul>
2	<ul> <li>□ Major on site equipment damage</li> <li>□ A security breach that has potential to impact people, property or the environment</li> <li>□ Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property</li> </ul>
1	<ul> <li>☐ Moderate on site equipment damage</li> <li>☐ A security breach that impacts oil and gas assets</li> <li>☐ Reportable liquid spill or gas release on location</li> <li>☐ **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</li> </ul>
0	□ No consequential impacts

<sup>\*\*</sup> 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	□ Uncontrolled, with control unlikely in near term	
3	□ Escalation possible; under or imminent control	
2	□ Escalation unlikely; controlled or likely imminent control	
1	□ Escalation highly unlikely; controlled or imminent control	
0	□ 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 (http://www.bcogc.ca/node/11188/download). In addition to Form A, spills must also be reported to EMBC.			
Moderate (3-4)	evel-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)			



		Probability					
			4	3	2	1	0
Classification Matrix		Uncontrolled, with control unlikely in near term	Escalation possible; under or imminent control	Escalation unlikely; controlled or likely imminent control	Escalation highly unlikely; controlled or imminent control	Will not escalate; no hazard; no monitoring required	
	4	<ul> <li>□ Major on site equipment or infrastructure loss</li> <li>□ Major act of violence, sabotage, or terrorism which impacts permit holder assets</li> <li>□ Reportable liquid spill beyond site, uncontained and affecting environment</li> <li>□ Gas release beyond site affecting public safety</li> </ul>	Level 3	Level 3	Level 2	Level 2	Level 1
ce	3	<ul> <li>☐ Threats of violence, sabotage, or terrorism</li> <li>☐ Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property</li> <li>☐ HAZMAT worker exposure exceeding allowable</li> <li>☐ Major on site equipment failure</li> </ul>	Level 3	Level 2	Level 2	Level 1	Level 1
Consequence	2	<ul> <li>□ Major on site equipment damage</li> <li>□ A security breach that has potential to impact people, property or the environment</li> <li>□ Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property</li> </ul>	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
	1	<ul> <li>☐ Moderate on site equipment damage</li> <li>☐ A security breach that impacts oil and gas assets</li> <li>☐ Reportable liquid spill or gas release on location</li> <li>☐ ** 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</li> </ul>	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
	0	☐ No consequential impacts	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No Notification Required

### Minor Incidents

- The permit holder must report the minor incident to the Commission within 24 hours by electronic submission through the Online Minor Incident Reporting System, opened through KERMIT.
- If the minor incident involves a leak or a spill, EMBC must also be called at 1-800-663-3456 so that a Dangerous Goods Incident Report (DGIR) number may be issued.

### Level 1, 2, or 3 Emergency

• If the incident receives a score of Level 1, 2, or 3, it must be reported immediately (within 1 hour) (EMBC 1-800-663-3456).

### **Escalating, Downgrading or Standing-Down of Emergency**

- The Commission must be notified as soon as possible of any change to the emergency status.
- The permit holder must consult with the Commission for escalating, downgrading or the standing-down of an incident.

# **Permit Holders Post-Incident Report**

The Form D: Permit Holder Post Incident Report Form (https://www.bcogc.ca/node/5771/download) must be submitted by the permit holder to the Commission within 60 days for:

- 1. Any Level 1, 2 or 3 emergency incident: complete Part A-P; or
- 2. Any pipeline incident (including minor notification): complete Part A-U; or
- 3. Upon request by the Commission

to the Commission's incident reporting line This report and accompanying documentation can be found on the Commission's website under Emergency Response and Planning and must be emailed electronically to EMP@bcogc.ca

<sup>\*\*</sup> For this consequence criteria, a probability score of 2 or higher must be used.



# **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; 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

Please refer to the BC Environmental Management Act; <u>Spill Reporting Regulation</u>, 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:
  - o pit gain of 3 m<sup>3</sup> or greater
  - o casing pressure 85% of MA
  - 50% out of hole when kicked
  - well taking fluid (LC)
  - o associated spill
  - o 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

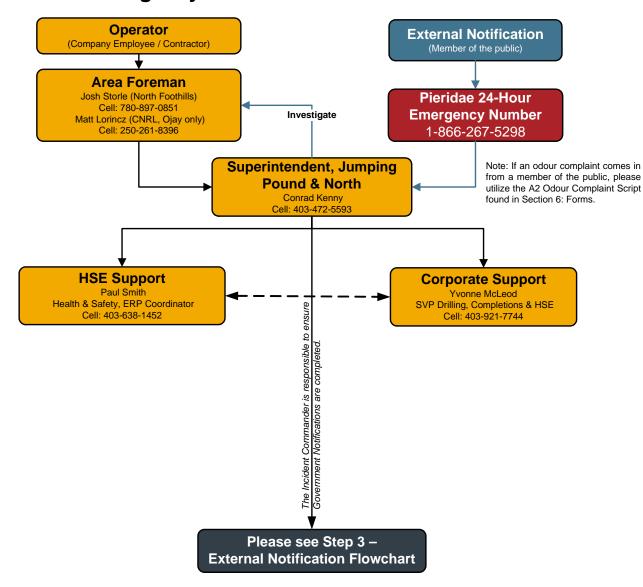
**Note:** Refer to the Petroleum Industry Spill / Release Reporting Requirements in Section 4: Emergency Response Procedures for further spill reporting criteria and the Government Notification Matrix in Section 5: External Agencies for other reportable incidents.



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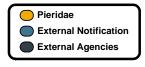
# **Internal Emergency Notification Flowchart**



#### **Investigation of Complaints**

Company representatives will be dispatched to investigate complaints received by outside sources (member of the public, 3<sup>rd</sup> party company etc.). If H<sub>2</sub>S is suspected, personnel should be dispatched in teams of two. Any company representative who is to investigate a complaint must be trained and prepared to assume the role of Incident Commander if any of the emergency conditions are met.

Once a complaint has been investigated, the company must report the results of the investigation to the outside source who alerted the company about the situation.



Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.

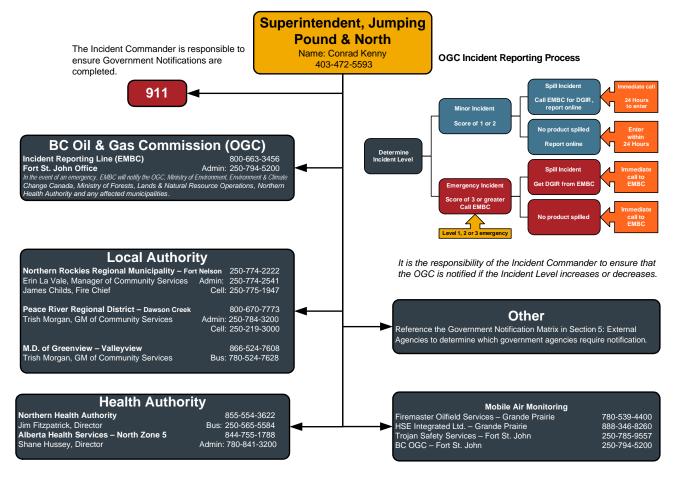


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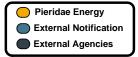
# **External Emergency Notification Flowchart**

Prior to commencing contact of the agencies below, make sure a completed A1 Initial Emergency Report Form is available and at hand for reference.



Refer to Section 5: External Agencies for the Government Notification Matrix, Provincial Lead and Supporting Agencies and Federal Agencies required to be contacted or notified

Refer to Area Specific Information for a listing of contacts for government agencies and support services.



Note: After Initial Notifications are complete, please reference Step 4 – Incident Briefing and begin building the initial Organizational Structure (pg 3) within the ICS 201 Incident Briefing form.



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# **Step 4** – Incident Briefing



Incident Name:					
Date/Time Initiated:				-	
Prepared By:		ICS Po	sition:		
Level of Emergency	Alert / Minor	Level 1	Level 2	Level 3	
Map Sketch:					ı
Note: Maps can be dr	awn or attached here.				
Situation Summary:	(Write description o	r attach A1)			
Safety Briefing:					

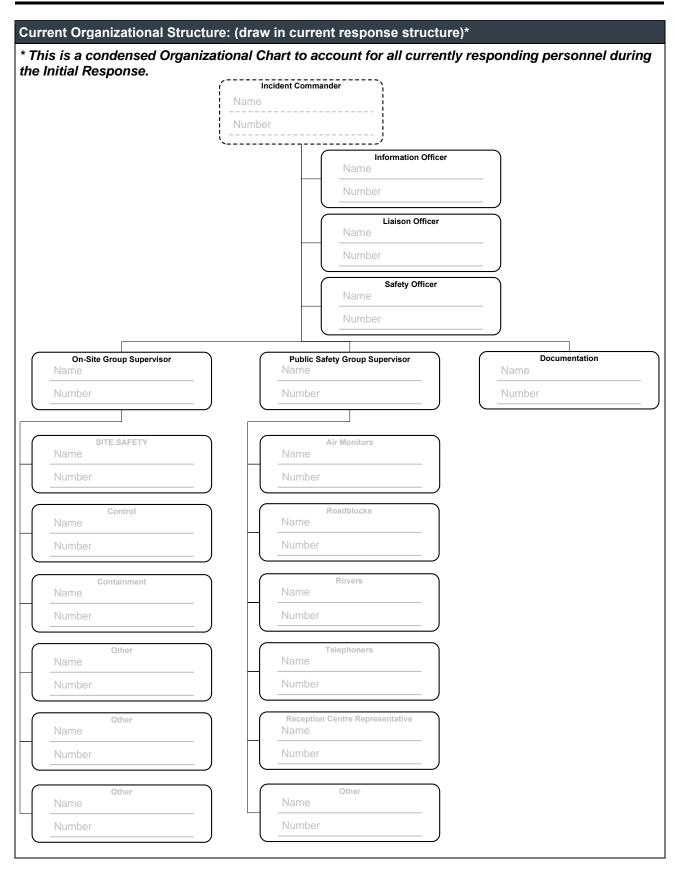
# **Step 4** – Incident Briefing



Current and Planned Objectives:							
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property							
Ensure Safety of Citizens and Response Personnel:		4. Minimize Economic Impacts:					
☐ 1a. Identify hazard(s) of relea	sed product.	☐ 4a. Consider tourism and local economic impacts.					
☐ 1b. Establish site control (hot security).	zone, warm zone, cold zone, &	☐ 4b. Protect public and private assets, as resources permit.					
☐ 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions.		☐ 4c. Establish damage claims process.					
☐ 1d. Consider evacuations if no	eeded.	5. Keep Stakeholders and Public Informed of Response Activities:					
☐ 1e. Establish aircraft restrictio	ons.	☐ 5a. Provide forum to obtain stakeholder input and concerns.					
☐ 1f. Monitor air in impacted are	eas	$\hfill\Box$ 5b. Provide stakeholders with details of response actions.					
☐ 1g. Develop site safety plan for briefings are conducted.	or personnel and ensure safety	☐ 5c. Identify stakeholder concerns and issues, and address as practical.					
2. Control the Source of the R	Release:	☐ 5d. Provide timely safety announcements.					
☐ 2a. Complete emergency shu	tdown.	☐ 5e. Conduct regular news briefings.					
☐ 2b. Conduct firefighting.		☐ 5f. Conduct public meetings, as appropriate.					
☐ 2c. Initiate temporary repairs.							
3. Manage a Coordinated Res	ponse Effort:						
☐ 3a. Complete or confirm notifi	cations.						
☐ 3b. Establish a unified comma (command post, etc.).	and organization and facilities						
☐ 3c. Ensure mobilization and to personnel and equipment.	racking of resources and account for						
☐ 3d. Complete documentation.							
Current and Planned Action	ons, Strategies and Tactics:						
Time:	Actions:						
HHMM							
HHMM							
HHMM							
HHMM							
HHMM							
HHMM							
ННММ							
HHMM							
HHMM							

Section 1: Initial Response





Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.

# **Step 4** – Incident Briefing



Resources Summar	y:			
Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)
External Notification	ns: (Governmen	nt)		
Agency	Time Called			Notes

**Section 1: Initial Response** 

# **Step 4** – Incident Briefing



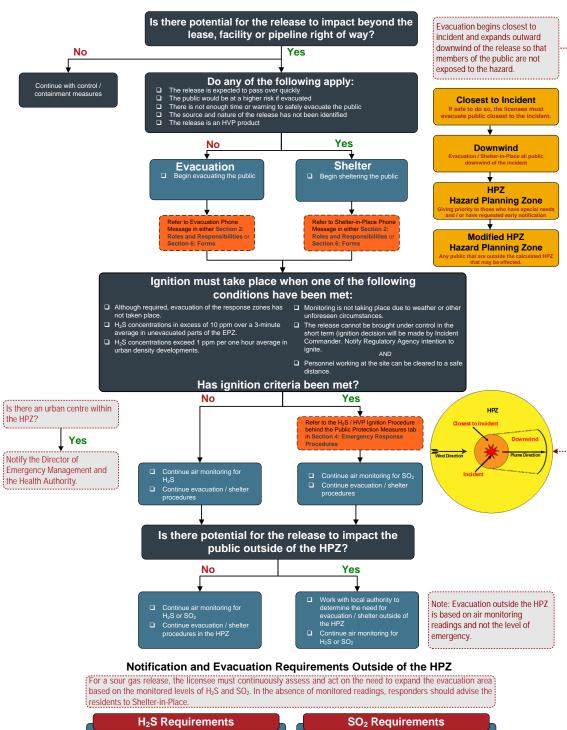
Si	te Safety and Hazard Control Analysis		
Si	te Control		
1.	Is Site Control set-up? ☐ Yes ☐ No	2. Is there an On-Scene Command Post? ☐ Yes ☐ If so, where?	□No
3.	Have all personnel been accounted for?  ☐ Yes ☐ No ☐ Don't Know	Injuries: Fatalities: Unaccounted: Trapped:	
4.	Are observers involved or rescue attempts planned?  Observers: □ Yes □ No  Rescuers: □ Yes □ No	5. Are Decon areas setup? ☐ Yes ☐ No If so, where?	
Ha	azard Identification, immediate signs of: (if yes,	explain in remarks)	
1.	Electrical line(s) down or overhead? $\square$ Yes $\square$ No	2. Unidentified liquid or solid products visible? ☐ Yes ☐	□No
3.	Wind direction across incident: ☐ Towards your position Wind Speed: ☐ Away from your position	4. Is a safe approach possible? ☐ Yes ☐	□No
5.	Odours or smells? ☐ Yes ☐ No	6. Vapours visible? ☐ Yes □	□No
7.	Holes, ditches, fast water, cliffs, etc. nearby?  ☐ Yes ☐ No	8. Fire, sparks, sources of ignition nearby? ☐ Yes ☐	□No
9.	Is local traffic a potential problem? ☐ Yes ☐ No	10. Product placards, colour codes visible? ☐ Yes ☐	□No
11.	. Other Hazards? ☐ Yes ☐ No	12. As you approach the scene from the upwind side, do you a change in the status of any of the above? ☐ Yes ☐	note 3 No
13	. Remarks:		
Ha	azard Mitigation: have you determined the neces	sity for any of the following?	
1.	Entry Objectives:		
2.	Warning sign(s), barriers, colour codes in place? ☐ Year	s □ No	
3.	Hazardous material being monitored?		
4.	Protective gear / level:	4a. Gloves:	
	4b. Respirators	4c. Clothing:	
<u> </u>	4d. Boots:	4e. Chemical cartridge change frequency:	
5.	Decon 5a. Instructions: 5b. Decon equipment and materials:		
6.	Emergency escape route established?		
7.	Field responders briefed on hazards? ☐ Yes ☐ No		
8.	Remarks:		
Pro	otective Zones: record initial control perimeters (see Figure 1)		



Evacuation Route Decontamination Station Staging Area Command Post  WARM ZONE  COLD ZONE  Figure 1 Protective Zones	1. Is there a Hot Zone established?  ☐ Yes ☐ No If so, Where?  2. Is there a Warm Zone established? ☐ Yes ☐ No If so, Where?  3. Is there a Cold Zone established? ☐ Yes ☐ No If so, Where?  4. Remarks: (Include any information on evacuation route, etc.)
5. Include any site sketches or photos of the protective zones (if available):	



# **Public Protection Measures Flowchart**



H₂S	Requirements	SO	2 Requirements
1-10 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H <sub>2</sub> S or SO <sub>2</sub> must be notified.	1-5 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H <sub>2</sub> S or SO <sub>2</sub> must be notified.
10 ppm and above (1-hour average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.	5 ppm and above	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.
nearest unevacuated	Level – when downwind monitoring at the residence, outside the Hazard Planning of 10 ppm, evacuation procedures will be b.		

Revised March 2019



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# Section 2: Roles and Responsibilities

# **Field Response Team**

**Key Response Personnel** 

# **General Safety Equipment and Resource Lists**

Operator, Truck & Other Safety Equipment

# Field Response Team - Command Staff

Command Staff Roles Chart

### Field Response Team - General Staff

Operations Section Roles Chart

Planning Section Roles Chart

Logistics Section Roles Chart

Finance / Admin. Section Roles Chart

# Field Response Team - Public Safety Staff

Public Safety Roles Chart

Air Monitors Module

Reception Centre Rep Module

Roadblocks Module

**Rovers Module** 

Telephoners Module

# **Ongoing Response**

Planning "P"

Five Step Ongoing Response Guide

**Objectives Meeting** 

**Tactics Meeting** 

Planning Meeting

**Operations Briefing** 

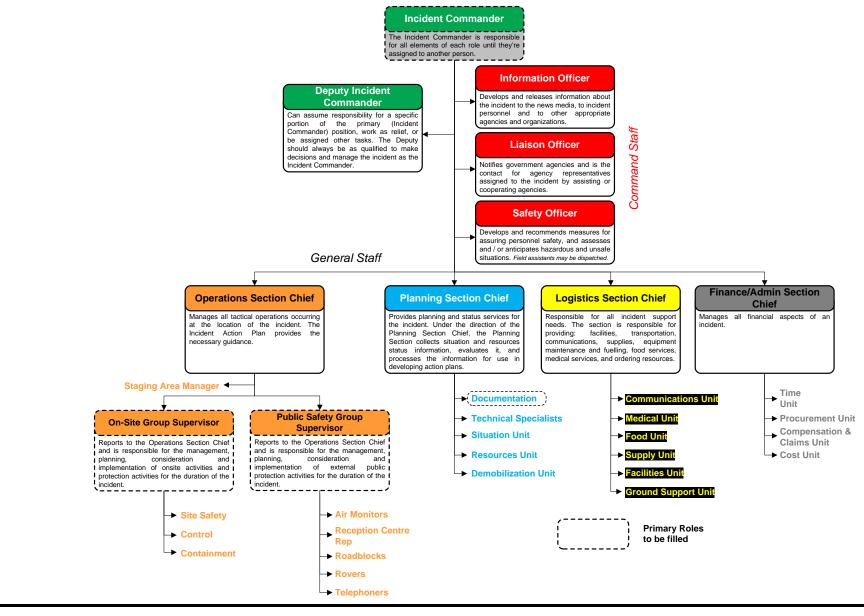
# **Response Teams Phone List**







# **Field Response Team**



Section 2: Roles and Responsibilities



# **Key Response Personnel**

The following individuals are likely to fill the key response roles identified:

Command Staff	Incident Commander	Senior Foreman	
On-Site	On-Site Group Supervisor	Team Lead Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.	
	Trained in Ignition (H₂S & HVP)	Team Lead	
Public Safety	Public Safety Group Supervisor	Area Foreman Area Superintendent	
	Air Monitors / Roadblock / Rovers	Area Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.	
	Telephoners	Operations Technician	
	Reception Centre Representative	Area Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.	

Please refer to the Response Teams Phone List (Yellow tabs) or Area Specific Information (White tabs) for the full list of personnel and their contact information.

# **General Safety Equipment and Resource Lists**

# Operator, Truck & Other Safety Equipment

Each operator is required to drive a suitable vehicle (4x4 truck) for their service areas and should carry the following equipment: 20-30lb fire extinguisher, vehicle emergency roadside kit, cell phone and a 4 head monitor.

Refer to Area Specific Information Section (white tabs) for further details on specific air monitoring equipment, back-up communication methods, ignition and roadblock kit contents as well as their locations, specialty fire-fighting equipment and/or service companies and their contact information for if the aforementioned equipment is not available.

#### **Command Staff Roles Incident Commander Deputy Incident Commander Information Officer Liaison Officer** Safety Officer The Incident Commander is in charge of overall management of the incident and must be fully qualified to manage the incident. The **Deputy Incident Commander** may assume The Information Officer is responsible The Liaison Officer is responsible for The Safety Officer develops and As incidents grow in size or complexity, a more highly qualified Incident Commander may be assigned by the company. responsibility for a specific portion of the primary for developing and releasing notifying government agencies and is recommends measures for assuring information about the incident to the personnel safety, and assesses and / position, work as relief, or be assigned other the contact for agency representatives Note: The highest ranking authority arriving at the site of the incident (first on-scene) becomes the Incident Commander and tasks. The **Deputy** should always be as qualified news media, to incident personnel and assigned to the incident by assisting or or anticipates hazardous and unsafe establishes command and control. The first on-scene will remain the Incident Commander until there is formal transfer of to make decisions and manage the incident as the to other appropriate agencies and cooperating agencies. command to a more senior company employee and / or qualified personnel. ncident Commander. organizations. Initial Response - \*Refer to the 5 Step Initial Response Guide in Section 1: Initial Response\* □ Ensure the site is evacuated if ☐ If no scribe has been assigned to the □ Receive incident briefing from □ Complete Regulatory А3 Incident Commander, support the the Incident Commander First Call unsafe. Step 1: Level of Emergency **Incident Commander** by documenting before contacting external Communication Form. ☐ Initiate rescue plans if safe to do If necessary, investigate and confirm the emergency. If the incident involves a release of sour product, the investigation should details of the emergency, focusing on agencies. □ Refer to Section 5: External be conducted in teams of two. Take appropriate safety precautions (PPE, SCBA, etc.). Ensure personal safety at all times. activities and decisions made. Prepare regular status updates Agencies for the Government ■ Review the Incident Action Plan Determine the Level of Emergency using the OGC Incident Classification Matrix for BC or AER's Assessment Matrix for that will be provided to internal Record, update and maintain a Notification Matrix. Notify as Classifying Incidents for all other provinces (e.g. Alert/Minor, Level 1, 2, 3) found in Section 1: Initial Response or using the to identify and correct any Emergency Assessment SmartPhone App. (Search H2Safety or Emergency Assessment in the App Store). chronological summary of the incident company personnel to keep soon as possible and provide potential occupational and them apprised of the situation. includina: status updates at agreed upon health hazards. Step 2: Internal Notification ☐ Identify and document any intervals to: ■ Names of personnel in each assigned ☐ Follow the Internal Emergency Notification Flowchart outlined in Section 1: Initial Response to contact required field resources. Refer to ☐ Ensure work / rest guidelines media involvement that has the Section 2: Roles and Responsibilities / Response Team Phone List. Relay the information from the A1 Initial Notification Form. position and their location Government regulator are followed. already taken place Mobilize internal resources to the site, to the Incident Command Post (ICP) or place them on standby as required. ■ Local authorities (counties, □ Control and containment measures □ Continuously monitor workers ☐ If the media statement hasn't Contact required company resources and communicate the level of emergency. Refer to Section 2: Roles and Responsibilities / cities, towns, MDs, RDs, ■ Environmental monitoring information for exposure to ensure they are yet been prepared ensure that Response Team Phone List. First Nations Reserves, etc.) wearing the required PPE. ☐ Injuries / deaths / missing persons the generic media statement **Step 3: External Notification** □ Health authority ■ Take appropriate action to from the ERP is communicated □ Phone calls ☐ Follow the External Emergency Notification Flowchart in Section 1: Initial Response for communication structure and the Provincial ■ Environment mitigate or eliminate unsafe and being used in the field. Notification Matrix in Section 5: External Agencies to determine which external agencies need to be notified. Reference Section 5: Actions and decisions conditions, operations, or External Agencies and the Area Specific Information for the location of the incident. ■ Assist head office with the □ Provincial emergency ☐ Status of the public protection actions hazards. preparation of a management organization Step 4: Incident Briefing ■ Manage the flow of traffic to and ☐ Immediately stop any unsafe preliminary media Other agencies ☐ The following positions are always filled regardless of the size of the incident: Incident Commander, On-Site Group Supervisor and communication with the Incident C1 statement if required practices. ■ Keep track of all government Commander so that he can focus on using the Preliminary Conduct a general inspection of correspondence using Assess the situation, identify the incident source, and consider how to stop the source. Carry out a site assessment that includes the managing the incident. Media Statement form. the facilities, food services and following: identify hazardous materials, evaluate risk to workers and the public, determine the potential for the incident to escalate, the Government C3 Conduct status update meetings. Document all sanitation services soon after identify safety concerns, determine which other company's facilities are involved. Agency Contact Log. communications with they become operational and Provide status to head office. Detail and prioritize the objectives for the next operational period taking into consideration the priorities of (1) Life Safety, (2) C2 Obtain cooperating and the media using the follow up on a periodic basis 201 Incident Stabilization, (3) Property & Environment using the ICS 201 Incident Briefing Form. Deal with some day-to-day decision assisting agency information Media Contact Log. throughout the incident for Assign other positions as required to meet the identified objectives. Review and complete the ICS 207 Incident Organization Form ICS 207 making. that includes: contact compliance to all health and Develop a detailed media Chart in Section 6: Forms. Depending on the scale of emergency, all positions may not be assigned. The Incident Assume duties of the Incident information, radio frequencies, safety standards. Provide a strategy for the incident. Commander assumes responsibility for all unassigned roles until personnel have been assigned to them. Commander, if required. cooperative agreements. report of deficiencies. Designate and prepare media Conduct a role review with each of the positions above to ensure they clearly understand their roles and responsibilities. equipment type, number of Maintain communication with the Incident ■ Document both safe and unsafe briefing rooms away from the Develop detailed plans of action (strategies) to achieve the objectives and determine what tactics and resources are required to personnel, condition of Incident Command Post. acts, corrective actions taken on implement the strategies (oil spill services, safety services, etc.). equipment and personnel, the scene, accidents or injuries, Organize tours and photo Activate the Incident Command Post (ICP). Refer to the Appendices for Incident Command Post activation guidelines. agency constraints, etc. and ways to improve safety on opportunities if required. **Important** Ensure the Planning Section posts and updates the status board with incident details. □ Conduct appropriate periodic future incidents. Prior to beginning any activities, each Step 5: Public Safety Maintain communication with briefings to keep agencies person in a role must: ☐ Investigate accidents that have the Incident Commander. informed of planning actions. Determine the size of the Emergency Planning and Response Zones around the incident. Refer to the EPZ calculation tables and map occurred within the incident ☐ Obtain a completed ICS 201 Incident in Area Specific Information. □ Coordinate with anv Briefing and ICS 207 Incident ■ Media releases must be Use the Public Protection Measures Flowchart located in Section 1: Initial Response to assist with determining if evacuation / shelter / Organization Chart from the Incident government agency coordinated with applicable ☐ Identify "Hot Zone" and declare ignition are required. representatives attending the regulatory agency. when responders may enter it. ☐ Ensure the affected public are contacted and advised to shelter or evacuate as required. Throughout the duration of the incident, ICP or REOC. ☐ Ensure that responders inside ☐ If necessary, coordinate with each person in a role must: ☐ Establish Air Monitoring, Reception Centre Representatives, Roadblocks, Rovers, and Telephoners as required. Coordinate with mutual aid the "Hot Zone" are accounted and use broadcast media to ☐ Chronologically document all actions, Ongoing Response - \*Refer to the Five Step Ongoing Response Guide in Section 2: Ongoing Response\* groups. for and initiate search if decisions, contacts and requests on an notify residents in the hazard ☐ Establish a method to track responders and resources to ensure they are accounted for at all times. ICS 214 Activity Log. Copies can be required. area. found in Section 6: Forms. ☐ Monitor implementation of IAP and revise as the situation dictates. Prepare for next operational period. ☐ Prepare a site-specific health ■ Work with Communications / After the incident is over, each person in a Support the Operations Section Chief in the preparation of an incident control and containment action plan. and safety plan. Media to develop a role must: ☐ Ensure each section chief has adequate staff, is not violating span of control and clearly understands the roles and responsibilities. communications plan that ■ Assist with post-incident activities. ☐ Conduct frequent Command Staff and General Staff meetings. includes establishing protocols All forms referenced can be found in ☐ If transfer of command occurs, an incident status briefing must take place. Provide all documentation and review situation status, for responders and all company Section 6: Forms objectives and priorities, current organization and resources, facilities, communications plan, concerns and introductions to staff. personnel as required to ensure incident information remains As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the **Incident Commander** and the applicable government regulator. confidential (i.e. restriction on cell phone usage for The **Demobilization Unit** will develop and implement objectives/strategies for demobilization photography, social media, speaking to the media, etc.) All team members are located at the Incident Command Post (ICP), unless otherwise noted. Revised October 2018

			General Sta	iff Roles – Ope	rations Section
Operations Section Chief	On-Site Group Supervisor	Staging Area Manager	Site safety	Control	Containment
The Operations Section Chief is responsible for managing all tactical operations occurring at the location of the incident. The Incident Action Plan provides the necessary guidance. The need to expand the Operations Section is generally dictated by the number of tactical resources involved and is influenced by span of control considerations.	On-Site Group Supervisor is responsible for coordinating all activities of Control, Containment and Site Safety at the scene of the emergency / incident.	The Staging Area Manager is responsible for managing all activities within a Staging Area.	Site Safety is responsible for responder safety and safety advice at all times at the scene of the emergency / incident.	Control is responsible for implementing measures designed to bring the incident under control or stop the incident.	Containment is responsible for implementing measures designed to reduce the impact of the incident on and prevent the spread of the incident to the surrounding areas.
<ul> <li>Identify and confirm communication links.</li> <li>Ensure the On-Site Command Post (OSCP) is established.</li> <li>Manage the following positions, as required: On-Site Group Supervisor, Public Safety Group Supervisor.</li> <li>In conjunction with the Incident Commander, the Planning Section Chief, and the Public Safety Group Supervisor, develop and implement an Incident Action Plan (IAP)</li> <li>Ensure responder safety at all times.</li> <li>Oversee control / containment procedures; ensure the hazard is isolated.</li> <li>Determine the current and potential environmental impact of product released, response activities, or waste disposal.</li> <li>Ensure that all environmental laws and regulations are complied with during emergency response operations.</li> <li>Provide technical advice to Incident Commander to determine public protection measures.</li> <li>Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services. Coordinate with Logistics to obtain equipment and resources.</li> <li>Assist the On-Site Group Supervisor in</li> </ul>	<ul> <li>Ensure all personnel are accounted for. Release nonessential personnel from the site</li> <li>Oversee and maintain control of all on-site personnel.</li> <li>Establish On-Site Command Post (OSCP).</li> <li>Obtain incident briefing and environmental impact information.</li> <li>Coordinate activities of Staging Area Manager, Site Safety, Control and Containment.</li> <li>Report air monitoring to Incident Commander (third party and regulatory).</li> <li>Call police, fire and ambulance as needed.</li> <li>Coordinate with ambulance / fire / RCMP / regulatory agencies / spill co-ops.</li> <li>Conduct meetings with on-site personnel to review action plans, communication and safety.</li> <li>Request additional resources needed to implement on-site response actions.</li> <li>Supervise the execution of the on-site response actions.</li> <li>The On-Site Group Supervisor has the authority to ignite the release if ignition criteria are met. If at all possible, the On-Site Group Supervisor must consult with higher authority individuals within the company (ideally the Operations Section</li> </ul>	<ul> <li>□ Establish a staging area near the incident site and outside of the EPZ. When choosing a site for the staging area ensure the following conditions are met:         □ Adequate sized site that is stable and level with suitable access roads         □ No entry problems such as narrow approach ways, gates, power lines, buried pipelines, etc.         □ Approval has been received from landowner         □ Reception of communication equipment is adequate</li> <li>□ Erect staging area information and directional signs to the staging area, if required.</li> <li>□ Flag the perimeter of the staging area.</li> <li>□ Obtain an office trailer and emergency lighting, if required.</li> <li>□ Coordinate traffic and maintain a log of personnel and services dispatched to, or arriving from the site of the emergency. Communicate this information to the Logistics Section Chief.</li> <li>□ Respond to Operations Section Chief or Incident Commander requests for resources.</li> <li>□ Confirm all workers have required training before they are dispatched to the incident.</li> </ul>	access/egress.		<ul> <li>Assist with the development of containment procedures.</li> <li>Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take actions to contain the incident so as to prevent the incident from spreading offsite and to reduce the impact on the public, sensitive terrain, watercourses, etc.</li> <li>Provide or seek technical / engineering advice around all containment-related issues.</li> <li>Secure the scene and restrict access to essential and authorized personnel only.</li> <li>Inform Operations Section Chief of any interactions with regulatory agencies or environmental personnel.</li> <li>Coordinate oil spill cooperative activities (booms, dams, etc.).</li> </ul>
determining whether ignition is appropriate. If at all possible, input is to be obtained from the Incident Commander and the applicable government regulator.  Maintain continuous communications with the Incident Commander.	Chief, Incident Commander, etc.) and the applicable government regulator before making the decision to ignite a release. Refer to Section 4: Emergency Response Procedures.  Maintain and provide status to the Planning Section of all resources in Staging Area.  Demobilize or move Staging Area as required.	<ul> <li>Maintain and provide status to the Planning Section of all resources in Staging Area.</li> <li>Demobilize or move Staging Area as</li> </ul>		Prior to beginning any activities, each person in  ☐ Obtain a completed ICS 201 Incident Briefin Incident Commander.  Throughout the duration of the incident, each pure incident Copies can be found in Section 6: Forms.  After the incident is over, each person in a role  ☐ Assist with post-incident activities.	ng and ICS 207 Incident Organization Chart from the person in a role must: sions, contacts and requests on an ICS 214 Activity Log.
					Revised October 2018
Located at the Incident Command Post (ICP)	Located at the On-Site Command Post (OSCP)	Located at the Staging Area	Located at the On-Site Command Post	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)

Escalate, Downgrade or Stand-Down Levels of Emergency: As the emergency is brought under control, the decision to downgrade the level and/or stand down the emergency will be based on air monitoring readings in consultation with the Incident Commander and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. Emergency Follow-up: Once the emergency is over, the area residents, industrial users, involved government agencies, and any individual notified will be information Officer or Public Safety Group Supervisor.

# **General Staff Roles – Planning Section**

					9 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Planning Section Chief	Documentation Unit	Technical Specialists Unit	Situation Unit	Resources Unit	Demobilization Unit
The Planning Section Chief is responsible for providing planning and status services for the incident. Under the direction of the Planning Section Chief, the Planning Section collects situation and resources status information, evaluates it, and processes the information for use in developing action plans. Dissemination of information can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays.	incident files. Duplication services will also	Certain incidents or events may require the use of Technical Specialists who have specialized knowledge and expertise. Technical Specialists may function within the Planning Section, or be assigned wherever their services are required.	The collection, processing, and organization of all incident information. The Situation Unit may prepare future projections of incident growth, maps, and intelligence information.	The Resources Unit is responsible for maintaining the status of all assigned resources at an incident.	The <b>Demobilization Unit</b> is responsible for developing the Incident Demobilization Plan.
<ul> <li>Identify and confirm communication links.</li> <li>Assign personnel to assume the following positions, as required: Documentation, Technical, Situation, Resources, and Demobilization.</li> <li>Assist with setup of the Incident Command Post.</li> <li>Review the details of the incident and support the Incident Commander with the development of a preliminary response strategy.</li> <li>Identify the need for technical specialists.</li> <li>Collect and analyze information on the current situation, prepare situation displays and situation summaries, and develop maps and projections.</li> <li>Establish special information collection activities as necessary, e.g., weather, environmental, toxics, etc.</li> <li>Provide technical support to the Incident Commander and work with Incident Commander to develop the Incident Action Plan (IAP).</li> </ul>	Document the Incident Action Plan (IAP) strategies using the ICS 201 Incident Briefing Form provided in Section 1: Initial Response or Section 6: Forms and disseminate them to all key responders.  Be prepared to document the Incident Commander's status update meetings using whiteboards, PC or Action Logs.  Ensure consistent documentation.  Ensure timely dissemination of all documentation.  Participate in planning meetings, capturing key information, decisions made, commitments and status.  Collect documentation from response team members and maintain a consistent system for organizing the data.  Records must be held for a minimum of 5 years as it may be requested by the regulatory agency	<ul> <li>Determine what technical support is available now and in the future.</li> <li>Work with Logistics to determine the key locations for the required technical support and appropriate time to acquire.</li> <li>Gather data (weather, etc.) and forecast changes considering incident potential and develop new or modified response strategies.</li> <li>As required, obtain plume dispersion modelling.</li> </ul>	<ul> <li>Collect and evaluate information to establish an accurate picture of the situation and creates a detailed summary. Use this information to create maps and projections.</li> <li>Prepare, post, or disseminate resources and situation status information as required, including special requests.</li> <li>Provide photographic services and maps if required.</li> </ul>	<ul> <li>Monitor the status and location of all incident resources / personnel responding to the incident.</li> <li>Oversee the check-in of all resources.</li> <li>Maintenance of a master list of all resources, e.g., key supervisory personnel, primary and support resources, etc.</li> <li>May assist in preparing the written Incident Action Plan.</li> <li>Maintain and post the current status and location of all resources.</li> </ul>	<ul> <li>Prepare plan for the demobilization of all personnel and equipment upon resolution of the incident.</li> <li>Ensure resources in available status are still required. Identify surplus resources and probably release time.</li> <li>Debrief non-required resources and dismiss resources being demobilized.</li> <li>Coordinate demobilization with agency representatives.</li> <li>Develop incident check-out function for all units.</li> <li>Ensure the demobilization process is organized, safe and cost effective.</li> </ul>
<ul> <li>Review any changes to the Incident         Action Plan (IAP) to ensure consistency.     </li> <li>Assemble information on alternative strategies.</li> </ul>	at any point during that time.  Establish duplication services.  Incident files will be stored for legal,			Form ICS ICS ICS ICS ICS 203 204 207 211 214	Form ICS ICS 214
<ul> <li>Coordinate with Logistics to determine current available resources and resource availability for future plans of action.</li> <li>Establish reporting sc hedules.</li> <li>Conduct long-range and / or contingency planning.</li> <li>Develop plans for demobilization.</li> <li>Maintain continuous communications with the Incident Commander.</li> </ul>	analytical, and historical purposes.  Post and maintain all Emergency Status Boards and other laminated charts in the Incident Command Post.			Prior to beginning any activities, each person in a r  ☐ Obtain a completed ICS 201 Incident Briefing a Incident Commander.  Throughout the duration of the incident, each pers  ☐ Chronologically document all actions, decisions Copies can be found in Section 6: Forms.  After the incident is over, each person in a role must	nd ICS 207 Incident Organization Chart from the on in a role must: , contacts and requests on an ICS 214 Activity Log.
the Incident Commander.    Form   Form   Form   Form   ICS   ICS	Form ICS ICS ICS 201 214 231 233		Form ICS ICS 209 214	<ul> <li>Assist with post-incident activities.</li> <li>All forms referenced can</li> </ul>	be found in Section 6: Forms

All team members are located at the Incident Command Post (ICP), unless otherwise noted.

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#### **General Staff Roles – Logistics Section Logistics Section Chief Communications Unit Medical unit Food Unit Supply Unit Facilities Unit Ground Support Unit** All incident support needs are provided The Communications Unit is The **Medical Unit** is responsible for all Responsible for supplying the food | The **Supply Unit** is responsible The Facilities Unit is responsible The Ground Support Unit is primarily by the Logistics Section. The section is responsible for developing plans for medical services for incident assigned needs for the entire incident, including ordering, receiving, for set-up, maintenance, and responsible for the maintenance, responsible for providing: facilities, personnel. The unit will develop processing, and storing services, and fuelling of all mobile the use of incident communications all remote locations, (e.g., Camps, demobilization of all incident Staging Areas), as well as providing equipment and vehicles, with the transportation, communications, equipment and facilities; installing and procedures for managing major incident-related resources. support facilities except staging testing of communications equipment; medical emergencies; and provide food for personnel unable to leave areas. The Facilities Unit will also exception of aviation resources. The supplies, equipment maintenance and tactical field assignments. The Food unit also has responsibility for the fuelling, food services, medical services, supervision of the Incident medical aid. provide security services to the Unit interacts with the Facilities Unit and ordering resources. Six units may be Communications Centre, incident as needed. ground transportation of personnel, Note: Medical assistance to the public established within the Logistics Section established; and the distribution and for location of fixed-feeding site; the supplies, and equipment. or victims of the emergency is an Supply Unit for food ordering; and and the Logistics Section Chief will maintenance of communications operational function. determine the need to activate or equipment. the Ground Support Unit for deactivate a unit. If a unit is not activated, transporting food. responsibility for that unit's duties will remain with the Logistics Section ☐ Identify and confirm communication ☐ Establish the communications plan □ Arrange and provide response Responsible for supplying the food Order, receive, distribute and □ Set-up, maintain, and demobilize □ Responsible for the maintenance, links. for the use of incident personnel with first aid and minor needs for the entire incident, track all incident equipment incident support facilities with service and fuelling of all mobile communications equipment and medical services. including all remote locations (e.g., and supplies. the exception of staging areas. equipment and vehicles, with the Assign personnel as required. Camps, Staging Areas), as well as exception of aviation resources. ☐ List and obtain all immediate □ Develop Incident Medical Plan. □ Ordered all off-incident □ Facilities may include: Incident providing food for personnel unable resources requested by the Incident ☐ Install, test, distribute, and maintain resources including: tactical Command Post, Incident Base. Coordinates the transportation of all to leave tactical field assignments. Develop procedures for handling **Commander or Operations Section** all communications equipment. and support resources Camps, and other facilities personnel, supplies, and equipment. serious injuries of responder □ Works with the Planning Section -Chief (including personnel), all within the incident area to be ■ Advise on communications □ Update the Resources Unit with the personnel. Resources Unit to anticipate the expendable and nonused for feeding, sleeping and □ Identify anticipated and known status (location and capability) of capabilities and limitations. numbers of personnel to be fed and expendable support supplies. sanitation services. Provide medical aid to personnel. incident service and support transportation vehicles. develop plans for supplying food to ■ Establish telephone, requirements. Management of tool Prepare layout of facilities; ■ Assist the Finance / Administration all incident areas. Develop the Incident Traffic Plan as communication links, and public operations, including the inform appropriate unit leaders. □ Maintain continuous communications Section with processing injuryaddress systems. required. Interacts with the Facilities Unit for storage, disbursement, and related claims. with the Incident Commander. ■ Will provide security services to location of fixed-feeding site; the service of all tools and portable ■ Establish clear and widespread the incident as needed. Note: Provision of medical assistance Develop plans to move required Supply Unit for food ordering; and non-expendable equipment. communication throughout the to the public or victims of the resources to site. the Ground and Air Support Units □ Contact local law enforcement incident. emergency is an operational function for transporting food. agencies as required. □ Confirm spending authorities with the and would be done by the Operations Finance / Admin Section. Obtain necessary equipment and Section and not by the Logistics □ Investigate and document all supplies and establish cooking Section Medical Unit. If there is a complaints and suspicious ■ Mobilize resources. facilities. requirement for victims of an incident occurrences. ■ Move required resources to site. the local public ambulance service is Order sufficient food and potable ■ Ensure strict compliance with most often utilized. □ Coordinate spending with the Finance water from the Supply Unit. applicable safety regulations. / Admin Section Chief. Maintain inventory of food and □ Provide facility maintenance services, e.g., sanitation, lighting, etc. Maintain food services areas. **Important** ensuring that all appropriate health Demobilize base and camp Prior to beginning any activities, each person in a role must: and safety measures and being facilities. Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the followed. Supervise caterers, cooks, and **Throughout** the duration of the incident, each person in a role must: other Food Unit personnel as ☐ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. appropriate. Copies can be found in Section 6: Forms. After the incident is over, each person in a role must: Assist with post-incident activities. All forms referenced can be found in Section 6: Forms

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Revised October 2018

#### **General Staff Roles – Finance / Admin Section** Finance / Admin Section Chief **Time Unit Procurement Unit Compensation & Claims Unit Cost Unit** The Finance / Administration Section Chief is The **Time Unit** is responsible for ensuring the All financial matters pertaining to vendor contracts. This unit oversees the completion of all forms required The Cost Unit provides all incident cost analysis. It responsible for managing all financial aspects of an accurate recording of daily personnel time, leases and fiscal agreements are managed by the by workers' compensation and local agencies. A file of ensures the proper identification of all equipment and Procurement Unit. The unit is also responsible for compliance with specific agency time recording injuries and illnesses associated with the incident will incident. The Finance / Administration Section personnel requiring payment; records all cost data; policies and managing commissary operations if also be maintained and all witness statement will be analyzes and prepares estimates of incident costs; Chief will determine the need to activate or deactivate maintaining equipment time records. Procurement Unit establishes local sources for obtained in writing. Close coordination with the a unit. established at the incident. and maintains accurate records of incident costs. medical Unit is essential. The Compensation & equipment and supplies; manages all equipment rental agreements; and processes all rental and supply fiscal Claims Unit is also responsible for investigating all claims involving property associated with or involved in document billing invoices. the incident. ■ Manage finances relating to vendor contracts, leases Identify and confirm communication links. □ Record daily personnel time, ensure compliance Handle all matters relating to compensation for □ Collect and evaluate cost data to establish an with specific agency time recording policies, and and fiscal agreements. ☐ Assign personnel to assume the following positions, injury or property damage due to the incident. accurate picture of the incident costs. manage commissary operations if established at as required: Time Unit, Procurement Unit, Maintain equipment time records. Oversees the completion of all forms required by ☐ Create cost summaries, cost estimates, and cost the incident. Compensation & Claims Unit, and Cost Unit. workers' compensation and local agencies. saving recommendations. ☐ Establish local sources for equipment and supplies. ☐ Submit cost estimate data forms to Cost Unit as ☐ Review legal issues with the **Incident Commander**. Coordinate with local jurisdiction on plans and supply Maintain a file with all the injuries and illnesses ☐ Prepare resources-use cost estimates for the required. Maintain continuous communications with the associated with the incident. Planning Section. **Incident Commander** ■ Ensure that all records are current and complete ☐ Manage all equipment rental agreements. Establish Obtain witness statements in writing. ☐ Identify all equipment and personnel requiring prior to demobilization. ■ Brief agency administrative personnel on all contracts and agreement with supply vendors. payment. ☐ Investigate all claims involving property associated incident-related financial issues needing attention or ☐ Processes all rental and supply fiscal document with or involved in the incident. billing invoices. ■ Ensure the completion of a Resident Manage all financial aspects of an incident. В2 Prepare and authorize contracts and land use Compensation Log for any out-of-pocket agreements, as needed. expenses incurred by evacuees. ☐ All claims must be submitted to the Finance and Legal departments for processing and disbursement of funds. ☐ If applicable, Finance and Legal will deal with insurers as well as any other extraneous circumstances (affected parties want more. **Important Prior** to beginning any activities, each person in a role must: □ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Throughout** the duration of the incident, each person in a role must: ☐ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms. After the incident is over, each person in a role must:

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Assist with post-incident activities.

All forms referenced can be found in Section 6: Forms

Revised October 2018

#### **Operations Section - Public Safety Roles** Roadblocks **Public Safety Group Supervisor Reception Centre Rep Air Monitors** Rovers **Telephoners** Monitoring personnel Reception Centre Reps are responsible for Roadblock personnel are responsible Rovers travel to assigned locations to Telephoners are responsible for the The Public Safety Group Supervisor is responsible for the management, planning, establishing reception centres, managing locate the public and personally provide notification of impacted residences and responsible for acquiring and providing for maintaining assigned roadblock consideration and implementation of external public protection activities for the air quality readings to the Public Safety evacuee accommodation, communication and positions, air monitor readings and public safety instructions and assistance as businesses to provide public safety duration of the incident. documentation for compensation purposes. communication with transients. instructions. **Group Supervisor.** □ Confirm communication links with the Incident Commander and Operations Section Chief. ☐ Provide air monitoring readings to ☐ Confirm resident contact lists are □ Confirm reception centre is available for ☐ In conjunction with the Public Safety □ Confirm resident contact lists are assist with decision making Group Supervisor determine the available available. (evacuation / shelter / ignition). need for and location of roadblocks. ☐ Establish reception centre. Refer to ☐ In conjunction with the Incident Commander: determine the size of the EPZ; identify the Confirm communication links. Confirm communication links. Obtain and check equipment and residents, businesses, industrial operators, and / or transients in the area; and determine the Section 2: Roles & Responsibilities. ☐ Pickup and check roadblock kits. ☐ In conjunction with the Public Safety ☐ Know safe routes in and out of the EPZ. initial public protection measures to be taken. Refer to Section 4: Emergency Response information (maps, forms, Group Supervisor, determine who Confirm communication links. Proceed to roadblock locations. Search for residents and transients in Procedures for guidelines on evacuation / shelter, ignition, roadblocks, rovers, public concerns, communications, reports, monitors, needs to be notified (residents, etc. Additional information for Air Monitors, Reception Centre Representative, Roadblocks, ■ Receive evacuees and maintain □ Confirm communication links. the Emergency Response and Planning safety, and breathing equipment). businesses, area users, etc.). B1 Rovers, and Telephoners can be found in Section 2: Roles & Responsibilities. a Reception Centre Registration ■ Establish roadblocks to secure the ☐ Confirm communication links. Review with the Public Safety B6 ☐ In conjunction with the Incident Commander, Planning Section Chief, and Operations FP7 Check all buildings including barns, ■ Monitor closest downwind public **Group Supervisor** which Section Chief, develop and implement an Incident Action Plan (IAP). ☐ Arrange for food and accommodations for shops, sheds, etc. ☐ Follow the scripts and procedures in telephoner scripts to use: location or residence. Review resident lists, area user lists, reception centres, and telephone numbers within the ERP. the evacuees. the ERP. Refer to either Section 2: ■ Assist, as required, with the Early Notification / Voluntary B7 Monitor environment for adverse ☐ If required, establish a Regional Emergency Operations Centre (REOC). ☐ Provide evacuees with a place to Roles & Responsibilities or Section notification, evacuation or В3 Evacuation Message, Sheltereffects. ☐ Assign personnel to assume the following positions as required: Air Monitors, Reception in-Place Phone Message, request counselling services, if sheltering of persons within 6: Forms ■ Record all readings B8 Centre Representative, Roadblocks, Rovers, and Telephoners. the EPZ. Record all contact with Evacuation Phone Message. required. ■ Monitor area for H<sub>2</sub>S and / on the Air Monitoring A5 ☐ The Telephoners must have sufficient personnel to accommodate the following ratios residents using the Resident Contact □ Contact special needs ☐ Record and follow up on all evacuees who or LEL with personal when contacting residents: 1 Telephoner to every 7 residences; and 1 Supervisor for Log. A5 residents at a Level 1 Emergency and Log. choose to make their own accommodation monitors and document every 10 Telephoners. ■ Report all readings at established provide them with the option to Post Evacuation Notices for readings on the Air B5 ☐ Dispatch Air Monitors at a Level 1 emergency (hand-held and mobile). evacuate intervals to the Public Safety Group residents that are not at their Monitoring Log. ☐ Arrange for temporary care of livestock (if ☐ Dispatch trained personnel with the appropriate hand-held gas monitors to record Supervisor. Contact the other residents and area residence possible) and the security of evacuated ☐ Report all H<sub>2</sub>S and / or LEL reading users in the EPZ and advise them to concentrations at the nearest unevacuated residences downwind of the incident site. ☐ For your own safety, ensure Public changes / increases to the Public ☐ Follow the scripts and procedures in the property. evacuate or shelter ☐ Mobilize third party mobile air monitoring units. Safety Group Supervisor is notified Safety Group Supervisor. ERP. Refer to Section 2: ■ Establish and oversee compensation ☐ Contact the schools / school buses to ☐ Maintain communication with the applicable government regulator and environment immediately if readings are Roles & Responsibilities or A5 ☐ For your own safety, ensure the administration activities at the reception make arrangements for school age agency regarding air monitoring needs and activities. approaching 10% LEL and / or 10 Section 6: Forms. **Public Safety Group Supervisor is** children (if applicable). Consult with the Operations Section Chief to determine the need for evacuation / ppm H<sub>2</sub>S. notified immediately if readings are ☐ Monitor area for H<sub>2</sub>S and / or LEL with sheltering. This is based on air monitoring readings at the nearest downwind residence. □ Reimburse evacuees for Advise that buses in the □ Prepare Mobile Monitoring approaching 10% LEL and / or 10 personal monitors and document their immediate out-ofaffected area leave Prioritize residents and area users in the EPZ to establish the order of evacuation. Coordinate B2 ppm H<sub>2</sub>S. readings on the Air Monitoring Log. pocket expenses and log immediately and that buses evacuation or shelter of residents, area users, and transients (via Telephoners and Rovers). ■ Report all H<sub>2</sub>S and / or LEL reading details on a Resident Record all incoming should not enter the area. □ Determine who needs to be notified and what script will be used: Early Notification / and outgoing traffic, Compensation Log. changes / increases to the Public Request a school administrator Voluntary Evacuation Message, Shelter-in-Place Phone Message, personnel, and B4 Safety Group Supervisor Evacuation Phone Message. B6 | B7 | B8 ■ Where possible, provide evacuees with for the reception centre to equipment on the ☐ For your own safety, ensure the Public assist in managing the children ☐ At a Level 1 Emergency it is required to notify any special needs information regarding their property, Roadblock Log. Safety Group Supervisor is notified and releasing them to their residents and give them the option to evacuate. livestock, and the incident. ☐ Forward information given to you by immediately if readings are guardians. ☐ If residences are evacuated, a reception centre must be established. ☐ Forward all media and incident inquiries to people passing through your location approaching 10% LEL or 10 ppm H<sub>2</sub>S. ■ Document all resident ☐ Determine and notify landowner / occupant(s) as soon as possible. the Information Officer. В3 to the Public Safety Group interactions using the ■ Report any suspicious behaviour to the ☐ Ensure the schools / school buses are contacted to make arrangements for school age ■ Report all names of evacuees who have Supervisor Resident Contact Log and **Public Safety Group Supervisor who** children (if applicable). registered at the reception centre to the report this information to the Public ■ Maintain communication with the will notify the police as required. ☐ If a large number of people need to be evacuated (large industrial operations and/or Public Safety Group Supervisor. Safety Group Supervisor. Immediately Public Safety Group Supervisor public facilities) refer to the Area Specific Information section (white tabs) for contacts ■ Maintain communication with the Public Address resident concerns and forward advise the Public Safety Group to obtain charter buses or changes to the normal notification procedures. ■ Maintain roadblock locations. Do not Safety Group Supervisor them to the Public Safety Group Supervisor about unsuccessful Send Rovers (if required) to identify human activity in the area which is not already leave until requested to do so by the Supervisor. contacts and any residents requiring identified within the ERP (drilling, pipeline construction, logging, hunting, farming, camping, **Public Safety Group Supervisor or** assistance. until relieved by other Roadblock Prepare Evacuation Notices and provide copies to Rovers. personnel. B5 Rovers can be used to assist with notifications, assist with evacuating special needs residents, assist with air monitoring, etc. Determine the need for helicopters to identify human activity in the area. **Important** Determine the need for and location of Roadblocks to isolate and secure the area. **Prior** to beginning any activities, each person in a role must: ☐ Ensure all Roadblock personnel are properly trained and have appropriate roadblock □ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the Incident Commander. ☐ Ensure all Roadblock personnel have the legal authority to restrict access to the area. **Throughout** the duration of the incident, each person in a role must: ☐ Assess public impact outside of EPZ. See Section 5: External Agencies to determine what assistance local authorities can provide for public protection outside the EPZ. Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms. ☐ Regularly update the **Incident Commander**. □ Confirm communication links with: Air Monitors, Reception Centre, Roadblocks, Rovers, and After the incident is over, each person in a role must: Telephoners. Personnel should check in at scheduled intervals. Assist with post-incident activities. ☐ Review and confirm evacuation of residents, area industrial users, transients, etc. from the area. All forms referenced can be found in Section 6: Forms Note: See Section 2: Roles & Request that a Notice to Airmen (NOTAM) is issued to restrict the airspace above the EPZ. Note: See Section 2: Roles & Responsibilities for a media script for Responsibilities for a media script for Roadblock and Rover personnel. Roadblock and Rover personnel Revised January 2019 **Location will be Incident Command Post** Located at the Incident Command Post (ICP) or the Regional Emergency Operations Location will be assigned. Location will be the reception centre. Location will be assigned. Location will be assigned. (ICP) or Regional Emergency Operations Centre (REOC). Centre (REOC).

#### Overview

 $H_2S,\ SO_2,\ LEL$  or other toxic substance concentrations will be monitored continuously during the incident response. It is crucial that  $Air\ Monitors$  continuously update the  $Public\ Safety\ Group\ Supervisor\ with monitored results. If air monitoring readings show high levels of <math display="inline">H_2S,\ SO_2,\ or\ LEL$  the  $Public\ Safety\ Group\ Supervisor\ may\ need to initiate\ evacuation\ /\ shelter\ of\ additional\ residences,\ change\ the\ location\ of\ the\ roadblocks,\ or\ ignite\ the\ release$ 

### **Air Monitor Roles**

- ☐ Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).
- ☐ Confirm communication links.
- ☐ Monitor closest downwind public location or residence.
- ☐ Monitor environment for adverse effects.
- $\hfill \square$  Record all readings on the Air Monitoring Log provided.
- □ Report all readings at established intervals to the **Public** Safety Group Supervisor.
- □ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching the following levels: 10% LEL or 10 ppm H<sub>2</sub>S.
- ☐ Prepare Mobile Monitoring Plan.
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Assist with post-incident activities.
- ☐ Monitor H<sub>2</sub>S and LEL concentrations along the edge of the EPZ to determine if sheltering and/or evacuation criteria has been met beyond the EPZ.

## **Air Monitoring Equipment**

Air monitoring equipment is used to:

- · Track the plume.
- · Determine if ignition criteria are met.
- Determine whether evacuation and / or shelter-in-place criteria have been met.
- Assist in determining when the emergency can be downgraded.
- Determine roadblock locations.
- Determine concentrations in areas being evacuated to ensure that evacuation is safe.

#### Tips

- ☐ **Air monitors** should be dispatched at a Level 1 Emergency.
- ☐ Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.
- ☐ Use the buddy system where possible.
- ☐ Breathing apparatus be prepared to don apparatus quickly.
- ☐ Ensure all personnel have a personal gas monitor.
- ☐ Speed and direction of wind may vary, therefore, be prepared to track gas plume.

#### ☐ Record all information:

- Concentrations in ppm or ppb
- · Location and time of readings
- Wind speed and direction

# **Regulatory Requirements**

#### Sour Gas Release - Manned Operations

- Critical / Special Sour Wells & EPZ includes a portion of urban density development or urban centre:
  - Must be minimum of two mobile air monitors: one to monitor the boundary of the urban density development or urban centre and the other to track the plume.

#### The licensee must also:

- Ensure that one unit is in the area during drilling and / or completion, testing, and workover operations in potentially critical sour zones.
- Ensure that the other unit is dispatched if it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
- Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site.
- Critical / Special Sour Wells whose EPZ does not include a portion of an urban density development or urban centre and for all noncritical sour wells:

#### The licensee must:

- Dispatch a mobile air quality monitoring unit(s) when it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
- Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel time is to the well site.

# HVP Product Release

public.

 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.

Sour Gas Release - Unmanned Operations

area where people may be present.

• If notified of a release by an alarm or by a reported odour, the

Air quality monitoring occurs downwind, with priority

being directed to the nearest unevacuated residence or

The licensee is expected to provide monitored H<sub>2</sub>S and SO<sub>2</sub>

information on a regular basis throughout a sour gas

emergency to the relevant government regulator, environmental

agency, health authority, local authorities, and on request to the

out **Air Monitors** upon confirmation of the release location.

licensee must investigate the source of the release and send

 The licensee is expected to provide monitored HVP product LEL information on a regular basis throughout the emergency to the relevant government regulator, environmental agency, health authority, local authorities, and on request to the public.

#### **Downgrading Level of Emergency**

• The decision to downgrade an incident will be based on the air monitoring results.

A5

# **Air Monitoring Log - Example**

ш			H₂S	$H_2S$ LEL $O_2$ $SO_2$ Other Temp (°C)	$O_2$ $SO_2$	$O_2$ $SO_2$	$O_2$ $SO_2$	SO <sub>2</sub>	···· (00)	Willia Collabilotic		0
П	Time	Location of Samples	(ppm)	(%)	(%)	(ppm)	Other	Other Temp (°C)	From	Speed (km/hr)	Comments	
	19:06	12-05-13-16 W5M	5	4		10		19	NW	12	Picked up 5 ppm reading upon entering lease access. Contacted control room at plant.	
	19:15	12-05-13-16 W5M	6	7		12		18	NW	11	H₂S reading increased 1 ppm at the access point.	
	19:25	12-05-13-16 W5M	6	7		12		17	NW	11	No change in readings. Wind and temperature is down.	
1		<u> </u>									<u> </u>	

#### \* Estimate meteorological conditions where accurate readings are not available.

# Choosing a Position

- Using your map and the current wind conditions, travel downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.
- Confirm the location with the Public Safety Group Supervisor and make sure you have a safe route to the assigned location that does not cross the hazardous area.

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#### Record Information

Record information on the following forms located within this Section:

☐ Air Monitoring Log☐ ICS 214 Activity Log

Form	For
A5	IC 21

# Reporting and Contacts

Air Monitors report to the Public Safety Group Supervisor						
Name:						
Phone Number:						
Reception Centre						
Location:						
Phone Number:						
Wind Direction:						

Revised October 2018

Air Monitor

A5 Air Monitoring Log

			Comments						
			Wind Conditions * Speed From (km/hr)						
			Wind C From						
	ne: ition:	ition:	Temp (°C)						
ne:			Other						
Responder Name:	Responder Position:		SO <sub>2</sub> (ppm)						
Resp	Resp		<b>o</b> <sub>2</sub> (%)						
			(%)						
			H <sub>2</sub> S (ppm)						
	of		Location of Samples						
Date:	Page		Time						

# **ICS 214 Activity Log**

ncident Name:					
Pate / Time Initiated:					
Prepared by: Position / Title:					
Personnel As	ssigned				
	Name	ICS Po	sition	Location	
Activity Log					
Time			Actions		

#### Overview

In the event of an emergency in which residents need to be evacuated, a Reception Centre must be established to receive and register the evacuees. A Reception Centre Representative is assigned to manage / coordinate activities at the Reception Centre. The Reception Centre Representative continuously updates the Public Safety Group Supervisor with a list of those who have, and have not, checked in at the Reception Centre.

# **Reception Centre Rep Roles**

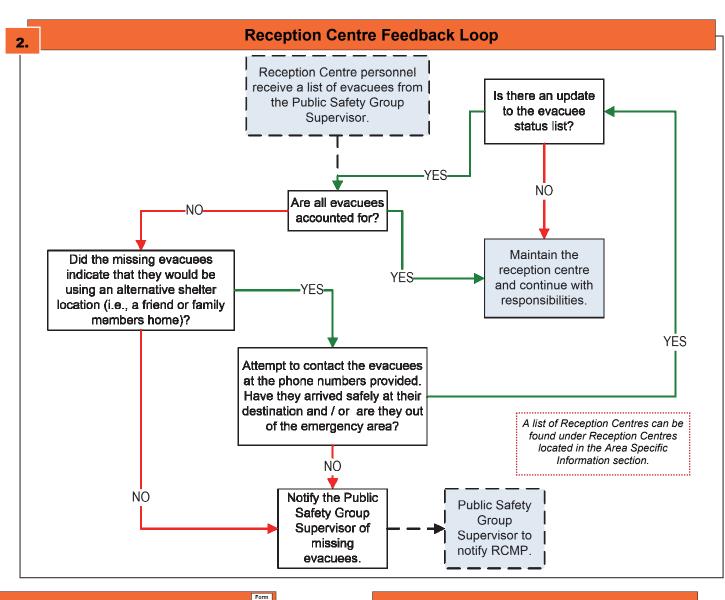
- ☐ Confirm Reception Centre is available for use.
- ☐ Establish Reception Centre.
- ☐ Confirm communication links.
- ☐ Receive evacuees and maintain a Reception Centre B1 Registration Log.
- ☐ Arrange for food and accommodations for the evacuees.
- ☐ Provide evacuees with a place to request counselling services, if required.
- □ Record and follow up on all evacuees who choose to make their own accommodation arrangements.
- ☐ Arrange for temporary care of livestock (if possible) and the security of evacuated property.
- ☐ Establish and oversee compensation administration activities at the reception centre.
- ☐ Reimburse evacuees for their immediate out-of-pocket expenses and log details on a Resident Compensation Log.
- ☐ Where possible, provide evacuees with information regarding their property, livestock, and the incident.
- ☐ Forward all media and incident inquiries to the C2 Information Officer.
- □ Report all names of evacuees who have registered at the Reception Centre to the Public Safety Group Supervisor.
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Assist with post-incident activities.
- □ Confirm information to be released to public with the Information Officer.
- □ Address resident concerns and forward them to the Public Safety Group Supervisor.

# **Choosing a Reception Centre**

- □ Reception Centres are usually located in schools, hotels / motels, or community halls.
- ☐ It may be useful to coordinate the location of the Reception Centre with the local authority (city, town, county, M.D., etc.).
- ☐ See Area Specific Information (white tabs) for pre-identified Reception Centres in your area.
- A Reception Centre should:
- ☐ Have a conference room of some type where a large number of people can gather.
- ☐ Have conferencing services including fax machine, internet access, and phone access.
- ☐ Be large enough to house all of the evacuees.
- ☐ Be outside of the hazard area.
- ☐ Allow residents to evacuate to the Reception Centre without travelling through the hazard area.
- ☐ Allow pets.

# Tips

- ☐ Ensure you have enough staff to handle the needs of all of the evacuees.
- ☐ Allow evacuees to vent their emotions.
- ☐ Do not make any promises that cannot be kept.
- ☐ Attempt to reunite families as quickly as possible.
- □ Document the details of anyone who may have trouble coping with the incident so that they can be given proper psychological support.
- ☐ Monitor whether residents that have been contacted by the Telephoners, Rovers, and Roadblock personnel have checked in at the Reception Centre.



# **Reception Centre Registration Log - Example**

**Destination Phon #** Name (List all names in party) # of Number Arrival Depart Resident ID (Where they can be Comments Time Time **Occupants** Arrived First Last reached) John and his wife arrived safely then left to stay at G124-A John Doe 2 2 19:06 19:21 555-555-5555 a friend's house in Red Deer. Jane and her 2 children arrived safely then left to 555-555-5555 H131-B Jane Doe 3 19:12 19:28 stay with her mother in Bentley. James, his wife and 1 child arrived safely. The other F122-A 5 3 19:20 555-555-5555 two children are away on a school trip. They will James Doe stay at the reception centre for the night.

#### **Media Statement**

В1

Refer all media inquiries to the Media Representative in Calgary. However, if they insist on a statement, please use the following:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Note: See Section 3.0 Communication & Media for more information on media

#### **Record Information** 3.

Record information on the following forms located within this Section:

- ☐ Reception Centre Registration Log
- ☐ Resident Compensation Log
- ☐ ICS 214 Activity Log
- ☐ Media Contact Log

Form	Form	Form	Form
ICS   214	В1	B2	C2

# **Reporting and Contacts**

Reception Centre Reps report to the Public Safety Group Supervisor.

Name:

Phone Number:

Reception Centre

Phone Number:

Wind Direction: \_\_\_

Location:

Revised

# **B1 Reception Centre Registration Log**

Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:

Resident	Name (list all names in party)		# Of	Number Arriva		Depart	Destination	
id	First	Last	Occupants	arrived	arrived time	time	phone # (where they can be reached)	Comments

# **B2 Resident Compensation Log**

Approved By: \_\_\_

Resident's Name:	Home Address:	Home Telephone #:	Location of Land (LSD):
		Business Telephone #:	
Number of Residents Evacuated:	Evacuated to:	Telephone # While Evacuated:	

No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details of Expense
									·
Total Reported Expenses									

# **ICS 214 Activity Log**

Incident Name	Incident Name:							
Date / Time Initiated:								
Prepared by:			Position / Title:					
Personnel As								
	Name	ICS Pos	sition	Locati	on			
Activity Log								
Time			Actions					

#### Overview

In the event of an emergency, roadblock locations and road detours will be established. The company will initially establish and maintain roadblocks until relieved by highway maintenance contractors or the RCMP. Roadblock personnel will be assigned in teams of two, one member to stop approaching traffic, the other will record the information gathered and relay to The Public Safety Group Supervisor. The Public Safety Group Supervisor must be continuously updated by Roadblock personnel so that all vehicles entering and exiting the EPZ are accounted for.

#### **Roadblock Personnel Roles**

- ☐ In conjunction with the Public Safety Group Supervisor, determine the need for and location of roadblocks.
- ☐ Pickup and check roadblock kits.
- □ Proceed to roadblock locations.
- □ Confirm communication links and establish communication interval
- ☐ Establish roadblocks to secure the EPZ.
- ☐ Follow the scripts and procedures in the ERP
- ☐ Knowledge and ability to communicate safest route away from
- ☐ Monitor area for H<sub>2</sub>S and / or LEL with personal monitors and A5 document readings on the Air Monitoring Log.
- □ Report all reading changes / increases to the Public Safety Group Supervisor
- ☐ For your own safety, ensure the **Public Safety Group Supervisor** is notified immediately if readings are approaching 10% LEL and / or 10
- ☐ Move location of Roadblock immediately if readings are approaching 10% LEL and / or 10 ppm H<sub>2</sub>S.
- □ Record all incoming and outgoing traffic, personnel, and equipment on the Roadblock Log.
- ☐ Forward information given to you by people passing through your location to the **Public Safety Group Supervisor**.
- □ Document activities using the ICS 214 Activity Log.
- ☐ Maintain communication with the Public Safety Group Supervisor.
- ☐ Maintain roadblock locations. Do not leave until requested to do so by the Public Safety Group Supervisor or until relieved by other Roadblock personnel
- ☐ Assist with post-incident activities.

# Roadblock Kit Contents - Sample

The roadblock kit may contain the following items:

#### Recommended

- ☐ Direct communication capability (radio, cell phone, etc.)
- ☐ ERP maps and roadblock forms
- ☐ Flashlight and batteries
- ☐ High visibility / reflective vests
- ☐ Orange traffic cones / reflectors
- ☐ Pens and / or pencils
- ☐ Personal Air Monitoring Device (H<sub>2</sub>S, CO, O<sub>2</sub>, LEL) ☐ Portable rotating emergency light
- □ SCBA ☐ Hand-held stop sign with reflective tape
- Waterproof bag
- Optional ☐ Caution tape
- □ Rain suit
- □ Road barrier

#### Tips

- ☐ When talking to motorists at the roadblock, ONLY provide them with the information as directed by the Public Safety Group Supervisor. ☐ Ask for identification prior to granting access.
- ☐ You do not have the legal authority to restrict access to the area without an order from the relevant authority. Report any person who chooses to proceed, without permission, through the roadblock.
- ☐ Check with the motorists and ensure all members of their residence are accounted for and documented on the Resident B3 Contact Log. Report any resident that is left behind in the EPZ.
- ☐ The roadblock should be setup to allow optimal visibility and sufficient distance for traffic to come to a safe and complete stop.
- □ Roadblock personnel should be highly visible on the side of the road and have an escape route in case of an emergency.
- DO NOT leave your position until you are directed to do so.

# **Choosing a Roadblock**

Roadblocks should be established:

- ☐ Approximately where the EPZ intersects any highways / roads.
- ☐ Outside of the hazard area.

2.

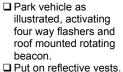
3.

- ☐ At a conspicuous location where the **Roadblock** personnel will be visible to approaching traffic. providing them with enough time to safely stop.
- At a location where traffic can easily turn around or detour (consider the potential for larger vehicles such as buses, semi-trailers, drilling rigs, etc.).
- ☐ Where possible at natural roadblock locations (e.g., gates, bridges, junctions, etc).

# **Before Departure**

- ☐ Make sure your vehicle is equipped and suitable for the travel conditions.
- ☐ Check roadblock kit to confirm all items are present (see sample of roadblock kit contents to
- $\square$  Confirm that your handheld monitor for H<sub>2</sub>S and / or LEL is functioning properly.
- ☐ Check all communications devices.
- ☐ Check that the red signaling baton flashlight is working and has spare batteries.
- ☐ Confirm that you have enough copies of the Roadblock Log form.
- □ Confirm the location of the roadblock with the Public Safety Group Supervisor and make sure you have a safe route to the assigned location that does not cross the hazardous area.

# Setting up a Roadblock



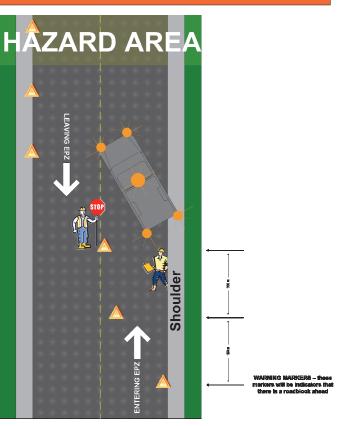
☐ Take a reading with your handheld monitor for H<sub>2</sub>S and / or LEL;

ensuring your Form roadblock is not too A5 close to the edge of the EPZ. Record readings on the Air Monitoring Log.

☐ Notify the Public Safety Group Supervisor once your roadblock is set up

☐ Continue to monitor and record H<sub>2</sub>S and / or LEL levels at scheduled intervals. Report to the **Public** Safety Group Supervisor at scheduled intervals

■ Maintain roadblock until the emergency is over and the "all clear" message is given or until relieved by other Roadblock personnel



# **Reporting and Contacts**

Roadblock personnel report to the Public Safety Group Supervisor.

Phone Number:

Reception Centre

Location:

Phone Number:\_ Wind Direction:

To give motorists time to prepare to come to a stop, it is recommended that the Roadblock personnel set up all available collapsible reflective triangles 100 metres apart, at a minimum distance of 200 metres before the roadblock.

Roadblock personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a State of Local Emergency by the local authority

When establishing a roadblock consider: □ Visibility

- ☐ Distance
- ☐ Bends in the road ☐ Level of the ground

Remember to: ☐ Remain calm ☐ Be courteous

□ Record names ☐ Notify the Public Safety Group Supervisor

# **How to Stop Traffic**

- 1. Hold the reflective stop / slow paddle erect and away from your body. Never wave the sign.
- 2. Look directly at the approaching driver.
- 3. Raise your free arm with the palm of your hand exposed to the driver.
- 4. Bring the vehicle to a full stop.
- 5. After the first vehicle has stopped, move to a spot (near the centre line of the roadway) where you can be seen by other approaching vehicles.

Because visibility is reduced at night, it is important that you use utmost care when stopping traffic through a roadblock area, and that you protect yourself from injury by:

- ☐ Standing in a safe position on the shoulder of the road.
- ☐ Waving the red signaling baton flashlight back and forth.

Note: The red signaling baton flashlight should only be used in place of the reflective stop / slow paddle at night or in conditions of low / poor visibility.

# **Roadblock Script**

"I am representing [Insert Company Name] and we are presently experiencing control problems ahead. This situation is serious enough to warrant restricted access beyond this point. For your own safety I must ask you not to proceed."

5b.

- ◆ Record driver's name, vehicle make, colour, etc. and at least the license plate number of all vehicles approaching your roadblock; also make a note of the time and of the direction the vehicle took when leaving (e.g., east, south, west, north) on your log sheet.
- ♦ Remember you have no legal position to restrict access to the general public. You are there to protect and notify - to protect the health and safety of the people by notifying them of the danger and secondly to protect the property of the residents who have evacuated the area.
- ♦ Should someone continue into the restricted area, regardless of your warning about personal safety, then use the 2-way radio or cell phone to notify the Public Safety Group Supervisor and the matter shall be immediately turned over to the Police.

#### **Media Statement**

If the media arrives at your roadblock location, company personnel may give the following statement:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

Contact the Public Safety Group Supervisor if a media representative arrives at your roadblock.

NEVER offer your opinion of what is happening at the location to a media person or stranger. This can be interpreted as the company's position. DO NOT give statements, other than the above message, regarding the emergency situation to the MEDIA. Refer them to the Information Officer.

# Be courteous but firm.

If the questioning persists, just keep politely repeating word for word the statement above.

# **Record Information**

Record information on the following forms located within this section:

- ☐ Roadblock Log ☐ Resident Contact Log
- ☐ Air Monitoring Log ☐ ICS 214 Activity Log

Form	Form
1CS	A5
211	

Form	Form	ш	
A5	В3		

# B4

#### Possible Scenarios for Roadblock Personnel:

- ♦ Motorist obeys request and drives away from the EPZ.
- ◆ Motorist is leaving the EPZ and agrees not to return until further notice.
- Emergency responders (service companies, fire, ambulance, etc.) are entering the EPZ to help respond to the incident.
- ♦ Motorist disobevs request to leave the area and enters the EPZ.

In all cases, notify the Public Safety Group Supervisor and log all information

June 2018

# **B3 Resident Contact Log**

Date:			Responder Name:	
	Page	of	Responder Position:	Responders Phone No.:

				Number	of people	Assistance or	
Time	Resident name	Resident ID	Shelter / Evacuate	Inside	Outside	transportation required?	Comments
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	

# **B4 Roadblock Log**

Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:

Vehicle type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering zone	Time Exiting zone	Comments (record all vehicles turned away)

# **ICS 214 Activity Log**

Incident Name:		
Date / Time Initiated:		
Prepared by:	Position / Title:	
Personnel Assigned		
Name	ICS Position	Location
Activity Log		
Time	Actions	

# **Rover Personnel Roles**

- ☐ Confirm resident contact lists are available.
- ☐ Confirm communication links.
- ☐ Know safe routes in and out of the EPZ.
- ☐ Search for residents and transients in the Emergency Planning and Response Zones.
- ☐ Check all buildings including barns, shops, sheds, etc.
- ☐ Assist, as required, with the notification, evacuation or sheltering of persons within the Emergency Planning B3 Zone. Record all contact with residents using the Resident Contact Log.
- ☐ Post Evacuation Notices for residents that are not at their residence
- ☐ Follow the scripts and procedures in the ERP.
- ☐ Monitor area for H<sub>2</sub>S and / or LEL with personal monitors and document readings on the Air Monitoring Log.
- □ Report all reading changes / increases to the Public Safety Group Supervisor.
- ☐ For your own safety, ensure the Public Safety Group Supervisor is notified immediately if readings are approaching the following levels: 10% LEL and / or 10 ppm H<sub>2</sub>S.
- ☐ Report any suspicious behaviour to the Public Safety
- Group Supervisor who will notify the police as required. □ Document all activities using the ICS 214 Activity Log.
- ☐ Maintain communication with the Public Safety Group Supervisor.
- ☐ Assist with post-incident activities.

#### **Media Statement**

If a media representative approaches you, company personnel may give the following statement:

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available.'

Contact the Public Safety Group Supervisor if a media representative approaches you.

**NEVER** offer your opinion of what is happening at the location to a media person or stranger. This can be interpreted as the company's position. DO NOT give statements, other than the above message, regarding the emergency situation to the MEDIA. Refer them to the Information Officer.

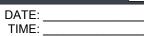
Be courteous but firm.

If the questioning persists, just keep politely repeating word for word the statement above.

# **Reporting and Contacts**

Rovers report to the Public Safety Group Supervisor.
Name:
Phone Number:
Reception Centre:
Location:
Phone Number:
Wind Direction:

# **Evacuation Notice - Example**



# **EVACUATION NOTICE**

[Insert Company Name] has an emergency at its nearby location.

As a safety precaution, please leave the area in a (north / east / south / west) direction and proceed to the **Reception Centre located at** 

[Insert Company Name] representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call [Insert Company Name] at

Thank you

#### **Tips**

Remember to:

- □ Remain calm
- ☐ Be courteous
- ☐ Document all actions and comments
- ☐ Notify the Public Safety Group Supervisor

Remember to use a handheld H<sub>2</sub>S and / or LEL monitor to continually test the atmosphere. Report all H<sub>2</sub>S and / or LEL reading changes / increases to the **Public Safety Group Supervisor**.

Response personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a State of Local Emergency by the local authority.

# **Before Departure**

☐ Protect yourself

☐ Ensure you are equipped with all necessary equipment:

□ SCBA

☐ Mobile communications or other form of communication

☐ Vehicle (4x4) with full tank of fuel

■ Map

☐ Confirm that your handheld monitor for H<sub>2</sub>S and / or LEL is functioning properly.

☐ Confirm that you have enough copies of the Evacuation Notice.

☐ Confirm your assignments with the Public Safety Group Supervisor and make sure you have a safe route to the assigned location that does not cross the hazardous area.

# **Notifying Residents / Transients**

The Public Safety Group Supervisor may request you to patrol the Emergency Planning and Response Zones in search of transients (people passing through the area) and / or residents that couldn't be reached by phone. Make contact with residents / transients and after providing an explanation record their names, contact information, purpose for being in the area (travelling through, live in the area, etc.), current condition, timing of your arrival, and whether or not they require evacuation assistance.

"Hi, I am [Insert Name] representing [Insert Company Name]. The company is presently experiencing control problems at a nearby location. The situation is serious enough that we are evacuating the public in the area. For your own safety I must ask you to leave the area immediately and check in with a company representative at the Reception Centre. Representatives at the Reception Centre will address any questions you may have and will make arrangements for your temporary accommodations.'

- ☐ Ask if they will require evacuation assistance and arrange additional transportation assistance if
- ☐ Make sure they are all accounted for.
- ☐ Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers,
- ☐ If they are able to transport themselves to the Reception Centre provide them with directions that will keep them away from the hazard.
- ☐ Ask them if they have any questions.
- ☐ Provide them with your name and contact information in case they need assistance later.
- ☐ Report to the Public Safety Group Supervisor.

# **Requested Evacuation Assistance**

The Public Safety Group Supervisor may request you to provide evacuation assistance for residents that have requested it. Ensure you obtain the number of residents requiring assistance, resident's names, location (legal and address), and the reason evacuation assistance is required (medical issue, children home alone, etc). A Telephoner should have already contacted and explained the situation to the residents; however, it is a good idea to confirm with the Public Safety Group Supervisor that they know you are coming to assist them. If they have not already been informed, contact the resident to tell them you are on your way and provide an estimated time of arrival.

"Hi, I am [Insert Name] representing [Insert Company Name]. I am here to help you evacuate out of the hazard area and make sure you arrive safely at the Reception Centre. A company representative at the Reception Centre will address any questions you may have and will make arrangements for your temporary accommodations.

☐ Try not to scare them. They are aware you might be coming but don't know what to expect.

- Make sure they are all accounted for.
- ☐ Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers,
- ☐ Ask them if they have any questions.
- ☐ Once you are satisfied that all personnel from the residence are accounted for, deliver them to the
- ☐ On the way to the Reception Centre, notify the Public Safety Group Supervisor of your progress and estimated time of arrival at the Reception Centre.
- ☐ Ensure that the residents check in at the Reception Centre with the Reception Centre Representative before you leave for your next assignment.

# **Record Information**

Record information on the following forms located within this section.

- ☐ Resident Contact Log
- ☐ Air Monitoring Log ☐ ICS 214 Activity Log
- Evacuation Notice

Form Form ICS A5 B3 B5

June 2018

B3 Resident Contact Log

Date:			Responder Name:					
Page	of		Responder Position:	<u></u>			Responders Phone No.:	- 1
Time	Resident name	Resident ID	Shelter / Evacuate	Number of Inside	Number of people	Assistance or transportation	Comments	
			O Shelter			O Yes		_
			O Evacuate			oN C		
			O Evacuate			O No		
			O Shelter O Evacuate			O Yes O No		
			O Shelter O Evacuate			O Yes		
			O Shelter O Evacuate			O Yes O No		
			O Shelter O Evacuate			O Yes		
			O Shelter O Evacuate	_		O Yes O No		
			O Shelter O Evacuate			O Yes O No		
			O Shelter O Evacuate			O Yes O No		
			O Shelter O Evacuate			O Yes O No		
			O Shelter O Evacuate			O Yes O No		_
			O Shelter			O Yes		

# **ICS 214 Activity Log**

ncident Name:								
Date / Time Ir	nitiated:							
Prepared by:			Position / Title:					
Personnel As	ssigned							
	Name	ICS Pos	sition	Location				
Activity Log								
Time			Actions					

#### Overview

In the event of an emergency in which residents and area users need to be sheltered and / or evacuated, a team of Telephoners will be established to contact people in the area and provide instructions to ensure their safety. The Public Safety Group Supervisor must be continuously updated with the Telephoners progress so that unsuccessful contact attempts and requests for evacuation assistance can be followed up on immediately.

# **Telephone Personnel Roles**

- ☐ Confirm resident contact lists are available.
- ☐ Confirm communication links.
- ☐ In conjunction with the Public Safety Group Supervisor, determine Form who needs to be notified (residents, businesses, area users, etc.).
- ☐ Review with the Public Safety Group Supervisor the telephoner scripts to be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message.
- ☐ Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate.
- ☐ Contact the other residents and area users in the EPZ and advise them to evacuate or shelter
- ☐ Contact the schools / school buses to make arrangements for school age children (if applicable)
- ☐ Advise that buses in the affected area leave immediately and that buses should not enter the area.
- Request a school administrator for the reception centre to assist in managing the children and releasing them to their guardians.
- ☐ Document all resident interactions using the Resident Contact Log and report this information to the Public Safety Group Supervisor. В3 Immediately advise the Public Safety Group Supervisor about unsuccessful contacts and any residents requiring assistance.
- ☐ Document all activities using the ICS 214 Individual Activity Log.
- ☐ Assist with post-incident activities.

# **Shelter-In-Place Instructions**

B7

B8

- ☐ Immediately gather everyone indoors and stay there. Do not leave even if you see people outside.
- ☐ Close and lock all outside doors and windows. Tape gaps around doors and windows. Leave all inside doors open.
- $\hfill\square$  Turn off appliances or equipment that blows out indoor air or sucks in
- ☐ Turn down furnace thermostats to the minimum setting and turn off air conditioners.
- ☐ Extinguish all potential sources of ignition (do not smoke or attempt to start vour vehicle)
- $oldsymbol{\square}$  Stay off of the phone so that you can be contacted by emergency personnel.
- lacktriangle Stay tuned to local radio and television for possible updates.

Note: For the full Shelter-In-Place instructions see page 2 of the Shelter-In-Place Telephoner Text form located in SECTION 6.0: FORMS.

#### Who to Contact

- Residents
- ☐ Schools / School Bus Transportation
- □ Businesses
- Public Facilities
- ☐ Recreation Areas
- ☐ Urban Centres (contact local authority to coordinate)
- ☐ Area Users (other oil and gas operators, rail, logging, etc.)
- □ Trappers
- ☐ Guides / Outfitters
- ☐ Grazing Lease / Allotment Holders
- Priority is given to:
- ☐ Those closest to the hazard
- ☐ Those downwind of the hazard
- ☐ Those with sensitivity issues (health issues, require assistance, etc.)

#### **Tips**

- ☐ Ensure you have enough personnel to quickly and efficiently shelter / evacuate the required residents / area users.
- ☐ A general guideline is to have one **Telephoner** for every seven residences that need to be contacted and one Telephoners Leader for every ten Telephoners.
- ☐ Special needs residents should be contacted at a Level 1 Emergency and given the option to evacuate

Response personnel cannot force an evacuation or restrict access to the area unless proper authority has been granted. The authority for forced evacuation is gained only through the declaration of a Local State of Emergency by the local authority.

#### **Shelter-In-Place Phone Message** Hello this is (your name) (company name) Is this the (name) residence at (telephone number) ?

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

is responding to a (potential) emergency at\_

To help us understand your immediate needs, we need to know:

#### How many people are at your location now?

Children

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to get in doors or stay out of the area?

☐ Yes ☐ No

(company name)

IF YES Whom? Location of the person(s)

We will send someone to find them as soon as possible.

#### Do you have children in school at this time?

☐ Yes ☐ No

What school?

Children's names

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over

Do you have the "Shelter-in-Place" instructions previously provided to you by \_\_\_\_\_(company name)

Please follow the Shelter-in-Place instructions located inside the resident pamphlet.

Verbally walk the resident through the Shelter-in-Place instructions on the next page.

Do you understand what I have told you?

Is there an alternate number we can contact you at?

If you have any urgent questions, please contact (company name) at (telephone number) Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Note: Refer to Shelter-in-Place instructions on page 2 of the Shelter-in-Place Phone Message located in this section.

Teler	honer	Comm	unication	Flow
I CIC			unication	1 10 1

			<b> </b>	Shelter-in-Place Message	Provide Public Safety Group  — → Supervisor with a list of unsuccessful contacts.
Telephoners receive a list of residents / area users from the Public Safety Group Supervisor.	•	Provide appropriate message	<b>-→</b>	Evacuation Message	Provide Public Safety Group Supervisor with a list of unsuccessful contacts and those requiring evacuation assistance.  Public Safety Group Supervisor to dispatch Rovers
			<b>-</b>	Voluntary Evacuation Message	Provide Public Safety Group Supervisor with a list of unsuccessful contacts, those choosing to evacuate, and those requiring evacuation assistance.

# **Evacuation Phone Message**

lello, this is	(your nam	<u>ne)</u> of	(company name)		
this the	(name)	residence at	(telephone number)		
(company name)	is responding to	a (potential) emergency at	(location)	in your area	

For your safety, it is extremely important that you and your family leave your residence immediately and travel in a north / east / south / west direction to our reception centre located at:

To help us understand your immediate needs, we need to know:

#### How many people are at your location now?

Α	dults				
_					

We will send someone to find them as soon as possible.

Is there anyone in your household that you cannot contact to inform them of the situation and advise them to evacuate away from the area?

☐ Yes ☐ No

IF YES Whom?

2b.

Location of the person(s) \_\_\_\_\_

Do you have children in school at this time?

77 Yes 77 No

IF YES What school?

Children's names

We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.

#### Do you require evacuation / transportation assistance?

IF YES We are sending someone to assist you. Please stay indoors and close all doors and windows until a Rover or the local police arrive to evacuate you.

Provide the resident with: IF NO

☐ Directions to safely travel to the reception centre

- ☐ A list of items to bring with them to the reception centre (medications, cell phone, etc.)
- $\square$  An idea of how long they may be expected to stay at the reception centre
- ☐ The option to bring their house pets to the reception centre

if you are unable to make it to the reception centre for any reason. Please keep your phone line free so that we can contact you if necessary.

Is there an alternate number we can contact you at?

A company representative at the reception centre will address any questions you may have and will make arrangements for your temporary accommodations. Do you understand everything I have told you? Are you leaving immediately?

If you have any urgent questions, please contact (company name) at (telephone number) . Thank you for your cooperation.

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

3.

# **Record Information**

Record information on the following forms located within this section: □ Resident Contact Log

- ☐ ICS 214 Individual Activity Log
- Voluntary Evac Message
- ☐ Shelter-in-Place Message ■ Evacuation Message

Wind Direction:

3	ICS 214	B3	B6	B7	B

# **Reporting and Contacts**

Telephoners report to the Public Safety Group Supervisor.

Name:\_\_ Phone Number:

Reception Centre

Phone Number:

ephone

Revised

# **B3 Resident Contact Log**

Date:		Responder Name:		
Page	of	Responder Position:	Responders Phone No.:	

				Number	of people	Assistance or	
Time	Resident name Resident ID	Shelter / Evacuate Insid	Inside	Outside	transportation required?	Comments	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	

# B6 Early Notification / Voluntary Evacuation Phone Message

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.				
Hello, this is <u>(your name)</u> calling from <u>(company name)</u> . Is this the <u>(name of residence / business)</u> at <u>(telephone number)</u> ?				
(Company name) is responding to a (potential) emergency at (location) in your area.				
You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.				
To help us understand and your immediate needs we need to know:				
How many people are at your location now? (Adults) (Children)				
Do you wish to leave your residence at this time?				
IF YES Please travel in a a <u>north / east / south / west</u> direction to our reception centre located at:				
IF NO Please standby for further contact. Please do not use your telephone for outgoing calls as this may prevent us form contacting you with updated information or when the problem has been eliminated.				
If you have urgent questions, please contact <u>(company name)</u> at <u>(telephone number)</u> .				
Thank you for your cooperation.				

# **ICS 214 Activity Log**

ncident Nam	ne:					
Date / Time Initiated:						
Prepared by:		Position / Title	Position / Title:			
Personnel A	ssigned					
	Name	ICS Position	Location			
Activity Log						
Time		Actions				



#### **Initial Response:**

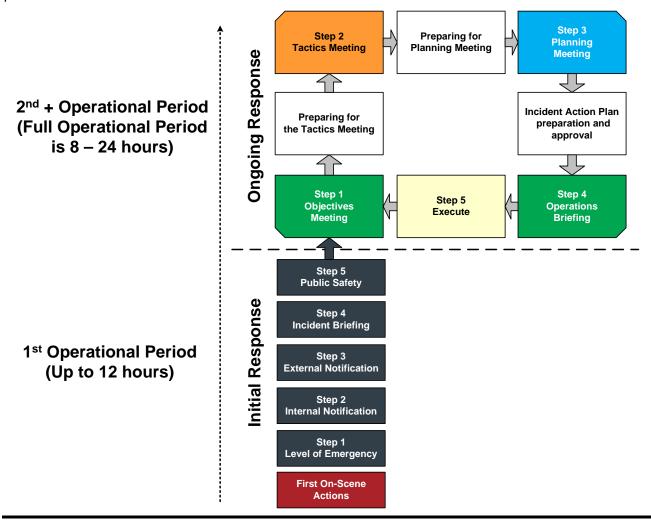
All incidents begin with the initial response (reactive phase) during the first operational period. At the onset of an emergency response an Initial Emergency Report (A1) Form is completed to determine the severity of the emergency and extent of the response. 95% of emergency responses begin and end in the first operational period.

After response personnel ensure their own personal safety by following the First On-Scene Actions, the Five Step Initial Response Guide, and associated tools, provide a structure for the Incident Commander to formulate a response and outlines the steps (key considerations) that need to be addressed and readdressed when evaluating the incident and associated emergency response.

## **Ongoing Response:**

An ongoing response (proactive phase) is required for an extended emergency response that spans over multiple operational periods and revolves around establishing the objectives, strategies, and tactics for the next upcoming operational period. 5% of incidents require an ongoing response, but once engaged emergency responders will circulate through this cycle multiple times.

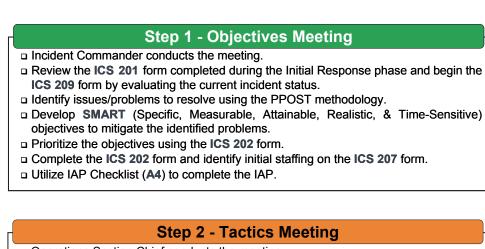
After the initial response has been completed, the Five Step Ongoing Response Guide and associated tools provide a cycle to plan the next steps of the emergency response. This continual cycle provides a structure for the Command Staff and General Staff to complete the Incident Action Plan (IAP) and associated documents. The ongoing response cycle and an associated IAP must be completed for each operational period until the incident is stood down.



**Section 2: Ongoing Response** 

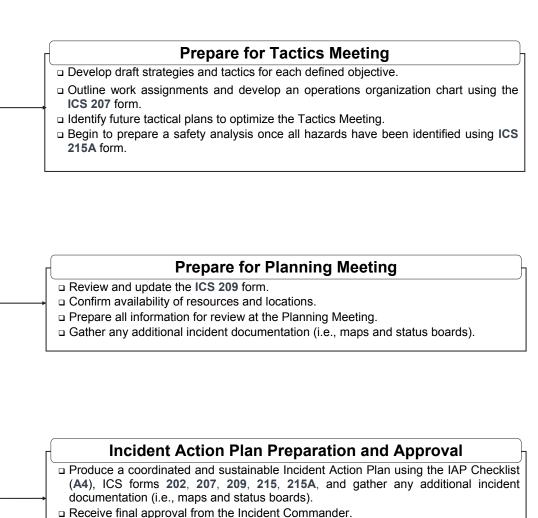


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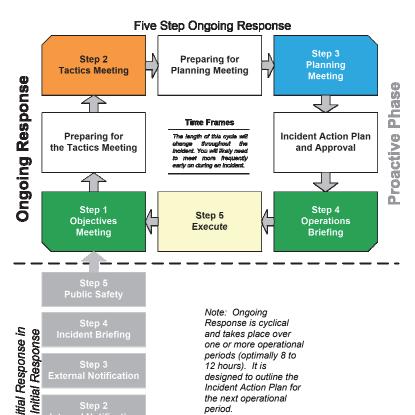


# Operations Section Chief conducts the meeting. □ Review the incident status using the ICS 209 form that was completed during the Objectives Meeting. Operations Section Chief proposes strategies and tactics. □ Evaluate and assign resources and personnel. □ Ensure that all strategies have associated tactics to ensure responder safety and complete the ICS 215A form. □ Complete the ICS 215 form and update the ICS 207 form started during the Objectives Meeting. Step 3 - Planning Meeting Planning Section Chief conducts the meeting. □ Review the incident status using the updated ICS 209 form. □ Confirm the strategies and tactics assigned to achieve the defined objectives. □ Ensure that all assigned tactics can be performed safely and follow the defined safety analysis using the ICS 215A form. □ Incident Commander to give tentative approval of proposed plan and review with key

# Step 4 - Operations Briefing Incident Commander conducts the meeting. Provide personnel with work assignments from the IAP. Operations Section Chief to brief the organization and provide clarification on all tactical assignments. Ensure that all responders know and understand the safety analysis, hazards, and controls. Step 5 - Execute Perform work assignments according to assigned roles. Document all actions, decisions, and conversations. Constantly evaluate how well the plan is designed and being conducted. Adjust the plan and associated actions accordingly. Identify additional objectives for the upcoming operational period.



#### □ Define work assignments and break the work into manageable units. □ If necessary, other documents may be included such as a Demobilization plan. Step 2 Step 3 **Planning Meeting Tactics Meeting** Preparing for Planning Meeting AM / PM AM / PM To То **Time Frames** AM / PM AM / PM The length of this cycle will change throughout the incident. You will likely need Incident Action Plan preparation and to meet more frequently **Preparing for the Tactics Meeting** approval early on during an incident. Step 4 Step 1 Step 5 **Objectives Meeting Operations Briefing** Execute AM / PM AM / PM AM / PM To To To AM / PM AM / PM AM / PM



9

Five Step
Ongoing
Response
Guide



□ Schedule next Objectives Meeting if applicable.

response personnel.

# **Objectives Meeting**



Owner: Incident Commander Date:	Time:				
**Roles below will atte	end only if designated and available**				
Attendees:					
☐ Incident Commander:	☐ Planning Section Chief:				
☐ Deputy Incident Commander:	☐ Logistics Section Chief:				
☐ Operations Section Chief:	☐ Finance/Admin. Section Chief:				
☐ Planning Section Chief:	☐ Safety Officer:				
☐ Liaison Officer:	☐ Other:				
☐ Information Officer:	☐ Other:				
Summary:					
<ul> <li>Establish objectives and priorities for the up</li> <li>Begin an ICS 209 Incident Status Summary</li> <li>Begin identifying all required roles on the IC</li> <li>Begin addressing the Incident Action Plan C</li> </ul>	y report. CS 207 form. Checklist (A4).				
<ul> <li>Schedule and prepare for the Tactics Meeting</li> <li>Resources: ICS 202, 207, 209 forms,</li> </ul>	and the IAP Checklist (A4)				
Agenda Items:					
☐ Status Update and review the ICS 201 Incid	dent Briefina form.				
☐ Determine incident priorities. Reference the					
•	apable of meeting initial and long-term challenges required to				
☐ Determine the incident response objectives must be <b>SMART</b> (Specific, Measurable, Att	and complete and <b>ICS 202</b> Incident Objectives form. They tainable, Realistic, & Time Sensitive).				
☐ Identify initial staffing requirements and begin filling out the ICS 207 Incident Organizational Chart.					
☐ Identify and select incident support facilities					
☐ Review the incident objectives for the next operational period so your management team can begin work on the IAP.					
☐ Document the incident status to relay to all I	responding personnel.				
Key Points:					
Ensure that the meeting is documented in the second s	/ recorded. (Utilize the back side of this page.)				
Define the hours of work and operational per	eriod.				
Utilize Incident Action Plan Checklist (A4).	Utilize Incident Action Plan Checklist (A4).				
Identify constraints and limitations.	Identify constraints and limitations.				
Clarify any staff roles and responsibilities.					
Determine expectations of the team for how	v all communications are to be made.				
·	as resource ordering, cost accounting, operations security,				
Continue to develop tasks for Command an	nd General Staff.				
<ul> <li>Agree on division of command workload, such as press and agency briefings.</li> </ul>					

# **Objectives Meeting**



Notes:	
Notes.	

# **Tactics Meeting**



Owner: Operations Section Chief	Date:	Time:		
**Roles below w	rill attend only if	designated and available**		
Attendees:	,			
☐ Incident Commander:		Planning Section Chief:		
☐ Deputy Incident Commander:		Logistics Section Chief:		
☐ Operations Section Chief:		Finance/Admin. Section Chief:		
☐ Planning Section Chief:		Safety Officer: Other:		
☐ Liaison Officer: ☐ Information Officer:		Other:		
Summary:		Janot .		
The objectives of this meeting are to:				
Meeting.	5A forms agreed upor anization Chart. cklist (A4) and contin	n by all attendees (Command and General Staff).  The to add to items accomplished.		
	5A, and IAP Checkli	st (A4)		
Agenda Items:	•			
☐ Review ICS 209 Incident Status S	ummarv.			
☐ Review incident objectives.	,			
☐ Define tactics to complete objective	es set out during the	Objectives Meeting.		
☐ Provide an operational update and	d identify tactics to de	al with incident.		
☐ Identify roles and responsibilities t	hat have to be perfor	med to implement tactics.		
☐ Build on already established ICS 2 with ICS 215 assignments.	207 Incident Organiza	ation Chart, check span-of-control, and match up		
Complete the Operational Planning V ☐ Identify work assignments	Vorksheet, ICS 215 (	Utilize one form for every established objective).		
□ Identify resources requirements				
☐ Identify overhead staffing needs to support each work assignment				
<ul> <li>☐ Identify specialized equipment and supply needs for each work assignment</li> <li>☐ Specify reporting times and location for personnel</li> </ul>				
		15.4		
☐ Identify potential hazard types	Complete the Incident Action Plan Safety Analysis, ICS 215A.			
☐ Identify mitigations for associated hazard types				
☐ Identify support facilities and locations.				
Key Points:				
	ımented / recorded.	(Utilize the back side of this page.)		
Review planned actions against in				
'	•	support facilities, and any key information.		
	· ·	support racillities, and any ney information.		
, ,, ,	- course and other course of			
Consider contingencies and secondary options.				

# **Tactics Meeting**



N A	
Notes:	

# **Planning Meeting**



			<del>,</del>		
Owner: Planning Section Chief	Date:		Time:		
**Roles below will attend only if designated and available**					
Attendees:					
☐ Incident Commander:		☐ Planning Sec	tion Chief:		
☐ Deputy Incident Commander:		☐ Logistics Sec			
☐ Operations Section Chief:			in. Section Chief:		
☐ Planning Section Chief: ☐ Liaison Officer:		☐ Safety Officer☐ Other:	y 2 2		
☐ Information Officer:		☐ Other:			
Summary:					
The objectives of this meeting are to	n with the nece		ed on the objectives, tactics, and		
Resources: IAP Checklist (A		isted ICS forms			
Agenda Items:	4) and an associ	ated 100 forms			
	· /ICS 202 207 2	000 215 and 215	Λ)		
<ul> <li>□ Review Incident Action Plan forms (ICS 202, 207, 209, 215, and 215A).</li> <li>□ Review Command's incident objectives, priorities, decisions, and direction.</li> </ul>					
•	•				
☐ Provide briefing on current situation	•	sk, weather foreca	ast, and incident projections.		
<ul> <li>□ Operations Section Chief provides briefing on:</li> <li>□ Current operations.</li> <li>□ An overview on the proposed plan including strategy, tactics or work assignments, resource commitment, contingencies, organization structure, and needed support facilities.</li> </ul>					
	☐ Review the proposed plan to ensure that Command direction, priorities, and operational objectives are				
☐ Delegate assignments and deadlines to appropriate staff members to assure timely and effective IAP development.					
Key Points:					
Ensure that the meeting is documented / recorded. (Utilize the back side of this page.)					
Review IAP Checklist (A4) to ensure that all critical materials have been accounted for in the IAP.					
Planning Section Chief brings meeting to order, cover ground rules, and review agenda.					
Planning Section Chief requests t					
Planning Section Chief reviews and validates responsibility for any open actions and management objectives.					
Planning Section Chief conducts round table of Command and General Staff to solicit their final input and commitment to the proposed plan.					

# **Planning Meeting**



N A	
Notes:	

# **Operations Briefing**



Owner: Incident Commander Date:	Time:				
**Roles below will attend	l only if designated and available**				
Attendees:	,				
☐ Incident Commander:	☐ On-Site Group Supervisor				
☐ Deputy Incident Commander:	☐ Public Safety Group Supervisor				
☐ Operations Section Chief:	☐ Air Monitor Team Lead				
☐ Planning Section Chief:	Roadblock Team Lead				
☐ Liaison Officer: ☐ Information Officer:	☐ Rover Team Lead				
☐ Planning Section Chief:	☐ Telephoner Team Lead ☐ Reception Centre Representatives				
☐ Logistics Section Chief:	□ Other:				
☐ Finance/Admin. Section Chief:	□ Other:				
☐ Safety Officer:	☐ Other:				
☐ Staging Area Manager:	☐ Other:				
Summary:					
The objectives of this meeting are to:					
<ul> <li>Review a summary of the incident status with</li> </ul>	h all responders.				
<ul> <li>Relay objectives, tactics, and strategies.</li> </ul>					
<ul> <li>Reinforce/relay the safety message.</li> </ul>					
<ul> <li>Assign roles &amp; responsibilities and tasks for a</li> </ul>	all responders to accomplish.				
Execute the response.					
	<ul> <li>Tentatively schedule next Objectives Meeting and identify potential problems/issues to address in the</li> </ul>				
next operational period.					
Resources: IAP Checklist (A4) and all	associated ICS forms				
Agenda Items:					
☐ Planning Section Chief briefly walks through	the IAP components and makes changes as needed.				
☐ Operations Section Chief conducts roll call o	of the Operation Section Supervisors and provides a briefing				
on emergency response.					
☐ Operations Section Chief briefs supervisory personnel on their assignments along with clarification on					
any of their issues and concerns.					
☐ Safety Officer covers major safety issues.					
☐ Logistics Section Chief covers logistical sup medical, etc).	port of operations (communications, supply, transportation,				
·	Finance / Admin. Section Chief covers time & cost tracking, procurement, and compensation process.				
☐ General Staff to cover issues applicable to Operations Section personnel.					
Key Points:					
Ensure that the meeting is documented / I	recorded. (Utilize the back side of this page.)				
	rs ground rules, agenda, and conducts roll call of Command				
Establish a briefing and message for all resp	onders.				
Review pre-determined public and media sta					
·	Planning Section Chief solicits final comments and adjourns briefing.				

# **Operations Briefing**

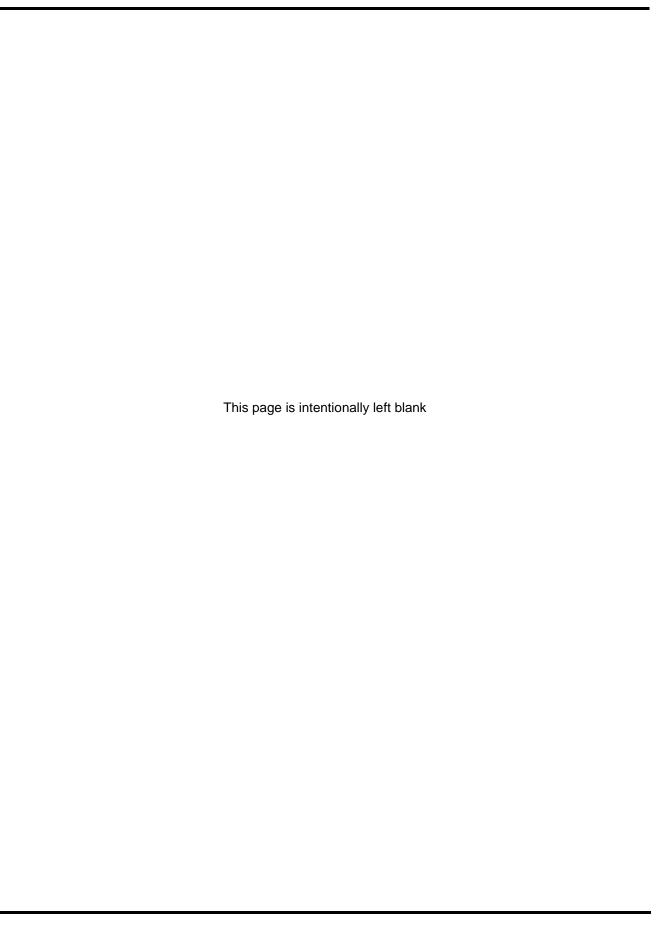


Notes:	



Employee Phone List					
Name	Title	Cell #	Office #		
Yvonne McLeod	SVP Drilling, Completions & HSE	403-921-7744	403-351-5423		
Kyra Dziedzic	Environmental Coordinator	403-339-1234	587-392-9384		
Alex Morash	Operations Engineer	403-630-9776	403-685-2424		
Arne Hamarsnes	Sr. Completions Engineer	403-874-8842	403-351-5422		
Petra Struck	Senior Engineering Technician	403-830-2263	403-351-4033		
Chris Clattenburg	Coordinator HS & ERP	403-991-6222	-		
Leighanne Mohr	HSE & R Manager	587-577-9560			
Conrad Kenny	Superintendent, Jumping Pound & North	403-472-5593	-		
Carolyn Normand	VP Operations	403-598-3188	403-776-7745		
James Millar	Director, External Relations	403-702-5698	403-776-7446		
Paul Smith	Health & Safety, ERP Coordinator	403-638-1452	-		
Josh Storle	North Foothills Foreman	780-897-0851	-		
James Jung	CNRL Backup Foreman/Operator	250-242-1214	-		
Matt Lorincz	CNRL Area Foreman	250-261-8396	-		
Richard Calliou	CNRL Area Foreman	250-262-9372	-		



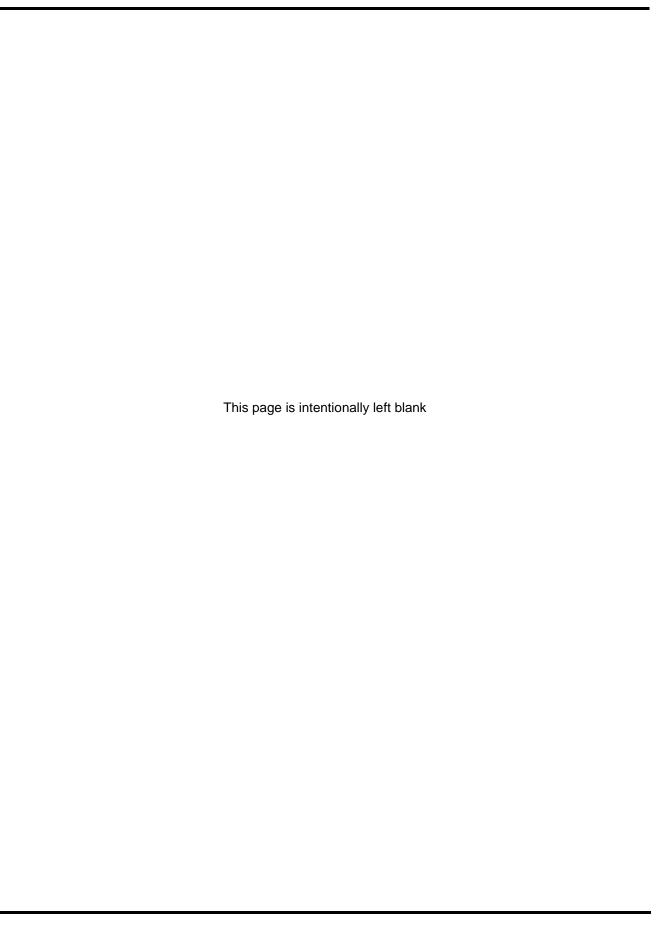




# **Section 3: Communication & Media**

Media Relations and Generic Media Statement	′
Generic Media Statement	
Media Management	′
On-Site Media Spokesperson	
Managing the Media On-Site	2
nternal Communication	:
Communicating With the Public	
Information Disseminated to the Public	
Preparing a Preliminary Media Statement	4







#### **Media Relations and Generic Media Statement**

Any incident that affects the environment, the health and safety of individuals, or causes extensive property damage could be a news "item". When such an incident occurs, the media should not be avoided. The key is to establish good rapport with the media early in the life of the emergency. Open and honest communication will help to create favourable public opinion and could help to prevent the public from overreacting to the incident.

Media releases are generated and released as significant developments occur. The company is expected to coordinate media releases with the relevant government agencies prior to release to provide consistency and accuracy of information. Information is communicated through written news releases, news conferences, and any other effective means that the company chooses to use. The company must identify a spokesperson to carry out this role and to interact with applicable government agencies.

Media releases will be developed by the Incident Commander in conjunction with the applicable regulatory agency. The Incident Commander will assign a Media Spokesperson to deliver the approved messages.

Media at the field level will be coordinated by the Information Officer with the Support of the Incident Commander. If media have arrived at the emergency site and the designated Information Officer is not yet available, only the Incident Commander or their designate can act as the company spokesperson, and will issue only the information below.

Future statements will be prepared by the Incident Commander and should be issued only by the designated Media Spokesperson. All media statements will be reviewed with the regulatory agency's Media Coordinator.

All information that is given to the media should be recorded. See **Section 6: Forms** for the C2 Media Contact Log.

#### **Generic Media Statement**

"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide you with more information as it becomes available."

# **Media Management**

- Do not wait until you are contacted by the media to react to their inquiries. By preparing in advance, the company will appear to be organized, aware, and actively responding to the situation. The essence of effective media management is preparation in advance of any media contact.
- It is important when contacting the media with a news release that you do not favour one media organization or agency over another. To minimize the chances of creating a prejudicial situation, deal solely with major umbrella press agencies.
- If media representatives are not provided with the basic information, it can be assumed that they will fill the gap with material from less reliable sources.

Be aware at all times that it is possible for the media or others to be monitoring your radio, cellular phone, or telephone conversations.



## On-Site Media Spokesperson

Depending on the specific emergency an on-site spokesperson may be required to handle all on-camera activities requested by the media. Only approved and trained spokespeople will be allowed to provide comment to the media. The Information Officer or Incident Commander will identify any and all media spokespersons. The Information Officer or Incident Commander may serve as the on-site Media. This representative will endeavor to maintain a favourable public image on behalf of the company. It is important that they keep in mind the following:

- The Dos and Don'ts of conducting yourself on camera; 75% of information comes from non-verbal actions (gestures, tone, posture, etc.)
- Public appearance, ensuring appropriate and approved wardrobe
- Preparation in communicating the media release in advance so the message feels natural
- How to handle impromptu or "off the record" inquiries from the media

## Managing the Media On-Site

Depending upon the size and/or scope of the emergency to the incident site, the media will likely travel to site and attempt to secure coverage of the situation. Usually the size and nature of an emergency will determine the amount of media attention garnered. It is important everyone on-site understands how to properly manage the media and that only designated individuals are to speak to the media. It is recommended that only individuals with adequate media training have even casual interactions with the media.

Media Briefing Areas are to be designated by the Incident. The Information Officer will, if required by the Incident Commander, determine the need for media management at the incident site.

As appropriate, the Information Officer should be designated to oversee local news media management. In order to address the needs of the media at the incident site, the following guidelines should be considered:

- If practical, an information centre will be set up nearby the incident site. All on-site media will be informed that this will be the only place where information is to be released.
- During an emergency situation, media access to company property is strictly prohibited unless prior approval has been given by the Incident Commander. If the Incident Commander deems the situation safe and access is granted to company property, media personnel must be accompanied at all times and wearing appropriate personal protective equipment (PPE).
- Ensure that if any media personnel are granted access on-site all potential hazards are identified and handled appropriately prior to their arrival (i.e. all on-site personnel are wearing proper PPE, operating equipment safely, etc.).
- With the exception of providing the initial prepared company statement, any requests by the media for information or interviews should be referred to the Information Officer.
- For an emergency that lasts more than 24 hours, consideration will be given to establishing a newsroom for all required personnel.
  - Ensure it is located a safe distance away from the incident.
  - Ensure proper internet and telephone access is made available.
  - Large enough to accommodate all of the potential media personnel.



#### **Internal Communication**

Internal communication plans for company personnel must include:

- Identification of primary and secondary communication methods during an incident.
- Procedures to control flow of information\*:
  - Ensure facts and relevant information are distributed to key responders
  - o Proper management of sensitive information
  - Camera and cellphone photo restrictions
  - o Social media protocol

# **Communicating With the Public**

Communication plans for contacting affected parties must be in place:

- When affected parties are within the Hazard Planning Zone (HPZ) / Emergency Planning Zone (EPZ) at the beginning of drilling and initial completion operations.
- A minimum of 24 hours before drilling operations enter a sour zone.
- At the conclusion of drilling and initial completion operations.
- At the beginning and conclusion of other operations including workovers, flaring, fracking, etc.

#### Information Disseminated to the Public

The company must make the following information available to the public, while maintaining documentation, as soon as possible during an incident:

#### To the affected public at the onset of the incident:

- Type and status of the 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.

#### To the affected public during the incident:

- 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.
- An explanation of the steps taken to address concerns.
- An explanation of the steps to be taken to prevent similar emergencies in the future.

<sup>\*</sup> Note: These procedures are developed by the Information Officer during the incident.



### Information Disseminated to the Public, continued

- To the general public during the incident:
  - Type and status of the incident.
  - Location of the incident.
  - o Areas impacted by the incident.
  - o Description of the products involved.
  - Contacts for additional information.
  - Actions being taken to respond to the situation, including anticipated time period.
- To the evacuated or sheltered public post-incident:
  - Status of recovery.
  - Financial reimbursement information.
  - Contacts for additional information.

## **Preparing a Preliminary Media Statement**

This verbal or written statement is the initial information given only to the media by the Information Officer, Incident Commander (or alternate) when the company's designated Media Spokesperson is unavailable, or authorizes a press release at the local level. See **Section 6: Forms** for the C1 Preliminary Media Statement form.

#### The preliminary statement shall contain:

- What, when, and where the incident occurred:
  - State the general nature and description of the incident.
  - Associate the incident location to the nearest major centre and the exact time the incident began or was discovered.
  - For example: At 11:00 am, today, September 13th, 2012, a warehouse at our battery location northeast of Wainwright caught on fire.
- Injuries / fatalities / damages:
  - Clearly distinguish the severity of the injuries sustained and if any fatalities occurred.
  - State the number of people currently receiving treatment.
  - Ensure no names are released to the media; it is important to keep this information private until all families and next-of-kin notifications are made.
  - For example: We have confirmed that three employees sustained injuries, two minor and one major. All of the injured casualties have been transported to the nearest care facilities and are receiving treatment.
- The current status of the emergency:
  - o Indicate the nature of the situation; i.e. what is being done by whom.
  - For example: Emergency crews currently have the fire under control and local authorities are investigating the cause. We are actively notifying the employee's families of the incident.
- When to expect more information:
  - For example: Our designated spokesperson will be issuing a formal statement once we have more information confirmed. Thank you for your cooperation and we will not be accepting any questions at this time.



# Preparing a Preliminary Media Statement, continued

#### What not to do:

- Don't downplay the seriousness of the event or speculate on volumes, damage or timelines.
- Don't point fingers; liability will be determined later by appropriate authorities.
- Primary focus must remain on the company's commitment to addressing the response and recovery
  effort
- Attempt to avoid any questions if possible, as designated media personnel should handle all media questions.
- Avoid saying "no comment." It sounds like you're hiding something. If necessary, explain why it is not appropriate or possible for you to answer the question.



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# **Section 4: Emergency Response Procedures**

Public Protection Measures	1
Shelter-In-Place	
Evacuation	
Ignition	
Road and Airspace Closures	
Establishing and Isolating a Perimeter	
Public Protection Measures Flowchart	4
H <sub>2</sub> S / HVP Ignition Procedure	5
Spill Response	
BC Petroleum Release Reporting Requirements Chart	1
AB Petroleum Release Reporting Requirements Chart	
Spill Response Guidelines	5
Spill Control Points	
Action	7
Recovery Techniques	8
Containment and Storage of Product	8
Disposal and Remedial Operations	8
Western Canadian Spill Services (WCSS)	8
Post-Incident	1
Call Down Notification	1
Public Care and Assistance	1
Clean-up and Repair	2
Third Party Investigations	2
Review and Debriefing	3
Critical Incident Stress Debriefing (CISD)	3
Post-Incident / Accident Investigation	2
Medical Emergencies	1
First Aid Information	2
Next-of-Kin Notification	5
Medical Evacuation (MEDEVAC) Procedure	7
Responder Safety	1
Site Safety	1
On-Site Work Areas	2
Working Alone	4
Missing Persons	6
Rest Periods	6



Fire / Explosion	1
Classification of Fires	3
Response Actions Based on Type of Fire	4
Transportation Incidents	1
First On-Scene Transportation (Road, Rail, Marine) Incident Flowchart	1
Loss, Theft or Unlawful Interference Reporting Flowchart	2
Motor Vehicle Accidents	
Emergency Response Assistance Canada (ERAC) Plan	4
CANUTEC - Canadian Transport Emergency Centre	4
Dangerous Goods References	5
TDG Reportable Quantities	5
Rail Car Identification Chart	7
Road Trailer Identification Chart	9
Table of Markings, Labels and Placards	11
TDG 30 Day Follow-up Report Form	13
Weather and Natural Disasters	1
Earthquake	2
Floods	4
Thunderstorm and Lightning Safety	6
Tornados	7
Winter Storms: Blizzards, Freezing Rain, Heavy Snow, Blowing Snow	7
After a Disaster	9
Security Incidents	1
Responding to threats	1
Bomb threats	2
Suspicious packages	5
Trespassing	7
Vandalism	8
Terrorism	8
Cyber-Attacks	9
Animal Encounters	1
First Responders to Animal attacks	1
Bears	2
Cougars	4
Large Hooved Animals (Ungulates)	6
Rattle Snakes	7
Wolves	8
Bees and Wasps	9
FniPens	10



#### **Public Protection Measures**

There are three primary public protection measures that are used to ensure the safety of the public in the event of an incident: shelter-in-place, evacuation, and ignition.

#### Shelter-In-Place

Shelter-in-place is considered the primary safety measure when the hazard is of a limited duration or the public would be at a higher risk if evacuated. Sheltering within a building creates an indoor buffer to protect affected individuals from higher (more toxic) concentrations that may exist outdoors. The goal is to reduce the movement of air into and out of the building until either the hazard has passed or other appropriate emergency actions can be taken (such as evacuation).

Sheltering indoors is a viable public protection measure in circumstances when:

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

Refer to either **Section 2**: **Roles and Responsibilities** or **Section 6**: **Forms** for the Shelter-in-Place Phone Message script to be used when contacting residents. Residents advised to shelter-in-place will be notified if additional measures are required, and when it is "all-clear".

#### **Evacuation**

For long-term releases, evacuation is preferred to sheltering if public safety can be assured during the evacuation process.

Evacuation is a viable public protection measure in circumstances when:

- The location of the plume is known and safe egress routes can be assured
- The release will not likely be contained in the near future
- Visibility and road conditions are good
- The residents clearly understand their directions

The licensee is expected to monitor the air quality along the edge of the EPZ to determine if sheltering or evacuation criteria have been met outside the EPZ.

Appropriate methods must be utilized to ensure transients (hunters, trappers, recreational users, non-resident landowners, etc.) within the EPZ are located and evacuated. When a tactical evacuation has taken place, the appropriate local authority must be notified.

Residents should also be evacuated during ongoing emergency flaring or burning if their health and safety could be affected by the operation.

Special procedures may be required for evacuating large industrial operations and/or public facilities. If large numbers of people are involved, the permit holder must address assistance with transportation. Refer to the Area Specific Information Section (white tabs) for information regarding transportation (e.g., providing school buses) or other changes in the normal notification procedures.



# Public Protection Measures, continued Ignition

In conjunction with shelter-in-place and evacuation strategies, the release may be ignited at the source in order to reduce public exposure to the hazard. The combustion of the hydrogen sulphide  $(H_2S)$  results in the produced sulphur dioxide  $(SO_2)$  being carried high into the atmosphere allowing additional time for the public to safely evacuate. If an immediate threat to human life exists and there is not sufficient time to evacuate the hazard area or the Emergency Planning Zone (EPZ) – whichever is bigger – the On-Site Group Supervisor is authorized to ignite the release.

Note: Only those personnel trained in ignition procedures can determine if ignition is required and operate the ignition equipment.

Ignition of an HVP product release should occur only after the position of the plume has been established, after careful deliberation, and when safe to do so.

Until such time that a decision has been made to ignite a release, the licensee should take steps to minimize any chance of unplanned ignition in the area.

When making the decision to ignite, the licensee must take the following into consideration:

- the increased risk(s) of delayed ignition,
- whether the perimeter of the hazard area has been established,
- whether the public has been evacuated from the area,
- whether ignition will worsen the situation by endangering the public or the environment or damaging the equipment used to control the product,
- whether wind direction has been established and is it being continually monitored, and
- whether the possibility of an explosion has been assessed (i.e. obstructions or regions of congestion within the perimeter of the dispersing vapour cloud).

If at all possible, the On-Site Group Supervisor must consult with higher authority individuals within the company (ideally the Operations Section Chief, Incident Commander, EOC Director, etc.) and the appropriate government regulator.

# **Road and Airspace Closures**

The company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. The company must contact the RCMP and the transportation authority to have one-, two- or three-digit highways closed. However, if the safety of the public is in jeopardy, the company must be prepared to quickly restrict access to the area before contacting these agencies.

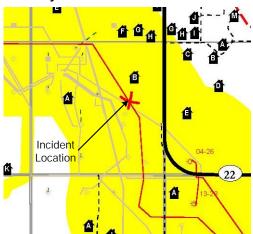
If warranted, the regulatory agency can issue a Closure Order that provides legal authority to close the area. The local authority may, if warranted, declare a Local State of Emergency. This grants the local authority special powers to do such things as road closures or declare mandatory evacuation.

The public must also be prevented from flying into the airspace above a gas release. It may be necessary for NAV CANADA to issue a Notice to Airmen (NOTAM) to advise the pilots of restrictions in the airspace above the EPZ or to close the airspace for a certain radius from the release (a no-fly zone). NOTAMs or closure of airspace may be requested by the regulatory agency at a level 2 or level 3 emergency.



# **Public Protection Measures, continued**

1. Identify the location of the incident on the map:



#### 3. Determine the wind direction

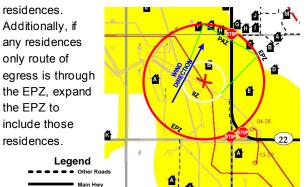
Look for wind direction indications such as flags, windsocks, direction of smoke, etc..

Draw the wind direction on the map with an arrow.



#### 5. Isolate the hazard area with roadblocks

If any residences exist between the optimal roadblock location and the EPZ, expand the EPZ to include those



# 2. Determine the size of response zones (hazard areas):

EPZ - Emergency Planning Zone

IIZ - Initial Isolation Zone

PAZ - Protective Action Zone

You can find this information:

- a) Labeled on the map
- b) In the site specific tables
- c) As the yellow area on the map

If the incident is at a facility or if you have not yet confirmed the exact location of the incident, you must use the largest EPZ for the area. The largest EPZ for the area is shown in yellow on the map.

#### 4. Draw the zones on map:

- a) EPZ The entire hazard area
- b) IIZ Those closest to the hazard
- c) PAZ Those downwind of the hazard



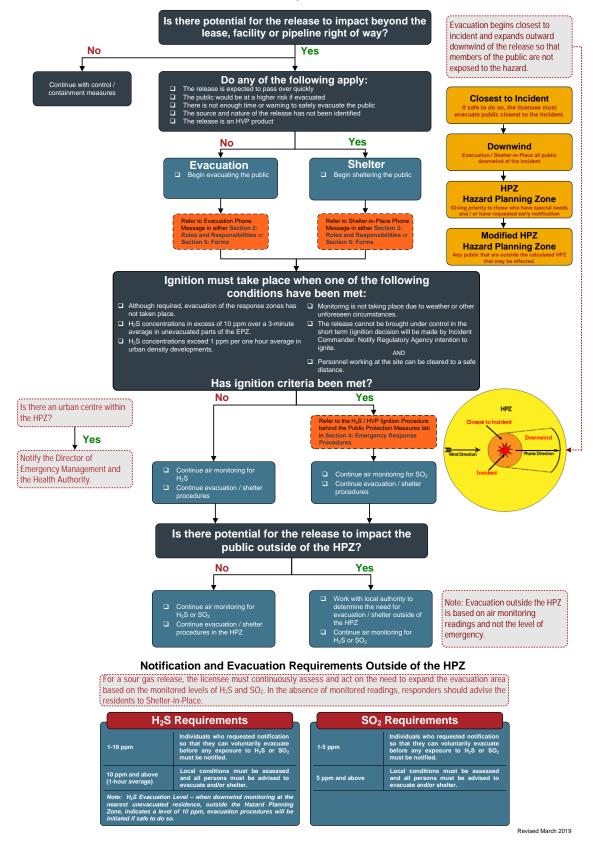
# 6. Following the appropriate provincial public protection measures chart, initiate public safety activities.

Residents in the IIZ are closest to the hazard and are the most at risk of being adversely affected.

Residents in the PAZ are the second group to be evacuated / sheltered in place as being downwind of the hazard puts them at a higher risk than the rest of the residences in the EPZ that are upwind or crosswind from the hazard.



# **Public Protection Measures, continued**



# H<sub>2</sub>S / HVP Ignition Procedure

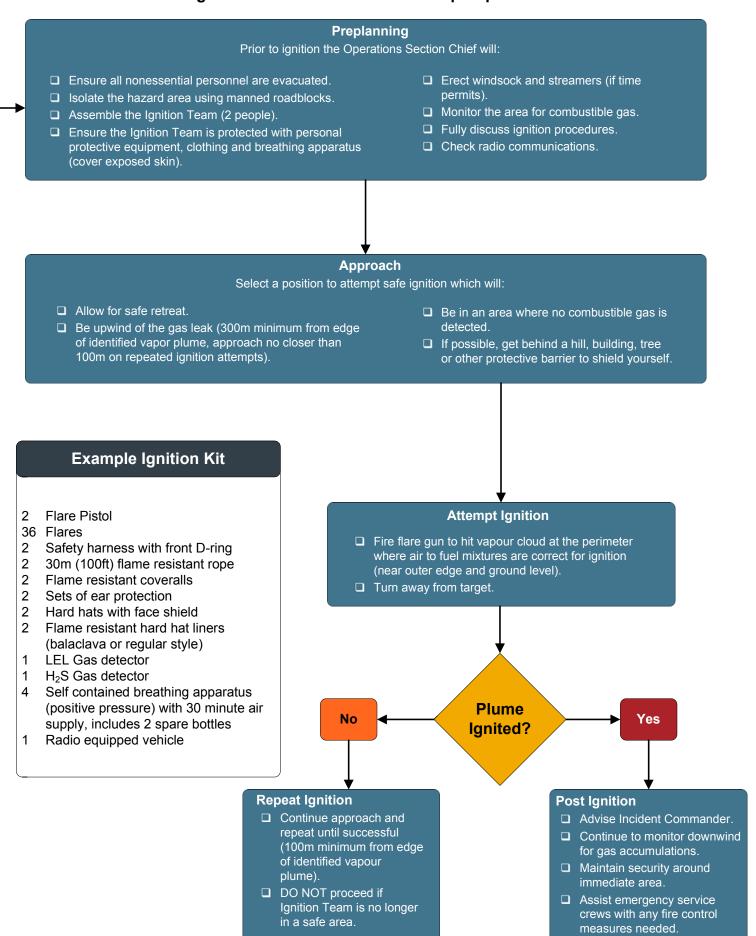
Procedures Flowchart.

#### Pre-Ignition Considerations – On-Site Group Supervisor

When making the decision to ignite, the licensee must take the following into consideration:

#### Hydrogen Sulphide (H<sub>2</sub>S) High Vapour Pressure (HVP) ☐ The increased risk(s) of delayed ignition. ☐ Whether the perimeter of the hazard area has been ☐ Proximity to residences, public facilities, towns or urban centres. ☐ Whether the public has been evacuated from the ☐ Risk of exposure / injury to the public or response workers ☐ Whether ignition will worsen the situation by Status of evacuation. endangering the public or the environment or Wind conditions and general topography. damaging the equipment used to control the product. ☐ Fire hazard after ignition in relation to adjacent ☐ Whether wind direction has been established and is forested or cropland area. being continually monitored. ☐ Safety of the Ignition Team (hazard area ☐ Whether the possibility of an explosion has been identification, protective gear). assessed (i.e., obstructions or regions of congestion within the perimeter of the dispersion vapour cloud). Ignition must take place when one of the following conditions has been met: ☐ Although required, evacuation of the response zones has ☐ Monitoring is not taking place due to weather or other not taken place. unforeseen circumstances ☐ Monitoring results indicate H<sub>2</sub>S concentrations in excess of ☐ The release cannot be brought under control in the short term (ignition decision will be made by Incident 10 ppm over a 3-minute average in unevacuated parts of the EPZ. Commander. Notify Regulatory Agency intention to ignite. ☐ H<sub>2</sub>S concentrations exceed 1 ppm per one hour average in AND urban density developments. ☐ Personnel working at the site can be cleared to a safe If monitoring levels are declining, then the situation needs to be continuously assessed for ignition. Once any of the above conditions have been met, ignition must occur within 15 minutes of the decision to ignite. Is There time to discuss the ignition decision No Yes with the Operations Section Chief, the Incident Commander, and the Regulatory Agency? **Review with the Operations Section Chief, the Incident Commander, and Regulatory Agency:** ■ Employee and public safety. Site conditions. ■ Site control procedures. ■ Monitoring of Emergency Hazard Area. Is ignition the most favourable ■ Determine post control option to minimize the ignition emergency □ Continue with hazard? service requirements release control Assemble and brief procedures onsite. ignition team. □ Review possible control procedures. ☐ Go to Ignition

#### Ignition Procedure - On-Site Group Supervisor





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# **British Columbia Petroleum Industry Release Reporting Requirements**

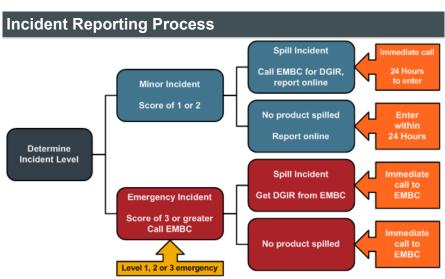
All spills exceeding the spill/release quotas listed in the table on the following page MUST be reported immediately to the appropriate regulatory agency.

appropriate regulatory agency.						
Agency	Reportable Spills	Report Type	Report to			
	Report when: 1) If a spill/release occurs or is at imminent risk of occurring.	Verbal	OGC / EMBC 24 Hour Number 800-663-3456 (Within 1 hour of a level 1, 2 or 3 emergency)			
Emergency Management	<ul> <li>2) All oil and produced water spills related to the Oil &amp; Gas Industry.</li> <li>3) All "Minor" incidents involving a leak or spill of any substance. **See Note**</li> <li>4) All spills or releases of any amount of material which impacts or may impact a body of water.</li> <li>5) All spills or releases of hazardous substances; which are not provincially regulated (such as radioactive substances).</li> </ul>	Written / Verbal	OGC / EMBC 24 Hour Number 800-663-3456 and by electronic submission through the Online Minor Incident Reporting System, operated through KERMIT (Within 24 hours of a Minor incident)			
BC (EMBC)	All pipeline incidents, such as spills during construction phase or failure     (without release) of any pressure control or ESD device.		Minister of Environment			
BC Oil & Gas Commission (OGC)	All Substances spilled/released, or likely to be spilled/released when quantities are equal to or exceed the quantities listed in the Environment		Initial Report - as soon as possible on request of the minister			
(090)	Reporting Requirements column in the Release Reporting Thresholds table on the following page.  Response to land based spills:  1) During the day must be initiated within 6 hours from time of discovery.	Written	Follow-up Report - at least once every 30 days after the spill began (if continuing) and any time the previously reported information has become inaccurate or incomplete			
	During the weekend or night must be initiated within 12 hours from time of discovery.		End of Spill Report - 30 days after emergency response completion date for that spill			
	Environmental emergencies if:  1) The emergency involves any of the substances identified in Environment  & Climate Change Canada's E2 List of regulated substances. See the	Verbal	OGC / EMBC 24 Hour Number 800-663-3456			
Canadian Environmental Protection Agency (CEPA)	website link at the bottom of the following page for more information.  Note: CEPA has not identified specific reporting thresholds; however, CEPA has suggested that existing provincial reporting thresholds or TDG reporting thresholds are acceptable for use.	Written	Within 30 days			
Transportation of	Substances regulated by Transportation of Dangerous Goods if:  1) A release is anticipated, or the release meets or exceeds the reporting	Verbal	911 Local Authority Dangerous Goods OGC / EMBC 800-663-3456			
Dangerous Goods (TDG)	threshold in the TDG Reporting Requirements column in the <b>Release Reporting Thresholds</b> table on the following page.	Written	Within 30 days			
Canadian Transport Emergency Centre	Loss and theft reporting: 1) CANUTEC - all loss or theft of dangerous goods materials	Verbal	1) 888-226-8832 or 613-996-6666 2) 613-995-5555 3) 613-995-0479			
(CANUTEC)	Natural Resources Canada Inspector - Class 1 explosive materials only     Canadian Nuclear Safety Commission - Class 7 radioactive materials only	Written	Within 30 days			
Department of Fisheries and Oceans (DFO)	1) A release of any substance deleterious to fish into a fish bearing water body.	Verbal	OGC / EMBC 24 Hour Number 800-663-3456			
	Immediately reportable and near-miss events as defined in the CER Event Reporting Guidelines October 2020:  1) An incident that harms people or the environment, 2) A rupture, or	Verbal	Via Transportation Safety Board (TSB) Reporting Hotline 819-997-7887			
Canada Energy Regulator (CER)	3) A toxic plume  Note: Immediately reportable incidents must be reported within 3 hours to both	Written	CER Online Event Reporting System (OERS) https://apps.cer-rec.gc.ca/ers/home/index			
	the TSB Reporting Hotline and CER's OERS. If applicable, refer to the Federal Roles & Responsibilities chart in SECTION 5: EXTERNAL AGENCIES and the CER site section behind the AREA SPECIFIC INFORMATION tab for further regulations, definitions and reporting guidelines.	Written	Within 21 days after the day of incident/near-miss			
Canadian Nuclear Safety	All radioactive releases must be reported immediately.	Verbal	613-995-0479			
Commission (CNSC)		Written	Within 21 days			
Indian Oil & Gas (IOGC)	Immediately reportable events on First Nation reserve lands only:  1) Any health or environment-threatening emergency or off-lease spills.  2) On-lease spills greater than 1m <sup>3</sup> .	Verbal	IOGC Tsuu T'ina Office 403-292-5625			

\*\*Note: The permit holder must report any minor incident (both spill and non-spill related) to the OGC within 24 hours by electronic submission through the Online Minor Incident Reporting System, opened through KERMIT (Form A). In addition to Form A, minor spills and leaks must also be reported immediately to EMBC so that a Dangerous Goods Incident Report (DGIR) number may be issued.

Lead Agency Contact Numbers					
British Columbia					
Emergency Management BC (EMBC)	800-663-3456				
BC Oil & Gas Commission (OGC)	600-003-3430				
Canada					
CANUTEC					
All Provinces 888-CAN-UTEC (888-226-8832) 613-996-6666					
Canada Energy Regulator (CER) / Transportation Safety Board of Canada (TSB)					
TSB Reporting Hotline (Pipelines) 819-997-7887					
CER Other Emergencies 403-299-2773					

Note: Spills must be reported promptly to avoid possible prosecution.



Please refer to the BC Environmental Management Act; <u>Spill Reporting Regulation</u>, Schedule "Reporting Levels for Certain Substances" for determining reportable spillage amounts of other substances not listed here.

Even though some spills are not reportable, the requirement to clean up the spill is still mandatory. Spills of reportable amounts which occur in a secondary containment are still a reportable incident.

# **British Columbia Petroleum Industry Release Reporting Requirements**

All spills exceeding the spill/release quotas listed in the table on the following page MUST be reported immediately to the appropriate regulatory agency.

		appropriate regulat	ory agency.							
Chemical Class	Substance / Example	T.D.G. R Road, Rail or Marine	eporting Requirements Loss or Theft	B.C. (OGC / EMBC) Reporting Requirements						
	Hydraulic Oil		Reporting Requirements	100 L on-site						
	Methanol Natural Gas	See Class 3 & 6.1  See Class 2.1								Any release off-site  10 kg or 15m <sup>3</sup> if there is a break in a pipeline or fitting operated above 100 psi that result in an uncontrollable release of natural gas
Other Released	Crude Oil / Emulsion	See Class 3								100 L on-site / Any release off-site
Substances	Produced / Salt Water Drilling or Invert Mud	No TDG Reporting Requirements  No TDG Reporting Requirements		200 L / Any release off-site						
	Condensate	See Class 3		100 L on-site / Any release off-site						
	Glycol	No TDG Reporting Requirements		200 kg or 200 L						
	Fresh Water	No TDG	Reporting Requirements	10,000 L						
	Any fluid with toxic substances	No TDG	Reporting Requirements	25 L						
Class 1 Explosives	Ammunition Nitro-glycerine	Any quantity of Packing Group II	Any quantity in Class 1.1, 1.2, and 1,3 Total quantity of 450 kg or more in Class 1.4 (except 1.4S), 1.5, or 1.6	All releases which could pose a danger, or 50 kg						
	H <sub>2</sub> S			10 kg or 100 L where the hydrocarbon						
Class 2.1 Flammable Gases	Methane Propane Butane Natural Gas		Total quantity of 450 kg or more	contains no toxic materials and does not impact water ways						
Class 2.2 Non-Flammable Gases	Compressed Air O2 N2 CO2	Any quantity	No TDG Reporting Requirements	10 kg						
Class 2.3 Toxic Gases (poisonous or corrosive)	H <sub>2</sub> S SO <sub>2</sub> Hydrogen Cyanide Nitric Acid Anhydrous Ammonia		Any quantity	5 kg						
Class 3 Flammable Liquids	Gasoline Diesel Methanol Demulsifiers Scale Inhibitors		Total quantity of 450 kg or more of desensitized explosives Any quantity of UN1261, Nitromethane	100 L						
	Lube Oil			100 L						
Class 4.1 Flammable Solids	Calcium Resinate Naphthalene Crude	Total quantity of 450 kg or more of desensitized explosives Any quantity of UN1357, Urea Nitrate, with not less than 20% water, by mass; UN3370, Urea Nitrate, Wetted, with not less than 10% water by mass								
Class 4.2 Spontaneously Combustible	Activated Carbon Potassium Sulphide Phosphorus		Total quantity of 450 kg or more in Packing Groups I or II	25 kg						
Class 4.3 Dangerous when Wet	Molten Sulphur Calcium Carbide Sodium Activated Carbon		Total quantity of 450 kg or more in Packing Groups I or II							
Class 5.1 Oxidizing Substances	Calcium Nitrate Ammonium Nitrate Bleaches	Any quantity of Packing Group I or II  More than 30 L or 30 kg of Packing Group III	Total quantity of 450 kg or more in Packing Groups I or II  Any quantity of UN1485, Potassium Chlorate; UN1486, Potassium Nitrate; UN 1487, Potassium Nitrate and Sodium Nitrate Mixture; UN1489, Potassium Perchlorate; UN1495, Sodium Chlorate; UN1498, Sodium Nitrate; UN1499 Sodium Nitrate and Potassium Nitrate Mixture; UN1511, Urea Hydrogen Peroxide; UN1942 Ammonia Nitrate, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substances; UN2014 Hydrogen Peroxide, Aqueous Solution with not less than 20% but not less than 60% hydrogen peroxide (stabilized as necessary); UN2015, Hydrogen Peroxide, Stabilized; UN2031, Nitric Acid, other than red fuming; UN3149, Hydrogen Peroxide and Peroxyacetic Acid Mixture with acid(s), water and not more than 5% peroxyacetic acid, stabilized	50 kg or 50 L						
Class 5.2 Organic Peroxides	Methyl Ethyl Ketone Peroxide Succinic Acid Peroxide		Any quantity in Class 5.2, Type B, liquid or solid, temperature controlled	1 kg or 1 L						
Class 6.1 Poisonous Toxic Substances	Arsenic Lead Acetate Mercuric Oxide Methanol Toxic Pesticides		Any quantity of Packing Group I	5 kg or 5 L						
Class 6.2 Infectious Substances	Infectious Substances affecting Humans / Animals	Any quantity of Category A or B	Any quantity	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment						
<b>Class 7</b> Radioactive Substances	Uranium Plutonium Naturally Occurring Radioactive Materials (N.O.R.M.)	For packages being transported under exclusive use: (i) 10 mSv/h on the external surface (ii) 2 mSv/h on the surface of the conveyance, and (iii) 0.1 mSv/h at a distance of 2 m from the surface  For packages not being transported under exclusive use: (i) 2 mSv/h on the external surface (ii) 0.1 mSv/h at a distance of 1m from the package, (iii) 2 mSv/h on the surface of the conveyance, and (iv) 0.1 mSv/h at a distance of 2m from the surface of the conveyance.	Any quantity	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 Substance Regulations"						
Class 8 Corrosives	Acids Bases Batteries Caustic Amine	Any quantity of Packing Group I or II 30 L or 30 kg of Packing Group III	Total quantity of 450 kg or more in Packing Group I or II  Any quantity of UN1796, Nitrating Acid Mixture with more than 50% nitric acid; UN1826, Nitrating Acid Mixture, Spent, with more than 50% nitric acid; UN2032, Nitric Acid, Red Fuming	5 kg or 5 L						
Class 9 Miscellaneous Products, Substances & Organisms, Environmentally Hazardous Substances	P.C.B. Asbestos Substances not regulated by the Transportation of Dangerous Goods Act	30 L or 30 kg of Packing Group II or III, or without Packing Group	No TDG Reporting Requirements	30 L or 30 kg of Packing Group II or III, or without Packing Group						

	Other items in the BC Spill Reporting Regulation that are applicable to the petroleum industry but do not fit in the above table format.					
Item	Substance Spilled	Specified Amount				
14	Waste containing dioxin as defined in Section 1 of the Hazardous Waste Regulation	1 k 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				
20	PCB wastes as defined in Section 1 of the Hazardous Waste Regulation	25 kg or 25 L				
23	A hazardous waste as defined in Section 1 of the Hazardous Waste Regulation and not covered under items 1 to 22 (built into above table)	25 kg or 25 L				
24	A substance, not covered by items 1 to 23 (built into above table) that can cause pollution	200 kg or 200 L				

# Alberta Petroleum Industry Release Reporting Requirements

All spills exceeding the spill/release quotas listed in the table on the following page MUST be reported immediately to the appropriate regulatory agency.

appropriate regulatory agency.					
Agency	Reportable Spills	Report Type	Report to		
Alberta Energy Regulator (AER) - Oil & Gas Regulation	Any release that has caused, is causing, or may cause an adverse affect*     Any pipeline release regardless of volume     Any release greater than 2m³ on-site	Verbal	AER 24 Hour Number 800-222-6514		
Alberta Energy Regulator (AER) - Environment Regulation	<ul> <li>4) Any release off-site</li> <li>5) Any release into a water body (as defined in the Water Act) or a watercourse, groundwater, or surface water (as stated in the Release Reporting Regulation)</li> <li>6) Any release of substance listed as toxic, prohibited or restricted by CEPA</li> <li>7) Any release that meets or exceeds the reporting threshold in the Environment Reporting Requirements column in the Release Reporting Thresholds table on the following page.</li> <li>Note: The AER Table of Reportable Releases found below further breaks</li> </ul>	Written	Next business day following verbal report of spill, the AER forwards a copy of the Release Report form to the company to complete. The form is to be submitted with supporting documentation within 7 days to the local field centre (if the release caused adverse affect)*		
	down release types by industry activity.  Environmental emergencies if:	Verbal	AER 24 Hour Number		
Canadian Environmental Protection Agency (CEPA)	The emergency involves any of the substances identified in Environment & Climate Change Canada's E2 List of regulated substances. See the website link at the bottom of the following page for more information.		800-222-6514		
Protection Agency (GEPA)	Note: CEPA has not identified specific reporting thresholds; however, CEPA has suggested that existing provincial reporting thresholds or TDG reporting thresholds are acceptable for use.	Written	Within 30 days		
Alberta Transportation - Environmental and Dangerous Goods Emergencies (EDGE)	Substances regulated by Transportation of Dangerous Goods if:  1) A release is anticipated, or the release meets or exceeds the reporting threshold in the TDG Reporting Requirements column in the <b>Release Reporting Thresholds</b> table on the following page.	Verbal	911 Local Authority Environmental and Dangerous Goods Emergencies (EDGE)		
Canadian Transport Emergency Centre	Loss and theft reporting:  1) CANUTEC - all loss or theft of dangerous goods materials  2) Natural Resources Canada Inspector - Class 1 explosive materials only	Verbal	1) 888-226-8832 or 613-996-6666 2) 613-995-5555 3) 613-995-0479		
(CANÚTEC)	3) Canadian Nuclear Safety Commission - Class 7 radioactive materials only	Written	Within 30 days		
Department of Fisheries and Oceans (DFO)	1) A release of any substance deleterious to fish into a fish bearing water body	Verbal	AER 24 Hour Number 800-222-6514		
	Immediately reportable and near-miss events as defined in the CER Event Reporting Guidelines October 2020:  1) An incident that harms people or the environment,	Verbal	Via Transportation Safety Board (TSB) Reporting Hotline 819-997-7887		
Canada Energy Regulator (CER)	2) A rupture, or 3) A toxic plume	Written	CER Online Event Reporting System (OERS)		
	Note: Immediately reportable incidents must be reported within 3 hours to both the TSB Reporting Hotline and CER's OERS. If applicable, refer to the Federal Roles & Responsibilities chart in SECTION 5: EXTERNAL AGENCIES and the CER site section behind the AREA SPECIFIC INFORMATION tab for further regulations, definitions and reporting guidelines.	Written	https://apps.cer-rec.gc.ca/ers/home/index  Within 21 days after the day of incident/ near-miss		
Canadian Nuclear Safety	All radioactive releases must be reported immediately.	Verbal	613-995-0479		
Commission (CNSC)	·	Written	Within 21 days		
Indian Oil & Gas (IOGC)	Immediately reportable events on First Nation reserve lands only:  1) Any health or environment-threatening emergency or off-lease spills.  2) On-lease spills greater than 1m³.	Verbal	IOGC Tsuu T'ina Office 403-292-5625		

Note: Spills must be reported promptly to avoid possible prosecution.

Lead Agency Contact Numbers				
Alberta				
Alberta Energy Regulator (AER) Field Offices				
Spill Reporting Line	800-222-6514			
Canada				
Alberta Transportation - Environmental and Dangerous Goods Emergencies (EDGE)				
Province Wide 800-272-9600				
CANUTEC				
888-CAN-UTEC All Provinces (888-226-8832) 613-996-6666				
Canada Energy Regulator (CER) / Transportation Safety Board of Canada (TSB)				
TSB Reporting Hotline (Pipelines)	819-997-7887			
CER Other Emergencies 403-299-2773				

AER Table of Reportable Releases						
Reportable Release	Oil & Gas	Mining - Oil Sands	In Situ - Oil Sands	Pipelines	Pipeline Installations	Pipeline- Related Activities & Equipment
Any leak or break from a pipeline				Χ		
Release of a substance that has caused, is causing, or may cause an adverse effect	Х	х	х	Х	х	Х
Release of a substance into a water body (as defined in the Water Act)	Х	Х	Х	Χ	Х	Х
Release of a substance into a watercourse, groundwater, or surface water (as stated in the <i>Release Reporting Regulation</i> )	Х	х	Х	Х	х	Х
Release of oil, water or unrefined product off-site	Х	Х	Х	Х	Х	Х
Release of oil, water, or unrefined product exceeding 2 cubic metres (m³) on-site	Х	х	Х	Х	х	Х
A liquid spill (as defined in the Oil Sands Conservation Rules)		Х	Х			
Release of a liquid hydrocarbon exceeding 2m <sup>3</sup>		Х	Х	Χ	Х	Х
Uncontrolled gas release of more than 30,000m <sup>3</sup>	Х	Х	Х	Х	Х	
Release of gas or gas equivalent exceeding 30,000m <sup>3</sup>		Х	Х	Χ	Х	
Well flowing uncontrolled	Х	Х	Х			

## \* Definition of Adverse Affect

Adverse Affect

Is defined by the Environmental Protection & Enhancement Act (EPEA) 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 affect.

- Any third party impact (off-lease), e.g. crop damage, vegetation damage or 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
- Toxic or flammable release to air going off-site

# Alberta Petroleum Industry Release Reporting Requirements

All spills exceeding the spill/release quotas listed in the table on the following page MUST be reported immediately to the appropriate regulatory agency. **Chemical Class** Road, Rail or Marine Loss or Theft Hydraulic Oil No TDG Reporting Requirements Refined products follow TDG Methanol See Class 3 & 6.1 Natural Gas See Class 2.1 30,000m<sup>3</sup> Crude Oil / Emulsion See Class 3 > 2m<sup>3</sup> on-site (Unrefined) Produced / Salt Water Any release off-site (Report to local AER office and notify No TDG Reporting Requirements Other Released (Unrefined) Substances landowner) Condensate (Unrefined) See Class 3 Any release that has caused, Ammonia is causing, or may cause an adverse effect Glycol No TDG Reporting Requirements Any release into a water body, Drilling Waste (Unrefined) or a watercourse, groundwater, or surface water Oilfield Waste (Unrefined) Any quantity in Class 1.1, 1.2, and 1.3 All releases which could pose Any quantity of Packing Group II Explosives Nitro-glycerine Total quantity of 450 kg or more in Class 1.4 (except 1.4S), 1.5, or 1.6 H<sub>2</sub>S Methane All releases which could pose Class 2.1 a danger, or any sustained release of 10 minutes or more Propane Total quantity of 450 kg or more Flammable Gases Natural Gas Compressed Air Class 2.2  $\begin{array}{c} O_2 \\ N_2 \\ CO_2 \end{array}$ No TDG Reporting Requirements 30,000m<sup>3</sup> Any quantity Non-Flammable Gases H<sub>2</sub>S SO<sub>2</sub> Class 2.3 All releases which could pose Hydrogen Cyanide Nitric Acid a danger, or any sustained release of 10 minutes or more Toxic Gases Any quantity (poisonous or corrosive) Anhydrous Ammonia Bitumen (Unrefined) Gasoline Total quantity of 450 kg or more of desensitized explosives Diesel Class 3 Methanol Flammable Liquids Any quantity of UN1261, Nitromethane Demulsifiers Scale Inhibitors Lube Oil Total quantity of 450 kg or more of desensitized explosives Calcium Resinate Class 4.1 Any quantity of UN1357, Urea Nitrate, with not less than 20% water, Naphthalene Flammable Solids by mass; UN3370, Urea Nitrate, Wetted, with not less than 10% water by mass > 2m<sup>3</sup> on-site Activated Carbon Any release off-site (Report to Potassium Sulphide Total quantity of 450 kg or more in Packing Groups I or II Spontaneously Combustible local AER office and notify landowner) Phosphorus Molten Sulphur Class 4.3 Calcium Carbide Total quantity of 450 kg or more in Packing Groups I or II Any release that has caused, is causing, or may cause an adverse effect Dangerous when Wet Sodium Activated Carbon Total quantity of 450 kg or more in Packing Groups I or II Any release into a water body, or a watercourse, Any quantity of UN1485, Potassium Chlorate; UN1486, Potassium Nitrate; UN 1487, Potassium Nitrate and Sodium Nitrate Mixture; UN1489, Potassium Perchlorate; UN1495, Sodium Chlorate; UN1498, Sodium Nitrate; UN1499 Sodium Nitrate and Potassium Nitrate Mixture; UN1511, Urea Hydrogen Peroxide; UN1942 Ammonia Nitrate, with not more than 0.2% combustible substances, including an expression substance scale and to the groundwater, or surface water Any quantity of Packing Group I or II Calcium Nitrate More than 30 L or 30 kg of Packing Group III Class 5.1 Ammonium Nitrate Oxidizing Substances including any organic substance calculated as carbon, to the exclusion of any other added substances; UN2014 Hydrogen Peroxide, Aqueous Solution with not less than 20% but not less than 60% hydrogen peroxide (stabilized as necessary); UN2015, Hydrogen Bleaches Peroxide, Stabilized; UN2031, Nitric Acid, other than red fuming; UN3149, Hydrogen Peroxide and Peroxyacetic Acid Mixture with acid (s), water and not more than 5% peroxyacetic acid, stabilized Methyl Ethyl Ketone Peroxide Any quantity in Class 5.2, Type B, liquid or solid, temperature Class 5.2 1 kg or 1 L Succinic Acid Organic Peroxides > 2m3 on-site Any release off-site (Report to local AER office and notify Lead Acetate Any quantity of Packing Group I Any release that has caused, Poisonous Toxic Substances Mercuric Oxide is causing, or may cause an adverse effect Toxic Pesticides Any release into a water body or a watercourse, groundwater, or surface water Infectious Substances affecting Class 6.2 Any quantity of Category A or B Any quantity All releases Infectious Substances For packages being transported under exclusive use: (i) 10 mSv/h on the external surface (ii) 2 mSv/h on the surface of the conveyance, and (iii) 0.1 mSv/h at a distance of 2 m from the surface Uranium Discharge or radiation level exceeding 10 mSv/h at package surface & 200 u Sv/h, Class 7 Naturally Occurring Radioactive Materia For packages not being transported under exclusive Any quantity Radioactive Substances (i) 2 mSv/h on the external surface (ii) 0.1 mSv/h at a distance of 1m from the package, (iii) 2 mSv/h on the surface of the conveyance, and (iv) 0.1 mSv/h at a distance of 2m from the surface of the conveyance. 1m from the package surface (N.O.R.M.) > 2m<sup>3</sup> on-site Any release off-site (Report to local AER office and notify Total quantity of 450 kg or more in Packing Group I or II Any quantity of UN1796, Nitrating Acid Mixture with more than 50% nitric acid; UN1826, Nitrating Acid Mixture, Spent, with more than Any quantity of Packing Group I or II Bases Class 8 Batteries Any release that has caused Corrosives is causing, or may cause an adverse effect 30 L or 30 kg of Packing Group III Caustic 50% nitric acid; UN2032, Nitric Acid, Red Fuming Amine Any release into a water body, or a watercourse, groundwater, or surface water Class 9 Miscellaneous Products. P.C.B. Asbestos 30 L or 30 kg of Packing Group II or III, or without Substances & Organisms, No TDG Reporting Requirements 25 kg or 25 L Packing Group Environmentally Hazardous Substances Other Any well flowing uncontrolled, any burning of effluent from a well or facility and any fire where loss exceeds 2m³ of oil, or 30,000m³ of gas where damage to well head occurs



## **Spill Response Guidelines**

This section provides basic hydrocarbon spill response guidelines. For greater detail, refer to the Western Canada Spill Services (WCSS) manuals, applicable Safety Data Sheets (SDS) and the Emergency Response Assistance Canada (ERAC) Plan. Refer to the Petroleum Industry Release Reporting Requirements chart at the beginning of this section to determine the TDG and Provincial Reporting Requirements for each class of chemicals (as classified by the TDG Hazard Classification System).

#### **Initial Response Actions:**

- Determine the Level of Emergency using the Assessment Matrix in Section 1: Initial Response.
- Determine spilled substance. If it can be classified as an LPG release, isolate the area to a minimum distance of 1600 meters (1 mile) and refer to the BLEVE portion of the fire / explosion section.
- Assess spill hazards and risks. Determine what PPE will be required.

#### Considerations:

- Are there any nearby public (workers, traffic, residents) that would need to be evacuated or diverted from the spill area?
- Is there a fire or explosion hazard? What is the ignition source?
- Is there H<sub>2</sub>S or other toxins present? Are concentrations safe or is additional PPE needed?
- Are there any areas deemed hazardous? (Mark with flags)
- What are the ground and weather conditions? (Snow, gravel, sand etc.)
- Where is the location of the leak, the type of release and the volume released? Is it reportable? Has it been reported to the regulator?
- How long has the spill been taking place?
- Are air monitoring trailers required?
- Is the spill into a watercourse, watershed or a water body?
- Is the spill contained or migrating? Which direction? How far can it go?
- If the spill is not contained, determine and prioritize the containment points and methods to be used.
- What lands or water bodies may be affected? (Farm, livestock, brush, drinking water, etc.)
- How is it going to be contained and cleaned up?
- How to access the spill site, the source of the spill and recovery points?
- What equipment is required? Is oil spill equipment (oil spill co-op) required?
- Where can spill responders park so as not to interfere with spill equipment? (Minimize vehicular traffic as much as possible at the spill site.)
- Are there any residences in the area? Do they have water wells that could be affected?
- Should the spill site be cordoned off to prevent wildlife / livestock from entering?
- Will a media response be required?



#### **Control/Containment**

- Remove all sources of ignition.
- Stop the spill if safely possible (e.g. shut off pump, replace cap, tip drum upward, patch leaking hole). Use the contents of the nearest spill kit to aid in stopping the spill if it is safe to do so.
- Assess speed and direction of spill and cause of movement (water, wind and slope).
- Use contents of spill kits to place sorbent materials on the spill, or use shovel to dig to contain spill.
   Methods may vary depending on the nature of the spill.
- Prioritize and set up containment points.
- Where possible, prevent a spill from entering a watercourse.
- Have a contingency plan ready in case spill worsens beyond control or if the weather or topography impedes containment.
- Avoid excessive walking or driving on the spill area.
- Consider ground disturbance guidelines.
- Surface run off may have to be diverted from the spill site if wet conditions are present.
- Mitigate or eliminate any danger to life, health, the environment or property arising from the spill.
- Ensure the health and safety of the persons responding to the spill.
- Once containment has been achieved, recovery and clean-up operations begin immediately.
- Recover as much product and saturated debris as possible.
- Keep environmental disturbance to a minimum.
- Take steps to rehabilitate any land affected by the spill.
- Take steps to prevent the occurrence of a similar spill.

#### **External Notifications**

- Follow notification procedures outlined at the beginning of this section as per the applicable provincial Petroleum Industry Release Reporting Requirements chart.
- Contact the applicable spill service (as outlined in the table below) to determine the closest available spill equipment and towing requirements. See contact information below:

British Columbia	Western Canadian Spill Services (WCSS)	866-541-8888
Alberta	Western Canadian Spill Services (WCSS)	866-541-8888
	Saskatchewan Oil Spill Cooperative	See Website
Saskatchewan	or	or
	Western Canadian Spill Services (WCSS)	866-541-8888
	MEP Environmental Products	204-632-4118
Manitoba	or	
	Manitoba Producers Oil Spill Cooperative	204-748-3095



## **Spill Control Points**

Control points are pre-identified locations on watercourses that allow for the staging and deployment of oil spill containment and recovery equipment in response to oil spills that have occurred upstream of the control point. Control point selection is critical to an effective oil spill response and part of your risk assessment and development of site-specific emergency response plan information. For a detailed list of control points utilize the WCSS website (http://www.wcss.ab.ca).

An ideal control point should have:

- Quick access to the watercourse in all seasons, using clear ground, a road or a trail
- Adequate work space to conduct operations and to store required equipment with minimal need for clearing of brush and vegetation
- Sufficient space to deploy containment and recovery equipment quickly with minimal effort or obstructions (i.e. trees, rocks, steep banks, etc.) and minimal environmental impact
- Boat launch location(s) for boats assisting in containment and recovery operations.

Selection of control points with public access is preferred.

For control points on private property - landowner approval and necessary permits for emergency access should be obtained in advance.

Designated site specific control points need to be reviewed at least annually. Each control point site should be visited periodically to evaluate suitability and to ensure information is accurate and complete. Old unsuitable control points should be removed and new control points added, as a part of revisions to site specific information, as required. Control point listings should include a site description, site diagram, access description, landowner/occupant phone number, site suitability and any other information related to the site.

#### Action

Where a spill occurs, the person who had possession immediately before the spill shall take all reasonable and practical action. They should have due regard for the safety of the public, themselves, to stop and contain and minimize the effects of the spill.

Provincial oil and gas regulations require operators to take immediate steps to contain and clean up spilled upstream petroleum product. Upstream petroleum product refers to crude oil, salt water, emulsions, condensates, sour gas natural gas liquids and / or any combination of the materials listed that are generated during exploration and production activities.



# **Recovery Techniques**

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

If a stream or river is to be boomed, the appropriate equipment should be obtained from the Local Spill Response Cooperative or mutual aid partners. Decisions must incorporate the following considerations:

- Width of stream or river to be boomed (where possible, the entire river width should be boomed)
- · Allowable boom angle based on stream or river 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 the stream, some allowance must be made for the flow of water past the dam. The Western Canadian Spill Services 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 occurred. In each case, the experience and innovative ability of the personnel at the spill site is needed for the successful containment of the oil spill.

Tank trucks, storage tanks or an earthen pit may be used to store recovered petroleum products. Access must be close enough to the recovery site so that hoses from the pumps can reach a tank truck. Storage tanks must be located on level, stable ground with access available for tank truck use. An earthen pit should only be constructed when tank trucks or storage tanks cannot be used. Earth-moving equipment and appropriate ground disturbance procedures will be required to construct a pit. A plastic lining should be used.

# **Disposal and Remedial Operations**

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

It is the company's responsibility when reporting a release to the regulatory agency or the Ministry of Environment (as appropriate) to inform any private individuals whose lands may be affected by the release. The company must notify the landowner of any release that occurs off a lease site, migrates off a lease site or occurs on an easement or right-of-way. The company is reminded that landowner cooperation is essential in being able to quickly respond to a release that is not on the normal working area of a lease site.

# **Western Canadian Spill Services (WCSS)**

WCSS maintains spill contingency plans and provides spill response equipment to all member companies.

WCSS - http://www.wcss.ab.ca/

Spill Contingency Plan - <a href="http://www.wcss.ab.ca/contingency-manual.shtml">http://www.wcss.ab.ca/contingency-manual.shtml</a>

Live Equipment Report - http://emis.wcss.ab.ca/PublicInventoryReport.aspx



#### **Post-Incident**

Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident. Records must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

#### **Call Down Notification**

After consultation with a senior company representative or the appropriate Regulatory Agency, Provincial Emergency Management or local County / Municipality, the Incident Commander will:

- 1. Give the "all clear" signal. Prior to the "all-clear" signal, the Incident Commander will confirm that all evacuated areas are safe to re-enter. This may involve such activities as:
  - Ensuring all equipment and locations are free of any pockets of fire, smoke and / or toxic gases.
  - o Ensuring all equipment and debris are removed from offices and / or public areas.
  - Cordoning off the incident area to isolate any remaining hazards.
  - o Checking low-lying areas and basements for contamination, if a toxic leak has occurred.

After the "all-clear" message has been given, the Incident Commander will be responsible for:

- o Ensuring all evacuees are promptly notified once the call down is given.
- Coordinating the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.
- Maintaining security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.
- 2. Coordinate the deactivation of all emergency response operations, personnel, equipment and incident areas.
- Ensure all previous contacts, including other companies; government agencies, etc. are notified of the emergency status call down.
- 4. Advise all response team members to document their call down notification calls.
- 5. Prepare and release an "all clear" statement to the media in conjunction with the Regulatory Agency.
- Organize debriefing meetings for advisory personnel involved. In the case of incidents that have involved a death or serious injury, consult with Human Resources personnel about arranging critical incident counselling.
- 7. Notify and debrief Joint Interest Partners and Insurance company representatives.

Note: Ensure all statements, event logs, forms and documentation on the incident remain securely stored following the incident.

#### **Public Care and Assistance**

The decision to recall evacuees will be coordinated by the regulatory agency in consultation with other applicable government agencies and the licensee. Ensure the following tasks are completed as required:

- 1. Ensure all evacuees are promptly notified once the call down is given.
- 2. Coordinate the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.
- 3. Maintain security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.
- 4. Ensure homes and businesses are ventilated and checked for gas pockets before allowing the occupants to enter. Rovers must check each room, office and public area.



# Post-Incident, continued

- 5. Ensure members of the Response Teams and other key participants in the emergency are debriefed as soon as possible.
- 6. Designate a senior company representative to act as the company Liaison with the public and other companies.
- 7. Ensure the affected employees and public are provided with post-incident company contact names and telephone numbers. If the emergency has impacted a large number of the public or has caused significant damage to private property or the environment, a temporary Public Relations Office should be established in the affected area.
- 8. Schedule a follow-up meeting with the public to clearly explain the cause of the incident and to address their concerns. Organize critical incident counselling as required.
- 9. Ensure public expense / damage claims have been collected and are processed in a timely manner.

## Clean-up and Repair

If a serious injury or death has occurred, the scene must be left undisturbed, as much as possible, until an investigation of the site can be completed by the appropriate authorities.

Ensure the following tasks are completed as required:

- Ensure the incident site is not disturbed if there has been a fatality or a serious injury until police, regulatory officials and company representatives complete necessary investigations.
- Ensure that site clean-up continues.
- Ensure that the correct procedures are developed and implemented for the decontamination of equipment.
- Ensure the On-Site Group Supervisor disposes of all hazardous waste according to applicable regulations (confer with the safety support personnel, the Response Team or other company safety personnel).

Note: The position of On-Site Group Supervisor during the remediation phase may be best filled by an Environmental Specialist.

- Ensure that priority is given to clearing debris and restoring the site to normal operating conditions after the government and company investigations are complete.
- Ensure that all safety equipment is demobilized, cleaned and inspected for contamination.
- Ensure all roadblocks, staging area and detour equipment is demobilized.
- Ensure that all clean-up and repair actions follow the companies safety and environment policies and safe-work procedures.

# **Third Party Investigations**

The Incident Commander will coordinate and observe all site investigations. Third party investigators such as police, government agencies and insurance companies may be required to investigate an incident site. It is important to co-operate with third party investigators. However, company personnel should be aware of the corresponding corporate guidelines.

• Obtain the name, title, address and telephone number of all inspectors and immediately inform the Incident Commander before proceeding with the investigation.



# Post-Incident, continued

- Ensure a company representative accompanies the inspector at all times. Never leave an inspector unattended.
- Give the inspectors the information they request, the facts only, no speculative information. Always tell the truth.

Document all items of evidence that the inspector has retained. Where possible, keep copies of the evidence provided to the Inspectors.

Wait until legal counsel is present before answering questions where the inspector indicates that any statements may be used as evidence or indicates that you have the right to counsel.

### **Review and Debriefing**

The effectiveness of the ERP shall be reviewed after the end of the emergency. In some situations, a formal debriefing may be held. The objective of the debriefing should be to improve emergency preparedness and response by identifying areas of success and areas requiring improvement (a debriefing should not be a fault-finding mission). If one is held, all groups that responded to the emergency should be represented. The representatives should come prepared with complete details of their activities during the emergency and, where possible, provide supporting documentation. Common elements of an effective debriefing include:

- a) A facilitator;
- b) A secretary to record the proceedings;
- c) A review of the sequence of events, including timing and actions taken; and
- d) Identification of those portions of the ERP that were effective and those that require improvement.

Action items identified during the debriefing should be documented and assigned with completion timelines, key lessons learned from emergency outcome should be shared with the appropriate parties, and the ERP should be revised as necessary. Separate debriefings may be held with different groups that participated in the emergency (e.g., emergency services organizations, the media, etc.).

# **Critical Incident Stress Debriefing (CISD)**

Responders are often under a great deal of stress. They must act quickly, often in the face of pain and fear, to assess the situation, determine priorities and begin rescuing others who are in danger. They may have experienced a serious injury themselves or witnessed the death of co-workers or the public.

If necessary, the Incident Commander will request that the company's Human Resource personnel dispatch specially trained counselors to meet with responders, preferably within 24 to 48 hours, to provide support and reassurance to those affected by an emergency. Team members should include a mental health professional and trained peer support personnel (fire-fighters, paramedics, police, military, etc.).

CISDs allow individuals to express the circumstances they were confronted with, how they felt at the incident and what their reactions were after the incident. The participants must understand that the meetings are strictly confidential and are not intended to judge or lay blame on an individual's actions. Recording devices and note taking should be prohibited. Meetings should be limited to a maximum of 20 individuals. Individuals who are perceived to be responsible for the incident should be excluded from group meetings and met on a one-on-one basis.

These sessions provide the responders with a supportive environment that helps them deal with their emotions. It also provides them with information about stress and its effects (severe agitation, emotional upset, inability to sleep, etc.) and it educates them about stress management techniques.



# Post-Incident, continued

## **Post-Incident / Accident Investigation**

Once the emergency status has been removed, a senior company representative will appoint a subcommittee to investigate the event. This subcommittee will consist of appropriate management and technical specialists as required.

The objective of the investigation will be to analyze and evaluate the event in order to establish a cause, to provide advice on how to prevent a reoccurrence of the event, and to make recommendations on procedures that will improve the company's emergency response efforts in the future.

The post-incident / accident investigation should include:

- A review of the events leading up to the incident / accident.
- An analysis of the on-site remedial procedures, including an evaluation of the safety standards that were applied.
- An appraisal of the company's shelter-in-place / evacuation response for the affected public.
- An evaluation of the effectiveness of the notification and communication systems between the incident site and the head office, as well as within the company.
- An appraisal of the effectiveness of any media or public relations efforts.
- An assessment of any potential legal or environmental issues that may be raised as a result of the event or as a result of the company's response efforts.
- A summary of current and future costs.
- Completed appropriate event report forms and applicable attachments.
- An assessment of the strengths and weaknesses of the company's response.

This report will be directed to the attention of a senior company representative. It will be his / her responsibility to ensure all recommendations for improvements to the Corporate and Field Emergency Response Plans are incorporated where applicable and promptly communicated to the appropriate company personnel.

Within 30 days of the end of an incident, a Licensee must file with the Provincial Agency, Canada Energy Regulator (CER), and / or the Transportation Safety Board (TSB), an Operator Incident Summary Report structured as outlined by the Provincial / Federal Agency. After reviewing the Operator Incident Summary Report, the Provincial and / or Federal agency may require that the licensee attend a meeting to further discuss the incident.

All documentation recorded during and following an emergency must be retained for up to five years in the event the Regulatory Agency requests it.



# **Medical Emergencies**

DISCLAIMER: The information contained in this section does not replace formal First Aid, CPR & AED training. The company makes no guarantee as to, and assumes no responsibility for, the correctness, sufficiency or completeness of such information or recommendations. A First Aid provider is someone who has completed formal first aid training from a recognized provider. Training can be obtained from the Canadian Red Cross (www.redcross.ca) or St. John Ambulance (www.sja.ca).

The 3 basic steps to follow in any emergency:

Remember: stay calm, look for dangers, never risk your own safety

# CHECK the person

- Does the person want your help? If the person is unable to answer, assume you have consent to give first aid.
- Check the person's ABCs (Airway, Breathing, and Circulation).



# CALL EMS/9-1-1

- If the person responds, find out if there is a need to call EMS/9-1-1.
- If the person does not respond, call for help and EMS/9-1-1.



# CARE for life-threatening conditions first

 Reduce the risk of disease transmission by using protective equipment, such as disposable gloves and a barrier device.



Canadian Red Cross (2013). Check, Call, Care First Aid Poster. Retrieved February 2013, from Canadian Red Cross Web site: http://www.redcross.ca/cmslib/general/tp\_fa\_poster\_checkcallcare\_web.pdf



# Medical Emergencies, continued First Aid Information

#### **CPR**

The simplified Adult Basic Life Support algorithm includes five steps. The algorithm diagram provided by the American Heart Association emphasizes the following:

- **1.** Assess the victim's responsiveness. If a victim is not breathing, or is not breathing normally (i.e., gasping), initiate CPR. Health care professionals should be trained to recognize cardiac arrest that presents as seizure-like activity or with agonal respirations.
- 2. Activate EMS (Emergency Medical Response) by calling 911.
- 3. Retrieve a defibrillator, usually an automatic external defibrillator (AED).
- 4. The algorithm proceeds in a loop of CPR and rhythm checks with defibrillation.
- **5.** Check PULSE before chest compressions for at least five seconds and no more than ten seconds. If in doubt, begin compressions
- **6.** CPR: push hard and fast. Begin chest compressions before ventilation. Chest compressions allow blood flow to the heart and brain. Delays in chest compressions result in diminished survival. Be sure to allow the chest to recoil between compressions. The chest should be compressed 100-120/min to a depth of 2"-2.4" (5-6cm)
- 7. For effective breathing, watch for chest rise and avoid excessive ventilation. 10 BREATHS should be delivered each minute, or one breath every six seconds. Each breath should be delivered over 1 second. Observe visible chest rise.
- 8. Avoid gastric inflation, as it may result in aspiration, pneumonia or vomiting.
- **9.** The ratio of chest compressions to breaths is 30 to 2.
- **10.** After the defibrillator becomes available, check rhythm. Use the AED when indicated and available. The victim should receive a shock that is repeated every two minutes or 5 cycles.

#### **Burns**

The American Red Cross recommends these steps to care for minor burns.

- Stop the burning. Put out the flames or remove the victim from the source of the burn.
- Cool the burn. Use large amounts of water to cool the burned area. DO NOT use ice or ice water
  other than on small superficial burns. Ice causes body heat loss. Use whatever resources are
  available: tub, shower or garden hose. You can apply soaked towels, sheets or other wet cloths to a
  burned face or other areas that cannot be immersed. Be sure to keep cloths cool by adding more
  water.
- Cover the burn. Use dry, sterile dressings or a clean cloth to cover a burn. Loosely bandage them in place. Covering the burn helps keep air out and reduces pain. Covering the burn also prevents infection. If the burn covers a large area of the body, cover it with clean, dry sheets or other cloth.

For minor burns and burns with open blisters that are not serious enough to need medical care, wash the areas with soap and water. Keep it clean. Put on an antibiotic ointment. Watch for signals of infection.



#### Burns, continued

Critical burns will need immediate medical attention. Call 911 or your emergency number if any one of the following instances occurs:

- · Victim is having difficulty breathing.
- More than one part of the body is burned.
- There are burns to the head, neck, hands, feet or genitals.
- A child or an elderly person has been burned.
- Chemicals, electricity or explosions have caused the burns.

#### **Chemical Exposure Guidelines**

- In the event of chemical exposure, emergency services or poison control centre should be contacted as soon as possible.
- The eye may be irrigated using copious amounts of clean water, preferably using an eyewash bottle, eyewash station or shower.
- First aid providers may use continuous, large volumes of clean water for irrigation of chemical injuries where chemical exposure has occurred to other parts of the body.

#### **Wounds & Abrasions Guidelines**

- Superficial wounds and abrasions should be irrigated with clean water, preferably tap water because of the benefit of pressure.
- First aid providers may apply antibiotic ointment to skin abrasions and wounds to promote faster healing with less risk of infection.
- First aid providers may apply an occlusive dressing to wounds and abrasions with or without antibiotic ointment.
- The use of triple antibiotic ointment may be preferable to double- or singleagent antibiotic ointment or cream.
- If antibiotic is not used, antiseptic could be used.
- There is some evidence that traditional approaches, including applying honey, are beneficial and may be used on wounds by first aid providers.
- People with wounds that develop redness, warmth or become painful or with wounds where the
  person develops fever should seek assessment from a healthcare provider.



### **Bleeding Guidelines**

- First aid providers must control external bleeding by applying direct pressure.
- The use of pressure points and elevation is NOT recommended.
- When direct pressure fails to control life-threatening external limb bleeding or is not possible (e.g.
  multiple injuries, inaccessible wounds, multiple casualties), tourniquets could be considered in special
  circumstances (such as disaster, war-like conditions, remote locations or in instances where specially
  trained first aid providers are providing care).
- Localized cold therapy with or without pressure may be beneficial in haemostasis for closed bleeding in extremities. Caution is advised when applying this recommendation to children due to a potential for hypothermia.
- The out-of-hospital application of a topical haemostatic agent to control lifethreatening bleeding not controlled by standard techniques and in situations where standard techniques could not be applied could be considered with appropriate training.

Source: www.redcross.ca/crc/documents/1303501\_FirstAid-2016\_Guidelines\_LR-PDF.pdf



#### **Next-of-Kin Notification**

When an employee, contractor or member of the public is seriously injured, missing, or pronounced dead, the next-of-kin must be notified as promptly as possible. Keep in mind the following policies before notifying any next-of-kin:

- Death is never presumed, and first aid must be administered until relieved by a paramedic.
- No telephone or radio discussion is to take place regarding the name(s) of the injured.
- Notification is not to occur until the casualty has been pronounced dead by a medical doctor or medical examiner.

If an employee, contractor or member of the public is injured or killed as a result of company operations; notifications will be coordinated through local RCMP / municipal police and designated company personnel.

#### **Before Notifying the Next-of-Kin**

- Never release the names of the injured, missing, or persons pronounced dead before the next-of-kin are notified.
- Triple-check the identity of any casualty.
- If the casualty is conscious, document concerns. Do not make promises that cannot be kept.
- Confirm the casualty's relationship with the people being notified.
- Be prepared to support the next-of-kin. Provide assistance such as transportation, child care, alternative accommodation, reimbursements for daily expenses, and the temporary care of the family home if required.

#### **During the Notification of the Next-of-Kin**

- Make the notification in person, not by telephone or through an intermediary.
- Provide the relatives with as much information as possible; too few details can cause excessive worry. Present only the facts; do not speculate.
- Do not discuss personal views of liability or fault.
- Allow the next-of-kin to vent their emotions.
- Attempt to support and reunite families as quickly as possible.
- Offer assistance; document key issues and concerns. Do not make promises that cannot be kept. Follow up on relatives' requests.
- Document the details of anyone who appears to be having trouble coping with the incident so that he
  / she can be given prompt psychological support.



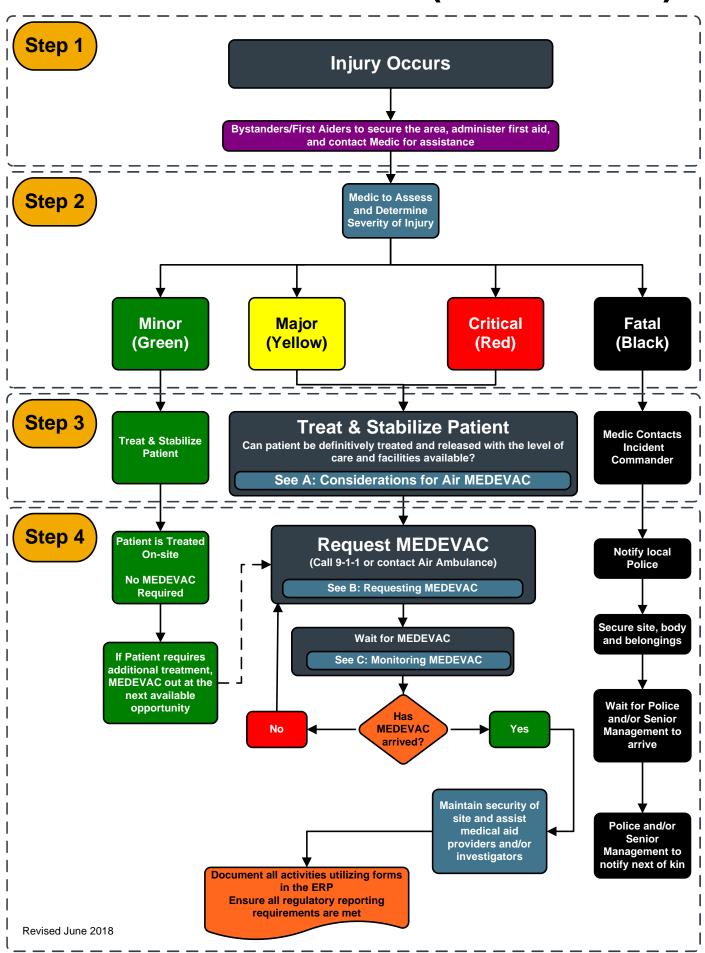
## During the Notification of the Next-of-Kin, continued

- Do not leave the next-of-kin alone.
- Offer to contact a neighbour, friend, relative, minister, doctor, or counsellor.
- Leave your name and telephone number with family members.
- Ensure the next-of-kin are protected from media harassment as required.

#### Follow-Up

- The same representative who conducted the initial notification should continue to contact and support the next-of-kin.
- If required, a senior company representative will ensure that a trained psychologist conducts critical
  incident stress debriefing sessions with next-of-kin, friends and company employees involved or
  affected by the tragedy.
- Advise the employee's family 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.

## Medical Evacuation (MEDEVAC) Procedure



In the event of any injury or illness the following steps shall be followed:

## 1) Survey the scene and ask yourself the following questions:

- Is it safe for me to help?
- What happened?
- How many people are injured?

#### 2) Call for help:

- 1) Activate Emergency Responders and/or call 9-1-1
- 2) Identify your location
- 3) Follow the direction of the Medic and administer First Aid if required and you are trained to do so
- 4) Review Step 1

### **Patient Priority Colour Code**

The practice of colour coding patients is a useful tool to prioritize patients into categories depending on their medical condition. This colour code system allows ease of communicating the condition of the patient to those involved in the care and transportation of the patient.

<u>Green</u> – Patients with minor injuries or illnesses who are usually walking. Medical care can be delayed beyond 2 hours.

#### For example:

- Minor burns
- Sprains and strains
- Colds and flu symptoms

<u>Yellow</u> – Patients with major injuries or illnesses that should be treated within 20 minutes to 2 hours.

#### For example:

- Open fractures
- Large lacerations

<u>Red</u> – Patients with critical, life threatening injuries or illnesses that require treatment as soon as possible.

#### For example:

- > Airway problems
- > Severe hemorrhage
- Severe burns
- Failing vital signs

<u>Black</u> – Death is obvious. Note: resuscitation / treatment must continue until directed otherwise by a qualified medical provider. Await Police.

#### A: Considerations for Air MEDEVAC

#### Consider air transport when:

- Patient requires critical care life support during transport that is not available locally.
- Patient's condition requires that time spent in transport be as short as possible.
- Potential delays associated with ground transport (road obstacles or conditions traffic, distance) are likely to worsen the patient's condition.
- Patient is located in an area inaccessible to regular ground transport.
- The use of medical transportation resources would leave the local area or worksite without adequate medical coverage.

#### **B: Requesting MEDEVAC**

When requesting MEDEVAC, be prepared to supply the following information:

- Location of patient pickup (facility, airport, road intersection, GPS)?
  - Who will be meeting MEDEVAC crew (radio callsign / frequency, cell number)?
- Will the patient meet the MEDEVAC crew at the pickup location or will the MEDEVAC crew need to be transported to the patient?
- Any special equipment required (ventilator, bariatric transport equipment, etc.)?
- Will any additional personnel be necessary (physician, nurse)?
- Is there an intended destination (major hospital, community)?
- Has any consultation with medical providers at the intended destination been done?

Do not delay launch / dispatch of MEDEVAC, provide the following information once available:

- Mechanism of injury (and time of injury if known)
- Injury or illness sustained
- Symptoms and vital signs
- Treatment given

#### C: Monitoring MEDEVAC

When requesting MEDEVAC, ensure that you are monitoring the transport and are aware of who to contact for updates and in case changes to plan are required.

When is MEDEVAC transport scheduled to arrive?:

What number should be contacted if something in the plan needs to be changed?

If transport doesn't arrive, or if no updates are heard, what time will we contact MEDEVAC for an update?

## **Emergency MEDEVAC Phone Numbers**

#### PROVINCIAL AIR AMBULANCE:

Alberta 800-661-3822

 British Columbia
 911

 Manitoba
 800-689-6559

 Saskatchewan
 888-782-8247

**STARS (AB, BC, SK, MB):** 24 Hour Emergency: 888-888-4567

Note: When a medical evacuation is complete all personnel must report to the Incident Commander for a debriefing session.





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## **Responder Safety**

### **Site Safety**

Response personnel must stay out of the hazard area until the hazards are identified and assessed. All responders must evaluate potential site hazards 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. They 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 (responders and public) before initiating control and containment operations.
- Do not allow anyone, including first responders such as police, fire fighters or ambulance attendants to enter the hazard 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 company facility is threatened by an external fire. They 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**

The On-Site Group Supervisor 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.

#### **Hazardous Area (Hot Zone)**

Extreme caution and planning must be undertaken when entering the hazardous area. Access to and from the hazardous area will be 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 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 the On-Site Group Supervisor to determine the hazardous area. An area is considered hazardous if any of the following conditions exist:

- Combustible gas reading of 10% LEL or greater
- H<sub>2</sub>S gas reading of 15 ppm or greater for 15 minutes
- SO<sub>2</sub> readings of 5 ppm or greater for 15 minutes
- Oxygen content of less than 19.5% or greater than 22%
- Presence of organic and inorganic vapours / gases and liquids (consult Safety Data Sheets (SDS) for toxicity data)
- An area the On-Site Group Supervisor deems to be hazardous, such as the area surrounding a fire or spill

The On-Site Group Supervisor 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 a downwind areas, low areas, confined spaces
- Site stability, e.g. steep slopes, overhanging banks, unstable soil, thin ice
- Weather conditions
- The toxicity and evacuation data for the product involved (Refer to SDS)

#### **Decontamination Area (Warm Zone)**

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.



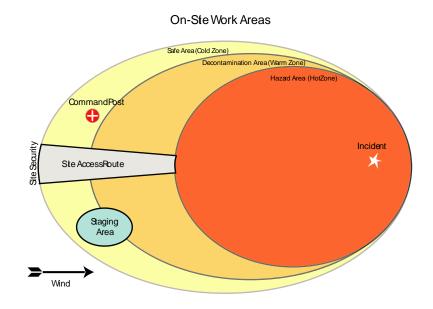
Decontamination is the complete or partial removal or neutralization of the harmful contamination chemicals. Some equipment will not withstand a proper decontamination process and therefore must be destroyed. Site safety personnel will recommend to the On-Site Group Supervisor whether clothing, instruments 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 designated hazardous and safe areas. Decontamination areas should be set up in areas that are not affected by the onsite hazard. Any contaminated personnel and equipment leaving the hazardous area must be decontaminated in the decontamination area 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.

### Safe Area (Cold Zone)

The safe area is an area verified by the On-Site Group Supervisor to be safe. The On-site Command Post (OSCP) is located in the safe area. The safe area must be continually monitored and evaluated to confirm its safety. If there is any concern about the area's safety, the On-site Command Post will relocate to an area proven to be safe.





## **Working Alone**

A Working Alone Procedure and a working alone hazard assessment are legislated responsibilities of every employer. One working alone hazard assessment may fit multiple work sites providing the working conditions are the same. These assessments must be available for the workers to review. All working alone hazards shall be mitigated to a reasonable and practical level of risk. Every worker who works alone must have a designated "Working Alone Contact". Activities, dates, and times of contact shall be documented and filed. The "Working Alone Contact" may be a co-worker, a 24/7 facility control room, a third party emergency answering service, or automated working alone tracking system.

#### **Application**

Each operating area will develop a Site Specific Procedure (SSP) for Working Alone; the SSP will be documented, approved by management, and signed by every company employee or contract employee working in that operating area. Service suppliers will be expected to provide their own "Working Alone Programs" but due to communication limitations or emergency response capabilities they may need to utilize the company Working Alone Program, this temporary change of "Working Alone Contact" should be documented on the safe work permit.

#### **Potential Hazards**

- Loss of communication needed for requesting assistance;
- Delays in reporting times;
- · Injury requiring assistance; and
- Transportation problems.

#### **Equipment and Training Requirements**

- The Working Alone Procedure and Response Plan for the overdue worker are to be a specific agenda item for safety meetings to ensure a suitable level of acceptance and involvement from all personnel is achieved, and
- Supervisors and members of the management shall discuss the plan with workers that participate in field activities, to ensure a high level of awareness and preparedness is maintained at all times.

#### **Low Risk Working Alone Procedure**

(Sweet Gas Operations, daylight hours, normal weather conditions)

- The employee should notify their "Working Alone Contact" of check-in times and locations of work;
- If multiple travel routes are an option then the route selected will also be noted
- If an employee's arrival at a check-in location is delayed by more than one (1) hour, the employee should notify their "Working Alone Contact" of the new estimated time of arrival.



## Responder Safety, continued High Risk Working Alone Procedure

(Sour Gas Operations, Call-outs, Adverse Weather Conditions)

- The employee should notify their "Working Alone Contact" prior to departure, and advise them contact of the estimated time of arrival at location;
- The employee should notify their "Working Alone Contact" of arrival at location;
- The employee should assess the problem or job scope, notify their contact, discuss the nature of the problem or job, work procedure to be used, and any additional required safeguards, and provide an estimation of how long they will be at the location;
- The employee should notify their "Working Alone Contact" when they are finished and ready to leave the location and estimated time of arrival at next check point, base or home; and
- The employee should notify their "Working Alone Contact" of arrival at next checkpoint, base or home.
- If the employee is delayed or expects to be delayed arriving at their next check-in point by more than one (1) hour, the employee should notify their "Working Alone Contact" of amended estimated time of arrival.
- During adverse weather conditions the employee should notify their "Working Alone Contact" of the exact route to be followed; shorter check-in time intervals are recommended.

Note: Every worker has both the right and responsibility to refuse unsafe work.

### **Overdue Worker Response Plan**

- The Overdue Worker Response Plan shall be initiated when a worker is one (1) hour overdue, (shorter grace periods may be instituted during bad weather or at high risk worksites), and
- After the one (1) hour grace period has expired, the worker's "Working Alone Contact" shall:
  - Attempt to contact the overdue worker by cell phone or radio; immediately notify the worker's supervisor of the circumstances;
- The supervisor will discuss options with the "Working Alone Contact" and together they will agree on an action plan; and
- The action plan may include any or all of the following:
  - Continue attempts to contact the overdue worker by cell phone or radio;
  - The "Working Alone Contact" or other designated individual will drive the route taken by the overdue worker in an attempt to contact the worker. Specific PPE safety equipment may be required for rescue activities by those involved with the Overdue Worker Response Plan:
  - The "Working Alone Contact" or the supervisor may request search assistance from industry workers in the area who have been identified in the contact list;
  - The "Working Alone Contact" or supervisor will call local hospital(s) to establish whether an injured person has been admitted; and
  - The "Working Alone Contact" or supervisor may notify the local police or RCMP of circumstances with a request for assistance.



## **Missing Persons**

In the event that an employee should go missing:

- Confirm that the person has failed to check in at the predetermined time.
- Contact the person's supervisor (or next in line for reporting) and provide details, e.g. where the person was working, length of time overdue, and if the person is alone.
- If it is deemed appropriate to initiate a search, inform a supervisor (or next in line for reporting) of any plans before any employees head out to search.
- Employees should never endanger themselves during a rescue.
- Searchers should always use the buddy system and work in teams. Each team must be fully
  equipped, names logged, and their designated search area recorded on a map before heading out.
  Searchers should carry maps and compass, GPS (Global Positioning System) unit, survival kit, first
  aid kit, communication equipment, extra batteries, and appropriate provisions.
- Search first where the missing person will most likely be found, e.g. where the person's truck is parked.
- If the missing person is not found within a specified time (e.g. two hours), notify the appropriate Search and Rescue (SAR) authority and/or local police.
- When formal SAR groups are engaged, it is imperative that only one person coordinates all operations.
- Notify ALL authorities when the missing person is found so all search participants are informed and can cease their efforts.
- Complete and submit the required accident/incident investigation form.

Source: PDAC Field Safety Pocket Guide

#### **Rest Periods**

Response members may experience a wide array of stresses which may include the death or serious injury of a co-worker, witnessing distressing sights, time pressures, responsibility overload, physical demands, mental demands, emotional demands, limited resources and high expectations from others, hazardous environments or extreme weather conditions.

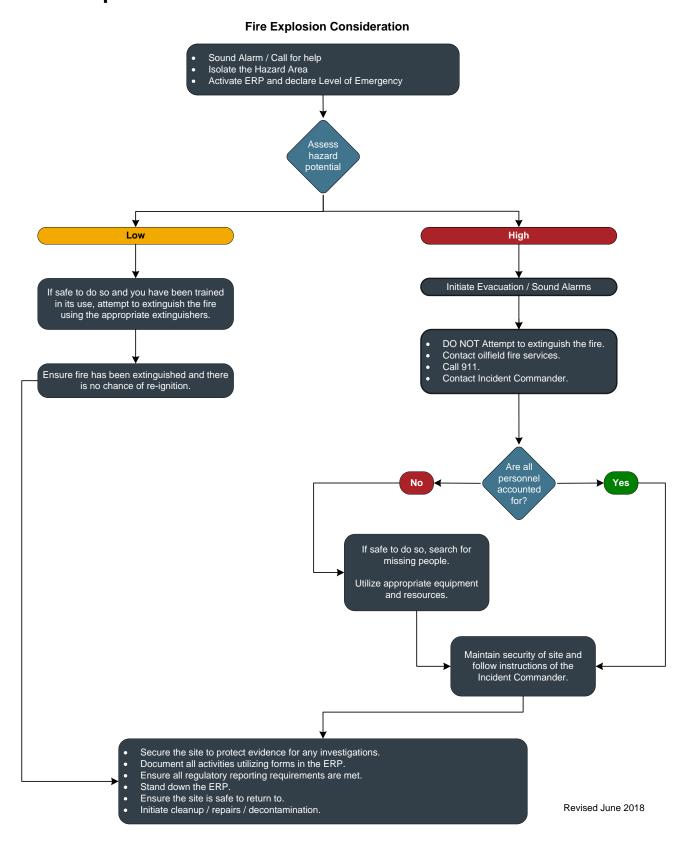
In high-stress assignments, responders should be routinely rotated. Where manpower is limited, responders should alternate from high-stress positions to lower-stress positions.

Fifteen to thirty minute rest periods should be scheduled every two hours during an emergency situation for all responders; and if possible, provided with:

- Shelter from weather, dry clothes and a place to sit or lie down away from the scene.
- Warm food, high protein snacks and juices.
- An opportunity to share their feelings with co-workers.



## Fire / Explosion





An explosion is a mechanical or chemical reaction that suddenly releases a large amount of energy, resulting in a shock or pressure wave that causes damage, high temperature and usually a release of gases. Explosions can be loosely categorized according to reaction time. High explosives react quickly within a millionth of a second, while low explosives react more slowly. Important general guidelines must be followed for all fires or explosions to ensure the safety of the public, employees and environment. When encountering different types of fire, the appropriate firefighting services should always be contacted. This is especially important for fuel-related, structure-related or forest-related fires to decrease the risk of major damage. For oil-related fires, industrial fire-fighters are the best equipped to reduce further danger in the area.

If a fire or explosion occurs, the following actions shall be taken:

#### **Control / Containment:**

- If possible;
  - Isolate the source and take reasonable action to extinguish or contain the fire.
  - Shut down all known fuel sources.
  - Shut off high voltage power supplies to equipment in fire-affected area.
  - Shut off fuel to heaters near to, or downwind of fire.
  - Dissipate static electrical charges on bodies of all personnel in area. Grounding may be accomplished by holding onto a metal structure for ten seconds with bare hands.
- Call out to industrial firefighting services.
- Notify the Incident Commander.
- Isolate hazard area or equipment as required.

#### **External Notifications:**

 Follow notification procedures for fires outlined in the Government Notification Matrix in Section 5: External Agencies.



# Fire / Explosion, continued Classification of Fires

Most fires that occur will fall into one or more of the following categories:

Class / Symbol	Material	Extinguishing Agent
A	Ordinary combustible materials, such as wood, paper, cloth, trash, and plastics.	Cooling, blanketing or wetting extinguishing agent is needed. Water and foam extinguishers work on this class of fire.
B	Flammable liquids such as gasoline, thinners, oil-based paints and greases; Also includes flammable gases such as propane and butane.	Extinguishers for this type of fire include carbon dioxide, dry chemical and halogenated or clean agent types.
	Energized electrical equipment, such as motors transformers and appliances.	The most common type of extinguisher for this class is a carbon dioxide extinguisher. A dry chemical or clean agent extinguisher can also be used.
	Combustible metals such as magnesium, sodium, potassium, titanium and aluminum.	Special dry powder extinguishing agents are required for this class of fire, and must be tailored to the specific hazardous metal.
K	Cooking oils and greases such as animal fats and vegetable fats.	A wet chemical fire extinguisher agent is used for this class of fire.

Source: www.femalifesafety.org



## Response Actions Based on Type of Fire

#### **Process Fire**

#### **Definition:**

Process fires include those within or adjacent to: fractionation skids, compressors, exchangers, vessels (also see BLEVE / LPG), piping, tanks/bullets (also see BLEVE / LPG).

#### Hazards:

Process fires can be a particular hazard where flammable materials are present.

#### **Response Actions:**

Deny or restrict access to the area, shut down and depressurize any related or additional process equipment, if safe to do so. Do not attempt to extinguish a process fire if you are not properly trained.

#### **Sulphur Fire**

#### **Definition:**

Sulphur dust suspended in air ignites easily, and can cause an explosion in confined areas.

#### Hazards:

Toxic gases will form upon combustion. Bulk/solid forms burn only at a moderate rate, whereas dust burns with explosive violence. Burning sulphur decomposes into toxic sulphur oxide gases such as sulphur dioxide (SO<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S) which is toxic if inhaled.

#### **Response Actions:**

The following precautions should be taken when dealing with sulphur fires:

- Prevent human contact or inhalation. Fire may produce irritating and/or toxic gases.
- Wear full faced, self-contained breathing apparatus and full protective clothing.
- Use a water fog, NOT water, to extinguish fire.
- Cool fire, surrounding area, and containers, tanks, and trucks to below 154°C in order to diminish the fire.
- Evacuate the area, except for essential personnel.
- Isolate the area with a 1600m radius.

Trained personnel, local fire departments or contract fire services should only attempt to control a sulphur fire. To ensure public protection, evacuate 1600 meters in all directions and ensure air monitoring is set up downwind of fire and the smoke plume. Continually assess evacuation zone based on air quality readings.



#### **Electrical System Fire**

#### **Definition:**

Electrical fires are fires involving potentially energized electrical equipment. This sort of fire may be caused by, for example, short-circuiting machinery or overloaded electrical cables.

#### Hazard:

Electrical fires can quickly get out of control and can cause serious damage and threaten lives.

#### **Response Actions:**

Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is, or could possibly be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Carbon dioxide CO<sub>2</sub>, FM-200 and dry chemical powder extinguishers such as PKP and even baking soda are especially suited to extinguishing this sort of fire. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire. Water conducts electricity; throwing water on an electrical fire can cause the fire to get larger.

#### **Grass Fire**

#### **Definition:**

A grass fire is a fire that burns large amounts of grass. They mainly occur in grasslands and or Great Plains.

#### Hazards:

Grassfires spread rapidly, travelling at speeds of up to 25 km/hr, and can quickly threaten lives and properties.

#### **Response Actions:**

Threatening grass fires have a potential to involve the licensee's and other area operators' facilities, pipelines and well sites, therefore guidelines to minimize damage to any property need to be followed. To protect the licensee's and other area user property, it is important to follow these guidelines:

- Notify other area operators of the emergency.
- Isolate and shut in all affected facilities if safe to do so.
- For small grass fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.
- For larger grass fires do not attempt to extinguish, but contact local fire department and local forestry
  office.



#### Forest Fire / Wildfire

#### **Definition:**

A forest fire is an uncontrolled fire in a wooded area. A forest fire is a natural disaster consisting of a fire which destroys a forested area, and can be a great danger to people who live in forests as well as wildlife. Forest fires are generally started by lightning, but also by human negligence or arson, and can burn thousands of square kilometres.

#### Hazards:

Forest fires can quickly get out of control and can cause serious damage in agricultural and forested lands.

#### **Response Actions:**

- Notify other area operators of the emergency.
- Isolate and shut in all affected facilities if safe to do so.
- For small fires extinguish using a shovel or ABC type fire extinguisher. If it enters coulees, along rivers, or into large areas of trees or forests, contact the local fire department and local forestry office for assistance.
- For larger fires do not attempt to extinguish the fire. To report a forest fire/wildfire, call:

British Columbia	1-800-663-5555 (Prov-wide) or *5555 (from cell, Prov-wide)
Alberta	310-FIRE (3473) (Prov-wide)
Saskatchewan	1-800-667-9660 (Prov-wide)
Manitoba	1-800-782-0076 (Prov-wide)
Northwest Territories	1-877-NWT-FIRE (698-3473) (Prov-wide)



#### **Natural Gas Liquid Fire**

#### **Definition:**

Liquid natural gas is very flammable after vaporization to a gaseous phase.

#### Hazard

If liquid natural gas is spilled, it vaporizes. The natural gas vapours are initially heavier than air and they form a cloud close to the ground, which is pushed downwind and eventually dissipates. If a viable ignition source is present where a vapour cloud exists at a 5%–15% concentration in air, the vapour cloud can ignite and burn. A vapour cloud, formed by an LNG spill, could drift downwind into populated areas. An LNG fire gives off a tremendous amount of heat. Water will react violently with the LNG and may cause the fire to flare up and intensify.

#### **Response Actions:**

A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which is done by dry chemical and Halon extinguishing agents, although smothering with CO<sub>2</sub> or, for liquids, foam is also effective.

#### **BLEVE**

#### **Definition:**

BLEVE is an acronym for Boiling Liquid Expanding Vapour Explosion. It is the term for an uncontrolled fire and explosion of vapour as it escapes from a ruptured vessel of pressurized / liquefied gas. Such explosions can be extremely hazardous.

#### Hazards:

The hazards associated with a BLEVE include the initial impact of the blast, the fireball and radiation from the explosion and projectiles (pieces of the tank and nearby equipment) that are rocketed from the explosion.

#### **Response Actions:**

- Contact Emergency Response Assistance Canada (ERAC) for assistance with emptying any damaged tanks.
  - Under the plan, response is provided for the following chemicals: LPG UN 1075, Propane UN 1978, Butane UN 1011, Propylene UN 1077, Butylene UN 1012, Isobutane UN 1969, Isobutylene UN 1055, Butadiene-1,3 UN 1010
- If safe to do so, attempt to extinguish any fires before they come in contact with any storage bullets.
- Call 911 to obtain assistance with fire suppression. Ensure all responders are made aware of the hazards.
- Flowing water can be used to cool the tanks in order to prevent or delay a BLEVE; however, this
  requires a significant amount of water and should not be attempted unless an unlimited water supply
  can be located and the tank can be approached safely.
- Evacuate all personnel and isolate the area to a 1600m radius.
- Evaluate the tank from a safe distance away. Choose an upwind position to the side of the tank if possible.
- Leave the area immediately if you hear a rising sound from venting safety devices or see discoloration of the tank.



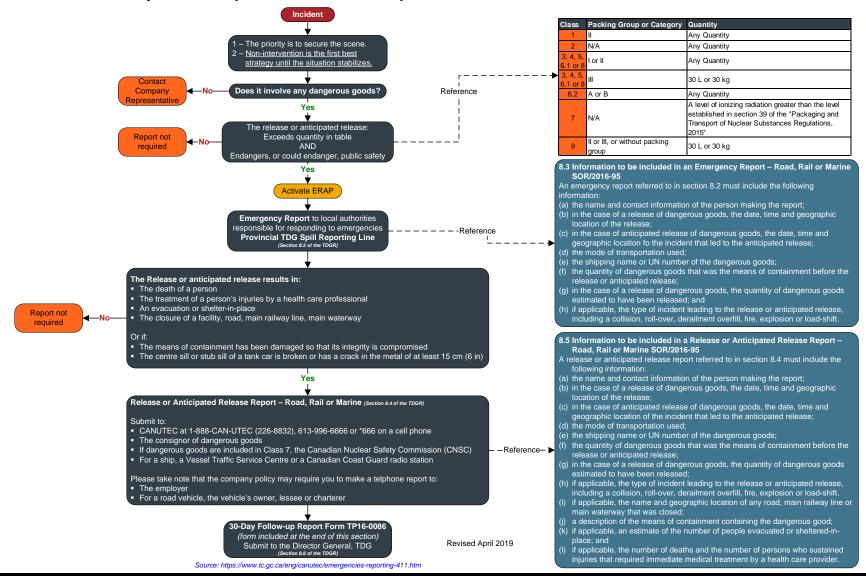
## **BLEVE Considerations Based on Tank Capacity**

	BLEVE																		
Сар	acity	Diam	eter	Len	gth	Propan	ie Mass		Approximate time to empty for engulfing fire	Fireball	l radius		gency distance	Mini evacuation		Preff evacuation	fered n distance		vater flow te
Litres	Gallons	Meters	Feet	Meters	Feet	kg	lbs	Minutes	Minutes	Meters	Feet	Meters	Feet	Metres	Feet	Meters	Feet	Litres/min	Gal/min
100	38.6	0.3	1	1.5	4.9	40	88	4	8	10	33	90	295	154	505	307	1007	94.6	25
400	154.4	0.61	2	1.5	4.9	160	353	4	12	16	53	90	295	244	801	488	1601	189.3	50
2000	772	0.96	3.2	3	9.8	800	1764	5	18	28	92	111	364	417	1368	834	2736	424	112
4000	1544	1	3.3	4.9	16.1	1600	3527	5	20	35	115	140	459	525	1722	1050	3445	598	158
8000	3088	1.25	4.1	6.5	21.3	3200	7055	6	22	44	144	176	577	661	2169	1323	4341	848	224
22000	8492	2.1	6.9	6.7	22	8800	19400	7	28	62	203	247	810	926	3038	1852	6076	1404	371
42000	16212	2.1	6.9	11.8	38.7	16800	37037	7	32	77	253	306	1004	1149	3770	2200	7218	1938	512
82000	31652	2.75	9	13.7	45	32800	72310	8	40	96	315	383	1257	1435	4708	2200	7218	2710	716
140000	54040	3.3	10.8	17.2	56.4	56000	123457	9	45	114	374	457	1499	1715	5627	2200	7218	3539	935



## **Transportation Incidents**

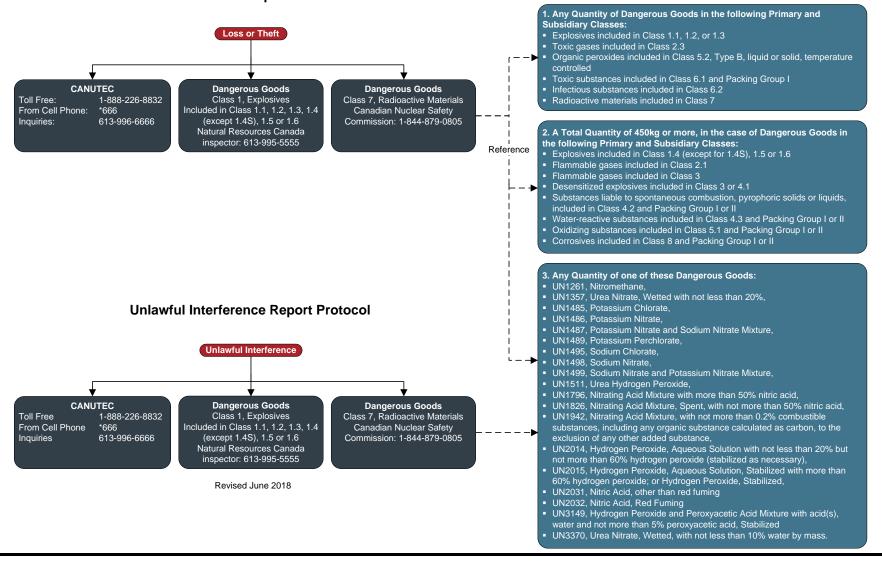
## First On-Scene Transportation (Road, Rail, Marine) Incident Flowchart





## Loss, Theft or Unlawful Interference Reporting Flowchart

#### **Loss or Theft Report Protocol**





#### **Motor Vehicle Accidents**

The first person on scene will follow the First Person On-Scene Transportation Incident Flowchart, then:

- Record and report the following:
  - Driver's name, address and phone number.
  - Driver's license number.
  - o Vehicle license plate number, make, model, year and colour.
  - Name of injured and nature of injury.
  - Witnesses' name, address and phone numbers.
  - Time and location of accident.
  - Actions taken.
  - Weather conditions.
  - Individuals and organizations notified.
- Make a statement to the RCMP / police.
- Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log (see Section 6: Forms).

The Incident Commander will be engaged through the initial notification and is responsible to:

- Ensure required communication occurs with internal and external personnel.
- Ensure no unauthorized personnel enter the emergency area.
- Ensure evidence is secured for investigation.
- Conduct an initial debriefing to all emergency personnel and delegate areas of responsibility.
- Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log (refer to Section 6: Forms).

In case of a hazardous material spill:

- Ensure your own personal safety.
- Refer to Section 4: Spill Response.

In case of a vehicle fire:

- Ensure your own personal safety.
- Call for assistance.
- Use an ABC fire extinguisher for cab, electrical, cargo space or trunk and engine fires.

Note: RCMP/Police must be notified when an injury or fatality has occurred and / or vehicle damages exceed \$1000.00.



Refer to the Transport Canada - 2016 Emergency Response Guidebook for further details regarding the Initial Phase of a Dangerous Goods / Hazardous Materials Transportation Incident.

### **Emergency Response Assistance Canada (ERAC) Plan**

Internal notification is required in the event of a LPG incident. The extent of the notification depends on the severity of the incident. If the Emergency Response Assistance Canada (ERAC) Plan has been implemented, the incident is considered serious. Examples of serious incidents include: fire, spill, rupture, collision involving tanker car, tanker car overturning, etc.

Notification of an LPG incident outside of a plant site will most likely come from Emergency Response Assistance Canada (ERAC) in Calgary, Alberta.

If the call is NOT from ERAC, contact ERAC immediately and confirm the plan has been initiated.

If you receive the initial call, contact the ERAC:

• Refer to Section 5: External Agencies or Area Specific Information for contact information

Refer to the First On-Scene Incident Flowchart on the previous page for information on when to contact.

## **CANUTEC – Canadian Transport Emergency Centre**

CANUTEC is operated by Transport Canada to assist emergency response personnel in handling dangerous goods emergencies involving all modes of transportation.

In an emergency, CANUTEC may be called collect at:

Refer to Section 5: External Agencies or Area Specific Information for contact information

CANUTEC **MUST** be notified in the case of the following:

- Lost, stolen or misplaced infectious substances.
- An incident involving infectious substances.
- An accidental release from a cylinder that has suffered a catastrophic failure.
- An incident where the shipping documents display CANUTEC's telephone number as the emergency number.
- A dangerous goods incident in which a railway vehicle, a ship, an aircraft, an aerodrome or an air cargo facility is involved.



# **Transportation Incidents, continued Dangerous Goods References**

### **Agency Contacts**

Although technical information and emergency response assistance can be obtained from CANUTEC, there are federal and provincial regulations requiring the reporting of dangerous goods incidents to certain authorities.

Refer to Section 5: External Agencies or Area Specific Information for contact information

Note: The nearest police department must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infectious substances.

The appropriate federal agencies must be notified if affected:

Refer to Section 5: External Agencies or Area Specific Information for contact information

## **TDG Reportable Quantities**

Refer to Petroleum Release Reporting Requirements chart in Section 4: Spill Response.

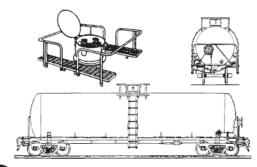


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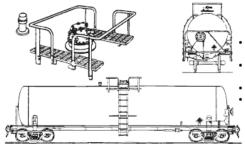


# **Transportation Incidents, continued Rail Car Identification Chart**

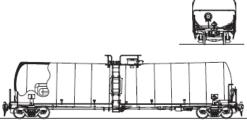
## 117 Pressure tank car



- For flammable, non-flammable, toxic and/or liquefied compressed gases
- Protective housing
- No bottom fittings
- · Pressures usually above 40 psi
- 131 General service tank car (low pressure)

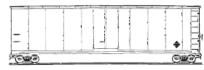


- For variety of hazardous and non-hazardous materials
- Fittings and valves normally visible at the top of the tank
- · Some may have bottom outlet valve
- Pressures usually below 25 psi
- 128 Low pressure tank car (TC117, DOT117)



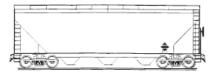
- For flammable liquids (e.g., Petroleum crude oil, ethanol)
- Protective housing separate from manway
- · Bottom outlet valve
- Pressures usually below 25 psi

111 Box car



- For general freight that carry bulk or nonbulk packages
- May transport hazardous materials in small packages or "tote bins"
- · Single or double sliding door

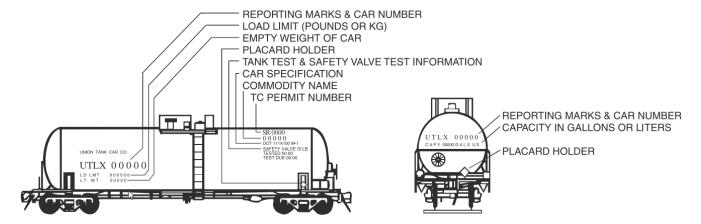
140 Hopper car



- For bulk commodities and bulk cargo (e.g., coal, ore, cement and solid granular materials)
- Bulk lading discharged by gravity through the hopper bottom doors when doors opened



## Transportation Incidents, continued Rail Car Identification Chart, continued



**CAUTION:** Emergency response personnel must be aware that rail tank cars vary widely in construction, fittings and purpose. Tank cars could transport products that may be solids, liquids or gases. The products may be under pressure. It is essential that products be identified by consulting shipping documents or train consist or contacting dispatch centres before emergency response is initiated.

The information stencilled on the sides or ends of tank cars, as illustrated above, may be used to identify the product utilizing:

- a. the commodity name shown; or
- b. the other information shown, especially reporting marks and car number which when supplied to a dispatch centre, will facilitate the identification of the product.

The recommended guides should be considered as last resort if the material cannot be identified by any other means.

Source: 2016 Emergency Response Guidebook

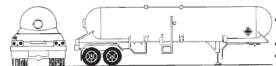


#### **Road Trailer Identification Chart**

**WARNING:** Road trailers may be jacketed, the cross-section may look different than shown and external ring stiffeners would be invisible.

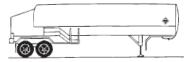
NOTE: An emergency shut-off valve is commonly found at the fornt of the tank, near the driver door.

117 MC331, TC331, SCT331

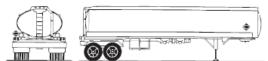


- For liquefied compressed gases (e.g., LPG, ammonia)
- Rounded heads
- Design pressure between 100-500 psi
- 117 MC338, TC338, SCT338, TC341, CGA341





- For refrigerated liquefied gases (cryogenic liquids)
- · Similar to a "giant thermo-bottle"
- Fitting compartments located in a cabinet at the rear of the tank
- MAWP between 25-500 psi\*\*
- 131 DOT406, TC406, SCT306, MC306, TC306



- For flammable liquids (e.g., gasoline, diesel)
- Elliptical cross-section
- Rollover protection at the top
- Bottom outlet valves
- MAWP between 3-15 psi<u>\*\*</u>

112 TC423

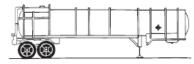


- · For emulsions and water-gel explosives
- Hopper-style configuration
- MAWP between 5-15 psi\*\*
- 137 DOT407, TC407, SCT307, MC307, TC307



- For toxic, corrosive, and flammable liquids
- Circular cross-section
- · May have external ring stiffeners
- MAWP of at least 25 psi\*\*
- 137 DOT412, TC412, SCT312, MC312, TC312

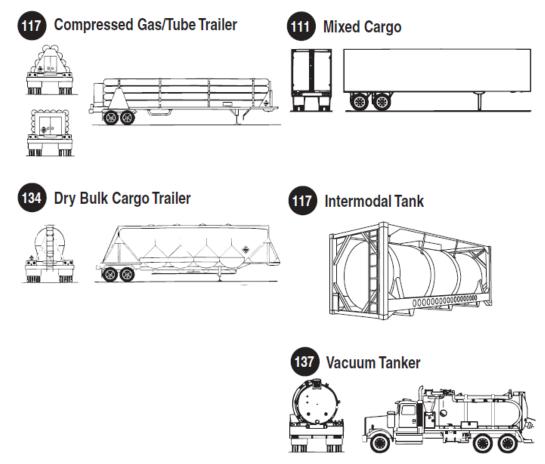




- Usually for corrosive liquids
- Circular cross-section
- External ring stiffeners
- Tank diameter is relatively small
- MAWP of at least 15 psi\*\*



# **Transportation Incidents, continued Road Trailer Identification Chart, continued**



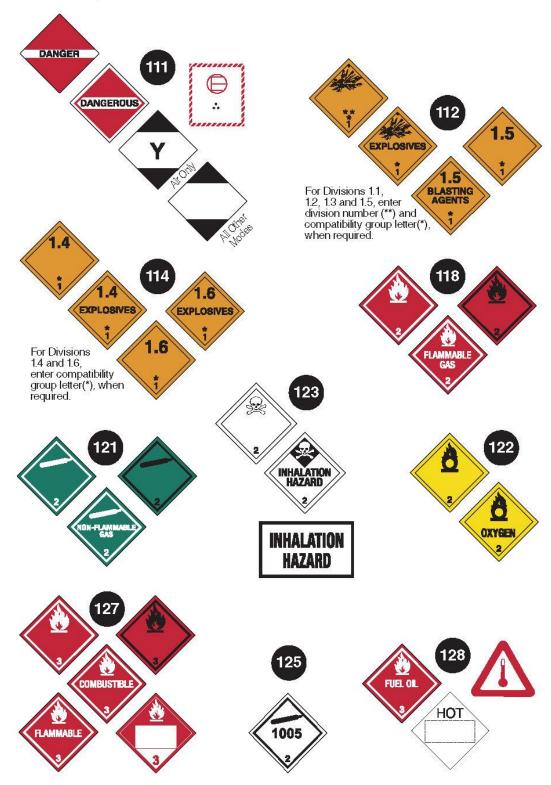
**CAUTION:** This chart depicts only the most general shapes of road trailers. Emergency response personnel must be aware that there are many variations of road trailers, not illustrated above, that are used for shipping chemical products. The suggested guides are for the most hazardous products that may be transported in these trailer types.

The recommended guides should be considered as last resort if the material cannot be identified by any other means.

Source: 2016 Emergency Response Guidebook

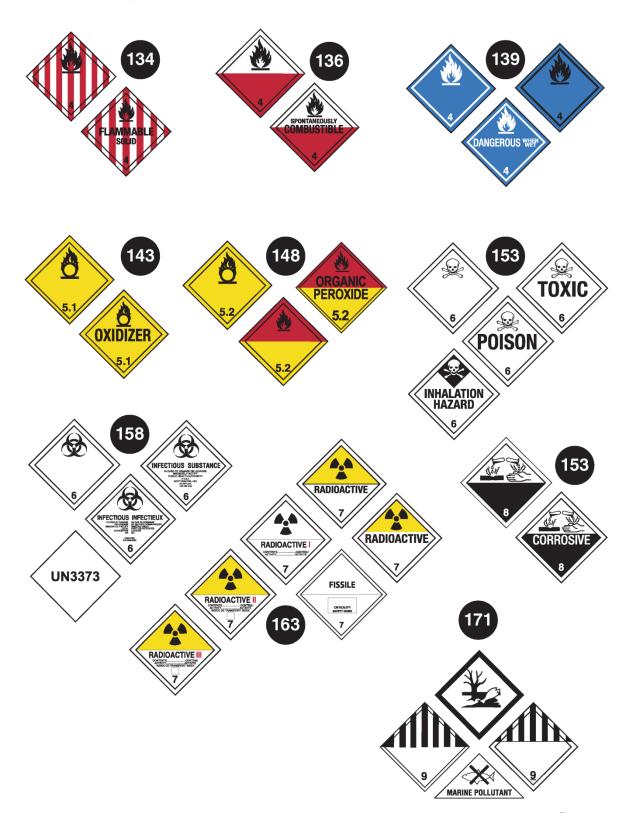


# Transportation Incidents, continued Table of markings, labels and placards





# Transportation Incidents, continued Table of Markings, Labels and Placards, continued



## TRANSPORTATION OF DANGEROUS GOODS 30-DAY FOLLOW-UP REPORT

PART I: REPORTING TIMELINE										
Please provide applicable date			FOR INTERNAL USE ONLY							
Date of initial report to CANUTE	EC (yyyy-mm-dd):		Road, Rail or Marine Reports							
30-Day Follow-up Report subm	ission date (yyyy-mm-dd):		Release							
30-Day Follow-up Repor	- t		<del></del>	Anticipated Release						
	o 30-Day Follow-up Report			Air Report						
	Follow-up Report submitted	(vvvv-mm-dd):		Dangerous Goods Accident or Incident						
PART II: CONTACT INFORMAT	<u> </u>	(7,7,7 22,7								
2. Information of the person comp										
Consignor Consignee Carrier/Aircraft Operator Other										
First Name	Last Name		Title							
Telephone (999-999-9999)	Company Name									
Address			City		Province/Territory					
					·					
Country	Postal Code (Z9Z 9Z9)	Email			<u> </u>					
	, ,									
3. Information on the Consignor,	L Consignee and Carrier/Airc	aft Operator								
Consignor										
First Name	Last Name		Title							
Telephone (999-999-9999)	Company Name		l							
Address			City		Province/Territory					
Country	Postal Code (Z9Z 9Z9)	Email	I							
Consignee		•								
First Name	Last Name		Title							
Telephone (999-999-9999)	Company Name		1							
Address			City		Province/Territory					
Country	Postal Code (Z9Z 9Z9)	Email								
Carrier/Aircraft Operator										
First Name	Last Name		Title							
Telephone (999-999-9999)	Company Name									
Address	1		City		Province/Territory					
Country	Postal Code (Z9Z 9Z9)	Email	1		,					



PART III: INCIDENT INFORMATION										
4. Please indicate the date and time of the incident										
Date (yyyy-mm-dd)		Time (24-hour system)								
5. Geographic location of the incident										
Address										
City	Province/Territory	Postal Cod	le (Z9Z 9Z9)	GPS Position						
	,		,							
If the incident occured by rail, please in	I dicate the milepost and subd	l ivision	If the incident name	happened on First Nations Territory, please indicate the Territory						
Origin of consignment			Destination of	consignment						
Same address as consignor	Same address as consi	gnee	Same add	ress as consignor Same address as consignee						
Other (please provide address):				ase provide address):						
			"	,						
C. Coornantia Area (Chook anticara ha										
6. Geographic Area (Check only one bo	•	_		Maria de la companya del companya de la companya de la companya del companya de la companya de l						
Urban Mixed use – residential, commercia	•	○ Rur Sma		es, agricultural lands  Wilderness/Remote Little or no population						
7. Mode of Transport (Check all applica	ble boxes)			_						
Road	Rail		Air	Marine Marine						
8. If MARINE was checked on question fixed facility	7, please indicate the position	on of the ves	sel and the nex	t location at which the vessel will be at anchor or alongside a						
Position			Next location							
9. Phase of Transport (Check only one	box)									
In-Transit Consignment moving between origi			Consignment is being packed or loaded into a means of transport at origin							
Unloading Consignment is being unpacked or	unloaded from a		Consignment is in short term storage pending transportation							
means of transport at destination										
10. Type of Incident (Check all applicab	ole boxes)									
Collision/Sideswipe Moving vehicles striking an object, a	animal, or another vehicle		Derailment Railcar leaving the rail tracks							
Ran off road Vehicle enters a soft shoulder, ditch	n or similar area		Overturn Vehicle turning on its side or upside down							
Loadshift Shifting of the consignment within a	vehicle		Dropped Means of containment falling unexpectedly							
Struck Means of containment being struck	by another object		Other (PI	ease specify):						
11. Type of Release (Check all applicate	ole boxes)									
Spill Quick, immediate discharge, emissi	on or escape		Leak Slow, spor	radic or continuous discharge, emission or escape						
Explosion  Violent sudden release of energy freshock wave that may result in fragn		Fire  Burning substances combined with oxygen to typically produce flame, heat and smoke								
BLEVE Boiling Liquid Expanding Vapour Ex	xplosion		Vapour  Dispersion in air of particles of a substance that is liquid or solid in its normal state							
Venting Controlled release of gas into the en	nvironment	Anticipated Release  Distressed means of containment that is not leaking, venting or otherwise releasing its contents								



12. Information on the Dangerous Goods												
UN Number	Shippin Name	g	Primary Class	Subsid Class(		Packing Group or Category	Before the	ntity in MOC Release or ed Release	r (kg / etc.)		timated Quantity Released (if applicable)	Units (kg, L, etc.)
13. Means of Containment												
Please provide a description of the means of containment involved in the incident by completing the appropriate forms from Annex E of the Guide (TP15294)												P15294)
	ONSEQUENCES											
14. Consequ	uences of the incide	ent (Check all	l applicable b	oxes)								
NOTE: Refe	er to the Guide for m	nore informati	ion on how t	o comple	te thi	s section						
Human		(e.g. produc		y, equipm	nent)	En	vironmental	(e.g. contan	ination of wate	erway,	ground, air)	
	ion of people and b	_		~		<b>~</b>						
	n Evacuation as a r		· ·	Yes		) No						
	Shelter in place as a se complete the follo		incident? (	Yes		) No						
100, p.oa.	o complete and lone	- I	te Residenc	•		Public Ruil	dinge					
	on of People and /Shelter in Place	Includes I buildings	houses and used as dwe tirement hon	nd other Includes libraries, hospitals, lwellings churches, government Incl					<b>Vorkplace</b> les warehouse acility, etc.	,	Public (Outside) Areas Includes parks, playgrounds, parking lots, etc.	
Estimated n evacuated	umber of <b>people</b>	(* 3		Sanarigo, etc.								
Estimated n	umber of <b>people</b> n <b>place</b>											
Estimated n buildings e												
Size of Evad	cuation area (square	e meters)	Du	Duration of Evacuation (hours)					Duration of She	elter in	place (hours)	
16. Injuries a	and/or deaths											
Were there	any injuries and/or o	deaths?	Yes (pleas	se comple	ete th	ne following ta	able) (	) No				
Minor Injuri	ies Yes	○ No										
	injured requiring in Dangerous Goods	mmediate fir		ment at t					Total			
Moderate In	njuries Yes	○ No						'				
Number of	injured requiring in	mmediate er	mergency tr	eatment	in h	ospital and re	elease short	ly after				
Attributed to	Dangerous Goods		Att	ributed to	o inci	dent			Total			
Major Injuri	es Yes	○ No										
	injured requiring in Dangerous Goods			<b>h overni</b> g tributed to	_		on		Total			
Deaths	○ Yes	○ No										
Number of Attributed to	deaths  Dangerous Goods	-	Att	ributed to	o inci	dent			Total			



17. Please indicate an es	stimate of costs	in Canadian	dollars associated	with the	incident, as applicable						
NOTE: Refer to the Guide for more information on how to fill this section											
Material loss of dangerous goods	Damage incur the carrier	red by	Property damage		Emergency response cost	Clean-up	cost	Total cost			
18. Infrastructure closure	and duration (p	lease use ad	Iditional sheets fo	r multiple	closures)						
Was there an infrastructu	ure closure as a	result of the	incident?	Yes	○ No						
If Yes, please complete t	If <b>Yes</b> , please complete the following table										
Type Duration of the closure (in hours)											
	Aerodrome – Area of land, water or other supporting surface used either in whole or in part for arrival and departure, movement or servicing of aircraft includes any building, installations and equipment situated thereon or in connection										
Air cargo facility – F	Facility used to re	eceive or trar	nsfer cargo carrie	d or to be	carried by an aircraft						
Facility – Permanent dangerous goods	t or temporary b	uilding or a p	ortion of a buildin	g or equi	pment used in loading o	r unloading	of				
Railway – Tracks use	ed by trains										
Waterway – Navigab	ole body of water	r through whi	ch a ship or boat	can move	e						
Roadway – The strip multiple lane freeway		nich motor ve	hicles circulate, s	uch as di	rt road, numbered provi	ncial highwa	ay or				
Runway – the strip of	of ground on a la	inding field th	at aircraft use for	landing o	or takeoff						
19. Geographic location	of closure										
Address											
City		Province/Ter	ritory	Postal	Code (Z9Z 9Z9)	GPS Posi	tion				
If the incident occured by	/ rail, please indi	icate the mile	post and subdivis	sion	Name of facility, road,	railway or v	vaterway				
20. ERAP Requirements	,										
Was an ERAP required u	under Part 7 of th	ne <i>Transpor</i>	tation of Danger	ous Goo	ds Regulations?	O Yes	○ No				
If Yes, please complete t	the following tab	le									
ERAP Reference Number	er		ERAF	Holder							
Address											
City		Province/Ter	ritory		Postal Code (Z9Z 9Z9	9)	Telephone of F	ERAP Holder (999-999-9999)			
Only	Total Code (232 323) Telephone of LIVAF Holder (339-339-3399)										
Email											
Level of Response (chec	k all that apply)										
No response											
Other:											

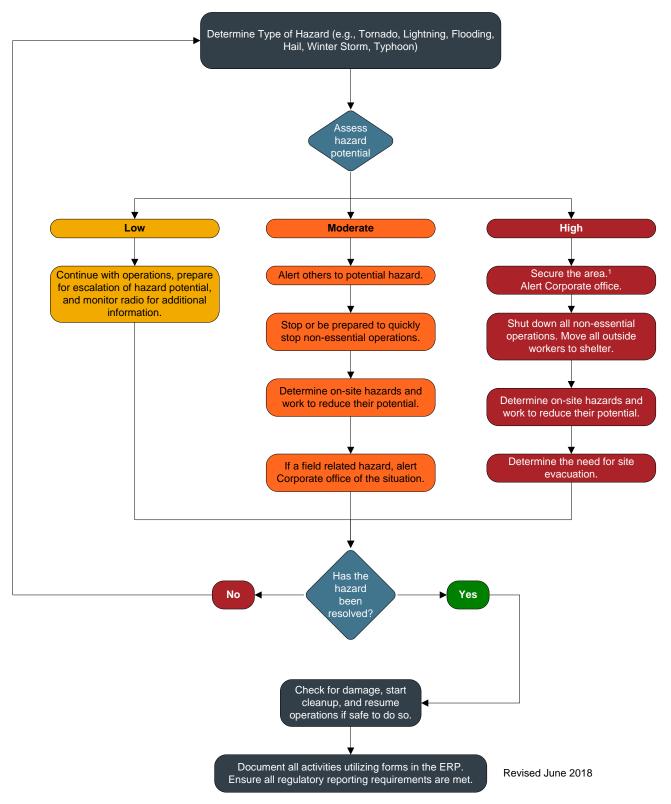


PART V: INCIDENT DESCRIPTION	
21. Please describe:	
The sequence of events that led to the incident The means of containment damage or failure, including the size/location of hole	es. cracks. etc.
The actions taken at the time it was discovered	
What was done to mitigate the effects of the release	
Contributing factors (e.g. human error, mechanical, equipment, packaging, infra     The physical environment (e.g. residential, commercial, industrial, etc.)	astructure, external, weather, etc.)
The physical environment (e.g. festdential, commercial, industrial, etc.)     The road's appearance (e.g. flat, straight, inclined, curved, intersection, etc.)	
• Timeline of event (e.g. how long it lasted, time of release or discovery, time of f	irst responder arrival, etc.)
Communications with first responders and with your organization	
Photographs and diagrams should be submitted, as required, for clarification. Es necessary.	timate the duration of the release, if possible. Please use additional sheets if
<b>NOTE:</b> Refer to the Guide for more information on how to complete this section	
PART VI: INCIDENT DESCRIPTION – AIR ONLY	
22. Please describe:	
Any serious jeopardy to persons on any aircraft or aircraft itself	
Any damages to property or environment	
• The route by which the dangerous goods were to be or have been transported,	including the name of any aerodromes along the route
Aircraft Operator	Air Cargo Facility
	1





## **Weather and Natural Disasters**



<sup>&</sup>lt;sup>1</sup> The primary concern is for human life. If time allows and it is safe to do so, secure the area (tie down / secure objects that could be moved and cause additional damage).



## Weather and Natural Disasters, continued

Severe storms can occur in Canada year round. In the months between May and September, hot and humid weather combined with a cold front could be a sign that a severe storm is brewing. A severe storm can create lightning, hail, severe rain fall (flooding), high winds and tornados. In the months between October and April, severe storms could include blizzards, freezing rain, heavy and blowing snow.

The weather office will issue through the use of radio and television repeated weather watches and warnings. The only exception to these warnings is earthquakes, since they occur by surprise and cannot be predicted.

#### Listen for the Warnings

Environment & Climate Change Canada (ECCC) monitors the weather 24-hours a day, seven days a week. If a severe storm is on the horizon, the weather service issues watches, advisories and warnings for that specific storm through national, regional and local radio and television stations, and through ECCC Weatheradio.

#### **Weather Watch**

This means conditions are favourable for a severe storm, even though nothing has developed yet. It does not mean that the storm will occur. A Weather Watch is usually issued early in the day; keep monitoring weather conditions and listen for updated statements.

#### **Weather Warning**

This means severe weather is happening or hazardous weather is highly probable. If the warning is for your area, take precautions immediately and listen to your radio for constant updates.

## Earthquake

#### **General Information**

An earthquake (also known as a quake, tremor, or tremblor) is caused by a sudden slip on a fault, which in turn, releases energy in waves that travel through rock to cause the shaking that we feel during an earthquake.

An earthquake cannot be prevented or predicted, but it can be mitigated. The effects of earthquakes include, but are not limited to, shaking and ground rupture. Most common effects or impacts of an earthquake are shaking and ground rupture. Depending on the magnitude of an earthquake, these may cause damage to buildings, pipelines and other rigid structures.

#### **During an Earthquake**

Be aware that some earthquakes are actually foreshocks and a larger earthquake might occur. Minimize movement to a few steps to a nearby safe place and stay indoors until the shaking has stopped and exiting is safe.



### If indoors

- DROP to the ground; take COVER by getting under a sturdy table or other piece of furniture; and HOLD ON until the shaking stops. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture.
- Use a doorway for shelter only if it is in close proximity to you and if you know it is a strongly supported, load bearing doorway.
- Stay inside until shaking stops and it is safe to go outside. Research has shown that most injuries
  occur when people inside buildings attempt to move to a different location inside the building or try to
  leave.
- Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.
- DO NOT use the elevators.

### If outdoors

- Stay outdoors and move away from buildings, streetlights, and utility wires.
- Once in the open, stay there until the shaking stops. The greatest danger exists directly outside buildings, at exits, and alongside exterior walls. Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.

### If in a moving vehicle

- Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires.
- Proceed cautiously once the earthquake has stopped. Avoid roads, bridges, or ramps that might have been damaged by the earthquake.

### If trapped under debris

- Do not light a match.
- Do not move about or kick up dust. Cover your mouth with a handkerchief or clothing.
- Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.



The potential for overland flooding can create a high level of risk for facility damage and environmental impact at petroleum facilities. While there is little that can be done to prevent flooding, actions can be taken to minimize the impact.

It is important to consider that your facility may play a vital role in fuel supply during an emergency situation. It is therefore important that you and the government authority having jurisdiction during a flood emergency have regular and clear communication with regards to facility closure.

### To shut down a facility which may be flooded:

- 1. Take a product inventory reading of all underground and aboveground tanks, including water level readings.
- 2. Seal fill pipe caps to prevent water from entering underground tanks. Close all valves to above ground tanks. DO NOT PLUG OR SEAL TANK VENT LINES.
- 3. Underground tanks should be kept as full of product as possible. Above ground tanks should be filled to a level at least 25% above the estimated/predicted floodwater elevation.
- 4. Ensure that above ground tanks which could float away are secured or tethered in a manner that would prevent floating from the property.
- 5. Seal all drains in tank lots.
- 6. Oil/water separators and product sumps should be skimmed of product using sorbent pads or vacuum trucks as appropriate. Spent sorbent pads should be drummed and every effort must be made to remove any waste from the expected flood zone. If time does not allow for removal the drums must be secured to prevent them from floating away. Close the oil/water separator drain valve.
- 7. Drums and lubricant cubes should be tied down or otherwise secured to prevent floating.
- 8. Propane facilities contact your propane supplier for appropriate flood emergency procedures.
- Secure used oil collection cabinets. Every effort must be made to remove all waste oil from the expected flood zone. If waste oil from the cabinet drains to a waste oil underground tank, ensure the connection is tight.
- 10. Secure containers of chemicals, cleaning agents, pesticides, etc. Every effort must be made to remove these products from the expected flood zone. If they cannot be moved to a safe location, store these containers at high elevations in a manner that prevents them from floating off the property or leaking into floodwaters.
- 11. If the facility is to be closed/evacuated, shut down electrical power to the site at the main breaker. Contact the power service utility company to determine if the power service to the facility is going to be cut-off.
- 12. Shut down other utilities to the site including natural gas and potable water. If water is obtained from a water well, secure the well using a well seal.
- 13. Shut down all appliances, including hot water tanks, furnaces, etc.
- 14. Lock all doors and gates to the facility.
- 15. Post a sign in a prominent location identifying the names and telephone numbers where key company personnel can be contacted during the emergency.



### To start-up a facility which has been flooded:

- Re-activate utilities to the site (natural gas, water, electricity) and appliances using qualified utility service personnel, where required.
- 2. Take product inventory readings and water dips of all tanks to determine if product has leaked out from the tanks or water has entered the tanks.
- 3. Take appropriate measures to test product quality.
- 4. Propane facilities contact your propane supplier for recommissioning your propane facilities.
- 5. Pump out water from sumps and containment pans using a qualified petroleum contractor.
- 6. Follow all re-entry procedures and requirements for health and safety as provided by your local government authority (disinfection, potable water testing, etc.).

Government agencies monitor weather patterns, precipitation and provincial water levels and flows. They provide a comprehensive series of public advisories about potential flooding. These include river stage-up advisories, ice-jam warnings, high stream flow advisories, flood watches and flood warnings; for more information visit the following websites:

Alberta	Alberta Environment http://environment.alberta.ca/forecasting/advisories/
British Columbia	Ministry of Forests, Lands and Natural Resource Operations – River Forecast Centre http://bcrfc.env.gov.bc.ca/warnings/index.htm
Manitoba	Government of Manitoba – Flood Information http://www.gov.mb.ca/flooding/index.html
Saskatchewan	Saskatchewan Watershed Authority https://www.wsask.ca/Lakes-and-Rivers/Stream-Flows-and-Lake-Levels/

### What to do during a flood

- Gather essential items together in a high place.
- Collect things needed for evacuation.
- Stack sandbags, if possible, to form a barrier to hold back or redirect moving water from critical areas.
- Turn off gas, electricity and water supply if it is safe to do so.
- Avoid electricity sources.
- Avoid walking or driving through flood water.



### Thunderstorm and Lightning Safety

A lightning bolt carries up to 100 million volts of electricity. When someone is struck by lightning, an electrical shock occurs that can cause burns and even stop the person's breathing. Although thunder and lightning can occur occasionally during a snowstorm, April to October are the prime thunderstorm months in Canada. Thunderstorms occur most often in late afternoon or evening, and around sunrise.

Knowing how lightning behaves can help you plan for an approaching storm. It tends to strike higher ground and prominent objects, especially materials that are good conductors of electricity, such as metal. Thunder can be a good indicator of lightning - loud crackling means its close, whereas rumbling means the storm is further away.

Because light travels faster than sound, you will see lightning before you hear the thunder. Each second between the flash and the thunderclap represents about 300 metres. If you can hear thunder, you are within striking distance. Immediately go inside, there is NO safe place to be outside in a thunderstorm.

Protection from lightning begins before the storm. Paying attention to weather conditions and forecasts allows time to plan for threatening weather and to react appropriately.

### What to do during a thunderstorm

The safest place to be during a thunderstorm is in a building that is fully enclosed with a roof, walls and floor with electrical wiring, plumbing, telephone line, or antennas to ground the lightning should the building be hit directly. Unsafe shelters are buildings or structures without electricity or plumbing to ground the lightning, as they do not provide any lightning protection. Shelters that are unsafe include covered picnic shelters, carports, tents, baseball dugouts as well as other small non-metal buildings (sheds and greenhouses).

Even when inside the building, there are safety precautions to take:

- Keep as many walls as possible between you and the outside. Stay away from doors, windows, and fireplaces.
- Stay away from anything that will conduct electricity such as radiators, stoves, sinks and metal pipes.
- Use battery operated appliances only. Avoid handling electrical appliances and regular telephones (cordless phones and cell phones do not increase the risk of a lightning strike).

The next best place for shelter is an enclosed metal car, truck or van but NOT a tractor, golf cart, topless or soft-top vehicle. Make sure the vehicle is not parked near trees or other tall objects that could fall over during a storm. When inside a vehicle during a lightning storm, roll up the windows and sit with your hands in your lap and wait out the storm. Don't touch any part of the metal frame or any wired device in the vehicle (including the steering wheel or plugged-in cell phone). A direct strike to your car will flow through the frame of the vehicle and usually jump over or through the tires to reach ground.

### What to do if you cannot find shelter

There is no safe place to be outdoors during a thunderstorm. However, to reduce the risk of being struck by lightning when outside, stay away from things that are tall (trees, flagpoles or posts), water, and other objects that conduct electricity (tractors, metal fences, lawn mowers, golf clubs). Do not become a target by being the highest object on the landscape. If you are with a group of people in the open, spread out several metres apart from one another.

If you get caught in a level field far from shelter, crouch down on the balls of your feet immediately, with feet together, place your arms around your knees and bend forward. Be the smallest target possible, and at the same time, minimize your contact with the ground. Don't lie flat.



If someone has been hit by lightning

Lightning victims are safe to touch. Bystanders shouldn't hesitate to save a life by calling for help. If breathing has stopped, administer mouth-to-mouth resuscitation. If the victim is not breathing or they do not have a pulse, a trained rescuer should administer cardiopulmonary resuscitation (CPR).

### **Tornados**

A tornado is nature's most violent form of storm activity. It can produce upwardly spiraling winds of 120 to 450 km/h, producing devastating damage along a path of 50 to 300 metres in width. The forward motion of the tornado funnel may be quite erratic as it zigzags along a southwest to north-easterly direction (usually) at a forward speed of 50 to 70 km/h.

Hot, humid weather combined with a cold front could be a sign that a tornado is brewing, and a funnel cloud hanging from a dark cloud may be visible before the tornado actually occurs (a funnel cloud is not a tornado until it touches the ground). The sound has been described as a tremendous roar which sounds like an express train or jet aircraft (only louder). Clouds may be green or yellow tinged. There is usually a noticeable lowering of a portion of the cloud that contains a large, swirling, turbulent mass from which the funnel will hang (funnel cloud).

### Protecting yourself during a tornado

- Have a radio on to listen for warning information or advice.
- Determine an appropriate shelter (select a shelter area that would offer protection, such as
  underneath a stairway and is secured to the main floor). The shelter must be easily accessible and
  able to offer protection from flying glass, debris and furniture. (Decide on shelter options in advance,
  for your place of employment.) If forced to take shelter away from the plant avoid large halls or any
  large building with large span roofs. Seek out an inner hallway, washroom, closet, etc.
- Stay away from windows.
- Avoid travelling any great distance so that you will not be caught out in the open.
- If the storm warning is issued for your immediate area, go to your designated shelter.
- If caught outdoors and you cannot reach shelter, lie flat in a ditch, excavation or culvert. If possible, lay flat, holding the base of a small tree, bush or shrubbery to avoid being lifted or blown away.
- If caught while driving, drive away from the funnel at a right angle or to its direction of travel (if possible). If you cannot escape the path of the funnel, get out of your vehicle immediately and seek shelter in a ditch or ravine, keeping its slope between you and the funnel.
- If caught away from the plant, seek shelter in a sturdy building. Go to an interior hallway or washroom
  on the lower floor, and stay away from windows.

### Winter Storms: Blizzards, Freezing Rain, Heavy Snow, Blowing Snow

### **General Information**

Blizzards come in on a wave of cold arctic air, bringing snow, bitter cold, high winds, and poor visibility in blowing snow. These conditions must last for a minimum of six hours to be designated a blizzard and they may last for several days. Poor visibility, low temperatures and high winds constitute a significant hazard.



Freezing rain occurs when the air in an upper-air layer has an above-freezing temperature, while the temperature at the surface is below freezing. The snow that falls melts in the warmer layer; as a result, it is rain—not snow— that lands on the surface. But since the temperature is below 0°C, raindrops freeze on contact and turn into a smooth layer of ice. More slippery than snow, freezing rain is tough and clings to everything it touches. A bit of freezing rain is dangerous; a great deal of it can be catastrophic.

### Things to do during a severe winter storm or if a storm is forecast

- Stay calm and leave your radio on to stay informed of the situation and hear updated forecasts.
- Stay indoors. If you must go out, dress for the weather.
- Secure everything that might be blown around or torn loose indoors and outdoors (flying objects can injure people and damage property).
- If you are outdoors when a storm hits, take shelter immediately.

Winter Weather Warnings	Issued			
Blizzard Warning	When winds of 40 km/hr or greater are expected to cause widespread reductions in visibility to 400 metres or less, due to blowing snow, or blowing snow in combination with falling snow, for at least 4 hours.			
Freezing Rain Warning	When freezing rain is expected to pose a hazard to transportation of property; or when freezing rain is expected for at least 2 hours.			
Snowfall Warning	When 10 cm or more of snow is expected to fall within 12 hours.			
Wind Warning	70 km/h or more sustained wind; and/or Gusts to 90 km/h or more.			
	Issued to warn of conditions that will cause frostbite to exposed skin. Criteria vary across the country, ranging from wind chill values of -55 in some Arctic regions to -30 in South-western Ontario. A national wind chill program is in development.			
Wind Chill Warning	For wind chill values:			
	-27 to -44risk of frostbite and risk of hypothermia increases with time spent outdoors			
	-45 or lowerexposed flesh may freeze in minutes and there is a serious risk of hypothermia			
	When severe and potentially dangerous winter weather conditions are expected, including:			
Winter Storm Warning	A major snowfall (25 cm or more within a 24 hour period); and			
······································	A significant snowfall (snowfall warning criteria amounts) combined with other cold weather precipitation types such as: freezing rain, strong winds, blowing snow and/or extreme wind chill.			

Source: Environment & Climate Change Canada (ECCC), Public Alert Criteria

http://www.ec.gc.ca/meteo-weather/default.asp?lang=En&n=D9553AB5-1



### After a Disaster

These are general guidelines to look for after an occurrence:

- Assess site and declare an emergency as required.
- Activate ERP as required.
- Account for all on-site and field personnel.
- Listen to a battery-operated radio or television for the latest emergency information.
- Give first aid to the injured and call for medical assistance if required. Do not move seriously injured persons unless they are in immediate danger of further injury. Use intrinsically safe flashlights to survey for damage and look for victims. Do not use candles or matches (explosion hazards may exist).
- Use the telephone for emergency calls only.
- Check for spilled medicines, bleaches, gasoline or other flammable liquids.
- Open cabinets cautiously. Beware of objects that can fall off shelves.
- Report fires to the fire department. Be alert to prevent fires, as broken water mains may cause a
  reduction in water pressure. Lightning and downed power lines can cause fires. Know how to fight
  small fires.
- Inspect utilities.
  - Look for electrical system damage. If you see sparks or broken or frayed wires, or if you smell hot insulation, turn off the electricity at the main fuse box or circuit breaker. Do not go near loose or dangling power lines. If you have to step in water to get to the fuse box or circuit breaker, call an electrician first for advice.
  - Check for sewage and water lines damage. If you suspect sewage lines are damaged, avoid using the toilets and call a plumber. If water pipes are damaged, contact the water company and avoid using water from the tap. You can obtain safe water by melting ice cubes.
  - Check for leaking pipes. If you smell sour gas:
    - Immediately evacuate the area and don appropriate personal protective equipment.
    - Close gas valves and isolate the area.
    - Turn off the main power switch (only if you are NOT wet or standing in water).
    - Shut down required plant and well sites and notify appropriate government authorities.
    - Check buildings prior to entering as there may be structural damage; proceed cautiously.
- In the case of a flood, proper cleanup is essential. Discard all materials that cannot or should not be saved. Wash and rinse all surfaces, then disinfect them. Remove any water as soon as possible and clean out mud and other debris. Water supplies may be contaminated; use caution with drinking water.
- In the case of an earthquake, expect aftershocks. These are usually less violent than the main quake but can be strong enough to do additional damage to weakened structures and can occur in the first hours, days, weeks, or even months after the quake.

Note: The emotional impacts of disasters on those affected can be distressing and lasting, even if it doesn't involve physical harm. Help by maintaining a positive attitude and a sense of calmness. Your local health authority can assist in coping with trauma resulting from a disaster.



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### **Security Incidents**

A security incident is a security-related occurrence, threat or action that has adversely affected people, the environment, assets and economic stability, or could potentially do the same.

### **General Notes on Prevention of Security Incidents**

As defined in the CSA Standard Security Management for Petroleum and Natural Gas Industry Systems (Z246.1-17), a Security Management Program should be implemented to ensure security incidents and threats are identified and managed with appropriate safeguards and response procedures in place.

This documented security risk management process should incorporate threat, vulnerability, risk assessment and asset characterization. Asset characterization, in particular, identifies and ranks any assets that could result in adverse consequences if damaged or destroyed.

To minimize the possibility of threats within a company property, an adequate physical security system must be in place. This should include the following:

- Perimeter fencing and gates to protect against unauthorized entry into a facility gates should be closed when not in use and locked when unoccupied
- Appropriate signage at the perimeter and entrances
- Intrusion detection systems / alarm systems
- Sufficient lighting in darkness or areas of poor visibility
- Pedestrian access control
- Security guard force, both static and mobile
- Employee awareness

### **Types of Security Threats**

Security-related threats have the intent to cause harm and could include bomb threats, suspicious packages, terrorism, vandalism, trespassing and cyber-attacks.

### **Responding to Threats**

Should any facility or office be the subject of a threat, or be advised of the potential of a terrorist attack, or of the potential of an attack to an adjoining facility being operated by another company, the person receiving the initial threat should remain calm, document all information in writing and notify his supervisor immediately. The supervisor should make an immediate assessment of the circumstances then:

- Obtain all data from the person who received the threat.
- If there is clear and imminent danger, the plant should be immediately evacuated, and the Field Response Team activated from a remote location.
- Contact local police / Royal Canadian Mounted Police (RCMP).
- Notify the Regulatory Agency and the EOC Director.



Once the Field Response Team is activated, the Field Response Team Incident Commander and a senior company representative will consider the threat and options available to respond to the threat. There are a myriad of potential short and long term responses available and they will be dependent on the evaluation of the threat, time available to respond, resources available locally or that can be brought in a reasonable time, and police and military resources available.

• If the threat is considered possible, the Canadian Security Advisor recommends that the following immediate/short term responses should be considered:

### **Field Operations:**

- Establish intelligence liaison with local authorities (e.g. police).
- Report all suspicious activity to Corporate Security.
- · Discontinue all site tours and visits.
- Restrict vehicle access to specifically authorized vehicles only.
- ID all visitors seeking access.
- Assign a person to patrol the perimeter of the facility at the beginning of each operational shift and note any deficiencies; look for signs of attempted break and enter.
- Conduct an evacuation exercise.

## Remotely Operated Facilities (also applies to any facility operated by a single person):

- Establish full lock down on fences and assets on the lease/site everything that can be secured and locked is secured and locked.
- Conduct a fence perimeter patrol before entering the site look for signs of illegal entrance.
- Conduct a full exterior building patrol before entering a building look for signs of unlawful entrance (doors pried, windows open, broken glass etc.).
- When working, lock the gates upon entering and leaving the facility, and rigidly adhere to the work alone guidelines.

### **Bomb Threats**

Bomb threats are delivered in a variety of ways. The majority of threats are called in to the target, though occasionally these calls are through a third party. Sometimes a threat is communicated in writing, or by a recording.

Persons making bomb threats generally have one of two motivations:

- 1. The caller has definite knowledge or believes that an explosive or incendiary bomb has been, or will be, placed. He or she wants to minimize personal injury or property damage. The caller may be the person who placed the device or someone who has become aware of such information.
- 2. The caller wants to create an atmosphere of anxiety and panic which will, in turn, result in a disruption of the normal activities at the location where the device is purportedly placed.

While most bomb threats are unfounded, some are not. As such, each one must be dealt with as though it is real and handled seriously and calmly.



### **Bomb Appearance**

Bombs can be constructed to look like almost anything, and can be placed or delivered in any number of ways. The probability of finding a bomb that looks like the stereotypical bomb is almost non-existent. Most bombs are homemade, and are limited in their design only by the imagination and resources available to the bomber.

Remember, when searching for a bomb, suspect anything that looks unusual. Ultimately, however, let a trained bomb technician determine what is or is not a bomb.

### Responding to Bomb Threats over the Phone

Most threats or implied threats are received by telephone, generally at a publicized or switchboard number. Should that occur, obtain as much information as possible, filling out the Threatening Call / Bomb Threat form (Section 6: Forms).

If a bomb threat is received over the telephone, the employee receiving the phone call should take the following actions:

- Stay calm and keep their voice calm.
- Pay close attention to details. Write information down as the caller says it. Attempt to get the following information from the caller:
  - o What type of bomb is being used?
  - Did you place the bomb?
  - o Who is the target?
  - o Where has the bomb been placed?
  - o What time is the bomb set to explode?
  - o Why was the bomb placed?
  - o What type of container is the bomb placed in?
  - o What does it look like?
  - o What is the bomber's name?
  - o What is the bomber's address?
- While the first employee is dealing with the threatening phone call, they should have a co-worker or another person contact the police (dial 911) using another telephone, and as covertly as possible. As the first employee writes down answers to the questions above, these answers should be relayed to the police.
- The call recipient should attempt to keep the caller on the phone.
- The call recipient should note the caller's:
  - o Age and gender
  - Emotional state (angry, agitated, calm, etc.)
  - Speech patterns (accent, tone)
  - o Background noise (traffic, people talking and accents, music and type, etc.)

### Responding to Bomb Threats Received in Writing

If a threat has been received in writing, minimize the handling of the document to ensure preservation of forensic evidence - DO NOT PHOTOCOPY.



### Supervisor Responsibilities after Receiving a Bomb Threat

The supervisor should then:

- Obtain all data from the person who received the threat
- Activate the ERP if the situation warrants
- Contact local police / Royal Canadian Mounted Police (RCMP) if this has not already been done
- Notify the Regulatory Agency
- Decide on partial or total evacuation (if needed)
- Decide on partial or total search of the facility (if needed)

### **Evacuating the Facility**

If it seems prudent to evacuate the building:

- Have all employees briefly check their work areas for unfamiliar items.
- Instruct all employees not to touch suspicious items, but simply to report them to their supervisors (taking pictures if feasible).
- Instruct all employees not to take personal belongings when they leave.
- Leave doors and windows open
- Do not to turn light switches on or off.
- Do not activate the fire alarm.
- Use stairs only; do not use elevators.
- Use of radio communications should be restricted as the signal could detonate a device.
- All evacuees should report to an outside pre-designated muster area for accountability.

### **IED Evacuation Distances**

### Improvised Explosive Device (IED) SAFE STAND OFF DISTANCE

	Threat Description	Explosives Mass (TNT equivalent)¹		Building Evacuation Distance <sup>2</sup>		Outdoor Evacuation Distance <sup>3</sup>	
High Explosives (TNT Equivalent)	Pipe Bomb	5 lbs	2.3 kg	70 ft	21 m	850 ft	259 m
	Suicide Belt	10 lbs	4.5 kg	90 ft	27 m	1,080 ft	330 m
	Suicide Vest	20 lbs	9 kg	110 ft	34 m	1,360 ft	415 m
	Briefcase/Suitcase Bomb	50 lbs	23 kg	150 ft	46 m	1,850 ft	564 m
	Compact Sedan	500 lbs	227 kg	320 ft	98 m	1,500 ft	457 m
sives	Sedan	1,000 lbs	454 kg	400 ft	122 m	1,750 ft	534 m
oldx	Passenger/Cargo Van	4,000 lbs	1 814 kg	640 ft	195 m	2,750 ft	838 m
High E	Small Moving Van/ Delivery Truck	10,000 lbs	4 536 kg	860 ft	263 m	3,750 ft	1 143 m
	Moving Van/Water Truck	30,000 lbs	13 608 kg	1,240 ft	375 m	6,500 ft	1 982 m
	Semitrailer	60,000 lbs	27 216 kg	1,570 ft	475 m	7,000 ft	2 134 m



### **Bomb Search Guidelines**

Employees must not touch anything - only law enforcement explosive disposal units or qualified private consultants are qualified to search for a bomb or suspicious package.

In the event of a search, however, employees may be called upon to unlock drawers, cabinets, and the like for the search crew, and to identify any strange or unfamiliar objects.

### **Explosive Device Located**

If a device or suspected device is located:

- Do not touch or move the object.
- Evacuate the immediate area.
- If possible, take steps to minimize effects of an explosion in the vicinity by evacuation or isolation of the area.
- Ensure RCMP are apprised of the location so explosive disposal unit can be called.

### If there is an Explosion

- Have employees take cover under sturdy furniture, or leave the building if directed to do so by emergency responders.
- Stay away from windows.
- Do not light matches.
- Move well away from the site of the hazard to a safe location.
- Use stairs only; do not use elevators.
- Call 911 if no one has called.

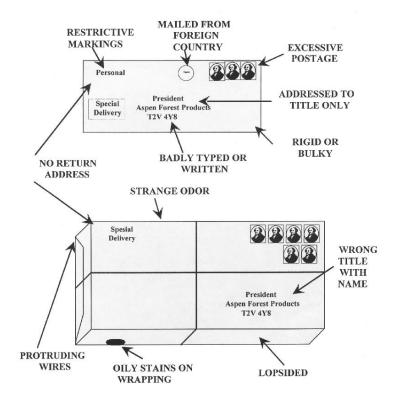
### **Suspicious Packages**

The likelihood of receiving a bomb in the mail is remote. Unfortunately, however, a small number of explosive devices have been mailed over the years resulting in death, injury and destruction of property.

A bomb can be enclosed in either a parcel or an envelope, and its outward appearance is limited only by the imagination of the sender. However, mail bombs have unique characteristics that may assist in identifying suspect packages.



### **Appearance of Suspicious Packages**



- Mail bombs may display restricted endorsements such as "Personal" or "Private". This factor is important when the addressee does not usually receive personal mail.
- Addressee's name / title may be inaccurate.
- Return address may be fictitious.
- Mail bombs may reflect / distort handwriting or the name and address may be prepared with homemade labels or cut-and-paste lettering.
- Cancellation or postmark may show a different location than the return address.
- Mail bombs may have excessive postage.
- Mail bombs may feel rigid or appear uneven or lopsided and may have an irregular shape, soft spots or bulges.
- Parcel bombs may be unprofessionally wrapped with several combinations of tape used to secure the package and may be endorsed "Fragile – Handle With Care" or "Rush – Do Not Delay".
- Parcel bombs may have a buzzing or ticking noise or a sloshing sound.
- Pressure or resistance may be noted when removing contents from an envelope or parcel.



### **Dealing with Suspicious Packages**

If an employee is suspicious of a mailing and is unable to verify the contents with the addressee or sender:

- Do not open the article.
- Isolate the item and evacuate the immediate area.
- Do not put the package or envelope in water or a confined space such as a desk drawer or filing cabinet.
- If possible, open windows in the immediate area to assist in venting potential explosive gases.

If an employee suspects a harmful chemical or biological substance is in a package already on company property they should:

- Cover the package or envelope with a plastic sheet, raincoat, etc.
- Evacuate the room closing all doors and windows.
- Call their supervisor who will contact the local police.
- Isolate the area where the package is.
- Isolate themselves in another area that has a telephone and wait for the emergency responders to arrive.

If an employee has touched a package that possibly contains a harmful substance or got some on their clothes, they should:

- Wash their hands well.
- Shower with their clothes on
- · Undress and seal their clothes in a plastic bag.
- Shower again and put on fresh clothes.

If an employee has any reason to believe a letter or parcel is suspicious, they should never take a chance or worry about possible embarrassment if the item turns out to be innocent.

### **Trespassing**

Any person who enters land where entry is prohibited or does not leave land immediately after being directed to do so by the owner or occupier of the land is guilty of trespassing.

### **Dealing with Trespassing**

If any personnel encounter a trespasser:

- Ask the trespasser to leave the unauthorized area.
- Give the trespasser a reasonable amount of time to leave peacefully.
- If the trespasser refuses to leave, call the RCMP / local authority.



### **Vandalism**

Vandalism is the willful damaging or defacing of property belonging to another person or to the public. Acts of vandalism can include:

- Defacing removing, marking or damaging a part of an object to draw attention to it.
- Criminal damage willful and unlawful destruction of other people's property.
- "Tagging" or graffiti gangs use "tags" to mark their territory and usually spray-paint walls and doors of homes and business establishments.

Vandalism can happen at any time of the day or night and in any season, but it most often occurs:

- In the evening during summer and fall
- On weekday evenings
- At night when fewer people are around and the property isn't under as much scrutiny
- Where building design and lighting offers concealment and anonymity
- In areas frequented by young people such as schools, parks, shopping plazas and public buildings
- In unoccupied buildings, open spaces or parked vehicles where minimum surveillance is given to property

### **Dealing with Vandalism**

- Report all incidents of vandalism to a supervisor
- Do not paint over vandalism and graffiti until the police department gives clearance to do so.

### **Terrorism**

Terrorism is the use of violence and threats against persons or property for the purposes of intimidation, coercion or ransom. The direct targets of violence are not the main targets of a terrorist but a means to draw the attention of the local populace, the government and the world to their cause. A terrorist group commits acts of violence to:

- Produce widespread fear
- Obtain worldwide, national, or local recognition for their cause by attracting the attention of the media
- Destroy facilities or disrupt lines of communication in order to create doubt that the government can provide for and protect its citizens
- Discourage foreign investments, tourism or assistance programs that can affect the target country's economy and support of the government in power
- Influence government decisions, legislation or other critical decisions
- Satisfy vengeance

Acts of terrorism include threats of terrorism, assassinations, kidnappings, hijackings, bomb scares and bombings, cyber-attacks, and the use of chemical, biological, nuclear and radiological weapons.



### **Examples of Petroleum Assets Subject to Risk**

- Buildings: Administration offices, corporate offices, control rooms
- Equipment: Process units and associated control systems, product storage tanks, surge vessels, boilers, turbines, process heaters, sewer systems
- Support Systems: Utilities such as natural gas lines, electrical power grid and facilities (including back-up power systems), water-supply systems, wastewater treatment facilities
- Transportation Interfaces: Railroad lines and railcars, product loading racks and vehicles, pipelines entering and leaving facility, marine vessels and dock area, off-site storage areas
- Cyber systems and information technology: Computer systems, networks, all devices with remote maintenance ports, SCADA systems, laptops, PDAs and cell phones.

### **Dealing with Terrorism**

All threats and incidents should be reported to the RCMP Terrorism Tip Line at 1-800-420-5805.

In order to deal with threats of terrorism, it is important to establish a security management system to effectively manage security risks. This system should include a security risk management process incorporating asset characterization, threat assessment, vulnerability assessment, risk assessment, risk mitigation, communication and recommendations.

This system should be reviewed at regular intervals and updated as necessary.

### Cyber-Attacks

Cyber-attacks are computer-to-computer attacks that undermine confidentiality, integrity or availability of a computer or the information contained.

Cyber-attacks can make computer systems malfunction or result in a disrupted flow of data and have the potential to create extreme economic damage.

This threat includes a risk to SCADA and DCS systems, which collect, display and store information in support of controlling equipment, devices and facilities.

### **Preventing Cyber-Attacks**

Steps that can be taken to enhance your cyber security:

- Know who owns and operates the IT system and its operating framework.
- Map the network include all internal/external connections, configuration control, etc.
- Develop a security policy structure and implement compliance monitoring.
- Apply as much security and hardening as appropriate.
- Accredit the IT system and follow a risk management approach.
- Know the system's possible vulnerabilities.
- Patch the system in a timely manner the longer this is delayed, the longer the system is vulnerable.
- Reduce Internet access points.
- Reduce or eliminate potential sources of infection USB flash drives (thumb drives, USB keys, etc.), flash media, etc.



• Communicate, train and educate staff and users.

Source: 10 IT Security "Commandments" - Communications Security Establishment Canada

### **Dealing with Cyber-Attacks**

In the event of a cyber-incident:

After obtaining corporate approval, local police or RCMP should be notified.

Serious cyber incidents:

• Should be reported to Public Safety Canada by email at <a href="mailto:contact@cyber.gc.ca">contact@cyber.gc.ca</a> or by phone at 1-833-292-3788.



### **Animal Encounters**

### First Responders to Animal Attacks

In the event of witnessing or identifying a scene as an attack, it is important to avoid harm to yourself. If equipped with deterrents, an attempt to scare away any remaining animals on scene is optional. In most cases any animals who have recently engaged in an attack are unpredictable therefore it is advised to keep clear and wait until the scene is clear. Steps to be considered:

- Assess the immediate area for personal safety and determine the type of incident
- If cause of injury is unknown, use your gas monitor to ensure there aren't any air-borne hazards.
- Ensure all animals have vacated the scene.
- If not, use any available noise deterrents (Honk Horn, Rev Engine, yell etc.)
- If possible call or radio for assistance and emergency services.
- Calling an applicable wildlife agency is an effective alternative; however, if confronted with a fast paced scenario such as this, the RCMP will be able to direct your call appropriately.
- Once the area is safe, assess the individuals' injuries and administer any necessary first aid. If the victim is conscious, always ask for his/her consent before doing so.
- Stay with the victim until help arrives:
  - As shock to the victim may be a factor after an attack, using a calm voice and catering to the individuals' requests as best possible is beneficial. For example; covering the victim with a blanket, providing drinking water for the victim, ensuring the victim that help is on the way, etc.
  - Minimize the victim's movements until emergency services have arrived as the extent of harm to the individual is unknown until assessed by a licensed health care representative.
- It is important to document the time and actions taken if a scenario like this presents itself as it will aid
  you and your company in showing what actions have been taken and how the situation has been
  responded to.
- Notify your supervisor of the incident.
- You or your supervisor must contact the applicable wildlife regulatory agency to report the incident.



### **Bears**

There are no hard and fast rules about what to do when you confront a bear. Bears react to humans in different ways in different situations. A bear's reaction depends on the following: sex, age, health; the season; whether the bear is hungry; whether bear cubs are present or whether there is an escape route available to the bear. Never harass or chase a bear!

There are three possible scenarios that are most likely to occur:

- 1. A wandering bear. While it is unlikely that a bear will wander into an area and near workers, we must be prepared to deal with this situation. Any bear seen on the job site will cause an immediate notification of the Incident Commander. In addition, all workers within 500 metres of the animal are to seek immediate shelter within a vehicle or building. The Incident Commander shall assess the situation, observe the bear for its intent, and determine a proper course of action to be taken. At no time will the bear be approached by any workers for any reason other than at the direction of the Incident Commander.
- 2. A located occupied den. A den occupied by a bear will cause an immediate cessation of work and removal of personnel within 500 metres of the den and notification of the Incident Commander. At the discretion of the Incident Commander, the appropriate Environment Fish and Wildlife agency may be notified to determine the best course of action to be taken.
- 3. **Denning bear disturbed**. The company understands that disturbing a hibernating bear is unsuitable for both the bear and for the workers. Upon discovery or disturbance of a hibernating bear all workers will immediately retreat from the area to a distance of not less than 500 metres and into immediate shelter within a vehicle or building. This situation will cause an immediate notification of the Incident Commander.

### On the Trail

Bear encounters on the trail can be dangerous, especially if the bear is surprised or if it is a female with cubs. The bear may consider you a threat and either run away or attempt to remove you as a threat. If you encounter a bear on a trail:

- Stop! Try to stay calm and quiet. Do not make any sudden moves or loud noises. Avoid direct eye contact with the bear; however, never take your eyes off the bear.
- Size up the situation. Is it a black bear or a grizzly? Are there cubs present and where are they in relation to you and the bear? Did you disturb the bear during feeding? Where is the rest of your party? (Always stay together as a group; a bear is less likely to attack a group of people than an individual).
- Do not run from the bear. You cannot out run it! Black bears can reach speeds of 55km/hr.
- Talk quietly and slowly back up leaving the way you came; give the bear enough time and room to leave on its own. Invading the bears space will invoke its "fight or flight" response. Grizzly bears are most likely to fight while Black bears are most likely to choose flight. Avoid any rapid movements and move up wind so the bear can catch your scent and determine you are not a threat.
- If the bear keeps coming at you, climb the tree as high as you can. Remember, some grizzlies and all black bears can climb trees; but if you climb a tree the bear may feel less threatened.



### In Case of Attack (general)

Try to defend yourself on a steep slope or grade; in doing so, you can ensure that any bear will at least have a difficult time standing erect, thereby reducing his full weight force. Bears are also front-heavy, creating an offset in balance when downing slopes or grades.

- Do not run from the bear. You cannot out run it. A bear will often make a "bluff" charge, in which it turns away at the last moment. Running away from such a charge will trigger a more aggressive attack.
- If the bear continues the attack, spray bear ("pepper") aerosol in the animal's eyes. This may cause the bear to stop the attack, and give you an opportunity to escape.

Note: Bear spray must be kept on your person within easy reach or it will not be of use. Bear spray is not a repellent, but a weapon that is only effective in the animal's eyes and nose. It will not repel bears from a sprayed area. In fact, there is evidence to suggest that bears are attracted to objects covered with pepper spray. Read the instructions, understand how to use the spray, and test it to be sure of its range and accuracy.

- If no escape is possible and the bear has knocked you to the ground—roll yourself into a "cannonball" position and play dead. Cover your neck and head with your hands and arms. Stay in this tucked position until the bear leaves.
- If a black bear is attacking you, or you are attacked at night by either species, consider it a predatory attack and fight back with everything you have.

### **Defensive Attack**

- Bears will engage in a defensive attack when feeling threatened or cornered. This type of attack
  occurs when a bear is protecting her young, or the carcass of its latest kill. The bear will show signs
  of stress, like huffing, pawing the ground, exposing its teeth, body swaying and pinning its ears back.
  The bear in this type of attack will often make "bluff" charge, in which it will turn away at the last
  moment or veer off its path.
- In this type of attack, play dead to show the bear you are not a threat.
  - If wearing a pack, leave it on for protection
  - b. Lie face down on the ground, legs splayed (spread) so the bear cannot easily turn you over
  - If rolled over, quickly turn back onto stomach
  - o Clasp hands around the back of your neck
  - o Do not shout or act aggressive
  - Remain quiet and still
  - Be prepared to wait until the bear realizes you are not a threat.
- If the bear continues to attack, fight for your life, aiming your assault at the bears head, nose and eyes.

### **Predatory attack**

- Bears will show no signs of stress during this type of attack. The bear will stalk you and swiftly attack without a warning or "bluff" charge.
- In this type of attack, act aggressive to show the bear you will not be easy prey
  - Do not be submissive
  - o Face the bear, never taking your eyes off of it



- Don't attempt to run away
- Scan for any near-by cover and possible weapons (stick and stones)
- Prepare your deterrent
- Make yourself as large as possible
- Raise your arms and stomp your feet
- Use rapid arm and leg movement
- Shout loudly
- o Remove your pack
- DO NOT PLAY DEAD
- If the bear continues to attack, fight for your life, aiming your assault at the bears head, nose and eyes.

### In Camp

Bears entering a camp may be coming to feed on human food and garbage, based on their past experiences in camps. Such bears are especially dangerous because they have become human habituated and no longer fear people. It is important if a bear wanders into your campsite to provide it with a negative stimulus to prevent it from returning and becoming human habituated (screaming, noise deterrents etc.). If your campsite is clean, with all attractants properly stored, a bear may lose interest and move on. If a bear comes into your camp, refer to the points in ON THE TRAIL. If your vehicle is nearby, get in it as soon as possible.

### **Cougars**

Conflict between cougars and humans is extremely rare. Although a cougar attack is highly unlikely, it always pays to be prepared. Information and awareness are your best defenses.

- Cougars are most active at dusk and dawn. However, they will roam and hunt at any time of the day or night and in all seasons.
- During late spring and summer, one to two-year old cougars become independent of their mothers.
   While attempting to find a home range, these young cougars may roam widely in search of unoccupied territory. This is when cougars are most likely to conflict with humans.
- Cougars have four toes with three distinct lobes present at the base of the pad. Claws are retractable, so they usually do not leave imprints.
- Generally, cougars are solitary. If tracks show two or more cougars traveling together, it probably
  indicates a female with cubs.
- Cougars seem to be attracted to children, possibly because their high-pitched voices, small size, and erratic movements make it difficult for cougars to identify them as human and not as prey.

### **Cougar Safety**

- Avoidance is the best line of defense.
- Keep a radio playing.
- Do not attract or feed wildlife, especially deer or raccoons. These are natural prey and may attract cougars.
- Roaming pets are easy prey.



- Bring pets in at night. If they must be left out, confine them in a kennel with a secure top.
- Do not feed pets outside. This not only attracts young cougars but also many small animals, such as mice and raccoons, that cougars prey upon.
- Place domestic livestock in an enclosed shed or barn at night.
- Hike in groups of two or more. Make enough noise to prevent surprising a cougar.
- Carry a sturdy walking stick to be used as a weapon.
- Watch for cougar tracks and signs. Cougars cover unconsumed portions of their kills with soil and leaf litter. Avoid these food caches.
- Cougar cubs are usually well hidden. However, if you do stumble upon cougar cubs, do not approach
  or attempt to pick them up. Leave the area immediately, as a female will defend her young.

### If You Meet a Cougar

- All cougar encounters should be considered predatory. Act big and confident. Make direct eye contact, be loud and attempt to intimidate.
- Never approach a cougar. Although cougars will normally avoid a confrontation, all cougars are unpredictable. Cougars feeding on a kill may be dangerous.
- Always give a cougar an avenue of escape.
- Stay calm. Talk to the cougar in a confident voice.
- Pick all children up off the ground immediately. Children frighten easily and their rapid movements may provoke an attack.
- Do not run. Try to back away from the cougar slowly. Sudden movement or flight may trigger an
  instinctive attack.
- Do not turn your back on the cougar. Face the cougar and remain upright.
- Do all you can to make yourself seem larger and as intimidating as possible. Don't crouch down or try
  to hide. Pickup sticks or branches and wave them about.
- Any cougar seen on the job-site will cause an immediate notification of the Incident Commander. In
  addition, all workers within 500 metres of the animal are to seek immediate shelter within a vehicle or
  building. The Incident Commander shall assess the situation, observe the cougar for its intent, and
  determine a proper course of action to be taken. At no time will the cougar be approached by any
  workers for any reason other than at the direction of the Incident Commander.

### If a Cougar Behaves Aggressively

- Arm yourself with a large stick, throw rocks, and speak loudly and firmly. Convince the cougar that you are a threat, not prey.
- If a cougar attacks, fight back! Many people have survived cougar attacks by fighting back with anything, including rocks, sticks, bare fists, and fishing poles.

Cougars are a vital part of our diverse wildlife. Seeing a cougar should be an exciting and rewarding experience, with both you and the cougar coming away unharmed. At the discretion of the On-Site Group Supervisor, the appropriate Environment Fish and Wildlife agency may be notified to determine the best course of action to be taken.



# **Animal Encounters, continued**Large Hooved Animals (Ungulates)

This family is comprised of several hooved omnivores common to Canadian lands. Unknown to most, ungulates cause more yearly fatalities then all predatory species combined. However, this is mainly due to vehicular accidents as opposed to acts of aggression. This class refers to:

- Bison
- Moose
- Mule and White tailed deer
- Elk
- Caribou

### **Ungulate Safety**

- Generally speaking they prefer not being near people.
- The best line of defense is avoidance.
- Although physical size and appearance varies significantly, temperaments have been noted to be fairly similar between most species of ungulate.
- Mating season for most ungulates is during the fall months with the young being born in the spring; at both of these periods females and particularly males will become more aggressive and territorial.
- Like all wildlife, keeping a safe distance and never feeding the animals is advised.

### If You Meet an Ungulate

The following 7 steps are suggested if experiencing a close encounter:

- 1. Avoid making similar noises, such as coughing, groaning, grunts, etc.
- 2. Do not approach the animal.
- 3. Stay calm and increase the distance between you and the animal while looking for an escape.
- 4. Run to safety once close enough.
- 5. Use noise deterrent if available.
- 6. Climb a tree if possible.
- 7. Report the incident to a work authority.

### If It Behaves Aggressively

If confronted by an ungulate that feels threatened by you, consider it to be a dangerous situation.

Look for an avenue of escape.

### If knocked down:

- Curl up in a ball, protect head and neck with arms, and remain as still as possible. This is known as the "cannonball" position.
- Do not try to escape until the animal has moved a safe distance away.



### **Rattle Snakes**

Most North American snakes aren't poisonous. Exceptions in Canada include the rattlesnake and very rarely the copperhead snake. Their bites can be life-threatening. Both have slit-like eyes and are known as pit vipers. Their heads are triangular, with a depression (pit) midway between the eye and nostril on either side of the head. Rattlesnakes can be easily identified by the "rattle" noise created from the last segment of their tale when shaken.

### **Rattlesnake Safety**

- Wear over-the-ankle or calf high boots.
- Do not put your hands where you cannot see.
- Use a tool when turning over rocks or boards.
- Always step on rocks and logs, never walk over them.
- Avoid walking through dense brush. If you must use a long stick or branch to beat the brush.
- Be careful when stepping over doorsteps. Snakes like to crawl along the edge of buildings.

### If You Meet a Rattlesnake

- · Remain calm. Do not panic.
- Stay at least five feet from the snake. Give the rattlesnake respect and space. Give the snake plenty
  of room.
- Avoid touching any snake. Back away slowly. Most snakes avoid people if possible and bite only when threatened or surprised.
- Do not try to kill the snake. Doing so is illegal and greatly increases the chance the snake will bite you.
- Alert your supervisor and others in the area of its location and update any hazard maps. Advise them to use caution and to respect the snake. Keep children and pets away.

### In the event of a snake bite

- Remain calm, and inactive. By becoming agitated, your heart beats faster and you increase the flow of blood to the affected area and increase the amount of toxin able to find its way into your tissues.
- Immobilize the bitten arm or leg, and stay as quiet as possible to keep the poison from spreading through your body.
- Remove jewellery before you start to swell.
- Position yourself, if possible, so that the bite is at or below the level of your heart.
- Cleanse the wound, but don't flush it with water, and cover it with a clean, dry dressing.
- Do not put ice or cold substances on the bite.
- Apply a splint to reduce movement of the affected area, but keep it loose enough so as not to restrict blood flow.
- Mark the size of the affected area with a pen to track its progression.
- Drink plenty of fluids to maintain blood volume and prevent shock
- Don't try to capture the snake, but try to remember its colour and shape so you can describe it, which
  may help identify the snake for treatment, or try to get a picture of it from a safe distance.



- Drive to a hospital or doctor's office ASAP, or have someone else drive. In the event you are several
  hours away from the nearest hospital, stay standing, stay hydrated, stay calm, and use a cell phone
  to call emergency responders.
- Do not make "X" incisions over the fang injuries or suck out the toxin. You will most likely cause excessive bleeding and/or additional necrosis (tissue death) and/or further infection from the germs in your mouth or surrounding environment.
- For shallow bite wounds, let it bleed out naturally. More blood will come out at first as generally there are anticoagulants in the venom. If a bite is deep enough to cause spurting blood (i.e. the strike hit a major artery and you're losing blood fast), immediately apply pressure to the wound and call emergency medical personnel.
- Do not use a tourniquet. While certain medical conditions still are helped with proper application of a tourniquet, these are few in number. In most cases, application of a tourniquet will cause necrosis and possibly elevate the need for amputation of the affected area distal to the heart. (a tourniquet is a tight encircling band applied around an arm or leg in an emergency to stop severe bleeding, e.g. tying a piece of cloth around your arm really tight) However, if treatment is more than 60 minutes away, using a constrictive band is advisable to prevent spread of the toxin. The band should be placed 5-10 cm above the bite and you should be able to place 2 fingers under the band.
- Snakes typically do not exhaust their venom after the initial bite, so be sure to remove yourself from the area as quick as possible. Furthermore, snakes have been known to have a bite reflex last up to 60 minutes after death.
- Watch the victim for signs of shock. This is treated by lying flat with feet elevated. Cover with warm clothes or blankets.

### **Wolves**

Wolves generally avoid human interactions, unless they have become human habituated through repeated exposure to humans without any negative stimulus. It is not normal for wolves to attack or pursue humans. Please do your part to keep wolves where they belong, in the wild. As human population continues to grow, wolves are now considered an endangered species in Canada. In an attempt to keep wolves non-habituated, if seen, ensure all garbage has been properly disposed of and use noise to deter/scare the animal(s) away.

### Wolf safety

- Wolves are notoriously intelligent animals; generally hunting in groups or packs surrounding their prey.
- Wolves have ranges of up to 400km.
- Wolves may breed anytime throughout the year. However, pups are mainly born between April-June at which time the entire pack will aggressively defend their young.
- Wolves are considered timid towards humans. Attacks are more likely if a wolf feels threatened, is sick, or assess their prey maybe injured and therefore more susceptible to attack.
- Secure all food items and never feed any other wildlife. Deer and small mammals can attract larger predators such as wolves.
- Howling is a form of communication for wolves. If heard within a close proximity, it is advised to find shelter in a vehicle or building.



### If you meet a wolf

In the unlikely event of a wolf or wolves threatening humans, here is what to do.

- Stay calm
- Never make sudden movement; back away slowly, never turning your back on the wolf.
- Leave the wolf an avenue of escape.
- Raise your voice and speak firmly.
- If the wolf continues to approach, wave your arms in an attempt to make yourself look bigger.
- Make use of any rocks, sticks, camping gear, fists, or feet to fend off an attack, Try to protect your neck and head from attacks.

### Finding a wolf carcass

Wolves are an endangered species; in the event of finding a wolf carcass, take these following steps:

- Do not disturb or move any evidence.
- If possible, cover the carcass with a secured tarp or blanket in an attempt to preserve it.
- Once reported to your supervisor, call the appropriate provincial wildlife agency as they will determine
  the best course of action to be taken.

### **Bees and Wasps**

The presence of native wild bees, and many species of wasps and hornets will be noted by all personnel working on the project.

Head-nets will be required PPE for all personnel when working in areas where large concentrations of bees, wasps, or hornets have been identified.

All personnel will inform the Incident Commander of any known allergy to, or past reaction to bee, wasp, or hornet stings.

### If a "nest" is detected:

- All personnel will leave the area immediately.
- Call in the location of the "nest" to the Incident Commander.
- The area will be flagged as a hazard and its location written down for marking on the hazard map.

### If a sting or attack occurs the following procedure will be followed:

- Remove the stinger within 30 seconds if possible.
- Do not squeeze the wound as this will release more venom.
- Wash the wound with soap and water.
- Apply cold pack.
- Watch for any of these signs and symptoms of allergic reaction and notify Incident Commander immediately if detected: rash, tightness of the chest and throat, swelling of the face, neck, and tongue, excessive sweating, dizziness, and / or difficulty breathing.



### **EpiPens**

Adrenaline (epinephrine) is a natural hormone released in response to stress. It is a natural "antidote" to the chemicals released during severe allergic reactions triggered by drug allergy, food allergy or insect allergy. It is destroyed by enzymes in the stomach, and so needs to be injected. When injected, it rapidly reverses the effects of a severe allergic reaction by reducing throat swelling, opening the airways, and maintaining blood pressure.

Use of adrenaline for treating anaphylaxis is First Aid.

IMPORTANT: The information provided is of a general nature and should not be used as a substitute for professional advice. If you think you may suffer from an allergic or other disease that requires attention, you should discuss it with your Incident Commander.

### Warning / direction for EpiPen use:

- Never put thumb, fingers, or hand over the orange tip. (Tip colours vary by brand. Other colours are generally black and green.)
- Do not remove grey safety release until ready to use.
- Do not use if solution is discoloured or red flag appears in clear window as it may be expired.
- Do not place any other foreign objects in carrier with auto-injector, as this may prevent you from removing the auto-injector for use.

### Steps for EpiPen use:

- 1. Unscrew the yellow or green cap off of the EpiPen carrying case and remove the EpiPen auto-injector from its storage tube.
- 2. Grasp unit with the black tip pointing downward.
- 3. Form fist around the unit (black tip down).
- 4. With your other hand, pull off the gray safety release.
- 5. Hold black tip near outer thigh.
- 6. Swing and jab firmly into outer thigh until it clicks so that unit is perpendicular (at a 90° angle) to the thigh. (Auto-injector is designed to work through clothing.)
- 7. Hold firmly against thigh for approximately 10 seconds. (The injection is now complete. Window on auto-injector will show red.)
- 8. Remove unit from thigh and massage injection area for 10 seconds.
- 9. Call for Help and seek immediate medical attention.
- 10. Carefully place the used auto-injector (without bending the needle), needle-end first, into the storage tube of the carrying case that provides built-in needle protection after use. Then screw the cap of the storage tube back on completely, and take it with you to the hospital emergency room.

Most of the liquid (about 90%) stays in the auto-injector and cannot be reused. However, you will have received the correct dose of the medication if the red flag appears in window.

### Immediately after EpiPen use:

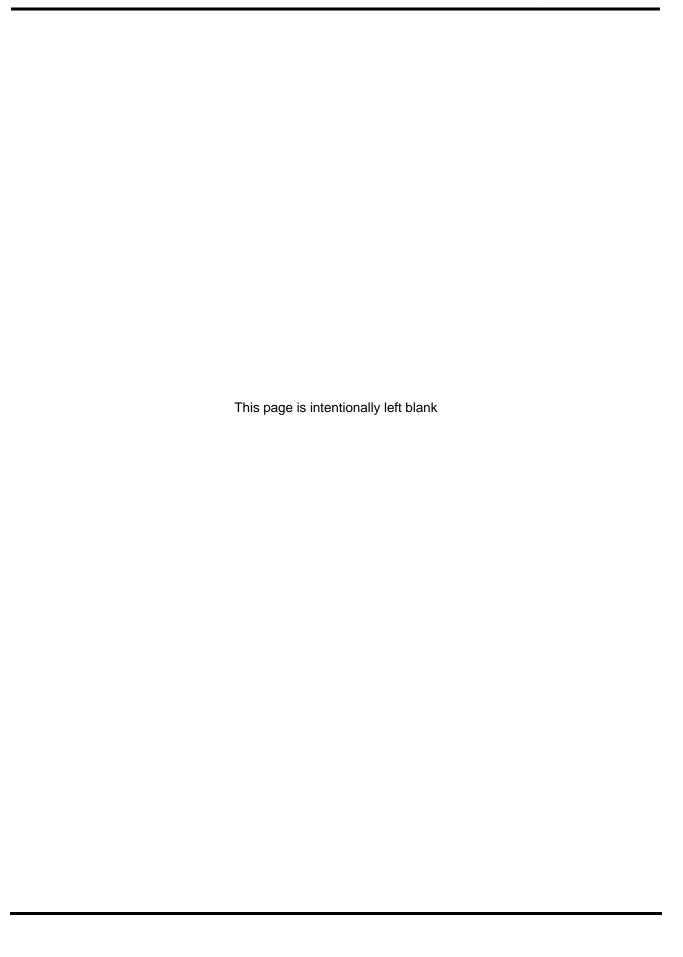
- Go immediately to the nearest hospital emergency room or call 911. You may need further medical attention. Take your used auto-injector with you.
- Tell the doctor that you have received an injection of epinephrine in your thigh.
- Give your used EpiPen to the doctor for inspection and proper disposal.

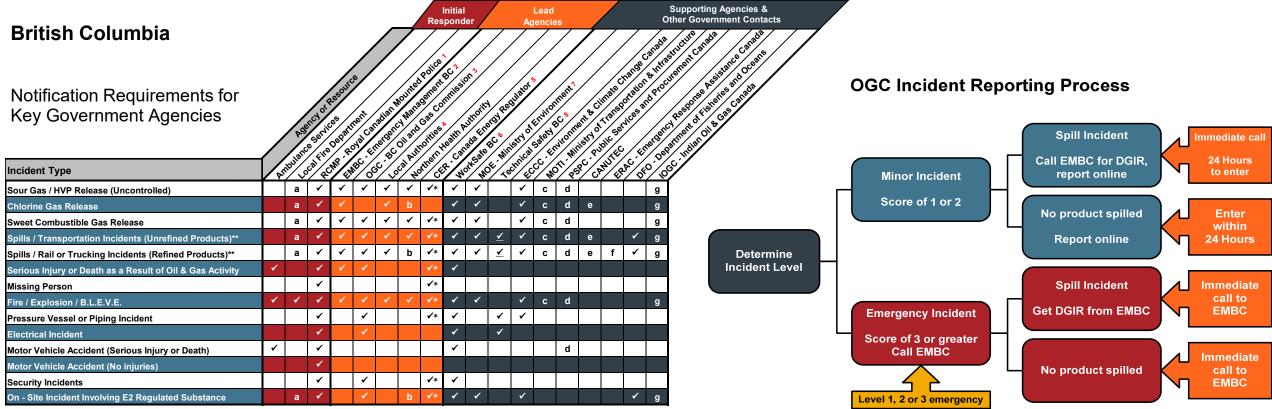


# **Section 5: External Agencies**

Provincial Notification Matrix
Provincial Lead Agency Roles
Government Consultation Summary
Specific Government Agency Roles
Health Services
Local Authority
Provincial Supporting Agency Roles
Federal Agency Roles







Phone numbers for the agencies listed above are located in the Area Specific Information

- Compulsory contact
- \* CER is a compulsory contact only for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.
- \*\* Refer to the British Columbia Petroleum Release Reporting Requirements chart included in the ERP.
- \_ Technical Safety BC only requires reporting of rail related accidents, incidents and spills. No other transportation related emergencies need to be reported.

EMBC to notify the OGC for all incident types including fire/explosion incidents, pressure vessel incidents, spills and releases, or electrical incidents occurring at facilities approved by the OGC.

EMBC to notify the Ministry of Environment for any incident which affects the water, air, or land environment, or any white or green space in the province.

EMBC to notify Environment & Climate Change Canada (ECCC) of all oil and gas incidents in time, but immediately as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on First Nations lands, in National Parks, into river or lake systems containing fish, or onto railway right-of-way.

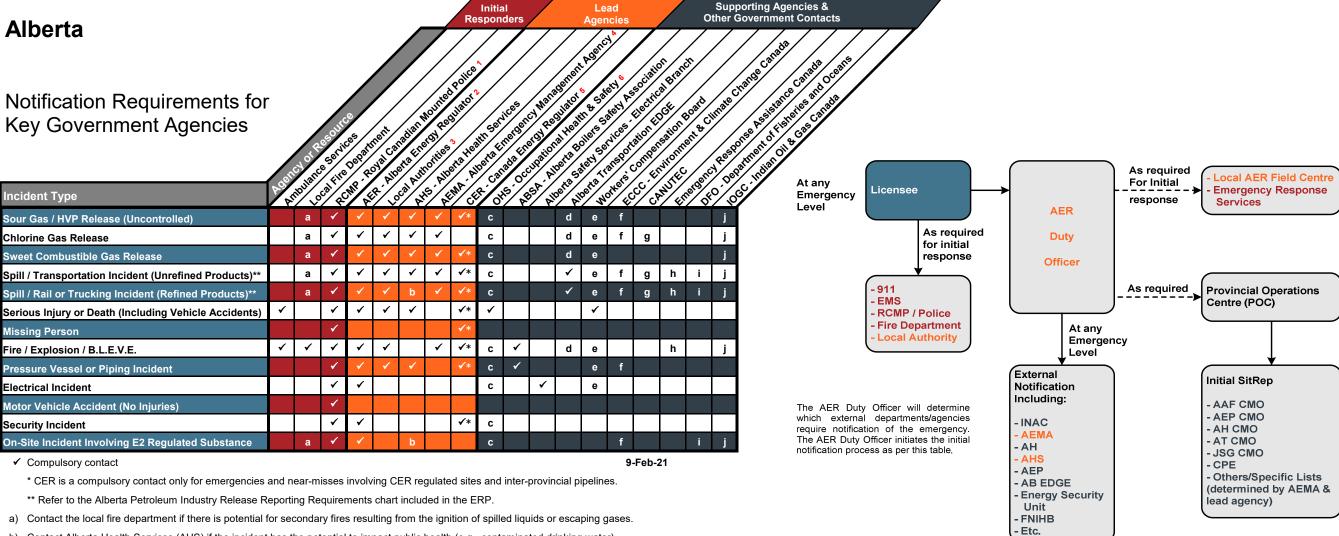
EMBC to notify Ministry of Forests, Lands and Natural Resources Operations, Northern Health Authority, affected municipalities and all other level of government and industry; depending on the ECC code level in their SOPs.

- a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.
- b) Contact the Northern Health Authority if the incident affects public health, e.g., contaminated drinking water.
- c) Contact the Ministry of Transportation and Infrastructure (MOTI) and the RCMP if the emergency intersects with a 1, 2 or 3 digit Provincial or Secondary highway (e.g., Hwy 2, Hwy 47, Hwy 837). MOTI and RCMP have the authority to shut down highways.
- d) Contact Public Services and Procurement Canada (PSPC) and the RCMP if the emergency intersects with the Alaska Highway (97) north of mile 83.5 all the way to the Yukon border. PSPC and RCMP have the authority to shut down this portion of the Alaska highway.
- e) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release

  from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take

  place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases
- f) Emergency Response Assistance Canada will only respond to transportation incidents and only incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); and those products have tank storage capacity of 450 litres or greater.
- g) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m3 must be reported to IOGC immediately.
- 1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.
- 2 Notify Emergency Management BC (EMBC) for all spill and non-spill incidents to receive a Dangerous Goods Incident Report (DGIR) number. EMBC will notify the OGC and Ministry of Environment, and will provide a representative to coordinate the provincial response.
- 3 Contact the OGC for any spills or release of hazardous substances that are not provincially regulated (such as radioactive materials), 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, drilling kicks when any of the following occur: pit gain of 3m³ or greater, casing pressure 85% of MA, 50% out of hole when kicked, well taking fluid (LC), associated spill or general situation deterioration such as leaks, equipment failure or unable to circulate etc., major damage to oil and gas roads or road structures and security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. The OGC must also be notified of needed emergency oil and gas road closures. The OGC may request a NOTAM order from NAV Canada upon request from operator.
- 4 Local authorities include regional district disaster services, national park authorities and the local police.
- 5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for all emergencies and near misses involving CER regulated sites and inter-provincial pipelines. The CER regulates all inter-provincial pipelines and other facilities and sites located in Frontier lands (Northern Canada).
- Ensure any workplace conditions that present an immediate hazard to other workers are addressed, ensure first aid and medical treatment for the worker, and then notify WorkSafeBC of the incident. The requirement to immediately report a serious injury or fatality is separate from the requirement to report injuries for claims purposes. Failure to immediately notify WorkSafeBC will be considered a breach of section 172 of the Workers Compensation Act. The employer must immediately report the following incidents, injury or not: Any incident that kills, causes risk of death, or seriously diving incident or decompression sickness, a major leak or release of a dangerous substance, a major structural failure or collapse of a structure, equipment, construction support system or excavation, or any serious mishap. Must also report incidents that requires the employee to seek medical attention or cause time-loss from work.
- 7 Ministry of Environment was formerly known as Ministry of Water, Land and Air Protection
- Technical Safety BC is to be notified immediately in cases of Boilers, Pressure Vessels, Piping and Fittings, Electrical & Gas incidents resulting in a moderate, major or severe property damage. All other incidents must be reported within 24 hours (or as soon as practical). Rail accidents where a person sustains a serious injury or is killed as a result of being on board or getting on or off the rolling stock, or coming into contact with any part of the rolling stock or its contents, or the rolling stock is involved in a grade crossing collision or a derailment, sustains damage that affects its safe operations, or causes or sustains a fire or explosion, or causes damage to the railway, that poses a threat to the safety of any person, property or the environment, or any dangerous good is released.





- b) Contact Alberta Health Services (AHS) if the incident has the potential to impact public health (e.g., contaminated drinking water).
- c) Contact Occupational Health & Safety and report when: an injury or accident results in death; an injury results in a worker being admitted to a hospital; a potentially serious incident (PSI) where a reasonable and informed person would determine that under slightly different circumstances, there would be a high likihood for a serious injury to a person; there is an unplanned or uncontrolled explosion, fire or flood that causes a serious injury; there is a collapse or upset of a crane derrick or hoist or; there is a collapse or failure of any component of a building or structure necessary for its structural integrity.
- d) Alberta Transportation EDGE (Environmental and Dangerous Goods Emergencies) is the first call for all transportation related spills/incidents. If spill is contained on-site, Alberta Transportation will contact the AER. If the spill moves off-site or into a waterbody, Alberta Transportation will contact Alberta Environment and Parks (AEP) and/or Environment & Climate Change Canada (ECCC). Contact Alberta Transportation or the RCMP if an oil & gas emergency affects a highway designated by 1, 2, or 3 digits (e.g., Hwy 27, Hwy 837). Alberta Transportation and RCMP have the authority to shut down highways.
- e) Contact the Workers' Compensation Board within 72 hours of being notified of an injury/illness that results in or will likely result in: Lost time or the need to temporarily or permanently modify work beyond the date of accident, death or permanent disability, a disabling or potentially disabling condition caused by occupational exposure or activity, the need for medical treatment beyond first aid, or medical aid expenses.
- f) ECCC will be notified by AER as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on first national Parks, into river or lake systems containing fish, or onto railway right-of-way.
- g) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases.
- h) Emergency Response Assistance Canada will only respond to incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); with a tank storage capacity of 450 litres or greater. Advisory assistance will be provided to incidents involving tank storage capacities less than 450 litres.
- i) Contact the Department of Fisheries and Oceans Canada to report an oil spill that occurs in or around fresh and marine waters.
- j) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m3 must be reported to IOGC immediately.
- 1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.
- 2 Alberta Energy Regulator is designated as the lead agency (single window approach) to implement the Gov't of Alberta Emergency Response Support Plan for a Petroleum Industry Incident.
- 3 Local Authorities include: cities, towns, villages, counties, municipal districts, improvement districts, special areas, Métis settlements, and first nations reserves.
- 4 Request that Alberta Emergency Management Agency identify the affected local authorities and implement Emergency Services. The Emergency Management Field Officer may provide assistance in contacting some or all of the local authorities.
- 5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for emergencies and near-misses involving CER regulated sites and inter-provincial pipelines.
- 6 Occupational Health and Safety see c) for further details on this agency's role



### **Before the Incident**

The Emergency Response and Safety Department is the lead department responsible for emergency management within the Commission. The Department oversees the administration of the EMR. This includes:

- ☐ Reviewing industry emergency management programs and plans
- ☐ Participating in permit holder emergency response exercises
- ☐ Providing 24 hour Emergency Officer services
- ☐ Leading emergency and incident follow-up and investigation
- ☐ Administering incident and complaint response services
- ☐ The Commission uses a combination of reviews, assessments, and field inspections.
- ☐ To ensure permit holders maintain compliance with the requirements detailed in the Emergency Management Regulation and the Oil and Gas Activities Act. The audit and inspection program objectives are to ensure permit holders have adequate processes and procedures in place.
- Participate in selected licensee ERP exercises.
- ☐ Maintain a 24 hour telephone contact where petroleum industry incidents can be reported.
- ☐ Assist the OGC with planning initiatives regarding petroleum industry emergency response as requested by the OGC.
- ☐ EMBC Northeast Region receives Industry Facility Emergency Response Plans.
- ☐ Participate in selected licensee ERP exercises when requested as time permits.
- ☐ Maintain a 24 "800" telephone contact where petroleum industry spill incidents can be
- ☐ Maintain 24 hour emergency contact numbers for local governments and provincial emergency responders.
- ☐ Set up and maintain an emergency management organization which can include an executive committee, emergency program management committee, emergency program coordinator or emergency social services director.
- Develop and maintain a Hazard, Risk and Vulnerability Analysis (HRVA) to identify potential emergencies and disasters in its jurisdictional area.
- ☐ Educate community residents and business owners about the need for personal emergency preparedness.
- ☐ Prepare for emergencies and disasters through mitigation, preparedness, response and
  - Conduct training and exercises for all emergency response staff.
- ☐ Establish procedures for implementing, reviewing and revising response and recovery plans. 0
  - Complete periodic reviews and updating of the local emergency plan.
- egi Respond to emergencies when required
  - ☐ Establish procedures for notifying persons threatened by emergencies or impending disasters
- ☐ Identify procedures for obtaining emergency resources.
- ☐ Establish priorities for restoring essential services.
- ☐ Work with volunteer groups to plan for the provision of food, clothing and shelter to
- Participate in industrial operators' preparatory training and exercises where possible.
- ☐ Maintain 24 hour emergency contact numbers.

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The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and British Columbia Ambulance Service, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 9□1□1 and have internal dispatch arrangements

- ☐ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones.
- ☐ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC.
- ☐ First response services provided by a fire department are determined by the local S authority responsible, and may include hazardous material incident response, road ency rescue and medical rescue
  - ☐ The BC Ambulance Service (BCAS) operates under the authority of the Emergency and Health Services Commission (EHSC) and is tasked with the provision of pre-hospital emergency care and transport of patients across the province.
  - ☐ BCAS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed
  - Participate in industrial operators' exercises where possible.
  - ☐ Maintain 24 hour emergency contact numbers.

### **During the Incident**

### During emergencies the Oil and Gas Commission (OGC) acts as a liaison between industry operators and the provincial emergency management

- structure to provide situation updates related to threatened oil and gas assets. Oversee operator's response to an incident
- ☐ Notified by EMBC of incidents within OGC's jurisdiction (on lease).
- ☐ Establish communication with operator.
- ☐ Confirm incident level with operator.
- ☐ Confirm downgrade of incident level. ☐ Issue road closure order upon request from operator.
- ☐ Request NOTAM order from NAV Canada upon request from operator.
- ☐ May send an OGC representative to operator's On-Site Command Post and / or Evacuation Centre.
- ☐ May establish a government EOC at the OGC office.
- ☐ Confirm ignition decision with operator if time permits.
- ☐ Confirm media releases to be sent out by operator.
- □ ECC Victoria will notify the OGC on call Emergency Response Officer and initiate British Columbia's notification of government agencies including MOF, MOE, MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of government and industry, depending on the level of "coding" (notification code 1,2,3 is determined by the Lead Agency MOE or OGC), depending on the code level Standard Operating Procedures (SOPs) in ECC will determine who is notified.
- ☐ Provide representatives to help coordinate provincial response as required
- ☐ Provides the local government response for rural and crown areas.
- ☐ Assesses the situation
- Provides support to the first responders, including resources.
- ☐ Provides public information, including media briefings.
- ☐ Coordinates the provision of food, clothing, shelter and transportation.
- Liaises with volunteer groups
- ☐ Provides situation reports to the PREOC.
- □ Tracks finances.
- ☐ Coordinates recovery of essential services.
- ☐ Coordinates community recovery efforts
- ☐ During emergencies and disasters the local authority's primary link to the provincial emergency management structure is the PREOC.
- Uhen a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC.
- ☐ Establish contact with the industrial operator in order to:
  - □ Obtain additional hazard information
  - ☐ Determine where roadblocks should be or are established.
  - ☐ Determine the direction of approach to the incident.
  - ☐ Determine if there are any injuries.
  - ☐ Find out what response and public protection actions have been taken.
- ☐ Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs). ☐ Activate the MEP, when required.
- ☐ Manage the Local Authority's emergency response.
- ☐ Activate the emergency public warning system to alert people to life threatening hazards, as required.
- ☐ Activate the Municipal EOC (MEOC), as required. ☐ May dispatch a representative to the Government EOC (GEOC), when it is established, to coordinate the response, if requested.
- ☐ If necessary, declare a local State of Emergency. ☐ When possible, work with all other responders to establish a single Regional EOC (REOC).
- ☐ Inform EMBC and the public when the emergency is over.

### **RCMP**

- ☐ Maintain law and order and assist the operator with security
- ☐ Assist with mobilization of additional resources as directed by EMBC.
- ☐ Assist with traffic control, evacuation, and residence security.
- ☐ Assist with setting up and maintaining roadblocks or closures of 1, 2 and 3 digit Provincial or Secondary highways.
- ☐ Establish and maintain communications with industrial operator.
- ☐ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response.
- ☐ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.

- Respond to and assess emergency incident to the scope of their abilities.
- ☐ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).
- ☐ Communicate to MEOC and provide site reps as required.
- Assist with fire protection where trained personnel are available
- ☐ Provide emergency medical assistance, as required. ☐ Coordinate news releases with the licensee, if required.

- ☐ Respond to and assess emergency incident to the scope of their abilities.
- ☐ The BC Ambulance Service provides and coordinates ambulance service s within British Columbia, including triage, treatment, transportation
- ☐ The BC Ambulance Service provides situational awareness and coordinates resources through the PREOCs and PECC.
- Provide medical aid and transportation of ill or injured workers to a medical facility during high risk operations as required under the WCB Act and WSBC Regulations.
- ☐ Provide emergency medical assistance, as required.

# □ Participate in multi-agency debriefings.

After the Incident

☐ Close EOC if established.

May audit licensee records.

☐ As requested by OGC

any feedback to the industrial operator

Participate in event debriefings.

☐ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.

Participate in multi-agency debriefings.



# Northern Health Authority

# Agency Roles



### Before the Incident

Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include:

☐ Acute (hospital) Care

☐ Public Health (Protection, Preventive and Population Health services

☐ Mental Health and Addictions

☐ Home and Community Care

□ In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and will activate its emergency response management plan(s).

□ Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities.

□ Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility.

The Police and Community Safety Branch of the Ministry of Justice will work with EMBC to:

 $\hfill \square$  Prepare, promulgate and implement orders relating to law enforcement and internal security.

☐ Provide through the jurisdictional police force:

☐ Advice to local authorities respecting the maintenance of law and order

☐ Reinforcement of local police services

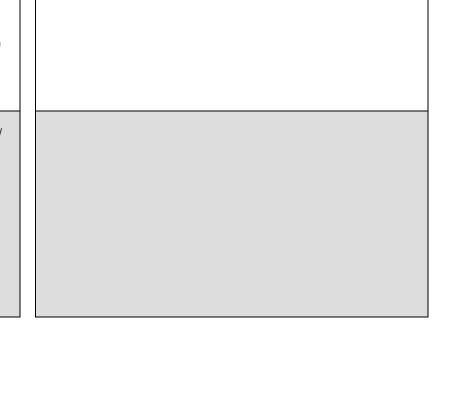
☐ Security control of emergency areas; and

☐ Traffic and crowd control

☐ The Ministry of Justice provides legal services to the government. Policy direction and legislative changes are made in consultation with the Ministry of Justice. During emergencies or disasters the Ministry of Justice may be called on to assist with risk management and provide expertise. This could include providing advice to provincial ministries and government corporations on legal matters relating to the preparation and promulgation of emergency orders, regulations, declarations and contractual arrangements.

### **During the Incident**

- ☐ Activate internal emergency response management plans related to ongoing provision of its services
- ☐ Provide acute care and emergency services at existing Northern Health hospitals/health centres.
- □ Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care.
- ☐ Apply and enforce the Public Health Act, and associated regulations.
- □ Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.).
- ☐ Provide advice/information on the best methods for monitoring health effects from an incident.
- ☐ Assist in development of (joint) messaging for public information on emergency incidents.
- ☐ Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities.
- ☐ Jurisdictional police forces to task search and rescue services for missing persons on land and in inland waters.
- ☐ Before, during and after an emergency the Ministry of Justice could be called upon to provide expertise, technical advice and/or policy direction regarding police and correctional services.
- ☐ The Minister of Justice has overall responsibility for emergency management in the province. In the event of a disaster, the Minister may:
  - ☐ Declare a provincial state of emergency
  - ☐ Make a formal written request for federal assistance or aid from the Government of Canada
  - ☐ Direct the establishment of M-DEC
  - ☐ Inform his/her colleagues of the situation, and
  - ☐ Be available for media interviews



After the Incident

**During the Incident** 

Before the Incident

After the Incident

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#### Before the Incident

The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and Emergency Medical Services, or EMS, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 911 and have internal dispatch

- ☐ First responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones
- ☐ When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC
- ☐ First response services provided by a fire department are determined by the local authority responsible, and may include hazardous material incident response, road rescue, and medical rescue
- ☐ Emergency Medical Services, or EMS, operates under the authority of the Alberta Health Services. No matter where an emergency happens in Alberta, AHS EMS can transport patients by either a ground ambulance or air ambulance - fixed wing airplane or helicopter.
- AHS EMS staff actively participates in emergency planning, mock emergency exercises and other joint training initiatives to ensure emergency preparedness and response resources are identified and deployed quickly and effectively when they are needed most
- ☐ Maintain readiness status for emergency notification
- ☐ Participate in industrial operators' exercises where possible
- ☐ Maintain 24 hour emergency contact numbers

#### **During the Incident**

#### RCMP

- □ RCMP or local police would also become involved if there are fatalities, as they are required to participate in the investigations. This could be through the medical examiner.
- ☐ Maintain law and order and assist the operator with local security but would require discussion with the local police at the time.
- ☐ The Office of the Fire Commissioner (OFC) has a working relationship with the RCMP and the RCMP may conduct selected duties of the Fire Commissioner where the fire's impact is not significant.
- ☐ Assist with traffic control, crowd control, evacuation, and residence security.
- ☐ Typically would not be involved in setting up or maintaining roadblocks unless the emergencies impacted or required the closure of 1, 2 and 3 digit Provincial or Secondary highways.
- ☐ Establish and maintain communications with industrial operator.
- ☐ Dispatch a representative to the off-site Regional Emergency Operations Centre, when established, to coordinate the response.
- ☐ Coordinate with the industrial operator both the establishment and the administration of reception centres for evacuees.
- 🗖 Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response

- ☐ Respond to and assess emergency incident to the scope of their abilities.
- ☐ Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).
- ☐ Communicate to MEOC and provide site reps as required.
- ☐ Assist with fire protection where trained personnel are available.
- ☐ Provide emergency medical assistance, as required.
- ☐ Coordinate news releases with the licensee, if required.

- ☐ Respond to and assess emergency incident to the scope of their abilities.
- ☐ The Alberta Health Services provides and coordinates ambulance services within Alberta, including triage, treatment, transportation and care of casualties
- ☐ Provide emergency medical assistance, as required. Emergency Medical Technicians (EMT) or Emergency Medical Responders (EMR) provide basic patient assessment and treatment including obtaining vital signs, administering oxygen and splinting extremities.
- □ ALS ambulances have at least one paramedic with expanded training, scope of practice, and can provide advanced treatment in airway management and medication administration.

#### After the Incident

- □ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
   □ Participate in multi-agency debriefings.



Revised June 2018



Type of Agency	Agency Name	Provided Specific Roles	Willing to consider a single REOC	Evacuation outside of the EPZ	Location of EOC	Suggested Reception Centres	Notes
Health Authority	Northern Health Authority	<b>√</b>	Yes where possible.	N/A	N/A	N/A	
Health Authority	AHS – Zone 5 North Shane Hussey	<b>✓</b>	Yes where possible.	N/A	N/A	N/A	
Local Authority	Northern Rockies Regional Municipality	<b>√</b>	Yes where possible.	Require assistance from the licensee with coordinating evacuation outside of the EPZ	Municipal Mall, 5319 50 Avenue Fort Nelson, BC	Northern Rockies Regional Rec. Centre	
Local Authority	Peace River Regional District	✓	N/A	N/A	N/A	N/A	
Local Authority	M.D. of Greenview	<b>√</b>	Yes where possible	Coordinate evacuation outside of the EPZ	4806 36 Avenue, Valleyview AB	N/A	
Government	EMBC	<b>√</b>	N/A	N/A	3235 Westwood Drive, Prince George BC	N/A	



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# Emergency Response Roles & Responsibilities

#### **Health Emergency Management BC, North (HEMBC)**

HEMBC is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise, education, tools, 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. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health.

#### Roles and responsibilities:

- Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC (appendix I)
- Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.

#### **Northern Health Authority (NH)**

Northern Health is the regional health authority responsible for providing health services to 300,000 people over an area of 600,000 square kilometers in the province of British Columbia. Services include:

- Acute (hospital) Care
- Public Health (Protection, Preventive and Population Health services)
- Mental Health and Addictions
- Home and Community Care

In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and activate its emergency response management plan(s).

#### NH Roles & responsibilities - PREPAREDNESS (PRE-EVENT):

- Participate with industry, local authority and other partners in the development of their Emergency Response Plans as it relates to health authority roles and responsibilities:
- Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility (as resources allow);

Author(s): Northern Health Emergency Management Issuing Authority: Northern Health Chief Medical Health Officer Date Issued (I), REVISED (R) Reviewed (r) (I) July 5, 2016,; (R) Oct 5, 2016,; (r) Sept, 2018,; (R) Feb, 2019.





#### NH Roles & responsibilities - RESPONSE:

- Activate internal health emergency management plans related to ongoing provision of services (listed above);
- Provide acute care and emergency services at existing Northern Health hospitals/health centres:
- Work with BC Emergency Health Services (Ambulance) and the BC Patient Transfer Network to transport patients to the appropriate levels of care;
- Apply and enforce the Public Health Act, and associated regulations;
- Provide advice/information to the stakeholders on the existing or potential public health effects of an incident (including drinking water safety, air quality, environmental contaminants, communicable disease prevention, re-occupancy of evacuated areas, etc.);
- Provide advice/information on the best methods for monitoring health effects from an incident.
- Assist in development of (joint) messaging for public information on emergency incidents:
- Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities

NOTE: British Columbia Emergency Health Services (BCEHS - Ambulance) remains independent of Northern Health. If an ambulance is required please contact BCEHS via 911 (or the local contact number, if 911 is not available in your area).





#### Appendix I

#### **Contact information:**

- For Emergency events that require immediate connection with Northern Health, please call:
  - HEMBC on call number (24/7) 1-855-554-3622
    - HEMBC will notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the event/emergency.
    - Please include this number in industry ERPs, for the use of permit holders in contacting Northern Health on an emergency basis.
    - Do NOT include this number on Public Awareness Pamphlets for individual projects; the EMBC/Oil and Gas Commission's emergency number(s) is more appropriate, and the HEMBC 24/7 number is on record with those agencies.
- For non-urgent requests or emergency exercise planning/information, contact HEMBC North Director Jim Fitzpatrick, at:

o Office: 250-565-5584

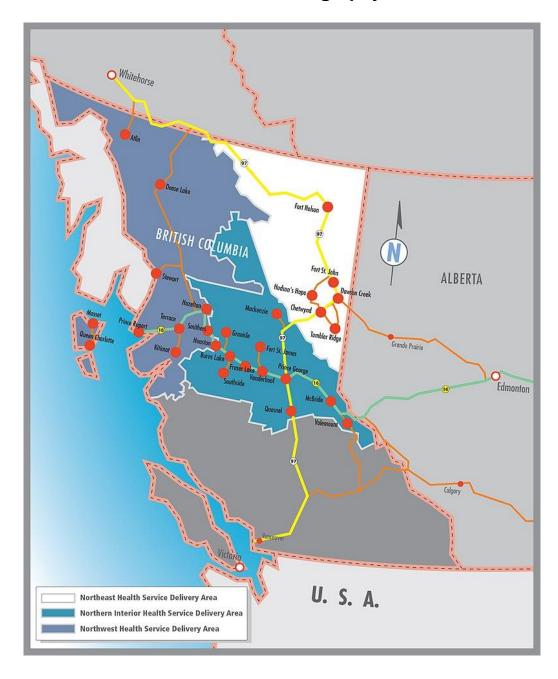
- HEMBC@northernhealth.ca
- Please note that Northern Health does not review or approve emergency response plans (ERPs) unless there is a request made from the regulators or governing agencies (e.g. Oil and Gas Commission, National Energy Board, Ministry of Environment, Environmental Assessment Office, etc.). Northern Health also does not require that general stakeholder consultation/notification packages be sent to Northern Health.
- Please make your site and project ERPs available to Northern Health in the event of an emergency to: <a href="https://example.com/HEMBC@northernhealth.ca">HEMBC@northernhealth.ca</a>
- For Environmental assessment inquires and general government consultation questions pertaining to health please email the NH Office of Health and Resource Development at: resource.development@northernhealth.ca





#### **Appendix II**

#### **Northern Health Geography**





# Oil and Gas Industry Emergency Preparedness and Response

Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to the oil and gas industry are outlined below. The provision of services during an emergency depends upon our assessment of legislative responsibilities, impact to services, and business continuity.

EPH will endeavor to:

- Participate with the Licensee in the development of their Emergency Response Plans as it relates to the Environmental Public Health Program's role and responsibility.
- Provide the AHS Zone Single-Point-of-Contact (SPOC) emergency phone number to enable the Licensee to notify and alert the Zone of an emergency. From the initial notification or alert, AHS emergency response will fan out to and coordinate with other AHS programs and facilities as necessary. The 911 EMS services remain independent of the Zone SPOC notification/alert process.
- Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which EPH has a role and responsibility.
- Participate in public information sessions during the Licensee's Emergency Response
   Plan development process when appropriate and as resources allow.
- Provide guidance to stakeholders and local municipal authorities in identifying sites suitable for establishing and operating an evacuation centre and/or reception centre, including operational requirements.
- Provide guidance to stakeholders on substances that may affect public health in consultation with the Zone Medical Officer of Health (MOH), including Alberta Health Acute Exposure Health Effects for Hydrogen Sulphide and Sulphur Dioxide information.
- Conduct assessments, inspections and give regulatory direction, when appropriate, to
  ensure the requirements of provincial legislation and EPH program areas of
  responsibilities for public health protection and disease prevention are maintained.
- Notify the Zone Medical Officer of Health of any incident affecting or potentially affecting other AHS programs or facilities. The Zone MOH will notify and coordinate emergency response in other program areas and facilities as necessary.
- Establish EPH emergency management operations, when appropriate, to support regional response efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed.
- Assist the Zone Medical Officer of Health, local municipal authority, and Public Information/Communication officers in the development, issuance, and rescinding of public health, public evacuation and shelter-in-place advisories.

- Provide guidance to stakeholders on matters relating to evacuation of the public and/or public facilities, and the re-occupancy of those evacuated areas or facilities.
- Record and respond to health complaints or concerns from the public during and following an incident.
- Participate in stakeholder debriefings as necessary.

#### 24 Hour Emergency Notification

Phone: 1-844-755-1788 Email: edp@ahs.ca

Use the phone number and email for all notifications across Alberta.

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

Edmonton Main Office 780-735-1800 Edmontonzone.environmentalhealth @ahs.ca
Calgary Main Office 403-943-2295 Calgaryzone.environmentalhealth @ahs.ca
Lethbridge Main Office 403-388-6689 Southzone.environmentalhealth @ahs.ca
Grande Prairie Main Office 780-513-7517 Northzone.environmentalhealth @ahs.ca
Red Deer Main Office 403-356-6366 Centralzone.environmentalhealth @ahs.ca

www.ahs.ca/eph

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**Before the Event** 

#### LOCAL AUTHORITY - NORTHERN ROCKIES REGIONAL MUNICIPALITY

Resources would be provided in support of an upstream emergency on an "as available" basis and in accordance with Local Authority Policy.

0	Work with the upstream operator to effectively prepare for an upstream petroleum industry incident. Provide input to the industrial operator's site-specific plan to ensure it is compatible with the Municipal Emergency Plan (MEP) where feasible.  Participate in industrial operators' preparatory training and exercises where possible.  Train personnel to carry out functions as assigned by MEP or procedures.  Maintain 24 hour emergency contact numbers.
Upon t	he Notification of and during an Event
	Respond to and assess the emergency incident only in the Northern Rockies Regional Municipality fire protection area for fires.
	Response to rescue & hazard incidents anywhere within the municipality, where feasible.  Establish contact with the industrial operator in order to:  Obtain additional hazard information.  Determine where roadblocks should be or are established.  Determine the direction of approach to the incident.  Determine if there are any injuries.  Find out what response and public protection actions have been taken by the upstream operation.  The location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).
	Activate the MEP, when required.  Manage the Local Authority's emergency response.  Activate the Municipal EOC (MEOC), as required.  If necessary, declare a State of Local Emergency.  Establish a public information service, including the use of the news media to inform and instruct the public of the emergency and of any protective actions to be taken.  Inform EMBC and the public when the emergency is over.
After th	he Event
<u> </u>	Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.  Participate in multi-agency debriefings.



#### **Emergency Services (as managed / operated by the Local Authority)**

Emergency Services will also, as a general rule, provide resources in support of a petroleum incident, on an "as available" basis.

Before	the Event
	Maintain readiness status for emergency notification.  Participate in industrial operators' exercises where possible.
	Maintain 24 hour emergency contact numbers.
During	the Event
	Respond to and assess emergency incident to the scope of their abilities.  Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).  Communicate to MEOC and provide site reps as required.  Assist with fire protection where trained personnel are available.  Provide emergency medical assistance, as required.  Coordinate news releases with the licensee, if required.
After th	ne Event
	Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
	Participate in multi-agency debriefings.

#### **Local Authority (Regional District)**

Peace River Regional District has a formal Emergency Management Plan which outlines the measures and sources of assistance that can be obtained to support emergency response efforts within their jurisdiction. Upon request from the Oil and Gas Commission (OGC), the Regional District may address emergency response capabilities, expectations and preparedness. If required, the Regional District may activate their emergency plan in order to achieve any of the following:

- Dispatch representative(s) to the OGC's Emergency Operations Centre (EOC), if established
- Provide support to ensure notification of endangered area residents.
- Provide support to coordinate and deliver emergency social services to evacuated residents
- If necessary, declare a State of Local Emergency and issue an evacuation Alert, Order and Rescind
- Assist in a public information service (joint OGC, Industry, local government)
- Provide building re-entry procedures.

Revised October 27, 2010



#### **LOCAL AUTHORITY - M.D. OF GREENVIEW**

Resources would be provided in support of an upstream emergency on an "as available" basis and in accordance with Local Authority Policy.

Before	the Event		
<u> </u>	Work with the upstream operator to effectively prepare for an upstream petroleum industry incident. Provide input to the industrial operator's site-specific plan to ensure it is compatible with the Municipal Emergency Plan (MEP) where feasible.  Participate in industrial operators' preparatory training and exercises where possible.  Train personnel to carry out functions as assigned by MEP or procedures.  Maintain 24 hour emergency contact numbers.		
Upon t	he Notification of and during an Event		
0	Respond to and assess the emergency incident.  Establish contact with the industrial operator in order to (the following roles/responsibilities are entirely contingent upon the communication of accurate and timely information from the industrial operator to the MD of Greenview):  Obtain additional hazard information.  Determine where roadblocks should be or are established.  Determine the direction of approach to the incident.  Determine if there are any injuries.  Find out what response and public protection actions have been taken by the upstream operation.  The location of the On-site Command Post (OSCP) and any Emergency		
	Operations Centres (EOCs).		
	Activate the MEP, when required.		
	Manage the Local Authority's emergency response.  Activate the emergency public warning system to alert people to life threatening hazards, as required.		
	Activate the Municipal EOC (MEOC), as required.		
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	to coordinate the response, if requested.  If necessary, declare a State of Local Emergency.		
	If the hazard area extends beyond the EPZ, the county will coordinate evacuation of the		
	public and reception centre establishment and maintenance with the industrial operator.		
	When possible work with all other responders to establish a single Regional EOC (REOC).		



Upon t	ne Notification of and during an Event, <i>continued</i>
	Establish a public information service on behalf of the MD of Greenview, including the use of the news media to inform and instruct the public of the emergency and of any protective actions to be taken.
	Provide timely news releases on behalf of the MD of Greenview, if required.
	If a State of Local Emergency has been declared, inform AEMA and the public when the emergency is over.
After th	ne Event
	Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
	Participate in multi-agency debriefings.
Emergency	y Services (as managed / operated by the Local Authority)
Emergency S on an "as ava	services will also, as a general rule, provide resources in support of a petroleum incident, ilable" basis.
Before	the Event
	Maintain readiness status for emergency notification.  Participate in industrial operators' exercises where possible.  Maintain 24 hour emergency contact numbers.
During	the Event
	Respond to and assess emergency incident to the scope of their abilities.  Establish a unified OSCP / ICP (On-site Command Post / Incident Command Post).  As available technology allows, communicate to MEOC and provide site reps as required.  Assist with fire protection where trained personnel are available.
	Provide emergency medical assistance, as required, understanding that Alberta Health Services is primarily responsible for ground ambulances in the Peace Country Health region.
	Provide timely news releases with respect to the MD of Greenview, if required.
After th	ne Event
	Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
	Participate in multi-agency debriefings.





#### **EMERGENCY MANAGEMENT BC**

#### **EMERGENCY RESPONSE ROLES & RESPONSIBILITIES**

#### Before An Emergency

- Assist the OGC with planning initiatives regarding upstream petroleum industry emergency response as requested by the OGC
- EMBC Northeast Region receives Industry Facility Emergency Response Plans.
- Participate in selected licensee ERP exercises when requested as time permits.
- Maintain a 24-hour 800 telephone contact where petroleum industry spill incidents can be reported.
- Maintain 24-hour emergency contact numbers for local governments and provincial emergency responders.

#### **During an Emergency**

- ECC Victoria will notify the OGC on call Emergency Response Officer and initiate
  British Columbia's notification of government agencies including MOF, MOE,
  MOT, Health Unit, WorkSafe BC, affected municipalities and all other level of
  government and industry, depending on the level of "coding" (notification Code:
  1,2,3 is determined by the Lead Agency MOE or OGC); depending on the code
  level Standard Operating Procedures (SOP's) in ECC will determine who is
  notified).
- Provide representatives to help coordinate provincial response as required.

#### After an Emergency

As requested by OGC.

	les
☐ Participate in event debriefings. ☐ Complete a "lessons-learned" process based on the scope of their involvement	Ro
and the outcome.	gency Roles
☐ Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.	Aç
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# Before the Incident

 $\hfill\Box$  Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.

#### Can liase with FLNRO to provide:

- Species and ecosystem protection policy.

# Ministry of Environme

- □ Water protection and sustainability policy
- ☐ Conservation and resource management enforcement

- ☐ Five key agencies are housed within the Ministry of Forests, Lands and Natural Resource Operations: Wildfire Management Branch, Dam Safety, Flood Safety, GeoBC and the River Forecast Centre.
- ☐ Develop, deliver and promote innovative and effective wildfire management practices to clients.
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ The Ministry of Forests, Lands and Natural Resource Operations is identified to provide personnel, equipment, supplies, telecommunications equipment. aviation support and weather information to assist in emergency response operations.
- ☐ The Ministry of Forests and Range is the designated key agency for wildfires.
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ In the event of an emergency, the Highway Department's Operations, Maintenance and Re- construction team plays an important role to ensure the public is safe and transportation routes are available for accessing emergency
- ☐ Ministry of Transportation and Infrastructure oversees provincial highways identified as emergency response routes - a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaster.
- of Transportation Infrastructure ☐ Disaster Response Routes (DRRs) are a critical part of the overall emergency transportation system.
  - ☐ Responsible for the construction, maintenance and operation of public roads.

The Roles & Responsibilities listed below for Public Services and Procurement Canada (PSPC) are only in relation to the Alaska Highway (97) in British Columbia, north of mile 83.5 (km 133) to the border of British Columbia and Yukon Territories at km 968.

In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI) and the provincial maintenance contractor, PSPC may:

- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ Hold responsibility for the acquisition of contracts for the maintenance and operation of the Alaska Highway.
- Oversee Alaska Highway response routes a network of pre-identified routes that can best move emergency services and supplies to where they are needed in response to a major disaste

#### **During the Incident**

Before, during and after an emergency the Ministry of Environment could be called upon to provide expertise, technical advice and/or policy direction regarding:

- ☐ Environmental emergency response (including hazardous materials)
- ☐ Air, land and water quality standards
- ☐ Pollution prevention and waste management
- ☐ Water and air monitoring and reporting
- ☐ Environmental assessment
- □ Environmental monitoring
- ☐ Parks, wilderness and protected areas.
- ☐ Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.
- ☐ May provide a representative to the Incident Command Centre, the Off-Site Command EOC 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 RP 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.
- ☐ May provide assistance with hazardous waste management.
- ☐ May conduct sampling for monitoring and enforcement purposes.

Before, during and after an emergency the Ministry of Forests, Lands and Natural Resource Operations could be called upon to provide expertise, technical advice and/or policy direction regarding:

- ☐ Forest stewardship policy
- ☐ Land use planning
- ☐ Water use planning and authorizations
- □ Drought management
- ☐ Dam and dike safety and regulation
- ☐ Flood plain management
- ☐ GeoBC and information management
- ☐ Pests, disease, invasive plants and species
- □ Wildfire management

Before, during and after an emergency the Ministry of Transportation and Infrastructure (MoTI) could be called upon to provide expertise, technical advice and/or policy direction regarding:

- ☐ Highway construction and maintenance
- ☐ Safety and protection of provincial road and bridge infrastructure
- ☐ Transportation planning and policy

#### ■ MoTI can:

- ☐ Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.
- ☐ Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- ☐ Coordinate and arrange for transportation, engineering and construction resources.
- ☐ Rebuild and restore provincial highways that are impacted by an emergency.
- ☐ Major agencies, boards and commissions within MoTI that have identified responsibilities within the Emergency Program Management Regulation are BC Rail, BC Transit and BC Ferries.
- □ During an emergency, BC Rail will:
  - ☐ Provide priority movement of emergency personnel, equipment and supplies.
  - ☐ In cooperation with Transport Canada, assist in railway crashes and derailments in the conduct of rescue operations, removal of debris and the cleanup of hazardous material.
  - ☐ Provide railcars for emergency facilities.
  - ☐ Provide specialized equipment.
- ☐ During an emergency, BC Transit will coordinate requirements for public transportation, including school and privately owned
- ☐ During an emergency, BC Ferries is required to provide priority loading for emergency personnel, equipment and supplies and ensure ferries are available to serve as reception centres, hospitals, response centres or other emergency facilities.

In conjunction with the BC Ministry of Transportation & Infrastructure (MOTI), PSPC, and the provincial maintenance contractor may be called upon to:

- ☐ Provide expertise, technical advice and/or policy direction regarding:
  - ☐ Highway construction and maintenance ☐ Safety and protection of provincial road and bridge infrastructure
  - ☐ Transportation planning and policy
- ☐ Play an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- ☐ Assist in the coordination of roadblock locations along the highway.
- ☐ Authorize closure of the Alaska Highway where the safety of the public is at risk.
- ☐ Assist in public notification of an emergency through the MOTIs DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- ☐ Coordinate and arrange for transportation, engineering and construction resources.
- ☐ Handle inter-departmental communication as needed during energy resources industry emergencies.
- ☐ Maintain ability to process calls for new emergencies.
- ☐ Provide information on the impacts to transportation routes.
- Provide response support if dangerous goods are released.

After the Incident

☐ Work with appropriate local and federal entities to facilitate the restoration and re-opening of the Alaska Highway. Complete a "lessons learned" process based on the scope of involvement and

- provide any feedback to the industrial operator. ☐ Provide a summary of transportation impacts during the post incident review
- ☐ Participate in multi-agency debriefings



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#### Before the Incident

- ☐ Provide public health measures, including epidemic control and immunization programs.
- Provide and coordinate ambulance services and triage, treatment, transportation and care of casualties.
- ☐ Provide the continuity of care for patients evacuated from hospitals or other health institutions and for medically dependant patients from other care facilities
- ☐ Provide standard medical units consisting of emergency hospitals, advanced treatment centres, casualty collection units and blood donor packs.
- ☐ Monitor potable water supplies.

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Technic Safety I

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- ☐ Inspect and regulate food quality with the assistance of the Minister of Agriculture.
- ☐ Provide critical incident stress debriefing and counselling services.
- ☐ Provide support services for physically challenged or medically disabled people affected by an emergency.
- ☐ Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- ☐ Provide input on public health issues related to a petroleum incident.

WorkSafeBC is a provincial body set up to maintain a safe, healthful working environment at job sites throughout the province. In addition to providing employers and workers with guidance and assistance when they are setting up health and safety programs, WorkSafeBC, has specific workplace responsibilities.

Under the Workers Compensation Act, WorkSafeBC is responsible for:

- ☐ Inspecting places of employment.
- ☐ Investigating accidents and the causes of industrial diseases.
- ☐ Issuing orders and directions specifying means of preventing injuries and industrial disease.
- ☐ Assisting and advising employers and workers in developing health and safety programs.
- ☐ Educating workers about health and safety.
- ☐ Providing living allowances, rehabilitation, and retraining for workers injured on the job.
- ☐ Collecting contributions to an accident fund from employers and distributing money from the fund to injured workers.
- ☐ Maintain a 24 hour emergency contact number where petroleum industry incidents can be reported.
- ☐ Receive Emergency Response Plans.
- ☐ Attend critical sour well meetings.

Examples of emergency management activities carried out by the Ministry of Agriculture are:

- ☐ Providing advice to farmers, aqua-culturalists and fishers on the protection of crops, livestock and provincially managed fish and marine plant stocks.
- ☐ Through EMBC, provide support to impacted agricultural industries and coordinate support and/or managing agricultural animal relocation
- ☐ Assisting the Ministry of Health with inspection and monitoring of food safety and quality.
- ☐ Coordinate with Canadian Food Inspection Agency the response to animal disease and plant health.
- ☐ Administering provision of crop insurance to cover damage from disasters or emergencies.
- ☐ Technical Safety BC (formerly BC Safety Authority) is an independent, selffunded organization mandated to oversee the safe installation and operation of technical systems and equipment across the province.
  - ☐ In addition to issuing permits, licenses and certificates, we work with industry to reduce safety risks through assessment, education and outreach, enforcement, and research.

Health Emergency Management BC (HEMBC) is a program under the Provincial Health Services Authority (PHSA). HEMBC provides the expertise. education, tools, 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. There is a HEMBC team in each BC health authority. HEMBC-North deals specifically with Northern Health

☐ Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC.

#### **During the Incident**

Before, during and after an emergency the Ministry of Health could be called upon to provide expertise, technical advice and/or policy direction regarding.

- ☐ Health service delivery
- ☐ Public health planning and response
- ☐ Community and home support services
- □ Mental health
- ☐ Communicable disease prevention
- ☐ During an emergency the Ministry of Health will provide the continuity of care both for patients evacuated from hospitals or other health institutions and for medically dependent patients from other care facilities; The Ministry will also provide emergency psychosocial services.
- Ensure appropriate Health entities have been notified of the incident.
- ☐ Ensure appropriate Executive and Public Health personnel have been notified of the incident.
- ☐ Carry out evacuation of medically dependent and vulnerable populations, as needed
- ☐ Transport incident casualties as required.
- ☐ Triage and provide medical care to incident casualties as required.
- ☐ Decontaminate incident casualties that present to health care facilities, as needed.
- ☐ Relay health hazard information to the public.
- ☐ Monitor water and air quality, as it relates to public health.
- ☐ Coordinate the public health response to the incident.
- ☐ Address the psychosocial aspects of the aftermath of an event. ☐ Arrange with Health Canada and the Public Health Agency of Canada for federal support, if needed.

Employer must immediately report the following types of incidents to WorkSafeBC's emergency and accident reporting phone line whether there is an injury or not:

- ☐ Any incident that kills, causes risk of death, or seriously injures a worker
- ☐ Any blasting accident that results in injury, or unusual event involving explosives
- ☐ A diving incident that causes death, injury, or decompression sickness requiring treatment
- ☐ A major leak or release of a dangerous substance
- ☐ A major structural failure or collapse of a structure, equipment, construction support system, or excavation
- ☐ Any serious mishap
- Employer must also report incidents that require the employee to seek medical attention or cause time-loss from work.

#### After the Incident

- Participate in event debriefings.
- ☐ Complete a "lessons-learned" process based on the scope of their involvement and the outcome.
- ☐ Continue with public health and environmental health monitoring as required.
- ☐ Continue to address the psychosocial aspects of recovery.

- ☐ Prompt investigation of incidents should be conducted so that other employees will not get injured in the same way. Everyone in the business has a role to play, and you must report accidents and incidents to your supervisor.
- ☐ According to the Regulation, an employer must immediately undertake an investigation into the cause of any accident or other incident that:
  - ☐ Is required to be reported under the Act?
  - ☐ Results in injury to a worker requiring medical treatment?
  - ☐ Does not involve injury to a worker, or involves only minor injury not requiring medical treatment, but has a potential for causing serious injury to a worker?
  - ☐ Is an incident required by regulation to be investigated?
  - ☐ Submit an employer's incident investigation report to WorkSafe BC.

Before, during and after an emergency the Ministry of Agriculture may be called upon to provide expertise, technical advice and/ or policy direction regarding:

- ☐ Agriculture
- ☐ Aquaculture and food industry development
- ☐ Animal health
- □ Crop/plant protection
- ☐ Food safety and quality
- ☐ Crop insurance
- Technical Safety BC implements a business continuity plan in the event of a natural disaster. This plan ensures that Technical Safety BC resumes safety services as soon as possible.
- Though Technical Safety BC is not a first responder, they will provide technical support including inspection services to the recovery team relating to the technical equipment and systems covered by the Safety Standards Act (e.g., gas, electrical, elevating devices, boiler and pressure vessel technologies) after first ensuring the safety of its employees.
- 🗖 Starting in the planning phase and through collaboration with other agencies, Technical Safety BC can provide most value to the public and best support the other agencies.
- ☐ For emergency events that require immediate connection with Northern Health, please call HEMBC on call (24/7) 855-554-3622. HEMBC will notify / activate the appropriate Northern Health programs (ie. Public Health, Acute Care etc.) based on the nature of the event / emergency. Please include this number in industry ERPs for the use of permit holders in contacting Northern Health on an emergency basis.
- □ Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.

- ☐ Technical Safety BC tracks and investigates incidents and hazards that are reported to inform awareness and prevention initiatives
- ☐ Technical Safety BC does not investigate all reported incidents and may not follow-up with a notification unless there is an intention to investigate.
- ☐ Technical Safety BC will contact duty holders within 24 hours of the next regular business day following the report of an incident if more information is required or an investigation is planned to occur.



After the Incident

#### □ All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP). □ This plan will be reviewed as required. ☐ The AER may activate the ERIESP based on the following criteria: ☐ Level 2 or 3 emergencies (as defined by the AER) ☐ Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcor ☐ Integrate PIA into internal response processes. ☐ All departments/agencies will participate in a joint PIA to be coordinated by AER. Participation from each department/agency will be determined by the response to ☐ Any level of emergency: ☐ requires coordination of multi-agency response; Common Tasks ☐ A join multi-department/agency exercise will be held as required. requires coordination of information and communication between departments/agencies and/or has significant asks the emergency. Reports required by other regulatory authorities must be completed and delivered provincial/national media interest □ Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency. □ The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will assist the AER by providing leadership and strategic policy direction for the GoA as per the Government Emergency Management Regulation (AR 248/2007). to the appropriate regulatory body within the time lines they prescribe. GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority. □ Inspect the work activities and processes to ensure legislative standards are being met by all work site parties. (Attendance to be determined by Occupational Health and Safety management.) ☐ Ensure work site parties have implemented appropriate controls prior to re-entry ☐ Maintain and provide resources to support 24\7 employer reporting of incidents to ☐ Investigate the incident if the incident is a reportable incident in line with current Alberta OHS Legislation. ☐ Ensure internal investigation has been conducted and that identified corrective \*OHS ☐ Maintain capacity for OHS attendance to a work site when warranted actions have been minimized to reduce recurrence of similar incidents. □ Ensure health and safety committee or health and safety representative as defined by OHS legislation has been involved in internal investigations. Agriculture Agriculture ☐ Act as subject matter expert (SME) relating to agriculture and livestock ☐ Act as SME relating to agriculture and livestock impacts. ☐ Provide a summary of agriculture and livestock impacts during the PIA ☐ Act as the liaison between farming/ranching community and GoA during energy resources industry emergencies. process. (if applicable) ☐ Act as the liaison between farming/ranching community and the Government ☐ Provide information relating to agricultural and livestock impacts to the GoA during energy resources industry emergencies. □ Conduct agriculture and livestock impact assessments of Alberta (GoA). ☐ Implement response activities as required. ☐ Maintain emergency response resources. Forestry ☐ Notify forestry staff in the area of the emergency. \*AAF ☐ Forest Areas Wildfire Coordination Centres will notify duty holder if energy resources industry infrastructure is threatened by ☐ Conduct forest impact assessment. (if applicable) wildfire, where practical and in order of priority. Priority contact will be through the contact information indicated in the company's Industrial Wildfire Control Plan for the identified locations. Can fight wildfires started as the result of the energy resources industry product release. ☐ Alberta Wildfire is responsible for managing all wildfires within the Forest Protection Area. Will suppress wildfires caused from industry operations when industry has appropriately shut-in the operation and notified Alberta wildfire to ensure the safety of first ☐ Maintain a 24/7 call centre (EDGE - Environmental and Dangerous Goods ☐ Handle inter-departmental communication as needed during energy resources industry emergencies. ☐ Provide a summary of transportation impacts during the PIA process. (if Emergencies) to receive emergency calls related to the transportation and ☐ Maintain ability to process calls for new emergencies. applicable handling of dangerous goods as well as environmental spills/releases/ ☐ Provide information on the impacts to transportation routes. incidents, and AER emergency notifications. ☐ Provide response support if dangerous goods are released ☐ Act as SME for dangerous goods incidents. ☐ Maintain a team of trained Communications and Public Engagement ☐ Confirm distribution of AER messaging. Provide support as required. □ Participate in all PIAs related to the ERIESP. personnel Coordinate key messaging with the AER. Activate crisis communications plan and crisis communications response. \*CP ☐ Maintain the list of Critical Infrastructure and key assets in the Province of ☐ Provide intelligence and threat risk assessments when appropriate and when requested, in relation to critical infrastructure and ☐ Participate in all PIAs related to the ERIESP Alberta. key assets. □ Communicate with owners and operators of critical infrastructure and key ☐ Maintain and regularly test the Emergency Notification System. ☐ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if assets, through normal communication channels, or if necessary through the ☐ Maintain awareness of threats, vulnerabilities, and risks related to human necessary through the Emergency Notification System maintained by ASSIST. Emergency Notification System maintained by ASSIST. induced intentional hazards ☐ Receive notification of an incident. ☐ As required under the *Pressure Equipment Safety Regulation* Section 35, the accident scene **must not be disturbed** (except ☐ Review, accept and register pressure equipment designs and construction Investigate accidents or unsafe conditions that involve pressure equipment. procedures that relate to pressure equipment. when it is absolutely necessary to prevent death or injury, or to prevent further property damage) unless approval to do so has ☐ close all or part of the accident site for 48 hours (or longer if authorized by a ☐ Issue certificate of inspection permits for pressure equipment before the been given by an ABSA Safety Codes Officer. equipment is placed into service prohibit any person from entering the site for safety reasons or to preserve ☐ Ensure that regular inspections of in-service pressure equipment are evidence conducted ☐ be accompanied by any person for assistance ☐ inspect and photograph any thing ☐ require any person to make full disclosure ☐ Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta. ☐ Examine, certify and register Pressure Welders and Welding Examiners, require closure or disconnection of any thing require to be performed any tests or evaluations Power Engineers, and Pressure Equipment Inspectors. □ remove evidence Authorize and monitor, through quality management systems, organizations require production of documents that have been permitted to conduct some of the activities subject to the regulations. Conduct safety education and training.

**During the Incident** 

Before the Incident

\*ABSA - Alberta Boilers Safety Authority

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☐ Strive to balance the interests of workers and employers.

transparent processes.

☐ Delivery of workers' compensation services to the workers and employers of

☐ Make decisions based on evidence, law and policy and fair, impartial and

☐ Encourage safer workplaces and promote disability management.

#### Before the Incident **During the Incident** After the Incident □ Ensure that non-energy industry resources environmental impacts are mitigated. □ Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into watercourses. □ Provide technical assistance related to emergency drinking water supply engineering. □ Notify Fish and Wildlife staff in the area of the emergency. ☐ Compile and maintain environment/emergency related records ☐ Monitor environmental recovery, when required. ☐ Maintain 24 hour emergency contact numbers and duty officer where resources □ Maintain 24 hour energency contact numbers and duty officer where resources can be accessed for a response related to this plan. □ Maintain emergency response resources. □ Maintain a specialty air monitoring team and equipment used to oversee and verify air monitoring during incident response. □ Act as SME. Prepare to act as lead agency when appropriate. The Workers' Compensation Board is a statutory corporation created by government under the Workers' Compensation Act to administer a system of ☐ Compensates injured workers for lost income, health care and other costs Employer must report to WCB within 72 hours of being notified of an injury/illness that results in or will likely result in: related to a work-related injury. ☐ Safely restores injured workers through return-to-work services to a level of ☐ Lost time or the need to temporarily or permanently modify work beyond the date of accident ☐ Death or permanent disability (amputation, hearing loss, etc.) ☐ A disabling or potentially disabling condition caused by occupational exposure or activity (poisoning, infection, workplace insurance for the workers and employers of the province of Alberta. competitive employability. ☐ Take reasonable measures to maintain a reasonable quality of life for severely respiratory disease, dermatitis, etc.) □ WCB has the overall responsibility for the administration of the workers' compensation system in Alberta. injured workers through the provision of services allowed by legislation and ☐ The need for medical treatment beyond first aid (assessment by a physician or chiropractor, physiotherapy, etc.) ☐ Medical aid expenses (dental treatment, eyeglass repair/replacement, prescription medications, etc.) ☐ Be a neutral and autonomous administrator of the worker's compensation

Note: Immediately report fatalities and serious injuries to the OHS Contact Centre 1-866-415-8690.

- ☐ Determines whether the injury or illness is caused by work. ☐ Responds to all client inquiries forwarded by the Minister and all other elected officials.

H<sub>2</sub>Safety \*WCB - Workers' Compensation Board Revised April 2019 \*WCSS - Western Canadian Spill Services \*AEP - Alberta Environment & Parks

**During the Incident** 

During an environmental emergency, The National Environmental Emergencies Centre (NEEC) is the focal point for ECCC.

FNIHB carries out the public health preparedness and response activities related to natural and man-made disasters. This includes Communicable Disease Control and Environmental Public Health Services. In addition, FNIHB administers Non-Insured Health Benefits to First Nations clients, which includes extended coverage for medical transportation, pharma-care, medical devices and mental health supports. During an emergency, FNIHB works with First Nations leadership and health service providers to ensure health needs of First Nations communities are met.

Provincial specific FNIHB roles & responsibilities will be found in this section of the ERP, if applicable or as appropriate

Before the Incident

Environment & Climate Change Canada's Environmental Emergencies Program (EEP

\*ECCC

0

NAV Canada

Health Canada

lealth Canada

Public He

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- ☐ ensure equitable production, fair prices and proper collection of royalties on behalf of First Nations; and
- secure compliance with and administer the regulatory framework in a fair manner.

IOGC operates pursuant to the Indian Oil and Gas Act and Indian Oil and Gas Regulations, 1995, as well as other relevant legislation and guidelines (see Acts and Regulations). Oil and gas activity on First Nation reserve lands depends on agreements involving First Nation band councils, oil and gas companies, and Indian Oil and Gas Canada.

Additional information is available at: http://www.pgic-iogc.gc.ca/eng/1100110010458/1100110010464 Acts and Regulations: https://www.pgic-iogc.gc.ca/eng/1100110010437/1100110010438

H<sub>2</sub>Safety

\*ECCC - Environment & Climate Change Canada

\*FNIHB - First Nation & Inuit Health Branch

\*RO - Regional Operations

\*IOGC - Indian Oil & Gas Canada Revised February 2021

After the Incident

ECCC can conduct post-emergency assessments.

Transport Can \*CANUTEC

O

Response

Emergency

Canada

#### Before the Incident **During the Incident** ☐ Regulate the handling, offering for transport and the transport of dangerous ☐ Assist emergency response personnel in handling dangerous good emergencies including advice on ☐ Chemical, physical and toxicological properties and incompatibilities of the dangerous goods ☐ Health hazards and first aid ☐ Federal regulations require that CANUTEC be contacted in the event of an ☐ Fire, explosion, spill or leak hazards incident or accident involving dangerous goods and infections substances. ☐ Remedial actions for the protection of life, property and the environment Maintains records of over 3 million Safety Data Sheets (SDS). □ Evacuation distances ☐ Personal protective clothing and decontamination □ CANUTEC staff does not go to the site of an incident, however, should on-site assistance be required, CANUTEC can assist in the activation or industry emergency response plans. ☐ Provide communication links with the appropriate industry, government or medical specialists. Emergency Response Assistance Canada (ERAC) is a not for profit cooperative Provides emergency response to plan participants who transport the following products by road or rail, or those who store these products

n tanks with capacities of 450 litres or greater. These products are gases at standard temperatures and pressure, and include: Propane (UN1978), Butane (UN1011), Propylene (UN1077), Butylene (UN1012), Isobutene (UN1969), Isobutylene (UN1055), and NGL (UN1075). It is recognized that these products may contain a concentration of condensate and/or quantities of other elements including hydrogen sulphide

☐ Response is also provided to emergencies involving Butadiene – 1,3 (stabilized) (UN1010).

In addition we respond to the following Flammable Liquids transported by rail only:

UN1170 Ethanol UN1987 Alcohols, N.O.S. UN1202 Diesel Fuel UN1993 Flammable Liquid, N.O.S. UN1203 Gasoline UN3295 Hydrocarbons, Liquid, N.O.S. UN1267 Petroleum Crude Oil UN3475 Ethanol and Gasoline Mixture

UN1268 Petroleum Distillates N.O.S. UN3494 Petroleum Sour Crude Oil, Flammable, Toxic UN1863 Fuel Aviation, Turbine Engine

☐ If LPG/Flammable Liquid Incident, Emergency Call Centre Operator receives an activation (notification) phone call

☐ Emergency Call Centre Operator sends group email to Home Based Coordinator ☐ Home Based Coordinator / Technical Advisor conferenced into call to assist with information gathering.

☐ Caller requires technical advice. ☐ Home Based Coordinator / Technical Advisor provides technical advice.

☐ Caller requests response team.

☐ Confirm plan participant involvement

☐ Plan participant notified of activation

☐ Home Based Coordinator / Technical Advisor activate plan.

☐ Mobilization phase ERAC-002.

☐ Initial incident size-up.

☐ Damage and spill assessment

☐ Develop Incident Action Plan.

☐ Execute IAP & initiate planning for next operational period.

☐ Update Emergency Call Centre Operator and Home Based Coordinator.

☐ Public Safety Canada houses the Government Operations Centre at the hub of the national emergency management system. It's an advanced centre for monitoring and coordinating the federal response to an emergency.

#### After the Incident

☐ Maintain voice communication and written information records for two years for the protection of all parties.

- ☐ Terminate and de-mobilize
- ☐ Post-incident assessment and communication program.

#### \*Canada Energy Regulator Roles & Responsibilities

The CER's top priority in any emergency is to make sure that people are safe and secure, and that property and the environment are protected. Any time there is a serious incident, CER inspectors may attend the site to oversee a company's immediate response. The CER will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the CER 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 CER:

education, support and exercises

- ☐ 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: and

goods by all modes in order to ensure public safety.

assistance to all Plan Participants and Stakeholders of ERAC.

approved by Transport Canada.

organization built by industry for industry providing safe, timely effective, sustainable,

cost effective flammable liquids and gases emergency preparedness and response

BRAC will act on behalf of the Plan Participant to develop, submit, update, and

BERAC provides a network of experienced, trained Technical Advisors (TAs),

Remedial Measures Advisors (RMAs) and Response Teams who respond to rail,

road and stationary tank incidents involving flammable gases, Class 2.1 Liquefied

Petroleum Gas (LPG) emergencies and Flammable Liquids Class 3 rail transport

and road cargo tank transport emergencies. The emergency responders are

Conce a year, there is Regional Training that is held in each region for the

Remedial Measures Advisors, Technical Advisors, Response Team Leaders,

Alternate Team Leaders as well as all Response Team Members to test their

skills and update them on any new developments. Also, once every two years,

National Training Session is held for all the Remedial Measures Advisors.

Technical Advisors, Response Team Leaders and Alternate Team leaders across

☐ Public Safety Canada works with provincial and territorial officials to ensure first

responders and emergency management personnel are well-prepared through

☐ Responsible for promoting and coordinating the preparation of departmental

emergency management plans as well as coordinating the government's response to an emergency through the Government Operations Centre (GOC).

constantly available through a 24 hour activation telephone number.

respond to the requirements of the Plan Participant ERAP submitted to and

☐ Maintain a 24 hour emergency telephone service.

- Energy Supply.
- Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code, or as per the Canada Energy Regulator Act or Canada Oil & Gas Operations Act (whichever is applicable)
- Inspects the pipeline or facility
- Examines the integrity of the pipeline or facility
- Requires appropriate repair methods are being used
- Appropriate environmental remediation of contaminated areas is conducted Coordinate stakeholder and Aboriginal community feedback regarding environmental clean-up and remediation
- Confirms that a company is following its Emergency Procedures Manual (s), commitments, plans, procedures, and CER regulations and identifies non-compliances
- Initiates enforcement actions as required
- Approves the restart of the pipeline.

If applicable; refer to the CER site section behind the blue Area Specific Information tab for further regulations, definitions and, reporting guidelines for CER related incidents specific to this ERP.

#### \*Transportation Safety Board Mandate

that will be provided to those who have experienced losses.

The Canadian Transportation Accident Investigation and Safety Board Act provides the legal framework that governs TSB activities. Our mandate is to advance transportation safety in the marine, pipeline, rail and air modes of transportation by:

☐ In the event of a large-scale natural disaster where response and recovery costs

exceed what individual provinces and territories could reasonably be expected to

bear on their own, PS provides financial assistance to the provincial and territorial governments through the Disaster Financial Assistance Arrangements (DFAA).

Assistance is paid to the province or territory – not directly to individuals or

communities. The provincial or territorial governments design, develop and deliver disaster financial assistance, determining the amounts and types of assistance

- a conducting independent investigations, including public inquiries 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; and
- reporting publicly on our 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 they believe the 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 identifying the causes and contributing factors of a transportation incident, 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.

tp://tsb-bst.ac.ca/eng/qui-about/index.html





## **Section 6: Forms**

#### **Documentation During and After an Incident**

#### **Form Descriptions**

#### Incident Command System (ICS) Forms

ICS 201 Incident Briefing

ICS 202 Incident Objectives

ICS 203 Organization Assignment List

ICS 204 Assignment List

ICS 207 Incident Organization Chart

ICS 208 Safety Message / Plan

ICS 209 Incident Status Summary

ICS 211 Check-In / Out List

ICS 214 Activity Log

ICS 215 Operational Planning Worksheet

ICS 215A IAP Safety Analysis

ICS 221 Demobilization Checkout

ICS 230 Meeting Schedule

ICS 231 Meeting Summary

ICS 233 Incident Open Action Tracker

#### **Emergency Forms**

A1 Initial Emergency Report Form

A2 Odour Complaint Script

A3 Regulatory First Call Communication

A4 Incident Action Plan Checklist

A5 Air Monitoring Log

A6 Threatening Call / Bomb Threat

A7 STARS Landing Zone Card

#### **Resident Forms**

**B1** Reception Centre Registration Log

**B2** Resident Compensation Log

**B3** Resident Contact Log

B4 Roadblock Log

**B5** Evacuation Notice

B6 Early Notification / Voluntary Evacuation Phone Message

B7 Shelter-In-Place Phone Message

**B8** Evacuation Phone Message

#### **Media Forms**

C1 Preliminary Media Statement

C2 Media Contact Log

C3 Government Agency Contact Log

C4 Media Centre Site







#### **Documentation During and After an Incident**

It is imperative that accurate documentation is kept throughout the duration of an incident for record keeping purposes. Records kept may be used for legal, investigation, audits, historical and/or analytical purposes. All documentation must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

It is the Documentation Units responsibility to collect documentation (forms, checklists, event logs, etc.) from response team members and maintain a consistent system for organizing the data.

#### **Form Descriptions**

The Incident Command System uses a series of standard forms and supporting documents that convey directions for the accomplishment of the objectives and distributing information. Listed below are the standard ICS form titles and descriptions of each form utilized.

Further ICS forms can be found through the ICS Canada website: <a href="http://www.icscanada.ca/en/forms.html">http://www.icscanada.ca/en/forms.html</a>.

Standard ICS Form Title	ICS Form Description
ICS 201 Incident Briefing	Provides the Incident Command and General Staffs with basic information regarding the incident situation and the resources allocated to the incident. This form also serves as a permanent record of the initial response to the incident.
ICS 202 Incident Objectives	Describes the basic strategy and objectives for use during each operational period.
ICS 203 Organization Assignment List	Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position.
ICS 204 Assignment List	Informs Division and Group supervisors of incident assignments.
ICS 207 Incident Organization Chart	A complete picture of the organizational structure for the incident.
ICS 208 Safety Message / Plan	Expands on the Safety Message and Site Safety Plan.
ICS 209 Incident Status Summary	Summarizes incident information for staff members and external parties, and provides information to the Public Information Officer for preparation of media releases.
ICS 211 Check-In/Out List	Used to check in personnel and equipment arriving at or departing from the incident. Check-in / out consists of reporting specific information that is recorded on the form.
ICS 214 Activity Log	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any afteraction report.
ICS 215 Operational Planning Worksheet	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this Worksheet to complete Assignment Lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource confirmation on other ICS forms such as the 209 Incident Status Summary.
ICS 215A Incident Action Plan Safety Analysis	Used to communicates to the Operations and Planning Section Chiefs the potential hazards identified by the Safety Officer. It identifies mitigation measures to address the identified hazards.



## Form Descriptions, continued

Standard ICS Form Title	ICS Form Description
ICS 221 Demobilization Checkout	Ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident.
ICS 230 Meeting Schedule	To record information about the daily scheduled meeting activities.
ICS 231 Meeting Summary	Provides more detailed information concerning the attendees and notes from a particular meeting.
ICS 233 Incident Open Action Tracker	Used by Command Staff to track time sensitive tasks / actions assigned to incident personnel.

Emergency Form Title	Emergency Form Description
A1 Initial Emergency Report Form	Used by recipient of a phone call from either a member of the public or other company personnel to record detailed information about incident.
A2 Odour Complaint Script	Used to record odour information from a member of the public as well as scripts to follow.
A3 Regulatory First Call Communication	A regulatory required form used to send detailed information to the regulator about an emergency used for assessment, historical, and analytical purposes following an incident.
A4 Incident Action Plan Checklist	A checklist of other forms and information required to accurately create an incident action plan.
A5 Air Monitoring Log	A form used by designated Air Monitor personnel to log information about air quality readings.
A6 Threatening Call / Bomb Threat	Detailed point driven form used to document incoming phone calls pertaining to personnel threats and bomb threats.
A7 Stars Landing Zone Card	An information card utilized if medical evacuation is required via STARS Air Ambulance.

Resident Form Title	Resident Form Description
B1 Reception Centre Registration Log	Log used by Reception Centre Rep to record information from evacuees being received at the reception centre. Can also be faxed to reception centre in case a representative has not been identified or cannot make it before evacuees start arriving.
B2 Resident Compensation Log	Detailed spreadsheet for expenses incurred by evacuees so that compensation may be properly dealt with.
B3 Resident Contact Log	A log used by various company personnel to record contact made with residents, whether they're sheltered / evacuated and if assistance is required.
B4 Roadblock Log	A log used by designated Roadblock personnel to identify details about vehicles and persons entering or exiting a hazard area.
B5 Evacuation Notice	A document to be left in doors / windows of surface developments that are unable to be contacted as a way to issue evacuation instructions



## Form Descriptions, continued

Resident Form Title	Resident Form Description
B6 Early Notification/Voluntary Evacuation Message	A script and document filled out by Telephoner personnel issuing calls to residents for early notification and voluntary evacuation purposes.
B7 Shelter-In-Place Message	A script and document filled out by Telephoner personnel issuing calls to residents with shelter-in-place instructions.
B8 Evacuation Phone Message	A script and document filled out by Telephoner personnel issuing calls to residents with evacuation instructions.

Media Form Title	Media Form Description
C1 Preliminary Media Statement	A generic script used by the Media Spokesperson to issue media statements until which time more detailed information is known and can be issued.
C2 Media Contact Log	A log used to identify what media outlets/persons have contacted the company and their contact information.
C3 Government Agency Contact Log	A log used to identify what government agencies have been notified about the incident.
C4 Media Centre Site	A document to distribute to media outlets/persons about the location for further media enquiries and press releases as well as details to get there.



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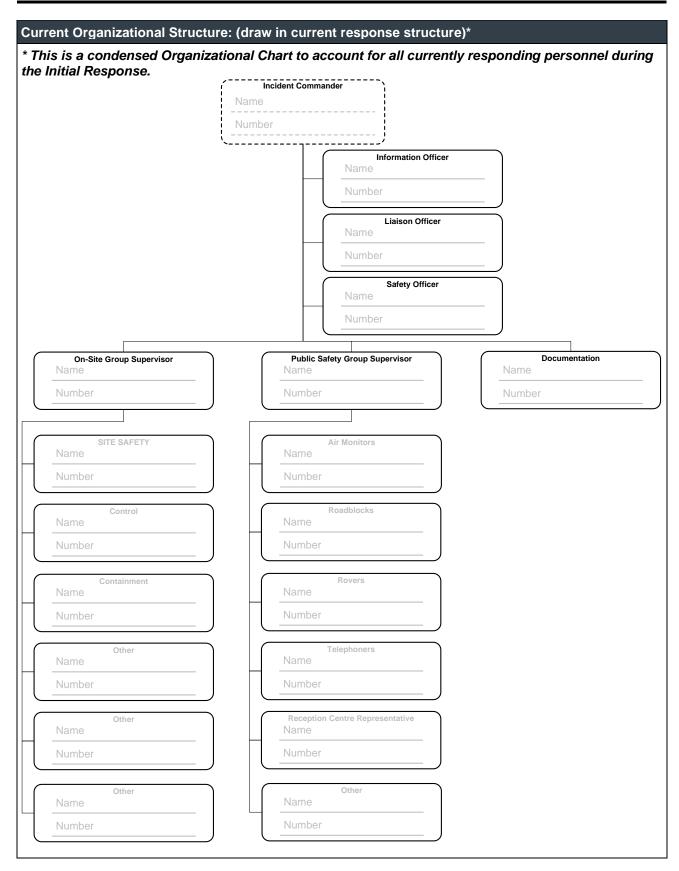
Ind	Incident Name:																									
Da	Date/Time Initiated:																									
Pr	Prepared By: ICS Position:																									
•									Level 1 Level 2 Level 3																	
	Map Sketch:  Note: Maps can be drawn or attached here.																									
100	ne.	iviaj	08 6	anı	De c	llaw		all	acri	eur	iere															
0:						(14		_		- 1:					4)											
Si	tuat	ion	Su	mm	ıary	': (W	/rite	e de	scri	iptio	on c	or a	ttac	h A	1)											
Sa	fety	y Br	iefi	ng:																						



Current and Planned Objectives:									
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property									
1. Ensure Safety of Citizens a	nd Response Personnel:	4. Minimize Economic Impacts:							
☐ 1a. Identify hazard(s) of relea	sed product.	☐ 4a. Consider tourism and local economic impacts.							
☐ 1b. Establish site control (hot security).	zone, warm zone, cold zone, &	☐ 4b. Protect public and private assets, as resources permit.							
1c. Establish an Emergency F Safety Actions.	Response Zone and Initiate Public	☐ 4c. Establish damage claims process.							
☐ 1d. Consider evacuations if ne	eeded.	5. Keep Stakeholders and Public Informed of Response Activities:							
☐ 1e. Establish aircraft restrictio	ns.	☐ 5a. Provide forum to obtain stakeholder input and concerns.							
☐ 1f. Monitor air in impacted are	eas	$\hfill\Box$ 5b. Provide stakeholders with details of response actions.							
☐ 1g. Develop site safety plan for briefings are conducted.	or personnel and ensure safety	$\hfill\Box$ 5c. Identify stakeholder concerns and issues, and address as practical.							
2. Control the Source of the R	telease:	☐ 5d. Provide timely safety announcements.							
☐ 2a. Complete emergency shu	tdown.	☐ 5e. Conduct regular news briefings.							
☐ 2b. Conduct firefighting.		☐ 5f. Conduct public meetings, as appropriate.							
☐ 2c. Initiate temporary repairs.									
3. Manage a Coordinated Res	ponse Effort:								
☐ 3a. Complete or confirm notifi	cations.								
☐ 3b. Establish a unified comma (command post, etc.).	and organization and facilities								
<ul> <li>3c. Ensure mobilization and trepersonnel and equipment.</li> </ul>	racking of resources and account for								
☐ 3d. Complete documentation.									
Current and Planned Action	ons, Strategies and Tactics:								
Time:	Actions:								
HHMM									
HHMM									
HHMM									
HHMM									
HHMM									
HHMM									
HHMM									
HHMM									
HHMM									

Section 6: Forms Page 2 of 6





Note: Refer to ICS 207 Incident Organization Chart in Section 6: Forms (Blue Tab) for full command structure.



Resources Summar	y:			
Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)
External Notification	ns: (Governmen	t)		
Agency	Time Called			Notes

**Section 6: Forms** 



Si	te Safety and Hazard Control Analysis								
	te Control								
	Is Site Control set-up? ☐ Yes ☐ No	2. Is there an On-Scene Command Post? ☐ Yes ☐ No If so, where?							
3.	Have all personnel been accounted for?  ☐ Yes ☐ No ☐ Don't Know	Injuries: Fatalities: Unaccounted: Trapped:							
4.	Are observers involved or rescue attempts planned?  Observers: □ Yes □ No  Rescuers: □ Yes □ No	5. Are Decon areas setup? ☐ Yes ☐ No If so, where?							
На	azard Identification, immediate signs of: (if yes,	explain in remarks)							
1.	Electrical line(s) down or overhead? ☐ Yes ☐ No	2. Unidentified liquid or solid products visible? ☐ Yes ☐ No							
3.	Wind direction across incident: ☐ Towards your position Wind Speed: ☐ Away from your position	4. Is a safe approach possible? ☐ Yes ☐ No							
5.	Odours or smells? ☐ Yes ☐ No	6. Vapours visible? ☐ Yes ☐ No							
7.	Holes, ditches, fast water, cliffs, etc. nearby?  ☐ Yes ☐ No	8. Fire, sparks, sources of ignition nearby? ☐ Yes ☐ No							
9.	Is local traffic a potential problem? ☐ Yes ☐ No	10. Product placards, colour codes visible? ☐ Yes ☐ No							
11	. Other Hazards?	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? ☐ Yes ☐ No							
	13. Remarks:								
	Hazard Mitigation: have you determined the necessity for any of the following?  1. Entry Objectives:								
2.	Warning sign(s), barriers, colour codes in place? ☐ Ye	s 🗆 No							
3.	Hazardous material being monitored?								
4.	Protective gear / level: 4b. Respirators 4d. Boots:	<ul><li>4a. Gloves:</li><li>4c. Clothing:</li><li>4e. Chemical cartridge change frequency:</li></ul>							
5.	Decon 5a. Instructions: 5b. Decon equipment and materials:								
6.	Emergency escape route established?								
7.	Field responders briefed on hazards? ☐ Yes ☐ No								
8.	Remarks:								
Pro	otective Zones: record initial control perimeters (see Figure 1)								



Evacuation Route Decontamination Station Staging Area Command Post WARM ZONE COLD ZONE  Figure 1 Protective Zones	<ol> <li>Is there a Hot Zone established?         <ul> <li>Yes</li> <li>No</li> <li>If so, Where?</li> </ul> </li> <li>Is there a Warm Zone established?         <ul> <li>Yes</li> <li>No</li> <li>If so, Where?</li> </ul> </li> <li>Is there a Cold Zone established?         <ul> <li>Yes</li> <li>No</li> <li>If so, Where?</li> </ul> </li> <li>Remarks: (Include any information on evacuation route, etc.)</li> </ol>
5. Include any site sketches or photos of the protective zones (if available):	

# **ICS 202 Incident Objectives**



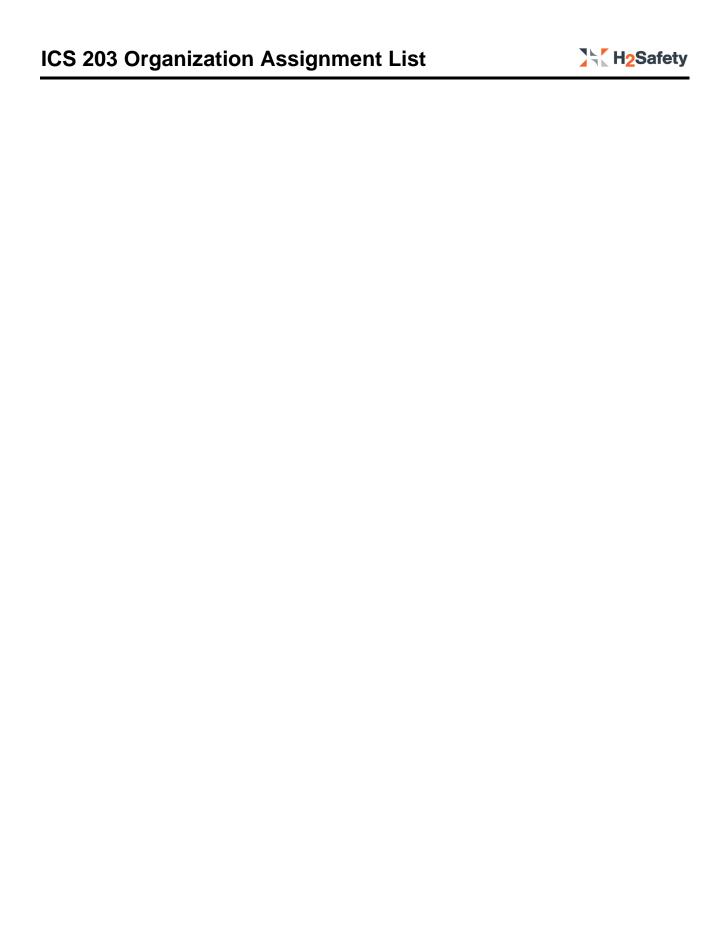
Incident	t Name:	
Date / T	ime Initiated:	
Prepare	ed by:	ICS Position:
Genera	l Control Objectives for the Incident:	
1		
2		
3		
4		
5		
Weathe	er Forecast:	
Genera	l Safety Message:	
		eable, Attainable, Realistic, & Time-Sensitive) the solutions identified on the Operations Briefing



# **ICS 203 Organization Assignment List**



	Name			Operational Period (Date/Time)					
				From:	To:				
Incident (	Commander(s)			Operations Section					
Ag	jency	IC	Deputy		Chief				
					Deputy				
				Staging Area	Manager				
				On-Site Group					
				Su	upervisor				
S	afety Officer				Lead				
	Assistant				Lead				
Inform	ation Officer				Lead				
	Assistant				Lead				
Li	aison Officer				Lead				
	Assistant								
				Public Safety Gro					
A m c == - = -	) on reason to the			Su	upervisor				
	Agency Representatives Agency Name				Lead				
Agency	iname				Lead				
					Lead				
					Lead				
					Lead				
				Branch – Divisior	/ Group				
				Branch					
				Diancii	Deputy				
Planning	Section			Division/Group	Lead				
· iaiiiiig	Chief			Division/Group	Lead				
	Deputy			Division/Group	Lead				
Re	sources Unit			Division/Group	Lead				
5	Situation Unit			Division/Group	Lead				
Enviro	nmental Unit								
Docum	entation Unit			Branch – Division	/ Group				
Demob	ilization Unit			Branch					
Technica	al Specialists				Deputy				
	•			Division/Group	Lead				
				Division/Group	Lead				
Logistics				Division/Group	Lead				
	Chief			Division/Group	Lead				
	Deputy			Division/Group	Lead				
	Supply Unit								
	acilities Unit			Finance / Admin Section					
	Support Unit				Chief				
	ications Unit				Deputy				
	Medical Unit				ime Unit				
	Food Unit			Procuren					
				Compensation / Cla					
				(	Cost Unit				
				I					



# **ICS 204 Assignment List**



Branch:	Branch:					Division / Group / Staging:							
Incident Nam	ne:				Operational Period:           From:         Date								
Division / Gro	oup / Stagi	ng											
					Division/Group Supervisor								
Branch Direct	ctor				Staging Area Manager								
Resources	Assigned	to This Period											
Resour Identifi		Leader	No. of Persons	Ce	Contact II #, radio fre		Reporting Lo Equipment and	ocation, Sp	ecial Pemarks				
identiii	CI		1 0130113	- 00	ir ii, radio ire	.q. 210.	Equipment and	Oupplies, i	temants				
Work Assign	ments:												
Special Instr	uctions:												
Division / C	roup Com	munications Summa	· Fr										
Funct		Frequencies	System	Chan.	Func	tion	Frequencies	System	Chan.				
1 dilot	Local	Trequenties	Cystom	Onan.		Local	Trequencies	Oystom	Onan.				
Command	Repeat				Logistics	Repeat							
Div. / Group	Tactical				Ground to A	Air							
Prepared By (Resource U	: nit l eader	1						Date:	Time:				
Signature:	Louder							1					



#### **ICS 207 Incident** Incident Commander **Organization Chart** Incident Name: **Public Information Officer** Time: Date: **Deputy Incident Commander** Command Staff Operational Period: Liaison Officer • The Incident Commander is responsible for all Field Response positions until the position is delegated. • This organizational chart is a starting point, the structure expands and contracts based on the incident **Operations** (Doers) Safety Officer • Information can flow anywhere throughout the organizational structure, decisions must flow up the chain of command. Company Phone List can be found behind the Response Teams Phone List tab Public Safety Indicates a position that is always filled regardless of the size of the incident. General Staff **Operations Section Chief Planning Section Chief Logistics Section Chief** Finance / Admin. Section Chief Time Unit **Communications Unit Supply Unit Procurement Unit Staging Area Manager Medical Unit Facilities Unit** Compensation & Claims Unit **Ground Support Unit Cost Unit Resources Unit** Food Unit Public Safety Group Supervisor On-Site Group Supervisor Roadblock Team Lead Air Monitor Lead Rover Team Lead Telephoner Team Lead **Reception Centre Rep Site Safety** Control Containment **Air Monitors** Roadblocks Rovers Telephoners 1 H2Safety Revised June 2018

# ICS 208 Safety Message / Plan



Incident Name:	Operational Pe	eriod:	
	From: Date_	Time	
	To: Date_	Time	
Safety Message/Expanded Safety Message, Safety	Plan Site Safet	by Plan.	
Sarety Message/Expanded Sarety Message, Sarety	Plan, Site Safet	ry Plan:	
Site Safety Plan Required? ☐ Yes ☐ No			
Approved Site Safety Plan(s) Located At:			
Prepared By:		Data Propared	
(Name and Position)		Date Prepared:	
Signature:		Time Prepared:	
		·····or roparou.	





				T						
Incident Name	ə: 			Location of Incider	nt:					
Date / Time In	nitiated:				(LSD / NTS)					
Prepared by:				ICS Position						
Incident Deta	ils:									
0	<u> </u>				1.51					
Gas readings: H <sub>2</sub> S  Level of Emergency:		H <sub>2</sub> S		SO <sub>2</sub>	LEL					
			ert / Minor	□ Level 1	☐ Level 2	☐ Level 3				
Incident Severity: ☐ Al Affect Medium: (Check all that app			□ Level 1	Level 2	Level 3					
☐ Air	□ Water		Soil	☐ Other – Specify:	Other – Specify:					
Site Type: (S		)		1 7						
□ Well (Active		,	□ Well (A	bandoned/Suspended)	☐ Remote	Sump				
□ Well (Drillin	g & Comple	tions): Rig N	Name:		•					
☐ Battery/Pla	nt/Facility		☐ Tank Fa	arm/Storage	☐ Pipeline	□ Pipeline				
☐ Riser (Pipe	line)									
☐ Road or Ro	ad Structure	)	Name:		Location o	n Road:				
☐ Other – Sp	ecify:				<u> </u>					
Incident Type	e: (Check al	I that apply	<b>(</b> )							
☐ Sour Gas F	Release		☐ Sweet (	Gas Release	☐ Liquid S	Spills				
☐ Natural Dis	aster/Weath	er	☐ Fire/Ex	plosion	☐ Drilling	Kick				
☐ Worker Inju	ry/Fatality		☐ Security	y (theft, threat, terrorism	) 🗆 Induced	Seismicity				
☐ Well Bore (	Communicat	ion	☐ Pipeline	e Boring	□ Vehicle/	Transportation				
☐ Equipment	Structural D	amage	☐ Pipeline	e Break	□ Well Co	ntrol				
☐ Other – Sp										
Activity: (Che										
	☐ Construction (Road, Lease, Pipe)			Exploration		Management				
☐ Processing			□ Well Fr			☐ Servicing				
☐ Repair			_	(Emergency)	□ Well Te	sting				
☐ Pressure T			☐ Transpo	ortation						
☐ Other – Sp	Other – Specify:									



		11.41.4							
Consequence or Impa	•		one, lea	ive blar	1K)				
☐ Worker Safety (Injur	•	☐ Property							
,	ind/or damage	to equipment or i	ntrastruc	ture, lo	ss of prod	uction, work stoppage)			
☐ Other – Specify:									
Material Information:									
Is spill off lease?	☐ Yes - Esti	mated spill quantit	y:			□ No			
☐ Liquid Hydrogen (Cr	ude, Oil, Diese	el, Fuel)	□Тс	xic Gas	Liquid (>	1% Different Toxins)			
☐ Acid	☐ Emulsion	(Oil, Gas, Water)	□ Sv	veet Na	tural Gas	☐ Salt Water			
☐ Methanol	☐ Non-Toxid	Liquids	☐ Fresh Water						
☐ Sour Natural Gas	□ Sour Liqu	ids (<1% H <sub>2</sub> S)	□ Ot	her – S	pecify:				
□ Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases)									
Area Information:									
Land Type: ☐ Priv	ate Land	☐ Crown Land	d Field	Name:					
Area Type: ☐ Fore	est 🗆 M	uskeg 🗆 Far	mland	□Re	sidential	☐ Other			
Access: ☐ Heli	copter $\square$ A	TV □ 4W	D	□ 2V	VD	□ Unknown			
Name of road the asse	t is located on	:							
KM where the incident	occurred:								
Distance to nearest res	sidence/public	facility:							
Nearest City/Town/Ope	en Camp:								
Weather Conditions:									
Weather Conditions	□ Clear	☐ Cloudy	□ Oth	er:					
Wind Direction	N NE	NW E	SE	S	SW	W			
Wind Strength	□ Calm	☐ Moderate	□ Stro	ong	☐ Gust	ty			
Temperature	°C								
Public / Worker Injuri	es / Medical E	mergencies:							
☐ First Aid ☐ Hosp	italization	□ Fatality	□ Other	- Spec	cify:				
Notification: (Notify a	II agencies as	s required)							
☐ 911 (Police/RCMP,			□ Local			☐ Health Authority			
Fire, EMS)  ☐ Canada Energy	(OGC, AE	=R*, etc.) ational Health	County, ☐ Emer		City)	☐ Ministry of			
Regulator (CER)	& Safety		Manage		gency	Transportation			
☐ Workers'		ency Response	□ West	ern Car	nadian				
Compensation Board (WCB)	(ERAC)	e Canada	Spill Se			☐ CANUTEC			
☐ Transportation									
Dangerous Goods (TDG)	□ Other		□ Othe	r		□ Other			
□ Other	□ Other		☐ Othe	r		□ Other			
*Request that the AER noti	fy Alberta Enviror	nment & Parks (Fores			nds), Enviror	nment & Climate Change Canada			
(ECCC) and the Department			External	Agenc	ies Conta	act List or Area Specific			
		r complete list o							

Section 6: Forms



<b>Agency Notification</b>				N. 4161
Agency Nan	ne Contact Nar	ne	<b>Contact Number</b>	Notified (Y/N)
				( 17N)
Collect all compl	eted C3 Government Agency Conta	act Logs from	n responders for full docume	ntation.
Notes:				
Doodblook Loostion				
Roadblock Location				
Roadblock	ns: Name		Location/LSD	
			Location/LSD	
Roadblock			Location/LSD	
Roadblock Number	Name			
Roadblock Number		rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.
Roadblock Number	Name	rom respon		on.



Air Monitor Locations	s:		
Air Monitor	Name	Locati	on/LSD
Number	Name	Locati	OII/L3D
Collect all cor	npleted A5 Air Monitoring Logs	from responders for ful	I documentation.
Notes:			
Reception Centres			
Name	Lo	ocation	Phone Number
	ted B1 Reception Centre Registrati	on Logs from responders f	or full documentation.
Notes:			

#### ICS 211 Check-In / Out List



Incident Name:												
Date / Time Initiated:												
Prepared by:				ICS Position:								
Check-in Location		Staging Area		ICS Res. Unit Other:								
Name of Company	Date of Check-in	Supervisor Name	Total # of Personnel	Incident Assignment	Assigned	Available	Date of Check-out					
Notes:												





## **ICS 214 Activity Log**



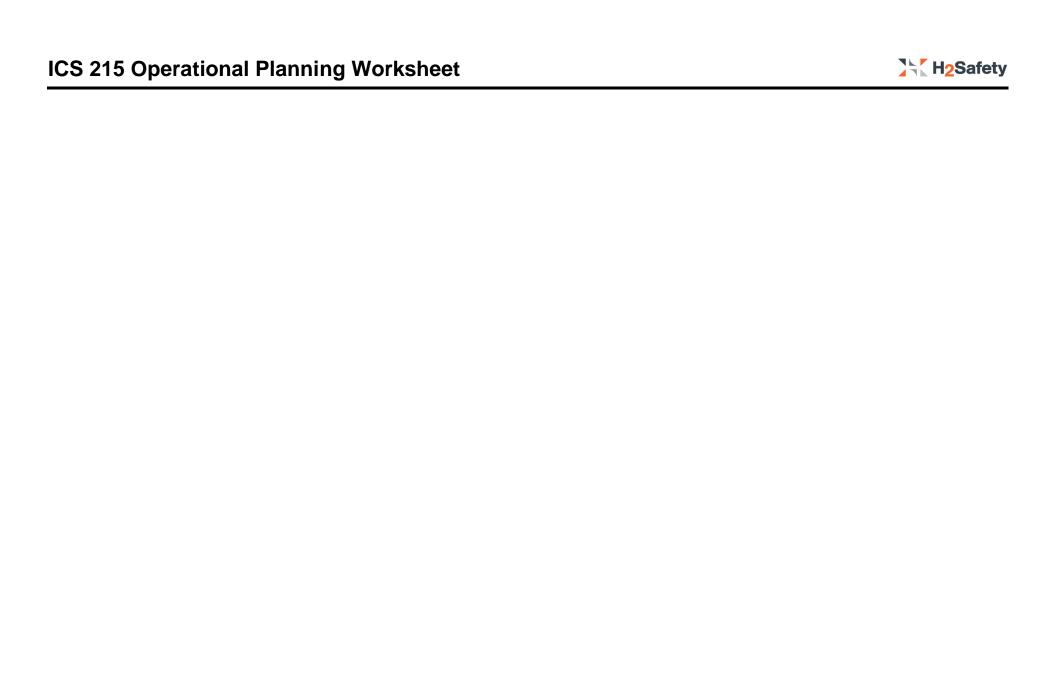
Incident Name:					
Date / Time Init	tiated:				
Prepared by:			Position / Title:		
Personnel Ass	signed				
	lame	ICS Pos	sition	Location	
Activity Log					
Time			Actions		
					·



### **ICS 215 Operational Planning Worksheet**



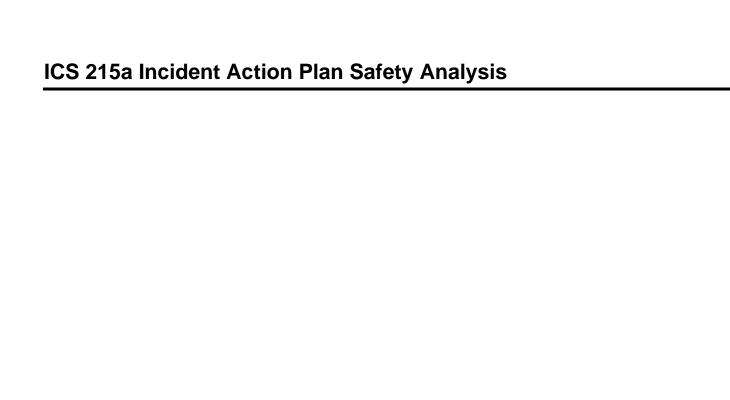
Incid	ent Nar	me:				Opera	ational Peri	od:									
						To:	Date		Time			To:	Date		_ Time		-
Branch	Division, Group, or Other	Work Assignments & Special Instructions	Resources											Overhead Position(s)	Special Equipment & Supplies	Reporting Location	Requested Arrival Time
		<b> </b>	Req.														
		I 4-	Have									<u> </u>	<u> </u>				
			Need														
		<u></u>	Req.			<u></u>											
			Have								<u> </u>	<u> </u>	<u> </u>				
			Need														
			Req.														
		Ī	Have														
		Ī	Need				-										
			Req.														
		Ī	Have			Ī					T		Ī				
		Ī	Need														
			Req.														
		I	Have				1						<u> </u>				
		-	Need														
			Req.							1	<u> </u>						
		I	Have		-  -		<u> </u>		<u> </u>	1	1	1	1	1			
		l ka	Need										<u> </u>	1			
		<del> </del>	Req.				<del></del>			-	<u> </u>	<u> </u>	<del></del>				
			Have	<u> </u>	-		<u> </u>		<u> </u>		<u> </u>		1				
		l <b>-</b>	Need		-		<del></del>				<del> </del>		<u> </u>				
		Total Resources Require  Total Resources - Have of Hand:													Prepared b Name: Position/Tit	le:	,
		Total Resources Need to Order:	)												Date/Time: Signature:		



### **ICS 215a Incident Action Plan Safety Analysis**



Incident Name:	Incident Name:						Date / Time Initiated:				
Prepared by:							ICS Position:				
Division or Group	Potenti	ial Hazar	ds							Controls (e.g., PPE, buddy system, escape routes)	
	Type of Hazard	Type of Hazard	Type of Hazard								

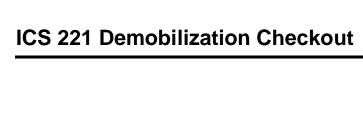




#### **ICS 221 Demobilization Checkout**



Inciden	nt Name / Nu	umber:					Date / Time:		Demob. Number:	
Unit/Pe	ersonnel Rel	leased:								
Transp	ortation Typ	e / Number:								
Actual	Release Da	te / Time:							Manifest Completed?	□ Yes □ No
Destina	ation:			Notify:	□HQ	☐ Agency	☐ Region	☐ Area		Dispatch
				Name:						
				Date:						
Unit Le	eader respo ting perforn	onsible for nance rating								
						Unit / Perso	nnel			
You an	nd your reso	urces have been	released su	ubject to Sigr	n-Off from the follo	owing:				
Demob	oilization Uni	it Leader – Chec	k the approp	priate box						
Logist	ics Section									
☐ Supp	ply Unit									
□ Com	nmunications	s Unit								
☐ Faci	ilities Unit									
☐ Grou	und Support	Unit Leader								
Planni	ng Section									
□ Dem	nobilization (	Jnit								
Financ	ce/Admin Se	ection								
☐ Time	e Unit									
Other										
Remark	ks:									
D-		- (	Prepared I	By:				Signature:		
Page		of	(Name and	d Position)						



# **ICS 230 Meeting Schedule**



Incident Name: Op	erational Period:	
Fro		Time
Meeting Schedule (Commonly-held meetings are include		
Date / Time Meeting Name Purpose	Attendees	Location
Prepared by: (Situation Unit Leader)	Date / Ti	me:



# **ICS 231 Meeting Summary**



Incident Name:	Meeting Date / Time:
Meeting Name:	
Meeting Location:	
Meeting Facilitator:	
Attendees:	
Notes: (with summary of decisions and action items)	
Prepared by:	Date / Time:



### **ICS 233 Incident Open Action Tracker**



	ent Name:						
No.	ltem	For	Status	Start Date	Briefed	Target Date	Actual Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

### **ICS 233 Incident Open Action Tracker**



No.	ltem	For	Status	Start Date	Briefed	Target Date	Actual Date
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

## **A1 Initial Emergency Report Form**



#### **First On-Scene Actions**

Evacuate		<ul> <li>☐ Get to a safe area immediately.</li> <li>☐ Move upwind if release is downwind of you.</li> <li>☐ Move crosswind if a release is upwind from you.</li> <li>☐ Move to higher ground if possible.</li> <li>☐ Call for help ("Man Down").</li> </ul>							
Alarm		☐ Sound bell, ho	'Man Down"). orn or whistle, or call by mergencies, call 911.	/ radio.					
Assess		<ul><li>☐ Take head count, locate any casualties. Consider all of the hazards.</li><li>☐ Fill out information below to complete assessment.</li></ul>							
Protect	[	☐ Put on breath	ing apparatus before a	ttempting rescue.					
Rescue	I	☐ Remove victir	n to a safe area.						
First Aid		☐ Follow the sta	ndard first aid protocol	s at worksite. (CPR, etc.)					
Medical Aid	u ,	•	port of casualties to menation to Emergency M	edical aid. ledical Services (EMS).					
Incident De	etails :	To be completed by the	person involved or notified						
Report taken				Date / Time					
Name of person calling  Caller Telephone									
Incident Loca	ation		/LCD / NIT						
Event Summ	nary		(LSD / NTS	3)					
Agencies Notified	□ Yes	Who?							
Event Status		dent contained or c ninent control possi		<ul><li>☐ Intermittent control pos</li><li>☐ Incident is uncontrolled</li></ul>					
Site Type	□ We	I ☐ Pipeline	☐ Tank Farm/Storage	☐ Battery/Plant/Facility	□ Other				
	□ Sou	ır Gas Release	☐ Sweet Gas Release	☐ Pipeline Break	☐ Security (theft, threat, terrorism)				
Incident Type	□ Los	s of Containment	☐ Fire/Explosion	☐ Worker Injury/Fatality	☐ Vehicle/Transportation				
	□ Liaı	uid Spill	☐ Other						

### **A1 Initial Emergency Report Form**



Impacts	
Public Health and Safety ☐ Could be jeopardized ☐ Is jeopardized	
Public Protection Measures Taken ☐ Notification ☐ Evacuation ☐ Shelter-in-place ☐ Roadblock	S
Worker Injuries □ First Aid □ Hospitalized □ Fatality □ Other	
Distance to nearest surface developmentkm Distance to nearest urban centrekm	_km
Details	
Release Impact	
Gas Readings         H <sub>2</sub> S         SO <sub>2</sub> LEL         Other	
Distance to nearest watercoursekm Weather Conditions	
Details NW Nity Nity	NE NE
	IE .
270° W	—→ E 90°
SSW SSE	
SW 225° S 180°	SE 135°
Nadia Public	
	] No
Details	
Notes / Instructions Provided:	
Notes / Instructions Frovided.	

Distribute this completed report to all Key Response Personnel

Note: Ensure the First On-Scene Actions have been completed before proceeding to the Five Step Initial Response Guide.

# **A2 Odour Complaint Script**



Date:			Prepared by:	
Time:	☐ a.	m. 🗌 p.m.	Duration of call:	
To help ι	us understand your imn	nediate needs, we	need to know:	
	Nama			
	Description of the co	mcem.		
How ma	any people are you w	ith right now?		
	Adults	Children	1	
Convo	u provido the legation	of the incident?		
Can yo	u provide the locatior	i or the incident?		
	Location of the incid	ent (address, leg	al, landmark, etc.):	
Where	are you right now?			
	☐ Home / Work	∏ In a Vehicle	e 🛭 Outside	☐ Other_
	a nome/ work	a ma vemen	a Outside	• Other
	If the resident is at h	ome/work/outs	side tell them:	
				yone that you may be with need to
				appliances that blow out indoor air on ot go outside or attempt to start
	icles until you are told		ting / all conditioning). L	of not go outside of attempt to start
	If the resident is in a	vehicle and can	not shelter-in-place tell	thom:
			,	
				yone that may be with you need to ed and shut off the air conditioning /
heat. If	you see or hear anyth	ning that might ind	icate where the incident	is occurring, travel in the opposite
	n of the hazard; otherw ard area.	ise, continue trave	elling on your current cou	urse which will likely take you out of
		soldle from the section of		aff of the phase as that we
			ruction so please stay s please call the compa	off of the phone so that we can any at
	<u> </u>	<u> </u>	· · ·	<del></del>



### **A3 First Call Communication**



	Regulatory Contact				Field	Centre				
	Caller				<u> </u>			F	Phone	
	Notification	Time	Time Rele			rt Time	E	End Time	☐ Ongoing	
Contact Details	Licensee				<u>I</u>			F	Phone	
ontact	Location				Neare	est Town		1		
ŭ	Nearest Resident		Distance/Direction	on				F	Phone	
	Media Involvement?	,	☐ Local ☐ Regional		Nation Interna		Media C	Contact		
	Operator							F	Phone	
	Public Health and Safety		Could be jeopar s jeopardized	dized		Worker In	njuries	☐ Firs	st Aid spitalization	☐ Fatality
Public Impact	Emergency Assessi Matrix completed wi licensee	☐ Minor ☐ One	☐ Tw ☐ Th	ree	ERP Activa	ated?		e Specific Id/Area	☐ Corporate	
	EPZ Size (2 km if unk	Numbers and	Types of	Public i	in EPZ			CP Location		
	Public Protection Mea Implemented	asures	<ul><li>☐ Notification</li><li>☐ Shelter</li></ul>	1		☐ Roadb		Numbe	er Evacuated	
	Release Impact	☐ On lea	ase 🗌 O	ff lease		H₂S Conc	entration			
, pe	☐ Sensitive Environ	ment	Environmer	nt Affected	d	☐ Air ☐ Land	[		ding Water ng Water	Water Body Name
Release Type	Area Affected (m³)	ty Damage	amage					vestock Affect	ed	
Rele	Gas Release	Sweet	☐ Sour	Sour				olume/R		
	Liquid Release	Oil	☐ Wate	☐ Water ☐ Efflu		uent		olume/R	Rate	
	☐ Release Point Dete	ermined								
nt	Third Party / Outside Required	e Assistand	_			or controlle possible	-		nent control   ent is uncont	
Containment	Company					wcss o	Со-ор			
эе	Well Licence No.		Type of Ir	ncident	□ĸ	(ick	☐ Blov	wout	☐ Loss o	f Circulation
Operations Type	Well Status	<ul><li>□ Drilling</li><li>□ Standir</li></ul>		_	□ P	Producing Sour	☐ Inje ☐ Crit		☐ Suspe	nded
ratio	Pipeline License No.		Line No.		□⊦	lit	Lea	ık	Ruptui	re
Ope	Production Facility Lie	cense No.	☐ Gas		_	Gas Plant Battery	☐ Cor	npressoi er	r AENV Ap	proval No.
						,			i	

#### **A3 First Call Communication**



D	☐ License Air Monitoring Occurring		Mobile	☐ Handheld	Estimated Time of Arrival				
orinį	Initial Readings / Loc	cation	☐ PPB	☐ On Site	Distance				
nite			□РРМ	☐ Off Site					
Ommunications Air Monitor Air Monitor	Contractor Name		Phone		AMU Phone	AMU Phone			
	Wind	ection	Speed	Meteorological Condi	itions	AER AMU ETA			
	Communications cor	npleted by Licens							
	☐ RCMP/Police	☐ Energy Regulator	☐ Emerge Agency	ncy Management	□TDG	☐ OH&S	☐ WCB		
Su	☐ Ambulance	☐ Local Author		of Transportation	☐ CANUTEC	☐ DFO	□ wcss		
atio	Fire	☐ Health Autho	ority	ment & Climate Change CCC)	ERAC	Other	Other		
nric	☐ CER	☐ First Nations	Indian C	Oil & Gas	Other	Other	Other		
Comi	Contact Names & Ph								
	Incident Cause	□ Natural	☐ Huma	n-Induced unintentiona	I ☐ Human-I	☐ Human-Induced Intentional			
	☐ First Nations Ban	d Band / Settle	ement Name / Co	ontact	Phone				
	☐ Metis Settlement								
	Complaints	☐ Local							
tion		☐ Large are	ea		1				
rmat	Private Land Title ho	lder			Phone				
Info	Additional Informatio	n							
her									
ŏ									

### **A4 Incident Action Plan Checklist**



IAP Checklist Items:	Comments:
☐ ICS 202 – Incident Objectives	
☐ ICS 207 – Incident Organizational Chart	
☐ ICS 209 – Incident Status Summary	
☐ ICS 215 – Operational Planning Worksheet	
☐ ICS 215A – IAP Safety Analysis	
☐ ICS 230 – Meeting Schedule	
☐ ICS 233 – Incident Open Action Tracker	
□ Map:	
□ Map:	
☐ Other:	
□ Other:	
□ Other:	
Notes:	



# **A5 Air Monitoring Log**



Date:		Responder Name:	
Page _	of	Responder Position:	

		H₂S	I FI	Oa	SO <sub>2</sub>		Temp	Wind C	onditions *	
Time	Location of Samples	(ppm)	LEL (%)	O₂ (%)	(ppm)	Other	Temp (°C)	From	Speed (km/hr)	Comments

<sup>\*</sup>Estimate meteorological conditions where accurate readings are not available.



		H₂S	LEL	O <sub>2</sub>	SO <sub>2</sub>		Temp	Wind Conditions *		
Time	Location of Samples	(ppm)	(%)	(%)	(ppm)	Other	(°C)	From	Speed (km/hr)	Comments

<sup>\*</sup>Estimate meteorological conditions where accurate readings are not available.

# A6 Threatening Call / Bomb Threat



Time Call Received: Time Call Reported:									
-	What/Whom Call	Directed	d To:						
e 🔲 Unknown	Approximate Age:	):							
Familiar voice:	☐ Yes ☐ No	Who:							
Threat (Exact Wording):									
<ul> <li>Listen carefully and remain calm.</li> <li>Do not interrupt caller.</li> <li>Attempt to keep caller talking.</li> <li>Attempt to ask questions below.</li> <li>Obtain as much information as you can while call is in progress.</li> <li>Signal someone to call your supervisor; give him / her this information.</li> <li>Do not hang up or disconnect your phone, even after the caller hangs up.</li> <li>For telephone tracing, call the local telephone company and local police.</li> </ul>									
estions:									
acilities, or emplo	yees? (e.g.: nicknan	mes, fam	niliarity with staff,	etc.)[	☐ Yes ☐ No				
ı / facility by the d	escription of the born	nb location	on? □ Ye	s F	∃No				
		The Todation	<u> </u>						
ch	Language	Ma	anner	Ва	ckground				
			lm [		Office Machines				
	Good	☐ Ang	gry		actory Machines				
ed 🔲	Poor Foul Language Accent	☐ Irra☐ Col☐ Inco	ntional [ herent [ oherent [		Street Traffic Airplanes Frains Animals Party				
		☐ Ser	rious	P	Atmosphere				
s possible. Have eme work stations for u	nployees	☐ Lau	ughing [ rvous [	□ \ □ (	Music /oices Quiet				
	e Unknown Familiar voice:  salm.  sow. as you can while our supervisor; givect your phone, e local telephone lestions:  facilities, or employ facility by the description of the local spossible. Have employed the local spossible.	What/Whom Call    Unknown   Approximate Age     Familiar voice:   Yes   No     Familiar voice	What/Whom Call Directed    Directed   Approximate Age:     Familiar voice:   Yes   No   Who:     Pamiliar voice:   Yes   No   No   No   No   No   No   No   N	What/Whom Call Directed To:	What/Whom Call Directed To:				





# STARS® Site Number \_\_\_\_ Location \_\_\_

### Remote Site Landing Zone Reference Card

In the event of a SITE EMERGENCY PHONE the STARS Emergency Link Centre®

**TOLL FREE** 

OR

DIRECT

1-888-888-4567

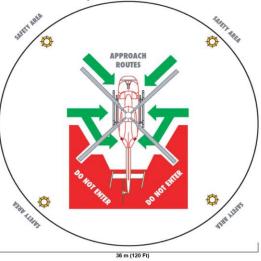
403-299-0932

#### BE PREPARED WITH THE FOLLOWING INFORMATION

- 1. STARS Site Number
- 2. Location of site (Legal Land Description or GPS)
- 3. Contact phone number at the site
- 4. Known hazards on-site
- 5. If applicable, is there a monitor on-site confirming the presence of H2S

### SAFETY GUIDELINES

- the landing zone should be on level ground. (less than 5% slope) at least 36 x 36 metres (120 x 120 ft) and more, if possible, to include a safety zone
- check for loose debris in landing zone THIS IS OF VITAL IMPORTANCE
- ensure no one approaches the helicopter STARS crew will approach you when safe to do so
- everyone should be at least 30 metres from landing zone during landing and takeoff, due to possibility of injury from loose debris caused by rotor downwash
- movement around aircraft is to be in safe areas only



WIND DIRECTION

STARS LANDING ZONE

if necessary, provide road blocks approximately 500 metres on either side of the landing zone

### PRE-LANDING CHECKLIST

The STARS Emergency Link Centre will require the following information from the site:

#### **TERRAIN**

level or sloping type of surface dust, loose snow. rocks, bushes, stumps, etc.

### LANDING ZONE MARKINGS

4 turbo flares 4 road flares / strobes 4 reflective flares 4 highway cones (days only) extra strobes/flares/cones on upwind side

#### **HAZARDS**

signs vehicles trees equipment wires



### **B1** Reception Centre Registration Log



Due to travel and time constraints, the company may not always be able to have a company employee at the Reception Centre before evacuees begin arriving. In this case this cover page can be included with the forms on the next 2 pages and sent to a representative at the Reception Centre to provide them with guidance on how to register and track evacuees until a company representative arrives.

Evacue	ee registration guidelines			
[Insert	Company Name] requires your assista	ance with receiving evacuees at the following	g Reception Centre:	
Your co	ompany contact is:			
Name:		Position:	Contact Number:	Fax Number:
1) 2) 3) 4) 5)	Provide the evacuees with food and Record if any evacuees choose to le	nent below and any other status updates as I lodging as required. eave the Reception Centre (name, contact n		any residents that are unaccounted for.

# **B1 Reception Centre Registration Log**



Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:

Resident	Name (list all	Name (list all names in party)		Number	Arrival	Depart	Destination	
ID	First	Last	# Of Occupants	arrived	time	Depart time	phone # (where they can be reached)	Comments

# **B2** Resident Compensation Log



Resid	lent's Name:		Home A	ddress:			Home T	elephone #	:	Location of Land (LSD):		
							Busines	s Telephon	e #:			
Numb	Number of Residents Evacuated:		Evacua	ted to:			Telepho	ne # While	Evacuated:			
No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details	of Expense		
Total Reported Expenses												
Approv	ved Bv:	L				D:	ate <sup>.</sup>					

Section 6: Forms Page 1 of 2

# **B2** Resident Compensation Log



Resid	dent's Name:		Home A	ddress:			Home T	elephone #	t:	Location of Land (LSD):	
							Busines	s Telephon	ne #:		
Num	Number of Residents Evacuated:		Evacua	ted to:			Telepho	ne # While	Evacuated:		
No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	De	Details of Expense	
	Total Repor	ted Expenses									
Annro	ved By:	L		<u>I</u>	l		ate:	<u>I</u>	I		

Section 6: Forms Page 2 of 2

# **B3 Resident Contact Log**



Date:		Responder Name:	
Page	of	Responder Position:	_ Responders Phone No.:

	Decident name   Decident ID   Chalter / Evacuate		01 11 15	Number	of people	Assistance or	<b>2</b>
Time	Resident name	Resident ID	Shelter / Evacuate	Inside	Outside	transportation required?	Comments
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	



				Number	of people	Assistance or	•
Time	Resident name	Resident ID	Shelter / Evacuate	Inside	Outside	transportation required?	Comments
			O Shelter O Evacuate			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			<ul><li>Shelter</li><li>Evacuate</li></ul>			O Yes O No	
			O Shelter O Evacuate			O Yes O No	

### **B4 Roadblock Log**



Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:

Only emergency responders should be allowed to enter the Emergency Planning Zone (EPZ).

Vehicle Type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering Zone	Time Exiting Zone	Comments (record all vehicles turned away)



Vehicle type	License plate # and province / state	Name of driver (if available)	# of people in vehicle	Time entering zone	Time Exiting zone	Comments (record all vehicles turned away)



TIME:	

# EVACUATION NOTICE

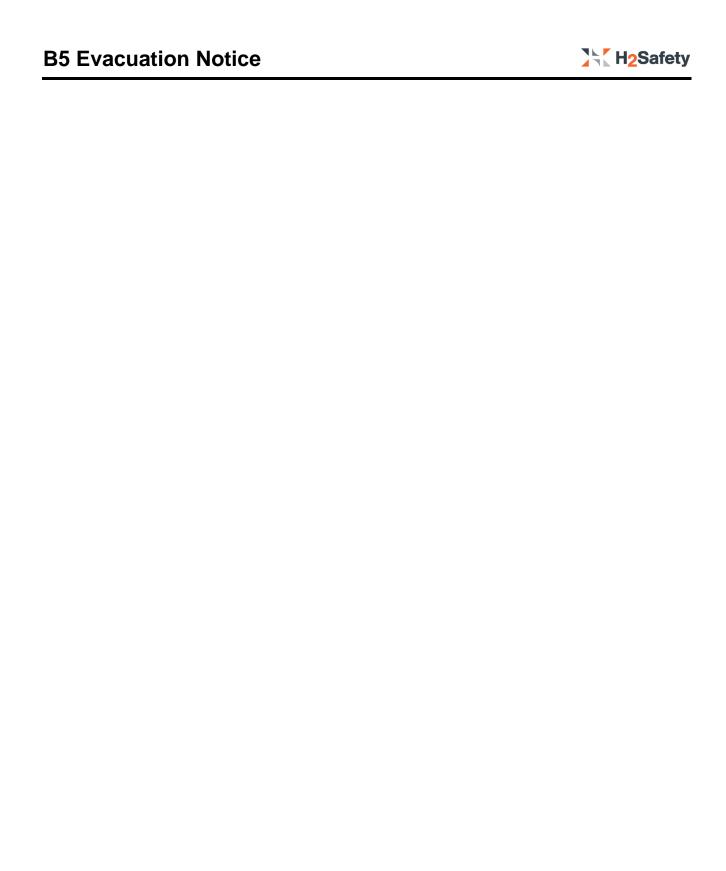
[Insert Company Name] has an emergency at its nearby location.

As a safety precaution, please leave the area in a (north / east / south / west) direction and proceed to the Reception Centre located at

[Insert Company Name] representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call [Insert Company Name] at

Thank you for your cooperation.



# **B6 Early Notification / Voluntary Evacuation Phone Message**



Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this	s is	(your name)	calling fr	om	(company name	<u>.</u>		
Is this the	(nam	e of residence / bus	siness)	at	(telephone numbe	<u>er)</u> ?		
(com	pany name)	is responding to a	a (potential) e	emergency at _	(location)	_ in your area.		
	You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.							
To help u	s understand a	and your immediate r	needs we nee	ed to know:				
How man	y people are	at your location no	w?					
	Adults			_				
Do you w	ish to leave y	our residence at th	nis time?					
If Yes	Please travel	in a <u>north / east / so</u>	outh / west d	irection to our	reception centre loca	ited at:		
If No		by for further contact us from contacting yo		•				
If you have urgent questions, please contact <u>(company name)</u> at <u>(telephone number)</u> .								
Thank you for your cooperation.								

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)

# **B6 Early Notification / Voluntary Evacuation Phone Message**



**Section 6: Forms** 

## **B7 Shelter-In-Place Phone Message**



Hello, th	is is of company name)				
Is this th	e <u>(name)</u> residence at <u>(telephone number)</u> ?				
(con	npany name) is responding to a (potential) emergency at(location) in your area.				
	safety, it is extremely important that you, and those with you, stay indoors until the potential to longer exists, or you are advised to evacuate.				
To help	us understand your immediate needs, we need to know:				
How ma	ny people are at your location now?				
	Adults				
	Children				
	anyone in your household that you cannot contact to inform them of the situation and advise them doors or stay out of the area?				
	☐ Yes ☐ No				
If Yes	Whom?				
	Location of the person(s)				
	We will send someone to find them as soon as possible.				
Do you	have children in school at this time?				
	☐ Yes ☐ No				
If Yes	What school?				
	Children's names				
	We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.				
Do you	have the "Shelter-in-Place" instructions previously provided to you by <u>(company name)</u> ?				
	☐ Yes ☐ No				
If Yes	Please follow the Shelter-in-Place instructions located inside the resident pamphlet.				
If No	Verbally walk the resident through the Shelter-in-Place instructions on the next page.				
Do you understand what I have told you?					
Is there an alternate number we can contact you at?					
If you ha	ave any urgent questions, please contact <u>(company name)</u> at <u>(telephone number)</u> .				
Thank y	ou for your cooperation.				

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)



### **Shelter-In-Place Instructions**

For your safety:

- Immediately gather everyone indoors and stay there
- Close and lock all windows and outside doors
  - If convenient, tape the gaps around the exterior door frames
- Leave open all inside doors
- Extinguish indoor wood burning fires
  - If possible, close flue dampers
- Turn off appliances or equipment that either:
  - Blows out or uses indoor air, such as:
    - Bathroom and kitchen exhaust fans
    - Built-in vacuum systems
    - Clothes dryers
    - Gas fireplaces and gas stoves
  - Sucks in outside air, such as:
    - Heating, ventilation and air conditioner (HVAC) systems for apartments, commercial or public facilities
    - Fans for heat recovery ventilators or energy recovery ventilators (HRV / ERV)
- Turn down furnace thermostats to the minimum setting and turn off air conditioners
- Avoid using the telephone, except for emergencies, so that you can be contacted by company emergency response personnel
- Call the company emergency numbers you have been provided:
  - If you are experiencing symptoms or smelling odours (so that we can address your concerns and adjust our response priorities)
  - If you have contacted fire, police or ambulance (so that we can coordinate our response)
- Stay tuned to local radio and television for possible information updates
- Do not leave your residence, even if you see people outside, until you are told to do so
- After the hazardous substance has passed through the area you will receive an "all-clear" message from the company emergency response personnel. You may also receive, if required, instructions to:
  - Ventilate your building by opening all windows and doors; turning on fans and turning up thermostats. During this time the air outside may be fresher and you may choose to leave your building while ventilating.
  - Once the building is completely ventilated return all equipment to normal settings & operation.
- Do not leave your sheltered location or attempt to start any vehicle until a company representative advises you that the area is safe.

If you are unable to follow these instructions, please notify company emergency response personnel.

### **B8 Evacuation Phone Message**



Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this	s is	(your name)	of	(company na	me)
Is this the	e	(name)	residence at	(telephone nu	mber) ?
(Comp	any name)	_ is responding to a	(potential) emergency at	(location)	in your area.
			at you and your family leave ction to our reception centre le		nmediately and
To help u	s understand	your immediate nee	eds, we need to know:		
How mai	ny people are	at your location n	ow?		
	Adults				
	Children				
	nyone in your ate away from		cannot contact to inform the	m of the situation	and advise them
	☐ Yes	□ No			
If Yes	Whom?				
		the person(s)			
	We will send	someone to find the	em as soon as possible.		
Do you h		in school at this ti	me?		
	☐ Yes				
If Yes					
		names			
	the area imm	nediately. If school is	sure the safety of your childre in session, your children will when the school day is over	be redirected to	
Do you r	equire evacu	ation / transportati	on assistance?		
	☐ Yes	□ No			
If Yes			ist you. Please stay indoors a rrive to evacuate you.	and close all door	s and windows
If No	Provide the	resident with:			
	□ Direction	ons to safely travel	to the reception centre		
		f items to bring wit	th them to the reception cer	ntre (medication	s, cell phone,
	etc.)	of how long thou	may be expected to stay at	the reception of	ontro
			may be expected to stay at nouse pets to the reception		entre
Diagna or					atro for any rosson
	ontact <u>(com</u> eep your phon		you are unable to make it to e can contact you if necessa		ille for any reason.
		ımber we can conta	•		
arrangem			centre will address any ques odations. Do you understand		
_	ve any urgen ou for your co	nt questions, please coperation.	e contact <u>(company na</u>	me) at (tele	ephone number).

(Pass on all information regarding this call to the Public Safety Group Supervisor immediately)



### **C2 Media Contact Log**



Date:		Responder Name:						
Page	of	Responder Position:	Responders Phone No.:					
If you feel	you are not the ap	propriate person to be answering the media agencies questions,	use the following series of statements.					
	"[Insert Company Name] has an Information Officer to answer all media questions."							
	"May I request the following information to expedite your request?" (complete the form below).							
"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."								

T:	O-11 T-	Call Faces	Madia Outlet	Device to A Control Name	Telephone	Numbers	Damada / Information Daminal
Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Work	Fax	Remarks / Information Required
		1					

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

Section 6: Forms Page 1 of 2

# **C2 Media Contact Log**



Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Work	Numbers Fax	Remarks / Information Required
					VVOIK	Гах	

## **C3 Government Agency Contact Log**



Date:		Responder Name:					
Page	of	Responder Position:	Responders Phone No.:				
If you feel y	you are not the a	ppropriate person to be answering the media agencies questions,	use the following series of statements.				
	"[Insert Company Name] has a Government Liaison to answer all media questions."						
"May I request the following information to expedite your request?" (complete the form below).							
	"Thank you. [Insert Company Name] appreciates your cooperation and I will pass on this information to the appropriate person."						

<b>T</b> '	O-11 T-	0-11 5	A	O and and Name	Telephone Numbers		Demonto / Occurrents
Time	Call To	Call From	Agency	Contact Name	Work	Fax	Remarks / Comments

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.

# **C3 Government Agency Contact Log**



Time	Call To	Call From	Agency	Contact Name	Telephone Numbers Work Fax		Remarks / Comments
Tille	Call 10	Call I Tolli	Agency	Contact Name	Work	Fax	Remarks / Comments

### **C4 Media Centre Site**



Location		
Address:		
City / Town:		
Phone #:		
Contact		
Home #:		
Map or Directi	ions to Site	





# **Appendices**

Appendix A: ERP Scope, Training and Plan Maintenance	
Scope	1
Plan Objectives	1
Purpose	1
HSE Policy	3
Training Requirements	5
Plan Maintenance	6
Appendix B: Incident Command Post (ICP)	9
Communication Methods Between Command Posts - Alberta	9
Communication Methods Between Command Posts - British Columbia	10
ICP Activation and Setup	11
Appendix C: Toxic Gases	13
Hydrogen Sulphide (H <sub>2</sub> S)	13
Sulphur Dioxide (SO <sub>2</sub> )	19
Appendix D: Key Elements of the Incident Command System (ICS)	24
Management by Objectives	24
Unity and Chain of Command	24
Organizational Flexibility	25
Span of Control	25
Common Terminology	25
Incident Action Plan (IAP)	25
Integrated Communications	25
Establishment and Transfer of Command	26
Resources Management	26
Summary of Responsibilities	26
Appendix E: Land Descriptions	27
Dominion Land Survey (DLS) System	27
National Topographic System (NTS)	28
Appendix F: ERP Reference Material	29
Acronyms	29
Glossary of Terms	30



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# Appendix A: ERP Scope, Training and Plan Maintenance Scope

This plan defines the emergency response process related to all hazards affecting petroleum operations. This Emergency Response Plan (ERP) outlines the process for an Alert/Minor, Level-1, Level-2, or Level-3 emergency for any jurisdiction or incident type.

### **Plan Objectives**

The primary objective of this Emergency Response Plan (ERP) is to define the incident management system and organizational structure, process and tools to respond effectively to all incidents regardless of size or complexity. It has been designed to be intuitive and have natural process flow utilizing the Incident Command System (ICS) and to comply with applicable regulations, standards, and industry best practices.

### **Purpose**

This ERP clearly defines emergency response team roles, functions and duties to protect people, environment, and assets during an incident. This plan clarifies the following:

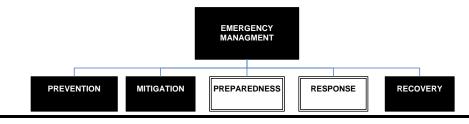
- Overall Incident Command System (ICS) response organization.
- Incident Command System (ICS) Roles and responsibilities.
- Guidance to determine the Alert or Emergency Level.
- Mechanisms to activate the ERP.
- Notification /communication requirements to stakeholders (public /government /responders).
- Documentation tools for accurate records management of events and decisions during an event.
- Guidance for post-emergency actions.

The intent of this Emergency Response Plan (ERP) is to define effective measures in place to:

- Notify and protect the workers and the public.
- Minimize environmental impact.
- Minimize asset and property loss.
- Regain steady state of operations.
- Minimize emergency response time.
- Maximize response effectiveness.
- Coordinate with government agencies and stakeholders.
- Minimize business and reputational impact.

This manual outlines the framework, tools and reference materials to facilitate a prompt, safe, efficient and properly managed response to all incidents regardless of size or complexity. Therefore this plan provides employees and contractors with practical tools that will guide them through the Preparedness and Response principles of Emergency Management.

### **Emergency Management Process Flow**





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### **Health, Safety and Environmental Policy**

### Safety of our employees, communities and the environment is the top priority.

The Company takes the health, safety and security of our employees, contractors, customers and neighbours very seriously.

Our commitment to health, safety and environment is founded in our company values. These values are put into action every day. Our people are dedicated to making the Company an exemplary corporate citizen for our work force as well as local communities, First Nations and indigenous communities, regulators and government.

The Company is committed to achieving health, safety and environmental excellence throughout our entire organization by:

- Leadership and culture. We require a high level of commitment to health, safety and environment, not only from our management and employees, but also from our suppliers, contractors, visitors and guests. We will be leaders based on a culture founded on integrity and respect.
- Corporate management. Management is focused on ensuring that health, safety and environment is
  our highest priority. Such management focus helps ensure that we comply with or exceed regulatory
  requirements. If operational results and safety ever come into conflict, our employees and contractors
  have a responsibility to choose safety and management will support this choice.
- Community communication and stewardship. Corporate sustainability and responsibility activities will be collaborative, reward-based, performance-driven, integrated, diversified, and scalable.

We have a responsibility toward people and the environment. We expect it, and our investors and stakeholders expect it. This commitment will ensure the long-term success of the Company.

### Commitment

Our commitment is to work continuously toward excellence through a process of "plan, do, check, act" by:

- designing and maintaining hazard-free offices and operations
- implementing effective and responsible work processes and procedures based on applicable standards, regulations, industry best practices, and manufacturer's specifications
- ensuring all personnel are trained and competent, and have the necessary tools to work safely
- supporting hazard, near miss and incident reporting and investigation, and ensuring corrective actions are taken
- responding promptly and effectively to emergencies in order to minimize the consequences
- procuring sustainable materials, recycling or reusing materials when possible
- conserving and being a responsible steward of natural resources
- continuously improve health, safety and environment efforts by regularly reviewing program effectiveness

reporting results internally and externally

Alfred Sorensen
Chief Executive Officer



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## **Appendix A: ERP Scope, Training and Plan Maintenance, continued**

## **Training Requirements**

Frequency / Action	As Required	Semi- Annually	Annually*	Every Three (3) Years**	Every Five (5) Years***		
Training							
Employee Orientation New / Transfer	✓						
On-the-job Training	✓						
Response Discussion During Pre-Job Meetings	✓						
Drills	✓						
Tabletop Exercise			✓ one of these				
Communication / Partial Mobilization Exercises			exercises				
Major (Full Scale) Exercise				✓	✓		
Post Incident (Actual) Review	✓						
ERP Review / Self Audit		✓					

<sup>\*</sup> Must be held annually.

<sup>\*\*</sup> CSA Z246.2-18, CER, OGC & AER requires Major Exercises be held every three (3) years.

<sup>\*\*\*</sup> Environment & Climate Change Canada (ECCC) requires Major Exercises be held every five (5) years for facilities with E2 required substances.



## Appendix A: ERP Scope, Training and Plan Maintenance, continued

## **Plan Maintenance**

### Responsibility

The licensee is responsible to ensure that an ERP is created for all provincial and federally regulated oil and gas activities (i.e. sour operations, HVP pipelines, cavern storage facilities, etc.), they are maintained regularly, and any updates are disseminated to the regulatory agency and other plan holders as required. In order for this to occur the following responsibilities are designated:

- Each individual plan holder is responsible for ensuring their assigned manuals are current, all updates are applied / downloaded / inserted, and any errors or omissions are reported to a supervisor.
- Each Area Manager is responsible for ensuring that a semi-annual review of their ERP is conducted.
   The ERP Revision Request Form is located in this section and can be used to track this information and provide documentation in the case of an ERP assessment.
- Any requests for revisions to this plan should be forwarded to the applicable Area Manager for review. These revisions will be discussed with the company's Emergency Response Program Coordinator and H<sub>2</sub>Safety Services Inc. Any significant changes including those resulting from exercises and incidents will require immediate updates sent out to all plan holders; less significant changes will be implemented during the ERP's next annual update.
- The company's Emergency Response Program Coordinator is responsible for ensuring that the plans and distribution lists are updated, training is performed, and new projects are included in the plan. Information in this plan will be verified and updated at least once a year.
- Old manuals must be sent to H<sub>2</sub>Safety Services Inc. or destroyed. If a plan holder no longer requires their manual (job changes, position changes, etc.), it must be returned to the company's Emergency Response Program Coordinator to be tracked, reassigned, or destroyed.

The licensee must distribute changes in information that are instrumental to implementing the ERP to all required plan holders.

Errors identified in the ERP by the regulatory agency, licensee, and other party must be corrected immediately upon identification.

### **Modifications to New or Existing Operations**

The licensee must submit a supplement for review and approval to the regulatory agency for all newly added wells, pipelines, well / pipeline tie-ins, facilities and operating areas prior to commencement of operations if there are new surface developments within the Emergency Planning Zone. For example, the EPZ for a new pipeline tie-in does not fall entirely within the existing Emergency Planning Zone and impacts a new residence / public facility / trapper cabin / etc. that was not previously included in the Emergency Response Plan. The licensee must conduct a public involvement program for all new members of the public. Before any new or major modifications to an existing facility / pipeline are brought on-stream, any additions or changes will be added to the Emergency Response Plan. If required, a site specific Emergency Response Plan will be developed. Meetings to review response plan requirements must be held before major facility modifications are commissioned.



# **Appendix A: ERP Scope, Training and Plan Maintenance, continued**

## **ERP Revision Request Form**

Plan Holder Name / Title / Company:
ERP Name:
Manual Number:
If any of the following items have changed, please check the box beside it and provide a description of the change in the space provided:  Company information Mapping information Resident contact information Response staff information or capacity changes Facility additions, such as well or pipeline tie-ins Other
Description of the change:
Please attach additional pages and/or support documentation as required.
Please return the completed checklist to:
Pieridae Energy Attn: Yvonne McLeod 3100-308 4 Avenue SW Calgary, AB T2P 0H7
Email: yvonne.mcleod@pieridaeenergy.com Fax: 403-261-5902

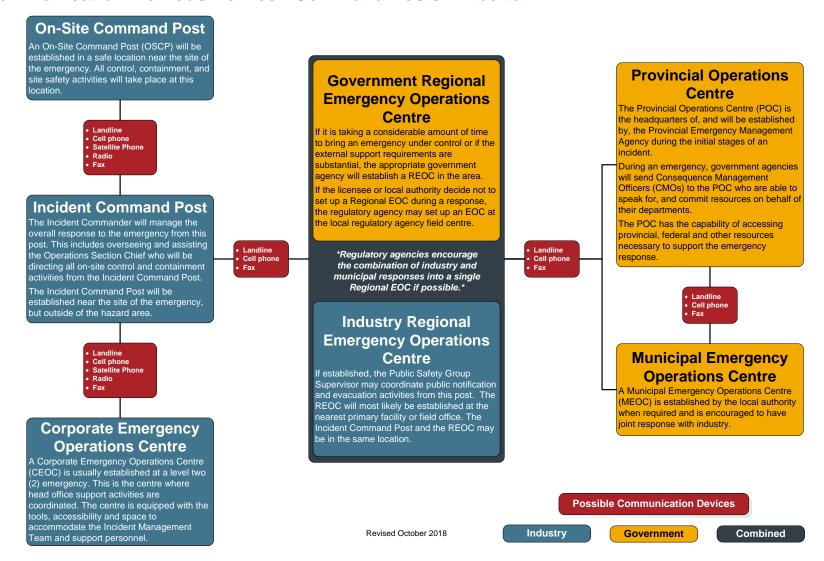


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## **Appendix B: Incident Command Post (ICP)**

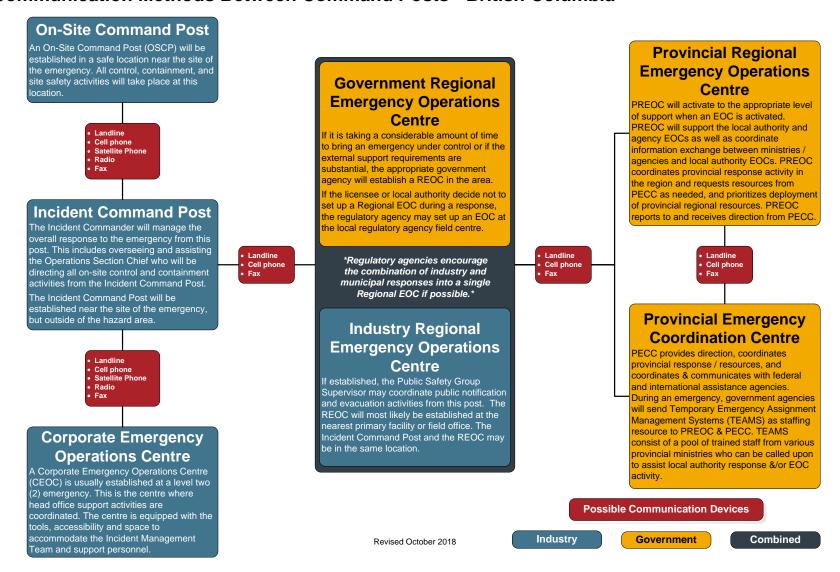
### **Communication Methods Between Command Posts - Alberta**



Appendices Page 9



# Appendix B: Incident Command Post (ICP), continued Communication Methods Between Command Posts - British Columbia



Appendices Page 10



# Appendix B: Incident Command Post (ICP), continued ICP Activation and Setup

The Incident Command Post is activated by the Incident Commander.

The following tasks must be addressed once the ICP has been activated:

Position	Task
Incident	<ul><li>□ Establish briefings with the Field Response Team (FRT).</li><li>□ Ensure staffing is adequate for the task(s).</li></ul>
Commander	☐ Consider the time difference, if applicable, and determine how time will be communicated throughout the incident.
Safety Officer	<ul> <li>□ Ensure the room / floor / building is secure.</li> <li>□ Ensure a safe work area, i.e. remove clutter or cords causing slips, trips, falls, etc.</li> </ul>
Information Officer	□ Notify the receptionist that there is an incident. Provide details of what message should be given out to the public and media, as well as where to direct incoming calls.
	<ul><li>☐ Ensure inbound and outbound calls received or made are centrally logged.</li><li>☐ Ensure responders have their office phones forwarded to their cell phones.</li></ul>
Logistics / IT Support	<ul> <li>□ Turn on all computers; ensure the relevant systems are operational and that they all have internet/email access.</li> <li>□ Bring up any ERP related electronic tools (ie; H₂CommandCentre) and ensure they are working and that they can all be displayed on various projectors / screens as required.</li> <li>□ Check that printers are connected to the computers and working. Print a test page to confirm.</li> <li>□ Check that the fax machine is setup and working.</li> <li>□ Check that any phone conferencing systems are set up and working.</li> <li>□ Ensure that telephone lines are available and active.</li> <li>□ Ensure TVs are working properly and set up to local news or CNN.</li> <li>□ Obtain any additional equipment as required.</li> </ul>
Logistics / Security	<ul> <li>Ensure the room/floor/building is secure. Arrange for additional security if required.</li> <li>If the location of the Incident Command Post is closed to general staff, provide a list of staff needing access clearance to the meeting area.</li> <li>The following supplies should be available: notepaper, pens, printer cartridges and paper, documentation forms, dry erase markers, staplers and staples, spare power bars and extension cords, etc.</li> <li>Arrange for refreshments (coffee, food, water, etc.) for those working there, as well as sleeping space if required.</li> <li>Ensure there are sufficient tables and chairs for the team.</li> </ul>



# Appendix B: Incident Command Post (ICP), continued ICP Activation and Setup, continued

Position	Task
	☐ Determine which emergency response plans and other ERP tools are needed and pull them out to be readily accessible.
	☐ Determine what laminated maps and charts are going to be utilized and put them up on the wall with dry erase markers. Set up the white boards and roles chart.
	☐ Ensure clocks are displaying the correct time, including any clocks with a different time zone.
	☐ As each person arrives: provide them with a vest, provide them with a print out of the Initial Emergency Report Form, ensure they synchronize their watches and ensure they check in with their assigned supervisor.
Planning /	☐ As team members arrive, write their name in the appropriate position on the Field
Documentation	Response Team Assignment Chart.
	☐ Pass out documentation forms and provide an overview of the documentation process.
	☐ Ensure the latest contact list for Field Response Team members are available.
	<ul> <li>□ Begin documenting all actions, decisions and major events. Start-up</li> <li>H<sub>2</sub>CommandCentre if available.</li> </ul>
	☐ Continually update the laminated maps and charts as information becomes available (Field Response Team Assignment Chart, Emergency Status Board, etc.).
	☐ Post a schedule of events, including shift changes and status updates.

## **Incident Command Post Briefings**

Once the ICP has been activated and team members arrive, the Incident Commander or Deputy needs to conduct an initial briefing to provide the team with the status of the situation, establish operational periods for the ICP, establish a meeting schedule for both a planning meeting and periodic briefings and outline broad goals to guide the ICP throughout the emergency.

In additional to periodic briefings for status updates, the Incident Commander also has to conduct a meeting once the approved Incident Action Plan is in place. This meeting will outline the planned objectives and tasks and will ensure that resources required for implementation of the action plan are in available or en route.

At the end of each operational period, all departing members of the Field Response Team will be debriefed and must brief their replacements.

#### **Documentation**

It is critical to ensure that all ICP documentation is compiled, properly stored and readily available after the event. Proper documentation will aid in investigations, inquiries, debriefs and support for financial claims and budgets. Everything that happens during the Response/Recovery Operations should be recorded at the ICP. The forms at the back of this manual are designed to aid in this process



# Appendix C: Toxic Gases Hydrogen Sulphide (H<sub>2</sub>S)

#### **Background**

Hydrogen sulphide (H<sub>2</sub>S) is a flammable, colourless gas with a characteristic odour of rotten eggs that people can smell at low levels. It is also known as hydrosulphuric acid and sewer gas. H<sub>2</sub>S occurs naturally in crude petroleum, natural gas, volcanic gases and hot springs. It can also result from bacterial breakdown of organic matter. Industrial sources include emissions from industrial paper plants; combustion of coal, fuel oil and natural gas (including gas flares); kraft paper mills; tanneries; and emissions from sewers and waste treatment facilities. Cigarette smoke is also a source of hydrogen sulphide.

H<sub>2</sub>S is released primarily as a gas and spreads in the air. Its residence time in the atmosphere ranges from about one day to more than 40 days, depending on ambient temperature and other atmospheric variables, including humidity, sunshine and presence of other pollutants. The decreased temperatures and decreased levels of hydroxyl ions in northern regions in winter increase the residence time. When released H<sub>2</sub>S gas is ignited, it will change into sulphur dioxide (SO<sub>2</sub>), be carried into the atmosphere and dispersed over a larger area at lower concentrations.

#### Signs and Symptoms

Exposure to hydrogen sulphide may cause irritation to the eyes, nose or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulphide can cause a loss of consciousness and possibly death. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulphide (0.00011-0.00033 ppm).

### **Acute Exposure Effects**

The effects on humans will vary depending on the duration and  $H_2S$  concentration of exposure. The health effects of acute exposure to  $H_2S$  are shown in the following table. Acute exposure reflects a range from a few seconds up to several weeks.

### Hydrogen Sulphide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects
Less than 1	Most people smell "rotten eggs".
3 – 5	Odour is strong.
20 – 150	Nose and throat feel dry and irritated. Eyes sting, itch or water and "gas eye" symptoms may occur. Prolonged exposure may cause coughing, hoarseness, shortness of breath and runny nose.
150 – 200	Sense of smell is blocked (olfactory fatigue).
200 – 250	Major irritation of the nose, throat and lungs, along with headache, nausea, vomiting and dizziness. Prolonged exposure can cause fluid buildup in the lungs (pulmonary edema), which can be fatal.
300 – 500	Symptoms are the same as above, but more severe. Death can occur within 1-4 hours of exposure.
Above 500	Immediate loss of consciousness. Death is rapid, sometimes immediate.

Adapted from Hydrogen Sulfide in Industry, WorkSafe BC February 2010



## **Acute Health Effects of Hydrogen Sulphide (AB Regulations)**

Concentration 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.
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.



## Acute Health Effects of Hydrogen Sulphide (AB Regulations), continued

Concentration in Air (ppm)	Description of Potential Health Effects
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

Source: Alberta Health Services, Environmental Public Health <a href="http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf">http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf</a>



### **Chronic Exposure Effects of Hydrogen Sulphide**

Chronic effects from H<sub>2</sub>S exposure is a developing area of research. Chronic exposure may inflame and irritate the upper respiratory tract.

#### Medical treatment for hydrogen sulphide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Hydrogen Sulphide (H₂S) Guidelines - Revised November 2000)

#### Guidelines for in Hospital Assessment/Treatment of Possible Hydrogen Sulphide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual H₂S exposure.

Section I provides information on H<sub>2</sub>S

Section II summarizes possible health effects, which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations

#### I. Hydrogen sulphide

H<sub>2</sub>S is a colourless gas. It is heavier than air and tends to flow in ditches, trenches and low-lying areas.

H<sub>2</sub>S is clearly recognizable in small concentrations at around one part per million (ppm) by its characteristic rotten egg smell.

At concentrations of about 150 ppm in the air, or after prolonged exposure to lower concentrations, the olfactory sense is paralyzed and the presence of  $H_2S$  can no longer be detected by odour.

#### II. Health effects of hydrogen sulphide

H<sub>2</sub>S can be rapidly fatal. It acts by paralyzing the respiratory control centre in the brain and by inhibiting cellular respiration.

Hydrogen sulphide is a mucous-membrane and respiratory-tract irritant. Pulmonary edema, which may be immediate or delayed, can occur after exposure to high concentrations.

#### Acute exposure may include the following symptoms and signs:

#### **Central Nervous System**

CNS injury is immediate and significant after exposure to hydrogen sulphide. At high concentrations, only a few breaths can lead to loss of consciousness, coma, respiratory paralysis, seizures, and death. CNS stimulation may precede CNS depression. Stimulation manifests as excitation, rapid breathing, and headache; depression manifests as impaired gait, dizziness, and coma, possibly progressing to respiratory paralysis and death. In addition, decreased ability to smell occurs at 100 to 150 ppm.

#### Respiratory

Inhaled Hydrogen sulphide initially affects the nose and throat. Low concentrations (50 ppm) can rapidly produce irritation of the nose, throat, and lower respiratory tract. Pulmonary manifestations include cough, shortness of breath, and bronchial or lung hemorrhage. Higher concentrations can provoke bronchitis and cause accumulation of fluid in the lungs, which may be immediate or delayed for 24 hours or more. Lack of oxygen may result in cyanosis.



#### Medical Treatment for Hydrogen Sulphide Exposure, continued

#### Cardiovascular

High dose exposure may cause insufficient cardiac output, irregular heartbeat and conduction abnormalities.

#### Renal

Although very unlikely, transit renal effect may include blood, casts, and protein in the urine. Renal failure as a direct result of hydrogen sulphide toxicity has not been described, although it may occur secondary to cardiovascular compromise.

#### **Gastrointestinal**

Symptoms may include nausea and vomiting.

#### **Dermal**

Prolonged or massive exposure may cause burning, itching, redness and painful inflammation of the skin.

#### **Ocular**

Eye irritation may result in inflammation (i.e. kerato-conjunctivitis) and clouding of the eye surface. Symptoms include blurred vision, sensitivity to light, and spasmodic blinking or involuntary closing of the eyelid.

#### **Potential Sequelae**

Inflammation of the bronchi can be a late development. Survivors of severe exposure may suffer psychic disturbances and permanent damage to the brain and heart.

#### III. Approach to the worker with suspected hydrogen sulphide exposure

Although this document refers only to H<sub>2</sub>S, it is important for the clinician to keep in mind the possibility of coexposure to numerous other agents. Sulphur dioxide may have been present if there has been combustion of hydrogen sulphide. Sulphur dioxide does not cause loss of consciousness but is a respiratory tract irritant. Therefore, the management of sulphur dioxide intoxication is similar to that for hydrogen sulphide. Other agents capable of causing asphyxia include carbon monoxide (toxic asphyxia) as well as a wide array of gases that act as simple asphyxiants (carbon dioxide, methane, nitrogen, etc.) by displacing oxygen. Finally, other conditions (MI, syncope, seizure, etc.) that may cause sudden collapse must be investigated and managed as appropriate.

#### **History**

The history is the key to the diagnosis of hydrogen sulphide (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to hydrogen sulphide. This should include questions about work processes, the presence of a rotten egg odour and inquiring as to effects in co-workers. If possible, this should be supplemented by Industrial Hygiene information, which might include the triggering of alarms for hydrogen sulphide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with H<sub>2</sub>S exposure. Determining the presence of respiratory tract irritation (conjunctivitis, rhinitis, tracheitis) is of particular importance since this symptom distinguishes hydrogen sulphide from several other asphyxiants and serious toxicity is unlikely in the absence of this symptom at presentation.

#### Investigations

There are no specific tests in routine clinical use to establish hydrogen sulphide intoxication. Rather, testing is aimed at characterizing the seguels of intoxication, as well as to rule out other causes for the presentation.



#### Medical Treatment for Hydrogen Sulphide Exposure, continued

#### **Treatment**

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical bum and maintenance of circulatory status. Although nitrite therapy has been advocated as an antidote, there is little evidence to support its use and as it is potentially dangerous it is not recommended.

On arrival - check blood gases and assess for lactic acidosis. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema. ECG may assist as arrhythmias and bradycardia are not uncommon. Temporary T wave depression may occur and ECG may mimic infarction.

For the unconscious patient, give oxygen using mechanical ventilation with positive end expiratory pressure.

Assess for associated musculo-skeletal and internal traumatic injury.

Maintain circulating fluid volume, but be alert for delayed onset of pulmonary edema.

At times, strong physical restraint may be required. Keep the patient as inactive as possible.

A pulmonary function test should be done near time of discharge and, if abnormal should be repeated at appropriate intervals thereafter.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

#### IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms

Possible exposure, with symptoms (that are compatible with H<sub>2</sub>S)

Known exposure including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation, and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (1) and (2), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24-48 hours prior to RTW.



# Appendix C: Toxic Gases, continued Sulphur Dioxide (SO<sub>2</sub>)

#### **Background**

Sulphur Dioxide (SO<sub>2</sub>) belongs to the family of sulphur oxide gases (SO<sub>2</sub>). Sulphur is prevalent in raw materials including crude oil and coal, as well as in ore that contains common metals. Sulphur oxide gases form when fuels containing sulphur are burned and when gas is processed or metals are extracted from ore. Like other sulphur oxide gases, SO<sub>2</sub> dissolves in water or water vapour to form acid, and interacts with other gases and particles in the air to form sulphates and other products.

Sulphur dioxide is a colourless gas that is about 2.5 heavier than air. It has a sweet pungent odour, and can be detected by taste and smell at concentrations as low as 300 parts per billion (ppb). Acids that are formed when SO<sub>2</sub> (and nitrogen oxides) react with other substances in the air may be carried great distances before falling to earth as rain, fog, snow or dry particles. Acid rain damages forests and crops, changes the chemical make-up of soils, and increases the acidity of lakes and streams. Continued long-term exposure will affect the natural variety of plants and animals in an ecosystem. As well as contributing to smog, SO<sub>2</sub> emissions cause aesthetic damage and accelerate the decay of building materials and paints.

General guidelines dictate evacuation where SO<sub>2</sub> concentrations reach 5 ppm averaged over a 15 minute period. However, as a precaution, evacuation will be established under the criteria when the SO<sub>2</sub> level reaches 1 ppm for two to three hours, or averages 0.3 ppm over twenty-four hours.

#### **Signs and Symptoms**

Sulphur dioxide causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Acute and chronic exposure to  $SO_2$  affects the respiratory system. Acute exposure effects, with increasing exposure, include irritation of the eye, nose and throat, choking, coughing, bronchitis and pneumonia. Exposure to low concentrations can aggravate chronic pulmonary diseases, such as asthma and emphysema. Co-exposure to cold or dry air may further exacerbate the respiratory effects of  $SO_2$  on sensitive asthmatics. Particularly sensitive groups include children, the elderly and those with existing heart or lung disease.

## **Sulphur Dioxide Toxicity Table (BC Regulations)**

Concentration (ppm)	Effects
0.13	24 hour 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	5 – 15 minutes exposure produces increased irritation of eyes, nose, and throat, choking, coughing, and in some cases wheezing due to narrowing of the airways (which increases the resistance of the air flow).
150	Short-term endurance lost due to the severe eye irritation and because of the effects on the membranes of the nose, throat, and lungs.
500	Highly dangerous after exposure of 30 – 60 minutes.

Adapted from the Canada Safety Council Data Sheet "Sulphur Dioxide" No. B-4 Oil and Gas Commission November 2003.



### **Acute Health Effects of Sulphur Dioxide (AB Regulations)**

Concentration (ppm)	Acute Health Effects
0.1	Transient bronchoconstriction <sup>1</sup> in sensitive exercising asthmatic individuals that ceases when exposure ceases. <sup>2</sup>
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	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).

<sup>&</sup>lt;sup>1</sup> At low levels, bronchoconstriction was generally observed as changes in airway conductance detectable by spirometry rather than as clinical symptoms.

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

Source: Alberta Health Services, Environmental Public Health <a href="http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf">http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf</a>

<sup>&</sup>lt;sup>2</sup> 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.



#### Medical treatment for sulphur dioxide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Sulphur Dioxide (SO<sub>2</sub>) Guidelines - Revised July 2001)

#### Guidelines for in Hospital Assessment/Treatment of Possible Sulphur Dioxide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual SO<sub>2</sub> exposure.

Section I provides information on SO<sub>2</sub>

Section II summarizes possible health effects which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations.

#### I. Sulphur Dioxide

 $SO_2$  is a colourless gas with a pungent odour detectable by the human nose at concentrations of about 0.5 to 0.8 ppm.

SO<sub>2</sub> is highly soluble in water resulting in the formation of sulphurous acid.

Approximately 90% of inhaled SO<sub>2</sub> is absorbed in the upper respiratory tract.

Asthmatics and individuals with underlying bronchial hyperactivity may be more susceptible to low level exposure to SO<sub>2</sub>.

#### II. Health Effects of Sulphur Dioxide

SO<sub>2</sub> causes almost immediate coughing with significant exposure.

SO<sub>2</sub> causes irritation of the conjunctive and nasal mucosa at levels between 5 and 10 ppm.

Exposures of SO<sub>2</sub> as low as 8 ppm has been associated with symptoms of cough, phlegm, wheezing and exertional dyspnea.

Acute high-dose exposures leading to severe injury are unusual, parenchyma lung damage occurs above 50 ppm.



Medical treatment for sulphur dioxide exposure, continued

Acute exposure may include the following symptoms and signs:

#### Respiratory

Inhaled SO<sub>2</sub> is a moderate to strong respiratory irritant. Reddening of the throat and nose may occur. Repeated exposure to 10 ppm has caused nosebleeds. Sensitivity varies among people, short exposure to low concentrations may produce a reversible decrease in lung function, and symptoms may include chest tightness.

Exposure to high concentrations of  $SO_2$  has caused severe airways obstruction, hypoxia and pulmonary edema. The effects of pulmonary edema include coughing and shortness of breath which can be delayed until hours or days after the exposure; these symptoms are aggravated by physical exertion. Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

#### Dermal

The gas will react with moisture on the skin and cause irritation (redness, itching).

#### **Ocular**

Eye irritation may result in smarting of the eyes and tearing. In severe cases (high concentrations in a confined area), SO<sub>2</sub> has caused temporary corneal burns.

#### **Potential Sequelae**

Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

#### III. Approach to the worker with suspected Sulphur Dioxide Exposure

Although this document refers only to SO<sub>2</sub>, it is important for the clinician to keep in mind the possibility of coexposure to numerous other agents.

#### History

The history is the key to the diagnosis of  $SO_2$  (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to sulphur dioxide. This should include questions about work processes, the presence of an odour and inquiring as to the effects in co-workers. If possible, this should be supplemented by industrial hygiene information which might include the triggering of alarms for sulphur dioxide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with SO<sub>2</sub> exposure.

#### Investigations

There are no specific tests in routine clinical use to establish sulphur dioxide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication as well as to rule out other causes for the presentation.



#### Medical treatment for sulphur dioxide exposure, continued

#### **Treatment**

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical burn and maintenance of respiratory status.

On arrival - check blood gases. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema.

Oxygen should be delivered by nasal cannula or mask, or if pulmonary injury leads to severe hypoxia by mechanical ventilation.

If bronchospasm occurs, bronchodilators may be of value.

A pulmonary function test should be done near time of discharge and, if abnormal, should be repeated at appropriate intervals thereafter.

Conjunctival irritation should be treated with copious irrigation with saline and the eyes examined with fluorescein for corneal defects.

Assess for associated musculo-skeletal and internal traumatic injury.

Prophylactic antibiotics should be avoided.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

#### IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms;

Possible exposure, with symptoms (that are compatible with SO<sub>2</sub>) or

Known exposure, including "knockdown", with symptoms that require medical treatment and/or hospitalization.

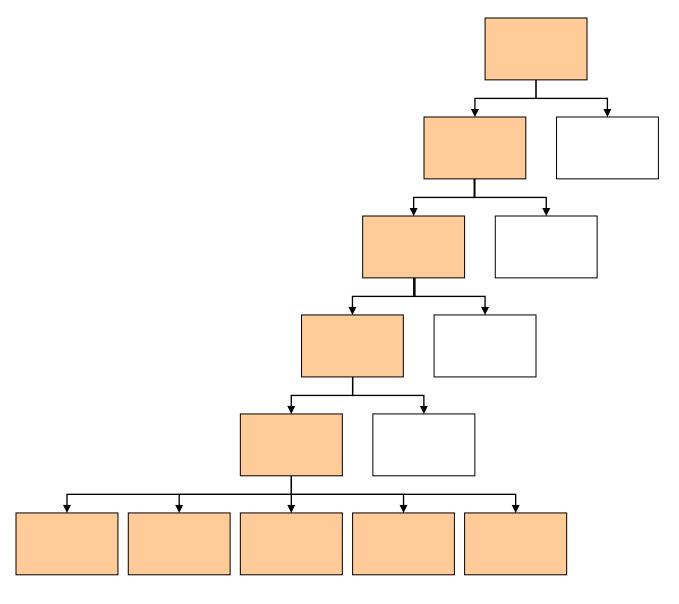
In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (2) and (3), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24 - 48 hours prior to RTW.



## **Appendix D: Key Elements of the Incident Command System (ICS)**

**Management by Objectives** – Objectives are ranked by priority, should be as specific as possible, must be attainable and if possible given a working time-frame. Objectives are accomplished by first outlining strategies (general plans of action), then determining appropriate tactics (how the strategy will be executed) for the chosen strategy

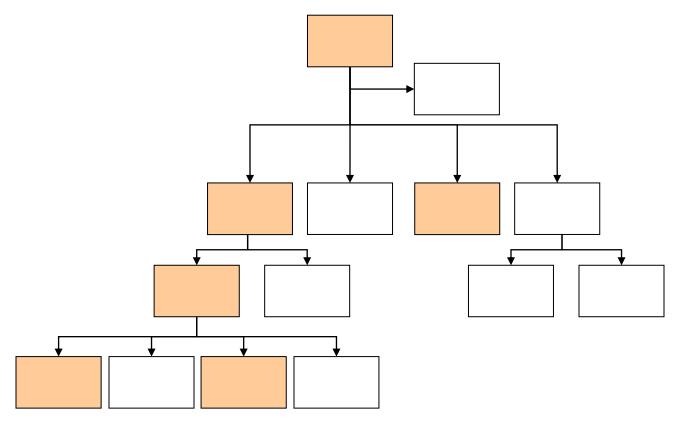
**Unity and Chain of Command** – Each individual takes direction from and reports to only one designated supervisor; this is called Unity of Command. Higher level personnel have authority over lower level personnel; the lower level personnel are subordinate to and take direction from higher level personnel. Orders and instructions travel down the chain of command from one supervisor to each subordinate. This is called Chain of Command.





## Appendix D: Key Elements of the Incident Command System (ICS), continued

**Organizational Flexibility** – Only positions that are required at the time should be assigned. In most cases, very few positions will need to be assigned.



**Span of Control** – ICS requires that any single person's span of control (number of people reporting to them) should be between three and seven, with five being ideal.

**Common Terminology** – When different organizations are required to work together, the use of common terminology is essential.

**Incident Action Plan (IAP)** – Every incident must have a written or oral Incident Action Plan. The following information is part of an Incident Action Plan and must be communicated to the rest of the organization:

- Objectives, strategies and tactics outlined by the Incident Commander.
- Resources assignments what resources do we have and what are they doing? What resources are on order and what are they going to do?
- A description of the ICS organizational structure what positions will be filled?
- Supporting materials incident map, communications plan, evacuation plan, stick diagrams, etc.

**Integrated Communications** – The use of a common communications plan is essential for ensuring effective communication during an incident.



# Appendix D: Key Elements of the Incident Command System (ICS), continued

**Establishment and Transfer of Command** – The highest ranking authority arriving onscene at an incident will assume the role of the Incident Commander. That person will continue to be the Incident Commander until there is a formal transfer of command. A transfer of command briefing usually consists of:

- Reviewing a description of the incident.
- Reviewing the actions taken thus far to contain and control the incident.
- · Reviewing the current ICS organizational structure.
- A summary of the resources available and ordered.

**Resources Management** – A resource must either be in assigned, available, or out-of-service status.

- Assigned a resource in assigned status is currently doing whatever tasks have been assigned to it.
- Available a resource in available status is ready to be deployed at a moments notice. Resources in available status often wait for assignments at an incident Staging Area.
- Out-of-Service a resources in out-of-service status might be sleeping, receiving medical aid, getting
  repairs, etc. and is not ready for assignment.

### **Summary of Responsibilities**

These management functions are handled by the General Staff once they have been delegated by the Incident Commander.

**Command** Ensures safety. Assumes overall responsibility for the incident.

The Incident Commander is responsible for the Command of the incident as well as the following management functions until they are assigned to other response personnel:

**Operations** Implements the Incident Action Plan (IAP) focusing on control, containment, and site

safety.

Public Safety Implements the Incident Action Plan (IAP) focusing on notification and evacuation of

the public.

**Planning** Help create and track (document) the success of the Incident Action Plan (IAP).

**Logistics** Secure the resources and put them in place to allow Operations to implement the

Incident Action Plan.

**Finance/Admin** Ensures procedures are in place to allow logistics to secure the resources (spending)

and track and control the expenditures.

**Communications** Disseminates information and liaises with external agencies.

Communications is handled by the Information Officer once one has been appointed by the Incident Commander. The Information Officer is part of the Command Staff.



## **Appendix E: Land Descriptions**

## **Dominion Land Survey (DLS) System**

- Each township (6 mile x 6 mile) is divided into 36 sections (1 mile x 1 mile)
- Each section is divided into 16 legal sub-divisions (L.S.D.)
- Each section is divided into four quarters (N.W., N.E., S.W., and S.E.)

The numbering of sections and L.S.D.s is shown below:

	•		<ul><li>Rang</li></ul>	е —		Secti	on			
<b>†</b>	31	32	33	34	35	36	13 N	14 w	15	16 E
+	30	29	28	27	26	25	12	11	10	9
o w n	19	20	21	22	23	24	5	6 W	7 .s	8 F
s h i	18	17	16	15	14	13	4	3	2	1
<b>p</b>	7	8	9	10	11	12	1			
	6	5	4	3	2	1				

- Townships increase in number from South to North starting at the Canada USA border
- Ranges increase in number from East to West within a Meridian. A Range is one (1) Township wide (6 miles).
- Meridians run from the North Pole to the South Pole and are spaced every four degrees. The principal Meridian in Canada originates in Central Manitoba and increases West or East from there.
- Legal land description is listed in the following order:

	L.S.D		Section		Township		Range	Meridian
Example	02	-	01	_	38	-	09	West of the 4 <sup>th</sup>



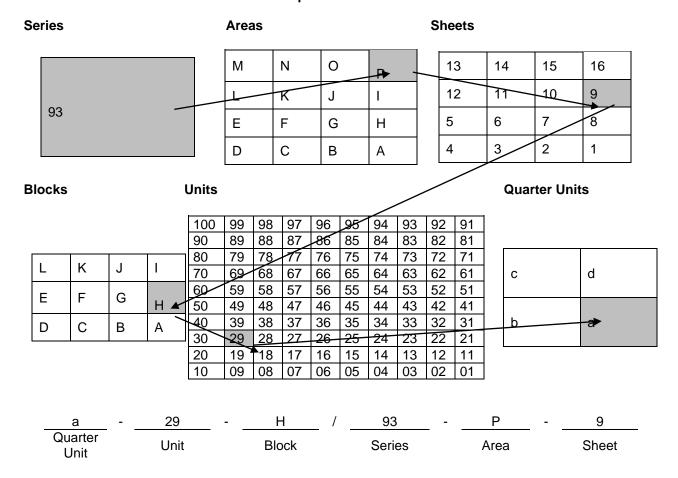
# Appendix E: Land Descriptions, continued National Topographic System (NTS)

Based on the National Topographic System (NTS), the map labelling terms are as follows:

1) Series	A rectangular area that has a width of 8 degrees of longitude and 4 degrees of latitude. There are 9 Series in British Columbia (82, 83, 92, 93, 94, 102, 103, 104, and 114).
2) Area	1/16 of a map Series that has a width of 2 degrees of longitude by 1 degree of latitude (labelled from A to P).
3) Sheet	1/16 of map Area that has a width of 30' in longitude and 15' of latitude (labelled from 1 to 16).
4) Block	1/12 of a map Sheet with a width of 7'30" in longitude and 5' in latitude (labelled from A to L).
5) Unit	1/100 of a map Block, and has a latitudinal extent of 30" and longitudinal extent of 45" (labelled from 1 to 100).
6) Quarter Unit	1/4 of a map Unit (labelled from a to d).

Note: 1 degree is equivalent to approximately 111 km in British Columbia. Degrees vary in size around the planet. They become smaller the closer they get to the poles (north or south) and very large as they reach the equator.

#### Example a-29-H / 93-P-9





# **Appendix F: ERP Reference Material Acronyms**

Acronym	Meaning	Acronym	Meaning
ABSA	Alberta Boilers Safety Association	IIZ	Initial Isolation Zone
AEMA	Alberta Emergency Management Agency	INAC	Indigenous and Northern Affairs Canada
AER	Alberta Energy Regulator	LA	Local Authority
AH	Alberta Health	LBV	Line Block Valve
AHS	Alberta Health Services	LEL	Lower Explosive Limit
AT	Alberta Transportation	LPG	Liquefied Petroleum Gas
BLEVE	Boiling Liquid Expanding Vapour Explosion	MARS	Mapping and Response System
CANUTEC	Canadian Transport Emergency Centre	MD	Municipal District
CAPP	Canadian Association of Petroleum Producers	MEP	Municipal Emergency Plan
CEPA	Canadian Environmental Protection Act	MER	Ministry of Energy and Resources
CER	Canada Energy Regulator	MOP	Maximum Operating Pressure
CERC	Corporate Emergency Response Centre	NGL	Natural Gas Liquids
CISD	Critical Incident Stress Debriefing	NOTAM	Notice to Airmen
CPE	Communications and Public Engagement	OGC	Oil & Gas Commission
CSA	Canadian Standards Association	OHS	Occupational Health and Safety
DFO	Department of Fisheries and Oceans	OSCAR	Oil Spill Containment and Recovery
EAZ	Emergency Awareness Zone	OSCP	On-Site Command Post
ECCC	Environment & Climate Change Canada	PAD	Protective Action Distance
EMBC	Emergency Management BC	PAZ	Protective Action Zone
EMO	Emergency Measures Organization	POC	Provincial Operations Centre
EOC	Emergency Operations Centre	PPB	Parts Per Billion
EPZ	Emergency Planning Zone	PPE	Personal Protective Equipment
ERAC	Emergency Response Assistance Canada	PPM	Parts Per Million
ERP	Emergency Response Plan	RCMP	Royal Canadian Mounted Police
ESD	Emergency Shut Down	RD	Rural District
ESDV	Emergency Shut-Down Valve	REOC	Regional Emergency Operations Centre
ETA	Estimated Time of Arrival	RHA	Regional Health Authority
FH Order	Fire Hazard Order	RM	Rural Municipality
FNIHB	First Nations and Inuit Health Branch – Health Canada	SABA	Supplied Air Breathing Apparatus
GEOC	Government Emergency Operations Centre	SCBA	Self-Contained Breathing Apparatus
HPZ	Hazard Planning Zone	SDS	Safety Data Sheet
HVAC	Heating Ventilation Air Conditioning	SHA	Saskatchewan Health Authority
HVP	High Vapour Pressure	SO <sub>2</sub>	Sulphur Dioxide
HVPL	High Vapour Pressure Liquid	STARS	Shock Trauma Air Rescue Society
H <sub>2</sub> S	Hydrogen Sulphide	TDG	Transportation of Dangerous Goods
IAP	Incident Action Plan	WCSS	Western Canadian Spill Service
ICS	Incident Command System	WHMIS	Workplace Hazardous Materials Information System



# **Appendix F: ERP Reference Material, continued Glossary of Terms**

#### Adjacent to

Within 25 m.

#### Air Quality Monitoring

Measurement of atmospheric concentrations of a hazardous substance, such as H<sub>2</sub>S or SO<sub>2</sub>.

#### Alberta Energy Regulator (AER)

The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for Albertans.

#### Alert (Alberta specific)

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**

All NGL products are flammable and will flash at extremely low temperatures. An open flame or spark is not necessary to cause ignition. Any hot surface which exceeds the auto-ignition temperature of a product can cause a fire if the vapours reaching the hot surface are within their flammable range.

#### **Best practices**

A technique or methodology that, through experience and research, has proven to reliably lead to a desired result. A commitment to using the best practices in any field is a commitment to using all the knowledge and technology at one's disposal to ensure success.

#### **Body of water**

Streams, lakes, and rivers.

#### **Boiling Liquid Expanding Vapour Explosion (BLEVE)**

Boiling Liquid Expanding Vapour Explosion, which is associated with natural gas liquids and high vapour pressure liquids.

#### **Boiling point**

This is the temperature that a liquid changes to a gas. NGL 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 NGLs because contact with flesh can reduce the temperature of the flesh to the NGL boiling point and cause severe frostbite.

#### **British Columbia Oil and Gas Commission (OGC)**

The OGC is the lead agency for all regulated oil and gas related activities within British Columbia.

#### British Columbia Emergency Management (EMBC) (British Columbia specific)

Aids local governments in analyzing hazards and risks, develop and test emergency plans, train and organize emergency staff and volunteers. EMBC also manages all agencies in the event of an emergency or disaster, which cannot be handled locally.

#### **Businesses**

Industrial operators, retail outlet operators, suppliers, residents, outfitters, foresters and other entities that normally operate within the Emergency Planning Zone, but do not necessarily reside in the Emergency Planning Zone.



## Glossary of Terms, continued

### Closure order (British Columbia specific)

When the OGC believes that, because of hazardous conditions in a field or at a well, it is necessary or expedient to close an area and to shut out all persons except those specifically authorized, the commission may make an order in writing setting out and delimiting the closed area. For Alberta see Fire Hazard (FH) Order.

#### **Corporate Emergency Response Plan**

This Emergency Response Plan is to facilitate a co-ordinated response by company executive and management personnel to an emergency situation, which may affect the company or its affiliated companies. The Corporate Emergency Response Plan is an integral part of all site-specific company Emergency Response Plans and procedures.

#### **Critical Incident Stress Debriefing (CISD)**

Critical Incident Stress Debriefing is a specially structured counselling process between the debriefers and those who are directly involved and/or impacted by an incident.

#### Critical sour well (Alberta specific)

A well with an H<sub>2</sub>S release rate greater than 2.0 m3/s or wells with lower H<sub>2</sub>S release rates in close proximity to an urban centre as defined in ID 97-6: Sour Well Licensing and Drilling Requirements.

#### **Emergency**

A present or imminent event outside the scope of normal operations that requires prompt coordination of resources to protect the health, safety, and welfare of people and to limit damage to property and the environment.

#### **Emergency Operations Centre (EOC)**

An Emergency Operations Centre is a designated facility in a suitable location (i.e. head office, regional office, etc.) established by the permit holder to support Incident Command and to manage the larger aspects of an emergency. In a high-impact emergency, there may be a number of EOCs established to support the response. They may include the Incident Command Post, regional and corporate EOCs, a municipal EOC (MEOC), and the provincial government EOC (POC).

#### Emergency Awareness Zone (EAZ) (British Columbia specific)

A distance outside of the EPZ where public protection measures may be required due to poor dispersion of the hazard. This area is twice the radius of the Emergency Planning Zone (EPZ).

#### **Emergency Planning Zone (EPZ)**

The geographical area that surrounds a well, pipeline or facility containing hazardous product that requires specific emergency response planning by the licensee.

#### **Emergency Response Plan (ERP)**

A comprehensive plan to protect the public that includes criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communication and coordination among the parties.

#### **Emergency Support Team (EST)**

Provides advice and logistical support to the Field Response Team and Incident Commander in particular. The team is comprised of head office personnel and any contract emergency experts.

#### **EOC Director**

The EOC Director activates the Corporate Emergency Operations Centre with staff to provide advice and support to the Incident Commander (Field Response Team).



## Glossary of Terms, continued

#### **EOC Director, continued**

Note: If the emergency happens outside an area that has a site specific Emergency Response Plan, only then will the EOC Director assume or appoint the role of Incident Commander and dispatch a Field Response Team to the incident site.

#### ERCBH2S (Alberta specific)

A software program that calculate site-specific EPZs using thermodynamics, fluid dynamics, atmospheric dispersion modelling and toxicology.

#### **Evacuation**

Organized, phased, and supervised withdrawal of members of the public from dangerous or potentially dangerous areas to safe areas.

**Tactical Evacuation** – A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required, and local authority must be advised if a tactical evacuation has occurred.

**Planned Evacuation** – An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

#### **Explosive Limits (Lower and Upper)**

Each gaseous hydrocarbon substance has a minimum (Lower Explosive Limit or LEL) and a maximum (Upper Explosive Limit or UEL) percentage in air below or above which combustion will not take place. Explosive limit and flammability limit are used interchangeable. The terms "Too Lean" and "Too Rich" are used for levels outside of the explosive range.

#### **Facility**

Any building, structure, installation, equipment, or appurtenance that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substance or wastes. This does not include wells or pipelines.

#### Field Response Team (FRT)

Company and contractor personnel directly involved in controlling the incident at the emergency site and from the EOC.

#### Fire Hazard (FH) Order (Alberta specific)

An order issued by the AER during an emergency to restrict public access to a specified area.

#### **Functional Exercise**

As described in CAN/CSA Z246.2-18, an activity designed to evaluate capabilities and multiple functions using simulated response. A functional exercise will simulate the deployment of resources and rapid problem solving. Participants will evaluate management of the command and coordination centres and assess the adequacy of emergency response plans and resources.

### **Gathering system**

The network of pipelines, pumps, tanks, and other equipment that carries oil and gas to a processing plant or to other separation equipment.

#### Hazard

A situation with potential to harm persons, property, or the environment.



### Glossary of Terms, continued

#### Hazard Planning Zone (HPZ) (British Columbia specific)

A geographical area (a) determined by using the hazard planning distance as a radius, and (b) within which persons, property or the environment may be affected by an emergency. Defined in Emergency Management Regulation.

#### **Hazardous product**

A substance released in quantities that may harm persons, property, or the environment.

#### **High Vapour Pressure Liquids (HVPLs)**

HVPLs have a vapour pressure greater than 240 kPa at  $38^{\circ}$ C (34.8 PSIG @  $100^{\circ}$ F) and include ethane, propane, butane, and pentanes plus, either as a mixture or as a single component.

Note: Comparisons

Gasoline - Vapour pressure between 55 and 100 kPa at 38°C (8 - 14.5 PSIG @ 100°F).

**Condensate -** Often a component of a propane/butane mixture, has a vapour pressure of 59 to 72 kPa at 38°C (8.6 - 10.4 PSIG @ 100°F).

M 4 4 6 6 6 (6.6 16.11 6 6 6 16 1

### High Vapour Pressure (HVP) plume dispersion geometry

An uncontrolled release of NGL product on flat terrain will form a vapour plume as it disperses. If the vapour plume formed at the leak site has not been ignited, it will most likely reach its maximum size within the first half hour of the leak occurrence. Two unique features of an NGL plume are:

The downwind edge of the plume tends to spread out significantly forming a broad frontal edge.

Under certain conditions, the plume will travel upwind for a short distance.

#### High Vapour Pressure (HVP) pipeline

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. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.

#### **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.

#### Hydrogen sulphide (H<sub>2</sub>S)

A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen.  $H_2S$  is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations, it has a rotten egg smell and causes eye and throat irritations. Depending on the particular gaseous mixture, gas properties, and ambient conditions, a sour gas release may be:

Heavier than air (dense), so it will tend to drop towards the ground with time,

Lighter than air (buoyant), so it will tend to rise with time, or

About the same weight as air (neutrally buoyant), so it will tend to neither rise nor drop but with time disperse.

#### Hydrogen sulphide (H<sub>2</sub>S) release rate

The rate that sour gas escapes into the atmosphere is often calculated for sour gas wells. It is usually defined in cubic metres per second ( $m^3/s$ ). The size of the emergency planning zone is estimated from the  $H_2S$  release rate.



## **Glossary of Terms, continued**

#### Hydrogen sulphide (H<sub>2</sub>S) release volume

The volume of sour gas that escapes into the atmosphere is often calculated for facilities that have a defined retention volume, usually defined in cubic metres. Emergency planning zone sizes are often estimated using the volume of H<sub>2</sub>S that may be released from a facility. More sophisticated models may also incorporate the rate at which the release could occur and the nature of the gas and the atmospheric conditions when determining the emergency planning zone size.

#### Hyper-susceptible

A person or persons who may be abnormally reactive to a given exposure to toxins and whose reaction may occur in orders of magnitude greater than that of the susceptible population. Hypersusceptibles include those persons with impaired respiratory function, heart disease, liver disease, neurological disorders, eye disorders, severe anemia, and suppressed immunological function.

#### Ignition

Process of setting a hydrocarbon release on fire.

#### **Ignition Team**

Consists of at least two personnel trained in plume ignition.

#### Incident

An unexpected occurrence or event that requires action by emergency personnel to prevent or minimize the impacts on people, property, and the environment.

#### Incident classification

A system that examines the risk level to members of the public following an incident and assigns a level of emergency based on the consequence of the incident and the likelihood of the incident escalating.

#### **Incident Command Post (ICP)**

A designated place where the Incident Commander and staff is located. The ICP should be located outside of the hazard area, but close to the incident. The ICP may be a vehicle, trailer, fixed facility or any location suitable to accommodate the function.

#### **Incident Commander**

Manages the overall response to emergency incidents. The Incident Commander is responsible for: developing objectives, strategies and tactics that guide the response; assigning personnel to fill necessary positions; ensuring the safety of all personnel; keeping internal and external stakeholders updated; coordinating with other response agencies.

#### **Incident Command System (ICS)**

A standardized, on-scene, all-hazard incident management system. The Incident Command System (ICS) is flexible in that it can be adapted for large and small incidents.

#### Initial Isolation Zone (IIZ)

An area in close proximity to a continuous hazardous release where indoor sheltering may provide limited protection due to proximity of release.

#### **Incident Management System**

A system used to coordinate preparedness and incident management.

#### Isolating the release

Ensuring access to the hazard area is controlled.



## Glossary of Terms, continued

#### Level 1 Emergency (Alberta specific)

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.

#### Level 1 Emergency (British Columbia specific)

There is no immediate danger to the public or environment as no H<sub>2</sub>S has been released; the emergency is confined to the lease or company property.

#### Level 2 Emergency (Alberta specific)

There is no immediate danger outside the licensee's property or the right-of-way, 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.

#### Level 2 Emergency (British Columbia specific)

There is potential risk to the public or environment, as the emergency could extend beyond company property. However, control is still possible.

#### Level 3 Emergency (Alberta specific)

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.

#### Level 3 Emergency (British Columbia specific)

An immediate danger to the public or environment exists; control of the situation has been lost.

#### Licensee

The responsible duty holder as specified in legislation.

#### Liquid to gas expansion

NGL products will expand greatly when released to the atmosphere. For example, propane expands 272 times its liquid volume. Other products expand at different rates, but all have a high gas to liquid ratio.

#### **Liquefied Petroleum Gas (LPG)**

Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.

#### **Local Authority**

A local authority is considered to be:

- 1) The council of a city, town, village or municipal district;
- 2) in the case of an improvement district or special area, the Minister of Municipal Affairs;
- 3) for a national park, the park superintendent or the par superintendent's delegate;
- 4) the settlement council of a Métis settlement: or
- 5) the band council of a First Nations Reserve.

#### **Local State of Emergency**

See State of local emergency.

#### **Lower Explosive Limit (LEL)**

The lowest concentration of gas or vapour (per cent by volume in air) that explodes if an ignition source is present at ambient temperatures.



## Glossary of Terms, continued

#### Manitoba Growth, Enterprise & Trade – Petroleum Branch

The Manitoba Growth, Enterprise & Trade – Petroleum Branch administers The Mines and Minerals Act and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas.

#### M.D.

Municipal District

#### Major (full-blown) exercise

As described in CAN/CSA Z246.2-18, a multi-agency, multi-jurisdictional activity involving actual deployment of resources in a coordinated response, as if a real emergency had occurred. The full-scale exercise includes the mobilization of units, personnel, and equipment. Participants will assess plans and procedures and evaluate coordinated responses under crisis conditions.

#### **Maximum Operating Pressure (MOP)**

The maximum licensed operating pressure for a vessel or pipeline or a section of it.

#### Ministry of Energy and Resources (MER)

MER is the lead regulatory agency for the upstream petroleum industry in Saskatchewan.

#### Mobile air quality monitoring

Use of sophisticated portable equipment to track substances such as H<sub>2</sub>S or SO<sub>2</sub> at very low parts per billion atmospheric concentrations.

#### Municipality

See local authority.

#### **Municipal Emergency Operations Centre (MEOC)**

The centre from which responsible municipal officials manage and support emergency operations within their jurisdiction, as well as formulate protective actions and provide public information. The centre has adequate workspace, maps, status boards, and communications capability.

#### **Municipal Emergency Plan (MEP)**

The emergency plan of the local authority.

#### **Natural Gas Liquids (NGL)**

These are hydrocarbons liquefied under pressure in field facilities or in gas processing plants. Natural gas liquids include ethane, propane, butane and pentanes plus and normally occur as a mixture of these compounds.

Physical Properties of NGL Products:

**Colour -** NGL products are colourless except when they include a condensate component, which gives them a light-yellow appearance. Releases during winter conditions can discolour snow. NGL products may appear as a white cloud when released to the atmosphere. This white cloud is formed by the condensing of moisture in the air.

**Odour -** Most NGL products have a mild petroleum odour. During pipeline transport NGL products are almost odourless.

**Vapour Density -** A measure of the mass per unit volume of the vapour (i.e. kg/m3). All NGL products transported by the company have a vapour density greater than air or a relative vapour density greater than 1.0.



## Glossary of Terms, continued

#### **NAV Canada**

Canada's civil air navigation services provider, with operations coast to coast. NAV Canada provides air traffic control, flight information, weather briefings, aeronautical information services, airport advisory services, and electronic aids to navigation.

#### **Notice to Airmen (NOTAM)**

An order issued by Transport Canada restricting access to airspace in a defined area.

#### **Notification**

The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.

#### **Odour complaint**

A report that someone smells an offensive odour (may be sour gas) in the area.

#### Oil Spill Containment and Recovery Unit (OSCAR)

Trailer containing oil spill equipment for containment and recovery.

#### On-site command post (OSCP)

An emergency operations centre established in the immediate vicinity of the incident to provide immediate and direct response to the emergency and initially staffed by licensee personnel.

#### Partially controlled flow

A restricted flow of product at surface that cannot be shut off at the licensee's discretion with equipment onsite.

#### Personal consultation

Consultation through face-to-face visits or telephone conversations with all requisite individuals.

#### Petroleum industry

Refers to all petroleum industry operations.

#### Plume (gas plume)

An elongated mobile column of gas or smoke.

#### **Protective Action Zone (PAZ)**

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.

#### **Protective Action Distance (PAD)**

The distance from the incident to the EPZ outer boundary.

#### **Provincial Operations Centre (POC)**

An operations centre with the capacity to accommodate representatives from each government department.

#### **Public**

The group of people who may be or are impacted by an emergency (e.g., employees, contractors, neighbours, emergency response organizations, regulatory agencies, the media, appointed or elected officials, visitors, customers, etc., as appropriate).



## Glossary of Terms, continued

#### Public facility (Alberta specific)

A public building, such as a hospital, rural school, or major recreational facility, situated outside of an urban centre that can accommodate more than 50 individuals and/or that requires additional transportation to be provided during an evacuation.

#### **Public protection measures**

The use of sheltering, evacuation, ignition, and isolation procedures to mitigate the impact of a hazardous release on members of the public.

#### **Public Safety Group Supervisor**

Member of the field response team. Individual charged with the responsibility of co-ordinating the evacuation or shelter of people in the emergency hazard Area. The Public Safety Group Supervisor reports to and may be located in the same location as the Incident Commander.

#### Publicly used development (Alberta specific)

Places where the presence of 50 individuals or less can be anticipated (e.g., places of business, cottages, campgrounds, churches, and other locations created for use by the non-resident public).

#### Publicly used facility (British Columbia specific)

Places where the presence of people can be anticipated. Examples include places of business, cottages, campgrounds, churches, and other locations created for use by the public. Includes any similar development the OGC may designate as a public facility.

#### Publicly used facility

Places where the presence of people can be anticipated. Examples include places of business, cottages, campground, churches, and other locations created for use by the public.

#### Reception centre

A centre established to register evacuees for emergency shelter, to assess their needs, and, if temporary shelter is not required because evacuees will stay elsewhere, to ascertain where they can be contacted.

#### Regional Emergency Operations Centre (REOC)

An operations centre established in a suitable location to manage the larger aspects of the emergency that is manned jointly by government and industry staff.

#### Residence

A dwelling that is occupied full time or part time.

#### Resident

Individual living in the area at a fixed location.

#### Resident data record

Form used to track the contact made with residents, businesses and transients.

#### Response zones (Alberta specific)

The Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ).

#### **Roadblock Crew**

Personnel responsible for controlling access to the Emergency Hazard Area, reporting to the Public Safety Group Supervisor.



# Appendix F: ERP Reference Material, continued Glossary of Terms, continued

#### Rover

Member of the field response team. Individual responsible for assisting in the evacuation of the Hazard Area, reporting to the Public Safety Group Supervisor. May also be directed to shut-in / shut down equipment that may cause future safety hazards.

#### **Rover Kit**

A briefcase containing maps, forms, supplies and instructions needed by the Rover to carry out their duties.

#### S.A.B.A.

Supplied Air Breathing Apparatus.

#### S.C.B.A.

Self Contained Breathing Apparatus.

#### Serious injury

A serious injury includes the following:

- an injury that results in death;
- fracture of a major bone;
- amputation other than a portion of a finger or toe;
- loss of sight in an eye;
- internal haemorrhage;
- third degree burns;
- · unconsciousness;
- An injury that results in paralysis (permanent loss of function).

#### Shelter-in-Place

Remaining indoors for short-term protection from exposure to toxic gas releases.

#### Sour gas

Natural gas, including solution gas, containing hydrogen sulphide (H<sub>2</sub>S).

#### Sour gas release

An uncontrolled release of natural gas containing hydrogen sulphide (H<sub>2</sub>S).

#### Sour multiphase product (British Columbia specific)

Any liquid that contains H<sub>2</sub>S in the gas phase.

#### Sour multiphase pipeline (British Columbia specific)

A pipeline that transmits a multiphase product that contains more than 10 moles of H<sub>2</sub>S per kilomole of natural gas in the gas phase.

#### Sour pipeline

Pipeline that conveys gas and/or liquid that contains sour gas.

#### Sour production facility

Facility that processes gas and/or liquid that contains sour gas

#### Sour well

An oil or gas well expected to encounter during drilling formations bearing sour gas or any oil or gas well capable of producing sour gas.



# Appendix F: ERP Reference Material, continued Glossary of Terms, continued

#### Special needs

Those persons for whom early response actions must be taken because they require evacuation assistance, requested early notification, do not have telephones, require transportation assistance, have a language or comprehension barrier, or have specific medical needs. Special needs also include those who decline to give information during the public consultation process and any residences or businesses where contact cannot be made.

#### Special sour well (British Columbia specific)

A designation that reflects the proposed well's proximity to populated centers and its maximum potential H<sub>2</sub>S release rate during the drilling state. The casing or open-hole flow configuration is used in arriving at this designation.

#### Standing well

A well that has been drilled and cased but not perforated. A company is generally allowed to leave the well as standing for up to one year.

#### State of local emergency

A declaration by a local authority providing the necessary authority, resources, and procedures at the municipal level to allow an emergency to be resolved effectively and efficiently.

#### Sulphur dioxide (SO<sub>2</sub>)

A colourless, water-soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid.  $SO_2$  has a pungent smell similar to a burning match.  $SO_2$  is extremely toxic at higher concentrations. The molecular weight of  $SO_2$  is heavier than air; however, typical releases are related to combustion, which makes the gaseous mixture lighter than air (buoyant).

#### Surface development

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 EPZ and those from which dwellers are required to egress through the EPZ.

#### Susceptible

The subpopulation of persons who may be considered more sensitive to the effects of H<sub>2</sub>S and SO<sub>2</sub>, including the elderly, pregnant women, and the very young, particularly preschool-aged children.

#### **Tabletop exercise**

As described in CAN/ CSA Z246.2-18, an informal exercise generally used to review resource allocations and roles and responsibilities of personnel and to familiarize new personnel with emergency operations without the stress and time constraints of a major exercise.

#### **Technically complete Emergency Response Plan (ERP)**

A plan that meets all applicable requirements.

#### **Telephoners**

Telephoners place calls to residents as directed by the Public Safety Group Supervisor.

#### Threatening telephone call

Any communication that threatens the well-being of company personnel or property. A form is provided in the manual to capture data from or about a person who calls with a threatening message.

#### **Transient**

An individual that is temporarily in the area (e.g. camper, cross-country skier).



# Appendix F: ERP Reference Material, continued Glossary of Terms, continued

#### Trapper

The holder of a provincial licensed and registered trapline for the purpose of hunting and trapping fur bearing animals.

#### **Uncontrolled flow**

A release of product that cannot be shut off at the licensee's discretion.

#### **Urban centre**

A 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.

#### **Unrestricted country development**

Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.

#### **Urban density development**

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.

#### Vapour pressure

The pressure exerted by the vapour when the rate of evaporation is equal to the rate of condensation of the vapour. All NGL products have vapour pressure greater than atmospheric pressure air and therefore have to be kept under pressure or else they will vaporize.

#### Vapour-air plume / vapour cloud

When released to atmosphere, products form a vapour-air plume that is colourless, heavier than air and has a faint gasoline odour. Depending on the product released and the atmospheric conditions, water vapour may condense to form a cloud.

#### Water body

Natural or manmade; contains or conveys water continuously, intermittently, or seasonally. A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills. Examples of a manmade water body include, but are not limited to, a canal, drainage ditch, reservoir, dugout or other manmade surface feature.

#### Well servicing

The maintenance procedures performed on a producing or injecting well after the well has been completed and operations have commenced. Well servicing activities are generally conducted to maintain or enhance well productivity or injectivity.

#### Workover

The process of re-entering an existing well to perform remedial action that will restore or improve the productivity or injectivity of the target formation.



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#### **EMERGENCY RESPONSE PLAN**

# AREA SPECIFIC INFORMATION

**RESPONSE FACILITY LOCATIONS** 

REQUIRED EQUIPMENT & HAND TOOLS LIST

HAZARD ASSESSMENT

AREA OVERVIEW MAP

#### **EKWAN/SIERRA SITE SECTION**

EKWAN/SIERRA FIELD MAP

**ACCESS MAPS & DIRECTIONS** 

**EKWAN/SIERRA EPZ CALCULATIONS** 

RESIDENT INFORMATION

#### **OJAY SITE SECTION**

OJAY FIELD MAP

**ACCESS MAPS & DIRECTIONS** 

OJAY EPZ CALCULATIONS

**CER SITE SECTION** 



#### **EMERGENCY RESPONSE PLAN**

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# **RESPONSE FACILITY LOCATIONS**

Ekwan - Sierra (Field Office)		
Facility	Sierra Gas Plant	
Location	A-26-K / 094-I-11	
Emergency Telephone 1-866-267-5298		
Facility Telephone	1-250-774-3151 ext. 106	



#### **EMERGENCY RESPONSE PLAN**

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# **REQUIRED EQUIPMENT & HAND TOOLS**

Description	Quantity Requied
Ditch Hitch Tow Kit	1
Booster Cables 20'	1
#1 First Aid Kit	1
Emergency Flares (triangle reflectors 3 in a kit)	1
LED Flashlight	1
Ratchet Straps	2
Cell Phone Booster System	1
30lb Fire Extinguisher c/w Bracket	1
Pipe Wrench 18" Alum	1
Pipe Wrench 24' Alum	1
Crescent Wrench 12"	1
Crescent Wrench 15"	1
Vice Grips 10"	1
Pliers Water Pump 12"	1
Needle Nose Pliers 8"	1
Side Cutter Pliers 7"	1
14 piece Combination Wrench Set (3/8" to 1") 1	1
Hammer (Brass 5lb) 1	1
Hammer (Ball pean 2 lb) 1	1
Wire Brush 1	1
Pry Bar 16" 1	1
Allen Key Set (SAE) 1	1
Assorted 1/2" Drive Socket Set (3/8" to 1") 1	1
Assorted 3/8" Drive Socket Set (1/4" to 7/8") 1	1
Screwdriver Set 10 Piece 1	1
Long Handle Round Spade 1	1
Axe 1	1
Garden Rake 1	1
Baker Pump 1	1
Wajax 1	1
Cargo Net	1
Packing Puller 1	1
Two Way Radio for Vehicle 1	1



#### **EMERGENCY RESPONSE PLAN**

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# Hazard Assessment



# **Table of Contents**

1.0 Introduction	3
2.0 Hazard Risk Vulnerability Assessment (HRVA)	4
2.1 Scenarios	5
2.2 Hazards	7
3.0 Hazard Planning Zones	8
3.1 Deactivated Pipelines	9
4.0 Methodology	10
5.0 Asset Tables	11
6.0 Health Effects	12

#### 1.0 Introduction

The objective of the hazard assessment process is to identify, assess, and quantify the consequential emergency events which may result from Pieridae Alberta Production's specific oil and gas activities. This is achieved by identifying all relevant oil and gas substances currently under process / storage containment within a defined area. From that, the realistic worst-case scenario resulting from an incident which could directly or indirectly impact public safety has been determined.

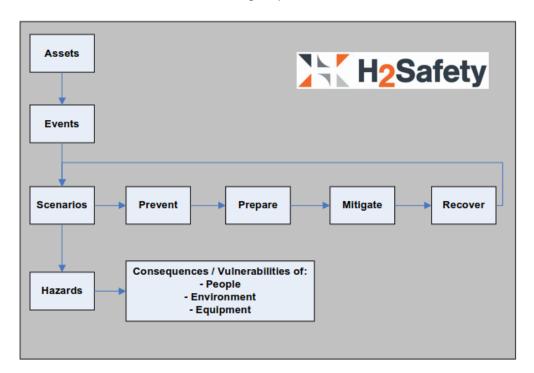
Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2-18 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Pieridae to deliver an effective and timely response protocol for each identified consequential emergency event in order to protect the public, the environment and assets.

This document also intends to meet the following regulations:

- BC Oil & Gas Commission Emergency Management Manual; August 2018; Version 2.1
- Canada Energy Regulator Onshore Pipeline Regulations SOR/99-294
- Canadian Environmental Protection Act, 1999

## 2.0 Hazard Risk Vulnerability Assessment (HRVA)

The first step in our hazard assessment is to complete a Hazard Risk Vulnerability Assessment (HRVA) for the area which includes the following steps:



Assets – a complete list of assets in a geographical area.

Events – these are triggers that start an emergency. These can be natural (earthquake, flood) or manmade (human error, equipment failure).

Scenarios – the event then triggers an emergency scenario to occur. We then review these scenarios to look at Prevention, Preparation, Mitigation, and Recovery.

Hazards – the various scenarios then create a hazard that can affect people, the environment, or property.

#### 2.1 Scenarios

Included below is a list of most probable scenarios that could occur at an oil and gas location. This would include wellsite's, pipelines, pipeline risers, or at a facility. Scenarios are then reviewed from the following perspectives:

- Preventative steps taken to reduce the occurrence of a scenario happening
- Preparation ensuring preparedness if a scenario occurs
- Response steps taken to reduce impacts if a scenario does occur
- Recovery actions taken after the scenario has been resolved

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Fire	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Grounding procedures for vessels and trucks</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Repair / Replace damaged equipment
Container Rupture	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Preventative maintenance procedures</li> <li>Operator present daily</li> <li>Pressure Safety Valve (PSV)</li> <li>PSV serviced regularly</li> <li>Secondary containment</li> <li>Berms</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Recover Product</li> <li>Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
Loading / unloading incident	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Operator present daily</li> <li>Secondary containment</li> <li>Berms</li> <li>Truck loading / unloading procedures</li> <li>Positive grounding procedures</li> <li>Driver competency check</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
Physical Container Damage	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Operator present daily</li> <li>Restricted areas</li> <li>Physical barriers</li> <li>Tank farm design</li> <li>Signage</li> <li>Check Valves</li> <li>Secondary containment</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Recover Product</li> <li>Repair / Replace equipment</li> </ul>

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Container Degradation	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Operator present daily</li> <li>External inspections</li> <li>Vessel coating</li> <li>Asset integrity program</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Recover Product</li> <li>Repair / Replace equipment</li> </ul>
Environmental Impacts (freezing, excess heat, etc)	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Preventative maintenance procedures</li> <li>Operator present daily</li> <li>Pressure Safety Valve (PSV)</li> <li>PSV serviced regularly</li> <li>Secondary containment</li> <li>Berms</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Recover Product</li> <li>Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
Pipe System Failure	<ul> <li>Engineering Controls</li> <li>Administrative Controls</li> <li>Training / exercises</li> <li>Preventative maintenance procedures</li> <li>Operator present daily</li> <li>Equipment and lines clearly identified</li> <li>Check Valves</li> <li>Manual Block Valves</li> <li>Automatic or remote Emergency Shutdown Valve (ESD)</li> <li>Asset Integrity program</li> <li>Technical Safety BC compliance</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul> <li>Incident investigation</li> <li>Recover Product</li> <li>Environmental and/or wildlife cleanup and rehabilitation</li> </ul>

#### 2.2 Hazards

Based on typical oil and gas products and the scenarios above, we can typically classify hazards into the following categories:

- Physical Hazard: Flammable, Combustible, or Oxidizing Substances
- Physical Hazard: Potential for Pool Fires
- Human Health Hazard: Inhalation Toxicity
- Human Health Hazard: Carcinogenicity
- Human and Environmental Health Hazard: Corrosive Substances
- Environmental Health Hazard: Persistent, Bioaccumulative, or Aquatically Toxic

These hazards have the potential to result in the following consequences:

Impacted	Potential Consequences
Company Employees	<ul> <li>Fatality</li> <li>Permanent Disability</li> <li>Lost time Injury</li> <li>Illness</li> <li>Medical Aid</li> <li>Low to no potential consequences</li> </ul>
Other Workers in the Area	<ul> <li>Fatality</li> <li>Permanent Disability</li> <li>Lost time Injury</li> <li>Illness</li> <li>Medical Aid</li> <li>Low to no potential consequences</li> <li>Evacuation / restricted access / road closures</li> </ul>
General Public	<ul> <li>Fatality</li> <li>Permanent Disability</li> <li>Lost time Injury</li> <li>Illness</li> <li>Medical Aid</li> <li>Low to no potential consequences</li> <li>Evacuation / restricted access / road closures</li> </ul>
Environment	<ul> <li>Release into atmosphere / plume</li> <li>Release of flammable gas / liquid</li> <li>Release of corrosive liquid</li> <li>Liquid spill on land and negative impacts to plant life</li> <li>Liquid spill into water body and negative impacts to water and plant life</li> <li>Negative impacts to wildlife (illness, injury, disability, or fatality)</li> </ul>
Equipment	<ul><li>Equipment failure / damage</li><li>Complete loss of equipment</li><li>Lost revenues</li></ul>

### 3.0 Hazard Planning Zones

The purpose of the Hazard Assessment is to determine zones for emergency planning purposes. Hence, actual response zones may be smaller or larger than the planning zones based on real world air monitoring, terrain impacts, weather, etc.

The Hazard Assessment considers hazards from primary sources only. Cascading events (one BLEVE event leading to another) and chemical reactions are not considered in the Hazard Planning Zone (HPZ) calculations.

To quantify the hazards described above, we must determine how an HPZ is defined. This is typically done by determining what endpoint is used in the modeling. Modeling endpoints are often based on a Level of Concern (LOC) which is a threshold that relates a modeling endpoint to a human health effect.

Hazard	Endpoint	Units	Health Effects
Thermal Radiation	5.00	kW / m <sup>2</sup>	2 <sup>nd</sup> degree burns within 60 seconds
Overpressure	3.50	Psi	Serious injury likely
Toxic Effects	Dependent on substance released		

- Thermal radiation high temperatures associated with the burning of gas can cause significant burns or even death to individuals that are too close to the heat source.
- Overpressure is the pressure above atmospheric pressure that is caused by the shock wave created from an explosion. Overpressure can result in structural damage leading to public harm or directly by damaging hollow organ systems such as auditory, respiratory, and gastrointestinal systems.
- Toxic Effects Various substances will have different effects

Thermal Radiation and Overpressure LOC's are from ALOHA; which is an air hazard modeling program developed jointly by NOAA and the Environmental Protection Agency (EPA). Toxic Effect HPZ's are determined utilizing numerous methods and LOC's depending on the substance, but are generally completed using one of the following:

- BC Oil & Gas Commission Emergency Management Manual; August 2018; Version 2.1
- Alberta Energy Regulator (AER) ERCBH2S Dispersion Model
- Transport Canada 2016 Emergency Response Guidebook
- ALOHA Dispersion Model

#### 3.1 Deactivated Pipelines

In accordance with the BCOGC Oil and Gas Activities act – Pipeline Regulation, all pipelines being re-licensed to Deactivated status must be deactivated in accordance with CSA Z662. CSA Z662 states under section 10.15.1.1 Deactivation of piping:

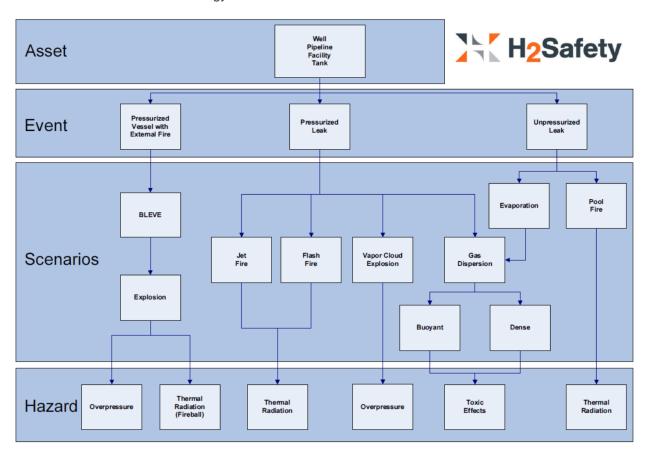
Operating companies deactivating piping shall

- a) Isolate the piping, using blind flanges, weld caps, or blanking plates suitable for the pressure from which the deactivated piping is being isolated;
- b) Where required, provide a pressure-relief system; and
- c) Fill the piping with a suitable medium, having regard for the intended duration of the deactivation, the effects of the medium on the integrity of the piping, and the potential consequences of a leak.

As a corrosion inhibitor may be utilized in deactivated pipelines, a hazard planning zone (HPZ) of 10 meters has been assigned to all deactivated pipelines to represent the pipeline right-of-way.

# 4.0 Methodology

Included below is the methodology used to determine HPZ's.



# **5.0 Asset Tables**

For asset tables, refer to the back of the applicable supplement area (white tabs). Each set of asset tables will include their associated Hazard Planning Zones (HPZ's).

# **6.0 Health Effects**

Included below is a list of most probable health effects that could occur at an oil and gas location.

Hazardous Product	General Description	Health Effects
Natural Gas	<ul> <li>Extremely flammable.</li> <li>Will be easily ignited by heat, sparks or flames.</li> <li>Will form explosive mixtures with air.</li> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul> <li>Hydrogen sulphide gas and hydrocarbon vapours may:</li> <li>Cause irritation of eyes, nose and throat, dizziness and drowsiness.</li> <li>At higher concentrations, sever irrigation of eyes, nose, throat and lungs may occur.</li> <li>Unconsciousness and respiratory failure may happen without warning. Death may result if not promptly revived.</li> <li>Contact with skin may cause irritation and possibly dermatitis. Hydrocarbons are absorbed through intact skin.</li> <li>Contact of liquid with eyes may cause sever irritation.</li> </ul>
Carbon Dioxide	<ul> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul> <li>Vapours may cause dizziness or asphyxiation without warning.</li> <li>Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.</li> </ul>
Hydrogen Sulphide	<ul> <li>Flammable - explosive when mixed with air – forms SO<sub>2</sub> when combusted</li> <li>Rotten egg smell at low concentrations – inhibits olfactory senses at high concentrations.</li> <li>Heavier than air; will tend to disperse slower in sheltered or low lying areas.</li> <li>Extremely toxic.</li> </ul>	<ul> <li>Initial odour of H<sub>2</sub>S detected at about 0.1 ppm. Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness.</li> <li>H<sub>2</sub>S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly.</li> <li>Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin.</li> <li>Contact of liquid with eyes may cause severe irritation and possible damage.</li> </ul>

Hazardous Product	General Description	Health Effects
Oil or Condensate	<ul> <li>Colourless/straw coloured liquid, hydrocarbon and rotten eggs odour.</li> <li>Material will ignite at normal temperatures.</li> </ul>	<ul> <li>Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness.</li> <li>H<sub>2</sub>S may cause a loss of sense of smell at 100 ppm. At higher concentrations, severe irritation of eyes, nose, throat and lungs, dizziness. Headache, nausea, unconsciousness and respiratory failure may occur. Death may result if not revived promptly.</li> <li>Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin.</li> <li>Contact of liquid with eyes may cause severe irritation and possible damage.</li> </ul>
Nitrogen	- Containers may explode when heated. Ruptured cylinders may rocket.	<ul> <li>Vapours may cause dizziness or asphyxiation without warning.</li> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>
Compressed Air	- High pressure air	- Possible burns, abrasions and skin irritation.
Steam	- High pressure, high temperature air/water	- Possible burns and skin irritation.
Emissions	- Carbon monoxide	<ul> <li>Very toxic.</li> <li>Can harm the blood (decreased ability to carry oxygen). Symptoms may include headache, nausea, dizziness, drowsiness and confusion</li> <li>May cause permanent damage to organs including the brain and heart.</li> <li>Symptoms of mild frostbite include numbness, prickling and itching.</li> <li>Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become waxy white or yellow. Blistering, tissue death and infection may develop in severe cases.</li> </ul>
	- Sulphur Dioxide	<ul> <li>Very toxic if inhaled.</li> <li>Causes severe skin burns and eye damage</li> <li>Corrosive to the respiratory tract.</li> </ul>

Hazardous Product	General Description	Health Effects
Produced Water	<ul><li>Clear to dirty grey liquid.</li><li>Flammable liquid and vapour.</li></ul>	<ul> <li>Can be fatal if inhaled.</li> <li>Causes serious eye irritation.</li> <li>May cause skin irritation.</li> <li>May cause gastrointestinal irritation.</li> </ul>
Diesel	<ul><li>Bright, oily liquid; clear to yellow in colour with mild petroleum-like odour.</li><li>Flammable liquid and vapour.</li></ul>	<ul> <li>May be fatal if swallowed and enters airways.</li> <li>Causes skin irritation.</li> <li>Harmful if inhaled.</li> <li>May cause damage to organs through prolonged or repeated exposure.</li> </ul>
Gasoline	<ul> <li>Clear to slightly yellow or green liquid with Gasoline odour.</li> <li>Extremely flammable liquid and vapour.</li> </ul>	<ul> <li>May be fatal if swallowed and enters airways.</li> <li>Causes skin irritation.</li> <li>May cause drowsiness or dizziness.</li> <li>May cause cancer.</li> <li>May cause damage to organs through prolonged or repeated exposure.</li> </ul>
Lube Oil	- Yellow liquid with petroleum oil like odour.	<ul> <li>May cause skin and eye irritation.</li> <li>Repeated or long term exposure may cause dizziness or drowsiness.</li> </ul>
Propane	<ul> <li>Colourless, liquefied gas.</li> <li>Extremely flammable and may explode when heated.</li> <li>Will be easily ignited by heat, sparks or flames.</li> <li>Will form explosive mixtures with air.</li> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul> <li>May displace oxygen and cause rapid suffocation.</li> <li>May cause respiratory irritation.</li> <li>Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite.</li> <li>May cause eye and skin irritation.</li> </ul>
Corrosion Inhibitor	<ul> <li>Black liquid.</li> <li>Highly flammable liquid and vapour.</li> </ul>	<ul> <li>Harmful if swallowed or in contact with skin.</li> <li>Causes skin irritation.</li> <li>Causes serious eye damage.</li> <li>Toxic if inhaled.</li> <li>May cause drowsiness or dizziness.</li> <li>May cause kidney damage through prolonged or repeated exposure.</li> </ul>

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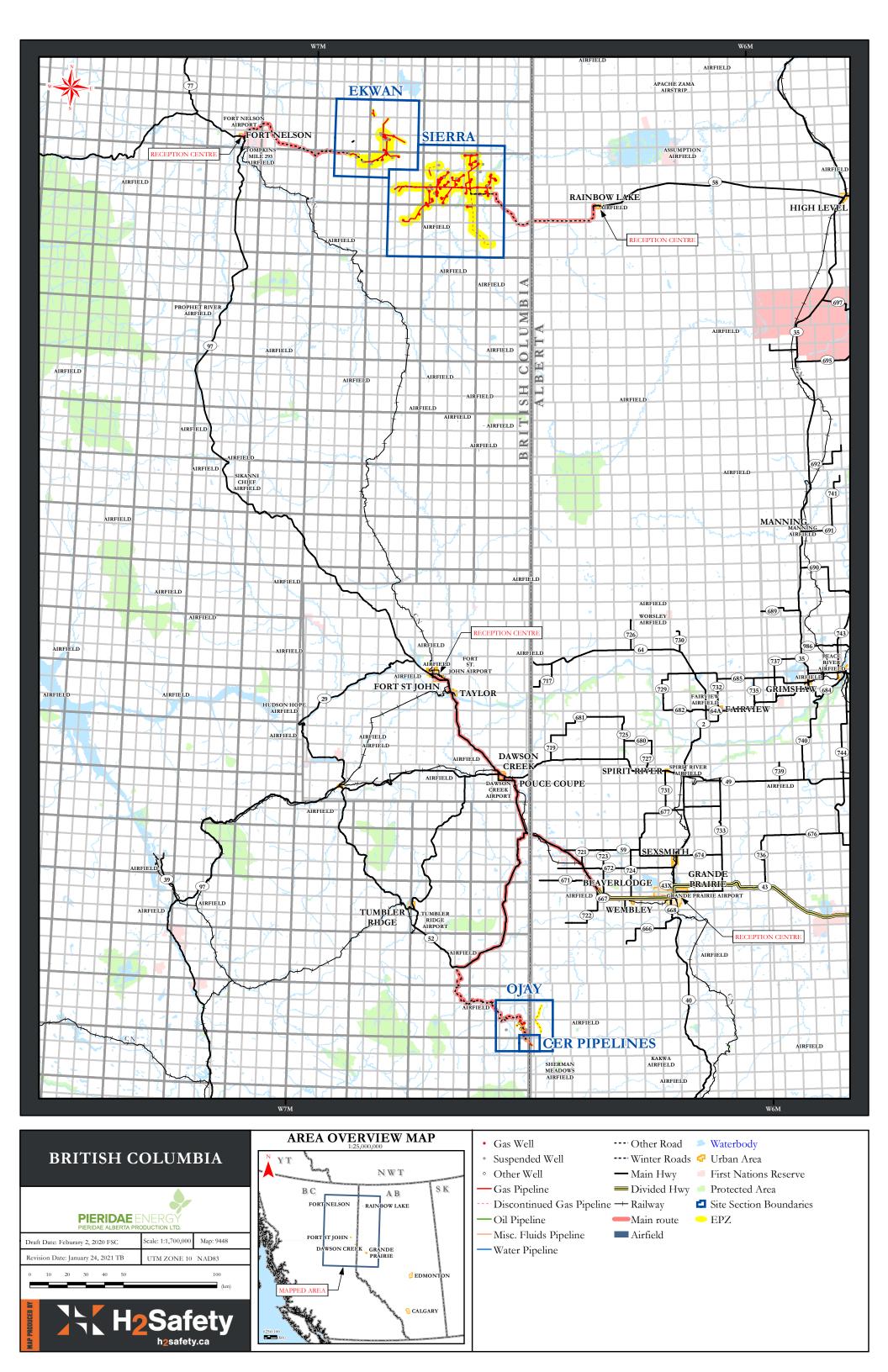
Hazardous Product	General Description	Health Effects
Scale Inhibitor	<ul><li>Colourless liquid.</li><li>Flammable liquid and vapour.</li></ul>	<ul> <li>Harmful if swallowed.</li> <li>May cause damage to eyes.</li> <li>May cause damage to kidneys through prolonged or repeated exposure.</li> </ul>
Paraffin Inhibitor	<ul> <li>Clear liquid.</li> <li>Hydrocarbon-like odour.</li> <li>Flammable liquid and vapour.</li> </ul>	<ul> <li>Harmful in contact with skin and can cause skin irritation.</li> <li>Causes serious eye irritation.</li> <li>May cause respiratory irritation.</li> <li>May cause drowsiness or dizziness.</li> <li>May cause cancer or genetic defects.</li> <li>May cause damage to nervous system through prolonged or repeated exposure.</li> <li>May be fatal if swallowed and enters airways.</li> </ul>
Biocide	<ul><li>Colourless liquid.</li><li>Pungent odour.</li><li>Flammable liquid and vapour.</li></ul>	<ul> <li>Causes serious eye damage.</li> <li>Causes severe skin burns.</li> <li>May cause allergic skin reaction.</li> <li>Harmful if swallowed.</li> <li>Causes digestive tract burns.</li> <li>May cause allergic respiratory tract irritation.</li> <li>Toxic if inhaled.</li> </ul>
Demulsifier / Emulsion Breaker	<ul> <li>Clear amber liquid.</li> <li>Highly flammable liquid and vapour.</li> <li>Hydrocarbon-like odour.</li> </ul>	<ul> <li>Harmful if swallowed.</li> <li>May be fatal if swallowed and enters airways.</li> <li>Causes skin irritation.</li> <li>Causes serious eye irritation.</li> <li>May cause respiratory irritation.</li> <li>May cause drowsiness or dizziness.</li> <li>May cause genetic defects.</li> </ul>
Ethylene Glycol	- Clear, colourless, viscous liquid.	<ul> <li>May cause eye irritation.</li> <li>May be harmful if inhaled. Causes respiratory tract irritation.</li> <li>May be harmful if absorbed through skin. Causes skin irritation.</li> <li>May be harmful if swallowed.</li> </ul>

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Hazardous Product	General Description	Health Effects
Natural Gas Liquids (NGL)	<ul> <li>Colourless, liquefied gas.</li> <li>Extremely flammable and may explode when heated.</li> <li>Will be easily ignited by heat, sparks or flames.</li> <li>Will form explosive mixtures with air.</li> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul> <li>May displace oxygen and cause rapid suffocation.</li> <li>May cause respiratory irritation.</li> <li>Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite.</li> <li>May cause eye and skin irritation.</li> </ul>
Liquefied Petroleum Gas (LPG)	<ul> <li>Colourless, liquefied gas.</li> <li>Extremely flammable and may explode when heated.</li> <li>Will be easily ignited by heat, sparks or flames.</li> <li>Will form explosive mixtures with air.</li> <li>Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul> <li>May displace oxygen and cause rapid suffocation.</li> <li>May cause respiratory irritation.</li> <li>Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite.</li> <li>May cause eye and skin irritation.</li> </ul>
Methanol	<ul><li>Clear, colourless liquid.</li><li>Alcohol-like odour.</li><li>Highly flammable in liquid and vapour.</li></ul>	<ul> <li>Toxic if swallowed.</li> <li>Toxic in contact with skin.</li> <li>Toxic if inhaled.</li> <li>Causes damage to organs.</li> </ul>
Jet Fuel (Jet B or Avgas)	<ul> <li>Clear to straw-coloured liquid.</li> <li>Highly flammable liquid and vapour.</li> <li>Gasoline-like odour.</li> </ul>	<ul> <li>May be fatal if swallowed and enters airways.</li> <li>Causes skin irritation.</li> <li>May cause drowsiness or dizziness.</li> <li>May cause cancer.</li> <li>May cause damage to organs through prolonged or repeated exposure.</li> </ul>
Amine (MEA)	<ul><li>Clear, colourless liquid.</li><li>Amine-like odour.</li><li>Combustible at high temperatures.</li></ul>	<ul> <li>Harmful if swallowed, in contact with skin or inhaled.</li> <li>Causes severe skin burns and eye damage.</li> <li>May cause respiratory irritation.</li> <li>May cause damage to organs through prolonged or repeated exposure if swallowed.</li> </ul>

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Hazardous Product	General Description	Health Effects
H2S Scavenger	<ul><li>Clear liquid.</li><li>Soluble in Water.</li></ul>	<ul> <li>Irritating to eyes and skin.</li> <li>Irritating to respiratory system. May cause severe irritation burns.</li> <li>May cause allergic skin reaction.</li> <li>May be harmful if swallowed.</li> </ul>
Other	- At facilities, well-sites, risers, etc., other hazardous materials are likely to be present. Refer to SDS sheets and Transportation Canada Emergency Guidebook for a description and health effects of unlisted hazardous products.	



Courier / Mailing Address: 3100-308 4 Avenue SW

Calgary, AB T2P 0H7

Superintendent Jumping Pound & North

Conrad Kenny Cell: 403-472-5593

Health & Safety, ERP Coordinator

Paul Smith Cell: 403-638-1452

Northern Foothills Foreman

Josh Storle Cell: 780-897-0851

**SVP Drilling, Completions & HSE** 

Yvonne McLeod Cell: 403-921-7744

For a detailed contact list, refer to the Incident Management Team Phone List yellow tab, behind the Section 2.0: Roles and Responsibilities blue tab.

#### **OPERATIONS SUMMARY**

Pieridae Alberta Production Ltd. is owner / operator of sour (H<sub>2</sub>S) producing wells and facilities located in the Ekwan/Sierra field.

#### **EPZ Information**

The largest calculated EPZ for the Ekwan/Sierra field is 4060 m. The highest licensed pipeline  $H_2S$  concentration is 3.89% and the largest release volume is 2786 m³. The highest licensed well  $H_2S$  concentration is 4.54% and the largest release rate is 0.3339 m³/s.

#### Closest Urban Centre

The Town of Rainbow Lake, located approximately 87 km east is the closest urban centre to the of the west point of the Ekwan emergency planning zone.. It is accessible only when weather permitting. Fort Nelson which has a population of +/- 3366 is the closest urban centre to the Sierra EPZ.

#### Hydrology

There are numerous streams and water bodies within or intersecting the emergency planning zone, some of which include; Ekwan Creek, Hay River, Klicho Creek, Kotcho River, Kyklo Creek, Sahcho Creek and Townsoitoi Creek.

#### Highways

There are no highways intersecting or within the emergency planning zone.

#### Surface Developments

There are 4 cabins, 1 camps and 4 petroleum facilities (2 vacant) within the emergency planning zone.

#### Site Access and Special Considerations

Refer to the following page for the access map and directions.

#### **SAFETY EQUIPMENT**

#### Operator / Truck Safety Equipment

Refer to the "Required Equipment & Hand Tools" for a complete listing of safety equipment.

#### Notification

The Sierra Gas Plant is equipped with an alarm system to alert operators to an upset or hazardous condition on a twenty-four (24) hour basis via Supervisory Control & Data Acquisition (SCADA).

#### Communications

Cell phones are the primary method of communication. Some areas may require the use of two-way radios.

#### Roadblock Kits / Ignition Kits

Roadblock and ignition kit availability will be coordinated at the time of incident of by the Team Lead.

\*\* If any of the above mentioned safety equipment is insufficient, Pierdae personnel will contact a local safety company who will be asked to provide additional equipment. \*\*

#### **EMERGENCY SERVICES**

Note: All numbers, unless otherwise indicated, are 24 hours

 Ambulance
 \*911

 Fort Nelson
 24hr: 250-774-2344

 STARS Air Ambulance
 888-888-4567

Hospitals

Fort Nelson General Hospital 24hr: 250-774-8121

Fire Department\*\* \*911

Northern Rockies Regional Municipality 24hr: 250-774-2222

\*\*This area does <u>NOT</u> have fire coverage from any local fire department. All fires must be handled by the company, mutual aid partners, or contract oilfield fire fighting services Local fire departments will only respond to motor vehicle accidents and medical emergencies unless specifically dispatched by EMBC or the Local Authority.

RCMP \*911 Northern Rockies / Fort Nelson 24hr: 250-774-2777

\*Note that as of January 2021 there is now 911 service throughout the jurisdiction of the Northern Rockies Regional Municipality, however the previous emergency numbers are also still active.

Poison Control Centre (British Columbia) 24hr: 604-682-5050

**BC One Call** 24hr: 800-474-6886

#### Reception Centres

Northern Rockies Recreation Centre

5500 Alaska Highway, Fort Nelson, BC 250-774-2541 xt. 2080

#### **LEAD AGENCIES & PRIORITY CONTACTS**

Note: All numbers, unless otherwise indicated, are 24 hours.

BC Oil & Gas Commission		800-663-3456 250-794-5200
Emergency Management BC Heather MacRae, Regional Manager	Office:	800-663-3456 250-561-3514
Northern Rockies Regional Municipality Erin La Vale, Emergency Coordinator		250-774-2222 250-774-2541 250-500-1591
James Childs, Fire Chief	Bus:	250-774-3955 250-775-1947
Northern Health Authority HEMBC On Call		855-554-3622
Non-Emergency: Jim Fitzpatrick, Director	Office:	250-565-5584
WorkSafe BC - Fort St. John (after hours reporting) Daytime Reporting		866-922-4357 888-621-7233
Theresa Pearsall, Support Services Coordinator	Bus:	250-785-1283
Technical Safety BC		866-566-7233
BC Ministry of Transportation & Infrastructure North Peace Area, Fort St. John Katherine Styba, District Manager	Admin:	800-842-4122 250-787-3237 250-576-1157
BC Ministry of Environment - Peace Region Terry Sawchuk, Emergency Response Officer	Office:	800-663-3456 250-787-3391
Transportation of Dangerous Goods (TDG)		800-272-9600
BC Ministry of Forest, Lands and Natural Resource C Forest Fire Reporting	Operations	800-663-5555
Peace Forest District Mark Van Tassel, District Manager	Bus: Bus:	*5555 (cell) 250-784-1200 250-784-1230
CANUTEC (Call collect)	Toll-Free:	613-996-6666 888-226-8832 *666 (cell)
Information		613-992-4624
Environment Canada  *Meteorological Services  *Ensure to report the call as emergency in order to price	oritize call	604-664-9385
Air Traffic Control		866-541-4102 877-992-6853

#### MEDIA STATEMENT

Refer all media inquiries to the Media Representative in Calgary. However, if they insist on a statement, please use the following:

"We are currently dealing with the situation at hand to ensure the safety of persons, property and the environment. The matter is being investigated. A statement will be released by the Company once the facts have been determined. If you would like to leave your contact information with me, I will promptly pass it on to someone who will contact you and will provide you with information as it becomes available."

NOTE: See Section 3.0 Communication & Media for more information on media.

#### SUPPORT SERVICES

Note: All numbers, unless otherwise indicated, are 24 ho

Mobile Air Monitoring			
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400		
HSE Integrated Ltd Grande Prairie	888-346-8260		
Trojan Safety Services - Grande Prairie	877-785-9558		
BC OGC (1 mobile air monitor)	250-794-5200		

\* Due to response time, dispatch mobile air monitoring at a Level 1 Emergency. Response time is expected to be minimum 7-9 hours from Grande Prairie, AB and 4 - 6 hours from Fort St. John, BC

Oilfield Fire Fighting / Safety Contractors Firemaster Oilfield Services Inc Grande Prairie HSE Integrated Ltd Grande Prairie Safety Boss - Fort St. John Trojan Safety Services Ltd., Fort St. John	780-539-4400 888-346-8260 800-882-4967 877-785-9557
Well Control Specialists Firemaster Oilfield Services Inc Grande Prairie Capstone Blowout Recovery - Province Wide Safety Boss - Fort St. John	780-539-4400 866-347-3911 800-882-4967

Ignition Services	
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400
HSE Integrated Ltd Grande Prairie	888-346-8260
Safety Boss Inc Province wide	800-882-496
Emergency Response Management	

Emergency Response Management	
H₂Safety Services Inc Calgary	403-212-233
Toll Free	888-216-233
- ··· -	

Clean Harbours Industrial Services - Fort Nelson	250-233-8811
Mutual Aid Clearwater Mutual Aid Coop (CMAC) - Rocky Mountain House	866-950-2622

ı	Transportation	
	Diversified Transportation Ltd Fort Nelson	250-774-3767
	Prairie Bus Lines - Red Deer	866-342-6390
	Heliconter Companies (Day Flying Only)	

rionooptor companies (bay riying only)	
Bailey Helicopters (loud hailer capability)	250-785-2518
Canadian Helicopters Ltd Fort St. John	250-787-0431
Qwest Helicopters—Fort Nelson	250-774-5302
WCSS - Zone 6 - Coop "C"*	866-541-8888

WCSS - Zone 6 - Coop "C"*	866-541-8888	
Regional Custodian:		
Clean Harbors Production Services - Shawn Doré	Bus:250-785-4577	

# Cell: 250-261-9404 Equipment Location:

#### Clean Harbors Surface Rentals:

6715 85 Avenue, Fort St. John, BC V1J 4J3

#### **Equipment Summary**

52' OSCAR Trailer (Semi-Truck)

40' Boom Cache Sea-can (winch tractor/trailer)

20' Wildlife Sea Can (winch tractor/trailer)

Single Engine Barge (1 ton truck w/ 2 5/16" ball hitch & electric brakes) Workboat (1/2 ton w/ 2" ball hitch)

Drum Skimmer c/w power pak (1/2 ton truck)

400' Shallow Water Boom (1/2 ton truck)

#### Coop Custodian:

Clean Harbors Production Services - Shawn Doré
Bus:250-785-4577
Cell: 250-261-9404

#### **Equipment Location:**

4901 46 Avenue, Fort Nelson, BC V0C 1R0

#### Equipment Summary & Transport Requirements:

20' ISRU Sea Can (winch tractor/trailer) Work Boats (2) (1/2 ton w/ 2" ball hitch)

\*See website for more info (http://www.wcss.ab.ca)

EKWAN/SIERRA

February 2021



February 2021 www.h2safety.ca

# AREA USERS & TIE-INS

e: All numbers, unless otherwise indicated, are 24 hours.

Oil	and	Gas	
_			

Company Name	Emergency #
ARC Resources Ltd.	403-292-0434
Canadian Natural Resources Limited	888-878-3700
Canlin Energy Corporation	866-409-2744
Enbridge Pipelines Inc.	800-663-9931
Exxonmobil Canada Energy	866-232-9563
Harvest Operations Corp.	800-760-2826
Husky Oil Operations	877-262-2111
Northriver Midstream Energy Ltd.	844-667-8477
Orphan Fund	250-794-5200
Ovintiv Canada ULC	403-645-3333
SanLing Energy Ltd.	888-262-5530
Shanghai Energy Corporation	844-306-5110
Signalta Resources Ltd.	403-265-5091
TC Energy	888-982-7222
Tervita Corporation	800-327-7455
Tourmaline Oil Company	877-365-1619

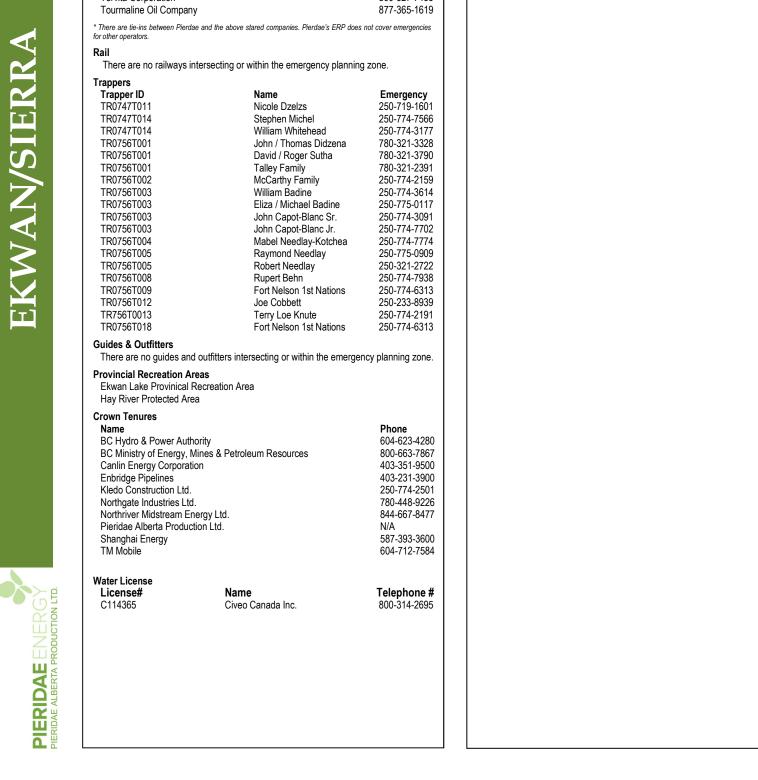


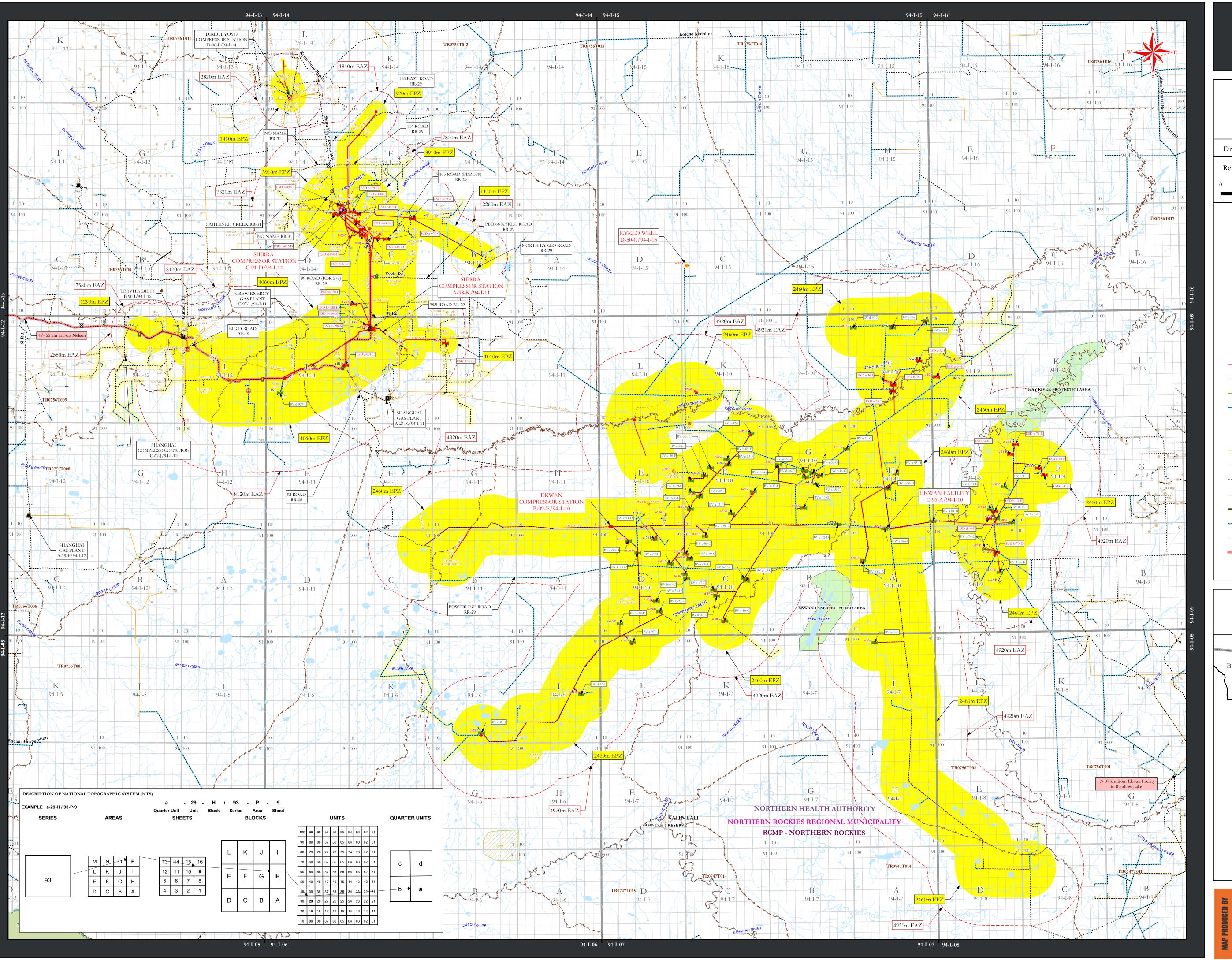
#### Other

During ground-truthing and the consultation, it was identified that from Km 122 north on Sierra Yoyo Desan Road, there is no egress for the facilities and camps except to go south through the Sierra EPZ. Some of the roads in the area are winter access only. Information was obtained by phone from operators in the area regarding their facilities and camps however the area was not ground-truthed due to road conditions and the exact locations of the facilities and camps is not known. Information shown on the map was obtained from the public database.

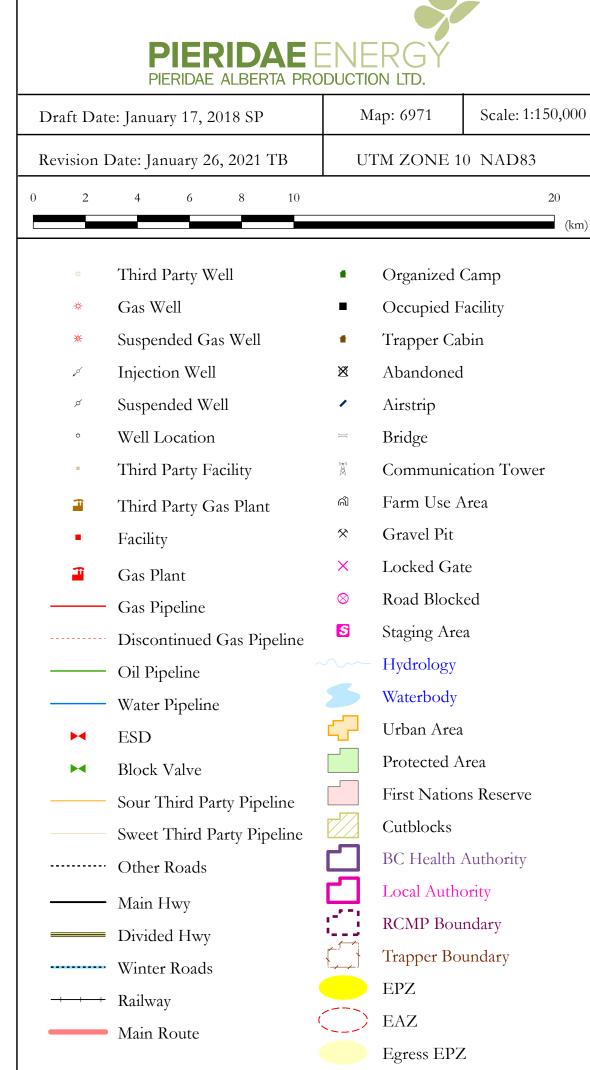
One of the area operators estimated that in this area there could be 20 to 25 campsand facilities with up to 1500 people working and staying in the camps. Some of the camps and facilities are accessible only by helicopter and some workers are flown in to the CNRL airstrip. All workers transported in or out by ground transportation would have to come through the EPZ.

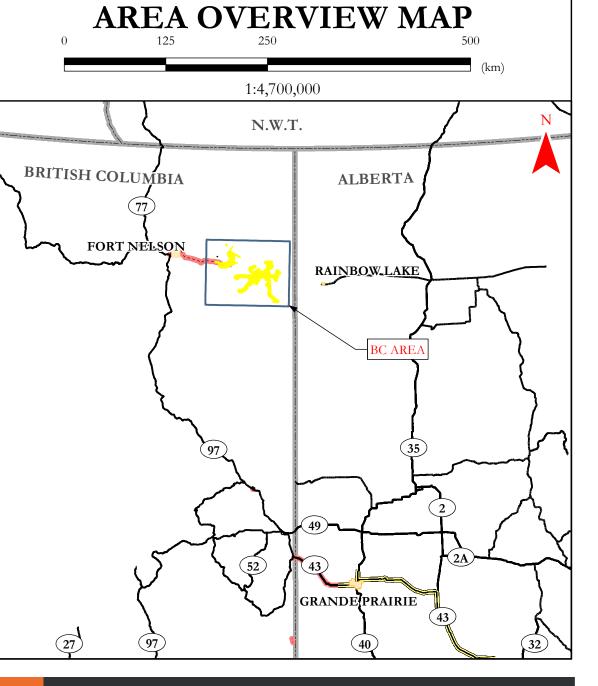
There is another landing strip on the Komie road at Cabin Lake but it is unclear who owns it and it is not maintained. Other airstrips are shown on the map but it is not known who owns them or if they are maintained.





# EKWAN/SIERRA FIELD







# **Ekwan - Facilities**

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE		WELL OR PIPELINE HPZ	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
				PIE	RIDAE OPERATI	NG								
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN B-006-L/094-I-10 002	BCPG0008137	B-006-L/094-I-10	58.6678922	-120.9498095	58° 40' 4.411"	-120° 56' 59.314"	PG	1199.36	2460	N/A	2460	21.510	AC
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN B-009-E/094-I-10 001	BCCS0007726	B-009-E/094-I-10	58.5853242	-120.9827290	58° 35' 7.167"	-120° 58' 57.824"	CS	1199.36	2460	N/A	2460	22.532	Р
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D-029-K/094-I-10 004	BCGM0008579	D-029-K/094-I-10	58.6910328	-120.8572461	58° 41' 27.718"	-120° 51' 26.085"	GM	1199.36	2460	N/A	2460	26.779	AC
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D-029-K/094-I-10 003	BCDH0007388	D-029-K/094-I-10	58.6910328	-120.8572461	58° 41' 27.718"	-120° 51' 26.085"	DH	1199.36	2460	N/A	2460	26.779	AC

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility locations listed in the table above also have manual block valves at these locations.

#### LEGEND

Facility: B=Battery CS=Compressor Station GP=Gas Plant GI=Gas Injection Plant GM=Gas Sales Meter PG=Gathering point PS=Pump Station TS=Test Facility TL=Terminal S=Satellite DH=Dehydrator UN=Unknown WI=Water Injection PT=Pipeline Terminal WD=Water Disposal OM=Oil Sales Meter WF=Well Facility PR=Pigging Receiver/Launcher WD=Water Disposal Facility WH=Water Hub

Status: A=Abandoned D=Discontinued O=Operating P=To Be Constructed S=Suspended AC=Active NW=New

Other: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

#### NOTES

All Ikkuma facilities in the area are included above.

Table has been carried forward from 2020 at the direction of the client.

		LICENSE			H2S	AOF	H2S RELEASE	SOUR	EPZ	DISTANCE TO	
LICENSEE	WELLNAME	NO.	UWI	SURFACE LOCATION	(%)	(1000 m3/day)	RATE (m3/s)	EPZ (m)	ASSIGNED (m)	NEAREST RESIDENT	STATUS
	-1-						(1113/5)			(km)	
		RIDAE SOUR		1 004 11/004 1 40					1000		212
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 001-H/094-I- 10		200A011H094I1002	A-001-H/094-I-10	0.02	100.0	0.0002	16	100*	26.268	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 001-H/094-I- 10	12636	200D011H094I1003	A-001-H/094-I-10	0.02	100.0	0.0002	16	100*	26.268	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 002-G/094-I- 10	9540	200C002G094I1002	A-002-G/094-I-10	0.02	100.0	0.0002	16	100*	34.363	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 002-G/094-I- 10	9540	200B012G094I1003	A-002-G/094-I-10	0.02	100.0	0.0002	16	100*	34.363	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 013-E/094-I- 10	20244	200A013E094I1000	A-013-E/094-I-10	0.02	100.0	0.0002	16	100*	26.248	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 015-F/094-I- 10	12632	200A025F094I1000	A-015-F/094-I-10	0.02	100.0	0.0002	16	100*	31.604	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 015-F/094-I- 10	12632	200C025F094I1002	A-015-F/094-I-10	0.02	100.0	0.0002	16	100*	31.604	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 016-C/094-I- 10	11287	200A027C094I1000	A-016-C/094-I-10	0.02	100.0	0.0002	16	100*	35.179	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 016-C/094-I- 10	11287	200A027C094I1002	A-016-C/094-I-10	0.02	100.0	0.0002	16	100*	35.179	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 025-E/094-I- 10	20471	200A025E094I1000	A-025-E/094-I-10	0.02	100.0	0.0002	16	100*	24.545	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 034-D/094-I- 10	15289	200D036D094I1002	A-034-D/094-I-10	0.02	100.0	0.0002	16	100*	29.338	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 039-F/094-I- 10	25823	200D038F094I1002	A-039-F/094-I-10	0.02	100.0	0.0002	16	100*	28.482	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 039-F/094-I- 10	25823	200D038F094I1003	A-039-F/094-I-10	0.02	100.0	0.0002	16	100*	28.482	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 039-F/094-I- 10	25823	200B049F094I1000	A-039-F/094-I-10	0.02	100.0	0.0002	16	100*	28.482	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 045-G/094-I- 10	11284	200A045G094I1000	A-045-G/094-I-10	0.02	100.0	0.0002	16	100*	35.681	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 045-G/094-I- 10	11284	200B054G094I1002	A-045-G/094-I-10	0.02	100.0	0.0002	16	100*	35.681	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 047-C/094-I- 10	12777	200A057C094I1000	A-047-C/094-I-10	0.02	100.0	0.0002	16	100*	32.938	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 050-L/094-I- 09	17143	200C041I094I1000	A-050-L/094-I-09	0.02	100.0	0.0002	16	100*	25.622	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 052-E/094-I- 10	20243	200A052E094I1000	A-052-E/094-I-10	0.02	100.0	0.0002	16	100*	25.686	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN A- 053-C/094-I- 10	11989	200D054C094I1000	A-053-C/094-I-10	0.02	100.0	0.0002	16	100*	35.070	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 055-E/094-I- 10	20473	200A055E094I1000	A-055-E/094-I-10	0.02	100.0	0.0002	16	100*	23.530	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 055-G/094-I- 10	897	200A055G094I1000	A-055-G/094-I-10	0.02	100.0	0.0002	16	100*	35.889	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN A- 055-G/094-I- 10	897	200A055G094I1002	A-055-G/094-I-10	0.02	100.0	0.0002	16	100*	35.889	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 055-H/094-I- 10	9610	200B065H094I1003	A-055-H/094-I-10	0.02	100.0	0.0002	16	100*	28.685	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL HZ EKWAN A- 056-G/094-I- 10	23432	200C056G094I1000	A-056-G/094-I-10	0.02	100.0	0.0002	16	100*	36.595	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL HZ EKWAN A- 056-G/094-I- 10	23432	200D067G094I1002	A-056-G/094-I-10	0.02	100.0	0.0002	16	100*	36.595	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 058-F/094-I- 09	18176	200C058F094I0900	A-058-F/094-I-09	0.02	100.0	0.0002	16	100*	16.303	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 058-F/094-I- 09	18176	200A069F094I0902	A-058-F/094-I-09	0.02	100.0	0.0002	16	100*	16.303	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 058-F/094-I- 09	18176	200A069F094I0903	A-058-F/094-I-09	0.02	100.0	0.0002	16	100*	16.303	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 071-G/094-I- 10	12503	200D081G094I1002	A-071-G/094-I-10	0.02	100.0	0.0002	16	100*	32.848	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 080-C/094-I- 10	15055	202A081D094I1000	A-080-C/094-I-10	0.02	100.0	0.0002	16	100*	29.829	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 074-D/094-I- 09	16721	200A085D094I0900	A-085-D/094-I-09	0.02	100.0	0.0002	16	100*	22.768	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 074-D/094-I- 09	16721	200C085D094I0902	A-085-D/094-I-09	0.02	100.0	0.0002	16	100*	22.768	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN A- A094-D/094-I- 10	17025	200A085D094I1000	A-094-D/094-I-10	0.02	100.0	0.0002	16	100*	26.265	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 094-D/094-I- 10	16769	200A094D094I1000	A-094-D/094-I-10	0.02	100.0	0.0002	16	100*	26.267	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 094-D/094-I- 10	16769	200A094D094I1002	A-094-D/094-I-10	0.02	100.0	0.0002	16	100*	26.267	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- D094-D/094-I- 10	17087	200A003E094I1000	A-094-D/094-I-10	0.02	100.0	0.0002	16	100*	26.316	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- E094-D/094-I- 10	17086	200B005E094I1000	A-094-D/094-I-10	0.02	100.0	0.0002	16	100*	26.314	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 097-L/094-I- 07	12634	200A017D094I1003	A-097-L/094-I-07	0.02	100.0	0.0002	16	100*	30.133	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 098-C/094-I- 10	12126	200B009F094I1002	A-098-C/094-I-10	0.02	100.0	0.0002	16	100*	30.149	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 098-I/094-I- 07	11288	200B098I094I0702	A-098-I/094-I-07	0.02	100.0	0.0002	16	100*	35.083	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 098-I/094-I- 07	11288	200C099I094I0703	A-098-I/094-I-07	0.02	100.0	0.0002	16	100*	35.083	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 099-E/094-I- 09	13878	200B088E094I0904	A-099-E/094-I-09	0.02	100.0	0.0002	16	100*	23.963	GAS

						AOF	H2S		EPZ	DISTANCE TO	
LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	(1000	RELEASE RATE	SOUR EPZ (m)	ASSIGNED	NEAREST	STATUS
						m3/day)	(m3/s)		(m)	RESIDENT (km)	
	F	PIERIDAE SOUR	OPERATING								
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 099-E/094-I- 09	13878	200A089E094I0905	A-099-E/094-I-09	0.02	100.0	0.0002	16	100*	23.963	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 099-E/094-I- 09	13878	200D089E094I0903	A-099-E/094-I-09	0.02	100.0	0.0002	16	100*	23.963	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN A- 099-E/094-I- 09	13878	200A099E094I0902	A-099-E/094-I-09	0.02	100.0	0.0002	16	100*	23.963	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ HAY B- 001-E/094-I- 09	14701	200A091D094I0903	B-001-E/094-I-09	0.02	100.0	0.0002	16	100*	19.754	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ HAY B- 001-E/094-I- 09	14701	200D091D094I0900	B-001-E/094-I-09	0.02	100.0	0.0002	16	100*	19.754	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ HAY B- 001-E/094-I- 09	14701	200D091D094I0902	B-001-E/094-I-09	0.02	100.0	0.0002	16	100*	19.754	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 013-E/094-I- 09	18153	200D013E094I0900	B-013-E/094-I-09	0.02	100.0	0.0002	16	100*	20.851	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 013-E/094-I- 09	18153	200D013E094I0902	B-013-E/094-I-09	0.02	100.0	0.0002	16	100*	20.851	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 013-E/094-I- 09	18153	200D013E094I0903	B-013-E/094-I-09	0.02	100.0	0.0002	16	100*	20.851	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 013-E/094-I- 09	18153	200B022E094I0904	B-013-E/094-I-09	0.02	100.0	0.0002	16	100*	20.851	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 015-E/094-I- 10	20688	200C025E094I1000	B-015-E/094-I-10	0.02	100.0	0.0002	16	100*	24.523	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 018-D/094-I- 10	17350	200B028D094I1000	B-018-D/094-I-10	0.02	100.0	0.0002	16	100*	28.191	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 023-D/094-I- 10	12625	200C003D094I1000	B-023-D/094-I-10	0.02	100.0	0.0002	16	100*	30.114	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 032-F/094-I- 10		200D032F094I1000	B-032-F/094-I-10	0.02	100.0	0.0002	16	100*	32.867	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 032-F/094-I- 10	13565	200D043F094I1002	B-032-F/094-I-10	0.02	100.0	0.0002	16	100*	32.867	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 034-D/094-I- 10	12633	200D045D094I1000	B-034-D/094-I-10	0.02	100.0	0.0002	16	100*	28.924	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 034-D/094-I- 10	12633	200D045D094I1002	B-034-D/094-I-10	0.02	100.0	0.0002	16	100*	28.924	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 035-I/094-I- 10	18161	200B044I094I1000	B-035-I/094-I-10	0.02	100.0	0.0002	16	100*	29.204	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- A035-I/094-I- 10	20115	200B044I094I1002	B-035-I/094-I-10	0.02	100.0	0.0002	16	100*	29.126	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- A035-I/094-I- 10	20115	202B044I094I1000	B-035-I/094-I-10	0.02	100.0	0.0002	16	100*	29.126	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 039-F/094-I- 10	17116	200C048F094I1000	B-039-F/094-I-10	0.02	100.0	0.0002	16	100*	27.721	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 039-F/094-I- 10	17116	200C048F094I1000	B-039-F/094-I-10	0.02	100.0	0.0002	16	100*	27.721	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 053-C/094-I- 10	9199	200B044C094I1002	B-053-C/094-I-10	0.02	100.0	0.0002	16	100*	34.791	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 060-C/094-I- 10	18945	200C070C094I1000	B-060-C/094-I-10	0.02	100.0	0.0002	16	100*	30.402	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 065-F/094-I- 10	12119	200A055F094I1000	B-065-F/094-I-10	0.02	100.0	0.0002	16	100*	30.018	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 065-F/094-I- 10		200C055F094I1002	B-065-F/094-I-10	0.02	100.0	0.0002	16	100*	30.018	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 073-D/094-I- 09	18119	202D073D094I0900	B-073-D/094-I-09	0.02	100.0	0.0002	16	100*	22.172	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 073-D/094-I- 09	18119	200B082D094I0902	B-073-D/094-I-09	0.02	100.0	0.0002	16	100*	22.172	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN B- 091-I/094-I- 10	18141	202B010D094I1600	B-091-I/094-I-10	0.02	100.0	0.0002	16	100*	28.009	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 016-G/094-I- 10	11289	200C027G094I1002	C-016-G/094-I-10	0.02	100.0	0.0002	16	100*	37.016	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 025-I/094-I- 10	18181	200C014I094I1002	C-025-I/094-I-10	0.02	100.0	0.0002	16	100*	29.176	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 025-I/094-I- 10	18181	200A025I094I1000	C-025-I/094-I-10	0.02	100.0	0.0002	16	100*	29.176	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ HAY C- 032-E/094-I- 09	14692	200D043E094I0900	C-032-E/094-I-09	0.02	100.0	0.0002	16	100*	19.539	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 036-I/094-I- 10	17397	200A047I094I1000	C-036-I/094-I-10	0.02	100.0	0.0002	16	100*	30.014	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 036-I/094-I- 10	17397	200A047I094I1003	C-036-I/094-I-10	0.02	100.0	0.0002	16	100*	30.014	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 036-I/094-I- 10	17397	200C047I094I1002	C-036-I/094-I-10	0.02	100.0	0.0002	16	100*	30.014	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- A044-G/094-I- 10	13598	200A056G094I1000	C-044-G/094-I-10	0.02	100.0	0.0002	16	100*	35.271	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 047-F/094-I- 09		200D036F094I0900	C-047-F/094-I-09	0.02	100.0	0.0002	16	100*	15.896	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 047-F/094-I- 09		200D036F094I0902	C-047-F/094-I-09	0.02	100.0	0.0002	16	100*	15.896	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 052-I/094-I- 10	17144	200C052I094I1000	C-052-I/094-I-10	0.02	100.0	0.0002	16	100*	27.434	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 052-I/094-I- 10	17144	200A063I094I1002	C-052-I/094-I-10	0.02	100.0	0.0002	16	100*	27.434	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- A052-I/094-I- 10	18271	200D063I094I1000	C-052-I/094-I-10	0.02	100.0	0.0002	16	100*	27.462	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 055-F/094-I- 10	11988	200C044F094I1002	C-055-F/094-I-10	0.02	100.0	0.0002	16	100*	30.223	GAS

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	AOF (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR EPZ (m)	EPZ ASSIGNED (m)	DISTANCE TO NEAREST RESIDENT (km)	
			OPERATING								
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 055-F/094-I- 10	11988	200C055F094I1000	C-055-F/094-I-10	0.02	100.0	0.0002	16	100*	30.223	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 057-F/094-I- 10	11987	200D047F094I1000	C-057-F/094-I-10	0.02	100.0	0.0002	16	100*	28.767	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 057-F/094-I- 10	11987	200D047F094I1000	C-057-F/094-I-10	0.02	100.0	0.0002	16	100*	28.767	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 057-F/094-I- 10	11987	200D047F094I1002	C-057-F/094-I-10	0.02	100.0	0.0002	16	100*	28.767	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA C- 059-G/094-I- 10	11986	200C048G094I1002	C-059-G/094-I-10	0.02	100.0	0.0002	16	100*	34.513	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 060-C/094-I- 10	11290	200D061D094I1002	C-060-C/094-I-10	0.02	100.0	0.0002	16	100*	30.081	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 061-E/094-I- 09	18083	200A061E094I0900	C-061-E/094-I-09	0.02	100.0	0.0002	16	100*	18.587	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 061-E/094-I- 09	18083	200C060F094I0902	C-061-E/094-I-09	0.02	100.0	0.0002	16	100*	18.587	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 062-D/094-I- 10	11990	200A063D094I1002	C-062-D/094-I-10	0.02	100.0	0.0002	16	100*	28.524	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 062-D/094-I- 10	11990	200C063D094I1003	C-062-D/094-I-10	0.02	100.0	0.0002	16	100*	28.524	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 069-A/094-I- 10	12508	200D059A094I1000	C-069-A/094-I-10	0.02	100.0	0.0002	16	100*	33.076	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 069-A/094-I- 10	12508	202B069A094I1002	C-069-A/094-I-10	0.02	100.0	0.0002	16	100*	33.076	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN C- 073-D/094-I- 09	13177	200C073D094I0900	C-073-D/094-I-09	0.02	100.0	0.0002	16	100*	22.002	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN C- 078-D/094-I- 10	17002	200C078D094I1002	C-078-D/094-I-10	0.02	100.0	0.0002	16	100*	24.169	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 080-C/094-I- 10	13589	200A081D094I1000	C-080-C/094-I-10	0.02	100.0	0.0002	16	100*	29.319	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 080-C/094-I- 10	13589	200A081D094I1002	C-080-C/094-I-10	0.02	100.0	0.0002	16	100*	29.319	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 080-C/094-I- 10	13589	200A081D094I1003	C-080-C/094-I-10	0.02	100.0	0.0002	16	100*	29.319	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 082-F/094-I- 10	12502	200A083F094I1000	C-082-F/094-I-10	0.02	100.0	0.0002	16	100*	31.798	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 082-F/094-I- 10	12502	200A083F094I1002	C-082-F/094-I-10	0.02	100.0	0.0002	16	100*	31.798	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 085-I/094-I- 10	18331	200C074I094I1002	C-085-I/094-I-10	0.02	100.0	0.0002	16	100*	30.491	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 085-I/094-I- 10	18331	200C074I094I1005	C-085-I/094-I-10	0.02	100.0	0.0002	16	100*	30.491	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 085-I/094-I- 10	18331	200A085I094I1003	C-085-I/094-I-10	0.02	100.0	0.0002	16	100*	30.491	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 085-I/094-I- 10	18331	200A085I094I1004	C-085-I/094-I-10	0.02	100.0	0.0002	16	100*	30.491	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 085-I/094-I- 10	18331	200C085I094I1000	C-085-I/094-I-10	0.02	100.0	0.0002	16	100*	30.491	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 087-D/094-I- 10	12641	200B007E094I1000	C-087-D/094-I-10	0.02	100.0	0.0002	16	100*	24.381	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN C- 096-A/094-I- 10	11286	200D007H094I1000	C-096-A/094-I-10	0.02	100.0	0.0002	16	100*	30.486	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- A003-E/094-I- 09	13178	200D003E094I0900	D-003-E/094-I-09	0.02	100.0	0.0002	16	100*	20.903	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- A003-E/094-I- 09	13178	200D003E094I0902	D-003-E/094-I-09	0.02	100.0	0.0002	16	100*	20.903	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 004-E/094-I- 09	18117	200D095D094I0902	D-004-E/094-I-09	0.02	100.0	0.0002	16	100*	21.510	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- A004-E/094-I- 09	20109	202D095D094I0900	D-004-E/094-I-09	0.02	100.0	0.0002	16	100*	21.532	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- A004-E/094-I- 09	20109	202D095D094I0902	D-004-E/094-I-09	0.02	100.0	0.0002	16	100*	21.532	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 004-E/094-I- 09	18117	200B004E094I0900	D-004-E/094-I-09	0.02	100.0	0.0002	16	100*	21.510	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ TEES D- 005-J/094-I- 06	11975	202C015J094I0600	D-005-J/094-I-06	0.02	100.0	0.0002	16	100*	30.262	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 014-E/094-I- 09	16709	200B024E094I0902	D-014-E/094-I-09	0.02	100.0	0.0002	16	100*	21.166	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 014-E/094-I- 09	16709	200A025E094I0903	D-014-E/094-I-09	0.02	100.0	0.0002	16	100*	21.166	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 020-F/094-I- 10	11285	200C030F094I1002	D-020-F/094-I-10	0.02	100.0	0.0002	16	100*	28.084	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- 029-K/094-I- 10	17289	200D029K094I1000	D-029-K/094-I-10	2.00	70.0	0.0162	183	183	26.780	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 036-H/094-I- 10	15968	200A035H094I1002	D-036-H/094-I-10	0.02	100.0	0.0002	16	100*	29.555	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 036-H/094-I- 10	15968	200B035H094I1000	D-036-H/094-I-10	0.02	100.0	0.0002	16	100*	29.555	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 037-C/094-I- 10	15053	200B057C094I1000	D-037-C/094-I-10	0.02	100.0	0.0002	16	100*	33.435	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 037-L/094-I- 09	17062	200D037L094I0900	D-037-L/094-I-09	0.02	100.0	0.0002	16	100*	23.197	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 037-L/094-I- 09	17062	200D048L094l0902	D-037-L/094-I-09	0.02	100.0	0.0002	16	100*	23.197	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- 043-D/094-I- 09	12924	200D043D094I0902	D-043-D/094-I-09	0.02	100.0	0.0002	16	100*	23.034	GAS

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	AOF (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR EPZ (m)	EPZ ASSIGNED (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
	PIEF	RIDAE SOUR	OPERATING								
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- 043-D/094-I- 09	12924	200D043D094I0903	D-043-D/094-I-09	0.02	100.0	0.0002	16	100*	23.034	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ TEES D- 043-I/094-I- 06	12642	200A033I094I0602	D-043-I/094-I-06	0.02	100.0	0.0002	16	100*	30.835	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL HZ EKWAN D- 046-G/094-I- 10	23431	200D036G094I1000	D-046-G/094-I-10	0.02	100.0	0.0002	16	100*	36.549	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL EKWAN D- 048-F/094-I- 10	4688	200D048F094I1000	D-048-F/094-I-10	0.02	100.0	0.0002	16	100*	28.417	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 050-C/094-I- 15	18183	200D031D094I1502	D-050-C/094-I-15	0.02	100.0	0.0002	16	100*	27.041	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 050-F/094-I- 10	15828	200B060F094I1000	D-050-F/094-I-10	0.02	100.0	0.0002	16	100*	27.378	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 053-D/094-I- 09	15275	200D063D094I0900	D-053-D/094-I-09	0.02	100.0	0.0002	16	100*	22.595	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 071-E/094-I- 09	16693	200B081E094I0900	D-071-E/094-I-09	0.02	100.0	0.0002	16	100*	18.116	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 076-D/094-I- 10	12501	200A086D094I1000	D-076-D/094-I-10	0.02	100.0	0.0002	16	100*	25.615	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 076-D/094-I- 10	12501	200A086D094I1002	D-076-D/094-I-10	0.02	100.0	0.0002	16	100*	25.615	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 076-D/094-I- 10	12501	200B096D094I1003	D-076-D/094-I-10	0.02	100.0	0.0002	16	100*	25.615	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 090-I/094-I- 10	18179	200B090I094I1000	D-090-I/094-I-10	0.02	100.0	0.0002	16	100*	33.711	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ EKWAN D- 090-I/094-I- 10	18179	200D071J094l1002	D-090-I/094-I-10	0.02	100.0	0.0002	16	100*	33.711	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	EKWAN D- 100-F/094-I- 10	17290	200D100F094I1000	D-100-F/094-I-10	1.20	275.0	0.0382	301	301	26.388	GAS

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

#### **LEGEND**

Other: UWI=Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

## **Ekwan - Sour Pipelines**

LICENSEE	FROM	то	START	START VALVE	START VALVE	END	END VALVE		LICENSE	LINE NO	LINE SEGMENT	SUB OD	SEGMENT LENGTH	WALL	LICENSED PRESSURE	ASSIGNED	LICENSED	TEMP 7	SEGMENT RELEASE	CUMULATIVE RELEASE	SOUR	ASSIGNED	STATUS
			VALVE	LATITUDE	LONGITUDE	VALVE	LATITUDE	LONGITUDE	NO.	LL 110.	MODIFIER	(mm)	(km)	(mm)	(kPa)	H2S (%)	H2S (%)	(°C)	VOLUME (m3)	VOLUME (m3)	EPZ (m)	EPZ (m)	CIAIGS
							PIE	RIDAE SOUR OP	PERATING										()				
PIERIDAE ALBERTA PRODUCTION LTD.		B-006-L/094-I-10 -	-	-	-	-	-	-	82960	1	-	SG 88.9	3.30	4.8	14,331	0.10	0.00	5 0.70	3	1199	2460		0
	C-082-F/094-I-10 -	C-055-F/094-I-10 -	-	-	-	-	-	-	88764	2	-	NG 219.1	3.00	7.0	9,450	0.10	2.00	5 0.70	14	1199	2460	2460	0
	B-065-F/094-I-10 - C-055-F/094-I-10 -	A-065-F/094-I-10 - B-010-F/094-I-10 -		-	-	-	-	-	88764 88765	<u>4</u> 6	-	NG 168.3 NG 219.1	7.06	4.8 7.0	9,450 9,450	0.10 0.10	2.00	5 0.70 5 0.70	33	1199 1199	2460 2460	2460 2460	0
	C-057-F/094-I-10 -	B-056-F/094-I-10 -	-	-	-	-	-	-	88765	7	-	NG 168.3	0.99	4.8	9,450	0.10	2.00	5 0.70	3	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-048-F/094-I-10 -	B-056-F/094-I-10 -	-	-	-	-	-	-	88851	2	-	NG 168.3	1.24	4.8	9,450	0.10	2.00	5 0.70	3	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		D-048-F/094-I-10 -	-	-	-		-	-	91419	2		SG 114.3	1.51	3.2	9,450	0.10	0.00	5 0.70	2	1199	2460	2460	0
	A-002-G/094-I-10 -	B-009-E/094-I-10 -	-	-	-	-	-	-	88514	2	-	SG 323.9	19.65	8.7	9,450	0.10	2.00	5 0.70	202	1199	2460	2460	0
	B-009-E/094-I-10 - B-078-B/094-I-11 -	C-081-C/094-I-11 - A-006-G/094-I-11 -	-	-	-	-	-	-	721737 96008	1	-	SG 323.9 NG 114.3	17.06 3.24	8.7 3.2	9,450 9,930	0.10 0.10	2.00	5 0.70 5 0.70	176 6	1199 1199	2460 2460	2460 2460	0
	C-096-A/094-I-10 -	A-002-G/094-I-10 -	_	-	-	-	-	-	88704	1	-	SG 323.9	3.71	8.7	9,450	0.10	2.00	5 0.70	38	1199	2460	2460	0
	A-098-C/094-I-10 -	B-009-F/094-I-10 -	-	-	-	-	-	-	88564	2	-	SG 168.3	1.48	4.8	9,450	0.10	2.00	5 0.70	4	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-016-C/094-I-10 -	A-009-G/094-I-10 -	-	-	-	-	-	-	88684	2	-	SG 168.3	10.13	4.8	9,450	0.10	2.00	5 0.70	28	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		B-053-C/094-I-10 -	-	-	-	-	-	-	88684	5	-	SG 168.3	0.15	4.8	9,450	0.10	2.00	5 0.70	0	1199	2460	2460	0
	A-055-H/094-I-10 - C-069-A/094-I-10 -	A-009-H/094-I-10 - A-009-H/094-I-10 -	-	-	-		-	-	88704 88704	<u>4</u> 6	-	SG 168.3 SG 168.3	7.09 2.73	4.8	9,450 9,450	0.10 0.10	2.00	5 0.70 5 0.70	20 8	1199 1199	2460 2460	2460 2460	0
	A-055-H/094-I-10 -	C-069-A/094-I-10 -		-	-	-	-	-	88704	7	-	SG 168.3	0.18	4.8	9,450	0.10	2.00	5 0.70	0	1199	2460	2460	0
	C-059-G/094-I-10 -	A-007-G/094-I-10 -	-	-	-	-	-	-	88705	2	-	NG 168.3	6.55	4.8	9,450	0.10	2.00	5 0.70	18	1199	2460	2460	Ö
PIERIDAE ALBERTA PRODUCTION LTD.	A-045-G/094-I-10 -	B-047-G/094-I-10 -	-	-	-	1	-	-	88705	4	-	NG 168.3	1.81	4.8	8,450	0.10	2.00	5 0.70	4	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		D-017-G/094-I-10 -	-	-	-	-	-	-	88705	6	-	NG 168.3	0.73	4.8	9,450	0.10	2.00	5 0.70	2	1199	2460	2460	0
	A-015-F/094-I-10 - D-005-J/094-I-06 -	B-014-F/094-I-10 - D-006-D/094-I-10 -	-	-	-	-	-	-	88742	4	-	NG 168.3	0.41 19.43	4.8	9,450	0.10 0.10	2.00 0.00	5 0.70	1 54	1199	2460 2460	2460	0
	D-005-J/094-I-06 - D-006-D/094-I-10 -	D-006-D/094-I-10 -	-	-	-		-	-	88745 88745	<u>3</u> 5	-	SG 168.3 SG 219.1	6.33	4.8 7.0	9,450 9,450	0.10	0.00	5 0.70 5 0.70	29	1199 1199	2460	2460 2460	0
		C-087-D/094-I-10 -	-	-	-	-	-	-	88745	6	-	SG 219.1	1.39	7.0	9,450	0.10	0.00	5 0.70	6	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		B-044-C/094-I-10 -	-	-	-	-	-	-	88757	2	-	SG 114.3	2.11	4.8	9,450	0.10	2.00	5 0.70	3	1199	2460	2460	0
	A-001-H/094-I-10 -	C-096-A/094-I-10 -	-	-	-	-	-	-	88760	2	-	NG 168.3	4.34	4.8	9,450	0.10	2.00	5 0.70	12	1199	2460	2460	0
	C-062-D/094-I-10 -	A-072-D/094-I-10 -	-	-	-	-	-	-	88765	8	-	NG 219.1	0.66	4.8	9,450	0.10	2.00	5 0.70	3	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.		B-010-F/094-I-10 - A-045-G/094-I-10 -	-	-	-	-	-	-	88765 88786	<u>9</u> 2	-	NG 219.1 SG 168.3	3.81 4.56	7.0 4.8	9,450 9,450	0.10 0.10	2.00	5 0.70 5 0.70	18 13	1199 1199	2460 2460	2460 2460	0
	C-087-D/094-I-10 -	A-009-E/094-I-10 -		-	-	-	-	-	88844	3	-	SG 219.1	1.89	7.0	9,450	0.10	0.00	5 0.70	9	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		A-008-D/094-I-10 -	-	-	-	-	-	-	88847	2	-	NG 114.3	1.04	4.0	9,450	0.10	0.00	5 0.70	1	1199	2460	2460	Ö
PIERIDAE ALBERTA PRODUCTION LTD.	B-023-D/094-I-10 -	D-006-D/094-I-10 -	-	-	-	-	-	-	88848	4		NG 114.3	2.56	4.0	9,450	0.10	0.00	5 0.70	3	1199	2460	2460	0
	B-034-D/094-I-10 -	D-036-D/094-I-10 -	-	-	-	-	-	-	88849	2	-	NG 114.3	1.37	4.0	9,450	0.10	0.00	5 0.70	2	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.	A-098-I/094-I-07 - D-043-I/094-I-06 -	B-094-I/094-I-07 - A-054-I/094-I-06 -	-	-	-	-	-	-	89109 89265	2	-	SG 114.3 SG 114.3	2.57 0.87	4.0	9,450 9,450	0.10 0.10	0.00	5 0.70 5 0.70	3	1199 1199	2460 2460	2460 2460	0
	C-080-C/094-I-10 -	B-090-C/094-I-10 -	_	-	-	-	-	-	89507	2	-	SG 114.3	0.75	4.0	9,450	0.10	0.00	5 0.70	1	1199	2460	2460	0
	C-044-G/094-I-10 -	A-055-G/094-I-10 -	-	-	-	-	-	-	89508	2	-	NG 114.3	0.65	4.0	9,450	0.10	0.00	5 0.70	1	1199	2460	2460	Ö
PIERIDAE ALBERTA PRODUCTION LTD.		A-055-G/094-I-10 -	-	-	-	-	-	-	89513	2	-	NG 114.3	0.08	4.0	9,450	0.10	0.00	5 0.70	0	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		B-023-F/094-I-10 -	-	-	-	-	-	-	89516	2	-	SG 168.3	1.62	4.8	9,450	0.10	0.00	5 0.70	4	1199	2460	2460	0
	B-023-F/094-I-10 - A-080-C/094-I-10 -	C-005-F/094-I-10 - C-080-C/094-I-10 -	-	-	-	-	-	-	88742 90282	<u>5</u> 2	-	SG 168.3 SG 114.3	1.92 0.55	1.9	9,450 9,450	0.10 0.10	2.00 0.00	5 0.70 5 0.70	6	1199 1199	2460 2460	2460 2460	0
	D-037-C/094-I-10 -	B-046-C/094-I-10 -	-	-	-	-	-	-	90282	2	-	SG 114.3	0.55	3.2	9,430	0.10	0.00	5 0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	91099	2	-	SG 114.3					0.00	5 0.70	1	1199		2460	
PIERIDAE ALBERTA PRODUCTION LTD.	D-036-H/094-I-10 -	C-036-H/094-I-10 -	-			•	-	-	91371	2		NG 114.3				0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		C-098-L/094-I-07 -	-	-	-	-	-	-	92231	2		NG 114.3				0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.		B-038-F/094-I-10 - B-004-E/094-I-10 -	-	-	-	-	-	-	92232	2		SG 114.3 SG 323.8			9,450	0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		D-061-E/094-I-10 -	-	-	-	-	-	-	92233 92297	2		NG 88.9			9,930 9,438	0.10 0.10	0.00	5 0.70 5 0.70		1199 1199	2460 2460	2460 2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		B-031-E/094-I-09 PL	-	-	-	-	-	-	92297	4		NG 114.3				0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.		D-003-E/094-I-09 -	-	-	-	-	-	-	92297	5	-	NG 114.3	2.80	4.0	9,450	0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	92297	7		NG 114.3				0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-001-E/094-I-09 W	E D-003-E/094-I-09 -	-	-	-	-	-	-	92297	9		NG 114.3				0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	92297 92297	11 13		NG 114.3 NG 114.3				0.10 0.10	0.00	5 0.70 5 0.70		1199 1199	2460 2460	2460 2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	92297	14		NG 219.1	15.98		9,450	0.10	0.00	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	92297	17		SG 168.3				0.10	0.50	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-051-E/094-I-09 -	B-031-E/094-I-09 -	-	-	-	-	-	-	92297	18	-	SG 219.1	2.53	5.6	9,438	0.10	0.50	5 0.70	12	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			ESD		120.55961	-	-	-	93669	1		SG 219.1			9,438	0.10	0.50	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			ESD		120.52027	-	-	-	93670	1		SG 168.3				0.10	0.50	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	93671 93672	1		NG 168.3 NG 219.1				0.10 0.10	0.50 0.50	5 0.70 5 0.70		1199 1199	2460 2460	2460 2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			ESD		120.57271	-	-	-	93672	2		SG 88.9				0.10	0.50	5 0.70		1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			ESD		120.57271	-	-	-	93672	3		SG 88.9				0.10	0.50	5 0.70		1199	2460		0

## **Ekwan - Sour Pipelines**

LICENSEE	FROM	то	START VALVE	START VALV LATITUDE	E START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT S MODIFIER	SUB OD	SEGMEI LENGT (km)		LICENSED PRESSURE (kPa)		LICENSED H2S (%)	TEMP (°C)	Z	SEGMENT RELEASE VOLUME (m3)	CUMULATIVE RELEASE VOLUME (m3)	SOUR EPZ (m)	ASSIGNED EPZ (m)	STATUS
PIERIDAE ALBERTA PRODUCTION LTD.	B-073-D/094-I-09	WE C-074-D/094-I-09	- ESD	58.56098	120.40942	-	1	•	93877	1	-	NG 88.	2.67	3.2	9,930	0.10	0.50	5	0.70	2	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-004-E/094-I-09	WE D-014-E/094-I-09	- ESD	58.58893	120.41825	-	1	ı	93878	1	- :	SG 88.	1.20	3.2	9,438	0.10	0.50	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			- ESD	58.59437	120.40958	-		-	93878	2	- :	SG 88.	0.58	3.2	9,438	0.10	0.50	5	0.70	0	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-061-E/094-I-09	WE D-061-E/094-I-09	PL ESD	58.6389	120.3846	-	1	ı	93885	1	-	SG 168.	3 0.25	4.8	9,438	0.10	0.50	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-061-E/094-I-09	PL C-061-E/094-I-09		-	-	ESD	58.6389	120.3846	93885	2	- :	SG 88.	0.25	3.2	9,438	0.10	0.50	5	0.70	0	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			- ESD	58.62227	120.33459	-		-	93889	2	- :	SG 88.	1.10	3.2	9,438	0.10	0.50	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-091-I/094-I-10	WE D-086-I/094-I-10		-	-	-	ı	•	94285	1	-	NG 168	3.00	4.8	9,930	0.10	0.50	5	0.70	9	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-085-I/094-I-10	WE C-085-I/094-I-10	PL -	-	-	-	ı	•	94285	2	-	NG 168	3 0.12	4.8	9,930	0.10	0.50	5	0.70	0	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-060-C/094-I-10	WE C-060-C/094-I-10		-	-	-	ı	ı	94430	1	-	NG 114.	3 0.57	3.2	9,930	0.10	2.00	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-004-E/094-I-09	WE D-003-E/094-I-09	- ESD	58.58935	120.4189	-	-	-	95857	1	-	NG 88.	0.91	3.2	9,438	0.10	0.01	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-050-L/094-I-09	WE D-021-I/094-I-10	PL -	-	-	-	ı	ı	95976	2	-	NG 168	3 1.56	4.8	9,930	0.10	0.50	5	0.70	5	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-021-I/094-I-10	PL C-005-I/094-I-10	PL -	-	-	-	ı	ı	95976	3	-	NG 168	3.77	4.8	9,930	0.10	0.50	5	0.70	11	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-056-G/094-I-10	PL A-055-G/094-I-10	PL -	-	-	-	-	-	720842	1	-	NG 88.	0.93	3.2	9,450	0.10	0.00	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.			PL -	-	-	-	-	-	720856	1	-	NG 88.	1.10	3.2	9,450	0.10	0.00	5	0.70	1	1199	2460	2460	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-039-F/094-I-10	WE B-038-F/094-I-10		-	-	-	-	-	721907	1	-	NG 114	3 0.69	4.0	9,438	0.10	0.50	5	0.70	1	1199	2460	2460	0
							PIER	DAE SOUR DISC	CONTINUED															
PIERIDAE ALBERTA PRODUCTION LTD.	D-013-F/094-I-10	- B-023-F/094-I-10		-	-	-	-	-	88742	2	-	NG 168	3 0.49	4.8	9,450	0.10	2.00	5	0.70	1	1199	2460	2460	D
	D-080-C/094-I-08			-	-	-	1	-	89104	2	-	SG 219.	1 37.09	7.0	9,450	0.10	0.00	5	0.70	171	1199	2460	2460	D
PIERIDAE ALBERTA PRODUCTION LTD.	D-029-K/094-I-10	WE B-006-L/094-I-10	PL -	-	-	-	-	-	94084	1	- ;	SG 168	3 6.88	4.8	9,438	0.10	3.00	5	0.70	19	1199	2460	2460	D

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

#### LEGEND

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher Valve: CV=Check Valve ESD=Emergency Shutdown Valve

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction TEMP=Temperature ROW=Pipeline Right of Way

## **Sierra - Facilities**

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE		WELL OR PIPELINE HPZ	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
				PIE	RIDAE OPERATI	ING								
PIERIDAE ALBERTA PRODUCTION LTD.	YOYO B-097-F/094-I-14 001	BCCS0000243	B-097-F/094-I-14	58.9107895	-121.3350912	58° 54' 38.842"	-121° 20' 6.328"	CS	313.75	920	N/A	920	7.720	AC
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA C-091-D/094-I-14 001	BCCS0000301	C-091-D/094-I-14	58.8321565	-121.3868239	58° 49' 55.763"	-121° 23' 12.566"	CS	2607.89	3910	N/A	3910	0.102	AC
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA C-091-D/094-I-14 002	BCGM0008176	C-091-D/094-I-14	58.8321565	-121.3868239	58° 49' 55.763"	-121° 23' 12.566"	GM	2607.89	3910	N/A	3910	0.102	AC
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-088-K/094-I-11 001	BCCS0000370	D-088-K/094-I-11	58.7421103	-121.3431967	58° 44' 31.597"	-121° 20' 35.508"	CS	105.43	744	N/A	744	0.072	AC

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility locations listed in the table above also have manual block valves at these locations.

#### LEGEND

Facility: B=Battery CS=Compressor Station GP=Gas Plant GI=Gas Injection Plant GM=Gas Sales Meter PG=Gathering point PS=Pump Station TS=Test Facility TL=Terminal S=Satellite DH=Dehydrator UN=Unknown WI=Water Injection PT=Pipeline Terminal WD=Water Disposal OM=Oil Sales Meter WF=Well Facility PR=Pigging Receiver/Launcher WD=Water Disposal Facility WH=Water Hub

<u>Status</u>: A=Abandoned D=Discontinued O=Operating P=To Be Constructed S=Suspended AC=Active NW=New <u>Other</u>: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

#### NOTES

All Ikkuma facilities in the area are included above.

Table has been carried forward from 2020 at the direction of the client.

## **Sierra - Sour Wells**

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	AOF (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR EPZ (m)	EPZ ASSIGNED (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA A-002-E/094-I-14	10519	PIERIDAE SOUR OP 200A001E094I1402	A-002-E/094-I-14	1.28	10	0.0015	46	100*	0.280	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA A-002-E/094-I-14	10519	200A001E094I1403	A-002-E/094-I-14	1.28	625	0.0926	503	503	0.280	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA A-020-C/094-I-14	4560	200A020C094I1400	A-020-C/094-I-14	3.98	645	0.2971	989	989	2.529	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SAHTANEH A-045-I/094-I-12	3858	200A045I094I1200	A-045-I/094-I-12	0.52	750	0.0451	332	332	2.937	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SAHTANEH A-045-I/094-I-12	3858	200A045I094I1202	A-045-I/094-I-12	3.13	750	0.2717	939	939	2.937	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA A-A051-L/094-I-11	12344	200D041L094I1100	A-051-L/094-I-11	2.50	1154	0.3339	1091	1091	0.301	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA A-A051-L/094-I-11	12344	200D041L094l1102	A-051-L/094-I-11	2.50	1154	0.3339	1091	1091	0.301	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA A-051-L/094-I-11	4202	200A051L094I1100	A-051-L/094-I-11	2.50	452	0.1308	615	615	0.329	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA A-076-C/094-I-14	4193	200C076C094I1404	A-076-C/094-I-14	1.51	468	0.0818	468	468	1.923	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA A-089-C/094-I-14	4095	200A089C094I1400	A-089-C/094-I-14	1.60	211	0.0391	305	305	2.062	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA A-098-K/094-I-11	1814	200A098K094I1102	A-098-K/094-I-11	2.60	600	0.1806	741	741	0.093	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA B-077-C/094-I-14	6619	200B077C094I1400	B-077-C/094-I-14	1.42	468	0.0769	452	452	1.387	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA B-080-C/094-I-14	7370	200B080C094I1400	B-080-C/094-I-14	1.45	268	0.0450	331	331	2.091	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA B-088-C/094-I-14	6632	200B088C094I1400	B-088-C/094-I-14	1.45	216	0.0363	292	292	2.040	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA B-093-C/094-I-14	5058	200B093C094I1400	B-093-C/094-I-14	1.56	174	0.0314	269	269	4.738	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA B-098-K/094-I-11	13713	200A099K094I1100	B-098-K/094-I-11	2.84	671	0.2206	832	832	0.490	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA C-068-C/094-I-14	13696	200C068C094I1400	C-068-C/094-I-14	1.80	625	0.1302	613	613	0.651	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA C-091-D/094-I-14	1659	200D091D094I1402	C-091-D/094-I-14	2.22	625	0.1606	692	692	0.150	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA C-092-D/094-I-14	13592	200C092D094I1400	C-092-D/094-I-14	2.00	10	0.0023	59	100*	0.635	WATER INJECTION
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA C-099-C/094-I-14	10533	200B099C094I1400	C-099-C/094-I-14	1.51	174	0.0304	264	264	1.443	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA C-100-C/094-I-14	5298	200C100C094I1400	C-100-C/094-I-14	1.48	161	0.0276	249	249	0.963	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-003-E/094-I-14	13714	200D003E094I1400	D-003-E/094-I-14	1.80	26	0.0054	97	100*	0.767	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SAHTANEH D-029-L/094-I-11	4198	200C029L094l1102	D-029-L/094-I-11	4.54	10	0.0053	95	100*	1.923	WATER INJECTION
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-064-K/094-I-11	4182	200D064K094I1100	D-064-K/094-I-11	3.11	342	0.1231	593	593	3.650	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA D-077-C/094-I-14	10531	200B087C094I1400	D-077-C/094-I-14	1.29	268	0.0400	309	309	1.824	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA D-079-C/094-I-14	10532	203C078C094I1402	D-079-C/094-I-14	1.68	600	0.1167	575	575	1.553	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	HZ SIERRA D-079-C/094-I-14	10532	200D079C094I1400	D-079-C/094-I-14	1.68	10	0.0019	54	100*	1.553	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-079-J/094-I-11	7714	200D079J094l1100	D-079-J/094-I-11	2.50	218	0.0631	403	403	6.624	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-088-K/094-I-11	5883	200D088K094I1100	D-088-K/094-I-11	2.34	671	0.1817	744	744	0.136	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-090-C/094-I-14	3854	200D090C094I1400	D-090-C/094-I-14	1.19	187	0.0258	240	240	1.620	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	SIERRA D-092-D/094-I-14	2452	200D092D094I1400	D-092-D/094-I-14	2.00	10	0.0023	59	100*	0.134	WATER INJECTION

## **Sierra - Sour Wells**

	LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	AOF (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR EPZ (m)	EPZ ASSIGNED (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
				PIERIDAE SOUR DRILLE	D AND CASED							
Р	ERIDAE ALBERTA PRODUCTION LTD.	SAHTANEH B-096-J/094-I-12	14108	200B096J094I1200	B-096-J/094-I-12	0.00	10	0.0000	0	100*	0.709	DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

#### **LEGEND**

Other: UWI=Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

## Sierra - Sour Pipelines

				OTABT	OTABT		END						OFOMENIA		LIGENGER			SE	GMENT	OURSELL ATD/E			
LICENSEE	FROM	то	START	START VALVE	START VALVE	END	END VALVE	END VALVE	LICENSE	LINE NO.	LINE SEGMENT	SUB OD	SEGMENT LENGTH	WALL	LICENSED PRESSURE	LICENSED		7	ELEASE	CUMULATIVE RELEASE	SOUR	ASSIGNED	STATUS
LIOLNOLL	1110111	.5	VALVE		LONGITUDE	VALVE	VALVE LATITUDE	LONGITUDE	NO.	LINE NO.	MODIFIER	(mm)	(km)	(mm)	(kPa)	H2S (%)	(°C)	VC	OLUME ,	VOLUME (m3)	EPZ (m)	EPZ (m)	UIAIUU
									ED ATINIO				` ,		( ',				(m3)	,			
	D 007 E/004 L44	0 004 0/004 144				FOD		AE SOUR OP				00 4440	40.05	0.0	45.000	4.00	-	2.70	044	04.4	000	000	
PIERIDAE ALBERTA PRODUCTION LTD.	B-097-F/094-I-14		-	-	-	ESD	58.8312	121.3858	82973	1	-	SG 114.3	10.25	6.0	15,000	1.69	5		314	314	920	920	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-091-D/094-I-14		ESD	58.83119	121.3858	-	E0 0040	404 0050	82973	2	-	FG 60.3	10.25	3.9	4,140	1.69	-	0.70	23	23	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-002-E/094-I-14	<del></del>	ESD	58.83734	121.3898	ESD	58.8312	121.3858	87332	1	-	SG 114.3	1.50	6.0	14,882	2.00	<u> </u>	0.70	54	54	200	200	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-099-C/094-I-14	- C-091-D/094-I-14 -	ESD	58.83024	121.3634	ESD	58.8312	121.3858	87448	1	-	SG 168.3	1.54	6.4	14,882	2.00	5		128	128	420	420	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-097-C/094-I-14	<del></del>	-	-	-	ESD	58.8312	121.3858	82217	1	-	SG 168.3	3.14	7.1	21,359	1.16			213	318	930	930	
PIERIDAE ALBERTA PRODUCTION LTD.	B-095-C/094-I-14	- C-097-C/094-I-14 -	-	-	- 404 0740	- CD		404.0740	84341	4	-	SG 168.3	1.60	7.1	20,650	1.16			105	318	930	930	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-100-C/094-I-14			58.83214	121.3713	ESD	58.8321	121.3713	84342	3	-	SG 168.3	0.17	7.1	20,650	1.16	-	0.70	11	399	1130	1130	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-093-C/094-I-14		ESD	58.8271	121.2811	ESD	E0 0074	121.2811	84341	2	-	SG 168.3	1.46	7.1	13,960	1.16		0.70	65	399	1130	1130	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-055-B/094-I-14		- FCD	- F0 0074	101 0011		58.8271		85129	1	-	SG 114.3	7.00	6.0	13,962	1.04			123	399	1130	1130	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-093-C/094-I-14		ESD ESD	58.8271	121.2811	ESD	58.8271	121.2811	85129	4	-	SG 168.0	0.34	11.0	13,600	1.04	<del></del>	0.70	12	399	1130	1130	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-093-C/094-I-14			58.8271	121.2811	ESD	58.8271	121.2811	85129	5	-	SG 114.0	0.12	6.0	13,962	1.04	-	0.70	2	399	1130	1130	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-090-C/094-I-14	<del></del>	ESD	58.82437	121.3651	-	-	-	82334	1	-	SG 168.3	1.98	12.7	21,359	1.16			115	115	380	380	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-076-C/094-I-14		ESD	58.8107	121.3200	-	- E0.040C	101 2565	82549	1	-	SG 168.3	5.00	8.7	7,200	1.18	-		112	112	380	380	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-079-A/094-I-14		-	- 	101 0567	ESD	58.8186		83424	2	-	SG 168.3	0.34	8.7	20,650	1.16		0.70	21	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-079-C/094-I-14			58.81375	121.3567	ESD	58.8138		83424	3	-	SG 168.3	0.21	8.7	20,650	1.16		0.70	13	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-089-C/094-I-14			58.81858	121.3565	ESD	58.8312	121.3858	82554	1	-	SG 114.3	2.75	6.0	18,182	1.20		0.70	72	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-078-C/094-I-14	- C-091-D/094-I-14 -	-	-	-	ESD	58.8312	121.3858	83424	1	-	SG 168.3	3.06	11.0	,	1.16			110	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-080-C/094-I-14		-	-	-	ESD	58.8312	121.3858	84930	1	-	SG 168.3	2.40	5.6	12,850	1.10		0.70	97	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-079-C/094-I-14		-	-	-	-	-	-	88723	2	-	SG 114.3	1.10	6.0	18,182	1.60	<del></del>	0.70	39	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-089-C/094-I-14	- B-080-C/094-I-14 -	ESD	58.81858	121.3565	-	-	-	86248	1	-	SG 168.3	1.50	5.6	13,500	1.10	5	0.70	64	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-078-C/094-I-14		-	-	-	ESD	58.8138		83424	4	-	SG 168.3	0.09	8.7	20,650	1.16		0.70	6	498	1360	1360	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-079-C/094-I-14		-	-	-	-	-	-	89357	2	-	SG 168.3	1.33	6.4	10,205	2.00		0.70	76	108	360	360	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-089-C/094-I-14			58.81858	121.3565	-	-	-	722774	1	-	SG 168.3	0.55	6.4	10,205	2.00		0.70	31	108	360	360	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-100-C/094-I-14		ESD	58.83214	121.3713	ESD	58.8312	121.3858	84341	5	-	SG 168.3	1.15	7.1	13,960	1.16			51	51	190	190	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-100-C/094-I-14		-	-	-	-	-	-	88120	1	-	SG 168.3	0.38	7.9	12,500	2.00	-	0.70	25	25	120	120	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-078-C/094-I-14	- C-078-C/094-I-14 -	-	-	- 404 0057	-	-	-	84340	4	-	SG 168.3	0.20	7.1	13,960	1.16	5	0.70	9	435	1220	1220	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-077-C/094-I-14		ESD	58.81166	121.3357	-	-	-	84340	2	-	SG 168.3	0.80	7.1	13,960	1.16	-	0.70	36	435	1220	1220	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-078-C/094-I-14		-	-	- 404.0507	ESD	58.8312	121.3858	84340	3	-	SG 168.3	3.22	7.1	13,960	1.16			143	435	1220	1220	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-079-C/094-I-14	- C-091-D/094-I-14 -		58.81375	121.3567	ESD	58.8312	121.3858	87374	1	-	SG 168.3	3.09	8.0	14,882	2.00	5		247	435	1220	1220	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-091-D/094-I-14	<del></del>	ESD	58.83119	121.3858	ESD	58.8312	121.3858	88863	1	-	SG 168.3	0.02	8.7	12,500	1.60		0.70	1	435	1220	1220	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-077-C/094-I-14		-	-	-	ESD	58.8312	121.3858	723671	1	-	SG 114.3	4.36	4.8	9,930	2.00			0	110	370	370	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-098-K/094-I-11	S C-091-D/094-I-14 GP	ESD	58.73953	121.3421	ESD	58.8312	121.3858	82008	1	-	NG 168.3	11.09	8.7	21,359	0.00		0.70	·	0	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-068-C/094-I-14		ESD	- 58.83119	121.3858	ESD	58.7395	121.3421	82750	6	-	SG 60.3	0.29	3.9	4,140	2.19		0.70	1	1	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.  PIERIDAE ALBERTA PRODUCTION LTD.	C-091-D/094-I-14								82551	1	-	SG 60.3	11.30	3.9	3,450	3.89		0.70	49	49	190	190	
	A-098-K/094-I-11	- C-091-D/094-I-14 -		58.73953	121.3421	ESD	58.8312	121.3858	82550	1	-	SG 273.1	11.30	8.7	13,960	2.19			2608	2608	3910	3910	0
PIERIDAE ALBERTA PRODUCTION LTD.  PIERIDAE ALBERTA PRODUCTION LTD.	C-079-C/094-I-14		-	-	-	ESD	58.8312	121.3858	88723	7	-	SG 114.3	2.60	4.8	13,500	1.60 2.25			71	71	250	250	0
	D-009-C/094-I-14	<del></del>	ESD	- - 75005	101 2005	-	-	-	82750	7	-	SG 168.3	0.30	7.1	10,205		-	0.70	19	168	530	530	_
PIERIDAE ALBERTA PRODUCTION LTD.	A-020-C/094-I-14		ESD	58.75985	121.3695	-	- E0 720E	101 0401	82750	9	-	SG 168.3 SG 168.3	1.20	8.7	10,205	2.19		0.70	71	168	530	530	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-009-C/094-I-14	<del></del>	-	-	-	ESD	58.7395	121.3421	82750	10	-		1.30	8.7	10,205	2.25		0.70	79	168	530	530	0
PIERIDAE ALBERTA PRODUCTION LTD.	A-051-L/094-I-11	- A-098-K/094-I-11 S		58.71224	121.3819	ESD	58.7395	121.3421	91483	1	-	SG 114.3	4.65	4.8	12,800	2.00			151	151	490	490	0
PIERIDAE ALBERTA PRODUCTION LTD. PIERIDAE ALBERTA PRODUCTION LTD.	A-051-L/094-I-11 A-045-I/094-I-12				121.3819			121.3421	82750		-	SG 168.3 SG 219.1		-		2.19	5		215	215	660	660	
PIERIDAE ALBERTA PRODUCTION LTD.  PIERIDAE ALBERTA PRODUCTION LTD.	B-045-I/094-I-12			-	-	- ESD	- 58 7305	121.3421		1	-	SG 273.1			13,960 13,960	2.19	5		710 2047	2786 2786	4060	4060 4060	0
	B-048-L/094-I-11 B-048-L/094-I-11			-	-		JO./ J95		82750	<u>3</u>	1	SG 273.1 SG 114.3		_	8,067	2.19 2.80	5		2047	2786	4060 4060		0
PIERIDAE ALBERTA PRODUCTION LTD.		S A-098-K/094-I-11 S		-	-	-	- E0 720E	121.3421			-				,							4060	0
	B-098-K/094-I-11			- 59 7/209	121.3507			121.3421	83832	<u>3</u>	-	SG 168.3 SG 168.3		8.7	13,960 13,960	2.46 2.00	5		26 105	26 105	120 360	120 360	0
PIERIDAE ALBERTA PRODUCTION LTD.  PIERIDAE ALBERTA PRODUCTION LTD.	D-079-J/094-I-11				121.3507			121.3427		1	-	SG 168.3			14,085	1.10	5		349	349	1010	1010	0
PIERIDAE ALBERTA PRODUCTION LTD.  PIERIDAE ALBERTA PRODUCTION LTD.	C-070-I/094-I-11		-		121.2317	- 500			84929	1		SG 168.3 SG 88.9		4.8	9,930	2.80	5		4	468	1290	1290	0
	D-086-J/094-I-12		-	-	-	-	-	-	84929	1	-	SG 88.9 SG 168.3			9,930		5		464				0
	C-018-L/094-I-12			-	-		-	-			-				,	2.80				468	1290	1290	
PIERIDAE ALBERTA PRODUCTION LTD.			-	-	-	-	-	-	82962	1	-	OE 168.3 OE 168.3			11,713	2.15	5		57	520	1410	1410	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-018-L/094-I-14		-	-	-	-	-	-	82962	2	-			6.3		0.00	5		0	57	210	210	
PIERIDAE ALBERTA PRODUCTION LTD.	D-008-L/094-I-14		-	-	-	-	-	-	82962	3	-	OE 60.3			11,713	0.00	5		0	0	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.	D-008-L/094-I-14		-	-	-	-	-	-	82962	4	-	OE 60.3			10,507	0.00	5		0	0	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.	C-038-L/094-I-14		-	-	-	<del>-</del>	-	-	84180	2		SG 168.3			11,720	2.15	5		14	14	100*	100*	0
PIERIDAE ALBERTA PRODUCTION LTD.	B-002-L/094-I-14	- C-092-E/094-I-14 -	-	-	-	-	-	-	88769	1	-	SG 60.3	0.15	3.2	9,930	0.00	5	J./U	0	14	100*	100*	0

## **Sierra - Sour Pipelines**

LICENSEE	FROM	то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE		LINE NO.	LINE SEGMENT MODIFIER		OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	z	SEGMENT RELEASE VOLUME (m3)	CUMULATIVE RELEASE VOLUME (m3)	SOUR EPZ (m)	ASSIGNED EPZ (m)	STATUS
							PIERIDA	E SOUR DISC	ONTINUED															
PIERIDAE ALBERTA PRODUCTION LTD.	D-003-E/094-I-14 -	C-091-D/094-I-14 -	-	•	-	ESD	58.8312	121.3858	89410	1	-	SG	168.3	2.12	6.4	10,205	2.00	5	0.70	121	121	400	400	D
PIERIDAE ALBERTA PRODUCTION LTD.	B-088-C/094-I-14 -	C-091-D/094-I-14 -	-	•	-	ESD	58.8312	121.3858	84342	2	-	SG	168.3	2.84	7.1	20,650	1.16	5	0.70	186	399	1130	1130	D
PIERIDAE ALBERTA PRODUCTION LTD.	D-064-K/094-I-11 -	A-098-K/094-I-11 S	-		-	ESD	58.7395	121.3421	82552	1	-	SG	168.3	3.75	8.7	22,060	3.11	5	0.70	674	674	1720	1720	D
·																								

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s).

All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

#### **LEGEND**

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher Valve: CV=Check Valve ESD=Emergency Shutdown Valve

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction TEMP=Temperature ROW=Pipeline Right of Way

## **Sierra - Sour Pipelines Water**

LICENSEE FROM	то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER PIERIDAE SOU	INCLUDES UNIQUE LINE # JR OPERATING	SUB (r		GMENT GTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	z G	AS LIQL 3/d) (m3/	ID G d) (m3		GVF n3/m3)	SEGMENT RELEASE VOLUME (m3)	CUMULATIVE RELEASE VOLUME (m3)	SOUR EPZ (m)	ASSIGNED EPZ (m)	STATUS
PIERIDAE ALBERTA PRODUCTION LTD. C-091-D/094-I-14	- C-092-D/094-I-14 -	ESD	58.83119	121.38584	ESD	58.82969	121.3970	89328	1	-		SW 1	14.3	0.88	4.8	9,305	2.00	5	0.70	.1 500	.0 0.	20 1	137.4	3.02	3	50*	50*	0
PIERIDAE ALBERTA PRODUCTION LTD. C-091-D/094-I-14	- C-091-D/094-I-14 -	ESD	58.83119	121.38584	ESD	58.83119	121.38584	84700	1	-		SW 8	8.9	0.03	4.8	8,000	2.98	5	0.70	.1 500	.0 0.	20 1	118.3	0.10	0	50*	50*	0
PIERIDAE ALBERTA PRODUCTION LTD. C-091-D/094-I-14	- D-092-D/094-I-14 -	ESD	58.83119	121.38584	-	-	-	84700	2	-		SW 8	88.9	0.15	4.8	8,000	2.98	5	0.70	.1 500	.0 0.	20 1	118.3	0.44	0	50*	50*	0
PIERIDAE ALBERTA PRODUCTION LTD. D-092-D/094-I-14	- D-092-D/094-I-14 -	-	-	-	-	-	-	84700	3	-		SW 8	88.9	0.002	4.8	8,000	2.98	5	0.70	.1 500	.0 0.	20 1	118.3	0.01	0	50*	50*	0
PIERIDAE ALBERTA PRODUCTION LTD. B-048-L/094-I-11	- D-029-L/094-I-11 -	-	-	-	ESD	58.69056	121.48024	82750	2	-		SW 1	19.4	1.30	8.9	6,895	2.19	5	0.70	.1 500	.0 0.	20 1	102.2	4.61	5	50*	50*	0

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

#### LEGEND

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GM=Gas Sales Meter GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater MS=Meter Station PG=Gathering Point PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in PR=Pigging Receiver/Launcher <u>Valve</u>: CV=Check Valve ESD=Emergency Shutdown Valve

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids MP=Multiphase

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed

T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WALL=Wall Thickness OD=Outside Diameter Z=Compressibility Factor GLR=Gas-To-Liquid Ratio GVF=Gas Volume Fraction TEMP=Temperature ROW=Pipeline Right of Way

Calgary, AB T2P 0H7 Cell: 780-897-0851 North Foothills Foreman Josh Storle **CNRL Backup Foreman/Operator** James Jung Cell: 250-242-1214 **CNRL Area Foreman** Cell: 250-261-8396 Matt Lorincz **CNRL Operations Superintendent** Richard Calliou Cell: 250-262-9372 Health & Safety, ERP Coordinator Paul Smith Cell: 403-638-1452 SVP Drilling, Completions & HSE Yvonne McLeod Cell: 403-921-7744

For a detailed contact list, refer to the Incident Management Team Phone List yellow tab, behind the Section 2.0: Roles and Responsibilities blue tab.

#### **OPERATIONS SUMMARY**

Pieridae's Ojay Field is a small sweet gas producing property straddling the border between Alberta and British Columbia, approximately 90 km southwest of Grande Prairie, AB. This field is contract operated by Canadian Natural Resources Limited (CNRL) by operators from the CNRL Battery and Dehydrator facility at A-65-A/093-I-09.

The Ojay field consists of six producing/flowing sweet gas wells, two licensed wells, one drilled and cased well and two shut-in/suspended wells. Two of the wells are in Alberta and the remainder of the wells are in British Columbia. There are four active sweet natural gas pipelines in British Columbia, and one inter-provincial sweet gas pipeline. which falls under the Canada Energy Regulator (CER) regulations.

The Ojay field encompasses the area between Township 63, Range 14 in Alberta and between I/93-I-08 and G/93-I-09 in British Columbia. Sweet gas from the producing wells is dehydrated at CNRL Central Dehydrator facility located at A-65-A/93-I-09. Gas flows from the 10-24 well in Alberta via the CER pipeline to a riser at D-083-I/93-I-08.

#### **EPZ Information**

The largest EPZ for the sweet wells and pipelines is 100 m.

#### Closest Urban Centre

The district municipality of Tumbler Ridge is located approximately 86 km northwest of the emergency planning zone and has a population of +/- 1,987.

#### Hydrology

There are numerous streams and water bodies within or intersecting the emergency planning zone, some of which include; Chinook Creek, Chinook Lake, and Sherman

#### Highways

There are no highways intersecting or within the emergency planning zone.

#### Surface Developments

There are no surface developments within the field. In the event of an incident, assign rovers to patrol the area.

#### Site Access

Refer to the following page for the access map and directions.

#### SAFETY EQUIPMENT

#### Operator / Truck Safety Equipment

Refer to the "Required Equipment & Hand Tools" for a complete listing of safety

#### Notification

Third party operators (CNRL) attend to the wells and pipelines periodically.

#### Communications

There is minimal cell coverage in the Ojay field, two way radios will be the primary method of communication. The following are radio frequencies used on the Ojay

Channel	Frequency	Location
RR-01	150.08 MHz	KM 0-25
RR-07	150.26 MHz	KM 25-62
RR-05	150.2 MHz	KM 62-93
RR-23	151.19 MHz	700 RD
RR-23	151.19 MHz	4700 RD
RR-20	150 83 MHz	7000 RD

#### Roadblock Kits

Roadblock kit availability will be coordinated at the time of incident of by the Team

## **AREA USERS & TIE-INS - AB**

#### Oil and Gas

Company Name	Emergency #
Canadian Natural Resources Limited*	888-878-3700
Repsol Oil & Gas Canada Inc.	403-237-1234
* There are tip ins between Pioridae and the above stared companies	Digridagi's EDD doos not cover

cover emergencies for other operators.

#### Trappers

Trapper ID	Name	Emergency
2593	Thomas Prince	587-299-4829

Guides & Outfitters - Wildlife Management Unit (WMU) #445

Name

Certificate Emergency Legacy Bighorns Ltd. 403-320-0472 Brett Logue Mountain Man Adventures Tom Sallows 780-518-9211

#### Forestry Management Units (G16) See Alberta Energy Regulator (AER)

#### Forestry Management Agreements (FMA)

Weyerhaeuser Canada Ltd. - Grande Prairie

Kim Anweiler, Land Use Coordinator Cell: 780-832-7756

#### AREA USERS & TIE-INS - BC

Oil and Gas	
Company Name	Emergency #
Canadian Natural Resources Limited*	888-878-3700

\* There are tie-ins between Pieridae and the above stared companies, Pieridae's ERP does not cover emergencies for other operators.

#### Trappers Trapper ID

TR0719T004	Randy Bedell	250-843-7522
<b>Guides &amp; Outfitters</b>		
Certificate	Name	Emergency
701249	Aaron Fredlund	403-638-1368
_		

Crown Tenure File ID Phone 9635724 Canadian Natural Resources Limited 888-878-3700 **Forest Tenure** hone

File ID	Name	Phone
L48387	Prairie Provident Resources Canada Ltd.	403-292-8000

## **EMERGENCY SERVICES**

Ambulance / BCEHS	91	1
BC Ambulance Services	250-374-593	7
Air Ambulance (STARS)	888-888-456	7
Hospitals		
Dawson Creek & District Hospital	250-782-850	1
Fort St. John Hospital & Health Centre	250-261-731	0
Queen Elizabeth II Hospital	780-538-710	0
Poison Control Centre (AB)	800-332-141	4
Poison Control Centre (BC)	800-567-891	1
Alberta First Call	800-242-344	7
BC One Call	800-474-688	6
Fire Departments	91	1
Grande Prairie Fire Department (AB)	Admin: 780-538-039	93
Dawson Creek, Fort St. John (BC)**	91	1
Tumbler Didge (DC)**	Admin. 250 242 202	Λ

Admin: 250-242-3939 Tumbler Ridge (BC)\* \*This area does NOT have fire coverage from any local fire department. All fires must be handled by t company, mutual aid partners, or contract oilfield fire fighting services. Local fire departments will or respond to motor vehicle accidents and medical emergencies unless specifically dispatched by EMBC or the Local Authority

#### **RCMP**

Dawson Creek (BC) Grande Prairie (AB)	250-784-3700 780-830-5790
Reception Centres	
Howard Johnson Hotel	250-787-0651

#### Fax: 250-787-5266 8540 Alaska Road, Fort St. John, BC Paradise Inn & Conference Centre 780-539-6000 11201 100 Avenue, Grande Prairie AB Fax: 780-532-1961

#### **LEAD AGENCIES & PRIORITY CONTACTS**

Note. All Hullibers, unless otherwise mulcated, are 24 hours.		
For incidents involving the CER regulated pipeline, call the CER 24 hour number		
Canada Energy Regulator (CER, Formerly National Energy Board)*		
TSB Incident Line (Pipeline emergencies)	819-997-7887	
CER Incident Line (All other emergencies)	403-807-9473	
ALBERTA LEAD AGENCIES		
Alberta Energy Regulator (AER)	800-222-6514*	
Grande Prairie / High Level Field Office		
Wildfire Reporting	310-FIRE(3473)	
* One call number for regulatory agency, spill reporting and Alberta Environ wildlife).	ment & Parks (lands, fish, forest,	
M.D. of Greenview	866-524-7608	
Wayne Brown, Regional Fire Chief	Office: 780-524-7628	
Alberta Health Services - Z5 North	Admin: 780-841-3200	

Alberta Health Services - 25 North	Aumin	. / 00-04 1-3200	
Shane Hussey, Director of Environmental Services	24 hr:	844-755-1788	
Alberta Health & Wellness	Admin:	780-427-7164	
Alberta Emergency Management Agency (AEMA) - Northwes	st	866-618-2362	
Ken Hawrylenko, Emergency Management Field Officer	Cell:	780-292-1155	
Alberta Boilers Safety Association (ABSA)		780-437-9100	
Alberta Safety Services - Electrical Branch	Admin:	866-421-6929	
Alberta Environmental and Dangerous Goods Emergencies	(EDGE)	800-272-9600	

Workers' Compensation Board (WCB) 866-922-9221 **BRITISH COLUMBIA LEAD AGENCIES** 

	<del>-</del>
BC Oil & Gas Commission	800-663-3456
	250-794-5200
Emergency Management BC (EMBC)	800-663-3456*
Heather MacDes Designal Manager (Drings Coarse Office)	Office. 2E0 E61 2E11

Heather MacRae, Regional Manager (Prince George Office) Office: 250-561-3514 \*In the event of an emergency, EMBC will notify the OGC, Ministry of Environment, Environment & Climate Change Canada, Ministry of Forests, Land & Natural Resources Operations, Northern Health Authority, and any affected municipalities. Doggo Biver Pegianal Dietrie 800-670-7773

	000-070-7773
Cell:	250-219-3000
On Call:	855-554-3622
Office:	250-565-5584
Cell:	250-617-6611
	866-566-7233
	On Call: Office:

BC Ministry of Transportation & Infrastructure		
South Peace Area	Admin:	250-784-2363
Katherine Styba District Manager	Office:	250-576-1157
•	Cell:	250-262-5486
Argo Road Maintenance		800-663-7623

BC Ministry of Environment and Climate Change Strategy			
Peace Region Office	Admin:	250-787-3411	
Terry Sawchuk, Environmental Emerg. Response Officer	Office:	250-787-3391	
Report a Poacher		877-952-7277	
Public Works Association of BC (PWABC)	Office:	604-880-8585	
Ministry of Forests, Lands & Natural Resource Operations			
Peace Forest District - Dawson Creek	Admin:	250-784-1200	
Mark Van Tassel, Resource Manager	Office:	250-784-1230	
Forest Fire Reporting		800-663-5555	
Transportation of Dangerous Goods (TDG)		800-663-3456	
WorkSafe BC - Fort St. John (after hours reporting)		866-922-4357	

#### FEDERAL AGENCIES

Air	Traffic	Control
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911

Daytime Reporting

Theresa Pearsall, Support Services Coordinator

Emergency

NAV Canada*	866-541-4102
Transport Canada**	877-992-6853
* If flight information on a NOTAM and in any in manying of anything NAVAO	,

<sup>\*</sup> If flight information or a NOTAM advisory is required, contact NAV Canada

<sup>\*\*</sup> if a NOTAM is required for airspace closure, contact the Transport Canada Aviation Operations Centre CANUTEC

Toll-Free		888-226-8832
From Cell Phone		*666
Inquiries	Admin:	613-992-4624
Emergency Response Assistance Canada (ERAC)		800-265-0212
Environment and Climate Change Canada (ECCC)		

Meteorological Services 604-664-9385 866-283-2333 National Environment Emergencies Centre

Bus: 888-621-7233

Bus: 250-785-1283

613-996-6666

### SUPPORT SERVICES

Note: All numbers, unless otherwise indicated, are 24 l	hours.
Mobile Air Monitoring*	
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400
HSE Integrated Ltd Grande Prairie	888-346-8260
Trojan Safety Services - Grande Prairie	877-785-9558
BC OGC (1 mobile air monitor)	250-794-5200
* Due to response time, dispatch mobile air monitoring at a Level 1 Emergency. R approximately 4.5 hours from Grande Prairie, Alberta.	esponse time is expected to be
Oilfield Fire Fighting / Safety Contractors	
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400
HSE Integrated Ltd Grande Prairie	888-346-8260
Safety Boss - Fort St. John	800-882-4967
Trojan Safety Services Ltd., Fort St. John	877-785-9557
Well Control Specialists	
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400
Capstone Blowout Recovery - Province Wide	866-347-3911
Superior Fire Control - Grande Prairie	877-882-0035
Ignition Services	
Firemaster Oilfield Services Inc Grande Prairie	780-539-4400
HSE Integrated Ltd Grande Prairie	888-346-8260
Safety Boss Inc Province wide	800-882-4967
<b>Emergency Response Management</b>	
H₂Safety Services Inc Calgary	403-212-2332
Toll Free	888-216-2332
Spill Response	
Clean Harbours Industrial Services - Grande Prairie	800-645-8265
Transportation	
Northern Express - High Level	780-926-0808
Prairie Bus Lines - Red Deer	403-304-8257
Helicopter Companies (Day Flying Only)	
Bailey Helicopters (loud hailer capability)	250-785-2518
Canadian Helicopters Ltd Fort St. John	250-787-0431
Highland Helicopters Ltd Grande Prairie	780-539-3112

Canadian Helicopters Ltd Fort St. John	250-787-043
Highland Helicopters Ltd Grande Prairie	780-539-311
Yellowhead Helicopters Ltd Fort St. John	250-785-233
WCSS - Zone 6 - Coop "E"	866-541-888
Coon Custodian: Dombina Dinalinas	780 524 303

780-524-3938 Dwayne Jones Cell: 780-524-8877

**Equipment Summary** Equipment Location Pembina Valleyview Pump Stn 20' ISRU Sea Can (winch tractor /

12-10-69-22 W5M trailer)

Coop Custodian: Marko Hackenberg (Rockwater Energy Solutions) 780-827-5353 Cell: 780-827-6061

**Equipment Location Equipment Summary** 97 Street & Hoppe Avenue 20' ISRU Sea Can (winch tractor / Grande Cache trailer)

wcss

Northbound on Hwy 40 (100 Street in town) turn right (east) on Hoppe Avenue. Travel 1 km to 97 Street, turn left (north). Sea-Can is 200 meters north on right (east) side of road

WCSS - Zone 6 - Coop "T" 866-541-8888 Regional Custodian: Clean Harbors Bus: 780-532-4331 **Equipment Location** 

**Equipment Summary** 52' OSCAR (Semi-Truck). 16' Winter 9601 - 156 Avenue Grande Prairie

> OSCAR trailer (3/4 ton truck w/ 2-5/16" ball hitch), 2 Workboats (1/2ton truck with 2" ball hitch), 16' Wildlife Trailer (1/2-ton truck w/ 2" ball hitch)

Transport: Contact - Clean Harbors

Coop Custodian: Seven Generations Energy Ltd. 780-228-2292 Bus: 587-298-0026 Mike Clarke Sandra Miller Bus: 780-296-5822

**Equipment Location Equipment Summary** Cutbank Plant Site 20' ISRU Sea-Can 10-65-05 W6M (Winch Truck/Trailer)

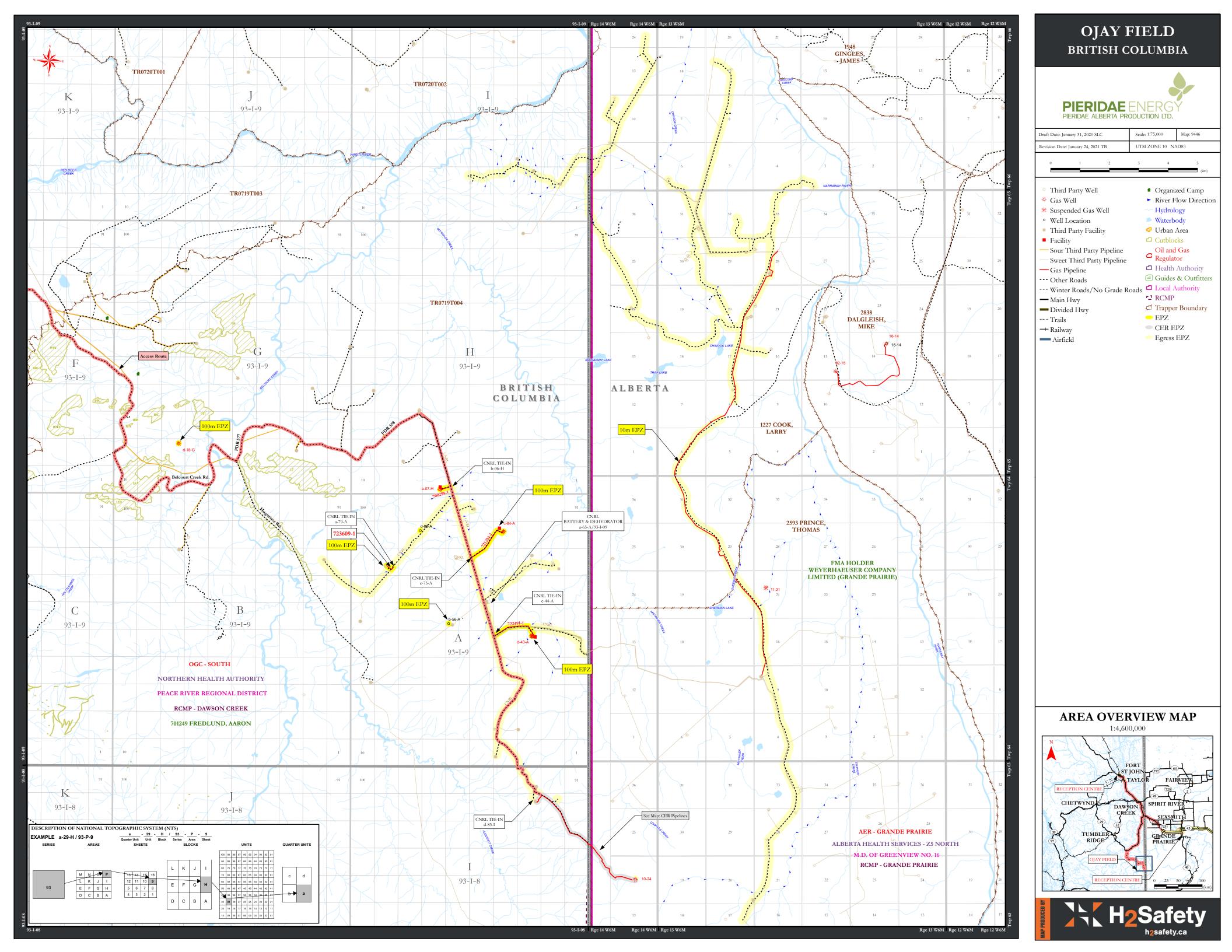


February 202



<sup>\*\*</sup> If any of the above mentioned safety equipment is insufficient, Pieridae personnel will contact a local safety company who will be asked to provide additional equipment. \*\*

<sup>\*</sup> See website for more info (http://www.wcss.ab.ca)



## Ojay - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	uwi	SURFACE LOCATION			H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
			PIERIDAE SWEET OPE								
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY A-007-H/093-I-09	22459	200A007H093I0900	A-007-H/093-I-09	54.584638	-120.079514	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY A-007-H/093-I-09	22459	200A007H093I0903	A-007-H/093-I-09	54.584638	-120.079514	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY C-084-A/093-I-09	23735	200C084A093I0900			-120.046100	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-018-G/093-I-09	14568	200D018G093l0900	D-018-G/093-I-09	54.598583	-120.217181	0	-	100	-	CAPPED GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-043-A/093-I-09	26566	200C053A093I0902	D-043-A/093-I-09	54.539928	-120.031162	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL OJAY D-A043-A/093-I-09	26567	200C042A093I0900	D-043-A/093-I-09	54.539921	-120.030853	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	PANTERRA RES ET AL NARWAY 6-24-63-14	434445	100062406314W600	10-24-063-14W6	-	-	0	-	100	-	GAS
PIERIDAE ALBERTA PRODUCTION LTD.	IKM HZ NARWAY 12-24-63-14	470737	100122406314W600	10-24-063-14W6	-	-	0	-	100	-	GAS
			PIERIDAE SWEET SUSF	PENDED							
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-043-A/093-I-09	26566	200C053A093I0903	D-043-A/093-I-09	54.539928	-120.031162	0	-	100	-	SUSPENDED GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-043-A/093-I-09	26566	200C053A093I0904	D-043-A/093-I-09	54.539928	-120.031162	0	-	100	-	SUSPENDED GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-043-A/093-I-09	26566	200C053A093I0905	D-043-A/093-I-09	54.539928	-120.031162	0	-	100	-	SUSPENDED GAS
PIERIDAE ALBERTA PRODUCTION LTD.	OJAY D-043-A/093-I-09	26566	200C053A093I0906	D-043-A/093-I-09	54.539928	-120.031162	0	-	100	-	SUSPENDED GAS
PIERIDAE ALBERTA PRODUCTION LTD.	ET AL OJAY D-098-I/093-I-08	14206	200A008A093I0900	D-098-I/093-I-08	-	-	0	-	100	-	SUSPENDED GAS
			PIERIDAE SWEET LICI	ENSED							
PIERIDAE ALBERTA PRODUCTION LTD.	HZ OJAY B-A056-A/093-I-09	30905	200D057A093I0900	B-056-A/093-I-09	54.543648	-120.074986	0	-	100	-	LICENSED
PIERIDAE ALBERTA PRODUCTION LTD.	CNRL OJAY D-088-A/093-I-09	33416	200C088A093I0900	D-088-A/093-I-09	54.572050	-120.089879	0	-	100	-	LICENSED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

#### **LEGEND**

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone

## **Ojay - Sweet Pipelines**

LICENSEE	WATER CROSS	FROM	то	START VALVE	START VALVE LATITUDE	LONGITUDE	VALVE	END VALVE LATITUDE DPERATING			LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)		THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
PIERIDAE ALBERTA PRODUCTION LTD.	-	A-007-H/093-I-09 WE	B-006-H/093-I-09 PL	_	-	-	-	-	-	700298	1	-	NG	114.3	0.22	4.0	9,930	0	-	100	Q
PIERIDAE ALBERTA PRODUCTION LTD.	-	C-084-A/093-I-09 WE	C-075-A/093-I-09 PL	_	-	-	-	-	-	721254	1	-	NG	168.3	1.7	5.6	9,930	0	-	100	Q
PIERIDAE ALBERTA PRODUCTION LTD.	-	D-043-A/093-I-09 WE	C-044-A/093-I-09 PL	-	-	-	-	-	-	722491	1	-	NG	168.3	1.52	4.0	9,930	0	-	100	Q
PIERIDAE ALBERTA PRODUCTION LTD.	-	B-079-A/093-I-09 UN	A-079-A/093-I-09 UN	1 -	-	-	-	-	-	723609	1	-	NG	168.3	0.37	4.8	9,930	0	-	100	Q
						PIERIDAE SV	VEET DI	SCONTINUED													
PIERIDAE ALBERTA PRODUCTION LTD.	-	13-09-064-13W6 BE	11-28-065-13W6 BE	-	-	-	-	-	-	51340	1	-	NG	219.7	17.3	7.0	0	0	-	10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s) All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations

#### **LEGEND**

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater

MS=Meter Station PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in WF=Well Facility

Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas

FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water

UN=Unknown ML=Miscellaneous Liquids AA=Air

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW=Pipeline Right of Way



## **Emergency Contact Information**

For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator is the primary management agency – they will be contacted by the Transportation Safety Board.

\*\*A pipeline is CER-regulated due to the fact that it crosses a Provincial Border. \*\*

This must be your first call											
	24 Hr Incident Line	819-997-7887									
Transportation Safety Board (TSB)	Facsimile	819-953-7876									
	Email	PipelineNotifications@tsb.gc.ca									

Call the TSB 24 Hr Incident Line when an incident meets the Immediately Reportable Events (see page 2 for criteria) for all Canada Energy Regulator (CER) regulated pipelines and facilities.

Both the phone notification and the input of information into the

CER's Online Event Reporting System (OERS): <a href="https://apps.cer-rec.gc.ca/ers/home/index">https://apps.cer-rec.gc.ca/ers/home/index</a> are required to occur as soon as possible and no later than three hours of the incident being discovered. For all other events (non-immediate) companies are only required to input the information via the OERS.

Secondary Calls												
Contact as needed <b>AFTER</b> contacting the TSB and CER.												
Alberta Energy Regulator (AER)	24 Hr	800-222-6514										
BC Oil & Gas Commission	24 Hr	800-663-3456										

Hazardous occurrences (under Part XVI of the Canada Oil and Gas Occupational Safety and Health Regulations) and incidents requiring medical evacuations are to be reported to the CER immediately.







## **CER Definition of an Emergency**

CAN /CSA Z246.2-18 defines an emergency as "an event or imminent event, outside of the scope of normal operations that requires prompt coordination of resources to protect people, the environment, and property".

Emergencies can result from numerous causes including pipeline and equipment failure, human error and natural perils such as tornadoes, hurricanes, floods, or earthquakes and terrorism or other criminal activities. Multi-hazard emergencies such as an earthquake causing pipeline breaks, fires and explosions, which result in injury and further property damage, can also occur.

Companies must consider all probable emergencies and have applicable procedures in place to deal with potential effects and threats to people, property and the environment, as determined through a formal hazard assessment.

#### **CER Definition of an Incident**

Section 52 of the Onshore Pipeline Regulations (OPR) requires companies to notify the Board of all incidents relating to the construction, operation, or abandonment of their pipelines. An "incident" is defined in section 1 of the OPR as an occurrence that results in:

- 1. The death of or serious injury to a person;
- 2. A significant adverse effect on the environment;
- 3. An unintended fire or explosion;
- An unintended or uncontained release of low-vapour pressure (LVP) hydrocarbons in excess of 1.5 m<sup>3</sup>:
- 5. An unintended or uncontrolled release of gas or high-vapour pressure (HVP) hydrocarbons;
- 6. The operation of a pipeline beyond its design limits as determined under CSA Z662 or CSA Z276 or any operating limits imposed by the Board.

Companies are required to report a death or serious injury to a person only where the death or injury is a result of an occurrence that relates to the construction, operation, or abandonment of a "pipeline". Whether a death or injury is related to the construction, operation, or abandonment of a pipeline will depend on whether the person who was killed or injured was working at the time of the incident and/or whether the work was a cause or contributing factor to the incident. It is important to note that, unlike the Canada Labour Code (CLC), the OPR does not differentiate between different types of "persons". Therefore, companies must report all deaths or serious injuries to any person that occur relating to pipeline construction, operation, or abandonment regardless of whether or not that person was directly employed by the company.

The definition of "serious injury" in the OPR is not exhaustive and contains multiple injuries that qualify as serious, including "the fracture of a major bone". The CER uses the following definition of "major bone": skull, mandible, spine, scapula, pelvis, femur, humerus, fibula, tibia, radius, and ulna.

## **Immediately Reportable Events**

Where regulations require an event to be reported "immediately", companies must also consider whether the event meets any of the following definitions:

## An Incident that Harms People or the Environment:

- A death;
- A serious injury (as defined in the OPR or TSB regulations);
- An unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m<sup>3</sup> that leaves company property or occurs on or off the right of way;
- An unintended or uncontrolled sweet natural gas or HVP release >30,000 m<sup>3</sup>;
- Any unintended or uncontrolled release of sour natural gas or hydrogen sulfide; and/or
- A significant adverse effect on the environment.



## Immediately Reportable Events, continued

### A Rupture:

 an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

#### A Toxic Plume:

a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an
incident that causes people, including employees, to take protective measures (e.g. muster,
shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at (819) 997-7887. Subsequently, the company is required to input the details required by both the TSB (see TSB regulations) and the CER into the OERS. The phone notification and the input of information into OERS are required to occur as soon as possible and no later than three hours of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an "Incident that Harms People or the Environment", however the company will be responsible for specifically indicating whether the incident meets the definitions of "Rupture" and "Toxic Plume".

For all other events that do not meet any of the definitions in this section, companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.

## **Multiple Incident Types**

It is possible that a single occurrence may result in multiple incident types. If multiple incident types occur as a result of a single occurrence, companies are expected to report those incident types under a single incident report.

Examples of situations where this might be the case include but are not limited to:

- A pipeline rupture (occurrence) where there is a release of gas (incident type) and an explosion (incident type):
- An industrial accident (occurrence) that causes a death (incident type), a serious injury (incident type) and a fire (incident type);
- An operational malfunction (occurrence) that causes an overpressure (incident type) and a release of product (incident type); or
- An operational malfunction (occurrence) that causes several concurrent or immediately consecutive overpressures (incident types).

In cases where an incident has occurred, and a second incident occurs during the response to the initial incident (e.g. a fire occurs during the clean-up of a spill), the second incident is considered distinct and should be reported separately.

The events that are reportable using the online reporting system are:

- Incidents under the National Energy Board Onshore Pipeline Regulations (OPR), National Energy Board Processing Plant Regulations (PPR), and Canada Oil and Gas Drilling and Production Regulations (DPR)/Oil and Gas Drilling Regulations;
- Unauthorized activities under the NEB Act and Pipeline Damage Prevention Regulations -Authorizations (DPR-A);
- Pipeline damage and consent suspensions under the Pipeline Damage Prevention Regulations Obligations of Pipeline Companies (DPR-O);



## Multiple Incident Types, continued

- · Emergency burning or flaring under the PPR;
- Hazard identification under the PPR;
- Suspension of operations under the PPR;
- Near-misses under the DPR;
- Serious accidents or incidents under the Canada Oil and Gas Geophysical Operations Regulations/Oil and Gas Geophysical Operations Regulations;
- Emergencies or accidents under the Canada Oil and Gas Installation Regulations/Oil and Gas Installation Regulations; and
- Accidents, illnesses, and incidents under the Canada Oil and Gas Diving Regulations/Oil and Gas Diving Regulations.

In the event that OERS is unavailable, companies are directed to report events to the TSB Reporting Hotline at 819-997-7887.

## **Reporting Timelines**

Section 52 of the OPR requires companies to immediately notify the Board of any incident. Section 52 of the OPR also requires the submission of a Preliminary Incident Report (PIR) and a Detailed Incident Report (DIR) "as soon as is practicable". Generally, companies' initial notification of an incident will satisfy the PIR requirements. The information required for a DIR must be submitted within 12 weeks of reporting an incident. For complex incidents, companies may request an extension for submission of a DIR.

The CER and the TSB have adopted a single window reporting approach. However, in some areas, the TSB reporting requirements are somewhat different than the CER requirements. For additional details on the TSB reporting requirements, companies should refer to the TSB website (<a href="http://www.bst-tsb.gc.ca/eng/incidents-occurrence/index.asp">http://www.bst-tsb.gc.ca/eng/incidents-occurrence/index.asp</a>).

Transportation Safety Board of Canada Place du centre, 4th Floor 200 Promenade du Portage Hull, Quebec K1A 1K8 Facsimile 819-953-7876

## **Supporting Information**

The table below indicates the location of CER supporting documentation in this emergency response plan.

Supporting Information	Found in
CER Distribution	Foreword: Distribution List Page 3
Company 24/7 Emergency Number	Binder Cover
Area Map of CER Regulated Facilities	Area Specific Information
TSB Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
CER Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
Safety data sheets (SDS)	
Health and Safety Plan	Appendix A in ERP Core



# **Emergency Preparedness & Response Policy Emergency Management Expectations**

An effective emergency management program includes being prepared for emergencies, responding in the event of an emergency and ensuring that operations are able to continue safely and can recover in a timely, efficient manner.

Emergency management is critical to ensuring that people, the environment, the public, the organization's assets and reputation are protected in the event of an unanticipated hazard event, be it natural, technological or human-induced.

## **Emergency Management Preparedness**

Emergency preparedness is a continuous process of all-hazards planning and coordination in order to effectively minimize the adverse effects and consequences inherent in any emergency incident. Through the use of such tools as exercises, proactive resource management and capability analysis, preparedness is one of the key pillars with which to ensure the adaptation of comprehensive approaches for the company's emergency management strategy. The emergency management process must include the following:

- Hazard Risk and Vulnerability Assessment
- Public Involvement
- Communications Planning
- Situational Awareness
- Crisis Management Plans
- Emergency Response Plans
- Emergency Management Resources
- Competence, Training and Awareness
- Exercises and Drills
- Record Keeping
- Distributions Lists (Internal and External)
- Continuous Improvement

Emergency Response Plans should contain:

- Communication procedures
- Emergency contacts
- Evacuation and Rescue plans
- Equipment locations and supply companies
- Spill response and containment (where required)
- Meet regulatory requirements
- Event classification
- Activation and Stand Down Levels
- Guidelines for medical emergencies
- Defined roles and responsibilities
- Maps and Emergency Planning Zones
- Mutual Aid Understandings (where applicable)

Confidential ERPs will be available at the field Incident Command Post and the Corporate Emergency Response Centre.



#### **Extended Emergencies**

In an extended emergency, company responders will develop an Incident Action Plan utilizing forms found within ERP, which may include:

- ICS Form 201 Incident Briefing
- ICS Form 202 Incident Objectives
- Form A1 Initial Emergency Report
- Form A4 Incident Action Plan (IAP) Checklist

## **Emergency Response, Continuity and Recovery**

In the event of an emergency, each business unit shall determine the level of emergency as per established protocols and respond according to their respective emergency response plans. Response includes the mobilization and ongoing management of resources, people, equipment and assets to manage the effects of an incident; functions inclusive of the Incident Command System (ICS), the company's primary response platform.

Each business unit shall establish, implement and maintain procedures for communicating information related to emergency management, including:

- Communication of plans and procedures to employees, operating partners, contractors, the supply chain, regulators and local communities; and
- Emergency and crisis communications to stakeholders, including emergency responders, regulators, the media, family members and the public.

# **Emergency Management Monitoring, Assessment and Continuous Improvement**

Lessons learned and knowledge generated from monitoring results should be used to develop "improved practices", which are then shared widely. After emergencies or disasters occur, a systematic approach is used to learn lessons from the experience, increase effectiveness and improve emergency management practices and processes.

## **Manual Updating Procedures and Schedule**

The company's Corporate and Site-Specific ERPs are to be updated annually and submitted to the CER on or before April 1st of each year, or when significant changes (either operational or identified from exercises/incidents and resulting debriefs) occur or are identified. If an update occurs outside of the January 1st to April 1st period, a letter must be submitted to the CER indicating that there have been no changes to operations since the ERP was last submitted. ERP updates are performed by a third-party company (H2Safety), whose expertise in the field provides company personnel with the education, training, and resources to excel in Emergency Response. Approvals for ERP updates will be carried out by the company's Emergency Management Coordinator.



## **Debriefing**

#### Internal Debriefing

The Incident Commander, in consultation with the Lead Agency and/or other regulatory body, will order "Return to Normal" status.

- All response team members and on-site personnel, including contract personnel and emergency services, will be notified.
- All previous contacts including public, workers, landowners, government and industrial operators must also be notified of the end of the emergency.
- Ensure a media statement is prepared and delivered by Senior Management.
- Debriefing meeting(s) with company personnel (including insurance, legal, and human resources as appropriate) must be conducted.
- Debriefing meeting(s) to review effectiveness of the Emergency Response Plan must be conducted. Feedback and comments as a result of the debrief must be incorporated into the ERP revision and procedures. This feedback should be submitted to the ERP provider.
- Debriefing meeting(s) with residents, landowners, Lead Agency and other government agencies and all other impacted parties may be conducted.
- Document all "Return to Normal" activities.
- Complete response debriefing for all response teams. Submit, in writing, response findings and recommendations to the Incident Commander when applicable, which will be submitted to the overall report writer.

## **Public Debriefing**

When the public has been impacted, company operations should provide the public information as soon after the emergency as possible, to answer any questions or concerns. This should be done by a senior company representative, a trained Media Advisor, or by the Incident Commander.

After an emergency, a number of additional items should be considered:

- Debriefings, as mentioned above.
- Crisis management for company personnel and for other members of the public that may have been significantly affected by the emergency.
- If the emergency is of a level where it has impacted the public, an information center may be established within the community where the emergency occurred to answer any questions posed by the public.
- Establish a means of compensating citizens who may have had out-of-pocket expenses (such as meals and lodging costs) as a result of the emergency.
- Through the media, provide details of the investigation into the incident that are pertinent to the public, as it becomes available.

## **Health and Safety Plan**

The company's extensive Health and Safety program is to be implemented at all times during and after an incident. Training is provided to all company employees and contractors; all information and documentation can be found in the Health and Safety Manual.

## **Site Specific Control Points and Response**

In the event of an incident (reported from an external source and/or confirmed by a drop in pressure), an operator would be sent out to visually confirm the need to shut down operations. Operators have the ability to manually trip the ESDs at the risers on the CER line. The operator would then immediately contact his/her supervisor and the TSB, and then work with internal support and outside agencies to determine a plan of action for resolving the source of the release.



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## **CER Pipelines**

LICENSEE	WATER CROSS	FROM	то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	VALVE		END VALVE LONGITUDE		LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
						PIERIDAE	SWEET	OPERATING													
PIERIDAE ALBERTA PRODUCTION LTD.	-	10-24-063-14W6 WE	07-26-063-14W6 P	L -	-	-	-	-	-	280135	1	-	NG	168.3	2.2	4.8	9,930	0	-	100	Z
PIERIDAE ALBERTA PRODUCTION LTD.	-	A-071-I/093-I-08 PL	D-083-I/093-I-08 F	-	-	-	-	-	-	724292	1	-	NG	168.3	2.7	4.8	9,930	0	-	100	T

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s) All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations

#### **LEGEND**

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater MS=Meter Station PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in WF=Well Facility Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids AA=Air Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed LI=Linknown Q=Active I=Inactive S=Suspended R=Removed

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW=Pipeline Right of Way

