



**NORTHERN ALBERTA /  
NORTHEAST BC  
EMERGENCY RESPONSE PLAN**

---

**MARCH 2019**

**Whitecap Alberta 24 Hr Emergency: 866-590-5289**  
**Whitecap Boundary Lake 24 Hr Emergency: 250-787-3700**  
**BC OGC 24 Hr Incident Reporting: 800-663-3456**

Whitecap Resources Inc.  
3800, 525 – 8th Avenue SW  
Calgary, Alberta T2P 1G1  
**Admin: 403-266-0767**  
**Fax: 403-266-6975**

# REVISION HISTORY

This Emergency Response Plan is effective March 15, 2019. Whitecap Resource’s HSE Technician 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:**

ERP Revision Due Date: March 15, 2020				
Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
March 15 2019	March 15 2019	Yearly update to Revision History, Distribution List and Table of contents	Foreword	All
		Changed “sensitive” to “special needs”	Section 1: Initial Response	Five Step Guide, AER Assessment Matrix
		Updated to most current OGC Incident Classification Matrix		OGC Incident Classification Matrix
		Revised contact names/numbers		Step 2 – Internal Notification for BC/AB
		Added reporting info for OGC, flowchart, and comments about completing A1 form and where to find telephone numbers.		Step 3 – External Notification
		New version of the Public Protection Measures Flowchart to include HPZ language. Design change.		Step 5 – Public Protection Measures Flowchart AB / BC
		Revised table of contents to match new content added.		Table of Contents
		Added General Safety Equipment and Resource Lists heading.	Page 1	
		Added bullet point to Information Officer about developing a communications plan that establishes protocols on the use/transfer of confidential information. Updated note on bottom of page to include Escalation and Stand-Down of Emergencies.	Section 2: Roles & Responsibilities	Command Staff Roles
		Added note to Documentation Unit about keeping records for 5 years.		Planning Staff Roles
		Added 3 notes to Compensation & Claims Unit regarding expense claims being submitted to appropriate parties.		Finance/ Admin. Roles
		Changes Critical Sour to say Critical / Special Sour to match both OGC and AER regs. Added bullet point to Air Monitor Roles regarding measuring H <sub>2</sub> S and LEL levels at edge of EPZ to determine public protection measure criteria.		Air Monitors
		Removed telephone list from core, to be included with Area Specific Information		Response Teams Phone List
		Added 2 new sections on Internal Communication and Communicating with the public.	Section 3: Communications and Media	All

# REVISION HISTORY, continued

Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages
March 15 2019	March 15 2019	Revised table of contents to match new content added.	Section 4: Emergency Response Procedures	Table of Contents
		<b>Public Protection Measures Tab</b> - Added new information to Evacuation regarding monitoring air quality at edge of EPZ and developing methods to evacuate transients. Added new section called Road and Airspace Closures. Revised Ignition Procedure and Public Protection Measures Flowchart to include HPZ language, Notification and Evacuation Requirements Outside of HPZ as well as new design.		Pages 25-28
		<b>Spill Response Tab</b> - Revised Spill charts for AB / BC, changed note regarding specifics around AB and SK to be general for all provinces, added WCSS links for spill plans and live equipment lists and changed CSA Reference.		Pages 65-68, 69-70
		<b>Post Incident Tab</b> - added paragraph at beginning about keeping documentation for a minimum of 5 years, revised entire CIRD section, added documentation statement to Accident Investigation.		Pages 124-127
		Revised Government Notification Matrix, Lead, Supporting and Federal Agency roles due to updated regulations, agency name changes, as well as updated roles & responsibilities identified during consultation process.	Section 5: External Agencies	All
		Added heading and information on Documentation During and After an Incident.	Section 6: Forms	Table of Contents and pages 1-2
		Revised table of contents to match new content added.	Appendices	Table of Contents
		Added Communication methods Between Command Post BC Specific version and revised AB version.		Appendix E Pages 7-8
		Revised note about H <sub>2</sub> S ignition that was incorrect.		Appendix H – Page 14
		Added HPZ.		Appendix N – Pages 30-31
				Appendix O – Page 34
		Complete revision of maps, contact numbers, EPZ calculation tables, etc.	Area Specific Information Foreword	All

# REVISION HISTORY, continued

Date of Issue	Reason For Revision	Section	Affected Pages
February 1, 2018	Annual update to ERP. Applied company-wide corporate changes, updated operations phone list and relevant charts. Updated government contact information and roles. Updated all required site sections and applied new resident information for applicable site sections.	Foreword	ALL
		Section 1: Initial Response	Five Step Initial Response Guide, BC & AB Incident Classification Matrices, Internal & External Emergency Notification Flowcharts, BC & AB Public Protection Measures Flowcharts
		Section 2: Roles & Responsibilities	Key Response Personnel, Response Teams Phone List
		Section 4: Emergency Response Procedures	TOC, BC & AB Public Protection Measures Flowcharts, BC & AB Petroleum Release Reporting Requirements Charts, Transportation Incidents Section (ALL)
		Section 5: External Agencies	ALL
		Section 6: Forms	A3: Regulatory First Call Communication
		Appendices	Appendix N: Acronyms, Appendix O: Glossary of Terms
		Area Specific Information	
		Area Specific Information Foreword	Area Overview Map
		NEB Pipelines	ALL
		Boundary Lake AB	ALL
		Boundary Lake BC	ALL
		Elmworth / Wapiti	ALL
		Karr	ALL
		Simonette	ALL
Valhalla / Progress	ALL		

# REVISION HISTORY, continued

Date of Issue	Reason For Revision	Section	Affected Pages
October 1, 2016	<p>Annual update to ERP.            Applied company-wide corporate changes and updated operations phone list.            Updated all required site sections and changed Karr's access map to a shorter route and added a new site section for the Elmworth area.            Updated all government contact information, added in Hazards Assessment for NEBC and applied new resident information for all applicable site sections.</p>	Foreword	ALL (except Cover Page)
		Section 1: Initial Response	BC Incident Matrix, Internal & External Emergency Notification Flowcharts
		Section 2: Roles & Responsibilities	Key Response Personnel List & Response Teams Phone List
		Section 4: Emergency Response Procedures	TOC, Pages 27-31 & 79-81
		Section 5: External Agencies	ALL
		Section 6: Forms	TOC
		Area Specific Information	
		Area Specific Information Foreword	Area Overview Map
		NEB Pipelines	ALL
		Boundary Lake AB	ALL (except access maps)
		Boundary Lake BC	ALL (except access maps)
		Karr / Simonette	Field contact information, On-Site Storage & Karr's access map
		Elmworth (New)	ALL
Valhalla	ALL (except access map)		
November 1, 2015	New ERP manual	ALL	ALL

# WHITECAP - NORTHERN AB / NORTHEAST BC ERP

## DISTRIBUTION LIST

Manual #	Type	Res Info	Branch	Title/Agency	Name
<b>Corporate</b>					
33438	Binder	Full	Calgary	Emergency Operations Center (EOC)	[REDACTED]
33439	Binder	Full	Calgary	Emergency Operations Center (EOC)	[REDACTED]
33440	Binder	Full	Calgary	Emergency Operations Center (EOC)	[REDACTED]
33441	Binder	Full	Calgary	Operations Engineer - Boundary Lake & Valhalla	[REDACTED]
33442	Binder	Full	Calgary	Operations Engineer - Deep Basin	[REDACTED]

**5 Hard Corporate Manuals**

<b>Field</b>					
33443	Binder	Full	Boundary Lake	Boundary Lake Compressor Station	[REDACTED]
33444	Binder	Full	Grande Prairie	Valhalla 03-27 Gas Plant	[REDACTED]
33445	Binder	Full	Grande Prairie	Deep Basin Field Office	[REDACTED]
33446	Binder	Full	Grande Prairie	Area Superintendent	[REDACTED]
33447	Binder	Full	Boundary Lake	Lead Operator - Boundary Lake	[REDACTED]
33448	Binder	Full	Grande Prairie	Lead Operator - Valhalla	[REDACTED]
33449	Binder	Full	Grande Prairie	Lead Operator - Deep Basin	[REDACTED]
33450	Binder	Full	Grande Prairie	HSE Field Consultant	[REDACTED]

**8 Hard Field Manuals**

<b>External</b>					
33451	Binder	Full	Calgary	National Energy Board (NEB)	[REDACTED]
33452	Digital	Full	Calgary	National Energy Board (NEB)	[REDACTED]
33453	Binder	Full	Fort St. John	BC Oil & Gas Commission (OGC)	[REDACTED]
33454	Digital	Full	Fort St. John	BC Oil & Gas Commission (OGC) - Web Upload	[REDACTED]
33455	Binder	None	Prince George	Emergency Management BC (EMBC)	[REDACTED]
33456	Digital	None	Dawson Creek	Peace River Regional District	[REDACTED]
33457	Binder	None	Fort St. John	WorkSafe BC	[REDACTED]
33458	Digital	Full	Calgary	Alberta Energy Regulator (AER) - Web Upload	[REDACTED]
33459	Digital	None	High Level	Alberta Health Services - Zone 5 North	[REDACTED]
33460	Digital	None	Worsley	Clear Hills County	[REDACTED]
33461	Digital	None	Clairmont	County of Grande Prairie	[REDACTED]
33462	Digital	None	Spirit River	Saddle Hills County	[REDACTED]
33463	Binder	None	Fairview	RCMP - Fairview	[REDACTED]
33464	Digital	None	Beaverlodge	RCMP - Beaverlodge	[REDACTED]
33465	Digital	None	Fort St. John	RCMP - Fort St. John	[REDACTED]
33466	Binder	Full	Calgary	H <sub>2</sub> Safety Services Inc.	[REDACTED]

**6 Hard External Manuals**

**10 Digital External Manuals**

**WHITECAP RESOURCES LTD - NORTHERN AB & NORTHEAST BC PRODUCTION PHONE LIST**

**EMERGENCY RESPONSE 24 HOURS: 1-866-590-5289 or 1-250-787-3700**

Suite 3800, 525 Eighth Avenue SW, Calgary, AB T2P 1G1

Name	Position	Office	Fax	Cell	Home	Email
<b>CALGARY</b>						
[REDACTED]	VP Operations	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	Operations Engineer - Deep Basin	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	Operations Engineer - Boundary Lake & Valhalla	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	VP HSE	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	VP Production & Operations	[REDACTED]		[REDACTED]		[REDACTED]

Name	Position	Office	Fax	Cell	Home	Email
<b>FIELD</b>						
[REDACTED]	Field HSE Advisor			[REDACTED]		[REDACTED]
[REDACTED]	Area Superintendent	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	Lead Operator - Boundary Lake			[REDACTED]		[REDACTED]
[REDACTED]	Lead Operator - Valhalla	[REDACTED]		[REDACTED]		[REDACTED]
[REDACTED]	Lead Operator - Deep Basin			[REDACTED]		[REDACTED]

Revised: February 2018

# TABLE OF CONTENTS

## FOREWORD

COVER PAGE	
REVISION RECORD .....	1
DISTRIBUTION LIST .....	5
PHONE LIST .....	6
TABLE OF CONTENTS .....	7

## SECTION 1: RESPONSE

### INTRODUCTION

#### INITIAL RESPONSE

A1 INITIAL EMERGENCY REPORT FORM	
FIRST ON SCENE ACTIONS	
FIVE STEP INITIAL RESPONSE GUIDE	
FIVE STEP WORKSHEET	
STEP 1 - LEVEL OF EMERGENCY	
STEP 2 - INTERNAL NOTIFICATION	
STEP 3 - EXTERNAL NOTIFICATION	
STEP 4 - INCIDENT BRIEFING	
STEP 5 - PUBLIC SAFETY	

#### ONGOING RESPONSE

ONGOING RESPONSE GUIDE	
OBJECTIVES MEETING	
PEAR WORKSHEET	
A4 IAP CHECKLIST	
ICS 202 INCIDENT OBJECTIVES	
ICS 207 INCIDENT ORGANIZATION CHART	
ICS 209 INCIDENT STATUS SUMMARY	
TACTICS MEETING	
ICS 215 OPERATIONAL PLANNING WORKSHEET	
ICS 215A IAP SAFETY ANALYSIS	
PLANNING MEETING	
OPERATIONS BRIEFING	

## SECTION 2: ROLES AND RESPONSIBILITIES

GENERAL SAFETY EQUIPMENT AND RESOURCE LISTS	
OPERATOR, TRUCK & OTHER SAFETY EQUIPMENT	
KEY RESPONSE PERSONNEL	
EMERGENCY RESPONSE STRUCTURE	
FIELD RESPONSE TEAM	
QUICK REFERENCE GUIDE - FIELD RESPONSE TEAM	
QUICK REFERENCE GUIDE - EMERGENCY SUPPORT TEAM	



**SECTION 2: ROLES AND RESPONSIBILITIES, continued**

**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**

PUBLIC SAFETY ROLES CHART

AIR MONITORS MODULE

RECEPTION CENTRE REP MODULE

ROADBLOCKS MODULE

ROVERS MODULE

TELEPHONERS MODULE

**SECTION 3: COMMUNICATION AND MEDIA**

MEDIA RESPONSE OVERVIEW PROCESS FLOWCHART..... 1

MEDIA RELATIONS & GENERIC MEDIA STATEMENT.....3

    MEDIA MANAGEMENT .....5

    ON-SITE MEDIA SPOKESPERSON .....5

    MANAGING THE MEDIA ON-SITE.....5

INTERNAL COMMUNICATION.....6

COMMUNICATING WITH THE PUBLIC.....6

    INFORMATION DISSEMINATED TO THE PUBLIC .....7

    PREPARING A PRELIMINARY MEDIA STATEMENT .....8

    C1 PRELIMINARY MEDIA STATEMENT .....9

    C2 MEDIA CONTACT LOG .....11

**SECTION 4: EMERGENCY RESPONSE PROCEDURES**

**INVESTIGATION OF COMPLAINTS ..... 1**

    A2 ODOUR COMPLAINT SCRIPT .....3

**PUBLIC SAFETY ..... 5**

    BRITISH COLUMBIA PUBLIC SAFETY .....5

    ALBERTA PUBLIC SAFETY.....13

**PUBLIC PROTECTION MEASURES ..... 25**

    SHELTER-IN-PLACE.....25

    EVACUATION.....25

    IGNITION.....26

    ROAD AND AIRSPACE CLOSURES.....26

    BRITISH COLUMBIA PUBLIC PROTECTION MEASURES FLOWCHART .....27

    ALBERTA PUBLIC PROTECTION MEASURES FLOWCHART.....28

    BRITISH COLUMBIA H<sub>2</sub>S / HVP IGNITION PROCEDURE .....29

    ALBERTA H<sub>2</sub>S / HVP IGNITION PROCEDURE.....31

**MEDICAL EMERGENCIES..... 33**

    FIRST AID INFORMATION .....35

    NEXT-OF-KIN NOTIFICATION.....39

    MEDICAL EVACUATION (MEDEVAC) PROCEDURE .....41

**SECTION 4: EMERGENCY RESPONSE PROCEDURES, continued**

HELICOPTER (STARS) REMOTE LANDING ZONE REFERENCE CARD .....	42
HELICOPTER (STARS) LANDING ZONE INFORMATION CARD .....	44
HELICOPTER (STARS) LANDING ZONE BRIEFING FOR CREW .....	45
BRITISH COLUMBIA AIR AMBULANCE (BCAS) .....	47
<b>RESPONDER SAFETY .....</b>	<b>49</b>
SITE SAFETY .....	49
ON-SITE WORK AREAS .....	50
WORKING ALONE .....	52
MISSING PERSONS .....	54
REST PERIODS .....	54
DECONTAMINATION AREA .....	55
PSYCHOLOGICAL SUPPORT .....	55
CRITICAL INCIDENT STRESS DEBRIEFING (CISD) .....	55
<b>FIRE / EXPLOSION .....</b>	<b>57</b>
CLASSIFICATION OF FIRES .....	59
RESPONSE ACTIONS BASED ON TYPE OF FIRE .....	60
<b>SPILL RESPONSE .....</b>	<b>65</b>
BRITISH COLUMBIA PETROLEUM RELEASE REPORTING REQUIREMENTS CHART .....	65
ALBERTA PETROLEUM RELEASE REPORTING REQUIREMENTS CHART .....	67
SPILL RESPONSE GUIDELINES .....	69
SPILL CONTROL POINTS .....	71
ACTION .....	71
RECOVERY TECHNIQUES .....	71
CONTAINMENT AND STORAGE OF PRODUCT .....	72
DISPOSAL AND REMEDIAL OPERATIONS .....	72
<b>TRANSPORTATION INCIDENTS .....</b>	<b>73</b>
FIRST ON-SCENE TRANSPORTATION (ROAD, RAIL, MARINE) INCIDENT FLOWCHART .....	73
LOSS, THEFT OR UNLAWFUL INTERFERENCE REPORTING FLOWCHART .....	74
MOTOR VEHICLE ACCIDENTS .....	75
EMERGENCY RESPONSE ASSISTANCE CANADA (ERAC) PLAN .....	76
CANUTEC – CANADIAN TRANSPORT EMERGENCY CENTRE .....	76
DANGEROUS GOODS REFERENCES .....	77
TDG REPORTABLE QUANTITIES .....	77
RAIL CAR IDENTIFICATION CHART .....	79
ROAD TRAILER IDENTIFICATION CHART .....	81
TABLE OF MARKINGS, LABELS AND PLACARDS .....	83
TDG 30 DAY FOLLOW-UP REPORT FORM .....	85
<b>WEATHER AND NATURAL DISASTERS .....</b>	<b>91</b>
EARTHQUAKE .....	92
FLOODS .....	94
THUNDERSTORM AND LIGHTNING SAFETY .....	96
TORNADOS .....	97
WINTER STORMS: BLIZZARDS, FREEZING RAIN, HEAVY SNOW, BLOWING SNOW .....	97
AFTER A DISASTER .....	99
<b>ANIMAL ENCOUNTERS .....</b>	<b>101</b>
FIRST RESPONDERS TO ANIMAL ATTACKS .....	101

**SECTION 4: EMERGENCY RESPONSE PROCEDURES, continued**

BEARS..... 101

BEEES AND WASPS..... 104

COUGARS..... 105

LARGE HOOVED ANIMALS..... 106

RATTLE SNAKES..... 107

WOLVES..... 109

EPIPENS..... 110

**SECURITY INCIDENTS ..... 113**

    RESPONDING TO THREATS..... 113

    BOMB THREATS ..... 114

    SUSPICIOUS PACKAGES..... 117

    TRESPASSING ..... 119

    VANDALISM..... 120

    TERRORISM..... 120

    CYBER ATTACKS..... 121

**POST-INCIDENT ..... 123**

    CALL DOWN NOTIFICATION..... 123

    PUBLIC CARE AND ASSISTANCE ..... 123

    CLEAN UP AND REPAIR ..... 124

    THIRD PARTY INVESTIGATIONS..... 124

    REVIEW AND DEBRIEFING..... 125

    CRITICAL INCIDENT STRESS DEBRIEFING (CISD)..... 125

    POST-INCIDENT / ACCIDENT INVESTIGATION ..... 126

**SECTION 5: EXTERNAL AGENCIES**

BC PROVINCIAL NOTIFICATION MATRIX

AB PROVINCIAL NOTIFICATION MATRIX

BC PROVINCIAL LEAD AGENCY ROLES

AB PROVINCIAL LEAD AGENCY ROLES

GOVERNMENT CONSULTATION SUMMARY

SPECIFIC GOVERNMENT AGENCY ROLES

    HEALTH SERVICES

    LOCAL AUTHORITY

BC PROVINCIAL SUPPORTING AGENCY ROLES

AB PROVINCIAL SUPPORTING AGENCY ROLES

FEDERAL AGENCY ROLES

**SECTION 6: FORMS**

FORM DESCRIPTIONS

INCIDENT COMMAND SYSTEM (ICS) FORMS

    ICS 201 INCIDENT BRIEFING

    ICS 202 INCIDENT OBJECTIVES

    ICS 207 INCIDENT ORGANIZATION CHART

    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

**SECTION 6: FORMS, continued**
**EMERGENCY FORMS**

- A1 INITIAL EMERGENCY FORM
- A2 ODOUR COMPLAINT SCRIPT
- A3 REGULATORY FIRST CALL COMMUNICATION
- A4 INCIDENT ACTION PLAN CHECKLIST
- A5 AIR MONITORING LOG
- A6 THREATENING CALL / BOMB THREAT

**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 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: SYMBOL LEGEND .....	1
APPENDIX B: TRAINING REQUIREMENTS.....	1
APPENDIX C: PLAN MAINTENANCE.....	2
RESPONSIBILITY .....	2
MODIFICATIONS TO NEW OR EXISTING OPERATIONS.....	2
ERP REVISION REQUEST FORM.....	3
APPENDIX D: ENVIRONMENTAL, HEALTH & SAFETY POLICY STATEMENT.....	5
APPENDIX E: COMMUNICATION METHODS BETWEEN COMMAND POSTS .....	7
BRITISH COLUMBIA .....	7
ALBERTA.....	8
APPENDIX F: INCIDENT COMMAND POST (ICP) ACTIVATION AND SETUP.....	9
INCIDENT COMMAND POST BRIEFINGS.....	10
DOCUMENTATION .....	10
APPENDIX G: KEY ELEMENTS OF THE INCIDENT COMMAND SYSTEM.....	11
MANAGEMENT BY OBJECTIVES.....	11
UNITY AND CHAIN OF COMMAND.....	11
ORGANIZATIONAL FLEXIBILITY.....	12
SPAN OF CONTROL.....	12
COMMON TERMINOLOGY .....	12
INCIDENT ACTION PLAN (IAP) .....	12
INTEGRATED COMMUNICATIONS.....	12
ESTABLISHMENT AND TRANSFER OF COMMAND .....	13
RESOURCES MANAGEMENT .....	13
SUMMARY OF RESPONSIBILITIES .....	13

**APPENDICES, continued**

APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S).....14

    BACKGROUND.....14

    SIGNS AND SYMPTOMS.....14

    ACUTE EXPOSURE EFFECTS.....14

    HYDROGEN SULPHIDE (H<sub>2</sub>S) TOXICITY TABLE (BC REGULATIONS) .....14

    ACUTE HEALTH EFFECTS OF HYDROGEN SULPHIDE (AB REGULATIONS) .....15

    CHRONIC EXPOSURE EFFECTS.....17

    MEDICAL TREATMENT FOR HYDROGEN SULPHIDE (H<sub>2</sub>S) EXPOSURE.....17

    GUIDELINES FOR IN HOSPITAL ASSESSMENT/TREATMENT OF POSSIBLE HYDROGEN  
SULPHIDE EXPOSURE .....17

APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>).....21

    BACKGROUND.....21

    SIGNS AND SYMPTOMS.....21

    SULPHUR DIOXIDE (SO<sub>2</sub>) TOXICITY TABLE (BC REGULATIONS).....21

    ACUTE HEALTH EFFECTS OF SULPHUR DIOXIDE (AB REGULATIONS) .....22

    MEDICAL TREATMENT FOR SULPHUR DIOXIDE (SO<sub>2</sub>) EXPOSURE.....23

    GUIDELINES FOR IN HOSPITAL ASSESSMENT/TREATMENT OF POSSIBLE SULPHUR  
DIOXIDE EXPOSURE.....23

APPENDIX J: DESCRIPTION OF DOMINION LAND SURVEY (DLS) SYSTEM.....26

APPENDIX K: DESCRIPTION OF NATIONAL TOPOGRAPHIC SYSTEM (NTS).....27

APPENDIX L: DESCRIPTION OF UNIVERSAL TRANSVERSE MERCATOR (UTM) COORDINATE  
SYSTEM .....28

APPENDIX M: CONVERSION TABLE.....29

APPENDIX N: ACRONYMS.....30

APPENDIX O: GLOSSARY OF TERMS.....32

**AREA SPECIFIC INFORMATION**

# SECTION 1: RESPONSE

## INTRODUCTION

### **INITIAL RESPONSE**

A1 INITIAL EMERGENCY REPORT FORM

FIRST ON-SCENE ACTIONS

FIVE STEP INITIAL RESPONSE GUIDE

FIVE STEP WORKSHEET

STEP 1 – LEVEL OF EMERGENCY

STEP 2 – INTERNAL NOTIFICATION

STEP 3 – EXTERNAL NOTIFICATION

STEP 4 – INCIDENT BRIEFING

STEP 5 – PUBLIC SAFETY

### **ONGOING RESPONSE**

ONGOING RESPONSE GUIDE

OBJECTIVES MEETING

PEAR WORKSHEET

A4 IAP CHECKLIST

ICS 202 INCIDENT OBJECTIVES

ICS 207 INCIDENT ORGANIZATION CHART

ICS 209 INCIDENT STATUS SUMMARY

TACTICS MEETING

ICS 215 OPERATIONAL PLANNING WORKSHEET

ICS 215A IAP SAFETY ANALYSIS

PLANNING MEETING

OPERATIONS BRIEFING

---

THIS PAGE INTENTIONALLY LEFT BLANK

---

# INTRODUCTION

The Response Section is designed to provide the Incident Commander, General Staff and Command Staff\* with an organized approach and functional tools for every emergency response. This begins with steps to approach/evaluate any incident and the structure to effectively manage an incident until it is stood down. The primary considerations are personal, public and responder safety.

\*Refer to *FIELD RESPONSE TEAM GENERAL STAFF* and *FIELD RESPONSE TEAM COMMAND STAFF* sections (yellow tabs) for detailed roles.

## Initial Response:

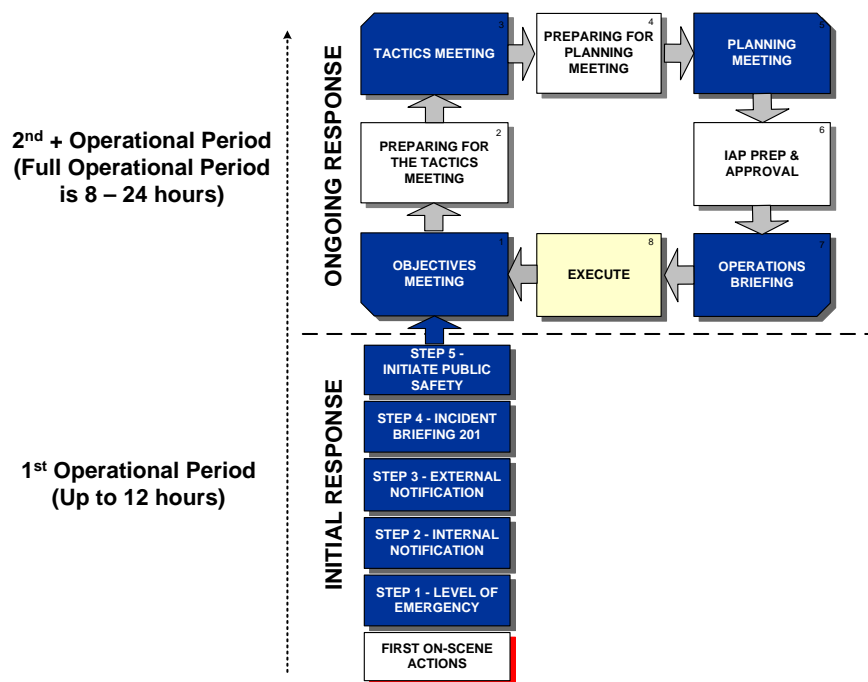
All incidents begin with the initial response (reactive phase) during the first operational period. At the onset of an emergency response an Initial Emergency Report (A1) Form is completed to determine the severity of the emergency and extent of the response. 95% of emergency responses begin and end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





THIS PAGE INTENTIONALLY LEFT BLANK

---

# A1 INITIAL EMERGENCY REPORT FORM



EMERGENCY RESPONSE PLAN

*DISTRIBUTE THIS COMPLETED REPORT TO ALL KEY RESPONSE PERSONNEL*

**SECTION A CALLER IDENTIFICATION**

Report Taken By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Caller's Name: \_\_\_\_\_  
Incident Location: \_\_\_\_\_  
Telephone Numbers: \_\_\_\_\_ Email: \_\_\_\_\_

*Note: If the call has originated from a member of the public, inform the caller that field personnel will be sent immediately to investigate the incident. Once the incident has been investigated, a company representative will phone the original caller to confirm the incident was investigated and to outline the corrective measures that are being taken.*

**SECTION B INCIDENT DESCRIPTION**

**SITUATION:**  Odour complaint  Fire / Explosion  Spill  Other  
**LOCATION:**  Well-site  Pipeline  Sat / Bty  Unknown  
**STATUS:**  Controlled  Uncontrolled  Unknown

Approximate distance and direction to closest residence or public facility (If known): \_\_\_\_\_

**DETAILS:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**GAS READINGS (H<sub>2</sub>S, SO<sub>2</sub> and LEL):** \_\_\_\_\_

**SECTION C INJURIES AND MEDICAL EMERGENCIES**

Minor Injuries: \_\_\_\_\_

Critical Injuries: \_\_\_\_\_

Fatalities: \_\_\_\_\_

Actions Taken: \_\_\_\_\_

Assistance Required: \_\_\_\_\_

# A1 INITIAL EMERGENCY REPORT FORM



## EMERGENCY RESPONSE PLAN

<b>SECTION D</b>		<b>WELL STATUS (Drilling, Completion, Workovers, Servicing)</b>	
Depth/Perforations _____	m KB _____	Wellbore Fluid Density _____	kg/m <sup>3</sup> _____
Pit Gain _____	m <sup>3</sup> _____	Kill Fluid Density _____	kg/m <sup>3</sup> _____
SIDPP / SITP _____	kPa _____	Misc. _____	
SICP _____	kPa _____		
RSPP _____	kPa _____		
<b>SECTION E</b>		<b>WEATHER</b>	
<b>Weather Conditions:</b>		<b>Temperature:</b>	
<b>Wind:</b> <input type="checkbox"/> Calm	<input type="checkbox"/> Moderate	<input type="checkbox"/> Strong	<input type="checkbox"/> Gusty
<b>Wind Direction:</b> From:		To:	
<b>SECTION F</b>		<b>ACTIONS TAKEN</b>	
<b>Already Notified:</b>	<input type="checkbox"/> Regulatory Agency	<input type="checkbox"/> RCMP	<input type="checkbox"/> Municipality
	<input type="checkbox"/> Ambulance	<input type="checkbox"/> Health Authority	<input type="checkbox"/> Other
<b>SECTION G</b>		<b>CALLER INSTRUCTIONS</b>	
<b>Instructions given to Caller:</b>			

*Note: If applicable, complete First On-scene Actions then proceed to the Five Step Initial Response Guide.*

# FIRST ON SCENE ACTIONS



## EMERGENCY RESPONSE PLAN

At the onset of any emergency, it is essential that all first responders follow these preliminary actions to ensure the safety of themselves and others. Complete the First On-Scene Actions form below before proceeding to the Five Step Initial Response Guide.

<b>1. Evacuate</b>	<input type="checkbox"/> Get to a safe area immediately. <input type="checkbox"/> Move upwind if release is downwind of you. <input type="checkbox"/> Move crosswind if release is upwind from you. <input type="checkbox"/> Move to higher ground if possible.				
<b>2. Alarm</b>	<input type="checkbox"/> Call for help (“Man Down”). <input type="checkbox"/> Sound bell, horn or whistle, or call by radio.				
<b>3. Assess</b>	<input type="checkbox"/> Do a head count. <input type="checkbox"/> Consider other hazards.				
	Is there damage or injuries?	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
	Was there a release of product ?	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
		Type:			
	Estimated quantity of liquid:				
	Location of release ?				
	What is the potential impact ?				
	Gas monitored data:				
	Is the cause known ?	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
	What is the affect medium ?	<input type="checkbox"/> Air	<input type="checkbox"/> Water	<input type="checkbox"/> Soil	<input type="checkbox"/> Other
	Possible steps to contain and control ?				
	Is there a public safety risk ?	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
	Is there a risk of fire ?	<input type="checkbox"/> Yes		<input type="checkbox"/> No	
	What is the potential for escalation ?				
<b>4. Protect</b>	<input type="checkbox"/> Put on breathing apparatus before attempting rescue.				
<b>5. Rescue</b>	<input type="checkbox"/> Remove victim to a safe area.				
<b>6. First Aid</b>	<input type="checkbox"/> Apply CPR if necessary.				
<b>7. Medical Aid</b>	<input type="checkbox"/> Arrange transport of victim to medical aid. <input type="checkbox"/> Provide information to Emergency Medical Services (EMS).				

THIS PAGE INTENTIONALLY LEFT BLANK

---

## FIRST ON-SCENE ACTIONS

Evacuate  
Alarm  
Assess  
Protect  
Rescue  
First Aid  
Medical Aid

Refer to A1 Initial  
Emergency Report  
Form

### 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, SK) 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)

### STEP 3 - EXTERNAL NOTIFICATION

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

- 911 (police, fire, ambulance)
- 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 201

- 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 EPZ as default.
- Identify the affected surface developments and area users. (Houses, businesses, guides/outfitters, trappers, schools, other oil and gas operators, etc.)
- Determine the appropriate public protection measure for the affected surface developments and area users. (Evacuation, shelter-in-place and/or ignition)
- Coordinate evacuation outside of the EPZ with the local authority, if required.
- 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, etc.
- 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.)
- Provide status updates to the Public Safety Group Supervisor at established intervals.

Use the following resources:

- SECTION 2: ROLES AND RESPONSIBILITIES (Rovers)
- SECTION 6: FORMS
- AREA SPECIFIC INFORMATION (MAP)

#### TELEPHONERS

- Establish a Telephoner Team to notify residents to evacuate or shelter-in-place as required.
- 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 AND 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 AND RESPONSIBILITIES (Roadblocks)
- SECTION 6: FORMS
- AREA SPECIFIC INFORMATION (MAP)

#### AIR MONITORS

- Dispatch Air Monitoring personnel to the nearest residence / public facility downwind of the incident.
- Follow safety procedures and have appropriate PPE.
- Monitor and record air quality readings using the following forms: ICS 214 & A5. (Smoke, plumes, wind, etc.)
- Provide status updates to the Public Safety Group Supervisor at established intervals.

Use the following resources:

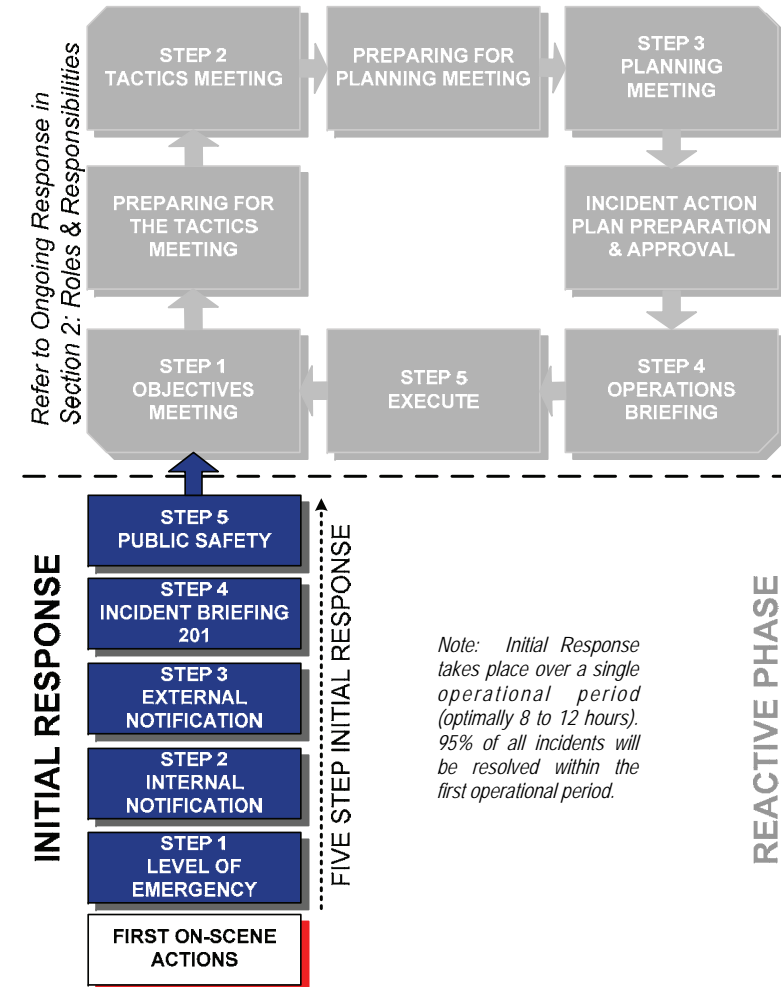
- SECTION 2: ROLES AND RESPONSIBILITIES (Air Monitors)
- SECTION 6: FORMS

#### 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 AND RESPONSIBILITIES (Reception Centre Rep)
- SECTION 6: FORMS



# FIVE STEP INITIAL RESPONSE GUIDE

# FIVE STEP WORKSHEET

## EMERGENCY RESPONSE PLAN

<b>STEP 1 – LEVEL OF EMERGENCY</b>	Determine the Level of Emergency using the Assessment Matrix for Classifying Incidents	
<input type="checkbox"/> Alert / Minor		<input type="checkbox"/> Level 2
<input type="checkbox"/> Level 1		<input type="checkbox"/> Level 3
For any emergency involving an NEB regulated site, utilize the appropriate emergency assessment matrix for that province.		

<b>STEP 2 – INTERNAL NOTIFICATION</b>	Notify recommended Whitecap staff using the Internal Emergency Notification Flowchart	
<b>FIELD</b>	<b>CORPORATE</b>	
<i>Operator Name:</i>	<i>Corporate Contact:</i>	
<i>Phone Number:</i>	<i>Phone Number:</i>	
<i>Lead Operator Name:</i>	<i>Corporate Contact:</i>	
<i>Phone Number:</i>	<i>Phone Number:</i>	
<i>Area Foreman Name:</i>	<i>Corporate Contact:</i>	
<i>Phone Number:</i>	<i>Phone Number:</i>	

<b>STEP 3 – EXTERNAL NOTIFICATION</b>	Notify recommended external agencies using the External Emergency Notification Flowchart	
<i>911</i>	<i>Other:</i>	
	<i>Phone Number:</i>	
<i>AER</i>	<i>Other:</i>	
	<i>Phone Number:</i>	
<i>Local Authority:</i>	<i>Other:</i>	
<i>Phone Number:</i>	<i>Phone Number:</i>	
<i>Health Authority:</i>	<i>Other:</i>	
<i>Phone Number:</i>	<i>Phone Number:</i>	

<b>STEP 4 – INCIDENT BRIEFING</b>	Complete an ICS 201 Incident Briefing Form
---------------------------------------	--

<b>STEP 5 – PUBLIC SAFETY</b>	Determine the requirements for sheltering, evacuation, ignition, isolation procedures and the resources required
Public protection measures	Refer to last page of Section 1
Air Monitors	Refer to Air Monitors roles
Reception Centre Rep	Refer to Reception Centre Rep roles
Rovers	Refer to Rovers roles
Roadblocks	Refer to Roadblocks roles
Telephoners	Refer to Telephoners roles

# FIVE STEP WORKSHEET



EMERGENCY RESPONSE PLAN

Notes:

A large, empty rectangular box with a black border, intended for handwritten notes.





## 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 [Online Minor Incident Reporting System](#).*

**Table 1. Consequence Ranking**

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

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

**Table 2. Probability Ranking**

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

**Table 3. Incident Risk Score and Classification**

Consequence \_\_\_\_\_ + Probability \_\_\_\_\_ = Risk Score \_\_\_\_\_ (this must be completed)

Risk Score	Assessment Result
Minor (1-2)	<b>Notification Only;</b> permit holder must notify the Commission online within 24 hours using the <a href="http://www.bcogc.ca/node/11188/download">Form A: Minor Incident Notification Form (http://www.bcogc.ca/node/11188/download)</a> . In addition to Form A, spills must also be reported to EMBC.
Moderate (3-4)	<b>Level-1 Emergency;</b> immediate notification (call EMBC)
Major (5-6)	<b>Level-2 Emergency;</b> immediate notification (call EMBC)
Serious (7-8)	<b>Level-3 Emergency;</b> immediate notification (call EMBC)

OGC Incident Classification Matrix		Probability					
		4	3	2	1	0	
		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	
Consequence	4	<input type="checkbox"/> Major on site equipment or infrastructure loss <input type="checkbox"/> Major act of violence, sabotage, or terrorism which impacts permit holder assets <input type="checkbox"/> Reportable liquid spill beyond site, uncontained and affecting environment <input type="checkbox"/> Gas release beyond site affecting public safety	Level 3	Level 3	Level 2	Level 2	Level 1
	3	<input type="checkbox"/> Threats of violence, sabotage, or terrorism <input type="checkbox"/> Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property <input type="checkbox"/> HAZMAT worker exposure exceeding allowable <input type="checkbox"/> Major on site equipment failure	Level 3	Level 2	Level 2	Level 1	Level 1
	2	<input type="checkbox"/> Major on site equipment damage <input type="checkbox"/> A security breach that has potential to impact people, property or the environment <input type="checkbox"/> Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property	Level 2	Level 2	Level 1	Level 1	Minor Notification Form
	1	<input type="checkbox"/> Moderate on site equipment damage <input type="checkbox"/> A security breach that impacts oil and gas assets <input type="checkbox"/> Reportable liquid spill or gas release on location <input type="checkbox"/> ** Occurrence of magnitude 4.0 or greater induced earthquake within 3 km of oil and gas operations or any earthquake which is felt on surface within a 3 km radius of oil and gas operations	Level 2	Level 1	Level 1	Minor Notification Form	Minor Notification Form
	0	<input type="checkbox"/> No consequential impacts	Level 1	Level 1	Minor Notification Form	Minor Notification Form	No Notification Required
<p><b>Minor Incidents</b></p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul> <p><b>Level 1, 2, or 3 Emergency</b></p> <ul style="list-style-type: none"> <li>If the incident receives a score of Level 1, 2, or 3, it must be <b>reported immediately (within 1 hour)</b> to the Commission's incident reporting line (EMBC 1-800-663-3456).</li> </ul>		<p><b>Escalating, Downgrading or Standing-Down of Emergency</b></p> <ul style="list-style-type: none"> <li>The Commission must be notified as soon as possible of any change to the emergency status.</li> <li>The permit holder must consult with the Commission for escalating, downgrading or the standing-down of an incident.</li> </ul> <p><b>Permit Holders Post-Incident Report</b></p> <p>The <b>Form D: Permit Holder Post Incident Report Form</b> (<a href="https://www.bcogc.ca/node/5771/download">https://www.bcogc.ca/node/5771/download</a>) must be submitted by the permit holder to the Commission within 60 days for:</p> <ol style="list-style-type: none"> <li>Any Level 1, 2 or 3 emergency incident: complete Part A-P; or</li> <li>Any pipeline incident (including minor notification): complete Part A-U; or</li> <li>Upon request by the Commission</li> </ol> <p>This report and accompanying documentation can be found on the Commission's website under Emergency Response and Planning and must be emailed electronically to <a href="mailto:EMP@bcogc.ca">EMP@bcogc.ca</a>.</p>					

\*\* 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 m<sup>3</sup> by volume where operating pressure is >100 PSI
- Condensate; 100 litres
- Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsions, etc. which contain toxic substances; 25 litres

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

### Other Reportable Incidents

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

- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
  - pit gain of 3 m<sup>3</sup> or greater
  - casing pressure 85% of MA
  - 50% out of hole when kicked
  - well taking fluid (LC)
  - associated spill
  - general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc
- Pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only

**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.

This page is intentionally left blank



## Assessment Matrix for Classifying Incidents

Follow these 3 Steps to determine the Level of Emergency

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

Under "Example of Consequence in Category" column, select the box with the worst consequence that currently fits the incident. For example, if there is a fatality on site you must select the "Catastrophic" category which would give you a "Rank" of 4.

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

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

Under "Description" pick the description that currently fits the likelihood of the incident escalating. For example, if the incident is contained and controlled and there is no chance of additional hazards, the incident would receive a "Rank" of 1.

### Sum the "Rank" from Table 1 and Table 2 to obtain the Risk Level and the Incident Classification

Combine the two rankings from the above tables to obtain the "Risk Level" and "Level of Emergency".

For example, if the "Consequence Rank" is 4 and the "Likelihood Rank" is 1 then the combined score or "Risk Level" is 5.

A "Risk Level" of 5 would be classified as a Level 1 Emergency.

Refer to the appropriate column in Table 4 (reverse of this page) for responses to the Level of Emergency that has been determined.

Note:

- 1) In Alberta the licensee **must** use the Assessment Matrix for Classifying Incidents to classify an incident.
- 2) In Alberta the licensee **must** contact the Alberta Energy Regulator (AER) after it has communicated and activated internal response resources to confirm the level of emergency and convey the specifics of the incident.
- 3) After contacting the Alberta Energy Regulator (AER), the licensee in Alberta, must notify the local authority, the RCMP/police and the local health authority if the hazardous release goes off site and has the potential to impact the public or if the licensee has contacted members of the public or the media.
- 4) Once the situation improves, the licensee must make the decision to downgrade or stand down an emergency in consultation with the government regulator.

Step 3 ↓ Table 3. Incident Classification	
Risk Level	Assessment Results
Very Low 2 - 3	Alert
Low 4 - 5	Level - 1 Emergency
Medium 6	Level - 2 Emergency
High 7 - 8	Level - 3 Emergency

Revised June 2018

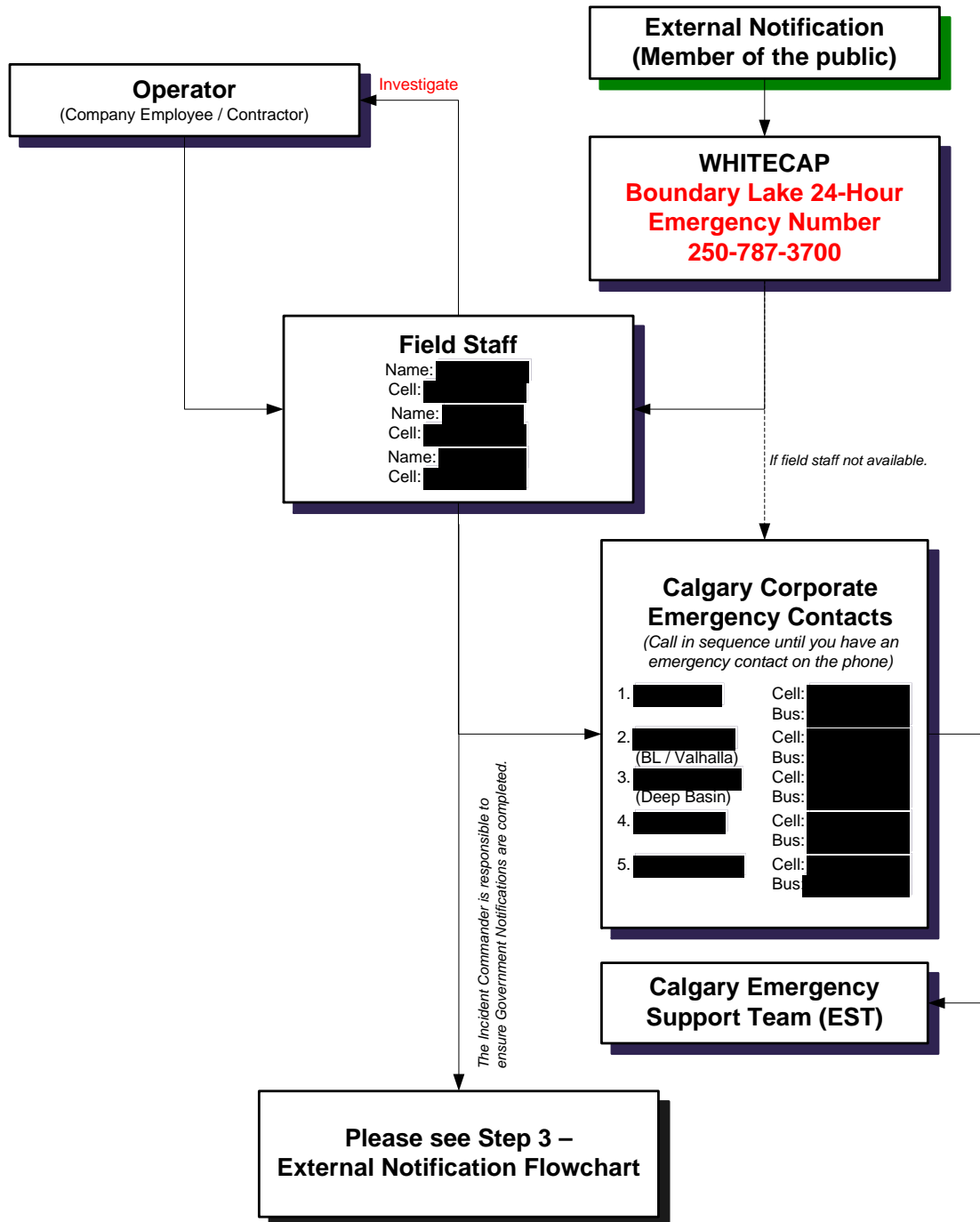
# Step 1 – Level of Emergency



Step 4 ↓ Table 4. Incident Response - Incident Classification				
Responses	Alert	Level - 1 Emergency	Level - 2 Emergency	Level - 3 Emergency
<b>Communications</b>				
<b>Internal</b>	Discretionary, depending on licensee policy.	Notification of off-site management.	Notification of off-site management.	Notification of off-site management.
<b>External public</b>	Courtesy, at licensee discretion.	Mandatory for individuals who have requested notification within the EPZ.	Planned and instructive in accordance with the specific ERP.	Planned and instructive in accordance with the specific ERP.
<b>Media</b>	Reactive, as required.	Reactive, as required.	Proactive media management to local or regional interest.	Proactive-media management to national interest.
<b>Government</b>	Reactive, as required. Notify AER if public or media is contacted.	Notify government regulator. Call local authority and health authority if public or media is contacted.	Notify government regulator, local authority & health authority.	Notify government regulator, local authority & health authority.
<b>Actions</b>				
<b>Internal</b>	On site, as required by licensee.	On site, as required by licensee. Initial response undertaken in accordance with the site-specific or corporate-level ERP.	Predetermined public safety actions are under way. Corporate management team alerted and may be appropriately engaged to support on-scene responders.	Full implementation of incident management system.
<b>External</b>	On site, as required by licensee.	On site, as required by licensee.	Potential for multi agency (operator, municipal, provincial or federal) response.	Immediate multi agency (operator, municipal, provincial or federal) response.
<b>Resources</b>				
<b>Internal</b>	Immediate and local. No additional personnel required.	Establish what resources would be required.	Limited supplemental resources or personnel required.	Significant incremental resources required.
<b>External</b>	None.	Begin to establish resources that may be required.	Possible assistance from government agencies and external support services, as required.	Assistance from government agencies and external support services, as required.
<b>Definition</b>	<b>Alert</b>	<b>Level-1 Emergency</b>	<b>Level-2 Emergency</b>	<b>Level-3 Emergency</b>
	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.	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.	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.	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.
<b>Responses</b>	<b>Alert</b>	<b>Level-1 Emergency</b>	<b>Level-2 Emergency</b>	<b>Level-3 Emergency</b>
	Investigate and escalate level if required initiate control procedures	In addition to Alert level responses: <ul style="list-style-type: none"> <li>- Isolate the hazard area</li> <li>- Activate the ERP</li> <li>- Conduct public safety actions for special needs residents</li> <li>- If special needs residents decide to voluntarily evacuate, activate a reception centre</li> <li>- Notify appropriate internal personnel and government agencies</li> <li>- Have air monitoring conducted at the site if necessary</li> </ul>	In addition to Level-1 responses: <ul style="list-style-type: none"> <li>- Fully activate emergency response procedures with command centres established or on standby</li> <li>- Inform government agencies of situation and incorporate support (government regulator, local authority, health authority, RCMP)</li> <li>- Identify the hazard and emergency operating areas and take any required action to protect the public through shelter or evacuation.</li> <li>- Prepare ignition team (butane gas related)</li> <li>- Respond to media, company and public questions</li> <li>- Prepare for the potential of the situation to escalate to a Level-3</li> <li>- Record activities and keep government and municipal agencies advised, if applicable</li> <li>- Establish roadblocks</li> <li>- Activate the EOC, if it has not already been established at a Level-1 emergency</li> </ul>	In addition to Level-2 responses: <ul style="list-style-type: none"> <li>- Emergency response plan and command centres are fully activated</li> <li>- Company Management has been notified and all internal support positions staffed</li> <li>- Continue to monitor and adjust hazard and emergency operating areas (maintain security)</li> <li>- Mobilize additional people and resources</li> <li>- Ignite a gas release if ignition criteria are met</li> <li>- Continue to advise company and government</li> <li>- Activate the reception centre, if it has not already been established at a Level-1 or Level-2 emergency</li> <li>- Continue to maintain the EOC, once it is activated</li> </ul>

# STEP 2 – INTERNAL NOTIFICATION

## INTERNAL EMERGENCY NOTIFICATION FLOWCHART: BOUNDARY LAKE



- Whitecap Resources
- External Notification
- External Agencies

*Note: After Initial Notifications are complete please reference Section 1: Ongoing Response and complete the ICS 207 Incident Organization Chart.*

# STEP 2 – INTERNAL NOTIFICATION

---



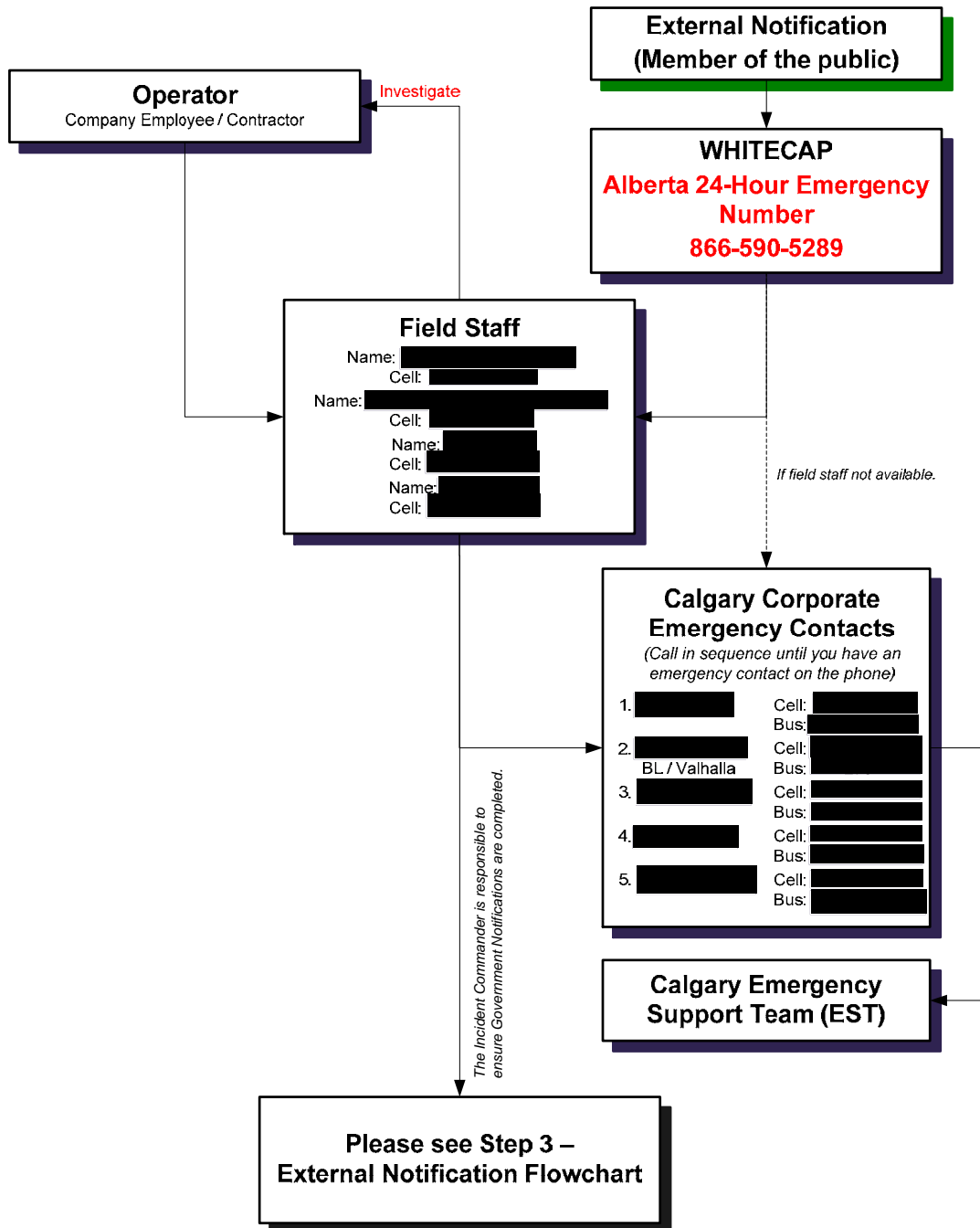
EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---



## INTERNAL EMERGENCY NOTIFICATION FLOWCHART: ALBERTA



- Whitecap Resources
- External Notification
- External Agencies

*Note: After Initial Notifications are complete please reference Section 1: Ongoing Response and complete the ICS 207 Incident Organization Chart.*

# STEP 2 – INTERNAL NOTIFICATION

---



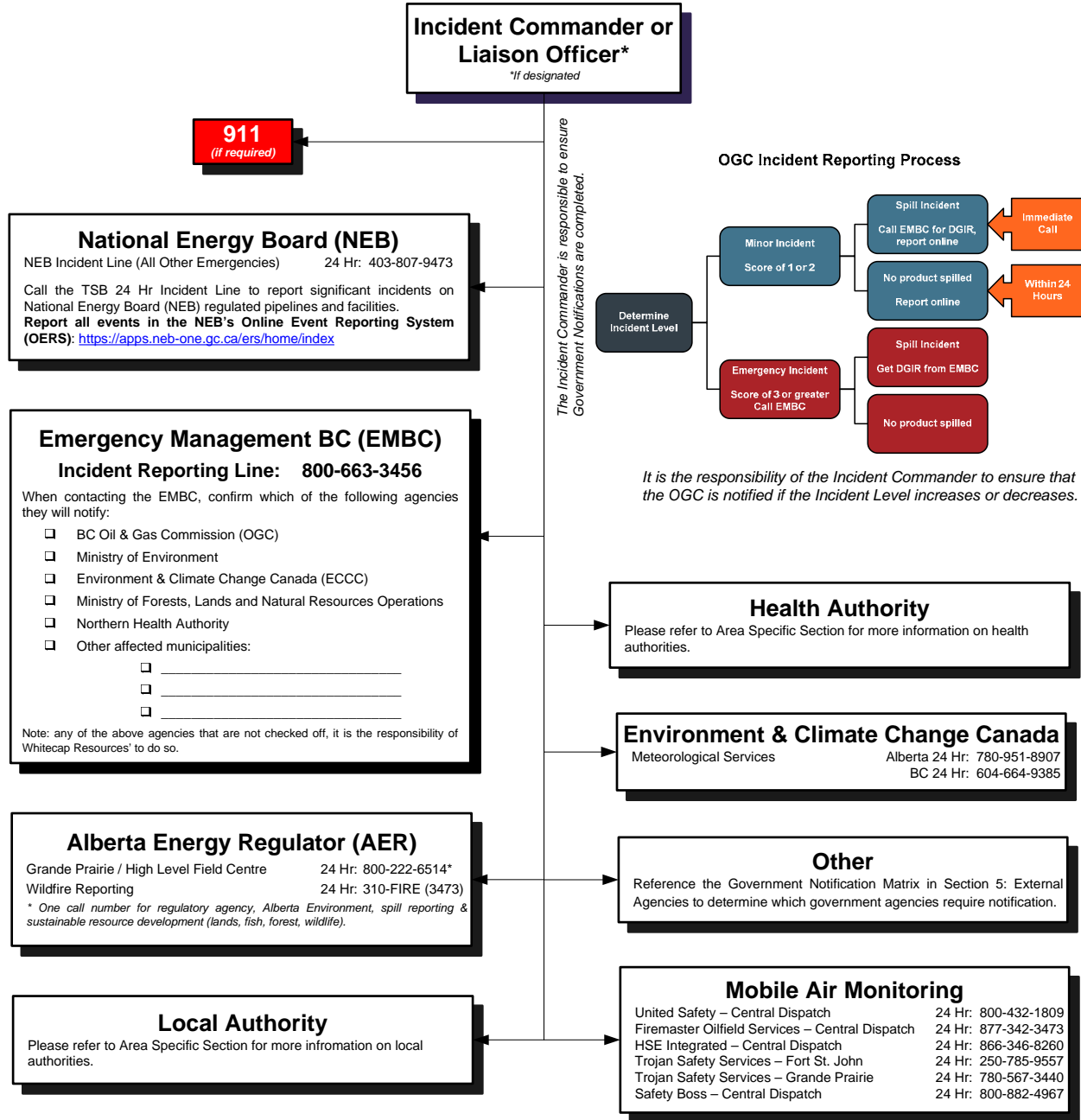
EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---

## 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.*

Whitecap Resources  
 External Agencies

*Note: After Initial Notifications are complete please reference Section 1: Ongoing Response and complete the ICS 207 Incident Organization Chart.*

# STEP 3 – EXTERNAL NOTIFICATION



EMERGENCY RESPONSE PLAN

---

THIS PAGE INTENTIONALLY LEFT BLANK

---

# STEP 4 – ICS 201 INCIDENT BRIEFING



## EMERGENCY RESPONSE PLAN

Incident Name:	
Date/Time Initiated:	
Prepared By:	ICS Position:
Level of Emergency <input type="checkbox"/> Alert / Minor <input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3	
<b>Map Sketch:</b>	
<i>Note: Maps can be drawn or attached here.</i>	
A large grid consisting of 20 columns and 20 rows, intended for drawing a map sketch.	
<b>Situation Summary: (Write description or attach A1)</b>	
<b>Safety Briefing:</b>	

# STEP 4 – ICS 201 INCIDENT BRIEFING



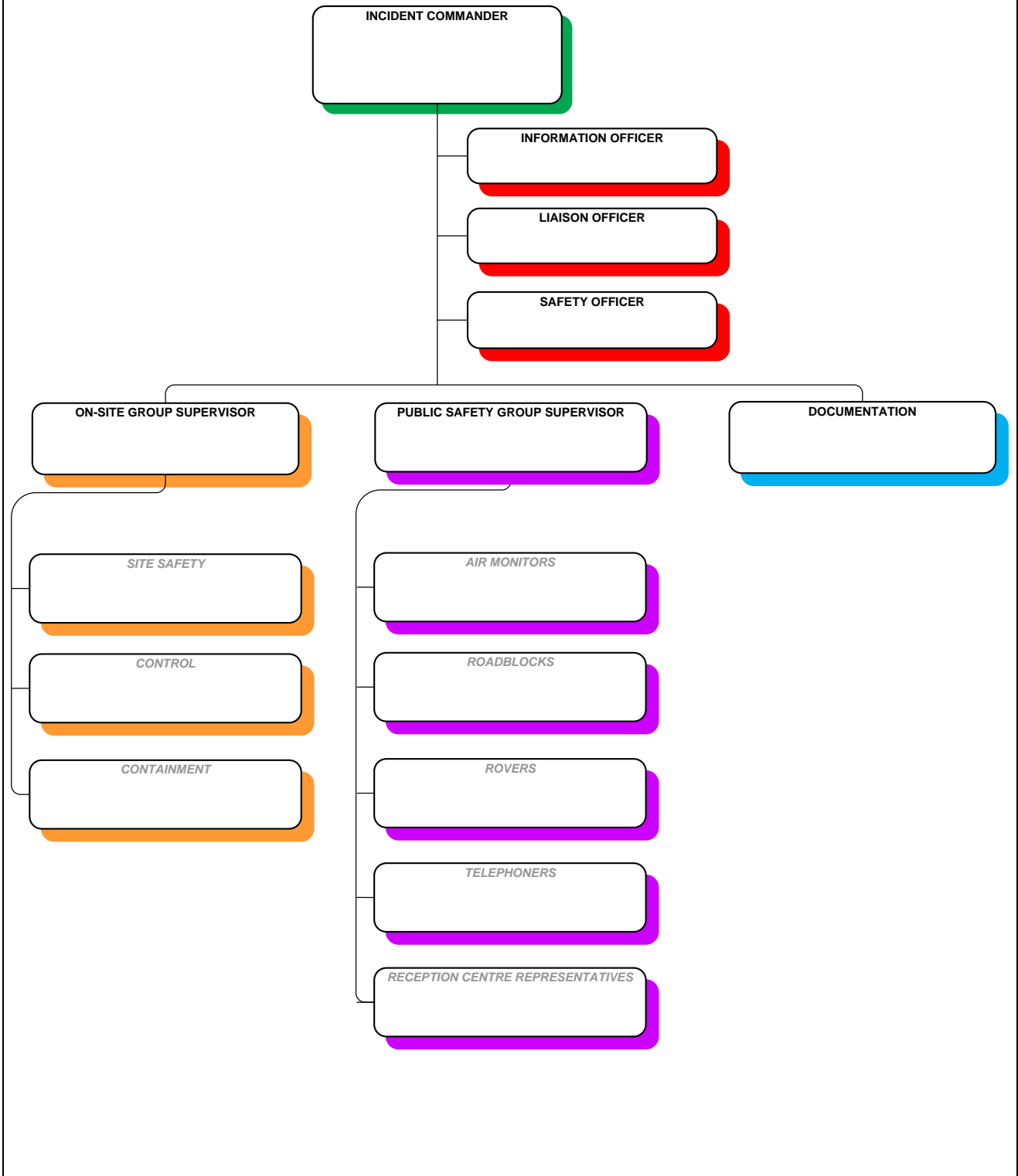
## EMERGENCY RESPONSE PLAN

Current and Planned Objectives:		
People	Worker Safety	Priority #
	Public Safety	#
Environment		#
Assets		#
Reputation		#
Current and Planned Actions, Strategies and Tactics:		
<b>Time:</b>	<b>Actions:</b>	
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		
HHMM		

# STEP 4 – ICS 201 INCIDENT BRIEFING

Current Organizational Structure: (draw in current response structure)\*

\* This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.



Note: Refer to ICS 207 Incident Organization Chart in SECTION 1: ONGOING RESPONSE (YELLOW TAB) or SECTION 6: FORMS (BLUE TAB) for full command structure.

# STEP 4 – ICS 201 INCIDENT BRIEFING



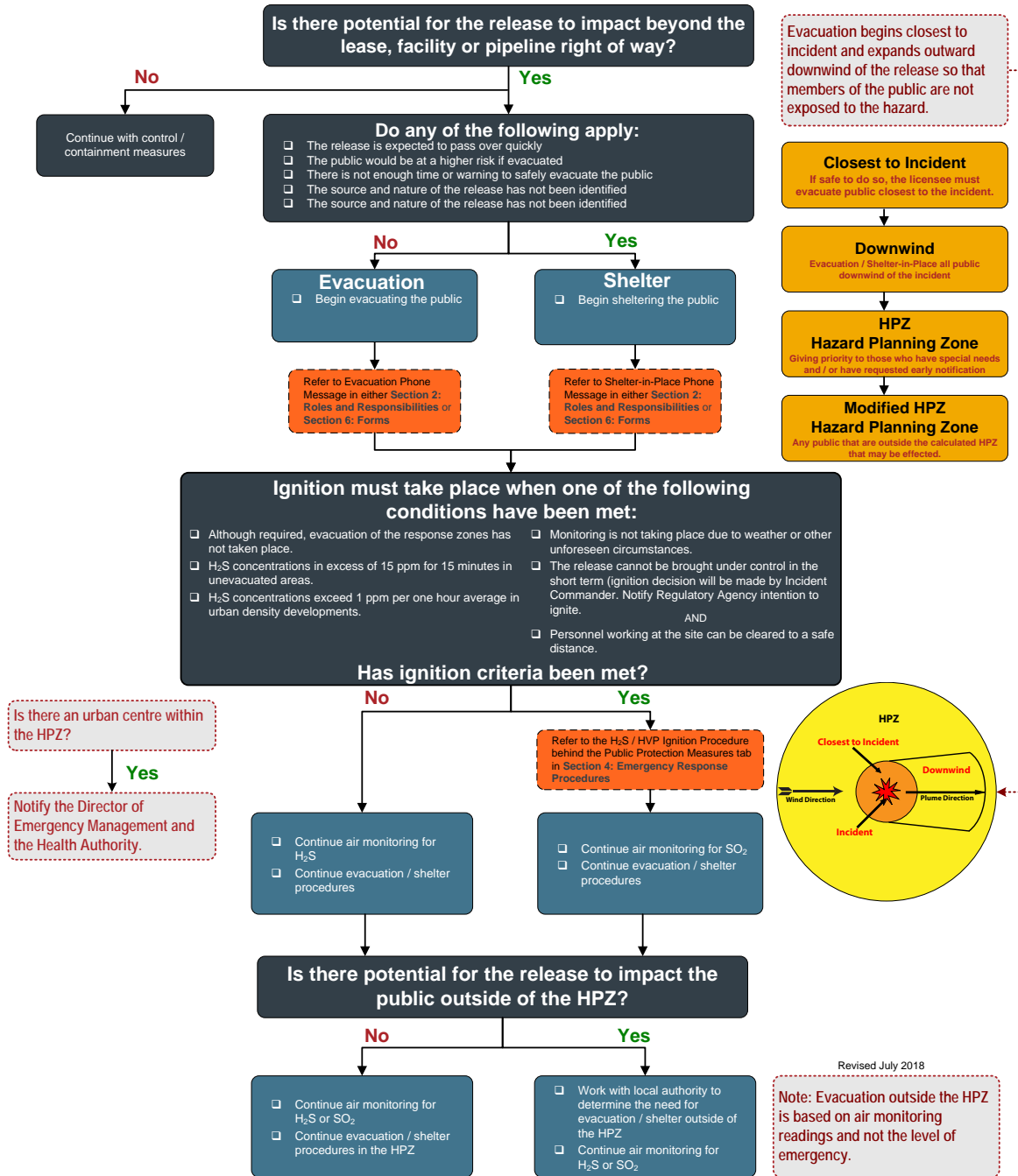
## EMERGENCY RESPONSE PLAN

Resources Summary:				
Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
External Notifications: (Government)				
Agency	Time Called	Notes		



# STEP 5 – PUBLIC PROTECTION MEASURES FLOWCHART

## BRITISH COLUMBIA



#### Notification and Evacuation Requirements Outside of the HPZ

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H<sub>2</sub>S and SO<sub>2</sub>. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H <sub>2</sub> S Requirements		SO <sub>2</sub> 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.
<p>Note: H<sub>2</sub>S Evacuation Level – when downwind monitoring at the nearest unevacuated residence, outside the Hazard Planning Zone, indicates a level of 10 ppm, evacuation procedures will be initiated if safe to do so.</p>			

**STEP 5 – PUBLIC PROTECTION  
MEASURES FLOWCHART**



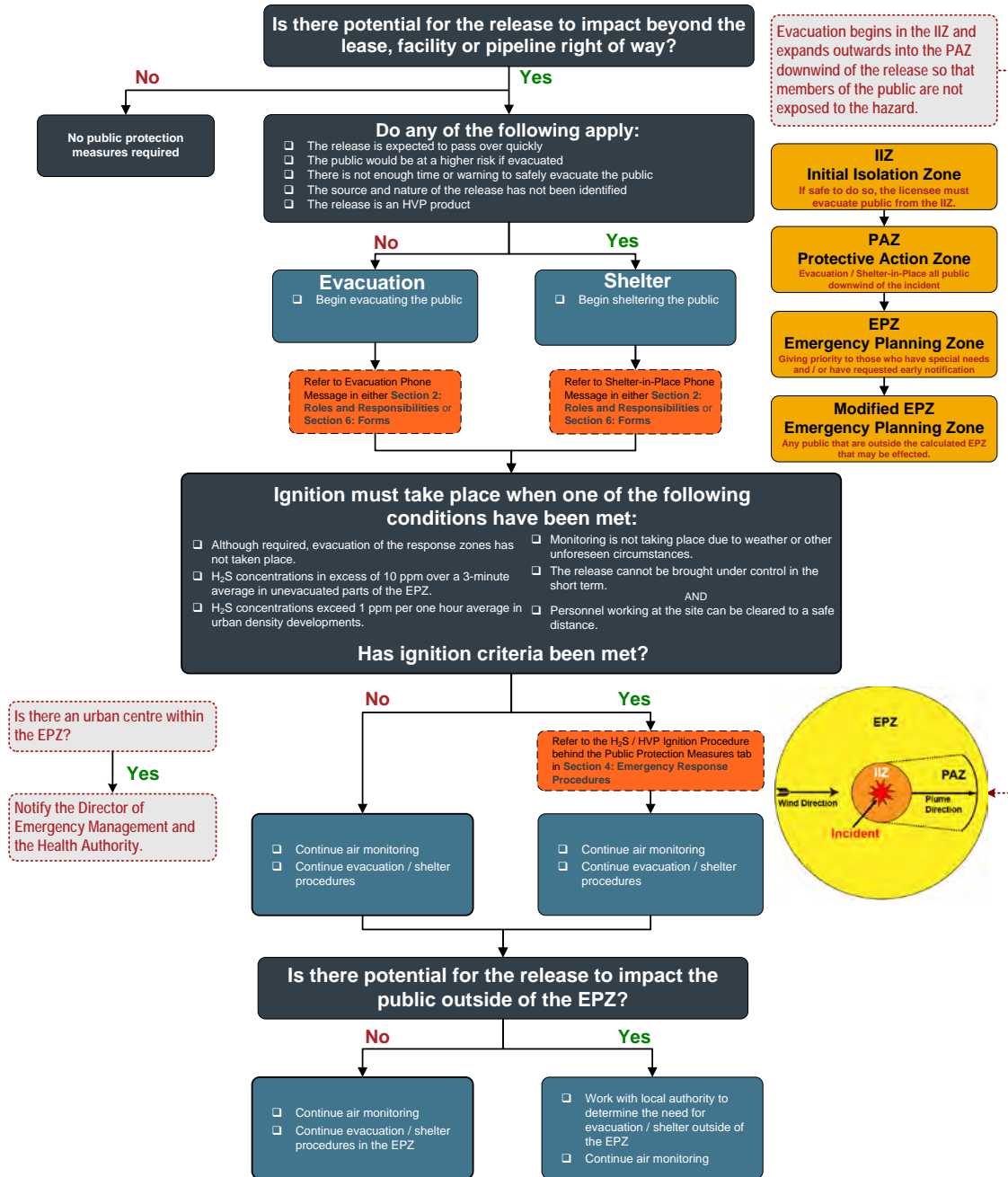
EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK



# STEP 5 – PUBLIC PROTECTION MEASURES FLOWCHART

ALBERTA



### Evacuation Requirements

Revised June 2018

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H<sub>2</sub>S and SO<sub>2</sub>. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

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

Note: This section is based on Alberta Regulations; however, the same standards will be followed by the company for operations in other provinces.

**STEP 5 – PUBLIC PROTECTION  
MEASURES FLOWCHART**



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK



## 1 - OBJECTIVES MEETING

- Incident Commander conducts the meeting.
- Review the ICS 201 form completed during the Initial Response phase and begin the ICS 209 form by evaluating the current incident status.
- Identify issues/problems to resolve using the PEAR worksheet.
- Develop SMART (Specific, Measurable, Attainable, Realistic, & Time-Sensitive) objectives to mitigate the identified problems.
- Prioritize the objectives using the ICS 202 form.
- Complete the ICS 202 form and identify initial staffing on the ICS 207 form.
- Utilize IAP Checklist (A4) to complete the IAP.

## 2 - PREPARE FOR TACTICS MEETING

- Develop draft strategies and tactics for each defined objective.
- Outline work assignments and develop an operations organization chart using the ICS 207 form.
- Identify future tactical plans to optimize the Tactics Meeting.
- Begin to prepare a safety analysis once all hazards have been identified using ICS 215A form.

## 3 - TACTICS MEETING

- 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.

## 4 - PREPARE FOR PLANNING MEETING

- Review and update the ICS 209 form.
- Confirm availability of resources and locations.
- Prepare all information for review at the Planning Meeting.
- Gather any additional incident documentation (i.e., maps and status boards).

## 5 - 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 response personnel.

## 6 - IAP PREP & APPROVAL

- Produce a coordinated and sustainable Incident Action Plan using the IAP Checklist (A4), ICS forms, and gather any additional incident documentation (i.e., maps and status boards).
- Receive final approval from the Incident Commander.
- Define work assignments and break the work into manageable units.
- If necessary, other documents may be included such as a Demobilization plan.

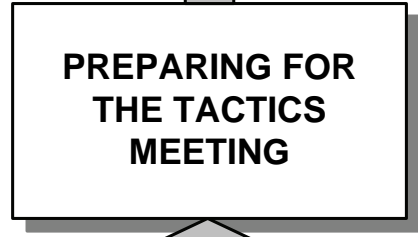
## 7 - OPERATIONS BRIEFING

- 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.

## 8 - EXECUTE

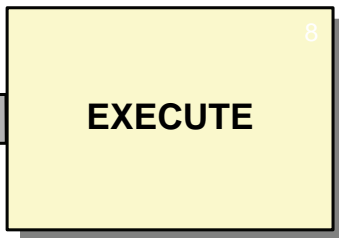
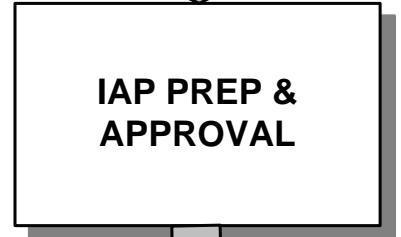
- Perform work assignments according to assigned roles.
- Document all actions, decisions, and conversations.
- Constantly evaluate how well the plan is designed and being conducted.
- Adjust the plan and associated actions accordingly.
- Identify additional objectives for the upcoming operational period.
- Schedule next Objectives Meeting if applicable.

ONGOING RESPONSE



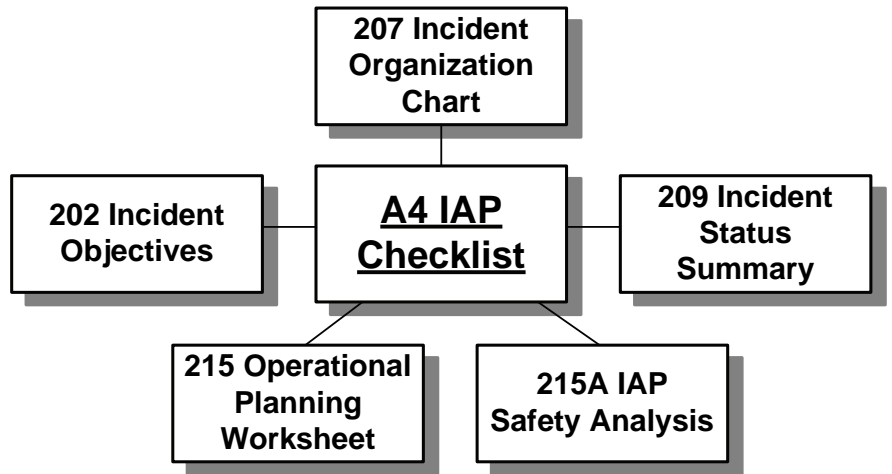
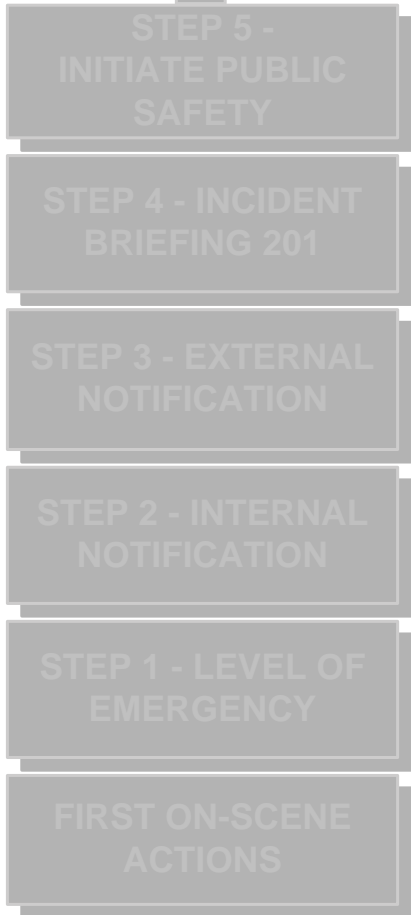
**TIME FRAMES**

*The length of this cycle will change throughout the incident. You will likely need to meet more frequently early on during an incident.*



PROACTIVE PHASE

See Initial Response



Note: Ongoing Response is cyclical and takes place over one or more operational periods (optimally 8 to 12 hours). It is designed to outline the Incident Action Plan for the next operational period.

# OBJECTIVES MEETING



## EMERGENCY RESPONSE PLAN

<b>Owner: Incident Commander</b>	<b>Date:</b>	<b>Time:</b>
<b>**Roles below will attend only if designated and available**</b>		
<b>Attendees:</b>		
<input type="checkbox"/> <i>Incident Commander:</i>	<input type="checkbox"/> <i>Planning Section Chief:</i>	
<input type="checkbox"/> <i>Deputy Incident Commander:</i>	<input type="checkbox"/> <i>Logistics Section Chief:</i>	
<input type="checkbox"/> <i>Operations Section Chief:</i>	<input type="checkbox"/> <i>Finance/Admin. Section Chief:</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Safety Officer:</i>	
<input type="checkbox"/> <i>Liaison Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Information Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<b>Summary:</b>		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> <li>• Have a completed <b>ICS 202</b> form agreed upon by all attendees (Command and General Staff).</li> <li>• Establish objectives and priorities for the upcoming operational period.</li> <li>• Begin an <b>ICS 209</b> Incident Status Summary report.</li> <li>• Begin identifying all required roles on the <b>ICS 207</b> form.</li> <li>• Begin addressing the Incident Action Plan Checklist (<b>A4</b>).</li> <li>• Schedule and prepare for the Tactics Meeting.</li> </ul>		
<b>Resources:</b>	<b>ICS 202, 207, 209 forms, and the IAP Checklist (A4)</b>	
<b>Agenda Items:</b>		
<input type="checkbox"/> Status Update and review the <b>ICS 201</b> Incident Briefing form.		
<input type="checkbox"/> Determine incident priorities (PEAR). Reference PEAR worksheet on next page.		
<input type="checkbox"/> Establish an incident organization that is capable of meeting initial and long-term challenges required to mitigate the incident.		
<input type="checkbox"/> Determine the incident response objectives and complete and <b>ICS 202</b> Incident Objectives form. They must be <b>SMART</b> (Specific, Measurable, Attainable, Realistic, & Time Sensitive).		
<input type="checkbox"/> Identify initial staffing requirements and begin filling out the <b>ICS 207</b> Incident Organizational Chart.		
<input type="checkbox"/> Identify and select incident support facilities.		
<input type="checkbox"/> Review the incident objectives for the next operational period so your management team can begin work on the IAP.		
<input type="checkbox"/> Document the incident status to relay to all responding personnel.		
<b>Key Points:</b>		
<ul style="list-style-type: none"> <li>• <b>Ensure that the meeting is documented / recorded.</b> (Utilize the back side of this page.)</li> <li>• Define the hours of work and operational period.</li> <li>• Utilize Incident Action Plan Checklist (<b>A4</b>).</li> <li>• Identify constraints and limitations.</li> <li>• Clarify any staff roles and responsibilities.</li> <li>• Determine expectations of the team for how all communications are to be made.</li> <li>• Discuss and agree on process issues such as resource ordering, cost accounting, operations security, and sensitive information.</li> <li>• Continue to develop tasks for Command and General Staff.</li> <li>• Agree on division of command workload, such as press and agency briefings.</li> </ul>		

# OBJECTIVES MEETING



## EMERGENCY RESPONSE PLAN

Notes:

--



# OBJECTIVES MEETING PEAR WORKSHEET

Before creating a formalized plan of action for the incident, it is important to:

- Identify all groups that are affected by the incident,
- Determine the hazards and risks associated with these groups, and
- Identify actions that can be taken to mitigate these hazards.

		Impacts	Actions
<b>P</b> <sub>eople</sub>	Worker Safety		
	Public Safety		
<b>E</b> <sub>nvironment</sub>			
<b>A</b> <sub>ssets</sub>			
<b>R</b> <sub>eputation</sub>			

**OBJECTIVES MEETING  
PEAR WORKSHEET**

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---

# A4 INCIDENT ACTION PLAN CHECKLIST



## EMERGENCY RESPONSE PLAN

IAP Checklist Items:	Comments:
<input type="checkbox"/> ICS 202 – Incident Objectives	
<input type="checkbox"/> ICS 207 – Incident Organizational Chart	
<input type="checkbox"/> ICS 209 – Incident Status Summary	
<input type="checkbox"/> ICS 215 – Operational Planning Worksheet	
<input type="checkbox"/> ICS 215A – IAP Safety Analysis	
<input type="checkbox"/> Emergency Status Board	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Other: _____	
<b>Notes:</b>	

# A4 INCIDENT ACTION PLAN CHECKLIST



EMERGENCY RESPONSE PLAN

---

---

# ICS 202 INCIDENT OBJECTIVES



## EMERGENCY RESPONSE PLAN

Incident Name:	
Date / Time Initiated:	
Prepared by:	ICS Position:
<b>General Control Objectives for the Incident:</b>	
1	
2	
3	
4	
5	
<b>Weather Forecast:</b>	
<b>General Safety Message:</b>	
<i>Note: Create and prioritize SMART (Specific, Measureable, Attainable, Realistic, &amp; Time-Sensitive) objectives that address the incident issues and utilize the solutions identified on the Operations Briefing page.</i>	

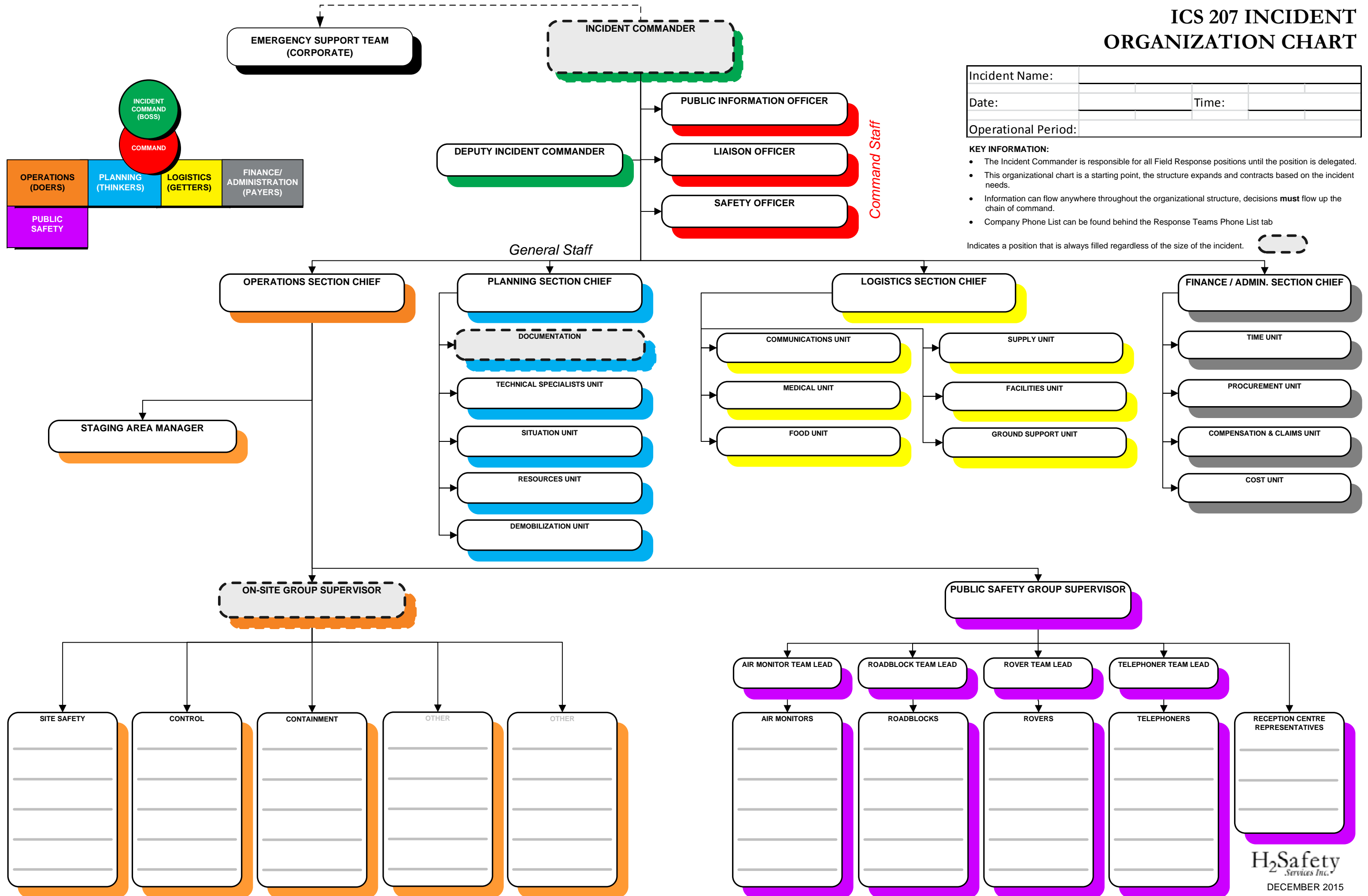
# ICS 202 INCIDENT OBJECTIVES

---



EMERGENCY RESPONSE PLAN

# ICS 207 INCIDENT ORGANIZATION CHART



Incident Name: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Operational Period: \_\_\_\_\_

- KEY INFORMATION:**
- 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 needs.
  - 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

Indicates a position that is always filled regardless of the size of the incident.

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

Incident Name:	Location of Incident:	
Date / Time Initiated:	(LSD / NTS)	
Prepared by:	ICS Position	
<b>Incident Details:</b>		
<b>Level of Emergency:</b>		
Incident Severity:	<input type="checkbox"/> Alert / Minor	<input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3
<b>Site Type: (Select only 1)</b>		
<input type="checkbox"/> Well (Active)	<input type="checkbox"/> Well (Abandoned/Suspended)	<input type="checkbox"/> Remote Sump
<input type="checkbox"/> Well (Drilling & Completions): Rig Name:		
<input type="checkbox"/> Battery/Plant/Facility	<input type="checkbox"/> Tank Farm/Storage	<input type="checkbox"/> Pipeline
<input type="checkbox"/> Riser (Pipeline)		
<input type="checkbox"/> Road or Road Structure	Name:	Location on Road:
<input type="checkbox"/> Other – Specify:		
<b>Incident Type: (Check all that apply)</b>		
<input type="checkbox"/> Sour Gas Release	<input type="checkbox"/> Sweet Gas Release	<input type="checkbox"/> Liquid Spills
<input type="checkbox"/> Natural Disaster/Weather	<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Drilling Kick
<input type="checkbox"/> Worker Injury/Fatality	<input type="checkbox"/> Security (theft, threat, terrorism)	<input type="checkbox"/> Induced Seismicity
<input type="checkbox"/> Well Bore Communication	<input type="checkbox"/> Pipeline Boring	<input type="checkbox"/> Vehicle/Transportation
<input type="checkbox"/> Equipment/Structural Damage	<input type="checkbox"/> Pipeline Break	<input type="checkbox"/> Well Control
<input type="checkbox"/> Other – Specify:		
<b>Activity: (Check all that apply)</b>		
<input type="checkbox"/> Construction (Road, Lease, Pipe)	<input type="checkbox"/> Drilling/Exploration	<input type="checkbox"/> Waste Management
<input type="checkbox"/> Processing	<input type="checkbox"/> Well Fracturing	<input type="checkbox"/> Servicing
<input type="checkbox"/> Repair	<input type="checkbox"/> Flaring (Emergency)	<input type="checkbox"/> Well Testing
<input type="checkbox"/> Pressure Testing	<input type="checkbox"/> Transportation	
<input type="checkbox"/> Other – Specify:		



# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

<b>Consequence or Impacts: (Check all that apply, if none, leave blank)</b>			
<input type="checkbox"/> Worker Safety (Injuries, Fatalities)		<input type="checkbox"/> Property	
<input type="checkbox"/> Economic (Loss of and/or damage to equipment or infrastructure, loss of production, work stoppage)			
<input type="checkbox"/> Other – Specify:			
<b>Material Information:</b>			
Is spill off lease? <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Liquid Hydrogen (Crude, Oil, Diesel, Fuel)	
<input type="checkbox"/> Acid	<input type="checkbox"/> Emulsion (Oil, Gas, Water)		<input type="checkbox"/> Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases)
<input type="checkbox"/> Methanol	<input type="checkbox"/> Non-Toxic Liquids	<input type="checkbox"/> Fresh Water	<input type="checkbox"/> Salt Water
<input type="checkbox"/> Sour Natural Gas	<input type="checkbox"/> Sour Liquids (<1% H <sub>2</sub> S)	<input type="checkbox"/> Sweet Natural Gas	
<input type="checkbox"/> Toxic Gas Liquid (>1% Different Toxins)		<input type="checkbox"/> Other – Specify:	
<b>Area Information:</b>			
Land Type: <input type="checkbox"/> Private Land <input type="checkbox"/> Crown Land		Field Name:	
Area Type: <input type="checkbox"/> Forest <input type="checkbox"/> Muskeg <input type="checkbox"/> Farmland <input type="checkbox"/> Residential <input type="checkbox"/> Other			
Access: <input type="checkbox"/> Helicopter <input type="checkbox"/> ATV <input type="checkbox"/> 4WD <input type="checkbox"/> 2WD <input type="checkbox"/> Unknown			
Name of road the asset is located on:			
KM where the incident occurred:			
Distance to nearest residence/public facility:			
Nearest City/Town/Open Camp:			
<b>Weather Conditions:</b>			
Weather Conditions <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Other:			
Wind Direction      N      NE      NW      E      SE      S      SW      W			
Wind Strength <input type="checkbox"/> Calm <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Gusty			
Temperature      °C			
<b>Public / Worker Injuries / Medical Emergencies:</b>			
<input type="checkbox"/> First Aid	<input type="checkbox"/> Hospitalization	<input type="checkbox"/> Fatality	<input type="checkbox"/> Other – Specify:
<b>Notification: (Notify all agencies as required)</b>			
<input type="checkbox"/> 911	<input type="checkbox"/> Energy Regulator (OGC / AER* / ECON)	<input type="checkbox"/> Local Authority (MD, County, Town, City)	<input type="checkbox"/> Health Authority
<input type="checkbox"/> National Energy Board (NEB)	<input type="checkbox"/> Occupational Health & Safety (OH&S)	<input type="checkbox"/> Emergency Management Agency	<input type="checkbox"/> Ministry of Transportation
<input type="checkbox"/> Workers' Compensation Board (WCB)	<input type="checkbox"/> Western Canadian Spill Services (WCSS)	<input type="checkbox"/> CANUTEC	<input type="checkbox"/> Emergency Response Assistance Canada (ERAC)
<input type="checkbox"/> Transportation Dangerous Goods (TDG)	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>
<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>
*Request that the AER notify Alberta Environment & Parks (Forestry/Fish/Wildlife/Lands), Environment Canada and the Department of Fisheries and Oceans as required.			
<b>Refer to the Government Notification Matrix and External Agencies Contact List for complete list of agencies requiring contact.</b>			

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

Agency Notification			
Agency Name	Contact Name	Contact Number	Notified (Y/N)

Collect all completed C3 Government Agency Contact Logs from responders for full documentation.

Notes:

### Roadblock Locations:

Roadblock Number	Name	Location/LSD

Collect all completed B4 Roadblock Logs from responders for full documentation.

Notes:

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

### Air Monitor Locations:

Air Monitor Number	Name	Location/LSD

Collect all completed A5 Air Monitoring Logs from responders for full documentation.

### Notes:

### Reception Centres

Name	Location	Phone Number

Collect all completed B1 Reception Centre Registration Logs from responders for full documentation.

### Notes:

# TACTICS MEETING



## EMERGENCY RESPONSE PLAN

<b>Owner: Operations Section Chief</b>	<b>Date:</b>	<b>Time:</b>
<b>**Roles below will attend only if designated and available**</b>		
<b>Attendees:</b>		
<input type="checkbox"/> <i>Incident Commander:</i>	<input type="checkbox"/> <i>Planning Section Chief:</i>	
<input type="checkbox"/> <i>Deputy Incident Commander:</i>	<input type="checkbox"/> <i>Logistics Section Chief:</i>	
<input type="checkbox"/> <i>Operations Section Chief:</i>	<input type="checkbox"/> <i>Finance/Admin. Section Chief:</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Safety Officer:</i>	
<input type="checkbox"/> <i>Liaison Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Information Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<b>Summary:</b>		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> <li>• Define tactics, work assignments, and resources to meet actions identified during the Objectives Meeting.</li> <li>• Have completed <b>ICS 215</b> and <b>215A</b> forms agreed upon by all attendees (Command and General Staff).</li> <li>• Update the <b>ICS 207</b> Incident Organization Chart.</li> <li>• Refer to Incident Action Plan Checklist (<b>A4</b>) and continue to add to items accomplished.</li> <li>• Schedule and prepare for the Planning Meeting.</li> </ul>		
<b>Resources:</b>	<b>ICS 209, 215, 215A, and IAP Checklist (A4)</b>	
<b>Agenda Items:</b>		
<input type="checkbox"/> Review <b>ICS 209</b> Incident Status Summary.		
<input type="checkbox"/> Review incident objectives.		
<input type="checkbox"/> Define tactics to complete objectives set out during the Objectives Meeting.		
<input type="checkbox"/> Provide an operational update and identify tactics to deal with incident.		
<input type="checkbox"/> Identify roles and responsibilities that have to be performed to implement tactics.		
<input type="checkbox"/> Build on already established <b>ICS 207</b> Incident Organization Chart, check span-of-control, and match up with <b>ICS 215</b> assignments.		
<p>Complete the Operational Planning Worksheet, <b>ICS 215</b> (Utilize one form for every established objective).</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify work assignments</li> <li><input type="checkbox"/> Identify resources requirements to achieve each work assignment</li> <li><input type="checkbox"/> Identify overhead staffing needs to support each work assignment</li> <li><input type="checkbox"/> Identify specialized equipment and supply needs for each work assignment</li> <li><input type="checkbox"/> Specify reporting times and location for personnel</li> </ul>		
<p>Complete the Incident Action Plan Safety Analysis, <b>ICS 215A</b>.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify potential hazard types</li> <li><input type="checkbox"/> Identify mitigations for associated hazard types</li> </ul>		
<input type="checkbox"/> Identify support facilities and locations.		
<b>Key Points:</b>		
<ul style="list-style-type: none"> <li>• <b>Ensure that the meeting is documented / recorded.</b> (Utilize the back side of this page.)</li> <li>• Review planned actions against incident objectives and priorities.</li> <li>• Utilize a map or chart to depict the operational areas, support facilities, and any key information.</li> <li>• Discuss any applicable open action items.</li> <li>• Consider contingencies and secondary options.</li> </ul>		

Notes:



# ICS 215 OPERATIONAL PLANNING WORKSHEET

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---





# ICS 215A INCIDENT ACTION PLAN SAFETY ANALYSIS

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---

# PLANNING MEETING



## EMERGENCY RESPONSE PLAN

<b>Owner: Planning Section Chief</b>	<b>Date:</b>	<b>Time:</b>
<b>**Roles below will attend only if designated and available**</b>		
<b>Attendees:</b>		
<input type="checkbox"/> <i>Incident Commander:</i>	<input type="checkbox"/> <i>Planning Section Chief:</i>	
<input type="checkbox"/> <i>Deputy Incident Commander:</i>	<input type="checkbox"/> <i>Logistics Section Chief:</i>	
<input type="checkbox"/> <i>Operations Section Chief:</i>	<input type="checkbox"/> <i>Finance/Admin. Section Chief:</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Safety Officer:</i>	
<input type="checkbox"/> <i>Liaison Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Information Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<b>Summary:</b>		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> <li>Finalize an Incident Action Plan with the necessary forms based on the objectives, tactics, and strategies outlined from the previous command meetings.</li> <li>Schedule and prepare for the Operations Briefing.</li> </ul>		
<b>Resources:</b>	<b>IAP Checklist (A4) and all associated ICS forms</b>	
<b>Agenda Items:</b>		
<input type="checkbox"/> Review Incident Action Plan forms (ICS 202, 207, 209, 215, and 215A).		
<input type="checkbox"/> Review Command's incident objectives, priorities, decisions, and direction.		
<input type="checkbox"/> Provide briefing on current situation, resources at risk, weather forecast, and incident projections.		
<input type="checkbox"/> Operations Section Chief provides briefing on: <ul style="list-style-type: none"> <li><input type="checkbox"/> Current operations.</li> <li><input type="checkbox"/> An overview on the proposed plan including strategy, tactics or work assignments, resource commitment, contingencies, organization structure, and needed support facilities.</li> </ul>		
<input type="checkbox"/> Review the proposed plan to ensure that Command direction, priorities, and operational objectives are met.		
<input type="checkbox"/> Delegate assignments and deadlines to appropriate staff members to assure timely and effective IAP development.		
<b>Key Points:</b>		
<ul style="list-style-type: none"> <li><b>Ensure that the meeting is documented / recorded.</b> (Utilize the back side of this page.)</li> <li>Review IAP Checklist (A4) to ensure that all critical materials have been accounted for in the IAP.</li> <li>Planning Section Chief brings meeting to order, cover ground rules, and review agenda.</li> <li>Planning Section Chief requests tacit Command approval of the plan as presented.</li> <li>Planning Section Chief reviews and validates responsibility for any open actions and management objectives.</li> <li>Planning Section Chief conducts round table of Command and General Staff to solicit their final input and commitment to the proposed plan.</li> </ul>		

Notes:

--

# OPERATIONS BRIEFING



## EMERGENCY RESPONSE PLAN

<b>Owner: Incident Commander</b>	<b>Date:</b>	<b>Time:</b>
<b>**Roles below will attend only if designated and available**</b>		
<b>Attendees:</b>		
<input type="checkbox"/> <i>Incident Commander:</i>	<input type="checkbox"/> <i>On-Site Group Supervisor</i>	
<input type="checkbox"/> <i>Deputy Incident Commander:</i>	<input type="checkbox"/> <i>Public Safety Group Supervisor</i>	
<input type="checkbox"/> <i>Operations Section Chief:</i>	<input type="checkbox"/> <i>Air Monitor Team Lead</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Roadblock Team Lead</i>	
<input type="checkbox"/> <i>Liaison Officer:</i>	<input type="checkbox"/> <i>Rover Team Lead</i>	
<input type="checkbox"/> <i>Information Officer:</i>	<input type="checkbox"/> <i>Telephoner Team Lead</i>	
<input type="checkbox"/> <i>Planning Section Chief:</i>	<input type="checkbox"/> <i>Reception Centre Representatives</i>	
<input type="checkbox"/> <i>Logistics Section Chief:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Finance/Admin. Section Chief:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Safety Officer:</i>	<input type="checkbox"/> <i>Other:</i>	
<input type="checkbox"/> <i>Staging Area Manager:</i>	<input type="checkbox"/> <i>Other:</i>	
<b>Summary:</b>		
<p>The objectives of this meeting are to:</p> <ul style="list-style-type: none"> <li>• Review a summary of the incident status with all responders.</li> <li>• Relay objectives, tactics, and strategies.</li> <li>• Reinforce/relay the safety message.</li> <li>• Assign roles &amp; responsibilities and tasks for all responders to accomplish.</li> <li>• Execute the response.</li> <li>• Tentatively schedule next Objectives Meeting and identify potential problems/issues to address in the next operational period.</li> </ul>		
<b>Resources:</b>	<b>IAP Checklist (A4) and all associated ICS forms</b>	
<b>Agenda Items:</b>		
<input type="checkbox"/> Planning Section Chief briefly walks through the IAP components and makes changes as needed.		
<input type="checkbox"/> Operations Section Chief conducts roll call of the Operation Section Supervisors and provides a briefing on emergency response.		
<input type="checkbox"/> Operations Section Chief briefs supervisory personnel on their assignments along with clarification on any of their issues and concerns.		
<input type="checkbox"/> Safety Officer covers major safety issues.		
<input type="checkbox"/> Logistics Section Chief covers logistical support of operations (communications, supply, transportation, medical, etc).		
<input type="checkbox"/> Finance / Admin. Section Chief covers time & cost tracking, procurement, and compensation process.		
<input type="checkbox"/> General Staff to cover issues applicable to Operations Section personnel.		
<b>Key Points:</b>		
<ul style="list-style-type: none"> <li>• <b>Ensure that the meeting is documented / recorded.</b> (Utilize the back side of this page.)</li> <li>• Planning Section Chief opens briefing, covers ground rules, agenda, and conducts roll call of Command and General Staff members.</li> <li>• Establish a briefing and message for all responders.</li> <li>• Review pre-determined public and media statements.</li> <li>• Planning Section Chief solicits final comments and adjourns briefing.</li> </ul>		

Notes:

--

# SECTION 2: ROLES AND RESPONSIBILITIES

## **GENERAL SAFETY EQUIPMENT AND RESOURCE LISTS**

OPERATOR, TRUCK & OTHER SAFETY EQUIPMENT

## **KEY RESPONSE PERSONNEL**

## **EMERGENCY RESPONSE STRUCTURE**

## **FIELD RESPONSE TEAM**

QUICK REFERENCE GUIDE – FIELD RESPONSE TEAM

QUICK REFERENCE GUIDE – EMERGENCY SUPPORT TEAM

## **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**

PUBLIC SAFETY ROLES CHART

AIR MONITORS MODULE

RECEPTION CENTRE REP MODULE

ROADBLOCKS MODULE

ROVERS MODULE

TELEPHONERS MODULE

---

THIS PAGE INTENTIONALLY LEFT BLANK

---

## 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.

### KEY RESPONSE PERSONNEL

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

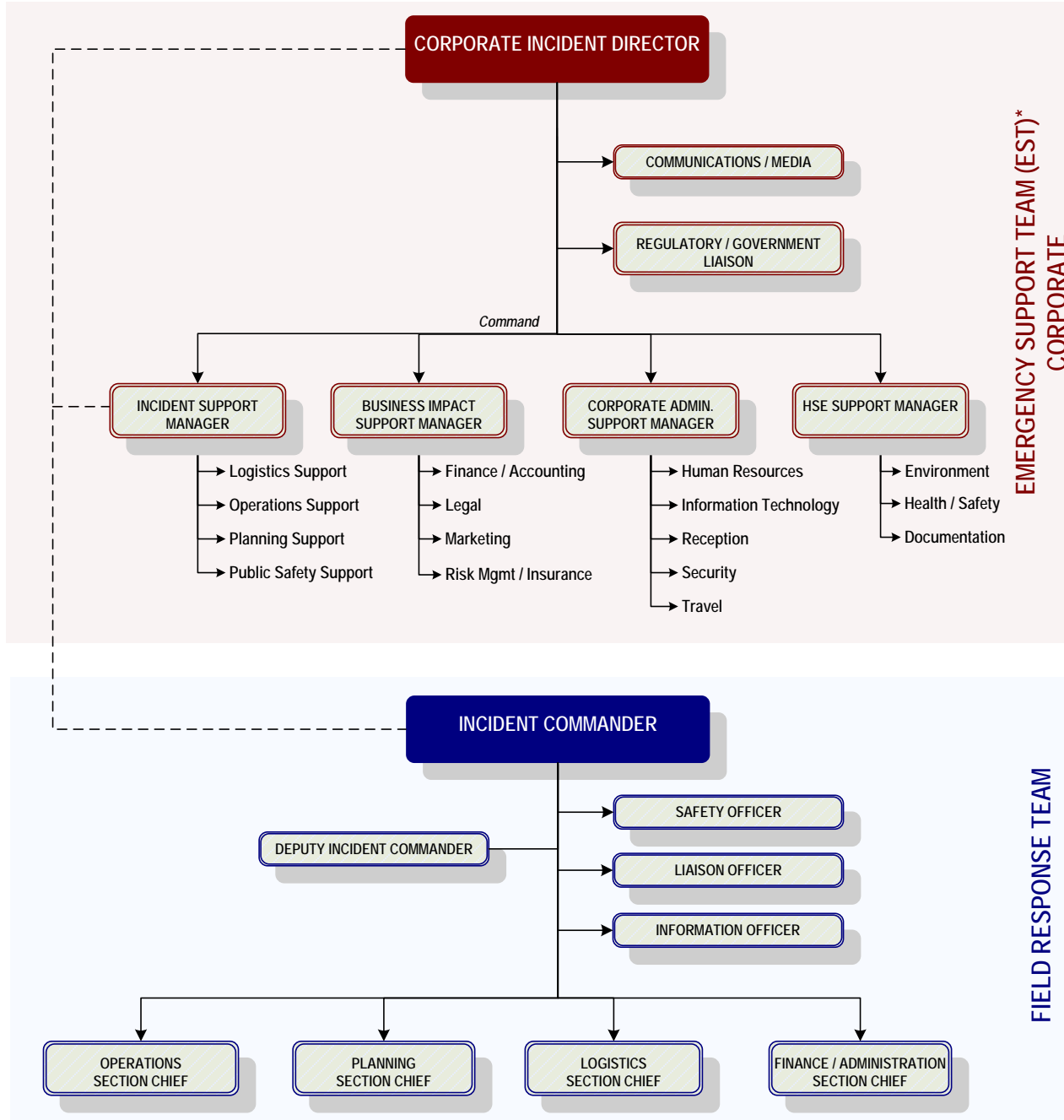
<b>COMMAND STAFF</b>	<b>Incident Commander</b>	Area Superintendent Lead Operator HSE Field Consultant
<b>ON-SITE</b>	<b>On-Site Group Supervisor</b>	Lead Operator Area Operators
	<b>Trained in Ignition</b>	Contact Ignition Service Company
<b>PUBLIC SAFETY</b>	<b>Public Safety Group Supervisor</b>	Area Superintendent Lead Operator HSE Field Consultant Administrator Medic
	<b>Air Monitors / Roadblock / Rovers</b>	Area Operators HSE Advisor Administrator Medic
	<b>Telephoners</b>	Corporate staff Area Operators
	<b>Reception Centre Representative</b>	Lead Operators HSE Field Consultant
<b>DOCUMENTATION</b>	<b>Documentation</b>	Medic
<b>EMERGENCY SUPPORT TEAM</b>	<b>Incident Director</b>	VP of Production VP of Operations Operations Engineer VP of HSE
	<b>Information Officer</b>	President & CEO VP of Production VP of Operations VP of HSE

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.



# EMERGENCY RESPONSE STRUCTURE

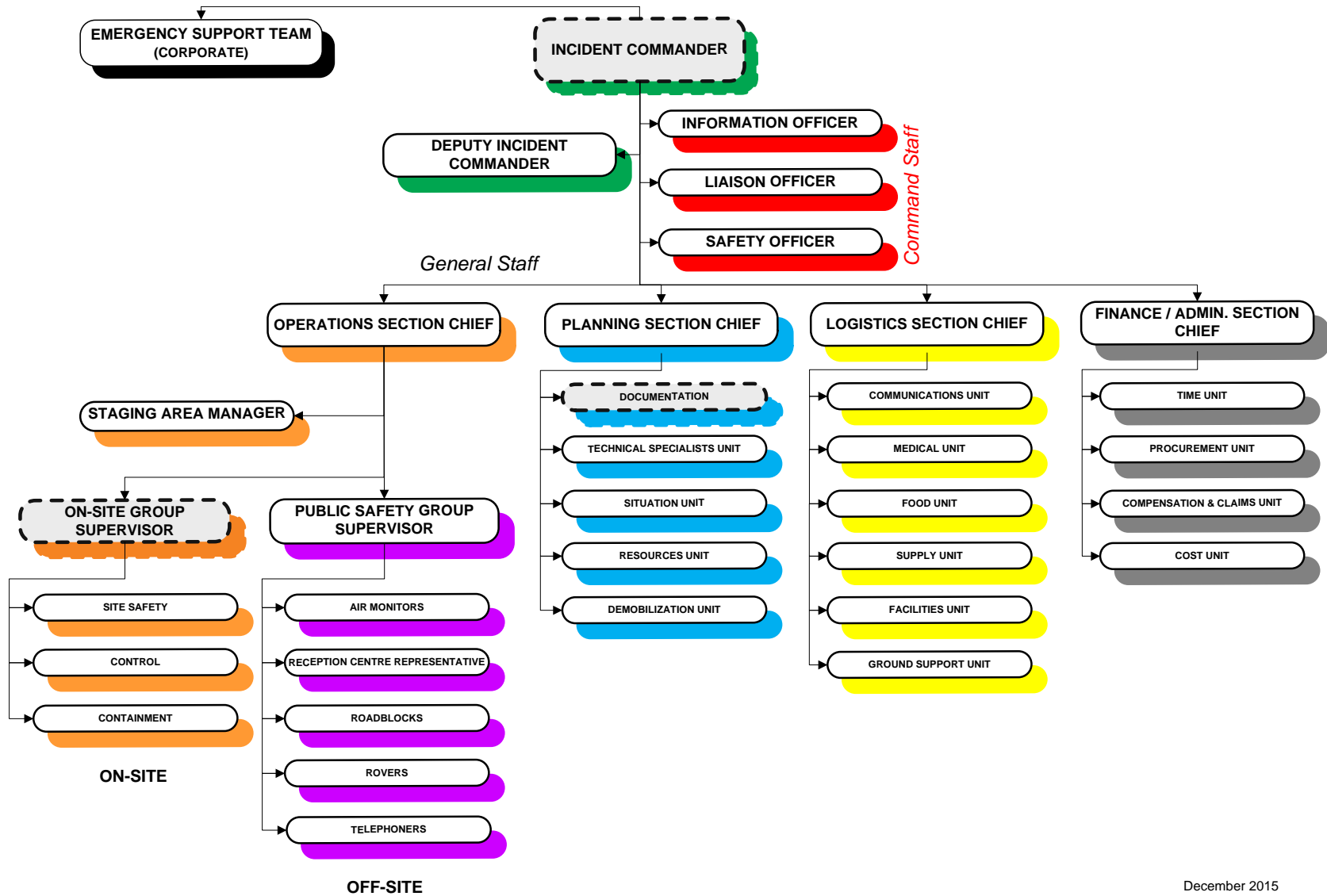
## WHITECAP RESOURCES EMERGENCY RESPONSE ORGANIZATIONAL CHART



**Legend**  
 - - - - - Communication  
 ————— Command

\* The detailed role descriptions for the EST can be found in the Whitecap Resources Emergency Support Team Plan located at the Calgary Office.

# FIELD RESPONSE TEAM



THIS PAGE INTENTIONALLY LEFT BLANK

---

---

**QUICK REFERENCE GUIDE – FIELD RESPONSE TEAM**

The Incident Commander is responsible for all elements of each role until they're assigned to another person. Below are brief descriptions of each of the key roles that the Incident Commander might choose to assign right away.

<b>Deputy Incident Commander</b>	Can assume responsibility for a specific portion of the primary (Incident Commander) position, work as relief, or be assigned other tasks. The Deputy should always be as qualified to make decisions and manage the incident as the Incident Commander.
<b>Information Officer</b>	Develops and releases information about the incident to the news media, to incident personnel and to other appropriate agencies and organizations.
<b>Liaison Officer</b>	Notifies government agencies and is the contact for agency representatives assigned to the incident by assisting or cooperating agencies.
<b>Safety Officer</b>	Develops and recommends measures for assuring personnel safety, and assesses and / or anticipates hazardous and unsafe situations.
<b>Operations Section Chief</b>	Manages all tactical operations occurring at the location of the incident. The Incident Action Plan provides the necessary guidance.
<b>Planning Section Chief</b>	Provides 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.
<b>Logistics Section Chief</b>	Responsible for all incident support needs. The section is responsible for providing: facilities, transportation, communications, supplies, equipment maintenance and fuelling, food services, medical services, and ordering resources.
<b>Finance/Admin Section Chief</b>	Manages all financial aspects of an incident.
<b>Public Safety Group Supervisor</b>	Reports to the Operations Section Chief and is responsible for the management, planning, consideration and implementation of external public protection activities for the duration of the incident.

---

## QUICK REFERENCE GUIDE – EMERGENCY SUPPORT TEAM

### (LOCATED AT THE CORPORATE EMERGENCY OPERATIONS CENTRE)

The **Corporate Incident Director** is responsible for all elements of each role until they're assigned to another person. Below are brief descriptions of each of the key roles that the Corporate Incident Director might choose to assign right away.

<b>Corporate Incident Director</b>	The Corporate Incident Director is responsible for coordination of response efforts from corporate to support the Field Response Team (FRT) and for efforts to ensure business continuity during the incident. The Corporate Incident Director determines the level of activation of the Emergency Support Team (EST) and assigns all positions to meet the required level of activation.
<b>Communications &amp; Media</b>	Serves as the coordination point for all public information, media relations and internal information sources. Communications & Media is responsible for preparing the Field Response Team (FRT) and the Emergency Support Team (EST) to deal successfully with internal and external communication.
<b>Regulatory / Government Liaison</b>	Provides regulatory guidance and advice to the Emergency Support Team (EST) as well as to be a liaison between responding government agencies and the company. The Regulatory / Government Liaison is responsible for providing support to the field Liaison Officer.
<b>Incident Support Manager</b>	The Incident Support Manager is the main link between the Field Response Team (FRT) and the Emergency Support Team (EST) and is the main informant for the EST. The Incident Support Manager speaks directly with the field Deputy Incident Commander, if assigned, or the field Incident Commander. The Incident Support Manager provides operational, public safety, planning and logistics advice and support to assist the FRT with developing an effective field Incident Action Plan (IAP).
<b>Business Impact Support Manager</b>	The role of business impact is to identify and work to mitigate all of the negative impacts of the incident on the business as well as to provide business advice and support. The Business Impact Support Manager provides support to the company in the areas of finance / accounting, legal, marketing, risk management and insurance.
<b>Corporate Admin Support Manager</b>	The Corporate Admin Support Manager provides administrative and technical support to the company in the areas of human resources, information technology, travel, security and reception.
<b>Health, Safety &amp; Environment Support Manager</b>	The Health, Safety & Environment Support Manager is responsible for providing Health, Safety & Environmental support to the Field Response Team (FRT). The Health, Safety & Environment Support Manager is also responsible for managing the health / safety / environmental / planning / documentation activities of the Emergency Support Team (EST).

# Command Staff Roles

Incident Commander	Deputy Incident Commander	Information Officer	Liaison Officer	Safety Officer
<p>The <b>Incident Commander</b> is in charge of overall management of the incident and must be fully qualified to manage the incident. As incidents grow in size or complexity, a more highly qualified <b>Incident Commander</b> may be assigned by the company.</p> <p><b>Note: The highest ranking authority arriving at the site of the incident (first on-scene) becomes the Incident Commander and establishes command and control. The first on-scene will remain the Incident Commander until there is formal transfer of command to a more senior company employee and / or qualified personnel.</b></p> <p><b>Initial Response - *Refer to the 5 Step Initial Response Guide in Section 1: Initial Response*</b></p> <p><b>Step 1: Level of Emergency</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If necessary, investigate and confirm the emergency. If the incident involves a release of sour product, the investigation should be conducted in teams of two. Take appropriate safety precautions (PPE, SCBA, etc.). Ensure personal safety at all times.</li> <li><input type="checkbox"/> Determine the Level of Emergency using the OGC Incident Classification Matrix for BC or AER's Assessment Matrix for Classifying Incidents for all other provinces (e.g. Alert/Minor, Level 1, 2, 3) found in <b>Section 1: Initial Response</b> or using the Emergency Assessment SmartPhone App. (Search H<sub>2</sub>Safety or Emergency Assessment in the App Store).</li> </ul> <p><b>Step 2: Internal Notification</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Follow the Internal Emergency Notification Flowchart outlined in Section 1: Initial Response to contact required field resources. Refer to the <b>Section 2: Roles and Responsibilities / Response Team Phone List</b>. Relay the information from the A1 Initial Notification Form. Mobilize internal resources to the site, to the Incident Command Post (ICP) or place them on standby as required.</li> <li><input type="checkbox"/> Contact required company resources and communicate the level of emergency. Refer to <b>Section 2: Roles and Responsibilities / Response Team Phone List</b>.</li> </ul> <p><b>Step 3: External Notification</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Follow the External Emergency Notification Flowchart in <b>Section 1: Initial Response</b> for communication structure and the Provincial Notification Matrix in <b>Section 5: External Agencies</b> to determine which external agencies need to be notified. Reference <b>Section 5: External Agencies</b> and the Area Specific Information for the location of the incident.</li> </ul> <p><b>Step 4: Incident Briefing</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The following positions are always filled regardless of the size of the incident: <b>Incident Commander, On-Site Group Supervisor</b> and <b>Documentation</b>.</li> <li><input type="checkbox"/> Assess the situation, identify the incident source, and consider how to stop the source. Carry out a site assessment that includes the following: identify hazardous materials, evaluate risk to workers and the public, determine the potential for the incident to escalate, identify safety concerns, determine which other company's facilities are involved.</li> <li><input type="checkbox"/> Detail and prioritize the objectives for the next operational period taking into consideration the <b>priorities of (1) Life Safety, (2) Incident Stabilization, (3) Property &amp; Environment</b> using the ICS 201 Incident Briefing Form.</li> <li><input type="checkbox"/> Assign other positions as required to meet the identified objectives. Review and complete the ICS 207 Incident Organization Chart in <b>Section 6: Forms</b>. Depending on the scale of emergency, all positions may not be assigned. The <b>Incident Commander</b> assumes responsibility for all unassigned roles until personnel have been assigned to them.</li> <li><input type="checkbox"/> Conduct a role review with each of the positions above to ensure they clearly understand their roles and responsibilities.</li> <li><input type="checkbox"/> Develop detailed plans of action (strategies) to achieve the objectives and determine what tactics and resources are required to implement the strategies (oil spill services, safety services, etc.).</li> <li><input type="checkbox"/> Activate the Incident Command Post (ICP). Refer to the <b>Appendices</b> for Incident Command Post activation guidelines.</li> <li><input type="checkbox"/> Ensure the <b>Planning Section</b> posts and updates the status board with incident details.</li> </ul> <p><b>Step 5: Public Safety</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Determine the size of the Emergency Planning and Response Zones around the incident. Refer to the EPZ calculation tables and map in <b>Area Specific Information</b>.</li> <li><input type="checkbox"/> Use the Public Protection Measures Flowchart located in <b>Section 1: Initial Response</b> to assist with determining if evacuation / shelter / ignition are required.</li> <li><input type="checkbox"/> Ensure the affected public are contacted and advised to shelter or evacuate as required.</li> <li><input type="checkbox"/> Establish <b>Air Monitoring, Reception Centre Representatives, Roadblocks, Rovers, and Telephoners</b> as required.</li> </ul> <p><b>Ongoing Response - *Refer to the Five Step Ongoing Response Guide in Section 2: Ongoing Response*</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Establish a method to track responders and resources to ensure they are accounted for at all times.</li> <li><input type="checkbox"/> Monitor implementation of IAP and revise as the situation dictates. Prepare for next operational period.</li> <li><input type="checkbox"/> Support the <b>Operations Section Chief</b> in the preparation of an incident control and containment action plan.</li> <li><input type="checkbox"/> Ensure each section chief has adequate staff, is not violating span of control and clearly understands the roles and responsibilities.</li> <li><input type="checkbox"/> Conduct frequent Command Staff and General Staff meetings.</li> <li><input type="checkbox"/> If transfer of command occurs, an incident status briefing must take place. Provide all documentation and review situation status, objectives and priorities, current organization and resources, facilities, communications plan, concerns and introductions to staff.</li> <li><input type="checkbox"/> 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 <b>Incident Commander</b> and the applicable government regulator.</li> <li><input type="checkbox"/> The <b>Demobilization Unit</b> will develop and implement objectives/strategies for demobilization.</li> </ul>	<p>The <b>Deputy Incident Commander</b> may assume responsibility for a specific portion of the primary position, work as relief, or be assigned other tasks. The <b>Deputy</b> should always be as qualified to make decisions and manage the incident as the <b>Incident Commander</b>.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If no scribe has been assigned to the <b>Incident Commander</b>, support the <b>Incident Commander</b> by documenting details of the emergency, focusing on activities and decisions made.</li> <li><input type="checkbox"/> Record, update and maintain a chronological summary of the incident including:             <ul style="list-style-type: none"> <li><input type="checkbox"/> Names of personnel in each assigned position and their location</li> <li><input type="checkbox"/> Control and containment measures</li> <li><input type="checkbox"/> Environmental monitoring information</li> <li><input type="checkbox"/> Injuries / deaths / missing persons</li> <li><input type="checkbox"/> Phone calls</li> <li><input type="checkbox"/> Actions and decisions</li> <li><input type="checkbox"/> Status of the public protection actions</li> </ul> </li> <li><input type="checkbox"/> Manage the flow of traffic to and communication with the <b>Incident Commander</b> so that he can focus on managing the incident.</li> <li><input type="checkbox"/> Conduct status update meetings.</li> <li><input type="checkbox"/> Provide status to head office.</li> <li><input type="checkbox"/> Deal with some day-to-day decision making.</li> <li><input type="checkbox"/> Assume duties of the <b>Incident Commander</b>, if required.</li> <li><input type="checkbox"/> Maintain communication with the <b>Incident Commander</b>.</li> </ul> <div style="border: 2px solid red; padding: 5px; margin-top: 10px;"> <p style="text-align: center; color: red; font-weight: bold;">Important</p> <p>Prior to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the <b>Incident Commander</b>.</li> </ul> <p>Throughout the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in <b>Section 6: Forms</b>.</li> </ul> <p>After the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assist with post-incident activities.</li> </ul> <p style="text-align: center; color: red; font-weight: bold;">All forms referenced can be found in Section 6: Forms</p> </div>	<p>The <b>Information Officer</b> is responsible for developing and releasing information about the incident to the news media, to incident personnel and to other appropriate agencies and organizations.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Receive incident briefing from the <b>Incident Commander</b> before contacting external agencies.</li> <li><input type="checkbox"/> Prepare regular status updates that will be provided to internal company personnel to keep them apprised of the situation.</li> <li><input type="checkbox"/> Identify and document any media involvement that has already taken place</li> <li><input type="checkbox"/> If the media statement hasn't yet been prepared ensure that the generic media statement from the ERP is communicated and being used in the field.</li> <li><input type="checkbox"/> Assist head office with the preparation of a preliminary media statement if required using the Preliminary Media Statement form.</li> <li><input type="checkbox"/> Document all communications with the media using the Media Contact Log.</li> <li><input type="checkbox"/> Develop a detailed media strategy for the incident.</li> <li><input type="checkbox"/> Designate and prepare media briefing rooms away from the Incident Command Post.</li> <li><input type="checkbox"/> Organize tours and photo opportunities if required.</li> <li><input type="checkbox"/> Maintain communication with the <b>Incident Commander</b>.</li> <li><input type="checkbox"/> Media releases must be coordinated with applicable regulatory agency.</li> <li><input type="checkbox"/> If necessary, coordinate with and use broadcast media to notify residents in the hazard area.</li> <li><input type="checkbox"/> Work with Communications / Media to develop a communications plan that includes establishing protocols for responders and all company personnel as required to ensure incident information remains confidential (i.e. restriction on cell phone usage for photography, social media, speaking to the media, etc.).</li> </ul>	<p>The <b>Liaison Officer</b> is responsible for notifying government agencies and is the contact for agency representatives assigned to the incident by assisting or cooperating agencies.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Complete Regulatory First Call Communication Form. <span style="border: 1px solid black; padding: 2px;">Form A3</span></li> <li><input type="checkbox"/> Refer to Section 5: External Agencies for the Government Notification Matrix. Notify as soon as possible and provide status updates at agreed upon intervals to:             <ul style="list-style-type: none"> <li><input type="checkbox"/> Government regulator</li> <li><input type="checkbox"/> Local authorities (counties, cities, towns, MDs, RDs, First Nations Reserves, etc.)</li> <li><input type="checkbox"/> Health authority</li> <li><input type="checkbox"/> Environment</li> <li><input type="checkbox"/> Provincial emergency management organization</li> <li><input type="checkbox"/> Other agencies</li> </ul> </li> <li><input type="checkbox"/> Keep track of all government correspondence using the Government Agency Contact Log. <span style="border: 1px solid black; padding: 2px;">Form C3</span></li> <li><input type="checkbox"/> Obtain cooperating and assisting agency information that includes: contact information, radio frequencies, cooperative agreements, equipment type, number of personnel, condition of equipment and personnel, agency constraints, etc.</li> <li><input type="checkbox"/> Conduct appropriate periodic briefings to keep agencies informed of planning actions.</li> <li><input type="checkbox"/> Coordinate with any government agency representatives attending the ICP or REOC.</li> <li><input type="checkbox"/> Coordinate with mutual aid groups.</li> </ul>	<p>The <b>Safety Officer</b> develops and recommends measures for assuring personnel safety, and assesses and / or anticipates hazardous and unsafe situations.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure the site is evacuated if unsafe.</li> <li><input type="checkbox"/> Initiate rescue plans if safe to do so.</li> <li><input type="checkbox"/> Review the Incident Action Plan to identify and correct any potential occupational and health hazards.</li> <li><input type="checkbox"/> Ensure work / rest guidelines are followed.</li> <li><input type="checkbox"/> Continuously monitor workers for exposure to ensure they are wearing the required PPE.</li> <li><input type="checkbox"/> Take appropriate action to mitigate or eliminate unsafe conditions, operations, or hazards.</li> <li><input type="checkbox"/> Immediately stop any unsafe practices.</li> <li><input type="checkbox"/> Conduct a general inspection of the facilities, food services and sanitation services soon after they become operational and follow up on a periodic basis throughout the incident for compliance to all health and safety standards. Provide a report of deficiencies.</li> <li><input type="checkbox"/> Document both safe and unsafe acts, corrective actions taken on the scene, accidents or injuries, and ways to improve safety on future incidents.</li> <li><input type="checkbox"/> Investigate accidents that have occurred within the incident area.</li> <li><input type="checkbox"/> Identify "Hot Zone" and declare when responders may enter it.</li> <li><input type="checkbox"/> Ensure that responders inside the "Hot Zone" are accounted for and initiate search if required.</li> <li><input type="checkbox"/> Prepare a site-specific health and safety plan.</li> </ul>

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

Revised March 2019

**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, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

# General Staff Roles – Operations Section

Operations Section Chief	On-Site Group Supervisor	Staging Area Manager	Site safety	Control	Containment
<p>The <b>Operations Section Chief</b> 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 <b>Operations Section</b> is generally dictated by the number of tactical resources involved and is influenced by span of control considerations.</p>	<p><b>On-Site Group Supervisor</b> is responsible for coordinating all activities of <b>Control</b>, <b>Containment</b> and <b>Site Safety</b> at the scene of the emergency / incident.</p>	<p>The <b>Staging Area Manager</b> is responsible for managing all activities within a Staging Area.</p>	<p><b>Site Safety</b> is responsible for responder safety and safety advice at all times at the scene of the emergency / incident.</p>	<p><b>Control</b> is responsible for implementing measures designed to bring the incident under control or stop the incident.</p>	<p><b>Containment</b> 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.</p>
<ul style="list-style-type: none"> <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: <b>On-Site Group Supervisor</b>, <b>Public Safety Group Supervisor</b>.</li> <li>❑ In conjunction with the <b>Incident Commander</b>, the <b>Planning Section Chief</b>, and the <b>Public Safety Group Supervisor</b>, 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 <b>Incident Commander</b> to determine public protection measures.</li> <li>❑ Assess the requirements for on-site safety supervision, personnel, equipment, and other contract services. Coordinate with <b>Logistics</b> to obtain equipment and resources.</li> <li>❑ Assist the <b>On-Site Group Supervisor</b> in determining whether ignition is appropriate. If at all possible, input is to be obtained from the <b>Incident Commander</b> and the applicable government regulator.</li> <li>❑ Maintain continuous communications with the <b>Incident Commander</b>.</li> </ul>	<ul style="list-style-type: none"> <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 <b>Staging Area Manager</b>, <b>Site Safety</b>, <b>Control</b> and <b>Containment</b>.</li> <li>❑ Report air monitoring to <b>Incident Commander</b> (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 <b>On-Site Group Supervisor</b> has the authority to ignite the release if ignition criteria are met. If at all possible, the <b>On-Site Group Supervisor</b> must consult with higher authority individuals within the company (ideally the <b>Operations Section Chief</b>, <b>Incident Commander</b>, etc.) and the applicable government regulator before making the decision to ignite a release. Refer to <b>Section 4: Emergency Response Procedures</b>.</li> </ul>	<ul style="list-style-type: none"> <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:                             <ul style="list-style-type: none"> <li>❑ Adequate sized site that is stable and level with suitable access roads</li> <li>❑ No entry problems such as narrow approach ways, gates, power lines, buried pipelines, etc.</li> <li>❑ Approval has been received from landowner</li> <li>❑ Reception of communication equipment is adequate</li> </ul> </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 <b>Logistics Section Chief</b>.</li> <li>❑ Respond to <b>Operations Section Chief</b> or <b>Incident Commander</b> requests for resources.</li> <li>❑ Confirm all workers have required training before they are dispatched to the incident.</li> <li>❑ Maintain and provide status to the <b>Planning Section</b> of all resources in Staging Area.</li> <li>❑ Demobilize or move Staging Area as required.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Assess hazards &amp; potential risks e.g. fire/explosion, toxicity, oxygen deficiency, ignition sources, access/egress.</li> <li>❑ Ensure responder safety at all times.</li> <li>❑ Ensure that on-site personnel are taking appropriate safety actions: PPE, SCBA / SABA, Safe Work Procedures, proper grounding / bonding procedures, work in teams, etc.</li> <li>❑ Ensure workers that show signs of stress, fatigue, and other symptoms are demobilized and sent for treatment if necessary.</li> <li>❑ Maintain records of all injuries and on-site medical treatments.</li> <li>❑ Conduct responder safety orientations.</li> <li>❑ Monitor activities and conduct a head count on a regular basis.</li> <li>❑ Continually evaluate risks and stop unsafe activities immediately.</li> <li>❑ Recommend alternatives for activities that are considered to be unsafe.</li> </ul>	<ul style="list-style-type: none"> <li>❑ Assist with the development of control procedures.</li> <li>❑ Identify immediate response tactics (i.e. offensive / defensive response tactics). Only when safety is assured, take immediate operational actions to bring the incident under control (i.e. shut down, isolate, de-pressure, etc.).</li> <li>❑ Provide or seek technical / engineering advice around all control-related issues.</li> <li>❑ Inform <b>Operations Section Chief</b> of any interactions with regulatory agencies or environmental personnel.</li> </ul>	<ul style="list-style-type: none"> <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 <b>Operations Section Chief</b> of any interactions with regulatory agencies or environmental personnel.</li> <li>❑ Coordinate oil spill cooperative activities (booms, dams, etc.).</li> </ul>
<p><b>Important</b></p> <p><b>Prior</b> to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> <li>❑ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the <b>Incident Commander</b>.</li> </ul> <p><b>Throughout</b> the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> <li>❑ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in <b>Section 6: Forms</b>.</li> </ul> <p><b>After</b> the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> <li>❑ Assist with post-incident activities.</li> </ul> <p style="color: red; font-weight: bold;">All forms referenced can be found in Section 6: Forms</p>					
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 (OSCP)	Located at the On-Site Command Post (OSCP)	Located at the On-Site Command Post (OSCP)

Revised March 2019

**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, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

# General Staff Roles – Planning Section

Planning Section Chief	Documentation Unit	Technical Specialists Unit	Situation Unit	Resources Unit	Demobilization Unit																			
<p>The <b>Planning Section Chief</b> is responsible for providing planning and status services for the incident. Under the direction of the <b>Planning Section Chief</b>, 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.</p>	<p>The <b>Documentation Unit</b> is responsible for the maintenance of accurate, up-to-date incident files. Duplication services will also be provided by the <b>Documentation Unit</b>.</p>	<p>Certain incidents or events may require the use of <b>Technical Specialists</b> who have specialized knowledge and expertise. <b>Technical Specialists</b> may function within the Planning Section, or be assigned wherever their services are required.</p>	<p>The collection, processing, and organization of all incident information. The <b>Situation Unit</b> may prepare future projections of incident growth, maps, and intelligence information.</p>	<p>The <b>Resources Unit</b> is responsible for maintaining the status of all assigned resources at an incident.</p>	<p>The <b>Demobilization Unit</b> is responsible for developing the Incident Demobilization Plan.</p>																			
<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify and confirm communication links.</li> <li><input type="checkbox"/> Assign personnel to assume the following positions, as required: <b>Documentation, Technical, Situation, Resources, and Demobilization.</b></li> <li><input type="checkbox"/> Assist with setup of the Incident Command Post.</li> <li><input type="checkbox"/> Review the details of the incident and support the <b>Incident Commander</b> with the development of a preliminary response strategy.</li> <li><input type="checkbox"/> Identify the need for technical specialists.</li> <li><input type="checkbox"/> Collect and analyze information on the current situation, prepare situation displays and situation summaries, and develop maps and projections.</li> <li><input type="checkbox"/> Establish special information collection activities as necessary, e.g., weather, environmental, toxics, etc.</li> <li><input type="checkbox"/> Provide technical support to the <b>Incident Commander</b> and work with <b>Incident Commander</b> to develop the Incident Action Plan (IAP).</li> <li><input type="checkbox"/> Review any changes to the Incident Action Plan (IAP) to ensure consistency.</li> <li><input type="checkbox"/> Assemble information on alternative strategies.</li> <li><input type="checkbox"/> Coordinate with <b>Logistics</b> to determine current available resources and resource availability for future plans of action.</li> <li><input type="checkbox"/> Establish reporting schedules.</li> <li><input type="checkbox"/> Conduct long-range and / or contingency planning.</li> <li><input type="checkbox"/> Develop plans for demobilization.</li> <li><input type="checkbox"/> Maintain continuous communications with the <b>Incident Commander</b>.</li> </ul> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Form ICS 202</td> <td style="padding: 2px;">Form ICS 214</td> <td style="padding: 2px;">Form ICS 215</td> <td style="padding: 2px;">Form ICS 215a</td> <td style="padding: 2px;">Form ICS 230</td> </tr> </table> </div>	Form ICS 202	Form ICS 214	Form ICS 215	Form ICS 215a	Form ICS 230	<ul style="list-style-type: none"> <li><input type="checkbox"/> Document the Incident Action Plan (IAP) strategies using the ICS 201 Incident Briefing Form provided in <b>Section 1: Initial Response</b> or <b>Section 6: Forms</b> and disseminate them to all key responders. <span style="float: right; font-size: small;">Form ICS 201</span></li> <li><input type="checkbox"/> Be prepared to document the <b>Incident Commander's</b> status update meetings using whiteboards, PC or Action Logs. <span style="float: right; font-size: small;">Form ICS 214</span></li> <li><input type="checkbox"/> Ensure consistent documentation.</li> <li><input type="checkbox"/> Ensure timely dissemination of all documentation.</li> <li><input type="checkbox"/> Participate in planning meetings, capturing key information, decisions made, commitments and status.</li> <li><input type="checkbox"/> Collect documentation from response team members and maintain a consistent system for organizing the data.             <ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> </ul> </li> <li><input type="checkbox"/> Establish duplication services.</li> <li><input type="checkbox"/> Incident files will be stored for legal, analytical, and historical purposes.</li> <li><input type="checkbox"/> Post and maintain all Emergency Status Boards and other laminated charts in the Incident Command Post.</li> </ul> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Form ICS 201</td> <td style="padding: 2px;">Form ICS 214</td> <td style="padding: 2px;">Form ICS 231</td> <td style="padding: 2px;">Form ICS 233</td> </tr> </table> </div>	Form ICS 201	Form ICS 214	Form ICS 231	Form ICS 233	<ul style="list-style-type: none"> <li><input type="checkbox"/> Determine what technical support is available now and in the future.</li> <li><input type="checkbox"/> Work with <b>Logistics</b> to determine the key locations for the required technical support and appropriate time to acquire.</li> <li><input type="checkbox"/> Gather data (weather, etc.) and forecast changes considering incident potential and develop new or modified response strategies.</li> <li><input type="checkbox"/> As required, obtain plume dispersion modelling.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 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><input type="checkbox"/> Prepare, post, or disseminate resources and situation status information as required, including special requests.</li> <li><input type="checkbox"/> Provide photographic services and maps if required.</li> </ul> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Form ICS 201</td> <td style="padding: 2px;">Form ICS 209</td> <td style="padding: 2px;">Form ICS 214</td> </tr> </table> </div>	Form ICS 201	Form ICS 209	Form ICS 214	<ul style="list-style-type: none"> <li><input type="checkbox"/> Monitor the status and location of all incident resources / personnel responding to the incident.</li> <li><input type="checkbox"/> Oversee the check-in of all resources.</li> <li><input type="checkbox"/> Maintenance of a master list of all resources, e.g., key supervisory personnel, primary and support resources, etc.</li> <li><input type="checkbox"/> May assist in preparing the written Incident Action Plan.</li> <li><input type="checkbox"/> Maintain and post the current status and location of all resources.</li> </ul> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Form ICS 203</td> <td style="padding: 2px;">Form ICS 204</td> <td style="padding: 2px;">Form ICS 207</td> <td style="padding: 2px;">Form ICS 211</td> <td style="padding: 2px;">Form ICS 214</td> </tr> </table> </div>	Form ICS 203	Form ICS 204	Form ICS 207	Form ICS 211	Form ICS 214	<ul style="list-style-type: none"> <li><input type="checkbox"/> Prepare plan for the demobilization of all personnel and equipment upon resolution of the incident.</li> <li><input type="checkbox"/> Ensure resources in available status are still required. Identify surplus resources and probably release time.</li> <li><input type="checkbox"/> Debrief non-required resources and dismiss resources being demobilized.</li> <li><input type="checkbox"/> Coordinate demobilization with agency representatives.</li> <li><input type="checkbox"/> Develop incident check-out function for all units.</li> <li><input type="checkbox"/> Ensure the demobilization process is organized, safe and cost effective.</li> </ul> <div style="text-align: right; margin-top: 10px;"> <table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Form ICS 214</td> <td style="padding: 2px;">Form ICS 221</td> </tr> </table> </div>	Form ICS 214	Form ICS 221
Form ICS 202	Form ICS 214	Form ICS 215	Form ICS 215a	Form ICS 230																				
Form ICS 201	Form ICS 214	Form ICS 231	Form ICS 233																					
Form ICS 201	Form ICS 209	Form ICS 214																						
Form ICS 203	Form ICS 204	Form ICS 207	Form ICS 211	Form ICS 214																				
Form ICS 214	Form ICS 221																							
<p style="text-align: center; color: red; margin: 0;"><b>Important</b></p> <p><b>Prior</b> to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the <b>Incident Commander</b>.</li> </ul> <p><b>Throughout</b> the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in <b>Section 6: Forms</b>.</li> </ul> <p><b>After</b> the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assist with post-incident activities.</li> </ul> <p style="text-align: center; color: red; margin-top: 5px;"><b>All forms referenced can be found in Section 6: Forms</b></p>																								

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

Revised March 2019

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, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.



# General Staff Roles – Logistics Section

Logistics Section Chief	Communications Unit	Medical unit	Food Unit	Supply Unit	Facilities Unit	Ground Support Unit
<p>All incident support needs are provided by the Logistics Section. The section is responsible for providing: facilities, transportation, communications, supplies, equipment maintenance and fuelling, food services, medical services, and ordering resources. Six units may be established within the Logistics Section and the <b>Logistics Section Chief</b> will determine the need to activate or deactivate a unit. If a unit is not activated, responsibility for that unit's duties will remain with the <b>Logistics Section Chief</b>.</p>	<p>The <b>Communications Unit</b> is responsible for developing plans for the use of incident communications equipment and facilities; installing and testing of communications equipment; supervision of the Incident Communications Centre, if established; and the distribution and maintenance of communications equipment.</p>	<p>The <b>Medical Unit</b> is responsible for all medical services for incident assigned personnel. The unit will develop procedures for managing major medical emergencies; and provide medical aid.</p> <p><i>Note: Medical assistance to the public or victims of the emergency is an operational function.</i></p>	<p>Responsible for supplying the food needs for the entire incident, including all remote locations, (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments. The <b>Food Unit</b> interacts with the <b>Facilities Unit</b> for location of fixed-feeding site; the <b>Supply Unit</b> for food ordering; and the <b>Ground Support Unit</b> for transporting food.</p>	<p>The <b>Supply Unit</b> is responsible for ordering, receiving, processing, and storing all incident-related resources.</p>	<p>The <b>Facilities Unit</b> is responsible for set-up, maintenance, and demobilization of all incident support facilities except staging areas. The <b>Facilities Unit</b> will also provide security services to the incident as needed.</p>	<p>The Ground Support Unit is primarily responsible for the maintenance, services, and fuelling of all mobile equipment and vehicles, with the exception of aviation resources. The unit also has responsibility for the ground transportation of personnel, supplies, and equipment.</p>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify and confirm communication links.</li> <li><input type="checkbox"/> Assign personnel as required.</li> <li><input type="checkbox"/> List and obtain all immediate resources requested by the <b>Incident Commander</b> or <b>Operations Section Chief</b>.</li> <li><input type="checkbox"/> Identify anticipated and known incident service and support requirements.</li> <li><input type="checkbox"/> Maintain continuous communications with the <b>Incident Commander</b>.</li> <li><input type="checkbox"/> Develop plans to move required resources to site.</li> <li><input type="checkbox"/> Confirm spending authorities with the Finance / Admin Section.</li> <li><input type="checkbox"/> Mobilize resources.</li> <li><input type="checkbox"/> Move required resources to site.</li> <li><input type="checkbox"/> Coordinate spending with the <b>Finance / Admin Section Chief</b>.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Establish the communications plan for the use of incident communications equipment and facilities.</li> <li><input type="checkbox"/> Install, test, distribute, and maintain all communications equipment.</li> <li><input type="checkbox"/> Advise on communications capabilities and limitations.</li> <li><input type="checkbox"/> Establish telephone, communication links, and public address systems.</li> <li><input type="checkbox"/> Establish clear and widespread communication throughout the incident.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Arrange and provide response personnel with first aid and minor medical services.</li> <li><input type="checkbox"/> Develop Incident Medical Plan.</li> <li><input type="checkbox"/> Develop procedures for handling serious injuries of responder personnel.</li> <li><input type="checkbox"/> Provide medical aid to personnel.</li> <li><input type="checkbox"/> Assist the Finance / Administration Section with processing injury-related claims.</li> </ul> <p><i>Note: Provision of medical assistance to the public or victims of the emergency is an operational function and would be done by the Operations Section Medical Unit. If there is a requirement for victims of an incident the local public ambulance service is most often utilized.</i></p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Responsible for supplying the food needs for the entire incident, including all remote locations (e.g., Camps, Staging Areas), as well as providing food for personnel unable to leave tactical field assignments.</li> <li><input type="checkbox"/> Works with the Planning Section - <b>Resources Unit</b> to anticipate the numbers of personnel to be fed and develop plans for supplying food to all incident areas.</li> <li><input type="checkbox"/> Interacts with the <b>Facilities Unit</b> for location of fixed-feeding site; the <b>Supply Unit</b> for food ordering; and the <b>Ground and Air Support Units</b> for transporting food.</li> <li><input type="checkbox"/> Obtain necessary equipment and supplies and establish cooking facilities.</li> <li><input type="checkbox"/> Order sufficient food and potable water from the <b>Supply Unit</b>.</li> <li><input type="checkbox"/> Maintain inventory of food and water.</li> <li><input type="checkbox"/> Maintain food services areas, ensuring that all appropriate health and safety measures and being followed.</li> <li><input type="checkbox"/> Supervise caterers, cooks, and other <b>Food Unit</b> personnel as appropriate.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Order, receive, distribute and track all incident equipment and supplies.</li> <li><input type="checkbox"/> Ordered all off-incident resources including: tactical and support resources (including personnel), all expendable and non-expendable support supplies.</li> <li><input type="checkbox"/> Management of tool operations, including the storage, disbursement, and service of all tools and portable non-expendable equipment.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Set-up, maintain, and demobilize incident support facilities with the exception of staging areas.</li> <li><input type="checkbox"/> Facilities may include: Incident Command Post, Incident Base, Camps, and other facilities within the incident area to be used for feeding, sleeping and sanitation services.</li> <li><input type="checkbox"/> Prepare layout of facilities; inform appropriate unit leaders.</li> <li><input type="checkbox"/> Will provide security services to the incident as needed.</li> <li><input type="checkbox"/> Contact local law enforcement agencies as required.</li> <li><input type="checkbox"/> Investigate and document all complaints and suspicious occurrences.</li> <li><input type="checkbox"/> Ensure strict compliance with applicable safety regulations.</li> <li><input type="checkbox"/> Provide facility maintenance services, e.g., sanitation, lighting, etc.</li> <li><input type="checkbox"/> Demobilize base and camp facilities.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Responsible for the maintenance, service and fuelling of all mobile equipment and vehicles, with the exception of aviation resources.</li> <li><input type="checkbox"/> Coordinates the transportation of all personnel, supplies, and equipment.</li> <li><input type="checkbox"/> Update the <b>Resources Unit</b> with the status (location and capability) of transportation vehicles.</li> <li><input type="checkbox"/> Develop the Incident Traffic Plan as required.</li> </ul>
<p style="text-align: center;"><b>Important</b></p> <p><b>Prior</b> to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the <b>Incident Commander</b>.</li> </ul> <p><b>Throughout</b> the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in <b>Section 6: Forms</b>.</li> </ul> <p><b>After</b> the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assist with post-incident activities.</li> </ul> <p style="text-align: center; color: red;"><b>All forms referenced can be found in Section 6: Forms</b></p>						

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

Revised March 2019

**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, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor**.

# General Staff Roles – Finance / Admin Section

Finance / Admin Section Chief	Time Unit	Procurement Unit	Compensation & Claims Unit	Cost Unit
<p>The <b>Finance / Administration Section Chief</b> is responsible for managing all financial aspects of an incident. The <b>Finance / Administration Section Chief</b> will determine the need to activate or deactivate a unit.</p>	<p>The <b>Time Unit</b> is responsible for ensuring the accurate recording of daily personnel time, compliance with specific agency time recording policies and managing commissary operations if established at the incident.</p>	<p>All financial matters pertaining to vendor contracts, leases and fiscal agreements are managed by the <b>Procurement Unit</b>. The unit is also responsible for maintaining equipment time records. The <b>Procurement Unit</b> establishes local sources for equipment and supplies; manages all equipment rental agreements; and processes all rental and supply fiscal document billing invoices.</p>	<p>This unit oversees the completion of all forms required by workers' compensation and local agencies. A file of injuries and illnesses associated with the incident will also be maintained and all witness statement will be obtained in writing. Close coordination with the medical Unit is essential. The <b>Compensation &amp; Claims Unit</b> is also responsible for investigating all claims involving property associated with or involved in the incident.</p>	<p>The <b>Cost Unit</b> provides all incident cost analysis. It ensures the proper identification of all equipment and personnel requiring payment; records all cost data; analyzes and prepares estimates of incident costs; and maintains accurate records of incident costs.</p>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Identify and confirm communication links.</li> <li><input type="checkbox"/> Assign personnel to assume the following positions, as required: <b>Time Unit, Procurement Unit, Compensation &amp; Claims Unit,</b> and <b>Cost Unit.</b></li> <li><input type="checkbox"/> Review legal issues with the <b>Incident Commander.</b></li> <li><input type="checkbox"/> Maintain continuous communications with the <b>Incident Commander.</b></li> <li><input type="checkbox"/> Brief agency administrative personnel on all incident-related financial issues needing attention or follow-up.</li> <li><input type="checkbox"/> Manage all financial aspects of an incident.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Record daily personnel time, ensure compliance with specific agency time recording policies, and manage commissary operations if established at the incident.</li> <li><input type="checkbox"/> Submit cost estimate data forms to <b>Cost Unit</b> as required.</li> <li><input type="checkbox"/> Ensure that all records are current and complete prior to demobilization.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Manage finances relating to vendor contracts, leases and fiscal agreements.</li> <li><input type="checkbox"/> Maintain equipment time records.</li> <li><input type="checkbox"/> Establish local sources for equipment and supplies. Coordinate with local jurisdiction on plans and supply sources.</li> <li><input type="checkbox"/> Manage all equipment rental agreements. Establish contracts and agreement with supply vendors.</li> <li><input type="checkbox"/> Processes all rental and supply fiscal document billing invoices.</li> <li><input type="checkbox"/> Prepare and authorize contracts and land use agreements, as needed.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Handle all matters relating to compensation for injury or property damage due to the incident.</li> <li><input type="checkbox"/> Oversees the completion of all forms required by workers' compensation and local agencies.</li> <li><input type="checkbox"/> Maintain a file with all the injuries and illnesses associated with the incident.</li> <li><input type="checkbox"/> Obtain witness statements in writing.</li> <li><input type="checkbox"/> Investigate all claims involving property associated with or involved in the incident.</li> <li><input type="checkbox"/> Ensure the completion of a Resident Compensation Log for any out-of-pocket expenses incurred by evacuees. <span style="border: 1px solid black; padding: 2px; font-size: small;">Form B2</span></li> <li><input type="checkbox"/> All claims must be submitted to the Finance and Legal departments for processing and disbursement of funds.                             <ul style="list-style-type: none"> <li><input type="checkbox"/> If applicable, Finance and Legal will deal with insurers as well as any other extraneous circumstances (affected parties want more, etc.).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Collect and evaluate cost data to establish an accurate picture of the incident costs.</li> <li><input type="checkbox"/> Create cost summaries, cost estimates, and cost saving recommendations.</li> <li><input type="checkbox"/> Prepare resources-use cost estimates for the Planning Section.</li> <li><input type="checkbox"/> Identify all equipment and personnel requiring payment.</li> </ul>

**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 **Incident Commander.**

**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:

- Assist with post-incident activities.

**All forms referenced can be found in Section 6: Forms**

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

Revised March 2019

**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, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the **Information Officer** or **Public Safety Group Supervisor.**

# Operations Section - Public Safety Roles

Public Safety Group Supervisor	Air Monitors	Reception Centre Rep	Roadblocks	Rovers	Telephoners
<p><b>The Public Safety Group Supervisor is responsible for the management, planning, consideration and implementation of external public protection activities for the duration of the incident.</b></p>	<p><b>Air Monitoring</b> personnel are responsible for acquiring and providing air quality readings to the <b>Public Safety Group Supervisor</b>.</p>	<p><b>Reception Centre Reps</b> are responsible for establishing reception centres, managing evacuee accommodation, communication and documentation for compensation purposes.</p>	<p><b>Roadblock</b> personnel are responsible for maintaining assigned roadblock positions, air monitor readings and communication with transients.</p>	<p><b>Rovers</b> travel to assigned locations to locate the public and personally provide public safety instructions and assistance as required.</p>	<p><b>Telephoners</b> are responsible for the notification of impacted residences and businesses to provide public safety instructions.</p>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm communication links with the <b>Incident Commander</b> and <b>Operations Section Chief</b>.</li> <li><input type="checkbox"/></li> <li><input type="checkbox"/> In conjunction with the <b>Incident Commander</b>: determine the size of the EPZ; identify the residents, businesses, industrial operators, and / or transients in the area; and determine the initial public protection measures to be taken. Refer to <b>Section 4: Emergency Response Procedures</b> for guidelines on evacuation / shelter, ignition, roadblocks, rovers, public concerns, etc. Additional information for <b>Air Monitors, Reception Centre Representative, Roadblocks, Rovers, and Telephoners</b> can be found in <b>Section 2: Roles &amp; Responsibilities</b>.</li> <li><input type="checkbox"/> In conjunction with the <b>Incident Commander, Planning Section Chief, and Operations Section Chief</b>, develop and implement an Incident Action Plan (IAP).</li> <li><input type="checkbox"/> Review resident lists, area user lists, reception centres, and telephone numbers within the ERP.</li> <li><input type="checkbox"/> If required, establish a Regional Emergency Operations Centre (REOC).</li> <li><input type="checkbox"/> Assign personnel to assume the following positions as required: <b>Air Monitors, Reception Centre Representative, Roadblocks, Rovers, and Telephoners</b>.             <ul style="list-style-type: none"> <li><input type="checkbox"/> The <b>Telephoners</b> must have sufficient personnel to accommodate the following ratios when contacting residents: 1 Telephoner to every 7 residences; and 1 Supervisor for every 10 Telephoners.</li> </ul> </li> <li><input type="checkbox"/> Dispatch <b>Air Monitors</b> at a Level 1 emergency (hand-held and mobile).             <ul style="list-style-type: none"> <li><input type="checkbox"/> Dispatch trained personnel with the appropriate hand-held gas monitors to record concentrations at the nearest unevacuated residences downwind of the incident site.</li> <li><input type="checkbox"/> Mobilize third party mobile air monitoring units.</li> <li><input type="checkbox"/> Maintain communication with the applicable government regulator and environment agency regarding air monitoring needs and activities.</li> <li><input type="checkbox"/> Consult with the <b>Operations Section Chief</b> to determine the need for evacuation / sheltering. This is based on air monitoring readings at the nearest downwind residence.</li> </ul> </li> <li><input type="checkbox"/> Prioritize residents and area users in the EPZ to establish the order of evacuation. Coordinate evacuation or shelter of residents, area users, and transients (via <b>Telephoners</b> and <b>Rovers</b>).             <ul style="list-style-type: none"> <li><input type="checkbox"/> Determine who needs to be notified and what script will be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message. <span style="float: right;">Form B6 Form B7 Form B8</span></li> <li><input type="checkbox"/> At a Level 1 Emergency it is required to notify any special needs residents and give them the option to evacuate.</li> <li><input type="checkbox"/> If residences are evacuated, a reception centre must be established.</li> <li><input type="checkbox"/> Determine and notify landowner / occupant(s) as soon as possible.</li> <li><input type="checkbox"/> Ensure the schools / school buses are contacted to make arrangements for school age children (if applicable).</li> <li><input type="checkbox"/> If a large number of people need to be evacuated (large industrial operations and/or public facilities) refer to the <b>Area Specific Information</b> section (white tabs) for contacts to obtain charter buses or changes to the normal notification procedures.</li> </ul> </li> <li><input type="checkbox"/> Send <b>Rovers</b> (if required) to identify human activity in the area which is not already identified within the ERP (drilling, pipeline construction, logging, hunting, farming, camping, fishing, etc.).</li> <li><input type="checkbox"/> Prepare Evacuation Notices and provide copies to <b>Rovers</b>. <span style="float: right;">Form B5</span></li> <li><input type="checkbox"/> <b>Rovers</b> can be used to assist with notifications, assist with evacuating special needs residents, assist with air monitoring, etc.</li> <li><input type="checkbox"/> Determine the need for helicopters to identify human activity in the area.</li> <li><input type="checkbox"/> Determine the need for and location of <b>Roadblocks</b> to isolate and secure the area.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure all <b>Roadblock</b> personnel are properly trained and have appropriate roadblock kits.</li> <li><input type="checkbox"/> Ensure all <b>Roadblock</b> personnel have the legal authority to restrict access to the area.</li> </ul> </li> <li><input type="checkbox"/> Assess public impact outside of EPZ. See <b>Section 5: External Agencies</b> to determine what assistance local authorities can provide for public protection outside the EPZ.</li> <li><input type="checkbox"/> Regularly update the <b>Incident Commander</b>.</li> <li><input type="checkbox"/> Confirm communication links with: <b>Air Monitors, Reception Centre, Roadblocks, Rovers, and Telephoners</b>. Personnel should check in at scheduled intervals.</li> <li><input type="checkbox"/> Review and confirm evacuation of residents, area industrial users, transients, etc. from the area.</li> <li><input type="checkbox"/> Request that a Notice to Airmen (NOTAM) is issued to restrict the airspace above the EPZ.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide air monitoring readings to assist with decision making (evacuation / shelter / ignition).</li> <li><input type="checkbox"/> Obtain and check equipment and information (maps, forms, communications, reports, monitors, safety, and breathing equipment).</li> <li><input type="checkbox"/> Confirm communication links.</li> <li><input type="checkbox"/> Monitor closest downwind public location or residence.</li> <li><input type="checkbox"/> Monitor environment for adverse effects.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Record all readings on the Air Monitoring Log. <span style="float: right;">Form A5</span></li> </ul> </li> <li><input type="checkbox"/> Report all readings at established intervals to the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> For your own safety, ensure <b>Public Safety Group Supervisor</b> is notified immediately if readings are approaching 10% LEL and / or 10 ppm H<sub>2</sub>S.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Prepare Mobile Monitoring Plan. <span style="float: right;">Form B2</span></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm reception centre is available for use.</li> <li><input type="checkbox"/> Establish reception centre. Refer to <b>Section 2: Roles &amp; Responsibilities</b>.</li> <li><input type="checkbox"/> Confirm communication links.</li> <li><input type="checkbox"/> Receive evacuees and maintain a Reception Centre Registration Log. <span style="float: right;">Form B1</span></li> <li><input type="checkbox"/> Arrange for food and accommodations for the evacuees.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Provide evacuees with a place to request counselling services, if required.</li> </ul> </li> <li><input type="checkbox"/> Record and follow up on all evacuees who choose to make their own accommodation arrangements.</li> <li><input type="checkbox"/> Arrange for temporary care of livestock (if possible) and the security of evacuated property.</li> <li><input type="checkbox"/> Establish and oversee compensation administration activities at the reception centre.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Reimburse evacuees for their immediate out-of-pocket expenses and log details on a Resident Compensation Log. <span style="float: right;">Form B2</span></li> </ul> </li> <li><input type="checkbox"/> Where possible, provide evacuees with information regarding their property, livestock, and the incident.</li> <li><input type="checkbox"/> Forward all media and incident inquiries to the <b>Information Officer</b>.</li> <li><input type="checkbox"/> Report all names of evacuees who have registered at the reception centre to the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> Address resident concerns and forward them to the <b>Public Safety Group Supervisor</b>.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> In conjunction with the <b>Public Safety Group Supervisor</b> determine the need for and location of roadblocks.</li> <li><input type="checkbox"/> Pickup and check roadblock kits.</li> <li><input type="checkbox"/> Proceed to roadblock locations.</li> <li><input type="checkbox"/> Confirm communication links.</li> <li><input type="checkbox"/> Establish roadblocks to secure the EPZ.</li> <li><input type="checkbox"/> Follow the scripts and procedures in the ERP. Refer to either <b>Section 2: Roles &amp; Responsibilities</b> or <b>Section 6: Forms</b>.</li> <li><input type="checkbox"/> Monitor area for H<sub>2</sub>S and / or LEL with personal monitors and document readings on the Air Monitoring Log. <span style="float: right;">Form A5</span></li> <li><input type="checkbox"/> Report all H<sub>2</sub>S and / or LEL reading changes / increases to the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> For your own safety, ensure the <b>Public Safety Group Supervisor</b> is notified immediately if readings are approaching 10% LEL and / or 10 ppm H<sub>2</sub>S.             <ul style="list-style-type: none"> <li><input type="checkbox"/> Record all incoming and outgoing traffic, personnel, and equipment on the Roadblock Log. <span style="float: right;">Form B4</span></li> </ul> </li> <li><input type="checkbox"/> Forward information given to you by people passing through your location to the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> Maintain communication with the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> Maintain roadblock locations. Do not leave until requested to do so by the <b>Public Safety Group Supervisor</b> or until relieved by other <b>Roadblock</b> personnel.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm resident contact lists are available.</li> <li><input type="checkbox"/> Confirm communication links.</li> <li><input type="checkbox"/> Know safe routes in and out of the EPZ.</li> <li><input type="checkbox"/> Search for residents and transients in the Emergency Response and Planning Zones.</li> <li><input type="checkbox"/> Check all buildings including barns, shops, sheds, etc. <span style="float: right;">Form B3</span></li> <li><input type="checkbox"/> Assist, as required, with the notification, evacuation or sheltering of persons within the EPZ. Record all contact with residents using the Resident Contact Log. <span style="float: right;">Form B5</span></li> <li><input type="checkbox"/> Post Evacuation Notices for residents that are not at their residence. <span style="float: right;">Form A5</span></li> <li><input type="checkbox"/> Follow the scripts and procedures in the ERP. Refer to <b>Section 2: Roles &amp; Responsibilities</b> or <b>Section 6: Forms</b>.</li> <li><input type="checkbox"/> Monitor area for H<sub>2</sub>S and / or LEL with personal monitors and document readings on the Air Monitoring Log.</li> <li><input type="checkbox"/> Report all H<sub>2</sub>S and / or LEL reading changes / increases to the <b>Public Safety Group Supervisor</b>.</li> <li><input type="checkbox"/> For your own safety, ensure the <b>Public Safety Group Supervisor</b> is notified immediately if readings are approaching 10% LEL or 10 ppm H<sub>2</sub>S.</li> <li><input type="checkbox"/> Report any suspicious behaviour to the <b>Public Safety Group Supervisor</b> who will notify the police as required.</li> <li><input type="checkbox"/> Maintain communication with the <b>Public Safety Group Supervisor</b>.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm resident contact lists are available.</li> <li><input type="checkbox"/> Confirm communication links.</li> <li><input type="checkbox"/> In conjunction with the <b>Public Safety Group Supervisor</b>, determine who needs to be notified (residents, businesses, area users, etc.). <span style="float: right;">Form B6</span></li> <li><input type="checkbox"/> Review with the <b>Public Safety Group Supervisor</b> which telephoner scripts to use: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message. <span style="float: right;">Form B7</span></li> <li><input type="checkbox"/> Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate. <span style="float: right;">Form B8</span></li> <li><input type="checkbox"/> Contact the other residents and area users in the EPZ and advise them to evacuate or shelter.</li> <li><input type="checkbox"/> Contact the schools / school buses to make arrangements for school age children (if applicable).             <ul style="list-style-type: none"> <li><input type="checkbox"/> Advise that buses in the affected area leave immediately and that buses should not enter the area.</li> <li><input type="checkbox"/> Request a school administrator for the reception centre to assist in managing the children and releasing them to their guardians. <span style="float: right;">Form B3</span></li> </ul> </li> <li><input type="checkbox"/> Document all resident interactions using the Resident Contact Log and report this information to the <b>Public Safety Group Supervisor</b>. Immediately advise the <b>Public Safety Group Supervisor</b> about unsuccessful contacts and any residents requiring assistance.</li> </ul>
<p><b>Important</b></p> <p><b>Prior</b> to beginning any activities, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the <b>Incident Commander</b>.</li> </ul> <p><b>Throughout</b> the duration of the incident, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in <b>Section 6: Forms</b>.</li> </ul> <p><b>After</b> the incident is over, each person in a role must:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Assist with post-incident activities.</li> </ul> <p style="color: red; font-weight: bold;">All forms referenced can be found in Section 6: Forms</p>					
<p>Located at the Incident Command Post (ICP) or the Regional Emergency Operations Centre (REOC).</p>	<p>Location will be assigned.</p>	<p>Location will be the reception centre.</p>	<p>Location will be assigned.</p>	<p>Location will be assigned.</p>	<p>Location will be Incident Command Post (ICP) or Regional Emergency Operations Centre (REOC).</p>
<p><b>Escalate, Downgrade or Stand-Down Levels of Emergency:</b> 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 <b>Incident Commander</b> and the applicable government regulator. All affected persons and the media must be kept informed of the status of an emergency. <b>Emergency Follow-up:</b> Once the emergency is over, the area residents, transients, industrial users, involved government agencies, and any individual notified will be informed of the stand-down by the <b>Information Officer</b> or <b>Public Safety Group Supervisor</b>.</p>					

Revised January 2019

## OVERVIEW

H<sub>2</sub>S, SO<sub>2</sub>, 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 H<sub>2</sub>S, SO<sub>2</sub>, 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 MONITORS 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.
- 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.

FORM A5

FORM ICS 214

## 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.

### SOUR GAS RELEASE – UNMANNED OPERATIONS

- If notified of a release by an alarm or by a reported odour, the licensee must investigate the source of the release and send out Air Monitors upon confirmation of the release location.

Air quality monitoring occurs downwind, with priority being directed to the nearest unevacuated residence or area where people may be present.

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 public.

### HVP PRODUCT RELEASE

- 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.

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.

## AIR MONITORING LOG ~ EXAMPLE

FORM A5

TIME	LOCATION OF SAMPLES	H <sub>2</sub> S (ppm)	LEL (%)	O <sub>2</sub> (%)	SO <sub>2</sub> (ppm)	OTHER	TEMP(°C)	WIND CONDITIONS *		COMMENTS
								FROM	SPEED (km/hr)	
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	H <sub>2</sub> S 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.

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

## CHOOSING A POSITION

1.

1. 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.
2. 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.

## RECORD INFORMATION

2.

Record information on the following forms located within this section:

- Air Monitoring Log
- ICS 214 Activity Log

FORM A5 FORM ICS 214

## REPORTING AND CONTACTS

Air Monitors report to the Public Safety Group Supervisor.

Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Reception Centre

Location: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Wind Direction: \_\_\_\_\_



## 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 Registration Log.
- Arrange for food and accommodations for the evacuees.
- 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 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.

## 1. 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.

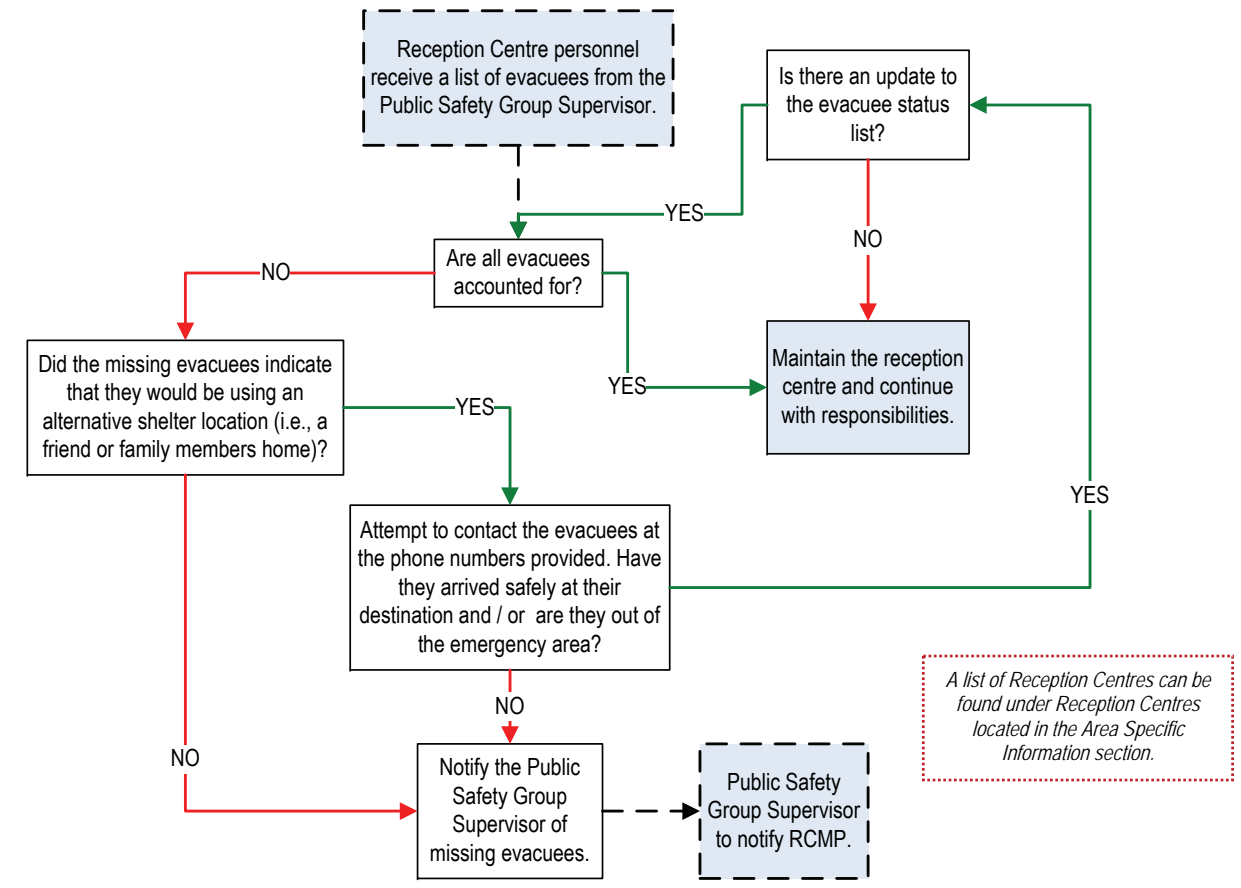
A Reception Centre should:

- 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.

## 2. RECEPTION CENTRE FEEDBACK LOOP



A list of Reception Centres can be found under Reception Centres located in the Area Specific Information section.

## RECEPTION CENTRE REGISTRATION LOG ~ EXAMPLE

RESIDENT ID	NAME (LIST ALL NAMES IN PARTY)		# OF OCCUPANTS	NUMBER ARRIVED	ARRIVAL TIME	DEPART TIME	DESTINATION PHONE # (Where they can be reached)	COMMENTS
	FIRST	LAST						
G124-A	John	Doe	2	2	19:06	19:21	555-555-5555	John and his wife arrived safely and then left to stay at a friend's house in Red Deer.
H131-B	Jane	Doe	3	3	19:12	19:28	555-555-5555	Jane and her 2 children arrived safely then left to stay at her mother's house in Bently.
F122-A	James	Doe	5	3	19:20		555-555-5555	James, his wife and 1 child arrived safely. The other 2 children are away on a school trip. They will stay at the reception centre for the night.

## MEDIA STATEMENT

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

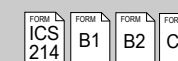
"We are currently dealing with the situation at hand to ensure the safety of the public, our personnel, and the environment. A statement will be released by the company once the facts have been determined. If you would like to leave your business card or phone number, a company representative will provide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

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

## 3. RECORD INFORMATION

Record information on the following forms located within this section:

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



## REPORTING AND CONTACTS

The Reception Centre Representative reports to the Public Safety Group Supervisor.

Name: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

Reception Centre:

Location: \_\_\_\_\_  
Phone Number: \_\_\_\_\_

Wind Direction: \_\_\_\_\_



## OVERVIEW

In the event of an emergency, roadblock locations and road detours will be established. Whitecap will initially establish and maintain roadblocks until relieved by highway maintenance contractors. 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 times.
- Establish roadblocks to secure the EPZ.
- Follow the scripts and procedures in the ERP.
- Knowledge and ability to communicate safest route away from hazard.
- Monitor area for H<sub>2</sub>S and / or LEL with personal monitors and document readings on the Air Monitoring Log. FORM A5
- 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 ppm H<sub>2</sub>S.
- Move location of Roadblock immediately if readings are approaching 10% LEL and / or 10 ppm H<sub>2</sub>S. FORM B4
- 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. FORM ICS 214
- 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 Contact Log. Report any resident that is left behind in the EPZ. FORM B3
- 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.

## REPORTING AND CONTACTS

Roadblock personnel report to the Public Safety Group Supervisor.

Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Reception Centre

Location: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Wind Direction: \_\_\_\_\_

## CHOOSING A ROADBLOCK

1.

Roadblocks should be established:

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

2.

- 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 left).
- 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

3.

- Park vehicle as illustrated, activating four way flashers and roof mounted rotating beacon.

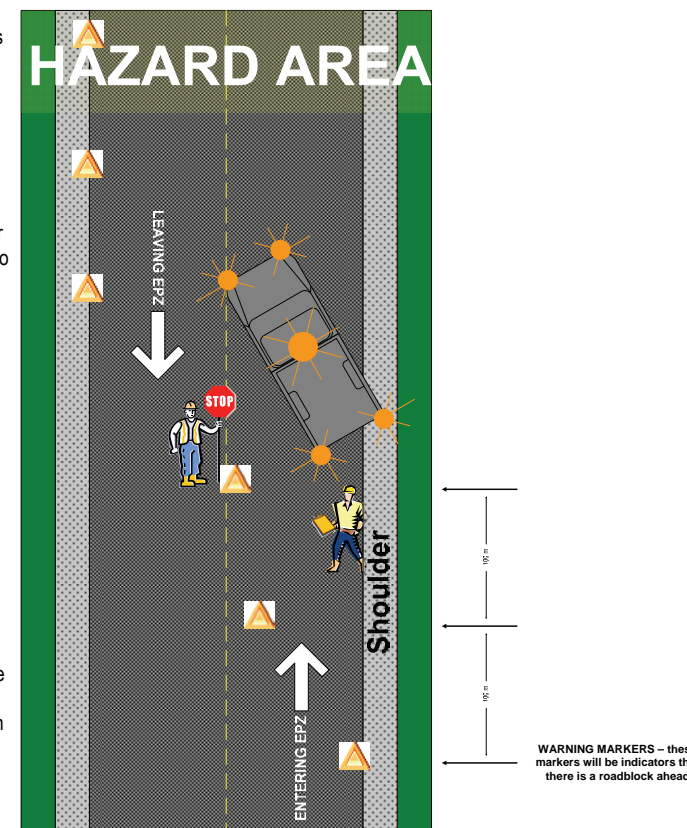
- Put on reflective vests.

- Take a reading with your handheld monitor for H<sub>2</sub>S and / or LEL; ensuring your roadblock is not too close to the edge of the EPZ. Record readings on the Air Monitoring Log. FORM A5

- 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.



## HOW TO STOP TRAFFIC

4.

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

5a.

**"I am representing Whitecap Resources 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."**

*Note:*

- ◆ 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

5b.

If the media arrives at your roadblock location, Whitecap 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

6.

Record information on the following forms located within this section:

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



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 disobeys request to leave the area and enters the EPZ.

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





## OVERVIEW

Rovers are responsible for patrolling the Emergency Planning Zone to locate and notify residents, businesses, industrial operators, transients (i.e. hunters, trappers, recreational users, non-resident landowners), and the general public. The Public Safety Group Supervisor must be continuously updated by the Rovers so that unsuccessful attempts to evacuate residents, transients, etc. can be followed up on immediately.

## 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 Zone. Record all contact with residents using the Resident Contact Log. FORM B3
- Post Evacuation Notices for residents that are not at their residence. FORM B5
- 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. FORM A5
- 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. FORM ICS 214
- Maintain communication with the Public Safety Group Supervisor.
- Assist with post-incident activities.

## MEDIA STATEMENT

If a media representative approaches you, Whitecap 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.**

## 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.

## REPORTING AND CONTACTS

Rovers report to the Public Safety Group Supervisor.

Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Reception Centre:

Location: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Wind Direction: \_\_\_\_\_

## EVACUATION NOTICE ~ EXAMPLE

DATE: \_\_\_\_\_  
TIME: \_\_\_\_\_

# EVACUATION NOTICE

**Whitecap Resources Inc. 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**

Whitecap Resources Inc. representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call Whitecap Resources Inc. at \_\_\_\_\_.

**Thank you**

## BEFORE DEPARTURE

1.

- Protect yourself
- Ensure you are equipped with all necessary equipment:
  - SCBA
  - Gas monitors
  - Mobile communications or other form of communication
  - Forms
  - 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

2a.

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 \_\_\_\_\_ (your name) representing Whitecap Resources. 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 necessary.
- Make sure they are all accounted for.
- Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers, etc.).
- 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

2b.

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 \_\_\_\_\_ (your name) representing Whitecap Resources. 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."**

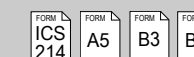
- Try not to scare them. They are aware you might be coming but don't know what to expect.
- Make sure they are all accounted for.
- Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers, etc.)
- Ask them if they have any questions.
- Once you are satisfied that all personnel from the residence are accounted for, deliver them to the Reception Centre.
- 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

3.

Record information on the following forms located within this section:

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





## 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.

## TELEPHONER PERSONNEL ROLES

- Confirm resident contact lists are available.
- Confirm communication links.
- In conjunction with the Public Safety Group Supervisor, determine who needs to be notified (residents, businesses, area users, etc.). FORM B6
- 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. FORM B7
- Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate. FORM B8
- 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. Immediately advise the Public Safety Group Supervisor about unsuccessful contacts and any residents requiring assistance. FORM B3
- Document all activities using the ICS 214 Activity Log. FORM ICS 214
- Assist with post-incident activities.

## SHELTER-IN-PLACE INSTRUCTIONS

- 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.
- Turn off appliances or equipment that blows out indoor air or sucks in outside air.
- 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 your vehicle).
- Stay off of the phone so that you can be contacted by emergency personnel.
- 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. FORM B7

## 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 evacuation 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.

2a.

## SHELTER-IN-PLACE PHONE MESSAGE

Hello, this is \_\_\_\_\_ (your name) of \_\_\_\_\_ (company name) .  
Is 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 those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

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

How many people are at your location now?

Adults \_\_\_\_\_

Children \_\_\_\_\_

Is there anyone 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

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 \_\_\_\_\_ (company name) ?

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 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.

2b.

## EVACUATION PHONE MESSAGE

Hello, this is \_\_\_\_\_ (your name) of \_\_\_\_\_ (company name) .  
Is 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?

Adults \_\_\_\_\_

Children \_\_\_\_\_

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? \_\_\_\_\_

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 require evacuation / transportation assistance?

Yes  No

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.

IF NO Provide the resident with:

- Directions to safely travel to the reception centre
- A list of items to bring with them to the reception centre (medications, cell phone, etc.)
- 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

Please contact \_\_\_\_\_ (company name) 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?

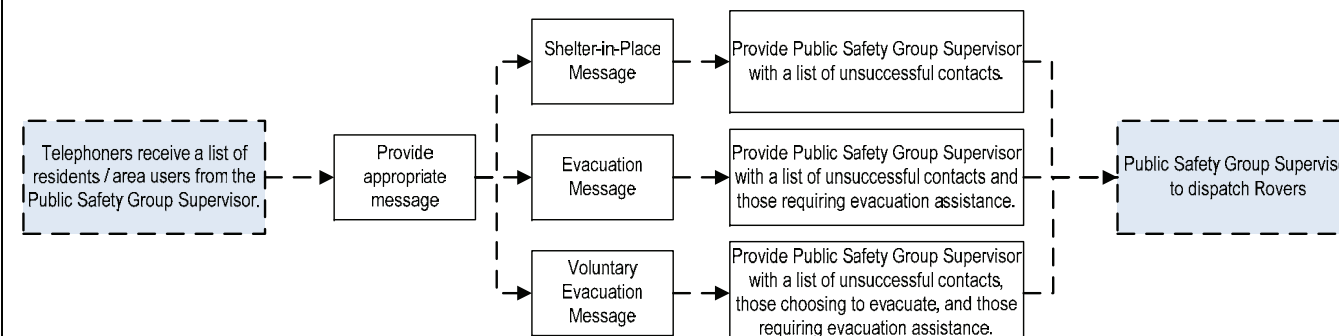
If you have any urgent questions, please contact \_\_\_\_\_ (company name) at \_\_\_\_\_ (telephone number) .

Thank you for your cooperation.

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

1.

## TELEPHONER COMMUNICATION FLOW



3.

## RECORD INFORMATION

Record information on the following forms located within this section:

- Resident Contact Log FORM B3
- ICS 214 Activity Log FORM ICS 214
- Voluntary Evac Message FORM B6
- Shelter-in-Place Message FORM B7
- Evacuation Message FORM B8

## REPORTING AND CONTACTS

Telephoners report to the Public Safety Group Supervisor.

Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Reception Centre

Location: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Wind Direction: \_\_\_\_\_



# SECTION 3: COMMUNICATION AND MEDIA

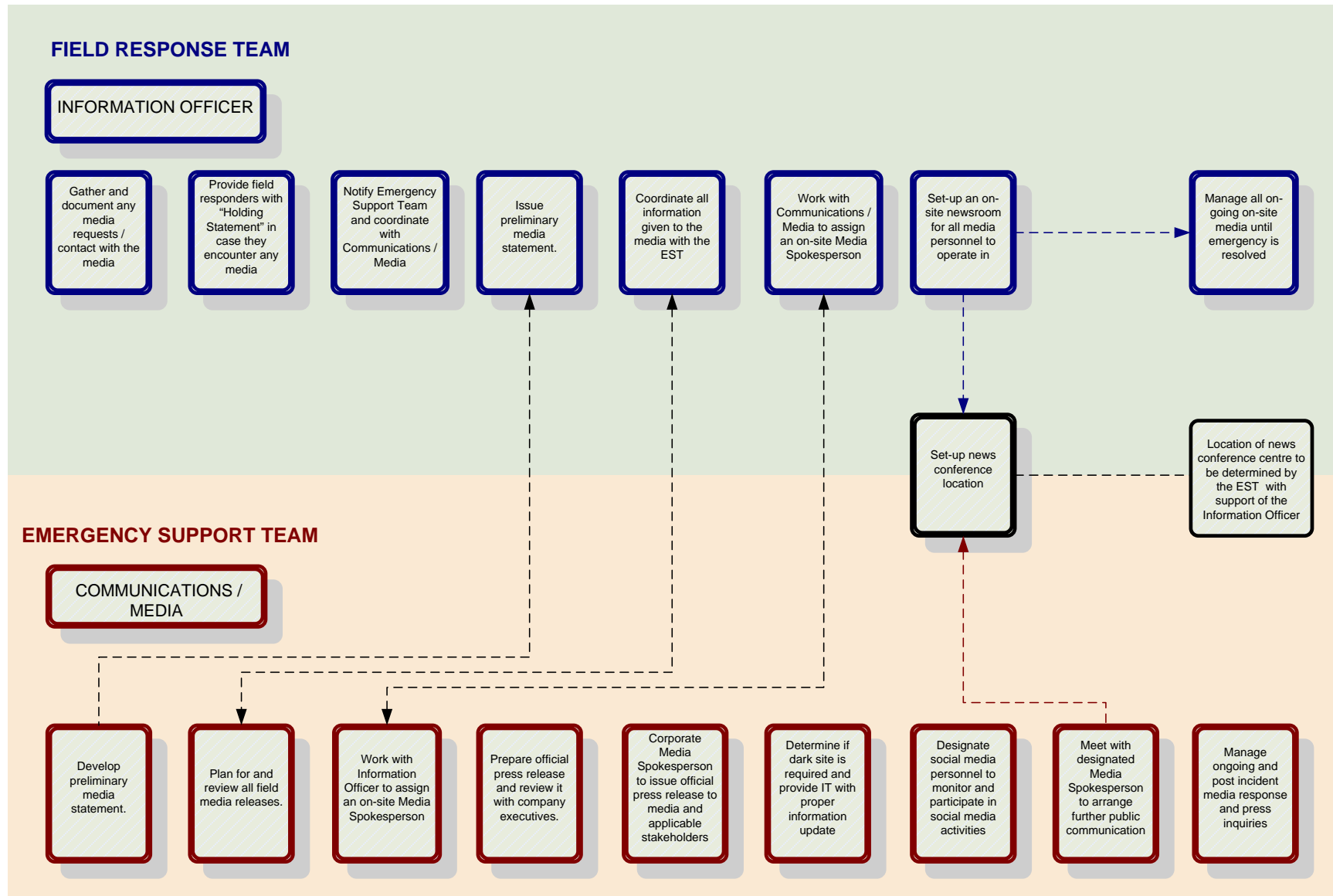
MEDIA RESPONSE OVERVIEW PROCESS FLOWCHART .....	1
MEDIA RELATIONS & GENERIC MEDIA STATEMENT .....	3
MEDIA MANAGEMENT .....	5
ON-SITE MEDIA SPOKESPERSON .....	5
MANAGING THE MEDIA ON-SITE .....	5
INTERNAL COMMUNICATION .....	6
COMMUNICATING WITH THE PUBLIC .....	6
INFORMATION DISSEMINATED TO THE PUBLIC .....	7
PREPARING A PRELIMINARY MEDIA STATEMENT .....	8
C1 PRELIMINARY MEDIA STATEMENT .....	9
C2 MEDIA CONTACT LOG .....	11

---

THIS PAGE INTENTIONALLY LEFT BLANK

---

# MEDIA RESPONSE OVERVIEW PROCESS FLOWCHART





THIS PAGE INTENTIONALLY LEFT BLANK

## MEDIA RELATIONS & 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 Emergency Support Team in conjunction with the applicable regulatory agency. The Emergency Support Team will assign a Corporate Media Spokesperson to deliver the approved messages.

Media at the field level will be coordinated by the Information Officer with the Support of Communications / Media from the Emergency Support Team. 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 Emergency Support Team and should be issued only by the designated Corporate 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 the end of this section or 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."

THIS PAGE INTENTIONALLY LEFT BLANK

## 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 Emergency Support Team will identify any and all media spokespersons. The Information Officer or Incident Commander may serve as the on-site Media Spokesperson or the Emergency Support Team may send the Corporate Media Spokesperson to the site. This representative will endeavour 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 Commander if advised by the Communication & Media position. The Information Officer will, if required by the Emergency Support Team and 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 Emergency Support Team. 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).

## MANAGING THE MEDIA ON-SITE, continued

- Ensure that if any media personnel are granted access on-site all potential hazards are identified and handled appropriately prior 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 in 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
  - Proper management of sensitive information
  - Camera and cellphone photo restrictions
  - Social media protocol

*\*Note: These procedures are developed by the Information Officer during the incident.*

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

## 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 Corporate Media Spokesperson is unavailable, or authorizes a press release at the local level.

### 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:
  - 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.

### 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.

# C1 PRELIMINARY MEDIA STATEMENT



## EMERGENCY RESPONSE PLAN

Date:(YY/MM/DD)	Responder Name:
Responder Position:	Responder Phone No.:

**This is the information I can give you so far:**

At (time – 24hr local clock) on (date), a(n) (fire, explosion, gas release, spill) occurred at the Company's (location name) site, located (distance) kilometres (east / west / north / south) of (nearest town or city).

Presently, (number of personnel) workers are being treated for injuries. The names and condition of the injured cannot be released until their families have been contacted.

The (well site, plant, pipeline, office, drilling location) has been (shut down, isolated, or is still flowing).

Company staff have been activated and are directing emergency response procedures to protect the public, our workers and the environment.

The cause of the (fire, explosion, gas release, spill) is not yet known and no estimate of damage is available. As information becomes available, news releases will be issued from the Information Office.

Any further inquiries should be directed to the Emergency Support Team, who will issue a press release at a later time.

**Contact:**

\_\_\_\_\_ Office: \_\_\_\_\_

\_\_\_\_\_ Fax: \_\_\_\_\_

*Note: Only the **Media Spokesperson** designated by the Emergency Support Team is to provide any specific information to the public or the media. Refer to page 3 of SECTION 3: COMMUNICATION & MEDIA for the generic media statement to be used by all other response personnel.*



THIS PAGE INTENTIONALLY LEFT BLANK

---

# C2 MEDIA CONTACT LOG



## EMERGENCY RESPONSE PLAN

Date: \_\_\_\_\_ Responder Name: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ Responder Position: \_\_\_\_\_ Responders Phone No.: \_\_\_\_\_

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.

*Note:*

**"Whitecap Resources Inc. 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. Whitecap Resources Inc. appreciates your cooperation and I will pass on this information to the appropriate person."**

Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	Fax	

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 4: EMERGENCY RESPONSE PROCEDURES

<b>INVESTIGATION OF COMPLAINTS</b> .....	<b>1</b>
A2 ODOUR COMPLAINT SCRIPT .....	3
<b>PUBLIC SAFETY</b> .....	<b>5</b>
BRITISH COLUMBIA PUBLIC SAFETY .....	5
ALBERTA PUBLIC SAFETY .....	13
<b>PUBLIC PROTECTION MEASURES</b> .....	<b>25</b>
SHELTER-IN-PLACE .....	25
EVACUATION .....	25
IGNITION .....	26
ROAD AND AIRSPACE CLOSURES.....	26
BRITISH COLUMBIA PUBLIC PROTECTION MEASURES FLOWCHART .....	27
ALBERTA PUBLIC PROTECTION MEASURES FLOWCHART .....	28
BRITISH COLUMBIA H <sub>2</sub> S / HVP IGNITION PROCEDURE .....	29
ALBERTA H <sub>2</sub> S / HVP IGNITION PROCEDURE .....	31
<b>MEDICAL EMERGENCIES</b> .....	<b>33</b>
FIRST AID INFORMATION .....	35
NEXT-OF-KIN NOTIFICATION.....	39
MEDICAL EVACUATION (MEDEVAC) PROCEDURE .....	41
HELICOPTER (STARS) REMOTE LANDING ZONE REFERENCE CARD .....	42
HELICOPTER (STARS) LANDING ZONE INFORMATION CARD.....	44
HELICOPTER (STARS) LANDING ZONE BRIEFING FOR CREW .....	45
BRITISH COLUMBIA AIR AMBULANCE (BCAS) .....	47
<b>RESPONDER SAFETY</b> .....	<b>49</b>
SITE SAFETY.....	49
ON-SITE WORK AREAS.....	50
WORKING ALONE.....	52
MISSING PERSONS.....	54
REST PERIODS.....	54
DECONTAMINATION AREA .....	55
PSYCHOLOGICAL SUPPORT.....	55
CRITICAL INCIDENT STRESS DEBRIEFING (CISD) .....	55
<b>FIRE / EXPLOSION</b> .....	<b>57</b>
CLASSIFICATION OF FIRES .....	59
RESPONSE ACTIONS BASED ON TYPE OF FIRE .....	60

---

---

<b>SPILL RESPONSE.....</b>	<b>65</b>
BRITISH COLUMBIA PETROLEUM RELEASE REPORTING REQUIREMENTS CHART .....	65
ALBERTA PETROLEUM RELEASE REPORTING REQUIREMENTS CHART .....	67
SPILL RESPONSE GUIDELINES .....	69
SPILL CONTROL POINTS.....	71
ACTION .....	71
RECOVERY TECHNIQUES.....	71
CONTAINMENT AND STORAGE OF PRODUCT .....	72
DISPOSAL AND REMEDIAL OPERATIONS .....	72
<b>TRANSPORTATION INCIDENTS.....</b>	<b>73</b>
FIRST ON-SCENE TRANSPORTATION (ROAD, RAIL, MARINE) INCIDENT FLOWCHART .....	73
LOSS, THEFT OR UNLAWFUL INTERFERENCE REPORTING FLOWCHART .....	74
MOTOR VEHICLE ACCIDENTS .....	75
EMERGENCY RESPONSE ASSISTANCE CANADA (ERAC) PLAN .....	76
CANUTEC – CANADIAN TRANSPORT EMERGENCY CENTRE.....	76
DANGEROUS GOODS REFERENCES.....	77
TDG REPORTABLE QUANTITIES.....	77
RAIL CAR IDENTIFICATION CHART .....	79
ROAD TRAILER IDENTIFICATION CHART .....	81
TABLE OF MARKINGS, LABELS AND PLACARDS .....	83
TDG 30 DAY FOLLOW-UP REPORT FORM .....	85
<b>WEATHER AND NATURAL DISASTERS.....</b>	<b>91</b>
EARTHQUAKE .....	92
FLOODS.....	94
THUNDERSTORM AND LIGHTNING SAFETY .....	96
TORNADOS.....	97
WINTER STORMS: BLIZZARDS, FREEZING RAIN, HEAVY SNOW, BLOWING SNOW .....	97
AFTER A DISASTER.....	99
<b>ANIMAL ENCOUNTERS.....</b>	<b>101</b>
FIRST RESPONDERS TO ANIMAL ATTACKS .....	101
BEARS.....	101
BEEES AND WASPS .....	104
COUGARS .....	105
LARGE HOOVED ANIMALS .....	106
RATTLE SNAKES .....	107
WOLVES .....	109
EPIPENS .....	110

---

**SECURITY INCIDENTS..... 113**

    RESPONDING TO THREATS ..... 113

    BOMB THREATS..... 114

    SUSPICIOUS PACKAGES..... 117

    TRESPASSING..... 119

    VANDALISM..... 120

    TERRORISM..... 120

    CYBER ATTACKS ..... 121

**POST-INCIDENT ..... 123**

    CALL DOWN NOTIFICATION..... 123

    PUBLIC CARE AND ASSISTANCE ..... 123

    CLEAN UP AND REPAIR..... 124

    THIRD PARTY INVESTIGATIONS..... 124

    REVIEW AND DEBRIEFING ..... 125

    CRITICAL INCIDENT STRESS DEBRIEFING (CISD) ..... 125

    POST-INCIDENT / ACCIDENT INVESTIGATION..... 126

THIS PAGE INTENTIONALLY LEFT BLANK

---

## **INVESTIGATION OF COMPLAINTS**

Personnel may initially become aware of an emergency / incident from an outside source such as a member of the public, the media, a third party company or government agency. All incoming information relating to a complaint should be recorded and internal notification procedures should be initiated. Form A2 Odour Complaint Script on the next page can be used to deal with an odour complaint from a member of the public. The Incident Commander can use all incoming information to complete the A3 Regulatory First Call Communications Form found in SECTION 6: FORMS.

An Emergency is not automatically declared when a complaint is received. However, an Emergency is declared if any of the following conditions are met:

- Complaints are received from several different sources about the same incident
- The complaint is substantiated to be a threat to the public or the environment
- The Company is made aware of the incident from a reputable source, such as police or fire departments

Company representatives will be dispatched to investigate the complaint. If H<sub>2</sub>S is suspected, personnel should be dispatched in teams of two. If any Emergency conditions are met, the Incident Commander is advised. Any company representative who is likely 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.



THIS PAGE INTENTIONALLY LEFT BLANK

## A2 ODOUR COMPLAINT SCRIPT

Date:	Prepared by:
Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Duration of call:

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

*Name:* \_\_\_\_\_

*Contact number:* \_\_\_\_\_

*Description of the concern:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**How many people are you with right now?**

*Adults* \_\_\_\_\_ *Children* \_\_\_\_\_

**Can you provide the location of the incident?**

*Location of the incident (address, legal, landmark, etc.):* \_\_\_\_\_

\_\_\_\_\_

**Where are you right now?**

Home / Work     In a Vehicle     Outside     Other \_\_\_\_\_

*If the resident is at home / work / outside tell them:*

The company will send someone to investigate. To be safe, you and anyone that you may be with need to go inside and stay inside. Close all doors and windows and turn off any appliances that blow out indoor air (i.e. clothes dryer) or suck in outside air (i.e. heating / air conditioning). Do not go outside or attempt to start any vehicles until you are told it is safe to do so.

*If the resident is in a vehicle and cannot shelter-in-place tell them:*

The company will send someone to investigate. To be safe, you and anyone that may be with you need to get inside the vehicle and stay inside. Keep all doors and windows closed and shut off the air conditioning / heat. If you see or hear anything that might indicate where the incident is occurring, travel in the opposite direction of the hazard; otherwise, continue travelling on your current course which will likely take you out of the hazard area.

**Someone will call you back with further instruction so please stay off of the phone so that we can contact you. If you have any urgent questions please call the company at \_\_\_\_\_.**

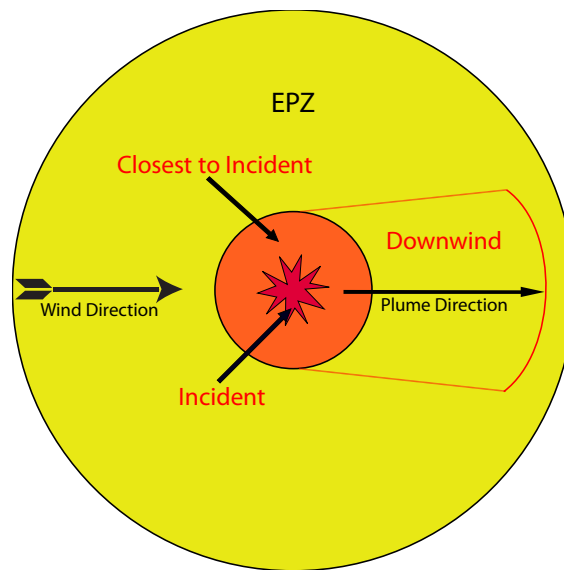
THIS PAGE INTENTIONALLY LEFT BLANK

## PUBLIC SAFETY

### BRITISH COLUMBIA PUBLIC SAFETY

When a hazardous substance is released into the atmosphere, evacuation and shelter-in-place are two strategies for protecting the public in the affected or threatened areas.

- Closest to Incident, evacuation is initiated immediately (if it is safe to do so).
- Downwind, a critical choice – evacuation or shelter-in-place – must be made.
- Where it is difficult to gather sufficient data to decide between evacuation and shelter-in-place, evacuation is initiated unless the area to be evacuated has already been contaminated to a degree that presents an immediate danger to life or health.



**Closest to Incident:**

Closest to Incident defines a geographical area in close proximity to a continuous hazardous release where indoor sheltering may provide temporary protection due to proximity of release.

**Downwind:**

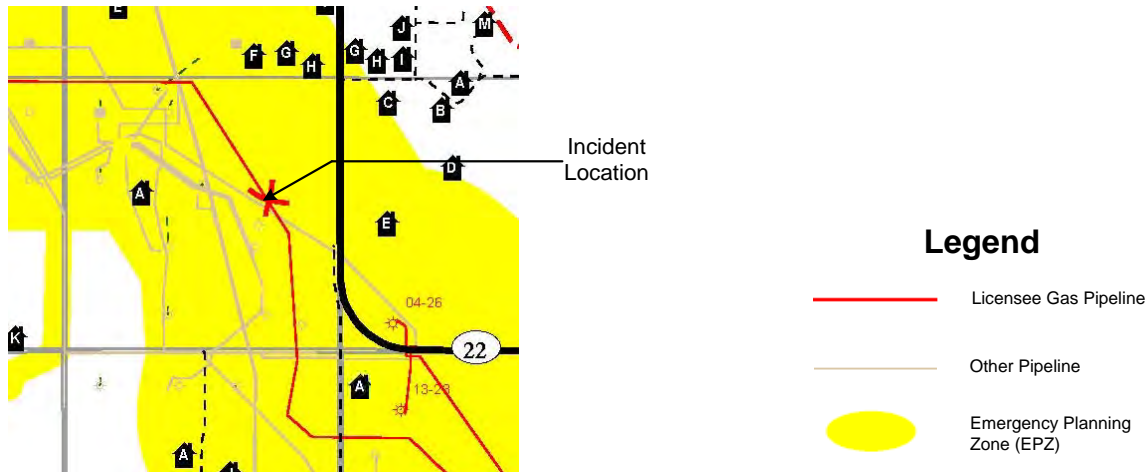
Downwind is a geographical area downwind of an incident. Immediately following a release of H<sub>2</sub>S or HVP product, the approximate size and location of this area can be determined using actual conditions at the time.

**Emergency Planning Zone (EPZ):**

An EPZ is a geographical area surrounding a well, pipeline, or facility containing hazardous product that requires incident response by the licensee following a release of sour gas or HVP Product.

## BRITISH COLUMBIA PUBLIC SAFETY, continued

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



### 2. Determine the hazard area:

- a) Locate the Emergency Planning Zone (EPZ) calculation tables for the field in the ERP. EPZ calculation tables are located in the Area Specific Information section of the ERP.
- b) Use the EPZ calculation tables to identify the Emergency Planning Zone (EPZ) for the well or pipeline involved in the incident.

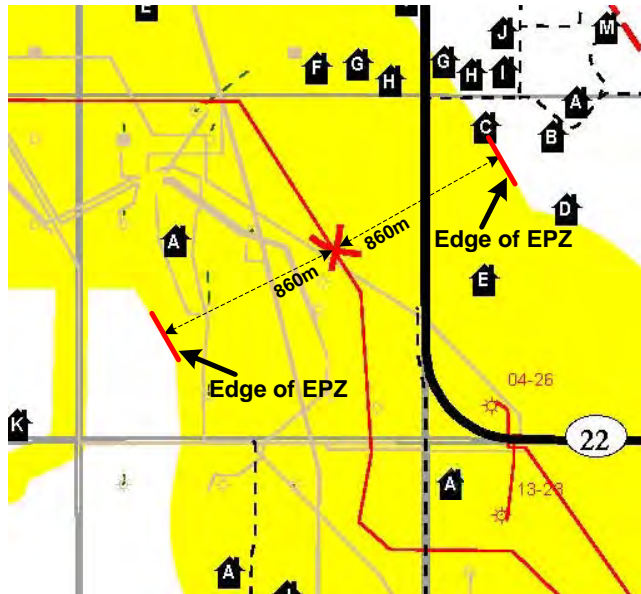
From	To	License Number	Line	EPZ (m)	Status
14-06-020-02VV5	CS 09-14-020-03VV5	PL 12640	223	860	○
09-14-020-03VV5	CS 10-27-020-03VV5	PL 12640	223	860	○
10-27-020-03VV5	CS 16-32-020-03VV5	PL 12640	223	860	○
16-32-020-03VV5	CS 09-01-021-04VV5	PL 12640	223	860	○
09-01-021-04VV5	CS 16-34-020-04VV5	PL 12640	223	860	○
16-34-020-04VV5	PL 15-34-020-04VV5	PL 12640	254	860	○
15-34-020-04VV5	PL 02-04-021-04VV5	GP 12640	255	860	○

**NOTE:** There are many instances when the EPZ for the incident may not be the full size of the yellow EPZ on the map such as when two pipelines are running parallel to each other or when a well EPZ is contained within a larger pipeline EPZ.

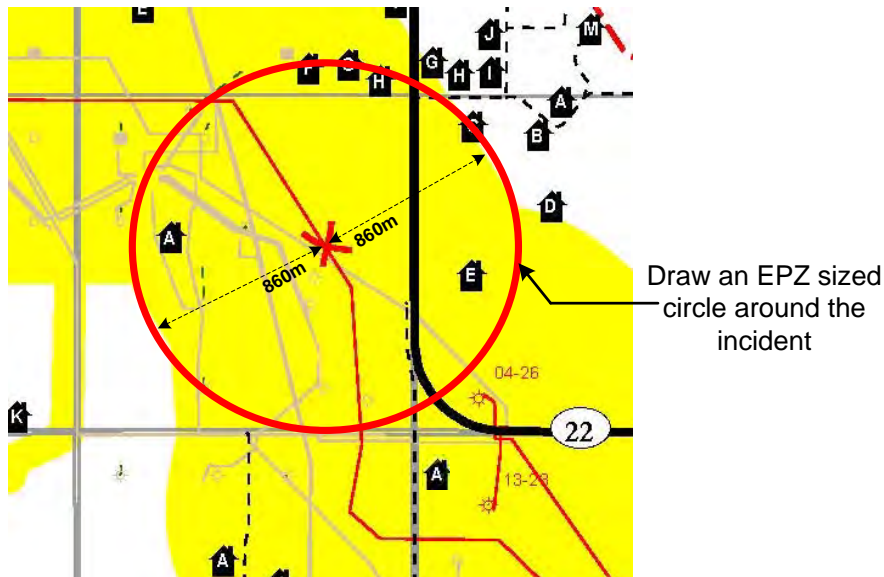
## BRITISH COLUMBIA PUBLIC SAFETY, continued

### 3. Draw the Emergency Planning Zone:

- a) Once you have determined your EPZ, use the map to mark the edges of the EPZ on either side of the incident location.



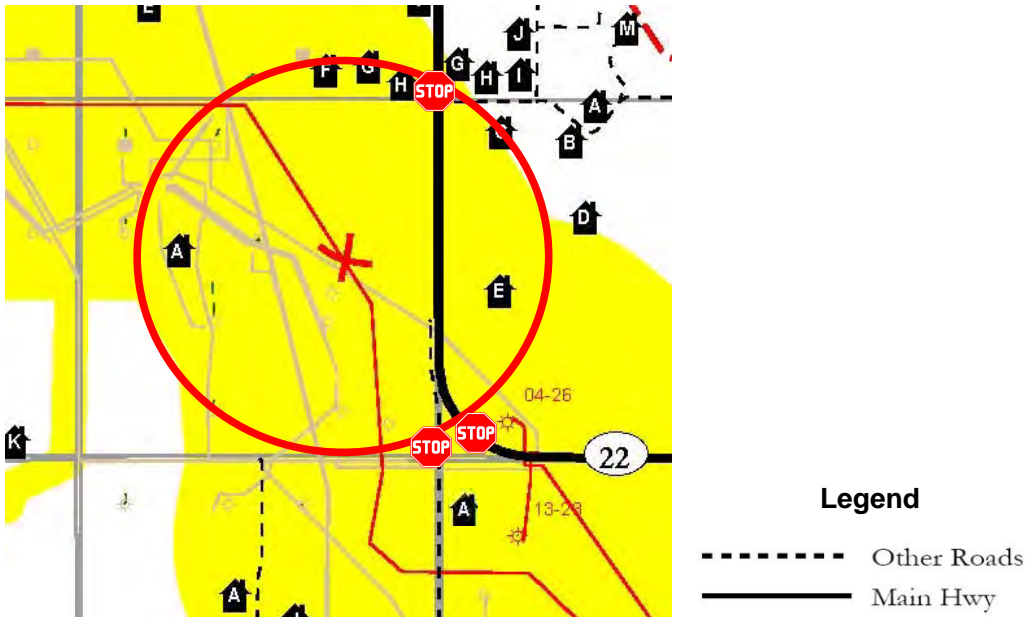
- b) Using the distance from the incident location to the edge of the EPZ, draw a complete circle around the incident site.



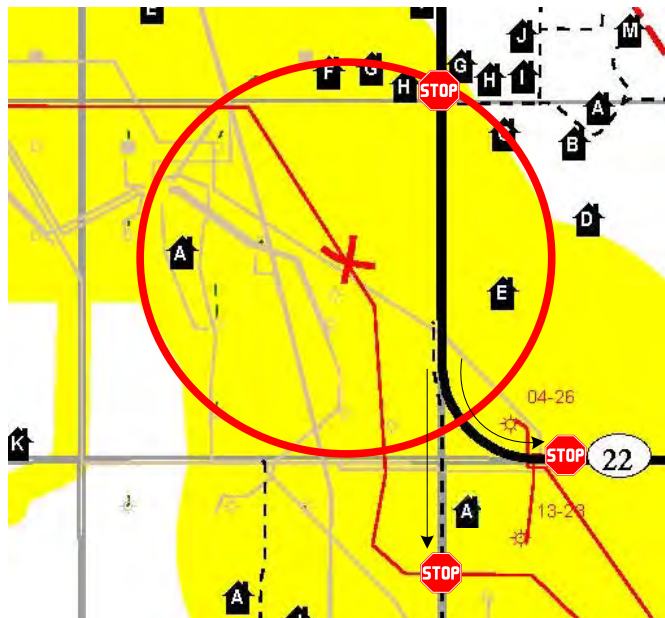
## BRITISH COLUMBIA PUBLIC SAFETY, continued

### 4. Isolate the hazard area:

- a) As a guideline, establish roadblock locations where any road or highway enters / leaves the EPZ (refer to the stop signs in the picture below for examples).



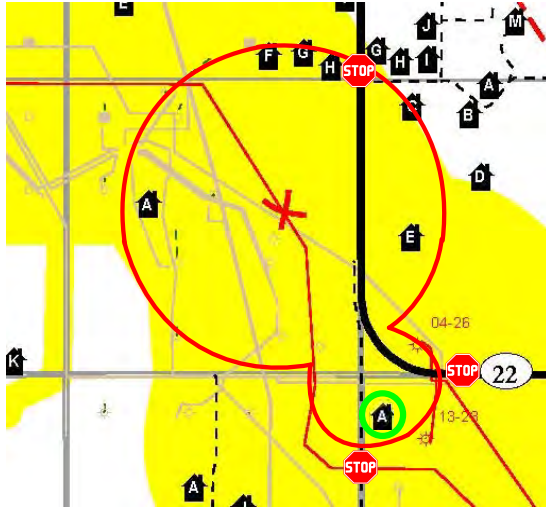
- b) Roadblock locations should be highly visible to traffic providing them with enough opportunity to safely stop. Roadblocks should be established at locations where traffic can easily turn around or detour. Adjust your initial roadblock locations as necessary to ensure these criteria are met.



## BRITISH COLUMBIA PUBLIC SAFETY, continued

### Isolate the hazard area, continued:

- c) If roadblock locations are moved further away from the hazard, additional surface developments may be included in the isolation area. This includes those who would have to egress through the hazard area to leave the area. Any new surface developments added by moving the roadblock locations will need to be included when the public is notified / evacuated / sheltered.



*NOTE: Expand the EPZ to include any residences you have added by moving the roadblock locations.*

Public protection measures at the centre expand outward downwind of the release so that members of the public are not exposed to the hazard. Priority is directed towards those who are the most at risk. Residents should be evacuated / sheltered in the following order:

1. Closest to incident
2. Residents downwind
3. Sensitive residents in the EPZ (those who have health problems or may require transportation assistance)
4. The rest of the EPZ

Ideally, the company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. In Alberta, the company must contact the RCMP and Alberta Transportation to have a one-, two-, or three-digit highway closed, e.g. Highway 2, Highway 21 or Highway 567. In Saskatchewan and Manitoba, the company is to contact the RCMP only to have 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 (also known as an FH or Fire Hazard Closure Order) that provides legal authority to close the area. The local authority, e.g. county, municipality, or town, may, if warranted, declare a Local State of Emergency. This State of Emergency grants the local authority special powers to do such things as road closures or declare a mandatory evacuation.

The following information should be provided to the RCMP, the transportation / highway authorities, and the local authority when they are contacted:

- the nature, location and extent of the emergency
- suggestions where the roadblocks should be located
- wind speed and direction

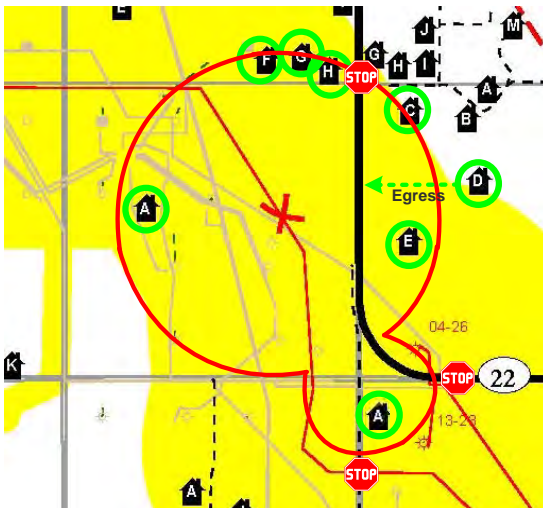


## BRITISH COLUMBIA PUBLIC SAFETY, continued

- number of people living within the site-specific emergency planning zone

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). NOTAM's or closure of airspace may be requested by the regulatory agency at a level 2 or level 3 emergency.

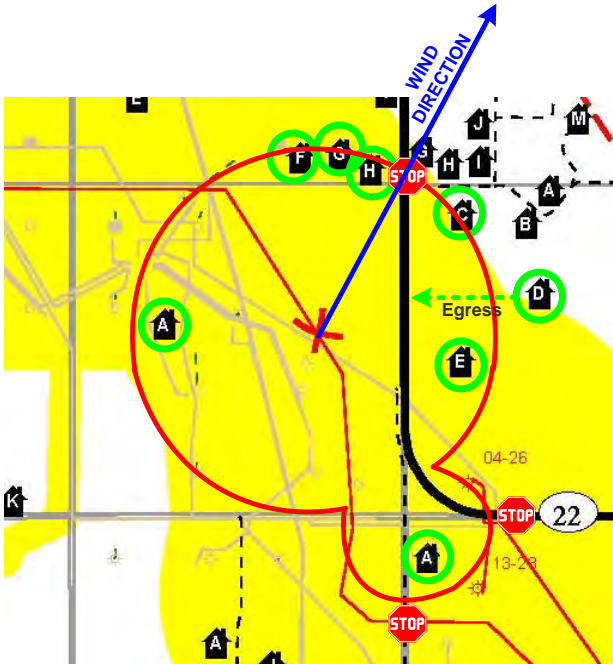
5. Dispatch **Rovers** to patrol the EPZ in search of any transient activity.
6. Analyze the potential impact to the public. Are there any of the following within the EPZ:
  - a) Determine if you have any of the following in the EPZ:
    - Residences / businesses
    - Public facilities
    - Recreation areas
    - Urban centres (immediately contact the local authority to coordinate response)



## BRITISH COLUMBIA PUBLIC SAFETY, continued

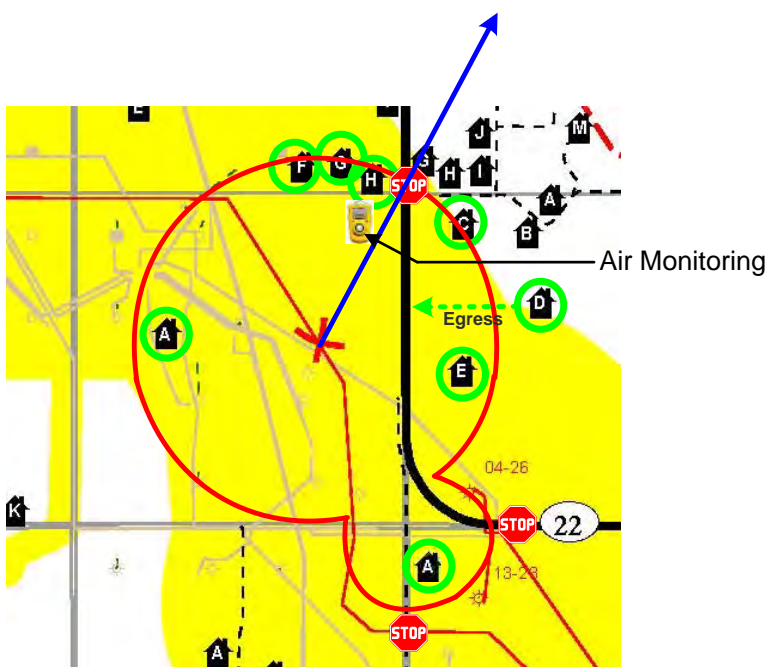
### 7. Determine wind direction:

- a) Determine the wind direction. To indicate the wind direction on the map, draw a straight line starting at the incident location and ending outside of the EPZ.



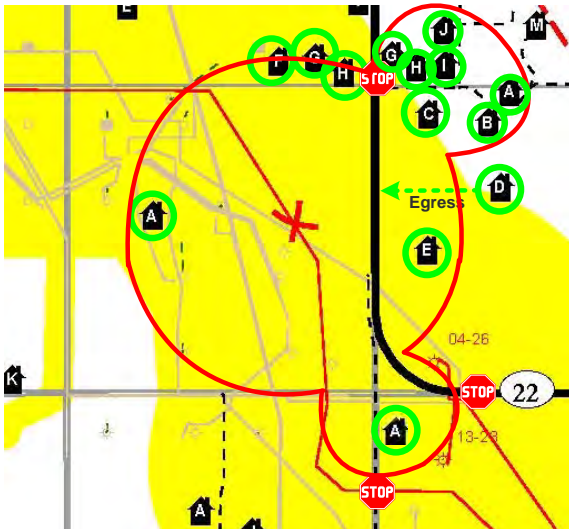
### 8. Dispatch **Air Monitors** to take readings downwind of the incident with priority given to the nearest unevacuated residence or place where people may gather:

- a) Air monitoring readings should also be coming in from Roadblock personnel and Rovers.



## BRITISH COLUMBIA PUBLIC SAFETY, continued

9. Expand the hazard area if the air monitoring readings reported by the **Rovers**, **Roadblock** personnel, and **Air Monitoring** personnel indicate dangerous levels for the **Roadblock** personnel and the public near the edge of the hazard area.
  - a. If you expand the hazard area you must evacuate / shelter any newly impacted residences including those who would have to egress through the hazard area to leave the area.

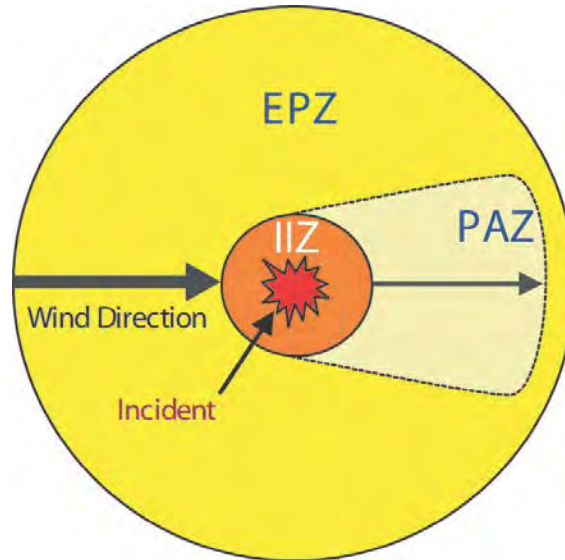


*NOTE: If you do not have contact information for the residences outside of the EPZ or you do not have the resources to coordinate the response outside of the EPZ contact the Local Authority to assist with response efforts.*

10. Assign a **Telephoner Team** to contact people in the area and provide them with emergency instructions (i.e., Shelter-In-Place, Early Notification / Voluntary Evacuation, Evacuation).
  - a) Priority should be given to those closest to the hazard, those downwind of the hazard, and those considered sensitive (i.e., health issues, requires transportation assistance, etc.). **See the Public Protection Measures tab for more information on determining appropriate Public Protection Measures.**
  - b) Send a **Rover** to assist with evacuation if requested.
  
11. If any residents are evacuated, assign a **Reception Centre Representative** to establish and manage a Reception Centre.

## ALBERTA PUBLIC SAFETY

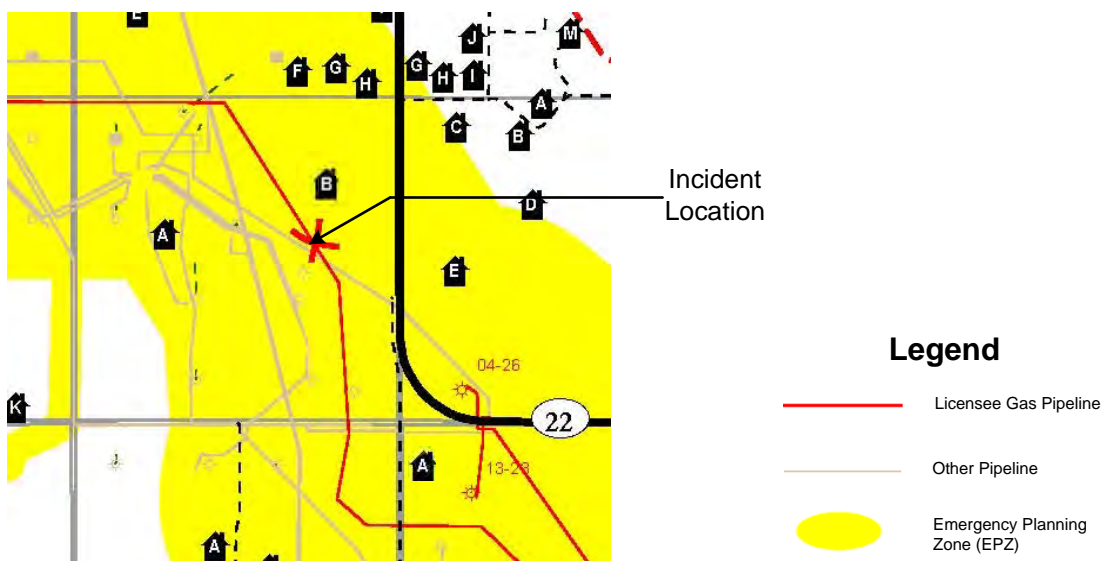
When a hazardous substance is released into the atmosphere, evacuation and shelter-in-place are two strategies for protecting the public in the affected or threatened areas. Within the initial isolation zone, evacuation is initiated immediately (if it is safe to do so). Within the protective action zone, a critical choice – evacuation or shelter-in-place – must be made. Where it is difficult to gather sufficient data to decide between evacuation and shelter-in-place, evacuation is initiated unless the area to be evacuated has already been contaminated to a degree that presents an immediate danger to life or health.



Initial isolation and protective action zones

Instructions for identifying the response and planning zones are outlined on the following pages. Please familiarize yourself with this process.

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



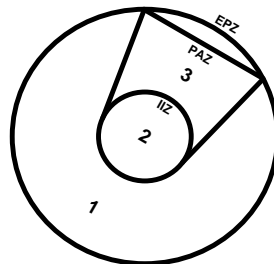
## ALBERTA PUBLIC SAFETY, continued

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

- a) Locate the Emergency Planning Zone (EPZ) calculation tables for the field in the ERP. EPZ calculation tables are located in the Area Specific Information section of the ERP.
- b) Use the EPZ calculation tables to identify the Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ) for the well or pipeline involved in the incident.

From	To	License Number	Line	EPZ (m)	IIZ (m)	PAZ (m)
14-02-077-04W6	WE 16-03-077-04W6	PL 39940	1	480	100	400
03-10-077-04W6	WE 02-10-077-04W6	PL 38954	1	3950	1190	3390
10-27-077-04W6	PL 10-27-077-04W6	PL 37984	7	860	330	750
08-34-077-04W6	WE 10-27-077-04W6	PL 37984	1	860	330	750
10-27-077-04W6	PL 01-28-077-04W6	PL 37984	2	860	330	750

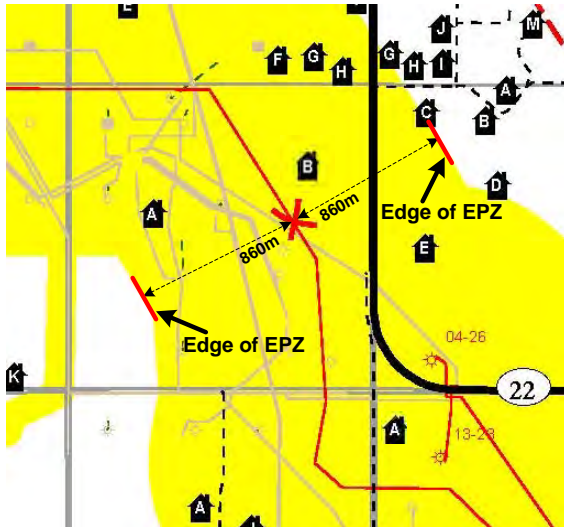
- c) If the incident is at a facility or if you have not yet confirmed the exact location of the incident you must use the largest EPZ for the area. The largest EPZ for the area is shown in yellow on the map.
- d) The next steps will show you how to draw the response zones on your map starting with the EPZ and ending with the PAZ.



## ALBERTA PUBLIC SAFETY, continued

### 3. Draw the Emergency Planning Zone:

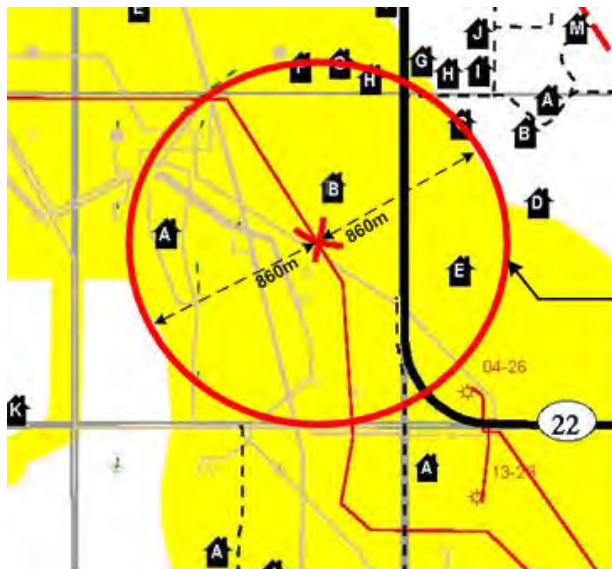
- a) Once you have determined the distance of your IIZ, PAZ and EPZ, mark the edge of the EPZ, on each side of the incident location.



*Note: There are many instances when the EPZ for the incident may not be the full size of the yellow EPZ on the map such as when two pipelines are running parallel to each other or when a well EPZ is contained within a larger pipeline EPZ.*

EPZ (m)	IIZ (m)	PAZ (m)
480	100	400
3950	1190	3390
860	330	750
860	330	750
860	330	750

- b) Using the distance from the incident location to the edge of the EPZ, draw a complete circle around the incident site.

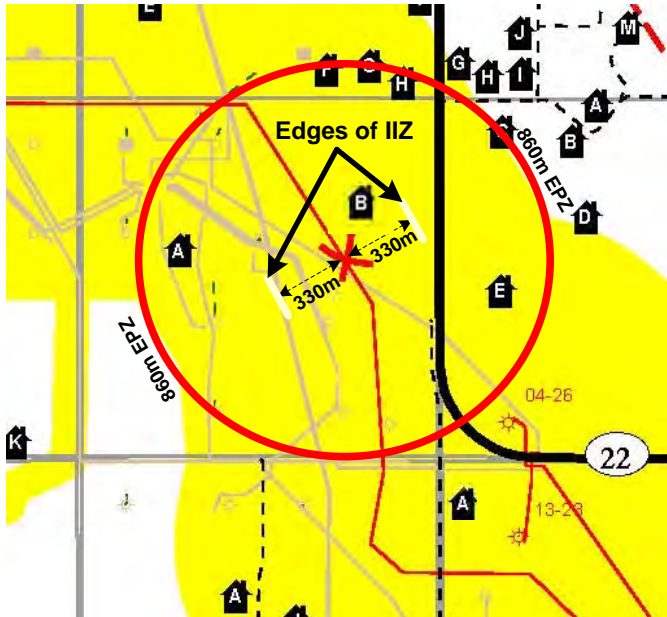


Draw an EPZ sized circle around the incident

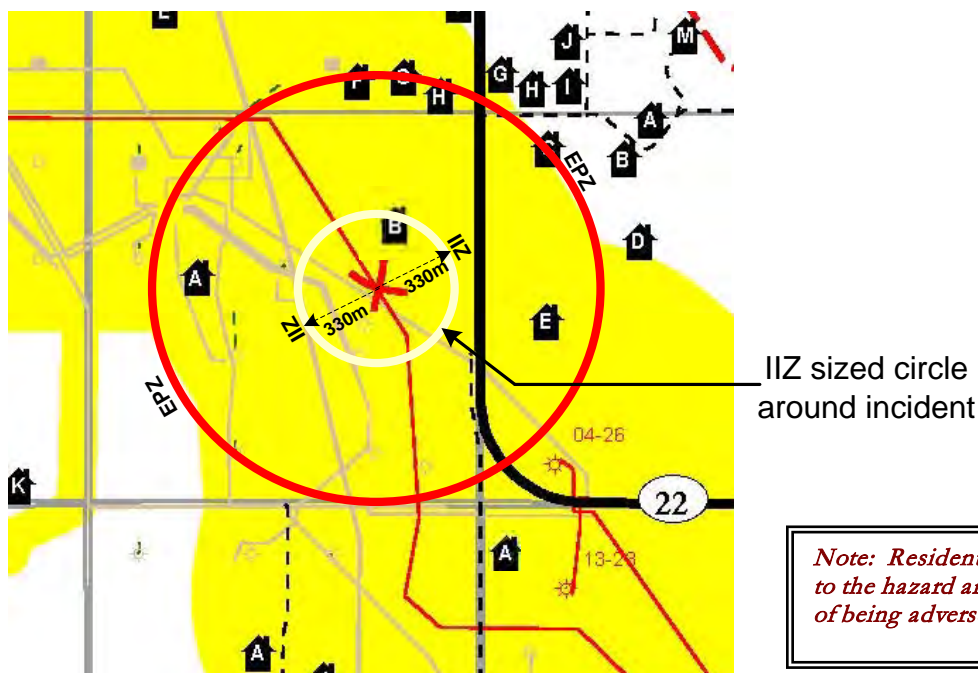
## ALBERTA PUBLIC SAFETY, continued

### 4. Draw the Initial Isolation Zone:

- a) Mark the edges of the IIZ on each side of the incident location.



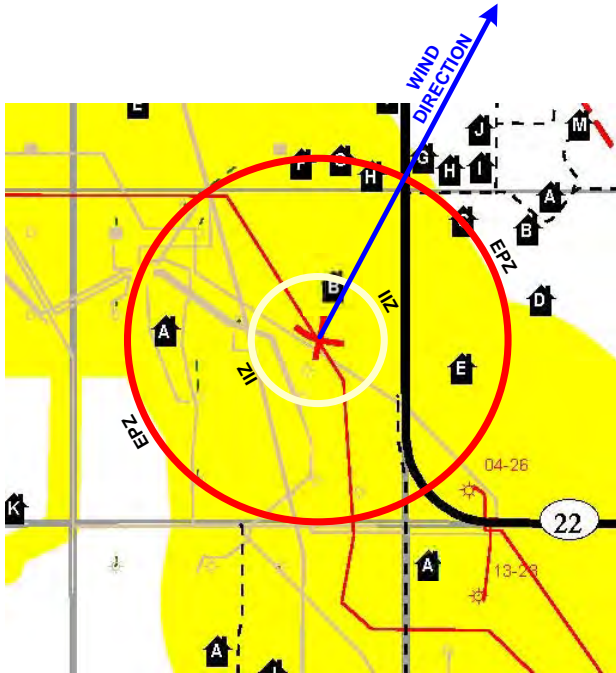
- b) Using the distance from the incident location to the edge of the IIZ, draw a complete circle around the incident site.



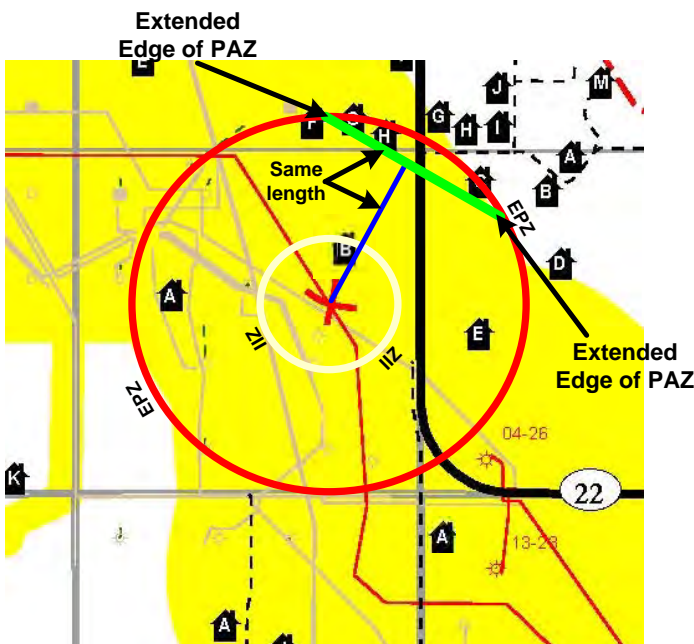
## ALBERTA PUBLIC SAFETY, continued

### 5. Draw the Protective Action Zone:

- a) Determine the wind direction. To indicate the wind direction on the map, draw a straight line starting at the incident location and ending outside of the EPZ.



- b) Use the PAZ distance to mark the edge of the PAZ, downwind of the incident, along the wind direction line. The width of the PAZ is equal to the length of the PAZ. To keep your PAZ parallel with your wind direction, place half the width of the PAZ left of your wind direction line and half the PAZ width to the right of your wind direction line.

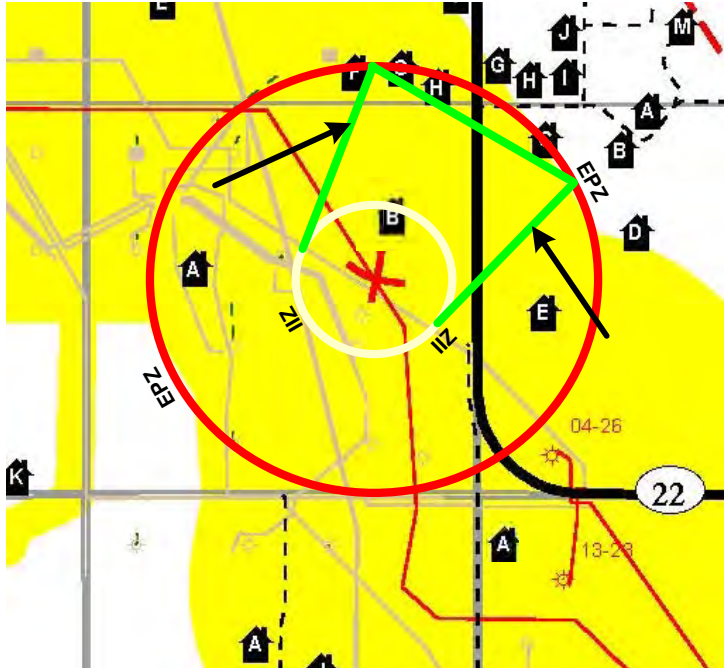


EPZ (m)	IIZ (m)	PAZ (m)
480	100	400
3950	1190	3390
860	330	750
860	330	750
860	330	750



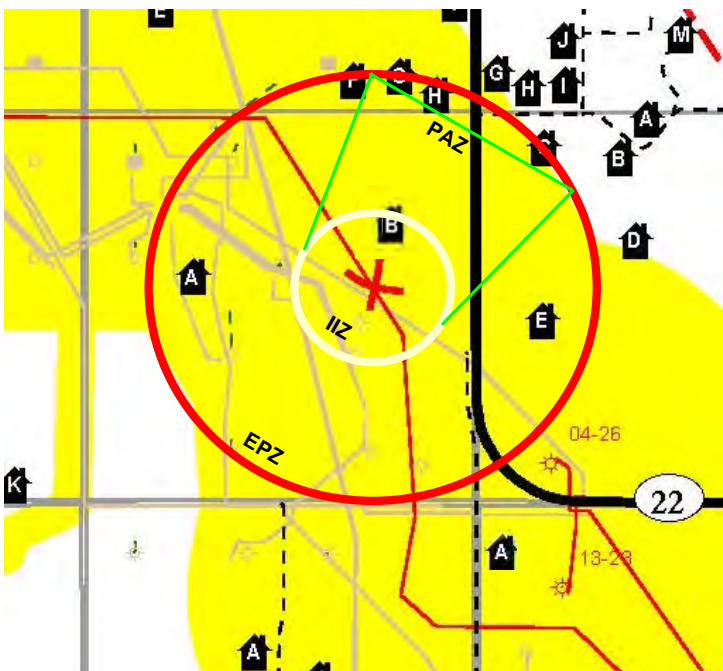
## ALBERTA PUBLIC SAFETY, continued

- c) To complete the PAZ you will need to draw two additional lines from each side of the IIZ circle to connect with the outer edge of the PAZ.



*Note: Residents in the PAZ are the second group to be evacuated / sheltered 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.*

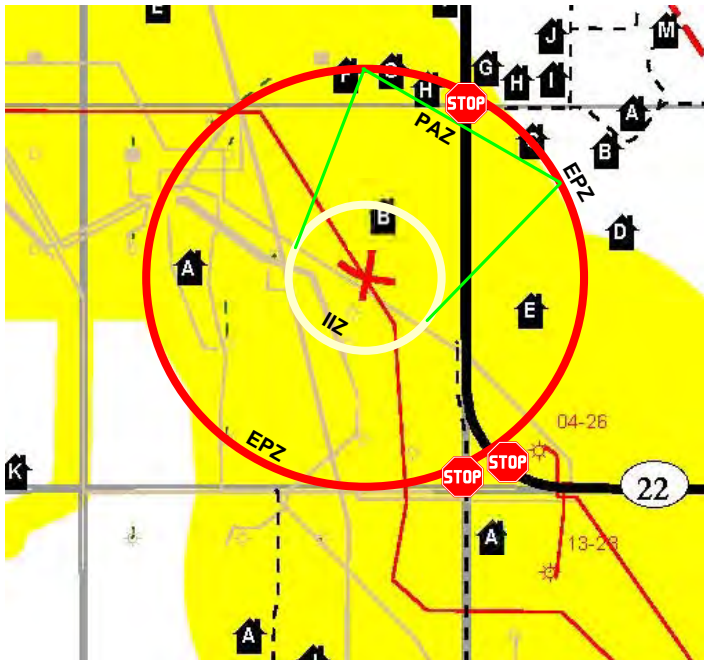
- d) Once completed, your Emergency Response Zones should look similar to the image below.



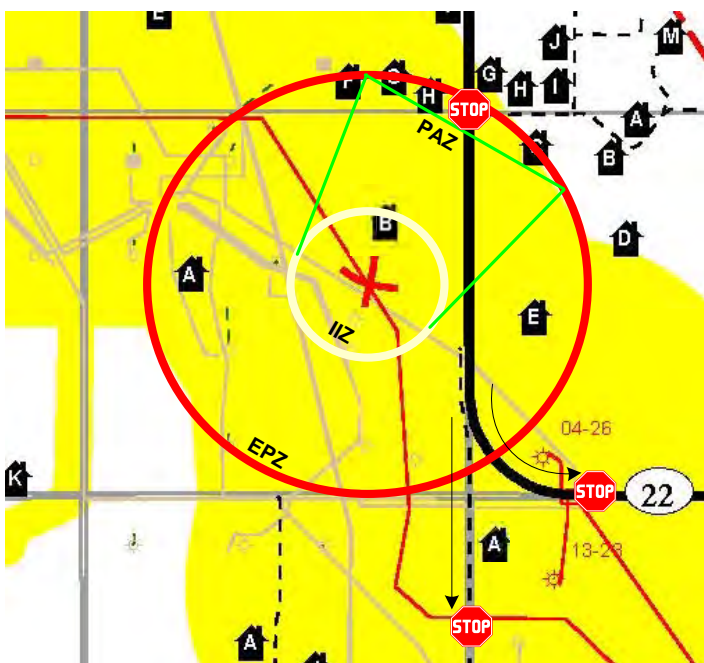
## ALBERTA PUBLIC SAFETY, continued

### 6. Isolate the hazard area:

- a) As a guideline, establish roadblock locations where any road or highway enters / leaves the EPZ (refer to the stop signs in the picture below for examples).

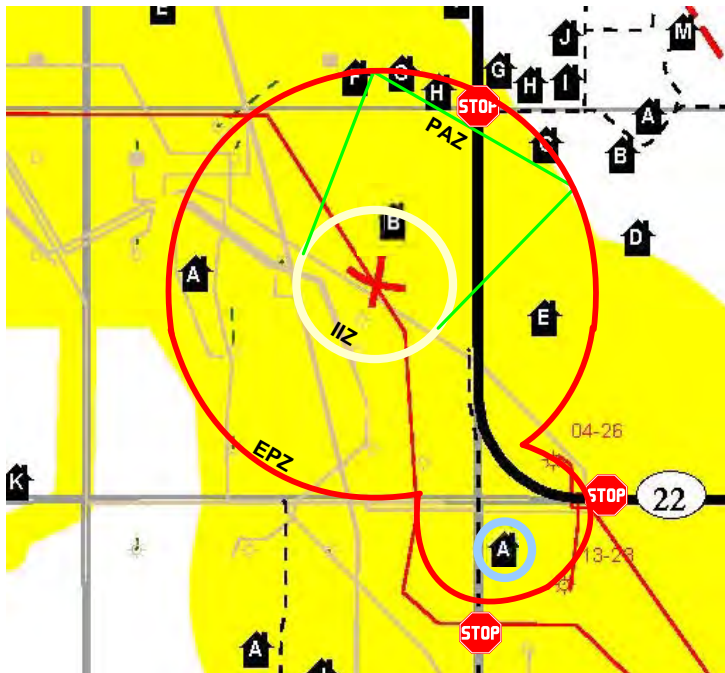


- b) Roadblock locations should be highly visible to traffic providing them with enough opportunity to safely stop. Roadblocks should be established at locations where traffic can easily turn around or detour. Adjust your initial roadblock locations as necessary to ensure these criteria are met.



## ALBERTA PUBLIC SAFETY, continued

- c) If roadblock locations are moved further away from the hazard, additional surface developments may be included in the isolation area. This includes those who would have to egress through the hazard area to leave the area. Any new surface developments added by moving the roadblocks will need to be included when the public is notified / evacuated / sheltered.



*Note: Expand the EPZ to include any residences you have added by moving the roadblock locations.*

Public protection measures begin in the IIZ and expand outward into the PAZ downwind of the release so that members of the public are not exposed to the hazard. Priority is directed towards those who are the most at risk. Residents should be evacuated / sheltered in the following order:

5. IIZ
6. PAZ (downwind)
7. Sensitive residents in the EPZ (those who have health problems or may require transportation assistance)
8. The rest of the EPZ

Ideally, the company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. In Alberta, the company must contact the RCMP and Alberta Transportation to have a one-, two-, or three-digit highway closed, e.g. Highway 2, Highway 21 or Highway 567. In Saskatchewan and Manitoba, the company is to contact the RCMP only to have 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 (also known as an FH or Fire Hazard Closure Order) that provides legal authority to close the area. The local authority, e.g. county, municipality, or town, may, if warranted, declare a Local State of Emergency. This State of Emergency grants the local authority special powers to do such things as road closures or declare a mandatory evacuation.

The following information should be provided to the RCMP, the transportation / highway authorities, and the local authority when they are contacted:

- the nature, location and extent of the emergency

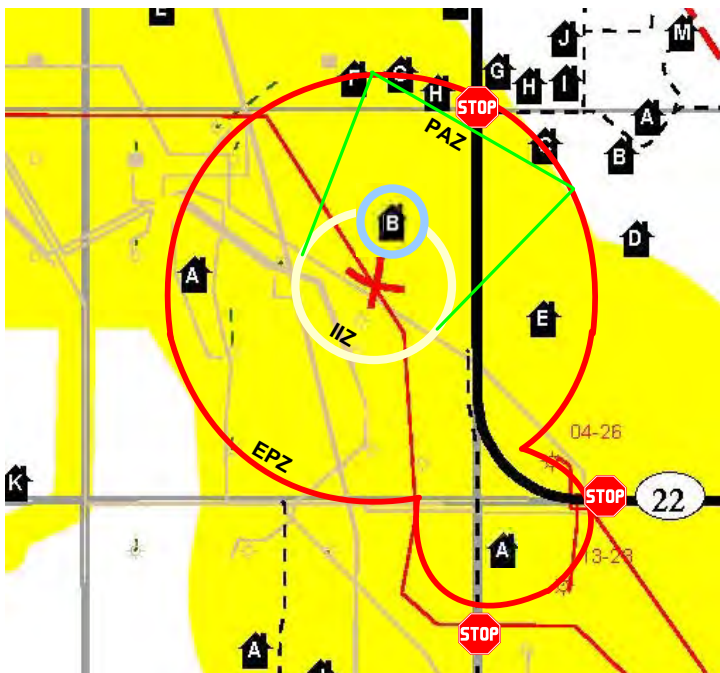
## ALBERTA PUBLIC SAFETY, continued

- suggestions where the roadblocks should be located
- wind speed and direction
- number of people living within the site-specific emergency planning zone

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). NOTAM's or closure of airspace may be requested by the regulatory agency at a level 2 or level 3 emergency.

### 7. Begin Public Protection Measures in the IIZ:

- a) Determine if you have any of the following in the IIZ:
  - Residences / businesses
  - Public facilities
  - Recreation areas
  - Urban centres (immediately contact the local authority to coordinate response)



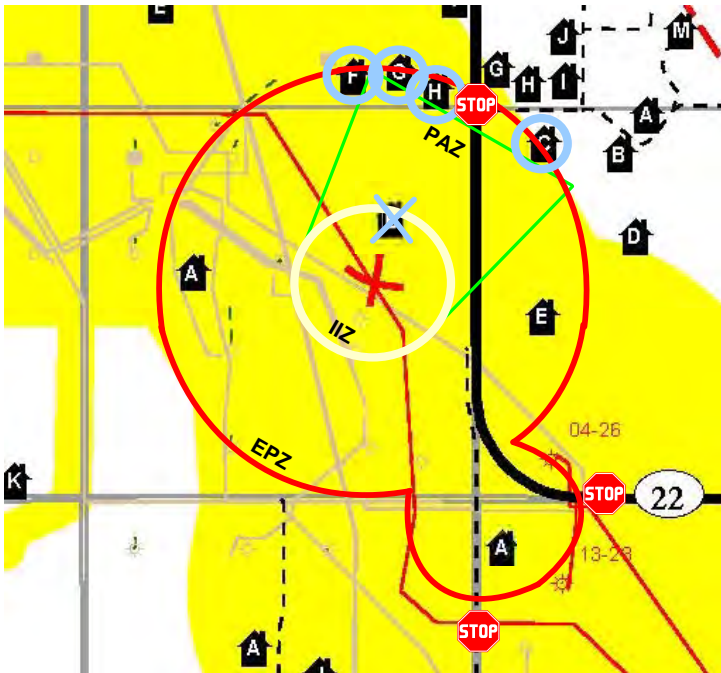
*Note: Shelter-in-place may not be a viable public protection measure in the IIZ. Shelter residents immediately upon notification of an incident however; if it is safe to do so, the licensee must evacuate residents from the IIZ.*

- b) Refer to the Public Protection Measures flowchart in the Public Protection Measures section for more information on determining which public protection measure to use.
- c) Assign a **Telephoner Team** to contact people in the IIZ and provide them with emergency instructions using the relevant phone message (i.e., B6 – Early Notification / Voluntary / Evacuation Message, B7 - Shelter-in-Place Phone Message, B8 – Evacuation Phone Message). Send a Rover to assist with evacuation if requested.
- d) If any residents are evacuated, assign a **Reception Centre Representative** to establish and manage a reception centre.

## ALBERTA PUBLIC SAFETY, continued

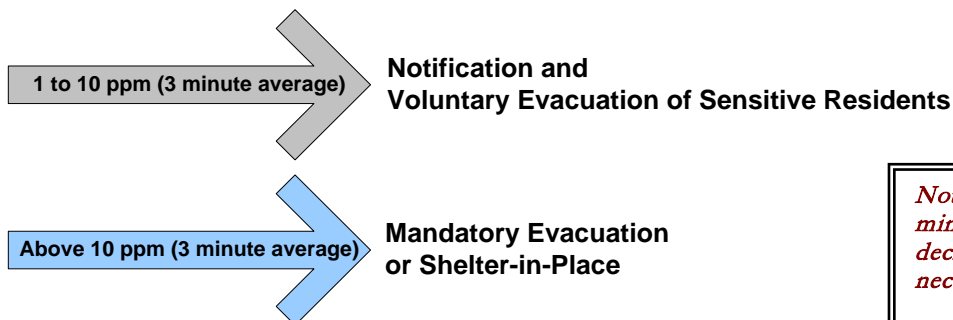
### 8. Begin Public Protection Measures in the PAZ:

- a) Determine if you have any of the following in the PAZ:
  - Residences / businesses
  - Public facilities
  - Recreation areas
  - Urban centres (immediately contact the local authority to coordinate response)



*Note: If at any time during the incident the wind direction changes the PAZ will change and public protection measures will need to be redirected to the new downwind residences. A shift in wind direction could cause ignition criteria to be met.*

- b) Dispatch **Air Monitors** to take readings in the PAZ at the nearest unevacuated residence or place where people may gather. Refer to the **Public Protection Measures flowchart** in the **Public Protection Measures** section for more information on determining which public protection measure to use.



*Note: If monitored levels over the 3 minute period interval are declining, evacuation may not be necessary.*

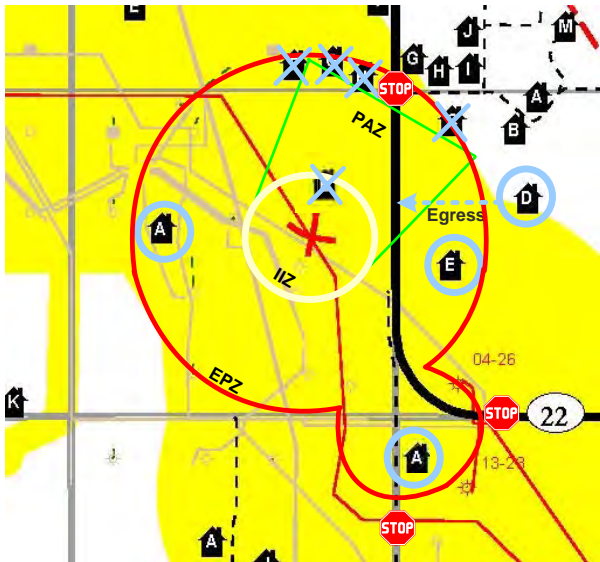
- c) Assign a **Telephoner Team** to contact people in the PAZ and provide them with emergency instructions using the relevant phone message (i.e., B6 - Early Notification / Voluntary Evacuation, B7 – Shelter-in-Place, B8 - Evacuation). Send a Rover to assist with evacuation if requested.

## ALBERTA PUBLIC SAFETY, continued

### 9. Begin Public Protection Measures in the EPZ:

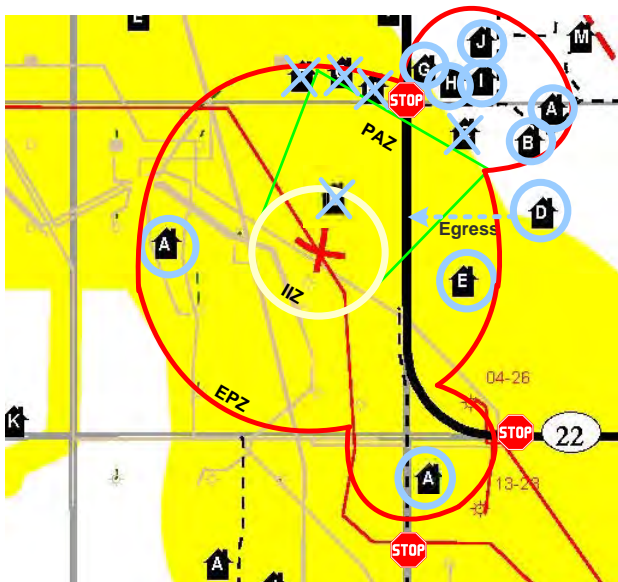
b) Determine if you have any of the following in the EPZ:

- Residences / businesses
- Public facilities
- Recreation areas
- Urban centres (immediately contact the local authority to coordinate response)



*Note: The licensee must notify the rest of the public in the EPZ as soon as notification attempts have been completed for the public in the IIZ and PAZ. Typically, residents within the EPZ but outside of the IIZ and PAZ will be contacted and advised to shelter-in-place pending further instruction.*

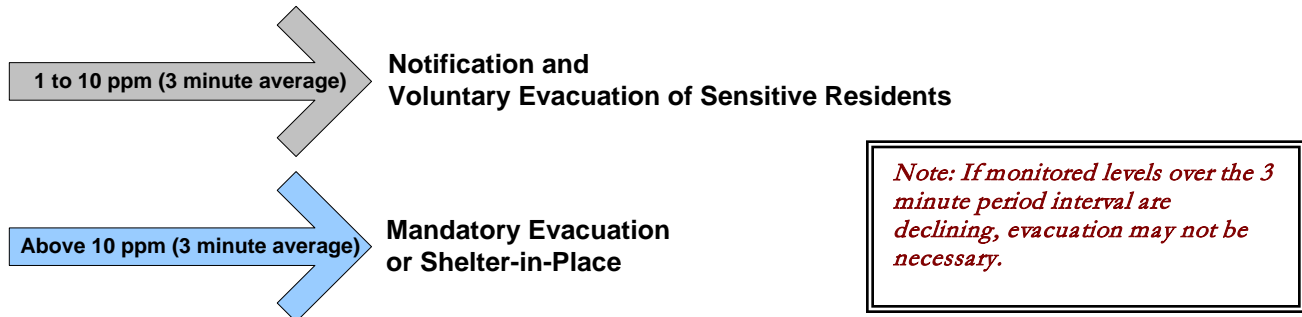
c) If air monitoring readings outside of the EPZ are indicating the presence of H<sub>2</sub>S (1 ppm or greater) you will need to expand your EPZ and ensure any nearby residences are included. If you expand the hazard area you must evacuate / shelter any newly impacted residences including those who would have to egress through the hazard area to leave the area.



*Note: If you do not have contact information for the residences outside of the EPZ or you do not have the resources to coordinate the response outside of the EPZ, contact the local authority to assist with response efforts.*

## ALBERTA PUBLIC SAFETY, continued

- d) Refer to the Public Protection Measures flowchart in the Public Protection Measures section for more information on determining which public protection measure to use.



- e) Assign a **Telephoner Team** to contact people in the EPZ and provide them with emergency instructions using the relevant phone message (i.e., B6 - Early Notification / Voluntary Evacuation Message, B7 - Shelter-in-Place Phone Message, B8 – Evacuation Phone Message). Send a **Rover** to assist with evacuation if requested.

10. Dispatch **Rovers** to patrol the response zones in search of transients.

## 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.

Note:



## **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<sub>2</sub>S) results in the produced sulphur dioxide (SO<sub>2</sub>) 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.

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, Incident Director, etc.) and the appropriate government regulator.

### **ROAD AND AIRSPACE CLOSURES**

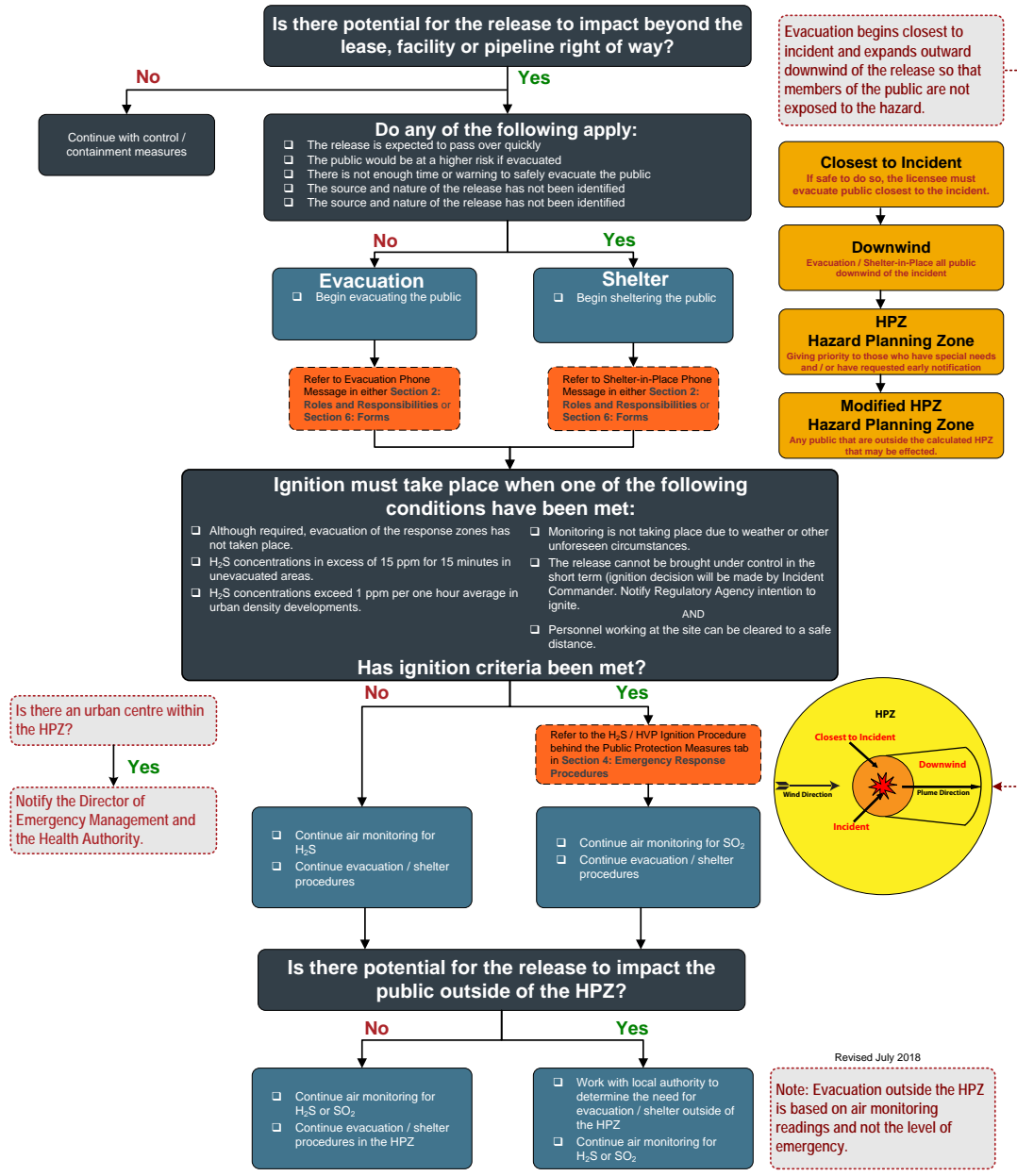
The company should receive authorization from local authorities or the RCMP before establishing roadblocks on public roads. The company must contact the RCMP and the transportation authority to have one-, two- or three-digit highways closed. However, if the safety of the public is in jeopardy, the company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

## BRITISH COLUMBIA PUBLIC PROTECTION MEASURES FLOWCHART



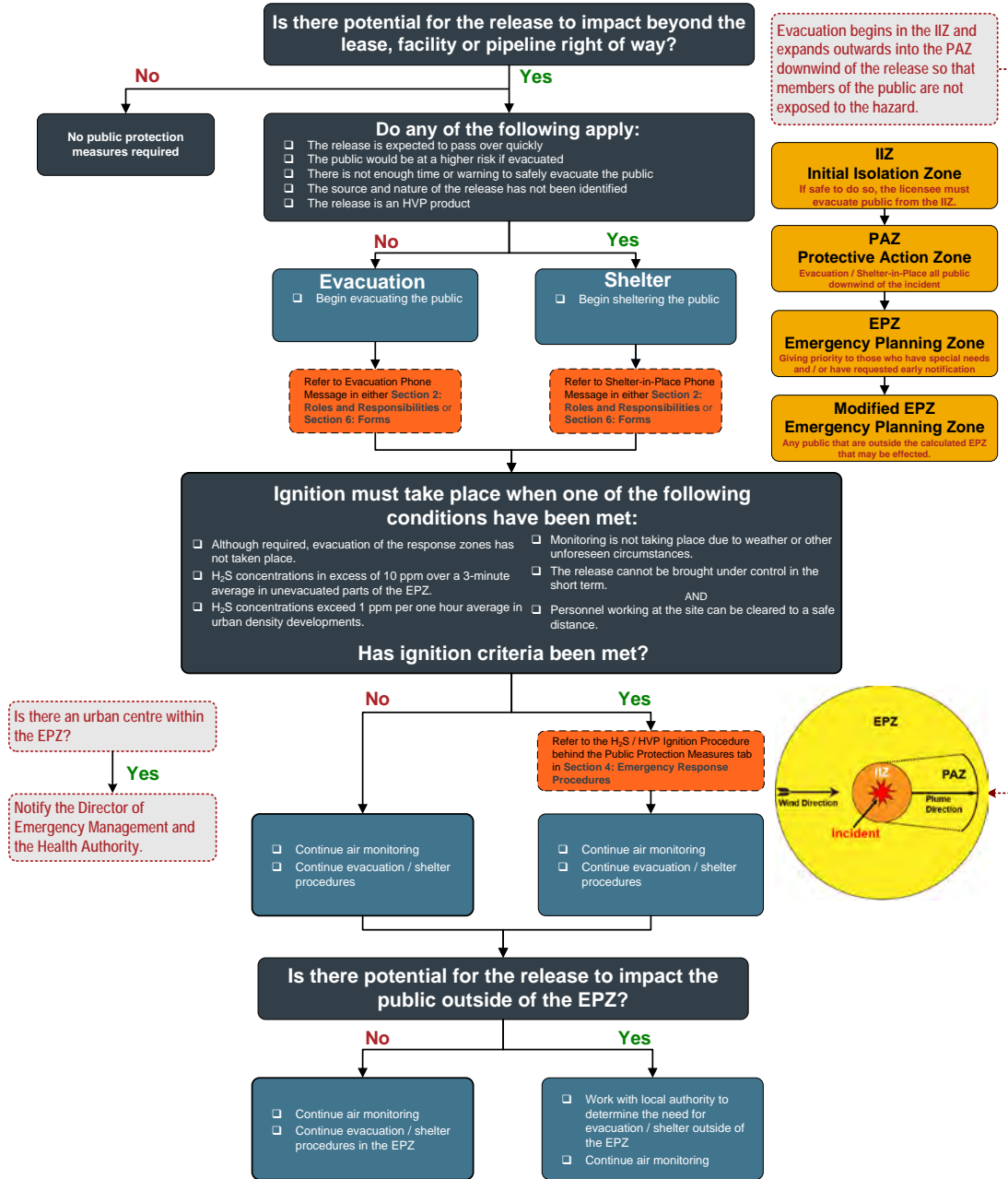
### Notification and Evacuation Requirements Outside of the HPZ

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H<sub>2</sub>S and SO<sub>2</sub>. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

H <sub>2</sub> S Requirements		SO <sub>2</sub> 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.
<p>Note: H<sub>2</sub>S Evacuation Level – when downwind monitoring at the nearest unevacuated residence, outside the Hazard Planning Zone, indicates a level of 10 ppm, evacuation procedures will be initiated if safe to do so.</p>			

# PUBLIC PROTECTION MEASURES, continued

## ALBERTA PUBLIC PROTECTION MEASURES FLOWCHART



### Evacuation Requirements

Revised June 2018

For a sour gas release, the licensee must continuously assess and act on the need to expand the evacuation area based on the monitored levels of H<sub>2</sub>S and SO<sub>2</sub>. In the absence of monitored readings, responders should advise the residents to Shelter-in-Place.

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

Note: This chart is based on Alberta Regulations and guidelines; however, the same standards will be followed by the company for operations in other provinces.

# BRITISH COLUMBIA H<sub>2</sub>S / HVP IGNITION PROCEDURE

## 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)

- Proximity to residences, public facilities, towns or urban centres.
- Risk of exposure / injury to the public or response workers.
- Status of evacuation.
- Wind conditions and general topography.
- Fire hazard after ignition in relation to adjacent forested or cropland area.
- Safety of the Ignition Team (hazard area identification, protective gear).

### High Vapour Pressure (HVP)

- 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 being continually monitored.
- Whether the possibility of an explosion has been 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 not taken place.
- H<sub>2</sub>S concentrations in excess of 15 ppm for 15 minutes in unevacuated parts of the EPZ.  
**If monitoring levels are declining, then the situation needs to be continuously assessed for ignition.**
- H<sub>2</sub>S concentrations exceed 1 ppm per one hour average in urban density developments.
- Monitoring is not taking place due to weather or other unforeseen circumstances
- The release cannot be brought under control in the short term (ignition decision will be made by Incident Commander. Notify Regulatory Agency intention to ignite.
- Personnel working at the site can be cleared to a safe distance.

**ONCE ANY OF THE ABOVE CONDITIONS HAS BEEN MET, IGNITION MUST OCCUR WITHIN 15 MINUTES OF THE DECISION TO IGNITE.**

**IS THERE TIME TO DISCUSS THE IGNITION DECISION WITH THE OPERATIONS SECTION CHIEF, THE INCIDENT COMMANDER, AND THE REGULATORY AGENCY?**

**Yes**

**No**

**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 CONTROL OPTION TO MINIMIZE THE HAZARD?**

**No**

**Yes**

- Continue with release control procedures onsite.
- Review possible control procedures.

- Determine post ignition emergency service requirements.
- Assemble and brief ignition team.
- Go to Ignition Procedures Flowchart.

## IGNITION PROCEDURE – On-Site Group Supervisor

### PREPLANNING

Prior to ignition the Operations Section Chief will:

- Ensure all nonessential personnel are evacuated.
- Isolate the hazard area using manned roadblocks.
- Assemble the Ignition Team (2 people).
- Ensure the Ignition Team is protected with personal protective equipment, clothing and breathing apparatus (cover exposed skin).
- Erect windsock and streamers (if time permits).
- Monitor the area for combustible gas.
- Fully discuss ignition procedures.
- Check radio communications.

### APPROACH

Select a position to attempt safe ignition which will:

- Allow for safe retreat.
- Be upwind of the gas leak (300m minimum from edge of identified vapor plume, approach no closer than 100m on repeated ignition attempts).
- Be in an area where no combustible gas is detected.
- If possible, get behind a hill, building, tree or other protective barrier to shield yourself.

### EXAMPLE IGNITION KIT

- 2 Flare Pistol
- 36 Flares
- 2 Safety harness with front D-ring
- 2 30m (100ft) flame resistant rope
- 2 Flame resistant coveralls
- 2 Sets of ear protection
- 2 Hard hats with face shield
- 2 Flame resistant hard hat liners (balaclava or regular style)
- 1 LEL Gas detector
- 1 H<sub>2</sub>S Gas detector
- 4 Self contained breathing apparatus (positive pressure) with 30 minute air supply, includes 2 spare bottles
- 1 Radio equipped vehicle

### ATTEMPT IGNITION

- Fire flare gun to hit vapour cloud at the perimeter where air to fuel mixtures are correct for ignition (near outer edge and ground level).
- Turn away from target.

**PLUME IGNITED?**

**No**

**Yes**

### REPEAT IGNITION

- Continue approach and repeat until successful (100m minimum from edge of identified vapour plume).
- DO NOT proceed if Ignition Team is no longer in a safe area.

### POST IGNITION

- Advise Incident Commander.
- Continue to monitor downwind for gas accumulations.
- Maintain security around immediate area.
- Assist emergency service crews with any fire control measures needed.

# ALBERTA H<sub>2</sub>S / HVP IGNITION PROCEDURE

## 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)

- Proximity to residences, public facilities, towns or urban centres.
- Risk of exposure / injury to the public or response workers.
- Status of evacuation.
- Wind conditions and general topography.
- Fire hazard after ignition in relation to adjacent forested or cropland area.
- Safety of the Ignition Team (hazard area identification, protective gear).

### High Vapour Pressure (HVP)

- 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 being continually monitored.
- Whether the possibility of an explosion has been 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:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Although required, evacuation of the response zones has not taken place.</li> <li><input type="checkbox"/> Monitoring results indicate H<sub>2</sub>S concentrations in excess of 10 ppm over a 3-minute average in unevacuated parts of the EPZ. <b>If monitoring levels are declining, then the situation needs to be continuously assessed for ignition.</b></li> <li><input type="checkbox"/> Monitored H<sub>2</sub>S concentrations exceed 1 ppm in urban density developments.</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Monitoring is not taking place due to weather or other unforeseen circumstances.</li> <li><input type="checkbox"/> The release cannot be brought under control in the short term.</li> <li><input type="checkbox"/> Personnel working at the site can be cleared to a safe distance.</li> </ul> |
|--|---|
- AND

**ONCE ANY OF THE ABOVE CONDITIONS HAS BEEN MET, IGNITION MUST OCCUR WITHIN 15 MINUTES OF THE DECISION TO IGNITE.**

**IS THERE TIME TO DISCUSS THE IGNITION DECISION WITH THE OPERATIONS SECTION CHIEF, THE INCIDENT COMMANDER, AND THE REGULATORY AGENCY?**

Yes

No

**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 CONTROL OPTION TO MINIMIZE THE HAZARD?**

No

Yes

- Continue with release control procedures onsite.
- Review possible control procedures.

- Determine post ignition emergency service requirements.
- Assemble and brief ignition team.
- Go to Ignition Procedures Flowchart.

## IGNITION PROCEDURE – On-Site Group Supervisor

### PREPLANNING

Prior to ignition the Operations Section Chief will:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure all nonessential personnel are evacuated.</li> <li><input type="checkbox"/> Isolate the hazard area using manned roadblocks.</li> <li><input type="checkbox"/> Assemble the Ignition Team (2 people).</li> <li><input type="checkbox"/> Ensure the Ignition Team is protected with personal protective equipment, clothing and breathing apparatus (cover exposed skin).</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Erect windsock and streamers (if time permits).</li> <li><input type="checkbox"/> Monitor the area for combustible gas.</li> <li><input type="checkbox"/> Fully discuss ignition procedures.</li> <li><input type="checkbox"/> Check radio communications.</li> </ul> |
|--|---|

### APPROACH

Select a position to attempt safe ignition which will:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Allow for safe retreat.</li> <li><input type="checkbox"/> Be upwind of the gas leak (300m minimum from edge of identified vapor plume, approach no closer than 100m on repeated ignition attempts).</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Be in an area where no combustible gas is detected.</li> <li><input type="checkbox"/> If possible, get behind a hill, building, tree or other protective barrier to shield yourself.</li> </ul> |
|--|---|

### EXAMPLE IGNITION KIT

- 2 Flare Pistol
- 36 Flares
- 2 Safety harness with front D-ring
- 2 30m (100ft) flame resistant rope
- 2 Flame resistant coveralls
- 2 Sets of ear protection
- 2 Hard hats with face shield
- 2 Flame resistant hard hat liners (balaclava or regular style)
- 1 LEL Gas detector
- 1 H<sub>2</sub>S Gas detector
- 4 Self contained breathing apparatus (positive pressure) with 30 minute air supply, includes 2 spare bottles
- 1 Radio equipped vehicle

### ATTEMPT IGNITION

- Fire flare gun to hit vapour cloud at the perimeter where air to fuel mixtures are correct for ignition (near outer edge and ground level).
- Turn away from target.

**PLUME IGNITED?**

No

Yes

### REPEAT IGNITION

- Continue approach and repeat until successful (100m minimum from edge of identified vapour plume).
- DO NOT proceed if Ignition Team is no longer in a safe area.

### POST IGNITION

- Advise Incident Commander.
- Continue to monitor downwind for gas accumulations.
- Maintain security around immediate area.
- Assist emergency service crews with any fire control measures needed.

## MEDICAL EMERGENCIES

**DISCLAIMER:** The information contained in this section does not replace formal First Aid, CPR & AED training. Whitecap Resources 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](http://www.redcross.ca)) or St. John Ambulance ([www.sja.ca](http://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](http://www.redcross.ca/cmslib/general/tp_fa_poster_checkcallcare_web.pdf)

THIS PAGE INTENTIONALLY LEFT BLANK

# MEDICAL EMERGENCIES, continued

## FIRST AID INFORMATION

### FIRST AID INFORMATION

#### 1. Safety

Before starting First Aid, always ensure the area is safe

- A. For yourself
- B. For the casualty

#### 2. How to call your Emergency Ambulance Number

- A. Call your local Emergency Number.
  - 1. Keep calm.
  - 2. Speak clearly.
  - 3. Answer questions.
- B. State the type of emergency and events of the incident.
- C. Give the location of emergency.
- D. Hang up only when instructed to do so by the dispatcher you hang up.

#### 3. Unconsciousness

Fig-1



A. Check for unconsciousness (Fig-1)

- 1. Call out to casualty.
- 2. Gently tap shoulders.

B. If no response

- 1. Send for an ambulance.  
If alone and a phone is nearby, place casualty in recovery position (Fig-2) before leaving to call the ambulance, unless the casualty is in view when making a call.

Fig-2



**IF INJURIES ARE NOT SUSPECTED**

- 2. Position casualty face up.
- 3. Open the airway (Fig-3).
- 4. Check for no breathing or no normal breathing (gaspings)
- 5. If casualty is not breathing (or gasping only), begin CPR (Section 5).
- 6. Place in recovery position if: (Fig-2)
  - a) Unconscious casualty is breathing and injuries are not suspected
  - b) Breathing is noisy (gurgling or snoring sounds)
  - c) Casualty starts to vomit
  - d) Casualty is bleeding from the mouth
  - e) You must leave the casualty unattended

Fig-3



**IF INJURIES ARE SUSPECTED**

- 2. Check breathing without moving the casualty.
  - Check for gasping or abnormal breathing patterns.

**IF NOT BREATHING**

- 3. Position casualty face up.
  - Minimize neck movement.
- 4. Begin CPR (Section 5).

#### 4. Artificial Respiration

\* Refer to Section 5 – CPR to determine when Artificial Respiration is used.

Fig-4



**ADULT**

After chest compressions:

- A. Give 2 breaths
  - 1. Open the airway (Fig-3).
  - 2. Cover casualty's mouth with yours and pinch nostrils (Fig-4).
  - 3. Give enough air to make chest rise.
- B. If air does not go in, perform steps for choking adult (Section 6).
- C. Check for signs of circulation (no more than 10 seconds): carotid pulse (Fig-5), movement and coughing. If no signs of circulation, continue CPR.

Fig-5



Fig-6



**CHILD**

After chest compressions:

- A. Give 2 breaths
  - 1. Open the airway (Fig-3).
  - 2. Cover child's mouth with yours and pinch nostrils (Fig-4).
  - 3. Give just enough air to make chest rise.
- B. If air does not go in, perform steps for choking child (Section 6).
- C. Check for signs of circulation (no more than 10 seconds): carotid pulse (Fig-5), movement and coughing. If no signs of circulation, continue CPR.

**INFANT**

After chest compressions:

- A. Give 2 breaths
  - 1. Open the airway.
  - 2. Cover infant's mouth and nose with your mouth (Fig-6).
  - 3. Give just enough air to make chest rise.
- B. If air does not go in, perform steps for choking infant. (Section 6)
- C. Check for signs of circulation (no more than 10 seconds): brachial pulse, movement and coughing. If no signs of circulation, continue CPR.

Source: Circulation, Journal of the American Heart Association: 2010 American Heart Association and American Red Cross Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care; 2010 American Heart Association and American Red Cross Guidelines for First Aid



# MEDICAL EMERGENCIES, continued

## FIRST AID INFORMATION

### 5. Cardiopulmonary Resuscitation Unconsciousness (CPR)

Perform CPR only if the casualty is unresponsive and not breathing or not breathing normally (gaspings).

A. Take no more than 10 seconds to check for a pulse.

B. If no signs of circulation, send or go for medical help. If alone and a phone is nearby (meaning you can get to a phone, call and return within 3 minutes), place casualty in recovery position (Fig-2) before leaving to call the ambulance, unless the casualty is in view while making the call.

#### ADULT / CHILD CASUALTY

C. Begin CPR, if a defibrillator is available use immediately on an adult and use after two minutes of CPR for a child.

1. Use the basic life support (BLS) sequence of steps: C-A-B (Chest Compressions-Airway-Breathing).
2. Ensure casualty is on a firm, flat surface
3. Kneel with your hands placed mid-chest.
4. Position your hands in the centre of the upper chest, with fingers interlocked and parallel (Fig-7).
5. Push down hard and fast, at a rate of at least 100 compressions per minute.
  - Depress and release the chest rhythmically (Fig-8).
  - Press the heels of the hands straight down on the breastbone to compress the chest at least 2 inches (5 cm) for an adult and at least 1/3 the depth of the chest for a child.
  - The pressure and release phases take the same time.
  - Release pressure and completely remove your weight at the top of each compression to allow for complete chest recoil after each compression.
  - If a trained rescuer, give 30 chest compressions to 2 breaths. Otherwise perform chest compressions only.
  - Count compressions out loud to keep track of how many you have given and to help keep a steady rhythm.

D. If a trained rescuer, begin Artificial Respiration.

6. Open the airway by tilting the head and lifting the jaw (Fig-3).
7. Cover the casualty's mouth with yours and pinch nostrils (Fig-4).
8. Breathe into the casualty twice, each breathe should take 1 second. Use enough air to make the chest rise.
  - \* If air does not go in, perform steps for choking adult / child (Section 6).

#### INFANT CASUALTY (UNDER 1 YEAR OLD)

C. Begin CPR

1. Use the basic life support (BLS) sequence of steps: C-A-B (Chest Compressions-Airway-Breathing).
2. Ensure casualty is on a firm, flat surface.
2. Place two fingers of one hand in the centre of the chest, just below the nipple line.
4. Push down hard and fast, at a rate of at least 100 compressions per minute.
  - Depress and release the chest rhythmically
  - Press straight down to compress the chest 1/3 the depth of the chest, approximately 1.5 inches (4 cm) (Fig-9).
  - The pressure and release phases take the same time
  - Release pressure at the top of each compression to allow for complete chest recoil after each compression.
  - If a trained rescuer, give 30 chest compressions to 2 breaths. Otherwise perform chest compressions only.
  - Count compressions out loud to keep track of how many you have given, and to help keep a steady rhythm.

D. Begin Artificial Respiration

5. Open the airway by tilting the head and lifting the jaw.
6. Cover the infants mouth and nose with your mouth (Fig-5).
7. Breathe into the infant twice, use just enough air to make the chest rise.
  - \* If air does not go in, perform steps for choking infant (Section 6).



Fig-7



Fig-8



Fig-9

### 6. Choking

#### CONSCIOUS ADULT / CHILD

A. Ask "Are you choking?"  
If casualty can speak or cough, air way is open enough to force out obstructing object.

B. If casualty CAN speak or cough  
1. Reassure and encourage coughing  
2. Do not hit on back

C. If casualty CANNOT speak or cough  
1. Stand behind casualty, locate hip bones and wrap your arms around waist.  
2. Make a fist with one hand and place above navel, at hip level. Grab fist with other hand. (Fig-10)  
3. Thrust inward and upward into abdomen.  
4. Repeat abdominal thrusts until air way is clear or casualty becomes unconscious.  
5. If casualty becomes unconscious, call medical help, then follow steps for UNCONSCIOUS ADULT / CHILD.

D. If casualty is pregnant or obese  
1. Wrap you arms around the casualty's chest at armpit level.  
2. Place the thumb side of one fist over the centre of the chest. Place the second hand over top of the fist.  
3. Give inward chest thrusts until the air way is cleared or the casualty becomes unconscious.  
4. If casualty becomes unconscious, call medical help, then follow steps for UNCONSCIOUS ADULT / CHILD.

#### CONSCIOUS INFANT

If obstruction is due to upper respiratory tract infection (cough, cold, etc.), do not give First Aid for choking. Get immediate medical attention.

A. Determine if infant is choking on foreign substance.

B. Give 5 back blows (Fig-11)  
1. Place infant face down, head lower than trunk.  
2. Support head.  
3. Give 5 back blows between shoulder blades using heel of one hand.

C. Give 5 chest thrusts (Fig-12)  
1. Turn infant face up, keeping head lower than trunk.  
2. Support head.  
3. Place 2 fingers on breastbone, 1 finger width below nipple line and give 5 chest thrusts.

D. Continue back blows and chest thrust until object is removed or infant becomes unconscious.

E. If infant becomes unconscious, call medical help, follow steps in UNCONSCIOUS INFANT.

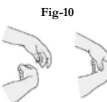


Fig-10



Fig-11



Fig-12

Source: Circulation, Journal of the American Heart Association; 2010 American Heart Association and American Red Cross Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care; 2010 American Heart Association and American Red Cross Guidelines for First Aid

## MEDICAL EMERGENCIES, continued

### FIRST AID INFORMATION

#### 10. Bleeding

Serious bleeding may occur with deep cuts and severed blood vessels.

**A. Ensure safety.**

**B. Send for an ambulance when bleeding is severe.**

**C. Control bleeding. (Fig-13)**

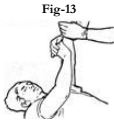
1. Assist casualty to sit or lie down.
2. Remove clothing to expose extent of wound.
3. Cover with sterile gauze or clean cloth.
4. Apply firm pressure directly over the gauze. If dressings are not available, have casualty to use own hand to apply pressure.
5. If it is possible to provide continuous manual pressure, wrap an elastic bandage firmly over gauze to hold it in place.
6. If blood soaks through, do not remove the gauze; add more gauze on top and apply more pressure.

**D. Broken bone, glass or objects protruding through skin. (Fig-14)**

1. Do not remove embedded objects.
2. Cover wound with clean dressings.
3. Apply pressure close to wound by not pressing on broken bone or object.
4. Maintain pressure and prevent movement of object by applying bulk pads around the object. Bandage pads in place.

**E. Nosebleeds**

1. Seat casualty with head tilted forward.
2. Pinch nostrils firmly for 10 minutes.
3. Avoid blowing nose for several hours.
4. If bleeding persists, call an ambulance.



#### 11. Eye Injuries

**A. Call an ambulance for all serious eye injuries.**

**B. Chemicals in eye**

1. Wash eye immediately with large amounts of cool, running water for at least 15 minutes.

**C. Foreign object in eye.**

1. Never rub eye and do not try to remove embedded foreign objects.
2. Cover eye lightly with bandage.

**D. Puncture wounds**

1. Help casualty to lie down in face up position. Caution not to move.
2. Cover injured eye with clean dressing and secure lightly with bandage.

#### 12. Severe Burns & Scalds

**A. Ensure safety.**

**B. Call ambulance for severe burns or scalds.**

**C. For burns or scalds caused by fire, hot solids, hot liquids or sun:**

1. Cool affected part with cool water (15°C to 25°C) until pain is relieved or until instructed otherwise by medical personnel.
2. Remove rings and bracelets before limb starts to swell.
3. Cover burn with clean cloth and secure lightly with bandage.
4. Ensure hospital treatment for deep burns and scalds of areas larger than a quarter.
5. DO NOT breath on, cough on or touch burns.
6. DO NOT break blisters.
7. DO NOT remove clothing stuck on burn.
8. DO NOT apply medications, ointments or greasy substances to burn.

**D. For burns caused by dry chemicals:**

1. Brush off dry chemicals with a gloved hand or piece of clothing.
2. Remove all contaminated clothing from the casualty, making sure you do not contaminate yourself.
3. If chemical is an acid or alkali, immediately flood with copious amounts of water.
4. Cover burn with clean cloth and secure lightly with bandage.

**E. For electrical burns:**

1. Turn off electricity at its source before entering the area around the casualty. In case of high-voltage electrocutions caused by fallen power lines, immediately notify the appropriate authorities.
2. Check for breathing and pulse. If the casualty isn't breathing, or isn't breathing normally, perform CPR. Refer to Section 5.
3. Cover burn with clean cloth and secure lightly with bandage.
4. All electrical injuries require medical assessment. The extent of the damage may be severe and unseen.

Source: *Circulation, Journal of the American Heart Association: 2010 American Heart Association and American Red Cross Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care; 2010 American Heart Association and American Red Cross Guidelines for First Aid*

## MEDICAL EMERGENCIES, continued

### FIRST AID INFORMATION

#### 13. Heat Exposure (Hyperthermia)

**A. Definition:** High body temperature due to overexertion or high temperature. Signs and symptoms may include nausea, dizziness, muscle cramps, feeling faint, headache, fatigue and heavy sweating.

**B. Treatment:**

1. Move casualty to a cool area to lie down.
2. Remove as many layers of clothing as possible.
3. Cool casualty with water spray or sponge.
4. Encourage casualty to drink fluids, preferably ones that contain carbohydrates and electrolytes.
5. Send for medical help if symptoms worsen.
6. If unconscious:
  - (a) Call an ambulance.
  - (b) Ensure breathing and circulation.
  - (c) Place in recovery position.

#### 14. Cold Exposure (Hypothermia)

**A. Definition:** Extreme loss of body heat.

**B. Treatment:**

1. If conscious:
  - (a) Remove from cold environment.
  - (b) Remove wet clothing.
  - (c) Wrap with anything on hand, such as blankets, clothing and/or newspapers.
  - (d) If no definitive health care is near, begin active warming by placing casualty near a heat source and placing containers of warm, not hot, water in contact with the skin.
2. Send for medical help.
3. If unconscious:
  - (a) Call an ambulance.
  - (b) Ensure breathing and circulation.
  - (c) Remove from cold environment; protect from further cooling.

#### 15. Poisoning

**A. In all cases:**

1. Ensure safety.
2. Identify poison and container, if possible.
3. Phone Poison Control Centre.
4. Call an ambulance. Send container and contents with casualty to hospital.

**B. Inhaled poisons such as exhaust fumes.**

1. Remove source of fumes.
2. Move casualty to fresh air.
3. Check breathing and circulation.
4. Give artificial respiration or CPR as required.

**C. Poisons in contact with skin or eyes.**

1. Flood area with a gently stream of cool running water for at least 15 minutes.
2. Continue flooding area until ambulance takes over.
3. Remove contaminated clothing.
4. Do not use chemical antidotes.

**D. For swallowed household chemical poisons:**

1. If conscious:
  - (a) Phone the Poison Control Centre. Follow their advice on first aid.
  - (b) Do not administer anything by mouth for poison ingestion unless advised to do so by a poison centre or a physician. If poison is hydrocarbon or corrosive, DO NOT induce vomiting.
  - (c) To avoid inhalation of vomit, place casualty's head lower than body in recovery position.
2. If unconscious:
  - (a) Call an ambulance.
  - (b) Check breathing and circulation.
  - (c) Place casualty in recovery position.
  - (d) DO NOT induce vomiting.

Source: *Circulation, Journal of the American Heart Association: 2010 American Heart Association and American Red Cross Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care; 2010 American Heart Association and American Red Cross Guidelines for First Aid*

## MEDICAL EMERGENCIES, continued

### 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 corporate 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.

## **MEDICAL EMERGENCIES, continued**

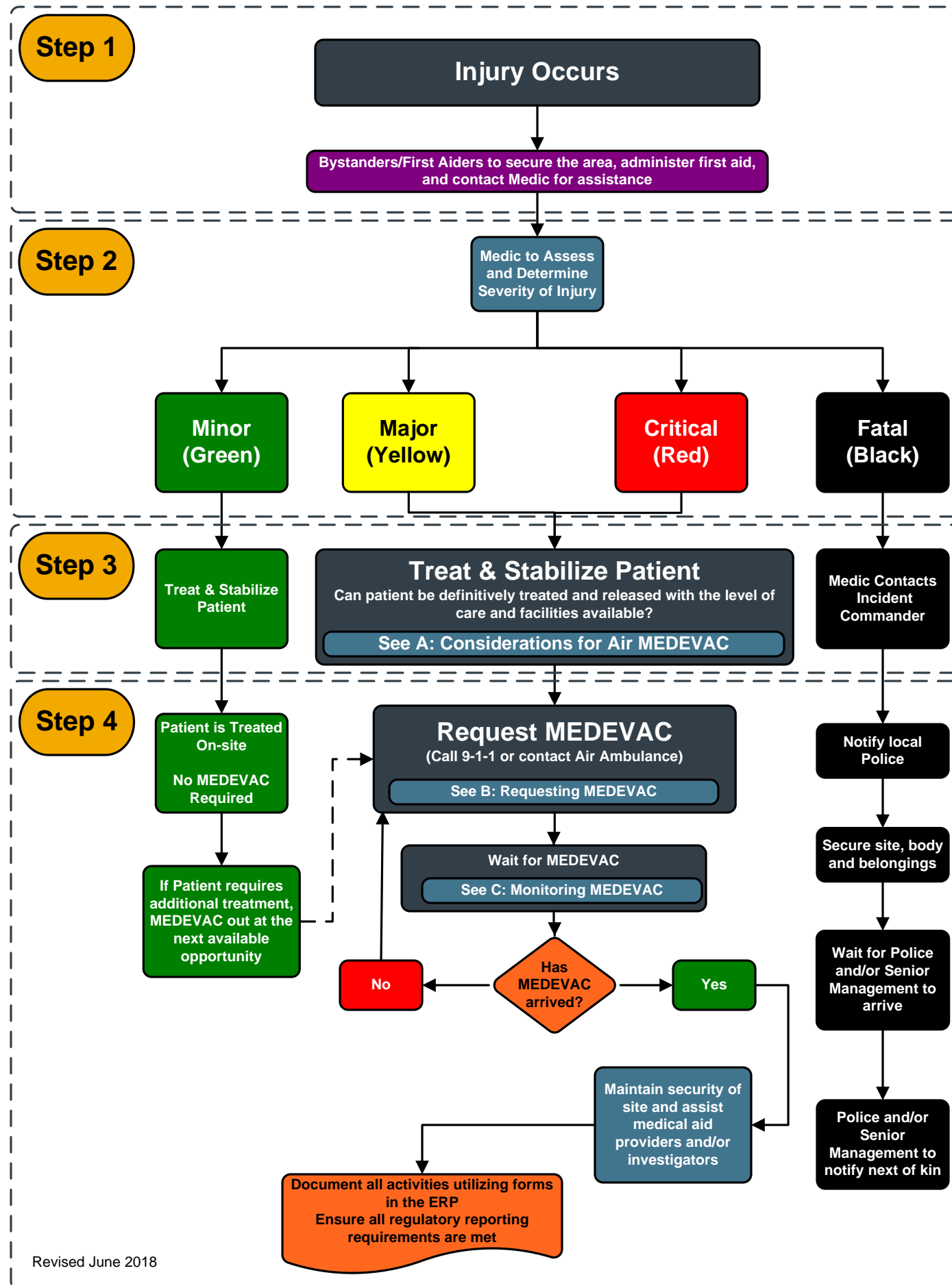
### **During the Notification of the Next-of-Kin, continued**

- 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, the Incident Commander / Corporate Incident Director 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.

**Green** – 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

**Yellow** – Patients with major injuries or illnesses that should be treated within 20 minutes to 2 hours.

**For example:**

- Open fractures
- Large lacerations

**Red** – 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

**Black** – 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

# 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**  
**1-888-888-4567**

**OR**

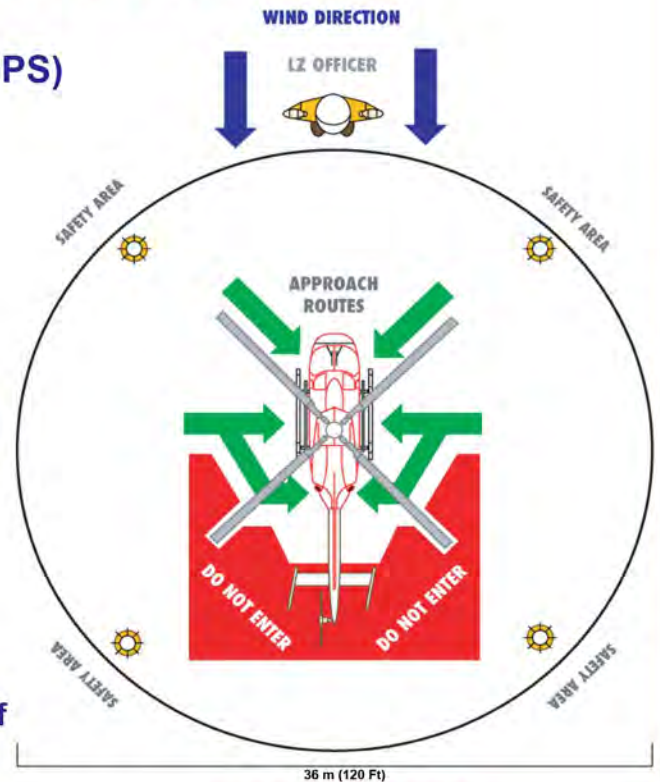
**DIRECT**  
**403-299-0932**

### 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 H<sub>2</sub>S

### 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
- if necessary, provide road blocks approximately 500 metres on either side of the landing zone



STARS 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

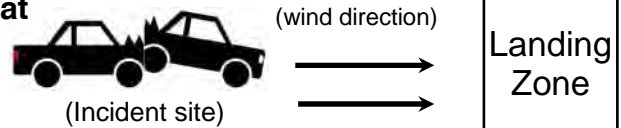
# STARS®

## LANDING ZONE INFORMATION CARD

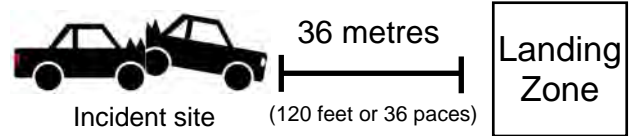
**STEP 1:** Advise your dispatch centre which channel you will be using to communicate with STARS.



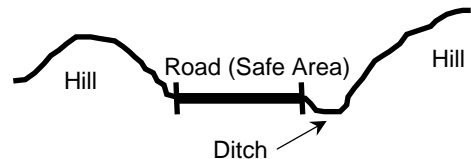
**STEP 2:** Select an area for the landing zone that is downwind from the incident site (unless hazardous materials or gases are present).



**STEP 3:** Select an area for the landing zone that is a minimum of 36 metres (or 120 feet, or 36 paces) from the incident site.



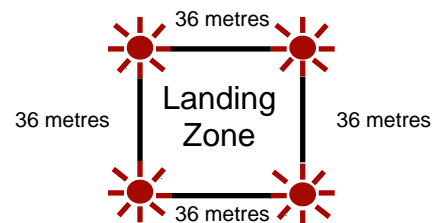
**STEP 4:** Select a flat, level surface for the landing zone; preferably pavement or concrete, if available.



**STEP 5:** Ensure the landing zone area is clear of wires, poles, trees and debris.



**STEP 6:** Mark out a 36 metre by 36 metre (120 feet x 120 feet, or 36 paces x 36 paces) square, and mark the corners with LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.

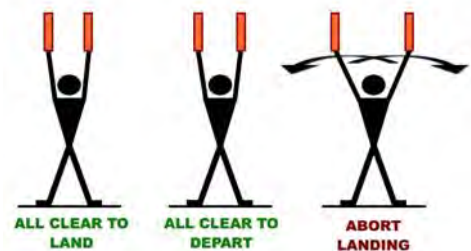


**STEP 7:** Brief STARS crew via radio or cell phone and stand at the middle of the upwind side of the landing zone with the wind at your back.

Monitor radio frequency to communicate with the STARS team.

As the helicopter approaches, go down on one knee and DO NOT MOVE from your position.

Do not approach the helicopter at any time unless escorted by the STARS crew.



Landing zone hand signals

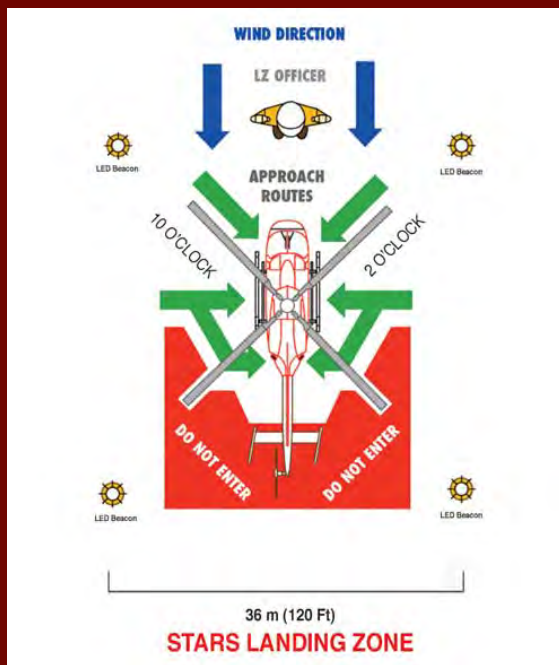


# Landing Zone Briefing for STARS Crew

- STEP 1:** Identify yourself and confirm the Landing Zone Officer is present with the landing zone secure.
- STEP 2:** Communicate the location of the landing zone using N/E/S/W to reference the accident scene or other landmarks.
- STEP 3:** Identify the type of surface for the landing zone (field, road or other).
- STEP 4:** State what is marking the corners of the landing zone: LED beacons, heavy pylons or any other bright conspicuous objects easily seen from the air.
- STEP 5:** Communicate the wind direction and approximate speed.
- STEP 6:** Identify the hazards in the area of the landing zone such as wires, poles, trees, or hazardous materials using N/E/S/W in reference to the landing zone.



**Ensure the wind is at your back**



## Special Consideration:

Remove any loose debris and indicate if there is snow or dust in the landing zone. If dusty or fresh snow conditions exist you may be asked to move into the centre of the landing zone. Kneel and **DO NOT MOVE** from your position as the helicopter will land directly beside you.

**If you have any questions or comments regarding this landing zone information card or would like to watch our landing zone video, please visit [www.stars.ca](http://www.stars.ca)**

# STARS®

EMERGENCY LINK CENTRE 1-888-999-3822

This number can also be used to provide a landing briefing to the STARS crew if radio comms are not available

## **MEDICAL EMERGENCIES, continued**

### **BRITISH COLUMBIA AIR AMBULANCE (BCAS)**

The BC Ambulance Service (BCAS) Air Ambulance program provides critical transportation linkages between hospitals and referral centres across the province for patients requiring a higher level of care. Operating from 3 flight centers located in Vancouver, Kelowna and Prince George, the Air Ambulance Program employs dedicated aircraft and uses commercial and charter aircraft when required.

Such resources include: 6 fixed wing planes (2 turboprops and 1 jet based in Vancouver, 2 turboprops based in Kelowna and 1 turboprop based in Prince George), and 3 helicopters (2 based in Vancouver and 1 based in Prince Rupert). BCAS also employs approximately 40 charter carriers throughout British Columbia.

All requests for Air Ambulance, neonatal, maternal and paediatric service are processed through the Provincial Air Ambulance Coordination Center (PAACC) located in Victoria, British Columbia.

The BCAS Air Ambulance program employs highly skilled, specially trained emergency medical personnel including Advanced Care Paramedics specializing in Adult Critical Care and Child and Maternal Critical Care.

BCAS also contracts the services of Air Ambulance pilots, who are highly experienced, flying both day and night in varying weather conditions and responding to calls throughout the province. Thanks to flying standards that surpass even those required of the aviation industry by Transport Canada, BCAS continues to achieve safe, effective and efficient air transports.

*<http://www.bcas.ca/EN/index.html>*

THIS PAGE INTENTIONALLY LEFT BLANK

## 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.

## RESPONDER SAFETY, continued

### 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 as 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.

## RESPONDER SAFETY, continued

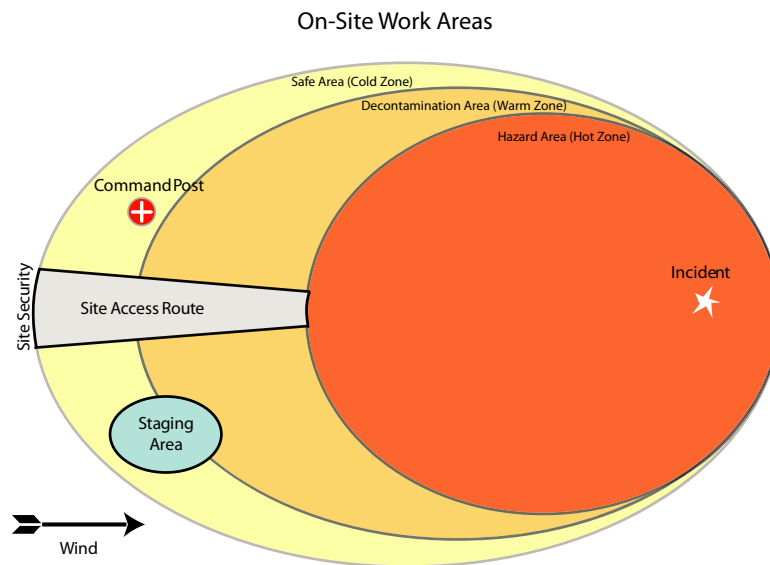
Decontamination is the complete or partial removal or neutralization of the harmful contamination chemicals. Some equipment will not withstand a proper decontamination process and therefore must be destroyed. Site safety personnel will recommend to the On-Site Group Supervisor whether clothing, instruments 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 on-site 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.



## **RESPONDER SAFETY, continued**

### **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.



## RESPONDER SAFETY, continued

### 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.

## **RESPONDER SAFETY, continued**

### **DECONTAMINATION AREA**

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

- By contacting vapours, gases, mists or particulate in the air
- By being splashed by materials while sampling or opening container
- By walking through puddles of liquids or on contaminated soil
- By 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 locations that are not affected by the on-site hazard. Any contaminated personnel and equipment leaving the hazardous area must be decontaminated (in the decontamination area) before continuing into 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.

## **PSYCHOLOGICAL SUPPORT**

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.

Fifteen-minute rest periods should be scheduled every two hours for all corporate and field response team members. If possible, they should be provided with a sheltered place to sit or lie down, nutritious food, potable water or juices.

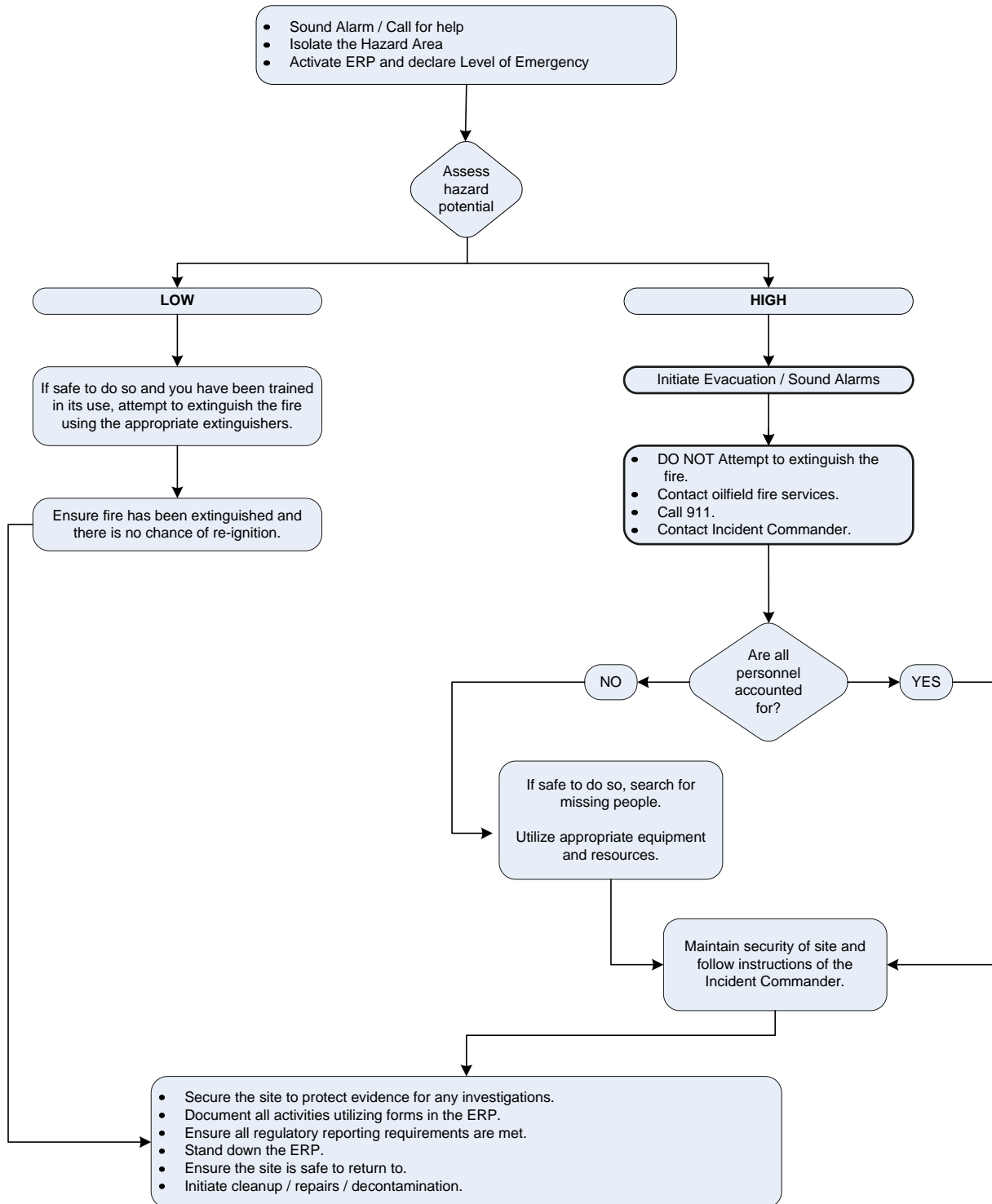
## **CRITICAL INCIDENT STRESS DEBRIEFING (CISD)**

If necessary, the Incident Commander will request that the Emergency Support Team dispatch trained personnel to meet with responders, preferably within 24 to 48 hours, to provide support and reassurance to those affected by an emergency. The company's Human Resources personnel will contact trained CISD counsellors as required.

THIS PAGE INTENTIONALLY LEFT BLANK

# FIRE / EXPLOSION

## Fire Explosion Consideration



## **FIRE / EXPLOSION, continued**

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

#### CLASSIFICATION OF FIRES

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

CLASS/SYMBOL	MATERIAL	EXTINGUISHING AGENT
	Ordinary combustible materials, such as paper, wood and textile fibers.	Cooling, blanketing or wetting extinguishing agent is needed.
	Flammable liquids such as gasoline, thinners, oil-based paints and greases.	Extinguishers for this type of fire include carbon dioxide, dry chemical and halogenated agent types.
	Energized electrical equipment, where a non-conducting gaseous clean agent or smothering agent is needed.	The most common type of extinguisher for this class is a carbon dioxide extinguisher.
	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.
	Commercial cooking appliances with vegetable oils, animal oils or fats at high temperatures.	A wet potassium acetate, low pH-based agent is used for this class of fire.

Source: [www.pyrene.ca/classifications.shtml](http://www.pyrene.ca/classifications.shtml)

## **FIRE / EXPLOSION, continued**

### **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.

## **FIRE / EXPLOSION, continued**

### **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.



## FIRE / EXPLOSION, continued

### 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)

## FIRE / EXPLOSION, continued

### 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.

## FIRE / EXPLOSION, continued

### BLEVE CONSIDERATIONS BASED ON TANK CAPACITY

BLEVE																			
Capacity		Diameter		Length		Propane Mass		Minimum time to failure for severe torch	Approximate time to empty for engulfing fire	Fireball radius		Emergency response distance		Minimum evacuation distance		Preferred evacuation distance		Cooling water flow rate	
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

## BC Spill & Release Reporting Requirements

*All spills must be reported to your Whitecap HSE Advisor*

	Reportable Quantities		
	British Columbia (see <a href="#">Note 1</a> )		
	<i>All releases must be reported, regardless of a minimum reportable quantity, if the release of a "polluting substance" is causing "pollution".</i>		
Product	Onsite	Offsite	Transportation (see <a href="#">Note 2</a> )
<b>Spills</b>			
<b>Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.</b>	100 L (hydrocarbon contains no toxic substances and does not impact a water way)	Any volume. NEB lines in excess of 1.5m <sup>3</sup> that leaves company property or right-of-way	100 L (hydrocarbon contains no toxic substances and does not impact water way)
<b>Produced water</b>	200 L (fluid contains no toxic substances)	Any volume	No TDG Reporting Requirements
<b>Diesel fuel, gasoline and other refined flammable liquids (Class 3)</b>	100 L	Any Volume	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Glycol (New or used)</b>	100 L	100 L (see Note 1)	No TDG Reporting Requirements
<b>Methanol (Class 3 sub class 6.1)</b>	100 L (see Note 3)	Any Volume	Any Quantity (Packing Group II)
<b>Lube oil (New or used)</b>	100 L	Any Volume	No TDG Reporting Requirements
<b>Oilfield wastes (See <a href="#">Note 3</a>)</b>	<a href="#">Note 3</a>	<a href="#">Note 3</a>	<a href="#">Note 3</a>
<b>Molten sulphur or flammable solids (Class 4)</b>	25 kg	25 kg (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Pesticides (See <a href="#">Note 3</a>)</b>	Reportable quantity dependent on product classification		
<b>Toxic substances (Class 6.1)</b>	5 kg or 5 L	5 kg or 5 L (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Corrosives (Class 8)</b>	5 kg or 5 L	5 kg or 5 L (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Other refined products (See <a href="#">Note 3</a>)</b>	Reportable quantity dependent on product classification		
<b>Air Release - Natural gas</b>	10 kg or 15 m <sup>3</sup> by volume where operating pressure is > 100 PSI; Any quantity that could pose a danger to public safety or 50 kg (non-pipeline); H <sub>2</sub> S of 10 ppm or greater, 1 m or more from source.		
<b>Other Reportable Releases</b>			
<ul style="list-style-type: none"> <li>• Fresh water 10,000 L; Drilling or Invert mud 100 L; Any fluid including hydrocarbons, drilling fluids, invert mud, effluent, emulsion, etc. which contains toxic substance 25 L</li> <li>• Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;</li> <li>• Major damage to oil and gas roads or road structures;</li> <li>• Drilling kicks when any one of the following occur:               <ul style="list-style-type: none"> <li>• pit gain of 3 m<sup>3</sup> or greater</li> <li>• casing pressure 85% of MA</li> <li>• 50% out of hole when kicked</li> <li>• well taking fluid (LC)</li> <li>• associated spill</li> <li>• general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc.</li> </ul> </li> <li>• Pipeline incidents, such as spills during construction phase, near misses from mobile or excavation equipment, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device (see the Pipeline Operations Manual, Section 12);</li> <li>• Induced seismicity &gt;4 on the Richter scale during oil and gas operations such as well fracturing; and</li> <li>• Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only.</li> </ul>			
<b>Emergency Management British Columbia (EMBC) 1-800-663-3456</b>			
<b>Incident Reporting Instructions:</b> Use the Incident Classification Matrix to determine if the incident is a Minor Incident or a Level 1, 2, or 3 Emergency			
<b>Minor Incident:</b> The permit holder must report the minor incident to the Commission within 24 hours by electronic submission through the Online Minor Incident Reporting System, operated through KERMIT. <a href="https://kermit.bcogc.ca/Login.aspx">https://kermit.bcogc.ca/Login.aspx</a>			
If the minor incident involves a leak or a spill, EMBC must also be called at 1-800-663-3456 for the Ministry of Environment to be notified.			
The incident must be reported by electronic submission by the permit holder incident representative. A copy of the Form A: Minor Incident Notification Form and the Incident Classification Matrix can be found on the Emergency Response and Safety section of the Commission's website to help the permit holder gather the information required before entering it online. The matrix and any photos or any other relevant documentation can be attached to the online submission.			
<b>Level 1, 2, or 3 Emergency:</b> If the incident receives a score of Level 1, 2, or 3, it must be reported immediately (within 1 hour) to the Commission's incident reporting line (EMBC 1-800-663-3456).			
<b>Permit Holder Post Incident:</b> The Form D: Permit Holder Post Incident Report Form must be submitted by the permit holder to the Commission within 60 days for:			
<ol style="list-style-type: none"> <li>1. Any Level 1, 2 or 3 emergency incident must complete Part A-P; or</li> <li>2. Any pipeline incident (including minor notification): complete Part A-U; or</li> <li>3. Upon request by the Commission.</li> </ol>			
<b>B.C. Ministry of Environment, local police &amp; TDG releases via the Emergency Management British Columbia (EMBC) 1-800-663-3456</b>			
Transport company or Whitecap to report the incident			
Information required – the shipping name or UN number of the dangerous goods, the quantity of dangerous good that 1) was in means of containment before the accidental release, the "dangerous goods accident" or the dangerous goods incident" and 2) is known or suspected to have been released, a description of the condition of the means of containment from which the dangerous goods were released, including details as to whether the conditions of transport were normal when the means of containment failed, for an accidental release from a cylinder that has suffered a catastrophic failure, a description of the failure, the location of the accidental release, number of deaths, and injuries, and an estimate of the number of people evacuated.			
Written report within 30 days to Transport Dangerous Goods (Place de Ville, Tower C 9th Floor, 330 Sparks St. Ottawa, Ontario K1A 0N5) or email to dor-rcd@tc.gc.ca For a Railway vehicle report to <b>CANUTEC at 613-996-6666</b> .			
<b>Federally-regulated releases</b>	<ul style="list-style-type: none"> <li>• Report to <b>Environment Canada 1-780-499-2432</b> for any release of a deleterious substance directly or indirectly (including through groundwater) into water frequented by fish.</li> <li>• National Energy Board (NEB)-regulated pipelines require reporting to the <b>NEB 403-807-9473</b> for all construction and operation releases. Operation incidents must also be reported to the <b>Transportation Safety Board of Canada (TSBC) 819- 997-7887</b>.</li> <li>• Radioactive releases must be immediately reported to any CNSC (Canadian Nuclear Safety Commission) office and a full report must be filed within 21 days. <b>CNSC Western Regional Office 403-292-5181</b>.</li> </ul>		
<b>Notes:</b>			
1	In B.C.: All releases that impact water ways must be reported, regardless of a minimum reportable quantity. If the release of a "polluting substance" is causing "pollution". A "polluting substance" is any substance, whether gaseous, liquid or solid, that is capable of causing pollution if it were to escape to air or be spilled or escape onto land or into a waterbody. "Pollution" is the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment. If there is any doubt, report the release.		
2	Transportation refers to the TDG and means all handling, offering for transport and transporting of dangerous goods by any means of transport. Handling means loading, unloading, packing or unpacking dangerous goods in a means of containment for the purposes of, in the course of or following transportation, and includes storage in the course of transportation. Transportation does not include pipelines.		
3	Contact Whitecap's HSE Advisor as Waste and TDG classification are variable. Refer to the product's MSDS to determine TDG classification; in particular amines and inhibitors can have a variety of classifications (e.g., corrosive, flammable, etc.). Refer to the Whitecap's Waste Chart for waste information.		

Spill Priorities - Assess spill situation from a safety, environment and public perspective, establish site control, determine and control source of spill, contain and prevent the spill from spreading, call your supervisor and enter the incident into the incident tracking system. Call your HSE Advisor, who will: advise if the incident needs to be report to the regulator and who is reporting it, assist/coordinate cleanup coordinate waste handling, transportation and disposal Submit the release report to OGC or 30 day Letter to TDG.

Product	Reportable Quantities		
	Alberta (see <a href="#">Note 1</a> ) Any release that may cause and adverse effect must be reported		
	Onsite	Offsite	Transportation (see <a href="#">Note 3</a> )
<b>Spills</b>			
<b>Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.</b>	2 m <sup>3</sup> any unrefined product release that may cause, is causing, or has caused an adverse effect	All spills. Any spill from a pipeline. Regardless of volume. NEB lines in excess of 1.5m <sup>3</sup> that leaves company property or right-of-way	See Class 3
<b>Produced water</b>	2 m <sup>3</sup> any unrefined product release that may cause, is causing, or has caused an adverse effect	All spills. Any spill from a pipeline. Regardless of volume	No TDG Reporting Requirements
<b>Diesel fuel, gasoline and other refined flammable liquids (Class 3)</b>	Any refined product release that may cause, is causing, or has caused an adverse effect  (AER uses the TDGR as a potential indication of a release that may cause adverse effect. The release volume limits in the TDGR table are not mandatory to be called into the AER rather they are an indication of limits that may require reporting due to potential adverse effect)	Any refined product release that may cause, is causing, or has caused an adverse effect  (AER uses the TDGR as a potential indication of a release that may cause adverse effect. The release volume limits in the TDGR table are not mandatory to be called into the AER rather they are an indication of limits that may require reporting due to potential adverse effect)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Glycol (New or used)</b>			No TDG Reporting Requirements
<b>Methanol (Class 3 sub class 6.1)</b>			Any Quantity (Packing Group II)
<b>Lube oil (New or used)</b>			No TDG Reporting Requirements
<b>Oilfield wastes (See <a href="#">Note 3</a>)</b>			<b>Note 3</b>
<b>Molten sulphur or flammable solids (Class 4)</b>			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Pesticides (See <a href="#">Note 3</a>)</b>			Reportable quantity dependent on product classification
<b>Toxic substances (Class 6.1)</b>			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Corrosives (Class 8)</b>			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
<b>Other refined products (See <a href="#">Note 3</a>)</b>			Reportable quantity dependent on product classification

<b>Air Releases - Natural Gas</b> <ul style="list-style-type: none"> <li>Any release from a pipeline and any other release &gt;30,000 m<sup>3</sup></li> <li>Any quantity that could pose a danger to public safety or 50 kg (non-pipeline)</li> </ul>
<b>Other Reportable Releases</b> <ul style="list-style-type: none"> <li>Any well flowing uncontrolled</li> <li>Any burning of effluent from a well or facility</li> <li>Any Fire where loss exceeds 2m<sup>3</sup> of oil, or 30,000m<sup>3</sup> of gas or where damage to well head occurs</li> </ul>

**Alberta Energy Regulator (AER) 1-800-222-6514**

Preliminary information – licence number, incident location, time the release occurred, type of product released, volume released, area affected (description of location & surrounding environment), on or off lease, within/outside of PLA disposition (crown land), what happened? Details of action taken & proposed to be taken

Written Release Report within 7 days emailed to [bonnyville.fieldcenter@aer.ca](mailto:bonnyville.fieldcenter@aer.ca), [draytonvalley.fieldcenter@aer.ca](mailto:draytonvalley.fieldcenter@aer.ca), [fort.mcmurray@aer.ca](mailto:fort.mcmurray@aer.ca), [grandeprairie.fieldcenter@aer.ca](mailto:grandeprairie.fieldcenter@aer.ca), [medicinehat.fieldcenter@aer.ca](mailto:medicinehat.fieldcenter@aer.ca), [midapore.fieldcenter@aer.ca](mailto:midapore.fieldcenter@aer.ca), [reddeer.fieldcenter@aer.ca](mailto:reddeer.fieldcenter@aer.ca), [slavelake.fieldcenter@aer.ca](mailto:slavelake.fieldcenter@aer.ca), [stalbert.fieldcenter@aer.ca](mailto:stalbert.fieldcenter@aer.ca), & [wainwright.fieldcenter@aer.ca](mailto:wainwright.fieldcenter@aer.ca)

**TDG releases to be reported to local police and 1-800-272-9600**

**Transport company or Whitecap to report the incident**

Information required – the shipping name or UN number of the dangerous goods, the quantity of dangerous good that 1) was in means of containment before the accidental release, the “dangerous goods accident” or the dangerous goods incident” and 2) is known or suspected to have been released, a description of the condition of the means of containment from which the dangerous goods were released, including details as to whether the conditions of transport were normal when the means of containment failed, for an accidental release from a cylinder that has suffered a catastrophic failure, a description of the failure, the location of the accidental release, number of deaths, and injuries, and an estimate of the number of people evacuated.

Written report within 30 days to Transport Dangerous Goods (Place de Ville, Tower C 9<sup>th</sup> Floor, 330 Sparks St. Ottawa, Ontario K1A 0N5) or email to [dor-rcd@tc.gc.ca](mailto:dor-rcd@tc.gc.ca)

**For a Railway vehicle report to CANUTEC at 613-996-6666.**

**Federally-Regulated Releases**

- Report to **Environment Canada 1-780-499-2432** for any release of a deleterious substance directly or indirectly (including through groundwater) into water frequented by fish.
- National Energy Board (NEB)-regulated pipelines require reporting to the **NEB 403-807-9473** for all construction and operation releases. Operation incidents must also be reported to the **Transportation Safety Board of Canada (TSBC) 819- 997-7887**.
- Radioactive releases must be immediately reported to any CNSC (Canadian Nuclear Safety Commission) office and a full report must be filed within 21 days. **CNSC Western Regional Office 403-292-5181**.

<b>Notes:</b>	
<b>1</b>	<p><b>In Alberta:</b> A release includes to spill, discharge, dispose of, spray, inject, inoculate, abandon, deposit, leak, seep, pour, emit, empty, throw, dump, place &amp; exhaust. To be reportable, the release must be into the environment. For example, a spill that is fully contained within a building, including odours, is not considered a release into the environment. However, if there is any possibility of odours venting from the building into the environment, AER should be notified.</p> <p>All releases must be reported, regardless of a minimum reportable quantity, if the release has caused, is causing or may cause an adverse effect. An “adverse effect” is defined as “<b>impairment of or damage to the environment, human health or safety, or property</b>”. All releases must be reported, regardless of a minimum quantity, if the release is into a watercourse, groundwater or surface water. <b>If there is any doubt, report the release.</b></p>
<b>2</b>	<p><b>Transportation</b> refers to the TDG and means all handling, offering for transport and transporting of dangerous goods by any means of transport. Handling means loading, unloading, packing or unpacking dangerous goods in a means of containment for the purposes of, in the course of or following transportation, and includes storage in the course of transportation. Transportation does not include pipelines.</p>
<b>3</b>	<p>Contact Whitecap’s HSE Advisor as Waste and TDG classification are variable. Refer to the product’s SDS to determine TDG classification; in particular amines and inhibitors can have a variety of classifications (e.g., corrosive, flammable, etc.). Refer to the <i>Whitecap’s Waste Chart</i> for waste information.</p>

Spill Priorities - Assess spill situation from a safety, environment and public perspective, establish site control, determine and control source of spill, contain and prevent the spill from spreading, call your supervisor and enter the incident into the incident tracking system, Call your HSE Advisor, who will: advise if the incident needs to be report to the regulator and who is reporting it, assist/coordinate cleanup coordinate waste handling, transportation and disposal Submit the release report to AER or 30 day Letter to TDG.

## 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 Considerations Based On Tank Capacity Chart, on page 78 in the Fire/Explosion tab of this 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?

## SPILL RESPONSE, continued

### 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:

- Contact the applicable spill service (as outlined in the table below) to determine the closest available spill equipment and towing requirements.

Follow notification procedures outlined at the beginning of this section.

Alberta	Western Canadian Spill Service (WCSS)	866-541-8888
British Columbia	Western Canadian Spill Service (WCSS)	866-541-8888

\*See website for more info - <http://www.wcss.ab.ca>

Spill Contingency plan - <http://www.wcss.ab.ca/contingency-manual.shtml>

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

## 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 is 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



## **SPILL RESPONSE, continued**

- 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.

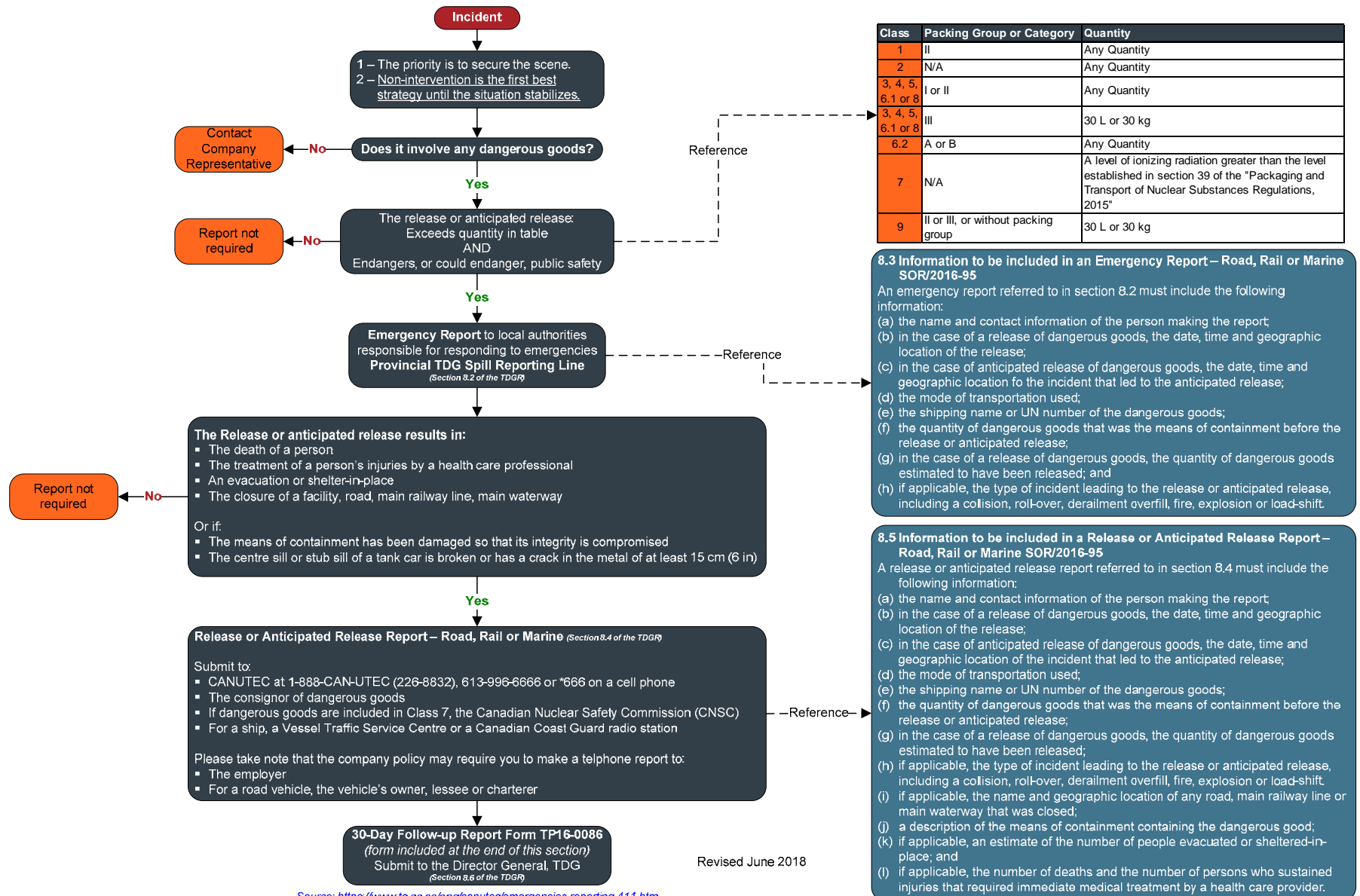
## **DISPOSAL AND REMEDIAL OPERATIONS**

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 companies 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.

# TRANSPORTATION INCIDENTS

## FIRST ON-SCENE TRANSPORTATION (ROAD, RAIL, MARINE) INCIDENT FLOWCHART

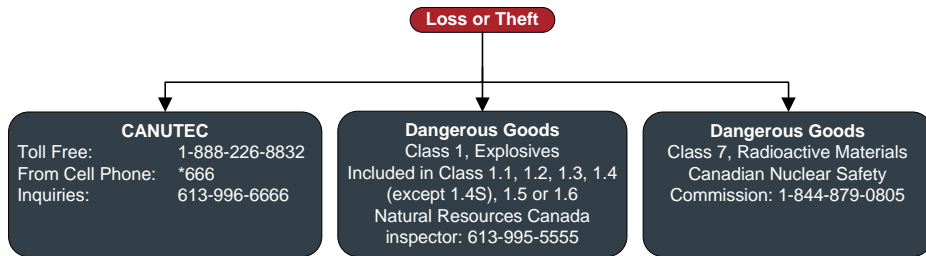


Source: <https://www.tc.gc.ca/eng/canutec/emergencies-reporting-411.htm>

TRANSPORTATION, continued

LOSS, THEFT OR UNLAWFUL INTERFERENCE REPORTING FLOWCHART

Loss or Theft Report Protocol



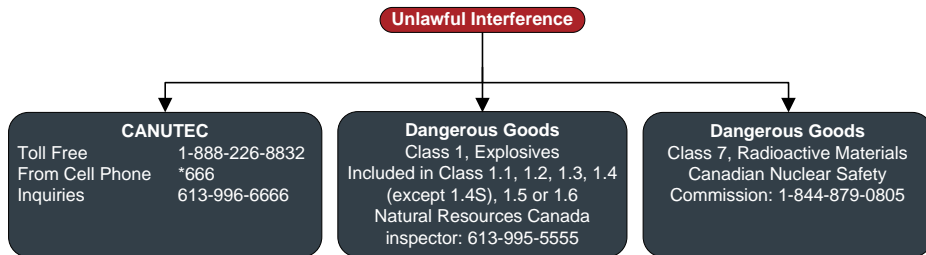
- 1. Any Quantity of Dangerous Goods in the following Primary and Subsidiary Classes:**
- Explosives included in Class 1.1, 1.2, or 1.3
  - Toxic gases included in Class 2.3
  - Organic peroxides included in Class 5.2, Type B, liquid or solid, temperature controlled
  - Toxic substances included in Class 6.1 and Packing Group I
  - Infectious substances included in Class 6.2
  - Radioactive materials included in Class 7

- 2. A Total Quantity of 450kg or more, in the case of Dangerous Goods in the following Primary and Subsidiary Classes:**
- Explosives included in Class 1.4 (except for 1.4S), 1.5 or 1.6
  - Flammable gases included in Class 2.1
  - Flammable gases included in Class 3
  - Desensitized explosives included in Class 3 or 4.1
  - Substances liable to spontaneous combustion, pyrophoric solids or liquids, included in Class 4.2 and Packing Group I or II
  - Water-reactive substances included in Class 4.3 and Packing Group I or II
  - Oxidizing substances included in Class 5.1 and Packing Group I or II
  - Corrosives included in Class 8 and Packing Group I or II

- 3. Any Quantity of one of these Dangerous Goods:**
- UN1261, Nitromethane,
  - UN1357, Urea Nitrate, Wetted with not less than 20%,
  - UN1485, Potassium Chlorate,
  - UN1486, Potassium Nitrate,
  - UN1487, 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,
  - UN1796, Nitrating Acid Mixture with more than 50% nitric acid,
  - UN1826, Nitrating Acid Mixture, Spent, with not more than 50% nitric acid,
  - UN1942, Nitrating Acid Mixture, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance,
  - UN2014, Hydrogen Peroxide, Aqueous Solution with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary),
  - UN2015, Hydrogen Peroxide, Aqueous Solution, Stabilized with more than 60% hydrogen peroxide; or Hydrogen Peroxide, Stabilized,
  - UN2031, Nitric Acid, other than red fuming
  - UN2032, Nitric Acid, Red Fuming
  - UN3149, Hydrogen Peroxide and Peroxyacetic Acid Mixture with acid(s), water and not more than 5% peroxyacetic acid, Stabilized
  - UN3370, Urea Nitrate, Wetted, with not less than 10% water by mass.

Reference

Unlawful Interference Report Protocol



Revised June 2018

## **TRANSPORTATION, continued**

### **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.
  - 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.*

## TRANSPORTATION, continued

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, 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

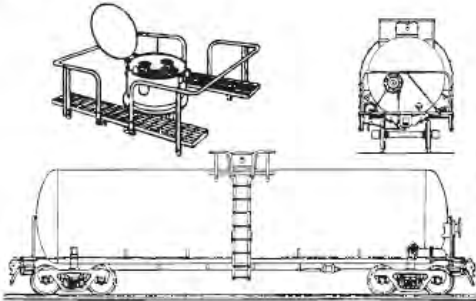
Refer to Petroleum Release Reporting Requirements chart in **SECTION 4 – SPILL RESPONSE**.

THIS PAGE INTENTIONALLY LEFT BLANK

## TRANSPORTATION, continued

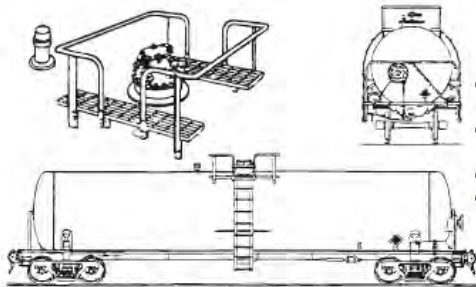
### RAIL CAR IDENTIFICATION CHART

#### 117 Pressure tank car



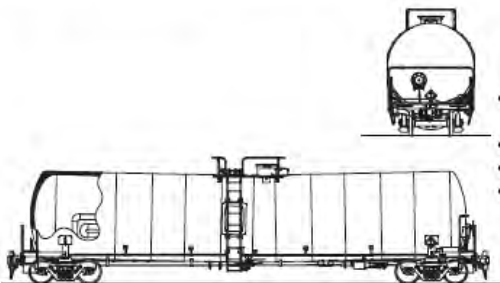
- For flammable, non-flammable, toxic and/or liquefied compressed gases
- Protective housing
- No bottom fittings
- Pressures usually above 40 psi

#### 131 General service tank car (low pressure)



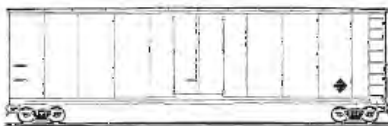
- For variety of hazardous and non-hazardous materials
- Fittings and valves normally visible at the top of the tank
- Some may have bottom outlet valve
- Pressures usually below 25 psi

#### 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 non-bulk 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, 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*

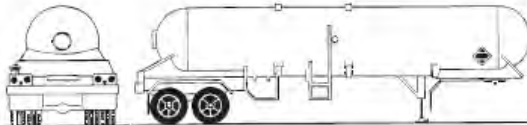
## TRANSPORTATION, continued

### 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.

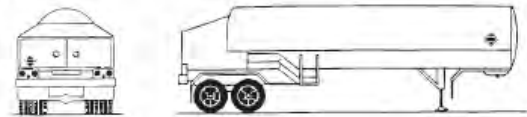
**NOTE:** An emergency shut-off valve is commonly found at the front of the tank, near the driver door.

#### 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



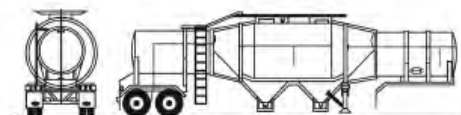
- For refrigerated liquefied gases (cryogenic liquids)
- Similar to a "giant thermo-bottle"
- Fitting compartments located in a cabinet at the rear of the tank
- MAWP between 25-500 psi\*\*

#### 131 DOT406, TC406, SCT306, MC306, TC306



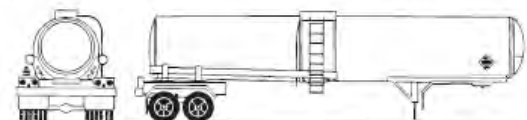
- For flammable liquids (e.g., gasoline, diesel)
- Elliptical cross-section
- Rollover protection at the top
- Bottom outlet valves
- MAWP between 3-15 psi\*\*

#### 112 TC423



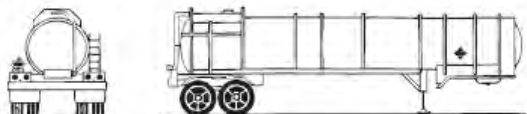
- For emulsions and water-gel explosives
- Hopper-style configuration
- MAWP between 5-15 psi\*\*

#### 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

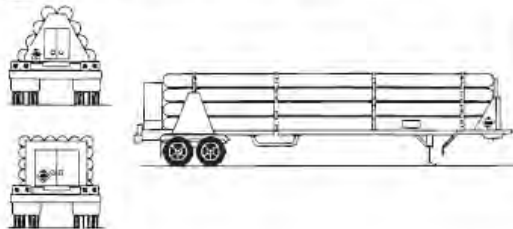


- Usually for corrosive liquids
- Circular cross-section
- External ring stiffeners
- Tank diameter is relatively small
- MAWP of at least 15 psi\*\*

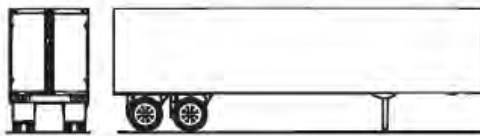
## TRANSPORTATION, continued

### ROAD TRAILER IDENTIFICATION CHART, continued

**117** Compressed Gas/Tube Trailer



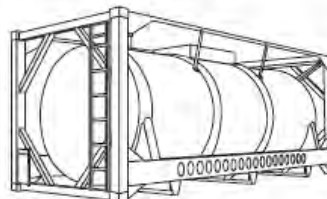
**111** Mixed Cargo



**134** Dry Bulk Cargo Trailer



**117** Intermodal Tank



**137** Vacuum Tanker



**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, continued**

**TABLE OF MARKINGS, LABELS AND PLACARDS**

**111**

DANGER

DANGEROUS

Y

Air Only

All Other Modes

**112**

EXPLOSIVES

1.5

1.5 BLASTING AGENTS

For Divisions 1.1, 1.2, 1.3 and 1.5, enter division number (\*\*) and compatibility group letter (\*), when required.

**114**

1.4

1.4 EXPLOSIVES

1.6

1.6 EXPLOSIVES

For Divisions 1.4 and 1.6, enter compatibility group letter (\*), when required.

**118**

FLAMMABLE GAS

**121**

NON-FLAMMABLE GAS

**122**

OXYGEN

**123**

INHALATION HAZARD

**125**

1005

**127**

COMBUSTIBLE

FLAMMABLE

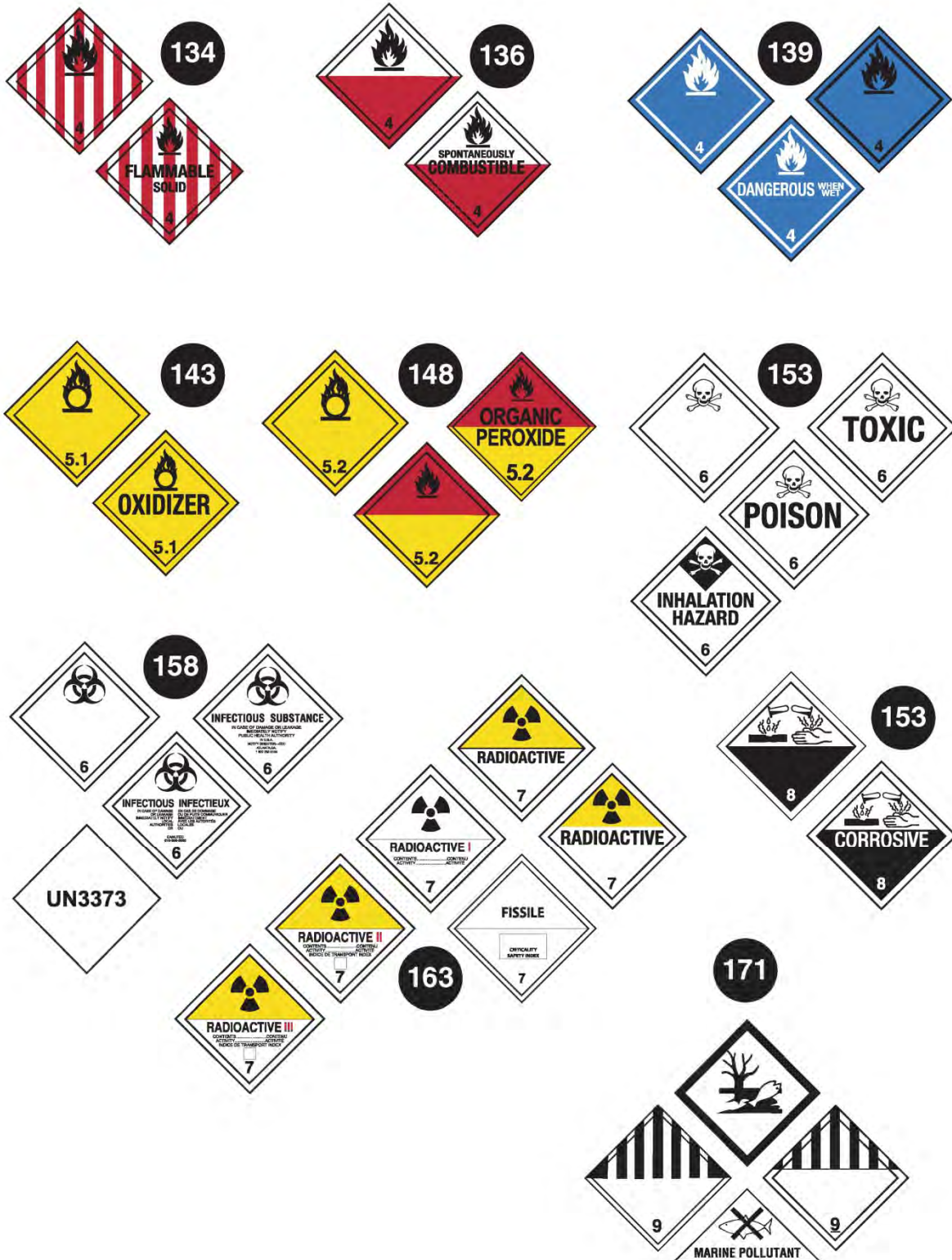
**128**

FUEL OIL

HOT

**TRANSPORTATION, continued**

**TABLE OF MARKINGS, LABELS AND PLACARDS, continued**





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

PART I: REPORTING TIMELINE			
1. Please provide applicable dates and check one box  Date of initial report to CANUTEC (yyyy-mm-dd): _____  30-Day Follow-up Report submission date (yyyy-mm-dd): _____  <input type="radio"/> 30-Day Follow-up Report <input type="radio"/> Update or amendment to 30-Day Follow-up Report • Date original 30-Day Follow-up Report submitted (yyyy-mm-dd): _____			<b>FOR INTERNAL USE ONLY</b>  <b>Road, Rail or Marine Reports</b> <input type="radio"/> Release <input type="radio"/> Anticipated Release  <b>Air Report</b> <input type="radio"/> Dangerous Goods Accident or Incident
PART II: CONTACT INFORMATION			
2. Information of the person completing this report  <input type="checkbox"/> Consignor <input type="checkbox"/> Consignee <input type="checkbox"/> Carrier/Aircraft Operator <input type="checkbox"/> Other			
First Name	Last Name	Title	
Telephone (999-999-9999)	Company Name		
Address		City	Province/Territory
Country	Postal Code (Z9Z 9Z9)	Email	
3. Information on the Consignor, Consignee and Carrier/Aircraft Operator			
<b>Consignor</b>			
First Name	Last Name	Title	
Telephone (999-999-9999)	Company Name		
Address		City	Province/Territory
Country	Postal Code (Z9Z 9Z9)	Email	
<b>Consignee</b>			
First Name	Last Name	Title	
Telephone (999-999-9999)	Company Name		
Address		City	Province/Territory
Country	Postal Code (Z9Z 9Z9)	Email	
<b>Carrier/Aircraft Operator</b>			
First Name	Last Name	Title	
Telephone (999-999-9999)	Company Name		
Address		City	Province/Territory
Country	Postal Code (Z9Z 9Z9)	Email	

**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 Code (Z9Z 9Z9)	GPS Position
------	--------------------	-----------------------	--------------

If the incident occurred by rail, please indicate the milepost and subdivision	If the incident happened on First Nations Territory, please indicate the Territory name
--	---

Origin of consignment <input type="radio"/> Same address as consignor <input type="radio"/> Same address as consignee <input type="radio"/> Other (please provide address):	Destination of consignment <input type="radio"/> Same address as consignor <input type="radio"/> Same address as consignee <input type="radio"/> Other (please provide address):
---	--

6. Geographic Area (Check only one box)

**Urban** Mixed use – residential, commercial       **Suburban** Primary residential       **Rural** Small towns, villages, agricultural lands       **Wilderness/Remote** Little or no population

7. Mode of Transport (Check all applicable boxes)

Road       Rail       Air       Marine

8. If MARINE was checked on question 7, please indicate the position of the vessel and the next location at which the vessel will be at anchor or alongside a fixed facility

Position	Next location
----------	---------------

9. Phase of Transport (Check only one box)

**In-Transit** Consignment moving between origin and destination       **Loading** Consignment is being packed or loaded into a means of transport at origin

**Unloading** Consignment is being unpacked or unloaded from a means of transport at destination       **Temporary Storage** Consignment is in short term storage pending transportation

10. Type of Incident (Check all applicable boxes)

<input type="checkbox"/> <b>Collision/Sideswipe</b> Moving vehicles striking an object, animal, or another vehicle	<input type="checkbox"/> <b>Derailment</b> Railcar leaving the rail tracks
<input type="checkbox"/> <b>Ran off road</b> Vehicle enters a soft shoulder, ditch or similar area	<input type="checkbox"/> <b>Overturn</b> Vehicle turning on its side or upside down
<input type="checkbox"/> <b>Loadshift</b> Shifting of the consignment within a vehicle	<input type="checkbox"/> <b>Dropped</b> Means of containment falling unexpectedly
<input type="checkbox"/> <b>Struck</b> Means of containment being struck by another object	<input type="checkbox"/> <b>Other (Please specify):</b> _____

11. Type of Release (Check all applicable boxes)

<input type="checkbox"/> <b>Spill</b> Quick, immediate discharge, emission or escape	<input type="checkbox"/> <b>Leak</b> Slow, sporadic or continuous discharge, emission or escape
<input type="checkbox"/> <b>Explosion</b> Violent sudden release of energy from means of containment producing a shock wave that may result in fragment projection and/or fire ball	<input type="checkbox"/> <b>Fire</b> Burning substances combined with oxygen to typically produce flame, heat and smoke
<input type="checkbox"/> <b>BLEVE</b> Boiling Liquid Expanding Vapour Explosion	<input type="checkbox"/> <b>Vapour</b> Dispersion in air of particles of a substance that is liquid or solid in its normal state
<input type="checkbox"/> <b>Venting</b> Controlled release of gas into the environment	<input type="checkbox"/> <b>Anticipated Release</b> Distressed means of containment that is not leaking, venting or otherwise releasing its contents

12. Information on the Dangerous Goods								
UN Number	Shipping Name	Primary Class	Subsidiary Class(es)	Packing Group or Category	Total Quantity in MOC Before the Release or Anticipated Release	Units (kg, L, etc.)	Estimated 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)

**PART IV: CONSEQUENCES**

14. Consequences of the incident (Check all applicable boxes)

**NOTE:** Refer to the Guide for more information on how to complete this section

Human       Property (e.g. product loss, facility, equipment)       Environmental (e.g. contamination of waterway, ground, air)

15. Evacuation of people and buildings/Shelter in place

Was there an Evacuation as a result of the incident?     Yes     No

Was there Shelter in place as a result of the incident?     Yes     No

If **Yes**, please complete the following table

Evacuation of People and Buildings/Shelter in Place	Private Residence Includes houses and other buildings used as dwellings (e.g. Retirement homes)	Public Buildings Includes libraries, hospitals, churches, government buildings, etc.	Workplace Includes warehouse, facility, etc.	Public (Outside) Areas Includes parks, playgrounds, parking lots, etc.
Estimated number of <b>people evacuated</b>				
Estimated number of <b>people sheltered in place</b>				
Estimated number of <b>buildings evacuated</b>				
Size of Evacuation area (square meters)	Duration of Evacuation (hours)		Duration of Shelter in place (hours)	

16. Injuries and/or deaths

Were there any injuries and/or deaths?     Yes (please complete the following table)     No

**Minor Injuries**     Yes     No

**Number of injured requiring immediate first aid treatment at the scene**

Attributed to Dangerous Goods	Attributed to incident	<b>Total</b>

**Moderate Injuries**     Yes     No

**Number of injured requiring immediate emergency treatment in hospital and release shortly after**

Attributed to Dangerous Goods	Attributed to incident	<b>Total</b>

**Major Injuries**     Yes     No

**Number of injured requiring immediate treatment with overnight hospitalization**

Attributed to Dangerous Goods	Attributed to incident	<b>Total</b>

**Deaths**     Yes     No

**Number of deaths**

Attributed to Dangerous Goods	Attributed to incident	<b>Total</b>



17. Please indicate an estimate 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 incurred by the carrier	Property damage	Emergency response cost	Clean-up cost	<b>Total cost</b>
----------------------------------	--------------------------------	-----------------	-------------------------	---------------	-------------------

18. Infrastructure closure and duration (please use additional sheets for multiple closures)

Was there an infrastructure closure as a result of the incident?  Yes  No

If **Yes**, please complete the following table

Type	Duration of the closure (in hours)
<input type="checkbox"/> <b>Aerodrome</b> – 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 therewith	
<input type="checkbox"/> <b>Air cargo facility</b> – Facility used to receive or transfer cargo carried or to be carried by an aircraft	
<input type="checkbox"/> <b>Facility</b> – Permanent or temporary building or a portion of a building or equipment used in loading or unloading of dangerous goods	
<input type="checkbox"/> <b>Railway</b> – Tracks used by trains	
<input type="checkbox"/> <b>Waterway</b> – Navigable body of water through which a ship or boat can move	
<input type="checkbox"/> <b>Roadway</b> – The strip of land over which motor vehicles circulate, such as dirt road, numbered provincial highway or multiple lane freeway	
<input type="checkbox"/> <b>Runway</b> – the strip of ground on a landing field that aircraft use for landing or takeoff	

19. Geographic location of closure

Address

City	Province/Territory	Postal Code (Z9Z 9Z9)	GPS Position
------	--------------------	-----------------------	--------------

If the incident occurred by rail, please indicate the milepost and subdivision

Name of facility, road, railway or waterway

20. ERAP Requirements

Was an ERAP required under Part 7 of the *Transportation of Dangerous Goods Regulations*?  Yes  No

If **Yes**, please complete the following table

ERAP Reference Number	ERAP Holder		
Address			
City	Province/Territory	Postal Code (Z9Z 9Z9)	Telephone of ERAP Holder (999-999-9999)
Email			

Level of Response (check all that apply)

No response  First responders on scene  Phone call to ERAP holder  Employee from ERAP holder  Team from ERAP holder

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 holes, 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, infrastructure, external, weather, etc.)
- The physical environment (e.g. residential, 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 first responder arrival, etc.)
- Communications with first responders and with your organization

Photographs and diagrams should be submitted, as required, for clarification. Estimate the duration of the release, if possible. Please use additional sheets if necessary.

**NOTE:** Refer to the Guide for more information on how to complete this section

**PART VI: INCIDENT DESCRIPTION – AIR ONLY**

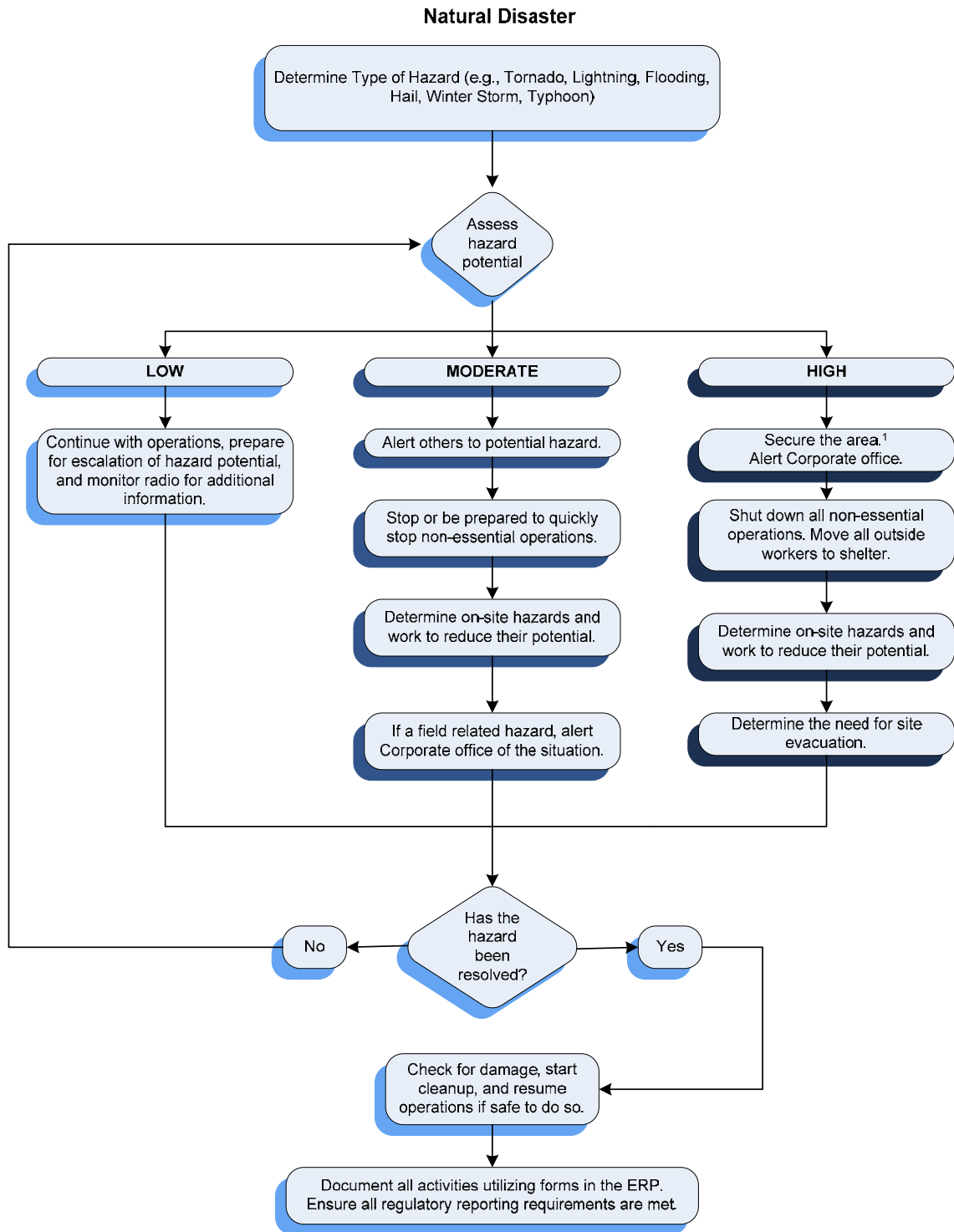
22. Please describe:

- 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

# WEATHER AND NATURAL DISASTERS



<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 Canada 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 Environment Canada's 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.

## **WEATHER AND NATURAL DISASTERS, continued**

### **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.

## WEATHER AND NATURAL DISASTERS, continued

### FLOODS

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.
9. 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.

## WEATHER AND NATURAL DISASTERS, continued

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

1. 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 <a href="http://environment.alberta.ca/forecasting/advisories/">http://environment.alberta.ca/forecasting/advisories/</a>
British Columbia	Emergency Management BC <a href="http://www.embc.gov.bc.ca/em/floods/notifications.html">http://www.embc.gov.bc.ca/em/floods/notifications.html</a>

### 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.

## **WEATHER AND NATURAL DISASTERS, continued**

### **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.



## WEATHER AND NATURAL DISASTERS, continued

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.

## WEATHER AND NATURAL DISASTERS, continued

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 or 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.
Wind Chill Warning	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.  For wind chill values:  -27 to -44 ...risk of frostbite and risk of hypothermia increases with time spent outdoors  -45 or lower ...exposed flesh may freeze in minutes and there is a serious risk of hypothermia
Winter Storm Warning	When severe and potentially dangerous winter weather conditions are expected, including:  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 Canada, 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.
- 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.

*Note:*

THIS PAGE INTENTIONALLY LEFT BLANK

## ANIMAL ENCOUNTERS

### FIRST RESPONDERS TO ANIMAL ATTACKS

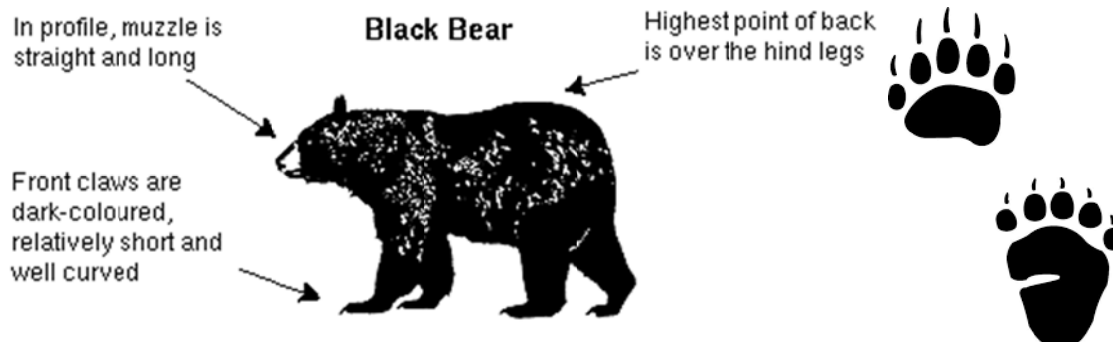
In the event of witnessing or identifying a scene as an attack, it is important to avoid harm to yourself. If equipped with deterrents, an attempt to scare away any remaining animals on scene is optional. In most cases any animals who have recently engaged in an attack are unpredictable therefore it 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!

### Is it a black bear or a grizzly bear?



## ANIMAL ENCOUNTERS, continued



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.

## ANIMAL ENCOUNTERS, continued

### 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
  - 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
  - Clasp hands around the back of your neck
  - 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
  - Face the bear, never taking your eyes off of it

## ANIMAL ENCOUNTERS, continued

- 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
  - 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.

## BEES AND WASPS

The presence of Africanized (Killer) bees, 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.



## ANIMAL ENCOUNTERS, continued

### 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 defences.

- 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.

## ANIMAL ENCOUNTERS, continued

- 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.

## LARGE HOOVED ANIMALS

This family is comprised of several hooved omnivores common to Canadian lands. Unknown to most, hooved animals cause more yearly fatalities than 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

### Hooved Animal Safety

- Generally speaking they prefer not being near people.
- The best line of defence is avoidance.
- Although physical size and appearance varies significantly, temperaments have been noted to be fairly similar between most species of hooved animal.
- Mating season for most hooved animals 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.

## ANIMAL ENCOUNTERS, continued

### If You Meet a Large Hooved Animal

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 a large hooved animal 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, 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.

## ANIMAL ENCOUNTERS, continued

### 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.

## ANIMAL ENCOUNTERS, continued

### 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

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. 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.

## ANIMAL ENCOUNTERS, continued

### 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.

## **ANIMAL ENCOUNTERS, continued**

### **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.

THIS PAGE INTENTIONALLY LEFT BLANK



## 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 Emergency Operations Centre Director (Corporate Incident Director).

## SECURITY INCIDENTS, continued

Once the Field Response Team is activated, the Field Response Team Incident Commander and the Corporate Incident Director 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.

## **SECURITY INCIDENTS, continued**

### **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:
  - What type of bomb is being used?
  - Did you place the bomb?
  - Who is the target?
  - Where has the bomb been placed?
  - What time is the bomb set to explode?
  - Why was the bomb placed?
  - What type of container is the bomb placed in?
  - What does it look like?
  - What is the bomber's name?
  - 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:
  - Age and gender
  - Emotional state (angry, agitated, calm, etc.)
  - Speech patterns (accent, tone)
  - 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.

## SECURITY INCIDENTS, continued

### 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.

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

	Threat Description	Explosives Mass (TNT equivalent) <sup>1</sup>		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
	Sedan	1,000 lbs	454 kg	400 ft	122 m	1,750 ft	534 m
	Passenger/Cargo Van	4,000 lbs	1 814 kg	640 ft	195 m	2,750 ft	838 m
	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

## **SECURITY INCIDENTS, continued**

### **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.

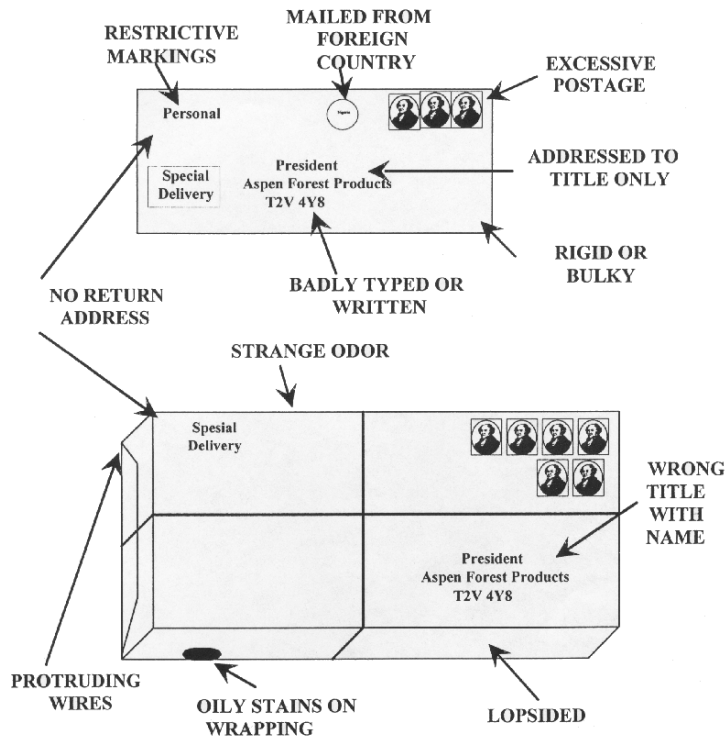
## **SUSPICIOUS PACKAGES**

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.

## SECURITY INCIDENTS, continued

### 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.

## **SECURITY INCIDENTS, continued**

### **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 them self 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.

## SECURITY INCIDENTS, continued

### VANDALISM

Vandalism is the wilful 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** – wilful 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.



## **SECURITY INCIDENTS, continued**

### **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.
- Accredite 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.

## **SECURITY INCIDENTS, continued**

- 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 [communications@ps-sp.gc.ca](mailto:communications@ps-sp.gc.ca) or by phone at 1-800-830-3118.

## **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 the Incident Commander 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.
  - Ensuring all equipment and debris are removed from offices and / or public areas.
  - Cordoning off the incident area to isolate any remaining hazards.
  - 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:

- Ensuring all evacuees are promptly notified once the call down is given.
  - Co-ordinating 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. Co-ordinate the deactivation of all emergency response operations, personnel, equipment and incident areas.
  3. 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.
  6. 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**

Ensure the following tasks are completed as required:

1. Ensure all evacuees are promptly notified once the call down is given.
2. Co-ordinate 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 Businesses are ventilated and checked for gas pockets before allowing the occupants to enter. Rovers must check each 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

**Note:**

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.

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

- 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).
- 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 by the debriefing should be documented and assigned. Key lessons learned should be shared with the appropriate parties and 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. Separate debriefings may be held with different groups that participated in the emergency (e.g., emergency services organizations, the media).

## **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, the Corporate Incident Director 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 the Corporate Incident Director. 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, National Energy Board (NEB), 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.

# SECTION 5: EXTERNAL AGENCIES

BC PROVINCIAL NOTIFICATION MATRIX

AB PROVINCIAL NOTIFICATION MATRIX

BC PROVINCIAL LEAD AGENCY ROLES

AB PROVINCIAL LEAD AGENCY ROLES

GOVERNMENT CONSULTATION SUMMARY

SPECIFIC GOVERNMENT AGENCY ROLES

HEALTH SERVICES

LOCAL AUTHORITIES

BC PROVINCIAL SUPPORTING AGENCY ROLES

AB PROVINCIAL SUPPORTING AGENCY ROLES

FEDERAL AGENCY ROLES

---

THIS PAGE INTENTIONALLY LEFT BLANK

---



# Alberta

## Notification Requirements for Key Government Agencies

Incident Type	Agency or Resource										Initial Responders		Lead Agencies		Supporting Agencies & Other Government Contacts									
	a	b	c	d	e	f	g	h	i	j	1	2	3	4	5	6	7	8	9	10	11	12		
Sour Gas / HVP Release (Uncontrolled)	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Chlorine Gas Release	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Sweet Combustible Gas Release	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Spill / Transportation Incident (Unrefined Products)**	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Spill / Rail or Trucking Incident (Refined Products)**	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Serious Injury or Death (Including Vehicle Accidents)	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Missing Person	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Fire / Explosion / B.L.E.V.E.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Pressure Vessel or Piping Incident	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Electrical Incident	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Motor Vehicle Accident (No Injuries)	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
Security Incident	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													
On-Site Incident Involving E2 Regulated Substance	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓													

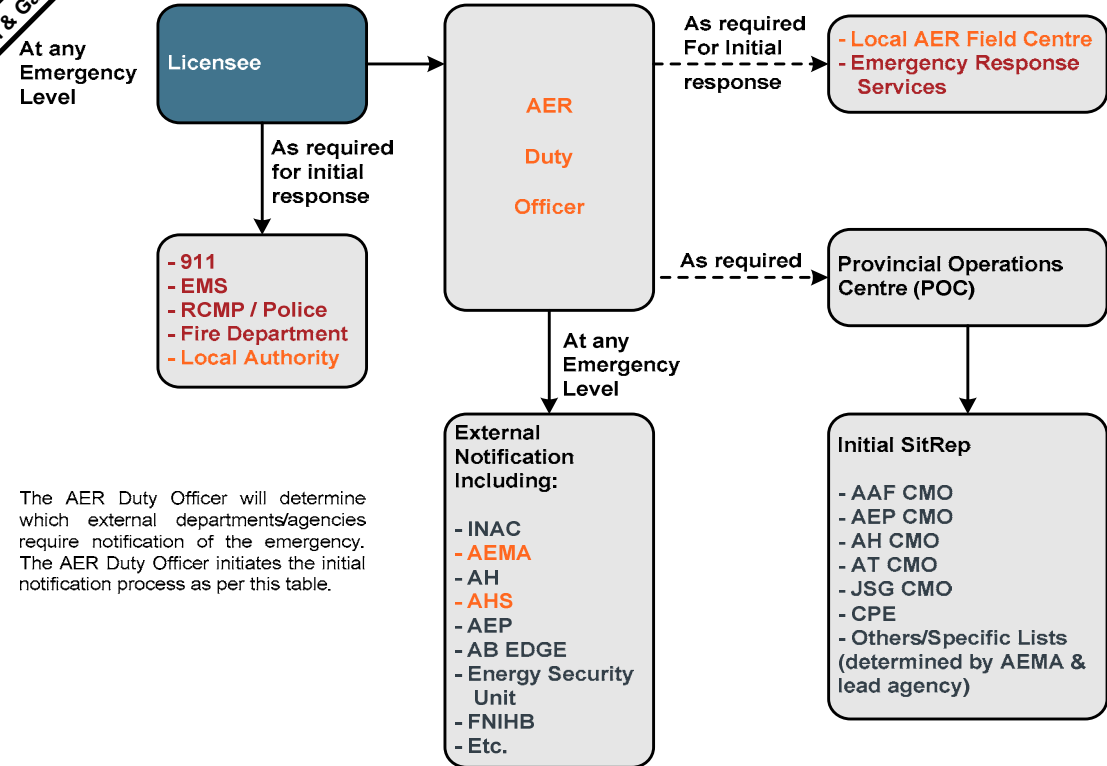
✓ Compulsory contact

\* NEB is a compulsory contact only for emergencies involving NEB regulated sites and inter-provincial pipelines.

\*\* Refer to the Alberta Petroleum Industry Release Reporting Requirements chart included in the ERP.

21-Jan-19

- 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 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 that had the potential to cause serious injury, but did not; there is an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential to cause 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 2, Hwy 47, Hwy 837).
  - 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 nations lands, in 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 1m<sup>3</sup> 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 infectious 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 National Energy Board (via the Transportation Safety Board of Canada) for emergencies involving NEB regulated sites and inter-provincial pipelines.
  - ⑥ Occupational Health and Safety - see c) for further details on this agency's role.
  - ⑦ Oil Spill Cooperatives in Alberta are run by Western Canadian Spill Services (WCSS).



The AER Duty Officer will determine which external departments/agencies require notification of the emergency. The AER Duty Officer initiates the initial notification process as per this table.

Alberta Notification Matrix

# British Columbia

## Notification Requirements for Key Government Agencies

Incident Type	Initial Responders										Lead Agencies				Supporting Agencies & Other Government Contacts				
	Agency or Resource	Ambulance Services	Local Fire Department	RCMP - Royal Canadian Mounted Police	EMBC - Emergency Management BC	OGC - BC Oil and Gas Commission	Local Authorities	Northern Health Authority	NEB - National Energy Board	WorkSafe BC	MOE - Ministry of Environment	Technical Safety BC	ECCC - Environment & Climate Change Canada	MOTI - Ministry of Transportation & Infrastructure	WCSS - Oil Spill Cooperative	CANUTEC	ERAC - Emergency Response Assistance Canada	DFO - Department of Fisheries and Oceans	IOGC - Indian Oil & Gas Canada
<b>Sour Gas / HVP Release (Uncontrolled)</b>	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓	c						f
Chlorine Gas Release	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓	c	d					f
Sweet Combustible Gas Release	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓	c						f
Spills / Transportation Incidents (Unrefined Products)**	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓	c	✓	d				f
Spills / Rail or Trucking Incidents (Refined Products)**	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓	c	✓	d	e			f
Serious Injury or Death as a Result of Oil & Gas Activity	✓	✓	✓	✓	✓	✓	✓*	✓											
Missing Person		✓					✓*												
Fire / Explosion / B.L.E.V.E.	✓	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	c							f
Pressure Vessel or Piping Incident		✓		✓			✓*	✓	✓	✓									
Electrical Incident		✓		✓			✓*	✓	✓										
Motor Vehicle Accident (Serious Injury or Death)	✓		✓				✓*	✓											
Motor Vehicle Accident (No injuries)		✓					✓*	✓											
<b>Security Incidents</b>							✓*	✓											
On - Site Incident Involving E2 Regulated Substance	a	✓	✓	✓	✓	✓	✓*	✓	✓	✓	✓	✓							f

Phone numbers for the agencies listed above are located in the Area Specific Information 17-Jan-19

- ✓ Compulsory contact
- \* NEB is a compulsory contact only for emergencies involving NEB 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.

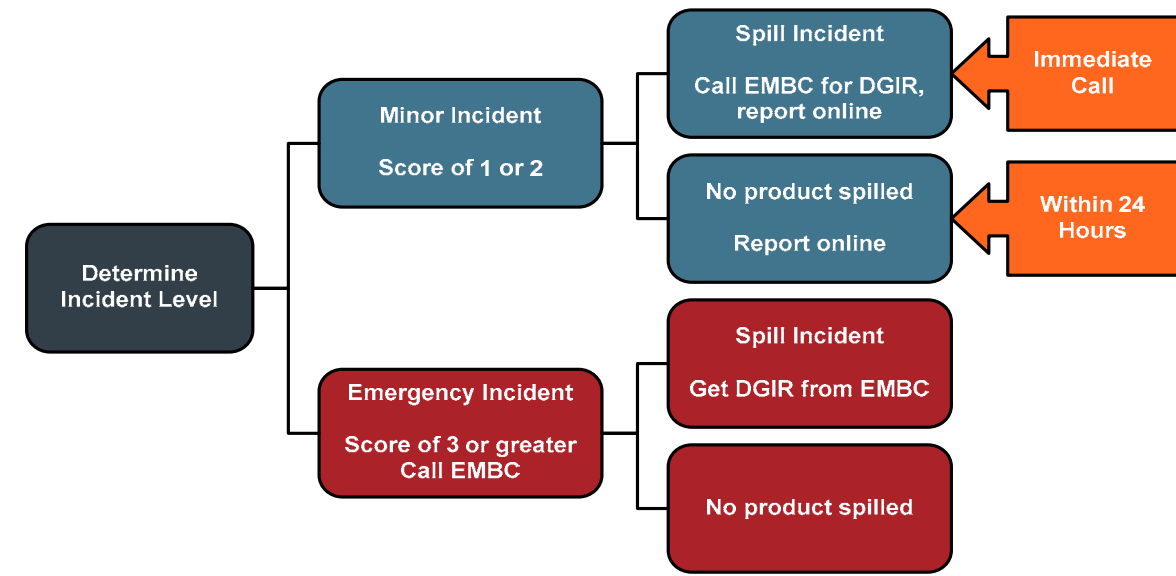
EMBC to notify the Ministry of Environment for any incident which affects the water, air, or land environment, or any white or green space in the province.

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.

- Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.
- Contact the Northern Health Authority if the incident affects public health, e.g., contaminated drinking water.
- Contact the Ministry of Transportation and Infrastructure if the emergency intersects with a 1, 2 or 3 digit Provincial or Secondary highway (e.g., Hwy 2, Hwy 47, Hwy 837).
- 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.
- 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.
- 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 1m<sup>3</sup> must be reported to IOGC immediately.
- <sup>①</sup> 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 infectious substances.
- <sup>②</sup> 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.
- <sup>③</sup> 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 3m<sup>3</sup> 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.
- <sup>④</sup> Local authorities include regional district disaster services, national park authorities and the local police.
- <sup>⑤</sup> Contact the National Energy Board (NEB) (via the Transportation Safety Board of Canada) for all emergencies involving NEB regulated sites and inter-provincial pipelines. The NEB regulates all inter-provincial pipelines and other facilities and sites located in Frontier lands (Northern Canada).
- <sup>⑥</sup> 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.
- <sup>⑦</sup> Ministry of Environment was formerly known as Ministry of Water, Land and Air Protection.
- <sup>⑧</sup> 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 and fatal injury or 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.
- <sup>⑨</sup> Oil Spill Cooperative northern BC are run by Western Canadian Spill Services (WCSS).

## OGC Incident Reporting Process



# British Columbia Notification Matrix



	Before the Incident	During the Incident	After the Incident
<b>Common Tasks</b>	<ul style="list-style-type: none"> <li>All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP).</li> <li>This plan will be reviewed as required.</li> <li>A joint multi-department/agency exercise will be held as required.</li> </ul>	<ul style="list-style-type: none"> <li>The AER may activate the ERIESP based on the following criteria: <ul style="list-style-type: none"> <li>Level 2 or 3 emergencies (as defined by the AER)</li> <li>Any level of emergency: <ul style="list-style-type: none"> <li>requires coordination of multi-agency response;</li> <li>requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest.</li> </ul> </li> </ul> </li> <li>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.</li> <li>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 <i>Government Emergency Management Regulation (AR 248/2007)</i>.</li> <li>GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority.</li> </ul>	<ul style="list-style-type: none"> <li>Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome.</li> <li>Integrate PIA into internal response processes.</li> <li>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 the emergency.</li> <li>Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.</li> </ul>
<b>*Alberta Energy Regulator (AER)</b>	<ul style="list-style-type: none"> <li>Confirm and act as lead Government of Alberta (GoA) organization in energy resources industry emergency preparedness and response.</li> <li>Set requirements for planning for, and responding to energy resources industry emergencies.</li> <li>Participate in exercises of this plan.</li> <li>Review and recommend changes to this plan.</li> <li>Maintain 24/7 telephone contact where energy resources industry emergencies can be reported.</li> <li>Maintain 24/7 emergency contact numbers where resources can be accessed to carry out a response to this plan.</li> <li>Make this plan available to stakeholders.</li> <li>Communicate changes to the plan with stakeholders</li> <li>Maintain emergency response resources.</li> <li>Act as Subject Matter Expert (SME).</li> </ul>	<ul style="list-style-type: none"> <li>Receive notification of energy resources industry emergencies.</li> <li>Determine the emergency level of an emergency through consultation with the duty holder.</li> <li>Dispatch AER representative to the site of the emergency, as required.</li> <li>Confirm that local resources have been notified as appropriate.</li> <li>Monitoring discharges and ensuring appropriate mitigation and response actions are taken to reduce the impact of liquid releases for land based spills and to ensure watercourses are protected.</li> <li>Confirm, plan and/or implement public safety actions taken to ensure the safety of the public and the environment, including issuing Fire Hazard Orders or requesting NOTAMS.</li> <li>As lead agency, provide coordination for departments/agencies and duty holder on site.</li> <li>Request a local authority liaison officer to be present at the REOC, if necessary.</li> <li>Activate the Energy Resources Industry Emergency Support Plan.</li> <li>Advise AEMA to escalate POC activation (if required).</li> <li>Identify and request initial provincial resources to support the emergency response, to be coordinated at the regional level if necessary through a local or regional EOC.</li> <li>Initiate consolidated Situation Reports through AEMA.</li> <li>Provide Situation Reports to AEMA if requested.</li> <li>Send an AER representative to the emergency location and/or the incident command post.</li> <li>Establish an EOC at the local AER Field Centre until the duty holder or local authority establishes a REOC. AER ECC will be expanded if a REOC is not established.</li> <li>Dispatch an AER representative to the REOC when it opens.</li> <li>Request the deployment of other provincial GoA department/agency representative to be present at the REOC, or the local AER Field Centre ECC.</li> <li>Provide timely situation reports, through AEMA, to other GoA departments/agencies activated by this plan.</li> <li>Notify all participants when the emergency has concluded and there is no longer any hazard to the public.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct the PIA related to the response, as described by the ERIESP.</li> <li>As part of the PIA, recommend any mitigation actions that may improve the coordination of the GoA response, as described by the ERIESP.</li> <li>Establish processes to receive and address community concerns.</li> <li>Review and update the ERIESP, in consultation with AEMA.</li> <li>Communicate any changes to the ERIESP to applicable stakeholders.</li> </ul>
<b>*AEMA</b>	<ul style="list-style-type: none"> <li>Act as the provincial coordinating agency in energy resources industry emergency responses as per the <i>Emergency Management Act</i>.</li> <li>Maintain list of 24 hour emergency contact numbers.</li> <li>Maintain 24 hour duty manager system.</li> </ul>	<ul style="list-style-type: none"> <li>Confirm AER has been notified.</li> <li>Conduct the notification in accordance with Section 5.3.</li> <li>Obtain a situation report from the AER, AEP, local authority, etc.</li> <li>Confirm the level of emergency.</li> <li>Elevate the POC as required.</li> <li>Notify the appropriate provincial officials as per standard operating procedures.</li> <li>Release consolidated Situation Reports in accordance with section 3.4.4.</li> <li>Coordinate the Government of Alberta response including requests for provincial/federal resources.</li> <li>Provide ongoing situation reports or briefing notes to appropriate provincial officials in accordance with the AEP or as requested.</li> <li>Notify partners and stakeholders when the event is over.</li> </ul>	<ul style="list-style-type: none"> <li>Participate in all PIAs related the ERIESP.</li> <li>Complete documentation or reporting in relation to the activation of the ERIESP and the emergency for all GoA-wide PIAs.</li> </ul>
<b>Local Authority</b>	<ul style="list-style-type: none"> <li>Work with the operator to effectively prepare for a 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.</li> <li>Participate in industrial operators' preparatory training and exercises where possible.</li> <li>Train personnel to carry out functions as assigned by MEP or procedures.</li> <li>Maintain 24 hour emergency contact numbers.</li> <li>Meaningful planning (including confirmation and coordination of roles and responsibilities) between the local authority and the licensee/operator has taken place.</li> <li>Details on municipal emergency response capacity and planning are found in the applicable municipal emergency plan.</li> </ul>	<ul style="list-style-type: none"> <li>Receive notification and work with the licensee/operator.</li> <li>In a petroleum industry incident, determine if the incident can be managed and the level of support that would be needed if required from AER and AEMA. If the local authority, licensees or operators are unable to manage the response, the AER with assistance from AEMA will manage the response.</li> <li>Send a local authority liaison officer to be present at the AER regional EOC if necessary.</li> <li>If AEMA is providing support provide regular situation reports.</li> <li>Respond to and assess the emergency incident.</li> <li>Establish contact with the industrial operator in order to: <ul style="list-style-type: none"> <li>Obtain additional hazard information.</li> <li>Determine where road blocks should be or are established.</li> <li>Determine the direction of approach to the incident.</li> <li>Determine if there are any injuries.</li> <li>Find out what response and public protection actions have been taken.</li> <li>Identify the location of the On-site Command Post (OSCP) and any Emergency Operations Centres (EOCs).</li> </ul> </li> <li>Activate the MEP, when required.</li> <li>Manage the Local Authority's emergency response.</li> <li>Activate the emergency public warning system to alert people to life threatening hazards, as required.</li> <li>Activate the Municipal EOC (MEOC), as required.</li> <li>Initiate public protection measures, as necessary.</li> <li>May dispatch a representative to the Provincial Operations Centre (POC), when it is established, to coordinate the response, if requested.</li> <li>If necessary, declare a local State of Emergency.</li> <li>If the hazard area extends beyond the Emergency Planning Zone (EPZ), the county will coordinate evacuation of the public as well as reception centre establishment and maintenance with the industrial operator.</li> <li>When possible, work with all other responders to establish a single Regional EOC (REOC).</li> <li>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.</li> <li>Coordinate news releases with the licensee, if required.</li> <li>Inform AEMA and the public when the emergency is over.</li> </ul>	<ul style="list-style-type: none"> <li>Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.</li> <li>Participate in multi-agency debriefings.</li> </ul>
<b>Alberta Health Services (AHS)</b>	<p>Alberta Health Services (AHS) - Environmental Public Health (EPH) roles and responsibilities in public health emergency preparedness and response to 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.</p> <p>Environmental Public Health will endeavor to:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Participate with stakeholders in preparedness training and exercises associated with a Licensee's simulated activation of an Emergency Response Plan in which Environmental Public Health has a role and responsibility.</li> <li>Participate in public information sessions during the Licensee's Emergency Response Plan development process when appropriate and as resources allow.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>Establish EPH emergency management operations, when appropriate, to support regional efforts and liaise with the Government Emergency Operations Centre, Municipal Emergency Operations Centre and/or Industry Emergency Operations Centre, if needed.</li> <li>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.</li> <li>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.</li> <li>Record and respond to health complaints or concerns from the public during and following an incident.</li> </ul>	<ul style="list-style-type: none"> <li>Record and respond to health complaints or concerns from the public during and following an incident.</li> <li>Participate in stakeholder debriefings as necessary.</li> </ul>

Note: The roles for the local authority(s) and regional health authority(s) are not outlined in the Energy Resources Industry Emergency Support Plan (ERIESP) Plan and will be coordinated during the public consultation program.  
\*AER - Alberta Energy Regulator \*AEMA - Alberta Emergency Management Agency \*AHS - Alberta Health Services

# Lead Agency Roles



## AB Emergency Services

### 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 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 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 Plans.

#### Fire

- 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.

#### EMS

- 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.

## 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 reported.

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 recovery planning.

Conduct training and exercises for all emergency response staff.

Establish procedures for implementing, reviewing and revising response and recovery plans.

Complete periodic reviews and updating of the local emergency plan.

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 victims.

Participate in industrial operators' preparatory training and exercises where possible.

Maintain 24 hour emergency contact numbers.

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 authority responsible, and may include hazardous material incident response, road 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 most.

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.

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.

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.

**Fire**

- 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.

**EMS**

- Respond to and assess emergency incident to the scope of their abilities.
- The BC Ambulance Service provides and coordinates ambulance services within British Columbia, including triage, treatment, transportation and care of casualties.
- 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.

## After the Incident

- Close EOC if established.
- Participate in event debriefings.
- Receive and review Post-Incident reports.
- May audit licensee records.

As requested by OGC

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

Participate in multi-agency 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.

\*OGC

\*EMBC

Local Authority / Regional Districts

\*BC Emergency Services

# Lead Agency Roles



## Northern Health Authority

### 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.

## Ministry of Justice

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

## GOVERNMENT CONSULTATION SUMMARY

Alberta									
Type of Agency	Agency Name	Provided Specific Roles	Agreed to Generic Roles	Unable to Contact	Willing to consider a single REOC	Evacuation outside of the EPZ	Location of EOC	Suggested Reception Centres	Notes
Local Authority	Clear Hills County Audrey Bjorklund, Deputy Director of Emergency Management	X			Yes, where possible.	Coordinate	Clear Hills County Office 313 Alberta Ave, Worsley, AB	-	Audrey Bjorklund approved these roles.
Local Authority	County of Grande Prairie Dan Verdun, Deputy Fire Chief	X			Yes, where possible.	Requires Assistance	10808 - 100 Ave Clairmont, AB	-	Dan Verdun approved these roles.
Health Services	Alberta Health Services - Zone 5 Shane Hussey, Director - North	X			Yes, where possible.	Require Assistance	Virtual	-	Shane Hussey approved these roles.

British Columbia									
Type of Agency	Agency Name	Provided Specific Roles	Agreed to Generic Roles	Unable to Contact	Willing to consider a single REOC	Evacuation outside of the EPZ	Location of EOC	Suggested Reception Centres	Notes
Local Authority	Emergency Management BC Heather MacRae, Regional Manager	X			No	N/A	3235 Westwood Dr Prince George, BC	-	Heather MacRae approved these roles.
Local Authority	Ministry of Transportation - North Peace Area Katherine Styba, District Manager	-	-	-	-	-	-	-	-
Local Authority	Peace River Regional District Deborah Jones-Middleton, Protective Services Manager	X			-	-	Representatives will be dispatched to established OGC EOC	-	Roles are available and updated through regional district website.
Health Services	Northern Health Jim Fitzpatrick, Director	X			Yes, where possible.	N/A	-	-	Barb Oke approved these roles.

## GOVERNMENT CONSULTATION SUMMARY

THIS PAGE INTENTIONALLY LEFT BLANK





## **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.



# Peace River Regional District

---

1981 Alaska Avenue, Box 810, Dawson Creek, BC V1G 4H8  
Tel: (250) 784-3200 Fax: (250) 784-3201 [www.prrd.bc.ca](http://www.prrd.bc.ca)

## **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*

---

# 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 (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 will 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);

**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

### NH/HEMBC- Contact information

1. For Emergency events that require immediate connection with Northern Health, please call :
  - HEMBC on call number ( 24/7) **855-554-3622** (or 855-55-HEMBC)
    - 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.
    - **Please 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.
  
2. For non-urgent requests related to Emergency Response Plans, or emergency exercise planning/information, contact HEMBC North Director Jim Fitzpatrick, at:
  - 250-565-5584
  - [HEMBC@northernhealth.ca](mailto:HEMBC@northernhealth.ca)
  
3. 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](mailto:resource.development@northernhealth.ca)

## CLEAR HILLS COUNTY ROLES

**Clear Hills County** must be contacted at a Level 1 Emergency if any members of the public are notified or road blocks are established on any County road(s) or numbered provincial highways. Clear Hills County must be contacted automatically at a Level 2 or 3 Emergency.

**Please note:** Clear Hills County will dispatch a representative to liaison with the Incident Commander/ Operations Chief at the Incident Command Post.

### Responsibilities

- Initiates and manages the local disaster services response in accordance with County Policy.
- May dispatch representative(s) to the Government's Off-Site Emergency Operations Centre.
- Ensures all local emergency and public information services are available in accordance with County Policy. (Public Information Releases will be coordinated with the Companies Public Information Officer)
- If required, activates Municipal Emergency Operations Centre (MEOC) and coordinates activities at this centre. The MEOC is available to the Company for use as a REOC subject to limitations as may be imposed by Clear Hills County due to current operational requirements at the time.
- Upon request, may assist with set-up and administration of Reception Centre.
- May assist with arrangement of temporary accommodations for residents who have been evacuated in accordance with County Policy.
- May assist with set up and maintenance of road blocks in accordance with County Policy.
- May assist with Fire Protection in accordance with County Policy in areas where accessible.
- If necessary, may declare a local state of emergency to provide local authorities with special powers.
- Supports the Company in dealing with the emergency in accordance with County Policy.

### Resources

There is 1 County Fire Department, located at Worsley and 3 Fire Departments on contract from Hines Creek, Fairview and Berwyn for the Hines Creek and east area, each with approximately 20 volunteer firefighters.

**Please note:** The Fire Departments are not equipped for Industrial Fire Protection and would be responsible for anything off-site or outside the Emergency Perimeter Zone (EPZ). Some Fire Department resources may be useful for on-site actions such as Water Tanker Trucks, Portable Tanks, etc. and may be made available if requested. Certain areas of Clear Hills County have limited access or are extremely remote from any Fire Station.

Alberta Sustainable Resource Development - Peace Wildfire Management Area is responsible for Wildland Fire Protection in these areas. The County has no Special Constables. All policing duties are covered by the RCMP - Fairview Detachment. The Public Works Department employs about 6 personnel, which expands to 20 employees during the summer.

Emergency Medical Services are under Alberta Health, dial 911.

**Contact information:**

Name	Title	Office #	Cell #	E-mail
Dan Verdun	Fire Chief (Primary)	780-532-9727		
Bart Johnson	Deputy Fire Chief	780-532-9727		
Stuart Remple	Manager / Enforcement	780-532-9727		
Bill Rogan	Director Emergency Management	780-532-9722		

**Initial contact person for ERP’s for the County of Grande Prairie No. 1 is Dan Verdun Deputy Chief.**

**Responsibilities**

The *Emergency Services Act* requires the local authority of each municipality to be responsible for Emergency Response Planning and for the direction and control of their emergency response in their respective jurisdiction (*Local Authority*).

**The Local Authority:**

- Review the Site specific Emergency Response Plan
- Initiates and manages the local municipal disaster services response
- Dispatches representative(s) to the Emergency Operations Centre, when established and as required
- If required, activates their municipal emergency operations centre and coordinates municipal activities at this centre
- Upon request, may assist with setting up and administration of the Reception Centre.
- Assists with the arrangements of temporary accommodations for residents who have been evacuated
- Assist with the establishing, set up and maintenance of roadblocks as resources and staff training permit
- Ensures that if available, local emergency services and resources are available to the level that they are trained
- Assists with off-site fire protection
- Activates the Emergency Public Warning System (EPWS) to alert public to life threatening hazards as required according to criteria set out by AEMA
- Supports operator in dealing with the emergency situation
- Initiate public protection methods as required
- If necessary, declares a local state of emergency to provide local authorities with special powers (mandatory evacuation, use of or entry into private property, conscription, demolition of private property structures for safety reasons, etc), and
- Establish a public information service, including use of the news media to inform and instruct the public of the emergency as required
- Assist as required with post incident damage assessment

**Resources**

- The County has and may provide equipment and manpower in an offsite support role for fire protection and emergency mitigation. No County Fire personnel will work outside of their scope of practice. All County personnel will remain under immediate control and direction of a County Fire Officer or designate. The County Fire Service is manned 24 hours a day from the Clairmont and Dunes Fire Halls. All other stations in the County service area are Paid on Call and will be dispatched through 911.
- The County has uniformed Level 1 Peace Officers. The RCMP performs all other policing, evacuation and notification duties. The Peace Officers would be mobilized at the request of the RCMP.
- The County has a large Public Works Department (divided into 3 zones), affiliated equipment and vehicles, and a staff that ranges from 140 in the winter to 240 in the summer. Manpower and equipment may be available to assist with roadblocks and county road closures depending on training and availability.

**County of Grande Prairie Notification 24 hr. Phone Number 1-780-814-0280**

**For all Emergencies Dial 911**





# 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](mailto: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.***

<i>Edmonton Main Office</i>	<i>780-735-1800</i>	<i><a href="mailto:Edmontonzone.environmentalhealth@ahs.ca">Edmontonzone.environmentalhealth@ahs.ca</a></i>
<i>Calgary Main Office</i>	<i>403-943-2295</i>	<i><a href="mailto:Calgaryzone.environmentalhealth@ahs.ca">Calgaryzone.environmentalhealth@ahs.ca</a></i>
<i>Lethbridge Main Office</i>	<i>403-388-6689</i>	<i><a href="mailto:Southzone.environmentalhealth@ahs.ca">Southzone.environmentalhealth@ahs.ca</a></i>
<i>Grande Prairie Main Office</i>	<i>780-513-7517</i>	<i><a href="mailto:Northzone.environmentalhealth@ahs.ca">Northzone.environmentalhealth@ahs.ca</a></i>
<i>Red Deer Main Office</i>	<i>403-356-6366</i>	<i><a href="mailto:Centralzone.environmentalhealth@ahs.ca">Centralzone.environmentalhealth@ahs.ca</a></i>

[www.ahs.ca/eph](http://www.ahs.ca/eph)

**Common Tasks**

Before the Incident	
<b>*OHS</b>	<ul style="list-style-type: none"> <li>Maintain and provide resources to support 24/7 employer reporting of incidents to OHS.</li> <li>Maintain capacity for OHS attendance to a work site when warranted.</li> </ul>
<b>*AAF</b>	<ul style="list-style-type: none"> <li>Act as subject matter expert (SME) relating to agriculture and livestock impacts.</li> <li>Act as the liaison between farming/ranching community and the Government of Alberta (GoA).</li> <li>Maintain emergency response resources.</li> </ul>
<b>*Alberta Health</b>	<ul style="list-style-type: none"> <li>Act as the SME on health effects for energy resources industry hazards.</li> <li>Provides technical expertise on potential health impacts to the public, linkages to health resources and considers provincial health system impacts.</li> <li>Act as the SME on health effects for petroleum industry hazards.</li> </ul>
<b>*AT</b>	<ul style="list-style-type: none"> <li>Maintain a 24/7 call centre (EDGE - Environmental and Dangerous Goods Emergencies) to receive emergency calls related to the transportation and handling of dangerous goods as well as environmental spills/releases/incidents, and AER emergency notifications.</li> <li>Act as SME for dangerous goods incidents.</li> </ul>
<b>*CPE</b>	<ul style="list-style-type: none"> <li>Maintain a team of trained Communications and Public Engagement personnel.</li> <li>Activate crisis communications plan and crisis communications response.</li> </ul>
<b>*JSG</b>	<ul style="list-style-type: none"> <li>Maintain the list of Critical Infrastructure and key assets in the Province of Alberta.</li> <li>Maintain and regularly test the Emergency Notification System.</li> <li>Maintain awareness of threats, vulnerabilities, and risks related to human induced intentional hazards.</li> </ul>
<b>*ABSA</b>	<ul style="list-style-type: none"> <li>Review, accept and register pressure equipment designs and construction procedures that relate to pressure equipment.</li> <li>Issue certificate of inspection permits for pressure equipment before the equipment is placed into service.</li> <li>Ensure that regular inspections of in-service pressure equipment are conducted.</li> <li>Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta.</li> <li>Examine, certify and register Pressure Welders and Welding Examiners, Power Engineers, and Pressure Equipment Inspectors.</li> <li>Authorize and monitor, through quality management systems, organizations that have been permitted to conduct some of the activities subject to the regulations.</li> <li>Conduct safety education and training.</li> </ul>

During the Incident	
	<ul style="list-style-type: none"> <li>The AER may activate the ERIESp based on the following criteria:               <ul style="list-style-type: none"> <li>Level 2 or 3 emergencies (as defined by the AER)</li> <li>Any level of emergency:                   <ul style="list-style-type: none"> <li>requires coordination of multi-agency response;</li> <li>requires coordination of information and communication between departments/agencies and/or has significant provincial/national media interest.</li> </ul> </li> </ul> </li> <li>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.</li> <li>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 <i>Government Emergency Management Regulation (AR 248/2007)</i>.</li> <li>GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority.</li> </ul>
	<ul style="list-style-type: none"> <li>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.)</li> </ul>
	<p><b>Agriculture</b></p> <ul style="list-style-type: none"> <li>Act as SME relating to agriculture and livestock impacts.</li> <li>Act as the liaison between farming/ranching community and GoA during energy resources industry emergencies.</li> <li>Provide information relating to agricultural and livestock impacts to the GoA during energy resources industry emergencies.</li> </ul> <p><b>Forestry</b></p> <ul style="list-style-type: none"> <li>Notify forestry staff in the area of the emergency.</li> <li>Notify duty holder if energy resources industry infrastructure is threatened by wildfire.</li> <li>Can fight wildfires started as the result of the energy resources industry product release.</li> </ul>
	<ul style="list-style-type: none"> <li>Verify that AHS (Alberta Health Services) and/or FNIHB (First Nations &amp; Inuit Health Branch) have been notified of the emergency.</li> <li>AH will assess the potential for and implications of human health issues and coordinate the provision of information and support to and from AHS.</li> <li>Provide health and medical technical expertise as requested and as appropriate.</li> <li>Act as SME on health effects for petroleum industry hazards, providing technical expertise on health impacts to the public, linkages to health resources and provincial health impacts.</li> <li>AH in collaboration with AHS will monitor and assess the impact of health system and collaboration with AHS and other GoA ministries to communicate knowledge of situation to stakeholders (federal and provincial)</li> <li>AH will provide scientific advice and recommendations on human health risk assessments when addressing site specific clean-up, site specific de-commissioning and process impact assessments.</li> <li>During a petroleum event, AH will primarily communicate to AHS. AHS will provide safety messaging to the public, and will relay situational information to the local health system.</li> <li>Provide support to AHS as required.</li> </ul>
	<ul style="list-style-type: none"> <li>Handle inter-departmental communication as needed during energy resources industry emergencies.</li> <li>Maintain ability to process calls for new emergencies.</li> <li>Provide information on the impacts to transportation routes.</li> <li>Provide response support if dangerous goods are released.</li> </ul>
	<ul style="list-style-type: none"> <li>Confirm distribution of AER messaging. Provide support as required.</li> </ul>
	<ul style="list-style-type: none"> <li>Provide intelligence and threat risk assessments when appropriate and when requested, in relation to critical infrastructure and key assets.</li> <li>Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.</li> </ul>
	<ul style="list-style-type: none"> <li>Receive notification of an incident.</li> <li>As required under the <i>Pressure Equipment Safety Regulation</i> Section 35, the accident scene <b>must not be disturbed</b> (except when it is absolutely necessary to prevent death or injury, or to prevent further property damage) <b>unless</b> approval to do so has been given by an ABSA Safety Codes Officer.</li> </ul>

After the Incident	
	<ul style="list-style-type: none"> <li>Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome.</li> <li>Integrate PIA into internal response processes.</li> <li>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 the emergency.</li> <li>Reports required by other regulatory authorities must be completed and delivered to the appropriate regulatory body within the time lines they prescribe.</li> </ul>
	<ul style="list-style-type: none"> <li>Ensure work site parties have implemented appropriate controls prior to re-entry by workers.</li> <li>Investigate the incident if the incident is a reportable incident in line with current Alberta OHS Legislation.</li> <li>Ensure internal investigation has been conducted and that identified corrective actions have been minimized to reduce recurrence of similar incidents.</li> <li>Ensure health and safety committee or health and safety representative as defined by OHS legislation has been involved in internal investigations.</li> </ul>
	<p><b>Agriculture</b></p> <ul style="list-style-type: none"> <li>Provide a summary of agriculture and livestock impacts during the PIA process. (if applicable)</li> <li>Conduct agriculture and livestock impact assessments.</li> <li>Implement response activities as required.</li> </ul> <p><b>Forestry</b></p> <ul style="list-style-type: none"> <li>Conduct forest impact assessment. (if applicable)</li> </ul>
	<ul style="list-style-type: none"> <li>Provide a summary of the health impacts during the PIA process. (if applicable)</li> </ul>
	<ul style="list-style-type: none"> <li>Provide a summary of transportation impacts during the PIA process. (if applicable)</li> </ul>
	<ul style="list-style-type: none"> <li>Participate in all PIAs related to the ERIESp.</li> <li>Coordinate key messaging with the AER.</li> </ul>
	<ul style="list-style-type: none"> <li>Participate in all PIAs related to the ERIESp.</li> <li>Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if necessary through the Emergency Notification System maintained by ASSIST.</li> </ul>
	<ul style="list-style-type: none"> <li>Investigate accidents or unsafe conditions that involve pressure equipment. May:           <ul style="list-style-type: none"> <li>close all or part of the accident site for 48 hours (or longer if authorized by a Justice)</li> <li>prohibit any person from entering the site for safety reasons or to preserve evidence</li> <li>be accompanied by any person for assistance</li> <li>inspect and photograph any thing</li> <li>require any person to make full disclosure</li> <li>require closure or disconnection of any thing</li> <li>require to be performed any tests or evaluations</li> <li>remove evidence</li> <li>require production of documents</li> </ul> </li> </ul>

**Supporting Agency Roles**

\*OHS - Occupational Health & Safety

\*AAF - Alberta Agriculture and Forestry

\*AH - Alberta Health

\*AT - Alberta Transportation

\*CPE - Communications and Public Engagement

\*JSG - Alberta Justice and Solicitor General

\*ABSA - Alberta Boilers Safety Authority

Revised January 2019



# Supporting Agency Roles



	Before the Incident	During the Incident	After the Incident
*AEP	<ul style="list-style-type: none"> <li><input type="checkbox"/> Maintain 24 hour emergency contact numbers and duty officer where resources can be accessed for a response related to this plan.</li> <li><input type="checkbox"/> Maintain emergency response resources.</li> <li><input type="checkbox"/> Maintain a specialty air monitoring team and equipment used to oversee and verify air monitoring during incident response.</li> <li><input type="checkbox"/> Act as SME.</li> <li><input type="checkbox"/> Prepare to act as lead agency when appropriate.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure that non-energy industry resources environmental impacts are mitigated.</li> <li><input type="checkbox"/> Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into watercourses.</li> <li><input type="checkbox"/> Provide technical assistance related to emergency drinking water supply engineering.</li> <li><input type="checkbox"/> Notify Fish and Wildlife staff in the area of the emergency.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Compile and maintain environment/emergency related records</li> <li><input type="checkbox"/> Monitor environmental recovery, when required.</li> </ul>
*WCB	<p>The Workers' Compensation Board is a statutory corporation created by government under the Workers' Compensation Act to administer a system of workplace insurance for the workers and employers of the province of Alberta.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> WCB has the overall responsibility for the administration of the workers' compensation system in Alberta.</li> <li><input type="checkbox"/> Be a neutral and autonomous administrator of the worker's compensation system.</li> <li><input type="checkbox"/> Strive to balance the interests of workers and employers.</li> <li><input type="checkbox"/> Delivery of workers' compensation services to the workers and employers of Alberta.</li> <li><input type="checkbox"/> Make decisions based on evidence, law and policy and fair, impartial and transparent processes.</li> <li><input type="checkbox"/> Encourage safer workplaces and promote disability management.</li> </ul>	<p>Employer must report to WCB within 72 hours of being notified of an injury/illness that results in or will likely result in:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Lost time or the need to temporarily or permanently modify work beyond the date of accident</li> <li><input type="checkbox"/> Death or permanent disability (amputation, hearing loss, etc.)</li> <li><input type="checkbox"/> A disabling or potentially disabling condition caused by occupational exposure or activity (poisoning, infection, respiratory disease, dermatitis, etc.)</li> <li><input type="checkbox"/> The need for medical treatment beyond first aid (assessment by a physician or chiropractor, physiotherapy, etc.)</li> <li><input type="checkbox"/> Medical aid expenses (dental treatment, eyeglass repair/replacement, prescription medications, etc.)</li> </ul> <p>Note: Immediately report fatalities and serious injuries to the OHS Contact Centre 1-866-415-8690.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Determines whether the injury or illness is caused by work.</li> <li><input type="checkbox"/> Responds to all client inquiries forwarded by the Minister and all other elected officials.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Compensates injured workers for lost income, health care and other costs related to a work-related injury.</li> <li><input type="checkbox"/> Safely restores injured workers through return-to-work services to a level of competitive employability.</li> <li><input type="checkbox"/> Take reasonable measures to maintain a reasonable quality of life for severely injured workers through the provision of services allowed by legislation and policy.</li> </ul>
*WCSS	<p>Cooperatives operate within specific geographic areas. The petroleum companies in each Co-op work together to achieve a state of spill response readiness. To accomplish this Cooperatives maintain spill contingency plans and strategically place OSCARS (Oil Spill Containment and Recovery units) that are available to all member companies in the area. They hold annual training exercises and provide educational funding for their membership. In an effort to continually improve, Co-ops are often involved in research and development projects.</p> <p>WCSS members in good standing must sign an equipment use agreement to access equipment and are not charged for the use of the equipment; non-members have access to our equipment at our discretion and at a daily rental rate.</p> <p>Operators who are members in good standing of an Area Spill Response Unit or Western Canada Spill Services are only required to provide the name(s) and phone numbers (s) of their emergency contact personnel. The operators must maintain their membership with the Area Spill Response Unit and participate in the annual spill training exercise(s).</p>	<p>WCSS receives a call from Petroleum Company and dispatches the necessary equipment (wildlife equipment, airboats, winter response units, drum skimmers, containment and recovery equipment, regional OSCAR etc.).</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> The equipment user is responsible for equipment repairs and/or replacement if necessary, costs to inventory and restock units and for consumables that are used.</li> </ul>

\*WCB - Workers' Compensation Board

\*WCSS - Western Canadian Spill Services

\*AEP - Alberta Environment & Parks

	Before the Incident	During the Incident	After the Incident
<b>Ministry of Environment</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.</li> <li><b>Can liaise with FLNRO to provide:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Species and ecosystem protection policy.</li> <li><input type="checkbox"/> Water protection and sustainability policy</li> <li><input type="checkbox"/> Conservation and resource management enforcement</li> </ul> </li> </ul>	<p>Before, during and after an emergency the Ministry of Environment could be called upon to provide expertise, technical advice and/or policy direction regarding:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Environmental emergency response (including hazardous materials)</li> <li><input type="checkbox"/> Air, land and water quality standards</li> <li><input type="checkbox"/> Pollution prevention and waste management</li> <li><input type="checkbox"/> Water and air monitoring and reporting</li> <li><input type="checkbox"/> Environmental assessment</li> <li><input type="checkbox"/> Environmental monitoring</li> <li><input type="checkbox"/> Parks, wilderness and protected areas.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> May assist the RP to ensure that other required agencies and affected stakeholders are contacted.</li> <li><input type="checkbox"/> May provide assistance with hazardous waste management.</li> <li><input type="checkbox"/> May conduct sampling for monitoring and enforcement purposes.</li> </ul>	
<b>*MFLNRO</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> Develop, deliver and promote innovative and effective wildfire management practices to clients.</li> <li><input type="checkbox"/> Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> The Ministry of Forests and Range is the designated key agency for wildfires.</li> </ul>	<p>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:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Forest stewardship policy</li> <li><input type="checkbox"/> Land use planning</li> <li><input type="checkbox"/> Water use planning and authorizations</li> <li><input type="checkbox"/> Drought management</li> <li><input type="checkbox"/> Dam and dike safety and regulation</li> <li><input type="checkbox"/> Flood plain management</li> <li><input type="checkbox"/> GeoBC and information management</li> <li><input type="checkbox"/> Pests, disease, invasive plants and species</li> <li><input type="checkbox"/> Wildfire management</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in event debriefings.</li> <li><input type="checkbox"/> Complete a "lessons-learned" process based on the scope of their involvement and the outcome.</li> </ul>
<b>Ministry of Transportation and Infrastructure</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.</li> <li><input type="checkbox"/> 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 services.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> Disaster Response Routes (DRRs) are a critical part of the overall emergency transportation system.</li> <li><input type="checkbox"/> Responsible for the construction, maintenance and operation of public roads.</li> </ul>	<p>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:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Highway construction and maintenance</li> <li><input type="checkbox"/> Safety and protection of provincial road and bridge infrastructure</li> <li><input type="checkbox"/> Transportation planning and policy</li> </ul> <p><input type="checkbox"/> MoTI can:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.</li> <li><input type="checkbox"/> Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.</li> <li><input type="checkbox"/> Coordinate and arrange for transportation, engineering and construction resources.</li> <li><input type="checkbox"/> Rebuild and restore provincial highways that are impacted by an emergency.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> During an emergency, BC Rail will: <ul style="list-style-type: none"> <li><input type="checkbox"/> Provide priority movement of emergency personnel, equipment and supplies.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> Provide railcars for emergency facilities.</li> <li><input type="checkbox"/> Provide specialized equipment.</li> </ul> </li> <li><input type="checkbox"/> During an emergency, BC Transit will coordinate requirements for public transportation, including school and privately owned buses.</li> <li><input type="checkbox"/> 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.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.</li> </ul>
<b>Technical Safety BC</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Technical Safety BC (formerly BC Safety Authority) is an independent, self-funded organization mandated to oversee the safe installation and operation of technical systems and equipment across the province.</li> <li><input type="checkbox"/> In addition to issuing permits, licenses and certificates, we work with industry to reduce safety risks through assessment, education and outreach, enforcement, and research.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> 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.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Technical Safety BC tracks and investigates incidents and hazards that are reported to inform awareness and prevention initiatives</li> <li><input type="checkbox"/> Technical Safety BC does not investigate all reported incidents and may not follow-up with a notification unless there is an intention to investigate.</li> <li><input type="checkbox"/> 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.</li> </ul>
<b>HEMBC North</b>	<p>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.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Maintain a 24-hour emergency/on call contact number for notification and activation of the health system in Northern BC.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> For emergency events that require immediate connection with Northern Health, please call HEMBC on call (24/7) - <b>855-554-3622</b>. 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.</li> <li><input type="checkbox"/> Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the incident/emergency event.</li> </ul>	

# Supporting Agency Roles

\*MFLNRO - Ministry of Forests, Lands and Natural Resource Operations

\*HEMBC - Health Emergency Management BC North



# Supporting Agency Roles



	Before the Incident	During the Incident	After the Incident
<b>Ministry of Health</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide public health measures, including epidemic control and immunization programs.</li> <li><input type="checkbox"/> Provide and coordinate ambulance services and triage, treatment, transportation and care of casualties.</li> <li><input type="checkbox"/> Provide the continuity of care for patients evacuated from hospitals or other health institutions and for medically dependant patients from other care facilities.</li> <li><input type="checkbox"/> Provide standard medical units consisting of emergency hospitals, advanced treatment centres, casualty collection units and blood donor packs.</li> <li><input type="checkbox"/> Monitor potable water supplies.</li> <li><input type="checkbox"/> Inspect and regulate food quality with the assistance of the Minister of Agriculture.</li> <li><input type="checkbox"/> Provide critical incident stress debriefing and counselling services.</li> <li><input type="checkbox"/> Provide support services for physically challenged or medically disabled people affected by an emergency.</li> <li><input type="checkbox"/> Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.</li> <li><input type="checkbox"/> Provide input on public health issues related to a petroleum incident.</li> </ul>	<p>Before, during and after an emergency the Ministry of Health could be called upon to provide expertise, technical advice and/or policy direction regarding:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Health service delivery</li> <li><input type="checkbox"/> Public health planning and response</li> <li><input type="checkbox"/> Community and home support services</li> <li><input type="checkbox"/> Mental health</li> <li><input type="checkbox"/> Communicable disease prevention</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> Ensure appropriate Health entities have been notified of the incident.</li> <li><input type="checkbox"/> Ensure appropriate Executive and Public Health personnel have been notified of the incident.</li> <li><input type="checkbox"/> Carry out evacuation of medically dependent and vulnerable populations, as needed.</li> <li><input type="checkbox"/> Transport incident casualties as required.</li> <li><input type="checkbox"/> Triage and provide medical care to incident casualties as required.</li> <li><input type="checkbox"/> Decontaminate incident casualties that present to health care facilities, as needed.</li> <li><input type="checkbox"/> Relay health hazard information to the public.</li> <li><input type="checkbox"/> Monitor water and air quality, as it relates to public health.</li> <li><input type="checkbox"/> Coordinate the public health response to the incident.</li> <li><input type="checkbox"/> Address the psychosocial aspects of the aftermath of an event.</li> <li><input type="checkbox"/> Arrange with Health Canada and the Public Health Agency of Canada for federal support, if needed.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Participate in event debriefings.</li> <li><input type="checkbox"/> Complete a "lessons-learned" process based on the scope of their involvement and the outcome.</li> <li><input type="checkbox"/> Continue with public health and environmental health monitoring as required.</li> <li><input type="checkbox"/> Continue to address the psychosocial aspects of recovery.</li> </ul>
<b>WorkSafeBC</b>	<p>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.</p> <p>Under the Workers Compensation Act, WorkSafeBC is responsible for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inspecting places of employment.</li> <li><input type="checkbox"/> Investigating accidents and the causes of industrial diseases.</li> <li><input type="checkbox"/> Issuing orders and directions specifying means of preventing injuries and industrial disease.</li> <li><input type="checkbox"/> Assisting and advising employers and workers in developing health and safety programs.</li> <li><input type="checkbox"/> Educating workers about health and safety.</li> <li><input type="checkbox"/> Providing living allowances, rehabilitation, and retraining for workers injured on the job.</li> <li><input type="checkbox"/> Collecting contributions to an accident fund from employers and distributing money from the fund to injured workers.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Maintain a 24 hour emergency contact number where petroleum industry incidents can be reported.</li> <li><input type="checkbox"/> Receive Emergency Response Plans.</li> <li><input type="checkbox"/> Attend critical sour well meetings.</li> </ul>	<p><b>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:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Any incident that kills, causes risk of death, or seriously injures a worker</li> <li><input type="checkbox"/> Any blasting accident that results in injury, or unusual event involving explosives</li> <li><input type="checkbox"/> A diving incident that causes death, injury, or decompression sickness requiring treatment</li> <li><input type="checkbox"/> A major leak or release of a dangerous substance</li> <li><input type="checkbox"/> A major structural failure or collapse of a structure, equipment, construction support system, or excavation</li> <li><input type="checkbox"/> Any serious mishap</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Employer must also report incidents that require the employee to seek medical attention or cause time-loss from work.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 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.</li> <li><input type="checkbox"/> According to the Regulation, an employer must immediately undertake an investigation into the cause of any accident or other incident that: <ul style="list-style-type: none"> <li><input type="checkbox"/> Is required to be reported under the Act?</li> <li><input type="checkbox"/> Results in injury to a worker requiring medical treatment?</li> <li><input type="checkbox"/> 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?</li> <li><input type="checkbox"/> Is an incident required by regulation to be investigated?</li> <li><input type="checkbox"/> Submit an employer's incident investigation report to WorkSafe BC.</li> </ul> </li> </ul>
<b>Ministry of Agriculture</b>	<p>Examples of emergency management activities carried out by the Ministry of Agriculture are:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Providing advice to farmers, aqua-culturalists and fishers on the protection of crops, livestock and provincially managed fish and marine plant stocks.</li> <li><input type="checkbox"/> Through EMBC, provide support to impacted agricultural industries and coordinate support and/or managing agricultural animal relocation.</li> <li><input type="checkbox"/> Assisting the Ministry of Health with inspection and monitoring of food safety and quality.</li> <li><input type="checkbox"/> Coordinate with Canadian Food Inspection Agency the response to animal disease and plant health.</li> <li><input type="checkbox"/> Administering provision of crop insurance to cover damage from disasters or emergencies.</li> </ul>	<p>Before, during and after an emergency the Ministry of Agriculture may be called upon to provide expertise, technical advice and/or policy direction regarding:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Agriculture</li> <li><input type="checkbox"/> Aquaculture and food industry development</li> <li><input type="checkbox"/> Animal health</li> <li><input type="checkbox"/> Crop/plant protection</li> <li><input type="checkbox"/> Food safety and quality</li> <li><input type="checkbox"/> Crop insurance</li> </ul>	
<b>Western Canadian Spill Services</b>	<p>Cooperatives operate within specific geographic areas. The petroleum companies in each Co-op work together to achieve a state of spill response readiness. To accomplish this Cooperatives maintain spill contingency plans and strategically place OSCARS (Oil Spill Containment and Recovery units) that are available to all member companies in the area. They hold annual training exercises and provide educational funding for their membership. In an effort to continually improve, Co-ops are often involved in research and development projects.</p> <p>WCSS members in good standing must sign an equipment use agreement to access equipment and are not charged for the use of the equipment; non-members have access to our equipment at our discretion and at a daily rental rate.</p> <p>Operators who are members in good standing of an Area Spill Response Unit or Western Canada Spill Services are only required to provide the name(s) and phone numbers (s) of their emergency contact personnel. The operators must maintain their membership with the Area Spill Response Unit and participate in the annual spill training exercise(s).</p>	<p>WCSS receives a call from Petroleum Company and dispatches the necessary equipment (wildlife equipment, airboats, winter response units, drum skimmers, containment and recovery equipment, regional OSCAR etc.).</p>	<p>The equipment user is responsible for equipment repairs and/or replacement if necessary, costs to inventory and restock units and for consumables that are used.</p>

	Before the Incident	During the Incident	After the Incident
<b>*ECCC</b>	<p>Environment &amp; Climate Change Canada's Environmental Emergencies Program (EEP) protects Canadian and their environment from the effects of environmental emergencies through provision of <u>science-based expert advice and regulations</u>.</p> <p>The key Acts and Regulations that govern ECCC's role in environmental emergencies that allow it to deliver its mandate are:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <i>Canadian Environmental Protection Act, 1999</i></li> <li><input type="checkbox"/> <i>Fisheries Act—Pollution Prevention Provisions;</i></li> <li><input type="checkbox"/> <i>Migratory Birds Convention Act, 1994;</i></li> <li><input type="checkbox"/> <i>Statutory Notification Requirements—EC's Environmental Notification System.</i></li> <li><input type="checkbox"/> <i>Environmental Emergencies Regulations.</i></li> </ul>	<p>During an environmental emergency, <i>The National Environmental Emergencies Centre (NEEC)</i> is the focal point for ECCC.</p> <p><b>ECCC's services during an environmental emergency:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Collaborate with federal, provincial, territorial and international environmental protection agencies to enable rapid sharing of information.</li> <li><input type="checkbox"/> Convene and chair a Science Table of experts and stakeholders to develop consensus based advice to the Lead Agency.</li> <li><input type="checkbox"/> Identify environmentally sensitive areas and priorities (sensitivity and resource at risk mapping).</li> <li><input type="checkbox"/> Advise on mitigation and cleanup measures.</li> <li><input type="checkbox"/> Provide support and guidance in the assessment of oiled shorelines to prioritize their protection and cleanup (Shoreline Cleanup Assessment Technique (SCAT)).</li> <li><input type="checkbox"/> Advice on the fate and behavior of the spilled product.</li> <li><input type="checkbox"/> Advice on sampling and laboratory analysis.</li> <li><input type="checkbox"/> Provide weather forecasting and spill dispersion modelling to identify where these substances are likely to move in the environment.</li> <li><input type="checkbox"/> Provided expertise on the migratory bird resources and species at risk, including on-site assessment and determination of wildlife impact.</li> <li><input type="checkbox"/> Can conduct post-emergency assessments.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> ECCC can conduct post-emergency assessments.</li> <li><input type="checkbox"/> Provide specialized advice in shoreline clean-up assessment techniques (SCAT).</li> <li><input type="checkbox"/> Provide Advise on mitigation and cleanup measures..</li> </ul>
<b>*DFO</b>	<p>The Canadian Coast Guard is the lead federal agency for ensuring appropriate response to all ship-source and unknown mystery spills in Canadian waters and waters under international agreements.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Establishes appropriate and nationally consistent level of preparedness and response services in Canadian waters.</li> <li><input type="checkbox"/> Design and develop related regulations, policies, strategies and tools.</li> <li><input type="checkbox"/> Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act.</li> <li><input type="checkbox"/> Conduct environmental assessments under the Canadian Environmental Assessment Act.</li> <li><input type="checkbox"/> Design, develop and implement communication and education strategies.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Any amount of hydrocarbons entering a waterway frequented by fish or occupied by waterfowl is deemed to be in contravention of the Federal Fisheries Act and must be reported to the Department of Fisheries and Oceans.</li> <li><input type="checkbox"/> Work together with provincial environment protection agencies and may be initially notified by ECCC.</li> <li><input type="checkbox"/> May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat.</li> <li><input type="checkbox"/> Monitors and investigates all reports of marine pollution in Canada in conjunction with other federal departments.</li> <li><input type="checkbox"/> Maintains communications with the program's partners, including Transport Canada and ECCC, to ensure a consistent coordinated approach to marine pollution incident response.</li> <li><input type="checkbox"/> Aids in search and rescue operations.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Work closely with ECCC, The Canadian Coast Guard and other provincial environmental agencies.</li> </ul>
<b>NAV Canada</b>	<p>NAV Canada is a private company who coordinates the safe and efficient movement of aircraft in Canadian domestic airspace and international airspace assigned to Canadian control.</p> <p><b>Flight Information Centre (FIC) – FIC Services</b></p> <p>Each Flight Information Centre is responsible for providing its particular service area with the following services, which pilots rely upon for safe flight planning and operations:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Emergency</li> <li><input type="checkbox"/> Aviation Weather Briefing</li> <li><input type="checkbox"/> Flight Planning</li> <li><input type="checkbox"/> En-route Flight Information Services</li> <li><input type="checkbox"/> Remote Aerodrome Advisory Services (RAAS)</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> As requested by the provincial oil and gas regulator, the Flight Information Centre will issue a NOTAM (Notice to Airmen).</li> <li><input type="checkbox"/> To close air space beyond an airport (e.g. above a sour gas release), the Flight Information Centre can be contacted by the provincial oil and gas regulator. Depending on the situation, the Flight Information Centre may issue a NOTAM to close the air space in a defined area.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Rescind the NOTAM and re-open air space that was closed due to emergency.</li> </ul>
<b>Health Canada</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sets national standards to keep the environment healthy, keep water and air pollution low and Canadians safe.</li> <li><input type="checkbox"/> Maintains a nationwide network of radiation monitoring stations and can act if levels spike.</li> <li><input type="checkbox"/> Under Chemicals Management Plan, assess health risks from chemicals used in manufacturing and agriculture and require users to prove they actually need the chemicals to make their products</li> <li><input type="checkbox"/> Sets strict rules on how chemicals are used in order to limit human exposure.</li> <li><input type="checkbox"/> Preparedness exercises are designed to test how well the plans and procedures work during simulated emergency situations. Such exercises help the government identify strengths as well as any problems or inadequacies in preparedness plans and procedures so that these can be addressed before, not after, an actual emergency.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> During a health emergency or disaster, Health Canada and the Public Health Agency of Canada are responsible for supporting emergency health and social services in the provinces and territories.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Work collaboratively with the provinces and territories to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.</li> </ul>
<b>Public Health Agency of Canada</b>	<p>The Centre for Emergency Preparedness and Response (CEPR) is responsible for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Developing and maintaining national emergency response plans for the Public Health Agency of Canada and Health Canada.</li> <li><input type="checkbox"/> Assessing public health risks during emergencies.</li> <li><input type="checkbox"/> Contribution to keeping Canada's health and emergency policies in line by collaborating with other federal and international health and security agencies.</li> <li><input type="checkbox"/> The health authority in the Government of Canada on bioterrorism, emergency health services and emergency response.</li> </ul> <ul style="list-style-type: none"> <li><input type="checkbox"/> Strengthen intergovernmental collaboration on public health and facilitate national approaches to public health policy and planning.</li> <li><input type="checkbox"/> Manages emergency preparedness and emergency response plans and keeps them up to date.</li> <li><input type="checkbox"/> Develops and runs exercises to train emergency workers.</li> <li><input type="checkbox"/> Develops and delivers training courses that teach health workers how to respond to emergencies.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> In an emergency situation, the Office of Emergency Response Services (OERS) is responsible for supporting emergency health and social services in the provinces, territories or abroad. It manages the National Emergency Stockpile System (NESS), which includes medical, pharmaceutical and related emergency supplies. The Office is responsible for the federal response to emergencies that have health repercussions; this includes the deployment of health emergency response teams (HERT).</li> <li><input type="checkbox"/> If a public health emergency grows beyond one province and/or territory, the Public Health Agency of Canada usually gets involved.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Work with Health Canada to test ways in which the Canadian health care system can be improved and ensure its sustainability for the future.</li> </ul>

**\*Indigenous Services Canada, Regional Operations and First Nations and Inuit Health Branch**

Since the Government of Canada's renewed commitment to better our relationship with Indigenous peoples of Canada, measures were initiated to affect a shift in the way the Government delivers services to Indigenous peoples. As a result, the creation of two new departments was announced on the 4th of December 2017. The two newly created departments, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and the department of Indigenous Services Canada (ISC), were created to further the government goals.

As part of the above referred to transition, both the Regional Operations (RO), formally part of Indigenous and Northern Affairs Canada (INAC), and all of First Nations and Inuit Health Branch (FNIHB) of Health Canada has been absorbed into the newly created department of Indigenous Services Canada (ISC).

RO and FNIHB continue to work closely and collaborate on provision of emergency preparedness and response activities in First Nations communities in Canada.

RO liaise, communicate, cooperate, coordinate and collaborate with First Nations and public, private, and non-government sector partners in support of on reserve emergency management service delivery. Through our emergency management services agreement with provincial Emergency Management Agencies, First Nations are supported in the four pillars of emergency management.

FNIHB carries out the Public Health preparedness and response related to natural and man-made disasters. This includes Communicable Disease Control and Environmental Public Health Services. In addition, FNIHB provides Non-Insured Health Benefits, extending coverage for medical transportation, pharma-care, medical devices, and crisis mental health support via funding of community based counsellors and crisis support workers. Regional nursing surge capacity is coordinated based on pre-identified and emerging needs, as well as, the continuity of primary care in communities in cooperation with provincial health services. All these services are coordinated and delivered by ISC-FNIHB in the First Nations on a date-to-day basis and during large scale disasters to assist the communities.

Provincial specific FNIHB roles & responsibilities will be found in this section of the ERP, if applicable or as appropriate.

**\*Indian Oil & Gas Canada**

IOGC is an organization committed to managing and regulating oil and gas resources on First Nation reserve lands. It is a special operating agency within Indigenous Services Canada.

IOGC is responsible for oil and gas on First Nation reserve lands across Canada, but only a handful of reserves exist north of the 60th parallel. Therefore, practically all of IOGCs work is south of the 60th parallel, with most of that in the Western Canada Sedimentary Basin.

IOGC's general responsibilities are to:

- identify and evaluate oil and gas resource potential on Indian reserve lands;
- encourage companies to explore for, drill and produce these resources through leasing activity;
- 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>

# Federal Agency Roles



## Transport Canada \*CANUTEC

### Before the Incident

- Regulate the handling, offering for transport and the transport of dangerous goods by all modes in order to ensure public safety.
- Maintain a 24 hour emergency telephone service.
- Federal regulations require that CANUTEC be contacted in the event of an incident or accident involving dangerous goods and infectious substances.
- Maintains records of over 2 million Safety Data Sheets (SDS).

### During the Incident

- 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
  - Fire, explosion, spill or leak hazards
  - Remedial actions for the protection of life, property and the environment
  - 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.

### After the Incident

- Maintain voice communication and written information records for two years for the protection of all parties.

## \*Emergency Response Assistance Canada

- Emergency Response Assistance Canada (ERAC) is a not for profit cooperative organization built by industry for industry providing safe, timely effective, sustainable, cost effective flammable liquids and gases emergency preparedness and response assistance to all Plan Participants and Stakeholders of ERAC.
- ERAC will act on behalf of the Plan Participant to develop, submit, update, and respond to the requirements of the Plan Participant ERAP submitted to and approved by Transport Canada.
  - ERAC 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 constantly available through a 24 hour activation telephone number.
  - Once 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 Canada.

Provides emergency response to plan participants who transport the following products by road or rail, or those who store these products in 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). 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.

- Terminate and de-mobilize.
- Post-incident assessment and communication program.

## \*PSC

- Public Safety Canada works with provincial and territorial officials to ensure first responders and emergency management personnel are well-prepared through education, support and exercises.
- 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).

- 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.

- 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 that will be provided to those who have experienced losses.

### \*National Energy Board Roles & Responsibilities

The NEB'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, NEB inspectors may attend the site to oversee a company's immediate response. The NEB will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the NEB will verify that the regulated company conducts adequate and appropriate clean-up and remediation of any environmental effects caused by the incident.

As lead regulatory agency, the NEB:

- Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of:
  - Emergency Management
  - Safety
  - Security
  - Environment
  - Integrity of operations and facilities; and
  - Energy Supply.
- Investigates the event, either in cooperation with the Transportation Safety Board of Canada, under the Canada Labour Code, or as per the National Energy Board Act or Canada Oil & Gas Operations 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 NEB regulations and identifies non-compliances
- Initiates enforcement actions as required
- Approves the restart of the pipeline.

If applicable; refer to the NEB site section behind the blue Area Specific Information tab for further regulations, definitions and, reporting guidelines for NEB related incidents specific to this ERP.

### \*Transportation Safety Board Mandate

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:

- 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.

<http://www.bst-tsb.gc.ca/eng/qui-about/mission-mandate.asp>



# 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 207 INCIDENT ORGANIZATION CHART  
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

#### EMERGENCY FORMS

A1 INITIAL EMERGENCY REPORT FORM  
A2 ODOUR COMPLAINT SCRIPT  
A3 REGULATORY FIRST CALL COMMUNICATION  
A4 INCIDENT ACTION PLAN (IAP) CHECK LIST  
A5 AIR MONITORING LOG  
A6 THREATENING CALL / BOMB THREAT

#### 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

---

THIS PAGE INTENTIONALLY LEFT BLANK

---

## 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: <http://www.icscanada.ca/en/forms.html>.

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 207 Incident Organization Chart	A complete picture of the organizational structure for the incident.
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 medial 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 after-action 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 communicate 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

<b>Emergency Form Title</b>	<b>Emergency Form Description</b>
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 created by the AER used to send detailed information to the AER 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.
<b>Resident Form Title</b>	<b>Resident Form Description</b>
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
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.
<b>Media Form Title</b>	<b>Media Form Description</b>
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.

# ICS 201 INCIDENT BRIEFING



## EMERGENCY RESPONSE PLAN

Incident Name:				
Date/Time Initiated:				
Prepared By:	ICS Position:			
Level of Emergency	<input type="checkbox"/> Alert / Minor	<input type="checkbox"/> Level 1	<input type="checkbox"/> Level 2	<input type="checkbox"/> Level 3
<b>Map Sketch:</b>				
<i>Note: Maps can be drawn or attached here.</i>				
<b>Situation Summary: (Write description or attach A1)</b>				
<b>Safety Briefing:</b>				

# ICS 201 INCIDENT BRIEFING



## EMERGENCY RESPONSE PLAN

### Current and Planned Objectives:

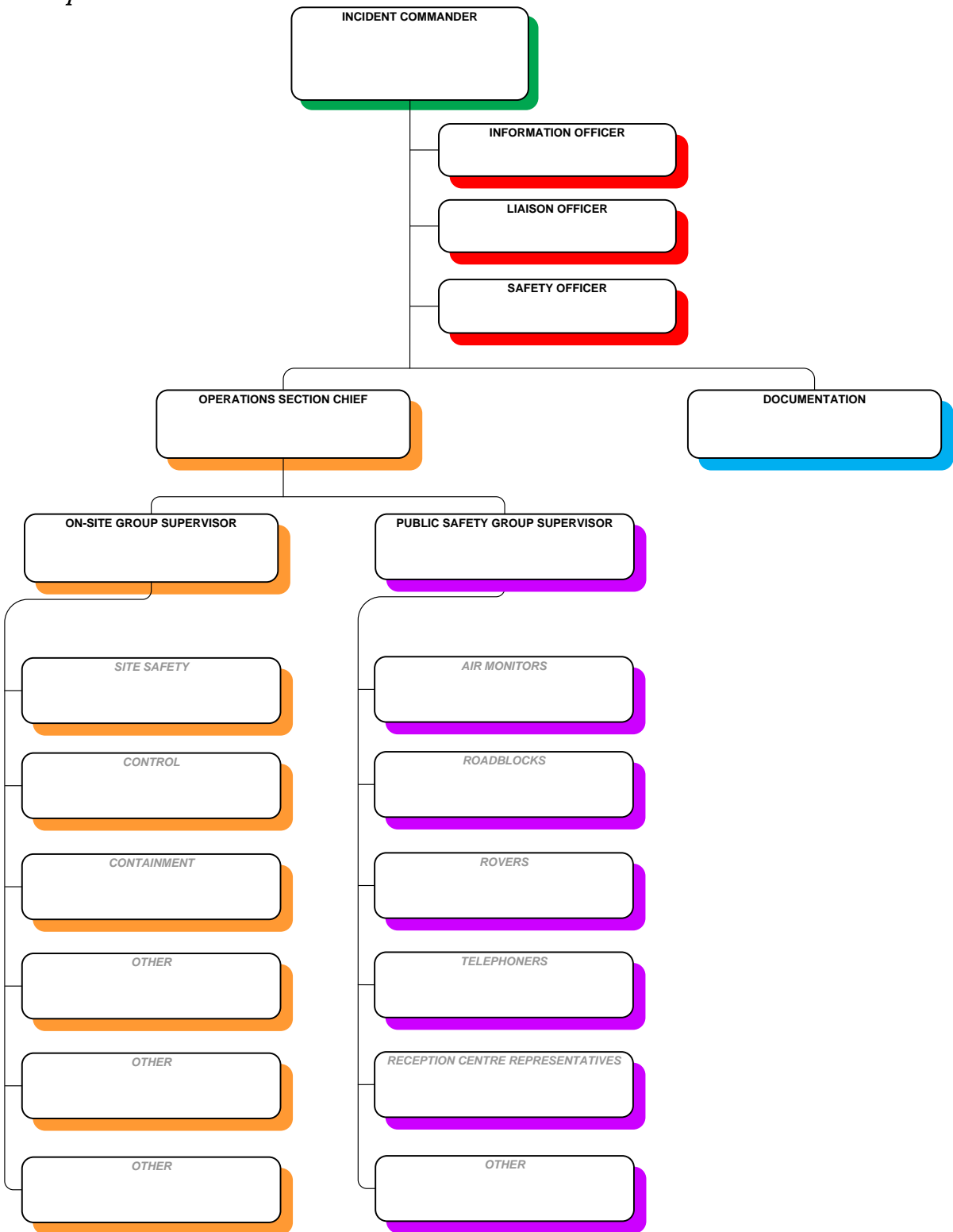
Current and Planned Objectives:		
People	Worker Safety	Priority
	#	
Public Safety	#	
Environment	#	
Assets	#	
Reputation	#	

### Current and Planned Actions, Strategies and Tactics:

Time:	Actions:
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	
HHMM	

Current Organizational Structure: (draw in current response structure)\*

\* This is a condensed Organizational Chart to account for all currently responding personnel during the Initial Response.



Note: Refer to ICS 207 Incident Organization Chart in SECTION 1: ONGOING RESPONSE (YELLOW TAB) or SECTION 6: FORMS (BLUE TAB) for full command structure.

# ICS 201 INCIDENT BRIEFING



## EMERGENCY RESPONSE PLAN

Resources Summary:				
Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
External Notifications: (Government)				
Agency	Time Called	Notes		



# ICS 202 INCIDENT OBJECTIVES



## EMERGENCY RESPONSE PLAN

Incident Name:	
Date / Time Initiated:	
Prepared by:	ICS Position:
<b>General Control Objectives for the Incident:</b>	
1	
2	
3	
4	
5	
<b>Weather Forecast:</b>	
<b>General Safety Message:</b>	
<i>Note: Create and prioritize SMART (Specific, Measureable, Attainable, Realistic, &amp; Time-Sensitive) objectives that address the incident issues and utilize the solutions identified on the Operations Briefing page.</i>	

THIS PAGE INTENTIONALLY LEFT BLANK

---

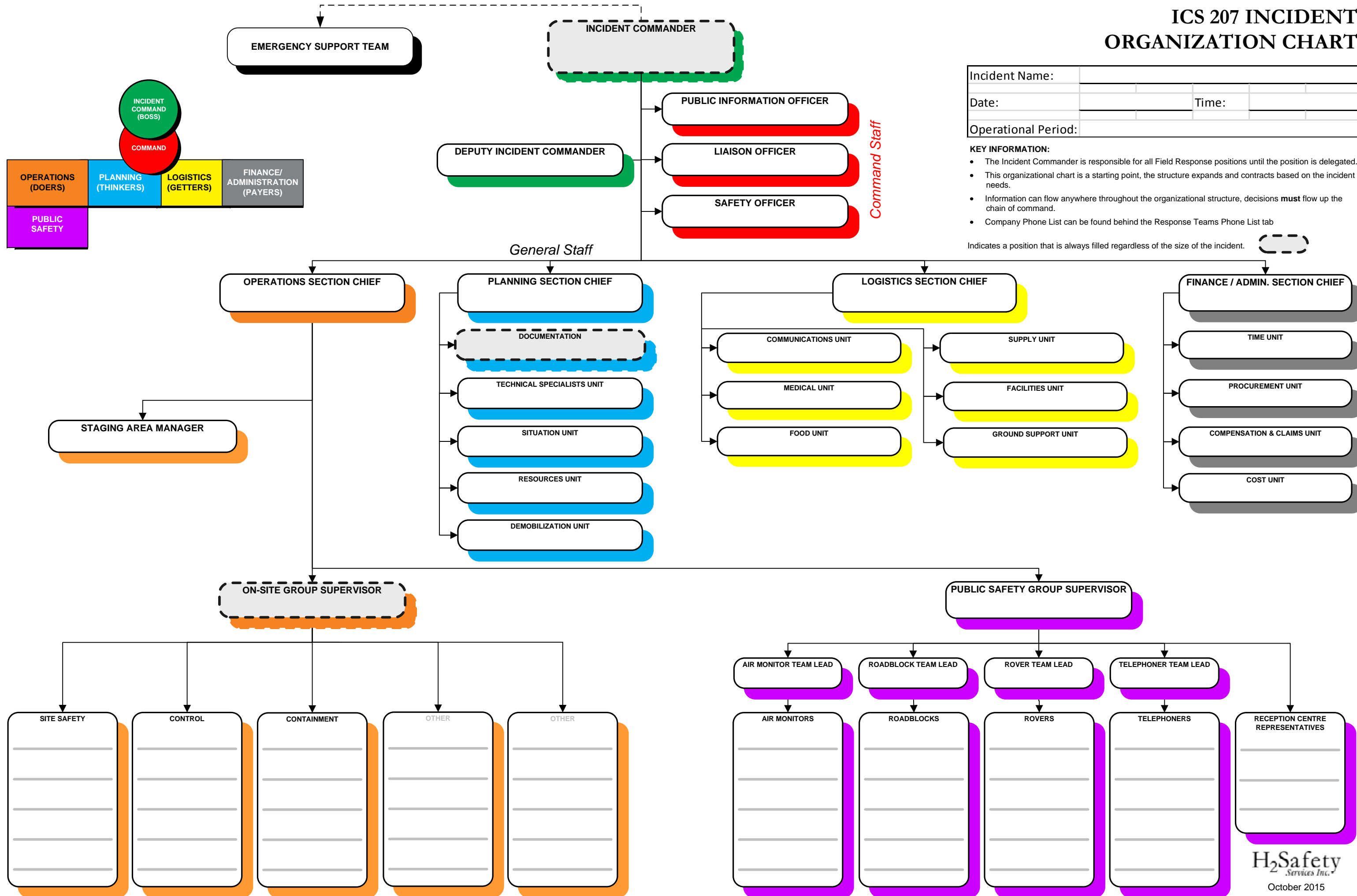
# ICS 207 INCIDENT ORGANIZATION CHART

Incident Name:			
Date:		Time:	
Operational Period:			

**KEY INFORMATION:**

- 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 needs.
- 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

Indicates a position that is always filled regardless of the size of the incident.



INCIDENT COMMAND (BOSS)  
COMMAND

OPERATIONS (DOERS)  
PLANNING (THINKERS)  
LOGISTICS (GETTERS)  
FINANCE/ ADMINISTRATION (PAYERS)  
PUBLIC SAFETY

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

Incident Name:	Location of Incident:	
Date / Time Initiated:	(LSD / NTS)	
Prepared by:	ICS Position	
<b>Incident Details:</b>		
<b>Level of Emergency:</b>		
Incident Severity:	<input type="checkbox"/> Alert / Minor	<input type="checkbox"/> Level 1 <input type="checkbox"/> Level 2 <input type="checkbox"/> Level 3
<b>Site Type: (Select only 1)</b>		
<input type="checkbox"/> Well (Active)	<input type="checkbox"/> Well (Abandoned/Suspended)	<input type="checkbox"/> Remote Sump
<input type="checkbox"/> Well (Drilling & Completions): Rig Name:		
<input type="checkbox"/> Battery/Plant/Facility	<input type="checkbox"/> Tank Farm/Storage	<input type="checkbox"/> Pipeline
<input type="checkbox"/> Riser (Pipeline)		
<input type="checkbox"/> Road or Road Structure	Name:	Location on Road:
<input type="checkbox"/> Other – Specify:		
<b>Incident Type: (Check all that apply)</b>		
<input type="checkbox"/> Sour Gas Release	<input type="checkbox"/> Sweet Gas Release	<input type="checkbox"/> Liquid Spills
<input type="checkbox"/> Natural Disaster/Weather	<input type="checkbox"/> Fire/Explosion	<input type="checkbox"/> Drilling Kick
<input type="checkbox"/> Worker Injury/Fatality	<input type="checkbox"/> Security (theft, threat, terrorism)	<input type="checkbox"/> Induced Seismicity
<input type="checkbox"/> Well Bore Communication	<input type="checkbox"/> Pipeline Boring	<input type="checkbox"/> Vehicle/Transportation
<input type="checkbox"/> Equipment/Structural Damage	<input type="checkbox"/> Pipeline Break	<input type="checkbox"/> Well Control
<input type="checkbox"/> Other – Specify:		
<b>Activity: (Check all that apply)</b>		
<input type="checkbox"/> Construction (Road, Lease, Pipe)	<input type="checkbox"/> Drilling/Exploration	<input type="checkbox"/> Waste Management
<input type="checkbox"/> Processing	<input type="checkbox"/> Well Fracturing	<input type="checkbox"/> Servicing
<input type="checkbox"/> Repair	<input type="checkbox"/> Flaring (Emergency)	<input type="checkbox"/> Well Testing
<input type="checkbox"/> Pressure Testing	<input type="checkbox"/> Transportation	
<input type="checkbox"/> Other – Specify:		

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

Consequence or Impacts: (Check all that apply, if none, leave blank)			
<input type="checkbox"/> Worker Safety (Injuries, Fatalities)		<input type="checkbox"/> Property	
<input type="checkbox"/> Economic (Loss of and/or damage to equipment or infrastructure, loss of production, work stoppage)			
<input type="checkbox"/> Other – Specify:			
Material Information:			
Is spill off lease? <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Liquid Hydrogen (Crude, Oil, Diesel, Fuel)	
<input type="checkbox"/> Acid	<input type="checkbox"/> Emulsion (Oil, Gas, Water)		<input type="checkbox"/> Non-Toxic Gases (Nitrogen, Carbon Dioxide, Inert Gases)
<input type="checkbox"/> Methanol	<input type="checkbox"/> Non-Toxic Liquids	<input type="checkbox"/> Fresh Water	<input type="checkbox"/> Salt Water
<input type="checkbox"/> Sour Natural Gas	<input type="checkbox"/> Sour Liquids (<1% H <sub>2</sub> S)	<input type="checkbox"/> Sweet Natural Gas	
<input type="checkbox"/> Toxic Gas Liquid (>1% Different Toxins)		<input type="checkbox"/> Other – Specify:	
Area Information:			
Land Type: <input type="checkbox"/> Private Land <input type="checkbox"/> Crown Land		Field Name:	
Area Type: <input type="checkbox"/> Forest <input type="checkbox"/> Muskeg <input type="checkbox"/> Farmland <input type="checkbox"/> Residential <input type="checkbox"/> Other			
Access: <input type="checkbox"/> Helicopter <input type="checkbox"/> ATV <input type="checkbox"/> 4WD <input type="checkbox"/> 2WD <input type="checkbox"/> Unknown			
Name of road the asset is located on:			
KM where the incident occurred:			
Distance to nearest residence/public facility:			
Nearest City/Town/Open Camp:			
Weather Conditions:			
Weather Conditions <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Other:			
Wind Direction      N      NE      NW      E      SE      S      SW      W			
Wind Strength <input type="checkbox"/> Calm <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Gusty			
Temperature      °C			
Public / Worker Injuries / Medical Emergencies:			
<input type="checkbox"/> First Aid	<input type="checkbox"/> Hospitalization	<input type="checkbox"/> Fatality	<input type="checkbox"/> Other – Specify:
Notification: (Notify all agencies as required)			
<input type="checkbox"/> 911	<input type="checkbox"/> Energy Regulator (OGC / AER* / ECON)	<input type="checkbox"/> Local Authority (MD, County, Town, City)	<input type="checkbox"/> Health Authority
<input type="checkbox"/> National Energy Board (NEB)	<input type="checkbox"/> Occupational Health & Safety (OH&S)	<input type="checkbox"/> Emergency Management Agency	<input type="checkbox"/> Ministry of Transportation
<input type="checkbox"/> Workers' Compensation Board (WCB)	<input type="checkbox"/> Western Canadian Spill Services (WCSS)	<input type="checkbox"/> CANUTEC	<input type="checkbox"/> Emergency Response Assistance Canada (ERAC)
<input type="checkbox"/> Transportation Dangerous Goods (TDG)	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>
<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>	<input type="checkbox"/> <i>Other</i>
*Request that the AER notify Alberta Environment & Parks (Forestry/Fish/Wildlife/Lands), Environment Canada and the Department of Fisheries and Oceans as required.			
<b>Refer to the Government Notification Matrix and External Agencies Contact List for complete list of agencies requiring contact.</b>			

# ICS 209 INCIDENT STATUS SUMMARY



## EMERGENCY RESPONSE PLAN

Agency Notification			
Agency Name	Contact Name	Contact Number	Notified (Y/N)

Collect all completed C3 Government Agency Contact Logs from responders for full documentation.

Notes:

Roadblock Locations:		
Roadblock Number	Name	Location/LSD

Collect all completed B4 Roadblock Logs from responders for full documentation.

Notes:

**Air Monitor Locations:**

Air Monitor Number	Name	Location/LSD

Collect all completed A5 Air Monitoring Logs from responders for full documentation.

**Notes:**

**Reception Centres**

Name	Location	Phone Number

Collect all completed B1 Reception Centre Registration Logs from responders for full documentation.

**Notes:**

# ICS 209 INCIDENT STATUS SUMMARY ALBERTA

<b>INCIDENT DATE:</b>	Day	Month	Year	<b>INCIDENT TIME:</b>	(24 HOUR CLOCK)	<b>LOCATION OF INCIDENT:</b> LSD    Sec    Twp    Rge    M				
<b>RECEIVED DATE:</b>	Day	Month	Year	<b>RECEIVED TIME:</b>	(24 HOUR CLOCK)	<b>LEVEL OF EMERGENCY:</b> (Circle One)    Alert      Level 1      Level 2      Level 3				

### SITE TYPE (Select only 1)

<input type="checkbox"/> WELL (ACTIVE)	<input type="checkbox"/> WELL (ABD / SUSPENDED)	<input type="checkbox"/> REMOTE SUMP	<input type="checkbox"/> WELL (D&C): RIG NAME:
<input type="checkbox"/> BATTERY / PLANT / FACILITY	<input type="checkbox"/> TANK FARM / STORAGE	<input type="checkbox"/> PIPELINE	<input type="checkbox"/> RISER (PIPELINE)
<input type="checkbox"/> ROAD OR ROAD STRUCTURE	NAME:		<input type="checkbox"/> LOCATION ON ROAD:
<input type="checkbox"/> OTHER – SPECIFY:			

### INCIDENT TYPE (Check all that apply)

<input type="checkbox"/> SOUR GAS RELEASE	<input type="checkbox"/> SWEET GAS RELEASE	<input type="checkbox"/> LIQUID SPILLS	<input type="checkbox"/> FIRE / EXPLOSION	<input type="checkbox"/> NATURAL DISASTER / WEATHER
<input type="checkbox"/> VEHICLE / TRANSPORTATION		<input type="checkbox"/> INJURY / FATALITY	<input type="checkbox"/> PIPELINE BREAK	<input type="checkbox"/> EQUIPMENT / STRUCTURE FAILURE
<input type="checkbox"/> DRILLING KICK	<input type="checkbox"/> PIPELINE BORING	<input type="checkbox"/> INDUCED SEISMICITY	<input type="checkbox"/> WELL CONTROL	<input type="checkbox"/> WELL BORE COMMUNICATION
<input type="checkbox"/> SECURITY (THEFT, THREAT, SABOTAGE, TERRORISM)		<input type="checkbox"/> OTHER – SPECIFY:		

### ACTIVITY (Check all that apply)

<input type="checkbox"/> DRILLING / EXPLORATION	<input type="checkbox"/> WELL TESTING	<input type="checkbox"/> WELL FRACTURING	<input type="checkbox"/> PROCESSING
<input type="checkbox"/> SERVICING	<input type="checkbox"/> REPAIR	<input type="checkbox"/> FLARING (EMERGENCY)	<input type="checkbox"/> CONSTRUCTION (ROAD, LEASE, PIPELINE, FACILITY)
<input type="checkbox"/> TRANSPORTATION	<input type="checkbox"/> WASTE MANAGEMENT	<input type="checkbox"/> PRESSURE TESTING	<input type="checkbox"/> OTHER – SPECIFY:

### CONSEQUENCE OR IMPACTS (Check all that apply, if none, leave blank)

<input type="checkbox"/> WORKER SAFETY (FATALITY, INJURIES)	<input type="checkbox"/> PROPERTY	<input type="checkbox"/> ECONOMIC (LOSS OF AND/OR DAMAGE TO EQUIPMENT OR INFRASTRUCTURE, LOSS OF PRODUCTION, WORK STOPPAGE)
<input type="checkbox"/> OTHER – SPECIFY:		

### AREA INFORMATION

LAND TYPE:	<input type="checkbox"/> PRIVATE <input type="checkbox"/> CROWN	FIELD NAME:
AREA TYPE:	<input type="checkbox"/> FOREST <input type="checkbox"/> MUSKEG <input type="checkbox"/> FARMLAND <input type="checkbox"/> RESIDENTIAL <input type="checkbox"/> OTHER	
ACCESS:	<input type="checkbox"/> HELICOPTER <input type="checkbox"/> ATV <input type="checkbox"/> 4WD <input type="checkbox"/> 2WD <input type="checkbox"/> UNKNOWN	
NAME OF ROAD THE ASSET IS LOCATED ON:		
KM WHERE THE INCIDENT OCCURRED:		
DISTANCE TO NEAREST RESIDENCE / PUBLIC FACILITY:		
NEAREST CITY / TOWN / OPEN CAMP:		

### WEATHER CONDITIONS

WEATHER CONDITIONS	<input type="checkbox"/> CLEAR	<input type="checkbox"/> CLOUDY	<input type="checkbox"/> OTHER
WIND DIRECTION	N    NE    NW    E    SE    S    SW    W		
WIND STRENGTH	<input type="checkbox"/> CALM	<input type="checkbox"/> MODERATE	<input type="checkbox"/> STRONG <input type="checkbox"/> GUSTY
TEMPERATURE	°C		
COMMENTS:			

### NOTIFICATION (Notify all agencies as required)

<input type="checkbox"/> 911	<input type="checkbox"/> ALBERTA ENERGY REGULATOR (AER)*	<input type="checkbox"/> LOCAL AUTHORITY (MD, COUNTY, TOWN, CITY)	<input type="checkbox"/> ALBERTA HEALTH SERVICES (AHS)	<input type="checkbox"/> NATIONAL ENERGY BOARD (NEB)
<input type="checkbox"/> ALBERTA OCCUPATIONAL & SAFETY (OH&S)	<input type="checkbox"/> ALBERTA EMERGENCY MANAGEMENT AGENCY	<input type="checkbox"/> ALBERTA HEALTH & WELLNESS (AHW)	<input type="checkbox"/> ALBERTA BOILER SAFETY ASSOCIATION (ABSA)	<input type="checkbox"/> ALBERTA SAFETY SERVICES – ELECTRICAL BRANCH
<input type="checkbox"/> MINISTRY OF TRANSPORTATION (TSB)	<input type="checkbox"/> WORKERS' COMPENSATION BOARD (WCB)	<input type="checkbox"/> WESTERN CANADIAN SPILL SERVICES (WCSS)	<input type="checkbox"/> CANUTEC	<input type="checkbox"/> EMERGENCY RESPONSE ASSISTANCE CANADA (ERAC)
<input type="checkbox"/> TRANSPORTATION DANGEROUS GOODS (TDG)	<input type="checkbox"/> OTHER – SPECIFY:	<input type="checkbox"/> OTHER – SPECIFY:	<input type="checkbox"/> OTHER – SPECIFY:	<input type="checkbox"/> OTHER – SPECIFY:

\* Request that the AER notify Alberta Environment, Alberta Sustainable Resource Development (forestry / fish / wildlife / lands), Environment Canada and Department of Fisheries and Oceans as required.

### PUBLIC / WORKER INJURIES / MEDICAL EMERGENCIES

<input type="checkbox"/> FIRST AID	<input type="checkbox"/> HOSPITALIZATION	<input type="checkbox"/> FATALITY	<input type="checkbox"/> OTHER:
------------------------------------	--	-----------------------------------	---------------------------------

### MATERIAL INFORMATION

<input type="checkbox"/> IS SPILL OFF LEASE?	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> ACID	<input type="checkbox"/> EMULSION (OIL, GAS, WATER)	<input type="checkbox"/> NON-TOXIC GASES (NITROGEN, CARBON DIOXIDE, INERT GASES)
<input type="checkbox"/> NON-TOXIC LIQUIDS	<input type="checkbox"/> METHANOL	<input type="checkbox"/> FRESH WATER	<input type="checkbox"/> SALT WATER	<input type="checkbox"/> LIQUID HYDROGEN (CRUDE, OIL, DIESEL, FUEL)
<input type="checkbox"/> SOUR NATURAL GAS	<input type="checkbox"/> SOUR LIQUIDS (< 1% H <sub>2</sub> S)	<input type="checkbox"/> TOXIC GAS	<input type="checkbox"/> SWEET NATURAL GAS	<input type="checkbox"/> TOXIC GAS LIQUID (> 1% DIFFERENT TOXINS)
<input type="checkbox"/> OTHER – SPECIFY:				

### AGENCY NOTIFICATION LOG

AGENCY NAME	CONTACT NAME	CONTACT NUMBER	NOTIFIED (Y/N)

Collect all completed C3 Government Agency Contact Logs from responders for full documentation.

### ROADBLOCK LOCATIONS

ROAD BLOCK #	NAME	LOCATION / LSD

Collect all completed B4 Roadblock Logs from responders for full documentation.

### AIR MONITOR LOCATIONS

AIR MONITOR #	NAME	LOCATION / LSD

Collect all completed A5 Air Monitoring Logs from responders for full documentation.

### RECEPTION CENTRES

NAME	LOCATION	CONTACT NUMBER

Collect all completed B1 Reception Centre Registration Logs from responders for full documentation.

### NOTES



# ICS 211 CHECK IN / OUT



## EMERGENCY RESPONSE PLAN

Incident Name:							
Date / Time Initiated:							
Prepared by:				ICS Position:			
Check-in Location <input type="checkbox"/> Staging Area <input type="checkbox"/> ICS Res. Unit <input type="checkbox"/> Other:							
Name of Company	Date of Check-in	Supervisor Name	Total # of Personnel	Incident Assignment	Assigned	Available	Date of Check-out
<b>Notes:</b>							

# ICS 211 CHECK IN / OUT

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---



THIS PAGE INTENTIONALLY LEFT BLANK

---



# ICS 215 OPERATIONAL PLANNING WORKSHEET

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---



# ICS 215A INCIDENT ACTION PLAN SAFETY ANALYSIS

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---



# A1 INITIAL EMERGENCY REPORT FORM



## EMERGENCY RESPONSE PLAN

*DISTRIBUTE THIS COMPLETED REPORT TO ALL KEY RESPONSE PERSONNEL*

### SECTION A

### CALLER IDENTIFICATION

Report Taken By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Caller's Name: \_\_\_\_\_  
Incident Location: \_\_\_\_\_  
Telephone Numbers: \_\_\_\_\_ Email: \_\_\_\_\_

*Note: If the call has originated from a member of the public, inform the caller that field personnel will be sent immediately to investigate the incident. Once the incident has been investigated, a company representative will phone the original caller to confirm the incident was investigated and to outline the corrective measures that are being taken.*

### SECTION B

### INCIDENT DESCRIPTION

**SITUATION:**  Odour complaint  Fire / Explosion  Spill  Other  
**LOCATION:**  Well-site  Pipeline  Sat / Bty  Unknown  
**STATUS:**  Controlled  Uncontrolled  Unknown

Approximate distance and direction to closest residence or public facility (If known): \_\_\_\_\_

#### DETAILS:

**GAS READINGS (H<sub>2</sub>S, SO<sub>2</sub> and LEL):** \_\_\_\_\_

### SECTION C

### INJURIES AND MEDICAL EMERGENCIES

Minor Injuries: \_\_\_\_\_

Critical Injuries: \_\_\_\_\_

Fatalities: \_\_\_\_\_

Actions Taken: \_\_\_\_\_

Assistance Required: \_\_\_\_\_

# A1 INITIAL EMERGENCY REPORT FORM



## EMERGENCY RESPONSE PLAN

SECTION D				WELL STATUS (Drilling, Completion, Workovers, Servicing)			
Depth/Perforations		m KB	Wellbore Fluid Density		kg/m <sup>3</sup>		
Pit Gain		m <sup>3</sup>	Kill Fluid Density		kg/m <sup>3</sup>		
SIDPP / SITP		kPa	Misc.				
SICP		kPa					
RSP		kPa					

SECTION E		WEATHER	
<b>Weather Conditions:</b>		<b>Temperature:</b>	
<b>Wind:</b> <input type="checkbox"/> Calm <input type="checkbox"/> Moderate <input type="checkbox"/> Strong <input type="checkbox"/> Gusty	<b>Wind Direction:</b> From:	To:	

SECTION F		ACTIONS TAKEN		
<b>Already Notified:</b>	<input type="checkbox"/> Regulatory Agency	<input type="checkbox"/> RCMP	<input type="checkbox"/> Municipality	
	<input type="checkbox"/> Ambulance	<input type="checkbox"/> Health Authority	<input type="checkbox"/> Other	

SECTION G	CALLER INSTRUCTIONS
<b>Instructions given to Caller:</b>	

Note: If applicable, complete First On-scene Actions then proceed to the Five Step Initial Response Guide.

# A2 ODOUR COMPLAINT SCRIPT



## EMERGENCY RESPONSE PLAN

Date:	Prepared by:
Time: <input type="checkbox"/> a.m. <input type="checkbox"/> p.m.	Duration of call:

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

*Name:* \_\_\_\_\_

*Contact number:* \_\_\_\_\_

*Description of the concern:* \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**How many people are you with right now?**

*Adults* \_\_\_\_\_ *Children* \_\_\_\_\_

**Can you provide the location of the incident?**

*Location of the incident (address, legal, landmark, etc.):* \_\_\_\_\_

\_\_\_\_\_

**Where are you right now?**

Home / Work     In a Vehicle     Outside     Other \_\_\_\_\_

*If the resident is at home / work / outside tell them:*

The company will send someone to investigate. To be safe, you and anyone that you may be with need to go inside and stay inside. Close all doors and windows and turn off any appliances that blow out indoor air (i.e. clothes dryer) or suck in outside air (i.e. heating / air conditioning). Do not go outside or attempt to start any vehicles until you are told it is safe to do so.

*If the resident is in a vehicle and cannot shelter-in-place tell them:*

The company will send someone to investigate. To be safe, you and anyone that may be with you need to get inside the vehicle and stay inside. Keep all doors and windows closed and shut off the air conditioning / heat. If you see or hear anything that might indicate where the incident is occurring, travel in the opposite direction of the hazard; otherwise, continue travelling on your current course which will likely take you out of the hazard area.

**Someone will call you back with further instruction so please stay off of the phone so that we can contact you. If you have any urgent questions please call the company at \_\_\_\_\_.**

THIS PAGE INTENTIONALLY LEFT BLANK

---

# A3 FIRST CALL COMMUNICATION



## EMERGENCY RESPONSE PLAN

CONTACT DETAILS	Regulatory Contact		Field Centre							
	Caller				Phone					
	Notification	Date	Time	Release	Start Time	End Time	<input type="checkbox"/> Ongoing			
	Licensee				Phone					
	Location			Nearest Town						
	Nearest Resident		Distance/Direction			Phone				
	Media Involvement?		<input type="checkbox"/> Local	<input type="checkbox"/> National	Media Contact					
			<input type="checkbox"/> Regional	<input type="checkbox"/> International						
PUBLIC IMPACT	Public Health and Safety		<input type="checkbox"/> Could be jeopardized		Worker Injuries		<input type="checkbox"/> First Aid	<input type="checkbox"/> Fatality		
			<input type="checkbox"/> Is jeopardized				<input type="checkbox"/> Hospitalization			
	Emergency Assessment Matrix completed with licensee		<input type="checkbox"/> Minor	<input type="checkbox"/> Two	ERP Activated?		<input type="checkbox"/> Site Specific	<input type="checkbox"/> Corporate		
			<input type="checkbox"/> One	<input type="checkbox"/> Three			<input type="checkbox"/> Field/Area			
	EPZ Size (2 km if unknown)		Numbers and Types of Public in EPZ			EOC/ICP Location				
Public Protection Measures Implemented		<input type="checkbox"/> Notification		<input type="checkbox"/> Roadblocks		Number Evacuated				
		<input type="checkbox"/> Shelter		<input type="checkbox"/> Evacuation						
RELEASE TYPE	Release Impact		<input type="checkbox"/> On lease		<input type="checkbox"/> Off lease		H <sub>2</sub> S Concentration			
	<input type="checkbox"/> Sensitive Environment		Environment Affected		<input type="checkbox"/> Air	<input type="checkbox"/> Standing Water	Water Body Name			
					<input type="checkbox"/> Land	<input type="checkbox"/> Flowing Water				
	Area Affected (m <sup>3</sup> )		<input type="checkbox"/> Property Damage		<input type="checkbox"/> Equipment Loss		<input type="checkbox"/> Wildlife / Livestock Affected			
	Gas Release		<input type="checkbox"/> Sweet		<input type="checkbox"/> Sour		Volume/Rate			
	Liquid Release		<input type="checkbox"/> Oil		<input type="checkbox"/> Water		<input type="checkbox"/> Effluent		Volume/Rate	
		<input type="checkbox"/> Release Point Determined								
CONTAINMENT	Third Party / Outside Assistance Required		<input type="checkbox"/> Incident contained or controlled			<input type="checkbox"/> Imminent control probable				
			<input type="checkbox"/> Intermittent control possible			<input type="checkbox"/> Incident is uncontrolled				
Company				WCSS Co-op						
OPERATION TYPE	Well Licence No.		Type of Incident		<input type="checkbox"/> Kick		<input type="checkbox"/> Blowout		<input type="checkbox"/> Loss of Circulation	
	Well Status		<input type="checkbox"/> Drilling		<input type="checkbox"/> Servicing		<input type="checkbox"/> Producing		<input type="checkbox"/> Injection	<input type="checkbox"/> Suspended
			<input type="checkbox"/> Standing		<input type="checkbox"/> Sweet		<input type="checkbox"/> Sour		<input type="checkbox"/> Critical	
	Pipeline License No.		Line No.		<input type="checkbox"/> Hit		<input type="checkbox"/> Leak		<input type="checkbox"/> Rupture	
Production Facility License No.		<input type="checkbox"/> Gas		<input type="checkbox"/> Gas Plant		<input type="checkbox"/> Compressor		AENV Approval No.		
		<input type="checkbox"/> Oil		<input type="checkbox"/> Battery		<input type="checkbox"/> Other				

# A3 FIRST CALL COMMUNICATION



## EMERGENCY RESPONSE PLAN

AIR MONITORING	<input type="checkbox"/> License Air Monitoring Occurring <input type="checkbox"/> Mobile <input type="checkbox"/> Handheld		Estimated Time of Arrival			
	Initial Readings / Location	<input type="checkbox"/> PPB <input type="checkbox"/> On Site <input type="checkbox"/> PPM <input type="checkbox"/> Off Site	Distance			
	Contractor Name	Phone	AMU Phone			
	Wind	Direction      Speed	Meteorological Conditions      AER AMU ETA			
COMMUNICATIONS	Communications completed by Licensee and /or Regulatory Agency					
	<input type="checkbox"/> RCMP/Police <input type="checkbox"/> Energy Regulator <input type="checkbox"/> Emergency Management Agency <input type="checkbox"/> TDG <input type="checkbox"/> OH&S <input type="checkbox"/> WCB <input type="checkbox"/> Ambulance <input type="checkbox"/> Local Authority <input type="checkbox"/> Ministry of Transportation <input type="checkbox"/> CANUTEC <input type="checkbox"/> DFO <input type="checkbox"/> WCSS <input type="checkbox"/> Fire <input type="checkbox"/> Health Authority <input type="checkbox"/> Environment & Climate Change Canada (ECCC) <input type="checkbox"/> ERAC <input type="checkbox"/> Other <input type="checkbox"/> Other <input type="checkbox"/> NEB <input type="checkbox"/> First Nations <input type="checkbox"/> Indian Oil & Gas <input type="checkbox"/> Other <input type="checkbox"/> Other <input type="checkbox"/> Other					
	Contact Names & Phone Numbers					
Incident Cause <input type="checkbox"/> Natural <input type="checkbox"/> Human-Induced unintentional <input type="checkbox"/> Human-Induced Intentional						
OTHER INFORMATION	<input type="checkbox"/> First Nations Band <input type="checkbox"/> Metis Settlement	Band / Settlement Name / Contact		Phone		
	Complaints	<input type="checkbox"/> Local <input type="checkbox"/> Large area				
	Private Land Title holder			Phone		
	Additional Information					

# A4 INCIDENT ACTION PLAN CHECKLIST



## EMERGENCY RESPONSE PLAN

IAP Checklist Items:	Comments:
<input type="checkbox"/> ICS 202 – Incident Objectives	
<input type="checkbox"/> ICS 207 – Incident Organizational Chart	
<input type="checkbox"/> ICS 209 – Incident Status Summary	
<input type="checkbox"/> ICS 215 – Operational Planning Worksheet	
<input type="checkbox"/> ICS 215A – IAP Safety Analysis	
<input type="checkbox"/> Emergency Status Board	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Map: _____	
<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Other: _____	
<b>Notes:</b>	

THIS PAGE INTENTIONALLY LEFT BLANK

---



# A5 AIR MONITORING LOG



## EMERGENCY RESPONSE PLAN

Date: \_\_\_\_\_ Responder Name: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ Responder Position: \_\_\_\_\_

TIME	LOCATION OF SAMPLES	H <sub>2</sub> S (ppm)	LEL (%)	O <sub>2</sub> (%)	SO <sub>2</sub> (ppm)	OTHER	TEMP(°C)	WIND CONDITIONS *		COMMENTS
								FROM	SPEED (km/hr)	

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

# A5 AIR MONITORING LOG



## EMERGENCY RESPONSE PLAN

TIME	LOCATION OF SAMPLES	H <sub>2</sub> S (ppm)	LEL (%)	O <sub>2</sub> (%)	SO <sub>2</sub> (ppm)	OTHER	TEMP(°C)	WIND CONDITIONS *		COMMENTS
								FROM	SPEED (km/hr)	

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

# A6 THREATENING CALL / BOMB THREAT

## EMERGENCY RESPONSE PLAN

Date:	Time Call Received:	Time Call Reported:		
Person Receiving Call:		What/Whom Call Directed To:		
Caller's Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unknown		Approximate Age:		
Accent: <input type="checkbox"/> Yes <input type="checkbox"/> No Type:		Familiar voice: <input type="checkbox"/> Yes <input type="checkbox"/> No Who:		
Threat (Exact Wording):				
<b>TIPS:</b> <ul style="list-style-type: none"> <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><b>Signal someone to call your supervisor; give him / her this information.</b></li> <li><b>Do not hang up or disconnect your phone</b>, even after the caller hangs up.</li> <li>For telephone tracing, call the local telephone company and local police.</li> </ul>				
<b>IF BOMB THREAT, ASK THE FOLLOWING QUESTIONS:</b>				
WHEN WILL THE BOMB GO OFF? <i>(Date and Time)</i>				
WHERE IS IT LOCATED?				
WHY DID YOU PLACE IT?				
WHAT KIND OF BOMB IS IT?				
WHAT DOES IT LOOK LIKE?				
WHAT IS YOUR NAME?				
WHERE ARE YOU CALLING FROM?				
Was the caller familiar with company facilities, or employees? (e.g.: nicknames, familiarity with staff, etc.) <input type="checkbox"/> Yes <input type="checkbox"/> No				
Did caller appear familiar with building / facility by the description of the bomb location? <input type="checkbox"/> Yes <input type="checkbox"/> No				
<b>IDENTIFYING CHARACTERISTICS OF CALLER</b>				
<b>VOICE</b>	<b>SPEECH</b>	<b>LANGUAGE</b>	<b>MANNER</b>	<b>BACKGROUND</b>
<input type="checkbox"/> Loud	<input type="checkbox"/> Fast	<input type="checkbox"/> Excellent	<input type="checkbox"/> Calm	<input type="checkbox"/> Office Machines
<input type="checkbox"/> Soft	<input type="checkbox"/> Slow	<input type="checkbox"/> Good	<input type="checkbox"/> Angry	<input type="checkbox"/> Factory Machines
<input type="checkbox"/> High Pitched	<input type="checkbox"/> Distinct	<input type="checkbox"/> Fair	<input type="checkbox"/> Rational	<input type="checkbox"/> Street Traffic
<input type="checkbox"/> Deep	<input type="checkbox"/> Distorted	<input type="checkbox"/> Poor	<input type="checkbox"/> Irrational	<input type="checkbox"/> Airplanes
<input type="checkbox"/> Raspy	<input type="checkbox"/> Stutter	<input type="checkbox"/> Foul Language	<input type="checkbox"/> Coherent	<input type="checkbox"/> Trains
<input type="checkbox"/> Pleasant	<input type="checkbox"/> Nasal	<input type="checkbox"/> Accent	<input type="checkbox"/> Incoherent	<input type="checkbox"/> Animals
<input type="checkbox"/> Intoxicated	<input type="checkbox"/> Slurred	<input type="checkbox"/> _____	<input type="checkbox"/> Deliberate /	<input type="checkbox"/> Party Atmosphere
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> Serious	<input type="checkbox"/> Music
Notify proper authorities as soon as possible. Have employees take a look around their immediate work stations for unusual packages. Evacuate building if necessary.			<input type="checkbox"/> Emotional	<input type="checkbox"/> Voices
			<input type="checkbox"/> Laughing	<input type="checkbox"/> Quiet
			<input type="checkbox"/> Nervous	<input type="checkbox"/> _____
Name of the supervisor first notified:				

**A6 THREATENING CALL /  
BOMB THREAT**

---



EMERGENCY RESPONSE PLAN

THIS PAGE INTENTIONALLY LEFT BLANK

---





# B2 RESIDENT COMPENSATION LOG



## EMERGENCY RESPONSE PLAN

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
<b>TOTAL REPORTED EXPENSES</b>									

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

# B2 RESIDENT COMPENSATION LOG



## EMERGENCY RESPONSE PLAN

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
<b>TOTAL REPORTED EXPENSES</b>									

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_











DATE: \_\_\_\_\_

TIME: \_\_\_\_\_

# **EVACUATION NOTICE**

**Whitecap Resources Inc. 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**

\_\_\_\_\_.

Whitecap Resources Inc.. representatives will be available at the Reception Centre to address your questions or concerns.

For assistance, call Whitecap Resources Inc. at \_\_\_\_\_.

**Thank you for your cooperation.**

THIS PAGE INTENTIONALLY LEFT BLANK

---

# B6 EARLY NOTIFICATION / VOLUNTARY EVACUATION PHONE MESSAGE

## EMERGENCY RESPONSE PLAN

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 \_\_\_\_\_ (*your name*) \_\_\_\_\_ calling from \_\_\_\_\_ (*company name*) \_\_\_\_\_ .

Is this the \_\_\_\_\_ (*name of residence / business*) \_\_\_\_\_ at \_\_\_\_\_ (*telephone number*) \_\_\_\_\_ ?

\_\_\_\_\_ (*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 *north / east / south / west* 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 from contacting you with updated information or when the problem has been eliminated.

If you have 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)*

**B6 EARLY NOTIFICATION /  
VOLUNTARY EVACUATION  
PHONE MESSAGE**

THIS PAGE INTENTIONALLY LEFT BLANK

---



# B7 SHELTER-IN-PLACE PHONE

## MESSAGE

## EMERGENCY RESPONSE PLAN

Hello, this is \_\_\_\_\_ (*your name*) of \_\_\_\_\_ (*company name*) .

Is 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 those with you, stay indoors until the potential hazard no longer exists, or you are advised to evacuate.

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

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

*Adults* \_\_\_\_\_

*Children* \_\_\_\_\_

Is there anyone 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*

**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 \_\_\_\_\_ (*company name*) ?

*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 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)*

# B7 SHELTER-IN-PLACE PHONE

## MESSAGE

## EMERGENCY RESPONSE PLAN

### 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



## EMERGENCY RESPONSE PLAN

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 _____ ( <i>your name</i> ) _____ of _____ ( <i>company name</i> ) _____ . Is this the _____ ( <i>name</i> ) _____ residence at _____ ( <i>telephone number</i> ) _____ ? _____ ( <i>Company name</i> ) _____ is responding to a ( <i>potential</i> ) emergency at _____ ( <i>location</i> ) _____ in your area. For your safety, it is extremely important that you and your family leave your residence immediately and travel in a <u>north / east / south / west</u> direction to our reception centre located at: _____	
To help us understand your immediate needs, we need to know:	
<b>How many people are at your location now?</b> <i>Adults</i> _____ <i>Children</i> _____	
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? <input type="checkbox"/> <i>Yes</i> <input type="checkbox"/> <i>No</i>	
<b>IF YES</b>	<i>Whom?</i> _____ <i>Location of the person(s)</i> _____ We will send someone to find them as soon as possible.
<b>Do you have children in school at this time?</b> <input type="checkbox"/> <i>Yes</i> <input type="checkbox"/> <i>No</i>	
<b>IF YES</b>	<i>What school?</i> _____ <i>Children's names</i> _____ 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.
<b>Do you require evacuation / transportation assistance?</b> <input type="checkbox"/> <i>Yes</i> <input type="checkbox"/> <i>No</i>	
<b>IF YES</b>	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.
<b>IF NO</b>	<i>Provide the resident with:</i> <input type="checkbox"/> <i>Directions to safely travel to the reception centre</i> <input type="checkbox"/> <i>A list of items to bring with them to the reception centre (medications, cell phone, etc.)</i> <input type="checkbox"/> <i>An idea of how long they may be expected to stay at the reception centre</i> <input type="checkbox"/> <i>The option to bring their house pets to the reception centre</i>
Please contact _____ ( <i>company name</i> ) _____ 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?	
<b>If you have any urgent questions, please contact _____ (<i>company name</i>) _____ at _____ (<i>telephone number</i>) _____ .</b> <b>Thank you for your cooperation.</b>	

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

THIS PAGE INTENTIONALLY LEFT BLANK

---

# C1 PRELIMINARY MEDIA STATEMENT



## EMERGENCY RESPONSE PLAN

Date:(YY/MM/DD)	Responder Name:
Responder Position:	Responder Phone No.:

**This is the information I can give you so far:**

At (time – 24hr local clock) on (date), a(n) (fire, explosion, gas release, spill) occurred at the Company's (location name) site, located (distance) kilometres (east / west / north / south) of (nearest town or city).

Presently, (number of personnel) workers are being treated for injuries. The names and condition of the injured cannot be released until their families have been contacted.

The (well site, plant, pipeline, office, drilling location) has been (shut down, isolated, or is still flowing).

Company staff have been activated and are directing emergency response procedures to protect the public, our workers and the environment.

The cause of the (fire, explosion, gas release, spill) is not yet known and no estimate of damage is available. As information becomes available, news releases will be issued from the Information Office.

Any further inquiries should be directed to the Emergency Support Team, who will issue a press release at a later time.

**Contact:**

\_\_\_\_\_ Office: \_\_\_\_\_

\_\_\_\_\_ Fax: \_\_\_\_\_

*Note: Only the **Media Spokesperson** designated by the Emergency Support Team is to provide any specific information to the public or the media. Refer to page 3 of SECTION 3: COMMUNICATION & MEDIA for the generic media statement to be used by all other response personnel.*

THIS PAGE INTENTIONALLY LEFT BLANK

---

# C2 MEDIA CONTACT LOG



## EMERGENCY RESPONSE PLAN

Date: \_\_\_\_\_ Responder Name: \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_ Responder Position: \_\_\_\_\_ Responders Phone No.: \_\_\_\_\_

If you feel you are not the appropriate person to be answering the media agencies questions, use the following series of statements.

*Note:*

**"Whitecap Resources Inc. 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. Whitecap Resources Inc. appreciates your cooperation and I will pass on this information to the appropriate person."**

Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Telephone Numbers		Remarks / Information Required
					Work	Fax	

Document all key events, conversations, and meetings on this form. Where lengthy notes are necessary, use additional copies or the back of the page.











THIS PAGE INTENTIONALLY LEFT BLANK

---

# APPENDICES

APPENDIX A: SYMBOL LEGEND.....	1
APPENDIX B: TRAINING REQUIREMENTS.....	1
APPENDIX C: PLAN MAINTENANCE.....	2
RESPONSIBILITY .....	2
MODIFICATIONS TO NEW OR EXISTING OPERATIONS .....	2
ERP REVISION REQUEST FORM .....	3
APPENDIX D: ENVIRONMENTAL, HEALTH & SAFETY POLICY STATEMENT.....	5
APPENDIX E: COMMUNICATION METHODS BETWEEN COMMAND POSTS.....	7
BRITISH COLUMBIA.....	7
ALBERTA.....	8
APPENDIX F: INCIDENT COMMAND POST (ICP) ACTIVATION AND SETUP.....	9
INCIDENT COMMAND POST BRIEFINGS.....	10
DOCUMENTATION .....	10
APPENDIX G: KEY ELEMENTS OF THE INCIDENT COMMAND SYSTEM.....	11
MANAGEMENT BY OBJECTIVES .....	11
UNITY AND CHAIN OF COMMAND .....	11
ORGANIZATIONAL FLEXIBILITY.....	12
SPAN OF CONTROL.....	12
COMMON TERMINOLOGY .....	12
INCIDENT ACTION PLAN (IAP).....	12
INTEGRATED COMMUNICATIONS.....	12
ESTABLISHMENT AND TRANSFER OF COMMAND.....	13
RESOURCES MANAGEMENT.....	13
SUMMARY OF RESPONSIBILITIES.....	13
APPENDIX H: HYDROGEN SULPHIDE (H <sub>2</sub> S).....	14
BACKGROUND.....	14
SIGNS AND SYMPTOMS.....	14
ACUTE EXPOSURE EFFECTS .....	14
HYDROGEN SULPHIDE (H <sub>2</sub> S) TOXICITY TABLE (BC REGULATIONS) .....	14
ACUTE HEALTH EFFECTS OF HYDROGEN SULPHIDE (AB REGULATIONS).....	15
CHRONIC EXPOSURE EFFECTS .....	17
MEDICAL TREATMENT FOR HYDROGEN SULPHIDE (H <sub>2</sub> S) EXPOSURE.....	17
GUIDELINES FOR IN HOSPITAL ASSESSMENT/TREATMENT OF POSSIBLE HYDROGEN SULPHIDE EXPOSURE .....	17

APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>) .....21

    BACKGROUND.....21

    SIGNS AND SYMPTOMS.....21

    SULPHUR DIOXIDE (SO<sub>2</sub>) TOXICITY TABLE (BC REGULATIONS).....21

    ACUTE HEALTH EFFECTS OF SULPHUR DIOXIDE (AB REGULATIONS) .....22

    MEDICAL TREATMENT FOR SULPHUR DIOXIDE (SO<sub>2</sub>) EXPOSURE .....23

    GUIDELINES FOR IN HOSPITAL ASSESSMENT/TREATMENT OF POSSIBLE SULPHUR  
    DIOXIDE EXPOSURE .....23

APPENDIX J: DESCRIPTION OF DOMINION LAND SURVEY (DLS) SYSTEM.....26

APPENDIX K: DESCRIPTION OF NATIONAL TOPOGRAPHIC SYSTEM (NTS).....27

APPENDIX L: DESCRIPTION OF UNIVERSAL TRANSVERSE MERCATOR (UTM) COORDINATE  
SYSTEM .....28

APPENDIX M: CONVERSION TABLE.....29









APPENDIX N: ACRONYMS.....30

APPENDIX O: GLOSSARY OF TERMS .....32

---

## APPENDIX A: SYMBOL LEGEND

There are several symbols used throughout the ERP to direct the reader’s attention to important notes, regulatory requirements, reference materials, key contact information, websites, and sections of the ERP that contain further information. The table below includes each symbol and its meaning.

SYMBOL	MEANING	SYMBOL	MEANING
	Important note.		Regulatory requirement.
	Refer to the procedure in the noted section.		
	Refer to the reference material provided in the Appendix section.		Contact information.
	Refer to the Safety Data Sheet (SDS) on-site for further information.		
	A website link is provided to access further information.		Refer to the specified form in Section 6: Forms.

## APPENDIX B: TRAINING REQUIREMENTS

Frequency / Action	As Required	Semi-Annually	Annually*	Every Three (3) Years**	Every Five (5) Years***
<b>TRAINING:</b>					
Employee Orientation New / Transfer	✓(All)				
On-the-job Training	✓(All)				
Response Discussion During Pre-Job Meetings	✓(All)				
Drills	✓(All)				
Tabletop Exercise			✓		
Communication / Partial Mobilization Exercises			one of these exercises (All)		
Major (Full Scale) Exercise				✓(Not ON or QC)	✓(All)
Post Incident (Actual) Review	✓(All)				
ERP Review / Self Audit			✓(Not ON or QC)		

\*Must be held annually.

\*\*NEB, OGC & AER requires Major Exercises be held every three (3) years.

\*\*\*Environment Canada requires Major Exercises be held every five (5) years for facilities with E2 required substances.



## APPENDIX C: PLAN MAINTENANCE

### RESPONSIBILITY

The licensee is responsible for ensuring that sour operation, HVP pipeline, and cavern storage facility ERPs are maintained regularly and updates disseminated to the regulatory agency and other plan holders. 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 Superintendent 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 Superintendent for review. These revisions will be discussed with the Manager, Health, Safety & Environment 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 Manager, Health, Safety & Environment 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 Manager, Health, Safety & Environment 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 C: 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:

H<sub>2</sub>Safety Services Inc.  
210, 7260 12 Street SE  
Calgary, AB  
T2H 2S5  
Email: erp@h2safety.ca  
Fax: 403-313-9180

THIS PAGE INTENTIONALLY LEFT BLANK

## APPENDIX D: ENVIRONMENTAL, HEALTH & SAFETY POLICY STATEMENT



### HEALTH, SAFETY, ENVIRONMENT AND COMMUNITY POLICY

Whitecap Resources Inc. is committed to protecting the health and safety of our employees, contractors and the public. We are also firmly committed to conducting our operations in a diligent manner designed to minimize any adverse impacts on our environment.

Whitecap will fulfill these commitments through the development and implementation of an effective health, safety and environmental program. This program will integrate health, safety and environmental considerations into all Whitecap's operations by:

- Providing and maintaining a safe work environment with proper policies, procedures, standards, training, equipment and emergency response procedures in accordance to all government regulations and industry practices;
- Providing appropriate health, safety and environmental training;
- Developing programs and practices to minimize health, safety and environmental problems;
- Ensuring timely and effective response and follow up to incidents resulting from our operations;
- Remaining sensitive to public concerns;
- Communicating with the public affected by our operations and;
- Establishing health, safety and environmental goals and regularly reviewing and improving on these goals.

All management, employees, contractors, subcontractors and suppliers engaged on behalf of Whitecap are responsible for following all the health, safety and environment procedures as required and participating in pertinent safety and environmental training.

By fulfilling our safety and environmental responsibilities, everyone who works for Whitecap will share in the benefits of a safe work environment.

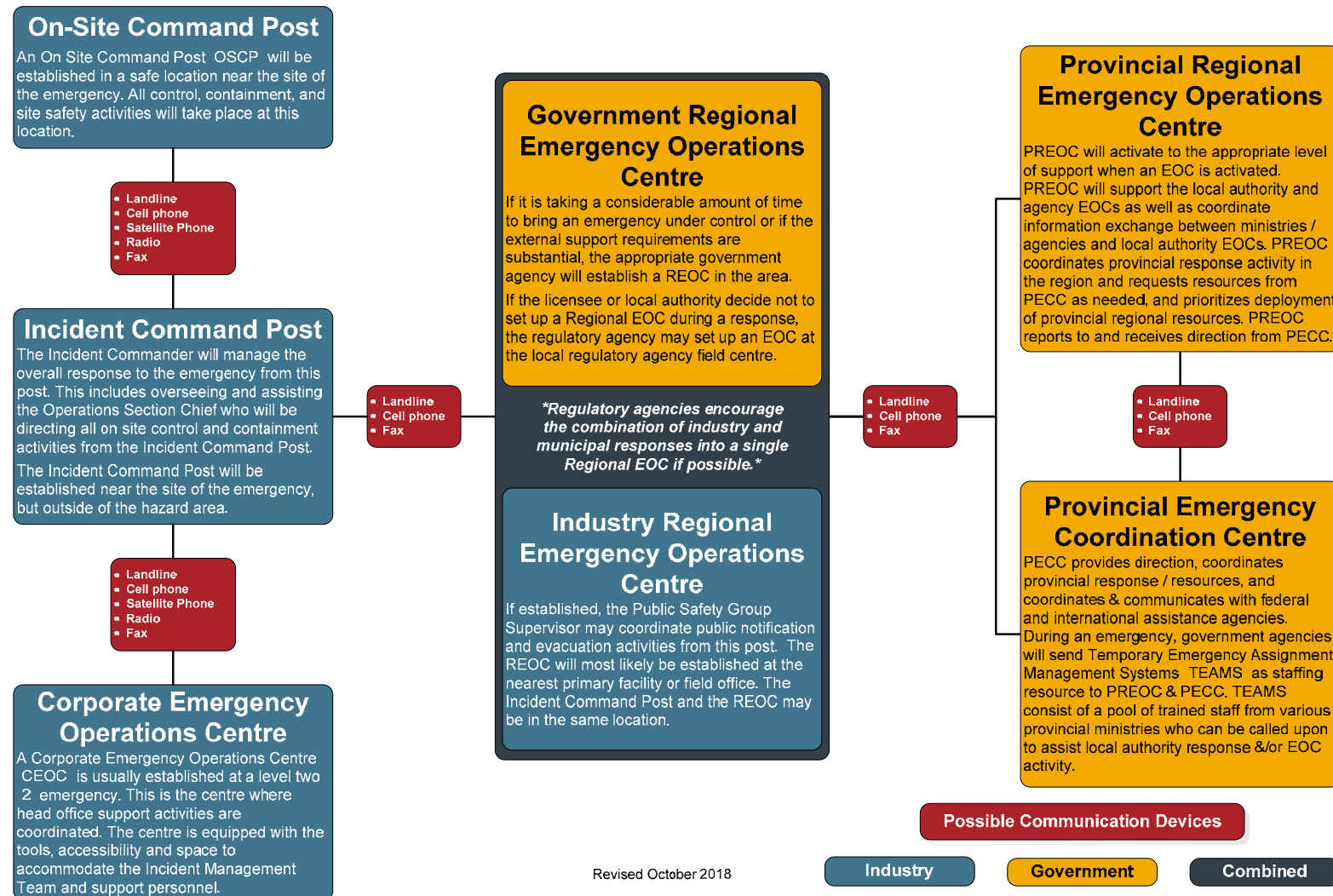
#### **Community Policy**

Whitecap believes in enhancing the communities where employees live and work, supporting causes and institutions through financial and volunteer efforts.

THIS PAGE INTENTIONALLY LEFT BLANK

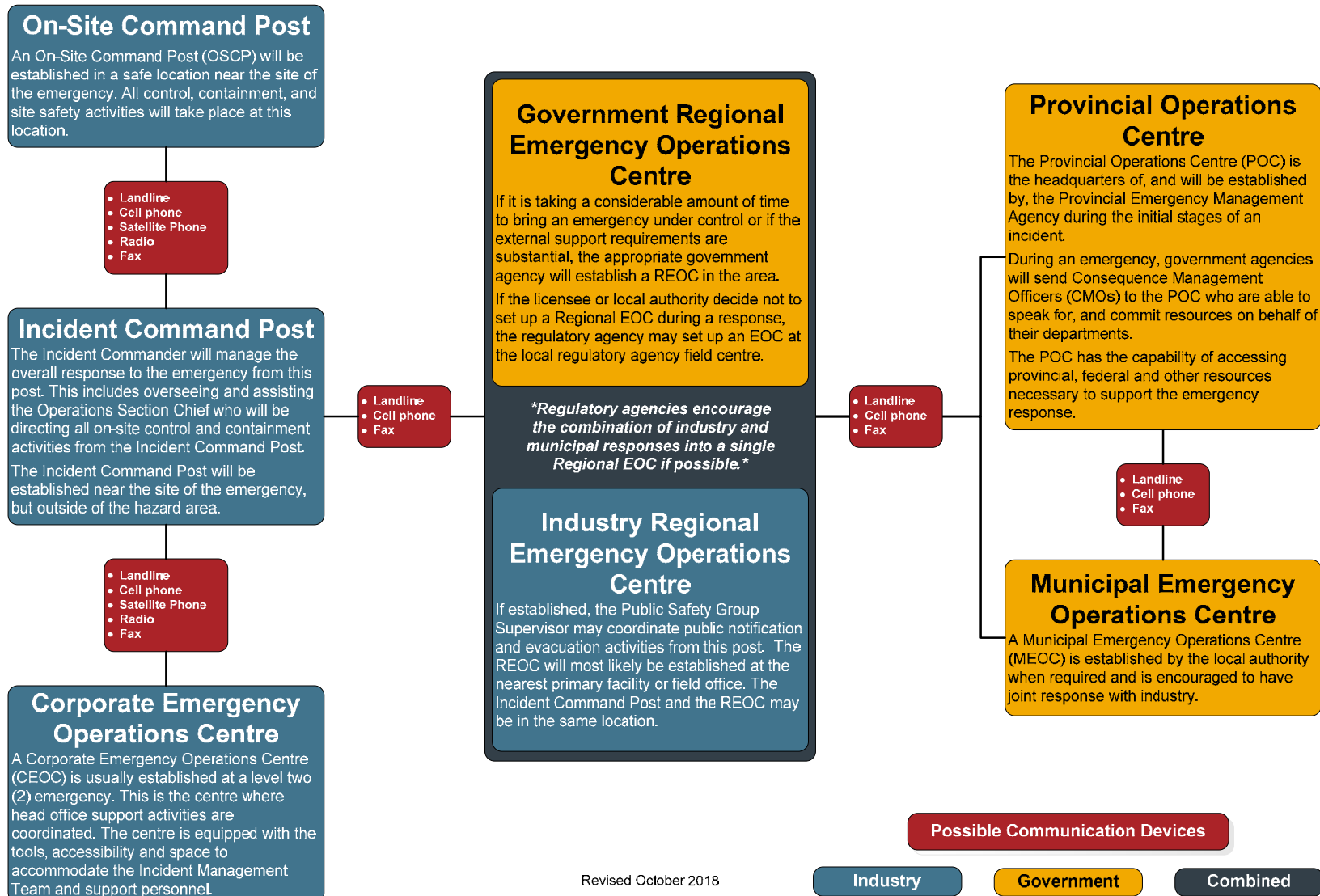
# APPENDIX E: COMMUNICATION METHODS BETWEEN COMMAND POSTS

## BRITISH COLUMBIA



# APPENDIX E: COMMUNICATION METHODS BETWEEN COMMAND POSTS, continued

## ALBERTA



## APPENDIX F: INCIDENT COMMAND POST (ICP) ACTIVATION AND SETUP

The Incident Command Post is activated by the Incident Commander.

The following tasks must be addressed once the EOC has been activated:

Position	Task
<b>Incident Commander</b>	Establish briefings with the Field Response Team and Emergency Support Team. Ensure staffing is adequate for the task(s). Consider the time difference, if applicable, and determine how time will be communicated throughout the incident.
<b>Safety Officer</b>	Ensure the room / floor / building is secure. Ensure a safe work area, i.e. remove clutter or cords causing slips, trips, falls, etc.
<b>Information Officer</b>	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. Ensure inbound and outbound calls received or made are centrally logged. Ensure responders have their office phones forwarded to their cell phones.
<b>Logistics / IT Support</b>	Turn on all computers; ensure the relevant systems are operational and that they all have internet/email access. Check that printers are connected to the computers and working. Print a test page to confirm. Check that the fax machine is setup and working. Check that any phone conferencing systems are set up and working. Ensure that telephone lines are available and active. Ensure TVs are working properly and set up to local news or CNN. Obtain any additional equipment as required.
<b>Logistics / Security</b>	Ensure the room/floor/building is secure. Arrange for additional security if required. 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. 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. Arrange for refreshments (coffee, food, water, etc.) for those working there, as well as sleeping space if required. Ensure there are sufficient tables and chairs for the team.

## APPENDIX F: INCIDENT COMMAND POST (ICP) ACTIVATION AND SETUP, continued

<p><b>Planning / Documentation</b></p>	<p>Determine which emergency response plans and other ERP tools are needed and pull them out to be readily accessible.</p> <p>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.</p> <p>Ensure clocks are displaying the correct time, including any clocks with a different time zone.</p> <p>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.</p> <p>As team members arrive, write their name in the appropriate position on the Field Response Team Assignment Chart.</p> <p>Pass out documentation forms and provide an overview of the documentation process.</p> <p>Ensure the latest contact list for Field Response Team members are available.</p> <p>Start up an EDS Session and begin documenting all actions, decisions and major events.</p> <p>Continually update the laminated maps and charts as information becomes available (Field Response Team Assignment Chart, Emergency Status Board, etc.).</p> <p>Post a schedule of events, including shift changes and status updates.</p>
--	--

### 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 addition 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

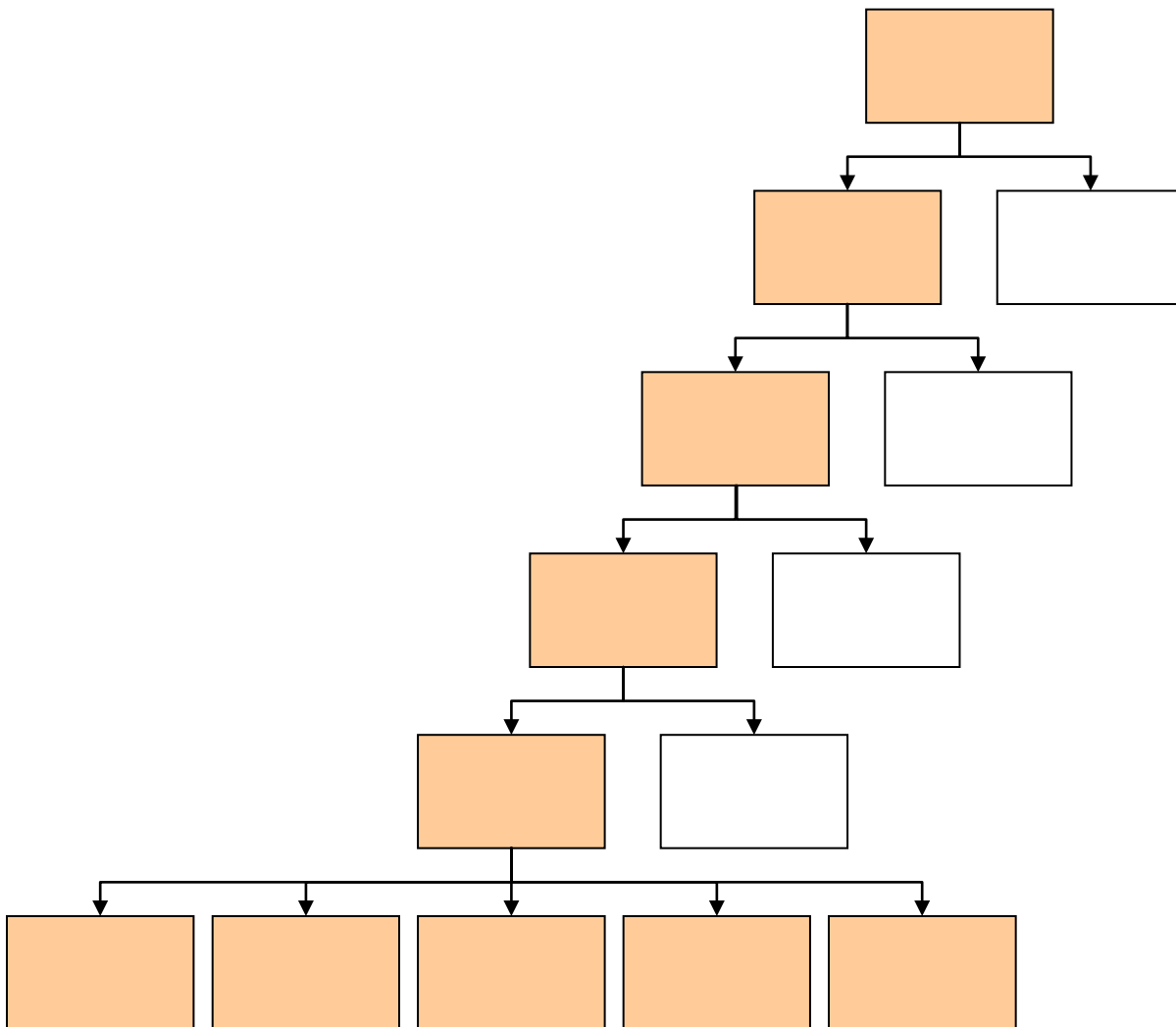
It is critical to ensure that all ICP documentation is compiled, properly stored and readily available after the event. Proper documentation will aid in investigations, inquiries, debriefs and support for financial claims and budgets. Everything that happens during the Response/Recovery Operations should be recorded at the ICP. The forms at the back of this manual are designed to aid in this process



## APPENDIX G: KEY ELEMENTS OF THE INCIDENT COMMAND SYSTEM

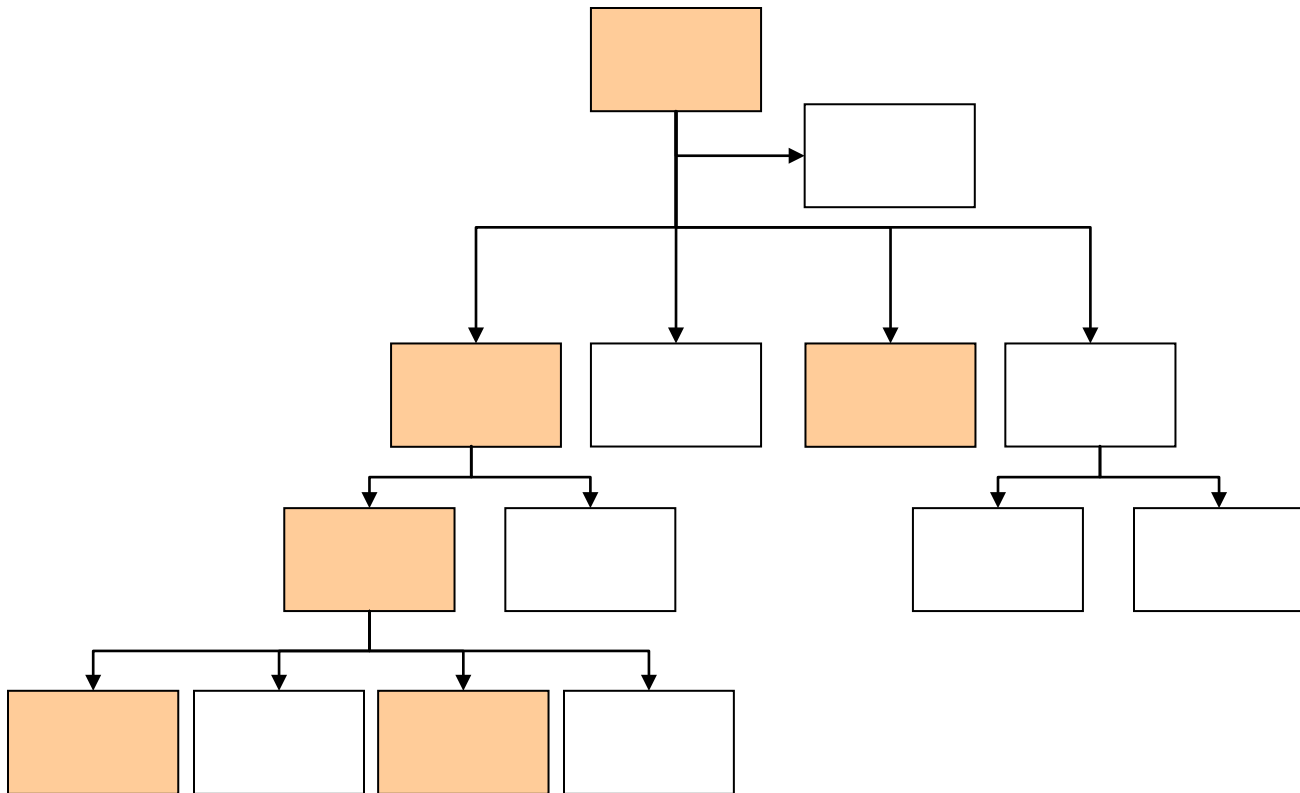
**MANAGEMENT BY OBJECTIVES** – Objectives are ranked by priority, should be as specific as possible, must be attainable and if possible given a working time-frame. Objectives are accomplished by first outlining strategies (general plans of action), then determining appropriate tactics (how the strategy 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 G: KEY ELEMENTS OF THE INCIDENT COMMAND SYSTEM, 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 G: KEY ELEMENTS OF THE INCIDENT COMMAND SYSTEM, continued

**ESTABLISHMENT AND TRANSFER OF COMMAND** – The highest ranking authority arriving on-scene 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 H: 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 disbursed over a larger area a 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<sub>2</sub>S concentration of exposure. The health effects of acute exposure to H<sub>2</sub>S are shown in the following table. Acute exposure reflects a range from a few seconds up to several weeks.

### HYDROGEN SULPHIDE (H<sub>2</sub>S) TOXICITY TABLE (BC REGULATIONS)

Concentration (ppm)	Effects
0.01 – 0.03	Odour threshold.
1 – 5	Moderate to strong offensive odour may create nausea, tearing of the eyes, headaches or loss of sleep upon prolonged exposure – effects are moderate.
10	Ceiling limit (BC WCB).
<b>OVER 10 PPM, PROTECTIVE EQUIPMENT IS NECESSARY</b>	
20 – 50	Slight eye and lung irritation; may cause eye damage after several days of exposure; may cause digestive upset and loss of appetite.
100	Eye and lung irritation.
150	Kills sense of smell; severe eye and lung irritation.
500	Serious damage to the eyes within 30 minutes; severe lung irritation; unconsciousness and death within 4 to 8 hours.
1000	Breathing stops within one or two hours.

## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

### HYDROGEN SULPHIDE (H<sub>2</sub>S) TOXICITY TABLE (BC REGULATIONS), continued

Adapted from the Canada Safety Council Data Sheet “Hydrogen Sulphide,” No. B-3. Alberta Provincial Board of Health “Guidelines for Action Regarding Hydrogen Sulphide.” National Research Council of Canada, “Hydrogen Sulfide in the Atmospheric Environment: Scientific Criteria for Addressing its Effects on Environment Quality,” Publication # 18467. Oil and Gas Commission November 2003.

### 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.

## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

### ACUTE HEALTH EFFECTS OF HYDROGEN SULPHIDE (AB REGULATIONS), continued



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

Source: Alberta Health Services, Environmental Public Health

<http://www.albertahealthservices.ca/EnvironmentalHealth/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf>

## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

See SDS

### CHRONIC EXPOSURE EFFECTS

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 (H<sub>2</sub>S) EXPOSURE

*(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Hydrogen Sulphide (H<sub>2</sub>S) Guidelines - Revised November 2000)*

See SDS

### 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 H<sub>2</sub>S 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

Note:

#### 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<sub>2</sub>S can no longer be detected by odour.

#### II. HEALTH EFFECT 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.

## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

### MEDICAL TREATMENT FOR HYDROGEN SULPHIDE (H<sub>2</sub>S) EXPOSURE, continued



#### 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.

##### 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.



## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

### MEDICAL TREATMENT FOR HYDROGEN SULPHIDE (H<sub>2</sub>S) EXPOSURE, continued



#### 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 co-exposure 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 sequels of intoxication, as well as to rule out other causes for the presentation.

## APPENDIX H: HYDROGEN SULPHIDE (H<sub>2</sub>S), continued

### MEDICAL TREATMENT FOR HYDROGEN SULPHIDE (H<sub>2</sub>S) 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 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 I: 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<sub>2</sub> 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<sub>2</sub> on sensitive asthmatics. Particularly sensitive groups include children, the elderly and those with existing heart or lung disease.

### SULPHUR DIOXIDE (SO<sub>2</sub>) 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.
1000 - 2000	May be fatal with continued exposure.

## APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>), continued

### SULPHUR DIOXIDE (SO<sub>2</sub>) TOXICITY TABLE (BC REGULATIONS), continued

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)

See SDS

CONCENTRATION OF SO <sub>2</sub> (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>1</sup> At low levels, bronchoconstriction was generally observed as changes in airway conductance detectable by spirometry rather than as clinical symptoms.

<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.

Source: Alberta Health Services, Environmental Public Health

<http://www.albertahealthservices.ca/EnvironmentalHealth/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf>

## APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>), continued

### MEDICAL TREATMENT FOR SULPHUR DIOXIDE (SO<sub>2</sub>) EXPOSURE

See SDS

*(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<sub>2</sub> 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 EFFECT 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.

**APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>), continued**  
**MEDICAL TREATMENT FOR SULPHUR DIOXIDE (SO<sub>2</sub>) 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<sub>2</sub> 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 co-exposure to numerous other agents.

**HISTORY**

The history is the key to the diagnosis of SO<sub>2</sub> (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.

## APPENDIX I: SULPHUR DIOXIDE (SO<sub>2</sub>), continued

### MEDICAL TREATMENT FOR SULPHUR DIOXIDE (SO<sub>2</sub>) EXPOSURE, continued

#### 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.

#### 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

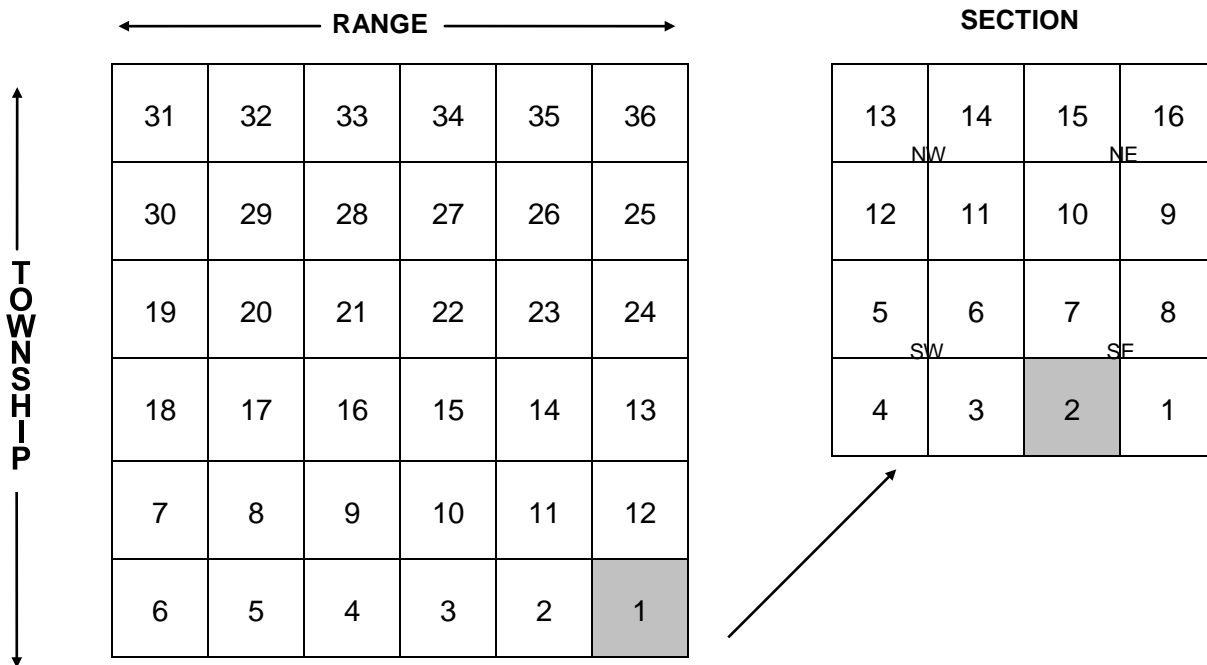
Known exposure, including "knockdown", with symptoms that require medical treatment and/or hospitalization.

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 J: DESCRIPTION OF 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:



- 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 4th



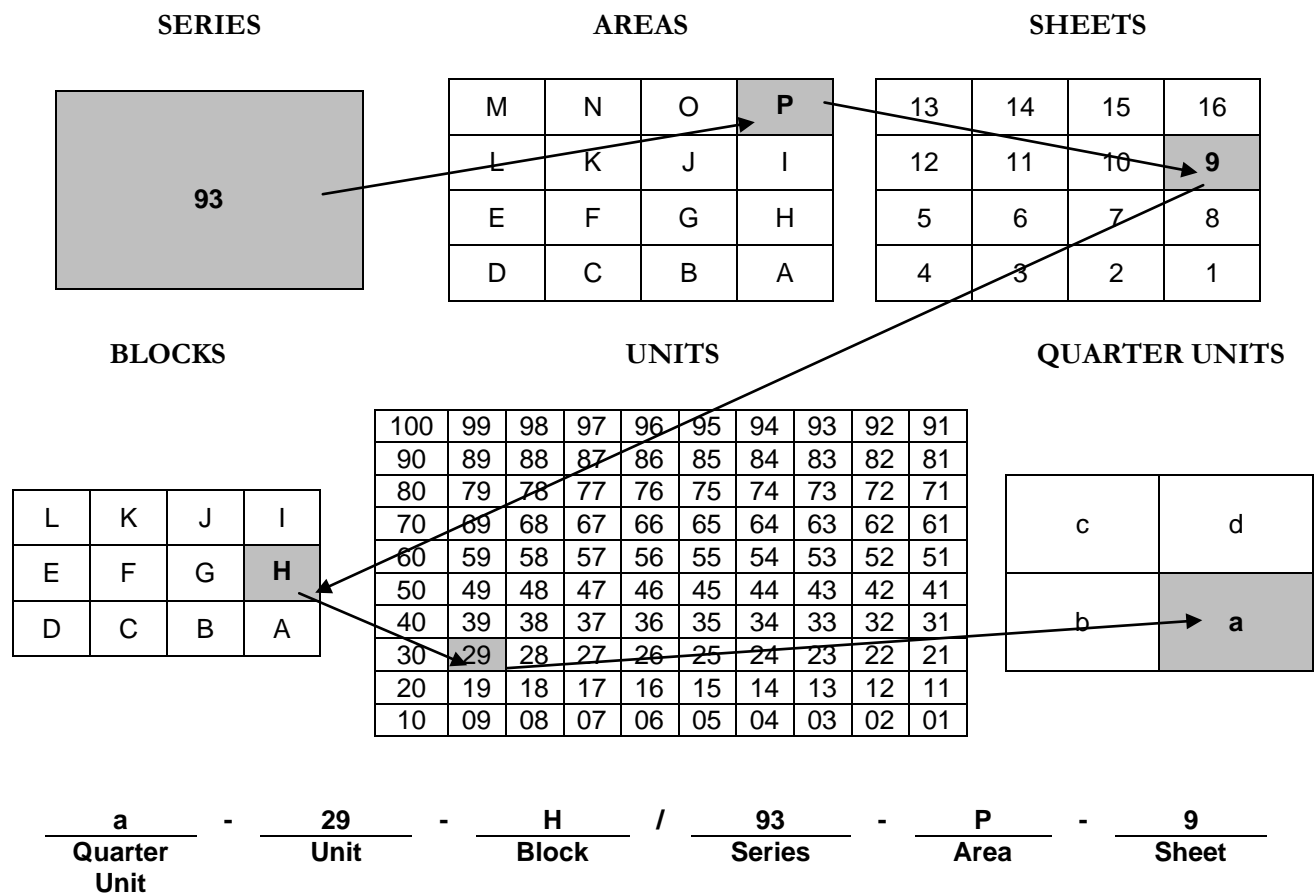
## APPENDIX K: DESCRIPTION OF NATIONAL TOPOGRAPHIC SYSTEM (NTS)

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



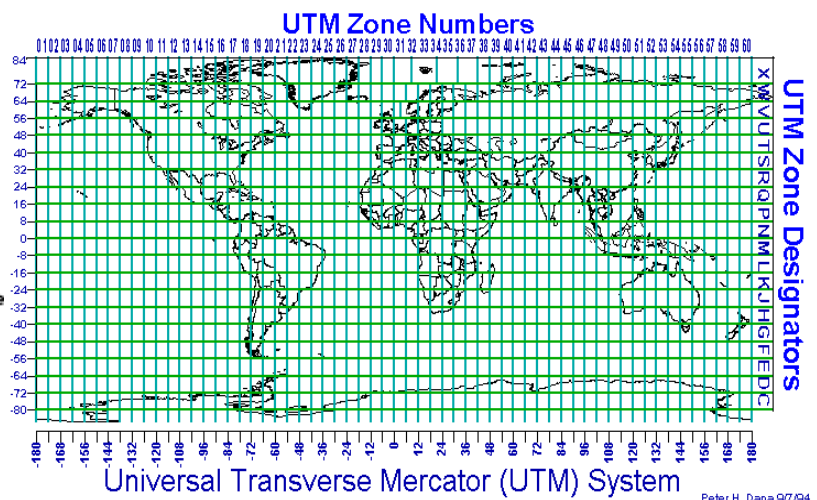
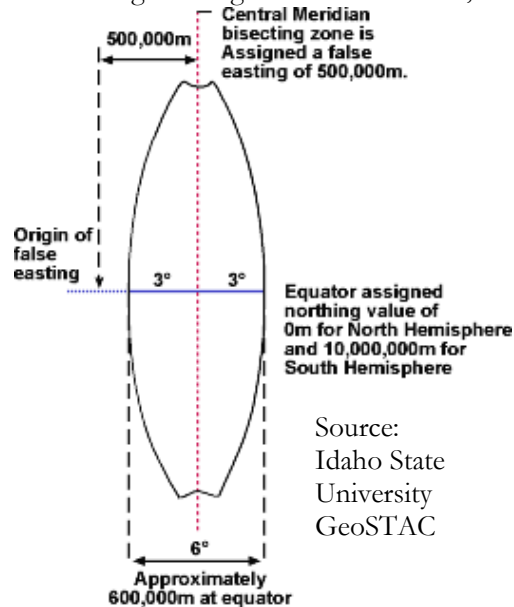
## APPENDIX L: DESCRIPTION OF UNIVERSAL TRANSVERSE MERCATOR (UTM) COORDINATE SYSTEM

When creating a map for any region on the earth, the curved surface is drawn onto a flat sheet of paper. The process causes the region to look warped because of the distortion created.

To represent the curved surface of the earth on a map, a variety of geometrical schemes or map projections have been used over centuries to reduce distortion. Depending upon the size and shape of the area mapped, certain projections will be used to either preserve size (area) or shape. The projection used for Canada is a strip projection called Transverse Mercator with zones that run north and south. Specifically, the Universal Transverse Mercator (UTM) projection is used.

There are 60 UTM zones in total; each zone is 6° in width (totalling 360°). As the latitude increases, the zones decrease in size, narrowing as the meridians curve to meet at the North Pole. Each of these zones has a Central Meridian that bisects the zone (bottom left diagram). In Alberta, for example, Zone 11 has a Central Meridian of 111° and Zone 12 has a Central Meridian of 117°.

The UTM grid straightens the meridians, removing distortion, and is measured in metres.



Across Canada, zones 7 to 22 encompass the country.

To determine a location using the UTM grid, coordinates are read as 'eastings' and 'northings'. Eastings describe a point's distance east of an origin. The Central Meridian of a zone is assigned a false easting of 500,000 metres and easting values increase moving east. Values less than 500,000 metres are west of the Central Meridian. The equator is the origin for all northings and their values increase moving north.

UTM coordinates are typically given with the zone first and then the easting and northing. For example, a location at 51°N latitude and 114°W longitude is read as Zone 11 289,504 m East & 5,653,890 m North in UTM.

**APPENDIX M: CONVERSION TABLE**

<b>H<sub>2</sub>S</b>		10 moles	1%		10,000 ppm	14, 000 mg/m <sup>3</sup>
<b>Pressure</b>		1 psi	6.895 kPa		1 kPa	0.15 psi
<b>Length</b>		1 in	2.54 cm		1 cm	0.39 in
		1 ft	0.31 m		1 m	3.281 ft
		1 yd	0.914 m		1 m	1.09 yd
		1 mi	1.609 km		1 km	0.62 mi
		1 mi	5280 ft		-	-
		1 mi	1760 yd		-	-
		1 km	1000 m		-	-
<b>Volume</b>		1 L	0.22 gal (imp)		1 gal (imp)	4.546 L
		1 bbl	42 gal (US)		1 gal (US)	0.024 bbl
		1 bbl	0.16 m <sup>3</sup>		1 m <sup>3</sup>	6.29 bbl
		1 m <sup>3</sup>	35.31 ft <sup>3</sup>		1 ft <sup>3</sup>	0.028 m <sup>3</sup>
		1 yd <sup>3</sup>	0.76 m <sup>3</sup>		1 m <sup>3</sup>	1.31 yd <sup>3</sup>
		1 gal (US)	0.83 gal (imp)		1 gal (imp)	1.2 gal (US)
		1 gal (US)	3.785 L		1 L	0.26 gal (US)
		1 mi <sup>2</sup>	2.59 km <sup>2</sup>		1 km <sup>2</sup>	0.39 mi <sup>2</sup>
		1 in <sup>3</sup>	16.39 cm <sup>2</sup>		1 cm <sup>2</sup>	0.06 in <sup>3</sup>
<b>Weight</b>		1 lb	0.454 kg		1 kg	2.2 lb
		1 ton	2000 lb		1 lb	0.0005 tons
		1 ton	907 kg		-	-
		1 tonne	1.102 tons		1 ton	0.907 tonnes
<b>Area</b>		1 acre	0.404 hectare		1 hectare	2.471 acres
		1 section	640 acres		-	-
		¼ section	160 acres		-	-
		1 LSD	40 acres		-	-
<b>Temperature</b>		0° C	32° F		0° F	-18° C
<b>Other</b>		1 dek	10 <sup>3</sup> m <sup>3</sup>		-	-

## APPENDIX N: ACRONYMS

Acronym	Meaning	Acronym	Meaning
ABSA	Alberta Boilers Safety Association	IAP	Incident Action Plan
AEMA	Alberta Emergency Management Agency	ICS	Incident Command System
AER	Alberta Energy Regulator	IIZ	Initial Isolation Zone
AHS	Alberta Health Services	ISC	Indigenous Services Canada
AHW	Alberta Health and Wellness	LA	Local Authority
AT	Alberta Transportation	LBV	Line Block Valve
ARD	Agriculture and Rural Development	LEL	Lower Explosive Limit
BLEVE	Boiling Liquid Expanding Vapour Explosion	LPG	Liquefied Petroleum Gas
CANUTEC	Canadian Transport Emergency Centre	MARS	Mapping and Response System
CAPP	Canadian Association of Petroleum Producers	MD	Municipal District
CEPA	Canadian Environmental Protection Act	MEP	Municipal Emergency Plan
CERC	Corporate Emergency Response Centre	MOP	Maximum Operating Pressure
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada	MRD	Manitoba Mineral Resources Division
CISD	Critical Incident Stress Debriefing	NEB	National Energy Board
CSA	Canadian Standards Association	NGL	Natural Gas Liquids
DFO	Department of Fisheries and Oceans	NOTAM	Notice to Airmen
EAZ	Emergency Awareness Zone	OGC	Oil & Gas Commission
ECON	Ministry of the Economy	OHS	Occupational Health and Safety
EDS	Electronic Documentation System	OSCAR	Oil Spill Containment and Recovery
EMBC	Emergency Management BC	OSCP	On-Site Command Post
EMO	Emergency Measures Organization	PAB	Public Affairs Bureau
EOC	Emergency Operations Center	PAD	Protective Action Distance
EPZ	Emergency Planning Zone	PAZ	Protective Action Zone
ERAC	Emergency Response Assistance Canada	POC	Provincial Operations Centre
ERP	Emergency Response Plan	PPB	Parts Per Billion
ESD	Emergency Shut Down	PPE	Personal Protective Equipment
ESDV	Emergency Shut-Down Valve	PPM	Parts Per Million
ETA	Estimated Time of Arrival	RCMP	Royal Canadian Mounted Police
FH Order	Fire Hazard Order	RD	Rural District
FNIAHB	First Nations, Inuit & Aboriginal Health Branch – Health Canada	REOC	Regional Emergency Operations Centre
GEOC	Government Emergency Operations Centre	RHA	Regional Health Authority
HPZ	Hazard Planning Zone	RM	Rural Municipality
HVAC	Heating Ventilation Air Conditioning	SABA	Supplied Air Breathing Apparatus
HVP	High Vapour Pressure	SCBA	Self-Contained Breathing Apparatus
HVPL	High Vapour Pressure Liquid	SDS	Safety Data Sheet
H <sub>2</sub> S	Hydrogen Sulphide	SOLGPS	Alberta Solicitor General and Public Security

## **APPENDIX N: ACRONYMS, continued**

Acronym	Meaning	Acronym	Meaning
SO <sub>2</sub>	Sulphur Dioxide	WCSS	Western Canadian Spill Service
STARS	Shock Trauma Air Rescue Society	WHMIS	Workplace Hazardous Materials Information System
TDG	Transportation of Dangerous Goods		

## APPENDIX O: GLOSSARY OF TERMS

<b>Adjacent to</b>	Within 25 m.
<b>Air quality monitoring</b>	Measurement of atmospheric concentrations of a hazardous substance, such as H <sub>2</sub> S or SO <sub>2</sub> .
<b>Alberta Energy Regulator (AER)</b>	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.
<b>Alert</b> <i>(Alberta specific)</i>	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.
<b>Auto-ignition temperature</b>	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.
<b>Best practices</b>	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.
<b>Body of water</b>	Streams, lakes, and rivers.
<b>Boiling Liquid Expanding Vapour Explosion (BLEVE)</b>	Boiling Liquid Expanding Vapour Explosion, which is associated with natural gas liquids and high vapour pressure liquids.
<b>Boiling point</b>	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.
<b>British Columbia Oil and Gas Commission (OGC)</b>	The OGC is the lead regulatory agency for the upstream petroleum industry in British Columbia.
<b>British Columbia Emergency Management (EMBC)</b> <i>(British Columbia specific)</i>	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.
<b>Businesses</b>	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.
<b>Closure order</b> <i>(British Columbia specific)</i>	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.

## GLOSSARY OF TERMS, continued

<p><b>Corporate Emergency Response Plan</b></p>	<p>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.</p>
<p><b>Corporate Incident Director</b></p>	<p>The Incident Director activates the Corporate Emergency Operations Centre with staff to provide advice and support to the Incident Commander (Field Response Team).</p> <p><i>Note: If the emergency happens outside an area that has a site specific Emergency Response Plan, only then will the Incident Director assume or appoint the role of Incident Commander and dispatch a Field Response Team to the incident site.</i></p>
<p><b>Critical Incident Stress Debriefing (CISD)</b></p>	<p>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.</p>
<p><b>Critical Incident Stress Debriefing (CISD)</b></p>	<p>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.</p>
<p><b>Critical sour well</b> <i>(Alberta specific)</i></p>	<p>A well with an H<sub>2</sub>S release rate greater than 2.0 m<sup>3</sup>/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.</p>
<p><b>Emergency</b></p>	<p>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.</p>
<p><b>Emergency Awareness Zone (EAZ)</b> <i>(British Columbia specific)</i></p>	<p>The area twice the radius of the Emergency Planning Zone (EPZ).</p>
<p><b>Emergency Management Ontario (EMO)</b></p>	<p>EMO is a government organization within the Ministry of Community Safety and Correctional Services, Province of Ontario. EMO is responsible for monitoring, coordinating and assisting in the development and implementation of emergency management programs in Ontario.</p>
<p><b>Emergency Operations Centre (EOC)</b></p>	<p>An operations centre established in a suitable location 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).</p>
<p><b>Emergency Planning Zone (EPZ)</b></p>	<p>The geographical area that surrounds a well, pipeline or facility containing hazardous product that requires specific emergency response planning by the licensee.</p>
<p><b>Emergency Response Plan (ERP)</b></p>	<p>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</p>

## GLOSSARY OF TERMS, continued

<b>Emergency Support Team</b>	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.
<b>ERCBH<sub>2</sub>S</b> <i>(Alberta specific)</i>	A software program that calculate site-specific EPZs using thermodynamics, fluid dynamics, atmospheric dispersion modelling and toxicology.
<b>Evacuation</b>	Organized, phased, and supervised withdrawal of members of the public from dangerous or potentially dangerous areas to safe areas.
<b>Explosive Limits(Lower and Upper)</b>	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.
<b>Facility</b>	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.
<b>Field Response Team</b>	Company and contractor personnel directly involved in controlling the incident at the emergency site and from the EOC.
<b>Fire Hazard (FH) Order</b> <i>(Alberta specific)</i>	An order issued by the AER during an emergency to restrict public access to a specified area.
<b>Full Scale (Major Exercise)</b>	As described in CAN/CSA Z246.2-14, 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.
<b>Functional Exercise</b>	As described in CAN/CSA Z246.2-14, 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.
<b>Gathering system</b>	The network of pipelines, pumps, tanks, and other equipment that carries oil and gas to a processing plant or to other separation equipment.
<b>Hazard</b>	A situation with potential to harm persons, property, or the environment.
<b>Hazard Planning Zone (HPZ)</b> <i>(British Columbia specific)</i>	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.
<b>Hazardous product</b>	A substance released in quantities that may harm persons, property, or the environment



## GLOSSARY OF TERMS, continued

<p><b>High Vapour Pressure Liquids (HVPLs)</b></p>	<p>HVPLs have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG @ 100°F) and include ethane, propane, butane, and pentanes plus, either as a mixture or as a single component.</p> <p><i>Note: Comparisons</i></p> <p><b>Gasoline</b> - Vapour pressure between 55 and 100 kPa at 38°C (8 - 14.5 PSIG @ 100°F).</p> <p><b>Condensate</b> - 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).</p>
<p><b>High Vapour Pressure (HVP) plume dispersion geometry</b></p>	<p>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:</p> <ol style="list-style-type: none"> <li>1) The downwind edge of the plume tends to spread out significantly forming a broad frontal edge.</li> <li>2) Under certain conditions, the plume will travel upwind for a short distance.</li> </ol>
<p><b>High Vapour Pressure (HVP) pipeline</b></p>	<p>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.</p>
<p><b>High Vapour Pressure (HVP) products</b></p>	<p>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.</p>
<p><b>Hydrogen sulphide (H<sub>2</sub>S)</b></p>	<p>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<sub>2</sub>S 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:</p> <ul style="list-style-type: none"> <li>• Heavier than air (dense), so it will tend to drop towards the ground with time,</li> <li>• Lighter than air (buoyant), so it will tend to rise with time, or</li> <li>• About the same weight as air (neutrally buoyant), so it will tend to neither rise nor drop but with time disperse.</li> </ul>
<p><b>Hydrogen sulphide (H<sub>2</sub>S) release rate</b></p>	<p>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<sup>3</sup>/s). The size of the emergency planning zone is estimated from the H<sub>2</sub>S release rate.</p>

## GLOSSARY OF TERMS, continued

<p><b>Hydrogen sulphide (H<sub>2</sub>S) release volume</b></p>	<p>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.</p>
<p><b>Hyper-susceptible</b></p>	<p>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.</p>
<p><b>Ignition</b></p>	<p>Process of setting a hydrocarbon release on fire.</p>
<p><b>Ignition Team</b></p>	<p>Consists of at least two personnel trained in plume ignition.</p>
<p><b>Incident</b></p>	<p>An unexpected occurrence or event that requires action by emergency personnel to prevent or minimize the impacts on people, property, and the environment.</p>
<p><b>Incident classification</b></p>	<p>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.</p>
<p><b>Incident Commander</b></p>	<p>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.</p>
<p><b>Incident Command System (ICS)</b></p>	<p>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.</p>
<p><b>Initial Isolation Zone (IIZ)</b></p>	<p>An area in close proximity to a continuous hazardous release where indoor sheltering may provide limited protection due to proximity of release.</p>
<p><b>Incident Management System</b></p>	<p>A system used to coordinate preparedness and incident management.</p>
<p><b>Isolating the release</b></p>	<p>Ensuring access to the hazard area is controlled.</p>
<p><b>Level 1 Emergency</b> <i>(Alberta specific)</i></p>	<p>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.</p>
<p><b>Level 1 Emergency</b> <i>(British Columbia specific)</i></p>	<p>There is no immediate danger to the public or environment as <b>no</b> H<sub>2</sub>S has been released; the emergency is confined to the lease or company property.</p>

## GLOSSARY OF TERMS, continued

<b>Level 2 Emergency</b> <i>(Alberta specific)</i>	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.
<b>Level 2 Emergency</b> <i>(British Columbia specific)</i>	There is potential risk to the public or environment, as the emergency could extend beyond company property. However, control is still possible.
<b>Level 3 Emergency</b> <i>(Alberta specific)</i>	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.
<b>Level 3 Emergency</b> <i>(British Columbia specific)</i>	An immediate danger to the public or environment exists; control of the situation has been lost.
<b>Licensee</b>	The responsible duty holder as specified in legislation.
<b>Liquid to gas expansion</b>	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.
<b>Liquefied Petroleum Gas (LPG)</b>	Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.
<b>Local Authority</b>	A local authority is considered to be: <ol style="list-style-type: none"> <li>1) The council of a city, town, village or municipal district;</li> <li>2) in the case of an improvement district or special area, the Minister of Municipal Affairs;</li> <li>3) for a national park, the park superintendent or the park superintendent’s delegate;</li> <li>4) the settlement council of a Métis settlement; or</li> <li>5) the band council of a First Nations Reserve.</li> </ol>
<b>Local State of Emergency</b>	See State of local emergency.
<b>Lower Explosive Limit (LEL)</b>	The lowest concentration of gas or vapour (per cent by volume in air) that explodes if an ignition source is present at ambient temperatures.
<b>Manitoba Mineral Resources Division (MRD)</b>	The Manitoba Mineral Resources Division administers The Mines and Minerals Act and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas.
<b>M.D.</b>	Municipal District
<b>Maximum Operating Pressure (MOP)</b>	The maximum licensed operating pressure for a vessel or pipeline or a section of it.
<b>Ministry of the Economy (ECON)</b>	ECON is the lead regulatory agency for the upstream petroleum industry in Saskatchewan.
<b>Mobile air quality monitoring</b>	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.
<b>Municipality</b>	See local authority.

## GLOSSARY OF TERMS, continued

<p><b>Municipal Emergency Operations Centre</b></p>	<p>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.</p>
<p><b>Municipal Emergency Operations Centre</b></p>	<p>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.</p>
<p><b>Municipal Emergency Plan (MEP)</b></p>	<p>The emergency plan of the local authority.</p>
<p><b>Natural Gas Liquids (NGL)</b></p>	<p>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.</p> <p>Physical Properties of NGL Products:</p> <p><b>Colour:</b> 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.</p> <p><b>Odour:</b> Most NGL products have a mild petroleum odour. During pipeline transport NGL products are almost odourless.</p> <p><b>Vapour Density:</b> A measure of the mass per unit volume of the vapour (i.e. kg/m<sup>3</sup>). All NGL products transported by the company have a vapour density greater than air or a relative vapour density greater than 1.0.</p>
<p><b>NAV Canada</b></p>	<p>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.</p>
<p><b>Notice to Airmen (NOTAM)</b></p>	<p>An order issued by Transport Canada restricting access to airspace in a defined area.</p>
<p><b>Notification</b></p>	<p>The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.</p>
<p><b>Odour complaint</b></p>	<p>A report that someone smells an offensive odour (may be sour gas) in the area.</p>
<p><b>Oil Spill Containment and Recovery Unit (OSCAR)</b></p>	<p>Trailer containing oil spill equipment for containment and recovery.</p>
<p><b>On-site command post (OSCP)</b></p>	<p>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.</p>

## GLOSSARY OF TERMS, continued

<b>Partially controlled flow</b>	A restricted flow of product at surface that cannot be shut off at the licensee's discretion with equipment on-site.
<b>Personal consultation</b>	Consultation through face-to-face visits or telephone conversations with all requisite individuals.
<b>Petroleum industry</b>	Refers to all petroleum industry operations.
<b>Plume (gas plume)</b>	An elongated mobile column of gas or smoke.
<b>Protective Action Zone (PAZ)</b>	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.
<b>Protective Action Distance (PAD)</b>	The distance from the incident to the EPZ outer boundary.
<b>Provincial Operations Centre (POC)</b>	An operations centre with the capacity to accommodate representatives from each government department.
<b>Public</b>	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).
<b>Public facility</b> <i>(Alberta specific)</i>	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.
<b>Public protection measures</b>	The use of sheltering, evacuation, ignition, and isolation procedures to mitigate the impact of a hazardous release on members of the public.
<b>Public Safety Group Supervisor</b>	Member of the field response team. Individual charged with the responsibility of coordinating 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.
<b>Publicly used development</b> <i>(Alberta specific)</i>	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).
<b>Publicly used facility</b> <i>(British Columbia specific)</i>	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.
<b>Publicly used facility</b>	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.
<b>Reception centre</b>	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.
<b>Regional Emergency Operations Centre (REOC)</b>	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.

## GLOSSARY OF TERMS, continued

<b>Residence</b>	A dwelling that is occupied full time or part time.
<b>Resident</b>	Individual living in the area at a fixed location.
<b>Resident data record</b>	Form used to track the contact made with residents, businesses and transients.
<b>Response zones</b> <i>(Alberta specific)</i>	The Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ).
<b>Roadblock Crew</b>	Personnel responsible for controlling access to the Emergency Hazard Area, reporting to the Public Safety Group Supervisor.
<b>Rover</b>	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.
<b>Rover Kit</b>	A briefcase containing maps, forms, supplies and instructions needed by the Rover to carry out their duties.
<b>S.A.B.A.</b>	Supplied Air Breathing Apparatus.
<b>S.C.B.A.</b>	Self Contained Breathing Apparatus.
<b>Serious injury</b>	A serious injury includes the following: <ul style="list-style-type: none"> <li>• an injury that results in death;</li> <li>• fracture of a major bone;</li> <li>• amputation other than a portion of a finger or toe;</li> <li>• loss of sight in an eye;</li> <li>• internal haemorrhage;</li> <li>• third degree burns;</li> <li>• unconsciousness;</li> <li>• An injury that results in paralysis (permanent loss of function).</li> </ul>
<b>Shelter-in-Place</b>	Remaining indoors for short-term protection from exposure to toxic gas releases.
<b>Sour gas</b>	Natural gas, including solution gas, containing hydrogen sulphide (H <sub>2</sub> S).
<b>Sour gas release</b>	An uncontrolled release of natural gas containing hydrogen sulphide (H <sub>2</sub> S).
<b>Sour multiphase product</b> <i>(British Columbia specific)</i>	Any liquid that contains H <sub>2</sub> S in the gas phase.
<b>Sour multiphase pipeline</b> <i>(British Columbia specific)</i>	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.
<b>Sour pipeline</b>	Pipeline that conveys gas and/or liquid that contains sour gas.
<b>Sour production facility</b>	Facility that processes gas and/or liquid that contains sour gas

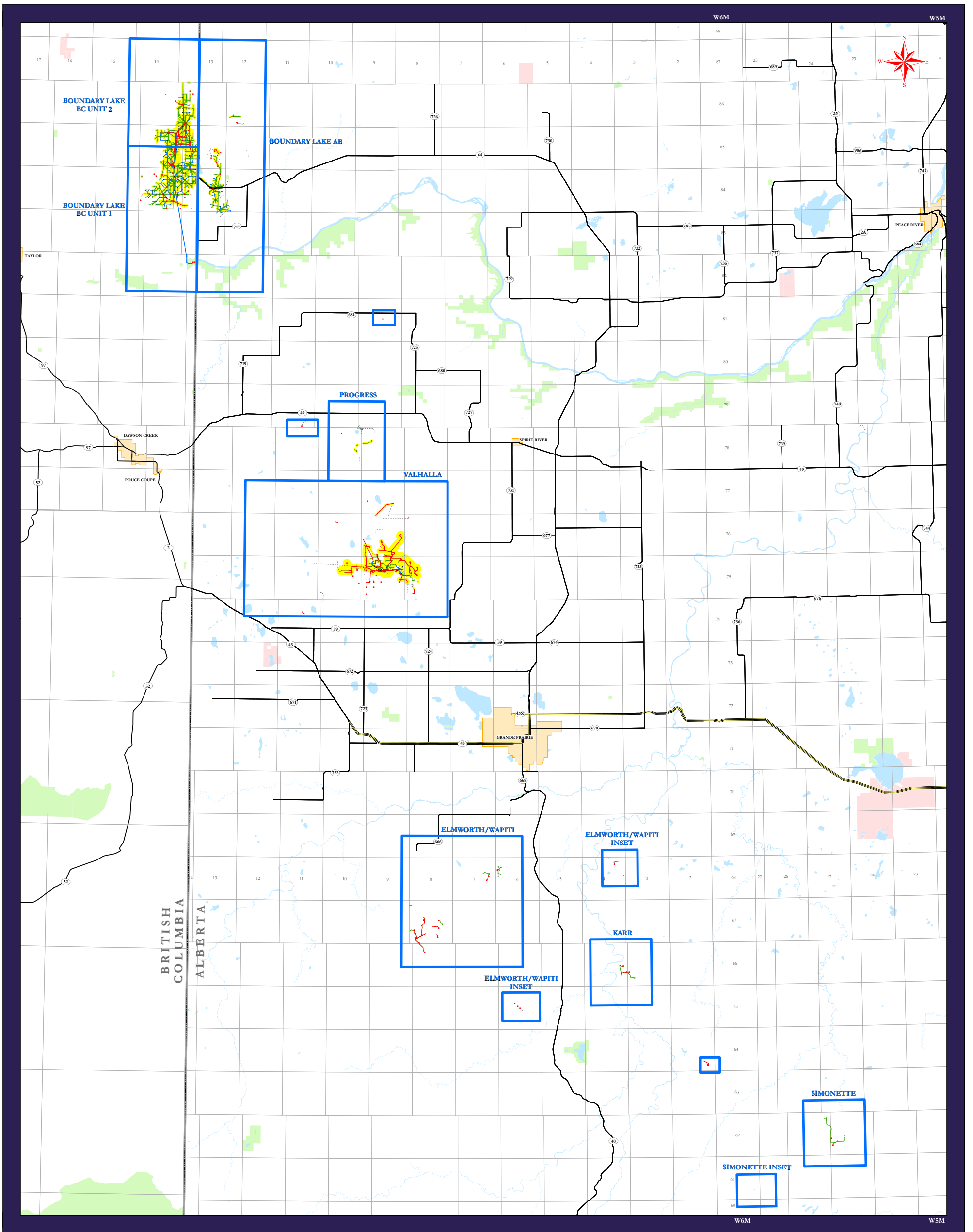
## GLOSSARY OF TERMS, continued

<b>Sour well</b>	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.
<b>Special needs</b>	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.
<b>Special sour well</b> <i>(British Columbia specific)</i>	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.
<b>Standing well</b>	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.
<b>State of local emergency</b>	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.
<b>Sulphur dioxide (SO<sub>2</sub>)</b>	A colourless, water-soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO <sub>2</sub> has a pungent smell similar to a burning match. SO <sub>2</sub> is extremely toxic at higher concentrations. The molecular weight of SO <sub>2</sub> is heavier than air; however, typical releases are related to combustion, which makes the gaseous mixture lighter than air (buoyant).
<b>Surface development</b>	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.
<b>Susceptible</b>	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.
<b>Tabletop exercise</b>	As described in CAN/ CSA Z246.2-14, 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.
<b>Technically complete Emergency Response Plan (ERP)</b>	A plan that meets all applicable requirements.
<b>Telephoners</b>	Telephoners place calls to residents as directed by the Public Safety Group Supervisor.
<b>Threatening telephone call</b>	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.

## GLOSSARY OF TERMS, continued

<b>Transient</b>	An individual that is temporarily in the area (e.g. camper, cross-country skier).
<b>Trapper</b>	The holder of a provincial licensed and registered trapline for the purpose of hunting and trapping fur bearing animals.
<b>Uncontrolled flow</b>	A release of product that cannot be shut off at the licensee's discretion.
<b>Urban centre</b>	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.
<b>Unrestricted country development</b>	Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.
<b>Urban density development</b>	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.
<b>Vapour pressure</b>	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.
<b>Vapour-air plume / vapour cloud</b>	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.
<b>Water body</b>	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.
<b>Well servicing</b>	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.
<b>Workover</b>	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.





**NAB/NEBC  
ERP OVERVIEW**

**WHITECAP  
RESOURCES INC**

Draft Date: September 25, 2015 SP    Scale: 1:380,000    Map: 5122

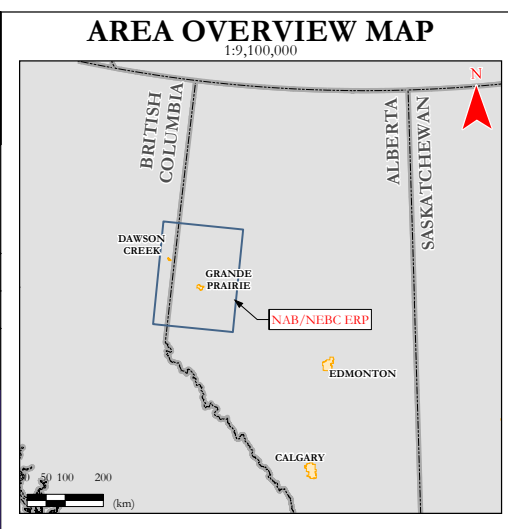
Revision Date: January 17, 2019 SP    UTM ZONE 11 NAD83

0    10    20    30    40    50  
 (km)

MAP PRODUCED BY:

**H<sub>2</sub>Safety  
Services Inc.**

403-212-2332  
 WWW.H2SAFETY.CA



- Whitecap Gas Well
- Whitecap Oil Well
- Whitecap Other Wells
- Whitecap Suspended Well
- ⊕ Whitecap Abandoned Well
- Whitecap Facility
- Whitecap Gas Pipeline
- Whitecap Oil Pipeline
- Whitecap HVP Pipeline
- Whitecap Misc. Fluids Pipeline
- Whitecap Water Pipeline
- ⋯ Whitecap Discontinued Pipeline
- Main Road
- Highway
- Waterbody
- Urban Area
- First Nations Reserve
- Metis Settlement
- Protected Areas
- NAB/NEBC Site Section Areas
- Provincial Boundary
- Whitecap NAB/NEBC EPZ

# BOUNDARY LAKE NEB PIPELINES

## EMERGENCY CONTACT INFORMATION

For Emergencies involving inter-provincial pipelines, the National Energy Board is the primary management agency – they will be contacted by the Transportation Safety Board.  
 \*\*A pipeline is NEB-regulated due to the fact that it crosses a Provincial Border. \*\*

**THIS MUST BE YOUR FIRST CALL**

<b>Transportation Safety Board of Canada (TSB)</b>	24 Hr Incident Line	819-997-7887
	Facsimile	819-953-7876
	Email	<a href="mailto:PipelineNotifications@tsb.gc.ca">PipelineNotifications@tsb.gc.ca</a>

Call the TSB 24 Hr Incident Line when an incident meets the Immediately Reportable Events (see page 2 for criteria) for all National Energy Board (NEB) regulated pipelines and facilities.

**Both** the phone notification and the input of information into the **NEB's Online Event Reporting System (OERS)**: <https://apps.neb-one.gc.ca/ers/home/index> 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 **AFTER** contacting the TSB and NEB.

<b>Alberta Energy Regulator (AER)</b>	24 Hr	800-222-6514
<b>Emergency Management BC (EMBC)</b> <small>(EMBC will notify the OGC, Ministry of Environment, Environment &amp; Climate Change Canada, Ministry of Forests, Lands and Natural Resource Operations, Northern Health Authority and any affected municipalities.)</small>	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 NEB immediately.



## NEB DEFINITION OF AN EMERGENCY

CAN /CSA Z246.2-14 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.**

## NEB 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;
- 4) 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 NEB 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 NEB 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);
- Emergency burning or flaring under the PPR;
- Hazard identification under the PPR;
- Suspension of operations under the PPR;

**MULTIPLE INCIDENT TYPES, continued**

- 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 NEB and the TSB have adopted a single window reporting approach. However, in some areas, the TSB reporting requirements are somewhat different than the NEB requirements. For additional details on the TSB reporting requirements, companies should refer to the TSB website ([www.tsb.gc.ca/eng/incidents-occurrence/index.asp](http://www.tsb.gc.ca/eng/incidents-occurrence/index.asp)).

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 NEB supporting documentation in this emergency response plan.

SUPPORTING INFORMATION	FOUND IN
NEB Distribution	<b>Foreword:</b> Distribution List Page 3
Company 24/7 Emergency Number	<b>Front Cover, Title Page; Section 1: Notification Flow Charts, Area Specific Information:</b> Boundary Lake Field
Area Map of NEB Regulated Facilities	<b>Area Specific Information:</b> Boundary Lake Field
TSB Roles & Responsibilities	<b>Section 5: External Agencies</b> Federal Roles Chart
NEB Roles & Responsibilities	<b>Section 5: External Agencies</b> Federal Roles Chart
Safety Data Sheets (SDS)	<b>Area Specific Information:</b> NEB Pipelines
Health and Safety Plan	Please refer to the company’s Health & Safety Plan located at the corporate head office.

## WHITECAP RESOURCES' EMERGENCY PREPAREDNESS & RESPONSE POLICY

### 1. 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.

### 2. 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 Whitecap Resources 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, Whitecap Resources 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

### 3. 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), Whitecap Resources 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.

### 4. 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.

### 5. MANUAL UPDATING PROCEDURES AND SCHEDULE

Whitecap Resources Corporate and Site-Specific ERPs are to be updated annually and submitted to the NEB 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 NEB indicating that there have been no changes to operations since the ERP was last submitted. ERP updates are performed by a third-party company (H<sub>2</sub>Safety), whose expertise in the field provides Whitecap Resources personnel with the education, training, and resources to excel in Emergency Response. Approvals for ERP updates will be carried out by Whitecap Resources Emergency Management Coordinator.

### 6. 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.

**Internal Debriefing, continued**

- Debriefing meeting(s) with Whitecap Resources 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.

**7. PUBLIC DEBRIEFING**

When the public has been impacted, Whitecap Resources operations should provide the public information as soon after the emergency as possible, to answer any questions or concerns. This should be done by either a senior Whitecap Resources personnel, 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.

**8. HEALTH AND SAFETY PLAN**

Whitecap Resources extensive Health and Safety program is to be implemented at all times during and after an incident. Training is provided to all Whitecap Resources employees and contractors; all information and documentation can be found in Whitecap Resources Health and Safety Manual.

**9. 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. Whitecap Resources operators have the ability to manually trip the ESDs at the risers on the NEB 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.



**Section 1: IDENTIFICATION**

**Product Name:** Boundary Lake Crude Oil

**Synonyms:** Not available.

**Product Use:** Refinery feedstock.

**Restrictions on Use:** Not available.

**Manufacturer/Supplier:** Whitecap Resources Inc.  
Suite 3800, East Tower 525 – 8th Avenue SW  
Calgary, AB T2P 1G1

**Emergency Phone:** 1-866-590-5289  
British Columbia: 250-787-3700  
Canotec: (613) 996-6666 or Cellular \*666

**Date of Preparation of SDS:** September 19, 2016

**Section 2: HAZARD(S) IDENTIFICATION**

**GHS INFORMATION**

**Classification:** Flammable Liquids, Category 1  
Acute Toxicity - Inhalation, Category 2  
Skin Irritation, Category 2  
Eye Irritation, Category 2A  
Germ Cell Mutagenicity, Category 1B  
Carcinogenicity, Category 1A  
Toxic to Reproduction, Category 2  
Specific Target Organ Toxicity (Single Exposure), Category 3 - Narcotic Effects  
Specific Target Organ Toxicity (Repeated Exposure), Category 2  
Aspiration Hazard, Category 1

**LABEL ELEMENTS**

**Hazard Pictogram(s):** 

**Signal Word:** Danger

**Hazard Statements:** Extremely flammable liquid and vapor.  
Fatal if inhaled.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause genetic defects.  
May cause cancer.  
Suspected of damaging fertility or the unborn child.  
May cause drowsiness or dizziness.  
May cause damage to organs through prolonged or repeated exposure.  
May be fatal if swallowed and enters airways.

**Precautionary Statements**

**Prevention:** Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.  
 Keep container tightly closed.  
 Ground/bond container and receiving equipment.  
 Use explosion-proof electrical, ventilating, and lighting equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Do not breathe mist, vapours, or spray.  
 Wash thoroughly after handling.  
 Use only outdoors or in a well-ventilated area.  
 Wear protective gloves, protective clothing and eye protection.  
 Wear respiratory protection.

**Response:** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Immediately call a poison center or doctor.  
 Do NOT induce vomiting.  
 If skin irritation occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
 Take off contaminated clothing and wash it before reuse.  
 In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or regular foam to extinguish.

**Storage:** Store in a well-ventilated place. Keep container tightly closed.  
 Keep cool.  
 Store locked up.

**Disposal:** Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

**Hazards Not Otherwise Classified:** Not applicable.

**Ingredients with Unknown Toxicity:** None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

**Section 3: COMPOSITION / INFORMATION ON INGREDIENTS**

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Petroleum	Not available.	8002-05-9	~100
Octane	Not available.	111-65-9	5 - 10
Nonane	Not available.	111-84-2	3 - 7
Heptane	Not available.	142-82-5	3 - 7
Hexane	Not available.	110-54-3	1 - 5

Pentane	Not available.	109-66-0	0.5 - 1.5
Butane	Not available.	106-97-8	0.5 - 1.5
Benzene, dimethyl-	Xylene	1330-20-7	0.5 - 1.5
Sulfur	Sulphur	7704-34-9	0.5 - 1.5
Benzene	Not available.	71-43-2	0.1 - 1
Benzene, methyl-	Toluene	108-88-3	0.1 - 1
Benzene, ethyl-	Ethylbenzene	100-41-4	0.1 - 1
Hydrogen sulfide (H <sub>2</sub> S)	Hydrogen sulphide	7783-06-4	0 - 0.5

#### Section 4: FIRST-AID MEASURES

**Inhalation:** If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor. If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

**Acute and delayed symptoms and effects:** Fatal if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. This product contains Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate. Inhalation of Toluene may result in peculiar skin sensations (e. g. pins and needles) or numbness.

**Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Acute and delayed symptoms and effects:** Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H<sub>2</sub>S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

**Skin Contact:** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a poison center or doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

**Acute and delayed symptoms and effects:** Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

**Ingestion:** If swallowed: Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person. If breathing or the heart stops, trained personnel should immediately begin artificial respiration (AR) or cardiopulmonary resuscitation (CPR) respectively. Get medical attention immediately.

**Acute and delayed symptoms and effects:** May be fatal if swallowed and enters airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

**Note to Physicians:** Symptoms may not appear immediately. For inhalation of Hydrogen Sulphide, consider oxygen.

#### Section 5: FIRE-FIGHTING MEASURES

##### FLAMMABILITY AND EXPLOSION INFORMATION

Extremely flammable liquid and vapor. Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. When heated, this material may evolve toxic and flammable Hydrogen sulphide.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

**Sensitivity to Mechanical Impact:** This material is not sensitive to mechanical impact.

**Sensitivity to Static Discharge:** Take precautionary measures against static discharge. This material is sensitive to static discharge.

##### MEANS OF EXTINCTION

**Suitable Extinguishing Media:** Small Fire: Dry chemical, CO<sub>2</sub>, water spray or regular foam.  
Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

**Unsuitable Extinguishing Media:** Do not use straight streams. CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

<b>Products of Combustion:</b>	Oxides of carbon. Oxides of sulphur. Aldehydes.
<b>Protection of Firefighters:</b>	Inhalation or contact with material may irritate or burn skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation. Runoff from fire control or dilution water may cause pollution. Hydrogen sulphide is heavier than air and may collect in low lying areas and confined spaces. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

#### **Section 6: ACCIDENTAL RELEASE MEASURES**

<b>Emergency Procedures:</b>	As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded.
<b>Personal Precautions:</b>	Do not touch or walk through spilled material. Use personal protection recommended in Section 8. Don full-face, positive pressure, self-contained breathing apparatus.
<b>Environmental Precautions:</b>	Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for Containment:</b>	Stop leak if you can do it without risk. A vapor suppressing foam may be used to reduce vapors.
<b>Methods for Clean-Up:</b>	Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material.
<b>Other Information:</b>	See Section 13 for disposal considerations.

#### **Section 7: HANDLING AND STORAGE**

**Handling:**

Do not swallow. Do not breathe mist, vapours, or spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, sparks, open flames, and hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Harmful concentrations of hydrogen sulfide (H<sub>2</sub>S) gas can accumulate in excavations and low-lying areas as well as the vapour space of storage and bulk transport compartments. See Section 8 for information on Personal Protective Equipment.

**Storage:**

Limit quantity of material in storage. Restrict access to storage area. Post appropriate warning signs. Keep storage area separate from populated work areas. Consider leak detection and alarm systems, as required. Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store away from incompatible materials. See Section 10 for information on Incompatible

Materials. Keep out of the reach of children. Head spaces in storage containers may contain toxic Hydrogen sulphide gas. Structural materials and lighting and ventilation systems should be corrosion resistant.

**Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines**

**Component**

Petroleum [CAS No. 8002-05-9]

**ACGIH:** No TLV established.

**OSHA:** 500 ppm (TWA), 2000 mg/m<sup>3</sup> (TWA);  
400 ppm (TWA) [Vacated];

Octane [CAS No. 111-65-9]

**ACGIH:** 300 ppm (TWA); (1979)

**OSHA:** 500 ppm (TWA), 2350 mg/m<sup>3</sup> (TWA);  
300 ppm (TWA); 375 ppm (STEL) [Vacated];

Nonane [CAS No. 111-84-2]

**ACGIH:** 200 ppm (TWA); (2011)

**OSHA:** 200 ppm (TWA) [Vacated];

Heptane [CAS No. 142-82-5]

**ACGIH:** 400 ppm (TWA); 500 ppm (STEL); (1979)

**OSHA:** 500 ppm (TWA), 2000 mg/m<sup>3</sup> (TWA);  
400 ppm (TWA); 500 ppm (STEL) [Vacated];

Hexane [CAS No. 110-54-3]

**ACGIH:** 50 ppm (TWA); Skin, BEI (1996)

**OSHA:** 500 ppm (TWA), 1800 mg/m<sup>3</sup> (TWA); Skin.  
50 ppm (TWA) [Vacated];

Pentane [CAS No. 109-66-0]

**ACGIH:** 1000 ppm (TWA); (2013)

**OSHA:** 1000 ppm (TWA), 2950 mg/m<sup>3</sup> (TWA);  
600 ppm (TWA); 750 ppm (STEL) [Vacated];

Butane [CAS No. 106-97-8]

**ACGIH:** 1000 ppm (TWA); (2012)

**OSHA:** 800 ppm (TWA) [Vacated];

Xylene [CAS No. 1330-20-7]

**ACGIH:** 100 ppm (TWA); 150 ppm (STEL); A4; BEI (1992)

**OSHA:** 100 ppm (TWA), 435 mg/m<sup>3</sup> (TWA);  
150 ppm (STEL) [Vacated];

Sulphur [CAS No. 7704-34-9]

**ACGIH:** 10 mg/m<sup>3</sup> (TWA) (Inhalable.); 3 mg/m<sup>3</sup> (TWA) (Respirable.); For Particles  
(Insoluble or Poorly Soluble) Not Otherwise Specified

**OSHA:** 15 mg/m<sup>3</sup> (Total dust) (TWA), 5 mg/m<sup>3</sup> (Respirable fraction) (TWA); For  
Particulates Not Otherwise Regulated (PNOR).

Benzene [CAS No. 71-43-2]

**ACGIH:** 0.5 ppm (TWA); 2.5 ppm (STEL); Skin; A1; BEI (1996)

**OSHA:** 1 ppm (TWA); 5 ppm (STEL);

Toluene [CAS No. 108-88-3]

**ACGIH:** 20 ppm (TWA); A4; BEI (2006)

**OSHA:** 200 ppm (TWA); 300 ppm (C); 500 ppm (Peak) (Maximum duration: 10 minutes.)  
100 ppm (TWA); 150 ppm (STEL) [Vacated];

Ethylbenzene [CAS No. 100-41-4]

**ACGIH:** 20 ppm (TWA); A3; BEI (2010)

**OSHA:** 100 ppm (TWA), 435 mg/m<sup>3</sup> (TWA);  
125 ppm (STEL) [Vacated];

Hydrogen sulphide [CAS No. 7783-06-4]

**ACGIH:** 1 ppm (TWA); 5 ppm (STEL); (2009);

**OSHA:** 20 ppm (C); 50 ppm (Peak) (Maximum duration: 10 mins. once only if no other  
meas. exp. occurs.)  
10 ppm (TWA); 15 ppm (STEL) [Vacated];

**TLV:** Threshold Limit Value

**TWA:** Time-Weighted Average

**STEL:** Short-Term Exposure Limit

**C:** Ceiling

**Engineering Controls:**

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits. Use explosion-proof electrical, ventilating, and lighting equipment.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**



**Eye/Face Protection:**

Wear safety glasses. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

**Hand Protection:**

Wear protective gloves. Consult manufacturer specifications for further information.

**Skin and Body Protection:**

Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

**Respiratory Protection:**

Wear respiratory protection. If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA

Standard CAN/CSA-Z94.4-11, with organic vapor cartridge, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

**General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

<b>Section 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
--

<b>Appearance:</b>	Dark brown oily liquid.
<b>Colour:</b>	Dark brown.
<b>Odour:</b>	Petroleum. Rotten eggs.
<b>Odour Threshold:</b>	0.0047 ppm, (Hydrogen sulphide)
<b>Physical State:</b>	Liquid.
<b>pH:</b>	Not available.
<b>Melting Point / Freezing Point:</b>	Not available.
<b>Initial Boiling Point:</b>	≤ 35 °C (113.2 °F) (ASTM D86)
<b>Boiling Range:</b>	≤ 35 to 356.7 °C (113.2 to 674.1 °F) (ASTM D86)
<b>Flash Point:</b>	< -5 °C (23 °F) (PMCC)
<b>Evaporation Rate:</b>	Not available.
<b>Flammability (solid, gas):</b>	Not applicable.
<b>Lower Flammability Limit:</b>	Not available.
<b>Upper Flammability Limit:</b>	Not available.
<b>Vapor Pressure:</b>	Not available.
<b>Vapor Density:</b>	Not available.
<b>Relative Density:</b>	0.840 to 0.860 (Water = 1) at 15 °C (59 °F)
<b>Solubilities:</b>	Insoluble in water.
<b>Partition Coefficient: n-Octanol/Water:</b>	Not available.
<b>Auto-ignition Temperature:</b>	Not available.
<b>Decomposition Temperature:</b>	Not available.
<b>Viscosity:</b>	4 to 6 mm <sup>2</sup> /s at 38 °C (100.4 °F) (ASTM D445)
<b>Percent Volatile, wt. %:</b>	Not available.
<b>VOC content, wt. %:</b>	Not available.



**Density:** 840 to 860 kg/m<sup>3</sup> at 15°C (59 °F)  
**API Gravity** 34 to 36  
**Pour Point:** -15 °C (5 °F) (ASTM D97)

**Section 10: STABILITY AND REACTIVITY**

**Reactivity:** Contact with incompatible materials. Sources of ignition. Exposure to heat.  
**Chemical Stability:** Stable under normal storage conditions.  
**Possibility of Hazardous Reactions:** None known.  
**Conditions to Avoid:** Contact with incompatible materials. Sources of ignition. Exposure to heat.  
**Incompatible Materials:** Oxidizers. Halogens.  
**Hazardous Decomposition Products:** Hazardous sulphur dioxide, and related oxides of sulphur may be generated upon combustion.

**Section 11: TOXICOLOGICAL INFORMATION**

**EFFECTS OF ACUTE EXPOSURE**

**Product Toxicity**

**Oral:** Not available.  
**Dermal:** Not available.  
**Inhalation:** Not available.

**Component Toxicity**

Component	CAS No.	LD <sub>50</sub> oral	LD <sub>50</sub> dermal	LC <sub>50</sub>
Petroleum	8002-05-9	4300 mg/kg (rat)	Not available.	Not available.
Octane	111-65-9	Not available.	Not available.	118000 mg/m <sup>3</sup> (rat); 4H
Nonane	111-84-2	Not available.	Not available.	3200 ppm (rat); 4H
Heptane	142-82-5	Not available.	Not available.	103000 mg/m <sup>3</sup> (rat); 4H
Hexane	110-54-3	25000 mg/kg (rat)	Not available.	48000 ppm (rat); 4H
Pentane	109-66-0	400 mg/kg (rat)	Not available.	364000 mg/m <sup>3</sup> (rat); 4H
Butane	106-97-8	Not available.	Not available.	658000 mg/m <sup>3</sup> (rat); 4H
Xylene	1330-20-7	4300 mg/kg (rat)	> 1700 mg/kg (rabbit)	5000 ppm (rat); 4H
Sulphur	7704-34-9	> 8437 mg/kg (rat)	Not available.	Not available.
Benzene	71-43-2	930 mg/kg (rat)	> 9400 µl/kg (rabbit)	10000 ppm (rat); 7H
Toluene	108-88-3	2600 mg/kg (rat)	14.1 mL/kg (rabbit)	49000 mg/m <sup>3</sup> (rat); 4H
Ethylbenzene	100-41-4	3500 mg/kg (rat)	17800 µl/kg	Not available.

Hydrogen sulphide 7783-06-4 Not available. (rabbit) Not available. 444 ppm (rat); 4H

**Likely Routes of Exposure:** Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Reproductive system. Central nervous system. Peripheral nervous system.

**Symptoms (including delayed and immediate effects)**

**Inhalation:** Fatal if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Excessive inhalation may cause headache, dizziness, confusion, loss of appetite and/or loss of consciousness. This product contains Hydrogen sulphide which may accumulate in confined spaces. Inhalation of Hydrogen sulphide may cause loss of sense of smell, major irritation of the respiratory tract, headache, nausea, vomiting, dizziness, and fluid buildup in the lungs (pulmonary edema), which can be fatal. At 300 ppm unconsciousness may occur after 20 minutes. From 300 to 500 ppm, death can occur within 1 to 4 hours of continuous exposure. At 500 ppm the respiratory system is paralyzed, the victim collapses almost instantaneously, and death can occur after exposure of only 30 to 60 minutes. Above 500 ppm Hydrogen sulphide may cause immediate loss of consciousness; death is rapid, and possibly immediate. Inhalation of Toluene may result in peculiar skin sensations (e. g. pins and needles) or numbness.

**Eye:** Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Hydrogen sulphide may cause eye irritation at 1-20 ppm and acute conjunctivitis at higher concentrations. Above 50 ppm H<sub>2</sub>S, eye irritation may include symptoms of redness, severe swelling, tearing, sensitivity to light and the appearance of 'Halos' around lights.

**Skin:** Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

**Ingestion:** May be fatal if swallowed and enters airways. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Skin Sensitization:** Not available.

**Respiratory Sensitization:** Not available.

**Medical Conditions Aggravated By Exposure:** Not available.

**EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)**

**Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system. Central nervous system. Cardiovascular system. Lungs. Blood. Cardiovascular system. Bone marrow. Liver. Kidneys. Reproductive system. Central nervous system. Peripheral nervous system.

**Chronic Effects:** Hazardous by OSHA/WHMIS criteria. May cause chronic effects. Prolonged or repeated contact may dry skin and cause irritation. High vapour concentrations, generally greater than 10% by volume, may sensitize the heart and lead to lethal cardiac arrhythmias. Repeated dermal application of crude oils in rats produced systemic toxicity in blood, liver, thymus and bone marrow. Prolonged or repeated skin contact with Nonane may cause liver and kidney damage and cause blood effects. Chronic inhalation of n-Hexane may cause peripheral nerve disorders and central nervous system effects. Reports of chronic poisoning with Benzene, Toluene, Ethylbenzene or Xylene describe anemia, decreased blood cell count and bone marrow hypoplasia. Liver and kidney damage may occur. Repeated exposure of the eyes to high concentrations of Xylenes vapour may cause reversible eye damage. Chronic inhalation exposure to xylene causes mid-frequency hearing loss in laboratory animals. Xylene reacts synergistically with n-hexane to enhance hearing loss. Hydrogen sulphide may reduce lung function; cause neurological effects such as headaches, nausea, depression and personality changes; eye and mucous membrane irritation: damage to cardiovascular system.

**Carcinogenicity:** May cause cancer. Lifetime skin painting studies in animals with whole crude oils and crude oil fractions have produced tumours in animals following prolonged and repeated skin contact. Chronic exposure to benzene has been associated with an increased incidence of leukemia and multiple myeloma (tumour composed of cells of the type normally found in the bone marrow).

**Component Carcinogenicity**

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Petroleum	Not listed.	Group 3	Not listed.	OSHA Carcinogen.	Not listed.
Xylene	A4	Group 3	Not listed.	Not listed.	Not listed.
Benzene	A1	Group 1	List 1	OSHA Carcinogen.	Listed.
Toluene	A4	Group 3	Not listed.	Not listed.	Not listed.
Ethylbenzene	A3	Group 2B	Not listed.	OSHA Carcinogen.	Listed.

**Mutagenicity:** May cause genetic defects.

**Reproductive Effects:** Suspected of damaging fertility or the unborn child. Studies exist which report a link to crude oil and reproductive effects including menstrual disorders.

**Developmental Effects**

**Teratogenicity:** Not available.

**Embryotoxicity:** Possible risk of harm to the unborn child. Repeated dermal application of crude oils to pregnant rats produced maternal toxicity and fetal developmental toxicity and fetal tumours. Benzene and Xylene have caused adverse fetal effects in laboratory animals. Exposure to Toluene may affect the developing fetus.

**Toxicologically Synergistic Materials:** Xylene reacts synergistically with n-hexane to enhance hearing loss.

**Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity:** Petroleum: 21 and 41 mg/l, 96 hr., Rainbow trout;  
Petroleum: 2.7 and 4.1 mg/l, 96 hr., Mysid;  
Petroleum: 122 and 528 ml/kg, 96 hr., Algae.

**Persistence / Degradability:** Not available.

**Bioaccumulation / Accumulation:** Not available.

**Mobility in Environment:** Not available.

**Other Adverse Effects:** Not available.

**Section 13: DISPOSAL CONSIDERATIONS**

**Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

**Section 14: TRANSPORT INFORMATION**

**U.S. Department of Transportation (DOT)**

**Proper Shipping Name:** UN1267, PETROLEUM CRUDE OIL, 3, PG I

**Class:** 3

**UN Number:** UN1267

**Packing Group:** I

**Label Code:**



**Canada Transportation of Dangerous Goods (TDG)**

**Proper Shipping Name:** UN1267, PETROLEUM CRUDE OIL, 3, PG I

**Class:** 3

**UN Number:** UN1267

**Packing Group:** I

**Label Code:**



**Section 15: REGULATORY INFORMATION**

**Chemical Inventories**

**US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

**Canada (DSL)**

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

**Federal Regulations**

**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**SARA Title III Component**

Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hexane	Not listed.	5000	313	Not listed.	Not listed.
Pentane	Not listed.	Not listed.	Not listed.	Not listed.	10000
Butane	Not listed.	Not listed.	Not listed.	Not listed.	10000
Xylene	Not listed.	100	313	U239	Not listed.
Benzene	Not listed.	10	313	U019	Not listed.
Toluene	Not listed.	1000	313	U220	Not listed.
Ethylbenzene	Not listed.	1000	313	Not listed.	Not listed.
Hydrogen sulphide	500	100	313s	U135	10000

**State Regulations**

**Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Petroleum	8002-05-9	Listed.
Octane	111-65-9	Listed.
Nonane	111-84-2	Listed.
Heptane	142-82-5	Listed.
Hexane	110-54-3	Listed.
Pentane	109-66-0	Listed.
Butane	106-97-8	Listed.
Xylene	1330-20-7	Listed.
Sulphur	7704-34-9	Listed.
Benzene	71-43-2	E
Toluene	108-88-3	Listed.
Ethylbenzene	100-41-4	Listed.
Hydrogen sulphide	7783-06-4	E

**Note:** E = Extraordinarily Hazardous Substance

**New Jersey**

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Petroleum	8002-05-9	SHHS
Octane	111-65-9	SHHS
Nonane	111-84-2	SHHS
Heptane	142-82-5	SHHS
Hexane	110-54-3	SHHS
Pentane	109-66-0	SHHS
Butane	106-97-8	SHHS
Xylene	1330-20-7	SHHS

Sulphur	7704-34-9	Listed.
Benzene	71-43-2	SHHS
Toluene	108-88-3	SHHS
Ethylbenzene	100-41-4	SHHS
Hydrogen sulphide	7783-06-4	SHHS

**Note:** SHHS = Special Health Hazard Substance

**Pennsylvania**

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

<b>Component</b>	<b>CAS No.</b>	<b>RTK List</b>
Petroleum	8002-05-9	Listed.
Octane	111-65-9	Listed.
Nonane	111-84-2	Listed.
Heptane	142-82-5	Listed.
Hexane	110-54-3	Listed.
Pentane	109-66-0	Listed.
Butane	106-97-8	Listed.
Xylene	1330-20-7	E
Sulphur	7704-34-9	Listed.
Benzene	71-43-2	ES
Toluene	108-88-3	E
Ethylbenzene	100-41-4	E
Hydrogen sulphide	7783-06-4	E

**Note:** E = Environmental Hazard; S = Special Hazardous Substance

**California**

**California Prop 65:** WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

<b>Component</b>	<b>Type of Toxicity</b>
Benzene	cancer; developmental, male
Toluene	developmental; female
Ethylbenzene	cancer

**Section 16: OTHER INFORMATION**

**Disclaimer:**

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for his own particular use.

**Date of Preparation of SDS:** September 19, 2016

**Version:** 1.2

**GHS SDS Prepared by:** Deerfoot Consulting Inc.

**Phone: (403) 720-3700**

# Boundary Lake NEB - Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	GAS FLOW RATE (1000m3/d)	LIQUID FLOW RATE (m3/d)	GLR	TEMP (°C)	Z	DIR 56 RELEASE VOLUME (m3)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS		
<b>WHITECAP SOUR OPERATING</b>																															
WHITECAP RESOURCES INC.	-	03-23-084-13W6	S	13-28-084-13W6	PL	ESD		80040	1	-	1	1,2	OE	273.1	4.79	4.8	4,960	4,960	0.20	0.10	8.00	630.00	12.70	5	0.78	12	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	13-28-084-13W6	PL	08-02-085-14W6	B	ESD		23242	1	-	2	1,2	OE	273.0	5.80	4.8	4,960	4,960	0.20	0.10	8.00	630.00	12.70	5	0.78	12	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	16-26-084-14W6	PL	13-28-084-13W6	PL	-	-	23241	1	-	3	3,4	FW	219.1	5.67	9.5	1,965	1,965	0	0											O
WHITECAP RESOURCES INC.	-	13-28-084-13W6	PL	03-23-084-13W6	PS	-	-	55616	1	-	4	3,4	FW	219.1	4.63	9.5	1,965	1,965	0	0											O

**LEGEND**  
Water Cross: CC=Creek Crossing LC=Lake Crossing OC=Overhead Crossing RC=River Crossing XA=Other Crossing  
Facility: B=Battery BE=Blind End CP=Chemical Plant CS=Compressor Station GP=Gas Plant GS=Gas Gathering System IP=Injection Plant LH=Line Heater MS=Meter Station  
PL=Pipeline PS=Pump Station S=Satellite WE=Well LR=Loading Rack  
Valve: CV=Check Valve ESD=Emergency Shutdown Valve  
Substance: CO=Crude Oil FG=Fuel Gas FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas SW=Salt Water MP=Multiphase  
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active C=Cancelled S=Suspended R=Removed  
Other: EPZ=Emergency Planning Zone IIZ=Initial Planning Zone PAZ=Protective Action Zone Wall=Wall Thickness OD=Outside Diameter Z=Compressibility Factor  
 GLR=Gas-To-Liquid Ratio TEMP=Temperature

## WHITECAP 24 HOUR

1-866-590-5289 / 1-250-787-3700

### Boundary Lake Field Office

Courier / Mailing Address: 1200 - 248 Road, Box 60  
Goodlow, BC V0C 1S0

### Whitecap Resources Head Office

Bus: 403-266-0767  
Fax: 403-266-6975

Courier / Mailing Address: 3800, 525 - 8 Avenue SW  
Calgary, AB T2P 1G1

## FACILITY & FIELD CONTACTS

### BOUNDARY LAKE BC FIELD

Area Superintendent  
Lead Operator  
HSE Field Advisor

CALGARY OFFICE  
Operations Engineer

VP Operations

VP Production & Operations

VP HSE

*For a detailed contact list, refer to the Field Response Teams Phone List at the front of the ERP.*

## SAFETY EQUIPMENT

### Operator / Truck Safety Equipment

Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, hand held radio and gas detector, first aid kit, 4-head monitor and cell phone. 6 SCBAs are positioned at satellites throughout the field.

### Notification

Operators attend to the facility, wells and gathering system 7 days a week. Facilities are equipped with alarms that result in operators being notified on a 24/7 basis and result in on-call operators responding to the field or site. All automated compressor sites have automatic flare igniters and LEL and gas detection.

### Communications

The primary method of communication is by cellular phone. Two-way radios are also utilized daily. There is limited cell reception in the south end of the field.

### Roadblock Kits / Ignition Kits\*

There are three roadblock kits and two flare guns located at the Boundary Lake Field Office. An additional roadblock kit is kept with the Rig Supervisor or in the Rig Shack. Roadblock kits contain the following: stop signs, orange safety vest, flashlight(s), red caution tape, three pop up pylons, and a flashing beacon. Ignition equipment and trained personnel can be provided by Ignition Service companies. See Support Services for more information.

*\*\* If any of the above mentioned safety equipment is insufficient, Whitecap Resources personnel will contact a local safety company who will be asked to provide additional equipment.*

## OPERATIONS SUMMARY

The Boundary Lake BC field consists of sweet and sour oil and gas wells and pipelines, water pipelines and water injection wells, located within the Peace River Regional District. The Boundary Lake BC field produces from two different functional units, Boundary Lake Unit 1 in the South and Boundary Lake Unit 2 in the North.

Raw sour gas is compressed at 07-02-85-14 and delivered to Canlin Energy Corp. and the 02-25-85-14 W6M Gas Plant for processing. The oil treating facility accepts the sour oil effluent from 03-23-84-13 W6M via the NEB pipeline. After separation, the oil is tanked and shipped to market. The produced water is tanked and re-injected into the Boundary Lake Unit 1 formation.

The oil treating facility for Unit 2 is located at 06-06-86-13 W6M where sour oil effluent from Boundary Lake Unit 2 is gathered, separated and compressed. Clean oil is tanked and shipped to market. The produced water is re-injected into the Boundary Lake Unit 2 and sour gas is sent to the 02-25-85-14 W6M Gas Plant where it combines with the sour gas from Unit 1.

Two pipelines, under NEB jurisdiction, cross the BC / Alberta border. There is one 10" oil well effluent pipeline that transports product from 03-23-84-13 W6M (AB) to the oil treating facility for processing and an 8" fresh water pipeline that transports injection water back to 03-23-84-14 W6M, where it is distributed throughout the field for voidage replacement.

### EPZ Information

The largest assigned EPZ for the BC field is 1100 m.

#### Boundary Lake Unit 1:

The maximum expected H<sub>2</sub>S concentration for the wells is 2.86%, with an assigned EPZ of 130 m. The maximum licensed H<sub>2</sub>S concentration for the pipelines is 2.00%, with an assigned EPZ of 374 m.

#### Boundary Lake Unit 2:

The maximum H<sub>2</sub>S concentration for the wells is 4.50%, with an assigned EPZ of 130 m. The maximum licensed H<sub>2</sub>S concentration for the pipelines is 4.50%, with an assigned EPZ of 1100 m.

### On-Site Storage

08-02 site storage includes:

1	Oil Tank	5000 bbl
3	Oil Tanks	2000 bbl
1	Produced Water Tank	2000 bbl
1	Oil Tank (Skim)	1000 bbl
3	Chemical Storage	200 bbl

02-25 site storage includes:

1	Emulsion Tank	400 bbl
1	Drain Tank (Slop)	100 bbl

06-06 site storage includes:

1	Oil Tank	2000 bbl
1	Oil Tank	1000 bbl
1	Produced Water Tank	5000 bbl

The following well sites have emulsion tanks:

14-06-84-13 W6M Active Well	2	400 bbl
14-07-84-13 W6M Active Well	1	400 bbl
11-30-84-14 W6M Active Well	1	100 bbl
05-17-84-13 Shut In Well	2	400 bbl
06-07-84-14 Shut In Well	1	400 bbl

### Closest Urban Centre

The settlement of Goodlow is located within the BC field. The city of Fort St. John is located approximately 45 km southwest of the BC field and has a population of +/- 20,155.

### Hydrology

There are various waterbodies located within the BC field including Boundary Creek, Boundary Lake, German Lake, Hogg Creek, Little Clear River, Moonlight Creek and many other unnamed streams and lakes.

### Highways

Highway 64 (Cecil Lake Road) runs east / west through the BC field EPZ. Clayhurst Road runs north / south through the BC EPZ.

### Site Access

Refer to the following pages for access maps and directions. Some facilities have a locked gate and require a key to enter.

**\*PLEASE REFER TO "BOUNDARY LAKE MAP" TAB FOR CORRESPONDING MAP**

## EMERGENCY SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

RCMP 911  
Fort St. John 250-787-8100

Fire Departments 911

**This area is NOT covered by a fire department. Any wellsite or secondary fire must be handled by contract oilfield fire fighting services. The Fort St. John Fire/Rescue will ONLY respond to motor vehicle accidents and medical emergencies.**

Ambulance 911  
BCEHS\* 911

Air Ambulance (STARS) 888-888-4567  
\* BCEHS covers both ground and air service. Locations will be determined when an emergency call is made via 911.

### Hospitals

Dawson Creek & District Hospital 250-782-8501  
Fort St. John Hospital and Health Centre 250-261-7310  
Queen Elizabeth II Hospital - Grande Prairie 780-538-7100

Poison Control Centre (BC) 604-682-5050

BC One-Call 800-474-6886  
www.bconeccall.ca

### Reception Centres

Clearview Elementary School Admin: 250-781-3333  
Shauna Hartman Cell: 250-261-4918  
13786 - 223 Road, Goodlow, BC

Evangelical Church of Goodlow Office: 250-781-3566  
Pastor John Cell: 778-256-1761  
13906 - 211 Road, Goodlow, BC

Howard Johnson Hotel 250-787-0651  
8540 Alaska Road, Fort. St. John, BC Fax: 250-787-5266

Lakeview Inn & Suites 250-787-0779  
10103 - 98 Avenue, Fort St. John, BC Fax: 250-787-0709

## RESIDENT INFORMATION

### Surface Developments

#### Boundary Lake Unit 1

There is a total of 16 surface developments within the Boundary Lake BC Unit 1 field. This includes 10 occupied residences, 2 vacant residences, 2 businesses, 1 cemetery and 1 manned oil & gas facility.

#### Boundary Lake Unit 2

There is a total of 4 surface developments within the Boundary Lake Unit 2 field. This includes 3 occupied residences and 1 manned oil & gas facility.

### Schools

Clearview Elementary School Admin: 250-781-3333

*\*For Resident IDs, names and phone numbers, refer to the "Confidential Information Tab" following this site section*

## LEAD AGENCIES & PRIORITY CONTACTS

Note: All numbers, unless otherwise indicated, are 24 hours.

Emergency Management BC (EMBC) - Incident Reporting Line 800-663-3456\*  
Heather MacRae, Regional Manager, Prince George Office Admin: 250-612-4172

*\*In the event of an emergency, EMBC will notify the OGC, Ministry of Environment, Environment & Climate Change Canada, Ministry of Forests, Lands & Natural Resource Operations, Northern Health Authority and any affected municipalities.*

BC Oil & Gas Commission (OGC) - Incident Reporting Line 800-663-3456  
Administration 250-794-5200

### National Energy Board

TSB Incident Line (Pipeline emergencies) 819-997-7887  
NEB Incident Line (All other emergencies) 403-807-9473  
Email pipelinenotifications@tsb.gc.ca  
OERS Website https://apps.neb-one.gc.ca/ers

Peace River Regional District - Dawson Creek 800-670-7773  
Deborah Jones-Middleton, Protective Services Manager Office: 250-784-3215  
Cell: 250-219-4011

### Northern Health Authority

HEMBC On Call 855-554-3622  
Jim Fitzpatrick, Director (Non-Emergency) Office: 250-565-5584  
Cell: 250-617-6611

### WORKSAFE BC - Fort St. John

After-Hours Reporting 866-922-4357  
Daytime Reporting Admin: 888-621-7233  
Theresa Pearsall, Support Services Coordinator Office: 250-785-1283

### Technical Safety BC

866-566-7233

### BC Ministry of Transportation & Infrastructure

North Peace Area, Fort St. John 888-883-6688  
Katherine Styba, District Manager Admin: 250-787-3237  
Office: 250-787-3238

### Highway Services

Yellowhead Road & Bridge 250-262-2600

Transportation of Dangerous Goods (TDG) 800-663-3456

Emergency Response Assistance Canada (ERAC) 800-265-0212

Public Works Association of BC (PWABC) 877-356-0699

### BC Ministry of Forest, Lands and Natural Resource Operations

Forest Fire Reporting 800-663-5555  
Peace Forest District Admin: 250-784-1200  
Mark Van Tessel, Resource Manager Office: 250-784-1230

### BC Ministry of Environment - Peace Region

Terry Sawchuk, Environmental Emergency Response Officer Office: 250-787-3391

### CANUTEC

Toll-Free 613-996-6666  
From Cell Phone 888-226-8832  
Inquiries \*666 Admin: 613-992-4624

### Environment & Climate Change Canada

Meteorological Services 604-664-9385

### Department of Fisheries and Oceans Canada (DFO)

Pacific Region 604-666-0384



**SUPPORT SERVICES**

Note: All numbers, unless otherwise indicated, are 24 hours.

**Mobile Air Monitoring\***  
 United Safety - Central Dispatch 800-432-1809  
 Firemaster Oilfield Services - Central Dispatch 877-342-3473  
 HSE Integrated - Central Dispatch 888-346-8260  
 Trojan Safety Services - Fort St. John 250-785-9557  
 Safety Boss - Central Dispatch 800-882-4967

**Oilfield Fire Fighting / Safety Contractors\***  
 Firemaster Oilfield Services - Central Dispatch 877-342-3473  
 HSE Integrated - Central Dispatch 888-346-8260  
 Safety Boss - Central Dispatch 800-882-4967

**Well Control Specialists\***  
 Firemaster Oilfield Services - Central Dispatch 877-342-3473  
 Capstone Blowout Recovery - Central Dispatch 866-347-3911  
 Safety Boss - Central Dispatch 800-882-4967

**Ignition Services**  
 Firemaster Oilfield Services - Central Dispatch 877-342-3473  
 Safety Boss - Central Dispatch 800-882-4967

\*Dispatch support services at a Level 1 Emergency. Response times are expected to be approximately 40 minutes if the support is coming from Fort St. John and 2.5 hours if the support is coming from Grande Prairie.

**Emergency Response Management**  
 H2Safety Services Inc. - Calgary 403-212-2332  
 Toll Free 888-216-2332

**Spill Response**  
 SWAT Consulting 866-610-7928

**Air Traffic Control**  
 NAV Canada 866-992-7433

**Bus Transportation**  
 Homer's Oilfield Service Charters - Dawson Creek 250-219-2247  
 Northern Express - Grande Prairie 780-926-0808

**Helicopter Companies (Day Flying Only)**  
 Yellowhead Helicopters - Fort St. John 250-785-2331  
 Bailey Helicopters - Fort St. John 250-785-2518  
 Canadian Helicopters Ltd. - Fort. St. John 780-429-6900

**WCSS - Zone 6 - Coop C\***  
 Regional Custodian: Clean Harbors Enviro. Services Admin: 250-785-4577  
 Shawn Dorie Cell: 250-261-9404  
 Fax: 250-785-8450

<b>Equipment Location</b>	<b>Equipment Summary</b>
Clean Harbors Surface Rentals 6715 - 85 Avenue Fort St. John, BC	1 OSCAR Trailer (tractor truck) 1 Barge (1 ton w/ 2 5/16" ball hitch and electric brakes) 1 40' Boom Cache Sea-Can (haul w/ winch tractor/trailer) 1 16' Wildlife Trailer 1 Workboat (1/2 ton w/ 2" ball hitch) 1 Drum Skimmer c/w powerpak

**Coop Custodian:** Clean Harbors 250-233-8811  
 Eric Pike Cell: 250-321-0446

<b>Equipment Location</b>	<b>Equipment Summary</b>
4901 - 46 Avenue  Fort Nelson, BC	1 Skid Unit (Bed truck or oilfield float trailer) 2 Muskrat Work Boats (1/2 ton w/ 2" ball hitch)

\*See website for more info - <http://www.wcss.ab.ca>  
 Spill Contingency plan - <http://www.wcss.ab.ca/contingency-manual.shtml>  
 Live Equipment Report - <http://lemis.wcss.ab.ca/PublicInventoryReport.aspx>

**AREA USERS & TIE-INS**

Note: All numbers, unless otherwise indicated, are 24 hours.

**Rail**  
 No railways have been identified within the BC field.

**Trappers**  
**Boundary Lake Unit 1 & 2**  

Trapper ID	Name	Emergency
TR0733T010	Vacant Line	N/A
TR0746T001	Chief & Council, Norman Davis, Gerry Attachie	250-827-3776

**Grazing Lease**  
**Boundary Lake Unit 1**  

Grazing ID	Name	Business
Ran076305	Wesley Allen Berge	250-261-3516
Ran077186	Terry Rempel	250-793-2319

**Guides & Outfitters - Management Unit (MGMT UNIT)**  
 No guides & outfitters have been identified within the BC field.

**Rights Holders - Crown Land**  
**Boundary Lake Unit 1 & 2**  

File Number	Name	Emergency
8007748	Canadian Natural Resources	888-878-3700
8006210, 8009489	ATCO Electric	800-668-5506
8001465	BC Hydro & Power Authority	604-528-1600
9634317, 8007756	Canlin Energy Corp.	866-409-2744
8001785, 8000917	BC Ministry of Forests, Lands & Natural Resource Operations	877-855-3222
8007703, 311747	Esso (Imperial) Oil	403-237-3737
8015164, 8001797	BC Ministry of Transportation	250-565-6481
8014459, 815650	Peace River Regional District	800-670-7773
8008238	Venturion	403-764-6640
8015664	WPD Mountain Wind	888-590-6277
248394	TAQA	800-216-8062

**Rights Holders - Cutblock**  
**Boundary Lake Unit 1 & 2**  

License	Name	Emergency
L49414	Kevin Gould	N/A

**Rights Holders - Woodlot**  
**Boundary Lake Unit 1 & 2**  

License	Name	Emergency
W0244	Penta-K Forest Consultants	N/A

**Oil and Gas**  

BP Canada Energy	800-840-1221	Tie In:	08-03-084-14 W6M
Canlin Energy Corp.*	866-409-2744	Tie In:	06-09-084-14 W6M
			11-14-085-14 W6M
CNRL*	888-878-3700	Tie In:	02-25-085-14 W6M
Enercapita Energy*	866-556-7834	Tie In:	09-19-085-13 W6M
			15-20-085-13 W6M
Exxon Mobil/Imperial*	866-232-9563	Tie In:	06-06-086-13 W6M
			08-31-085-13 W6M
			06-28-085-14 W6M
			06-15-084-14 W6M
			06-17-085-13 W6M
			08-11-084-14 W6M
			08-21-084-14 W6M
			08-22-084-14 W6M
			12-05-085-13 W6M
			12-08-085-13 W6M
			13-32-084-13 W6M
			14-19-084-13 W6M
			14-20-084-13 W6M
			16-11-085-14 W6M
			06-31-084-13 W6M
			14-25-084-14 W6M
			16-23-084-14 W6M
			14-22-084-14 W6M

Harvest Operations	800-760-2826		
Pembina Pipeline*	800-360-4706	Tie In:	13-11-085-14 W6M
			06-06-086-13 W6M

Plateau Pipe line	800-360-4706
Suncor Energy	403-296-3000
TAQA North	800-216-8062
Tervita Corp.	800-327-7455
Venturion Oil	877-303-7728
West Lake Energy	877-307-9004
Yoho Resources	888-537-1771

\*There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.

**AREA USERS & TIE-INS, continued**

Note: All numbers, unless otherwise indicated, are 24 hours.

**Non Resident Land Owners**  

Location	Name	Number
SE 1/4 23-86-14 W6M	Bonnie Rose Piper and Sterling Josef Piper	250-782-2588 250-219-8443
S 1/2 NE 24-86-14 W6M		
S 1/2 of NW 24-86-14 W6M		
SW 1/4 24-86-14 W6M	Bonnie Rose Piper, Lonnie Kenneth Piper, Perry Burl Piper	250-782-2588 250-784-4099 250-719-8154
	Bonnie Rose Piper and Lonnie Kenneth Piper	250-782-2588 250-784-4099
N 1/2 13-86-14 W6M		
N 1/2 14-86-14 W6M		
N 1/2 of SE 1/4 6-86-13 W6M		
SW 1/4 12-86-14 W6M	Bonnie Rose Piper and Laurie Elaine Stevens	250-782-2588 250-784-8212
NW 1/4 31-85-13 W6M	Bonnie Rose Piper and Everett Clinton Piper	250-782-2588 N/A
N 1/2 1-86-14 W6M	Bonnie Rose Piper and Pamela Jane Slater	250-782-2588 914-485-1301
SE 1/4 36-85-14 W6M		
SW 1/4 31-85-13 W6M	Perry Burl Piper	250-719-8154
SW 1/4 19-86-13 W6M		
NE 1/4 18-86-13 W6M		
NW 1/4 18-86-13 W6M		
NW 1/4 of the SE 1/4 19-86-13 W6M	Donna Lee Piper	250-782-6144
S 1/2 of SE 1/4 19-86-13 W6M		
SE 1/4 14-86-14 W6M	Taqa North Ltd.	403-724-5000
N 1/2 11-86-14 W6M		
S 1/2 11-86-14 W6M		
2-86-14 W6M		
NE 1/4 34-85-14 W6M		
35-85-14 W6M		
26-85-14 W6M		
S 1/2 22-85-14 W6M		
SE 1/4 13-85-14 W6M		
NE 1/4 12-85-14 W6M		
SE 1/4 12-85-14 W6M		
N 1/2 6-86-13 W6M	Laurie Elaine Stevens	250-784-8212
NE 1/4 3-86-14 W6M	Kevin & Fred Gould	250-262-6522
NE 1/4 28-85-14 W6M		
14-85-14 W6M		
NE 1/4 15-85-14 W6M		
SE 1/4 15-85-14 W6M		
SW 1/4 15-85-14 W6M		
SW 1/4 3-86-14 W6M	Dennis & Mavis Bloor	250-262-7079
33-85-14 W6M		
W 1/2 34-85-14 W6M	Terry Bloor	250-262-1617
SE 1/4 34-85-14 W6M		
NE 1/4 27-85-14 W6M		
SE 1/4 30-85-13 W6M	Pamela Jane Slater	914-485-1301
SE 1/4 27-85-14 W6M	Troy Brodrick Braun	250-261-8257
SW 1/4 27-85-14 W6M	Clayton Harvey Bahm	250-261-1119
SE 1/4 28-85-14 W6M	Harvey George Bahm and Wendy Ann Bahm	250-262-5490 250-781-3376
NW 1/4 15-85-14 W6M		
SW 1/4 32-84-13 W6M		
E 1/2 29-84-13 W6M		
W 1/2 28-85-14 W6M	Eveline Roselea Ferguson, Cyril Oliver Lyon Ferguson, Martin Lyle Ferguson	250-262-5490 250-781-3376
NW 1/4 21-85-14 W6M	Scott Anthony Roberts Katherine Elizabeth Roberts	250-262-7804
NW 1/4 22-85-14 W6M	Shawn Milton Roberts Brenda Lee Roberts	250-262-7804
NE 1/4 22-85-14 W6M	Samuel Wayne Roberts Shawn Milton Roberts Brenda Lee Roberts	250-781-3421 250-262-7804
NE 1/4 19-85-13 W6M	Ray Daryl Piper	250-782-3049
20-85-13 W6M		
34-84-14 W6M	Alice Vivian Barker	250-781-3422
17-85-14 W6M		
9-85-14 W6M	Ryan Jenner Carlstrom Rodney Dale Carlstrom	250-262-7226 780-595-2148
N 1/2 4-85-14 W6M	Lorne Little	250-261-3091
NW 1/4 7-84-14 W6M	Michael Andrew Giesbrecht Jessica Elaine Cox	250-329-6860
SE 1/4 8-84-14 W6M	Dennis Nelson	250-794-1954
NE 1/4 5-84-14 W6M		250-794-1608
3-84-14 W6M	Ronald James Rempel and Charlotte Ann Rempel	250-719-8213 250-719-8213

**AREA USERS & TIE-INS, continued**

Note: All numbers, unless otherwise indicated, are 24 hours.

**Non Resident Land Owners**  

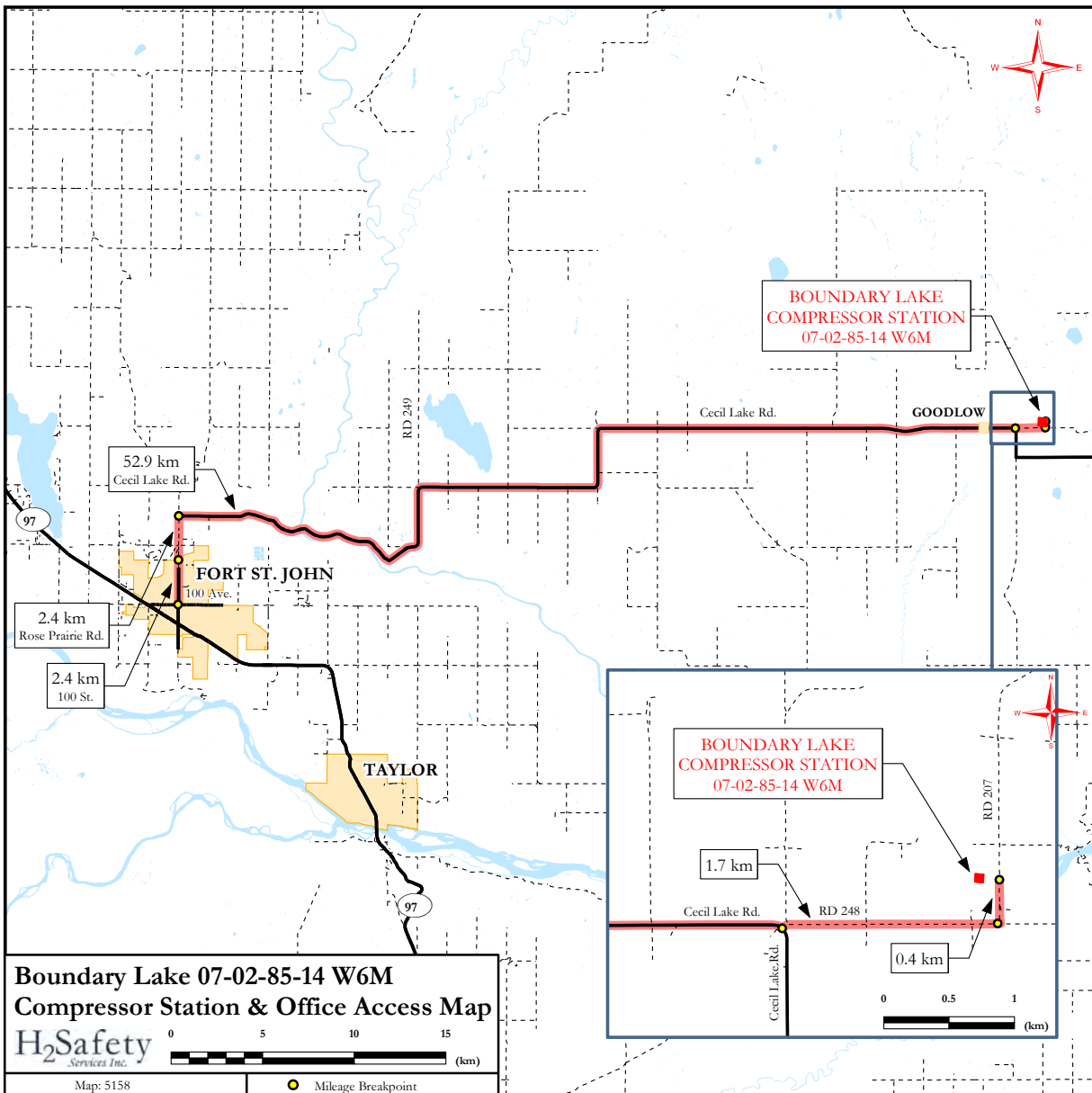
Location	Name	Number
N 1/2 10-85-14 W6M	Artland Farm Operation Ltd.	250-219-3999
11-85-14 W6M		
S 1/2 33-84-14 W6M		
N 1/2 35-84-14 W6M		
SE 1/4 35-84-14 W6M		
27-84-14 W6M		
SE 1/4 28-84-14 W6M		
NE 1/4 28-84-14 W6M		
NW 1/4 28-84-14 W6M		
SW 1/4 28-84-14 W6M		
SW 1/4 21-84-14 W6M		
S 1/2 10-85-14 W6M	464322 BC Ltd	250-719-6308
W 1/2 2-85-14 W6M		
E 1/2 3-85-14 W6M		
W 1/2 3-85-14 W6M		
W 1/2 12-85-14 W6M	Bowes & Herron Ltd.	N/A
W 1/2 7-85-13 W6M	Piper Enterprises Ltd.	250-719-8154
NE 1/4 7-85-13 W6M		
N 1/2 6-85-13 W6M		
S 1/2 6-85-13 W6M		
1-85-14 W6M	Valfrid Richard Velander	250-781-3561
SE 1/4 7-85-13 W6M	James Michael Furze, Theresa Michelle Furze	250-224-5911
8-85-13 W6M	The Nature Trust of British Columbia	N/A
E 1/2 2-85-14 W6M	Esther Elizabeth Jesse and Charles Joseph Bodnar	306-893-2710 306-845-2618
SE 1/4 32-84-13 W6M	Esther Elizabeth Jesse, Charles Joseph Bodnar	306-893-2710 306-845-2618
NW 1/4 32-84-13 W6M	Richard Joseph Greenland, Jael Leila Elizabeth Greenland	250-793-9206
E 1/4 34-84-14 W6M		
SW 1/4 34-84-14 W6M	Edward Beverly Forrester Nedra Noreen Forrester	250-262-8923
SE 1/4 34-84-14 W6M		
SW 1/4 35-84-14 W6M	Wesley Allen Berge	250-261-3516
W 1/2 36-84-14 W6M	Bruce Kindrat, Jeanne Agnes Kindrat	250-785-7575
E 1/2 36-84-14 W6M	Norman Kindrat	778-969-3045
S 1/2 31-84-13 W6M	Jeanine Bahm, Michael Andrew Bahm	250-781-3594 250-781-3294
30-84-14 W6M	Clinton Ray Ollenberger Sabrina Jean Ollenberger	250-261-8377
E 1/2 21-84-14 W6M	Terry Lee Rempel and Agnes Rempel	250-261-2781
SW 1/4 16-84-14 W6M		
W 1/2 22-84-14 W6M	Josef Herbert Ortwin Vogl Antonie Vogl	778-978-5484 250-996-7795
E 1/2 22-84-14 W6M	Frank Bueckert	250-793-0391
15-84-14 W6M	Alan Moi	250-747-2515
NE 1/4 16-84-14 W6M	David Bueckert and Elizabeth Bueckert	250-262-6504 250-262-2794
NW 1/4 16-84-14 W6M	Rose Marie Baldry	250-781-3349
NE 1/4 7-84-14 W6M		
N 1/2 8-84-14 W6M		
N 1/2 17-84-14 W6M	Shannon Lynne Callison	250-261-1650
S 1/2 17-84-14 W6M	Hansa Estates Ltd.	604-261-9235
18-84-14 W6M	Desmond Brian Van Der Merwe Alvina Ann Van Der Merwe	250-781-3659
NW 1/4 4-84-14 W6M	Deborah Nelson, Charlyn Joy Tobler	250-793-2319 250-781-3190

## Boundary Lake BC Unit 1 Site Access from Fort St. John

### DIRECTIONS TO THE BOUNDARY LAKE 07-02-85-14 W6M COMPRESSOR STATION & OFFICE

From the intersection of 100 St. and 100 Ave. in Fort St. John, British Columbia:

- Travel north on 100 St. for 2.4 km. 100 St. becomes Rose Prairie Rd.
- Continue north to stay on Rose Prairie Rd. and travel 2.4 km.
- Turn right (east) onto Cecil Lake Rd. and travel 52.9 km. Cecil Lake Rd will be become Rd. 248.
- Continue east on Rd. 248 and travel 1.7 km.
- Turn left (north) on Rd. 207 and travel 0.4 km to access the Boundary Lake 07-02-85-14 W6M Compressor Station & Office.

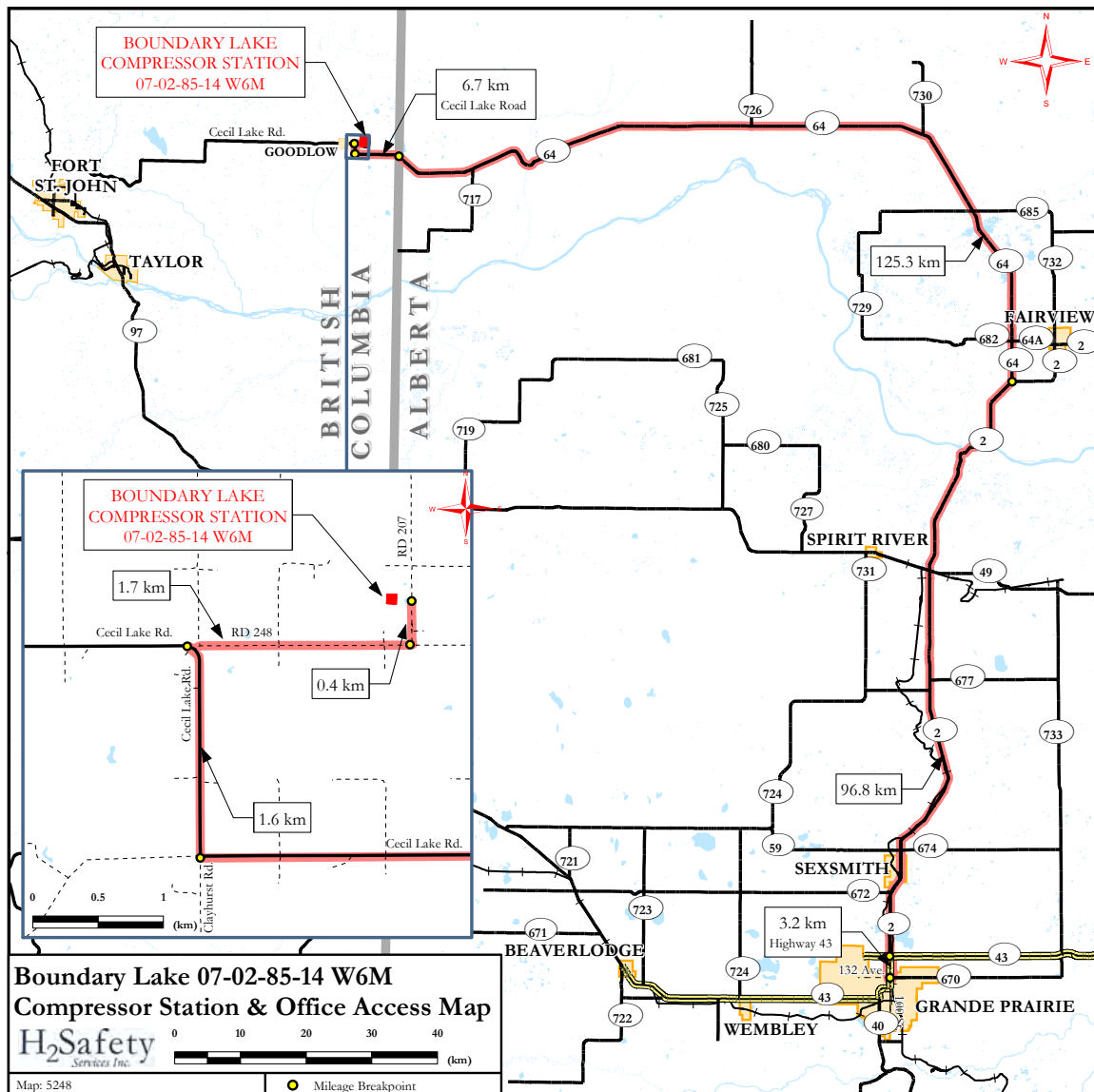


# Boundary Lake BC Unit 1 Site Access from Grande Prairie

## DIRECTIONS TO THE BOUNDARY LAKE 07-02-85-14 W6M COMPRESSOR STATION & OFFICE

From the intersection of Highway 43 / Highway 2 and Highway 670 in Grande Prairie, AB:

- Travel north on Highway 43 for 3.2 km. Highway 43 will become Highway 2.
- Continue north on Highway 2 and travel 96.8 km.
- Turn left (north) on Highway 64 and travel 125.3 km to the intersection of Highway 64 and Cecil Lake Rd. at the AB / BC border.
- Continue straight (west) on Cecil Lake Rd. and travel 6.7 km.
- Turn right (north) to remain on Cecil Lake Rd. and travel 1.6 km.
- Turn right (east) on Rd. 248 and travel 1.7 km.
- Turn left (north) on Rd. 207 and travel 0.4 km to access the Boundary Lake 07-02-85-14 W6M Compressor Station & Office.

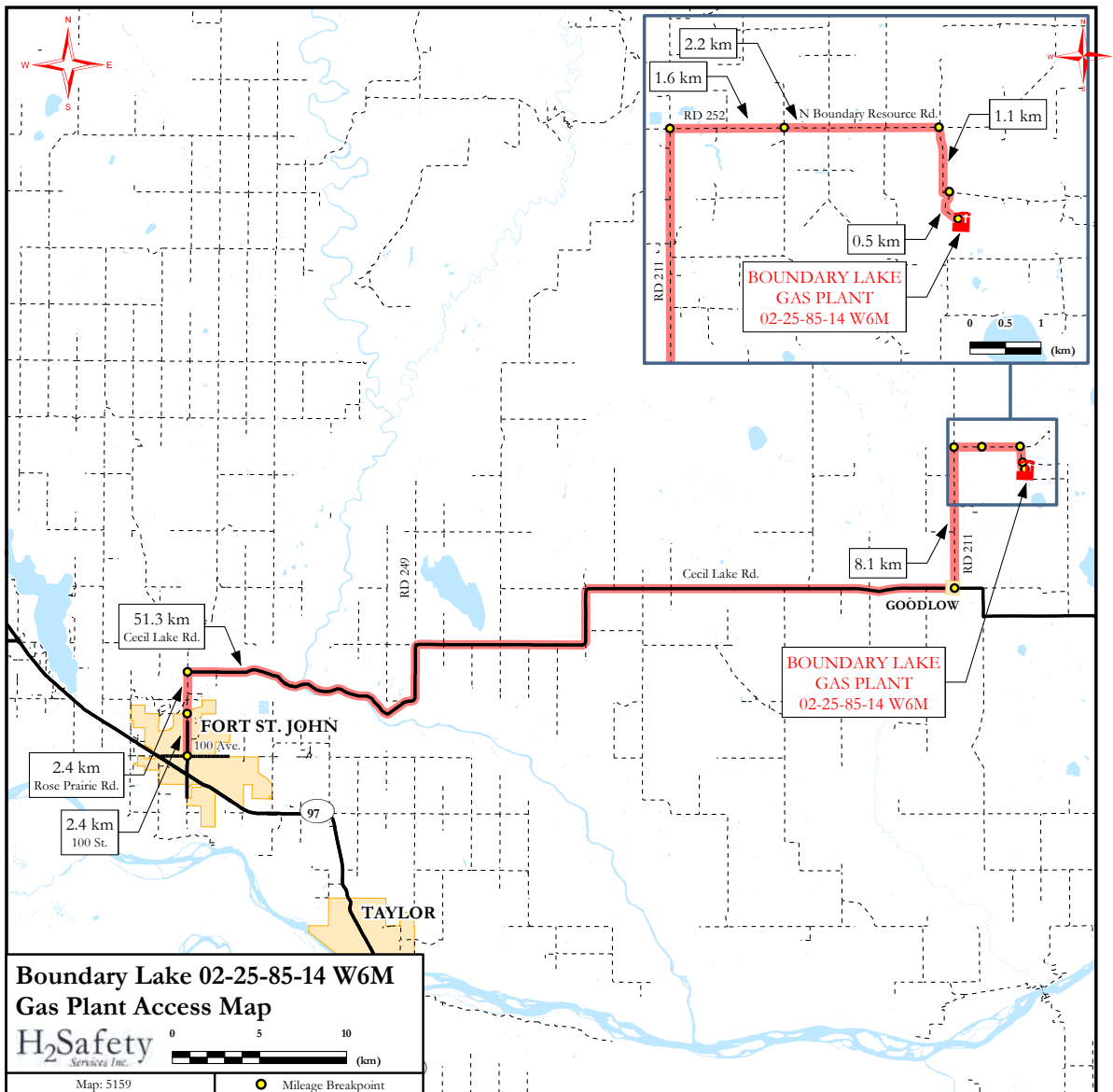


## Boundary Lake BC Unit 2 Site Access from Fort St. John

### DIRECTIONS TO ACCESS THE BOUNDARY LAKE 02-25-85-14 W6M GAS PLANT

From the intersection of 100 St. and 100 Ave. in Fort St. John, British Columbia:

- Travel north on 100 St. for 2.4 km. 100 St. becomes Rose Prairie Rd.
- Continue north to stay on Rose Prairie Rd. 2.4 km.
- Turn right (east) onto Cecil Lake Rd. and travel 51.3 km.
- Turn left (north) onto Rd. 211 and travel 8.1 km.
- Turn right (east) onto Rd. 252 and travel 1.6 km. Rd. 252 becomes N. Boundary Resource Rd.
- Continue east on N. Boundary Resource Rd. and travel 2.2 km.
- Turn right (south) travel 1.1 km to the Access Rd.
- Turn right (south) to continue on the Access Rd. and travel 0.5 km.
- Continue straight to access the Boundary Lake 02-25-85-14 W6M Gas Plant Site.





# Hazard Assessment



**Whitecap Resources British Columbia Field  
Operations**

March 2019

## 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
3.0 Methodology .....	9
4.0 Asset Tables .....	10
5.0 Health Effects .....	11

## 1.0 Introduction

The objective of the hazard assessment process is to identify, assess, and quantify the consequential emergency events which may result from Whitecap Resources' 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.

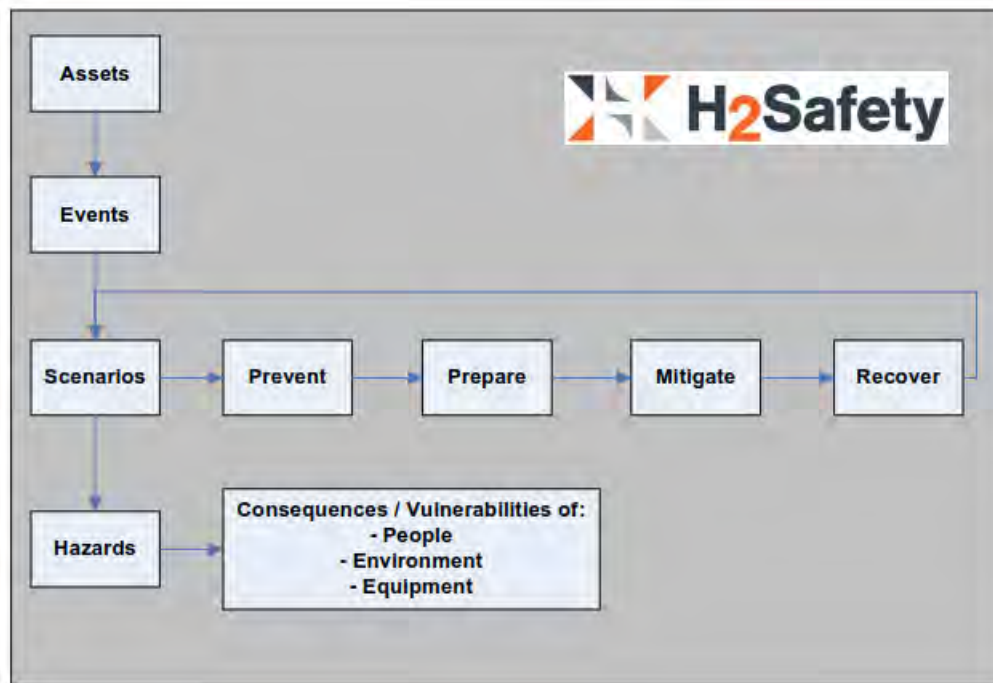
Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2-14 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Whitecap to deliver an effective and timely response protocol for each identified 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
- National Energy Board 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
<b>Fire</b>	<ul style="list-style-type: none"> <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	<ul style="list-style-type: none"> <li>- Repair / Replace damaged equipment</li> </ul>
<b>Container Rupture</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>- Incident investigation</li> <li>- Recover Product</li> <li>- Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
<b>Loading / unloading incident</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>- Incident investigation</li> <li>- Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
<b>Physical Container Damage</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>- Incident investigation</li> <li>- Recover Product</li> <li>- Repair / Replace equipment</li> </ul>

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
<b>Container Degradation</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>- Incident investigation</li> <li>- Recover Product</li> <li>- Repair / Replace equipment</li> </ul>
<b>Environmental Impacts (freezing, excess heat, etc)</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>- Incident investigation</li> <li>- Recover Product</li> <li>- Environmental and/or wildlife cleanup and rehabilitation</li> </ul>
<b>Pipe System Failure</b>	<ul style="list-style-type: none"> <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>- Alberta Boilers Safety Association (ABSA) compliance</li> </ul>	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	<ul style="list-style-type: none"> <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
<b>Company Employees</b>	<ul style="list-style-type: none"> <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>
<b>Other Workers in the Area</b>	<ul style="list-style-type: none"> <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>
<b>General Public</b>	<ul style="list-style-type: none"> <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>
<b>Environment</b>	<ul style="list-style-type: none"> <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>
<b>Equipment</b>	<ul style="list-style-type: none"> <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		

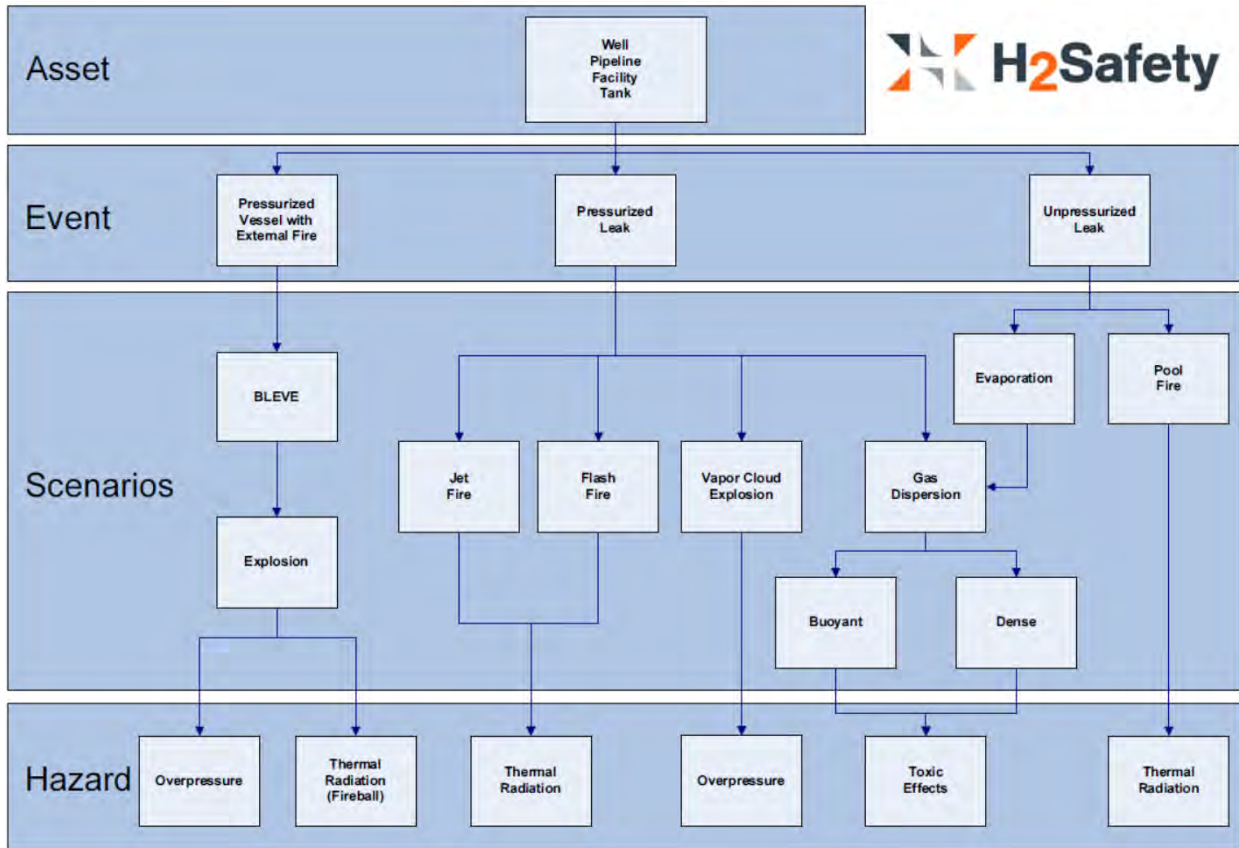
- Thermal radiation – high temperatures associated with the burning of gas can cause significant burns or even death to individuals that are too close to the heat source.
- Overpressure – is the pressure above atmospheric pressure that is caused by the shock wave created from an explosion. Overpressure 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

### 3.0 Methodology

Included below is the methodology used to determine HPZ's.



## 4.0 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).

## 5.0 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
<b>Natural Gas</b>	<ul style="list-style-type: none"> <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>	<p>Hydrogen sulphide gas and hydrocarbon vapours may:</p> <ul style="list-style-type: none"> <li>- Cause irritation of eyes, nose and throat, dizziness and drowsiness.</li> <li>- At higher concentrations, severe irritation 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 severe irritation.</li> </ul>
<b>Carbon Dioxide</b>	<ul style="list-style-type: none"> <li>- Vapours from liquefied gas are initially heavier than air and spread along ground.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Hydrogen Sulphide</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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
<b>Oil or Condensate</b>	<ul style="list-style-type: none"> <li>- Colourless/straw coloured liquid, hydrocarbon and rotten eggs odour.</li> <li>- Material will ignite at normal temperatures.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Nitrogen</b>	<ul style="list-style-type: none"> <li>- Containers may explode when heated. Ruptured cylinders may rocket.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Compressed Air</b>	<ul style="list-style-type: none"> <li>- High pressure air</li> </ul>	<ul style="list-style-type: none"> <li>- Possible burns, abrasions and skin irritation.</li> </ul>
<b>Steam</b>	<ul style="list-style-type: none"> <li>- High pressure, high temperature air/water</li> </ul>	<ul style="list-style-type: none"> <li>- Possible burns and skin irritation.</li> </ul>
<b>Emissions</b>	<ul style="list-style-type: none"> <li>- Carbon monoxide</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Produced Water</b>	<ul style="list-style-type: none"> <li>- Clear to dirty grey liquid.</li> <li>- Flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>



Hazardous Product	General Description	Health Effects
<b>Diesel</b>	<ul style="list-style-type: none"> <li>- Bright, oily liquid; clear to yellow in colour with mild petroleum-like odour.</li> <li>- Flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Gasoline</b>	<ul style="list-style-type: none"> <li>- Clear to slightly yellow or green liquid with Gasoline odour.</li> <li>- Extremely flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Lube Oil</b>	<ul style="list-style-type: none"> <li>- Yellow liquid with petroleum oil like odour.</li> </ul>	<ul style="list-style-type: none"> <li>- May cause skin and eye irritation.</li> <li>- Repeated or long term exposure may cause dizziness or drowsiness.</li> </ul>
<b>Propane</b>	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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>
<b>Corrosion Inhibitor</b>	<ul style="list-style-type: none"> <li>- Black liquid.</li> <li>- Highly flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Scale Inhibitor</b>	<ul style="list-style-type: none"> <li>- Colourless liquid.</li> <li>- Flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>

Hazardous Product	General Description	Health Effects
<b>Paraffin Inhibitor</b>	<ul style="list-style-type: none"> <li>- Clear liquid.</li> <li>- Hydrocarbon-like odour.</li> <li>- Flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Biocide</b>	<ul style="list-style-type: none"> <li>- Colourless liquid.</li> <li>- Pungent odour.</li> <li>- Flammable liquid and vapour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Demulsifier / Emulsion Breaker</b>	<ul style="list-style-type: none"> <li>- Clear amber liquid.</li> <li>- Highly flammable liquid and vapour.</li> <li>- Hydrocarbon-like odour.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Ethylene Glycol</b>	<ul style="list-style-type: none"> <li>- Clear, colourless, viscous liquid.</li> </ul>	<ul style="list-style-type: none"> <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>
<b>Other</b>	<ul style="list-style-type: none"> <li>- 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.</li> </ul>	

**Boundary Lake BC Unit 1 - Facilities**

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	ASSOCIATED WELL OR PIPELINE HPZ (m)	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)
WHITECAP OPERATING												
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 02-29-084-13 002	BCWD0001100	02-29-084-13W6	56.3072497	-120.0164661	56° 18' 26.098"	-120° 0' 59.277"	WD	N/A	WLB	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 03-13-084-14 001	BCST0000350	03-13-084-14W6	56.2770990	-120.0742122	56° 16' 37.556"	-120° 4' 27.163"	S	N/A	21	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 04-33-084-14 001	BCBT00003900	04-33-084-14W6	56.3211204	-120.1604104	56° 19' 16.033"	-120° 9' 37.477"	B	N/A	N/A	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 04-34-084-14 002	BCST00002904	04-34-084-14W6	56.3202569	-120.1308654	56° 19' 12.924"	-120° 7' 51.115"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 05-17-084-13 002	BCBT0010588	05-17-084-13W6	56.2805277	-120.0252629	56° 16' 49.899"	-120° 1' 30.946"	B	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 05-31-084-13 001	BCWI0001686	05-31-084-13W6	56.3242921	-120.0537250	56° 19' 27.451"	-120° 3' 13.41"	WI	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-01-085-14 002	BCST0000362	06-01-085-14W6	56.3389147	-120.0728726	56° 20' 20.092"	-120° 4' 22.341"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-02-085-14 005	BCST0000366	06-02-085-14W6	56.3390171	-120.1000967	56° 20' 20.461"	-120° 6' 0.348"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-03-085-14 002	BCST0000363	06-03-085-14W6	56.3391061	-120.1259926	56° 20' 20.781"	-120° 7' 33.573"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-07-084-14 001	BCBT0000618	06-07-084-14W6	56.2674587	-120.2091477	56° 16' 2.851"	-120° 12' 32.931"	B	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-09-084-14 001	BCST0000337	06-09-084-14W6	56.2656165	-120.1514228	56° 15' 56.219"	-120° 9' 5.122"	S	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-14-084-14 001	BCST0000351	06-14-084-14W6	56.2803168	-120.0999478	56° 16' 49.140"	-120° 5' 59.812"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-14-085-14 001	BCST0000367	06-14-085-14W6	56.3681151	-120.1000232	56° 22' 5.214"	-120° 6' 0.083"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-15-084-14 002	BCST0000352	06-15-084-14W6	56.2808044	-120.1264077	56° 16' 50.895"	-120° 7' 35.067"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-17-084-14 001	BCST0000354	06-17-084-14W6	56.2805895	-120.1765071	56° 16' 50.122"	-120° 10' 35.425"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-17-085-13 001	BCST0000346	06-17-085-13W6	56.3684373	-120.0208538	56° 22' 6.374"	-120° 1' 15.073"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-18-084-13 001	BCST0000338	06-18-084-13W6	56.2809692	-120.0469090	56° 16' 51.489"	-120° 2' 48.872"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-26-084-14 001	BCST0000360	06-26-084-14W6	56.3096148	-120.1001599	56° 18' 34.613"	-120° 6' 0.575"	S	N/A	WLB	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-30-084-13 001	BCST0000341	06-30-084-13W6	56.3101416	-120.0476717	56° 18' 36.509"	-120° 2' 51.618"	S	N/A	WLB	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-31-084-13 001	BCST0000342	06-31-084-13W6	56.3241709	-120.0470583	56° 19' 27.015"	-120° 2' 49.409"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-02-085-14 002	BCGP0000445	07-02-085-14W6	56.3396208	-120.0934234	56° 20' 22.634"	-120° 5' 36.324"	GP	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-02-085-14 001	BCGM0008073	07-02-085-14W6	56.3396208	-120.0934234	56° 20' 22.634"	-120° 5' 36.324"	GM	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-35-084-14 001	BCST0000361	07-35-084-14W6	56.3240036	-120.0924945	56° 19' 26.412"	-120° 5' 32.980"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-01-084-14 001	BCBT00002582	08-01-084-14W6	56.2518681	-120.0624429	56° 15' 6.725"	-120° 3' 44.794"	B	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 003	BCOM0007024	08-02-085-14W6	56.3368448	-120.0858052	56° 20' 12.641"	-120° 5' 8.898"	OM	97.35	363	50	363
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 002	BCBT0000474	08-02-085-14W6	56.3368448	-120.0858052	56° 20' 12.641"	-120° 5' 8.898"	B	97.35	363	50	363
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 006	BCBT0000046	08-02-085-14W6	56.3368448	-120.0858052	56° 20' 12.641"	-120° 5' 8.898"	B	97.35	363	50	363
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 004	BCOM0007030	08-02-085-14W6	56.3368448	-120.0858052	56° 20' 12.641"	-120° 5' 8.898"	OM	97.35	363	50	363
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 005	BCWI0001642	08-02-085-14W6	56.3368448	-120.0858052	56° 20' 12.641"	-120° 5' 8.898"	WI	97.35	363	50	363
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-03-084-14 001	BCST0000347	08-03-084-14W6	56.2517906	-120.1130982	56° 15' 6.446"	-120° 6' 47.153"	S	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-10-084-14 001	BCST0000348	08-10-084-14W6	56.2665697	-120.1130396	56° 15' 59.650"	-120° 6' 46.942"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-11-084-14 001	BCST0000349	08-11-084-14W6	56.2663744	-120.0872856	56° 15' 58.947"	-120° 5' 14.228"	S	100.28	374	N/A	374
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-16-084-14 001	BCST0000353	08-16-084-14W6	56.2806720	-120.1392885	56° 16' 50.419"	-120° 8' 21.438"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-21-084-14 001	BCST0000355	08-21-084-14W6	56.2954673	-120.1395941	56° 17' 43.682"	-120° 8' 22.538"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-22-084-14 002	BCST0000356	08-22-084-14W6	56.2952051	-120.1132038	56° 17' 42.738"	-120° 6' 47.533"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 11-14-085-14 001	BCST0000365	11-14-085-14W6	56.3720458	-120.0979252	56° 22' 19.364"	-120° 5' 52.530"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-05-085-13 001	BCST0000344	12-05-085-13W6	56.3426465	-120.0284510	56° 20' 33.527"	-120° 1' 42.423"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-08-085-13 001	BCST0000345	12-08-085-13W6	56.3571880	-120.0281587	56° 21' 25.876"	-120° 1' 41.371"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-13-084-14 001	BCBT0000049	12-13-084-14W6	56.2844635	-120.0798335	56° 17' 4.068"	-120° 4' 47.400"	B	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-11-085-14 001	BCOM0007141	13-11-085-14W6	56.3612702	-120.1044854	56° 21' 40.572"	-120° 6' 16.147"	OM	N/A	250	N/A	250
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-29-082-13 001	BCWI0000487	13-29-082-13W6	56.1434285	-120.0068340	56° 8' 36.342"	-120° 0' 24.602"	WI	N/A	ROW	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-32-084-13 001	BCST0000343	13-32-084-13W6	56.3318151	-120.0293777	56° 19' 54.534"	-120° 1' 45.759"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-06-084-13 002	BCBT00002175	14-06-084-13W6	56.2584234	-120.0482010	56° 15' 30.324"	-120° 2' 53.523"	B	100.28	374	N/A	374
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-07-084-13 001	BCBT00000045	14-07-084-13W6	56.2735279	-120.0471140	56° 16' 24.700"	-120° 2' 49.610"	B	N/A	130	50	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-19-084-13 001	BCST0000339	14-19-084-13W6	56.3026017	-120.0471982	56° 18' 9.366"	-120° 2' 49.133"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-20-084-13 003	BCST0000340	14-20-084-13W6	56.3027497	-120.0208975	56° 18' 9.898"	-120° 1' 15.231"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-25-084-14 001	BCST0000359	14-25-084-14W6	56.3171458	-120.0736214	56° 19' 1.724"	-120° 4' 25.037"	S	35.95	165	50	165

### Boundary Lake BC Unit 1 - Facilities

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	ASSOCIATED WELL OR PIPELINE HPZ (m)	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	14-28-084-14 001	BCBT0002934	14-28-084-14W6	56.3171646	-120.1526689	56° 19' 1.792"	-120° 9' 9.608"	B	N/A	130	N/A	130
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	16-11-085-14 001	BCST0000364	16-11-085-14W6	56.3605173	-120.0871488	56° 21' 37.862"	-120° 5' 13.735"	S	35.95	165	50	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	16-23-084-14 001	BCST0000357	16-23-084-14W6	56.3025380	-120.0869191	56° 18' 9.136"	-120° 5' 12.908"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	16-24-084-14 001	BCST0000358	16-24-084-14W6	56.3030538	-120.0605061	56° 18' 10.993"	-120° 3' 37.821"	S	35.95	165	N/A	165
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	16-30-082-13 001	BCWH0016169	16-30-082-13W6	56.1434231	-120.0134222	56° 8' 36.323"	-120° 0' 48.319"	WH	N/A	ROW	N/A	100
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE	16-36-084-14 001	BCST0001539	16-36-084-14W6	56.3316405	-120.0605515	56° 19' 53.905"	-120° 3' 37.985"	S	35.95	165	50	165

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 IP=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  
 All Whitecap facilities in the area are included above.

Boundary Lake BC Unit 1 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP SOUR OPERATING														
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-10-085-14	1545	100031008514W602	03-10-085-14W6	56.3495	-120.1257	5.500	0.707	0.0000	100	118	130	1.048	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-20-085-13	6889	100032008513W600	03-20-085-13W6	56.3791	-120.0219	1.200	0.286	0.0000	100	118	130	3.311	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY 03-32-084-13	31476	100043308413W600	03-32-084-13W6	56.3220	-120.0195	3.600	6.659	0.0003	100	118	130	0.232	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-23-084-14	6262	100042308414W600	04-23-084-14W6	56.2907	-120.1035	6.300	0.662	0.0000	100	118	130	0.151	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-05-085-13	2864	100050508513W600	05-05-085-13W6	56.3393	-120.0272	1.400	0.963	0.0000	100	118	130	1.223	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-35-084-14	2729	100053508414W600	05-35-084-14W6	56.3244	-120.1066	1.00	1.074	0.0000	100	118	130	0.427	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-36-084-14	2745	100053608414W600	05-36-084-14W6	56.3245	-120.0793	3.800	0.953	0.0000	100	118	130	1.115	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-01-085-14	761	100060108514W600	06-01-085-14W6	56.3390	-120.0738	1.00	1.813	0.0000	100	118	130	0.719	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-03-085-14	362	100060308514W600	06-03-085-14W6	56.3390	-120.1265	3.400	0.987	0.0000	100	118	130	0.680	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-05-085-13	813	100060508513W600	06-05-085-13W6	56.3386	-120.0208	1.300	0.873	0.0000	100	118	130	1.445	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-06-085-13	789	100060608513W600	06-06-085-13W6	56.3392	-120.0471	1.00	0.997	0.0000	100	118	130	1.119	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-06-085-13	2981	100110608513W600	06-06-085-13W6	56.3394	-120.0471	10.000	0.784	0.0001	100	118	130	1.133	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-07-085-13	2980	100110708513W600	06-07-085-13W6	56.3539	-120.0471	4.00	0.408	0.0000	100	118	130	1.019	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-07-085-13	763	100060708513W600	06-07-085-13W6	56.3536	-120.0471	800	1.255	0.0000	100	118	130	1.009	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-07-085-13	2979	100030708513W600	06-07-085-13W6	56.3539	-120.0469	1.200	1.306	0.0000	100	118	130	1.006	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-11-085-14	282	100061108514W600	06-11-085-14W6	56.3536	-120.0998	1.400	1.261	0.0000	100	118	130	2.405	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-17-085-13	760	100061708513W600	06-17-085-13W6	56.3681	-120.0213	1.000	0.398	0.0000	100	118	130	2.134	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A06-18-085-13	2738	100031808513W600	06-18-085-13W6	56.3683	-120.0476	9.00	0.201	0.0000	100	118	130	2.251	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-29-084-13	1091	100062908413W600	06-29-084-13W6	56.3101	-120.0208	7.900	0.467	0.0000	100	118	130	0.952	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-31-084-13	931	100063108413W600	06-31-084-13W6	56.3245	-120.0471	28.600	1.184	0.0004	100	118	130	0.949	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-32-084-13	965	100063208413W600	06-32-084-13W6	56.3246	-120.0208	1.700	0.421	0.0000	100	118	130	0.517	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-36-084-14	804	100063608414W600	06-36-084-14W6	56.3245	-120.0738	9.00	0.993	0.0000	100	118	130	1.210	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-02-085-14	2865	100070208514W600	07-02-085-14W6	56.3396	-120.0933	2.00	0.562	0.0000	100	118	130	0.912	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-05-085-13	2730	100070508513W600	07-05-085-13W6	56.3391	-120.0145	1.000	0.353	0.0000	100	118	130	1.637	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-14-085-14	3210	100071408514W600	07-14-085-14W6	56.3681	-120.0923	1.00	0.881	0.0000	100	118	130	2.593	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-26-084-14	2868	100072608414W600	07-26-084-14W6	56.3102	-120.0940	1.400	0.852	0.0000	100	118	130	0.897	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-35-084-14	2735	100073508414W600	07-35-084-14W6	56.3244	-120.0933	1.200	0.431	0.0000	100	118	130	0.693	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-02-085-14	788	100080208514W600	08-02-085-14W6	56.3390	-120.0868	4.300	1.786	0.0001	100	118	130	0.598	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-03-085-14	379	100080308514W600	08-03-085-14W6	56.3390	-120.1132	2.900	0.976	0.0000	100	118	130	0.680	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-05-085-13	878	100080508513W600	08-05-085-13W6	56.3392	-120.0078	2.300	0.433	0.0000	100	118	130	1.928	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-10-084-14	1023	100081008414W600	08-10-084-14W6	56.2663	-120.1132	4.00	0.723	0.0000	100	118	130	2.732	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-11-085-14	769	100081108514W600	08-11-085-14W6	56.3535	-120.0868	2.800	0.42	0.0000	100	118	130	2.153	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE A08-14-084-14	33873	100111308414W600	08-14-084-14W6	56.2802	-120.0873	3.000	10.277	0.0004	100	118	130	1.626	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-15-084-14	1076	100081508414W600	08-15-084-14W6	56.2808	-120.1132	6.00	1.21	0.0000	100	118	130	1.165	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-17-085-13	2568	100081708513W600	08-17-085-13W6	56.3683	-120.0067	6.00	0.357	0.0000	100	118	130	2.580	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-085-13	523	100081808513W600	08-18-085-13W6	56.3683	-120.0341	1.900	0.416	0.0000	100	118	130	2.048	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-21-084-14	1120	100082108414W600	08-21-084-14W6	56.2954	-120.1395	4.00	0.913	0.0000	100	118	130	0.822	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-23-084-14	6718	100082308414W600	08-23-084-14W6	56.2968	-120.0857	6.00	0.742	0.0000	100	118	130	1.440	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-24-084-14	978	100082408414W600	08-24-084-14W6	56.2954	-120.0605	4.00	2.423	0.0000	100	118	130	2.870	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-25-084-14	928	100082508414W600	08-25-084-14W6	56.3101	-120.0605	1.500	1.153	0.0000	100	118	130	1.927	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-26-084-14	966	100082608414W600	08-26-084-14W6	56.3099	-120.0868	6.00	0.783	0.0000	100	118	130	1.023	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-27-084-14	743	100082708414W600	08-27-084-14W6	56.3099	-120.1132	1.000	1.529	0.0000	100	118	130	0.992	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-34-084-14	861	100083408414W600	08-34-084-14W6	56.3244	-120.1132	1.900	1.375	0.0000	100	118	130	0.266	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-11-085-14	3211	100111108514W600	11-11-085-14W6	56.3572	-120.0997	6.00	0.93	0.0000	100	118	130	2.252	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-17-085-13	6720	100111708513W600	11-17-085-13W6	56.3710	-120.0214	1.00	0.378	0.0000	100	118	130	2.437	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-30-084-13	2867	100113008413W600	11-30-084-13W6	56.3137	-120.0470	4.000	0.89	0.0000	100	118	130	1.016	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-23-084-14	6263	100122308414W600	12-23-084-14W6	56.2980	-120.1048	8.00	0.417	0.0000	100	118	130	0.688	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-01-085-14	521	100140108514W602	14-01-085-14W6	56.3463	-120.0737	1.400	0.885	0.0000	100	118	130	1.424	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-02-085-14	493	100140208514W600	14-02-085-14W6	56.3463	-120.1000	2.000	0.745	0.0000	100	118	130	1.646	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-03-085-14	363	100140308514W600	14-03-085-14W6	56.3463	-120.1263	3.900	0.953	0.0000	100	118	130	0.846	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-06-085-13	792	100140608513W600	14-06-085-13W6	56.3464	-120.0471	1.200	0.912	0.0000	100	118	130	1.003	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-085-13	368	100140708513W602	14-07-085-13W6	56.3609	-120.0471	4.00	0.658	0.0000	100	118	130	1.525	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-10-084-14	843	100141008414W600	14-10-084-14W6	56.2736	-120.1265	2.00	0.59	0.0000	100	118	130	1.715	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-11-084-14	841	100141108414W600	14-11-084-14W6	56.2730	-120.1002	1.00	1.01	0.0000	100	118	130	1.975	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-085-14	759	100141208514W600	14-12-085-14W6	56.3608	-120.0738	10.000	1.061	0.0001	100	118	130	2.842	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-13-084-14	1080	100141308414W600	14-13-084-14W6	56.2881	-120.0738	1.00	2.03	0.0000	100	118	130	2.006	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-14-084-14	1059	100141408414W600	14-14-084-14W6	56.2881	-120.1002	3.600	0.983	0.0000	100	118	130	0.443	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-15-084-14	755	100141508414W600	14-15-084-14W6	56.2881	-120.1265	1.00	1.726	0.0000	100	118	130	0.691	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-19-084-13	998	100141908413W600	14-19-084-13W6	56.3027	-120.0471	1.400	2.724	0.0000	100	118	130	2.045	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE A14-19-084-13	33872	102083008413W600	14-19-084-13W6	56.3025	-120.0474	1.00	14.571	0.0000	100	118	130	2.070	OIL
WHITECAP RESOURCES INC.	WHITECAP													

**Boundary Lake BC Unit 1 - Sour Wells**

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-21-084-14	1172	100142108414W600	14-21-084-14W6	56.3029	-120.1529	1,100	2,565	0.0000	100	118	130	1.901	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-22-084-14	794	100142208414W600	14-22-084-14W6	56.3027	-120.1265	400	1,792	0.0000	100	118	130	0.788	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-23-084-14	929	100142308414W600	14-23-084-14W6	56.3027	-120.1002	4,000	1,006	0.0000	100	118	130	0.884	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-26-084-14	1111	100142608414W600	14-26-084-14W6	56.3172	-120.1002	8,700	0.571	0.0001	100	118	130	0.410	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-27-084-14	853	100142708414W600	14-27-084-14W6	56.3173	-120.1258	1,400	1,284	0.0000	100	118	130	0.297	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE A14-29-084-13	32470	100122808413W600	14-29-084-13W6	56.3173	-120.0211	2,900	11.18	0.0004	100	118	130	0.260	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-084-13	975	100143008413W600	14-30-084-13W6	56.3173	-120.0471	3,500	0.441	0.0000	100	118	130	0.821	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-31-084-13	888	100143108413W600	14-31-084-13W6	56.3318	-120.0471	400	0.943	0.0000	100	118	130	0.888	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-32-084-13	935	100143208413W600	14-32-084-13W6	56.3318	-120.0208	900	0.562	0.0000	100	118	130	1.319	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-35-084-14	805	100143508414W600	14-35-084-14W6	56.3318	-120.1002	5,500	1.385	0.0001	100	118	130	0.709	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-36-084-14	793	100143608414W600	14-36-084-14W6	56.3318	-120.0738	7,400	0.221	0.0000	100	118	130	0.575	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 15-06-084-13	26609	100150608413W600	15-06-084-13W6	56.2583	-120.0390	1,000	0.281	0.0000	100	118	130	4.646	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-08-085-13	889	100160808513W600	16-08-085-13W6	56.3609	-120.0078	1,200	0.663	0.0000	100	118	130	1.938	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY B16-18-084-13	31399	100141708413W600	16-18-084-13W6	56.2884	-120.0353	3,000	2.806	0.0001	100	118	130	3.481	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-20-084-13	1386	100162008413W600	16-20-084-13W6	56.3027	-120.0078	400	1.545	0.0000	100	118	130	1.809	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-26-084-14	1099	100162608414W600	16-26-084-14W6	56.3172	-120.0868	1,700	17.33	0.0003	100	110	110	0.446	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-29-084-13	1425	100162908413W600	16-29-084-13W6	56.3173	-120.0078	4,600	17.33	0.0009	100	110	110	0.531	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-36-084-14	798	100163608414W600	16-36-084-14W6	56.3318	-120.0605	2,200	1.732	0.0000	100	118	130	0.143	OIL
<b>WHITECAP SOUR SUSPENDED</b>														
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-25-084-14	1010	100142408414W600	03-25-084-14W6	56.3049	-120.0738	10,000	0.397	0.0000	100	118	130	1.931	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-01-085-14	2736	100030108514W600	06-01-085-14W6	56.3388	-120.0737	3,300	1.721	0.0001	100	118	130	0.709	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-15-085-14	1368	100061508514W602	06-15-085-14W6	56.3681	-120.1265	5,000	0.23	0.0000	100	118	130	0.503	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-17-084-14	1102	100061708414W600	06-17-084-14W6	56.2811	-120.1799	400	0.842	0.0000	100	118	130	0.920	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-09-084-14	1367	100080908414W600	08-09-084-14W6	56.2663	-120.1395	4,000	0.159	0.0000	100	118	130	1.420	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-10-085-14	360	100081008514W600	08-10-085-14W6	56.3535	-120.1131	10,000	0.42	0.0000	100	118	130	1.757	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-11-084-14	1136	100081108414W600	08-11-084-14W6	56.2662	-120.0873	3,000	0.532	0.0000	100	118	130	2.934	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-14-084-14	866	100081408414W600	08-14-084-14W6	56.2802	-120.0868	3,000	0.37	0.0000	100	118	130	1.643	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-16-084-14	1128	100081608414W600	08-16-084-14W6	56.2810	-120.1395	200	0.685	0.0000	100	118	130	0.790	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-17-084-14	1151	100081708414W600	08-17-084-14W6	56.2808	-120.1659	100	0.477	0.0000	100	118	130	0.782	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-084-14	1273	100081808414W600	08-18-084-14W6	56.2810	-120.1925	100	0.455	0.0000	100	118	130	0.798	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-35-084-14	815	100083508414W600	08-35-084-14W6	56.3244	-120.0868	10,000	0.301	0.0000	100	118	130	0.815	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-14-085-14	3179	100121408514W600	12-14-085-14W6	56.3720	-120.1066	900			100		110	1.746	SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-05-085-13	832	100140508513W600	14-05-085-13W6	56.3464	-120.0208	1,000	0.84	0.0000	100	118	130	0.808	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-14-085-14	10376	102141408514W600	14-14-085-14W6	56.3739	-120.1006	2,500	1.858	0.0001	100	118	130	2.142	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-084-14	21070	100143008414W600	14-30-084-14W6	56.3161	-120.2059	4,500	31.97	0.0017	100	118	130	0.524	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-34-084-14	6347	102143408414W600	14-34-084-14W6	56.3314	-120.1261	3,000	0.139	0.0000	100	118	130	0.201	SUSPENDED OIL

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

### Boundary Lake BC Unit 1 - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	ASSIGNED EPZ (m)	STATUS
WHITECAP SOUR OPERATING																								
WHITECAP RESOURCES INC.	-	14-06-084-13W6	08-11-084-14W6	-	-	-	-	-	-	7437	2	-	1	1,2	SG	168.3	3.45	3.2	9,726	0.50	5	0.71	374	Q
WHITECAP RESOURCES INC.	-	08-11-084-14W6	03-15-084-14W6	-	-	-	-	-	-	24055	3	-	2	1,2	SG	168.3	3.45	3.2	9,726	0.50	5	0.71	374	Q
WHITECAP RESOURCES INC.	-	14-14-085-14W6	11-14-085-14W6	-	-	-	CV	56.3720	-120.0979	7908	1	-	3	3	SG	88.9	0.28	4.0	4,014	0.10	5	0.86	110	Q
WHITECAP RESOURCES INC.	-	08-02-085-14W6	PL	10-10-085-14W6	PL	-	-	-	-	23032	1	-	4	4	SG	114.3	3.90	4.8	9,930	2.00	5	0.71	363	Q

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

**Boundary Lake BC Unit 1 - Sour Oil Pipelines**

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	ASSIGNED EPZ (m)	STATUS
WHITECAP SOUR OPERATING																												
WHITECAP RESOURCES INC.	-	08-11-084-14W6	16-23-084-14W6	-	-	-	-	-	-	1128	7	-	1	1 to 129	SE	124.0	4.17	12.5	3,450	0.32	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-10-084-14W6	08-11-084-14W6	-	-	-	-	-	-	1138	5	-	2	1 to 129	SE	124.0	1.40	12.5	3,450	0.32	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	08-02-085-14W6	-	-	-	-	-	-	1242	8	-	3	1 to 129	OM	254.0	2.45	0.0	689	0.17	5	0.97	50000	2350	21.277	8.3734	165	Q
WHITECAP RESOURCES INC.	-	07-02-085-14W6	08-02-085-14W6	-	-	-	-	-	-	1242	10	-	4	1 to 129	OM	152.4	0.20	0.0	689	0.02	5	0.97	50000	2350	21.277	8.3734	165	Q
WHITECAP RESOURCES INC.	-	06-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	1242	13	-	5	1 to 129	OM	203.2	0.62	0.0	689	0.01	5	0.97	50000	2350	21.277	8.3734	165	Q
WHITECAP RESOURCES INC.	-	06-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	1242	14	-	6	1 to 129	OM	101.6	0.12	0.0	689	0.01	5	0.97	50000	2350	21.277	8.3734	165	Q
WHITECAP RESOURCES INC.	-	06-01-085-14W6	08-02-085-14W6	-	-	-	-	-	-	1242	15	-	7	1 to 129	OM	203.2	0.89	0.0	689	0.01	5	0.97	50000	2350	21.277	8.3734	165	Q
WHITECAP RESOURCES INC.	-	14-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	2595	2	-	8	1 to 129	OM	60.3	0.76	3.2	3,450	0.2	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-15-085-14W6	11-14-085-14W6	-	-	-	-	-	-	3164	1	-	9	1 to 129	OE	88.9	1.85	4.0	1,550	0.50	5	0.97	50000	2350	21.277	17.496	165	Q
WHITECAP RESOURCES INC.	-	08-28-084-14W6	06-03-085-14W6	-	-	-	-	-	-	3730	2	-	10	1 to 129	OE	114.3	3.50	4.0	3,450	0.03	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	3769	1	-	11	1 to 129	OE	60.3	0.86	0.0	3,450	0.14	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	07-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	3769	10	-	12	1 to 129	OE	60.3	0.40	0.0	3,450	0.02	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-11-084-14W6	06-14-084-14W6	-	-	-	-	-	-	3769	22	-	13	1 to 129	OE	60.3	0.60	0.0	3,450	0.01	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	07-26-084-14W6	16-23-084-14W6	-	-	-	-	-	-	3769	28	-	14	1 to 129	OE	60.3	0.78	0.0	3,450	0.14	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-15-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	29	-	15	1 to 129	OE	60.3	1.20	0.0	3,450	0.01	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-27-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	33	-	16	1 to 129	OE	60.3	1.69	0.0	3,450	0.1	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-27-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	34	-	17	1 to 129	OE	60.3	3.57	0.0	3,450	0.14	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	35	-	18	1 to 129	OE	60.3	1.18	0.0	3,099	0.04	5	0.89	50000	2350	21.277	36.567	165	Q
WHITECAP RESOURCES INC.	-	05-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	39	-	19	1 to 129	OE	60.3	1.40	0.0	3,450	0.14	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	07-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	40	-	20	1 to 129	OE	60.3	1.40	0.0	3,450	0.1	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	11-30-084-13W6	14-25-084-14W6	-	-	-	-	-	-	3769	50	-	21	1 to 129	OE	60.3	1.73	0.0	3,450	0.4	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	05-36-084-14W6	14-25-084-14W6	-	-	-	-	-	-	3769	51	-	22	1 to 129	OE	60.3	0.75	0.0	3,450	0.38	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	07-14-085-14W6	08-14-085-14W6	-	-	-	-	-	-	3769	54	-	23	1 to 129	MP	60.3	0.30	0.0	3,450	0.01	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	05-35-084-14W6	07-35-084-14W6	-	-	-	-	-	-	3769	60	-	24	1 to 129	OE	88.9	0.86	0.0	3,450	0.01	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	62	-	25	1 to 129	OE	60.3	0.71	0.0	8,275	0.13	5	0.74	50000	2350	21.277	115.27	165	Q
WHITECAP RESOURCES INC.	-	04-23-084-14W6	06-14-084-14W6	-	-	-	-	-	-	4086	1	-	26	1 to 129	OE	60.3	1.20	3.9	3,450	0.63	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	12-23-084-14W6	10-23-084-14W6	-	-	-	-	-	-	4086	2	-	27	1 to 129	OE	60.3	0.60	3.9	9,900	0.08	5	0.71	50000	2350	21.277	144.43	165	Q
WHITECAP RESOURCES INC.	-	11-17-085-13W6	06-17-085-13W6	-	-	-	-	-	-	4516	1	-	28	1 to 129	OE	88.9	0.25	3.9	3,450	0.10	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-23-084-14W6	08-23-084-14W6	-	-	-	-	-	-	4517	1	-	29	1 to 129	OE	88.9	0.07	4.0	9,930	0.10	5	0.71	50000	2350	21.277	144.98	165	Q
WHITECAP RESOURCES INC.	-	04-16-084-14W6	06-16-084-14W6	-	-	-	-	-	-	4518	1	-	30	1 to 129	OE	88.9	0.69	4.0	9,930	0.10	5	0.71	50000	2350	21.277	144.98	165	Q
WHITECAP RESOURCES INC.	-	06-16-084-14W6	08-16-084-14W6	-	-	-	-	-	-	4518	2	-	31	1 to 129	OE	60.3	0.70	0.0	9,930	0.05	5	0.71	50000	2350	21.277	144.98	165	Q
WHITECAP RESOURCES INC.	-	07-35-084-14W6	08-35-084-14W6	-	-	-	-	-	-	4586	7	-	32	1 to 129	OE	88.9	0.30	0.0	3,450	0.12	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-21-084-14W6	01-21-084-14W6	-	-	-	-	-	-	4586	10	-	33	1 to 129	OE	114.3	0.61	0.0	3,450	0.04	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-19-084-13W6	16-24-084-14W6	-	-	-	-	-	-	4586	17	-	34	1 to 129	OE	168.3	0.91	0.0	3,450	0.14	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-17-085-13W6	12-08-085-13W6	-	-	-	-	-	-	4586	20	-	35	1 to 129	OE	88.9	1.31	0.0	3,450	0.1	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-03-085-14W6	06-02-085-14W6	-	-	-	-	-	-	4586	29	-	36	1 to 129	OE	114.3	1.61	0.0	3,450	0.34	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-36-084-14W6	14-25-084-14W6	-	-	-	-	-	-	4586	34	-	37	1 to 129	OE	88.9	0.72	3.9	3,450	0.09	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	03-20-085-13W6	06-17-085-13W6	-	-	-	-	-	-	4695	1	-	38	1 to 129	OE	88.9	1.32	4.0	3,450	0.12	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6	08-02-084-14W6	-	-	-	-	-	-	6120	1	-	39	1 to 129	OE	168.3	1.74	5.6	5,103	0.22	5	0.83	50000	2350	21.277	64.031	165	Q
WHITECAP RESOURCES INC.	-	04-34-084-14W6	04-34-084-14W6	-	-	-	-	-	-	7483	1	-	40	1 to 129	SE	60.3	0.04	3.9	750	0.15	5	0.97	50000	2350	21.277	9.0197	165	Q
WHITECAP RESOURCES INC.	-	16-04-085-14W6	06-03-085-14W6	-	-	-	-	-	-	8168	1	-	41	1 to 129	CO	60.3	1.25	3.9	3,448	0.35	5	0.88	50000	2350	21.277	41.09	165	Q
WHITECAP RESOURCES INC.	-	08-18-084-14W6	06-17-084-14W6	-	-	-	-	-	-	8195	1	-	42	1 to 129	CO	60.3	1.26	3.9	3,448	0.35	5	0.88	50000	2350	21.277	41.09	165	Q
WHITECAP RESOURCES INC.	-	08-26-084-14W6	16-23-084-14W6	-	-	-	-	-	-	8196	1	-	43	1 to 129	CO	60.3	0.77	3.9	3,448	0.35	5	0.88	50000	2350	21.277	41.09	165	Q



**Boundary Lake BC Unit 1 - Sour Oil Pipelines**

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	14-17-085-13W6	WE 06-17-085-13W6	PL	-	-	-	-	-	21667	1	-	65	1 to 129	OE	60.3	0.81	3.9	3,450	0.20	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	15-06-084-13W6	WE 14-06-084-13W6	PL	-	-	-	-	-	22325	1	-	66	1 to 129	OE	88.9	0.64	3.2	9,930	0.08	5	0.71	50000	2350	21.277	144.98	165	Q
WHITECAP RESOURCES INC.	-	06-32-084-13W6	UN 13-32-084-13W6	UN	-	-	-	-	-	23200	3	-	67	1 to 129	SE	69.0	0.99	7.5	4,960	0.32	5	0.84	50000	2350	21.277	61.949	165	Q
WHITECAP RESOURCES INC.	-	14-32-084-13W6	UN 13-32-084-13W6	UN	-	-	-	-	-	23201	3	-	68	1 to 129	SE	69.0	0.52	7.5	4,960	0.32	5	0.84	50000	2350	21.277	61.949	165	Q
WHITECAP RESOURCES INC.	-	06-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239	1	-	69	1 to 129	OM	60.3	1.36	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239	2	-	70	1 to 129	OM	60.3	0.55	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239	3	-	71	1 to 129	OE	60.3	1.35	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239	4	-	72	1 to 129	OM	60.3	0.65	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	13-28-084-13W6	08-02-085-14W6	-	-	-	-	-	-	23242	1	-	73	1 to 129	OM	273.0	5.80	0.0	3,450	0.20	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23259	1	-	74	1 to 129	OM	60.3	1.42	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23260	1	-	75	1 to 129	OM	60.3	0.62	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23260	2	-	76	1 to 129	OM	60.3	0.63	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23261	1	-	77	1 to 129	OM	60.3	1.37	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23261	2	-	78	1 to 129	OM	60.3	0.52	3.9	2,450	1.00	5	0.92	50000	2350	21.277	28.466	165	Q
WHITECAP RESOURCES INC.	-	06-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23261	3	-	79	1 to 129	OM	60.3	1.40	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23267	1	-	80	1 to 129	OM	60.3	0.85	0.0	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-35-084-14W6	06-02-085-14W6	-	-	-	-	-	-	23270	2	-	81	1 to 129	OM	60.3	0.89	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-15-084-14W6	06-15-084-14W6	-	-	-	-	-	-	23276	1	-	82	1 to 129	OM	60.3	0.80	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6	14-10-084-14W6	-	-	-	-	-	-	23276	2	-	83	1 to 129	OM	60.3	0.19	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6	06-15-084-14W6	-	-	-	-	-	-	23276	3	-	84	1 to 129	OM	60.3	0.62	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-17-084-14W6	08-17-084-14W6	-	-	-	-	-	-	23279	1	-	85	1 to 129	OM	60.3	0.86	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	23281	1	-	86	1 to 129	OM	60.3	0.06	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-21-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	4	-	87	1 to 129	OM	60.3	1.33	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299	1	-	88	1 to 129	OM	60.3	1.10	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-13-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299	2	-	89	1 to 129	OM	60.3	1.21	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299	3	-	90	1 to 129	OM	60.3	0.78	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-12-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299	4	-	91	1 to 129	OM	60.3	0.87	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23300	2	-	92	1 to 129	OM	60.3	0.78	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-14-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23301	1	-	93	1 to 129	OM	60.3	1.17	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-24-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23302	1	-	94	1 to 129	OM	60.3	0.94	0.0	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23308	1	-	95	1 to 129	OM	60.3	1.93	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-30-084-13W6	06-31-084-13W6	-	-	-	-	-	-	23312	1	-	96	1 to 129	OM	60.3	0.72	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-26-084-14W6	14-25-084-14W6	-	-	-	-	-	-	23328	1	-	97	1 to 129	OM	60.2	1.67	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-19-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23335	1	-	98	1 to 129	OM	60.3	1.22	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-30-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23336	1	-	99	1 to 129	OM	60.3	1.10	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-18-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23337	1	-	100	1 to 129	OM	60.3	1.69	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-11-084-14W6	08-11-084-14W6	-	-	-	-	-	-	23339	1	-	101	1 to 129	OM	60.3	0.82	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-23-084-14W6	16-23-084-14W6	-	-	-	-	-	-	23366	1	-	102	1 to 129	OM	60.3	0.81	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-23-084-14W6	16-23-084-14W6	-	-	-	-	-	-	23367	2	-	103	1 to 129	OM	60.3	0.69	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-25-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23368	1	-	104	1 to 129	OM	60.3	0.69	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-13-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23369	1	-	105	1 to 129	OM	60.3	2.14	3.9	3,450	0.01	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23377	1	-	106	1 to 129	OM	60.3	0.77	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	14-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23377	2	-	107	1 to 129	OM	60.3	1.58	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	11-20-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23377	4	-	108	1 to 129	OM	60.3	0.46	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	16-20-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23378	1	-	109	1 to 129	OM	60.3	0.79	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	06-18-085-13W6	08-18-085-13W6	-	-	-	-	-	-	23439	1	-	110	1 to 129	OM	60.3	0.82	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-18-085-13W6	06-17-085-13W6	-	-	-	-	-	-	23440	1	-	111	1 to 129	OM	60.3	0.80	3.9	3,450	1.00	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-17-085-13W6	UN 06-17-085-13W6	UN	-	-	-	-	-	23481	1	-	112	1 to 129	SE	97.0	0.94	10.0	3,450	0.32	5	0.88	50000	2350	21.277	41.117	165	Q
WHITECAP RESOURCES INC.	-	08-17-085-13W6	UN 06-17-085-13W6</																									

### Boundary Lake BC Unit 1 - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	ASSIGNED EPZ (m)	STATUS
WHITECAP SOUR DEACTIVATED																												
WHITECAP RESOURCES INC.	-	06-20-085-13W6	06-17-085-13W6	-	-	-	-	-	-	3123	1	-	130	130	OE	88.9	1.65	4.0	1,720	0.32	5							V
WHITECAP RESOURCES INC.	-	16-17-085-13W6	06-17-085-13W6	-	-	-	-	-	-	8170	1	-	131	131	CO	60.3	1.10	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	16-27-084-14W6	08-22-084-14W6	-	-	-	-	-	-	8172	1	-	132	132	OE	60.3	2.58	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	08-09-084-14W6	08-09-084-14W6	-	-	-	-	-	-	8197	1	-	133	133	CO	60.3	0.18	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	05-10-084-14W6	06-10-084-14W6	-	-	-	-	-	-	8197	4	-	134	134	CO	60.3	0.54	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	06-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	8197	5	-	135	135	CO	60.3	0.78	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	07-03-085-14W6	06-03-085-14W6	-	-	-	-	-	-	8198	3	-	136	136	CO	60.3	0.40	3.9	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	06-20-085-13W6	06-17-085-13W6	-	-	-	-	-	-	8204	1	-	137	137	CO	114.3	1.68	6.0	3,448	0.35	5							V
WHITECAP RESOURCES INC.	-	06-32-084-13W6	UN 13-32-084-13W6	UN	-	-	-	-	-	23200	1	-	138	138	OM	60.3	0.97	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-32-084-13W6	13-32-084-13W6	-	-	-	-	-	-	23200	2	-	139	139	OM	60.3	1.56	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23240	1	-	140	140	OM	60.3	1.40	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23266	1	-	141	141	OM	60.3	1.66	0.0	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23266	2	-	142	142	OM	60.3	1.98	0.0	2,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23266	3	-	143	143	OM	60.3	1.17	0.0	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-35-084-14W6	06-02-085-14W6	-	-	-	-	-	-	23270	1	-	144	144	OM	60.3	2.06	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	23270	3	-	145	145	OM	60.3	1.11	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-35-084-14W6	06-02-085-14W6	-	-	-	-	-	-	23270	4	-	146	146	OM	60.3	1.70	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-17-084-14W6	14-16-084-14W6	-	-	-	-	-	-	23282	5	-	147	147	OM	60.3	1.04	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	14-16-084-14W6	15-16-084-14W6	-	-	-	-	-	-	23282	6	-	148	148	OM	60.3	0.06	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	15-16-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	7	-	149	149	OM	60.3	0.85	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-16-084-14W6	16-16-084-14W6	-	-	-	-	-	-	23282	8	-	150	150	OM	60.3	0.19	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-16-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	9	-	151	151	OM	60.3	0.60	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-21-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	10	-	152	152	OM	60.3	1.24	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-20-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	11	-	153	153	OM	60.3	1.90	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-10-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299	5	-	154	154	OM	60.3	1.92	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-14-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23300	1	-	155	155	OM	60.3	0.86	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	08-31-084-13W6	06-31-084-13W6	-	-	-	-	-	-	23313	1	-	156	156	OM	60.3	0.54	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-30-084-13W6	06-31-084-13W6	-	-	-	-	-	-	23314	1	-	157	157	OM	60.3	1.20	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-25-084-14W6	14-25-084-14W6	-	-	-	-	-	-	23329	1	-	158	158	OM	60.2	0.82	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-26-084-14W6	14-25-084-14W6	-	-	-	-	-	-	23329	2	-	159	159	OM	60.2	0.86	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-19-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23337	2	-	160	160	OM	60.3	0.88	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	16-19-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23337	3	-	161	161	OM	60.3	0.81	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-30-084-13W6	14-19-084-13W6	-	-	-	-	-	-	23338	1	-	162	162	OM	60.3	0.79	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	01-23-084-14W6	08-23-084-14W6	-	-	-	-	-	-	23367	1	-	163	163	OM	60.2	0.58	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	03-25-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23370	1	-	164	164	OM	60.3	1.04	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-24-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23373	1	-	165	165	OM	60.3	1.32	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-25-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23374	1	-	166	166	OM	60.3	1.13	3.9	3,450	1.00	5							V
WHITECAP RESOURCES INC.	-	06-20-084-13W6	11-20-084-13W6	-	-	-	-	-	-	23377	3	-	167	167	OM	60.3	0.39	3.9	3,450	1.00	5							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 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=Plugging 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

**Boundary Lake BC Unit 1 - Sweet Wells**

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
<b>WHITECAP SWEET OPERATING</b>											
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 01-02-085-14	6918	100010208514W602	01-02-085-14W6	56.3347	-120.0868	0		WLB		BRINE DISPOSAL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-15-084-14	6385	100021508414W600	02-15-084-14W6	56.2776	-120.1190	0	118	130	1.644	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-15-085-14	3189	100021508514W600	02-15-085-14W6	56.3649	-120.1190	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-29-084-13	7820	100022908413W602	02-29-084-13W6	56.3074	-120.0167	0		WLB		BRINE DISPOSAL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-11-085-14	3182	100031108514W600	03-11-085-14W6	56.3499	-120.1001	0	118	130	2.017	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-16-084-14	6719	100041608414W600	04-16-084-14W6	56.2769	-120.1600	0	118	130	0.240	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-25-084-14	1219	100042508414W600	04-25-084-14W6	56.3063	-120.0802	0	118	130	1.568	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A04-34-084-14	10643	102043408414W600	04-34-084-14W6	56.3200	-120.1314	0	118	130	0.474	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-13-085-14	3191	100051308514W600	05-13-085-14W6	56.3681	-120.0802	0	118	130	3.330	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-14-085-14	4990	100051408514W600	05-14-085-14W6	56.3679	-120.1067	0	118	130	1.714	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-14-085-14	4990	100051408514W602	05-14-085-14W6	56.3679	-120.1067	0	118	130	1.714	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W600	05-31-084-13W6	56.3247	-120.0534	0	118	130	1.040	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W603	05-31-084-13W6	56.3247	-120.0534	0	118	130	1.040	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W604	05-31-084-13W6	56.3247	-120.0534	0	118	130	1.040	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W600	05-31-084-13W6	56.3247	-120.0534	0	118	130	1.040	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY C06-02-085-14	2911	100050208514W600	06-02-085-14W6	56.3389	-120.1005	0	118	130	0.946	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A06-02-085-14	6223	102060208514W600	06-02-085-14W6	56.3385	-120.0989	0	118	130	0.992	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-06-085-13	2744	100030608513W600	06-06-085-13W6	56.3394	-120.0469	0	118	130	1.146	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-08-085-13	847	100060808513W600	06-08-085-13W6	56.3536	-120.0208	0	118	130	0.816	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-09-084-14	5865	100060908414W600	06-09-084-14W6	56.2663	-120.1527	0	118	130	1.057	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-10-084-14	1024	100061008414W600	06-10-084-14W6	56.2663	-120.1265	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-11-084-14	1127	100061108414W600	06-11-084-14W6	56.2661	-120.1002	0	118	130	2.741	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-12-084-14	6092	100061208414W600	06-12-084-14W6	56.2665	-120.0736	0	118	130	3.336	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-13-084-14	989	100061308414W600	06-13-084-14W6	56.2809	-120.0738	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-13-085-14	758	100061308514W600	06-13-085-14W6	56.3681	-120.0738	0	118	130	3.272	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-14-084-14	803	100061408414W600	06-14-084-14W6	56.2802	-120.1002	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-14-085-14	1124	100061408514W600	06-14-085-14W6	56.3681	-120.1002	0	118	130	2.113	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-16-084-14	1035	100061608414W600	06-16-084-14W6	56.2808	-120.1529	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-18-084-13	1041	100061808413W600	06-18-084-13W6	56.2811	-120.0469	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY 05-18-084-13	32401	100021308414W600	06-18-084-13W6	56.2805	-120.0504	0	118	130	3.613	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-18-085-13	734	100061808513W600	06-18-085-13W6	56.3683	-120.0471	0	118	130	2.238	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-19-084-13	1098	100061908413W600	06-19-084-13W6	56.2955	-120.0476	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-20-084-13	1117	100062008413W600	06-20-084-13W6	56.2955	-120.0208	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-20-085-13	524	100062008513W600	06-20-085-13W6	56.3832	-120.0200	0	118	130	3.779	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-21-084-14	1157	100062108414W600	06-21-084-14W6	56.2954	-120.1529	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-22-084-14	780	100062208414W600	06-22-084-14W6	56.2953	-120.1265	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-23-084-14	1017	100062308414W600	06-23-084-14W6	56.2953	-120.1002	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-24-084-14	1036	100062408414W600	06-24-084-14W6	56.2954	-120.0738	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-26-084-14	927	100062608414W600	06-26-084-14W6	56.3099	-120.1002	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-27-084-14	802	100062708414W600	06-27-084-14W6	56.3099	-120.1265	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-30-084-13	1019	100063008413W600	06-30-084-13W6	56.3101	-120.0471	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-31-084-13	931	100063108413W602	06-31-084-13W6	56.3245	-120.0471	0	118	130	0.949	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-35-084-14	833	100063508414W600	06-35-084-14W6	56.3244	-120.1002	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-31-084-13	2734	100073108413W600	07-31-084-13W6	56.3249	-120.0406	0	118	130	0.693	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-01-085-14	770	100080108514W600	08-01-085-14W6	56.3392	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-06-085-13	795	100080608513W600	08-06-085-13W6	56.3392	-120.0341	0	118	130	1.205	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-07-085-13	807	100080708513W600	08-07-085-13W6	56.3536	-120.0341	0	118	130	0.427	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-08-084-14	6101	100080808414W600	08-08-084-14W6	56.2656	-120.1647	0	118	130	1.206	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY B08-17-085-13	31690	100100808513W600	08-17-085-13W6	56.3686	-120.0073	0	118	130	2.585	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-084-13	1108	100081808413W600	08-18-084-13W6	56.2810	-120.0341	0	118	130	4.294	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-19-084-13	1078	100081908413W600	08-19-084-13W6	56.2955	-120.0341	0	118	130	2.692	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-22-084-14	742	100082208414W600	08-22-084-14W6	56.2954	-120.1132	0	118	130	0.218	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A08-28-084-14	5788	102082808414W600	08-28-084-14W6	56.3093	-120.1407	0	118	130	1.560	OIL

**Boundary Lake BC Unit 1 - Sweet Wells**

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY B08-28-084-14	31471	100162808414W600	08-28-084-14W6	56.3112	-120.1391	0	118	130	1.342	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-29-084-13	1400	100082908413W600	08-29-084-13W6	56.3101	-120.0078	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-30-084-13	1061	100083008413W600	08-30-084-13W6	56.3101	-120.0341	0	118	130	1.064	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-084-14	814	100083608414W600	08-36-084-14W6	56.3245	-120.0604	0	118	130	0.941	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-084-14	814	100083608414W602	08-36-084-14W6	56.3245	-120.0604	0	118	130	0.941	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 09-10-085-14	1495	100091008514W600	09-10-085-14W6	56.3578	-120.1121	0	118	130	1.526	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-01-085-14	2740	100110108514W600	11-01-085-14W6	56.3429	-120.0734	0	118	130	1.087	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-02-085-14	4538	100110208514W600	11-02-085-14W6	56.3427	-120.0990	0	118	130	1.328	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-10-085-14	227	100111008514W600	11-10-085-14W6	56.3572	-120.1261	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A11-11-085-14	32573	100121108514W600	11-11-085-14W6	56.3568	-120.0993	0	118	130	2.290	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-25-084-14	2866	100112508414W600	11-25-084-14W6	56.3136	-120.0738	0	118	130	1.338	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A11-30-084-14	8851	102113008414W600	11-30-084-14W6	56.3152	-120.2063	0	118	130	0.591	GAS WELL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-13-085-14	8086	100121308514W600	12-13-085-14W6	56.3718	-120.0802	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-14-084-14	6382	100121408414W602	12-14-084-14W6	56.2845	-120.1066	0	118	130	0.662	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-20-084-13	6387	100122008413W600	12-20-084-13W6	56.2989	-120.0277	0	118	130	2.275	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY B12-20-084-13	30634	100021908413W600	12-20-084-13W6	56.2985	-120.0273	0	118	130	2.300	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-02-084-14	1166	100140208414W600	14-02-084-14W6	56.2592	-120.1005	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-03-084-14	969	100140308414W600	14-03-084-14W6	56.2590	-120.1265	0	118	130	2.338	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-04-084-14	1369	100140408414W600	14-04-084-14W6	56.2591	-120.1529	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-05-084-14	5900	100140508414W600	14-05-084-14W6	56.2584	-120.1781	0	118	130	0.992	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-06-084-13	9516	102140608413W600	14-06-084-13W6	56.2574	-120.0476	0	118	130	4.422	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-084-13	5873	100140708413W600	14-07-084-13W6	56.2735	-120.0469	0	118	130	4.115	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-084-14	1450	100140708414W600	14-07-084-14W6	56.2743	-120.2052	0	118	130	0.291	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-08-084-14	1164	100140808414W600	14-08-084-14W6	56.2736	-120.1792	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-08-085-13	767	100140808513W600	14-08-085-13W6	56.3609	-120.0208	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-11-085-14	821	100141108514W600	14-11-085-14W6	56.3608	-120.1002	0	118	130	2.112	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-084-14	1037	100141208414W600	14-12-084-14W6	56.2736	-120.0738	0	118	130	2.738	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-14-085-14	10376	102141408514W602	14-14-085-14W6	56.3739	-120.1006	0	118	130	2.142	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-18-084-13	1104	100141808413W600	14-18-084-13W6	56.2882	-120.0471	0	118	130	3.586	OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE C14-20-084-13	33769	100042808413W600	14-20-084-13W6	56.3019	-120.0217	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE B14-20-084-13	33770	102071908413W600	14-20-084-13W6	56.3018	-120.0217	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY A14-20-084-13	30631	100122108413W600	14-20-084-13W6	56.3022	-120.0217	0	118	130	1.821	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-25-084-14	1077	100142508414W600	14-25-084-14W6	56.3172	-120.0738	0	118	130	1.240	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-29-084-13	1060	100142908413W600	14-29-084-13W6	56.3173	-120.0208	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-31-084-13	888	100143108413W602	14-31-084-13W6	56.3318	-120.0471	0	118	130	0.888	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-01-085-14	776	100160108514W600	16-01-085-14W6	56.3464	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-02-085-14	777	100160208514W600	16-02-085-14W6	56.3463	-120.0868	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-03-085-14	359	100160308514W600	16-03-085-14W6	56.3463	-120.1131	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-04-084-14	1358	100160408414W600	16-04-084-14W6	56.2590	-120.1395	0	118	130	1.559	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-04-085-14	267	100160408514W600	16-04-085-14W6	56.3463	-120.1395	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-05-084-14	5845	100160508414W600	16-05-084-14W6	56.2591	-120.1658	0	118	130	0.495	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-05-085-13	882	100160508513W600	16-05-085-13W6	56.3464	-120.0088	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-06-085-13	796	100160608513W600	16-06-085-13W6	56.3464	-120.0349	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-07-085-13	775	100160708513W600	16-07-085-13W6	56.3605	-120.0335	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 16-08-084-14	6127	100160808414W600	16-08-084-14W6	56.2736	-120.1659	0	118	130	0.663	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-09-084-14	1133	100160908414W600	16-09-084-14W6	56.2736	-120.1395	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-10-084-14	1079	100161008414W600	16-10-084-14W6	56.2736	-120.1132	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-11-085-14	356	100161108514W600	16-11-085-14W6	56.3608	-120.0868	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-14-085-14	895	100161408514W600	16-14-085-14W6	56.3754	-120.0868	0	118	130	3.010	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-15-085-14	961	100161508514W600	16-15-085-14W6	56.3756	-120.1135	0	118	130	1.433	OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-17-084-14	1158	100161708414W600	16-17-084-14W6	56.2876	-120.1659	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-17-085-13	2641	100161708513W600	16-17-085-13W6	56.3752	-120.0084	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-084-13	6346	100161808413W600	16-18-084-13W6	56.2882	-120.0353	0	118	130	3.500	OIL

### Boundary Lake BC Unit 1 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-084-14	1343	100161808414W600	16-18-084-14W6	56.2884	-120.1922	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-19-084-13	1018	100161908413W600	16-19-084-13W6	56.3027	-120.0341	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-21-084-14	1122	100162108414W600	16-21-084-14W6	56.3027	-120.1395	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-22-084-14	727	100162208414W600	16-22-084-14W6	56.3027	-120.1127	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-23-084-14	997	100162308414W600	16-23-084-14W6	56.3027	-120.0868	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-24-084-14	872	100162408414W600	16-24-084-14W6	56.3031	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-084-14	1063	100162508414W600	16-25-084-14W6	56.3173	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-30-084-13	1062	100163008413W600	16-30-084-13W6	56.3173	-120.0341	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-31-084-13	369	100163108413W600	16-31-084-13W6	56.3318	-120.0341	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-32-084-13	939	100163208413W600	16-32-084-13W6	56.3318	-120.0078	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-34-084-14	846	100163408414W600	16-34-084-14W6	56.3318	-120.1132	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-35-084-14	797	100163508414W600	16-35-084-14W6	56.3317	-120.0868	0		WLB		WATER INJECTOR
WHITECAP SWEET SUSPENDED											
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 01-02-085-14	6918	100010208514W600	01-02-085-14W6	56.3347	-120.0868	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-24-084-14	6383	100022408414W600	02-24-084-14W6	56.2916	-120.0674	0	118	130	2.392	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-29-084-13	7820	100022908413W600	02-29-084-13W6	56.3074	-120.0167	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-17-084-13	17584	100051708413W602	05-17-084-13W6	56.2808	-120.0248	0	118	130	4.210	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-17-084-13	17584	100051708413W600	05-17-084-13W6	56.2808	-120.0248	0	118	130	4.210	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY A05-31-084-13	8478	100133108413W602	05-31-084-13W6	56.3240	-120.0536	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-32-084-13	2978	100053208413W600	05-32-084-13W6	56.3246	-120.0272	0	118	130	0.547	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-05-084-13	9764	100060508413W600	06-05-084-13W6	56.2526	-120.0232	0	118	130	4.454	SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-05-084-13	9764	100060508413W602	06-05-084-13W6	56.2526	-120.0232	0	118	130	4.454	SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-05-084-13	9764	100060508413W603	06-05-084-13W6	56.2526	-120.0232	0	118	130	4.454	SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-07-084-14	5849	100060708414W600	06-07-084-14W6	56.2662	-120.2052	0	118	130	1.000	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-15-084-14	1084	100061508414W600	06-15-084-14W6	56.2808	-120.1265	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-25-084-14	979	100062508414W600	06-25-084-14W6	56.3100	-120.0738	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-01-084-14	10235	100080108414W600	08-01-084-14W6	56.2520	-120.0626	0	118	130	3.758	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL OIL SKIMMING A08-02-085-14	7897	102080208514W600	08-02-085-14W6	56.3390	-120.0868	0	118	130	0.598	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-03-084-14	941	100080308414W600	08-03-084-14W6	56.2518	-120.1131	0	118	130	3.139	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-08-085-13	906	100080808513W600	08-08-085-13W6	56.3537	-120.0078	0	118	130	1.564	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-13-084-14	1068	100081308414W600	08-13-084-14W6	56.2810	-120.0604	0	118	130	3.009	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 10-15-084-14	6261	100101508414W600	10-15-084-14W6	56.2848	-120.1185	0	118	130	1.005	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-13-084-14	6381	100121308414W600	12-13-084-14W6	56.2845	-120.0798	0	118	130	1.748	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-17-084-14	1220	100141708414W600	14-17-084-14W6	56.2881	-120.1805	0	118	130	0.433	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 14-17-085-13	738	100141708513W600	14-17-085-13W6	56.3755	-120.0208	0	118	130	2.931	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A14-28-084-14	5663	102142808414W600	14-28-084-14W6	56.3172	-120.1531	0	118	130	1.801	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-30-084-14	25241	102143008414W600	14-30-084-14W6	56.3161	-120.2055	0	118	130	0.497	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-084-14	21070	100143008414W602	14-30-084-14W6	56.3161	-120.2059	0	118	130	0.524	SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-07-084-14	1357	100160708414W600	16-07-084-14W6	56.2736	-120.1917	0	118	130	0.356	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-09-085-14	1513	100160908514W600	16-09-085-14W6	56.3608	-120.1395	0	118	130	0.398	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-11-084-14	865	100161108414W600	16-11-084-14W6	56.2730	-120.0868	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-13-084-14	1085	100161308414W600	16-13-084-14W6	56.2882	-120.0605	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-14-084-14	1175	100161408414W600	16-14-084-14W6	56.2881	-120.0868	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-15-084-14	752	100161508414W600	16-15-084-14W6	56.2881	-120.1132	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-16-084-14	1112	100161608414W600	16-16-084-14W6	56.2881	-120.1395	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-27-084-14	753	100162708414W600	16-27-084-14W6	56.3172	-120.1132	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-36-084-14	798	100163608414W602	16-36-084-14W6	56.3318	-120.0605	0	118	130	0.143	SUSPENDED GAS
WHITECAP SWEET STANDING											
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-084-14	1037	100141208414W602	14-12-084-14W6	56.2736	-120.0738	0		100	2.738	STANDING
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-35-084-14	797	100163508414W602	16-35-084-14W6	56.3317	-120.0868	0		100	0.426	STANDING

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 WLB=Well Lease Boundary

### Boundary Lake BC Unit 1 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSUR E (kPa)	H2S (%)	ASSIGNED EPZ (m)	STATUS
WHITECAP SWEET HVP OPERATING																				
WHITECAP RESOURCES INC.	-	01-02-085-14W6	13-11-085-14W6	-	-	-	-	-	-	10449	1	-	HV	88.9	3.22	3.9	8,275	0	250	Q
WHITECAP SWEET OPERATING																				
WHITECAP RESOURCES INC.	-	16-24-084-14W6	16-23-084-14W6	-	-	-	-	-	-	1128	1	-	CO	114.3	1.98	0.0	1,550	0	24	Q
WHITECAP RESOURCES INC.	-	11-14-085-14W6	16-11-085-14W6	-	-	-	-	-	-	1128	3	-	CO	114.3	1.31	0.0	1,550	0	24	Q
WHITECAP RESOURCES INC.	-	08-16-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	2	-	OM	152.4	2.20	0.0	689	0	26	Q
WHITECAP RESOURCES INC.	-	08-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	3	-	OM	101.6	0.11	0.0	689	0	11	Q
WHITECAP RESOURCES INC.	-	08-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	4	-	OM	152.4	0.12	0.0	689	0	14	Q
WHITECAP RESOURCES INC.	-	08-22-084-14W6	16-26-084-14W6	-	-	-	-	-	-	1242	5	-	OM	203.2	2.91	0.0	689	0	35	Q
WHITECAP RESOURCES INC.	-	16-24-084-14W6	16-26-084-14W6	-	-	-	-	-	-	1242	7	-	OM	152.4	2.11	0.0	689	0	26	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	07-02-085-14W6	-	-	-	-	-	-	1242	9	-	OM	101.6	0.38	0.0	689	0	14	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	06-01-085-14W6	-	-	-	-	-	-	1242	12	-	OM	152.4	2.08	0.0	689	0	26	Q
WHITECAP RESOURCES INC.	-	08-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	1315	1	-	NG	50.8	0.98	0.0	861	0	11	Q
WHITECAP RESOURCES INC.	-	01-02-085-14W6	01-25-084-14W6	-	-	-	-	-	-	1394	1	-	NG	50.8	2.36	0.0	861	0	11	Q
WHITECAP RESOURCES INC.	-	13-29-082-13W6	16-30-082-13W6	-	-	-	-	-	-	1889	1	-	FW	273.1	0.45	0.0	1,034	0	ROW	Q
WHITECAP RESOURCES INC.	-	03-18-083-13W6	15-36-083-14W6	-	-	-	-	-	-	1889	9	-	FW	273.1	6.10	4.8	3,800	0	ROW	Q
WHITECAP RESOURCES INC.	-	05-13-084-14W6	13-13-084-14W6	-	-	-	-	-	-	1889	10	-	FW	273.1	1.00	4.8	3,800	0	ROW	Q
WHITECAP RESOURCES INC.	-	15-36-083-14W6	05-13-084-14W6	-	-	-	-	-	-	1889	11	-	FW	273.1	4.45	4.8	3,800	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-25-082-14W6	03-18-083-13W6	-	-	-	-	-	-	1889	12	-	FW	273.1	5.40	4.8	3,800	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-13-084-14W6	04-24-084-14W6	-	-	-	-	-	-	1889	13	-	FW	273.1	0.22	4.8	3,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	04-24-084-14W6	16-26-084-14W6	-	-	-	-	-	-	1889	14	-	FW	273.1	3.25	4.8	3,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-30-082-13W6	16-25-082-14W6	-	-	-	-	-	-	1889	15	-	FW	273.1	1.50	4.8	3,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	16-35-084-14W6	-	-	-	-	-	-	2034	1	-	SW	60.3	1.22	3.9	20,670	0	ROW	Q
WHITECAP RESOURCES INC.	-	03-10-085-14W6	06-03-085-14W6	-	-	-	-	-	-	2082	2	-	NG	50.8	1.20	2.0	200	0	11	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	16-11-085-14W6	-	-	-	-	-	-	2438	2	-	SW	60.3	2.71	3.9	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	11-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	2594	1	-	OE	60.3	0.49	3.2	750	0	11	Q
WHITECAP RESOURCES INC.	-	11-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	2595	1	-	MP	60.3	0.41	3.2	6,895	0	18	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	01-35-084-14W6	-	-	-	-	-	-	2966	5	-	FW	60.3	0.20	3.9	20,700	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-32-084-13W6	16-32-084-13W6	-	-	-	-	-	-	2967	10	-	PW	71.1	1.35	10.9	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	14-20-084-13W6	-	-	-	-	-	-	2967	11	-	FW	60.3	1.69	3.9	0	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-14-085-14W6	02-15-085-14W6	-	-	-	-	-	-	2967	26	-	SW	60.3	0.97	0.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	11-10-085-14W6	WE 02-15-085-14W6	WE	-	-	-	-	-	2967	27	-	FW	73.0	1.10	3.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	02-15-085-14W6	WE 12-14-085-14W6	PL	-	-	-	-	-	2967	28	-	FW	73.0	1.17	3.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	08-16-084-14W6	01-16-084-14W6	-	-	-	-	-	-	2967	35	-	FW	60.3	0.92	0.0	15,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-09-084-14W6	16-09-084-14W6	-	-	-	-	-	-	2967	36	-	FW	60.3	0.47	0.0	15,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-22-084-14W6	06-26-084-14W6	-	-	-	-	-	-	3003	1	-	FW	60.3	1.10	3.9	20,700	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-03-085-14W6	06-02-085-14W6	-	-	-	-	-	-	3004	1	-	FW	60.3	1.08	3.9	20,700	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-05-085-13W6	-	-	-	-	-	-	3006	1	-	FW	60.3	1.35	3.9	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-31-084-13W6	-	-	-	-	-	-	3015	1	-	FW	60.3	1.37	3.9	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	16-27-084-14W6	-	-	-	-	-	-	3325	1	-	FW	60.3	1.13	3.9	18,296	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	12-05-085-13W6	-	-	-	-	-	-	3386	5	-	FW	168.3	1.30	7.1	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	06-26-084-14W6	-	-	-	-	-	-	3386	6	-	FW	168.3	4.98	7.1	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	08-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	3769	2	-	OE	60.3	0.74	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	03-11-085-14W6	06-02-085-14W6	-	-	-	-	-	-	3769	11	-	OE	60.3	1.10	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	09-10-085-14W6	06-03-085-14W6	-	-	-	-	-	-	3769	12	-	OE	60.3	2.37	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-17-084-14W6	06-17-084-14W6	-	-	-	-	-	-	3769	17	-	OE	60.3	0.06	0.0	3,450	0	11	Q
WHITECAP RESOURCES INC.	-	14-17-084-14W6	06-17-084-14W6	-	-	-	-	-	-	3769	18	-	OE	60.3	1.31	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	3769	19	-	OE	60.3	2.88	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-13-084-14W6	03-13-084-14W6	-	-	-	-	-	-	3769	24	-	OE	88.9	0.43	0.0	3,450	0	21	Q
WHITECAP RESOURCES INC.	-	14-12-084-14W6	03-13-084-14W6	-	-	-	-	-	-	3769	26	-	OE	88.9	0.41	0.0	3,450	0	21	Q
WHITECAP RESOURCES INC.	-	05-26-084-14W6	16-23-084-14W6	-	-	-	-	-	-	3769	27	-	OE	60.3	1.65	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	30	-	OE	60.3	0.85	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-27-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	32	-	OE	60.3	2.50	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-18-084-13W6	06-18-084-13W6	-	-	-	-	-	-	3769	36	-	OE	60.3	0.29	0.0	3,450	0	14	Q
WHITECAP RESOURCES INC.	-	08-18-084-13W6	06-18-084-13W6	-	-	-	-	-	-	3769	37	-	OE	60.3	1.13	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	41	-	OE	60.3	1.40	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	42	-	OE	60.3	1.40	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-18-085-13W6	08-18-085-13W6	-	-	-	-	-	-	3769	44	-	OE	60.3	1.01	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	08-17-085-13W6	06-17-085-13W6	-	-	-	-	-	-	3769	45	-	OE	60.3	1.18	0.0	3,450	0	16	Q

**Boundary Lake BC Unit 1 - Sweet Pipelines**

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSUR E (kPa)	H2S (%)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	06-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	3769	47	-	OE	60.3	1.40	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	3769	48	-	OE	60.3	1.40	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	11-25-084-14W6	14-25-084-14W6	-	-	-	-	-	-	3769	49	-	OE	60.3	1.67	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	05-31-084-13W6	06-31-084-13W6	-	-	-	-	-	-	3769	52	-	OE	60.3	0.48	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	07-31-084-13W6	06-31-084-13W6	-	-	-	-	-	-	3769	53	-	OE	60.3	0.53	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	11-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	3769	55	-	OE	60.3	0.86	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	05-13-085-14W6	08-14-085-14W6	-	-	-	-	-	-	3769	56	-	OE	60.3	0.38	0.0	3,450	0	14	Q
WHITECAP RESOURCES INC.	-	16-14-085-14W6	11-14-085-14W6	-	-	-	-	-	-	3769	57	-	MP	60.3	0.73	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	16-15-085-14W6	11-14-085-14W6	-	-	-	-	-	-	3769	58	-	OE	60.3	1.07	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	08-14-085-14W6	01-14-085-14W6	-	-	-	-	-	-	3769	63	-	MP	60.3	0.50	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	08-14-085-14W6	01-14-085-14W6	-	-	-	-	-	-	3769	65	-	MP	60.3	0.50	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	05-17-085-13W6	06-17-085-13W6	-	-	-	-	-	-	3769	67	-	OE	60.3	0.50	0.0	3,450	0	15	Q
WHITECAP RESOURCES INC.	-	06-12-084-14W6	08-11-084-14W6	-	-	-	-	-	-	3906	1	-	OE	60.3	0.09	3.9	3,450	0	11	Q
WHITECAP RESOURCES INC.	-	16-08-084-14W6	08-16-084-14W6	-	-	-	-	-	-	3970	1	-	OE	60.3	2.00	3.9	4,900	0	17	Q
WHITECAP RESOURCES INC.	-	06-10-084-14W6	01-10-084-14W6	-	-	-	-	-	-	3994	1	-	FW	60.3	0.89	4.8	20,685	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-10-084-14W6	14-04-084-14W6	-	-	-	-	-	-	3994	2	-	FW	60.3	2.20	4.8	20,685	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-03-084-14W6	16-03-084-14W6	-	-	-	-	-	-	3994	3	-	FW	60.3	0.24	4.8	20,685	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-02-084-14W6	14-02-084-14W6	-	-	-	-	-	-	3994	4	-	FW	60.3	0.77	4.8	20,685	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-09-084-14W6	08-16-084-14W6	-	-	-	-	-	-	4042	1	-	OE	88.9	1.80	4.0	3,500	0	24	Q
WHITECAP RESOURCES INC.	-	16-05-084-14W6	06-09-084-14W6	-	-	-	-	-	-	4042	2	-	OE	88.9	1.10	4.0	3,500	0	24	Q
WHITECAP RESOURCES INC.	-	08-08-084-14W6	06-09-084-14W6	-	-	-	-	-	-	4042	3	-	NG	88.9	0.80	4.0	3,500	0	24	Q
WHITECAP RESOURCES INC.	-	16-34-084-14W6	06-35-084-14W6	-	-	-	-	-	-	4057	3	-	SW	60.3	0.28	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	06-16-084-14W6	-	-	-	-	-	-	4057	6	-	FW	60.3	0.75	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-21-084-14W6	16-21-084-14W6	-	-	-	-	-	-	4057	8	-	FW	72.5	0.05	3.8	21,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-21-084-14W6	06-22-084-14W6	-	-	-	-	-	-	4057	9	-	FW	60.3	1.20	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-21-084-14W6	06-27-084-14W6	-	-	-	-	-	-	4057	10	-	FW	60.3	1.20	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-23-084-14W6	06-24-084-14W6	-	-	-	-	-	-	4057	12	-	FW	60.3	1.50	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-23-084-14W6	06-23-084-14W6	-	-	-	-	-	-	4057	13	-	FW	60.3	1.18	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-19-084-13W6	06-19-084-13W6	-	-	-	-	-	-	4057	16	-	FW	60.3	1.40	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-19-084-13W6	06-20-084-13W6	-	-	-	-	-	-	4057	17	-	FW	60.3	1.35	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-13-084-14W6	06-18-084-13W6	-	-	-	-	-	-	4057	19	-	FW	60.3	1.35	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-13-084-14W6	06-13-084-14W6	-	-	-	-	-	-	4057	20	-	FW	60.3	1.50	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-16-084-14W6	06-21-084-14W6	-	-	-	-	-	-	4057	24	-	FW	60.3	1.30	4.8	20,690	0	ROW	Q
WHITECAP RESOURCES INC.	-	10-15-084-14W6	06-15-084-14W6	-	-	-	-	-	-	4062	1	-	OE	60.3	0.68	3.9	9,900	0	22	Q
WHITECAP RESOURCES INC.	-	14-05-084-14W6	06-09-084-14W6	-	-	-	-	-	-	4063	1	-	OE	88.9	1.85	4.0	4,825	0	27	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	16-23-084-14W6	-	-	-	-	-	-	4068	1	-	FW	60.3	1.20	4.8	20,700	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	4092	1	-	MP	60.3	0.14	3.9	6,900	0	14	Q
WHITECAP RESOURCES INC.	-	16-18-084-13W6	06-18-084-13W6	-	-	-	-	-	-	4143	1	-	OE	60.3	1.20	3.9	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	12-20-084-13W6	11-20-084-14W6	-	-	-	-	-	-	4170	1	-	OE	60.3	0.41	3.9	9,930	0	20	Q
WHITECAP RESOURCES INC.	-	02-15-084-14W6	06-15-084-14W6	-	-	-	-	-	-	4170	2	-	OE	88.9	0.61	4.8	21,500	0	48	Q
WHITECAP RESOURCES INC.	-	12-14-084-14W6	06-14-084-14W6	-	-	-	-	-	-	4170	3	-	OE	88.9	0.61	4.8	3,450	0	22	Q
WHITECAP RESOURCES INC.	-	14-34-084-14W6	06-03-085-14W6	-	-	-	-	-	-	4195	1	-	OE	60.3	0.82	3.9	9,930	0	24	Q
WHITECAP RESOURCES INC.	-	08-02-085-14W6	16-26-084-14W6	-	-	-	-	-	-	4207	1	-	SW	219.1	2.70	9.5	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	06-30-084-13W6	-	-	-	-	-	-	4207	2	-	SW	168.3	2.65	7.1	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-13-084-14W6	-	-	-	-	-	-	4207	3	-	SW	114.3	2.82	6.0	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-24-084-14W6	16-24-084-14W6	-	-	-	-	-	-	4207	4	-	SW	88.9	0.09	4.8	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-19-084-13W6	-	-	-	-	-	-	4207	5	-	SW	114.3	1.20	6.0	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-19-084-13W6	08-29-084-13W6	-	-	-	-	-	-	4207	6	-	SW	88.9	1.84	4.8	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-30-084-13W6	-	-	-	-	-	-	4207	7	-	SW	88.9	1.14	4.8	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-25-084-14W6	-	-	-	-	-	-	4207	8	-	SW	88.9	1.15	4.8	20,680	0	ROW	Q
WHITECAP RESOURCES INC.	-	04-19-084-13W6	01-24-084-14W6	-	-	-	-	-	-	4279	1	-	OE	60.3	0.41	3.9	9,930	0	20	Q
WHITECAP RESOURCES INC.	-	16-24-084-14W6	16-24-084-14W6	-	-	-	-	-	-	4279	2	-	OE	60.3	0.07	3.9	9,930	0	13	Q
WHITECAP RESOURCES INC.	-	06-17-084-14W6	08-17-084-14W6	-	-	-	-	-	-	4586	8	-	OE	88.9	0.91	0.0	3,450	0	24	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	08-16-084-14W6	-	-	-	-	-	-	4586	9	-	OE	88.9	1.61	0.0	3,450	0	24	Q
WHITECAP RESOURCES INC.	-	06-15-084-14W6	05-15-084-14W6	-	-	-	-	-	-	4586	11	-	OE	88.9	0.61	0.0	3,450	0	22	Q
WHITECAP RESOURCES INC.	-	14-20-084-13W6	16-19-084-13W6	-	-	-	-	-	-	4586	16	-	OE	114.3	0.81	0.0	3,450	0	30	Q
WHITECAP RESOURCES INC.	-	12-08-085-13W6	12-05-085-13W6	-	-	-	-	-	-	4586	21	-	OE	168.3	1.61	0.0	3,450	0	48	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	13-32-084-13W6	-	-	-	-	-	-	4586	22	-	PW	71.1	1.21	10.9	15,169	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-31-084-13W6	06-36-084-14W6	-	-	-	-	-	-	4586	25	-	OE	88.9	1.71	0.0	3,450	0	24	Q

### Boundary Lake BC Unit 1 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSUR E (kPa)	H2S (%)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	16-16-084-14W6	08-16-084-14W6	-	-	-	-	-	-	4586	31	-	OE	114.3	1.01	0.0	3,450	0	30	Q
WHITECAP RESOURCES INC.	-	08-16-084-14W6	08-16-084-14W6	-	-	-	-	-	-	4586	32	-	OE	88.9	0.20	0.0	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	16-19-084-13W6	14-19-084-13W6	-	-	-	-	-	-	4586	33	-	OE	114.3	0.80	0.0	3,450	0	30	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	12-05-085-13W6	-	-	-	-	-	-	4639	1	-	WS	168.3	4.98	6.3	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	16-26-084-14W6	-	-	-	-	-	-	4639	2	-	SW	88.9	0.15	4.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6	16-36-084-14W6	-	-	-	-	-	-	4639	3	-	WS	88.9	0.11	4.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-01-085-14W6	-	-	-	-	-	-	4648	1	-	WS	88.9	2.09	4.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-06-085-13W6	-	-	-	-	-	-	4648	2	-	WS	88.9	0.60	4.8	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	06-15-084-14W6	-	-	-	-	-	-	4941	1	-	FW	114.3	3.93	4.8	13,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-17-085-13W6	-	-	-	-	-	-	5144	1	-	WS	88.9	3.99	4.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-08-085-13W6	16-07-085-13W6	-	-	-	-	-	-	5144	2	-	WS	88.9	0.50	4.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-13-084-14W6	16-26-084-14W6	-	-	-	-	-	-	5261	2	-	FW	273.1	3.47	4.8	4,070	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-11-085-14W6	12-13-085-14W6	-	-	-	-	-	-	5665	1	-	SW	88.9	1.33	5.5	19,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-03-085-14W6	16-04-085-14W6	-	-	-	-	-	-	5701	1	-	SW	88.9	1.63	4.8	19,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6	05-31-084-13W6	-	-	-	-	-	-	5932	1	-	FW	88.9	1.20	5.5	15,620	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6	UN 08-01-085-14W6	UN	-	-	-	-	-	6120	3	-	SW	88.9	1.07	4.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-31-084-13W6	16-36-084-14W6	-	-	-	-	-	-	6120	5	-	OE	88.9	0.83	4.0	18,000	0	47	Q
WHITECAP RESOURCES INC.	-	06-31-084-13W6	16-36-084-14W6	-	-	-	-	-	-	6120	6	-	OE	88.9	1.63	4.0	3,450	0	24	Q
WHITECAP RESOURCES INC.	-	08-36-084-14W6	16-36-084-14W6	-	-	-	-	-	-	6120	7	-	OE	88.9	1.25	4.0	18,000	0	24	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	06-27-084-14W6	-	-	-	-	-	-	6804	1	-	FW	60.3	1.60	3.9	19,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	13-14-084-14W6	06-14-084-14W6	-	-	-	-	-	-	6804	2	-	FW	60.3	1.07	3.9	19,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	02-29-084-13W6	02-29-084-13W6	-	-	-	-	-	-	6836	1	-	SW	60.3	0.20	3.9	21,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-17-084-14W6	16-18-084-14W6	-	-	-	-	-	-	6939	1	-	FW	60.3	1.81	3.9	20,700	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6	16-09-084-14W6	-	-	-	-	-	-	7258	1	-	FW	60.3	0.84	3.9	13,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	06-02-085-14W6	-	-	-	-	-	-	7735	1	-	FW	114.3	2.98	4.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	04-13-085-14W6	13-13-085-14W6	-	-	-	-	-	-	8158	2	-	FW	219.1	1.62	7.9	17,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	16-26-084-14W6	-	-	-	-	-	-	8159	1	-	FW	168.3	0.46	5.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	16-26-084-14W6	-	-	-	-	-	-	8159	2	-	FW	168.3	0.47	5.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-07-085-13W6	14-08-085-13W6	-	-	-	-	-	-	8160	1	-	SW	60.3	0.73	3.9	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	13-08-085-13W6	-	-	-	-	-	-	8164	1	-	OE	88.9	1.93	5.5	14,470	0	44	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	16-27-084-14W6	-	-	-	-	-	-	8169	1	-	FW	60.3	1.13	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6	16-22-084-14W6	-	-	-	-	-	-	8169	2	-	FW	60.3	1.11	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	06-02-085-14W6	-	-	-	-	-	-	8179	1	-	FW	168.3	2.99	7.1	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	16-03-085-14W6	-	-	-	-	-	-	8179	3	-	FW	60.3	1.16	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-26-085-14W6	08-02-085-14W6	-	-	-	-	-	-	8185	1	-	NG	273.1	7.24	9.3	1,960	0	71	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-24-084-14W6	-	-	-	-	-	-	8188	2	-	FW	60.3	1.12	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-17-084-14W6	06-17-084-14W6	-	-	-	-	-	-	8195	2	-	CO	60.3	1.04	3.9	3,448	0	16	Q
WHITECAP RESOURCES INC.	-	16-07-084-14W6	06-17-084-14W6	-	-	-	-	-	-	8195	3	-	CO	60.3	1.35	3.9	3,448	0	16	Q
WHITECAP RESOURCES INC.	-	10-23-084-14W6	16-23-084-14W6	-	-	-	-	-	-	8196	3	-	CO	60.3	0.77	3.9	3,448	0	15	Q
WHITECAP RESOURCES INC.	-	06-15-084-14W6	08-17-084-14W6	-	-	-	-	-	-	8200	1	-	FW	114.3	2.39	6.0	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	14-08-084-14W6	-	-	-	-	-	-	9703	1	-	FW	60.3	1.18	3.9	15,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-25-084-14W6	16-26-084-14W6	-	-	-	-	-	-	11816	2	-	CO	114.3	0.67	4.0	3,450	0	29	Q
WHITECAP RESOURCES INC.	-	14-03-084-14W6	08-10-084-14W6	-	-	-	-	-	-	11816	4	-	CO	60.3	1.31	3.9	3,450	0	16	Q
WHITECAP RESOURCES INC.	-	06-14-084-14W6	16-14-084-14W6	-	-	-	-	-	-	11952	1	-	FW	73.5	1.26	11.0	19,500	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6	16-10-084-14W6	-	-	-	-	-	-	11952	2	-	FW	73.5	0.77	11.0	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-15-084-14W6	WE 14-10-084-14W6	PL	-	-	-	-	-	14793	1	-	FW	67.0	0.95	7.9	0	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	PL 02-15-085-14W6	PL	-	-	-	-	-	22249	1	-	FW	122.0	3.40	6.1	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6	06-10-084-14W6	-	-	-	-	-	-	22880	1	-	FW	73.0	0.88	10.4	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	10-10-085-14W6	WE 08-02-085-14W6	PL	-	-	-	-	-	23032	2	-	FG	88.9	3.90	4.0	4,961	0	27	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	13-28-084-13W6	-	-	-	-	-	-	23241	1	-	FW	219.1	5.67	0.0	0	0	ROW	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	UN 16-17-084-14W6	UN	-	-	-	-	-	23553	1	-	FW	71.1	0.75	10.9	20,640	0	ROW	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	UN 01-02-085-14W6	UN	-	-	-	-	-	23615	1	-	PW	97.4	1.11	12.9	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-04-085-13W6	16-07-085-13W6	-	-	-	-	-	-	23702	3	-	FW	60.3	2.09	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-31-084-13W6	-	-	-	-	-	-	23702	4	-	FW	60.3	1.44	3.9	14,470	0	ROW	Q
WHITECAP RESOURCES INC.	-	16-30-084-13W6	14-29-084-13W6	-	-	-	-	-	-	24386	1	-	PW	97.4	0.89	12.9	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-29-084-13W6	16-29-084-13W6	-	-	-	-	-	-	24386	2	-	PW	71.1	0.89	10.9	18,000	0	ROW	Q
WHITECAP RESOURCES INC.	-	14-29-084-13W6	06-32-084-13W6	-	-	-	-	-	-	24432	2	-	PW	71.1	0.85	10.9	20,680	0	ROW	T
WHITECAP RESOURCES INC.	-	08-29-084-13W6	16-20-084-13W6	-	-	-	-	-	-	24470	1	-	PW	71.1	0.85	10.9	18,000	0	ROW	T



### Boundary Lake BC Unit 1 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSUR E (kPa)	H2S (%)	ASSIGNED EPZ (m)	STATUS
WHITECAP SWEET DEACTIVATED																				
WHITECAP RESOURCES INC.	-	08-11-085-14W6	08-02-085-14W6	-	-	-	-	-	-	1242	23	-	NG	304.8	1.99	0.0	689	0		V
WHITECAP RESOURCES INC.	-	16-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	1253	1	-	NG	114.3	0.26	0.0	689	0		V
WHITECAP RESOURCES INC.	-	08-02-085-14W6	16-26-084-14W6	-	-	-	-	-	-	1785	1	-	FG	60.3	2.36	0.0	4,961	0		V
WHITECAP RESOURCES INC.	-	08-03-085-14W6	06-03-085-14W6	-	-	-	-	-	-	2082	1	-	CO	50.8	0.82	3.2	6,132	0		V
WHITECAP RESOURCES INC.	-	12-05-085-13W6	13-32-084-13W6	-	-	-	-	-	-	2439	1	-	FW	60.3	1.13	3.9	13,500	0		V
WHITECAP RESOURCES INC.	-	06-02-085-14W6	02-15-085-14W6	-	-	-	-	-	-	2967	2	-	FW	114.3	3.40	0.0	18,000	0		V
WHITECAP RESOURCES INC.	-	12-14-085-14W6	12-14-085-14W6	-	-	-	-	-	-	2967	7	-	SW	60.3	0.20	0.0	18,000	0		V
WHITECAP RESOURCES INC.	-	02-15-085-14W6	11-10-085-14W6	-	-	-	-	-	-	2967	8	-	FW	60.3	1.11	0.0	18,000	0		V
WHITECAP RESOURCES INC.	-	01-24-084-14W6	16-24-084-14W6	-	-	-	-	-	-	2967	37	-	OM	60.3	1.40	0.0	15,000	0		V
WHITECAP RESOURCES INC.	-	08-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	2967	39	-	OM	60.3	1.12	3.9	0	0		V
WHITECAP RESOURCES INC.	-	08-17-084-14W6	16-17-084-14W6	-	-	-	-	-	-	3014	1	-	FW	60.3	0.77	3.9	20,700	0		V
WHITECAP RESOURCES INC.	-	12-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3040	1	-	FW	60.3	0.04	3.9	20,690	0		V
WHITECAP RESOURCES INC.	-	12-05-085-13W6	16-07-085-13W6	-	-	-	-	-	-	3041	1	-	FW	60.3	2.17	3.9	20,700	0		V
WHITECAP RESOURCES INC.	-	16-11-085-14W6	08-02-085-14W6	-	-	-	-	-	-	3327	1	-	OE	168.3	2.57	4.8	3,450	0		V
WHITECAP RESOURCES INC.	-	16-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	3769	3	-	OE	60.3	0.98	0.0	0	0		V
WHITECAP RESOURCES INC.	-	06-03-084-14W6	08-03-084-14W6	-	-	-	-	-	-	3769	13	-	OE	60.3	0.87	4.0	3,450	0		V
WHITECAP RESOURCES INC.	-	14-03-084-14W6	08-03-084-14W6	-	-	-	-	-	-	3769	15	-	OE	60.3	1.64	4.0	3,450	0		V
WHITECAP RESOURCES INC.	-	16-03-084-14W6	08-03-084-14W6	-	-	-	-	-	-	3769	16	-	OE	60.3	0.86	4.0	3,450	0		V
WHITECAP RESOURCES INC.	-	08-14-084-14W6	06-14-084-14W6	-	-	-	-	-	-	3769	23	-	OE	60.3	1.96	0.0	3,450	0		V
WHITECAP RESOURCES INC.	-	08-20-085-13W6	14-17-085-13W6	-	-	-	-	-	-	3769	43	-	OE	60.3	1.18	3.9	3,450	0		V
WHITECAP RESOURCES INC.	-	08-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	3769	61	-	OE	60.3	1.45	0.0	8,275	0		V
WHITECAP RESOURCES INC.	-	16-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	3769	64	-	MP	60.3	0.06	0.0	3,450	0		V
WHITECAP RESOURCES INC.	-	16-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	3769	66	-	MP	60.3	0.06	0.0	3,450	0		V
WHITECAP RESOURCES INC.	-	08-17-084-14W6	08-17-084-14W6	-	-	-	-	-	-	4057	7	-	FW	60.3	0.23	4.8	20,690	0		V
WHITECAP RESOURCES INC.	-	05-16-084-14W6	05-16-084-14W6	-	-	-	-	-	-	4057	23	-	FW	60.3	0.18	4.8	20,690	0		V
WHITECAP RESOURCES INC.	-	08-13-084-14W6	06-18-084-13W6	-	-	-	-	-	-	4153	1	-	OE	60.3	0.81	3.9	3,450	0		V
WHITECAP RESOURCES INC.	-	06-01-085-14W6	06-36-084-14W6	-	-	-	-	-	-	4586	24	-	OE	114.3	1.80	0.0	3,450	0		V
WHITECAP RESOURCES INC.	-	06-15-084-14W6	06-16-084-14W6	-	-	-	-	-	-	7465	1	-	FW	88.9	1.63	4.8	13,500	0		V
WHITECAP RESOURCES INC.	-	16-26-084-14W6	13-12-085-14W6	-	-	-	-	-	-	8158	1	-	FW	219.1	5.00	7.9	14,470	0		V
WHITECAP RESOURCES INC.	-	12-05-085-13W6		-	-	-	-	-	-	8163	1	-	FW	60.3	3.58	3.9	14,470	0		V
WHITECAP RESOURCES INC.	-	06-03-085-14W6	14-34-084-14W6	-	-	-	-	-	-	10655	3	-	OE	50.8	0.82	2.0	8,274	0		V
WHITECAP RESOURCES INC.	-	12-05-085-13W6	04-08-085-13W6	-	-	-	-	-	-	23702	2	-	FW	60.3	0.82	3.9	14,470	0		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

## Boundary Lake BC Unit 2 - Facilities

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	ASSOCIATED WELL OR PIPELINE HPZ (m)	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
<b>WHITECAP OPERATING</b>														
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 02-25-085-14 005	BCGP0007362	02-25-085-14W6	56.3945368	-120.0695691	56° 23' 40.332"	-120° 4' 10.448"	GP	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 04-24-085-14 001	BCBT0000500	04-24-085-14W6	56.3785251	-120.0809299	56° 22' 42.690"	-120° 4' 51.347"	B	15.33	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-06-086-13 003	BCOM0007026	06-06-086-13W6	56.4255311	-120.0475293	56° 25' 31.911"	-120° 2' 51.105"	OM	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-06-086-13 002	BCBT0000151	06-06-086-13W6	56.4255311	-120.0475293	56° 25' 31.911"	-120° 2' 51.105"	B	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-25-085-14 002	BCBT0000149	06-25-085-14W6	56.3977766	-120.0741954	56° 23' 51.995"	-120° 4' 27.103"	B	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-25-085-14 004	BCST0003638	06-25-085-14W6	56.3977766	-120.0741954	56° 23' 51.995"	-120° 4' 27.103"	S	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-25-085-14 003	BCGM0008061	06-25-085-14W6	56.3977766	-120.0741954	56° 23' 51.995"	-120° 4' 27.103"	GM	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-29-086-13 001	BCBT0000157	06-29-086-13W6	56.4845087	-120.0220719	56° 29' 4.231"	-120° 1' 19.458"	B	N/A	N/A	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-30-085-13 001	BCBT0007588	06-30-085-13W6	56.3965715	-120.0463731	56° 23' 47.657"	-120° 2' 46.943"	B	27.67	132	50	132		NW
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-31-085-13 001	BCBT0007859	07-31-085-13W6	56.4107541	-120.0383877	56° 24' 38.714"	-120° 2' 18.195"	B	42.82	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-23-086-14 001	BCPG0009030	08-23-086-14W6	56.4699082	-120.0868569	56° 28' 11.669"	-120° 5' 12.684"	PG	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 09-19-085-13 001	BCST0000392	09-19-085-13W6	56.3867175	-120.0322855	56° 23' 12.182"	-120° 1' 56.227"	S	15.33	110	50	110		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-29-085-13 001	BCBT0000477	12-29-085-13W6	56.4003815	-120.0283847	56° 24' 1.373"	-120° 1' 42.184"	B	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-19-085-13 002	BCBT0026776	14-19-085-13W6	56.3908309	-120.0485046	56° 23' 26.991"	-120° 2' 54.616"	B	15.33	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-13-086-14 001	BCST0000395	16-13-086-14W6	56.4625202	-120.0597814	56° 27' 45.072"	-120° 3' 35.213"	S	15.33	110	50	110		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-27-085-14 002	BCOM0007027	16-27-085-14W6	56.4045480	-120.1119268	56° 24' 16.372"	-120° 6' 42.936"	OM	15.33	110	50	110		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-27-085-14 001	BCST0000150	16-27-085-14W6	56.4045480	-120.1119268	56° 24' 16.372"	-120° 6' 42.936"	S	15.33	110	50	110		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-30-086-13 001	BCBT0000152	16-30-086-13W6	56.4910521	-120.0338923	56° 29' 27.787"	-120° 2' 2.012"	B	N/A	N/A	N/A	100		AC
<b>WHITECAP DISCONTINUED</b>														
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 02-25-085-14 006	BCDH0007363	02-25-085-14W6	56.3945368	-120.0695691	56° 23' 40.332"	-120° 4' 10.448"	DH				100		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 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 IP=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

## Boundary Lake Unit 2 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP SOUR OPERATING														
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-08-086-13	6456	100020808613W600	02-08-086-13W6	56.4373	-120.0143	4.000	0.683	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-25-085-14	16088	100022508514W602	02-25-085-14W6	56.3945	-120.0698	32,000	1.887	0.0007	100	118	130		GAS WELL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-25-085-14	16088	100022508514W600	02-25-085-14W6	56.3945	-120.0698	32,000	1.887	0.0007	100	118	130		CAPPED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-01-086-14	2894	100030108614W600	03-01-086-14W6	56.4236	-120.0728	1,000	0.571	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-06-086-13	3024	100030608613W600	03-06-086-13W6	56.4235	-120.0467	4,000	1.684	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-12-086-14	3029	100031208614W600	03-12-086-14W6	56.4384	-120.0738	600	0.649	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-30-085-13	2893	100033008513W600	03-30-085-13W6	56.3946	-120.0469	600	1.094	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-31-085-13	2886	100033108513W600	03-31-085-13W6	56.4096	-120.0478	100	1.171	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-24-085-14	7093	100042408514W602	04-24-085-14W6	56.3785	-120.0809	200	1.326	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-28-085-14	4588	100042808514W600	04-28-085-14W6	56.3934	-120.1597	1,400	1.825	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-01-086-14	6552	100050108614W600	05-01-086-14W6	56.4276	-120.0779	1,400	1.355	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-07-086-13	2478	100050708613W600	05-07-086-13W6	56.4409	-120.0558	2,100	1.452	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-08-086-13	2476	100050808613W600	05-08-086-13W6	56.4409	-120.0294	3,100	0.403	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-19-085-13	2380	100051908513W600	05-19-085-13W6	56.3831	-120.0508	3,000	1.505	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-19-086-13	2513	100051908613W600	05-19-086-13W6	56.4700	-120.0514	3,100	1.229	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-27-085-14	2499	100052708514W600	05-27-085-14W6	56.3974	-120.1304	1,900	1.412	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-29-085-13	2479	100052908513W600	05-29-085-13W6	56.3973	-120.0267	1,000	1.461	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-30-085-13	2377	100053008513W602	05-30-085-13W6	56.3968	-120.0505	45,000	0.397	0.0002	100	118	130		CAPPED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-085-13	2374	100053108513W600	05-31-085-13W6	56.4118	-120.0514	800	1.423	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-06-086-13	101	100060608613W600	06-06-086-13W6	56.4262	-120.0456	1,800	0.697	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-07-086-13	862	100060708613W600	06-07-086-13W6	56.4409	-120.0471	4,000	0.98	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-08-086-13	949	100060808613W600	06-08-086-13W6	56.4410	-120.0208	3,900	0.313	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-12-086-14	829	100061208614W600	06-12-086-14W6	56.4408	-120.0738	2,000	0.448	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-19-086-13	1074	100061908613W600	06-19-086-13W6	56.4700	-120.0471	7,900	0.852	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-24-085-14	639	100062408514W600	06-24-085-14W6	56.3827	-120.0737	400	1.684	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-24-086-14	885	100062408614W600	06-24-086-14W6	56.4699	-120.0738	1,000	1.21	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W600	06-25-085-14W6	56.3977	-120.0746	800	1.829	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-30-085-13	1137	100063008513W600	06-30-085-13W6	56.3968	-120.0461	1,900	0.879	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-30-085-13	1137	100063008513W603	06-30-085-13W6	56.3968	-120.0461	16,900	34.708	0.0068	111	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-30-086-13	1050	100063008613W600	06-30-086-13W6	56.4846	-120.0471	1,800	0.687	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-32-085-13	2930	100063208513W600	06-32-085-13W6	56.4118	-120.0219	1,900	1.432	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-01-086-14	2375	100070108614W600	07-01-086-14W6	56.4259	-120.0686	1,000	1.597	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-06-086-13	2369	100070608613W600	07-06-086-13W6	56.4263	-120.0403	2,100	0.89	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-07-086-13	2467	100070708613W600	07-07-086-13W6	56.4410	-120.0385	2,800	1.258	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-19-085-13	2485	100071908513W600	07-19-085-13W6	56.3830	-120.0423	1,400	0.494	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-24-085-14	2486	100072408514W600	07-24-085-14W6	56.3828	-120.0690	3,700	1.171	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A07-31-085-13	24760	102073108513W600	07-31-085-13W6	56.4106	-120.0383	8,100	16.34	0.0015	100	118	130		GAS WELL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-01-086-14	1083	100080108614W600	08-01-086-14W6	56.4261	-120.0605	4,000	1.452	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-19-086-13	1049	100081908613W600	08-19-086-13W6	56.4700	-120.0342	2,000	0.871	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-25-085-14	1539	100082508514W600	08-25-085-14W6	56.3968	-120.0594	5,600	1.308	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-33-085-14	1717	100083308514W600	08-33-085-14W6	56.4109	-120.1395	4,000	1.029	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-34-085-14	857	100083408514W600	08-34-085-14W6	56.4117	-120.1132	2,000	1.893	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 10-25-085-14	24909	100102508514W600	10-25-085-14W6	56.4002	-120.0683	20,000	9.86	0.0023	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-01-086-14	2895	100110108614W600	11-01-086-14W6	56.4285	-120.0728	4,200	0.9	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-21-085-14	4589	100112108514W600	11-21-085-14W6	56.3863	-120.1532	2,000	0.427	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-27-085-14	2889	100112708514W600	11-27-085-14W6	56.3997	-120.1264	15,900	1.813	0.0003	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-30-085-13	2892	100113008513W600	11-30-085-13W6	56.3996	-120.0468	200	1.53	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-01-086-14	664	100140108614W600	14-01-086-14W6	56.4336	-120.0738	1,200	0.9	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-06-086-13	152	100140608613W600	14-06-086-13W6	56.4333	-120.0485	600	0.455	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-086-14	900	100141208614W600	14-12-086-14W6	56.4481	-120.0738	2,300	0.72	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-18-085-13	590	100141808513W600	14-18-085-13W6	56.3755	-120.0470	2,000	1.016	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-19-085-13	6663	102141908513W602	14-19-085-13W6	56.3906	-120.0483	7,000	0.658	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-23-085-14	643	100142308514W600	14-23-085-14W6	56.3882	-120.1027	900	0.48	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-085-13	1171	100143008513W600	14-30-085-13W6	56.4051	-120.0481	5,900	0.5	0.0000	100	118	130		OIL

## Boundary Lake Unit 2 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	GAS PROD. RATE (1000 m3/day)	H2S RELEASE RATE (m3/s)	SOUR HPZ (m)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
<b>WHITECAP SOUR SUSPENDED</b>														
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-30-085-13	7103	100023008513W600	02-30-085-13W6	56.3943	-120.0395	20,000	0.624	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-13-086-14	6553	100051308614W600	05-13-086-14W6	56.4556	-120.0779	2,500	0.512	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-01-086-14	663	100060108614W600	06-01-086-14W6	56.4259	-120.0730	6,600	0.531	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-13-086-14	880	100061308614W600	06-13-086-14W6	56.4554	-120.0738	7,300	0.129	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-27-085-14	924	100062708514W600	06-27-085-14W6	56.3972	-120.1265	4,000	0.471	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-31-085-13	183	100063108513W600	06-31-085-13W6	56.4117	-120.0473	4,000	0.175	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-36-085-14	662	100063608514W600	06-36-085-14W6	56.4117	-120.0738	4,000	2.75	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-18-086-13	2490	100071808613W600	07-18-086-13W6	56.4556	-120.0384	5,700	0.723	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-24-086-14	2500	100072408614W600	07-24-086-14W6	56.4699	-120.0691	5,200	0.126	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-28-085-14	2498	100072808514W600	07-28-085-14W6	56.3974	-120.1468	10,000	0.394	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-12-086-14	1096	100081208614W600	08-12-086-14W6	56.4409	-120.0605	4,000	0.29	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-086-13	995	100081808613W600	08-18-086-13W6	56.4555	-120.0342	2,100	0.205	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-24-085-14	608	100082408514W600	08-24-085-14W6	56.3830	-120.0600	600	0.346	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-25-086-14	1558	100082508614W600	08-25-086-14W6	56.4838	-120.0605	4,000	0.227	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-30-085-13	1097	100083008513W602	08-30-085-13W6	56.3974	-120.0341	4,000	1.667	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A08-30-085-13	2931	102083008513W600	08-30-085-13W6	56.3974	-120.0334	4,000	0.46	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-30-086-13	1167	100083008613W600	08-30-086-13W6	56.4846	-120.0342	4,000	0.873	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-31-085-13	1150	100083108513W600	08-31-085-13W6	56.4118	-120.0342	10,000	0.523	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-085-14	1058	100083608514W600	08-36-085-14W6	56.4118	-120.0605	5,800	0.399	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 10-25-085-14	24909	100102508514W602	10-25-085-14W6	56.4002	-120.0683	20,000	1.459	0.0003	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-18-085-13	2382	100111808513W600	11-18-085-13W6	56.3719	-120.0471	1,000	2.9	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-36-085-14	2475	100113608514W600	11-36-085-14W6	56.4154	-120.0738	2,000	0.237	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-23-085-14	2385	100122308514W600	12-23-085-14W6	56.3863	-120.1066	4,000	0.78	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-086-13	1100	100140708613W600	14-07-086-13W6	56.4481	-120.0471	4,000	0.7	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-086-13	1100	100140708613W602	14-07-086-13W6	56.4481	-120.0471	4,000	0.7	0.0000	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-086-13	1100	100140708613W603	14-07-086-13W6	56.4481	-120.0471	4,000	0.7	0.0000	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-13-085-14	7086	102141308514W600	14-13-085-14W6	56.3761	-120.0753	20,000	0.225	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-19-085-13	6663	102141908513W600	14-19-085-13W6	56.3906	-120.0483	8,100	1.087	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-19-086-13	1123	100141908613W600	14-19-086-13W6	56.4772	-120.0471	4,000	0.59	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-31-085-13	167	100143108513W600	14-31-085-13W6	56.4191	-120.0469	4,000	0.053	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-31-085-13	167	100143108513W602	14-31-085-13W6	56.4191	-120.0469	4,000	0.053	0.0000	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-36-085-14	657	100143608514W600	14-36-085-14W6	56.4190	-120.0738	1,000	0.716	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-085-14	1144	100162508514W602	16-25-085-14W6	56.4051	-120.0615	4,000	18.65	0.0009	100	118	130		SUSPENDED OIL

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

## Boundary Lake Unit 2 - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS		
WHITECAP SOUR OPERATING																														
WHITECAP RESOURCES INC.	-	08-02-085-14W6	UN	04-25-085-14W6	UN	ESD	56.3368	-120.0858	-	-	4634	2	-	1	1 to 5	SG	168.3	6.75	4.8	4,960	2.50	5	0.84	206.8594	363.45926	1050	53	1100	Q	
WHITECAP RESOURCES INC.	-	06-06-086-13W6	UN	04-25-085-14W6	UN	-	-	-	ESD	56.3948	-120.0819	4634	1	-	2	1 to 5	SG	168.3	4.10	4.8	4,960	2.50	5	0.84	125.6479	363.45926	1050	52	1100	Q
WHITECAP RESOURCES INC.	-	04-25-085-14W6	UN	02-25-085-14W6	UN	-	-	-	ESD	56.3945	-120.0696	23544	1	-	3	1 to 5	SG	168.3	0.78	4.0	4,960	2.50	5	0.84	24.40022	363.45926	1050	46	1100	Q
WHITECAP RESOURCES INC.	-	12-25-085-14W6		16-26-084-14W6		-	-	-	-	-	-	6837	1	-	4	1 to 5	SG	88.9	0.60	4.8	4,792	0.10	5	0.84	0.176551	363.45926	1050	22	1100	Q
WHITECAP RESOURCES INC.	-	06-25-085-14W6		13-25-085-14W6		ESD	56.3978	-120.0742	-	-	-	7654	1	-	5	1 to 5	SG	88.9	0.80	4.0	4,965	2.50	5	0.84	6.375204	363.45926	1050	23	1100	Q
WHITECAP RESOURCES INC.	-	07-31-085-13W6	WE	05-30-085-13W6	PL	-	-	-	-	-	-	22431	1	-	6	6,7	NG	114.3	2.48	3.2	4,960	0.90	5	0.84	12.64142	42.8156106	170	33	187	Q
WHITECAP RESOURCES INC.	-	05-30-085-13W6	WE	02-25-085-14W6	PL	-	-	-	ESD	56.3945	-120.0696	14016	1	-	7	6,7	SG	114.3	1.18	4.0	5,100	4.50	5	0.83	30.17419	42.8156106	170	32	187	Q
WHITECAP RESOURCES INC.	-	02-25-085-14W6		12-17-085-13W6		ESD	56.3945	-120.0696	ESD	56.3706	-120.0273	12893	1	-	8	8	SG	114.3	5.00	3.2	9,930	3.23	5	0.71	214.0711	214.071114	660	45	726	Q
WHITECAP RESOURCES INC.	-	06-30-085-13W6	WE	06-25-085-14W6	PL	-	-	-	ESD	56.3978	-120.0742	18354	1	-	9	9	NG	101.6	1.90	4.0	9,930	1.46	5	0.71	27.66947	27.6694666	120	39	132	Q

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

## Boundary Lake Unit 2 - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP SOUR OPERATING																																
WHITECAP RESOURCES INC.	-	05-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	4256	1	-	1	1 to 205	OE	60.3	0.41	3.2	10,210	0.14	5	0.70	13000	1600	8.125	150.05	0.010105	15.3252679	100	18	110	Q
WHITECAP RESOURCES INC.	-	03-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	4257	1	-	2	1 to 205	SE	60.3	0.55	3.2	10,210	0.08	5	0.70	13000	1600	8.125	150.05	0.007746	15.3252679	100	20	110	Q
WHITECAP RESOURCES INC.	-	05-13-086-14W6	06-13-086-14W6	-	-	-	-	-	-	4258	1	-	3	1 to 205	OE	60.3	0.33	3.2	10,210	0.25	5	0.70	13000	1600	8.125	150.05	0.014523	15.3252679	100	17	110	Q
WHITECAP RESOURCES INC.	-	11-18-085-13W6	11-18-085-13W6	-	-	-	-	-	-	4259	1	-	4	1 to 205	OE	60.3	0.11	3.9	9,930	0.08	5	0.71	13000	1600	8.125	144.98	0.001464	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	02-08-086-13W6	UN 05-08-086-13W6	UN	-	-	-	-	-	4285	1	-	5	1 to 205	SE	69.0	1.10	7.5	3,450	0.35	5	0.88	13000	1600	8.125	41.117	0.05979	15.3252679	100	16	110	Q
WHITECAP RESOURCES INC.	-	04-33-085-14W6	06-28-085-14W6	-	-	-	-	-	-	4366	1	-	6	1 to 205	SE	60.3	1.82	3.2	10,210	0.08	5	0.70	13000	1600	8.125	150.05	0.025632	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	11-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	4560	1	-	7	1 to 205	OE	60.3	0.04	3.2	9,928	0.08	5	0.71	13000	1600	8.125	144.95	0.000561	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	11-19-086-13W6	12-19-086-13W6	-	-	-	-	-	-	4560	2	-	8	1 to 205	OE	60.3	0.49	3.2	9,928	0.08	5	0.71	13000	1600	8.125	144.95	0.006878	15.3252679	100	19	110	Q
WHITECAP RESOURCES INC.	-	12-19-086-13W6	16-13-086-14W6	-	-	-	CV	56.4625	-120.0598	4560	3	-	9	1 to 205	OE	60.3	1.33	3.2	9,928	0.08	5	0.71	13000	1600	8.125	144.95	0.018669	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	06-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	4568	1	-	10	1 to 205	SE	60.3	0.35	3.9	9,930	1.00	5	0.71	13000	1600	8.125	144.98	0.058219	15.3252679	100	17	110	Q
WHITECAP RESOURCES INC.	-	11-19-086-13W6	16-13-086-14W6	-	-	-	CV	56.4625	-120.0598	4747	1	-	11	1 to 205	OE	88.9	1.39	3.2	9,928	0.08	5	0.71	13000	1600	8.125	144.95	0.045711	15.3252679	100	33	110	Q
WHITECAP RESOURCES INC.	-	05-08-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	4748	1	-	12	1 to 205	OE	60.3	2.18	3.2	3,450	0.31	5	0.88	13000	1600	8.125	41.117	0.104562	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-08-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	4748	2	-	13	1 to 205	OE	88.9	2.18	3.2	3,450	0.31	5	0.88	13000	1600	8.125	41.117	0.244965	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	14-13-085-14W6	06-24-085-14W6	-	-	-	-	-	-	4875	1	-	14	1 to 205	MP	60.3	1.00	3.2	3,450	2.00	5	0.88	13000	1600	8.125	41.117	0.309447	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	02-30-085-13W6	06-30-085-13W6	-	-	-	ESD	56.3966	-120.0464	4875	2	-	15	1 to 205	MP	60.3	0.80	3.2	3,450	2.00	5	0.88	13000	1600	8.125	41.117	0.247557	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	11-21-085-14W6	14-21-085-14W6	-	-	-	-	-	-	5151	1	-	16	1 to 205	OE	60.3	0.50	3.9	9,655	0.20	5	0.71	13000	1600	8.125	139.92	0.016602	15.3252679	100	19	110	Q
WHITECAP RESOURCES INC.	-	16-27-085-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	5163	1	-	17	1 to 205	OE	168.3	4.98	4.0	5,103	0.20	5	0.83	13000	1600	8.125	64.031	1.448563	15.3252679	100	53	110	Q
WHITECAP RESOURCES INC.	-	04-24-085-14W6	06-24-085-14W6	-	-	-	-	-	-	5636	1	-	18	1 to 205	OE	60.3	0.66	3.9	3,450	0.20	5	0.88	13000	1600	8.125	41.117	0.019362	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-19-085-13W6	15-20-085-13W6	-	-	-	ESD	56.3900	-120.0155	5760	1	-	19	1 to 205	SC	88.9	2.50	4.0	4,960	0.72	5	0.84	13000	1600	8.125	61.949	0.665577	15.3252679	100	24	110	Q
WHITECAP RESOURCES INC.	-	16-13-086-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	5802	1	-	20	1 to 205	OE	168.3	5.38	4.8	3,450	0.20	5	0.88	13000	1600	8.125	41.117	1.443259	15.3252679	100	45	110	Q
WHITECAP RESOURCES INC.	-	14-18-085-13W6	16-18-085-13W6	-	-	-	-	-	-	5833	1	-	21	1 to 205	OE	60.3	0.80	3.9	3,450	0.20	5	0.88	13000	1600	8.125	41.117	0.023469	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-18-085-13W6	01-19-085-13W6	-	-	-	-	-	-	5833	2	-	22	1 to 205	SE	60.3	0.21	3.9	3,450	0.20	5	0.88	13000	1600	8.125	41.117	0.006616	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	01-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	5833	3	-	23	1 to 205	OE	60.3	1.09	3.9	3,450	0.20	5	0.88	13000	1600	8.125	41.117	0.031976	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-12-086-14W6	07-12-086-14W6	-	-	-	-	-	-	5859	1	-	24	1 to 205	OE	88.9	0.20	4.8	10,200	0.20	5	0.70	13000	1600	8.125	149.87	0.015218	15.3252679	100	19	110	Q
WHITECAP RESOURCES INC.	-	03-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	1	-	25	1 to 205	SE	60.3	0.38	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.020607	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	05-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	2	-	26	1 to 205	SE	60.3	0.33	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.017895	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	06-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	3	-	27	1 to 205	SE	60.3	0.04	3.2	3,488	0.35	5	0.88	13000	1600	8.125	41.616	0.002174	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	07-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	4	-	28	1 to 205	SE	60.3	0.23	3.2	3,488	0.35	5	0.88	13000	1600	8.125	41.616	0.012498	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	11-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	5	-	29	1 to 205	SE	60.3	0.31	3.2	3,488	0.35	5	0.88	13000	1600	8.125	41.616	0.016846	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	06-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6074	6	-	30	1 to 205	SE	88.9	1.23	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.156183	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	06-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6074	7	-	31	1 to 205	SE	60.3	1.23	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.0667	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	03-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	6075	1	-	32	1 to 205	SE	60.3	0.29	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.015726	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	07-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	6075	3	-	33	1 to 205	SE	60.3	0.23	3.2	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.012472	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	11-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	6075	4	-	34	1 to 205	SE	60.3	0.27	3.2	3,448	0.42	5	0.88	13000	1600	8.125	41.09	0.017157	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	06-01-086-14W6	08-01-086-14W6	-	-	-	-	-	-	6075	5	-	35	1 to 205	SE	88.9	1.02	3.2	3,448	0.66	5	0.88	13000	1600	8.125	41.09	0.244234	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	06-01-086-14W6	08-01-086-14W6	-	-	-	-	-	-	6075	6	-	36	1 to 205	SE	60.3	1.02	3.2	3,448	0.66	5	0.88	13000	1600	8.125	41.09	0.104303	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-01-086-14W6	06-06-086-13W6	-																												

## Boundary Lake Unit 2 - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	06-18-086-13W6	06-18-086-13W6	-	-	-	-	-	-	8157	9	-	70	1 to 205	MP	60.3	0.06	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.00308	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	06-30-086-13W6	04-30-086-13W6	-	-	-	-	-	-	8161	1	-	71	1 to 205	CO	60.3	1.39	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.071351	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-25-086-14W6	08-25-086-14W6	-	-	-	-	-	-	8161	2	-	72	1 to 205	CO	60.3	0.27	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.01386	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	08-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	8161	3	-	73	1 to 205	CO	60.3	1.03	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.052872	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-30-086-13W6	01-30-086-13W6	-	-	-	-	-	-	8161	4	-	74	1 to 205	CO	60.3	0.62	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.031826	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	13-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	8161	5	-	75	1 to 205	CO	60.3	1.19	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.061085	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-30-086-13W6	04-30-086-13W6	-	-	-	-	-	-	8161	6	-	76	1 to 205	CO	60.3	0.68	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.034906	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	13-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	8161	7	-	77	1 to 205	CO	60.3	1.19	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.061085	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	8161	8	-	78	1 to 205	CO	60.3	1.61	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.082645	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	11-27-085-14W6	06-27-085-14W6	-	-	-	-	-	-	8162	1	-	79	1 to 205	CO	60.3	0.25	3.9	3,448	1.59	5	0.88	13000	1600	8.125	41.09	0.058298	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	05-27-085-14W6	06-27-085-14W6	-	-	-	-	-	-	8162	2	-	80	1 to 205	CO	60.3	0.27	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.01386	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	03-27-085-14W6	06-27-085-14W6	-	-	-	-	-	-	8162	4	-	81	1 to 205	CO	60.3	0.31	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.015913	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	06-28-085-14W6	08-28-085-14W6	-	-	-	-	-	-	8162	6	-	82	1 to 205	CO	88.9	0.54	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.061107	15.3252679	100	19	110	Q
WHITECAP RESOURCES INC.	-	12-23-085-14W6	13-23-085-14W6	-	-	-	-	-	-	8162	7	-	83	1 to 205	CO	60.3	0.32	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.016426	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	04-23-085-14W6	13-23-085-14W6	-	-	-	-	-	-	8162	8	-	84	1 to 205	CO	60.3	1.27	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.065192	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	14-23-085-14W6	13-23-085-14W6	-	-	-	-	-	-	8162	9	-	85	1 to 205	CO	60.3	0.46	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.023613	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	10-23-085-14W6	11-23-085-14W6	-	-	-	-	-	-	8162	10	-	86	1 to 205	CO	60.3	0.43	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.022073	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	10-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	11	-	87	1 to 205	CO	60.3	1.06	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.054412	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-28-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8162	12	-	88	1 to 205	CO	60.3	3.11	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.159642	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-27-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8162	13	-	89	1 to 205	CO	88.9	1.14	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.129004	15.3252679	100	21	110	Q
WHITECAP RESOURCES INC.	-	06-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8162	14	-	90	1 to 205	CO	60.3	0.94	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.048252	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	15	-	91	1 to 205	MP	60.3	0.14	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.007186	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	16	-	92	1 to 205	MP	88.9	0.14	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.015843	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-28-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	17	-	93	1 to 205	CO	60.3	0.09	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.00462	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	18	-	94	1 to 205	MP	60.3	0.15	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.0077	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	01-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8162	19	-	95	1 to 205	MP	60.3	0.77	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.039526	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	09-27-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8162	20	-	96	1 to 205	MP	60.3	0.59	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.030286	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	21	-	97	1 to 205	MP	88.9	0.15	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.016974	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	01-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8162	22	-	98	1 to 205	MP	88.9	0.77	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.087134	15.3252679	100	20	110	Q
WHITECAP RESOURCES INC.	-	09-27-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8162	23	-	99	1 to 205	MP	88.9	0.59	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.066868	15.3252679	100	19	110	Q
WHITECAP RESOURCES INC.	-	08-27-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8162	24	-	100	1 to 205	CO	60.3	0.86	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.044146	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	25	-	101	1 to 205	CO	60.3	0.08	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.004107	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	16-22-084-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	29	-	102	1 to 205	CO	60.3	0.06	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.00308	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	08-28-085-14W6	08-28-085-14W6	-	-	-	-	-	-	8162	30	-	103	1 to 205	CO	88.9	0.12	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.013579	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-27-085-14W6	07-27-085-14W6	-	-	-	-	-	-	8162	31	-	104	1 to 205	CO	88.9	0.88	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.099582	15.3252679	100	20	110	Q
WHITECAP RESOURCES INC.	-	10-27-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8162	32	-	105	1 to 205	CO	88.9	0.83	5.5	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.093924	15.3252679	100	20	110	Q
WHITECAP RESOURCES INC.	-	11-23-085-14W6	14-23-085-14W6	-	-	-	-	-	-	8162	33	-	106	1 to 205	CO	60.3	0.35	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.017966	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	14-23-085-14W6	13-23-085-14W6	-	-	-	-	-	-	8162	34	-	107	1 to 205	CO	60.3	0.45	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.023099	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	35	-	108	1 to 205	CO	60.3	0.19	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.009753	15.3252679	100	10	110	Q
WHITECAP RESOURCES INC.	-	07-24-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8166	3	-	109	1 to 205	MP	60.3	1.11	3.9	3,448	0.52	5	0.88	13000	1600	8.125	41.09	0.084654	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-24-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8166	4	-	110	1 to 205	CO	60.3	1.70	3.9	3,448	0.1	5	0.88	13000	1600	8.125	41.09	0.024933	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-</																															

## Boundary Lake Unit 2 - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	14-27-085-14W6	16-27-085-14W6	-	-	-	CV	56.4045	-120.1119	8187	1	-	140	1 to 205	CO	60.3	0.87	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.044659	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-24-085-14W6	08-24-085-14W6	-	-	-	-	-	-	8189	1	-	141	1 to 205	MP	60.3	0.23	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.011806	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	08-30-085-13W6	01-30-085-13W6	-	-	-	-	-	-	8189	2	-	142	1 to 205	CO	60.3	0.54	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.027719	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	11-20-085-13W6	09-19-085-13W6	-	-	-	-	-	-	8189	4	-	143	1 to 205	CO	60.3	0.78	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.040039	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	05-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	8189	7	-	144	1 to 205	MP	60.3	1.90	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.097531	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	8189	10	-	145	1 to 205	CO	60.3	0.66	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.033879	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-13-085-14W6	16-13-085-14W6	-	-	-	-	-	-	8192	1	-	146	1 to 205	CO	60.3	0.81	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.041579	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-13-085-14W6	16-13-085-14W6	-	-	-	-	-	-	8192	2	-	147	1 to 205	CO	60.3	0.21	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.01078	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	13-18-085-13W6	14-18-085-13W6	-	-	-	-	-	-	8192	3	-	148	1 to 205	CO	60.3	0.60	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.030799	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-18-085-13W6	16-18-085-13W6	-	-	-	-	-	-	8192	4	-	149	1 to 205	CO	60.3	0.80	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.041066	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	16-18-085-13W6	16-18-085-13W6	-	-	-	-	-	-	8192	5	-	150	1 to 205	CO	60.3	0.35	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.017966	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	01-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	8192	6	-	151	1 to 205	CO	60.3	1.09	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.055952	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-34-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	1	-	152	1 to 205	CO	60.3	1.17	3.9	3,448	0.2	5	0.88	13000	1600	8.125	41.09	0.034319	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-12-086-14W6	08-12-086-14W6	-	-	-	-	-	-	8199	1	-	153	1 to 205	CO	60.3	0.22	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.011293	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	14-01-086-14W6	04-06-086-13W6	-	-	-	-	-	-	8199	2	-	154	1 to 205	CO	60.3	1.68	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.086238	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-01-086-14W6	04-01-086-14W6	-	-	-	-	-	-	8199	3	-	155	1 to 205	CO	60.3	0.53	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.027206	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	06-36-085-14W6	16-36-085-14W6	-	-	-	-	-	-	8199	6	-	156	1 to 205	CO	60.3	2.01	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.103177	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	14-25-085-14W6	14-25-085-14W6	-	-	-	-	-	-	8199	7	-	157	1 to 205	CO	60.3	0.22	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.011293	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	08-25-085-14W6	16-25-085-14W6	-	-	-	-	-	-	8199	8	-	158	1 to 205	CO	60.3	0.94	3.9	3,448	0.56	5	0.88	13000	1600	8.125	41.09	0.077203	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	14-07-086-13W6	06-07-086-13W6	-	-	-	-	-	-	8199	9	-	159	1 to 205	CO	60.3	1.17	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.060058	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	07-06-086-13W6	07-06-086-13W6	-	-	-	-	-	-	8199	12	-	160	1 to 205	CO	60.3	0.27	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.01386	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	03-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	13	-	161	1 to 205	CO	60.3	0.24	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.01232	15.3252679	100	11	110	Q
WHITECAP RESOURCES INC.	-	16-31-085-13W6	15-31-086-13W6	-	-	-	-	-	-	8199	14	-	162	1 to 205	CO	60.3	0.29	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.014886	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	14-31-085-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	15	-	163	1 to 205	CO	60.3	0.71	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.036446	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-30-085-13W6	14-30-085-13W6	-	-	-	-	-	-	8199	16	-	164	1 to 205	CO	60.3	0.30	3.9	3,448	0.59	5	0.88	13000	1600	8.125	41.09	0.025959	15.3252679	100	12	110	Q
WHITECAP RESOURCES INC.	-	08-30-085-13W6	14-30-085-13W6	-	-	-	-	-	-	8199	17	-	165	1 to 205	CO	60.3	1.26	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.064678	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	04-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	22	-	166	1 to 205	CO	60.3	0.86	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.044146	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	04-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	23	-	167	1 to 205	CO	60.3	0.49	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.025153	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	04-01-086-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	24	-	168	1 to 205	CO	60.3	0.46	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.023613	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	16-36-085-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	25	-	169	1 to 205	CO	60.3	0.63	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.032339	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	06-07-086-13W6	03-07-086-13W6	-	-	-	-	-	-	8199	26	-	170	1 to 205	CO	60.3	0.62	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.031826	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-06-086-13W6	11-06-086-13W6	-	-	-	-	-	-	8199	27	-	171	1 to 205	CO	60.3	0.82	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.042092	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	28	-	172	1 to 205	CO	60.3	0.57	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.029259	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	02-06-086-13W6	03-06-086-13W6	-	-	-	-	-	-	8199	31	-	173	1 to 205	CO	60.3	0.61	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.031313	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	03-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8199	33	-	174	1 to 205	CO	60.3	0.85	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.043632	15.3252679	100	13	110	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	34	-	175	1 to 205	CO	60.3	1.31	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.067245	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	03-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8199	35	-	176	1 to 205	CO	60.3	0.85	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.043632	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	36	-	177	1 to 205	CO	60.3	1.31	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.067245	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-07-086-13W6	13-06-086-13W6	-	-	-	-	-	-	8199	38	-	178	1 to 205	CO	60.3	1.59	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.081618	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	8199	39	-	179	1 to 205	CO	60.3	1.39	3.9	3,448	0.35	5	0.88	13000	1600	8.125	41.09	0.071351	15.3252679	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	40	-	180	1 to 205	CO	6																



## Boundary Lake Unit 2 - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE LINE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)	Z	GAS (m3/d)	LIQUID (m3/d)	GLR (m3/m3)	GVF (m3/m3)	SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	05-30-085-13W6	06-30-085-13W6	-	-	-	-	-	-	6076	2	-	209	209	SE	60.3	0.29	3.2	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	07-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	6077	5	-	210	210	SE	60.3	0.33	3.2	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	6078	8	-	211	211	SE	88.9	0.53	3.2	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	6078	11	-	212	212	SE	88.9	0.53	3.2	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	06-27-085-14W6	06-27-085-14W6	-	-	-	-	-	-	8162	3	-	213	213	CO	60.3	0.05	3.9	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	07-27-085-14W6	06-27-085-14W6	-	-	-	-	-	-	8162	5	-	214	214	CO	60.3	0.25	3.9	3,448	0.35	5										V	
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	26	-	215	215	CO	60.3	0.11	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	27	-	216	216	CO	60.3	0.07	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8162	28	-	217	217	CO	60.3	0.01	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	03-30-086-13W6	14-19-086-13W6	-	-	-	-	-	-	8171	3	-	218	218	OE	60.3	0.52	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	03-19-086-13W6	06-19-086-13W6	-	-	-	-	-	-	8171	7	-	219	219	OE	60.3	0.33	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	14-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	8171	8	-	220	220	OE	60.3	0.62	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	05-17-086-13W6	06-17-086-13W6	-	-	-	-	-	-	8180	1	-	221	221	CO	60.3	0.28	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	06-17-086-13W6	03-17-086-13W6	-	-	-	-	-	-	8180	2	-	222	222	CO	60.3	0.58	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	08-07-086-13W6	05-08-086-13W6	-	-	-	-	-	-	8180	4	-	223	223	CO	60.3	0.21	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	14-08-086-13W6	05-08-086-13W6	-	-	-	-	-	-	8180	7	-	224	224	CO	60.3	1.67	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	14-08-086-13W6	05-08-086-13W6	-	-	-	-	-	-	8180	10	-	225	225	CO	60.3	1.20	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	14-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	8184	1	-	226	226	MP	60.3	1.16	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	14-20-085-13W6	13-20-085-13W6	-	-	-	-	-	-	8189	3	-	227	227	CO	60.3	0.39	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	13-20-085-13W6	13-20-085-13W6	-	-	-	-	-	-	8189	8	-	228	228	CO	60.3	0.27	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	16-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	8189	9	-	229	229	CO	60.3	0.53	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	11-36-085-14W6	11-36-085-14W6	-	-	-	-	-	-	8199	4	-	230	230	CO	60.3	0.14	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	08-36-085-14W6	16-36-086-14W6	-	-	-	-	-	-	8199	5	-	231	231	CO	60.3	1.22	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	8199	10	-	232	232	CO	60.3	0.48	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	08-06-086-13W6	07-06-086-13W6	-	-	-	-	-	-	8199	11	-	233	233	CO	60.3	0.62	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	11-36-085-14W6	06-36-085-14W6	-	-	-	-	-	-	8199	18	-	234	234	CO	60.3	0.38	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	05-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8199	29	-	235	235	CO	60.3	0.14	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8199	30	-	236	236	CO	60.3	0.38	3.9	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8199	32	-	237	237	CO	60.3	0.42	3.9	3,448	0.04	5											V
WHITECAP RESOURCES INC.	-	16-19-085-13W6	16-19-085-13W6	-	-	-	-	-	-	8206	1	-	238	238	CO	114.3	0.21	5.6	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	01-30-085-13W6	14-30-085-13W6	-	-	-	-	-	-	8206	2	-	239	239	CO	114.3	1.92	5.6	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	03-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8206	3	-	240	240	CO	114.3	0.92	5.6	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	-	-	-	8206	4	-	241	241	CO	114.3	1.25	5.6	3,448	0.35	5											V
WHITECAP RESOURCES INC.	-	06-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	23382	1	-	242	242	OM	60.3	0.42	3.2	3,448	1.00	5											V
WHITECAP RESOURCES INC.	-	07-28-085-14W6	06-28-085-14W6	-	-	-	-	-	-	23415	1	-	243	243	OM	60.3	0.25	3.2	3,450	1.00	5											V
WHITECAP RESOURCES INC.	-	14-19-086-13W6	11-19-086-13W6	-	-	-	-	-	-	23431	1	-	244	244	OM	60.3	0.55	3.2	3,448	1.00	5											V
WHITECAP RESOURCES INC.	-	11-19-086-13W6	16-13-086-14W6	-	-	-	-	-	-	23447	1	-	245	245	OM	114.3	1.39	4.0	3,447	1.00	5											V
WHITECAP RESOURCES INC.	-	06-13-086-14W6	16-13-086-14W6	-	-	-	-	-	-	23448	1	-	246	246	OM	88.9	1.22	4.0	3,447	1.00	5											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 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

## Boundary Lake Unit 2 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
<b>TIDEWATER SWEET OPERATING</b>											
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A02-25-085-14	16350	102022508514W600	02-25-085-14W6	56.3945	-120.0694	0	118	130		GAS WELL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-29-085-13	6551	100032908513W600	03-29-085-13W6	56.3938	-120.0210	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-23-085-14	2383	100042308514W600	04-23-085-14W6	56.3790	-120.1066	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-33-085-14	6560	100043308514W600	04-33-085-14W6	56.4098	-120.1564	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-17-086-13	918	100061708613W600	06-17-086-13W6	56.4555	-120.0208	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-18-086-13	811	100061808613W600	06-18-086-13W6	56.4555	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-19-085-13	618	100061908513W600	06-19-085-13W6	56.3832	-120.0463	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-23-085-14	646	100062308514W602	06-23-085-14W6	56.3826	-120.1000	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W603	06-25-085-14W6	56.3977	-120.0746	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-28-085-14	1786	100062808514W600	06-28-085-14W6	56.3972	-120.1514	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-29-085-13	591	100062908513W600	06-29-085-13W6	56.3974	-120.0206	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-12-086-14	2520	100071208614W600	07-12-086-14W6	56.4408	-120.0691	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-27-085-14	2370	100072708514W600	07-27-085-14W6	56.3971	-120.1218	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-27-086-14	4466	100072708614W600	07-27-086-14W6	56.4835	-120.1224	0	118	130		CAPPED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-30-085-13	2376	100073008513W600	07-30-085-13W6	56.3970	-120.0422	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-31-085-13	2477	100073108513W600	07-31-085-13W6	56.4117	-120.0382	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-23-085-14	652	100082308514W600	08-23-085-14W6	56.3830	-120.0875	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-28-085-14	1680	100082808514W600	08-28-085-14W6	56.3978	-120.1383	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 10-22-085-14	2373	100102208514W600	10-22-085-14W6	56.3863	-120.1196	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 10-23-085-14	2487	100102308514W600	10-23-085-14W6	56.3863	-120.0933	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-07-086-13	3019	100110708613W600	11-07-086-13W6	56.4445	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-12-086-14	3025	100111208614W600	11-12-086-14W6	56.4433	-120.0738	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-13-085-14	2381	100111308514W600	11-13-085-14W6	56.3718	-120.0738	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A11-18-085-13	6550	102111808513W600	11-18-085-13W6	56.3722	-120.0486	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-19-085-13	3035	100111908513W600	11-19-085-13W6	56.3852	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-20-085-13	2484	100112008513W600	11-20-085-13W6	56.3864	-120.0208	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-24-085-14	692	100112408514W602	11-24-085-14W6	56.3867	-120.0745	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-06-086-13	1284	100120608613W600	12-06-086-13W6	56.4303	-120.0530	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-13-085-14	629	100141308514W600	14-13-085-14W6	56.3754	-120.0738	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-18-086-13	1116	100141808613W600	14-18-086-13W6	56.4628	-120.0471	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-19-085-13	635	100141908513W600	14-19-085-13W6	56.3900	-120.0470	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-25-085-14	656	100142508514W600	14-25-085-14W6	56.4045	-120.0738	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-27-085-14	971	100142708514W600	14-27-085-14W6	56.4046	-120.1262	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-28-085-14	1751	100142808514W600	14-28-085-14W6	56.4045	-120.1514	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-29-085-13	771	100142908513W600	14-29-085-13W6	56.4046	-120.0208	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-01-086-14	860	100160108614W600	16-01-086-14W6	56.4337	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-06-086-13	1009	100160608613W600	16-06-086-13W6	56.4337	-120.0342	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-07-086-13	844	100160708613W600	16-07-086-13W6	56.4481	-120.0342	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-12-086-14	593	100161208614W600	16-12-086-14W6	56.4481	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-13-085-14	580	100161308514W600	16-13-085-14W6	56.3755	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-13-086-14	858	100161308614W600	16-13-086-14W6	56.4627	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-085-13	628	100161808513W600	16-18-085-13W6	56.3755	-120.0341	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-19-085-13	636	100161908513W600	16-19-085-13W6	56.3900	-120.0341	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-21-085-14	1798	100162108514W600	16-21-085-14W6	56.3907	-120.1396	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-22-085-14	823	100162208514W600	16-22-085-14W6	56.3899	-120.1132	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-23-085-14	719	100162308514W600	16-23-085-14W6	56.3899	-120.0868	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-24-085-14	736	100162408514W600	16-24-085-14W6	56.3899	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-24-086-14	1029	100162408614W600	16-24-086-14W6	56.4772	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-085-14	1144	100162508514W600	16-25-085-14W6	56.4051	-120.0615	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-27-085-14	812	100162708514W600	16-27-085-14W6	56.4045	-120.1132	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-28-085-14	1543	100162808514W600	16-28-085-14W6	56.4045	-120.1383	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-30-085-13	1481	100163008513W600	16-30-085-13W6	56.4038	-120.0328	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 16-31-085-13	218	100163108513W600	16-31-085-13W6	56.4191	-120.0338	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-36-085-14	206	100163608514W600	16-36-085-14W6	56.4190	-120.0604	0		WLB		WATER INJECTOR
<b>TIDEWATER SWEET SUSPENDED</b>											
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W600	02-25-085-14W6	56.3944	-120.0696	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W602	02-25-085-14W6	56.3944	-120.0696	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-13-086-14	2890	100031308614W600	03-13-086-14W6	56.4530	-120.0738	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-18-086-13	3016	100031808613W600	03-18-086-13W6	56.4531	-120.0472	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 04-34-085-14	1810	100043408514W602	04-34-085-14W6	56.4074	-120.1341	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-18-086-13	2489	100051808613W600	05-18-086-13W6	56.4556	-120.0557	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-30-085-13	2377	100053008513W600	05-30-085-13W6	56.3968	-120.0505	0	118	130		SUSPENDED OIL

## Boundary Lake Unit 2 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	SURFACE LATITUDE	SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A05-30-085-13	17888	102053008513W600	05-30-085-13W6	56.3962	-120.0545	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W604	06-25-085-14W6	56.3977	-120.0746	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W605	06-25-085-14W6	56.3977	-120.0746	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-30-085-13	1137	100063008513W602	06-30-085-13W6	56.3968	-120.0461	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-33-085-14	1767	100063308514W600	06-33-085-14W6	56.4109	-120.1514	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A06-34-085-14	10725	102063408514W600	06-34-085-14W6	56.4106	-120.1237	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-13-086-14	2519	100071308614W600	07-13-086-14W6	56.4554	-120.0691	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-13-086-14	2519	100071308614W602	07-13-086-14W6	56.4554	-120.0691	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-13-086-14	2519	100071308614W603	07-13-086-14W6	56.4554	-120.0691	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-27-086-14	4466	100072708614W602	07-27-086-14W6	56.4835	-120.1224	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-13-086-14	1101	100081308614W600	08-13-086-14W6	56.4555	-120.0605	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-19-085-13	632	100081908513W600	08-19-085-13W6	56.3828	-120.0341	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-23-085-14	652	100082308514W602	08-23-085-14W6	56.3830	-120.0875	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-23-086-14	1125	100082308614W600	08-23-086-14W6	56.4698	-120.0868	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-30-085-13	1097	100083008513W600	08-30-085-13W6	56.3974	-120.0341	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A08-30-085-13	2931	102083008513W602	08-30-085-13W6	56.3974	-120.0334	0	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-18-086-13	2888	100111808613W600	11-18-086-13W6	56.4579	-120.0472	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-24-085-14	692	100112408514W600	11-24-085-14W6	56.3867	-120.0745	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-28-085-14	10724	100112808514W602	12-28-085-14W6	56.3994	-120.1585	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-29-085-13	6875	100122908513W600	12-29-085-13W6	56.4005	-120.0283	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 14-13-086-14	952	100141308614W600	14-13-086-14W6	56.4627	-120.0738	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-22-085-14	1073	100142208514W600	14-22-085-14W6	56.3899	-120.1265	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-24-086-14	633	100142408614W600	14-24-086-14W6	56.4772	-120.0737	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-086-13	1066	100161808613W600	16-18-086-13W6	56.4628	-120.0342	0		WLB		SUSPENDED WATER INJECTOR
<b>TIDEWATER SWEET STANDING</b>											
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W603	02-25-085-14W6	56.3944	-120.0696	0		100		STANDING
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A03-31-085-13	26406	102033108513W600	03-31-085-13W6	56.4094	-120.0499	0		100		STANDING
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-23-086-14	1125	100082308614W602	08-23-086-14W6	56.4698	-120.0868	0		100		STANDING
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 14-13-086-14	952	100141308614W602	14-13-086-14W6	56.4627	-120.0738	0		100		STANDING
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 16-29-086-13	23891	100162908613W600	16-29-086-13W6	56.4907	-120.0097	0		100		STANDING

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 WLB=Well Lease Boundary

## Boundary Lake Unit 2 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	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
WHITECAP SWEET OPERATING																					
WHITECAP RESOURCES INC.	-	05-08-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1128	2	-	CO	114.3	2.01	0.0	1,550	0	21	24	Q
WHITECAP RESOURCES INC.	-	15-26-085-14W6	16-26-085-14W6	-	-	-	-	-	-	1242	20	-	NG	152.4	0.57	0.0	689	0	20	22	Q
WHITECAP RESOURCES INC.	-	16-27-085-14W6	15-26-085-14W6	-	-	-	-	-	-	1335	1	-	NG	101.6	1.04	0.0	551	0	13	15	Q
WHITECAP RESOURCES INC.	-	09-19-085-13W6	08-23-085-14W6	-	-	-	-	-	-	1404	1	-	NG	114.3	3.23	0.0	690	0	17	19	Q
WHITECAP RESOURCES INC.	-	16-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	1907	1	-	FW	60.3	1.68	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	1907	2	-	FW	60.3	1.68	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-31-085-13W6	16-31-085-13W6	-	-	-	-	-	-	1907	4	-	FW	88.9	0.26	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	5	-	FW	88.9	0.92	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-36-085-14W6	06-06-086-13W6	-	-	-	-	-	-	1907	6	-	FW	88.9	1.22	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-01-086-14W6	06-06-086-13W6	-	-	-	-	-	-	1907	7	-	FW	88.9	1.22	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	1907	8	-	FW	114.3	0.70	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-31-085-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	9	-	FW	88.9	0.61	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	10	-	FW	88.9	0.35	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	11	-	FW	88.9	0.30	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	12-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	12	-	FW	114.3	0.22	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-06-086-13W6	16-07-086-13W6	-	-	-	-	-	-	2010	4	-	FW	88.9	1.83	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-31-085-13W6	16-30-085-13W6	-	-	-	-	-	-	2010	5	-	FW	88.9	1.83	0.0	22,048	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	14-31-085-13W6	-	-	-	-	-	-	2272	1	-	CO	114.3	0.85	3.2	2,756	0	25	28	Q
WHITECAP RESOURCES INC.	-	14-31-085-13W6	11-31-085-13W6	-	-	-	-	-	-	2272	2	-	CO	114.3	0.31	3.2	2,756	0	21	24	Q
WHITECAP RESOURCES INC.	-	16-24-085-14W6	06-24-085-14W6	-	-	-	-	-	-	2447	1	-	CO	60.3	0.82	4.8	696	0	10	11	T
WHITECAP RESOURCES INC.	-	04-28-085-14W6	06-28-085-14W6	-	-	-	-	-	-	3058	1	-	OE	60.3	0.61	3.9	11,000	0	21	24	Q
WHITECAP RESOURCES INC.	-	16-36-085-14W6	16-25-085-14W6	-	-	-	-	-	-	3416	1	-	SW	88.9	1.58	5.5	22,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-25-085-14W6	16-24-085-14W6	-	-	-	-	-	-	3416	2	-	SW	88.9	1.73	5.5	22,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	14-06-086-13W6	14-06-086-13W6	-	-	-	-	-	-	3440	1	-	CO	60.3	0.04	3.9	4,800	0	10	11	Q
WHITECAP RESOURCES INC.	-	08-30-085-13W6	08-30-085-13W6	-	-	-	-	-	-	3686	1	-	CO	60.3	0.06	3.2	3,500	0	10	11	Q
WHITECAP RESOURCES INC.	-	16-30-085-13W6	16-19-085-13W6	-	-	-	-	-	-	4044	1	-	ML	88.9	1.60	5.5	20,700	0	47	52	Q
WHITECAP RESOURCES INC.	-	16-19-085-13W6	16-18-085-13W6	-	-	-	-	-	-	4044	2	-	PW	88.9	1.59	5.5	20,700	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-24-085-14W6	16-13-085-14W6	-	-	-	-	-	-	4044	3	-	FW	88.9	1.97	5.5	20,700	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-25-085-14W6	06-30-085-13W6	-	-	-	-	-	-	4051	1	-	CO	60.3	1.75	3.9	3,920	0	14	16	Q
WHITECAP RESOURCES INC.	-	12-19-086-13W6	16-24-086-14W6	-	-	-	-	-	-	4521	2	-	FW	60.3	0.89	3.2	22,070	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-07-086-13W6	13-07-086-14W6	-	-	-	-	-	-	4713	1	-	FW	60.3	0.08	3.2	22,070	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-07-086-13W6	16-12-086-14W6	-	-	-	-	-	-	4713	2	-	FW	60.3	0.22	3.2	22,070	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-27-085-14W6	16-28-085-14W6	-	-	-	-	-	-	5394	1	-	NG	88.9	1.78	5.5	19,500	0	46	51	Q
WHITECAP RESOURCES INC.	-	16-28-085-14W6	16-21-085-14W6	-	-	-	-	-	-	5584	1	-	FW	88.9	1.54	4.8	19,500	0		ROW	Q
WHITECAP RESOURCES INC.	-	08-23-085-14W6	16-23-085-14W6	-	-	-	-	-	-	5919	1	-	FW	88.9	0.85	4.8	18,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	07-12-086-14W6	06-12-086-14W6	-	-	-	-	-	-	6078	3	-	SE	60.3	0.29	3.2	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	05-07-086-13W6	06-07-086-13W6	-	-	-	-	-	-	6079	2	-	SE	60.3	0.25	3.2	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	11-07-086-13W6	06-07-086-13W6	-	-	-	-	-	-	6079	5	-	SE	60.3	0.43	3.2	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	06-07-086-13W6	03-07-086-13W6	-	-	-	-	-	-	6079	6	-	SE	88.9	0.77	3.2	3,448	0	20	22	Q
WHITECAP RESOURCES INC.	-	06-07-086-13W6	03-07-086-13W6	-	-	-	-	-	-	6079	7	-	SE	60.3	0.77	3.2	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	03-07-086-13W6	11-06-086-13W6	-	-	-	-	-	-	6079	9	-	SE	88.9	0.82	3.2	3,448	0	20	22	Q
WHITECAP RESOURCES INC.	-	11-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	6079	10	-	SE	88.9	0.18	3.2	3,448	0	15	17	Q
WHITECAP RESOURCES INC.	-	03-07-086-13W6	11-06-086-13W6	-	-	-	-	-	-	6079	11	-	SE	60.3	0.82	3.2	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	11-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	6079	12	-	SE	60.3	0.18	3.2	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	09-19-085-13W6	06-06-086-13W6	-	-	-	-	-	-	6285	1	-	OE	168.3	4.43	4.8	10,200	0	73	81	Q
WHITECAP RESOURCES INC.	-	02-15-085-14W6	16-22-085-14W6	-	-	-	-	-	-	7735	2	-	FW	114.3	2.78	4.0	18,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-21-085-14W6	-	-	-	-	-	-	7735	3	-	FW	114.3	1.73	4.0	18,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-13-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8157	1	-	CO	60.3	1.22	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	06-18-086-13W6	16-13-086-14W6	-	-	-	-	-	-	8157	2	-	CO	88.9	1.48	5.5	3,448	0	21	24	Q
WHITECAP RESOURCES INC.	-	07-13-086-14W6	06-13-086-14W6	-	-	-	-	-	-	8157	4	-	MP	60.3	0.25	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	03-13-086-14W6	06-13-086-14W6	-	-	-	-	-	-	8157	6	-	CO	60.3	0.38	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	11-18-086-13W6	06-18-086-13W6	-	-	-	-	-	-	8157	7	-	MP	60.3	0.30	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	05-18-086-13W6	06-18-086-13W6	-	-	-	-	-	-	8157	10	-	MP	60.3	0.30	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	03-18-086-13W6	06-18-086-13W6	-	-	-	-	-	-	8157	11	-	MP	60.3	0.32	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	04-24-085-14W6	13-24-085-14W6	-	-	-	-	-	-	8158	3	-	FW	219.1	1.62	7.9	17,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	04-25-085-14W6	04-25-085-14W6	-	-	-	-	-	-	8158	4	-	FW	219.1	0.46	7.9	17,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	14-13-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8166	5	-	CO	60.3	0.93	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	08-13-086-14W6	08-13-086-14W6	-	-	-	-	-	-	8166	6	-	CO	60.3	0.16	3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	08-13-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8166	10	-	CO	60.3	1.01	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	04-36-085-14W6	04-36-085-14W6	-	-	-	-	-	-	8167	1	-	FW	60.3	0.13	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	11-31-085-13W6	-	-	-	-	-	-	8167	2	-	FW	114.3	0.25	4.8	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	04-25-085-14W6	16-25-085-14W6	-	-	-	-	-	-	8167	3	-	FW	219.1	1.89	7.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-25-085-14W6	04-25-085-14W6	-	-	-	-	-	-	8167	6	-	FW	60.3	1.60	3.9	14,470	0		ROW	Q

## Boundary Lake Unit 2 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	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
WHITECAP RESOURCES INC.	-	13-24-085-14W6	13-24-085-14W6	-	-	-	-	-	-	8167	7	-	FW	60.3	0.17	3.9	1,447	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-23-085-14W6	16-23-085-14W6	-	-	-	-	-	-	8167	8	-	FW	60.3	0.17	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	-	-	-	8167	11	-	FW	219.1	1.30	7.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-31-085-13W6	03-31-085-13W6	-	-	-	-	-	-	8167	14	-	FW	114.3	0.92	4.7	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	14-30-085-13W6	01-30-085-13W6	-	-	-	-	-	-	8167	15	-	FW	114.3	1.97	4.8	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	01-01-086-14W6	01-01-086-14W6	-	-	-	-	-	-	8173	5	-	MP	114.3	0.03	6.0	14,470	0	17	19	Q
WHITECAP RESOURCES INC.	-	13-18-086-13W6	16-18-086-13W6	-	-	-	-	-	-	8175	1	-	FW	60.3	1.40	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	13-18-086-13W6	-	-	-	-	-	-	8175	2	-	FW	114.3	0.35	6.0	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8175	3	-	FW	60.3	0.33	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8175	4	-	FW	60.3	0.15	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-07-086-13W6	16-07-086-13W6	-	-	-	-	-	-	8175	5	-	FW	60.3	1.40	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-07-086-13W6	13-07-086-14W6	-	-	-	-	-	-	8175	6	-	FW	60.3	0.02	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	8175	7	-	FW	60.3	0.82	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	12-06-086-13W6	16-01-086-14W6	-	-	-	-	-	-	8175	8	-	FW	60.3	0.22	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	07-06-086-13W6	16-06-086-13W6	-	-	-	-	-	-	8175	9	-	FW	60.3	0.97	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-06-086-13W6	16-07-086-13W6	-	-	-	-	-	-	8175	10	-	FW	60.3	1.66	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-12-086-14W6	16-12-086-14W6	-	-	-	-	-	-	8175	11	-	FW	60.3	0.20	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	12-19-086-13W6	09-19-086-13W6	-	-	-	-	-	-	8176	1	-	FW	60.3	1.38	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	12-19-086-13W6	13-24-086-14W6	-	-	-	-	-	-	8176	2	-	FW	60.3	0.63	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	13-18-086-13W6	12-19-086-13W6	-	-	-	-	-	-	8176	3	-	FW	60.3	1.05	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-24-086-14W6	16-24-086-14W6	-	-	-	-	-	-	8176	4	-	FW	60.3	0.20	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-27-085-14W6	15-26-085-14W6	-	-	-	-	-	-	8177	1	-	FW	88.9	1.09	5.5	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	11-31-085-13W6	-	-	-	-	-	-	8178	1	-	FW	168.3	1.23	6.3	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	04-06-085-13W6	-	-	-	-	-	-	8178	2	-	FW	88.9	0.65	5.5	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	11-31-085-13W6	-	-	-	-	-	-	8178	4	-	FW	114.3	0.16	6.0	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	04-31-085-13W6	-	-	-	-	-	-	8178	6	-	FW	114.3	0.70	6.0	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	04-06-086-13W6	16-36-085-14W6	-	-	-	-	-	-	8178	8	-	FW	88.9	0.24	5.5	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	16-25-085-14W6	16-25-085-14W6	-	-	-	-	-	-	8178	9	-	FW	60.3	0.14	3.9	14,470	0		ROW	Q
WHITECAP RESOURCES INC.	-	08-33-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	3	-	CO	60.3	2.44	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	06-33-085-14W6	14-28-085-14W6	-	-	-	-	-	-	8193	4	-	MP	60.3	0.84	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	14-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	5	-	CO	60.3	2.75	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	08-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	6	-	CO	60.3	2.35	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	08-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8193	7	-	CO	60.3	0.18	3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	06-23-085-14W6	14-23-085-14W6	-	-	-	-	-	-	8193	8	-	CO	60.3	0.63	3.9	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	08-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8193	9	-	CO	60.3	0.17	3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	09-27-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	10	-	CO	60.3	0.74	3.9	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	15-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	11	-	MP	60.3	2.37	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC.	-	14-23-085-14W6	13-23-085-14W6	-	-	-	-	-	-	8193	12	-	CO	60.3	0.43	3.9	3,448	0	12	14	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8193	13	-	CO	60.3	0.03	3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	16-22-085-14W6	16-22-085-14W6	-	-	-	-	-	-	8193	14	-	CO	60.3	0.17	3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC.	-	01-27-085-14W6	08-27-085-14W6	-	-	-	-	-	-	8193	15	-	CO	60.3	0.64	3.9	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	09-27-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	16	-	CO	60.3	0.65	3.9	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	08-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	10647	2	-	CO	88.9	0.45	0.0	414	0	10	11	Q
WHITECAP RESOURCES INC.	-	14-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	10647	3	-	CO	88.9	1.20	0.0	414	0	11	13	Q
WHITECAP RESOURCES INC.	-	16-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	10647	4	-	CO	88.9	0.44	0.0	414	0	10	11	Q
WHITECAP RESOURCES INC.	-	02-25-085-14W6	PL 05-30-085-13W6	-	-	-	-	-	-	14016	2	-	FG	60.3	1.18	0.0	1,375	0	10	11	Q
WHITECAP RESOURCES INC.	-	02-22-085-14W6	PL 08-23-085-14W6	PL	-	-	-	-	-	15221	1	-	FW	67.3	2.11	3.5	18,000	0		ROW	Q
WHITECAP RESOURCES INC.	-	05-30-085-13W6	WE 07-31-085-13W6	PL	-	-	-	-	-	22431	2	-	FG	88.9	2.48	9.9	1,375	0	16	18	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	-	-	-	23413	2	-	FG	60.3	1.32	3.2	1,375	0	10	11	Q
WHITECAP RESOURCES INC.	-	07-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	23413	3	-	FG	60.3	0.64	3.2	1,375	0	10	11	Q
WHITECAP RESOURCES INC.	-	07-31-085-13W6	UN 07-31-085-13W6	UN	-	-	-	-	-	23517	1	-	NG	60.3	0.07	3.9	1,375	0	10	11	Q
WHITECAP RESOURCES INC.	-	06-06-086-13W6	16-27-085-14W6	-	-	-	-	-	-	24301	1	-	PW	168.3	5.26	7.1	18,000	0		ROW	Q
WHITECAP SWEET OPERATING																					
WHITECAP RESOURCES INC.	-	11-24-085-14W6	08-15-085-14W6	-	-	-	-	-	-	1090	2	-	CO	114.3	3.40	0.0	6,890	0			V
WHITECAP RESOURCES INC.	-	06-25-085-14W6	11-24-085-14W6	-	-	-	-	-	-	1096	1	-	NG	114.3	1.32	0.0	7,579	0			V
WHITECAP RESOURCES INC.	-	06-30-085-13W6	06-25-085-14W6	-	-	-	-	-	-	1157	1	-	NG	114.3	1.74	4.8	7,510	0			V
WHITECAP RESOURCES INC.	-	06-06-086-13W6	04-06-086-13W6	-	-	-	-	-	-	1242	17	-	NG	203.2	0.77	0.0	689	0			V
WHITECAP RESOURCES INC.	-	04-06-086-13W6	16-26-085-14W6	-	-	-	-	-	-	1242	18	-	NG	254.0	2.54	0.0	689	0			V
WHITECAP RESOURCES INC.	-	15-26-085-14W6	16-26-085-14W6	-	-	-	-	-	-	1242	21	-	NG	203.2	0.20	0.0	689	0			V
WHITECAP RESOURCES INC.	-	16-26-085-14W6	08-11-085-14W6	-	-	-	-	-	-	1242	22	-	NG	254.0	5.30	0.0	689	0			V
WHITECAP RESOURCES INC.	-	16-13-086-14W6	06-06-086-13W6	-	-	-	-	-	-	1564	1	-	NG	114.3	4.36	4.5	689	0			V
WHITECAP RESOURCES INC.	-	06-36-085-14W6	03-36-085-14W6	-	-	-	-	-	-	1620	1	-	FG	50.8	0.64	3.2	482	0			V
WHITECAP RESOURCES INC.	-	03-36-085-14W6	14-25-085-14W6	-	-	-	-	-	-	1620	2	-	FG	50.8	0.18	3.2	482	0			V
WHITECAP RESOURCES INC.	-	14-25-085-14W6	06-25-085-14W6	-	-	-	-	-	-	1620	3	-	FG	50.8	0.68	3.2	482	0			V

## Boundary Lake Unit 2 - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	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
WHITECAP RESOURCES INC.	-	05-25-085-14W6	16-27-085-14W6	-	-	-	-	-	-	1632	1	-	FW	152.4	1.83	0.0	4,961	0			V
WHITECAP RESOURCES INC.	-	16-27-085-14W6	01-35-085-14W6	-	-	-	-	-	-	1907	3	-	FW	114.3	1.83	0.0	22,048	0			V
WHITECAP RESOURCES INC.	-	11-31-085-13W6	16-19-085-13W6	-	-	-	-	-	-	2010	1	-	FW	114.3	3.05	0.0	22,048	0			V
WHITECAP RESOURCES INC.	-	16-19-085-13W6	16-24-085-14W6	-	-	-	-	-	-	2010	7	-	FW	60.3	1.61	0.0	22,048	0			V
WHITECAP RESOURCES INC.	-	16-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	2273	1	-	CO	114.3	0.37	3.2	2,756	0			V
WHITECAP RESOURCES INC.	-	12-19-086-13W6	08-19-086-13W6	-	-	-	-	-	-	2381	1	-	FW	60.3	1.52	3.2	20,670	0			V
WHITECAP RESOURCES INC.	-	08-23-086-14W6	16-13-086-14W6	-	-	-	-	-	-	2666	1	-	NG	88.9	1.93	3.2	9,922	0			V
WHITECAP RESOURCES INC.	-	13-18-086-13W6	16-13-086-14W6	-	-	-	-	-	-	4040	1	-	FW	60.3	0.33	3.9	17,200	0			V
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-19-086-13W6	-	-	-	-	-	-	4521	1	-	FW	114.3	4.49	5.5	22,070	0			V
WHITECAP RESOURCES INC.	-	06-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	5066	1	-	SW	114.3	0.93	5.5	19,500	0			V
WHITECAP RESOURCES INC.	-	03-07-086-13W6	03-07-086-13W6	-	-	-	-	-	-	6079	1	-	SE	60.3	0.11	3.2	3,448	0			V
WHITECAP RESOURCES INC.	-	03-07-086-13W6	06-07-086-13W6	-	-	-	-	-	-	6079	8	-	SE	60.3	0.35	3.2	3,448	0			V
WHITECAP RESOURCES INC.	-	12-28-085-14W6	06-28-085-14W6	-	-	-	-	-	-	7471	1	-	SE	60.3	0.75	3.9	9,930	0			V
WHITECAP RESOURCES INC.	-	14-24-086-14W6	16-24-086-14W6	-	-	-	-	-	-	8166	1	-	MP	60.3	1.00	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	14-18-086-13W6	16-13-086-14W6	-	-	-	-	-	-	8166	8	-	CO	60.3	0.76	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	13-19-086-13W6	16-13-086-14W6	-	-	-	-	-	-	8166	12	-	MP	60.3	1.79	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	16-18-085-13W6	14-18-085-13W6	-	-	-	-	-	-	8167	5	-	FW	60.3	0.78	3.9	14,470	0			V
WHITECAP RESOURCES INC.	-	01-36-085-14W6	01-36-085-14W6	-	-	-	-	-	-	8167	9	-	FW	219.1	0.45	7.9	14,470	0			V
WHITECAP RESOURCES INC.	-	04-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8167	10	-	FW	219.1	0.70	7.9	14,470	0			V
WHITECAP RESOURCES INC.	-	14-18-085-13W6	13-18-085-13W6	-	-	-	-	-	-	8167	12	-	FW	60.3	0.63	3.9	14,470	0			V
WHITECAP RESOURCES INC.	-	16-13-085-14W6	16-13-085-14W6	-	-	-	-	-	-	8167	13	-	FW	60.3	0.24	3.9	14,470	0			V
WHITECAP RESOURCES INC.	-	16-19-085-13W6	16-19-085-13W6	-	-	-	-	-	-	8167	16	-	FG	114.3	0.25	4.8	14,470	0			V
WHITECAP RESOURCES INC.	-	16-27-085-14W6	16-36-085-14W6	-	-	-	-	-	-	8173	1	-	MP	114.3	4.39	6.0	14,470	0			V
WHITECAP RESOURCES INC.	-	04-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	8173	6	-	MP	114.3	0.71	6.0	14,470	0			V
WHITECAP RESOURCES INC.	-	01-36-085-14W6	01-36-085-14W6	-	-	-	-	-	-	8178	3	-	FW	60.3	0.01	3.9	14,470	0			V
WHITECAP RESOURCES INC.	-	14-30-085-13W6	16-30-085-13W6	-	-	-	-	-	-	8178	5	-	FW	60.3	0.85	3.9	14,470	0			V
WHITECAP RESOURCES INC.	-	04-31-085-13W6	01-36-085-14W6	-	-	-	-	-	-	8178	7	-	FW	114.3	0.43	6.0	14,470	0			V
WHITECAP RESOURCES INC.	-	14-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	8189	5	-	CO	60.3	1.16	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	08-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	8189	6	-	CO	60.3	0.52	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	04-34-085-14W6	16-27-085-14W6	-	-	-	-	-	-	8193	2	-	CO	60.3	1.72	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	06-36-085-14W6	16-36-085-14W6	-	-	-	-	-	-	8199	19	-	CO	60.3	1.40	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	16-36-085-14W6	06-06-086-13W6	-	-	-	-	-	-	8199	20	-	CO	60.3	0.66	3.9	3,448	0			V
WHITECAP RESOURCES INC.	-	14-05-086-13W6	05-08-086-13W6	-	-	-	-	-	-	10646	1	-	CO	88.9	1.32	3.5	60	0			V
WHITECAP RESOURCES INC.	-	06-19-085-13W6	09-19-085-13W6	-	-	-	-	-	-	10647	1	-	CO	88.9	1.12	0.0	414	0			V
WHITECAP RESOURCES INC.	-	08-30-085-13W6	09-19-085-13W6	-	-	-	-	-	-	11641	1	-	SG	114.3	1.16	4.0	4,964	0			V
WHITECAP RESOURCES INC.	-	09-19-086-13W6	16-19-086-13W6	-	-	-	-	-	-	23429	1	-	FW	60.3	0.60	3.2	14,490	0			V
WHITECAP RESOURCES INC.	-	08-19-086-13W6	16-19-086-13W6	-	-	-	-	-	-	23430	1	-	FW	60.3	0.82	3.2	20,670	0			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

## WHITECAP 24 HOUR

### 1-866-590-5289 / 1-250-787-3700

**Boundary Lake Field Office**

**Courier / Mailing Address:** 1200 - 248 Road, Box 60  
Goodlow, BC V0C 1S0

**Whitecap Resources Head Office** Bus: 403-266-0767  
Fax: 403-266-6975

**Courier / Mailing Address:** 3800, 525 - 8 Avenue SW  
Calgary, AB T2P 1G1

## FACILITY & FIELD CONTACTS

**BOUNDARY LAKE AB FIELD**

**Area Superintendent** Cell: [REDACTED]

**Lead Operator** Cell: [REDACTED]

**HSE Field Advisor** Cell: [REDACTED]

**CALGARY OFFICE**

**Operations Engineer** Office: [REDACTED]  
Cell: [REDACTED]

**VP Operations** Office: [REDACTED]  
Cell: [REDACTED]

**VP Production & Operations** Office: [REDACTED]  
Cell: [REDACTED]

**VP HSE** Office: [REDACTED]  
Cell: [REDACTED]

*\* For a detailed contact list, refer to the Field Response Teams Phone List at the front of the ERP.*

## OPERATIONS SUMMARY

The Boundary Lake Alberta field consists of sweet and sour oil and gas wells and pipelines located within Clear Hills County. Oil is gathered at the 03-23-84-13 W6M Satellite and sent over to the 08-02-85-14 W6M Battery in BC for processing.

**EPZ Information**  
The maximum expected H<sub>2</sub>S concentration for the wells is 0.97 %, with a maximum calculated EPZ of 20 m. The maximum licensed H<sub>2</sub>S concentration for the pipelines is 0.97 %, with a maximum calculated EPZ of 250 m.

**On-Site Storage**  
Each of the following active well sites have a 400 bbl emulsion tank:  
16-10-85-13 W6M  
08-10-85-13 W6M  
06-14-85-13 W6M

**Closest Urban Centre**  
The settlement of Goodlow is located approximately 11 km west of the Alberta field. The city of Fort St. John is located approximately 65 km southwest of the Alberta field and has a population of +/- 20,155.

**Hydrology**  
There are various waterbodies located within the Boundary Lake Alberta field including Ole's Lake, Boundary Lake and many other unnamed streams and lakes.

**Highways**  
Highway 64 (Cecil Lake Road) runs east / west through the Alberta EPZ.

**Site Access**  
Refer to the following pages for access maps and directions. Some facilities have a locked gate and require a key to enter.

**\*PLEASE REFER TO "BOUNDARY LAKE MAP" TAB FOR CORRESPONDING MAP**

## SAFETY EQUIPMENT

**Operator / Truck Safety Equipment**  
Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, hand held radio and gas detector, first aid kit, 4-head monitor and cell phone. 6 SCBAs are positioned at satellites throughout the field.

**Notification**  
Operators attend to the facility, wells and gathering system 7 days a week. Facilities are equipped with alarms that result in operators being notified on a 24/7 basis and result in on-call operators responding to the field or site. All automated compressor sites have automatic flare igniters and LEL and gas detection.

**Communications**  
The primary method of communication is by cellular phone. Two-way radios are also utilized daily. There is limited cell reception in the South end of the field.

**Roadblock Kits / Ignition Kits\***  
The are three roadblock kits and two flare guns located at the Boundary Lake Field Office. An additional roadblock kit is kept with the Rig Supervisor or in the Rig Shack. Roadblock kits contain the following: stop signs, orange safety vest, flashlight(s), red caution tape, three pop up pylons, and a flashing beacon. Ignition equipment and trained personnel can be provided by Ignition Service companies. See Support Services for more information.

*\*\* If any of the above mentioned safety equipment is insufficient, Whitecap Resources personnel will contact a local safety company who will be asked to provide additional equipment.*

## AREA USERS & TIE-INS

Note: All numbers, unless otherwise indicated, are 24 hours.

**Oil and Gas**

Alliance Pipeline	800-884-8811
Canadian Natural Resources Limited*	888-878-3700
Exxon Mobil/Imperial	866-232-9563
Pembina Pipeline Corporation	800-360-4706
SanLing Energy	888-262-5530
TransCanada Pipelines	888-982-7222
Yoho Resources	888-537-1771

*\* There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.*

**Rail**  
No railways have been identified within the Alberta field.

**Trappers**

Trapper ID	Name	Emergency
1903	Glen Lundgard	780-835-2299
2598	Larry Smith	780-685-2159

**Guides & Outfitters - Wildlife Management Unit (WU) # 525 & 526**

Company	Name	Emergency
101294388 Saskatchewan Ltd.	Justin Redlick	306-580-4868
1029070 Alberta Ltd.	Laine Smith	780-532-4298
Alberta Racks	Sean Snider	780-203-0909
Alberta Wilderness Adventures	Louis Shilka	780-772-7200
Alberta Widland Outfitting	Paul Johnson	780-512-1027
Bear Canyon Outfitters	Larry Smith	780-834-0186
BK Outfitters	William Klyne	780-219-2694
Burnt Lake Outfitters	Brian Kitzan	780-939-6831
Canada Maximas	Markco Plummer	780-625-8200
Green Island Outfitters	Allen Trider	780-835-2443
High Caliber Outdoors LLC	Adam Gilkey	N/A
Mustang Ranch Guides	Herb Bean	780-685-2509
Stricker Outfitting	Charlie Stricker	250-689-0809
Top of the Flyway Outfitters	Trevor Manteufel	780-625-6736
Trophy North Outfitters	John Giesbrecht	780-928-2962
Udell's Guiding and Outfitting	Kelly Udell	780-722-0243
Wild Alberta High Country outfitters Inc	Ken Steinbru	780-882-6664
Xcalibr Hunts	Merlin Baumann	780-332-1090

Grazing Lease	Name	Business
Grazing ID GRL030022	Barry Boisvert	N/A

**Forestry Management Units & Agreements**  
Po2 - See Alberta Energy Regulator (AER)

**Natural Protected Areas**  
No natural protected areas have been identified within the Alberta field.

## LEAD AGENCIES & PRIORITY CONTACTS

Note: All numbers, unless otherwise indicated, are 24 hours.

**Alberta Energy Regulator (AER)** 800-222-6514\*  
Grande Prairie / High Level Field Office  
Wildfire Reporting 310-FIRE (3473)  
*\* One call number for regulatory agency, Alberta Environment, Spill Reporting & Sustainable Resource Development (lands, fish, forest, wildlife) & Environment Canada.*

**National Energy Board**  
TSB Incident Line (Pipeline emergencies) 819-997-7887  
NEB Incident Line (All other emergencies) 403-807-9473  
Email pipelinenotifications@tsb.gc.ca  
OERS Website https://apps.neb-one.gc.ca/ers

**Clear Hills County** Cell: 780-835-0153  
Audrey Bjorklund, Deputy Director of Emergency Mgmt. Admin: 780-685-3925

**Alberta Health Services - Z5 North** 844-755-1788  
Shane Hussey, Director Office: 780-841-3275

**Alberta Emergency Management (AEMA) - Northwest** 866-618-2362  
Brice Daly, Emergency Management Field Officer Cell: 780-876-2930

**Alberta Boilers Safety Association (ABSA)** 780-437-9100

**Alberta Safety Services - Electrical Branch** Admin: 866-421-6929

**Alberta Transportation of Dangerous Goods** 800-272-9600

**Emergency Response Assistance Canada (ERAC)** 800-265-0212

**Alberta Ministry of Transportation** Admin: 780-538-5310  
Grande Prairie District Office: 780-538-6113  
Henry Surowanec, Operations Manager Cell: 780-512-1387

**Alberta Health and Wellness** Admin: 780-427-7164

**Alberta Occupational Health and Safety** 866-415-8690

**Workers' Compensation Board** Admin: 866-922-9221

**CANUTEC** 613-996-6666  
Toll-Free 1-888-CAN-UTEC (226-8832)  
From Cell Phone \*666  
Inquiries Admin: 613-992-4624

**Environment & Climate Change Canada** 780-951-8907  
Meteorological Services

**Department of Fisheries and Oceans Canada (DFO)** 604-666-0384  
Pacific Region

## EMERGENCY SERVICES

**RCMP** 911  
Fairview Admin: 780-835-4031

**Fire Departments** 911  
Worsley Fire Department

**Ambulance** 911  
Dawson Creek, Fort St. John, Grande Prairie,  
Air Ambulance (STARS) 888-888-4567

**Hospitals**  
Fort St. John Hospital and Health Centre 250-261-7310  
Spirit River Central Peace Health Complex 780-864-3993  
Dawson Creek & District Hospital 250-782-8501  
Queen Elizabeth II Hospital - Grande Prairie 780-538-7100

**Alberta Poison and Drug Information Service** 800-332-1414

**Alberta One-Call** 800-242-3447  
www.albertaonecall.com

**Reception Centres**  
Clearview Elementary School Admin: 250-781-3333  
13786 - 223 Road, Goodlow, BC Cell: 250-261-4918  
Evangelical Church of Goodlow Office: 250-781-3566  
13906 - 211 Road, Goodlow, BC Cell: 778-256-1761  
Worsley Gateway Inn Admin: 780-685-2080  
355 Highway 726, Worsley, AB Fax: 780-685-2082

## SUPPORT SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours.

**Mobile Air Monitoring\***  
United Safety - Central Dispatch 800-432-1809  
Firemaster Oilfield Services - Central Dispatch 877-342-3473  
HSE Integrated - Central Dispatch 888-346-8260  
Trojan Safety Services - Fort St. John 250-785-9557  
Safety Boss - Central Dispatch 800-882-4967

**Oilfield Fire Fighting / Safety Contractors\***  
Firemaster Oilfield Services - Central Dispatch 877-342-3473  
HSE Integrated - Central Dispatch 888-346-8260  
Safety Boss - Central Dispatch 800-882-4967

**Well Control Specialists\***  
Firemaster Oilfield Services - Central Dispatch 877-342-3473  
Capstone Blowout Recovery - Central Dispatch 866-347-3911  
Safety Boss - Central Dispatch 800-882-4967

**Ignition Services**  
Safety Boss - Central Dispatch 800-882-4967  
Firemaster Oilfield Services - Central Dispatch 877-342-3473  
*\*Dispatch support services at any level of Emergency. Response times are expected to be approximately 1 hour if the support is coming from Fort St. John and 3 hours if the support is coming from Grande Prairie.*

**Emergency Response Management**  
H<sub>2</sub>Safety Services Inc. - Calgary 403-212-2332  
Toll Free 888-216-2332

**Air Traffic Control**  
NAV Canada 866-992-7433

**Highway Services**  
LaPrairie Group 780-332-4452

**Bus Transportation**  
Homer's Oilfield Services - Dawson Creek 250-219-2247  
Northern Express 780-926-0808

**Helicopter Companies (Day Flying Only)**  
Yellowhead Helicopters - Fort St. John 250-785-2331  
Bailey Helicopters - Fort St. John 250-785-2518  
Canadian Helicopters Ltd. - Fort. St. John 780-429-6900

**Spill Response**  
SWAT Consulting 866-610-7928

**WCSS - Zone 6 - Coop T\*** 866-541-8888  
Regional Custodian: Clean Harbors Admin: 780-532-4331  
Cell: 780-897-0065

Equipment Location	Equipment Summary
9601 - 156 Avenue Grande Prairie, AB	1 OSCAR (Semi-Truck) 1 Winter OSCAR (3/4-ton truck with 2 5/16" ball hitch) 2 Workboats (1/2-ton truck with 2" ball hitch)

**Transport:** Contact - Clean Harbors

**Coop Custodian:** CNRL Chinchaga Gas Plant 780-836-3364  
Ext. 25

Equipment Location	Equipment Summary
CNRL Chinchaga Gas Plant 01-24-96-05 W6M	1 20' Skid-mounted Sea-Can

**Transport:** Silvertip Oilfield Services 780-836-3792

*\*See website for more info (http://www.wcss.ab.ca).*

## RESIDENT INFORMATION

**Surface Developments**  
There is a total of 4 surface developments within the Alberta field. This includes 1 occupied residence and 3 manned oil & gas facilities.

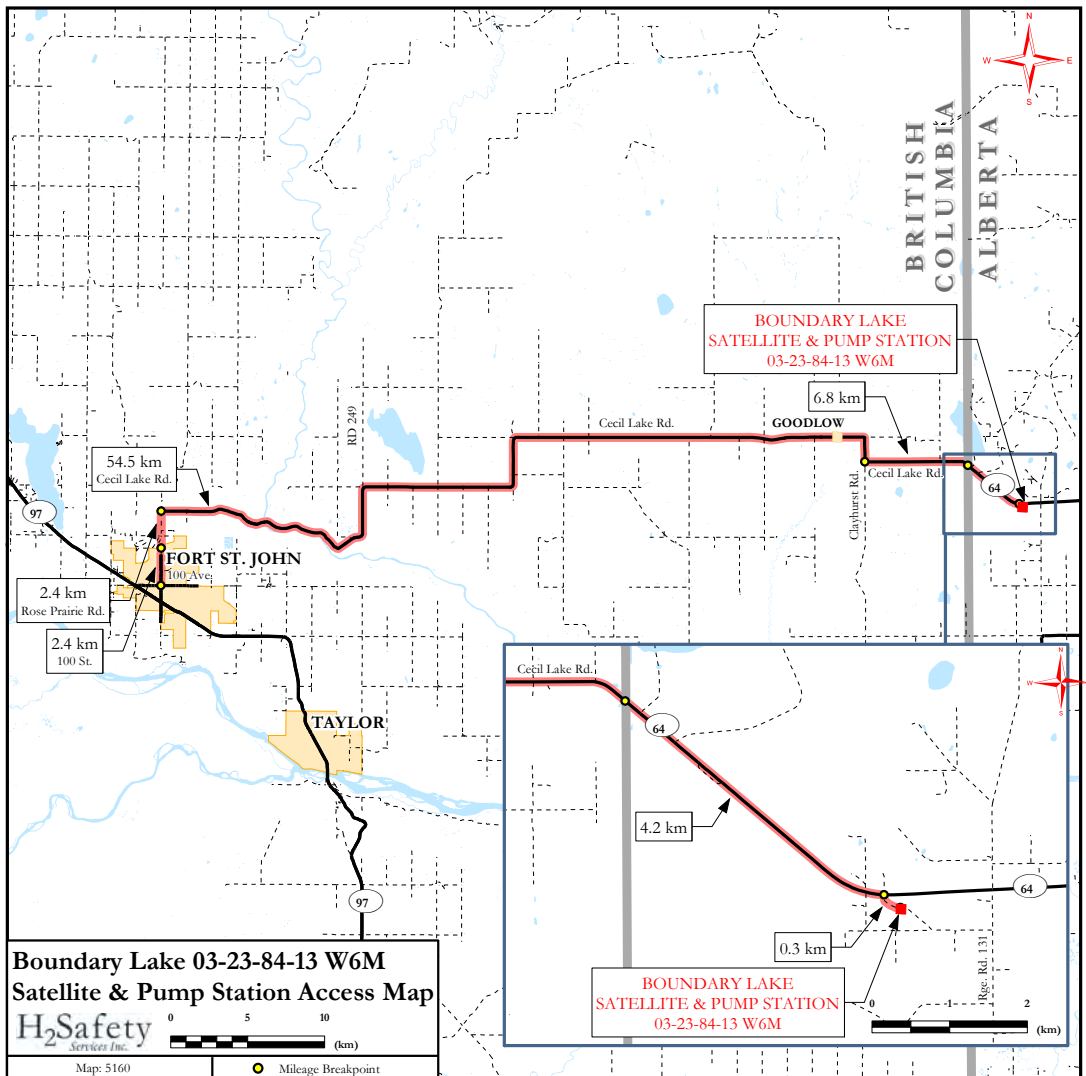
*\*For Resident IDs, names and phone numbers, refer to the "Confidential Information Tab" following this site section*

# Boundary Lake Alberta Site Access from Fort St. John

## DIRECTIONS TO THE BOUNDARY LAKE 03-23-84-13 W6M SATELLITE & PUMP STATION

From the intersection of 100 St. and 100 Ave. in Fort St. John, British Columbia:

- Travel north on 100 St. for 2.4 km. 100 St. becomes Rose Prairie Rd.
- Continue north to stay on Rose Prairie Rd. and travel 2.4 km.
- Turn right (east) onto Cecil Lake Rd. and travel 54.5 km.
- Turn right (south) to keep on Cecil Lake Rd. just past Goodlow, BC for 6.8 km. Cecil Lake Rd. will turn into Highway 64 at the BC / Alberta border.
- Continue straight on Highway 64 and travel 4.2 km.
- Turn right (south) onto the Access Rd. and travel 0.3 km to access the Boundary Lake 03-23-84-13 W6M Satellite & Pump Station.







## Boundary Lake Alberta - Facilities

LICENSEE	NAME	LICENSE NO.	LOCATION	LATITUDE (DECIMAL DEGREES)	LONGITUDE (DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	STATUS	EPZ (km)
<b>WHITECAP OPERATING</b>										
WHITECAP RESOURCES INC.	IMPERIAL BDY LK S TRIAS	F17030	03-23-084-13W6	56.2926532	-119.9443135	56° 17' 33.551"	-119° 56' 39.528"	GS	O	0.02
WHITECAP RESOURCES INC.	ESSO BOUNDARY S	F17030	03-23-084-13W6	56.2926532	-119.9443135	56° 17' 33.551"	-119° 56' 39.528"	IP	O	0.02
WHITECAP RESOURCES INC.	WHITECAP 06-05-086-12-6	F38850	06-05-086-12W6	56.4277639	-119.8603520	56° 25' 39.950"	-119° 51' 37.267"	B	P	-
WHITECAP RESOURCES INC.	WHITECAP 06-36-084-13-6	F17033	06-36-084-13W6	56.3233160	-119.9189663	56° 19' 23.937"	-119° 55' 8.278"	S	P	-
WHITECAP RESOURCES INC.	IMPERIAL BOUNDARY LK FIELDGATE 8-2	N/A	08-02-085-13W6	56.3391922	-119.9287049	56° 20' 21.091"	-119° 55' 43.337"	B	O	-
WHITECAP RESOURCES INC.	WHITECAP 08-07-086-12-6	F39116	08-07-086-12W6	56.4411129	-119.8735070	56° 26' 28.006"	-119° 52' 24.625"	S	P	0.25
WHITECAP RESOURCES INC.	WHITECAP 10-11-084-13-6	F17027	10-11-084-13W6	56.2698451	-119.9351117	56° 16' 11.442"	-119° 56' 6.402"	S	P	0.01
WHITECAP RESOURCES INC.	WHITECAP 10-24-084-13-6	F17031	10-24-084-13W6	56.3004474	-119.9070656	56° 18' 1.610"	-119° 54' 25.436"	S	P	0.01
WHITECAP RESOURCES INC.	WHITECAP 15-02-085-13-6	F17066	15-02-085-13W6	56.3452633	-119.9324730	56° 20' 42.947"	-119° 55' 56.902"	S	P	0.01

### LEGEND

Facility: B=Battery CP=Chemical Plant CS=Compressor Station GP=Gas Plant GS=Gas Gathering System IP=Injection Plant

LH=Line Heater MS=Meter Station PS=Pump Station S=Satellite TL=Terminals LR=Loading Rack

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed S=Suspended

Other: EPZ=Emergency Planning Zone

### Boundary Lake Alberta - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	H <sub>2</sub> S	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
						RELEASE RATE (m3/s)					
<b>WHITECAP SOUR OPERATING</b>											
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 1-12-84-13	128045	100011208413W600	01-12-084-13W6	0.20	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-11-84-13	42883	100021108413W600	02-11-084-13W6	0.02	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-14-84-13	43002	100021408413W600	02-14-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-26-84-13	127013	100022608413W600	02-26-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-7-86-12	385405	100060708612W600	03-07-086-12W6	0.97	0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 3-23-84-13	38289	100032308413W600	03-23-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 4-7-84-12	83271	100040708412W600	04-07-084-12W6	0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 5-23-84-13	44090	100052308413W600	05-23-084-13W6	0.15	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-1-84-13	38006	100060108413W600	06-01-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-6-84-12	126725	100060608412W600	06-06-084-12W6	0.04	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-11-84-13	43256	100061108413W600	06-11-084-13W6	0.04	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-11-85-13	25741	100061108513W600	06-11-085-13W6	0.02	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-14-85-13	97756	100061408513W600	06-14-085-13W6	0.30	0.0006	0.02	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-26-84-13	45794	100062608413W600	06-26-084-13W6	0.11	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 7-1-84-13	43001	100070108413W600	07-01-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 7-14-84-13	42285	100071408413W600	07-14-084-13W6	0.09	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 7-26-84-13	39278	100072608413W600	07-26-084-13W6	0.09	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-2-84-13	46085	100080208413W600	08-02-084-13W6	0.04	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BDYLKS 3-1-84-13	478836	100030108413W600	08-02-084-13W6	0.20	0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-7-86-12	385431	100080708612W600	08-07-086-12W6	0.97	0.0005	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-11-84-13	44426	100081108413W600	08-11-084-13W6	0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-15-84-13	102696	100081508413W600	08-15-084-13W6	0.31	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-22-84-13	117458	100082208413W600	08-22-084-13W6	0.12	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-23-84-13	42770	100082308413W600	08-23-084-13W6	0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 9-1-84-13	91133	100090108413W600	09-01-084-13W6	0.04	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 9-23-84-13	43026	100092308413W600	09-23-084-13W6	0.22	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 11-1-85-13	38998	100110108513W600	11-01-085-13W6	0.10	0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 11-26-84-13	97061	100112608413W600	11-26-084-13W6	0.12	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-3-84-13	194321	100100308413W600	12-02-084-13W6	0.12	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 13-23-84-13	42250	100132308413W600	13-23-084-13W6	0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-11-84-13	39794	100141108413W600	14-11-084-13W6	0.10	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-11-85-13	108656	100141108513W600	14-11-085-13W6	0.10	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-36-83-13	117459	100143608313W600	14-36-083-13W6	0.35	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-2-84-13	42658	100160208413W600	16-02-084-13W6	0.10	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-11-84-13	44098	100161108413W600	16-11-084-13W6	0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-15-84-13	42854	100161508413W600	16-15-084-13W6	0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BDYLKS 15-10-84-13	478674	100151008413W600	16-15-084-13W6	0.20	0.0005	0.02	0	0.01	Level na	PUMPING OIL
<b>WHITECAP SOUR SUSPENDED</b>											
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-24-84-13	38367	100102408413W600	10-24-084-13W6	0.93						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 12-14-84-13	42291	100121408413W600	12-14-084-13W6	0.12						SUSPENDED OIL

**LEGEND**

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone IIZ=Initial Isolation Zone PAZ=Protective Action Zone

## Boundary Lake Alberta - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	TEMP (°C)	Z	DIR 56 RELEASE VOLUME (m3)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS		
<b>WHITECAP SOUR OPERATING</b>																												
WHITECAP RESOURCES INC.	-	06-14-085-13W6	WE	11-14-085-13W6	PL	-	-	34696	2	-	1	1,2	NG	114.3	0.34	4.8	9,930	9,930	0.30	0.30	5	na	na	0.16	0.03	0.13	na	O
WHITECAP RESOURCES INC.	-	11-14-085-13W6	PL	01-14-085-13W6	GP	-	ESD	34696	3	-	2	1,2	NG	114.3	1.62	4.8	9,930	9,930	0.30	0.30	5	na	na	0.16	0.03	0.13	na	O
<b>WHITECAP SOUR DISCONTINUED</b>																												
WHITECAP RESOURCES INC.	-	16-15-085-13W6	BE	11-14-085-13W6	BE	-	-	34696	1	-	3	3	NG	114.3	1.28	4.8	0	0	0.30	0.30								D

**LEGEND**

Water Cross: CC=Creek Crossing LC=Lake Crossing OC=Overhead Crossing RC=River Crossing XA=Other Crossing  
Facility: B=Battery BE=Blind End CP=Chemical Plant CS=Compressor Station GP=Gas Plant GS=Gas Gathering System IP=Injection Plant LH=Line Heater MS=Meter Station  
 PL=Pipeline PS=Pump Station S=Satellite WE=Well LR=Loading Rack TL=Terminals TF=Tank Farm  
Valve: CV=Check Valve ESD=Emergency Shutdown Valve  
Substance: CO=Crude Oil FG=Fuel Gas FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas SW=Salt Water MP=Multiphase  
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active C=Cancelled S=Suspended R=Removed  
Other: EPZ=Emergency Planning Zone IIZ=Initial Isolation Zone PAZ=Protective Action Zone Wall=Wall Thickness OD=Outside Diameter Z=Compressibility Factor  
 GLR=Gas-To-Liquid Ratio TEMP=Temperature

## Boundary Lake Alberta - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	GAS FLOW RATE (1000 m3/d)	LIQUID FLOW RATE (m3/d)	GLR	TEMP (°C)	Z	DIR 56 RELEASE VOLUME (m3)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS		
WHITECAP SOUR OPERATING																															
WHITECAP RESOURCES INC.	-	05-36-084-13W6	S	03-23-084-13W6	PL	-	CV	7795	1	-	1	1 to 6, 44 to 47	OE	168.3	4.10	4.0	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	10-24-084-13W6	S	09-23-084-13W6	PL	-	-	7795	2	-	2	1 to 6, 44 to 47	OE	168.3	1.23	4.0	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	15-02-085-13W6	S	05-36-084-13W6	PL	-	CV	7795	5	-	3	3,44,45	OE	114.3	2.60	3.2	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	1	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	09-23-084-13W6	WE	10-24-084-13W6	S	-	CV	7795	6	-	4	4	OE	60.3	1.38	3.9	6,895	6,895	0.20	0.22	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	02-26-084-13W6	WE	11-24-084-13W6	PL	-	-	7795	7	-	5	5,6	OE	60.3	1.85	3.9	9,930	9,930	0.20	0.20	10.00	630.00	15.87	5	0.69	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	11-24-084-13W6	PL	10-24-084-13W6	S	-	CV	7795	8	-	6	5,6	OE	60.3	0.17	3.9	9,930	9,930	0.20	0.20	10.00	630.00	15.87	5	0.69	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	12-14-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	9	-	7	7	OE	60.3	0.97	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	16-15-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	10	-	8	8	OE	60.3	0.90	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	05-23-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	11	-	9	9	OE	60.3	0.60	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	13-23-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	12	-	10	10	OE	60.3	1.17	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	07-26-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	13	-	11	11	OE	60.3	1.82	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	11-26-084-13W6	WE	15-23-084-13W6	PL	-	-	7795	18	-	12	12,13	OE	60.3	1.47	3.9	6,890	6,890	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	15-23-084-13W6	PL	03-23-084-13W6	S	-	CV	7795	14	-	13	12,13	OE	60.3	1.20	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	08-23-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	15	-	14	13	OE	60.3	0.80	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	12-13-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	16	-	15	14	OE	60.3	1.61	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	03-23-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	17	-	16	15	OE	60.3	0.02	3.9	6,900	6,900	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	08-15-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	19	-	17	17	OE	60.3	1.61	3.9	6,900	6,900	0.20	0.31	10.00	630.00	15.87	5	0.74	0	0.02	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	08-22-084-13W6	WE	03-23-084-13W6	S	-	CV	7795	20	-	18	18	OE	60.3	0.99	3.9	9,930	9,930	0.20	0.20	10.00	630.00	15.87	5	0.69	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	02-11-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	21	-	19	19	OE	60.3	0.65	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	06-11-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	22	-	20	20	OE	60.3	0.58	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	14-11-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	23	-	21	21	OE	60.3	0.53	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	07-14-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	24	-	22	22	OE	60.3	1.26	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	02-14-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	25	-	23	23	OE	60.3	0.66	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	16-11-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	26	-	24	24	OE	60.3	0.60	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	08-11-084-13W6	WE	10-11-084-13W6	S	-	CV	7795	27	-	25	25	OE	60.3	0.60	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	12-02-084-13W6	WE	11-02-084-13W6	PL	-	CV	7795	29	-	26	27	OE	60.3	0.30	3.9	9,900	9,900	0.20	0.20	10.00	630.00	15.87	5	0.69	0	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	14-11-084-13W6	WE	10-11-084-13W6	S	-	-	7795	42	-	27	19 to 43	OE	97.0	0.51	10.0	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0	0.01	Level na	P
WHITECAP RESOURCES INC.	-	11-02-084-13W6	PL	10-11-084-13W6	S	-	-	7795	28	-	28	19 to 43	OE	60.3	1.83	3.9	9,900	9,900	0.20	0.20	10.00	630.00	15.87	5	0.69	5	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	10-11-084-13W6	S	09-11-084-13W6	PL	-	-	7795	4	-	29	19 to 43	OE	168.3	0.51	4.0	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	06-01-084-13W6	WE	03-23-084-13W6	S	-	ESD	7795	3	-	30	19 to 43	OE	168.3	5.79	4.0	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	07-01-084-13W6	WE	06-01-084-13W6	S	-	-	7795	30	-	31	19 to 43	OE	60.3	0.64	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	06-01-084-13W6	WE	06-01-084-13W6	S	-	-	7795	31	-	32	19 to 43	OE	60.3	0.02	3.9	6,895	6,895	0.20	0.20	10.00	630.00	15.87	5	0.74	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	08-02-084-13W6	WE	08-02-084-13W6	PL	-	-	7795	32	-	33	19 to 43	OE	60.3	0.60	3.9	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	16-02-084-13W6	WE	08-02-084-13W6	PL	-	-	7795	33	-	34	19 to 43	OE	60.3	0.87	3.9	4,960	4,960	0.20	0.20	10.00	630.00	15.87	5	0.80	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	09-01-084-13W6	WE	06-01-084-13W6	S	-	-	7795	34	-	35	19 to 43	OE	60.3	1.01	3.9	2,760	2,760	0.20	0.20	10.00	630.00	15.87	5	0.87	3	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	04-07-084-12W6	WE	04-07-084-12W6	PL	-	-	7795	35	-	36	19 to 43	OE	60.3	0.40	3.9	3,450	3,450	0.20	0.20	10.00	630.00	15.87	5	0.85	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	CC	04-07-084-12W6	PL	06-01-084-13W6	S	-	-	7795	36	-	37	19 to 43	OE	60.3	1.89	3.9	3,450	3,450	0.20	0.20	10.00	630.00	15.87	5	0.85	4	0.01	0	0.01	Level na	O
WHITECAP RESOURCES INC.	-	14-36-083-13W6	WE	06-01-084-13W6	S	-	-	7795	37	-	38	19 to 43	OE	60.3	0.73	3.9	6,900	6,900	0.20	0.35	10.00	630.00	15.87	5	0.74	8	0.02	0.01	0.01	Level na	O
WHITECAP RESOURCES INC.	-	06-06-084-12W6	WE	06-01-084-13W6	S	-	-	7795	38	-	39	19 to 43	OE	60.3	1.93	3.9	9,930	9,930	0.20	0.20											

## Boundary Lake Alberta - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	TO	START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE LINE #	INCLUDES UNIQUE #	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	GAS FLOW RATE (1000 m3/d)	LIQUID FLOW RATE (m3/d)	GLR	TEMP (°C)	Z	DIR 56 RELEASE VOLUME (m3)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS		
WHITECAP SOUR DISCONTINUED																															
WHITECAP RESOURCES INC.	-	13-01-085-13W6	BE	15-02-085-13W6	BE	-	-	9207	2	-	52	52	OE	60.3	0.48	3.9	0	0	0.08	0.08											D
WHITECAP RESOURCES INC.	-	14-02-085-13W6	BE	15-02-085-13W6	BE	-	-	9207	4	-	53	53	OE	60.3	0.60	3.2	0	0	0.08	0.08											D
WHITECAP RESOURCES INC.	-	16-11-085-13W6	BE	15-02-085-13W6	BE	-	-	9207	8	-	54	54	OE	114.3	1.87	4.0	0	0	0.08	0.08											D
WHITECAP RESOURCES INC.	-	04-24-084-13W6	BE	03-23-084-13W6	BE	-	-	15937	8	-	55	55	OE	60.3	1.43	3.9	0	0	0.08	0.08											D
WHITECAP RESOURCES INC.	-	15-36-083-13W6	WE	06-01-084-13W6	S	-	-	15939	4	-	56	56	OE	60.3	1.13	3.9	0	0	0.10	0.10											D
WHITECAP RESOURCES INC.	-	10-06-084-12W6	BE	10-06-084-12W6	BE	-	-	15939	13	-	57	57	OE	60.3	0.27	3.9	0	0	0.10	0.10											D
WHITECAP RESOURCES INC.	CC	10-06-084-12W6	BE	06-01-084-13W6	BE	-	-	15939	15	-	58	58	OE	60.3	2.27	3.9	0	0	0.10	0.10											D
WHITECAP RESOURCES INC.	-	02-13-084-13W6	BE	10-11-084-13W6	BE	-	-	15945	9	-	59	59	OE	60.3	2.18	3.9	0	0	0.10	0.10											D
WHITECAP RESOURCES INC.	-	14-36-084-13W6	BE	05-36-084-13W6	BE	-	-	15946	4	-	60	60	OE	60.3	0.80	3.9	0	0	0.20	0.20											D

### LEGEND

Water Cross: CC=Creek Crossing LC=Lake Crossing OC=Overhead Crossing RC=River Crossing XA=Other Crossing

Facility: B=Battery BE=Blind End CP=Chemical Plant CS=Compressor Station GP=Gas Plant GS=Gas Gathering System IP=Injection Plant LH=Line Heater MS=Meter Station

PL=Pipeline PS=Pump Station S=Satellite WE=Well LR=Loading Rack TL=Terminals TF=Tank Farm

Valve: CV=Check Valve ESD=Emergency Shutdown Valve

Substance: CO=Crude Oil FG=Fuel Gas FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas SW=Salt Water MP=Multiphase

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active C=Cancelled S=Suspended R=Removed

Other: EPZ=Emergency Planning Zone IIZ=Initial Isolation Zone PAZ=Protective Action Zone Wall=Wall Thickness OD=Outside Diameter Z=Compressibility Factor

GLR=Gas-To-Liquid Ratio TEMP=Temperature

**Boundary Lake Alberta - Sweet Wells**

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	STATUS
<b>WHITECAP SWEET OPERATING</b>						
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 1-2-84-13	204634	100010208413W600	01-02-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 1-22-84-13	44455	100012208413W600	01-22-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 5-14-84-13	42882	100051408413W600	05-14-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-5-86-12	379842	100060508612W600	06-05-086-12W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-10-85-13	106110	100081008513W600	08-10-085-13W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-11-84-13	37761	100101108413W600	10-11-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 12-6-84-12	81791	100120608412W600	12-06-084-12W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 12-13-84-13	42987	100121308413W600	12-13-084-13W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-1-84-13	44424	100140108413W600	14-01-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-2-84-13	44297	100140208413W600	14-02-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP HZ BDYLKS 4-11-84-13	480843	100041108413W600	14-11-084-13W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 15-14-84-13	38939	100151408413W600	15-14-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 15-26-84-13	42156	100152608413W600	15-26-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 15-36-83-13	38752	100153608313W600	15-36-083-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-10-85-13	104213	100161008513W600	16-10-085-13W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-22-84-13	46321	100162208413W600	16-22-084-13W6	0	WATER INJECTOR
<b>WHITECAP SWEET SUSPENDED</b>						
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 4-13-84-13	45793	100041308413W600	04-13-084-13W6	0	SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-24-84-13	42988	100062408413W600	06-24-084-13W6	0	SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-30-84-12	104148	100063008412W600	06-30-084-12W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-36-83-13	114326	100063608313W602	06-36-083-13W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 9-7-86-12	399908	100090708612W600	09-07-086-12W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	ONE-EX BDYLKS 9-16-85-12	367452	100091608512W600	09-16-085-12W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-23-84-13	42135	100102308413W600	10-23-084-13W6	0	SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	CABRE ET AL BDYLKS 13-19-84-12	102650	100131908412W600	13-19-084-12W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 14-10-85-13	116406	100141008513W600	14-10-085-13W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-3-84-13	113747	100160308413W600	16-03-084-13W6	0	SUSPENDED WATER INJECTOR
<b>WHITECAP SWEET STANDING</b>						
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-13-85-13	27344	100061308513W604	06-13-085-13W6	0	STANDING
WHITECAP RESOURCES INC.	ONE-EX BDYLKS 9-16-85-12	367452	100091608512W602	09-16-085-12W6	0	STANDING
WHITECAP RESOURCES INC.	BARRICK BDYLKS 12-12-87-12	345744	100121208712W600	12-12-087-12W6	0	STANDING
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-1-84-13	239421	100160108413W602	16-01-084-13W6	0	STANDING

**LEGEND**

Other: UWI=Unique Well Identifier

### Boundary Lake Alberta - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS		
<b>WHITECAP SWEET OPERATING</b>														
WHITECAP RESOURCES INC.	-	03-23-084-13W6	PS	09-11-084-13W6	PL	8385	2	FW	168.3	3.28	7.1	15,000	0	O
WHITECAP RESOURCES INC.	-	06-01-084-13W6	S	12-06-084-12W6	WE	8385	18	FW	60.3	1.80	3.9	15,000	0	O
WHITECAP RESOURCES INC.	-	06-01-084-13W6	S	15-36-083-13W6	WE	8385	22	FW	60.3	1.45	4.8	15,000	0	O
WHITECAP RESOURCES INC.	-	16-02-084-13W6	MS	14-02-084-13W6	WE	8385	23	FW	60.3	0.77	3.9	20,680	0	O
WHITECAP RESOURCES INC.	-	16-02-084-13W6	PL	16-02-084-13W6	MS	8385	24	FW	88.9	0.24	4.0	20,680	0	O
WHITECAP RESOURCES INC.	-	06-01-084-13W6	IP	14-01-084-13W6	WE	8385	25	FW	88.9	0.66	4.0	18,000	0	O
WHITECAP RESOURCES INC.	-	08-02-084-13W6	PL	01-02-084-13W6	WE	8385	27	FW	60.3	0.43	3.9	18,000	0	O
WHITECAP RESOURCES INC.	-	10-23-084-13W6	PL	16-22-084-13W6	WE	8385	28	FW	60.3	1.30	3.9	15,000	0	O
WHITECAP RESOURCES INC.	-	03-23-084-13W6	PS	01-22-084-13W6	WE	8385	37	FW	67.0	0.78	7.5	15,000	0	O
WHITECAP RESOURCES INC.	-	03-23-084-13W6	PS	06-14-084-13W6	PL	8385	38	FW	122.0	1.24	12.0	13,700	0	O
WHITECAP RESOURCES INC.	-	10-11-084-13W6	PL	09-11-084-13W6	PL	8385	39	FW	122.0	0.52	12.0	13,700	0	O
WHITECAP RESOURCES INC.	-	06-14-084-13W6	PL	05-14-084-13W6	WE	8385	40	FW	67.0	0.68	7.5	15,000	0	O
WHITECAP RESOURCES INC.	-	06-14-084-13W6	PL	15-14-084-13W6	WE	8385	41	FW	67.0	1.02	7.5	15,000	0	O
WHITECAP RESOURCES INC.	-	03-23-084-13W6	PS	10-23-084-13W6	PL	8385	43	FW	106.0	0.75	14.4	15,000	0	O
WHITECAP RESOURCES INC.	-	10-23-084-13W6	PL	10-23-084-13W6	PL	8385	44	FW	73.0	0.14	10.5	15,000	0	O
WHITECAP RESOURCES INC.	-	10-23-084-13W6	PL	15-26-084-13W6	WE	8385	45	FW	73.0	2.11	10.5	15,000	0	O
WHITECAP RESOURCES INC.	-	06-14-084-13W6	PL	10-11-084-13W6	PL	8385	46	FW	122.0	1.46	12.0	13,700	0	O
WHITECAP RESOURCES INC.	-	09-11-084-13W6	PL	06-01-084-13W6	MR	8385	47	FW	168.3	2.62	7.1	15,000	0	O
WHITECAP RESOURCES INC.	-	06-36-083-13W6	WE	01-06-084-12W6	PL	36018	1	NG	114.3	3.14	3.2	9,760	0	O
WHITECAP RESOURCES INC.	CC	06-05-086-12W6	WE	06-04-086-12W6	PL	49846	1	OE	114.3	1.80	3.2	4,960	0	O
WHITECAP RESOURCES INC.	-	06-13-085-13W6	WE	01-14-085-13W6	GP	57475	1	NG	88.9	1.01	3.2	7,930	0	O
WHITECAP RESOURCES INC.	-	08-10-085-13W6	WE	16-10-085-13W6	PL	57475	2	NG	60.3	0.62	3.9	7,380	0	O
WHITECAP RESOURCES INC.	-	16-10-085-13W6	WE	10-15-085-13W6	PL	57753	1	NG	60.3	1.40	3.9	7,380	0	O
<b>WHITECAP SWEET DISCONTINUED</b>														
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	05-36-084-13W6	BE	8385	3	FW	168.3	4.10	7.1	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	10-23-084-13W6	BE	8385	5	FW	60.3	0.79	3.9	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	15-14-084-13W6	BE	8385	6	FW	60.3	0.55	3.9	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	10-11-084-13W6	BE	8385	8	FW	60.3	2.45	3.9	0	0	D
WHITECAP RESOURCES INC.	-	05-36-084-13W6	BE	15-26-084-13W6	BE	8385	9	FW	60.3	1.13	3.9	0	0	D
WHITECAP RESOURCES INC.	-	05-36-084-13W6	BE	07-02-085-13W6	BE	8385	10	FW	60.3	2.18	3.9	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	01-22-084-13W6	BE	8385	11	FW	60.3	0.70	3.9	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	04-13-084-13W6	BE	8385	12	FW	60.3	2.44	3.9	0	0	D



### Boundary Lake Alberta - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	TO	LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS		
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	06-24-084-13W6	BE	8385	13	FW	60.3	1.86	3.9	0	0	D
WHITECAP RESOURCES INC.	-	10-11-084-13W6	BE	16-03-084-13W6	BE	8385	26	FW	60.3	1.66	3.9	0	0	D
WHITECAP RESOURCES INC.	-	03-23-084-13W6	BE	05-14-084-13W6	BE	8385	30	FW	60.3	1.52	3.9	0	0	D
WHITECAP RESOURCES INC.	-	09-11-084-13W6	BE	04-13-084-13W6	BE	8385	42	FW	67.0	1.43	7.5	0	0	D
WHITECAP RESOURCES INC.	-	05-36-084-13W6	BE	05-12-085-13W6	BE	9082	1	FW	60.3	3.76	3.9	0	0	D
WHITECAP RESOURCES INC.	CC	09-16-085-12W6	BE	12-10-085-12W6	BE	49092	1	NG	88.9	1.75	3.2	0	0	D

#### LEGEND

Water Cross: CC=Creek Crossing LC=Lake Crossing OC=Overhead Crossing RC=River Crossing XA=Other Crossing

Facility: B=Battery BE=Blind End CP=Chemical Plant CS=Compressor Station GP=Gas Plant GS=Gas Gathering System IP=Injection Plant LH=Line Heater

MS=Meter Station PL=Pipeline PS=Pump Station S=Satellite WE=Well LR=Loading Rack TL=Terminals

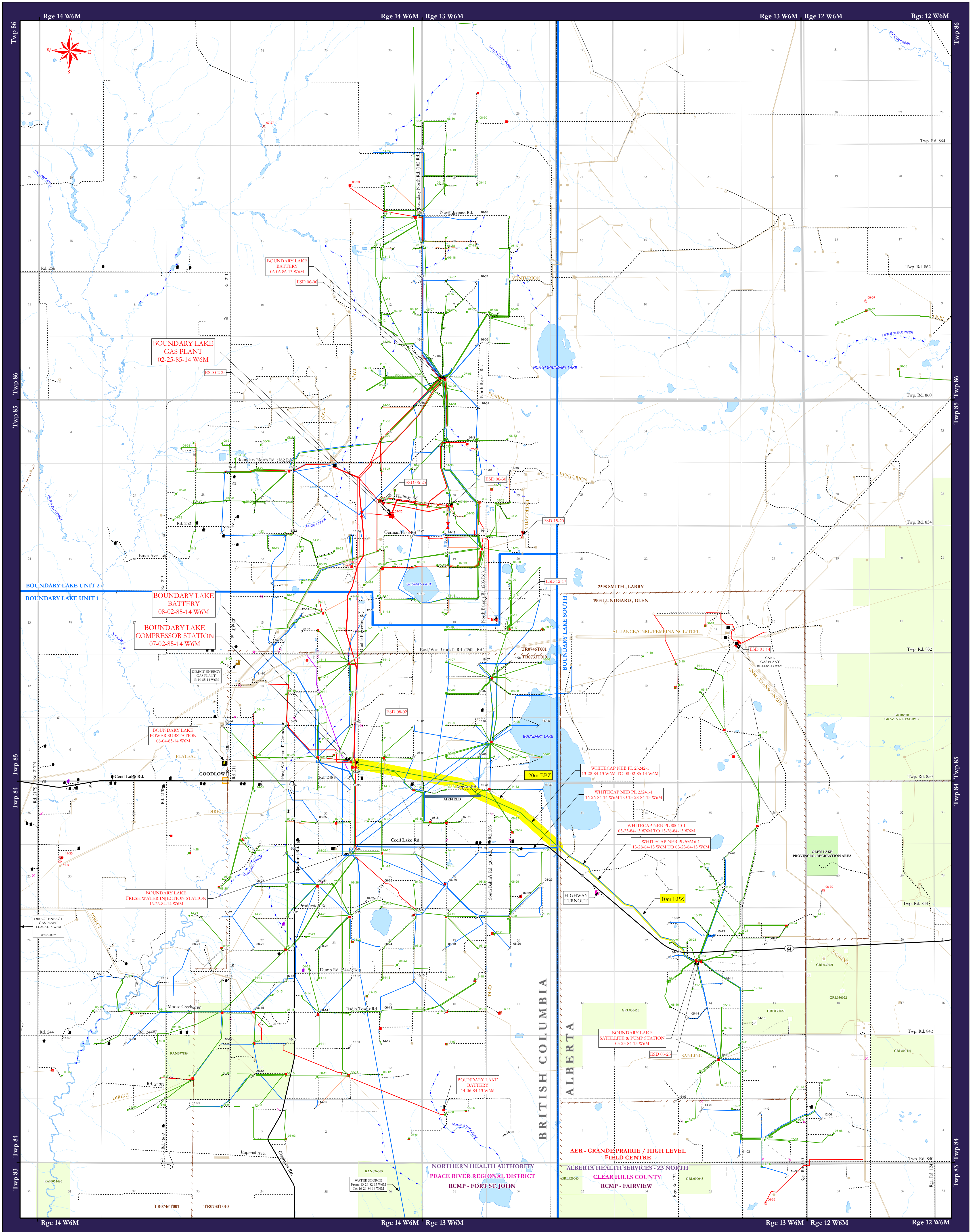
Substance: CO=Crude Oil FG=Fuel Gas FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent

SG=Sour Gas SW=Salt Water

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active C=Cancelled

S=Suspended R=Removed

Other: Wall=Wall Thickness OD=Outside Diameter



## BOUNDARY LAKE FIELD NAB/NEBC ERP

**WHITECAP  
RESOURCES INC.**

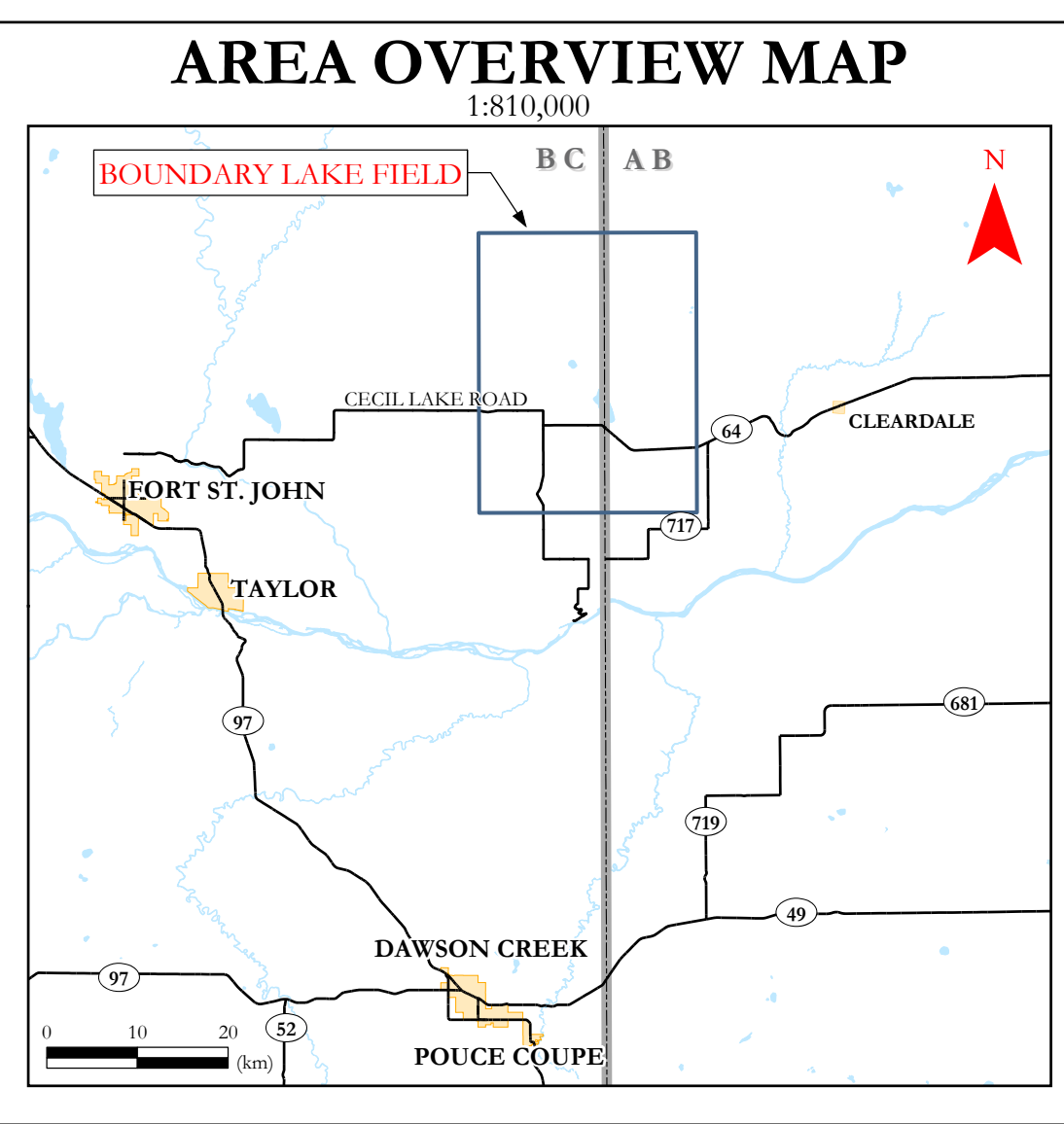
Draft Date: October 21, 2015 FSC	Scale: 1:43,000	Map: 5153
Revision Date: April 3, 2018 MJW	UTM ZONE 10 NAD83	

0 1 2 3 4 5 (km)

MAP PRODUCED BY:

**H<sub>2</sub>Safety  
Services Inc.**

403-212-2332  
WWW.H2SAFETY.CA



<ul style="list-style-type: none"> <li> Other Well</li> <li> Whitecap Gas Well</li> <li> Whitecap Suspended Gas Well</li> <li> Whitecap Oil Well</li> <li> Whitecap Suspended Oil Well</li> <li> Whitecap Injection Well</li> <li> Whitecap Service Well</li> <li> Whitecap Suspended Well</li> <li> Whitecap Well Location</li> <li> Other Facility</li> <li> Whitecap Facility</li> <li> Other Gas Plant</li> <li> Whitecap Gas Plant</li> <li> ESD</li> </ul>	<ul style="list-style-type: none"> <li> Other Pipeline</li> <li> Whitecap Gas Pipeline</li> <li> Whitecap Oil Pipeline</li> <li> Whitecap HVP Pipeline</li> <li> Whitecap Misc. Fluids Pipeline</li> <li> Whitecap Water Pipeline</li> <li> Whitecap Discontinued Pipeline</li> <li> Trails</li> <li> Other Roads</li> <li> Winter Roads/No Grade Roads</li> <li> Main Hwy</li> <li> Divided Hwy</li> <li> Railway</li> <li> Airfield</li> </ul>	<ul style="list-style-type: none"> <li> WCCS Control Point</li> <li> Abandoned</li> <li> Bridge</li> <li> Communication Tower</li> <li> Farm Use Area</li> <li> Locked Gate</li> <li> Power Station</li> <li> Occupied</li> <li> Business</li> <li> Vacant</li> <li> Church</li> <li> Occupied Facility</li> <li> Cemetery</li> </ul>	<ul style="list-style-type: none"> <li> River Flow Direction</li> <li> Hydrology</li> <li> Waterbody</li> <li> Urban Area</li> <li> Grazing Lease/Reserve/Tenure</li> <li> Protected Area</li> <li> AER Field Centre</li> <li> Alberta Health Services/BC Health Authority</li> <li> Local Authority</li> <li> RCMP</li> <li> Trapper Boundary</li> <li> Provincial Boundary</li> <li> Site Section Boundaries</li> <li> NEB Regulated Emergency Planning Zone (EPZ)</li> </ul>
--	--	---	---