

Northern AB / Northeast BC

Emergency Response Plan

MARCH 2020

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

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Revision History

This Emergency Response Plan is effective March 26, 2020. The company's Emergency Response Program Coordinator is responsible for updating this plan annually or as required. Any errors or omissions in the plan should be brought to their attention.

Date of Update Inserted Into ERP:

Signature:

ERP Revision Due Date: March 26, 2021								
Date of Revision	Date of Issue	Reason For Revision	Section	Affected Pages				
	March 26, 2020	New ERP Core template. Annual update to Area Specific Information: updated hazard calculations, completed public involvement program and updated contact lists for Boundary Lake AB, Boundary Lake BC and Valhalla. Operations description update to Elmworth/Wapiti and Karr site sections.	Foreword to Appendices	All Sections (New ERP Core)				
			Area Specific Information					
March 26, 2020			Boundary Lake CER	All				
			Boundary Lake BC	All				
			Boundary Lake AB	All				
			Elmworth / Wapiti	Site Section Only				
			Karr	Site Section Only				
			Valhalla / Progress	All				



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Whitecap Resouces Inc. - Northern AB / Northeast BC ERP

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Section 1: Initial Response

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Five Step Initial Response Guide

Five Step Worksheet

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Step 2 – Internal Notification

Response Teams Phone List

Step 3 - External Notification

Step 4 - Incident Briefing

Step 5 – Public Safety



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A1 Initial Emergency Report Form



First On-Scene Actions

		☐ Get to a safe area immediately.					
Evacuate		☐ Move upwind if release is downwind of you.					
		☐ Move crosswind if a release is upwind from you.					
	_		er ground if possible.				
Alarm	_	☐ Call for help (' ☐ Sound bell. ho	างเลก Down"). orn or whistle, or call by	, radio			
	_		mergencies, call 911.	, radio.			
Assess				ies. Consider all of the ha	azards.		
	2	☐ Fill out informa	ation below to complete	e assessment.			
Protect		☐ Put on breath	ing apparatus before a	ttempting rescue.			
Rescue		☐ Remove victin	n to a safe area.				
First Aid		☐ Follow the sta	ndard first aid protocol	s at worksite. (CPR, etc.)			
Medical Ai	d	☐ Arrange trans	port of casualties to me	edical aid.			
	_	☐ Provide inforn	nation to Emergency M	edical Services (EMS).			
Incident Do	etails 7	o he completed by the	person involved or notified				
Report taker		o ne completed by the	percentification of ficalica	Date / Time			
Name of per	son call	ing		Caller Telephone			
Incident Loca	ation		(LSD / NTS	3)			
Event Summ	nary		(2007)1111	<i>-</i>)			
	•						
Agencies Notified	□ Yes	Who?					
Event	□ No						
Status		ncident contained or controlled					
Site Type	□ Wel	I □ Pipeline	☐ Tank Farm/Storage	☐ Battery/Plant/Facility	□ Other		
1	□ Sou	r Gas Release	☐ Sweet Gas Release	☐ Pipeline Break	☐ Security (theft, threat, terrorism)		
Incident Type	□ Loss	s of Containment	☐ Fire/Explosion	☐ Worker Injury/Fatality	☐ Vehicle/Transportation		
	□ Liqu	id Spill	□ Other				

A1 Initial Emergency Report Form



Public Health and Safety Could be jeopardized Is jeopardized Public Protection Measures Taken Notification Evacuation Shelter-in-place Roadblocks Worker Injuries First Aid Hospitalized Fatality Other
Worker Injuries Distance to nearest surface developmentkm Distance to nearest urban centrekm Details Release Impact
Distance to nearest surface developmentkm Distance to nearest urban centrekm Details Release Impact
Release Impact
Release Impact □ On-Lease □ Off-Lease Product
Gas Readings H ₂ S SO ₂ LEL Other
Gas Readings H ₂ S SO ₂ LEL Other
Gas Readings H ₂ S SO ₂ LEL Other
Gas Readings H ₂ S SO ₂ LEL Other
Distance to nearest watercoursekm Weather Conditions
Distance to nearest watercoursekm Weather Conditions Details
NW NW
NNW NNE
WNW
270° W
wsw / /
Media Yes No Regulator Yes No No No Regulator Yes No Relations Issues?
Details
Notes / Instructions Provided:
Notes / Instructions Provided:

Distribute this completed report to all Key Response Personnel

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

First **On-Scene Actions**

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

Refer to A1 Initial **Emergency Report**

Step 1 - Level of Emergency

Determine Level of Emergency:

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

Use the following resources:

- Section 1: Initial Response (Level of Emergency)
- The Emergency Assessment SmartPhone App. (Search H₂Safety or Emergency Assessment in the App Store).



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

Step 2 - Internal Notification

- Pollow 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)

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

Step 3 - External Notification

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

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

Step 4 - Incident Briefing

Complete an ICS 201 Incident Briefing Form:

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

Use the following resources:

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

Step 5 - Initiate Public Safety

Public Protection Measures

- □ Determine the hazard area; start with Emergency Planning Zone (EPZ) as
- □ Identify the affected surface developments and area users. (Houses, businesses, guides/outfitters, trappers, schools, other oil and gas
- □ Determine the appropriate public protection measure for the affected surface developments and area users. (Evacuation, shelter-in-place and/or
- □ Coordinate evacuation outside of the EPZ with the local authority, if 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 FP7 for transients
- □ Assist residences that require evacuation assistance.
- □ Investigate surface developments that are identified as vacant or those who were unable to contact.
- □ Post notices on all outside doors of empty surface developments, vehicles,
- □ Record all contacts, communications and monitoring readings using the following forms: ICS 214, A5, B3 & B5.
- ☐ Monitor and record air quality readings using the following forms: ICS 214 & A5. (Smoke, plumes, wind, etc.)
- □ Provide status updates to the Public Safety Group Supervisor at established intervals.

Use the following resources:

- · Section 2: Roles & Responsibilities (Rovers)

Telephoners

- □ Establish a Telephoner Team to notify residents to evacuate or shelter-inplace 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 & Responsibilities (Telephoners)
- · Section 6: Forms

- · Section 6: Forms
- Area Specific Information (Map)

Reception Centre Rep

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

Use the following resources:

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

Step 4 Incident Briefing Note: Initial Response takes place over a single operational Step 3 period (optimally 8 to 12 **External Notification** . 95% of all hours). incidents will be resolved within the first Step 2 operational period. Internal Notificatior

Reactive Phase

Step 5

Public Safety

Step 1 Level of Emergency

> First On-Scene Actions

Response

Initial

Five Step Initial Response Guide



Roadblocks

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

Use the following resources:

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

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 & Responsibilities (Air Monitors)
- Section 6: Forms

FIVE STEP WORKSHEET



EMERGENCY RESPONSE PLAN

STEP 1 – LEVEL OF EMERGENCY	Determine the Level of Emergency using the Assessment Matrix for Classifying Incidents		
☐ Alert / Minor		☐ Level 2	
Level 1		☐ Level 3	
For any emergency involving an NEI	B regulated site, utili	ize the appropriate emergency assessment matrix for	
that province.			

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

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

STEP 4 – INCIDENT BRIEFING	Complete an ICS 201 Incident Briefing Form			
STEP 5 – PUBLIC SAFETY	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:	





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	 No worker injuries. Nil or low media interest. Liquid release contained on site. Gas release impact on site only. 				
2	 First Aid treatment required for on-site worker(s). Local and possible regional media interest. Liquid release not contained on site. Gas release impact has potential to extend beyond site. 					
3	Major	 Worker(s) requires hospitalization. Regional and national media interest. Liquid release extends beyond site – not contained. Gas release impact extends beyond site – public health / safety could be jeopardized. 				
4	Catastrophic	 Fatality. National and international media interest. Liquid release off site not contained – potential for, or is, impacting water or sensitive terrain. Gas release impact extends beyond site – public health / safety jeopardized. 				

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 heath 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.
- 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



S	tep 4↓		Table 4. I	ncident Resp	onse - Inc	cident Classification	on	
R	esponses	onses Alert		Level - 1 Emergency		Level - 2 Emergency		Level - 3 Emergency
Co	mmunicatio	าร						
on licensee po		. ,			Notification of off-site management.		Notification of off-site management.	
	External public	Courtesy, a discretion.	at licensee	Mandatory for indiv have requested not within the EPZ.		Planned and instructive in accordance with the specifier.	fic	Planned and instructive in accordance with the specific ERP.
	Media	Reactive, a	is required.	Reactive, as require	ed.	Proactive media management to local or regional interest.		Pro active-media man agement to national interest.
Go	overnment	Reactive, a Notify AER media is co	if public or	Notify government Call local authority authority if public or contacted.	and health	Notify government regulator, local authority & health authority.		Notify government regulator, local authority & health authority.
Act	tions			•				
	Internal	On site, as required by licensee.		On site, as required by licensee. Initial response undertaken in accordance with the site-specific or corporate-level 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.
l	External	On site, as licensee.	required by	On site, as required by license		Potential for multi agency (operator, municipal, provincial or federal) response.		Immediate multi agency (operator, municipal, provincial or federal) response.
Res	sources							
	Internal	Immediate and local. No additional personnel required.		Establish what resources would be required.		Limited supplemental resources or personnel required.		Significant incremental resources required.
External		None.		Begin to establish r may be required.	resources that	Possible assistance from government agencies and external support services, as required.		Assistance from government agencies and external support services, as required.
	Alert Level-1		Level-1 E	Emergency Level -2 En		I-2 Emergency		Level-3 Emergency
Definition	handled on site licensee throug operating proc- is deemed to b	censee through normal to the public, and environmental in can be handled or ownisk to members of personnel. There		the license's way, but there is minimal popact. The situation entirely by licensee will be immediate zard. There is little rest the license's way, but there emergency to licensee's promust be notified hazard is protomoderate three environment.		nmediate danger outside property or the right-of- eis the potential for the extend beyond the extend beyond the perty. Outside agencies ed. Immin ent control of the pable but there is a eat to the public and/or the entrest in the event.	from a There ongoin Immed	afety of the public is in jeopardy in major uncontrolled hazard. are likely significant and no environmental impacts. diate multi agency municipal and cial government involvement is ed.
	Aleı	t	Level-1 Emergency		Leve	I-2 Emergency	Level-3 Emergency	
Responses	level if required initiate control procedures - Isolate - Activate - Conduc special - If special to volun receptic - Notify a personr agencie - Have ai		Isolate the haza Activate the ER Conduct public special needs r If special needs to voluntarily exreception centr Notify appropria personnel and agencies	safety actions for residents seresidents decide vacuate, activate a e atte internal government oring conducted at	- Fully activate procedures established - Inform governmen health author dentify the operating are action to proshelter or every prepare ignirelated) - Respond to public questivation to each activation to each activate the	nazard and emergency eas and take any required tect the public through racuation. tion team (butane gas media, company and tions the potential of the escalate to a Level-3 rities and keep government al agencies advised, if	In addition to Level-2 responses: - Emergency response plan and command centres are fully activate - Company Management has been notified and all internal support positions staffed - Continue to monitor and adjust hazard and emergency operating areas (maintain security) - Mobilize additional people and resources - Ignite a gas release if ignition criteria are met - Continue to advise company and government - Activate the reception centre, if it has not already been established a a Level-1 or Level-2 emergency - Continue to maintain the EOC, onc it is activated	





Incident Classification Matrix

Instructions: Start at the top and continue down until you check off any one box in both consequence and probability to determine the incident classification. This matrix is required as an attachment upon submission of an incident through the <u>Online Minor Incident Reporting System</u>.

Table 1. Consequence Ranking

Rank	Consequence (any one of the following)
4	 □ Major on site equipment or infrastructure loss □ Major act of violence, sabotage, or terrorism which impacts permit holder assets □ Reportable liquid spill beyond site, uncontained and affecting environment □ Gas release beyond site affecting public safety
3	 ☐ Threats of violence, sabotage, or terrorism ☐ Reportable liquid spill or gas release beyond site, potentially affecting public safety, environment, or property ☐ HAZMAT worker exposure exceeding allowable ☐ Major on site equipment failure
2	 □ Major on site equipment damage □ A security breach that has potential to impact people, property or the environment □ Reportable liquid spill or gas release potentially or beyond site, not affecting public safety, environment, or property
1	 ☐ Moderate on site equipment damage ☐ A security breach that impacts oil and gas assets ☐ Reportable liquid spill or gas release on location ☐ **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	□ 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	□ Uncontrolled, with control unlikely in near term		
3	□ Escalation possible; under or imminent control		
2	□ Escalation unlikely; controlled or likely imminent control		
1	□ Escalation highly unlikely; controlled or imminent control		
0	□ Will not escalate; no hazard; no monitoring required		

Table 3. Incident Risk Score and Classification

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

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



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

Minor Incidents

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

Level 1, 2, or 3 Emergency

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

Escalating, Downgrading or Standing-Down of Emergency

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

Permit Holders Post-Incident Report

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

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

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

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

Step 1 – Level of Emergency



Spill Reporting Criteria

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

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

Please refer to the BC Environmental Management Act; <u>Spill Reporting Regulation</u>, Schedule "Reporting Levels for Certain Substances" for determining reportable spillage amounts of other substances:

Other Reportable Incidents

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

- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
 - o pit gain of 3 m³ or greater
 - o casing pressure 85% of MA
 - 50% out of hole when kicked
 - well taking fluid (LC)
 - associated spill
 - o general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc
- Pipeline incidents, such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only

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

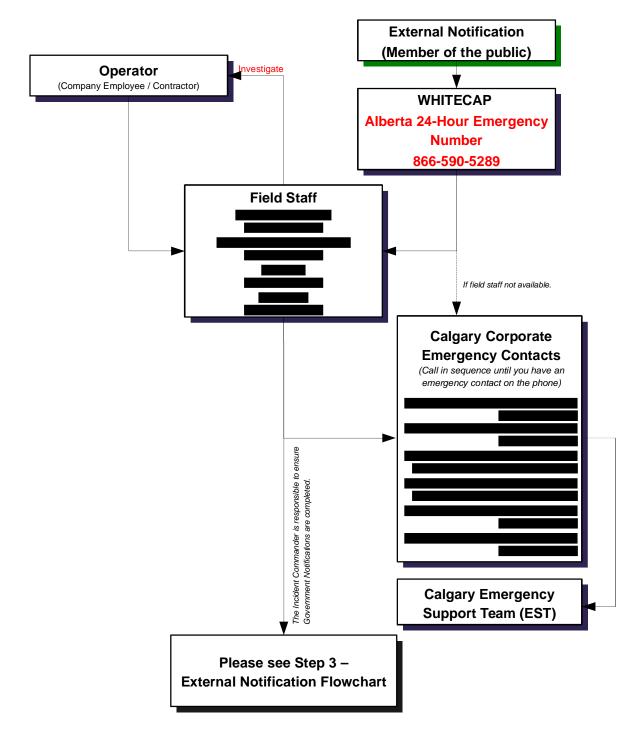


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EMERGENCY RESPONSE PLAN

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



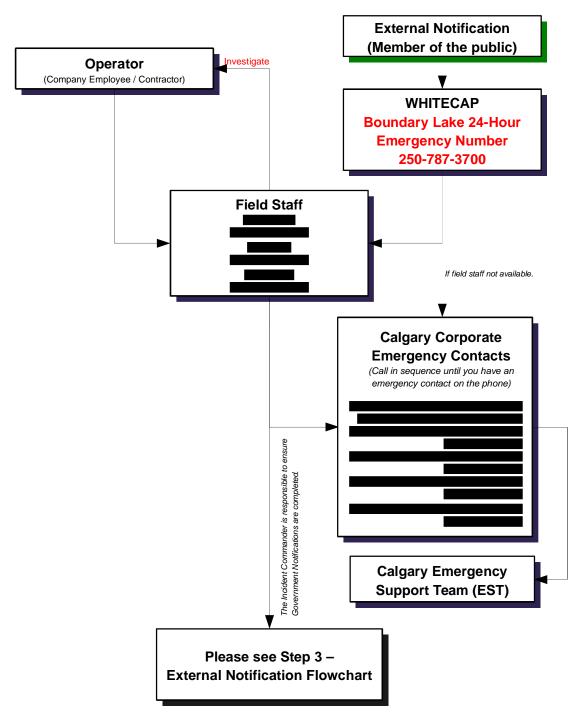
EMERGENCY RESPONSE PLAN

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EMERGENCY RESPONSE PLAN

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

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

EMERGENCY RESPONSE 24 HOURS: (AB/SK) 1-866-590-5289 or (BC) 1-250-787-3700

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

Name	Position	Office	Fax	Cell	Home	Email
CALGARY						
	Manager Production					
	VP Operations					
	Operations Engineer - Deep Basin					
	Operations Engineer - Boundary Lake & Valhalla					
	VP HSE					
	VP Production & Operations					

Name	Position	Office	Fax	Cell	Home	Email
FIELD						
	Field HSE Advisor	-				
	Area Superintendent					
	Lead Operator - Boundary Lake					
	Lead Operator - Valhalla					
	Lead Operator - Deep Basin					

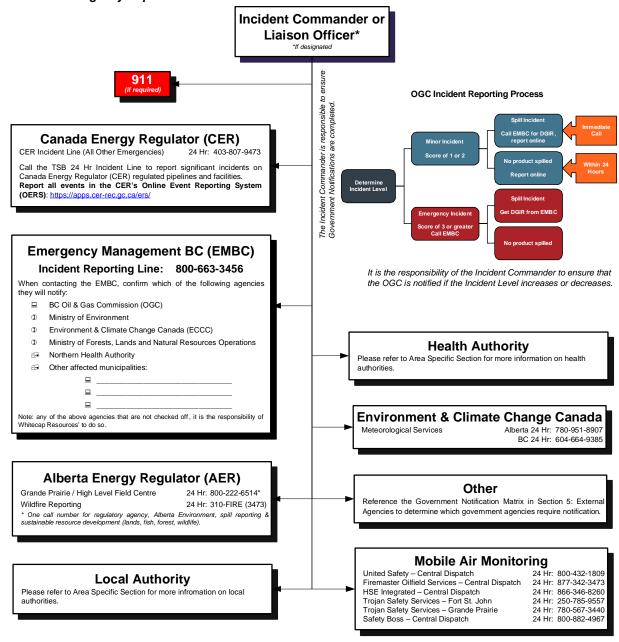
Revised: March 2020



EMERGENCY RESPONSE PLAN

EXTERNAL EMERGENCY NOTIFICATION FLOWCHART

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



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

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



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

STEP 3 – EXTERNAL NOTIFICATION



EMERGENCY RESPONSE PLAN

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Step 4 – Incident Briefing



Incident Name:							
Date/Time Initiated:							
Prepared By:		ICS Position	ICS Position:				
Level of Emergency	Alert / Minor	Level 1	Level 2	Level 3			
Map Sketch:							
Note: Maps can be drawn	or attached here.						
Situation Summary: (Wr	ite description or attac	h A1)					
, (•	····,					
Safety Briefing:							

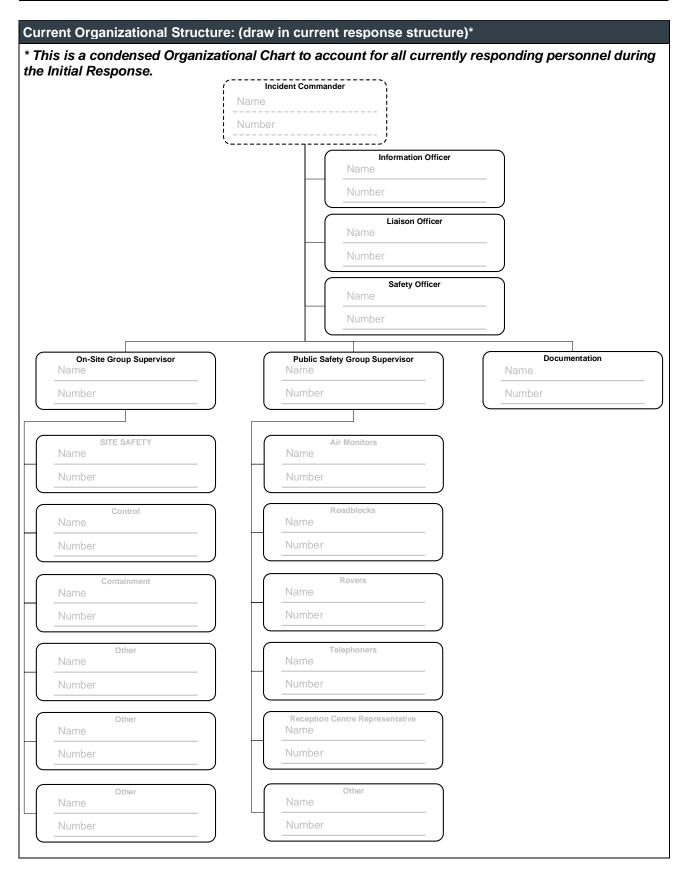
Step 4 – Incident Briefing



Current and Planned Objectives:						
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property						
1. Ensure Safety of Citizens a	and Response Personnel:	4. Minimize Economic Impacts:				
☐ 1a. Identify hazard(s) of relea	ised product.	☐ 4a. Consider tourism and local economic impacts.				
☐ 1b. Establish site control (hot security).	zone, warm zone, cold zone, &	☐ 4b. Protect public and private assets, as resources permit.				
☐ 1c. Establish an Emergency Safety Actions.	Response Zone and Initiate Public	☐ 4c. Establish damage claims process.				
☐ 1d. Consider evacuations if n	eeded.	5. Keep Stakeholders and Public Informed of Response Activities:				
☐ 1e. Establish aircraft restriction	ons.	☐ 5a. Provide forum to obtain stakeholder input and concerns.				
☐ 1f. Monitor air in impacted are	eas	☐ 5b. Provide stakeholders with details of response actions.				
☐ 1g. Develop site safety plan f briefings are conducted.	or personnel and ensure safety	☐ 5c. Identify stakeholder concerns and issues, and address as practical.				
2. Control the Source of the F	Release:	☐ 5d. Provide timely safety announcements.				
☐ 2a. Complete emergency shu	ıtdown.	☐ 5e. Conduct regular news briefings.				
☐ 2b. Conduct firefighting.		☐ 5f. Conduct public meetings, as appropriate.				
☐ 2c. Initiate temporary repairs.						
3. Manage a Coordinated Res	sponse Effort:					
☐ 3a. Complete or confirm notif	ications.					
☐ 3b. Establish a unified comm (command post, etc.).	and organization and facilities					
☐ 3c. Ensure mobilization and t personnel and equipment.	racking of resources and account for					
☐ 3d. Complete documentation	•					
Current and Planned Acti	ons, Strategies and Tactics:					
Time:	Actions:					
HHMM						
HHMM						
HHMM						
HHMM						
HHMM						
HHMM						
HHMM						
HHMM						
HHMM						

Section 1: Initial Response Page 2 of 6





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

Step 4 – Incident Briefing



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

Section 1: Initial Response

Step 4 – Incident Briefing



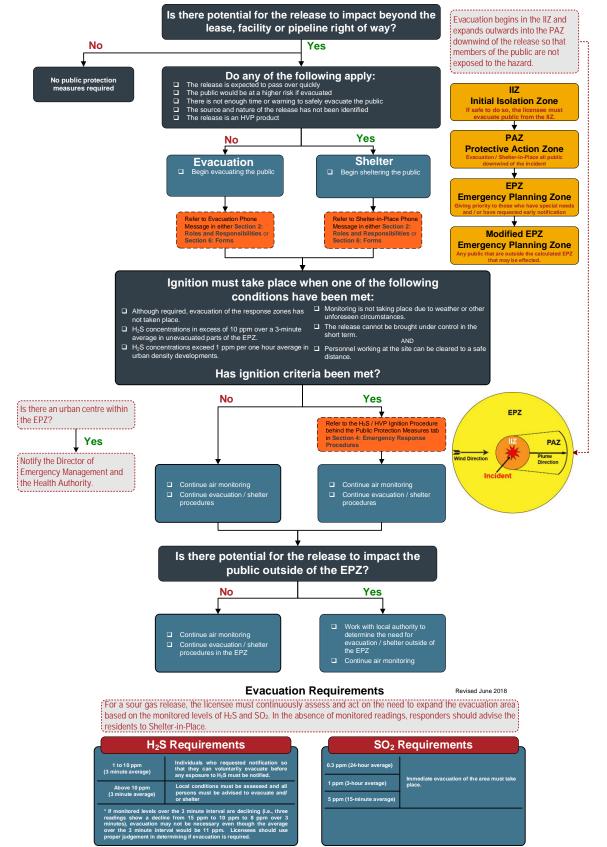
Site Safety and Hazard Control Analysis							
Site Control							
1. Is Site Control set-up? ☐ Yes ☐ No	2. Is there an On-Scene Command Post? ☐ Yes ☐ No If so, where?						
Have all personnel been accounted for? □ Yes □ No □ Don't Know	Injuries: Fatalities: Unaccounted: Trapped:						
Are observers involved or rescue attempts planned? Observers: □ Yes □ No Rescuers: □ Yes □ No	5. Are Decon areas setup? ☐ Yes ☐ No If so, where?						
Hazard Identification, immediate signs of: (if yes, o	explain in remarks)						
1. Electrical line(s) down or overhead? ☐ Yes ☐ No	2. Unidentified liquid or solid products visible? ☐ Yes ☐ No						
3. Wind direction across incident: ☐ Towards your position Wind Speed: ☐ Away from your position	4. Is a safe approach possible? ☐ Yes ☐ No						
5. Odours or smells? ☐ Yes ☐ No	6. Vapours visible? ☐ Yes ☐ No						
7. Holes, ditches, fast water, cliffs, etc. nearby? ☐ Yes ☐ No	8. Fire, sparks, sources of ignition nearby? ☐ Yes ☐ No						
9. Is local traffic a potential problem? ☐ Yes ☐ No	10. Product placards, colour codes visible? ☐ Yes ☐ No						
11. Other Hazards? ☐ Yes ☐ No	12. As you approach the scene from the upwind side, do you note a change in the status of any of the above? ☐ Yes ☐ No						
13. Remarks:							
Hazard Mitigation: have you determined the neces 1. Entry Objectives:	sity for any of the following?						
1. Litaly objectives.							
2. Warning sign(s), barriers, colour codes in place? ☐ Yes	s □ No						
 3. Hazardous material being monitored?							
4. Protective gear / level:	4a. Gloves:						
4b. Respirators 4d. Boots:	4c. Clothing: 4e. Chemical cartridge change frequency:						
5. Decon5a. Instructions:5b. Decon equipment and materials:	3 0 1						
6. Emergency escape route established? ☐ Yes ☐ No Route?							
7. Field responders briefed on hazards? ☐ Yes ☐ No							
8. Remarks:							
Protective Zones: record initial control perimeters (see Figure 1)							



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



Public Protection Measures Flowchart - AB



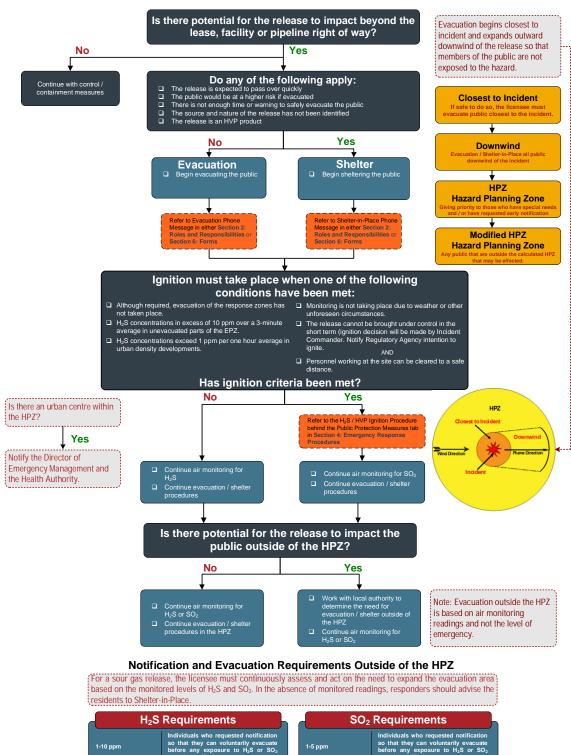
Note: This section is based on Alberta Regulations; however, the same standards will be followed by the company for operations in other provinces.



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Public Protection Measures Flowchart - BC



H ₂ S	Requirements	SO₂ Requirements				
1-10 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S or SO ₂ must be notified.	1-5 ppm	Individuals who requested notification so that they can voluntarily evacuate before any exposure to H ₂ S or SO ₂ must be notified.			
10 ppm and above (1-hour average)	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.	5 ppm and above	Local conditions must be assessed and all persons must be advised to evacuate and/or shelter.			
nearest unevacuated	Level – when downwind monitoring at the residence, outside the Hazard Planning I of 10 ppm, evacuation procedures will be o.					

Revised March 2019



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Section 2: Roles and Responsibilities

Field Response Team

Key Response Personnel

General Safety Equipment and Resource Lists

Operator, Truck & Other Safety Equipment

Response Team Structure

Quick Reference Guide – Emergency Support Team (EST)

Field Response Team - Command Staff

Command Staff Roles Chart

Field Response Team - General Staff

Operations Section Roles Chart

Planning Section Roles Chart

Logistics Section Roles Chart

Finance / Admin. Section Roles Chart

Field Response Team – Public Safety Staff

Public Safety Roles Chart

Air Monitors Module

Reception Centre Rep Module

Roadblocks Module

Rovers Module

Telephoners Module

Ongoing Response

Planning "P"

Five Step Ongoing Response Guide

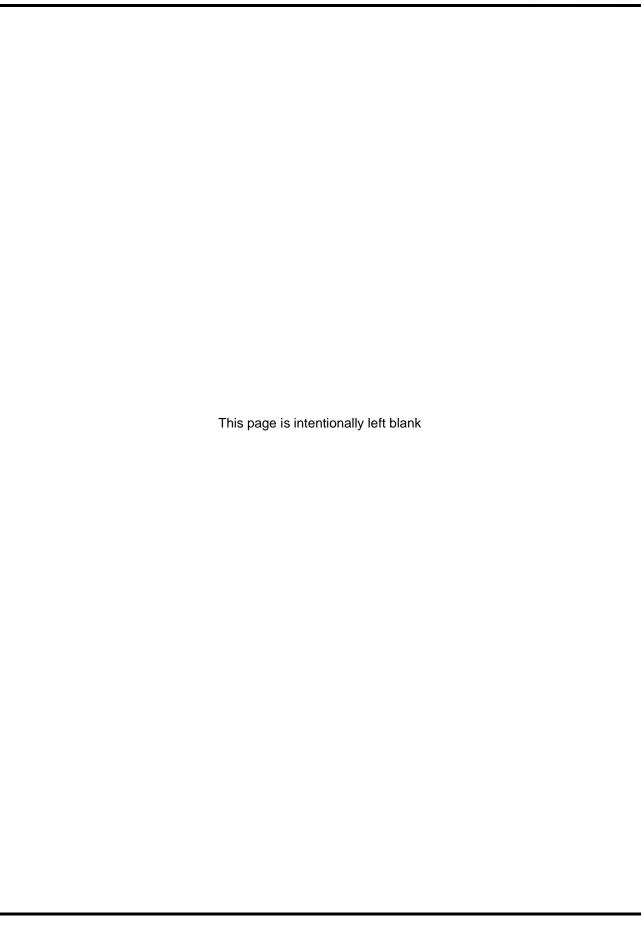
Objectives Meeting

Tactics Meeting

Planning Meeting

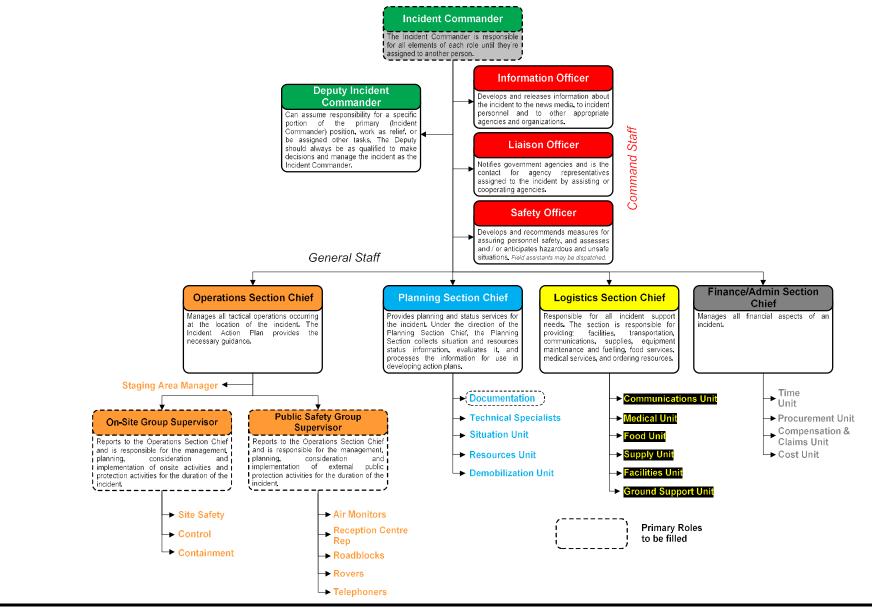
Operations Briefing







Field Response Team



Section 2: Roles and Responsibilities



Key Response Personnel

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

Command Staff	Incident Commander	Area Superintendent Area Foreman (Alternate Incident Commander)
On-Site	On-Site Group Supervisor	Lead Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.
	Trained in Ignition (H₂S & HVP)	Lead Operator Lead Operator
	Public Safety Group Supervisor	Area Foreman Area Superintendent
Public Safety	Air Monitors / Roadblock / Rovers	Area Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.
	Telephoners	Operations Technician
	Reception Centre Representative	Area Operators Please see the Response Teams Phone List (Yellow tab) or Area Specific Information (White tabs) for a list of Area Operators.
Emergency Support	EOC Director	VP Engineering VP Production
Team (EST)	Communications / Media	President & CEO

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

General Safety Equipment and Resource Lists

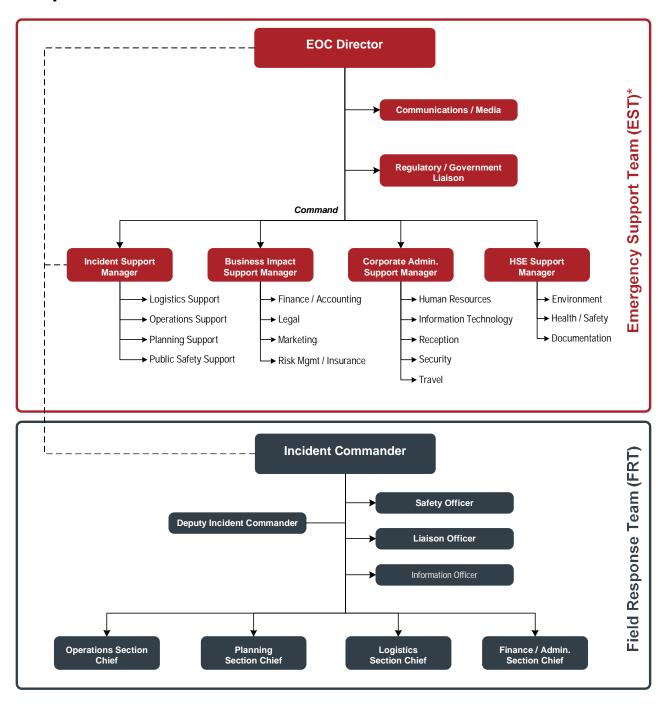
Operator, Truck & Other Safety Equipment

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

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



Response Team Structure





^{*} Detailed role descriptions for the EST can be found in the Emergency Support Team Plan located at the corporate office EOC.



Quick Reference Guide – Emergency Support Team (EST)

(Located at the Corporate Emergency Operations Centre)

The **EOC 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 EOC Director might choose to assign right away.

EOC Director	The EOC 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 EOC Director determines the level of activation of the Emergency Support Team (EST) and assigns all positions to meet the required level of activation.
Communications & Media	Serves as the coordination point for all public information, media relations and internal information sources. Communications & Media is responsible for preparing the FRT and the EST to deal successfully with internal and external communication.
Regulatory / Government Liaison	Provides regulatory guidance and advice to the 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.
Incident Support Manager	The Incident Support Manager is the main link between the FRT and the 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).
Business Impact Support Manager	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.
Corporate Admin Support Manager	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.
Health, Safety & Environment Support Manager	The Health, Safety & Environment Support Manager is responsible for providing Health, Safety & Environmental support to the FRT. The Health, Safety & Environment Support Manager is also responsible for managing the health / safety / environmental / planning / documentation activities of the EST.

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

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

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

General Staff Roles – Planning Section Planning Section Chief Documentation Unit Technical Specialists Unit Situation Unit Resources Unit Demobilization Unit The Resources Unit is responsible for The **Demobilization Unit** is responsible for The **Planning Section Chief** is responsible The **Documentation Unit** is responsible for Certain incidents or events may require the The collection, processing, and organization the maintenance of accurate, up-to-date maintaining the status of all assigned for providing planning and status services for use of Technical Specialists who have of all incident information. The Situation developing the Incident Demobilization Plan. incident files. Duplication services will also the incident. Under the direction of the specialized knowledge and expertise. Unit may prepare future projections of resources at an incident. Planning Section Chief, the Planning Technical Specialists may function within incident growth, maps, and intelligence be provided by the **Documentation Unit**. Section collects situation and resources the Planning Section, or be assigned information. wherever their services are required. 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 Determine what technical support is □ Document the Incident Action Plan □ Collect and evaluate information to Monitor the status and location of all ☐ Prepare plan for the demobilization of all □ Identify and confirm communication links. available now and in the future. (IAP) strategies using the ICS 201 establish an accurate picture of the incident resources / personnel responding personnel and equipment upon resolution ■ Assign personnel to assume the following ■ Work with Logistics to determine the key Incident Briefing Form provided in situation and creates a detailed summary. to the incident. of the incident. positions, as required: **Documentation**, locations for the required technical Section 1: Initial Response or Section Use this information to create maps and Technical, Situation, Resources, and Oversee the check-in of all resources. ☐ Ensure resources in available status are 6: Forms and disseminate them to all key support and appropriate time to acquire. projections. still required. Identify surplus resources responders. ☐ Gather data (weather, etc.) and forecast Maintenance of a master list of all □ Prepare, post, or disseminate resources □ Assist with setup of the Incident and probably release time. changes considering incident potential resources, e.g., key supervisory ■ Be prepared to document the and situation status information as and develop new or modified response personnel, primary and support resources ■ Debrief non-required resources and **Incident Commander's** required, including special requests. Review the details of the incident and strategies. dismiss resources being demobilized. status update meetings using support the **Incident Commander** with Provide photographic services and maps it ☐ As required, obtain plume dispersion whiteboards. PC or Action ■ May assist in preparing the written □ Coordinate demobilization with agency the development of a preliminary required. modelling. Incident Action Plan. representatives. Ensure consistent documentation. ☐ Identify the need for technical specialists Maintain and post the current status and Develop incident check-out function for all location of all resources. Collect and analyze information on the ■ Ensure timely dissemination of all units. current situation, prepare situation documentation. ■ Ensure the demobilization process is displays and situation summaries, and organized, safe and cos effective. Participate in planning meetings, capturing develop maps and projections. key information, decisions made.

and status board displays.

Demobilization.

Command Post.

response strategy.

■ Establish special information collection

environmental, toxics, etc.

Action Plan (IAP).

strategies.

planning.

activities as necessary, e.g., weather,

☐ Provide technical support to the **Incident**

Commander and work with Incident **Commander** to develop the Incident

Action Plan (IAP) to ensure consistency. □ Assemble information on alternative

current available resources and resource

□ Coordinate with **Logistics** to determine

availability for future plans of action.

□ Conduct long-range and / or contingency

Maintain continuous communications with

| Form | Form | Form | Form | CS | ICS | ICS | ICS | ICS | ICS | ICS | 202 | 214 | 215 | 215a | 230 |

□ Establish reporting schedules.

Develop plans for demobilization.

the Incident Commander.

□ Review any changes to the Incident

commitments and status.

□ Collect documentation from response

system for organizing the data.

Establish duplication services.

Incident Command Post.

☐ Incident files will be stored for legal,

analytical, and historical purposes.

□ Post and maintain all Emergency Status

Boards and other laminated charts in the

team members and maintain a consistent

minimum of 5 years as it may be requested by the regulatory agency

Records must be held for a

at any point during that time.

Important

Prior to beginning any activities, each person in a role must:

Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the

Throughout the duration of the incident, each person in a role must:

☐ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms.

After the incident is over, each person in a role must:

| Form | Form | Form | Form | Form | CS | ICS |

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.

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

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

Revised October 2018

General Staff Roles – Finance / Admin Section Finance / Admin Section Chief **Time Unit Procurement Unit Compensation & Claims Unit Cost Unit** The Finance / Administration Section Chief is The **Time Unit** is responsible for ensuring the All financial matters pertaining to vendor contracts. This unit oversees the completion of all forms required The Cost Unit provides all incident cost analysis. It responsible for managing all financial aspects of an accurate recording of daily personnel time, leases and fiscal agreements are managed by the by workers' compensation and local agencies. A file of ensures the proper identification of all equipment and incident. The Finance / Administration Section Chief compliance with specific agency time recording Procurement Unit. The unit is also responsible for injuries and illnesses associated with the incident will personnel requiring payment; records all cost data; policies and managing commissary operations if also be maintained and all witness statement will be analyzes and prepares estimates of incident costs; will determine the need to activate or deactivate a unit. maintaining equipment time records. The **Procurement** Unit establishes local sources for equipment and obtained in writing. Close coordination with the established at the incident. and maintains accurate records of incident costs. medical Unit is essential. The Compensation & supplies; manages all equipment rental agreements; and processes all rental and supply fiscal document Claims Unit is also responsible for investigating all billing invoices. claims involving property associated with or involved in the incident. ■ Manage finances relating to vendor contracts, leases □ Handle all matters relating to compensation for Identify and confirm communication links. □ Record daily personnel time, ensure compliance □ Collect and evaluate cost data to establish an injury or property damage due to the incident. with specific agency time recording policies, and and fiscal agreements. ☐ Assign personnel to assume the following positions, accurate picture of the incident costs. manage commissary operations if established at as required: Time Unit, Procurement Unit, ■ Maintain equipment time records. Oversees the completion of all forms required by ☐ Create cost summaries, cost estimates, and cost the incident. Compensation & Claims Unit, and Cost Unit. workers' compensation and local agencies. saving recommendations. ☐ Establish local sources for equipment and supplies. ☐ Review legal issues with the **Incident Commander** ☐ Submit cost estimate data forms to Cost Unit as Coordinate with local jurisdiction on plans and supply Maintain a file with all the injuries and illnesses ☐ Prepare resources-use cost estimates for the and EOC Director. required. associated with the incident. Planning Section. ■ Maintain continuous communications with the ☐ Ensure that all records are current and complete ☐ Manage all equipment rental agreements. Establish Obtain witness statements in writing. ☐ Identify all equipment and personnel requiring **Incident Commander** prior to demobilization. contracts and agreement with supply vendors. payment. □ Investigate all claims involving property associated ■ Brief agency administrative personnel on all ☐ Processes all rental and supply fiscal document with or involved in the incident. incident-related financial issues needing attention or billing invoices. follow-up. ■ Ensure the completion of a Resident B2 Prepare and authorize contracts and land use Compensation Log for any out-of-pocket Manage all financial aspects of an incident. agreements, as needed. expenses incurred by evacuees. □ All claims must be submitted to the Finance and Legal departments for processing and disbursement of funds. ☐ If applicable, Finance and Legal will deal with insurers as well as any other extraneous circumstances (affected parties want more, etc.). **Important** Prior to beginning any activities, each person in a role must: □ Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization Chart from the **Throughout** the duration of the incident, each person in a role must: ☐ Chronologically document all actions, decisions, contacts and requests on an ICS 214 Activity Log. Copies can be found in Section 6: Forms. After the incident is over, each person in a role must: Assist with post-incident activities.

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

Revised October 2018

All forms referenced can be found in Section 6: Forms

Operations Section - Public Safety Roles Public Safety Group Supervisor Reception Centre Rep Roadblocks **Air Monitors** Rovers **Telephoners** Monitoring personnel Reception Centre Reps are responsible for Roadblock personnel are responsible Rovers travel to assigned locations to Telephoners are responsible for the The Public Safety Group Supervisor is responsible for the management, planning, responsible for acquiring and providing establishing reception centres, managing for maintaining assigned roadblock locate the public and personally provide notification of impacted residences and consideration and implementation of external public protection activities for the air quality readings to the Public Safety evacuee accommodation, communication and positions, air monitor readings and public safety instructions and assistance as businesses to provide public safety duration of the incident. documentation for compensation purposes. communication with transients. instructions □ Confirm communication links with the Incident Commander and Operations Section Chief. ☐ Provide air monitoring readings to □ Confirm resident contact lists are □ Confirm resident contact lists are Confirm reception centre is available for ☐ In conjunction with the Public Safety assist with decision making Group Supervisor determine the available. available ☐ In conjunction with the Incident Commander: determine the size of the EPZ; identify the (evacuation / shelter / ignition). need for and location of roadblocks. residents, businesses, industrial operators, and / or transients in the area; and determine the ☐ Establish reception centre. Refer to Confirm communication links. Confirm communication links. initial public protection measures to be taken. Refer to Section 4: Emergency Response Obtain and check equipment and Section 2: Roles & Responsibilities ☐ Pickup and check roadblock kits. ☐ In conjunction with the Public Safety ☐ Know safe routes in and out of the EPZ. Procedures for quidelines on evacuation / shelter, ignition, roadblocks, rovers, public concerns, information (maps, forms, Group Supervisor, determine who Confirm communication links. Proceed to roadblock locations. etc. Additional information for Air Monitors, Reception Centre Representative, Roadblocks, Search for residents and transients in communications, reports, monitors, needs to be notified (residents, Rovers, and Telephoners can be found in Section 2: Roles & Responsibilities. ■ Receive evacuees and maintain □ Confirm communication links. the Emergency Response and Planning safety, and breathing equipment). businesses, area users, etc.). B1 ☐ In conjunction with the Incident Commander, Planning Section Chief, and Operations a Reception Centre Registration ■ Establish roadblocks to secure the Confirm communication links. ☐ Review with the Public Safety B6 Section Chief, develop and implement an Incident Action Plan (IAP). EPZ. Check all buildings including barns, ■ Monitor closest downwind public **Group Supervisor** which ☐ Review resident lists, area user lists, reception centres, and telephone numbers within the ERP. ☐ Arrange for food and accommodations for shops, sheds, etc. ☐ Follow the scripts and procedures in telephoner scripts to use: location or residence ☐ If required, establish a Regional Emergency Operations Centre (REOC). the evacuees. the ERP. Refer to either Section 2: ■ Assist, as required, with the Early Notification / Voluntary В7 ■ Monitor environment for adverse Assign personnel to assume the following positions as required: Air Monitors, Reception ☐ Provide evacuees with a place to Roles & Responsibilities or Section В3 Evacuation Message, Shelternotification, evacuation or effects. Centre Representative, Roadblocks, Rovers, and Telephoners. in-Place Phone Message, request counselling services, if sheltering of persons within 6: Forms ■ Record all readings ☐ The Telephoners must have sufficient personnel to accommodate the following ratios B8 the EPZ. Record all contact with Evacuation Phone Message. required. ■ Monitor area for H₂S and / when contacting residents: 1 Telephoner to every 7 residences; and 1 Supervisor for on the Air Monitoring A5 residents using the Resident Contact Contact special needs ☐ Record and follow up on all evacuees who or LEL with personal every 10 Telephoners. Log. A5 residents at a Level 1 Emergency and Log. choose to make their own accommodation monitors and document ☐ Dispatch Air Monitors at a Level 1 emergency (hand-held and mobile). ■ Report all readings at established provide them with the option to Post Evacuation Notices for readings on the Air B5 ☐ Dispatch trained personnel with the appropriate hand-held gas monitors to record evacuate intervals to the Public Safety Group residents that are not at their Monitoring Log. □ Arrange for temporary care of livestock (if concentrations at the nearest unevacuated residences downwind of the incident site. Supervisor. Contact the other residents and area residence. possible) and the security of evacuated ☐ Report all H₂S and / or LEL reading ☐ Mobilize third party mobile air monitoring units. users in the EPZ and advise them to ☐ For your own safety, ensure Public ☐ Follow the scripts and procedures in the changes / increases to the Public property. Maintain communication with the applicable government regulator and environment evacuate or shelter Safety Group Supervisor is notified Safety Group Supervisor. ERP. Refer to Section 2: Establish and oversee compensation agency regarding air monitoring needs and activities. Contact the schools / school buses to immediately if readings are Roles & Responsibilities or A5 ☐ For your own safety, ensure the administration activities at the reception Consult with the Operations Section Chief to determine the need for evacuation / make arrangements for school age approaching 10% LEL and / or 10 Section 6: Forms. **Public Safety Group Supervisor is** sheltering. This is based on air monitoring readings at the nearest downwind residence. children (if applicable). ppm H₂S. notified immediately if readings are ■ Monitor area for H₂S and /or LEL with Prioritize residents and area users in the EPZ to establish the order of evacuation. Coordinate Reimburse evacuees for Advise that buses in the □ Prepare Mobile Monitoring approaching 10% LEL and / or 10 personal monitors and document their immediate out-ofaffected area leave evacuation or shelter of residents, area users, and transients (via Telephoners and Rovers). B2 Plan. ppm H₂S. readings on the Air Monitoring Log. ☐ Determine who needs to be notified and what script will be used: Early Notification / pocket expenses and log immediately and that buses Record all incoming ■ Report all H₂S and / or LEL reading details on a Resident should not enter the area. Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone Message. B6 B7 B8 Compensation Log. and outgoing traffic. changes / increases to the Public Request a school administrator personnel, and B4 Safety Group Supervisor ☐ At a Level 1 Emergency it is required to notify any special needs ■ Where possible, provide evacuees with for the reception centre to equipment on the ☐ For your own safety, ensure the Public residents and give them the option to evacuate. assist in managing the children information regarding their property, Roadblock Log. Safety Group Supervisor is notified and releasing them to their ☐ If residences are evacuated, a reception centre must be established. livestock, and the incident. ☐ Forward information given to you by immediately if readings are guardians. ☐ Determine and notify landowner / occupant(s) as soon as possible. ☐ Forward all media and incident inquiries to people passing through your location approaching 10% LEL or 10 ppm H₂S. ■ Document all resident ☐ Ensure the schools / school buses are contacted to make arrangements for school age the Information Officer. B3 to the Public Safety Group interactions using the children (if applicable). ■ Report any suspicious behaviour to the ■ Report all names of evacuees who have Supervisor **Public Safety Group Supervisor** who Resident Contact Log and ☐ If a large number of people need to be evacuated (large industrial operations and/or registered at the reception centre to the report this information to the Public ■ Maintain communication with the public facilities) refer to the Area Specific Information section (white tabs) for contacts will notify the police as required. Public Safety Group Supervisor to obtain charter buses or changes to the normal notification procedures. Safety Group Supervisor. Immediately Public Safety Group Supervisor. ☐ Maintain communication with the Public Address resident concerns and forward advise the Public Safety Group Send Rovers (if required) to identify human activity in the area which is not already ■ Maintain roadblock locations. Do not Safety Group Supervisor them to the Public Safety Group Supervisor about unsuccessful identified within the ERP (drilling, pipeline construction, logging, hunting, farming, camping, leave until requested to do so by the Supervisor. contacts and any residents requiring **Public Safety Group Supervisor or** assistance. Prepare Evacuation Notices and provide copies to Rovers. until relieved by other Roadblock B5 Rovers can be used to assist with notifications, assist with evacuating special personnel. needs residents, assist with air monitoring, etc. Determine the need for helicopters to identify human activity in the area. Determine the need for and location of **Roadblocks** to isolate and secure the area. Important ☐ Ensure all Roadblock personnel are properly trained and have appropriate roadblock **Prior** to beginning any activities, each person in a role must: Obtain a completed ICS 201 Incident Briefing and ICS 207 Incident Organization ☐ Ensure all Roadblock personnel have the legal authority to restrict access to the area. Chart from the Incident Commander. ☐ Assess public impact outside of EPZ. See Section 5: External Agencies to determine what Throughout the duration of the incident, each person in a role must: assistance local authorities can provide for public protection outside the EPZ. ☐ Chronologically document all actions, decisions, contacts and requests on an ICS ☐ Regularly update the **Incident Commander**. 214 Activity Log. Copies can be found in Section 6: Forms. □ Confirm communication links with: Air Monitors, Reception Centre, Roadblocks, Rovers, and After the incident is over, each person in a role must: Telephoners. Personnel should check in at scheduled intervals. ☐ Review and confirm evacuation of residents, area industrial users, transients, etc. from the area. Assist with post-incident activities. Request that a Notice to Airmen (NOTAM) is issued to restrict the airspace above the EPZ. All forms referenced can be found in Section 6: Forms Note: See Section 2: Roles & Note: See Section 2: Roles & Responsibilities for a media script for Responsibilities for a media script for Roadblock and Rover personnel. Roadblock and Rover personnel. Revised January 2019 **Location will be Incident Command Post** Located at the Incident Command Post (ICP) or the Regional Emergency Operations Location will be assigned. Location will be assigned. Location will be assigned. Location will be the reception centre. (ICP) or Regional Emergency Operations Centre (REOC) Centre (REOC).

Overview

H₂S, SO₂, 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 H₂S, SO₂, 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.

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- □ 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 H₂S.
- ☐ Prepare Mobile Monitoring Plan.
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Assist with post-incident activities.
- ☐ Monitor H₂S and LEL concentrations along the edge of the EPZ to determine if sheltering and/or evacuation criteria has been met beyond the EPZ.

Air Monitoring Equipment

Air monitoring equipment is used to:

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

Tips

- ☐ Air monitors should be dispatched at a Level 1 Emergency.
- ☐ Ensure all equipment is operational and the appropriate documentation is available to verify testing and calibration requirements.
- ☐ Use the buddy system where possible.
- ☐ Breathing apparatus be prepared to don apparatus quickly.
- ☐ Ensure all personnel have a personal gas monitor.
- ☐ Speed and direction of wind may vary, therefore, be prepared to track gas plume.
- ☐ Record all information:
- Concentrations in ppm or ppb
- · Location and time of readings
- Wind speed and direction

Regulatory Requirements

Sour Gas Release - Manned Operations

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

The licensee must also:

- Ensure that one unit is in the area during drilling and / or completion, testing, and workover operations in potentially critical sour zones.
- Ensure that the other unit is dispatched if it is evident that well control measures are deteriorating and that a sour gas release is likely to occur.
- Prior to conducting operations in the sour zone, determine where the monitoring equipment is located and what the estimated travel
- · 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 H₂S and SO₂ 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

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.

Downgrading Level of Emergency

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

A5

Air Monitoring Log - Example

Time	Location of Samples	H₂S	LEL	O ₂	SO ₂	Other	Tomp (°C)	Wind	Conditions *	Comments
Time	Location of Samples	(ppm)	(%)	O ₂ (%)	(ppm)	Other	Temp (°C)	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	H₂S reading increased 1 ppm at the access point.
19:25	12-05-13-16 W5M	6	7		12		17	NW	11	No change in readings. Wind and temperature is down.

* Estimate meteorological conditions where accurate readings are not available.

Choosing a Position

- 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

Record information on the following forms located within this Section:

☐ Air Monitoring Log ☐ ICS 214 Activity Log

Form
CS 214

Reporting and Contacts

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

Revised

Air Monitor

A5 Air Monitoring Log

		, ,			 	 1	 	 	 	
				Comments						
			onditions *	Speed From (km/hr)						
			Wind C	From						
			Temp	(၁ _၀)	 			 	 	
ne:	sition:			Other						
Responder Name:	Responder Position:		ဗိုင်	(mdd)	 		 	 	 	
Resp	Resp		ဝ်	(%)						
			131	(%)						
			S, H	(mdd)	 		 	 	 	
	of			Location of Samples						
Date:	Page		i	Time						

ICS 214 Activity Log

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

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

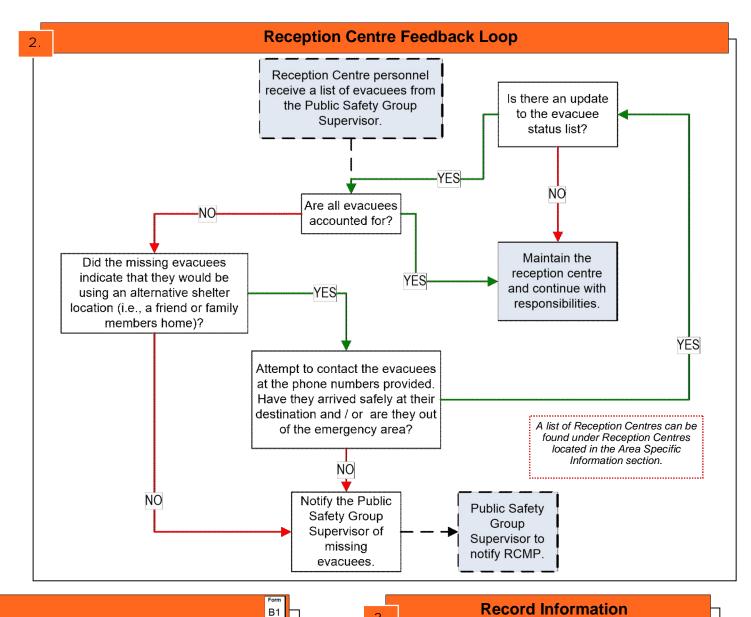
- ☐ Confirm Reception Centre is available for use.
- ☐ Establish Reception Centre.
- ☐ Confirm communication links.
- ☐ Receive evacuees and maintain a Reception Centre Registration Log.
- ☐ Arrange for food and accommodations for the evacuees.
- ☐ Provide evacuees with a place to request counselling services, if required. ☐ Record and follow up on all evacuees who choose to make
- their own accommodation arrangements.
- ☐ Arrange for temporary care of livestock (if possible) and B2 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 Form Information Officer.
- □ Report all names of evacuees who have registered at the Reception Centre to the Public Safety Group Supervisor. Form ICS 214
- □ Document activities using the ICS 214 Activity Log.
- ☐ Assist with post-incident activities.
- ☐ Confirm information to be released to public with the Information Officer.
- □ Address resident concerns and forward them to the Public Safety Group Supervisor.

Choosing a Reception Centre

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

Tips

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



Reception Centre Registration Log - Example

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

☐ Reception Centre Registration Log

☐ Resident Compensation Log

☐ ICS 214 Activity Log

☐ Media Contact Log

Wind Direction:

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.

Form	Form	Form	For
ICS	B1	B2	C
214	D 1	02	0

Reporting and Contacts

Record information on the following forms located within this Section:

Reception Centre Reps report to the Public Safety G	rou
Supervisor.	

Phone Number:

Reception Centre

Location: Phone Number:

Revised February 2019

B1 Reception Centre Registration Log

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

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

B2 Resident Compensation Log

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

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

Approved By: _____ Date: ____

ICS 214 Activity Log

Incident Nam	e :						
Date / Time Ir	nitiated:						
Prepared by:			Position / Title:				
Personnel As	ssigned						
	Name	ICS Pos	sition	Locat	tion		
Activity Log							
Time			Actions				

Overview

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

Roadblock Personnel Roles

- ☐ In conjunction with the Public Safety Group Supervisor, determine the need for and location of roadblocks.
- ☐ Pickup and check roadblock kits.
- ☐ Proceed to roadblock locations.
- □ Confirm communication links and establish communication interval
- ☐ Establish roadblocks to secure the EPZ.
- ☐ Follow the scripts and procedures in the ERP.
- ☐ Knowledge and ability to communicate safest route away from hazard.
- ☐ Monitor area for H₂S and / or LEL with personal monitors and document readings on the Air Monitoring Log.
- Report all reading changes / increases to the **Public Safety** Group Supervisor.
- ☐ For your own safety, ensure the Public Safety Group Supervisor is notified immediately if readings are approaching 10% LEL and / or 10
- ☐ Move location of Roadblock immediately if readings are approaching 10% LEL and / or 10 ppm H₂S. ☐ Record all incoming and outgoing traffic, personnel, and equipment on
- the Roadblock Log. ☐ Forward information given to you by people passing through your
- location to the Public Safety Group Supervisor.
- ☐ Document activities using the ICS 214 Activity Log.
- ☐ Maintain communication with the Public Safety Group Form Supervisor.
- ☐ Maintain roadblock locations. Do not leave until requested to do 214 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 (H₂S, CO, O₂, 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.
- ☐ The roadblock should be setup to allow optimal visibility and sufficient distance for traffic to come to a safe and complete stop.
- □ Roadblock personnel should be highly visible on the side of the road and have an escape route in case of an emergency.
- □ DO NOT leave your position until you are directed to do so.

Choosing a Roadblock

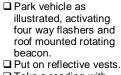
Roadblocks should be established:

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

Before Departure

- ☐ Make sure your vehicle is equipped and suitable for the travel conditions.
- ☐ Check roadblock kit to confirm all items are present (see sample of roadblock kit contents to
- ☐ Confirm that your handheld monitor for H₂S and / or LEL is functioning properly.
- ☐ Check all communications devices.
- ☐ Check that the red signaling baton flashlight is working and has spare batteries.
- ☐ Confirm that you have enough copies of the Roadblock Log form.
- □ Confirm the location of the roadblock with the Public Safety Group Supervisor and make sure you have a safe route to the assigned location that does not cross the hazardous area.

Setting up a Roadblock

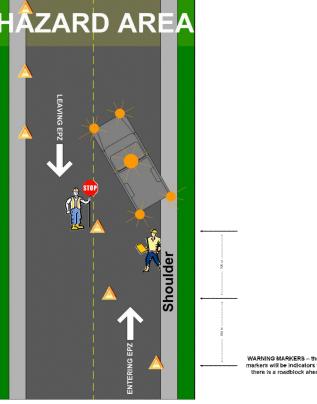


☐ Take a reading with your handheld monitor for H₂S and / or LEL; ensuring your roadblock is not too

close to the edge of the EPZ. Record readings on the Air Monitoring Log.

- ☐ Notify the **Public** Safety Group Supervisor once your roadblock is set up.
- ☐ Continue to monitor and record H2S 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.

Reception Centre



Reporting and Contacts

Roadblock personnel report to the Public Safety Group Supervisor.

Name: Phone Number:

Location

Phone Number: Wind Direction:

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

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

When establishing a roadblock consider: □ Visibility

- □ Distance ☐ Bends in the road
- ☐ Level of the ground
- Remember to: Remain calm ☐ Be courteous
- Record names ☐ Notify the Public Safety

How to Stop Traffic

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

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

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

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

Roadblock Script

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

5b.

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

Media Statement

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

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

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

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

Be courteous but firm.

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

Record Information

Record information on the following forms located within this section:

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

Form	For
1CS 214	Α





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.

B3 Resident Contact Log

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

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

B4 Roadblock Log

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

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

ICS 214 Activity Log

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

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. □ Assist, as required, with the notification, evacuation or sheltering of persons within the Emergency Planning B3 □ Assist, as required, with the notification, evacuation or sheltering of persons within the Emergency Planning B3
☐ Post Evacuation Notices for residents that are not at their Form
residence.
☐ Follow the scripts and procedures in the ERP.
☐ Monitor area for H ₂ S and / or LEL with personal monitors
and document readings on the Air Monitoring Log.
□ Report all reading changes / increases to the Public
Safety Group Supervisor.
☐ For your own safety, ensure the Public Safety Group
Supervisor is notified immediately if readings are approaching the following levels: 10% LEL and / or 10 ppm H ₂ 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
☐ Maintain communication with the Public Safety Group ICS 214
Supervisor.
☐ Assist with post-incident activities.

Media Statement

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

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

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

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

Be courteous but firm. If the questioning persists, just keep politely repeating word for word the statement above.

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

Evacuation Notice - Example



EVACUATION NOTICE

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

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

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

For assistance, call [Insert Company Name] at

Thank you

Tips

Remember to:

☐ Remain calm

☐ Be courteous

□ Document all actions and comments

☐ Notify the Public Safety Group Supervisor

Remember to use a handheld H₂S and / or LEL monitor to continually test the atmosphere. Report all H₂S and / or LEL reading changes / increases to the **Public Safety Group Supervisor**.

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

Before Departure

☐ Protect yourself

☐ Ensure you are equipped with all necessary equipment:

□ Gas monitors

☐ Mobile communications or other form of communication

☐ Forms

☐ Vehicle (4x4) with full tank of fuel

☐ Confirm that your handheld monitor for H₂S and / or LEL is functioning properly.

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

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

Notifying Residents / Transients

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

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

☐ Ask if they will require evacuation assistance and arrange additional transportation assistance if 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,

☐ If they are able to transport themselves to the Reception Centre provide them with directions that will keep them away from the hazard.

☐ Ask them if they have any questions.

☐ Provide them with your name and contact information in case they need assistance later.

☐ Report to the Public Safety Group Supervisor.

Requested Evacuation Assistance

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

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

☐ Try not to scare them. They are aware you might be coming but don't know what to expect. ☐ Make sure they are all accounted for.

☐ Ensure they gather any supplies they will need for the next 24 hours (medicines, baby food, diapers,

Ask them if they have any questions.

☐ Once you are satisfied that all personnel from the residence are accounted for, deliver them to the 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

☐ Resident Contact Log

☐ Air Monitoring Log ☐ ICS 214 Activity Log ■ Evacuation Notice

Form Form

A5 B3 B5

B3 Resident Contact Log

Date:			Responder Name:_				
ص م م	of		Responder Position:	<u>*</u>			Responders Phone No
))))	5						
				Number	Number of people	Assistance or	
Time	Resident name	Resident ID	Shelter / Evacuate	Inside	Outside	transportation required?	Comments
			O Shelter			O Yes	
			Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			oN C	
			O Shelter			O Yes	
			O Evacuate			oN C	
			O Shelter			O Yes	
			O Evacuate			oN O	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			oN C	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	
			O Evacuate			O No	
			O Shelter			O Yes	

ICS 214 Activity Log

Incident Name:								
Date / Time Initiated:	:							
Prepared by:			Position / Title:					
Personnel Assigned	d							
Name		ICS Pos	ition	Loc	ation			
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Activity Log								
Time			Actions					
			***************************************	da dostra hacida dostra hacida dostra hacida dostra hacida dostra hacid				

Overview

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

Telephone Personnel Roles

- ☐ Confirm resident contact lists are available.
- ☐ Confirm communication links.
- ☐ In conjunction with the Public Safety Group Supervisor, determine Form who needs to be notified (residents, businesses, area users, etc.).
- ☐ Review with the Public Safety Group Supervisor the telephoner scripts to be used: Early Notification / Voluntary Evacuation Message, Shelter-in-Place Phone Message, Evacuation Phone B7 Message.
- ☐ Contact special needs residents at a Level 1 Emergency and provide them with the option to evacuate.
- ☐ Contact the other residents and area users in the EPZ and advise them to evacuate or shelter.
- ☐ Contact the schools / school buses to make arrangements for school age children (if applicable)
- ☐ Advise that buses in the affected area leave immediately and that buses should not enter the area. Request a school administrator for the reception centre to assist in
- managing the children and releasing them to their guardians ☐ Document all resident interactions using the Resident Contact Log and report this information to the Public Safety Group Supervisor. Immediately advise the Public Safety Group Supervisor about
- unsuccessful contacts and any residents requiring assistance ☐ Document all activities using the ICS 214 Individual Activity Log.

Shelter-In-Place Instructions

Immediately gather everyone indoors and stay there. Do not leave even if

☐ Close and lock all outside doors and windows. Tape gaps around doors and

☐ Turn off appliances or equipment that blows out indoor air or sucks in

☐ Turn down furnace thermostats to the minimum setting and turn off air

☐ Extinguish all potential sources of ignition (do not smoke or attempt to start

☐ Stay off of the phone so that you can be contacted by emergency

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

Who to Contact

☐ Stay tuned to local radio and television for possible updates

☐ Assist with post-incident activities.

windows. Leave all inside doors open.

☐ Schools / School Bus Transportation

☐ Grazing Lease / Allotment Holders

☐ Those closest to the hazard

☐ Those downwind of the hazard

evacuate the required reside ☐ A general guideline is to have

that need to be contacted

☐ Urban Centres (contact local authority to coordinate) ☐ Area Users (other oil and gas operators, rail, logging, etc.)

you see people outside

conditioners.

personnel.

□ Residents

□ Businesses □ Public Facilities

☐ Trappers ☐ Guides / Outfitters

☐ Recreation Areas

Priority is given to:

Shelter-In-Place Phone Message

Hello this is (company name) (your name) Is this the residence at (telephone number) ? is responding to a (potential) emergency at

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

IF YES Whom?

Location of the person(s)

We will send someone to find them as soon as possible

Do you have children in school at this time?

☐ Yes ☐ No What school?

IF YES

В8

В3

ICS 214

Children's names

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

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

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

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

Do you understand what I have told you?

Is there an alternate number we can contact you at?

If you have any urgent questions, please contact __(company name) 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. **Telephoner Communication Flow**

			-	Shelter-in-Place Message	>	Provide Public Safety Group Supervisor with a list of unsuccessful contacts.
Telephoners receive a list of residents / area users from the Public Safety Group Supervisor.	►	Provide appropriate message	- -	Evacuation Message	- →	Provide Public Safety Group Supervisor with a list of unsuccessful contacts and those requiring evacuation assistance.

Voluntary

Evacuation

Message

at (telephone number)

Provide Public Safety Group

Supervisor with a list of unsuccessful

contacts, those choosing to

evacuate, and those requiring

evacuation assistance.

	,	,	
nts / area users.			
e one Telephoner	for every sever	n residences	٠
and one Telephor	ners Leader fo	or every ten	

Telephoners ☐ Special needs residents should be contacted at a Level 1 Emergency and given the option to evacuate.

Tips

☐ Ensure you have enough personnel to quickly and efficiently shelter /

☐ Those with sensitivity issues (health issues, require assistance, etc.)

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 hrough the declaration of a Local State of Emergency by the local authority.

(your name)

Hello, this is (company name) Is this the residence at (telephone number) (company name) is responding to a (potential) emergency at in vour area.

Evacuation Phone Message

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?

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?

IF YFS

IF NO

2b.

Location of the person(s)_

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

Do you have children in school at this time?

☐ Yes ☐ No What school?

Children's names

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

Do you require evacuation / transportation assistance?

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

Provide the resident with:

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

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?

Public Safety Group

Supervisor to dispatch

Rovers

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)

Record Information

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

☐ ICS 214 Individual Activity Log

□ Voluntary Evac Message

☐ Shelter-in-Place Message ■ Evacuation Message

100	Form	Form	Form	Form
214	В3	В6	В7	В8

Reporting and Contacts

Telephoners report to the Public Safety Group Supervisor.

name	
Phone Number:	
Pecentian Centre	

Location: Phone Number: _

Wind Direction:

Revised

B3 Resident Contact Log

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

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

B6 Early Notification / Voluntary Evacuation Phone Message

Before calling, reception cent		safe evacuation	route for the	residents to tra	vel, away from	the emergency	hazard	area,	upwind if	f possible,	towards the
Hello, this is	(vour name)	calling from	company na	me) . Is this the	(name of res	idence / busine	ss) at	(tele	phone n	umber) ?	

Hello, this is <u>(your name)</u> calling from <u>(company name)</u>. Is this the <u>(name of residence / business)</u> at <u>(telephone number)</u>?

(Company name) is responding to a (potential) emergency at (location) in your area.

You are in no danger at this time. All efforts are being made to resolve the problem and this phone call is only to inform you and provide you with an early notification.

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

How many people are at your location now? (Adults) (Children)

Do you wish to leave your residence at this time?

IF YES Please travel in a a <u>north / east / south / west</u> direction to our reception centre located at:

IF NO Please standby for further contact. Please do not use your telephone for outgoing calls as this may prevent us form contacting you with updated information or when the problem has been eliminated.

If you have urgent questions, please contact <u>(company name)</u> at <u>(telephone number)</u>.

Thank you for your cooperation.

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

ICS 214 Activity Log

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



Initial Response:

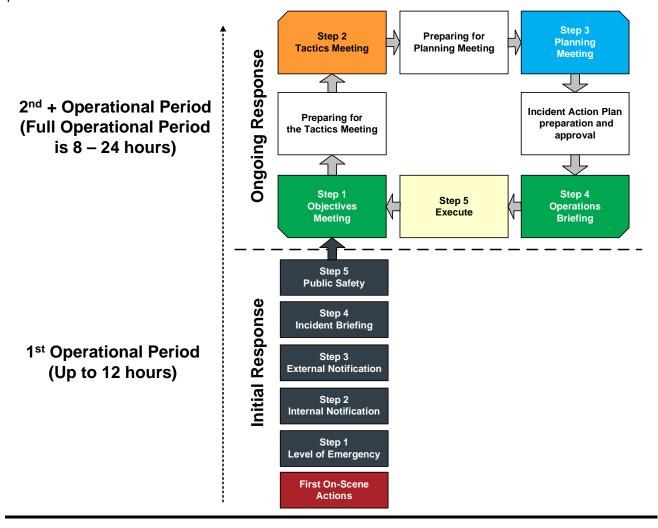
All incidents begin with the initial response (reactive phase) during the first operational period. At the onset of an emergency response an Initial Emergency Report (A1) Form is completed to determine the severity of the emergency and extent of the response. 95% of emergency responses begin and end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

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

Ongoing Response:

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

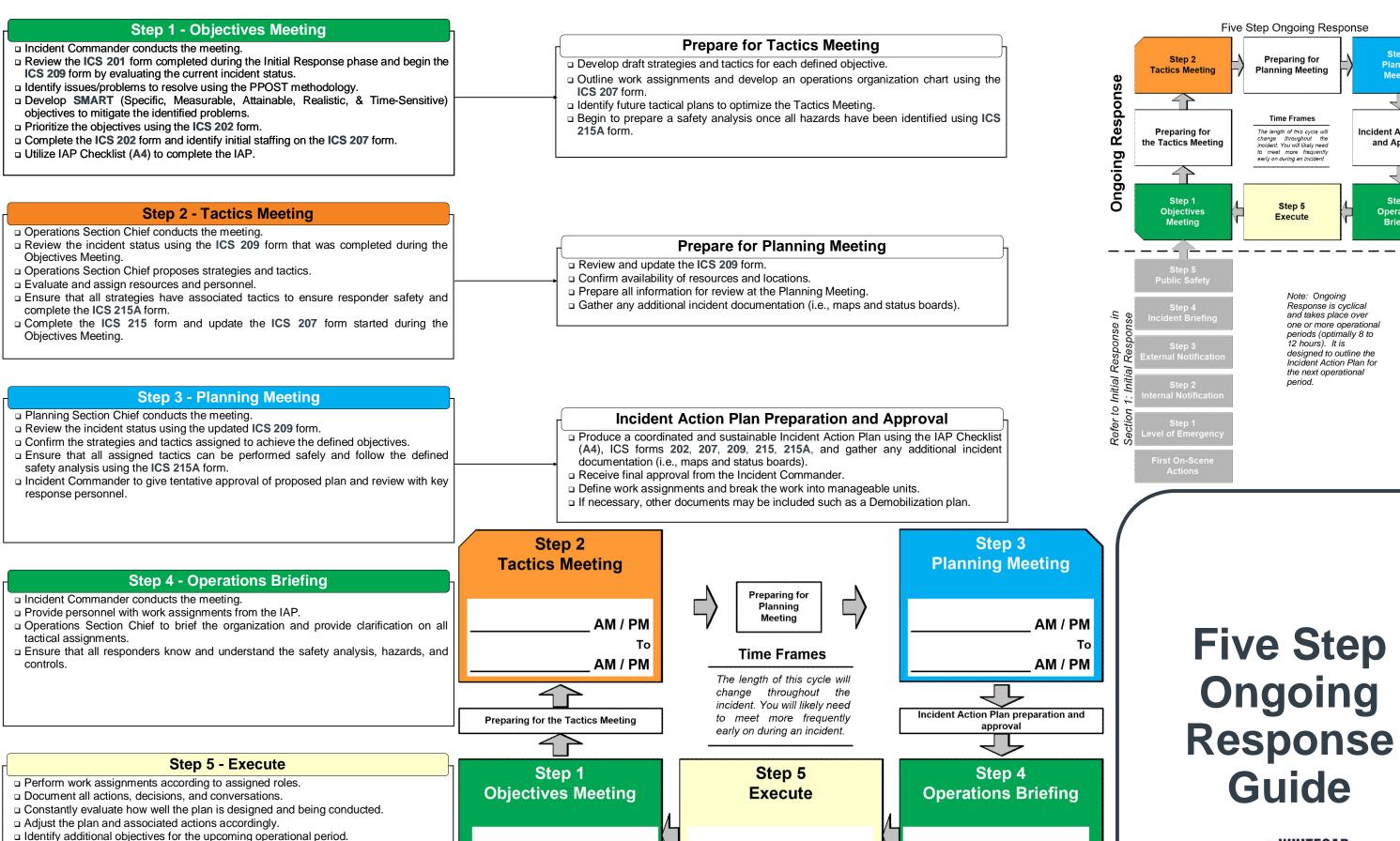
After the initial response has been completed, the Five Step Ongoing Response Guide and associated tools provide a cycle to plan the next steps of the emergency response. This continual cycle provides a structure for the Command Staff and General Staff to complete the Incident Action Plan (IAP) and associated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



Section 2: Ongoing Response



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AM / PM

AM / PM

AM / PM

AM / PM

To

Step 3

Planning Meeting

Incident Action Plan

and Approval

Operations

Briefing

Phase

Proactive

AM / PM

AM / PM

To

□ Schedule next Objectives Meeting if applicable.

Objectives Meeting



Owner: Incident Commander	Date:		Time:		
Roles below will attend only if designated and available					
Attendees:					
☐ Incident Commander:		☐ Planning Se			
☐ Deputy Incident Commander:		☐ Logistics Se			
☐ Operations Section Chief:			nin. Section Chief:		
☐ Planning Section Chief:		☐ Safety Office	97:		
☐ Liaison Officer:		□ Other:			
☐ Information Officer:		☐ Other:			
Summary:					
 The objectives of this meeting are t Have a completed ICS 202 form Establish objectives and prioritie Begin an ICS 209 Incident Statu Begin identifying all required role Begin addressing the Incident A Schedule and prepare for the Ta 	n agreed upon by a les for the upcoming is Summary report les on the ICS 207 ction Plan Checklis	g operational peri form.			
	209 forms, and the	e IAP Checklist	(A4)		
Agenda Items:					
☐ Status Update and review the IC	S 201 Incident Bri	efing form.			
☐ Determine incident priorities. Re	ference the PPOS	T methodology.			
☐ Establish an incident organization mitigate the incident.	on that is capable of	of meeting initial	and long-term challenges required to		
☐ Determine the incident response must be SMART (Specific, Meas			202 Incident Objectives form. They be Sensitive).		
☐ Identify initial staffing requirement	nts and begin filling	g out the ICS 207	Incident Organizational Chart.		
☐ Identify and select incident supp	ort facilities.				
☐ Review the incident objectives for on the IAP.	or the next operation	onal period so yo	ur management team can begin work		
☐ Document the incident status to	relay to all respond	ding personnel.			
Key Points:					
Ensure that the meeting is do	cumented / record	ded. (Utilize the	back side of this page.)		
Define the hours of work and op	erational period.				
Utilize Incident Action Plan Ched	cklist (A4).				
Identify constraints and limitation	ns.				
Clarify any staff roles and respo	nsibilities.				
Determine expectations of the terminal expectations are the terminal expectations.		mmunications are	e to be made.		
•			ost accounting, operations security,		
Continue to develop tasks for Co	ommand and Gene	eral Staff.			
Agree on division of command v	vorkload, such as p	oress and agency	/ briefings.		

Objectives Meeting



Notes:	

Tactics Meeting



Owner: Operations Section Chief	Date:	Time:
Roles below w	rill attend only if o	designated and available
Attendees:	, i	
☐ Incident Commander:		Planning Section Chief:
☐ Deputy Incident Commander:		ogistics Section Chief:
☐ Operations Section Chief:		Finance/Admin. Section Chief:
☐ Planning Section Chief:		Safety Officer:
☐ Liaison Officer: ☐ Information Officer:		Other:
Summary:		7d161.
The objectives of this meeting are to:		
Meeting.	5A forms agreed upor anization Chart. cklist (A4) and contine	et actions identified during the Objectives by all attendees (Command and General Staff). ue to add to items accomplished.
Resources: ICS 209, 215, 215	5A, and IAP Checklis	st (A4)
Agenda Items:		
☐ Review ICS 209 Incident Status S	ummary.	
☐ Review incident objectives.		
☐ Define tactics to complete objectiv	es set out during the	Objectives Meeting.
☐ Provide an operational update and	d identify tactics to dea	al with incident.
☐ Identify roles and responsibilities t	hat have to be perforr	med to implement tactics.
☐ Build on already established ICS 2 with ICS 215 assignments.	207 Incident Organiza	tion Chart, check span-of-control, and match up
☐ Identify work assignments	·	Utilize one form for every established objective).
☐ Identify resources requirements		
☐ Identify overhead staffing need		
☐ Identify specialized equipment		each work assignment
 ☐ Specify reporting times and loc Complete the Incident Action Plan Sa 		5.0
☐ Identify potential hazard types	alety Allalysis, 100 21	JA.
☐ Identify mitigations for associat	ed hazard types	
☐ Identify support facilities and locat		
Key Points:		
•	ımented / recorded	(Utilize the back side of this page.)
Review planned actions against in		•
· · · · · · · · · · · · · · · · · · ·	•	upport facilities, and any key information.
·	•	upport racilities, and any key information.
Discuss any applicable open action		
 Consider contingencies and secon 	ndary options.	

Tactics Meeting



Notes:	

Planning Meeting



Owner: Planning Section Chief	Date:		Time:		
Roles below w	l vill attend only if (designated	l and available		
Attendees:					
☐ Incident Commander:		Planning Sec	tion Chief:		
☐ Deputy Incident Commander:		ogistics Sec	ction Chief:		
☐ Operations Section Chief:			in. Section Chief:		
☐ Planning Section Chief: ☐ Liaison Officer:		Safety Officer	r:		
☐ Information Officer:		☐ Other:			
Summary:					
The objectives of this meeting are to	:				
 Finalize an Incident Action Pla strategies outlined from the previo Schedule and prepare for the Open 	n with the necessar ous command meeting erations Briefing.	gs.	ed on the objectives, tactics, and		
Resources: IAP Checklist (A	4) and all associated	ICS forms			
Agenda Items:					
☐ Review Incident Action Plan forms	s (ICS 202, 207, 209,	215 , and 215	A).		
☐ Review Command's incident objection	ctives, priorities, decis	sions, and dire	ection.		
☐ Provide briefing on current situation		weather foreca	ast, and incident projections.		
☐ Operations Section Chief provides	s briefing on:				
 □ Current operations. □ An overview on the proposed plan including strategy, tactics or work assignments, resource commitment, contingencies, organization structure, and needed support facilities. 					
☐ Review the proposed plan to ens					
met.					
□ Delegate assignments and deadlines to appropriate staff members to assure timely and effective IAP					
development.					
Key Points:					
Ensure that the meeting is docu					
Review IAP Checklist (A4) to ensure that all critical materials have been accounted for in the IAP.					
Planning Section Chief brings meeting to order, cover ground rules, and review agenda.					
 Planning Section Chief requests t 	Planning Section Chief requests tacit Command approval of the plan as presented.				
Planning Section Chief reviews and validates responsibility for any open actions and management objectives.					
Planning Section Chief conducts and commitment to the proposed		and and Gene	eral Staff to solicit their final input		

Planning Meeting



Notes:	

Operations Briefing



Owner: Incident Commander Date:	Time:		
**Roles below will attend	only if designated and available		
Attendees:			
☐ Incident Commander:	☐ On-Site Group Supervisor		
☐ Deputy Incident Commander:	☐ Public Safety Group Supervis	sor	
Operations Section Chief:	☐ Air Monitor Team Lead		
□ Planning Section Chief:	☐ Roadblock Leam Lead		
☐ Liaison Officer: ☐ Information Officer:	☐ Rover Team Lead ☐ Telephoner Team Lead		
☐ Planning Section Chief:	☐ Reception Centre Representa	atives	
☐ Logistics Section Chief:	☐ Other:		
☐ Finance/Admin. Section Chief:	☐ Other:		
☐ Safety Officer:	☐ Other:		
☐ Staging Area Manager:	□ Other:		
Summary:			
The objectives of this meeting are to:			
Review a summary of the incident status with	all responders.		
Relay objectives, tactics, and strategies.			
Reinforce/relay the safety message.			
Assign roles & responsibilities and tasks for all responders to accomplish.			
Execute the response. Tantatical value and Objectives Mastings			
Tentatively schedule next Objectives Meeting next energianal period	and identify potential problems/issues to	address in the	
next operational period.	acciated ICC forms		
Resources: IAP Checklist (A4) and all a Agenda Items:	ssociated ICS forms		
☐ Planning Section Chief briefly walks through t	a IAP components and makes changes	as needed	
☐ Operations Section Chief conducts roll call of			
on emergency response.	rie Operation Section Supervisors and	provides a briefing	
☐ Operations Section Chief briefs supervisory	ersonnel on their assignments along w	vith clarification on	
any of their issues and concerns.	ordering on their designments dising the	Thir darmodion on	
☐ Safety Officer covers major safety issues.			
☐ Logistics Section Chief covers logistical supp	ort of operations (communications sup	nly transportation	
medical, etc).	or operatione (communications, cap	pry, transportation,	
☐ Finance / Admin. Section Chief covers time &	cost tracking, procurement, and comper	nsation process.	
☐ General Staff to cover issues applicable to Op	erations Section personnel.		
Key Points:			
Ensure that the meeting is documented / re	corded. (Utilize the back side of this pa	age.)	
 Planning Section Chief opens briefing, covers and General Staff members. 	ground rules, agenda, and conducts rol	I call of Command	
Establish a briefing and message for all responders.			
Review pre-determined public and media state			
Planning Section Chief solicits final comments			

Operations Briefing



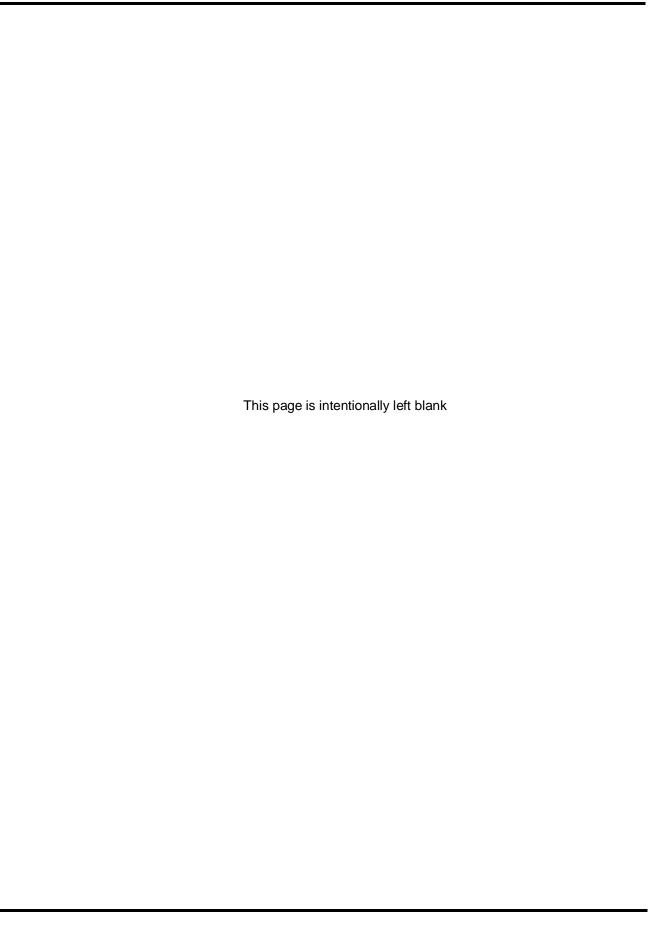
Notes:	



Section 3: Communications & Media

Media Relations and Generic Media Statement	′
Generic Media Statement	′
Media Management	′
On-Site Media Spokesperson	2
Managing the Media On-Site	2
Internal Communication	(
Communicating with the Public	
Information Disseminated to the Public	
Preparing a Preliminary Media Statement	
r repairing a r reillimiary media otatement	٠







Media Relations and Generic Media Statement

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

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

Media releases will be developed by the 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 **Section 6: Forms** for the C2 Media Contact Log.

Generic Media Statement

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

Media Management

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

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



On-Site Media Spokesperson

Depending on the specific emergency an on-site spokesperson may be required to handle all on-camera activities requested by the media. Only approved and trained spokespeople will be allowed to provide comment to the media. The 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 endeavor to maintain a favourable public image on behalf of the company. It is important that they keep in mind the following:

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

Managing the Media On-Site

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

Media Briefing Areas are to be designated by the Incident 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).
- Ensure that if any media personnel are granted access on-site all potential hazards are identified and handled appropriately prior to their arrival (i.e. all on-site personnel are wearing proper PPE, operating equipment safely, etc.).
- With the exception of providing the initial prepared company statement, any requests by the media for information or interviews should be referred to the Information Officer.
- For an emergency that lasts more than 24 hours, consideration will be given to establishing a newsroom for all required personnel.
 - Ensure it is located a safe distance away from the incident.
 - o 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

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.
 - o 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.

^{*} Note: These procedures are developed by the Information Officer during the incident.



Information Disseminated to the Public, continued

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

Preparing a Preliminary Media Statement

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

The preliminary statement shall contain:

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



Preparing a Preliminary Media Statement, continued

What not to do:

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



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Section 4: Emergency Response Procedures

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Public Protection Measures

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

Shelter-In-Place

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

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

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

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

Evacuation

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

Evacuation is a viable public protection measure in circumstances when:

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

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

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

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

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



Public Protection Measures, continued Ignition

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

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

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

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

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

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

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

Road and Airspace Closures

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

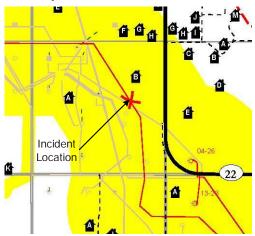
If warranted, the regulatory agency can issue a Closure Order that provides legal authority to close the area. The local authority may, if warranted, declare a Local State of Emergency. This grants the local authority special powers to do such things as road closures or declare mandatory evacuation.

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



Public Protection Measures, continued

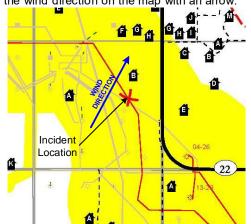
1. Identify the location of the incident on the map:



3. Determine the wind direction

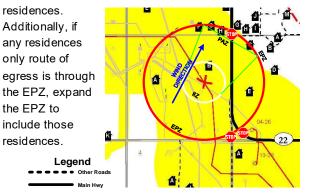
Look for wind direction indications such as flags, windsocks, direction of smoke, etc..

Draw the wind direction on the map with an arrow.



5. Isolate the hazard area with roadblocks

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



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

EPZ - Emergency Planning Zone

IIZ - Initial Isolation Zone

PAZ - Protective Action Zone

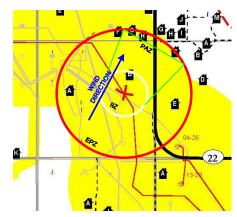
You can find this information:

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

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

4. Draw the zones on map:

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



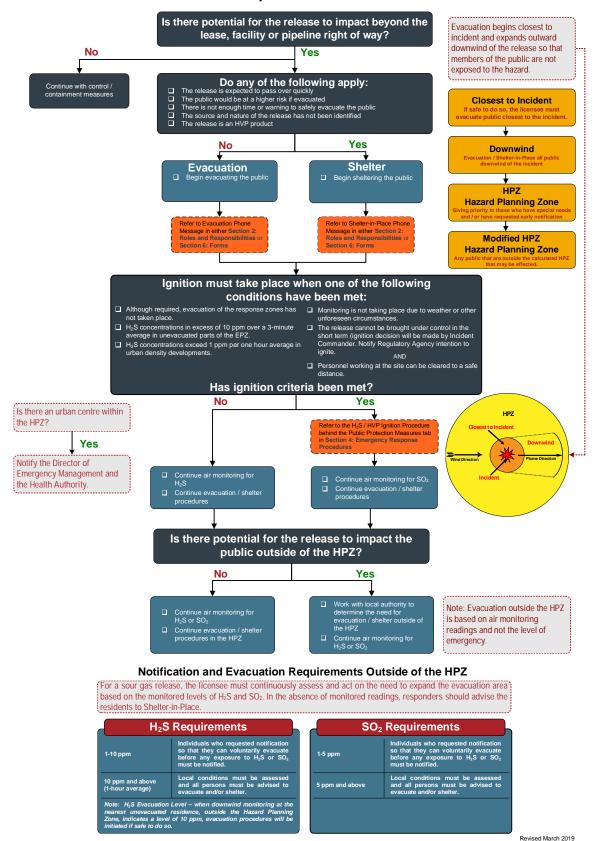
6. Following the appropriate provincial public protection measures chart, initiate public safety activities.

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

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

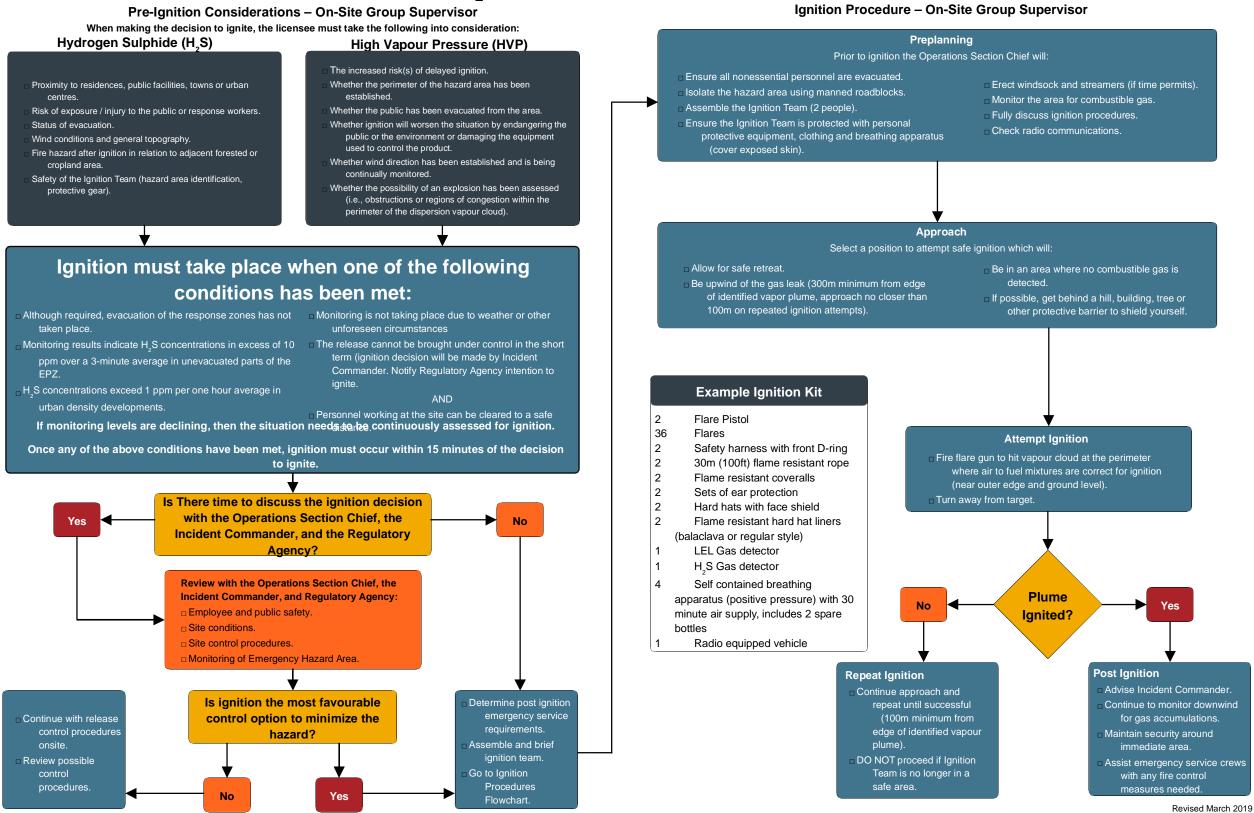


Public Protection Measures, continued





H₂S / HVP Ignition Procedure





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Alberta Spill & Release Reporting Requirements

All spills must be reported to your Whitecap HSE Advisor

	Reportable Quantities Alberta (see Note 1)			
	Any release that may cause and adverse effect must be reported			
Product	Onsite	Offsite	Transportation (see Note 3)	
Spills				
Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.	2 m³ 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 1.5m³ that leaves company property or right- of-way	See Class 3	
Produced water	2 m ³ 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	
Diesel fuel, gasoline and other refined flammable liquids (Class 3)	Any refined product release that may cause, is causing, or has caused an adverse effect	Any refined product release that may cause, is causing, or has caused an adverse effect	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III	
Glycol (New or used)			No TDG Reporting Requirements	
Methanol (Class 3 sub class 6.1)			Any Quantity (Packing Group II)	
Lube oil (New or used)			No TDG Reporting Requirements	
Oilfield wastes (See Note 3)	(AER uses the TDGR as a potential	(AER uses the TDGR as a potential	Note 3	
Molten sulphur or flammable solids (Class 4)	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)	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	
Pesticides (See <u>Note 3</u>)			Reportable quantity dependent on product classification	
Toxic substances (Class 6.1)			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III	
Corrosives (Class 8)			Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III	
Other refined products (See Note 3)			Reportable quantity dependent on product classification	

Air Releases - Natural Gas

• Any release from a pipeline and any other release >30,000 m³

• Any quantity that could pose a danger to public safety or 50 kg (non-pipeline)

- Other Reportable Releases
 - Any well flowing uncontrolled
 - Any burning of effluent from a well or facility
- Any Fire where loss exceeds 2m³ of oil, or 30,000m³ of gas or where damage to well head occurs

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, <a href="mailto:draw-release-re

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

$\label{prop:company} \textbf{Transport company or Whitecap to report the incident}$

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 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.

Notes:

1

2

In Alberta: A release includes to spill, discharge, dispose of, spray, inject, inoculate, abandon, deposit, leak, seep, pour, emit, empty, throw, dump, place & 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.

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 "impairment of or damage to the environment, human health or safety, or property". All releases must be reported, regardless of a minimum quantity, if the release is into a watercourse, groundwater or surface water. If there is any doubt, report the release.

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.

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 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 AER or 30 day Letter to TDG.



BC Spill & Release Reporting Requirements All spills must be reported to your Whitecap HSE Advisor

		Reportable Quantities	
	British Columbia (see <u>Note 1)</u> All releases must be reported, regardless of a minimum reportable quantity, if the release of a "polluting substance" is causing "pollution".		
Product	Onsite	Offsite	Transportation (see Note 2)
Spills	C	-,,,	77 d
Crude oil, condensate liquids, oilfield waste, emulsions, diluent, etc.	100 L (hydrocarbon contains no toxic substances and does not impact a water way)	Any volume. NEB lines in excess of 1.5m³ that leaves company property or right-of-way	100 L (hydrocarbon contains no toxic substances and does not impact water way)
Produced water	200 L (fluid contains no toxic substances)	Any volume	No TDG Reporting Requirements
Diesel fuel, gasoline and other refined flammable liquids (Class 3)	100 L	Any Volume	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Glycol (New or used)	100 L	100 L (see Note 1)	No TDG Reporting Requirements
Methanol (Class 3 sub class 6.1)	100 L (see Note 3)	Any Volume	Any Quantity (Packing Group II)
Lube oil (New or used)	100 L	Any Volume	No TDG Reporting Requirements
Oilfield wastes (See Note 3)	Note 3	Note 3	Note 3
Molten sulphur or flammable solids (Class 4)	25 kg	25 kg (See Note 1)	Any Quantity - Packing Group I or II 30 kg or 30 L - Packing Group III
Pesticides (See Note 3)	Reportable quantity dependent on product classification		
Toxic substances (Class 6.1)	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
Corrosives (Class 8)	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
Other refined products (See Note 3)	Reportable quantity dependent on product classification		
Air Release - Natural gas	10 kg or 15 m ³ by volume where operating pressure is > 100 PSI; Any quantity that could pose a danger to public safety or 50 kg (non-pipeline); H2S of 10 ppm or greater, 1 m or more from source.		

Other Reportable Releases

- 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
- Spills or release of hazardous substances which are not provincially regulated, such as radioactive substances;
- Major damage to oil and gas roads or road structures;
- Drilling kicks when any one of the following occur:
 - pit gain of 3 m3 or greater
 - casing pressure 85% of MA
 - 50% out of hole when kicked
 - well taking fluid (LC)
 - associated spill
 - general situation deterioration, i.e. leaks, equipment failure, unable to circulate, etc.
- Pipeline incidents, such as spills during construction phase, 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);
- Induced seismicity >4 on the Richter scale during oil and gas operations such as well fracturing; and
- Security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only.

Emergency Management British Columbia (EMBC) 1-800-663-3456

Incident Reporting Instructions: Use the Incident Classification Matrix to determine if the incident is a Minor Incident or a Level 1, 2, or 3 Emergency

Minor Incident: 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. https://kermit.bcogc.ca/Login.aspx

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.

Level 1, 2, or 3 Emergency: If the incident receives a score of Level 1, 2, or 3, it must be reported immediately (within 1 hour) to the Commission's incident reporting line (EMBC 1-800-663-3456).

<u>Permit Holder Post Incident:</u> The Form D: Permit Holder Post Incident Report Form must be submitted by the permit holder to the Commission within 60 days for:

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

B.C. Ministry of Environment, local police & TDG releases via the Emergency Management British Columbia (EMBC) 1-800-663-3456

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 **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.

Notes:

- 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.
- 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.
- 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.



Spill Response Guidelines

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

Initial Response Actions:

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

Considerations:

- Are there any nearby public (workers, traffic, residents) that would need to be evacuated or diverted from the spill area?
- Is there a fire or explosion hazard? What is the ignition source?
- Is there H₂S or other toxins present? Are concentrations safe or is additional PPE needed?
- Are there any areas deemed hazardous? (Mark with flags)
- What are the ground and weather conditions? (Snow, gravel, sand etc.)
- Where is the location of the leak, the type of release and the volume released? Is it reportable? Has it been reported to the regulator?
- How long has the spill been taking place?
- · Are air monitoring trailers required?
- Is the spill into a watercourse, watershed or a water body?
- Is the spill contained or migrating? Which direction? How far can it go?
- If the spill is not contained, determine and prioritize the containment points and methods to be used.
- What lands or water bodies may be affected? (Farm, livestock, brush, drinking water, etc.)
- How is it going to be contained and cleaned up?
- How to access the spill site, the source of the spill and recovery points?
- What equipment is required? Is oil spill equipment (oil spill co-op) required?
- Where can spill responders park so as not to interfere with spill equipment? (Minimize vehicular traffic as much as possible at the spill site.)
- Are there any residences in the area? Do they have water wells that could be affected?
- Should the spill site be cordoned off to prevent wildlife / livestock from entering?
- Will a media response be required?



Control/Containment

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

External Notifications

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

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



Spill Control Points

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

An ideal control point should have:

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

Selection of control points with public access is preferred.

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

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

Action

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

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



Recovery Techniques

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

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

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

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

Containment and Storage of Product

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

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

Disposal and Remedial Operations

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

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

Western Canadian Spill Services (WCSS)

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

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

Spill Contingency Plan - http://www.wcss.ab.ca/contingency-manual.shtml

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



Post-Incident

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

Call Down Notification

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

- 1. Give the "all clear" signal. Prior to the "all-clear" signal, the Incident Commander will confirm that all evacuated areas are safe to re-enter. This may involve such activities as:
 - Ensuring all equipment and locations are free of any pockets of fire, smoke and / or toxic gases.
 - o Ensuring all equipment and debris are removed from offices and / or public areas.
 - Cordoning off the incident area to isolate any remaining hazards.
 - 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.
- Coordinating the return of any evacuees to the area. Ensure the public and employees receive any assistance they may require.
- Maintaining security in any evacuated areas until the evacuees have returned and the businesses in the area have again become occupied.
- 2. Coordinate the deactivation of all emergency response operations, personnel, equipment and incident areas.
- 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

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

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



Post-Incident, continued

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

Clean-up and Repair

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

Ensure the following tasks are completed as required:

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

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

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

Third Party Investigations

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

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



Post-Incident, continued

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

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

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

Review and Debriefing

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

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

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

Critical Incident Stress Debriefing (CISD)

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

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

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

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



Post-Incident, continued

Post-Incident / Accident Investigation

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

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

The post-incident / accident investigation should include:

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

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

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

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



Medical Emergencies

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

The 3 basic steps to follow in any emergency:

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

CHECK the person

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



CALL EMS/9-1-1

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



CARE for life-threatening conditions first

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



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



First Aid Information

CPR

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

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

Burns

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

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

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



Burns, continued

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

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

Chemical Exposure Guidelines

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

Wounds & Abrasions Guidelines

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



Bleeding Guidelines

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

Source: www.redcross.ca/crc/documents/1303501 FirstAid-2016 Guidelines LR-PDF.pdf



Next-of-Kin Notification

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

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

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

Before Notifying the Next-of-Kin

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

During the Notification of the Next-of-Kin

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



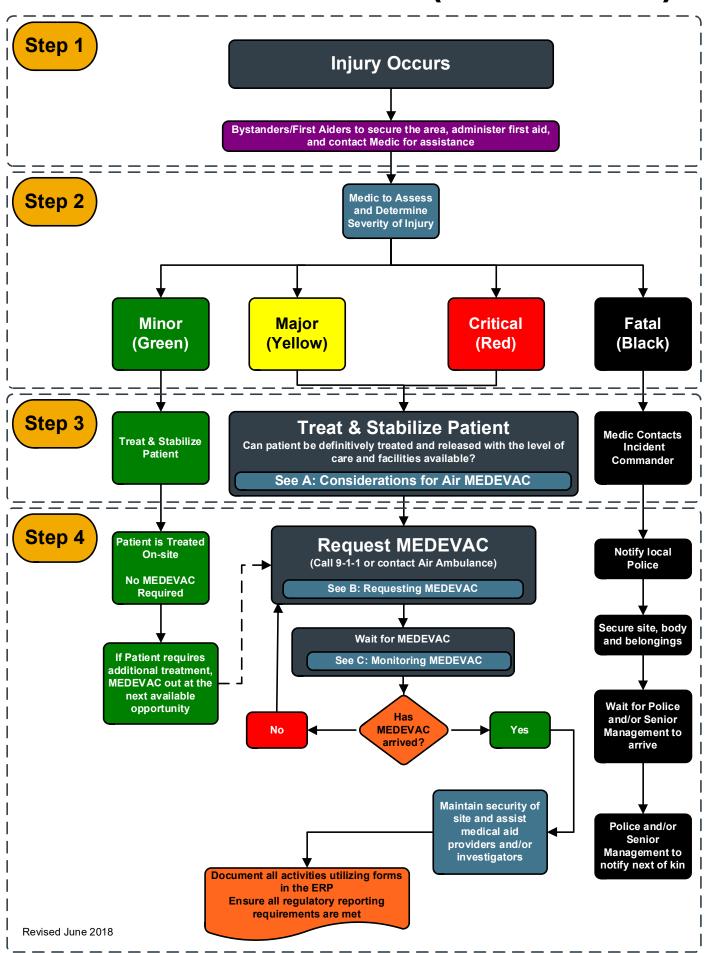
During the Notification of the Next-of-Kin, continued

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

Follow-Up

- The same representative who conducted the initial notification should continue to contact and support the next-of-kin.
- If required, a senior company representative will ensure that a trained psychologist conducts critical incident stress debriefing sessions with next-of-kin, friends and company employees involved or affected by the tragedy.
- Advise the employee's family that a senior company representative will be contacting them to discuss
 any immediate needs and to provide information on insurance coverage and benefits support. Follow
 up on this commitment.

Medical Evacuation (MEDEVAC) Procedure



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

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

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

2) Call for help:

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

Patient Priority Colour Code

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

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

For example:

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

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

For example:

- Open fractures
- Large lacerations

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

For example:

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

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

A: Considerations for Air MEDEVAC

Consider air transport when:

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

B: Requesting MEDEVAC

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

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

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

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

C: Monitoring MEDEVAC

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

When is MEDEVAC transport scheduled to arrive?: ______

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

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

Emergency MEDEVAC Phone Numbers

PROVINCIAL AIR AMBULANCE:

Alberta 800-661-3822

 British Columbia
 911

 Manitoba
 800-689-6559

 Saskatchewan
 888-782-8247

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

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



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Responder Safety

Site Safety

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

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

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

- Identify safe escape routes away from hazardous areas.
- Continue to assess the related hazards, e.g. toxic vapours, fire or explosion hazards.
- Protect themselves and others (responders and public) before initiating control and containment operations.
- Do not allow anyone, including first responders such as police, fire fighters or ambulance attendants to enter the hazard area unless they are properly trained and equipped with personal protective equipment.
- Avoid extinguishing an ignited hydrocarbon release if the supply cannot be stopped.
- Only attempt fire control on small fires. Extensive fires or uncontrolled facility fires must be dealt with by external firefighting professionals. Responders must not attempt to battle a fire without adequate firefighting equipment, training and backup personnel.
- Advise fire authorities when a company facility is threatened by an external fire. They should also be
 made aware of dangerous products or flammable hazards at the facility, such as pressurized NGL
 vessels, chemical and fuel storage.

Consider an outside expert when necessary. Well control, for example, is a speciality requiring specific experience, equipment and procedures.



On-Site Work Areas

The On-Site Group Supervisor may choose to separate the site into three distinct areas to clearly identify the high risk areas and to reduce the hazards to the on-site responders. The three areas could be defined as the safe area, the hazardous area and the decontamination area.

Hazardous Area (Hot Zone)

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

The following guidelines help the On-Site Group Supervisor to determine the hazardous area. An area is considered hazardous if any of the following conditions exist:

- Combustible gas reading of 10% LEL or greater
- H₂S gas reading of 15 ppm or greater for 15 minutes
- SO₂ readings of 5 ppm or greater for 15 minutes
- Oxygen content of less than 19.5% or greater than 22%
- Presence of organic and inorganic vapours / gases and liquids (consult Safety Data Sheets (SDS) for toxicity data)
- An area the On-Site Group Supervisor deems to be hazardous, such as the area surrounding a fire or spill

The On-Site Group Supervisor will consider the following on-site conditions when determining the size of the hazardous area:

- The location of access routes, power lines, pipelines, fire and explosion hazards
- Areas where vapours are likely to accumulate such a downwind areas, low areas, confined spaces
- Site stability, e.g. steep slopes, overhanging banks, unstable soil, thin ice
- Weather conditions
- The toxicity and evacuation data for the product involved (Refer to SDS)

Decontamination Area (Warm Zone)

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

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



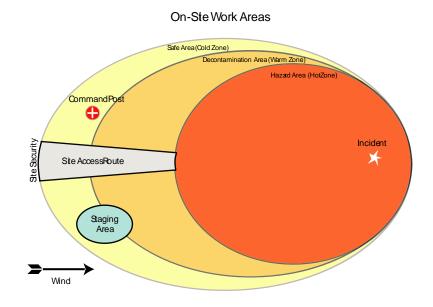
Decontamination is the complete or partial removal or neutralization of the harmful contamination chemicals. Some equipment will not withstand a proper decontamination process and therefore must be destroyed. Site safety personnel will recommend to the On-Site Group Supervisor whether clothing, instruments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

The decontamination area is usually set up in response to a hazardous material spill and when decontamination of personnel and equipment is required. The decontamination area buffers the designated hazardous and safe areas. Decontamination areas should be set up in areas that are not affected by the onsite hazard. Any contaminated personnel and equipment leaving the hazardous area must be decontaminated in the decontamination area before continuing to the safe area.

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

Safe Area (Cold Zone)

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





Working Alone

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

Application

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

Potential Hazards

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

Equipment and Training Requirements

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

Low Risk Working Alone Procedure

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

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



Responder Safety, continued High Risk Working Alone Procedure

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

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

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

Overdue Worker Response Plan

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



Missing Persons

In the event that an employee should go missing:

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

Source: PDAC Field Safety Pocket Guide

Rest Periods

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

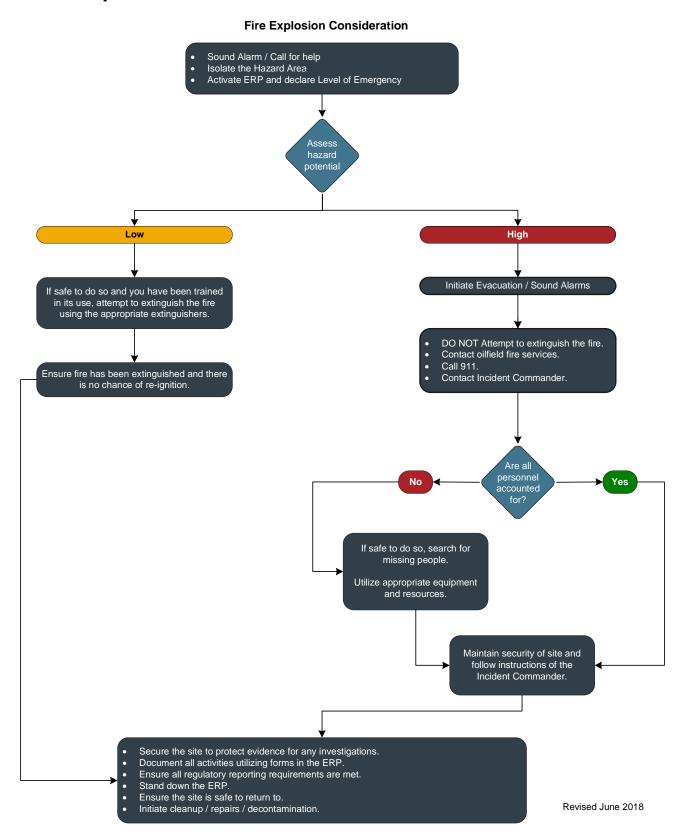
In high-stress assignments, responders should be routinely rotated. Where manpower is limited, responders should alternate from high-stress positions to lower-stress positions.

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

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



Fire / Explosion





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

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

Control / Containment:

- If possible;
 - o Isolate the source and take reasonable action to extinguish or contain the fire.
 - Shut down all known fuel sources.
 - o 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.



Classification of Fires

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

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

Source: www.femalifesafety.org



Response Actions Based on Type of Fire

Process Fire

Definition:

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

Hazards:

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

Response Actions:

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

Sulphur Fire

Definition:

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

Hazards:

Toxic gases will form upon combustion. Bulk/solid forms burn only at a moderate rate, whereas dust burns with explosive violence. Burning sulphur decomposes into toxic sulphur oxide gases such as sulphur dioxide (SO_2) and hydrogen sulphide (H_2S) which is toxic if inhaled.

Response Actions:

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

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

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



Electrical System Fire

Definition:

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

Hazard:

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

Response Actions:

Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is, or could possibly be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Carbon dioxide CO₂, FM-200 and dry chemical powder extinguishers such as PKP and even baking soda are especially suited to extinguishing this sort of fire. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire. Water conducts electricity; throwing water on an electrical fire can cause the fire to get larger.

Grass Fire

Definition:

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

Hazards:

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

Response Actions:

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

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



Forest Fire / Wildfire

Definition:

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

Hazards:

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

Response Actions:

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

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



Natural Gas Liquid Fire

Definition:

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

Hazard:

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

Response Actions:

A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which is done by dry chemical and Halon extinguishing agents, although smothering with CO₂ or, for liquids, foam is also effective.

BLEVE

Definition:

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

Hazards:

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

Response Actions:

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



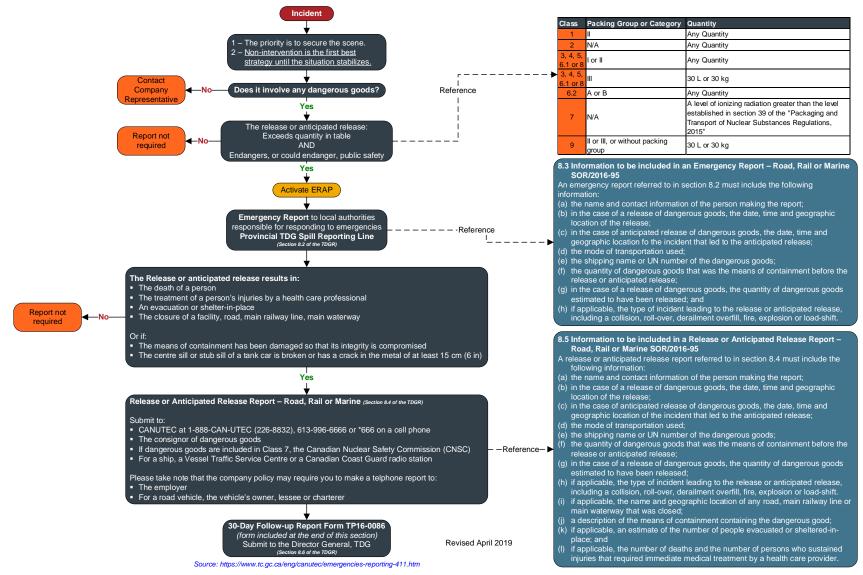
BLEVE Considerations Based on Tank Capacity

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



Transportation Incidents

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





Loss, Theft or Unlawful Interference Reporting Flowchart

Loss or Theft Report Protocol 1. Any Quantity of Dangerous Goods in the following Primary and **Subsidiary Classes:** Loss or Theft 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 Toxic substances included in Class 6.1 and Packing Group I **Dangerous Goods** CANUTEC **Dangerous Goods** Infectious substances included in Class 6.2 Class 1, Explosives Toll Free: 1-888-226-8832 Class 7. Radioactive Materials Radioactive materials included in Class 7 From Cell Phone: *666 Included in Class 1.1. 1.2. 1.3. 1.4 Canadian Nuclear Safety (except 1.4S), 1.5 or 1.6 Commission: 1-844-879-0805 Inquiries: 613-996-6666 Natural Resources Canada 2. A Total Quantity of 450kg or more, in the case of Dangerous Goods in inspector: 613-995-5555 the following Primary and Subsidiary Classes: Reference 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. **Unlawful Interference Report Protocol** UN1486. Potassium Nitrate. UN1487, Potassium Nitrate and Sodium Nitrate Mixture. UN1489, Potassium Perchlorate, **Unlawful Interference** 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, CANUTEC **Dangerous Goods Dangerous Goods** • UN1826, Nitrating Acid Mixture, Spent, with not more than 50% nitric acid, Toll Free UN1942, Nitrating Acid Mixture, with not more than 0.2% combustible 1-888-226-8832 Class 1, Explosives Class 7, Radioactive Materials Included in Class 1.1, 1.2, 1.3, 1.4 Canadian Nuclear Safety From Cell Phone substances, including any organic substance calculated as carbon, to the (except 1.4S), 1.5 or 1.6 Commission: 1-844-879-0805 exclusion of any other added substance, Inquiries 613-996-6666 Natural Resources Canada UN2014, Hydrogen Peroxide, Aqueous Solution with not less than 20% but inspector: 613-995-5555 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, Revised June 2018 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.



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.



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

Emergency Response Assistance Canada (ERAC) Plan

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

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

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

If you receive the initial call, contact the ERAC:

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

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

CANUTEC – Canadian Transport Emergency Centre

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

In an emergency, CANUTEC may be called collect at:

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

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

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



Transportation Incidents, continued Dangerous Goods References

Agency Contacts

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

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

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

The appropriate federal agencies must be notified if affected:

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

TDG Reportable Quantities

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

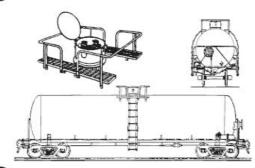


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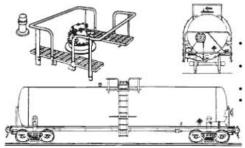


Transportation Incidents, continued Rail Car Identification Chart

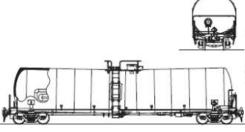
117 Pressure tank car



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

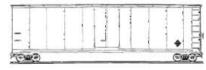


- For variety of hazardous and non-hazardous materials
- Fittings and valves normally visible at the top of the tank
- Some may have bottom outlet valve
- Pressures usually below 25 psi
- Low pressure tank car (TC117, DOT117)



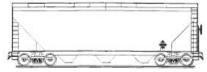
- For flammable liquids (e.g., Petroleum crude oil, ethanol)
- · Protective housing separate from manway
- Bottom outlet valve
- Pressures usually below 25 psi

111 Box car



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

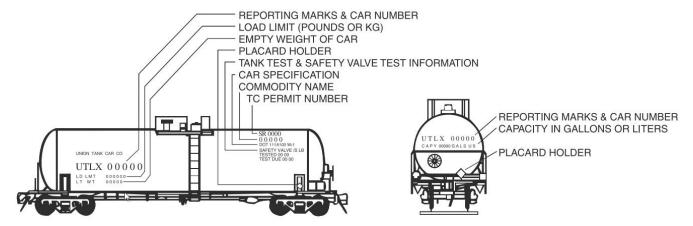
140 Hopper car



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



Rail Car Identification Chart, continued



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

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

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

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

Source: 2016 Emergency Response Guidebook

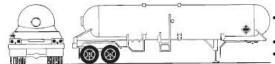


Road Trailer Identification Chart

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

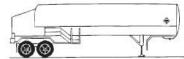
NOTE: An emergency shut-off valve is commonly found at the fornt of the tank, near the driver door.

MC331, TC331, SCT331

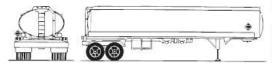


- For liquefied compressed gases (e.g., LPG, ammonia)
- Rounded heads
- Design pressure between 100-500 psi
- 117 MC338, TC338, SCT338, TC341, CGA341





- 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

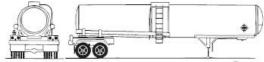


- For flammable liquids (e.g., gasoline, diesel)
- Elliptical cross-section
- Rollover protection at the top
- Bottom outlet valves
- MAWP between 3-15 psi**

112 TC423

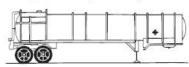


- For emulsions and water-gel explosives
- Hopper-style configuration
- MAWP between 5-15 psi**
- 137 DOT407, TC407, SCT307, MC307, TC307



- · 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

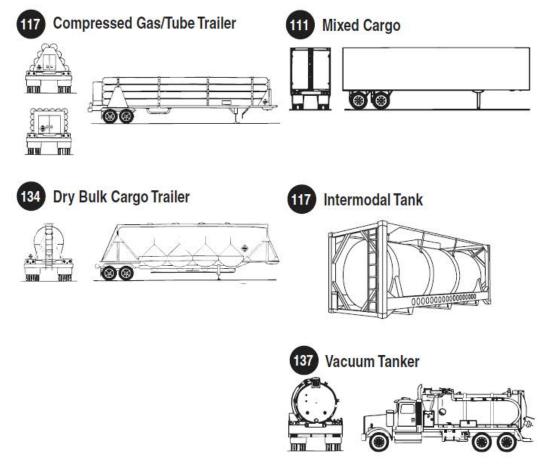




- · Usually for corrosive liquids
- Circular cross-section
- External ring stiffeners
- · Tank diameter is relatively small
- MAWP of at least 15 psi**



Transportation Incidents, continued Road Trailer Identification Chart, continued



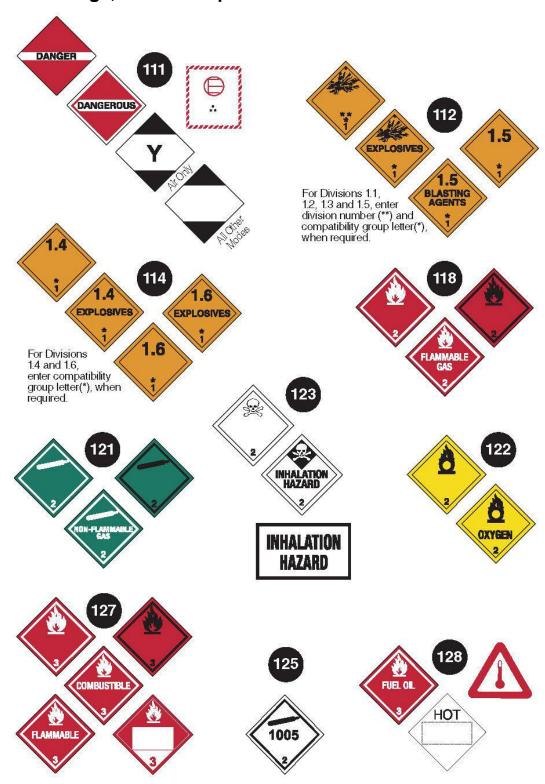
CAUTION: This chart depicts only the most general shapes of road trailers. Emergency response personnel must be aware that there are many variations of road trailers, not illustrated above, that are used for shipping chemical products. The suggested guides are for the most hazardous products that may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

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

Source: 2016 Emergency Response Guidebook

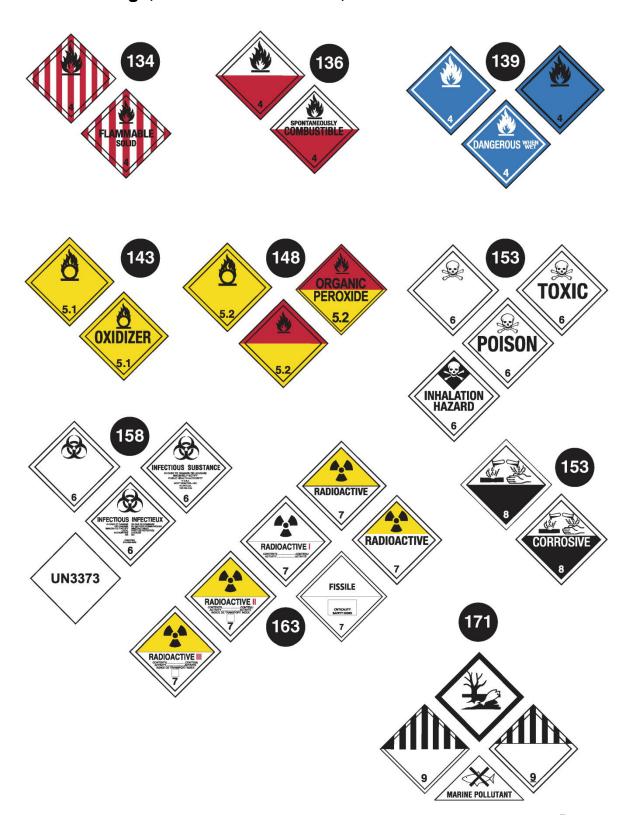


Transportation Incidents, continued Table of markings, labels and placards





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





TRANSPORTATION OF DANGEROUS GOODS 30-DAY FOLLOW-UP REPORT

PART I: REPORTING TIMELINE								
Please provide applicable date	s and check one box		FOR INTERNAL USE ONLY					
Date of initial report to CANUTE	EC (yyyy-mm-dd):			Road, Rail or Marine Reports				
30-Day Follow-up Report submi	ssion date (yyyy-mm-dd):			Release Anticipated Release				
30-Day Follow-up Repor	t			Anticipate	d Release			
	30-Day Follow-up Report			Air Report				
	Follow-up Report submitted	(vvvv-mm-dd):		Dangerous	s Goods Accident or Incident			
PART II: CONTACT INFORMATI		(уууу ппп аа).						
2. Information of the person comp								
Consignor Consign		t Operator	Other					
First Name	Last Name	Сорстатог	Title					
Telephone (999-999-9999)	Company Name							
Address			City		Province/Territory			
					·			
Country	Postal Code (Z9Z 9Z9)	Email			<u> </u>			
3. Information on the Consignor, (L Consignee and Carrier/Airci	aft Operator						
Consignor								
First Name	Last Name		Title					
Telephone (999-999-9999)	Company Name							
Address			City		Province/Territory			
					-			
Country	Postal Code (Z9Z 9Z9)	Email						
Consignee		L						
First Name	Last Name		Title					
Telephone (999-999-9999)	Company Name							
Address			City		Province/Territory			
Country	Postal Code (Z9Z 9Z9)	Email						
Carrier/Aircraft Operator								
First Name	Last Name		Title					
Telephone (999-999-9999)	Company Name							
Address			City		Province/Territory			
Country	Postal Code (Z9Z 9Z9)	Email	1		1			



PART III: INCIDENT INFORMATION								
4. Please indicate the date and time of	the incident							
Date (yyyy-mm-dd)			Time (24-hour system)					
5. Geographic location of the incident								
Address								
City	Province/Territory	Postal Cod	e (Z9Z 9Z9)	GPS Position				
		. 0010. 000	0 (202 020)					
If the incident occured by rail, please inc	dicate the milenost and subdi	vision	If the incident	happened on First Nations Territory, please indicate the Territory				
In the incident occured by fail, please in	dicate the inhepost and subdi	VISIOII	name	nappened of First Nations Territory, please indicate the Territory				
Origin of consignment			Destination of	consignment				
Same address as consignor	Same address as consig	anee	Same add	ress as consignor Same address as consignee				
Other (please provide address):	<u> </u>	5		ase provide address):				
Other (piedde provide address).			Outer (pier	ase provide address).				
6. Geographic Area (Check only one bo	ox)							
Urban Mixed use – residential, commercial	Suburban Primary residential	O Rura		s, agricultural lands Wilderness/Remote Little or no population				
7. Mode of Transport (Check all applica	ble boxes)							
Road	Rail		Air	Marine				
	7, please indicate the positio	n of the ves	sel and the nex	t 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	n and destination		Consignment is being packed or loaded into a means of transport at origin					
Unloading								
Consignment is being unpacked or	unloaded from a			ent is in short term storage pending transportation				
means of transport at destination								
10. Type of Incident (Check all applicab	le boxes)							
Collision/Sideswipe Moving vehicles striking an object, a	animal, or another vehicle		Derailmer Railcar lea	nt ving the rail tracks				
Ran off road	,		Overturn					
Vehicle enters a soft shoulder, ditch	or similar area			ning on its side or upside down				
Loadshift Shifting of the consignment within a	vehicle		Dropped Means of o	containment falling unexpectedly				
Struck			_					
Means of containment being struck	-		Other (F)	ease specify):				
11. Type of Release (Check all applicate	ole boxes)							
Spill Quick, immediate discharge, emissi	on or escape		Leak Slow, spor	adic or continuous discharge, emission or escape				
Explosion			Fire					
Violent sudden release of energy from	om means of containment pro	oducing a		ibstances combined with oxygen to typically produce flame, heat				
shock wave that may result in fragm			and smoke	3				
BLEVE			Vapour					
Boiling Liquid Expanding Vapour Ex	plosion		Dispersion	in air of particles of a substance that is liquid or solid in its				
			normal sta					
├── Venting				d Release means of containment that is not leaking, venting or otherwise				
Controlled release of gas into the er	nvironment			ts contents				



12. Informat	12. Information on the Dangerous Goods												
UN Number	Shippin Name	g	Primary Class	Subsidi Class(Packing Group or Category	Before the	ntity in MOC Release or ed Release	or (kg / etc.)		timated Quantity Released (if applicable)	Units (kg, L, etc.)	
13. Means o	of Containment	ment											
-	ide a description of	the means of	f containmer	t involved	d in tl	he incident by	y completing	the appropr	ate forms from	Annex	E of the Guide (TF	P15294)	
	ONSEQUENCES												
14. Consequ	uences of the incide	ent (Check all	applicable b	oxes)									
NOTE: Refe	er to the Guide for m	nore informati	ion on how to	complet	te thi	s section							
Human		(e.g. produc		, equipm	ent)	En	nvironmental	(e.g. contan	nination of wate	erway,	ground, air)		
	ion of people and b					_							
	n Evacuation as a r		`	Yes) No							
	shelter in place as a se complete the follo		incident? () Yes) No							
, pioac			te Residenc	•		Public Buil	dingo						
	on of People and /Shelter in Place	Includes I buildings	houses and oused as dwe tirement hom	other Ilings		udes libraries churches, gov buildings,	s, hospitals, ernment	Inclu	Norkplace des warehouse facility, etc.	,	Public (Outside) Areas Includes parks, playgrounds, parking lots, etc.		
Estimated n	umber of people	(e.g. res		Suitarings, etc.									
Estimated n	umber of people n place												
Estimated n													
Size of Evad	cuation area (square	e meters)	Du	Duration of Evacuation (hours)					Duration of She	elter in	place (hours)		
16. Injuries a	and/or deaths												
Were there	any injuries and/or o	deaths?	Yes (pleas	se comple	ete th	ne following ta	able) (No					
Minor Injuri	es Yes	○ No											
Number of injured requiring immediate first aid tr Attributed to Dangerous Goods				reatment at the scene Attributed to incident					Total				
Moderate In	njuries Yes	○ No											
Number of	injured requiring i	mmediate er	mergency tr	eatment	in ho	ospital and r	elease short	ly after					
Attributed to Dangerous Goods Attr					Attributed to incident					Total			
Major Injuri	es Yes	○ No											
	Number of injured requiring immediate treatment with overnight hospitalization Attributed to Dangerous Goods Attributed to incident Total												
Deaths	() Yes	○ No											
Number of	deaths	<u> </u>											
Attributed to	ttributed to Dangerous Goods				Attributed to incident					Total			



NOTE: Refer to the Guid	NOTE: Refer to the Guide for more information on how to fill this section								
Material loss of dangerous goods	Damage incurred the carrier	by Property da		Emergency response cost	Clean-up o	cost	Total cost		
18. Infrastructure closure	and duration (plea	se use additional sh	eets for multiple	e closures)					
Was there an infrastructu	re closure as a res	ult of the incident?	O Yes	○ No					
If Yes, please complete t	he following table								
	Type Duration of the closure (in hours)								
	Aerodrome – Area of land, water or other supporting surface used either in whole or in part for arrival and departure, movement or servicing of aircraft includes any building, installations and equipment situated thereon or in connection therewith								
Air cargo facility – F	acility used to rece	eive or transfer cargo	carried or to be	e carried by an aircraft					
Facility – Permanent dangerous goods	or temporary build	ling or a portion of a	building or equi	pment used in loading o	r unloading o	f			
Railway – Tracks use	ed by trains								
Waterway – Navigab	le body of water th	rough which a ship o	or boat can mov	e					
Roadway – The strip multiple lane freeway		motor vehicles circu	ılate, such as di	rt road, numbered provi	ncial highway	or			
Runway – the strip o	f ground on a landi	ng field that aircraft	use for landing	or takeoff					
19. Geographic location of	of closure								
Address									
City	Pro	ovince/Territory	Postal	Code (Z9Z 9Z9)	GPS Position	on			
If the incident occured by	rail, please indicat	e the milepost and s	ubdivision	Name of facility, road,	railway or wa	aterway			
20. ERAP Requirements									
Was an ERAP required u	nder Part 7 of the	Transportation of D	angerous Goo	ds Regulations?	O Yes	○ No			
If Yes, please complete t	he following table								
ERAP Reference Number	r		ERAP Holder						
Address	Address								
City	Pro	ovince/Territory		Postal Code (Z9Z 9Z9	9)	Telephone of E	ERAP Holder (999-999-9999)		
Email									
	Level of Response (check all that apply)								
No response	First responders or	n scene Pho	ne call to ERAP	holder Employe	ee from ERAF	P holder	Team from ERAP holder		
Other:									

17. Please indicate an estimate of costs in Canadian dollars associated with the incident, as applicable

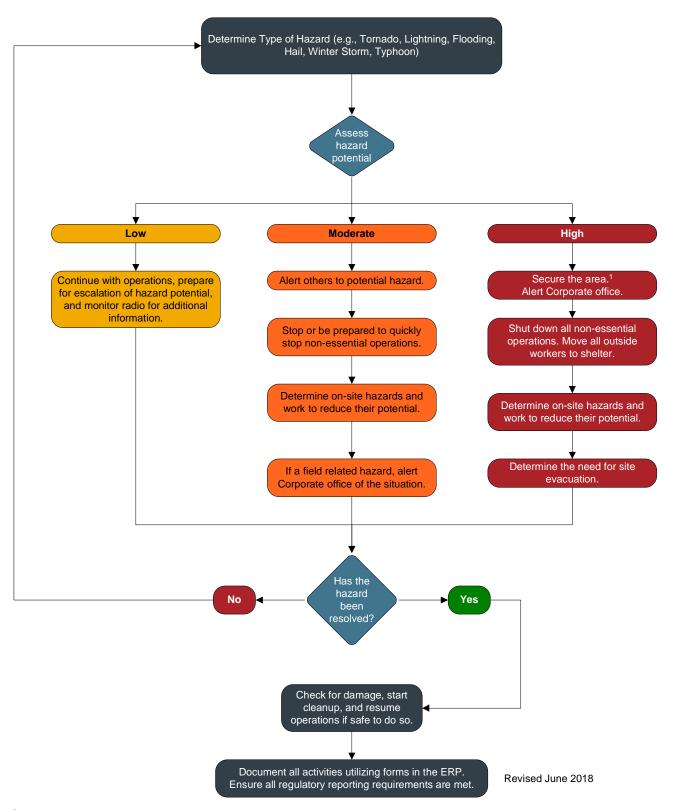


PART V: INCIDENT DESCRIPTION	
21. Please describe:	
The sequence of events that led to the incident The means of containment damage or failure, including the size/location of hole	es, cracks, etc.
The actions taken at the time it was discovered	
What was done to mitigate the effects of the release Contributing factors (e.g. human error, mechanical, equipment, packaging, infra	astructure external weather etc.)
The physical environment (e.g. residential, commercial, industrial, etc.)	addition, external, weather, etc.)
• The road's appearance (e.g. flat, straight, inclined, curved, intersection, etc.)	
Timeline of event (e.g. how long it lasted, time of release or discovery, time of f Communications with first responders and with your organization	irst responder arrival, etc.)
Photographs and diagrams should be submitted, as required, for clarification. Es necessary.	timate the duration of the release, if possible. Please use additional sheets if
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



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



Weather and Natural Disasters, continued

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

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

Listen for the Warnings

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

Weather Watch

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

Weather Warning

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

Earthquake

General Information

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

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

During an Earthquake

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



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



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

What to do during a flood

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



Thunderstorm and Lightning Safety

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

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

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

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

What to do during a thunderstorm

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

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

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

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

What to do if you cannot find shelter

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

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



If someone has been hit by lightning

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

Tornados

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

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

Protecting yourself during a tornado

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

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

General Information

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



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

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

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

Winter Weather Warnings	Issued				
Blizzard Warning	When winds of 40 km/hr or greater are expected to cause widespread reductions in visibility to 400 metres or less, due to blowing snow, o 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 property; or when freezing rain is expected for at least 2 hours.				
Snowfall Warning	When 10 cm or more of snow is expected to fall within 12 hours.				
Wind Warning	70 km/h or more sustained wind; and/or Gusts to 90 km/h or more.				
	Issued to warn of conditions that will cause frostbite to exposed skin. Criteria vary across the country, ranging from wind chill values of -55 in some Arctic regions to -30 in South-western Ontario. A national wind chill program is in development.				
Wind Chill Warning	For wind chill values:				
	-27 to -44risk of frostbite and risk of hypothermia increases with time spent outdoors				
	-45 or lowerexposed flesh may freeze in minutes and there is a serious risk of hypothermia				
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 & Climate Change Canada (ECCC), Public Alert Criteria

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



After a Disaster

These are general guidelines to look for after an occurrence:

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

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



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Security Incidents

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

General Notes on Prevention of Security Incidents

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

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

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

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

Types of Security Threats

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

Responding to Threats

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

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



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

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

Field Operations:

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

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

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

Bomb Threats

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

Persons making bomb threats generally have one of two motivations:

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

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



Bomb Appearance

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

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

Responding to Bomb Threats over the Phone

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

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

- Stay calm and keep their voice calm.
- Pay close attention to details. Write information down as the caller says it. Attempt to get the following
 information from the caller:
 - What type of bomb is being used?
 - o Did you place the bomb?
 - o Who is the target?
 - o Where has the bomb been placed?
 - What time is the bomb set to explode?
 - o Why was the bomb placed?
 - o What type of container is the bomb placed in?
 - o What does it look like?
 - 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.



Supervisor Responsibilities after Receiving a Bomb Threat

The supervisor should then:

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

Evacuating the Facility

If it seems prudent to evacuate the building:

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

IED Evacuation Distances

Improvised Explosive Device (IEI SAFE STAND OFF DISTANCE

	Threat Description	Explos Mass (equival	TNT	Bu Evad Dis
	Pipe Bomb	5 lbs	2.3 kg	70 ft
(TNT Equivalent)	Suicide Belt	10 lbs	4.5 kg	90 ft
	Suicide Vest	20 lbs	9 kg	110 fi
	Briefcase/Suitcase Bomb	50 lbs	23 kg	150 ft
	Compact Sedan	500 lbs	227 kg	320 ft
Se				



Bomb Search Guidelines

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

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

Explosive Device Located

If a device or suspected device is located:

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

If there is an Explosion

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

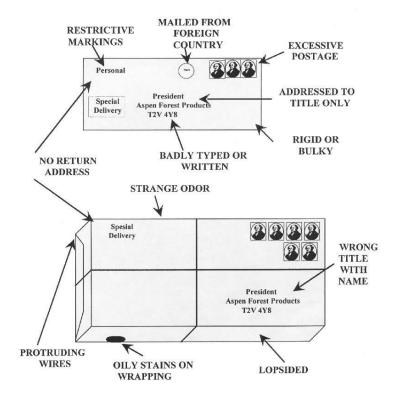
Suspicious Packages

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

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



Appearance of Suspicious Packages



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



Dealing with Suspicious Packages

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

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

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

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

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

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

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

Trespassing

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

Dealing with Trespassing

If any personnel encounter a trespasser:

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



Vandalism

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

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

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

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

Dealing with Vandalism

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

Terrorism

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

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

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



Examples of Petroleum Assets Subject to Risk

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

Dealing with Terrorism

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

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

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

Cyber-Attacks

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

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

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

Preventing Cyber-Attacks

Steps that can be taken to enhance your cyber security:

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



• Communicate, train and educate staff and users.

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

Dealing with Cyber-Attacks

In the event of a cyber-incident:

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

Serious cyber incidents:

• Should be reported to Public Safety Canada by email at contact@cyber.gc.ca or by phone at 1-833-292-3788.



Animal Encounters

First Responders to Animal Attacks

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

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



Bears

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

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

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

On the Trail

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

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



In Case of Attack (general)

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

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

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

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

Defensive Attack

- Bears will engage in a defensive attack when feeling threatened or cornered. This type of attack
 occurs when a bear is protecting her young, or the carcass of its latest kill. The bear will show signs
 of stress, like huffing, pawing the ground, exposing its teeth, body swaying and pinning its ears back.
 The bear in this type of attack will often make "bluff" charge, in which it will turn away at the last
 moment or veer off its path.
- In this type of attack, play dead to show the bear you are not a threat.
 - o If wearing a pack, leave it on for protection
 - b. Lie face down on the ground, legs splayed (spread) so the bear cannot easily turn you over
 - If rolled over, quickly turn back onto stomach
 - 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



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

In Camp

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

Cougars

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

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

Cougar Safety

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



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

If You Meet a Cougar

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

If a Cougar Behaves Aggressively

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

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



Large Hooved Animals (Ungulates)

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

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

Ungulate Safety

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

If You Meet an Ungulate

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

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

If It Behaves Aggressively

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

Look for an avenue of escape.

If knocked down:

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



Rattle Snakes

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

Rattlesnake Safety

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

If You Meet a Rattlesnake

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

In the event of a snake bite

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



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

Wolves

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

Wolf safety

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



If you meet a wolf

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

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

Finding a wolf carcass

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

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

Bees and Wasps

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

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

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

If a "nest" is detected:

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

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

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



EpiPens

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

Use of adrenaline for treating anaphylaxis is First Aid.

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

Warning / direction for EpiPen use:

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

Steps for EpiPen use:

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

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

Immediately after EpiPen use:

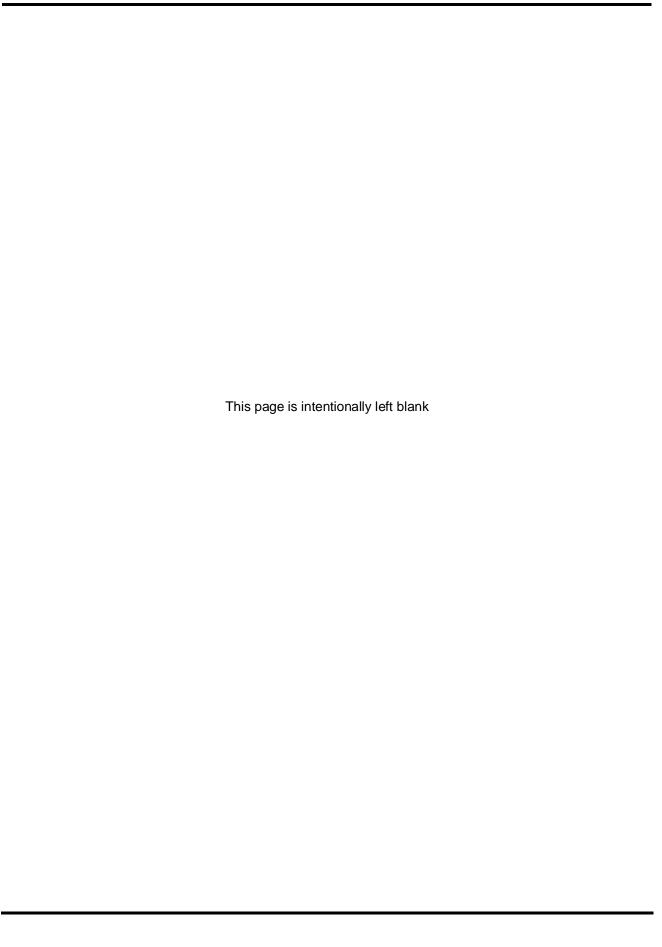
- Go immediately to the nearest hospital emergency room or call 911. You may need further medical attention. Take your used auto-injector with you.
- Tell the doctor that you have received an injection of epinephrine in your thigh.
- Give your used EpiPen to the doctor for inspection and proper disposal.

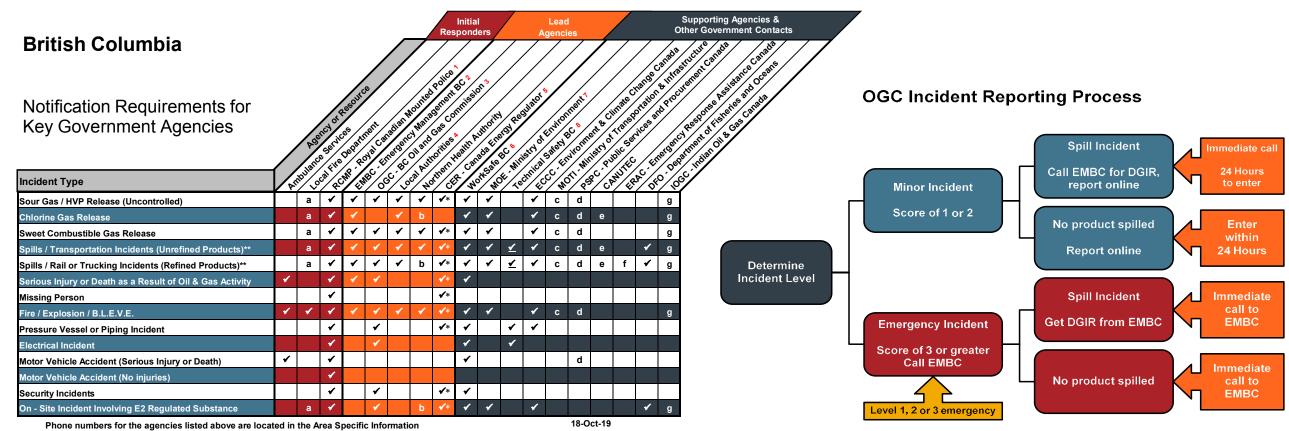


Section 5: External Agencies

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







✓ Compulsory contact

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

** Refer to the British Columbia Petroleum Release Reporting Requirements chart included in the ERP.

_ Technical Safety BC only requires reporting of rail related accidents, incidents and spills. No other transportation related emergencies need to be reported.

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

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

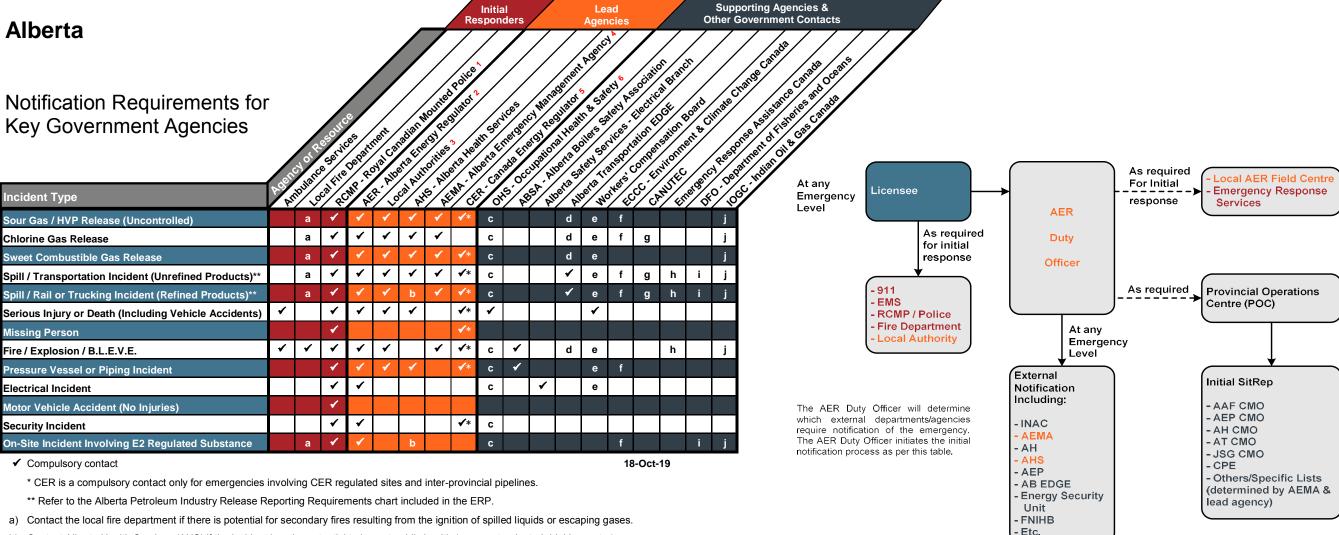
EMBC to notify Environment & Climate Change Canada (ECCC) of all oil and gas incidents in time, but immediately as required for incidents involving regulated substances at E2 registered facilities, incidents involving PCBs or any spills on First Nations lands,

in National Parks, into river or lake systems containing fish, or onto railway right-of-way.

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

- a) Contact the local fire department if there is potential for secondary fires resulting from the ignition of spilled liquids or escaping gases.
- b) Contact the Northern Health Authority if the incident affects public health, e.g., contaminated drinking water.
- c) Contact the Ministry of Transportation and Infrastructure (MOTI) and the RCMP if the emergency intersects with a 1, 2 or 3 digit Provincial or Secondary highway (e.g., Hwy 2, Hwy 47, Hwy 837). MOTI and RCMP have the authority to shut down highways.
- d) Contact Public Services and Procurement Canada (PSPC) and the RCMP if the emergency intersects with the Alaska Highway (97) north of mile 83.5 all the way to the Yukon border. PSPC and RCMP have the authority to shut down this portion of the Alaska highway.
- e) Contact the Canadian Transport Emergency Centre (CANUTEC) when a highway is shut down, there is an injury or fatality, there is lost, stolen or unlawfully interfered with dangerous goods (except Class 9), the incident involves infectious substances, there is an accidental release from a cylinder that has suffered a catastrophic failure, where the shipping documents display CANUTEC's telephone number, where a railway vehicle, ship, aircraft aerodrome or an air cargo facility is involved, when a facility is closed, evacuation/shelter-in-place procedures take place as a result of the transportation of dangerous goods, containment has been damaged and integrity compromised, or the centre/stub sill of a tank car is broken or there is a crack in the metal ≥ 15cm(6"). CANUTEC can also provide guidance on handling procedures for toxic material releases
- f) Emergency Response Assistance Canada will only respond to transportation incidents and only incidents that involve the following UN numbers: 1075 (Propane, Butane, etc.) and 1010 (Butadiene); and those products have tank storage capacity of 450 litres or greater.
- g) Indian Oil & Gas (IOGC), the First Nation and the provincial authority must be notified immediately in the event of any health or environment-threatening emergency or off-lease spills on First Nation reserve lands. On-lease spills greater than 1m3 must be reported to IOGC immediately
- 1 In the event of a fatality, request that the RCMP contact the Medical Examiner. The RCMP must be notified in the case of lost, stolen or misplaced explosives, radioactive materials or infections substances.
- 2 Notify Emergency Management BC (EMBC) for all spill and non-spill incidents to receive a Dangerous Goods Incident Report (DGIR) number. EMBC will notify the OGC and Ministry of Environment, and will provide a representative to coordinate the provincial response.
- 3 Contact the OGC for any spills or release of hazardous substances that are not provincially regulated (such as radioactive materials), pipeline incidents such as spills during construction phase, exposed pipe caused by flooding, pipeline over pressure, failure (without release) of any pressure control or ESD device during operations, drilling kicks when any of the following occur: pit gain of 3m³ or greater, casing pressure 85% of MA, 50% out of hole when kicked, well taking fluid (LC), associated spill or general situation deterioration such as leaks, equipment failure or unable to circulate etc., major damage to oil and gas roads or road structures and security related issues which are relatively minor; such information may be required for tracking and monitoring purposes only. The OGC must also be notified of needed emergency oil and gas road closures. The OGC may request a NOTAM order from NAV Canada upon request from operator.
- 4 Local authorities include regional district disaster services, national park authorities and the local police.
- 5 Contact the Canada Energy Regulator (via the Transportation Safety Board of Canada) for all emergencies involving CER regulated sites and inter-provincial pipelines and other facilities and sites located in Frontier lands (Northern Canada).
- Ensure any workplace conditions that present an immediate hazard to other workers are addressed, ensure first aid and medical treatment for the worker, and then notify WorkSafeBC of the incident. The requirement to immediately report a serious injury or fatality is separate from the requirement to report injuries for claims purposes. Failure to immediately notify WorkSafeBC will be considered a breach of section 172 of the Workers Compensation Act. The employer must immediately report the following incidents, injury or not: Any incident that kills, causes risk of death, or seriously diving incident or decompression sickness, a major leak or release of a dangerous substance, a major structural failure or collapse of a structure, equipment, construction support system or excavation, or any serious mishap. Must also report incidents that requires the employee to seek medical attention or cause time-loss from work.
- 7 Ministry of Environment was formerly known as Ministry of Water, Land and Air Protection
- 8 Technical Safety BC is to be notified immediately in cases of Boilers, Pressure Vessels, Piping and Fittings, Electrical & Gas incidents resulting in a moderate, major or severe property damage. All other incidents must be reported within 24 hours (or as soon as practical). Rail accidents where a person sustains a serious injury or is killed as a result of being on board or getting on or off the rolling stock, or coming into contact with any part of the rolling stock or its contents, or the rolling stock is involved in a grade crossing collision or a derailment, sustains damage that affects its safe operations, or causes or sustains a fire or explosion, or causes damage to the railway, that poses a threat to the safety of any person, property or the environment, or any dangerous good is released.





- b) Contact Alberta Health Services (AHS) if the incident has the potential to impact public health (e.g., contaminated drinking water).
- c) Contact Occupational Health & Safety and report when: an injury or accident results in death; an injury results in a worker being admitted to a hospital; a potentially serious incident (PSI) where a reasonable and informed person would determine that under slightly different circumstances, there would be a high likihood for a serious injury to a person; there is an unplanned or uncontrolled explosion, fire or flood that causes a serious injury 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).

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



Receive and review Post-Incident reports. ☐ Complete a "lessons learned" process based on the scope of involvement and provide

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
- 百 ☐ 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
- egi ☐ 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
- ☐ Participate in industrial operators' preparatory training and exercises where possible.
- Maintain 24 hour emergency contact numbers.

Local

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The first level of emergency response is provided by fire and/or police services and may involve the activation of the Emergency Operations Centre (EOC). Other first responders, such as the RCMP and British Columbia Ambulance Service, have a provincial mandate but with a local presence through detachments or stations. These agencies are usually accessed through 911 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.
- Service ☐ 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
 - ☐ 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 e 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 Eu resources are identified and deployed quickly and effectively when they are needed ပ
 - ☐ 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.

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

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

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

After the Incident

□ Close FOC if established ☐ Participate in event debriefings.

May audit licensee records.

☐ As requested by OGC

any feedback to the industrial operator.

Participate in multi-agency debriefings.

☐ Participate in multi-agency debriefings.





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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:

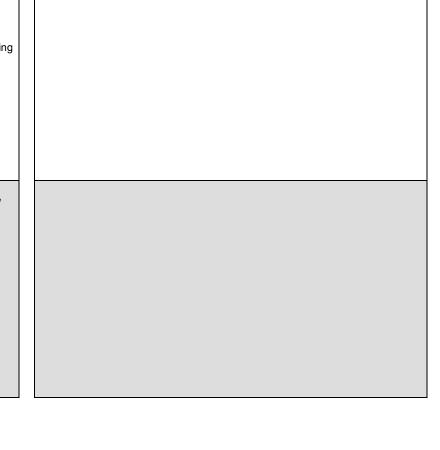
- ☐ Acute (hospital) Care
- ☐ Public Health (Protection, Preventive and Population Health services
- Mental Health and Addictions
- ☐ Home and Community Care
- ☐ In the event of a major emergency/disaster, Northern Health will provide health care services within its capacity, and will activate its emergency 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 responisibilities.
- ☐ Participate in stakeholder training and exercises associated with activation of an Emergency Response Plan, in which Northern Health or HEMBC have a role and responsibility.

The Police and Community Safety Branch of the Ministry of Justice will work

- ☐ 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
 - ☐ 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,
- ☐ Provide advice/information on the best methods for monitoring health effects from an incident.
- ☐ Assist in development of (joint) messaging for public information on emergency incidents.
- ☐ Provide guidance to stakeholders and local authorities on public health considerations in operating reception and evacuation centres, and group lodging facilities.
- ☐ Jurisdictional police forces to task search and rescue services for missing persons on land and in inland waters.
- ☐ Before, during and after an emergency the Ministry of Justice could be called upon to provide expertise, technical advice and/ or policy direction regarding police and correctional services.
- ☐ The Minister of Justice has overall responsibility for emergency management in the province. In the event of a disaster, the Minister may:
 - ☐ Declare a provincial state of emergency
 - ☐ Make a formal written request for federal assistance or aid from the Government of Canada
 - ☐ Direct the establishment of M-DEC
 - ☐ Inform his/her colleagues of the situation, and
 - ☐ Be available for media interviews



After the Incident

During the Incident

Before the Incident

After the Incident

Servi

Before the Incident

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

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

During the Incident

RCMP

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

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

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

After the Incident

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



Revised June 2018



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	Х			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	Х			Yes, where possible.	Requires Assistance	10808 - 100 Ave Clairmont, AB	-	Dan Verdun approved these roles.
Local Authority	Saddle Hills County Brian Ballard	Х			Yes, where possible.	Requires Assistance	Saddle Hills County office at NW-9-79-8 W6M	-	Brian Ballard approved these roles
Health Services	Alberta Health Services - Zone 5 Shane Hussey, Director - North	Х			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	х			No	N/A	3235 Westwood Dr Prince George, BC	-	Heather MacRae approved these roles.
Local Authority	Ministry of Transportation - North Peace Area Ken Namislo	Х	1	-	Yes, where possible	-	-	-	-
Local Authority	Peace River Regional District Deborah Jones-Middleton, Protective Services Manager	Х			-	-	Representitives will be dispatched to established OGC EOC	-	Roles are available and updated through regional district website.
Health Services	Northern Health Jim Fitzpatrick, Director	х			Yes, where possible.	N/A	-	-	Roles are available and updated through regional district website.



Oil and Gas Industry Emergency Preparedness and Response

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

EPH will endeavor to:

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

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

24 Hour Emergency Notification

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

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

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

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

www.ahs.ca/eph

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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.

County of Grande Prairie No. 1 Revised July 19, 2019

Contact information:

Name	Title	Office #	Cell #	E-mail

Initial contact person for ERP's for the County of Grande Prairie No. 1 is Dan Verdun Fire 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

County of Grande Prairie No. 1 Revised July 19, 2019

Resources

- The County has and may provide equipment and manpower in an <u>offsite support</u> 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 Response or Volunteer 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





MUTUAL AID UNDERSTANDING

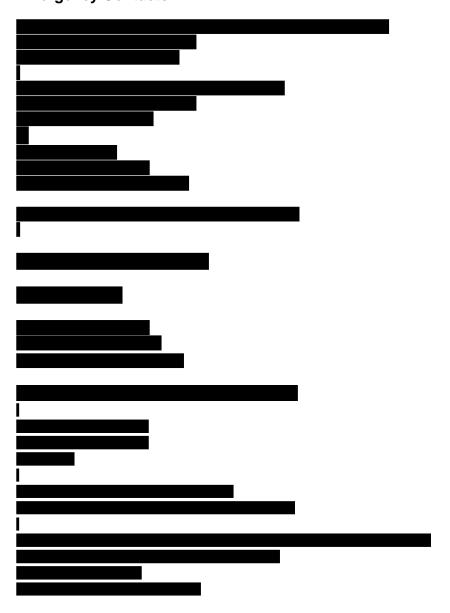
Emergency Notification of Saddle Hills County:

Saddle Hill 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.

Saddle Hill County must be contacted automatically at a Level 2 or 3 Emergency.

Please note: Saddle Hills County will dispatch a representative to liaison with the Incident Commander or Operations Chief at the Company Regional Emergency Operations Centre (REOC), Incident Command Post or On Site Command Post as appropriate depending on the location.

Emergency Contacts



Saddle Hills County is a member of: **Central Peace - Regional Emergency Management Agency** along with Birch Hills County, MD of Spirit River, Town of Spirit River and Village of Rycroft. This partnership enables a seamless response a throughout the Central Peace Region.

Responsibilities

- Initiates and manages the local Emergency Management response in accordance with County Policy.
- May dispatch representative(s) to the Company's Incident command Post (ICP) or Regional 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 to ensure consistency of key messages)
- If required, activates Central Peace Regional Emergency Operations Centre and coordinate activities at this centre. The Central Peace Regional EOC, located the Saddle Hills County office at NW9 79 8 W6 is available to the Company for use as a REOC subject to limitations as may be imposed by Saddle Hills County due to operational requirements at the time of an incident.
- Upon request, may assist with set-up and administration of a 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 and detours in accordance with County Policy.
- May assist with Fire Protection in accordance with County Policy in areas where accessible.
- If necessary, may declare a "State of Local Emergency" to provide local authorities with special powers.
- Supports the Company in dealing with the emergency in accordance with County Policy.

Resources

Fire Departments - There are 5 County Fire Departments, located at **Bonanza**, **Blueberry**, **Happy Valley**, **Savanna & Woking** and 1 Fire Department on contract from **Tomslake**, **BC for the Gundy area**, each with approximately 15 - 25 volunteer fire fighters.

Please note:

The Fire Departments are not equipped for Industrial Fire Protection and would only be responsible for anything off-site or outside the 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 Saddle Hills County have limited access or are extremely remote from any Fire Station, **Alberta Agriculture & Forestry** – GP Wildfire Management Area is responsible for Wildland fire protection in these areas

Police - The County currently has 1 Community Peace Officer. Most policing duties are covered by the Spirit River RCMP.

Public Works – The County Public Works Department employs about 20 personnel, which expands to 30 employees during the summer.

Emergency Medical Services are provided by Alberta Health Services - EMS, however, Saddle Hills County does have

Medical First Responders (trained and equipped to an FMR level) in areas of the County that are remote from the Ambulance Station in Spirit River. They are automatically dispatched to all ambulance calls in their area.

Emergency Social Services – The Central Peace – Emergency Social Services Group can provide assistance with registration and inquiry services as well as arranging for sheltering and other requirements as may be needed by evacuees.

Regional Emergency Operations Centre – 16 work stations (2 people each) with phone; data; & wifi capability.

(Whenever possible please send ERPs in CD Rom or similar electronic format)

2019/08/14

Ministry of Transportation – Roles & Responsibilities

Before the Incident

- Maintain a 24 hour emergency contact number where resources can be accessed for a response related to Emergency Response Plans.
- In the event of an emergency, the Highway Department's Operations, Maintenance and Reconstruction team plays an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- 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.
- Disaster Response Routes (DRRs) are a critical part of the overall emergency transportation system.
- Responsible for the construction, maintenance and operation of public roads.

During the Incident

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

- Highway construction and maintenance
- Safety and protection of provincial road and bridge infrastructure
- Transportation planning and policy

MoTI can:

- Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.
- Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- Coordinate and arrange for transportation, engineering and construction resources.
- Rebuild and restore provincial highways that are impacted by an emergency.

Major agencies, boards and commissions within MoTI that have identified responsibilities within the Emergency Program Management Regulation are BC Rail, BC Transit and BC Ferries.

- During an emergency, BC Rail will:
 - Provide priority movement of emergency personnel, equipment and supplies.
 - In cooperation with Transport Canada, assist in railway crashes and derailments in the conduct of rescue operations, removal of debris and the cleanup of hazardous material.
 - Provide railcars for emergency facilities.
 - Provide specialized equipment.
- During an emergency, BC Transit will coordinate requirements for public transportation, including school and privately owned buses.
- 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.

After the Incident

Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.





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.

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 Authority (NH)

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

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

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

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

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

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





NH Roles & responsibilities - RESPONSE:

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

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





Appendix I

Contact information:

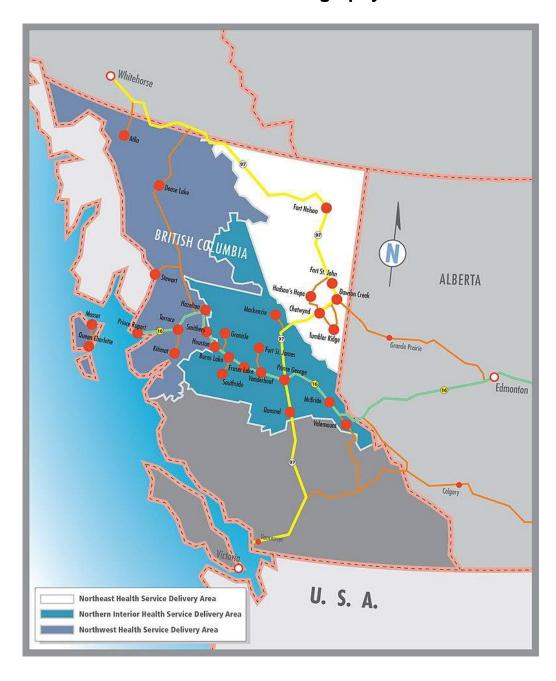
- For Emergency events that require immediate connection with Northern Health, please call:
 - HEMBC on call number (24/7)
 - HEMBC will notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the event/emergency.
 - Please include this number in industry ERPs, for the use of permit holders in contacting Northern Health on an emergency basis.
 - Do NOT include this number on Public Awareness Pamphlets for individual projects; the EMBC/Oil and Gas Commission's emergency number(s) is more appropriate, and the HEMBC 24/7 number is on record with those agencies.
- For non-urgent requests or emergency exercise planning/information, contact HEMBC North Director Jim Fitzpatrick, at:
 - o Office:
 - HEMBC@northernhealth.ca
- Please note that Northern Health does not review or approve emergency response plans (ERPs) unless there is a request made from the regulators or governing agencies (e.g. Oil and Gas Commission, National Energy Board, Ministry of Environment, Environmental Assessment Office, etc.). Northern Health also does not require that general stakeholder consultation/notification packages be sent to Northern Health.
- Please make your site and project ERPs available to Northern Health in the event of an emergency to: <a href="https://doi.org/10.1007/jebs-10.1007/j
- For Environmental assessment inquires and general government consultation questions pertaining to health please email the NH Office of Health and Resource Development at: resource.development@northernhealth.ca





Appendix II

Northern Health Geography



□ Participate in event debriefings.	Roles
☐ Complete a "lessons-learned" process based on the scope of their involvement and the outcome.	gency Roles
☐ Work with appropriate local and federal entities to facilitate the restoration of roadways and utilities.	Ag
	porting

Before the Incident

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

Ministry of Environme Can liase with FLNRO to provide:

of Transportation Infrastructure

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

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

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

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

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

During the Incident

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

- ☐ Environmental emergency response (including hazardous materials)
- ☐ Air, land and water quality standards
- ☐ Pollution prevention and waste management
- ☐ Water and air monitoring and reporting
- ☐ Environmental assessment
- □ Environmental monitoring
- ☐ Parks, wilderness and protected areas.
- ☐ Provide regulatory oversight and monitor the situation to ensure that the Responsible Party (RP) is taking appropriate actions. ☐ May provide a representative to the Incident Command Centre, the Off-Site Command EOC and the OGC Emergency
- Operations Centre (EOC) and / or the Provincial Emergency Operations Centre (PREOC) on a 24-hour basis.
- ☐ In a larger scale incident, based on risk, additional ministry resources such as IMTs (Incident Management Teams) may be deployed to establish unified command and monitor, augment, or take over the response if the RP fails to take appropriate action as deemed necessary by the EERO or Provincial Incident Commander.
- May assist the RP to ensure that other required agencies and affected stakeholders are contacted.
- ☐ May provide assistance with hazardous waste management.
- May conduct sampling for monitoring and enforcement purposes.

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

- ☐ Forest stewardship policy
- ☐ Land use planning
- ☐ Water use planning and authorizations
- Drought management
- ☐ Dam and dike safety and regulation
- ☐ Flood plain management
- ☐ GeoBC and information management
- ☐ Pests, disease, invasive plants and species
- □ Wildfire management

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

- ☐ Highway construction and maintenance
- ☐ Safety and protection of provincial road and bridge infrastructure
- ☐ Transportation planning and policy

■ MoTI can:

- ☐ Authorize the closure of provincial transportation routes, including highways and inland ferries, where the safety of the public is at risk.
- ☐ Assist in public notification through the DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- ☐ Coordinate and arrange for transportation, engineering and construction resources.
- ☐ Rebuild and restore provincial highways that are impacted by an emergency.
- ☐ Major agencies, boards and commissions within MoTI that have identified responsibilities within the Emergency Program Management Regulation are BC Rail, BC Transit and BC Ferries.
- □ During an emergency, BC Rail will:
 - ☐ Provide priority movement of emergency personnel, equipment and supplies.
 - ☐ In cooperation with Transport Canada, assist in railway crashes and derailments in the conduct of rescue operations, removal of debris and the cleanup of hazardous material.
 - ☐ Provide railcars for emergency facilities.
 - Provide specialized equipment.
- ☐ During an emergency. BC Transit will coordinate requirements for public transportation, including school and privately owned
- During an emergency, BC Ferries is required to provide priority loading for emergency personnel, equipment and supplies and ensure ferries are available to serve as reception centres, hospitals, response centres or other emergency facilities

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

- ☐ Provide expertise, technical advice and/or policy direction regarding:
 - ☐ Highway construction and maintenance ☐ Safety and protection of provincial road and bridge infrastructure
 - ☐ Transportation planning and policy
- ☐ Play an important role to ensure the public is safe and transportation routes are available for accessing emergency services.
- ☐ Assist in the coordination of roadblock locations along the highway.
- ☐ Authorize closure of the Alaska Highway where the safety of the public is at risk.
- ☐ Assist in public notification of an emergency through the MOTIs DriveBC website, as well as posting advisories on overhead message boards along designated routes.
- ☐ Coordinate and arrange for transportation, engineering and construction resources.
- ☐ Handle inter-departmental communication as needed during energy resources industry emergencies.
- ☐ Maintain ability to process calls for new emergencies.
- ☐ Provide information on the impacts to transportation routes.
- Provide response support if dangerous goods are released.

After the Incident

☐ Work with appropriate local and federal entities to facilitate the restoration and re-opening of the Alaska Highway.

Revised October 2019

- ☐ Complete a "lessons learned" process based on the scope of involvement and provide any feedback to the industrial operator.
- ☐ Provide a summary of transportation impacts during the post incident review
- ☐ Participate in multi-agency debriefings



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Before the Incident **During the Incident** After the Incident ☐ Provide public health measures, including epidemic control and Before, during and after an emergency the Ministry of Health could be called upon to provide expertise, technical advice and/or ☐ Participate in event debriefings. immunization programs. policy direction regarding: □ Complete a "lessons-learned" process based on the scope of their ☐ Provide and coordinate ambulance services and triage, treatment, ☐ Health service delivery involvement and the outcome. ☐ Public health planning and response ☐ Continue with public health and environmental health monitoring as required. transportation and care of casualties. ☐ Provide the continuity of care for patients evacuated from hospitals or other ☐ Community and home support services ☐ Continue to address the psychosocial aspects of recovery. health institutions and for medically dependant patients from other care □ Mental health facilities. □ Communicable disease prevention ☐ Provide standard medical units consisting of emergency hospitals, ☐ During an emergency the Ministry of Health will provide the continuity of care both for patients evacuated from hospitals or advanced treatment centres, casualty collection units and blood donor other health institutions and for medically dependent patients from other care facilities; The Ministry will also provide emergency psychosocial services. packs. Monitor potable water supplies. Ensure appropriate Health entities have been notified of the incident. □ Inspect and regulate food quality with the assistance of the Minister of ☐ Ensure appropriate Executive and Public Health personnel have been notified of the incident. ☐ Carry out evacuation of medically dependent and vulnerable populations, as needed. Agriculture. ☐ Provide critical incident stress debriefing and counselling services. ☐ Transport incident casualties as required. ☐ Provide support services for physically challenged or medically disabled ☐ Triage and provide medical care to incident casualties as required. ☐ Decontaminate incident casualties that present to health care facilities, as needed. people affected by an emergency. ☐ Maintain a 24 hour emergency contact number where resources can be ☐ Relay health hazard information to the public. accessed for a response related to Emergency Response Plans. ☐ Monitor water and air quality, as it relates to public health. ☐ Provide input on public health issues related to a petroleum incident. ☐ Coordinate the public health response to the incident. ☐ Address the psychosocial aspects of the aftermath of an event. ☐ Arrange with Health Canada and the Public Health Agency of Canada for federal support, if needed. Employer must immediately report the following types of incidents to WorkSafeBC's emergency and accident reporting phone WorkSafeBC is a provincial body set up to maintain a safe, healthful working ☐ Prompt investigation of incidents should be conducted so that other employees environment at job sites throughout the province. In addition to providing will not get injured in the same way. Everyone in the business has a role to play, line whether there is an injury or not: employers and workers with guidance and assistance when they are setting ☐ Any incident that kills, causes risk of death, or seriously injures a worker and you must report accidents and incidents to your supervisor. up health and safety programs, WorkSafeBC, has specific workplace ☐ Any blasting accident that results in injury, or unusual event involving explosives ☐ According to the Regulation, an employer must immediately undertake an ☐ A diving incident that causes death, injury, or decompression sickness requiring treatment investigation into the cause of any accident or other incident that: responsibilities. Under the Workers Compensation Act, WorkSafeBC is responsible for: ☐ A major leak or release of a dangerous substance ☐ Is required to be reported under the Act? ☐ Inspecting places of employment. ☐ A major structural failure or collapse of a structure, equipment, construction support system, or excavation ☐ Results in injury to a worker requiring medical treatment? ☐ Investigating accidents and the causes of industrial diseases. ☐ Any serious mishap ☐ Does not involve injury to a worker, or involves only minor injury not ☐ Issuing orders and directions specifying means of preventing ☐ Employer must also report incidents that require the employee to seek medical attention or cause time-loss from work. requiring medical treatment, but has a potential for causing serious injuries and industrial disease injury to a worker? ☐ Assisting and advising employers and workers in developing health ☐ Is an incident required by regulation to be investigated? and safety programs. ☐ Submit an employer's incident investigation report to WorkSafe BC. ☐ Educating workers about health and safety. ☐ Providing living allowances, rehabilitation, and retraining for workers injured on the job. ☐ Collecting contributions to an accident fund from employers and distributing money from the fund to injured workers. ☐ Maintain a 24 hour emergency contact number where petroleum industry incidents can be reported. ☐ Receive Emergency Response Plans. Attend critical sour well meetings. Examples of emergency management activities carried out by the Ministry of Before, during and after an emergency the Ministry of Agriculture may be called upon to provide expertise, technical advice and/ or policy direction regarding: Agriculture are: ☐ Providing advice to farmers, aqua-culturalists and fishers on the ☐ Agriculture Ministry of Agriculture protection of crops, livestock and provincially managed fish and ☐ Aquaculture and food industry development marine plant stocks. ☐ Animal health ☐ Through EMBC, provide support to impacted agricultural industries □ Crop/plant protection and coordinate support and/or managing agricultural animal ☐ Food safety and quality □ Crop insurance relocation. ☐ Assisting the Ministry of Health with inspection and monitoring of food safety and quality. ☐ Coordinate with Canadian Food Inspection Agency the response to animal disease and plant health. ☐ Administering provision of crop insurance to cover damage from disasters or emergencies. ☐ Technical Safety BC (formerly BC Safety Authority) is an independent, self-☐ Technical Safety BC implements a business continuity plan in the event of a natural disaster. This plan ensures that Technical ☐ Technical Safety BC tracks and investigates incidents and hazards that are ical BC funded organization mandated to oversee the safe installation and operation Safety BC resumes safety services as soon as possible. reported to inform awareness and prevention initiatives Technic Safety I of technical systems and equipment across the province. ☐ Though Technical Safety BC is not a first responder, they will provide technical support including inspection services to the ☐ Technical Safety BC does not investigate all reported incidents and may not recovery team relating to the technical equipment and systems covered by the Safety Standards Act (e.g., gas, electrical, elevating ☐ In addition to issuing permits, licenses and certificates, we work with industry follow-up with a notification unless there is an intention to investigate. devices, boiler and pressure vessel technologies) after first ensuring the safety of its employees. ☐ Technical Safety BC will contact duty holders within 24 hours of the next to reduce safety risks through assessment, education and outreach, ☐ Starting in the planning phase and through collaboration with other agencies, Technical Safety BC can provide most value to the enforcement, and research. regular business day following the report of an incident if more information is required or an investigation is planned to occur. public and best support the other agencies. Health Emergency Management BC (HEMBC) is a program under the ☐ For emergency events that require immediate connection with Northern Health, please call HEMBC on call (24/7) - 855-554-Provincial Health Services Authority (PHSA). HEMBC provides the expertise. 3622. HEMBC will notify / activate the appropriate Northern Health programs (ie. Public Health, Acute Care etc.) based on IEMBC North education, tools, and support specifically for the BC Health Sector to effectively the nature of the event / emergency. Please include this number in industry ERPs for the use of permit holders in contacting mitigate, prepare for, respond to, and recover from the impacts of emergency Northern Health on an emergency basis.

□ Notify/activate the appropriate Northern Health programs (i.e. Public Health, Acute Care, etc.) based on the nature of the



Health

events; ensuring the continuity of health services. There is a HEMBC team in

each BC health authority. HEMBC-North deals specifically with Northern

☐ Maintain a 24-hour emergency/on call contact number for notification and

activation of the health system in Northern BC.



incident/emergency event.

Before the Incident **During the Incident** After the Incident □ All departments/agencies should participate in training and exercises for this plan and the Energy Resources Industry Emergency Support Plan (ERIESP). □ This plan will be reviewed as required. ☐ The AER may activate the ERIESP based on the following criteria: ☐ Level 2 or 3 emergencies (as defined by the AER) Complete a Post Incident Assessment (PIA) based on the scope of their involvement and the outcome. ☐ Integrate PIA into internal response processes. ☐ Level Z or 3 emergency: ☐ Any level of emergency: ☐ requires coordination of multi-agency response; ☐ requires coordination of information and cor Common Tasks ☐ 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 ☐ A join multi-department/agency exercise will be held as required requires coordination of information and communication between departments/agencies and/or has significant asks the emergency. Reports required by other regulatory authorities must be completed and delivered provincial/national media interest □ Elevations of the POC will be escalated by AEMA. Once the elevations level of the POC has been escalated, provincial-level emergency control will be coordinated by AEMA under the leadership of the lead agency. □ The AER will develop emergency objectives to guide the GoA response and support to duty holders and local authorities. AEMA will to the appropriate regulatory body within the time lines they prescribe assist the AER by providing leadership and strategic policy direction for the GoA as per the Government Emergency Management Regulation (AR 248/2007). GoA emergency management assistance will be provided to the local authority as requested and as long as is required by the local authority. □ Inspect the work activities and processes to ensure legislative standards are being met by all work site parties. (Attendance to be determined by Occupational Health and Safety management.) ☐ Ensure work site parties have implemented appropriate controls prior to re-entry ☐ Maintain and provide resources to support 24\7 employer reporting of incidents to ☐ Investigate the incident if the incident is a reportable incident in line with current *OHS ☐ Maintain capacity for OHS attendance to a work site when warranted Alberta OHS Legislation. ☐ Ensure internal investigation has been conducted and that identified corrective actions have been minimized to reduce recurrence of similar incidents. □ Ensure health and safety committee or health and safety representative as defined by OHS legislation has been involved in internal investigations. Agriculture Agriculture ☐ Act as subject matter expert (SME) relating to agriculture and livestock ☐ Act as SME relating to agriculture and livestock impacts. ☐ Provide a summary of agriculture and livestock impacts during the PIA ☐ Act as the liaison between farming/ranching community and GoA during energy resources industry emergencies. process. (if applicable) ☐ Act as the liaison between farming/ranching community and the Government ☐ Provide information relating to agricultural and livestock impacts to the GoA during energy resources industry emergencies. □ Conduct agriculture and livestock impact assessments of Alberta (GoA) ☐ Implement response activities as required. ☐ Maintain emergency response resources. Forestry ☐ Notify forestry staff in the area of the emergency. *AAF ☐ Forest Areas Wildfire Coordination Centres will notify duty holder if energy resources industry infrastructure is threatened by □ Conduct forest impact assessment. (if applicable) wildfire, where practical and in order of priority. Priority contact will be through the contact information indicated in the company's Industrial Wildfire Control Plan for the identified locations. Can fight wildfires started as the result of the energy resources industry product release ☐ Alberta Wildfire is responsible for managing all wildfires within the Forest Protection Area. Will suppress wildfires caused from industry operations when industry has appropriately shut-in the operation and notified Alberta wildfire to ensure the safety of first ☐ Maintain a 24/7 call centre (EDGE - Environmental and Dangerous Goods ☐ Handle inter-departmental communication as needed during energy resources industry emergencies. ☐ Provide a summary of transportation impacts during the PIA process. (if Emergencies) to receive emergency calls related to the transportation and ☐ Maintain ability to process calls for new emergencies. applicable) handling of dangerous goods as well as environmental spills/releases/ ☐ Provide information on the impacts to transportation routes. incidents, and AER emergency notifications ☐ Provide response support if dangerous goods are released ☐ Act as SME for dangerous goods incidents. ☐ Maintain a team of trained Communications and Public Engagement □ Participate in all PIAs related to the ERIESP. ☐ Confirm distribution of AER messaging. Provide support as required. personnel Coordinate key messaging with the AER. Activate crisis communications plan and crisis communications response. ₹ S ☐ Maintain the list of Critical Infrastructure and key assets in the Province of ☐ Provide intelligence and threat risk assessments when appropriate and when requested, in relation to critical infrastructure and ☐ Participate in all PIAs related to the ERIESP Alberta. □ Communicate with owners and operators of critical infrastructure and key kev assets ☐ Maintain and regularly test the Emergency Notification System. ☐ Communicate with owners and operators of critical infrastructure and key assets, through normal communication channels, or if assets, through normal communication channels, or if necessary through the Maintain awareness of threats, vulnerabilities, and risks related to human necessary through the Emergency Notification System maintained by ASSIST. Emergency Notification System maintained by ASSIST. induced intentional hazards □ Receive notification of an incident. □ As required under the *Pressure Equipment Safety Regulation* Section 35, the accident scene **must not be disturbed** (except ☐ Review, accept and register pressure equipment designs and construction Investigate accidents or unsafe conditions that involve pressure equipment. procedures that relate to pressure equipment. when it is absolutely necessary to prevent death or injury, or to prevent further property damage) unless approval to do so has ☐ close all or part of the accident site for 48 hours (or longer if authorized by a ☐ Issue certificate of inspection permits for pressure equipment before the equipment is placed into service prohibit any person from entering the site for safety reasons or to preserve ☐ Ensure that regular inspections of in-service pressure equipment are evidence conducted ☐ be accompanied by any person for assistance ☐ inspect and photograph any thing ☐ require any person to make full disclosure ☐ Keep records for pressure equipment that has been registered for use, or manufactured, in Alberta. ☐ Examine, certify and register Pressure Welders and Welding Examiners, require closure or disconnection of any thing Power Engineers, and Pressure Equipment Inspectors. require to be performed any tests or evaluations ¬ remove evidence Authorize and monitor, through quality management systems, organizations require production of documents that have been permitted to conduct some of the activities subject to the regulations. Conduct safety education and training.

*ABSA - Alberta Boilers Safety Authority

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Before the Incident **During the Incident** After the Incident □ Ensure that non-energy industry resources environmental impacts are mitigated. □ Provide expertise to mitigate the impacts of non-energy resources industry liquid releases on land and into watercourses. □ Provide technical assistance related to emergency drinking water supply engineering. □ Notify Fish and Wildlife staff in the area of the emergency. ☐ Compile and maintain environment/emergency related records ☐ Monitor environmental recovery, when required. ☐ Maintain 24 hour emergency contact numbers and duty officer where resources □ Maintain 24 hour emergency contact numbers and duty officer where resources can be accessed for a response related to this plan. □ Maintain emergency response resources. □ Maintain a specialty air monitoring team and equipment used to oversee and verify air monitoring during incident response. □ Act as SME. Prepare to act as lead agency when appropriate. The Workers' Compensation Board is a statutory corporation created by government under the Workers' Compensation Act to administer a system of workplace insurance for the workers and employers of the province of Alberta. ☐ Compensates injured workers for lost income, health care and other costs related to a work-related injury. ☐ Safely restores injured workers through return-to-work services to a level of ☐ Death or permanent disability (amputation, hearing loss, etc.) ☐ A disabling or potentially disabling condition caused by occupational exposure or activity (poisoning, infection, competitive employability. Take reasonable measures to maintain a reasonable quality of life for severely injured workers through the provision of services allowed by legislation and respiratory disease, dermatitis, etc.) ☐ WCB has the overall responsibility for the administration of the workers' ☐ The need for medical treatment beyond first aid (assessment by a physician or chiropractor, physiotherapy, etc.) compensation system in Alberta. ☐ Medical aid expenses (dental treatment, eyeglass repair/replacement, prescription medications, etc.) ☐ Be a neutral and autonomous administrator of the worker's compensation

- Strive to balance the interests of workers and employers.
- ☐ Delivery of workers' compensation services to the workers and employers of
- ☐ Make decisions based on evidence, law and policy and fair, impartial and transparent processes.
- ☐ Encourage safer workplaces and promote disability management.

Note: Immediately report fatalities and serious injuries to the OHS Contact Centre 1-866-415-8690.

- ☐ Determines whether the injury or illness is caused by work.
 ☐ Responds to all client inquiries forwarded by the Minister and all other elected officials.

WHITECAP

Revised April 2019 *WCSS - Western Canadian Spill Services *WCB - Workers' Compensation Board *AEP - Alberta Environment & Parks

Environment & Climate Change Canada's Environmental Emergencies Program (EEP) protects Canadians and their environment from the effects of environmental emergencies through provision of science-based expert advice and regulations. The key Acts and Regulations that govern ECCC's role in environmental emergencies that ECCC allow it to deliver its mandate are: ☐ Canadian Environmental Protection Act, 1999 ☐ Fisheries Act—Pollution Prevention Provisions; ☐ Migratory Birds Convention Act. 1994: ☐ Statutory Notification Requirements—EC's Environmental Notification System. ☐ Environmental Emergencies Regulations 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 ☐ Establishes appropriate and nationally consistent level of preparedness and response services in Canadian waters. ☐ Design and develop related regulations, policies, strategies and tools. ☐ Review, assess and monitor activities associated with fish habitat to ensure their compliance with the Fisheries Act and Species at Risk Act. ☐ Conduct environmental assessments under the Canadian Environmental Assessment Act. Design, develop and implement communication and education strategies. NAV Canada lealth anada Sublic Health ency of Canada

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 Flight Information Centre (FIC) - FIC Services 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 □ Emergency ☐ Aviation Weather Briefing ☐ Flight Planning ☐ En-route Flight Information Services ☐ Remote Aerodrome Advisory Services (RAAS) ☐ Sets national standards to keep the environment healthy, keep water and air pollution low ☐ Maintains a nationwide network of radiation monitoring stations and can act if levels spike. ☐ 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 ☐ Sets strict rules on how chemicals are used in order to limit human exposure. 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. The Centre for Emergency Preparedness and Response (CEPR) is responsible for Developing and maintaining national emergency response plans for the Public Health Agency of Canada and Health Canada. ☐ Assessing public health risks during emergencies ☐ Contribution to keeping Canada's health and emergency policies in line by collaborating with other federal and international health and security agencies. ☐ The health authority in the Government of Canada on bioterrorism, emergency health services and emergency response. ☐ Strengthen intergovernmental collaboration on public health and facilitate national approaches to public health policy and planning.

☐ Manages emergency preparedness and emergency response plans and keeps them up to

☐ Develops and delivers training courses that teach health workers how to respond to

Develops and runs exercises to train emergency workers.

emergencies.

Before the Incident

During the Incident During an environmental emergency, The National Environmental Emergencies Centre (NEEC) is the focal point for ECCC. ECCC's services during an environmental emergency: ☐ Collaborate with federal, provincial, territorial and international environmental protectin agencies to enable rapid sharing of information. ☐ Convene and chair a Science Table of experts and stakeholders to develop consensus based advice to the Lead Agency. ☐ Identify environmentally sensitive areas and priorities (sensitivity and resource at risk mapping). Advise on mitigation and cleanup measures. 🗖 Provide support and guidance in the assessment of oiled shorelines to prioritize their protection and cleanup (Shoreline Cleanup Assessment Technique (SCAT)). Advice on the fate and behavior of the spilled product. Advice on sampling and laboratory analysis. ☐ Provide weather forecasting and spill dispersion modelling to identify where these substances are likely to move in the environment. ☐ Provided expertise on the migratory bird resources and species at risk, including on-site assessment and determination of wildlife impact. ☐ 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. ☐ Work together with provincial environment protection agencies and may be initially notified by ECCC. ☐ May send personnel to the site if there has been or could potentially be an impact to fish or fish habitat. ☐ Monitors and investigates all reports of marine pollution in Canada in conjunction with other federal departments. ☐ Maintains communications with the program's partners, including Transport Canada and ECCC, to ensure a consistent coordinated approach to marine pollution incident response ☐ Aids in search and rescue operations. As requested by the provincial oil and gas regulator, the Flight Information Centre will issue a NOTAM (Notice to Airmen). ☐ 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.

- During a health emergency or disaster, Health Canada and the Public Health Agency of Canada are responsible for supporting emergency health and social
- 🗖 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).
- ☐ If a public health emergency grows beyond one province and/or territory, the Public Health Agency of Canada usually gets involved.

*Indian Oil & Gas Canada

improved and ensure its sustainability for the future.

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.

After the Incident

☐ Provide specialized advice in shoreline clean-up assessment techniques (SCAT).

☐ ECCC can conduct post-emergency assessments

agencies.

☐ Provide Advise on mitigation and cleanup measures...

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

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

Since the Government of Canada's renewed commitment to a stronger relationship with Indigenous peoples in Canada, measures were initiated to effect a shift in the way the Government delivers services to Indigenous peoples. This included the creation of two new departments, which was announced on December 4, 2017. The two newly created departments, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) and Indigenous Services Canada (ISC), are intended to improve the delivery of services while accelerating movement towards self-government and self-determination of Indigenous peoples.

As part of the departmental transition, both the former Regional Operations (RO) part of Indigenous and Northern Affairs Canada (INAC) and all of First Nations and Inuit Health Branch (FNIHB) of Health Canada have been absorbed into the newly created Indigenous Services Canada (ISC), RO and FNIHB work closely and collaborate towards the provision of emergency preparedness and response activities to First Nations communities in Canada.

In regards to First Nations emergency management, the role of RO is to 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. ISC-RO supports First Nations in the four pillars of emergency management through service agreements with partners such as provincial emergency management agencies and the Red Cross.

FNIHB carries out the public health preparedness and response activities related to natural and man-made disasters. This includes Communicable Disease Control and Environmental Public Health Services. In addition, FNIHB administers Non-Insured Health Benefits to First Nations clients, which includes extended coverage for medical transportation, pharma-care, medical devices and mental health supports. During an emergency, FNIHB works with First Nations leadership and health service providers to ensure health needs of First Nations communities are met

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

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Transport Car *CANUTEC

Before the Incident **During the Incident** ☐ Regulate the handling, offering for transport and the transport of dangerous ☐ Assist emergency response personnel in handling dangerous good emergencies including advice on ☐ Maintain voice communication and written information records for two years for the ☐ Chemical, physical and toxicological properties and incompatibilities of the dangerous goods ☐ Health hazards and first aid ☐ Federal regulations require that CANUTEC be contacted in the event of an ☐ Fire, explosion, spill or leak hazards incident or accident involving dangerous goods and infections substances. ☐ Remedial actions for the protection of life, property and the environment ☐ Maintains records of over 3 million Safety Data Sheets (SDS). ■ Evacuation distances ☐ Personal protective clothing and decontamination □ CANUTEC staff does not go to the site of an incident, however, should on-site assistance be required, CANUTEC can assist in the activation or industry emergency response plans. ☐ Provide communication links with the appropriate industry, government or medical specialists. Emergency Response Assistance Canada (ERAC) is a not for profit cooperative Provides emergency response to plan participants who transport the following products by road or rail, or those who store these products ☐ Terminate and de-mobilize Post-incident assessment and communication program. organization built by industry for industry providing safe, timely effective, sustainable, in tanks with capacities of 450 litres or greater. These products are gases at standard temperatures and pressure, and include: Propane cost effective flammable liquids and gases emergency preparedness and response (UN1978), Butane (UN1011), Propylene (UN1077), Butylene (UN1012), Isobutene (UN1969), Isobutylene (UN1055), and NGL assistance to all Plan Participants and Stakeholders of ERAC. (UN1075). It is recognized that these products may contain a concentration of condensate and/or quantities of other elements including ☐ ERAC will act on behalf of the Plan Participant to develop, submit, update, and hydrogen sulphide. respond to the requirements of the Plan Participant ERAP submitted to and ☐ 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: ☐ ERAC provides a network of experienced, trained Technical Advisors (TAs), UN1170 Ethanol UN1987 Alcohols, N.O.S. Remedial Measures Advisors (RMAs) and Response Teams who respond to rail, UN1993 Flammable Liquid, N.O.S. UN1202 Diesel Fuel road and stationary tank incidents involving flammable gases, Class 2.1 Liquefied UN1203 Gasoline UN3295 Hydrocarbons, Liquid, N.O.S. Petroleum Gas (LPG) emergencies and Flammable Liquids Class 3 rail transport UN1267 Petroleum Crude Oil UN3475 Ethanol and Gasoline Mixture and road cargo tank transport emergencies. The emergency responders are UN1268 Petroleum Distillates N.O.S. UN3494 Petroleum Sour Crude Oil, Flammable, Toxic constantly available through a 24 hour activation telephone number. UN1863 Fuel Aviation, Turbine Engine Once a year, there is Regional Training that is held in each region for the ☐ If LPG/Flammable Liquid Incident, Emergency Call Centre Operator receives an activation (notification) phone call Remedial Measures Advisors, Technical Advisors, Response Team Leaders, ☐ Emergency Call Centre Operator sends group email to Home Based Coordinator. Alternate Team Leaders as well as all Response Team Members to test their ☐ Home Based Coordinator / Technical Advisor conferenced into call to assist with information gathering skills and update them on any new developments. Also, once every two years, Caller requires technical advice. National Training Session is held for all the Remedial Measures Advisors, ☐ Home Based Coordinator / Technical Advisor provides technical advice. Technical Advisors, Response Team Leaders and Alternate Team leaders across ☐ Caller requests response team. Confirm plan participant involvement. ☐ Plan participant notified of activation ☐ Home Based Coordinator / Technical Advisor activate plan. ☐ Mobilization phase ERAC-002. ☐ Initial incident size-up. ☐ Damage and spill assessment. ☐ Develop Incident Action Plan. ☐ Execute IAP & initiate planning for next operational period. ☐ Update Emergency Call Centre Operator and Home Based Coordinator. ☐ Public Safety Canada works with provincial and territorial officials to ensure first ☐ Public Safety Canada houses the Government Operations Centre at the hub of the national emergency management system. It's an responders and emergency management personnel are well-prepared through advanced centre for monitoring and coordinating the federal response to an emergency Responsible for promoting and coordinating the preparation of departmental

☐ 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.

After the Incident

protection of all parties.

*Canada Energy Regulator Roles & Responsibilities

The CER's top priority in any emergency is to make sure that people are safe and secure, and that property and the environment are protected. Any time there is a serious incident, CER inspectors may attend the site to oversee a company's immediate response. The CER will require that all reasonable actions are taken to protect employees, the public and the environment. Further, the CER will verify that the regulated company conducts adequate and appropriate clean-up and remediation of any environmental effects caused by the incident.

As lead regulatory agency, the CER:

education, support and exercises

- Monitors, observes and assesses the overall effectiveness of the company's emergency response in terms of:
 - Emergency Management
 - Safety
 - Security
 - Environment
 - Integrity of operations and facilities; and

goods by all modes in order to ensure public safety.

☐ Maintain a 24 hour emergency telephone service.

approved by Transport Canada.

Canada.

Emergency

- 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

emergency management plans as well as coordinating the government's

response to an emergency through the Government Operations Centre (GOC).

- Coordinate stakeholder and Aboriginal community feedback regarding environmental clean-up and remediation
- Confirms that a company is following its Emergency Procedures Manual (s), commitments, plans, procedures, and CER regulations and identifies non-compliances
- Initiates enforcement actions as required
- Approves the restart of the pipeline.

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

*Transportation Safety Board Mandate

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:

- a conducting independent investigations, including public inquiries when necessary, into selected transportation occurrences in order to make findings as to their causes and contributing factors;
- identifying safety deficiencies, as evidenced by transportation occurrences;
- making recommendations designed to eliminate or reduce any such safety deficiencies; and
- reporting publicly on our investigations and on the findings in relation thereto.

As part of its ongoing investigations, the TSB also reviews developments in transportation safety, and identifies safety risks that they believe the government and the transportation industry should address to reduce injury and loss.

To instill confidence in the public regarding the transportation accident investigation process, it is essential that an investigating agency be independent and free from any conflicts of interest when investigating accidents, identifying safety deficiencies, and making safety recommendations. As such, the TSB is an independent agency, separate from other government agencies and departments, that reports to Parliament through the President of the Queen's Privy Council for Canada. Our independence enables us to be fully objective in making findings as to causes and contributing factors, and in making transportation safety recommendations.

In identifying the causes and contributing factors of a transportation incident, it is not the function of the Board to assign fault or determine civil or criminal liability. However, the Board does not refrain from fully reporting on the causes and contributing factors merely because fault or liability might be inferred from the Board's findings. No finding of the Board should be construed as assigning fault or determining civil or criminal liability. Findings of the Board are not binding on the parties to any legal, disciplinary, or other proceedings

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 203 Organization Assignment List

ICS 204 Assignment List

ICS 207 Incident Organization Chart

ICS 208 Safety Message / Plan

ICS 209 Incident Status Summary

ICS 211 Check-In / Out List

ICS 214 Activity Log

ICS 215 Operational Planning Worksheet

ICS 215A IAP Safety Analysis

ICS 221 Demobilization Checkout

ICS 230 Meeting Schedule

ICS 231 Meeting Summary

ICS 233 Incident Open Action Tracker

Emergency Forms

A1 Initial Emergency Report Form

A2 Odour Complaint Script

A3 Regulatory First Call Communication

A4 Incident Action Plan Checklist

A5 Air Monitoring Log

A6 Threatening Call / Bomb Threat

A7 STARS Landing Zone Card

Resident Forms

B1 Reception Centre Registration Log

B2 Resident Compensation Log

B3 Resident Contact Log

B4 Roadblock Log

B5 Evacuation Notice

B6 Early Notification / Voluntary Evacuation Phone Message

B7 Shelter-In-Place Phone Message

B8 Evacuation Phone Message

Media Forms

C1 Preliminary Media Statement

C2 Media Contact Log

C3 Government Agency Contact Log

C4 Media Centre Site







Documentation During and After an Incident

It is imperative that accurate documentation is kept throughout the duration of an incident for record keeping purposes. Records kept may be used for legal, investigation, audits, historical and/or analytical purposes. All documentation must be held for a minimum of 5 years as it may be requested by the regulatory agency at any point during that time.

It is the Documentation Units responsibility to collect documentation (forms, checklists, event logs, etc.) from response team members and maintain a consistent system for organizing the data.

Form Descriptions

The Incident Command System uses a series of standard forms and supporting documents that convey directions for the accomplishment of the objectives and distributing information. Listed below are the standard ICS form titles and descriptions of each form utilized.

Further ICS forms can be found through the ICS Canada website: 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 203 Organization Assignment List	Provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position.								
ICS 204 Assignment List	Informs Division and Group supervisors of incident assignments.								
ICS 207 Incident Organization Chart	A complete picture of the organizational structure for the incident.								
ICS 208 Safety Message / Plan	Expands on the Safety Message and Site Safety Plan.								
ICS 209 Incident Status Summary	Summarizes incident information for staff members and external parties, and provides information to the Public Information Officer for preparation of media releases.								
ICS 211 Check-In/Out List	Used to check in personnel and equipment arriving at or departing from the incident. Check-in / out consists of reporting specific information that is recorded on the form.								
ICS 214 Activity Log	Provides a record of unit activities. Unit Logs can provide a basic reference from which to extract information for inclusion in any afteraction report.								
ICS 215 Operational Planning Worksheet	Documents decisions made concerning resource needs for the next operational period. The Planning Section uses this Worksheet to complete Assignment Lists, and the Logistics Section uses it for ordering resources for the incident. This form may be used as a source document for updating resource confirmation on other ICS forms such as the 209 Incident Status Summary.								
ICS 215A Incident Action Plan Safety Analysis	Used to communicates to the Operations and Planning Section Chiefs the potential hazards identified by the Safety Officer. It identifies mitigation measures to address the identified hazards.								



Form Descriptions, continued

Standard ICS Form Title	ICS Form Description						
ICS 221 Demobilization Checkout	Ensures that resources checking out of the incident have completed all appropriate incident business, and provides the Planning Section information on resources released from the incident.						
ICS 230 Meeting Schedule	To record information about the daily scheduled meeting activities.						
ICS 231 Meeting Summary	Provides more detailed information concerning the attendees and notes from a particular meeting.						
ICS 233 Incident Open Action Tracker	Used by Command Staff to track time sensitive tasks / actions assigned to incident personnel.						

Emergency Form Title	Emergency Form Description						
A1 Initial Emergency Report Form	Used by recipient of a phone call from either a member of the public or other company personnel to record detailed information about incident.						
A2 Odour Complaint Script	Used to record odour information from a member of the public as well as scripts to follow.						
A3 Regulatory First Call Communication	A regulatory required form used to send detailed information to the regulator about an emergency used for assessment, historical, and analytical purposes following an incident.						
A4 Incident Action Plan Checklist	A checklist of other forms and information required to accurately create an incident action plan.						
A5 Air Monitoring Log	A form used by designated Air Monitor personnel to log information about air quality readings.						
A6 Threatening Call / Bomb Threat	Detailed point driven form used to document incoming phone calls pertaining to personnel threats and bomb threats.						
A7 Stars Landing Zone Card	An information card utilized if medical evacuation is required via STARS Air Ambulance.						

Resident Form Title	Resident Form Description						
B1 Reception Centre Registration Log	Log used by Reception Centre Rep to record information from evacuees being received at the reception centre. Can also be faxed to reception centre in case a representative has not been identified or cannot make it before evacuees start arriving.						
B2 Resident Compensation Log	Detailed spreadsheet for expenses incurred by evacuees so that compensation may be properly dealt with.						
B3 Resident Contact Log	A log used by various company personnel to record contact made with residents, whether they're sheltered / evacuated and if assistance is required.						
B4 Roadblock Log	A log used by designated Roadblock personnel to identify details about vehicles and persons entering or exiting a hazard area.						
B5 Evacuation Notice	A document to be left in doors / windows of surface developments that are unable to be contacted as a way to issue evacuation instructions						



Form Descriptions, continued

Resident Form Title	Resident Form Description						
B6 Early Notification/Voluntary Evacuation Message	A script and document filled out by Telephoner personnel issuing calls to residents for early notification and voluntary evacuation purposes.						
B7 Shelter-In-Place Message	A script and document filled out by Telephoner personnel issuing ca to residents with shelter-in-place instructions.						
B8 Evacuation Phone Message	A script and document filled out by Telephoner personnel issuing calls to residents with evacuation instructions.						

Media Form Title	Media Form Description						
C1 Preliminary Media Statement	A generic script used by the Media Spokesperson to issue media statements until which time more detailed information is known and can be issued.						
C2 Media Contact Log	A log used to identify what media outlets/persons have contacted the company and their contact information.						
C3 Government Agency Contact Log	A log used to identify what government agencies have been notifiabout the incident.						
C4 Media Centre Site	A document to distribute to media outlets/persons about the location for further media enquiries and press releases as well as details to get there.						



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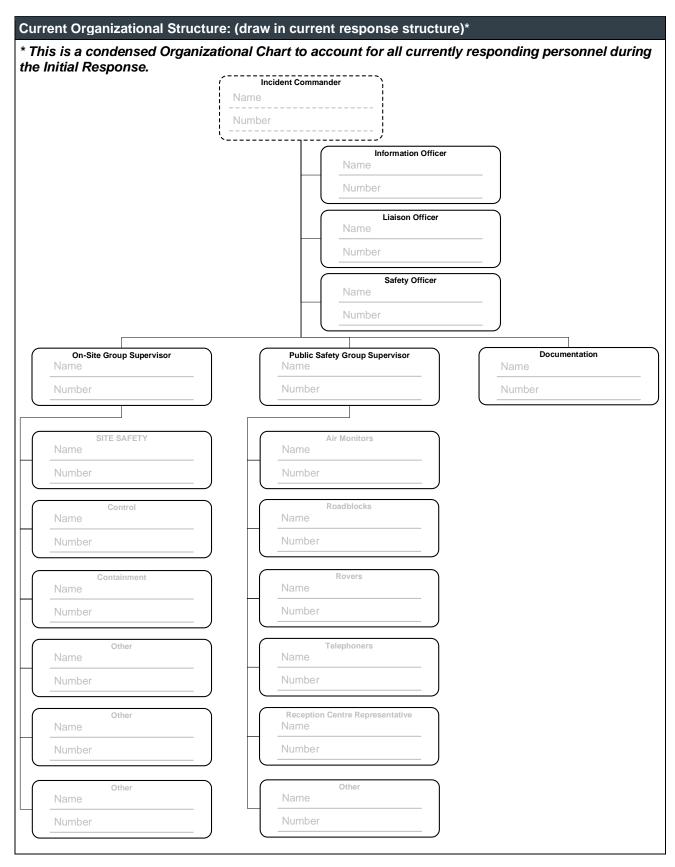
Incide	Incident Name:																								
Date/	Date/Time Initiated:																								
Prepa	Prepared By: ICS Position:																								
Level	of E	me	rger	ncy		/	Aler	t / N	1ino	r			Le	evel	1		Leve	el 2		Le	vel	3			
Map S	Sket	ch:																							
Note:	Maj	os c	an I	be c	Irau	n o	r att	ach	ed f	nere															
					_	_																			
													_												
Situa	tion	Su	mm	ary	: (V	/rite	de	scri	iptic	on c	or a	ttac	h A	1)											
Safet	y Br	iefi	ng:																						



Current and Planned Objectives:								
Priorities: (1) Life Safety (2) Incident Stabilization (3) Environment & Property								
Ensure Safety of Citizens and Response Personnel:	4. Minimize Economic Impacts:							
☐ 1a. Identify hazard(s) of released product.	☐ 4a. Consider tourism and local economic impacts.							
☐ 1b. Establish site control (hot zone, warm zone, cold zone, & security).	☐ 4b. Protect public and private assets, as resources permit.							
☐ 1c. Establish an Emergency Response Zone and Initiate Public Safety Actions.	☐ 4c. Establish damage claims process.							
☐ 1d. Consider evacuations if needed.	5. Keep Stakeholders and Public Informed of Response Activities:							
☐ 1e. Establish aircraft restrictions.	☐ 5a. Provide forum to obtain stakeholder input and concerns.							
☐ 1f. Monitor air in impacted areas	☐ 5b. Provide stakeholders with details of response actions.							
 1g. Develop site safety plan for personnel and ensure safety briefings are conducted. 	☐ 5c. Identify stakeholder concerns and issues, and address as practical.							
2. Control the Source of the Release:	☐ 5d. Provide timely safety announcements.							
☐ 2a. Complete emergency shutdown.	☐ 5e. Conduct regular news briefings.							
☐ 2b. Conduct firefighting.	☐ 5f. Conduct public meetings, as appropriate.							
☐ 2c. Initiate temporary repairs.								
3. Manage a Coordinated Response Effort:								
☐ 3a. Complete or confirm notifications.								
☐ 3b. Establish a unified command organization and facilities (command post, etc.).								
☐ 3c. Ensure mobilization and tracking of resources and account for personnel and equipment.								
☐ 3d. Complete documentation.								
Current and Planned Actions, Strategies and Tactics:								
Time: Actions:								
HHMM								
HHMM								
HHMM								
HHMM								
HHMM								
HHMM								
HHMM								
HHMM								
HHMM								

Section 6: Forms Page 2 of 6





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



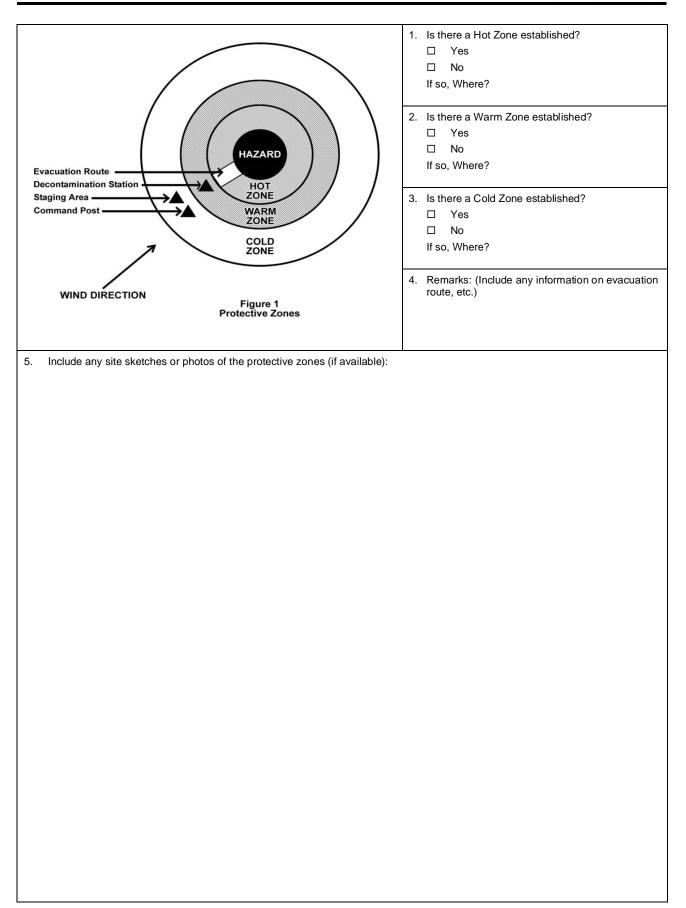
Resources Summary:											
Resource(s)	Time Called	ETA	On-Site	Notes (Location/Assignment/Status)							
External Notification	ns: (Governmen	nt)									
Agency	Time Called			Notes							

Section 6: Forms



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





ICS 202 Incident Objectives



Incident Name:							
Date / Time Initiated:							
Prepare	d by:	ICS Position:					
Genera	General Control Objectives for the Incident:						
1							
2							
3							
4							
5							
Weathe	r Forecast:						
Genera	I Safety Message:						
Note: Create and prioritize SMART (Specific, Measureable, Attainable, Realistic, & Time-Sensitive) objectives that address the incident issues and utilize the solutions identified on the Operations Briefing							
page.							



ICS 203 Organization Assignment List



Incident Name				Operational Period (Date/Time) From: To:			
Agency IC Depu		Deputy		Chief			
				Deputy Staging Area Manager			
				On-Site Group			
				Su	upervisor		
S	afety Officer				Lead		
	Assistant				Lead		
Inform	ation Officer				Lead		
	Assistant				Lead		
Li	aison Officer				Lead		
	Assistant						
				Public Safety Group			
				Sı	pervisor		
	Representatives				Lead		
Agency	Name				Lead		
					Lead		
					Lead		
					Lead		
				Branch - Division			
				Branch			
					Deputy		
Planning Section			Division/Group Lead				
Chief				Division/Group Lead			
Deputy			Division/Group Lead				
Resources Unit				Division/Group	Lead		
Situation Unit Environmental Unit				Division/Group	Lead		
				Branch – Division / Group			
Documentation Unit							
Demobilization Unit			Branch				
Technical Specialists				Division (Crown	Deputy		
				Division/Group	Lead		
Logistics	Section			Division/Group Division/Group	Lead Lead		
Logistics Section Chief				Division/Group	Lead		
	Deputy			Division/Group	Lead		
	Supply Unit						
F	acilities Unit			Finance / Admin Section			
Ground Support Unit			Chief				
Communications Unit			Deputy				
Medical Unit		Time Unit					
Food Unit		Procurement Unit					
				Compensation / Claims Unit			
				Cost Unit			
				l .			

ICS 203 Organization Assignment List

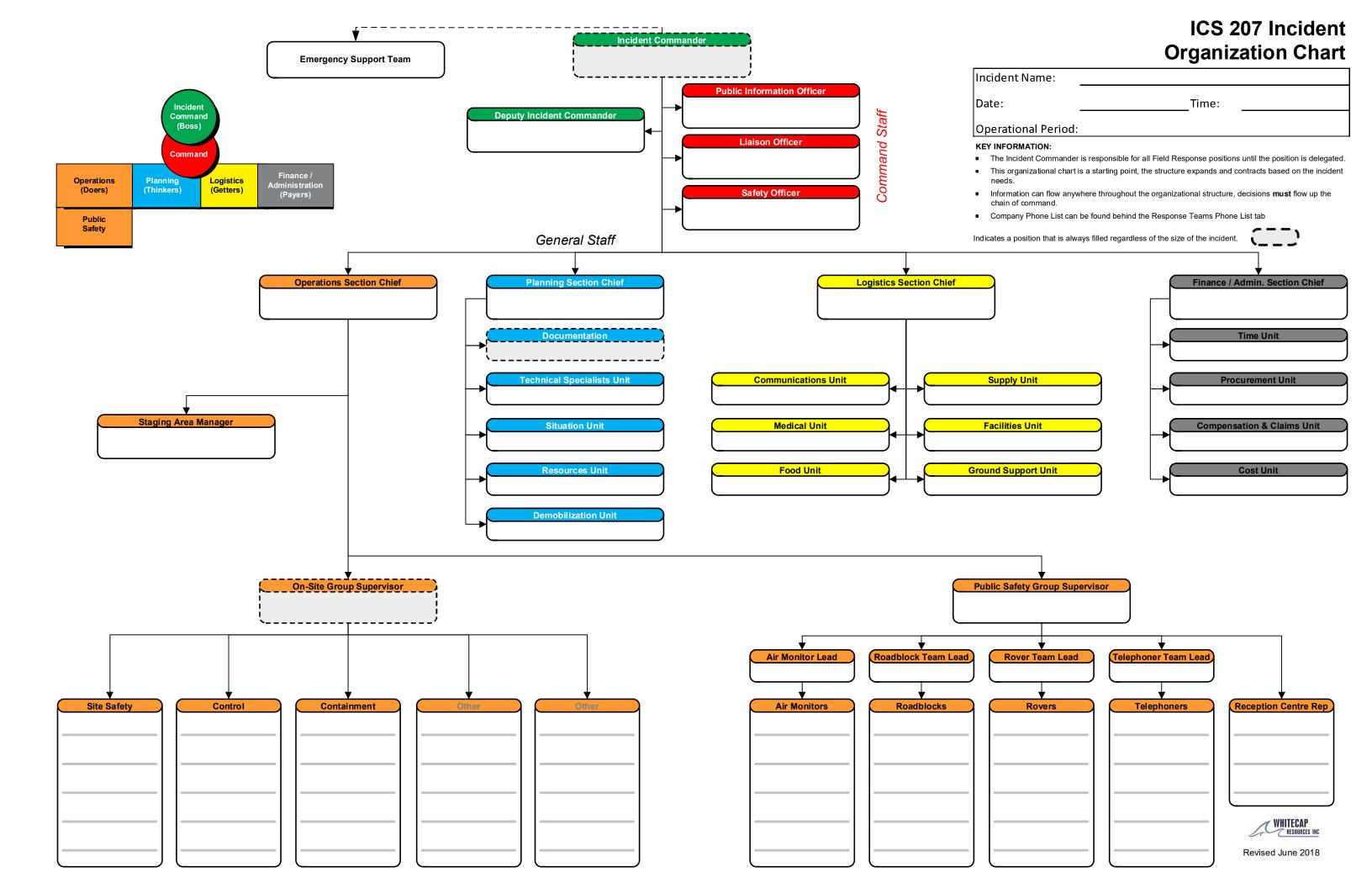


ICS 204 Assignment List



Branch:					Division / Group / Staging:				
Incident Name:					From:				
Division / Group / Staging Operations Chief Branch Director					Division/Group Supervisor Staging Area Manager				
Resources /	Assigned	to This Period							
Resour Identifi	Resource Leader No. of		No. of Persons	Cal	Contact Reporting Cell #, radio freq. Etc. Equipment an			ocation, Spe	ecial emarks
Identin	G1		reisons	OC.	ii m , radio ii e	rq. Lto.	Equipment and	oupplies, N	emarks
Work Assign	ments:								
Work / Golgillions.									
Special Instru	uctions:								
Division / G	roun Com	munications Summa	rv						
Function		Frequencies	System	Chan.	Funct	tion	Frequencies	System	Chan.
Command	Local Repeat					Local			
						Repeat			
Div. / Group Tactical				Ground to A	Air				
Prepared By: (Resource Unit Leader)								Date:	Time:
Signature:									





ICS 208 Safety Message / Plan



Incident Name:	Operatio	nal Period:	
	From:	Date	Time
	To:	Date	Time
Safety Message/Expanded Safety Message, Safety F	Plan. Site	Safety Plan:	
	1011, 0110	outory r turn	
Site Safety Plan Required? ☐ Yes ☐ No			
Approved Site Safety Plan(s) Located At:			
Prepared By:			
(Name and Position)		Date Pre	pared:
Signature:		Time Pre	epared:





Incident Name:		Location of Incident:				
Date / Time Initiated:		(LSD / NTS)				
Prepared by:		ICS Position				
Incident Details:						
Gas readings: H₂S		SO ₂	LEL			
Level of Emergency:		002				
	ert / Minor	☐ Level 1	☐ Level 2	☐ Level 3		
Affect Medium: (Check all that app	ly)					
□ Air □ Water □	Soil 🗆 (Other – Specify:				
Site Type: (Select only 1)						
☐ Well (Active)	☐ Well (Abanc	doned/Suspended)	□ Remote	Sump		
☐ Well (Drilling & Completions): Rig	Name:					
☐ Battery/Plant/Facility	☐ Tank Farm/	Storage	□ Pipeline	☐ Pipeline		
☐ Riser (Pipeline)						
☐ Road or Road Structure	Name:		Location on Road:			
☐ Other – Specify:						
Incident Type: (Check all that apply	y)					
☐ Sour Gas Release	☐ Sweet Gas	Release	☐ Liquid Sp	oills		
☐ Natural Disaster/Weather	☐ Fire/Explosi	ion	☐ Drilling K	(ick		
☐ Worker Injury/Fatality	☐ Security (the	eft, threat, terrorism)	□ Induced	Seismicity		
☐ Well Bore Communication	☐ Pipeline Bor	ring	□ Vehicle/	Transportation		
☐ Equipment/Structural Damage	☐ Pipeline Bre	eak	□ Well Cor	ntrol		
☐ Other – Specify:						
Activity: (Check all that apply)						
☐ Construction (Road, Lease, Pipe)	☐ Drilling/Expl	loration	☐ Waste M	lanagement		
☐ Processing	☐ Well Fractur	ring	☐ Servicing	☐ Servicing		
☐ Repair	☐ Flaring (Em	ergency)	□ Well Tes	ting		
☐ Pressure Testing	☐ Transportati	ion				
☐ Other – Specify:						



Consequence or Impacts: (Check all that apply, if none, leave blank)										
□ Worker Safety (Injuries, Fatalities) □ Property										
☐ Economic (Loss of and/or damage to equipment or infrastructure, loss of production, work stoppage)										
□ Other – Specify:										
Material Information:										
Is spill off lease? ☐ Yes - Estimated spill quantity: ☐ No										
☐ Liquid Hydrogen (Cru	☐ Liquid Hydrogen (Crude, Oil, Diesel, Fuel) ☐ Toxic Gas Liquid (>1% Different Toxins)									
☐ Acid	☐ Emulsion (Oil,	Gas, Water)	☐ Sweet Natural Gas	☐ Salt Water						
☐ Methanol	☐ Non-Toxic Liq	uids	☐ Fresh Water							
☐ Sour Natural Gas	☐ Sour Liquids (-	<1% H ₂ S)	☐ Other – Specify:							
☐ Non-Toxic Gases (Nit	trogen, Carbon Di	ioxide, Inert Gas	ses)							
Area Information:										
Land Type: ☐ Priva	te Land [☐ Crown Land	Field Name:							
Area Type: ☐ Fore:	st 🗆 Muske	eg □ Farm	land Residential	□ Other						
Access: ☐ Helic	opter □ ATV	□ 4WD	□ 2WD	□ Unknown						
Name of road the asset	is located on:									
KM where the incident of	occurred:									
Distance to nearest resi	dence/public facili	ity:								
Nearest City/Town/Oper	n Camp:									
Weather Conditions:										
Weather Conditions	□ Clear [□ Cloudy	☐ Other:							
Wind Direction	N NE 1	NW E	SE S SW	W						
Wind Strength	□ Calm [☐ Moderate	☐ Strong ☐ Gust	у						
Temperature	°C									
Public / Worker Injurie	s / Medical Emer	rgencies:								
☐ First Aid ☐ Hospi	talization	atality	Other – Specify:							
Notification: (Notify all	agencies as rec	quired)								
☐ 911 (Police/RCMP,	☐ Energy Reg		Local Authority (MD,	☐ Health Authority						
Fire, EMS) □ Canada Energy	(OGC, AER*, ☐ Occupation		ounty, Town, City) I Emergency	☐ Ministry of						
Regulator (CER)	& Safety (OH		lanagement Agency	Transportation						
☐ Workers'	☐ Emergency	/ Response								
Compensation Board (WCB)	Assistance Ca (ERAC)	anada L	Western Canadian pill Services (WCSS)	□ CANUTEC						
☐ Transportation Dangerous Goods (TDG)	□ Other		1 Other	□ Other						
□ Other	□ Other		1 Other	□ Other						
*Request that the AER notify (ECCC) and the Department of			//Fish/Wildlife/Lands), Environ	ment & Climate Change Canada						
Refer to the Government			ternal Agencies Conta	ct List or Area Specific						

Section 6: Forms

Information for complete list of agencies requiring contact.



Agency Notification					
Agency Nan		Contact Nan	ne	Contact Numbe	Notified
Agency Hun		- Contact Hair		- Contact Name	(Y/N)
					
Collect all compl	leted C3 Gov	ernment Agency Conta	et Logs from	n responders for full do	cumentation.
Notes:					
Notes.					
	_				
Roadblock Location	ns:		I		
Roadblock Location Roadblock Number	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock	ns:	Name		Location/LSD	
Roadblock Number					
Roadblock Number			rom respon	Location/LSD	
Roadblock Number			rom respon		
Roadblock Number			rom respon		
Roadblock Number			rom respon		
Roadblock Number			rom respon		
Roadblock Number			rom respon		
Roadblock Number			rom respon		
Roadblock Number			rom respon		



Air Monitor Locations:							
Air Monitor	Name	Locati	on/LSD				
Number	Name	Locali	011/200				
Collect all cor	mpleted A5 Air Monitoring Logs	from responders for ful	I documentation.				
Notes:							
Reception Centres							
Name	Lo	ocation	Phone Number				
	ted B1 Reception Centre Registration	on Logs from responders f	or full documentation.				
Notes:							

ICS 211 Check-In / Out List



Incident Name:							
Date / Time Initiated:							
Prepared by:				ICS Position:			
Check-in Location		Staging Area] ICS Res. Unit			
Name of Company	Date of Check-in	Supervisor Name	Total # of Personnel	Incident Assignment	Assigned	Available	Date of Check-out
Notes:							

ICS 211 Check-In / Out List



ICS 214 Activity Log



Incident Name:								
Date / Time Initiated:								
Prepared by:			Position / Title:					
Personnel Assigned	d							
Name		ICS Po	sition		Location			
Activity Log								
Time			Actions					
<u> </u>								



ICS 215 Operational Planning Worksheet



Incid				Ор	Operational Period:													
						To:	Date			Time			To: I	Date		_ Time		-
Branch	Division, Group, or Other	Work Assignments & Special Instructions	Resources												Overhead Position(s)	Special Equipment & Supplies	Reporting Location	Requested Arrival Time
			Req.															
			Have		 			ļ		ļ	<u> </u>			ļ				
			Need		 			ļ		ļ	ļ	ļ						
			Req.		 			ļ	ļ	ļ	ļ	<u> </u>		ļ				
			Have		 			ļ		ļ	ļ	<u> </u>		ļ				
			Need		 ļ			ļ 	ļ	ļ	ļ			ļ				
			Req.		 			ļ	ļ	 	ļ	-		ļ				
			Have Need		 			<u> </u>		ļ	<u> </u>	<u> </u>		ļ				
					 				 	-	 	+		 				
			Req. Have		 					 		-		ļ				
			Need		 <u> </u>			ļ		 		-		ļ				
			Req.		 				 	 	 	 		 				
			Have						 	 		†		}				
			Need					ļ		 	ļ	 		ļ				
			Req.					 			 							
			Have		 					†	 			†				
L			Need															
			Req.															
			Have											,				
			Need															
		Total Resources Requir	ed:													Prepared b	y:	
		Total Resources - Have Hand:	on													Name: Position/Tit	le:	
		Total Resources Need t Order:	to													Date/Time: Signature:		

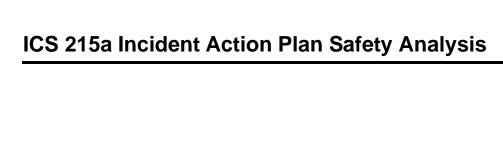




ICS 215a Incident Action Plan Safety Analysis



Incident Name:							Date / Time Initiated:			
Prepared by:							ICS Position:			
Division or Group	Potenti	ial Hazar	ds							Controls (e.g., PPE, buddy system, escape routes)
	Type of Hazard	Type of Hazard	Type of Hazard							





ICS 221 Demobilization Checkout



Incident Name / Number:					Date / Time:		Demob. Number:	
Unit/Personnel Released:								
Transportation Type / Number:								
Actual Release Date / Time:							Manifest Completed?	□ Yes □ No
Destination:		Notify:	□HQ	☐ Agency	☐ Region	☐ Area		Dispatch
		Name:						
		Date:						
Unit Leader responsible for collecting performance rating								
				Unit / Persor	nnel			
You and your resources have been	en released	subject to Sig	n-Off from the f	ollowing:				
Demobilization Unit Leader – Che	ck the appr	opriate box						
Logistics Section								
☐ Supply Unit								
☐ Communications Unit								
☐ Facilities Unit								
☐ Ground Support Unit Leader								
Planning Section								
☐ Demobilization Unit								
Finance/Admin Section								
☐ Time Unit								
Other								
Remarks:								
	Prepare	ed By:				Signature:		
Page of		and Position)						





ICS 230 Meeting Schedule



Incident Name):		Operational Period:					
			From: Date		Time	·		
Meeting Sche	dule (Commonly-held	meetings are inc	luded)					
Date / Time	Meeting Name	Purpo	se	Attendees	L	ocation		
	0, ,, ,, ,,							
Prepared by: (Situation Unit Leader)			Date / Tin	ne:			

ICS 230 Meeting Schedule



ICS 231 Meeting Summary



Incident Name:	Meeting Date / Time:
Meeting Name:	
Meeting Location:	
Meeting Facilitator:	
Attendees:	
Notes: (with summary of decisions and action items)	
Prepared by:	Date / Time:



ICS 233 Incident Open Action Tracker



Incid	ent Name:						
No.	Item	For	Status	Start Date	Briefed	Target Date	Actual Date
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

ICS 233 Incident Open Action Tracker



No.	ltem	For	Status	Start Date	Briefed	Target Date	Actual Date
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

A1 Initial Emergency Report Form



First On-Scene Actions

Evacuate		☐ Move upwind☐ Move crossw	area immediately. if release is downwind of ind if a release is upwind	•								
		☐ Move to high	er ground if possible.									
A1			Call for help ("Man Down").									
Alarm		□ Sound bell, horn or whistle, or call by radio.										
			mergencies, call 911.									
Assess			•	es. Consider all of the ha	azards.							
		☐ Fill out inform	ation below to complete	assessment.								
Protect		☐ Put on breath	ing apparatus before at	tempting rescue.								
Rescue		☐ Remove victir	n to a safe area.									
First Aid		☐ Follow the sta	andard first aid protocols	at worksite. (CPR, etc.)								
Medical Ai	id	_	port of casualties to me									
		☐ Provide inforr	nation to Emergency Mo	edicai Services (EiviS).								
Incident D	etails	To be completed by the	person involved or notified									
Report taker		To be completed by the	person inversed of notified	Date / Time								
	- ,											
Name of per	rson ca	lling		Caller Telephone								
Incident Loc	ation											
IIICIGETIL LOC	allon		(LSD / NTS)								
Event Summ	nary		\	,								
Agencies Notified	□ Ye											
	□ No			☐ Intermittent control pos☐ Incident is uncontrolled								
Notified Event	□ No	ident contained or c										
Notified Event Status	□ No	ident contained or c	ble	☐ Incident is uncontrolled	☐ Other ☐ Security (theft, threat,							
Notified Event Status	□ No □ Inc □ Im □ We	ident contained or c minent control possi ell □ Pipeline	ble ☐ Tank Farm/Storage	☐ Incident is uncontrolled☐ Battery/Plant/Facility	☐ Other							

A1 Initial Emergency Report Form



Impacts												
Public Health ar	nd Sa	afety		□ Could	l be jeopa	ard	ized		□ Is jeopard	lized		
Public Protection	n M	easures Tak	en	□ Notific	cation		Evacuation	on	☐ Shelter-in	-place	☐ Roadblo	ocks
Worker Injuries				☐ First A	Aid		Hospitaliz	zed	☐ Fatality	□ Otl	her	
Distance to near	est s	urface devel	pment		kr	n	Distanc centre	e to n	earest urban	ı		km
Details							0011110					
Release Impact		☐ On-Leas	e 🗆 C	Off-Lease	Produc	zt				Amount	t	
Gas Readings		H ₂ S	SO ₂	2	LEL		0	ther_				
Distance to neare	est w	atercourse			kn	า	Weathe	er Con	ditions			360°
Details											315° NW	N
											NW	w nne
										1	· · www	
										270° W	•	
										/	wsw	
Media		Yes □ No	Regu	ulator	□ Ye	s	□ No	Pub Affa	lic irs/Commu	nity	□ Yes	□ No
Involvement? Details			invo	lvement?				Rela	tions Issue	s?		
Details												
Notes / Instruc	ction	ns Provided	l:									

Distribute this completed report to all Key Response Personnel

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

A2 Odour Complaint Script



Date:			Prepared by:	
Time:	☐ a.m. [☐ p.m.	Duration of call:	
		1		
To help us	understand your immedi	ate needs, we r	need to know:	
/	Name:			
	Contact number:			
L	Description of the conce	ern:		
-				
How mai	ny people are you with r	right now?		
A	Adults	Children_		
Can you	provide the location of	the incident?		
L	ocation of the incident	(address, lega	l, landmark, etc.):	
_				
Where a	re you right now?			
L	☐ Home/Work	In a Vehicle	Outside	☐ Other
1	f the resident is at home	e/work/outsi	de tell them:	
go inside (i.e. cloth	and stay inside. Close al	ll doors and win de air (i.e. heati	dows and turn off any	yone that you may be with need to appliances that blow out indoor air to not go outside or attempt to start
1	f the resident is in a veh	icle and canno	ot shelter-in-place tell	them:
get inside heat. If y	e the vehicle and stay insi you see or hear anything of the hazard; otherwise,	de. Keep all do that might indic	ors and windows close ate where the incident	yone that may be with you need to d and shut off the air conditioning / is occurring, travel in the opposite urse which will likely take you out of
	e will call you back witl you. If you have any urg			off of the phone so that we can any at



A3 First Call Communication



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

General Incident Information									
AER contact:			Field	d centre:					
Licensee:		Caller: Phone:							
E-mail address for release report:									
Licence #:		Pipeline line #: Approval #:							
Incident location:/		W M							
Emergency level:									
Serious event? ☐ Yes ☐ No									
If yes, what kind of serious event?	□ Blowou	t		Fire	oss 🗆 F	Fracking			
Land type (jurisdiction):	old 🗌 Fi	rst Nations	Métis	CFB Crov	vn – Dispos	ition #:			
Agencies notified:					Date	9 :			
FIRST duty office (DO) contacted:	☐ Yes	☐ No If yes, da	ite & 1	time DO was contacted:					
DO contact name:									
Release Details									
Volumes									
Substance*	Released	(m ³ /10 ³ m ³)		Recovered (m³/10³ m	3)	Disposal/storage location			
					,				
* For emulsion, break down oil & water	if possible.								
Description of how the release vol		termined and verifi	ed (ir	ncluding calculations; e.c	ı., spill lengt	h × width × depth):			
			`	, ,	,,,	,			
Area affected (length x width):	m²								
How was the area affected determined? (Aerial survey, perimeter walk, range finder, samples taken,etc.):									
Who delineated the spill area (env	rironmental t	echnologist, operat	tor, et	tc.) and what process wa	as used?				

Reminded licensee to update the AER immediately if release volumes or area changes from what was originally reported.						
Asked for the immediate submission of photos of the entire spill site to the AER and communicated that photos of the cleanup will need to be submitted with the release report.						
Cause of release (suspected or actual):						
Impact						
Release off lease? Yes No (pipeline right-of-way is off lease)						
If yes, was the landowner notified? ☐ Yes ☐ No Name of landowner/agency:						
Release within disposition boundary?						
Outside disposition – was leaseholder notified?						
☐ If outside disposition, reminded licensee that they will need a TFA.						
Actual incident H ₂ S concentration (if applicable): % / ppm / mol/kmol						
Nearest town: Distance and direction to town:						
Environment affected: Air Land Water						
Distance of release to the nearest water body, watercourse, or waterway:						
How was this distance determined?						
Wildlife/waterfowl/livestock affected: ☐ None ☐ Habitat affected ☐ Animals injured/killed						
Notes/description:						
Confirm how the release has been or will be contained:						
Confirm how the release has been or will be cleaned up:						
Evacuees (#): People injured (#): Fatalities (#):						
Were members of the public affect? ☐ Yes ☐ No						
If yes, indicate if they were						
☐ notified ☐ instructed to shelter in place ☐ advised to evacuate						

Notes/description:						
Media interest? ☐ None ☐ Local ☐ Regional ☐ National						
Damage to public property? ☐ Minor/no damage ☐ Substantial	(home covered in oil)					
Pipeline Specific						
Hit? Yes No Line #:	Test failure? ☐ Yes ☐ No					
Normal operating pressure: kPa	Maximum operating pressure: kPa					
Is the pipeline shut in, depressured, and isolated?						
If yes, date & time:						
What is the total volume of liquid in the pipeline?						
Are there isolation valves?	en activated?					
Are there any other pipelines that tie into the failed line? Yes N	o If yes, have they been shut in/isolated?					
Reminded the company to contact the AER before excavating the	pipeline.					
Reminded, advised, or directed the company that the pipeline is n	ot to be returned to service without the AER's permission.					
Right-of-way (ROW)						
☐ Licensee has confirmed when the pipeline ROW and well were last	checked. Date:					
How was the ROW surveillance conducted (from the air, by quad, on for	ot, using infrared, etc.)?					
Requested that daily production volumes for the well/pipeline be submitted within 24 hours.						
Investigation information						
What operations are currently taking place (containment, sampling, line repair, site access, EM survey, etc.)?	locating, retaining contractors/consultants, pipeline excavation,					

A3 First Call Communication



	Regulatory Contact						Field Centre					
	Caller									Phor	ne	
S	Notification	Date		Time		Rele	Start Time Release			End	Time	☐ Ongoing
Contact Details	Licensee									Phor	ne	
ontact	Location					Neare	est Town					
Ö	Nearest Resident		Distan	ce/Direction						Phor	ne	
	Media Involvement?	•	☐ Lo	cal gional		Nation Interna		Media	Contac	t		
	Operator									Phor	ne	
;	Public Health and Safety	☐ Is		be jeopardi: ardized	zed		Worker In	njuries	_	irst A Iospita	id alization	☐ Fatality
Public Impact	Emergency Assessment				☐ Tw	-	ERP Activ	ated?		ite Sp ield/A		☐ Corporate
ublic	EPZ Size (2 km if unk	Num	nbers and Ty	s and Types of Public in EP				EOC/ICP Location				
F	Public Protection Measures Implemented				Stilloditori			Num	ber Ev	vacuated		
	Release Impact						H₂S Conc	entratior	ו			
ed	☐ Sensitive Environr	ment	Е	Environment Affected Air				☐ Sta	_		Water Body Name	
Release Type	Area Affected (m ³)	☐ Proper	ty Dan	nage	☐ Equ	uipmen	t Loss	□w	/ildlife /	Livest	ock Affect	ed
Relea	Gas Release	☐ Sweet		☐ Sour					Volume			
	Liquid Release	Oil		☐ Water		☐ Efflu	uent		Volume	e/Rate		
	☐ Release Point Dete	ermined										
nt	Third Party / Outside Required	e Assistan	ce	☐ Incide			or controlle possible	ed			t control is uncont	
Containment	Company						wcss c	Со-ор				
эе	Well Licence No.			Type of Inci	dent	□ĸ	iick	Blo	owout		☐ Loss o	f Circulation
Operations Type	Well Status	☐ Drilling ☐ Standir		☐ Servicing	9	□ P □ S	roducing	☐ Inj	ection itical		☐ Suspe	nded
atio	Pipeline License No.			Line No.		□н		Le			☐ Ruptur	·e
Ope	Production Facility Lic	cense No.		☐ Gas		□G	Sas Plant	-	mpress			proval No.
							•					

A3 First Call Communication



g	☐ License Air Monite	oring Occurring	□м	obile	☐ Handheld	Estimated Time of Arrival				
rin	Initial Readings / Location		☐ PPB		☐ On Site	Distance				
nito			☐ PPM ☐ Off Site							
Air Monitoring	Contractor Name Phone		ie		AMU Phone					
Αİ		ection	Spee	ed .	Meteorological Condi	tions	AER AMU ETA	U ETA		
	Wind				_					
	Communications con	npleted by Licens	see and	d /or Regula	atory Agency					
	☐ RCMP/Police	☐ Energy Regulator		☐ Emerger Agency	ncy Management	□TDG	☐ OH&S	☐ WCB		
SL	☐ Ambulance	☐ Local Author	•	•	of Transportation	☐ CANUTEC	☐ DFO	☐ wcss		
Communications	Fire	☐ Health Autho	rity C	☐ Environn Canada (EC	ment & Climate Change CCC)	P □ ERAC	Other	Other		
ınic	☐ CER	☐ First Nations		☐ Indian O	il & Gas	Other	Other	Other		
Соп										
	Incident Cause	☐ Natural		☐ Humar	n-Induced unintentional	al Human-Induced Intentional				
	☐ First Nations Band	d Band / Settle	ement l	Name / Co	ntact	Phone				
	☐ Metis Settlement									
	Complaints	☐ Local								
ion	•	☐ Large are	ea							
Other Information	Private Land Title holder					Phone	!			
Info	Additional Information	'n								
her										
ŏ										
	1									

A4 Incident Action Plan Checklist



IAP Checklist Items:	Comments:
☐ ICS 202 – Incident Objectives	
☐ ICS 207 – Incident Organizational Chart	
☐ ICS 209 – Incident Status Summary	
☐ ICS 215 – Operational Planning Worksheet	
☐ ICS 215A – IAP Safety Analysis	
□ ICS 230 – Meeting Schedule	
☐ ICS 233 – Incident Open Action Tracker	
□ Map:	
□ Map:	
□ Other:	
□ Other:	
□ Other:	
Notes:	

A4 Incident Action Plan Checklist



A5 Air Monitoring Log



Date:	Responder Name:	
Page of	Responder Position:	

	Location of Samples	H₂S (ppm)	LEL (%)	O ₂ (%)	SO₂ (ppm)	Other	Temp (°C)	Wind Conditions *		
Time								From	Speed (km/hr)	Comments

^{*}Estimate meteorological conditions where accurate readings are not available.



Time	Location of Samples	H₂S (ppm)	LEL (%)	O ₂ (%)	SO ₂ (ppm)	Other	Temp (°C)	Wind Conditions *		
								From	Speed (km/hr)	Comments

^{*}Estimate meteorological conditions where accurate readings are not available.

A6 Threatening Call / Bomb Threat



Date:				Time Call Rece	eived:			Time Call R	eported:			
	n Receiving Ca	II:			What/W	/hom Cal	l Dire					
	s Sex:] Female	☐ Unknowr	n Approx	imate Ag	e:					
Accen	t: Yes [☐ No T	ype:	Familiar voice:		□ No		0:				
Threa	(Exact Wordin	ıg):										
Tips:	Signal some Do not hang	rupt calle eep calle sk quest uch infor eone to g up or o	er. er talking. ions belovermation as call your disconne		ive him / h , even after	er this in the calle	r har	ngs up.				
If borr	ıb threat, ask t	the follo	wing que	stions:								
	will the bomb g and time)	go off?										
Where	is it located?											
Why d	id you place it?)										
What I	kind of bomb is	it?										
What	does it look like	?										
What i	s your name?											
Where	are you calling	g from?										
Was th	ne caller familia	r with co	mpany fa	cilities, or empl	oyees? (e.	g.: nickna	mes	, familiarity with	n staff, etc	.) Yes No		
Did ca	ller appear fam	niliar with	building /	facility by the o	description	of the bo	mb lo	ocation?	☐ Yes	□ No		
Identi	fying Characte	eristics o	of Caller									
	Voice		Speec	h	Language	е		Manner	E	Background		
	Loud		Fast		Excellent			Calm		Office Machines		
	Soft		Slow		Good			Angry		Factory Machines		
									Street Traffic Airplanes Trains Animals			
	Intoxicated		Slurred					Deliberate / Serious		Party Atmosphere		
								Emotional		Music		
	take a look aro	und their	immediate		le. Have employees							
Name	of the supervis	or first n	otified:									

A6 Threatening Call / Bomb Threat





STARS® Site Number ____ Location ___

Remote Site Landing Zone Reference Card

In the event of a SITE EMERGENCY PHONE the STARS Emergency Link Centre®

TOLL FREE

OR

DIRECT

1-888-888-4567

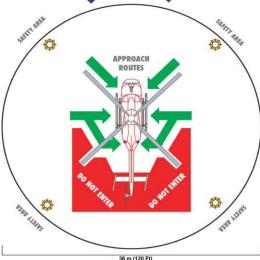
403-299-0932

BE PREPARED WITH THE FOLLOWING INFORMATION

- 1. STARS Site Number
- 2. Location of site (Legal Land Description or GPS)
- 3. Contact phone number at the site
- 4. Known hazards on-site
- 5. If applicable, is there a monitor on-site confirming the presence of H2S

SAFETY GUIDELINES

- the landing zone should be on level ground, (less than 5% slope) at least 36 x 36 metres (120 x 120 ft) and more, if possible, to include a safety zone
- check for loose debris in landing zone THIS IS OF VITAL IMPORTANCE
- ensure no one approaches the helicopter STARS crew will approach you when safe to do so
- everyone should be at least 30 metres from landing zone during landing and takeoff, due to possibility of injury from loose debris caused by rotor downwash
- movement around aircraft is to be in safe areas only



WIND DIRECTION

STARS LANDING ZONE

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

PRE-LANDING CHECKLIST

The STARS Emergency Link Centre will require the following information from the site:

TERRAIN

level or sloping type of surface dust, loose snow. rocks, bushes, stumps, etc.

LANDING ZONE MARKINGS

4 turbo flares 4 road flares / strobes 4 reflective flares 4 highway cones (days only) extra strobes/flares/cones on upwind side

HAZARDS

signs vehicles trees equipment wires

A7 STARS Landing Zone Card



B1 Reception Centre Registration Log



Due to travel and time constraints, the company may not always be able to have a company employee at the Reception Centre before evacuees begin arriving. In this case this cover page can be included with the forms on the next 2 pages and sent to a representative at the Reception Centre to provide them with guidance on how to register and track evacuees until a company representative arrives.

Evacue	e registration guidelines			
[Insert (Company Name] requires your assistance with receiving evacu	uees at the following Reception Centre:		
Your co	mpany contact is:			
Name:	Position:	Contact Number:	Fax Number:	
1) 2) 3) 4) 5)	Record all evacuees as they arrive on the forms provided. Provide all evacuees with the statement below and any other Provide the evacuees with food and lodging as required. Record if any evacuees choose to leave the Reception Centric Continually update the company of any residences arriving a	re (name, contact number, where are they going, etc	.).	

B1 Reception Centre Registration Log



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

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

B2 Resident Compensation Log



			1				1			
Resid	dent's Name:		Home A	Address:			Home I	elephone #	<u></u>	Location of Land (LSD):
							Busines	ss Telephon	ne #:	
Numb	Number of Residents Evacuated:			Evacuated to:				one # While	Evacuated:	
No.	Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	Details	s of Expense
	30.00									
	Total Repo	orted Expenses								
Approv	ved By:					D	ate:			

Section 6: Forms

B2 Resident Compensation Log



esident's Name:		Home Address:				Home T	elephone #	:	Location of Land (LSD):
							s Telephon	e #:	
umber of Reside	ents Evacuated:	Evacuated to:				Telepho	one # While	Evacuated:	
o. Date	Location	Trans.	Accom.	Meals	Phone	Sundry	Total	De	etails of Expense
Total Rep	oorted Expenses								

Section 6: Forms Page 2 of 2

B3 Resident Contact Log



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

		B 11 (B	01 1/ 15	Number	of people	Assistance or	
Time	Resident name	Resident ID	Shelter / Evacuate	Inside	Outside	transportation required?	Comments
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			ShelterEvacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	
			O Shelter O Evacuate			O Yes O No	

B3 Resident Contact Log



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

B4 Roadblock Log



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

Only emergency responders should be allowed to enter the Emergency Planning Zone (EPZ).

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



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



DATE:		
TIME:		

EVACUATION NOTICE

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

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

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

For assistance, call [Insert Company Name] at

Thank you for your cooperation.



B6 Early Notification / Voluntary Evacuation Phone Message



Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this	s is	(your name)	calling fro	om	(company name	<u>, </u>
Is this the	(nam	e of residence / bu	siness)	_at	(telephone numbe	<u>?</u>
(com	pany name)	is responding to	a (potential) e	mergency at _	(location)	in your area.
		this time. All efforts provide you with an e			ne problem and this	phone call is
To help u	s understand a	and your immediate	needs we nee	d to know:		
How mar	y people are	at your location no	ow?			
	Adults					
Do you w	ish to leave	our residence at th	nis time?			
If Yes	Please travel	in a <u>north/east/s</u>	outh / west di	rection to our r	reception centre loca	ited at:
If No		by for further contact us from contacting yo				
If you ha	ve urgent que	estions, please con	tact (con	npany name)	at <u>(telephone</u>	e number) .
Thank yo	ou for your co	operation.				

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

B6 Early Notification / Voluntary Evacuation Phone Message



B7 Shelter-In-Place Phone Message



Hello, th	s is of (company name)				
Is this th	e <u>(name)</u> residence at <u>(telephone number)</u> ?				
(cor	npany name) is responding to a (potential) emergency at(location) in your area.				
	safety, it is extremely important that you, and those with you, stay indoors until the potential o longer exists, or you are advised to evacuate.				
To help	us understand your immediate needs, we need to know:				
How ma	ny people are at your location now?				
	Adults				
	Children				
	anyone in your household that you cannot contact to inform them of the situation and advise them doors or stay out of the area?				
	☐ Yes ☐ No				
If Yes	Whom?				
	Location of the person(s)				
	We will send someone to find them as soon as possible.				
Do you	have children in school at this time?				
	☐ Yes ☐ No				
If Yes	What school?				
	Children's names				
	We will contact the school to ensure the safety of your children. Buses will be directed to leave the area immediately. If school is in session, your children will be redirected to the reception centre by their regular bus driver when the school day is over.				
Do you	have the "Shelter-in-Place" instructions previously provided to you by <u>(company name)</u> ?				
	☐ Yes ☐ No				
If Yes	Please follow the Shelter-in-Place instructions located inside the resident pamphlet.				
If No	Verbally walk the resident through the Shelter-in-Place instructions on the next page.				
Do you understand what I have told you?					
Is there an alternate number we can contact you at?					
If you ha	ave any urgent questions, please contact (company name) at (telephone number).				
Thank y	ou for your cooperation.				

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

B7 Shelter-In-Place Phone Message



Shelter-In-Place Instructions

For your safety:

- Immediately gather everyone indoors and stay there
- Close and lock all windows and outside doors
 - If convenient, tape the gaps around the exterior door frames
- · Leave open all inside doors
- Extinguish indoor wood burning fires
 - If possible, close flue dampers
- Turn off appliances or equipment that either:
 - Blows out or uses indoor air, such as:
 - Bathroom and kitchen exhaust fans
 - Built-in vacuum systems
 - Clothes dryers
 - Gas fireplaces and gas stoves
 - Sucks in outside air, such as:
 - Heating, ventilation and air conditioner (HVAC) systems for apartments, commercial or public facilities
 - Fans for heat recovery ventilators or energy recovery ventilators (HRV / ERV)
- Turn down furnace thermostats to the minimum setting and turn off air conditioners
- Avoid using the telephone, except for emergencies, so that you can be contacted by company emergency response personnel
- Call the company emergency numbers you have been provided:
 - If you are experiencing symptoms or smelling odours (so that we can address your concerns and adjust our response priorities)
 - If you have contacted fire, police or ambulance (so that we can coordinate our response)
- Stay tuned to local radio and television for possible information updates
- Do not leave your residence, even if you see people outside, until you are told to do so
- After the hazardous substance has passed through the area you will receive an "all-clear" message from the company emergency response personnel. You may also receive, if required, instructions to:
 - Ventilate your building by opening all windows and doors; turning on fans and turning up thermostats. During this time the air outside may be fresher and you may choose to leave your building while ventilating.
 - Once the building is completely ventilated return all equipment to normal settings & operation.
- Do not leave your sheltered location or attempt to start any vehicle until a company representative advises you that the area is safe.

If you are unable to follow these instructions, please notify company emergency response personnel.

B8 Evacuation Phone Message



Before calling, determine a safe evacuation route for the residents to travel, away from the emergency hazard area, upwind if possible, towards the reception centre.

Hello, this	s is	(your name)	of		(company name)			
Is this the	e	(name)	residence at	nce at <u>(telephone number)</u>				
(Comp	any name)	_ is responding to a	(potential) emergen	ncy at	(location) in your are	эа.		
	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 u	s understand	your immediate nee	ds, we need to know	v:				
How mai	ny people are	at your location n	ow?					
	Adults							
	Children							
	inyone in your ate away from		cannot contact to in	form them	of the situation and advise t	hem		
	☐ Yes	□ No						
If Yes	Whom?					_		
		the person(s)				_		
	We will send	someone to find the	em as soon as possi	ble.				
Do you h		in school at this ti	me?					
	☐ Yes	□ No						
If Yes						_		
		names				_		
	the area imm	nediately. If school is		ildren will b	. Buses will be directed to lead to be redirected to the reception			
Do you r	equire evacu	ation / transportati	on assistance?					
	☐ Yes	□ No						
If Yes			ist you. Please stay rrive to evacuate yo		nd close all doors and window	VS		
If No	Provide the	resident with:						
	□ Direction	ons to safely travel	to the reception ce	entre				
	☐ A list o etc.)	f items to bring wit	h them to the recep	ption cent	re (medications, cell phone	9,		
	/	a of how long they	mav be expected to	o stav at t	he reception centre			
			nouse pets to the re		,			
	ontact <u>(com</u> eep your phor		you are unable to me can contact you if		ne reception centre for any re	ason.		
Is there a	ın alternate nu	ımber we can contac	ct you at?					
arrangen					ons you may have and will m verything I have told you? Ar			
=	ve any urger ou for vour c	nt questions, please coperation.	e contact(com	<u>npany nan</u>	ne) at <u>(telephone numl</u>	<u>ber)</u> .		

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

B8 Evacuation Phone Message



C1 Preliminary Media Statement



Date:(YY/MM/DD)	Responder Name:
Responder Position:	Responder Phone No.:
This is the information I can give you so far:	
At <u>(time – 24hr local clock)</u> on (date), <u>a(n) (fire, e)</u> the Company's <u>(location name)</u> site, located <u>north / south)</u> of <u>(nearest town or city)</u>	
Presently, (number of personnel) workers are being to the injured cannot be released until their families have been of	
The (well site, plant, pipeline, office, drilling location) still flowing)	has been <u>(shut down, isolated, or is</u>
Company staff have been activated and are directing empublic, our workers and the environment.	nergency response procedures to protect the
The cause of the(fire, explosion, gas release, spill) is available. As information becomes available, news release	is not yet known and no estimate of damage es will be issued from the Information Office.
Any further inquiries should be directed to the Emergency State a later time.	upport Team, who will issue a press release at
Contact:	
Offic	ee:
Fa	IX:
Note: Only the Media Spokesperson designated by the specific information to the public or the media. Refer to page the generic media statement to be used by all other response	e 3 of Section 3: Communications & Media for

C1 Preliminary Media Statement



C2 Media Contact Log



Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:
If you feel	you are not the ap	propriate person to be answering the media agencies questions	, use the following series of statements.
		"[Insert Company Name] has an Information Officer to	o answer all media questions."
		"May I request the following information to expedite your r	equest?" (complete the form below).
	"Thank you. [Ins	sert Company Name] appreciates your cooperation and I wil	I pass on this information to the appropriate person."

	A 11 E	A 11 =			Telephone Numbers		
Time	Call To	Call From	Media Outlet	Reporter / Contact Name	Work	Fax	Remarks / Information Required

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

C2 Media Contact Log



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

C3 Government Agency Contact Log



Date:		Responder Name:	
Page	of	Responder Position:	Responders Phone No.:
If you feel	you are not the ap	propriate person to be answering the media agencies questions	, use the following series of statements.
		"[Insert Company Name] has a Government Liaison to	o answer all media questions."
		"May I request the following information to expedite your re	equest?" (complete the form below).
	"Thank you. [Ins	sert Company Name] appreciates your cooperation and I wil	I pass on this information to the appropriate person."

T:	Call Ta	Call Evans	A	Control Nove	Telephone	Numbers	Damanka / Camananta
Time	Call To	Call From	Agency	Contact Name	Telephone Work	Fax	Remarks / Comments
	1	I .	f	l .	l	l	1

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

C3 Government Agency Contact Log



Time	Call To	Call From	Agency	Contact Name	Telephone Work	Numbers	Remarks / Comments
Tillie	Can 10	Can i ioni	Agency	Contact Name	Work	Fax	itemarks / comments

C4 Media Centre Site



Lagation	
Location	
Address:	
City / Town:	
Phone #:	
Contact	
or: "	
Home #:	
Map or Directi	ons to Site

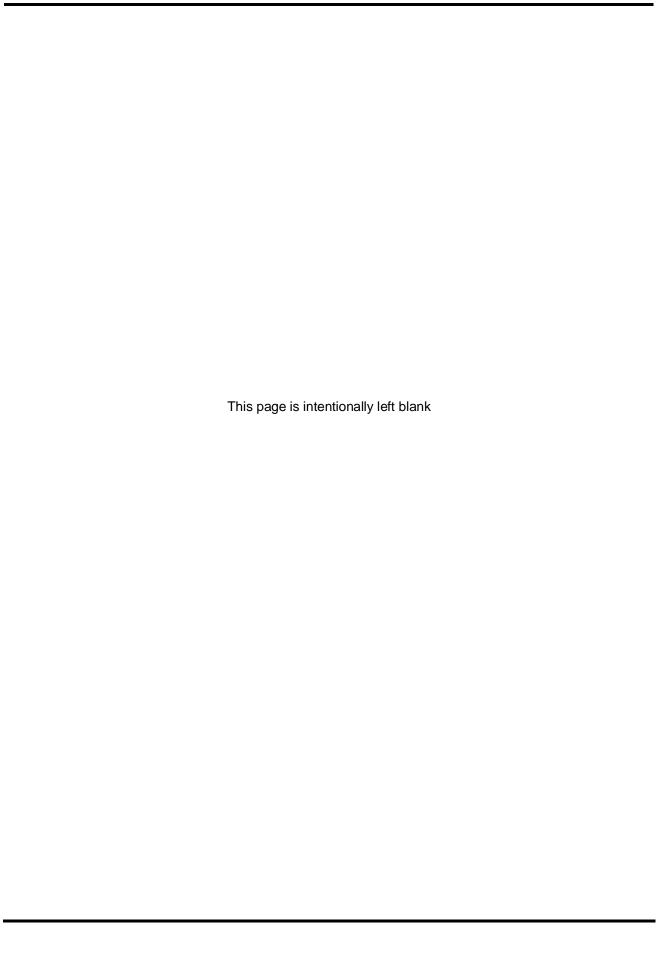




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Appendix A: ERP Scope, Training and Plan Maintenance Scope

This plan defines the emergency response process related to all hazards affecting petroleum operations. This Emergency Response Plan (ERP) outlines the process for an Alert/Minor, Level-1, Level-2, or Level-3 emergency for any jurisdiction or incident type.

Plan Objectives

The primary objective of this Emergency Response Plan (ERP) is to define the incident management system and organizational structure, process and tools to respond effectively to all incidents regardless of size or complexity. It has been designed to be intuitive and have natural process flow utilizing the Incident Command System (ICS) and to comply with applicable regulations, standards, and industry best practices.

Purpose

This ERP clearly defines emergency response team roles, functions and duties to protect people, environment, and assets during an incident. This plan clarifies the following:

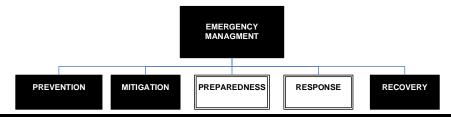
- Overall Incident Command System (ICS) response organization.
- Incident Command System (ICS) Roles and responsibilities.
- Guidance to determine the Alert or Emergency Level.
- Mechanisms to activate the ERP.
- Notification /communication requirements to stakeholders (public /government /responders).
- Documentation tools for accurate records management of events and decisions during an event.
- Guidance for post-emergency actions.

The intent of this Emergency Response Plan (ERP) is to define effective measures in place to:

- Notify and protect the workers and the public.
- Minimize environmental impact.
- Minimize asset and property loss.
- Regain steady state of operations.
- Minimize emergency response time.
- Maximize response effectiveness.
- Coordinate with government agencies and stakeholders.
- Minimize business and reputational impact.

This manual outlines the framework, tools and reference materials to facilitate a prompt, safe, efficient and properly managed response to all incidents regardless of size or complexity. Therefore this plan provides employees and contractors with practical tools that will guide them through the Preparedness and Response principles of Emergency Management.

Emergency Management Process Flow





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Appendix A: ERP Scope, Training and Plan Maintenance, continued HSE Policy



HEALTH, SAFETY, SECURITY, ENVIRONMENT AND COMMUNITY POLICY

Whitecap Resources Inc. ("Whitecap") is committed to the health, safety and security of our employees, contractors and the public. We are also firmly committed to conduct our operations in a way that will minimize any adverse impacts to our environment. Whitecap fulfills these commitments through compliance with all relevant regulations and the development and implementation of an effective health, safety, security and environmental program. This program applies to all Whitecap's operations and:

- Provides and maintains a safe work environment with proper policies, procedures, standards, training, equipment and emergency response procedures in accordance to all government regulations and industry practices;
- Provides appropriate health, safety, security and environmental training;
- Applies operational processes and asset integrity systems designed to minimize the frequency and volume of
 environmental spills and reduce emissions, and implements operational measures to reduce waste and
 optimize energy usage;
- Ensures timely and effective response and follow up to incidents, identified hazards and near misses resulting
 from our operations and implements incident investigations to identify root causes and share learnings.
 Personnel are encouraged to report hazards, incidents and near misses and granted immunity from
 disciplinary action;
- Establishes health, safety, security, and environmental performance targets intended to drive behaviour and performance improvement; and
- · Includes regular reviews of the effectiveness of our programs to ensure continuous improvement.

All management, employees, contractors, subcontractors and suppliers engaged on behalf of Whitecap are responsible for following Whitecap's health, safety, security and environment program as required and participating in pertinent safety and environmental training.

Community Policy

- Whitecap is committed to consulting community stakeholders in advance of project development and making meaningful efforts to resolve concerns and mitigate impacts.
- Whitecap will communicate regularly with communities and landowners in proximity to our operations and listen to and consider all concerns raised by these legitimate stakeholders.
- Whitecap believes in enhancing the communities where employees live and work, by supporting causes that
 focus on improving health and education for children.

By fulfilling the commitments in this policy, Whitecap's employees, contractors, subcontractors and suppliers will share in the benefits of a safe workplace and contribute to an organization that is environmentally and socially sustainable.

Approved by the Board of Directors on October 29, 2019.



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Appendix A: ERP Scope, Training and Plan Maintenance, continued

Training Requirements

Frequency / Action	As Required	Semi- Annually	Annually*	Every Three (3) Years**	Every Five (5) Years***	
Training						
Employee Orientation New / Transfer	✓					
On-the-job Training	✓					
Response Discussion During Pre-Job Meetings	✓					
Drills	✓					
Tabletop Exercise			one of these exercises			
Communication / Partial Mobilization Exercises						
Major (Full Scale) Exercise				✓	√	
Post Incident (Actual) Review	✓					
ERP Review / Self Audit		✓				

^{*} Must be held annually.

^{**} CSA Z246.2-18, CER, OGC & AER requires Major Exercises be held every three (3) years.

^{***} Environment & Climate Change Canada (ECCC) requires Major Exercises be held every five (5) years for facilities with E2 required substances.



Appendix A: ERP Scope, Training and Plan Maintenance, continued

Plan Maintenance

Responsibility

The licensee is responsible to ensure that an ERP is created for all provincial and federally regulated oil and gas activities (i.e. sour operations, HVP pipelines, cavern storage facilities, etc.), they are maintained regularly, and any updates are disseminated to the regulatory agency and other plan holders as required. In order for this to occur the following responsibilities are designated:

- Each individual plan holder is responsible for ensuring their assigned manuals are current, all updates are applied / downloaded / inserted, and any errors or omissions are reported to a supervisor.
- Each Area Manager is responsible for ensuring that a semi-annual review of their ERP is conducted.
 The ERP Revision Request Form is located in this section and can be used to track this information and provide documentation in the case of an ERP assessment.
- Any requests for revisions to this plan should be forwarded to the applicable Area Manager for review. These revisions will be discussed with the company's Emergency Response Program Coordinator and H₂Safety Services Inc. Any significant changes including those resulting from exercises and incidents will require immediate updates sent out to all plan holders; less significant changes will be implemented during the ERP's next annual update.
- The company's Emergency Response Program Coordinator is responsible for ensuring that the plans and distribution lists are updated, training is performed, and new projects are included in the plan. Information in this plan will be verified and updated at least once a year.
- Old manuals must be sent to H₂Safety Services Inc. or destroyed. If a plan holder no longer requires their manual (job changes, position changes, etc.), it must be returned to the company's Emergency Response Program Coordinator to be tracked, reassigned, or destroyed.

The licensee must distribute changes in information that are instrumental to implementing the ERP to all required plan holders.

Errors identified in the ERP by the regulatory agency, licensee, and other party must be corrected immediately upon identification.

Modifications to New or Existing Operations

The licensee must submit a supplement for review and approval to the regulatory agency for all newly added wells, pipelines, well / pipeline tie-ins, facilities and operating areas prior to commencement of operations if there are new surface developments within the Emergency Planning Zone. For example, the EPZ for a new pipeline tie-in does not fall entirely within the existing Emergency Planning Zone and impacts a new residence / public facility / trapper cabin / etc. that was not previously included in the Emergency Response Plan. The licensee must conduct a public involvement program for all new members of the public. Before any new or major modifications to an existing facility / pipeline are brought on-stream, any additions or changes will be added to the Emergency Response Plan. If required, a site specific Emergency Response Plan will be developed. Meetings to review response plan requirements must be held before major facility modifications are commissioned.



Appendix A: ERP Scope, Training and Plan Maintenance, continued

ERP Revision Request Form

Plan Holder Name / Title / Company:
ERP Name:
Manual Number:
If any of the following items have changed, please check the box beside it and provide a description of the change in the space provided: Company information Mapping information Resident contact information Response staff information or capacity changes Facility additions, such as well or pipeline tie-ins Other
Description of the change:
Please attach additional pages and/or support documentation as required.
Please return the completed checklist to:
H₂Safety Services Inc. 210, 7260 – 12 Street SE
Calgary, AB T2H 2S5
Email: erp@h2safety.ca Fax: 403-313-9180

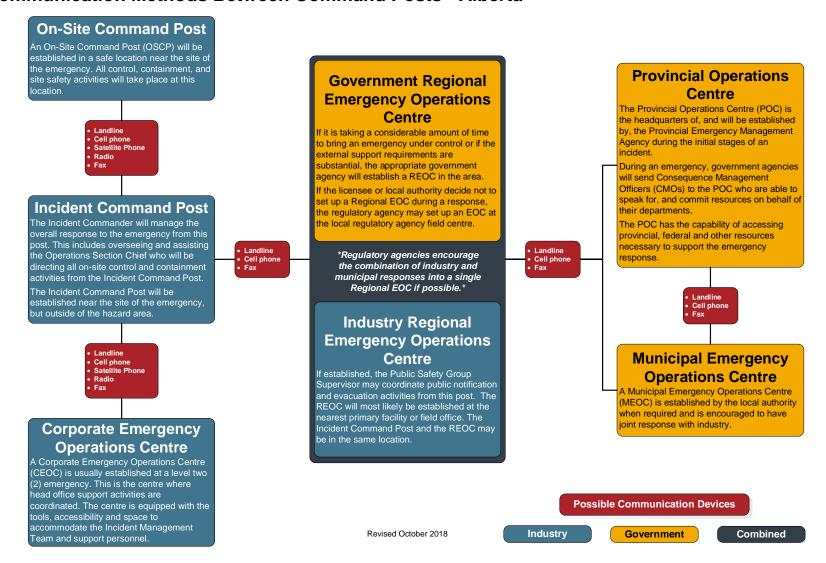


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Appendix B: Incident Command Post (ICP)

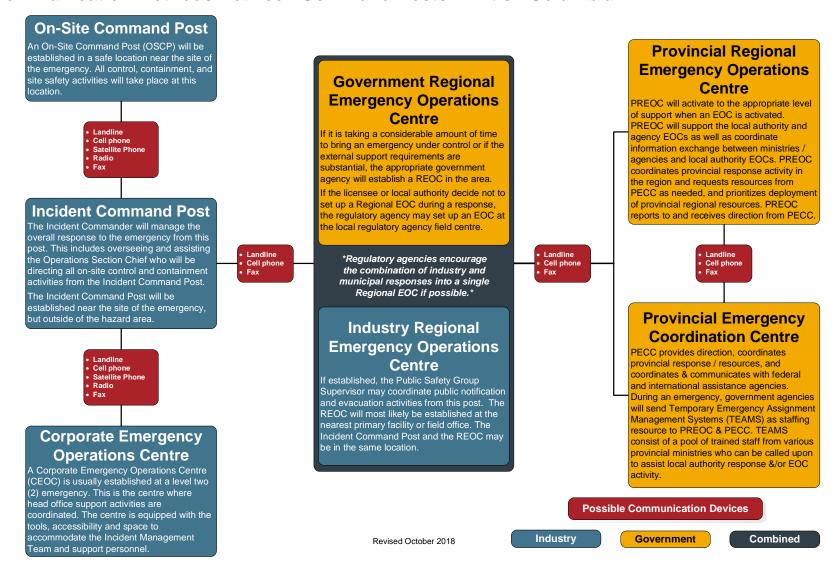
Communication Methods Between Command Posts - Alberta



Appendices Page 9



Appendix B: Incident Command Post (ICP), continued Communication Methods Between Command Posts - British Columbia



Appendices Page 10



Appendix B: Incident Command Post (ICP), continued ICP Activation and Setup

The Incident Command Post is activated by the Incident Commander.

The following tasks must be addressed once the ICP has been activated:

Position	Task							
Incident Commander	 Establish briefings with the Field Response Team (FRT). Ensure staffing is adequate for the task(s). Consider the time difference, if applicable, and determine how time will be communicated throughout the incident. 							
Safety Officer	 □ Ensure the room / floor / building is secure. □ Ensure a safe work area, i.e. remove clutter or cords causing slips, trips, falls, etc. 							
Information Officer	 Notify the receptionist that there is an incident. Provide details of what message should be given out to the public and media, as well as where to direct incoming calls. Ensure inbound and outbound calls received or made are centrally logged. Ensure responders have their office phones forwarded to their cell phones. 							
Logistics / IT Support	 □ Turn on all computers; ensure the relevant systems are operational and that they all have internet/email access. □ Bring up any ERP related electronic tools (ie; H₂CommandCentre) and ensure they are working and that they can all be displayed on various projectors / screens as required. □ 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. 							
□ Ensure the room/floor/building is secure. Arrange for additional secured. □ If the location of the Incident Command Post is closed to general solist of staff needing access clearance to the meeting area. □ The following supplies should be available: notepaper, pens, printer and paper, documentation forms, dry erase markers, staplers and power bars and extension cords, etc. □ Arrange for refreshments (coffee, food, water, etc.) for those working well as sleeping space if required. □ Ensure there are sufficient tables and chairs for the team.								



Appendix B: Incident Command Post (ICP), continued ICP Activation and Setup, continued

Position	Task
	 Determine which emergency response plans and other ERP tools are needed and pull them out to be readily accessible.
	☐ Determine what laminated maps and charts are going to be utilized and put them up on the wall with dry erase markers. Set up the white boards and roles chart.
	☐ Ensure clocks are displaying the correct time, including any clocks with a different time zone.
	☐ As each person arrives: provide them with a vest, provide them with a print out of the Initial Emergency Report Form, ensure they synchronize their watches and ensure they check in with their assigned supervisor.
Planning /	☐ As team members arrive, write their name in the appropriate position on the Field
Documentation	Response Team Assignment Chart.
	☐ Pass out documentation forms and provide an overview of the documentation process.
	☐ Ensure the latest contact list for Field Response Team members are available.
	□ Begin documenting all actions, decisions and major events. Start-up H ₂ CommandCentre if available.
	 Continually update the laminated maps and charts as information becomes available (Field Response Team Assignment Chart, Emergency Status Board, etc.).
	☐ Post a schedule of events, including shift changes and status updates.

Incident Command Post Briefings

Once the ICP has been activated and team members arrive, the Incident Commander or Deputy needs to conduct an initial briefing to provide the team with the status of the situation, establish operational periods for the ICP, establish a meeting schedule for both a planning meeting and periodic briefings and outline broad goals to guide the ICP throughout the emergency.

In additional to periodic briefings for status updates, the Incident Commander also has to conduct a meeting once the approved Incident Action Plan is in place. This meeting will outline the planned objectives and tasks and will ensure that resources required for implementation of the action plan are in available or en route.

At the end of each operational period, all departing members of the Field Response Team will be debriefed and must brief their replacements.

Documentation

It is critical to ensure that all ICP documentation is compiled, properly stored and readily available after the event. Proper documentation will aid in investigations, inquiries, debriefs and support for financial claims and budgets. Everything that happens during the Response/Recovery Operations should be recorded at the ICP. The forms at the back of this manual are designed to aid in this process



Appendix C: Toxic Gases

Hydrogen Sulphide (H₂S)

Background

Hydrogen sulphide (H₂S) 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. H₂S 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.

H₂S 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 H₂S gas is ignited, it will change into sulphur dioxide (SO₂), be carried into the atmosphere and dispersed over a larger area at lower concentrations.

Signs and Symptoms

Exposure to hydrogen sulphide may cause irritation to the eyes, nose or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulphide can cause a loss of consciousness and possibly death. In most cases, the person appears to regain consciousness without any other effects. However, in some individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulphide (0.00011-0.00033 ppm).

Acute Exposure Effects

The effects on humans will vary depending on the duration and H_2S concentration of exposure. The health effects of acute exposure to H_2S are shown in the following table. Acute exposure reflects a range from a few seconds up to several weeks.

Hydrogen Sulphide Toxicity Table (BC Regulations)

Concentration (ppm)	Effects						
Less than 1	Most people smell "rotten eggs".						
3 – 5	Odour is strong.						
20 – 150	Nose and throat feel dry and irritated. Eyes sting, itch or water and "gas eyes symptoms may occur. Prolonged exposure may cause coughing, hoarseness shortness of breath and runny nose.						
150 – 200	Sense of smell is blocked (olfactory fatigue).						
200 – 250	Major irritation of the nose, throat and lungs, along with headache, nause vomiting and dizziness. Prolonged exposure can cause fluid buildup in the lung (pulmonary edema), which can be fatal.						
300 – 500	Symptoms are the same as above, but more severe. Death can occur within 1-4 hours of exposure.						
Above 500	Immediate loss of consciousness. Death is rapid, sometimes immediate.						

Adapted from Hydrogen Sulfide in Industry, WorkSafe BC February 2010



Acute Health Effects of Hydrogen Sulphide (AB Regulations)

Concentration in Air (ppm)	Description of Potential Health Effects
1	A noticeable odour that may be offensive to some individuals. People may temporarily experience mild symptoms of discomfort, including nausea, headache, and irritability due to the odour. Asthma symptoms may worsen.
10 – 20	An obvious offensive odour. Temporary eye irritation may occur after a single exposure and last several hours. Symptoms include mild itchiness, dryness, increased blink reflex and slight watering. Some people may experience headaches, nausea and vomiting. Symptoms of asthma, bronchitis or other forms of chronic respiratory disease may worsen.
50	A strong, intense offensive odour that may irritate eyes and breathing passages. Eyes may be itchy, stinging, and red with increased blinking, tearing and tendency to rub eyes. Breathing passages could feel tingly or sting, with increased tendency to clear throat and cough. Symptoms of pre-existing respiratory disease may worsen. No permanent injury to eyes or breathing passages is expected unless exposure is prolonged. Odour–sensitive individuals may experience headaches, nausea, vomiting and diarrhea.
100	Initially there is a strong objectionable odour that lessens with prolonged exposure due to olfactory "fatigue." Eyes and breathing passages are often irritated within one hour of exposure. Eyes may be sore, stinging, burning, tearing, redness, swelling of eyelids, and possible blurred vision. Respiratory irritation may include sore throat, cough, soreness or stinging of breathing passages, and wheezing. The symptoms of asthma, bronchitis or other forms of chronic respiratory disease will worsen. Odour may cause headache, nausea, vomiting and diarrhea.
250	There may or may not be an odour present due to olfactory paralysis. Eyes and breathing passages will become irritated within minutes of exposure, and the irritation will worsen with longer exposure. The outer surface of the eyes and inner eyelids will be inflamed, red and sore. Eyes will begin watering and tearing immediately and vision may be blurred. Eyes may be permanently harmed if exposure is prolonged. Respiratory irritation will include sore throat, cough, difficulty breathing, soreness of chest, and wheezing. Asthma symptoms will worsen. People may experience "systemic" effects, including headache, nausea and vertigo depending on duration of exposure.
500	No odour is present due to olfactory paralysis. Severe irritation and possible permanent injury to the eyes and breathing passages within 30 minutes of exposure. Lung and breathing passage damage may cause 'chemical pneumonia' following exposure if the exposure was prolonged. Systemic effects involving the central nervous system may occur within one hour of exposure and include headache, anxiety, dizziness, loss of coordination and slurred speech. People may lose consciousness or collapse suddenly, and die if exposure persists.



Acute Health Effects of Hydrogen Sulphide (AB Regulations), continued

Concentration in Air (ppm)	Description of Potential Health Effects
750	No odour is present due to olfactory paralysis. Central nervous system effects will be most obvious, and could include anxiety, confusion, headache, slurred speech, dizziness, stumbling, loss of coordination, and other signs of motor dysfunction. People may lose consciousness, collapse suddenly and possibly die, if exposure continues for more than a few minutes. Lung and breathing passage damage will likely cause 'chemical pneumonia' among survivors.
1000	Immediate "knock-down" and loss of consciousness. Death within moments to minutes. Immediate medical attention needed if victim is to survive.

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

Source: Alberta Health Services, Environmental Public Health http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf



Chronic Exposure Effects of Hydrogen Sulphide

Chronic effects from H₂S exposure is a developing area of research. Chronic exposure may inflame and irritate the upper respiratory tract.

Medical treatment for hydrogen sulphide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Hydrogen Sulphide (H₂S) Guidelines - Revised November 2000)

Guidelines for in Hospital Assessment/Treatment of Possible Hydrogen Sulphide Exposure

This is provided to assist medical staff in assessing a worker who has a possible or actual H₂S exposure.

Section I provides information on H₂S

Section II summarizes possible health effects, which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations

I. Hydrogen sulphide

H₂S is a colourless gas. It is heavier than air and tends to flow in ditches, trenches and low-lying areas.

H₂S is clearly recognizable in small concentrations at around one part per million (ppm) by its characteristic rotten egg smell.

At concentrations of about 150 ppm in the air, or after prolonged exposure to lower concentrations, the olfactory sense is paralyzed and the presence of H_2S can no longer be detected by odour.

II. Health effects of hydrogen sulphide

H₂S can be rapidly fatal. It acts by paralyzing the respiratory control centre in the brain and by inhibiting cellular respiration.

Hydrogen sulphide is a mucous-membrane and respiratory-tract irritant. Pulmonary edema, which may be immediate or delayed, can occur after exposure to high concentrations.

Acute exposure may include the following symptoms and signs:

Central Nervous System

CNS injury is immediate and significant after exposure to hydrogen sulphide. At high concentrations, only a few breaths can lead to loss of consciousness, coma, respiratory paralysis, seizures, and death. CNS stimulation may precede CNS depression. Stimulation manifests as excitation, rapid breathing, and headache; depression manifests as impaired gait, dizziness, and coma, possibly progressing to respiratory paralysis and death. In addition, decreased ability to smell occurs at 100 to 150 ppm.

Respiratory

Inhaled Hydrogen sulphide initially affects the nose and throat. Low concentrations (50 ppm) can rapidly produce irritation of the nose, throat, and lower respiratory tract. Pulmonary manifestations include cough, shortness of breath, and bronchial or lung hemorrhage. Higher concentrations can provoke bronchitis and cause accumulation of fluid in the lungs, which may be immediate or delayed for 24 hours or more. Lack of oxygen may result in cyanosis.



Medical Treatment for Hydrogen Sulphide Exposure, continued

Cardiovascular

High dose exposure may cause insufficient cardiac output, irregular heartbeat and conduction abnormalities.

Renal

Although very unlikely, transit renal effect may include blood, casts, and protein in the urine. Renal failure as a direct result of hydrogen sulphide toxicity has not been described, although it may occur secondary to cardiovascular compromise.

Gastrointestinal

Symptoms may include nausea and vomiting.

Dermal

Prolonged or massive exposure may cause burning, itching, redness and painful inflammation of the skin.

Ocular

Eye irritation may result in inflammation (i.e. kerato-conjunctivitis) and clouding of the eye surface. Symptoms include blurred vision, sensitivity to light, and spasmodic blinking or involuntary closing of the eyelid.

Potential Sequelae

Inflammation of the bronchi can be a late development. Survivors of severe exposure may suffer psychic disturbances and permanent damage to the brain and heart.

III. Approach to the worker with suspected hydrogen sulphide exposure

Although this document refers only to H₂S, it is important for the clinician to keep in mind the possibility of coexposure to numerous other agents. Sulphur dioxide may have been present if there has been combustion of hydrogen sulphide. Sulphur dioxide does not cause loss of consciousness but is a respiratory tract irritant. Therefore, the management of sulphur dioxide intoxication is similar to that for hydrogen sulphide. Other agents capable of causing asphyxia include carbon monoxide (toxic asphyxia) as well as a wide array of gases that act as simple asphyxiants (carbon dioxide, methane, nitrogen, etc.) by displacing oxygen. Finally, other conditions (MI, syncope, seizure, etc.) that may cause sudden collapse must be investigated and managed as appropriate.

History

The history is the key to the diagnosis of hydrogen sulphide (or other industrial) intoxication. There are two facets to the history in such cases:

Exposure history: This attempts to define, in qualitative terms, the likelihood of, and amount of exposure to hydrogen sulphide. This should include questions about work processes, the presence of a rotten egg odour and inquiring as to effects in co-workers. If possible, this should be supplemented by Industrial Hygiene information, which might include the triggering of alarms for hydrogen sulphide and historical data on air measurements. For suspected exposures, the workplace can often provide useful estimates regarding the level of exposure, although such data may require several days to reconstruct.

Clinical history: The physician should attempt to establish the presence of as many of the symptoms as possible associated with H_2S 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.



Medical Treatment for Hydrogen Sulphide Exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical bum and maintenance of circulatory status. Although nitrite therapy has been advocated as an antidote, there is little evidence to support its use and as it is potentially dangerous it is not recommended.

On arrival - check blood gases and assess for lactic acidosis. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema. ECG may assist as arrhythmias and bradycardia are not uncommon. Temporary T wave depression may occur and ECG may mimic infarction.

For the unconscious patient, give oxygen using mechanical ventilation with positive end expiratory pressure.

Assess for associated musculo-skeletal and internal traumatic injury.

Maintain circulating fluid volume, but be alert for delayed onset of pulmonary edema.

At times, strong physical restraint may be required. Keep the patient as inactive as possible.

A pulmonary function test should be done near time of discharge and, if abnormal should be repeated at appropriate intervals thereafter.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms

Possible exposure, with symptoms (that are compatible with H₂S)

Known exposure including "knockdown", with symptoms that require medical treatment and/or hospitalization.

In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation, and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (1) and (2), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24-48 hours prior to RTW.



Appendix C: Toxic Gases, continued Sulphur Dioxide (SO₂)

Background

Sulphur Dioxide (SO₂) belongs to the family of sulphur oxide gases (SO₂). 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, SO₂ 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 SO₂ (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, SO₂ emissions cause aesthetic damage and accelerate the decay of building materials and paints.

General guidelines dictate evacuation where SO₂ concentrations reach 5 ppm averaged over a 15 minute period. However, as a precaution, evacuation will be established under the criteria when the SO₂ level reaches 1 ppm for two to three hours, or averages 0.3 ppm over twenty-four hours.

Signs and Symptoms

Sulphur dioxide causes a wide variety of health and environmental impacts because of the way it reacts with other substances in the air. Acute and chronic exposure to SO_2 affects the respiratory system. Acute exposure effects, with increasing exposure, include irritation of the eye, nose and throat, choking, coughing, bronchitis and pneumonia. Exposure to low concentrations can aggravate chronic pulmonary diseases, such as asthma and emphysema. Co-exposure to cold or dry air may further exacerbate the respiratory effects of SO_2 on sensitive asthmatics. Particularly sensitive groups include children, the elderly and those with existing heart or lung disease.

Sulphur Dioxide Toxicity Table (BC Regulations)

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

Adapted from the Canada Safety Council Data Sheet "Sulphur Dioxide" No. B-4 Oil and Gas Commission November 2003.



Acute Health Effects of Sulphur Dioxide (AB Regulations)

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

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

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

Source: Alberta Health Services, Environmental Public Health http://www.albertahealthservices.ca/assets/wf/eph/wf-eh-alberta-health-acute-exposure-health-effects-of-hydrogen-sulphide-and-sulphur-dioxide.pdf

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



Medical treatment for sulphur dioxide exposure

(Please note: This information was provided by a medical source other than the Provincial Regional Health Authorities. See Sulphur Dioxide (SO₂) 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 SO₂ exposure.

Section I provides information on SO₂

Section II summarizes possible health effects which should be evaluated at the time of presentation

Section III depicts a summary of possible clinical management

Section IV provides a guideline regarding return to work (RTW) considerations.

I. Sulphur Dioxide

 SO_2 is a colourless gas with a pungent odour detectable by the human nose at concentrations of about 0.5 to 0.8 ppm.

SO₂ is highly soluble in water resulting in the formation of sulphurous acid.

Approximately 90% of inhaled SO₂ is absorbed in the upper respiratory tract.

Asthmatics and individuals with underlying bronchial hyperactivity may be more susceptible to low level exposure to SO₂.

II. Health Effects of Sulphur Dioxide

SO₂ causes almost immediate coughing with significant exposure.

SO₂ causes irritation of the conjunctive and nasal mucosa at levels between 5 and 10 ppm.

Exposures of SO₂ as low as 8 ppm has been associated with symptoms of cough, phlegm, wheezing and exertional dyspnea.

Acute high-dose exposures leading to severe injury are unusual, parenchyma lung damage occurs above 50 ppm.



Medical treatment for sulphur dioxide exposure, continued

Acute exposure may include the following symptoms and signs:

Respiratory

Inhaled SO₂ is a moderate to strong respiratory irritant. Reddening of the throat and nose may occur. Repeated exposure to 10 ppm has caused nosebleeds. Sensitivity varies among people, short exposure to low concentrations may produce a reversible decrease in lung function, and symptoms may include chest tightness.

Exposure to high concentrations of SO_2 has caused severe airways obstruction, hypoxia and pulmonary edema. The effects of pulmonary edema include coughing and shortness of breath which can be delayed until hours or days after the exposure; these symptoms are aggravated by physical exertion. Survivors of high concentration exposures may suffer chemical bronchopneumonia and bronchiolitis obliterans, which can be fatal after a few days. Delayed chemical pneumonitis and bronchial asthma can also result.

Derma

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), SO₂ 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 SO₂, it is important for the clinician to keep in mind the possibility of coexposure to numerous other agents.

History

The history is the key to the diagnosis of SO₂ (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 SO₂ exposure.

Investigations

There are no specific tests in routine clinical use to establish sulphur dioxide intoxication. Rather, testing is aimed at characterizing the sequels of intoxication as well as to rule out other causes for the presentation.



Medical treatment for sulphur dioxide exposure, continued

Treatment

Treatment is entirely supportive in nature and includes supplemental oxygen, managing eye and skin exposure as a chemical burn and maintenance of respiratory status.

On arrival - check blood gases. Take chest film and repeat as necessary keeping in mind the delayed possibility of pulmonary edema.

Oxygen should be delivered by nasal cannula or mask, or if pulmonary injury leads to severe hypoxia by mechanical ventilation.

If bronchospasm occurs, bronchodilators may be of value.

A pulmonary function test should be done near time of discharge and, if abnormal, should be repeated at appropriate intervals thereafter.

Conjunctival irritation should be treated with copious irrigation with saline and the eyes examined with fluorescein for corneal defects.

Assess for associated musculo-skeletal and internal traumatic injury.

Prophylactic antibiotics should be avoided.

If symptoms and/or exposure history are strongly clinically suggestive, because of the possibility of delayed pulmonary edema, adequate monitoring and follow-up for at least 24 hours is essential.

IV. Guidelines for Return to Work (RTW)

Three possible scenarios may be considered by the attending medical personnel:

Possible exposure, without symptoms;

Possible exposure, with symptoms (that are compatible with SO₂) or

Known exposure, including "knockdown", with symptoms that require medical treatment and/or hospitalization.

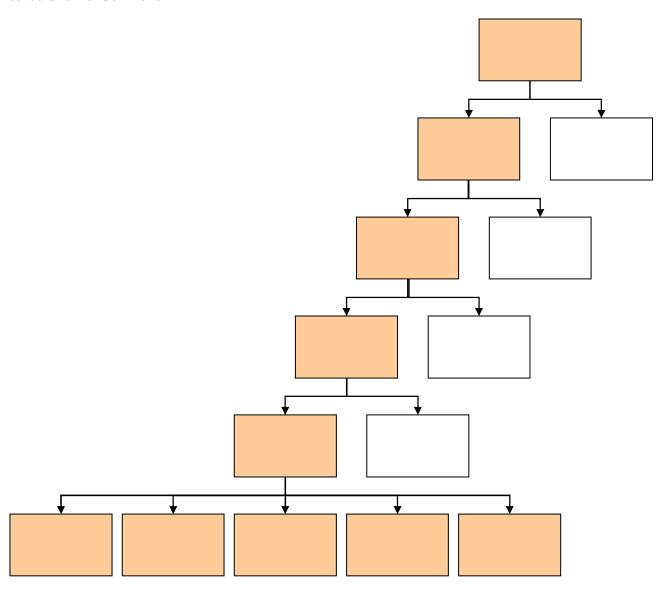
In each scenario, a clinical decision about appropriate medical investigations, treatment, follow-up evaluation and timing of return-to-work (RTW) will have to be made. It is emphasized that with scenarios (2) and (3), it may be preferable to either monitor the employee in the hospital or as an outpatient (with follow-up examination) for 24 - 48 hours prior to RTW.



Appendix D: Key Elements of the Incident Command System (ICS)

Management by Objectives – Objectives are ranked by priority, should be as specific as possible, must be attainable and if possible given a working time-frame. Objectives are accomplished by first outlining strategies (general plans of action), then determining appropriate tactics (how the strategy will be executed) for the chosen strategy

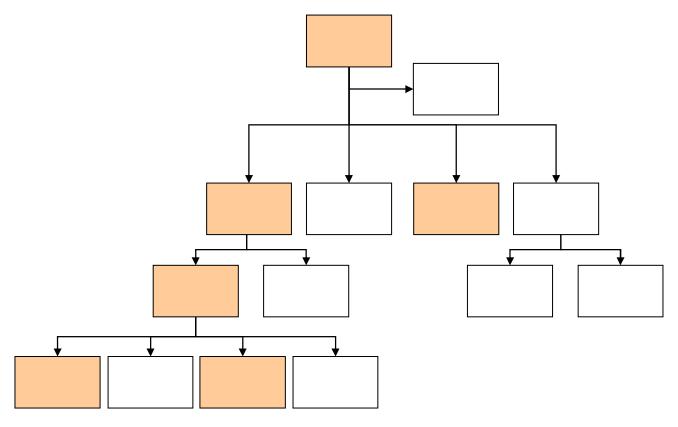
Unity and Chain of Command – Each individual takes direction from and reports to only one designated supervisor; this is called Unity of Command. Higher level personnel have authority over lower level personnel; the lower level personnel are subordinate to and take direction from higher level personnel. Orders and instructions travel down the chain of command from one supervisor to each subordinate. This is called Chain of Command.





Appendix D: Key Elements of the Incident Command System (ICS), continued

Organizational Flexibility – Only positions that are required at the time should be assigned. In most cases, very few positions will need to be assigned.



Span of Control – ICS requires that any single person's span of control (number of people reporting to them) should be between three and seven, with five being ideal.

Common Terminology – When different organizations are required to work together, the use of common terminology is essential.

Incident Action Plan (IAP) – Every incident must have a written or oral Incident Action Plan. The following information is part of an Incident Action Plan and must be communicated to the rest of the organization:

- Objectives, strategies and tactics outlined by the Incident Commander.
- Resources assignments what resources do we have and what are they doing? What resources are on order and what are they going to do?
- A description of the ICS organizational structure what positions will be filled?
- Supporting materials incident map, communications plan, evacuation plan, stick diagrams, etc.

Integrated Communications – The use of a common communications plan is essential for ensuring effective communication during an incident.



Appendix D: Key Elements of the Incident Command System (ICS), continued

Establishment and Transfer of Command – The highest ranking authority arriving onscene at an incident will assume the role of the Incident Commander. That person will continue to be the Incident Commander until there is a formal transfer of command. A transfer of command briefing usually consists of:

- Reviewing a description of the incident.
- Reviewing the actions taken thus far to contain and control the incident.
- Reviewing the current ICS organizational structure.
- A summary of the resources available and ordered.

Resources Management – A resource must either be in assigned, available, or out-of-service status.

- Assigned a resource in assigned status is currently doing whatever tasks have been assigned to it.
- Available a resource in available status is ready to be deployed at a moments notice. Resources in available status often wait for assignments at an incident Staging Area.
- Out-of-Service a resources in out-of-service status might be sleeping, receiving medical aid, getting repairs, etc. and is not ready for assignment.

Summary of Responsibilities

These management functions are handled by the General Staff once they have been delegated by the Incident Commander.

Command Ensures safety. Assumes overall responsibility for the incident.

The Incident Commander is responsible for the Command of the incident as well as the following management functions until they are assigned to other response personnel:

Operations Implements the Incident Action Plan (IAP) focusing on control, containment, and site

safety.

Public Safety Implements the Incident Action Plan (IAP) focusing on notification and evacuation of

the public.

Planning Help create and track (document) the success of the Incident Action Plan (IAP).

Logistics Secure the resources and put them in place to allow Operations to implement the

Incident Action Plan.

Finance/Admin Ensures procedures are in place to allow logistics to secure the resources (spending)

and track and control the expenditures.

Communications Disseminates information and liaises with external agencies.

Communications is handled by the Information Officer once one has been appointed by the Incident Commander. The Information Officer is part of the Command Staff.



Appendix E: Land Descriptions

Dominion Land Survey (DLS) System

- Each township (6 mile x 6 mile) is divided into 36 sections (1 mile x 1 mile)
- Each section is divided into 16 legal sub-divisions (L.S.D.)
- Each section is divided into four quarters (N.W., N.E., S.W., and S.E.)

The numbering of sections and L.S.D.s is shown below:

	•		– Rang	е —			Secti	on		
†	31	32	33	34	35	36	13 N	14 w	15	16 IE
	30	29	28	27	26	25	12	11	10	9
o w n	19	20	21	22	23	24	5	6 v	7 s	8 F
s h i	18	17	16	15	14	13	4	3	2	1
p 	7	8	9	10	11	12	1			
	6	5	4	3	2	1				

- Townships increase in number from South to North starting at the Canada USA border
- Ranges increase in number from East to West within a Meridian. A Range is one (1) Township wide (6 miles).
- Meridians run from the North Pole to the South Pole and are spaced every four degrees. The principal Meridian in Canada originates in Central Manitoba and increases West or East from there.
- Legal land description is listed in the following order:

	L.S.D	_	Section		Township		Range	_	Meridian	
Example	02	-	01	-	38	-	09	-	West of the 4 th	



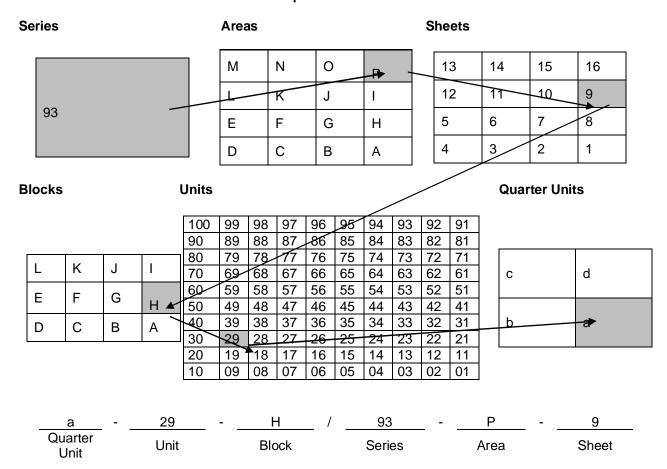
Appendix E: Land Descriptions, continued National Topographic System (NTS)

Based on the National Topographic System (NTS), the map labelling terms are as follows:

1) Series	A rectangular area that has a width of 8 degrees of longitude and 4 degrees of latitude. There are 9 Series in British Columbia (82, 83, 92, 93, 94, 102, 103, 104, and 114).
2) Area	1/16 of a map Series that has a width of 2 degrees of longitude by 1 degree of latitude (labelled from A to P).
3) Sheet	1/16 of map Area that has a width of 30' in longitude and 15' of latitude (labelled from 1 to 16).
4) Block	1/12 of a map Sheet with a width of 7'30" in longitude and 5' in latitude (labelled from A to L).
5) Unit	1/100 of a map Block, and has a latitudinal extent of 30" and longitudinal extent of 45" (labelled from 1 to 100).
6) Quarter Unit	1/4 of a map Unit (labelled from a to d).

Note: 1 degree is equivalent to approximately 111 km in British Columbia. Degrees vary in size around the planet. They become smaller the closer they get to the poles (north or south) and very large as they reach the equator.

Example a-29-H / 93-P-9





Appendix F: ERP Reference Material

Acronyms

Acronym	Meaning	Acronym	Meaning
ABSA	Alberta Boilers Safety Association	IIZ	Initial Isolation Zone
AEMA	Alberta Emergency Management Agency	INAC	Indigenous and Northern Affairs Canada
AER	Alberta Energy Regulator	LA	Local Authority
AH	Alberta Health	LBV	Line Block Valve
AHS	Alberta Health Services	LEL	Lower Explosive Limit
AT	Alberta Transportation	LPG	Liquefied Petroleum Gas
BLEVE	Boiling Liquid Expanding Vapour Explosion	MARS	Mapping and Response System
CANUTEC	Canadian Transport Emergency Centre	MD	Municipal District
CAPP	Canadian Association of Petroleum Producers	MEP	Municipal Emergency Plan
CEPA	Canadian Environmental Protection Act	MER	Ministry of Energy and Resources
CER	Canada Energy Regulator	MOP	Maximum Operating Pressure
CERC	Corporate Emergency Response Centre	NGL	Natural Gas Liquids
CISD	Critical Incident Stress Debriefing	NOTAM	Notice to Airmen
CPE	Communications and Public Engagement	OGC	Oil & Gas Commission
CSA	Canadian Standards Association	OHS	Occupational Health and Safety
DFO	Department of Fisheries and Oceans	OSCAR	Oil Spill Containment and Recovery
EAZ	Emergency Awareness Zone	OSCP	On-Site Command Post
ECCC	Environment & Climate Change Canada	PAD	Protective Action Distance
EMBC	Emergency Management BC	PAZ	Protective Action Zone
EMO	Emergency Measures Organization	POC	Provincial Operations Centre
EOC	Emergency Operations Centre	PPB	Parts Per Billion
EPZ	Emergency Planning Zone	PPE	Personal Protective Equipment
ERAC	Emergency Response Assistance Canada	PPM	Parts Per Million
ERP	Emergency Response Plan	RCMP	Royal Canadian Mounted Police
ESD	Emergency Shut Down	RD	Rural District
ESDV	Emergency Shut-Down Valve	REOC	Regional Emergency Operations Centre
ETA	Estimated Time of Arrival	RHA	Regional Health Authority
FH Order	Fire Hazard Order	RM	Rural Municipality
FNIHB	First Nations and Inuit Health Branch – Health Canada	SABA	Supplied Air Breathing Apparatus
GEOC	Government Emergency Operations Centre	SCBA	Self-Contained Breathing Apparatus
HPZ	Hazard Planning Zone	SDS	Safety Data Sheet
HVAC	Heating Ventilation Air Conditioning	SHA	Saskatchewan Health Authority
HVP	High Vapour Pressure	SO ₂	Sulphur Dioxide
HVPL	High Vapour Pressure Liquid	STARS	Shock Trauma Air Rescue Society
H ₂ S	Hydrogen Sulphide	TDG	Transportation of Dangerous Goods
IAP	Incident Action Plan	WCSS	Western Canadian Spill Service
ICS	Incident Command System	WHMIS	Workplace Hazardous Materials Information System



Appendix F: ERP Reference Material, continued Glossary of Terms

Adjacent to

Within 25 m.

Air Quality Monitoring

Measurement of atmospheric concentrations of a hazardous substance, such as H₂S or SO₂.

Alberta Energy Regulator (AER)

The AER ensures the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle. This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for Albertans.

Alert (Alberta specific)

An incident that can be handled on-site by the licensee through normal operating procedures and is deemed to be a very low risk to members of the public.

Auto-ignition temperature

All NGL products are flammable and will flash at extremely low temperatures. An open flame or spark is not necessary to cause ignition. Any hot surface which exceeds the auto-ignition temperature of a product can cause a fire if the vapours reaching the hot surface are within their flammable range.

Best practices

A technique or methodology that, through experience and research, has proven to reliably lead to a desired result. A commitment to using the best practices in any field is a commitment to using all the knowledge and technology at one's disposal to ensure success.

Body of water

Streams, lakes, and rivers.

Boiling Liquid Expanding Vapour Explosion (BLEVE)

Boiling Liquid Expanding Vapour Explosion, which is associated with natural gas liquids and high vapour pressure liquids.

Boiling point

This is the temperature that a liquid changes to a gas. NGL products change to a gas at extremely low temperatures and will absorb heat from the surrounding environment during the phase change. Therefore, caution must be used when working with NGLs because contact with flesh can reduce the temperature of the flesh to the NGL boiling point and cause severe frostbite.

British Columbia Oil and Gas Commission (OGC)

The OGC is the lead agency for all regulated oil and gas related activities within British Columbia.

British Columbia Emergency Management (EMBC) (British Columbia specific)

Aids local governments in analyzing hazards and risks, develop and test emergency plans, train and organize emergency staff and volunteers. EMBC also manages all agencies in the event of an emergency or disaster, which cannot be handled locally.

Businesses

Industrial operators, retail outlet operators, suppliers, residents, outfitters, foresters and other entities that normally operate within the Emergency Planning Zone, but do not necessarily reside in the Emergency Planning Zone.



Glossary of Terms, continued

Closure order (British Columbia specific)

When the OGC believes that, because of hazardous conditions in a field or at a well, it is necessary or expedient to close an area and to shut out all persons except those specifically authorized, the commission may make an order in writing setting out and delimiting the closed area. For Alberta see Fire Hazard (FH) Order.

Corporate Emergency Response Plan

This Emergency Response Plan is to facilitate a co-ordinated response by company executive and management personnel to an emergency situation, which may affect the company or its affiliated companies. The Corporate Emergency Response Plan is an integral part of all site-specific company Emergency Response Plans and procedures.

Critical Incident Stress Debriefing (CISD)

Critical Incident Stress Debriefing is a specially structured counselling process between the debriefers and those who are directly involved and/or impacted by an incident.

Critical sour well (Alberta specific)

A well with an H₂S release rate greater than 2.0 m₃/s or wells with lower H₂S release rates in close proximity to an urban centre as defined in ID 97-6: Sour Well Licensing and Drilling Requirements.

Emergency

A present or imminent event outside the scope of normal operations that requires prompt coordination of resources to protect the health, safety, and welfare of people and to limit damage to property and the environment.

Emergency Operations Centre (EOC)

An Emergency Operations Centre is a designated facility in a suitable location (i.e. head office, regional office, etc.) established by the permit holder to support Incident Command and to manage the larger aspects of an emergency. In a high-impact emergency, there may be a number of EOCs established to support the response. They may include the Incident Command Post, regional and corporate EOCs, a municipal EOC (MEOC), and the provincial government EOC (POC).

Emergency Awareness Zone (EAZ) (British Columbia specific)

A distance outside of the EPZ where public protection measures may be required due to poor dispersion of the hazard. This area is twice the radius of the Emergency Planning Zone (EPZ).

Emergency Planning Zone (EPZ)

The geographical area that surrounds a well, pipeline or facility containing hazardous product that requires specific emergency response planning by the licensee.

Emergency Response Plan (ERP)

A comprehensive plan to protect the public that includes criteria for assessing an emergency situation and procedures for mobilizing response personnel and agencies and establishing communication and coordination among the parties.

Emergency Support Team (EST)

Provides advice and logistical support to the Field Response Team and Incident Commander in particular. The team is comprised of head office personnel and any contract emergency experts.

EOC Director

The EOC Director activates the Corporate Emergency Operations Centre with staff to provide advice and support to the Incident Commander (Field Response Team).



Glossary of Terms, continued

EOC Director, continued

Note: If the emergency happens outside an area that has a site specific Emergency Response Plan, only then will the EOC Director assume or appoint the role of Incident Commander and dispatch a Field Response Team to the incident site.

ERCBH2S (Alberta specific)

A software program that calculate site-specific EPZs using thermodynamics, fluid dynamics, atmospheric dispersion modelling and toxicology.

Evacuation

Organized, phased, and supervised withdrawal of members of the public from dangerous or potentially dangerous areas to safe areas.

Tactical Evacuation – A measure to immediately move people to a safe area as part of emergency response and operations. Does not require approval from local authority but the local authority may enact an evacuation order, if required, and local authority must be advised if a tactical evacuation has occurred.

Planned Evacuation – An evacuation coordinated by local government authority that can authorize evacuation alerts and orders.

Explosive Limits (Lower and Upper)

Each gaseous hydrocarbon substance has a minimum (Lower Explosive Limit or LEL) and a maximum (Upper Explosive Limit or UEL) percentage in air below or above which combustion will not take place. Explosive limit and flammability limit are used interchangeable. The terms "Too Lean" and "Too Rich" are used for levels outside of the explosive range.

Facility

Any building, structure, installation, equipment, or appurtenance that is connected to or associated with the recovery, development, production, handling, processing, treatment, or disposal of hydrocarbon-based resources or any associated substance or wastes. This does not include wells or pipelines.

Field Response Team (FRT)

Company and contractor personnel directly involved in controlling the incident at the emergency site and from the EOC.

Fire Hazard (FH) Order (Alberta specific)

An order issued by the AER during an emergency to restrict public access to a specified area.

Functional Exercise

As described in CAN/CSA Z246.2-18, an activity designed to evaluate capabilities and multiple functions using simulated response. A functional exercise will simulate the deployment of resources and rapid problem solving. Participants will evaluate management of the command and coordination centres and assess the adequacy of emergency response plans and resources.

Gathering system

The network of pipelines, pumps, tanks, and other equipment that carries oil and gas to a processing plant or to other separation equipment.

Hazard

A situation with potential to harm persons, property, or the environment.



Glossary of Terms, continued

Hazard Planning Zone (HPZ) (British Columbia specific)

A geographical area (a) determined by using the hazard planning distance as a radius, and (b) within which persons, property or the environment may be affected by an emergency. Defined in Emergency Management Regulation.

Hazardous product

A substance released in quantities that may harm persons, property, or the environment.

High Vapour Pressure Liquids (HVPLs)

HVPLs have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG @ 100°F) and include ethane, propane, butane, and pentanes plus, either as a mixture or as a single component.

Note: Comparisons

Gasoline - Vapour pressure between 55 and 100 kPa at 38°C (8 - 14.5 PSIG @ 100°F).

Condensate - Often a component of a propane/butane mixture, has a vapour pressure of 59 to 72 kPa at 38°C (8.6 - 10.4 PSIG @ 100°F).

High Vapour Pressure (HVP) plume dispersion geometry

An uncontrolled release of NGL product on flat terrain will form a vapour plume as it disperses. If the vapour plume formed at the leak site has not been ignited, it will most likely reach its maximum size within the first half hour of the leak occurrence. Two unique features of an NGL plume are:

The downwind edge of the plume tends to spread out significantly forming a broad frontal edge.

Under certain conditions, the plume will travel upwind for a short distance.

High Vapour Pressure (HVP) pipeline

A pipeline system conveying hydrocarbons or hydrocarbon mixtures in the liquid or quasi-liquid state with a vapour pressure greater than 110 kilopascals absolute at 38°C. Some examples are liquid ethane, ethylene, propane, butanes, and pentanes plus.

High Vapour Pressure (HVP) products

HVP products have a vapour pressure greater than 240 kPa at 38°C (34.8 PSIG at 100°F) and include ethane, propane, butane and pentanes plus, either as a mixture or as a single component. A leak from a vessel or pipe containing HVP products can result in a BLEVE.

Hydrogen sulphide (H₂S)

A naturally occurring gas found in a variety of geological formations and also formed by the natural decomposition of organic matter in the absence of oxygen. H_2S is colourless, has a molecular weight that is heavier than air, and is extremely toxic. In small concentrations, it has a rotten egg smell and causes eye and throat irritations. Depending on the particular gaseous mixture, gas properties, and ambient conditions, a sour gas release may be:

Heavier than air (dense), so it will tend to drop towards the ground with time,

Lighter than air (buoyant), so it will tend to rise with time, or

About the same weight as air (neutrally buoyant), so it will tend to neither rise nor drop but with time disperse.

Hydrogen sulphide (H₂S) release rate

The rate that sour gas escapes into the atmosphere is often calculated for sour gas wells. It is usually defined in cubic metres per second (m^3/s). The size of the emergency planning zone is estimated from the H_2S release rate.



Glossary of Terms, continued

Hydrogen sulphide (H₂S) release volume

The volume of sour gas that escapes into the atmosphere is often calculated for facilities that have a defined retention volume, usually defined in cubic metres. Emergency planning zone sizes are often estimated using the volume of H₂S that may be released from a facility. More sophisticated models may also incorporate the rate at which the release could occur and the nature of the gas and the atmospheric conditions when determining the emergency planning zone size.

Hyper-susceptible

A person or persons who may be abnormally reactive to a given exposure to toxins and whose reaction may occur in orders of magnitude greater than that of the susceptible population. Hypersusceptibles include those persons with impaired respiratory function, heart disease, liver disease, neurological disorders, eye disorders, severe anemia, and suppressed immunological function.

Ignition

Process of setting a hydrocarbon release on fire.

Ignition Team

Consists of at least two personnel trained in plume ignition.

Incident

An unexpected occurrence or event that requires action by emergency personnel to prevent or minimize the impacts on people, property, and the environment.

Incident classification

A system that examines the risk level to members of the public following an incident and assigns a level of emergency based on the consequence of the incident and the likelihood of the incident escalating.

Incident Command Post (ICP)

A designated place where the Incident Commander and staff is located. The ICP should be located outside of the hazard area, but close to the incident. The ICP may be a vehicle, trailer, fixed facility or any location suitable to accommodate the function.

Incident Commander

Manages the overall response to emergency incidents. The Incident Commander is responsible for: developing objectives, strategies and tactics that guide the response; assigning personnel to fill necessary positions; ensuring the safety of all personnel; keeping internal and external stakeholders updated; coordinating with other response agencies.

Incident Command System (ICS)

A standardized, on-scene, all-hazard incident management system. The Incident Command System (ICS) is flexible in that it can be adapted for large and small incidents.

Initial Isolation Zone (IIZ)

An area in close proximity to a continuous hazardous release where indoor sheltering may provide limited protection due to proximity of release.

Incident Management System

A system used to coordinate preparedness and incident management.

Isolating the release

Ensuring access to the hazard area is controlled.



Glossary of Terms, continued

Level 1 Emergency (Alberta specific)

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

Level 1 Emergency (British Columbia specific)

There is no immediate danger to the public or environment as no H₂S has been released; the emergency is confined to the lease or company property.

Level 2 Emergency (Alberta specific)

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

Level 2 Emergency (British Columbia specific)

There is potential risk to the public or environment, as the emergency could extend beyond company property. However, control is still possible.

Level 3 Emergency (Alberta specific)

The safety of the public is in jeopardy from a major uncontrolled hazard. There are likely significant and ongoing environmental impacts. Immediate multi agency municipal and provincial government involvement is required.

Level 3 Emergency (British Columbia specific)

An immediate danger to the public or environment exists; control of the situation has been lost.

Licensee

The responsible duty holder as specified in legislation.

Liquid to gas expansion

NGL products will expand greatly when released to the atmosphere. For example, propane expands 272 times its liquid volume. Other products expand at different rates, but all have a high gas to liquid ratio.

Liquefied Petroleum Gas (LPG)

Mixture of heavier, gaseous hydrocarbons (butane and propane), liquefied as a portable source of energy.

Local Authority

A local authority is considered to be:

- 1) The council of a city, town, village or municipal district;
- 2) in the case of an improvement district or special area, the Minister of Municipal Affairs;
- 3) for a national park, the park superintendent or the par superintendent's delegate;
- 4) the settlement council of a Métis settlement: or
- 5) the band council of a First Nations Reserve.

Local State of Emergency

See State of local emergency.

Lower Explosive Limit (LEL)

The lowest concentration of gas or vapour (per cent by volume in air) that explodes if an ignition source is present at ambient temperatures.



Glossary of Terms, continued

Manitoba Growth, Enterprise & Trade – Petroleum Branch

The Manitoba Growth, Enterprise & Trade – Petroleum Branch administers The Mines and Minerals Act and related regulations governing the exploration, development, production, transportation and storage of crude oil and natural gas.

M.D.

Municipal District

Major (full-blown) exercise

As described in CAN/CSA Z246.2-18, a multi-agency, multi-jurisdictional activity involving actual deployment of resources in a coordinated response, as if a real emergency had occurred. The full-scale exercise includes the mobilization of units, personnel, and equipment. Participants will assess plans and procedures and evaluate coordinated responses under crisis conditions.

Maximum Operating Pressure (MOP)

The maximum licensed operating pressure for a vessel or pipeline or a section of it.

Ministry of Energy and Resources (MER)

MER is the lead regulatory agency for the upstream petroleum industry in Saskatchewan.

Mobile air quality monitoring

Use of sophisticated portable equipment to track substances such as H₂S or SO₂ at very low parts per billion atmospheric concentrations.

Municipality

See local authority.

Municipal Emergency Operations Centre (MEOC)

The centre from which responsible municipal officials manage and support emergency operations within their jurisdiction, as well as formulate protective actions and provide public information. The centre has adequate workspace, maps, status boards, and communications capability.

Municipal Emergency Plan (MEP)

The emergency plan of the local authority.

Natural Gas Liquids (NGL)

These are hydrocarbons liquefied under pressure in field facilities or in gas processing plants. Natural gas liquids include ethane, propane, butane and pentanes plus and normally occur as a mixture of these compounds.

Physical Properties of NGL Products:

Colour - NGL products are colourless except when they include a condensate component, which gives them a light-yellow appearance. Releases during winter conditions can discolour snow. NGL products may appear as a white cloud when released to the atmosphere. This white cloud is formed by the condensing of moisture in the air.

Odour - Most NGL products have a mild petroleum odour. During pipeline transport NGL products are almost odourless.

Vapour Density - A measure of the mass per unit volume of the vapour (i.e. kg/m3). All NGL products transported by the company have a vapour density greater than air or a relative vapour density greater than 1.0.



Glossary of Terms, continued

NAV Canada

Canada's civil air navigation services provider, with operations coast to coast. NAV Canada provides air traffic control, flight information, weather briefings, aeronautical information services, airport advisory services, and electronic aids to navigation.

Notice to Airmen (NOTAM)

An order issued by Transport Canada restricting access to airspace in a defined area.

Notification

The distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development.

Odour complaint

A report that someone smells an offensive odour (may be sour gas) in the area.

Oil Spill Containment and Recovery Unit (OSCAR)

Trailer containing oil spill equipment for containment and recovery.

On-site command post (OSCP)

An emergency operations centre established in the immediate vicinity of the incident to provide immediate and direct response to the emergency and initially staffed by licensee personnel.

Partially controlled flow

A restricted flow of product at surface that cannot be shut off at the licensee's discretion with equipment onsite.

Personal consultation

Consultation through face-to-face visits or telephone conversations with all requisite individuals.

Petroleum industry

Refers to all petroleum industry operations.

Plume (gas plume)

An elongated mobile column of gas or smoke.

Protective Action Zone (PAZ)

An area downwind of a hazardous release where outdoor pollutant concentrations may result in life threatening or serious and possibly irreversible health effects on the public.

Protective Action Distance (PAD)

The distance from the incident to the EPZ outer boundary.

Provincial Operations Centre (POC)

An operations centre with the capacity to accommodate representatives from each government department.

Public

The group of people who may be or are impacted by an emergency (e.g., employees, contractors, neighbours, emergency response organizations, regulatory agencies, the media, appointed or elected officials, visitors, customers, etc., as appropriate).



Glossary of Terms, continued

Public facility (Alberta specific)

A public building, such as a hospital, rural school, or major recreational facility, situated outside of an urban centre that can accommodate more than 50 individuals and/or that requires additional transportation to be provided during an evacuation.

Public protection measures

The use of sheltering, evacuation, ignition, and isolation procedures to mitigate the impact of a hazardous release on members of the public.

Public Safety Group Supervisor

Member of the field response team. Individual charged with the responsibility of co-ordinating the evacuation or shelter of people in the emergency hazard Area. The Public Safety Group Supervisor reports to and may be located in the same location as the Incident Commander.

Publicly used development (Alberta specific)

Places where the presence of 50 individuals or less can be anticipated (e.g., places of business, cottages, campgrounds, churches, and other locations created for use by the non-resident public).

Publicly used facility (British Columbia specific)

Places where the presence of people can be anticipated. Examples include places of business, cottages, campgrounds, churches, and other locations created for use by the public. Includes any similar development the OGC may designate as a public facility.

Publicly used facility

Places where the presence of people can be anticipated. Examples include places of business, cottages, campground, churches, and other locations created for use by the public.

Reception centre

A centre established to register evacuees for emergency shelter, to assess their needs, and, if temporary shelter is not required because evacuees will stay elsewhere, to ascertain where they can be contacted.

Regional Emergency Operations Centre (REOC)

An operations centre established in a suitable location to manage the larger aspects of the emergency that is manned jointly by government and industry staff.

Residence

A dwelling that is occupied full time or part time.

Resident

Individual living in the area at a fixed location.

Resident data record

Form used to track the contact made with residents, businesses and transients.

Response zones (Alberta specific)

The Initial Isolation Zone (IIZ), Protective Action Zone (PAZ) and Emergency Planning Zone (EPZ).

Roadblock Crew

Personnel responsible for controlling access to the Emergency Hazard Area, reporting to the Public Safety Group Supervisor.



Appendix F: ERP Reference Material, continued Glossary of Terms, continued

Rover

Member of the field response team. Individual responsible for assisting in the evacuation of the Hazard Area, reporting to the Public Safety Group Supervisor. May also be directed to shut-in / shut down equipment that may cause future safety hazards.

Rover Kit

A briefcase containing maps, forms, supplies and instructions needed by the Rover to carry out their duties.

S.A.B.A.

Supplied Air Breathing Apparatus.

S.C.B.A.

Self Contained Breathing Apparatus.

Serious injury

A serious injury includes the following:

- an injury that results in death;
- fracture of a major bone;
- amputation other than a portion of a finger or toe;
- loss of sight in an eye;
- internal haemorrhage;
- third degree burns;
- unconsciousness;
- An injury that results in paralysis (permanent loss of function).

Shelter-in-Place

Remaining indoors for short-term protection from exposure to toxic gas releases.

Sour gas

Natural gas, including solution gas, containing hydrogen sulphide (H₂S).

Sour gas release

An uncontrolled release of natural gas containing hydrogen sulphide (H₂S).

Sour multiphase product (British Columbia specific)

Any liquid that contains H₂S in the gas phase.

Sour multiphase pipeline (British Columbia specific)

A pipeline that transmits a multiphase product that contains more than 10 moles of H_2S per kilomole of natural gas in the gas phase.

Sour pipeline

Pipeline that conveys gas and/or liquid that contains sour gas.

Sour production facility

Facility that processes gas and/or liquid that contains sour gas

Sour well

An oil or gas well expected to encounter during drilling formations bearing sour gas or any oil or gas well capable of producing sour gas.



Glossary of Terms, continued

Special needs

Those persons for whom early response actions must be taken because they require evacuation assistance, requested early notification, do not have telephones, require transportation assistance, have a language or comprehension barrier, or have specific medical needs. Special needs also include those who decline to give information during the public consultation process and any residences or businesses where contact cannot be made.

Special sour well (British Columbia specific)

A designation that reflects the proposed well's proximity to populated centers and its maximum potential H₂S release rate during the drilling state. The casing or open-hole flow configuration is used in arriving at this designation.

Standing well

A well that has been drilled and cased but not perforated. A company is generally allowed to leave the well as standing for up to one year.

State of local emergency

A declaration by a local authority providing the necessary authority, resources, and procedures at the municipal level to allow an emergency to be resolved effectively and efficiently.

Sulphur dioxide (SO₂)

A colourless, water-soluble, suffocating gas formed by burning sulphur in air; also used in the manufacture of sulphuric acid. SO_2 has a pungent smell similar to a burning match. SO_2 is extremely toxic at higher concentrations. The molecular weight of SO_2 is heavier than air; however, typical releases are related to combustion, which makes the gaseous mixture lighter than air (buoyant).

Surface development

Dwellings that are occupied full-time or part-time, publicly used development, public facilities, including campgrounds and places of business, and any other surface development where the public may gather on a regular basis. Surface development includes residences immediately adjacent to the EPZ and those from which dwellers are required to egress through the EPZ.

Susceptible

The subpopulation of persons who may be considered more sensitive to the effects of H₂S and SO₂, including the elderly, pregnant women, and the very young, particularly preschool-aged children.

Tabletop exercise

As described in CAN/ CSA Z246.2-18, an informal exercise generally used to review resource allocations and roles and responsibilities of personnel and to familiarize new personnel with emergency operations without the stress and time constraints of a major exercise.

Technically complete Emergency Response Plan (ERP)

A plan that meets all applicable requirements.

Telephoners

Telephoners place calls to residents as directed by the Public Safety Group Supervisor.

Threatening telephone call

Any communication that threatens the well-being of company personnel or property. A form is provided in the manual to capture data from or about a person who calls with a threatening message.

Transient

An individual that is temporarily in the area (e.g. camper, cross-country skier).



Appendix F: ERP Reference Material, continued Glossary of Terms, continued

Trapper

The holder of a provincial licensed and registered trapline for the purpose of hunting and trapping fur bearing animals.

Uncontrolled flow

A release of product that cannot be shut off at the licensee's discretion.

Urban centre

A city, town, village, summer village, or hamlet with no fewer than 50 separate buildings, each of which must be an occupied dwelling, or any similar development.

Unrestricted country development

Any collection of permanent dwellings situated outside of an urban centre and having more than eight permanent dwellings per quarter section.

Urban density development

Any incorporated urban centre, unincorporated rural subdivision, or group of subdivisions with no fewer than 50 separate buildings, each of which must be an occupied dwelling.

Vapour pressure

The pressure exerted by the vapour when the rate of evaporation is equal to the rate of condensation of the vapour. All NGL products have vapour pressure greater than atmospheric pressure air and therefore have to be kept under pressure or else they will vaporize.

Vapour-air plume / vapour cloud

When released to atmosphere, products form a vapour-air plume that is colourless, heavier than air and has a faint gasoline odour. Depending on the product released and the atmospheric conditions, water vapour may condense to form a cloud.

Water body

Natural or manmade; contains or conveys water continuously, intermittently, or seasonally. A natural water body is any location where water flows or is present, whether the flow or the presence of water is continuous, seasonal, intermittent, or occurs only during a flood. This includes, but is not limited to, the bed and shore of a river, stream, lake, creek, lagoon, swamp, marsh, slough, muskeg, or other natural drainage, such as ephemeral draws, wetlands, riparian areas, floodplains, fens, bogs, coulees, and rills. Examples of a manmade water body include, but are not limited to, a canal, drainage ditch, reservoir, dugout or other manmade surface feature.

Well servicing

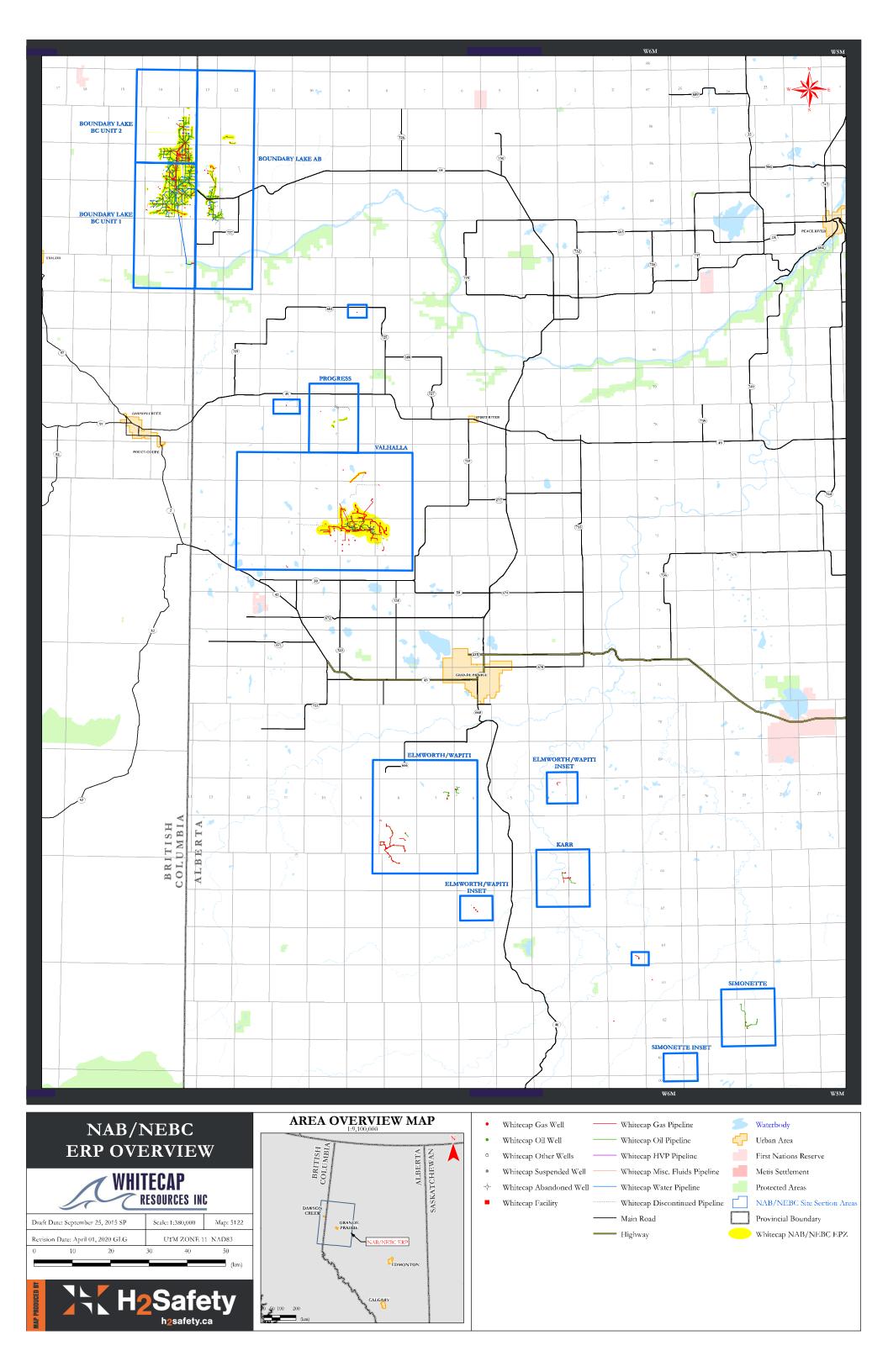
The maintenance procedures performed on a producing or injecting well after the well has been completed and operations have commenced. Well servicing activities are generally conducted to maintain or enhance well productivity or injectivity.

Workover

The process of re-entering an existing well to perform remedial action that will restore or improve the productivity or injectivity of the target formation.



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RESPONSE FACILITY LOCATIONS

AB/SK 24 HOUR EMERGENCY PHONE NUMBER: 1-866-590-5289 BC 24 HOUR EMERGENCY PHONE NUMBER: 1-250-787-3700

FIELD



CORPORATE





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BOUNDARY LAKE CER PIPELINES

EMERGENCY CONTACT INFORMATION

For Emergencies involving inter-provincial pipelines, the Canada Energy Regulator is the primary management agency – they will be contacted by the Transportation Safety Board.

**A pipeline is CER-regulated due to the fact that it crosses a Provincial Border. **

THIS MUST BE YOUR FIRST CALL

Transportation Safety Board of Canada (TSB)	24 Hr Incident Line	819-997-7887
	Facsimile	819-953-7876
	Email	PipelineNotifications@tsb.gc.ca

Call the TSB 24 Hr Incident Line when an incident meets the Immediately Reportable Events (see page 2 for criteria) for all Canada Energy Regulator (CER) regulated pipelines and facilities.

Both the phone notification and the input of information into the CER's Online Event Reporting System (OERS): https://apps.cer-rec.gc.ca/ers 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 CER.

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Alberta Energy Regulator (AER)	24 Hr	800-222-6514
Emergency Management BC (EMBC) (EMBC will notify the OGC, Ministry of Environment, Environment & Climate Change Canada, Ministry of Forests, Lands and Natural Resource Operations, Northern Health Authority and any affected municipalities.)	24 Hr	800-663-3456

Hazardous occurrences (under Part XVI of the Canada Oil and Gas Occupational Safety and Health Regulations) and incidents requiring medical evacuations are to be reported to the CER immediately.







Office national

CER 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.

CER DEFINITION OF AN INCIDENT

Section 52 of the Onshore Pipeline Regulations (OPR) requires companies to notify the Board of all incidents relating to the construction, operation, or abandonment of their pipelines. An "incident" is defined in section 1 of the OPR as an occurrence that results in:

- 1) The death of or serious injury to a person;
- 2) A significant adverse effect on the environment;
- 3) An unintended fire or explosion;
- 4) An unintended or uncontained release of low-vapour pressure (LVP) hydrocarbons in excess of 1.5 m³;
- 5) An unintended or uncontrolled release of gas or high-vapour pressure (HVP) hydrocarbons;
- 6) The operation of a pipeline beyond its design limits as determined under CSA Z662 or CSA Z276 or any operating limits imposed by the Board.

Companies are required to report a death or serious injury to a person only where the death or injury is a result of an occurrence that relates to the construction, operation, or abandonment of a "pipeline". Whether a death or injury is related to the construction, operation, or abandonment of a pipeline will depend on whether the person who was killed or injured was working at the time of the incident and/or whether the work was a cause or contributing factor to the incident. It is important to note that, unlike the Canada Labour Code (CLC), the OPR does not differentiate between different types of "persons". Therefore, companies must report all deaths or serious injuries to any person that occur relating to pipeline construction, operation, or abandonment regardless of whether or not that person was directly employed by the company.

The definition of "serious injury" in the OPR is not exhaustive and contains multiple injuries that qualify as serious, including "the fracture of a major bone". The CER uses the following definition of "major bone": skull, mandible, spine, scapula, pelvis, femur, humerus, fibula, tibia, radius, and ulna.

IMMEDIATELY REPORTABLE EVENTS

Where regulations require an event to be reported "immediately", companies must also consider whether the event meets any of the following definitions:

An Incident that Harms People or the Environment:

- A death
- A serious injury (as defined in the OPR or TSB regulations);
- An unintended or uncontrolled LVP hydrocarbon release in excess of 1.5 m³ that leaves company property or occurs on or off the right of way;
- An unintended or uncontrolled sweet natural gas or hyp release >30,000 m³;
- Any unintended or uncontrolled release of sour natural gas or hydrogen sulfide; and/or
- A significant adverse effect on the environment.

IMMEDIATELY REPORTABLE EVENTS, continued

A Rupture:

 an instantaneous release that immediately impacts the operation of a pipeline segment such that the pressure of the segment cannot be maintained.

A Toxic Plume:

• a band of service fluid or other contaminant (e.g. hydrogen sulfide or smoke) resulting from an incident that causes people, including employees, to take protective measures (e.g. muster, shelter-in-place or evacuation).

Where an event meets any of the above definitions, companies are required to notify the TSB Reporting Hotline at (819) 997-7887. Subsequently, the company is required to input the details required by both the TSB (see TSB regulations) and the CER into the OERS. The phone notification and the input of information into OERS are required to occur as soon as possible and no later than three hours of the incident being discovered. The goal of the initial phone notification is to allow the relevant agencies to mobilize a response to an incident, if required. Note that OERS will automatically determine whether the event meets the definition of an "Incident that Harms People or the Environment", however the company will be responsible for specifically indicating whether the incident meets the definitions of "Rupture" and "Toxic Plume".

For all other events that do not meet any of the definitions in this section, companies are not required to phone the TSB Reporting Hotline but must report the event as soon as possible and no later than twenty-four hours after the event was discovered.

MULTIPLE INCIDENT TYPES

It is possible that a single occurrence may result in multiple incident types. If multiple incident types occur as a result of a single occurrence, companies are expected to report those incident types under a single incident report.

Examples of situations where this might be the case include but are not limited to:

- A pipeline rupture (occurrence) where there is a release of gas (incident type) and an explosion (incident type):
- An industrial accident (occurrence) that causes a death (incident type), a serious injury (incident type) and a fire (incident type);
- An operational malfunction (occurrence) that causes an overpressure (incident type) and a release of product (incident type); or
- An operational malfunction (occurrence) that causes several concurrent or immediately consecutive overpressures (incident types).

In cases where an incident has occurred, and a second incident occurs during the response to the initial incident (e.g. a fire occurs during the clean-up of a spill), the second incident is considered distinct and should be reported separately.

The events that are reportable using the online reporting system are:

- Incidents under the Canada Energy Regulator Onshore Pipeline Regulations (OPR), Canada Energy Regulator Processing Plant Regulations (PPR), and Canada Oil and Gas Drilling and Production Regulations (DPR)/Oil and Gas Drilling Regulations;
- Unauthorized activities under the CER 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 CER and the TSB have adopted a single window reporting approach. However, in some areas, the TSB reporting requirements are somewhat different than the CER requirements. For additional details on the TSB reporting requirements, companies should refer to the TSB website (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 CER supporting documentation in this emergency response plan.

SUPPORTING INFORMATION	FOUND IN
CER Distribution	Foreword: Distribution List Page 3
Company 24/7 Emergency Number	Front Cover, Title Page; Section 1: Notification Flow Charts, Area Specific Information: Boundary Lake Field
Area Map of CER Regulated Facilities	Area Specific Information: Boundary Lake Field
TSB Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
CER Roles & Responsibilities	Section 5: External Agencies Federal Roles Chart
Safety Data Sheets (SDS)	Area Specific Information: CER 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 CER on or before April 1st of each year, or when significant changes (either operational or identified from exercises/incidents and resulting debriefs) occur or are identified. If an update occurs outside of the January 1st to April 1st period, a letter must be submitted to the CER indicating that there have been no changes to operations since the ERP was last submitted. ERP updates are performed by a third-party company (H₂Safety), whose expertise in the field provides 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 CER line. The operator would then immediately contact his/her supervisor, and the TSB, and then work with internal support and outside agencies to determine a plan of action for resolving the source of the release.



Date of Preparation: September 19, 2016

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

Canutec: (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 Extremely flammable liquid and vapor.

Statements: 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.



Date of Preparation: September 19, 2016

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, CO2, 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	



SAFETY DATA SHEET

Boundary Lake Crude Oil

Date of Preparation: September 19, 2016

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 (H2S)	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 H2S, 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.



Date of Preparation: September 19, 2016

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, CO2, 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.



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Products of Combustion: Oxides of carbon. Oxides of sulphur. Aldehydes.

Protection of Firefighters: 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

Emergency Procedures: 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.

Personal Precautions: Do not touch or walk through spilled material. Use personal

protection recommended in Section 8. Don full-face, positive

pressure, self-contained breathing apparatus.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined

areas.

Methods for Containment: Stop leak if you can do it without risk. A vapor suppressing foam

may be used to reduce vapors.

Methods for Clean-Up: 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.

Other Information: 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 (H2S) 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



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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/m³ (TWA);

400 ppm (TWA) [Vacated];

Octane [CAS No. 111-65-9]

ACGIH: 300 ppm (TWA); (1979)

OSHA: 500 ppm (TWA), 2350 mg/m³ (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/m³ (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/m³ (TWA); Skin.

50 ppm (TWA) [Vacated];

Pentane [CAS No. 109-66-0]

ACGIH: 1000 ppm (TWA); (2013)

OSHA: 1000 ppm (TWA), 2950 mg/m³ (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/m³ (TWA);

150 ppm (STEL) [Vacated];

Sulphur [CAS No. 7704-34-9]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles

(Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For

Particulates Not Otherwise Regulated (PNOR).



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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/m³ (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



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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.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown oily liquid.

Colour: Dark brown.

Odour: Petroleum. Rotten eggs.

Odour Threshold: 0.0047 ppm, (Hydrogen sulphide)

Physical State: Liquid.

pH: Not available.

Melting Point / Freezing

Point:

Not available.

Initial Boiling Point: $\leq 35 \,^{\circ}\text{C}$ (113.2 °F) (ASTM D86)

Boiling Range: ≤ 35 to 356.7 °C (113.2 to 674.1 °F) (ASTM D86)

Flash Point: < -5 °C (23 °F) (PMCC)

Evaporation Rate: Not available.

Flammability (solid, gas): Not applicable.

Lower Flammability Limit: Not available.

Upper Flammability Limit: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Relative Density: 0.840 to 0.860 (Water = 1) at 15 °C (59 °F)

Solubilities: Insoluble in water.

Partition Coefficient: n-

Octanol/Water:

Not available.

Auto-ignition Temperature: Not available.

Decomposition Not available.

Temperature:

Viscosity: 4 to 6 mm²/s at 38 °C (100.4 °F) (ASTM D445)

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.



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Density: 840 to 860 kg/m³ 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 ₅₀ oral	LD50 dermal	LC ₅₀
Petroleum	8002-05-9	4300 mg/kg (rat)	Not available.	Not available.
Octane	111-65-9	Not available.	Not available.	118000 mg/m³ (rat); 4H
Nonane	111-84-2	Not available.	Not available.	3200 ppm (rat); 4H
Heptane	142-82-5	Not available.	Not available.	103000 mg/m³ (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/m³ (rat); 4H
Butane	106-97-8	Not available.	Not available.	658000 mg/m³ (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/m³ (rat); 4H
Ethylbenzene	100-41-4	3500 mg/kg (rat)	17800 μl/kg	Not available.



Date of Preparation: September 19, 2016

(rabbit)

Hydrogen sulphide 7783-06-4 Not available. 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 H2S, 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 Not available.

Aggravated By Exposure:

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.



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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 nhexane 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.



Date of Preparation: September 19, 2016

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:

Label Code:

FLAMMABLE 3

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1267, PETROLEUM CRUDE OIL, 3, PG I

Class: 3

UN Number: UN1267

Packing Group: |

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	SAF	RA	Titl	е	Ш
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Component	Section 302 (EHS) TPQ (Ibs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Hexane	Not listed.	Not listed.	5000	313	Not listed.	Not listed.
Pentane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Butane	Not listed.	Not listed.	Not listed.	Not listed.	Not listed.	10000
Xylene	Not listed.	Not listed.	100	313	U239	Not listed.
Benzene	Not listed.	Not listed.	10	313	U019	Not listed.
Toluene	Not listed.	Not listed.	1000	313	U220	Not listed.
Ethylbenzene	Not listed.	Not listed.	1000	313	Not listed.	Not listed.
Hydrogen sulphide	500	100	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)

Massachassits Regulations Scotler of 6.000/		
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	Е

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



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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

SAFETY DATA SHEET

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

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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	Е
Sulphur	7704-34-9	Listed.
Benzene	71-43-2	ES
Toluene	108-88-3	Е
Ethylbenzene	100-41-4	Е
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.

Component Type of Toxicity

Benzene cancer; developmental, male 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 - CER Pipelines

	LICENSEE	WATER CROSS	FROM		то	ST VA	ART I	END I	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	JNIQUE 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 PA km) (kr	AZ SETBACK n) LEVEL	STATUS
													WHI	ΓECAP	SOUR OF	PERATING															
WHITE	CAP RESOURCES INC.	-	03-23-084-13W	6 S	13-28-084-13W6	PL E	SD		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	1 Level na	0
WHITE	CAP RESOURCES INC.	-	13-28-084-13W	6 PL	08-02-085-14W6	В	Е	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	1 Level na	0
WHITE	ECAP RESOURCES INC.	-	16-26-084-14W	6 PL	13-28-084-13W6	PL	-	-	23241	1	-	3	3,4	FW	219.1	5.67	9.5	1,965	1,965	0	0										0
WHITE	ECAP RESOURCES INC.	-	13-28-084-13W	6 PL	03-23-084-13W6	PS	-	-	55616	1	-	4	3,4	FW	219.1	4.63	9.5	1,965	1,965	0	0										0

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

<u>Valve</u>: 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:

Whitecap Resources Head Office

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

Manager Production

VP Operations

VP Production & Operations

VP HSE

For a detailed contact list, refer to the Field Response Teams Phone List at the front of

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.

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.

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.

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 CER 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 CER 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 H₂S concentration for the wells is 2.86%, with an assigned EPZ of 130 m. The maximum licensed H₂S concentration for the pipelines is 2.00%, with an assigned EPZ of 374 m.

Boundary Lake Unit 2:

The maximum H₂S concentration for the wells is 4.50%, with an assigned EPZ of 130 m. The maximum licensed H₂S concentration for the pipelines is 4.50%, with an assigned EPZ of 1100 m.

400 bbl

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: Emulcion Tank

ı	LIIIUISIUII I alik	400 001
1	Drain Tank (Slop)	100 bbl
01	a the contract of the characters.	

06-06 site storage includes:

Oil Lank	2000 bbi
Oil Tank	1000 bbl
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.

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

RCMP 9 Fort St. John 250-787-81	911 100
Fire Departments This area is NOT covered by a fire department. Any wellsite or secondary fi must be handled by contract oilfield fire fighting services. The Fort St. Jol Fire/Rescue will ONLY respond to motor vehicle accidents and media	hn

hn emergencies. 911

Ambulance 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.

RCMP.

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
oison Control Centre (BC)	604-682-5050

800-474-6886 BC One-Call www.bconecall.ca

Reception Centres Clearview Elementary School Admin: 250-781-3333

BC Drug and Poison Information Centre (Toll Free)

13786 - 223 Road, Goodlow, BC **Evangelical Church of Goodlow** Office: 250-781-3566

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 Fax: 250-787-0709 10103 - 98 Avenue, Fort St. John, BC

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 11 occupied residences, 1 vacant residence, 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.

Clearview Elementary School Admin: 250-781-3333

*For Resident IDs, names and phone numbers, refer to the "Confidential Information Tab"

LEAD AGENCIES & PRIORITY CONTACTS

Emergency Management BC (EMBC) - Incident Reporting Line 800-663-3456* 00 *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 250-794-5200

Canada Energy Regulator (CER)

Transportation Safety Board Incident Line (Pipeline emergencies) 819-997-7887 CER Incident Line (All other emergencies) 403-807-9473

Online Event Reporting System (OERS) Website https://apps.cer-rec.gc.ca/ers Peace River Regional District - Dawson Creek 800-670-7773

Northern Health Authority

800-567-8911

855-554-3622 HEMBC On Call

WORKSAFE BC - Fort St. John After-Hours Reporting 866-922-4357 Daytime Reporting Admin: 888-621-7233

866-566-7233 Technical Safety BC BC Ministry of Transportation & Infrastructure 800-842-4122 North Peace Area, Fort St. John Admin: 250-787-3237

Highway Services Yellowhead Road & Bridge 800-842-4122 / South Peace: Argo Road Maintenance 250-795-2919 North Peace: Dawson Road Maintenance 250-262-2600 800-663-3456 Transportation of Dangerous Goods (TDG) 800-265-0212 Emergency Response Assistance Canada (ERAC)

Public Works Association of BC (PWABC) 604-880-8585 BC Ministry of Forest, Lands and Natural Resource Operations

Forest Fire Reporting 800-663-5555 Peace Forest District Admin: 250-784-1200

BC Ministry of Environment - Peace Region 800-663-3456

CANUTEC 613-996-6666 Toll-Free 888-226-8832 From Cell Phone Admin: 613-992-4624 Inquiries

Environment & Climate Change Canada Meteorological Services 604-664-9385 Department of Fisheries and Oceans Canada (DFO)

Pacific Region



www.h2safetv.ca



604-666-0384

SUPPORT SERVICES Note: All numbers, unless otherwise indicated, are 24 h	iours.
Mobile Air Monitoring* United Safety - Central Dispatch Firemaster Oilfield Services - Central Dispatch HSE Integrated - Central Dispatch Trojan Safety Services - Fort St. John Safety Boss - Central Dispatch	800-432-1809 877-342-3473 888-346-8260 250-785-9557 800-882-4967
Oilfield Fire Fighting / Safety Contractors* Firemaster Oilfield Services - Central Dispatch HSE Integrated - Central Dispatch Safety Boss - Central Dispatch	877-342-3473 888-346-8260 800-882-4967
Well Control Specialists* Firemaster Oilfield Services - Central Dispatch Capstone Blowout Recovery - Central Dispatch Safety Boss - Central Dispatch	877-342-3473 866-347-3911 800-882-4967
Ignition Services Firemaster Oilfield Services - Central Dispatch Safety Boss - Central Dispatch *Dispatch support services at a Level 1 Emergency. Response ti approximately 40 minutes if the support is coming from Fort St the support is coming from Grande Prairie.	
Emergency Response Management H ₂ Safety Services Inc Calgary Toll Free	403-212-2332 888-216-2332
Spill Response SWAT Consulting ClearStream Energy Services	866-610-7928 250-785-5755
Air Traffic Control NAV Canada	866-992-7433
Bus Transportation Homer's Oilfield Service Charters - Dawson Creek	250-219-2247

250-785-2331
250-785-2518
780-429-6900
866-541-8888

WCSS - Zone 6 - Coop C	*		866-541-8888
Regional Custodian:	Clean Harbors Production Services Shawn Dorie	Cell:	250-785-4577 250-261-9404 250-785-8450

Equipment Location Clean Harbors Surface Rentals 6715 - 85 Avenue Fort St. John. BC	Equipment Summary - 52' OSCAR Trailer (semi-truck) - Single Engine Barge (1-T truck w/ 2-5/16" ball hitch & electric brakes)
Fort St. John, BC	ball hitch & electric brakes)
	- 40' Boom Cache Sea-Can (haul w/

winch tractor/trailer) - 20' Wildlife Sea Can (winch tractor/trailer)

- Workboat (1/2-T truck w/ 2" ball hitch) - Drum Skimmer w/ Power Pak (1/2-T truck) - 400' Shallow Water Boom (1/2-T truck)

Clean Harbors Production Services Admin: 250-785-4577 Coop Custodian: Shawn Dorie Cell: 250-261-9404 Fax: 250-785-8450

Equipment Summary Equipment Location

4901 - 46 Avenue - 20' ISRU Sea Can (winch tractor/trailer) Fort Nelson, BC - (2) Work Boats (1/2-T truck 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://emis.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. Grazing Lease

Boundary Lake Unit 1 Name Business Grazing ID

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

Rights Holders - Cutblock Boundary Lake Unit 1 & 2 License Name Emergency

Rights Holders - Woodlot Boundary Lake Unit 1 & 2 License Name Emergency

Oil and Gas Bonavista Energy

866-971-8317 Canlin Energy Corp.* 866-409-2744 Tie In: 03-15-084-14 W6M 11-14-085-14 W6M 02-25-085-14 W6M 888-878-3700 Tie In: Enbridge Pipelines 800-663-9931 09-19-085-13 W6M 866-556-7838 Tie In: Enercapita Energy* 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 06-01-085-14 W6M 06-15-084-14 W6M 06-17-085-13 W6M 06-31-084-13 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 14-22-084-14 W6M 14-25-084-14 W6M 16-11-085-14 W6M 16-23-084-14 W6M 16-24-084-14 W6M

08-03-084-14 W6M

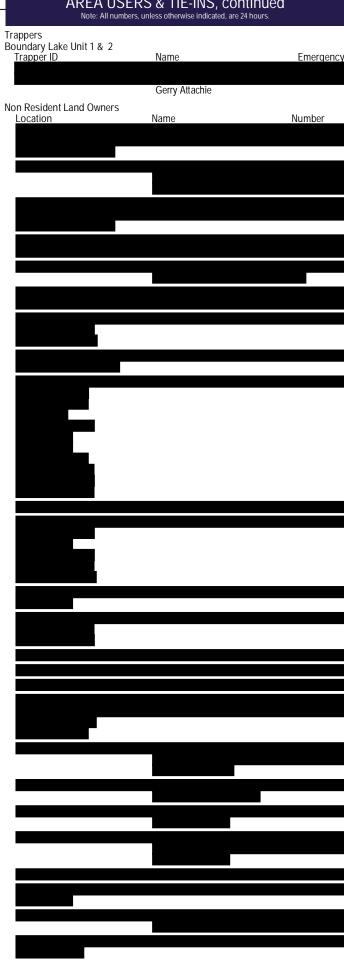
Harvest Operations 800-760-2826 Pembina Pipeline* 800-360-4706 13-11-085-14 W6M Tie In: 06-06-086-13 W6M Imperial Oil Res. Ltd. 877-304-8725 KXL Exploration Ltd. 888-263-4245

Tie In:

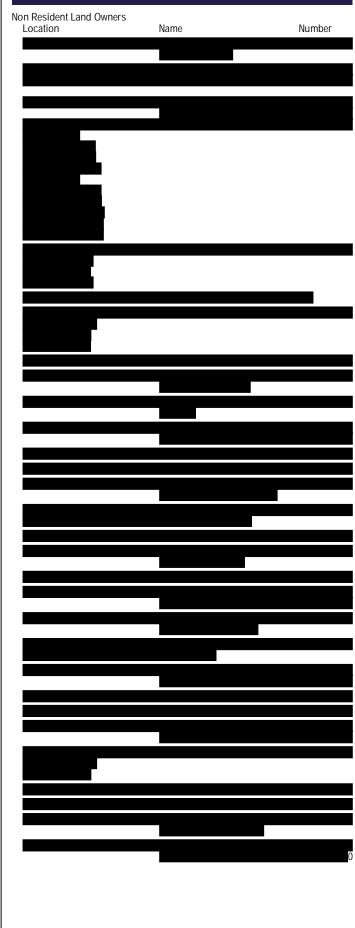
Plateau Pipe Line 800-360-4706 Paramount Resources 866-362-1138 Obsidian Energy Ltd. 877-792-2990 Suncor Energy 403-296-3000 800-216-8062 TAQA North Tervita Corp. 800-327-7455 Venturion Oil Ltd. 877-303-7728 West Lake Energy 877-307-9004 Yoho Resources 888-537-1771

* 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







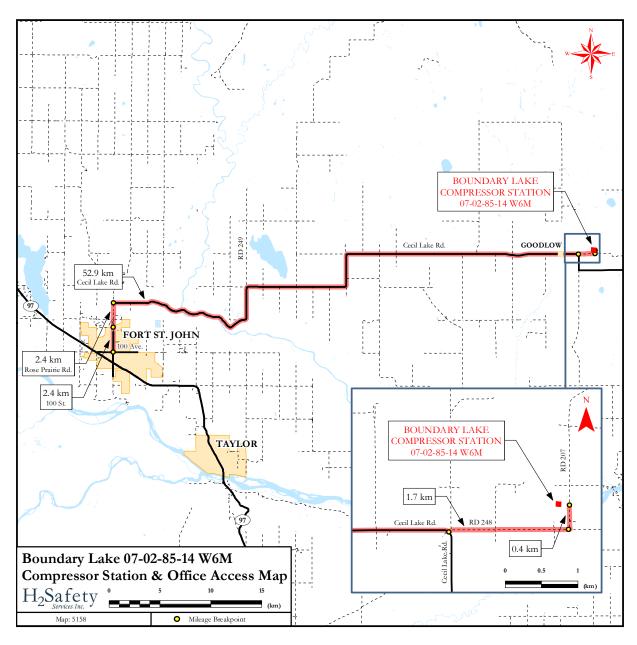


Boundary Lake BC Unit 1 Site Access from Fort St. John

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.



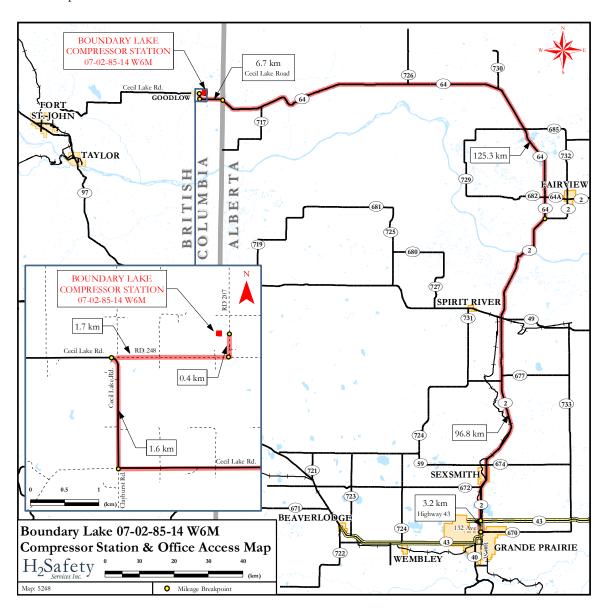


Boundary Lake BC Unit 1 Site Access from Grande Prairie

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.



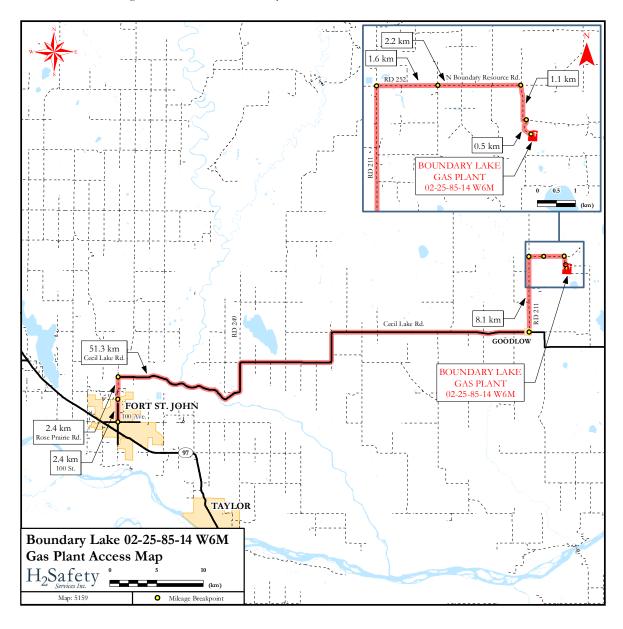


Boundary Lake BC Unit 2 Site Access from Fort St. John

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 British Columbia Field Operations

January 2020

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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.

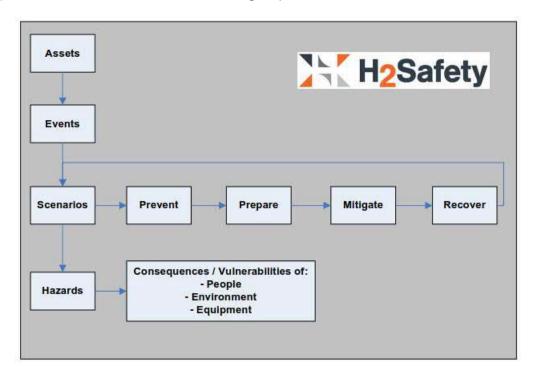
Utilizing best practices in the field of emergency management and with consideration of CSA Z246.2-18 Emergency Preparedness and Response for Petroleum and Natural Gas Industry Systems, this hazard assessment process will permit Whitecap Resources to deliver an effective and timely response protocol 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
Fire	 Engineering Controls Administrative Controls Training / exercises Grounding procedures for vessels and trucks 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	- Repair / Replace damaged equipment
Container Rupture	 Engineering Controls Administrative Controls Training / exercises Preventative maintenance procedures Operator present daily Pressure Safety Valve (PSV) PSV serviced regularly Secondary containment Berms 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Recover Product Environmental and/or wildlife cleanup and rehabilitation
Loading / unloading incident	 Engineering Controls Administrative Controls Training / exercises Operator present daily Secondary containment Berms Truck loading / unloading procedures Positive grounding procedures Driver competency check 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Environmental and/or wildlife cleanup and rehabilitation
Physical Container Damage	 Engineering Controls Administrative Controls Training / exercises Operator present daily Restricted areas Physical barriers Tank farm design Signage Check Valves Secondary containment 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Recover Product Repair / Replace equipment

Emergency Scenario	Preventative Measures	Preparation Measures	Response Actions	Recovery Actions
Container Degradation	 Engineering Controls Administrative Controls Training / exercises Operator present daily External inspections Vessel coating Asset integrity program 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Recover Product Repair / Replace equipment
Environmental Impacts (freezing, excess heat, etc)	 Engineering Controls Administrative Controls Training / exercises Preventative maintenance procedures Operator present daily Pressure Safety Valve (PSV) PSV serviced regularly Secondary containment Berms 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Recover Product Environmental and/or wildlife cleanup and rehabilitation
Pipe System Failure	 Engineering Controls Administrative Controls Training / exercises Preventative maintenance procedures Operator present daily Equipment and lines clearly identified Check Valves Manual Block Valves Automatic or remote Emergency Shutdown Valve (ESD) Asset Integrity program Technical Safety BC compliance 	Emergency response plan preparation, training, and exercising	See ERP for Response Actions	 Incident investigation Recover Product Environmental and/or wildlife cleanup and rehabilitation

2.2 Hazards

Based on typical oil and gas products and the scenarios above, we can typically classify hazards into the following categories:

- Physical Hazard: Flammable, Combustible, or Oxidizing Substances
- Physical Hazard: Potential for Pool Fires
- Human Health Hazard: Inhalation Toxicity
- Human Health Hazard: Carcinogenicity
- Human and Environmental Health Hazard: Corrosive Substances
- Environmental Health Hazard: Persistent, Bioaccumulative, or Aquatically Toxic

These hazards have the potential to result in the following consequences:

Impacted	Potential Consequences
Company Employees	 Fatality Permanent Disability Lost time Injury Illness Medical Aid Low to no potential consequences
Other Workers in the Area	 Fatality Permanent Disability Lost time Injury Illness Medical Aid Low to no potential consequences Evacuation / restricted access / road closures
General Public	 Fatality Permanent Disability Lost time Injury Illness Medical Aid Low to no potential consequences Evacuation / restricted access / road closures
Environment	 Release into atmosphere / plume Release of flammable gas / liquid Release of corrosive liquid Liquid spill on land and negative impacts to plant life Liquid spill into water body and negative impacts to water and plant life Negative impacts to wildlife (illness, injury, disability, or fatality)
Equipment	Equipment failure / damageComplete loss of equipmentLost revenues

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 ²	2 nd degree burns within 60 seconds					
Overpressure	3.50	Psi	Serious injury likely					
Toxic Effects	Dependent on substance released							

- Thermal radiation high temperatures associated with the burning of gas can cause significant burns or even death to individuals that are too close to the heat source.
- Overpressure is the pressure above atmospheric pressure that is caused by the shock wave created from an explosion. Overpressure can result in structural damage leading to public harm or directly by damaging hollow organ systems such as auditory, respiratory, and gastrointestinal systems.
- Toxic Effects Various substances will have different effects

Thermal Radiation and Overpressure LOC's are from ALOHA; which is an air hazard modeling program developed jointly by NOAA and the Environmental Protection Agency (EPA). Toxic Effect HPZ's are determined utilizing numerous methods and LOC's depending on the substance, but are generally completed using one of the following:

- BC Oil & Gas Commission Emergency Management Manual; August 2018; Version 2.1
- Alberta Energy Regulator (AER) ERCBH2S Dispersion Model
- Transport Canada 2016 Emergency Response Guidebook
- ALOHA Dispersion Model

3.1 Deactivated Pipelines

In accordance with the BCOGC Oil and Gas Activities act – Pipeline Regulation, all pipelines being re-licensed to Deactivated status must be deactivated in accordance with CSA Z662. CSA Z662 states under section 10.15.1.1 Deactivation of piping:

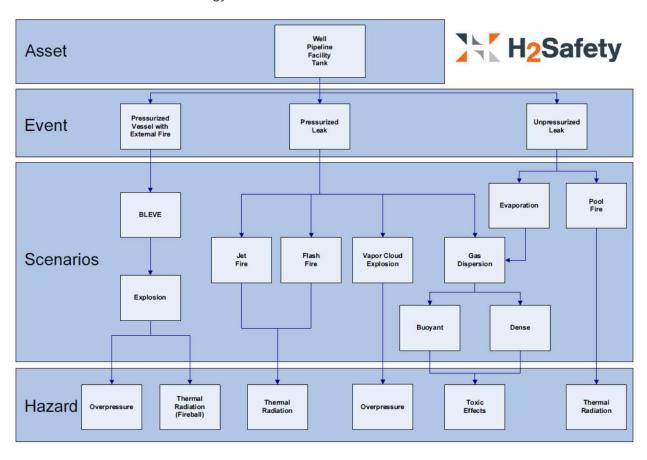
Operating companies deactivating piping shall

- a) Isolate the piping, using blind flanges, weld caps, or blanking plates suitable for the pressure from which the deactivated piping is being isolated;
- b) Where required, provide a pressure-relief system; and
- c) Fill the piping with a suitable medium, having regard for the intended duration of the deactivation, the effects of the medium on the integrity of the piping, and the potential consequences of a leak.

As a corrosion inhibitor may be utilized in deactivated pipelines, a hazard planning zone (HPZ) of 10 meters has been assigned to all deactivated pipelines to represent the pipeline right-of-way.

4.0 Methodology

Included below is the methodology used to determine HPZ's.



5.0 Asset Tables

For asset tables, refer to the back of the applicable supplement area (white tabs). Each set of asset tables will include their associated Hazard Planning Zones (HPZ's).

6.0 Health Effects

Included below is a list of most probable health effects that could occur at an oil and gas location.

Hazardous Product	General Description	Health Effects						
Natural Gas	 Extremely flammable. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapours from liquefied gas are initially heavier than air and spread along ground. 	 Hydrogen sulphide gas and hydrocarbon vapours may: Cause irritation of eyes, nose and throat, dizziness and drowsiness. At higher concentrations, sever irrigation of eyes, nose, throat and lungs may occur. Unconsciousness and respiratory failure may happen without warning. Death may result if not promptly revived. Contact with skin may cause irritation and possibly dermatitis. Hydrocarbons are absorbed through intact skin. Contact of liquid with eyes may cause sever irritation. 						
Carbon Dioxide	 Vapours from liquefied gas are initially heavier than air and spread along ground. 	 Vapours may cause dizziness or asphyxiation without warning. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. 						
Hydrogen Sulphide	 Flammable - explosive when mixed with air – forms SO₂ when combusted Rotten egg smell at low concentrations – inhibits olfactory senses at high concentrations. Heavier than air; will tend to disperse slower in sheltered or low lying areas. Extremely toxic. 							

Hazardous Product	General Description	Health Effects
Oil or Condensate	 Colourless/straw coloured liquid, hydrocarbon and rotten eggs odour. Material will ignite at normal temperatures. 	 Gas/vapour may cause irritation of eyes, nose and throat, dizziness and drowsiness. H₂S 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. Contact with skin may cause irritation and possibly dermatitis. Absorbed through intact skin. Contact of liquid with eyes may cause severe irritation and possible damage.
Nitrogen	- Containers may explode when heated. Ruptured cylinders may rocket.	 Vapours may cause dizziness or asphyxiation without warning. Vapours from liquefied gas are initially heavier than air and spread along ground.
Compressed Air	- High pressure air	- Possible burns, abrasions and skin irritation.
Steam	- High pressure, high temperature air/water	- Possible burns and skin irritation.
Emissions	- Carbon monoxide	 Very toxic. Can harm the blood (decreased ability to carry oxygen). Symptoms may include headache, nausea, dizziness, drowsiness and confusion May cause permanent damage to organs including the brain and heart. Symptoms of mild frostbite include numbness, prickling and itching. 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.
	- Sulphur Dioxide	 Very toxic if inhaled. Causes severe skin burns and eye damage Corrosive to the respiratory tract.

Hazardous Product	General Description	Health Effects
Produced Water	Clear to dirty grey liquid.Flammable liquid and vapour.	 Can be fatal if inhaled. Causes serious eye irritation. May cause skin irritation. May cause gastrointestinal irritation.
Diesel	Bright, oily liquid; clear to yellow in colour with mild petroleum-like odour.Flammable liquid and vapour.	 May be fatal if swallowed and enters airways. Causes skin irritation. Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure.
Gasoline	 Clear to slightly yellow or green liquid with Gasoline odour. Extremely flammable liquid and vapour. 	 May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause cancer. May cause damage to organs through prolonged or repeated exposure.
Lube Oil	- Yellow liquid with petroleum oil like odour.	 May cause skin and eye irritation. Repeated or long term exposure may cause dizziness or drowsiness.
Propane	 Colourless, liquefied gas. Extremely flammable and may explode when heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapours from liquefied gas are initially heavier than air and spread along ground. 	 May displace oxygen and cause rapid suffocation. May cause respiratory irritation. Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. May cause eye and skin irritation.
Corrosion Inhibitor	 Black liquid. Highly flammable liquid and vapour. 	 Harmful if swallowed or in contact with skin. Causes skin irritation. Causes serious eye damage. Toxic if inhaled. May cause drowsiness or dizziness. May cause kidney damage through prolonged or repeated exposure.

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Hazardous Product	General Description	Health Effects
Scale Inhibitor	Colourless liquid.Flammable liquid and vapour.	 Harmful if swallowed. May cause damage to eyes. May cause damage to kidneys through prolonged or repeated exposure.
Paraffin Inhibitor	 Clear liquid. Hydrocarbon-like odour. Flammable liquid and vapour. 	 Harmful in contact with skin and can cause skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May cause cancer or genetic defects. May cause damage to nervous system through prolonged or repeated exposure. May be fatal if swallowed and enters airways.
Biocide	Colourless liquid.Pungent odour.Flammable liquid and vapour.	 Causes serious eye damage. Causes severe skin burns. May cause allergic skin reaction. Harmful if swallowed. Causes digestive tract burns. May cause allergic respiratory tract irritation. Toxic if inhaled.
Demulsifier / Emulsion Breaker	 Clear amber liquid. Highly flammable liquid and vapour. Hydrocarbon-like odour. 	 Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May cause genetic defects.
Ethylene Glycol	- Clear, colourless, viscous liquid.	 May cause eye irritation. May be harmful if inhaled. Causes respiratory tract irritation. May be harmful if absorbed through skin. Causes skin irritation. May be harmful if swallowed.

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Hazardous Product	General Description	Health Effects
Natural Gas Liquids (NGL)	 Colourless, liquefied gas. Extremely flammable and may explode when heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapours from liquefied gas are initially heavier than air and spread along ground. 	 May displace oxygen and cause rapid suffocation. May cause respiratory irritation. Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. May cause eye and skin irritation.
Liquefied Petroleum Gas (LPG)	 Colourless, liquefied gas. Extremely flammable and may explode when heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapours from liquefied gas are initially heavier than air and spread along ground. 	 May displace oxygen and cause rapid suffocation. May cause respiratory irritation. Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. May cause eye and skin irritation.
Methanol	Clear, colourless liquid.Alcohol-like odour.Highly flammable in liquid and vapour.	 Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Causes damage to organs.
Jet Fuel (Jet B or Avgas)	 Clear to straw-coloured liquid. Highly flammable liquid and vapour. Gasoline-like odour. 	 May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. May cause cancer. May cause damage to organs through prolonged or repeated exposure.
Amine (MEA)	Clear, colourless liquid.Amine-like odour.Combustible at high temperatures.	 Harmful if swallowed, in contact with skin or inhaled. Causes severe skin burns and eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if swallowed.

Hazardous Product	General Description	Health Effects
H2S Scavenger	Clear liquid.Soluble in Water.	 Irritating to eyes and skin. Irritating to respiratory system. May cause severe irritation burns. May cause allergic skin reaction. May be harmful if swallowed.
Other		ardous materials are likely to be present. Refer to SDS sheets and for a description and health effects of unlisted hazardous products.

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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)	TO NEAREST RESIDENT (km)	STATUS
					AP OPERATING									
	WHITECAP BOUNDARYLAKE 02-29-084-13 002						-120° 0' 59.277"	WD	N/A	130	N/A	130		AC
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	N/A	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 04-33-084-14 001	BCBT0003900	04-33-084-14W6	56.3211204			-120° 9' 37.477"	В	N/A	N/A	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 04-34-084-14 002	BCST0002904	04-34-084-14W6	56.3202569			-120° 7' 51.115"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 05-17-084-13 002	BCBT0010588					-120° 1' 30.946"	В	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 05-31-084-13 001	BCWI0001686	05-31-084-13W6	56.3242921	-120.0537250		-120° 3' 13.41"	WI	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-01-085-14 002	BCST0000362					-120° 4' 22.341"	S	43.95	187	N/A	187		AC
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	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-03-085-14 002	BCST0000363	06-03-085-14W6	56.3391061	-120.1259926		-120° 7' 33.573"	S	43.95	187	50	187		AC
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"	В	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-09-084-14 001	BCST0000337	06-09-084-14W6	56.2656165			-120° 9' 5.122"	S	43.95	187	N/A	187		AC
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	43.95	187	N/A	187		AC
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	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-15-084-14 002	BCST0000352	06-15-084-14W6	56.2808044		56° 16' 50.895"	-120° 7' 35.067"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-17-084-14 001	BCST0000354	06-17-084-14W6	56.2805895		56° 16' 50.122"	-120° 10' 35.425"	S	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-17-085-13 001	BCST0000346	06-17-085-13W6	56.3684373		56° 22' 6.374"	-120° 1' 15.073"	S	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-18-084-13 001	BCST0000338	06-18-084-13W6	56.2809692			-120° 2' 48.872"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-26-084-14 001	BCST0000360	06-26-084-14W6	56.3096148			-120° 6' 0.575"	S	N/A	ROW	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-30-084-13 001	BCST0000341	06-30-084-13W6	56.3101416			-120° 2' 51.618"	S	N/A	ROW	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-31-084-13 001	BCST0000342	06-31-084-13W6			56° 19' 27.015"	-120° 2' 49.409"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-02-085-14 001	BCGM0008073	07-02-085-14W6	56.3396208			-120° 5' 36.324"	GM	43.95	187	50	187		AC
WHITECAP RESOURCES INC.		BCGP0000445	07-02-085-14W6	56.3396208			-120° 5' 36.324"	GP	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 07-35-084-14 001	BCST0000361	07-35-084-14W6	56.3240036			-120° 5' 32.980"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-01-084-14 001	BCBT0002582	08-01-084-14W6	56.2518681	-120.0624429		-120° 3' 44.794"	В	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 002	BCBT0000474	08-02-085-14W6	56.3368448			-120° 5' 8.898"	В	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 006	BCBT0000046	08-02-085-14W6				-120° 5' 8.898"	В	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.		BCOM0007024	08-02-085-14W6	56.3368448		2 56° 20' 12.641"	-120° 5' 8.898"	OM	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.		BCOM0007030	08-02-085-14W6			2 56° 20' 12.641"	-120° 5' 8.898"	OM	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-02-085-14 005	BCWI0001642	08-02-085-14W6	56.3368448		56° 20' 12.641"	-120° 5' 8.898"	WI	363.46	1100	50	1100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-03-084-14 001	BCST0000347				2 56° 15' 6.446"	-120° 6' 47.153"	S	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-10-084-14 001	BCST0000348	08-10-084-14W6	56.2665697	-120.1130396		-120° 6' 46.942"	<u>S</u>	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-11-084-14 001	BCST0000349	08-11-084-14W6	56.2663744			-120° 5' 14.228"	S	100.28	374	N/A	374		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-16-084-14 001	BCST0000353	08-16-084-14W6	56.2806720	-120.1392885		-120° 8' 21.438"	<u>S</u>	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-21-084-14 001	BCST0000355	08-21-084-14W6	56.2954673			-120° 8' 22.538"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 08-22-084-14 002 WHITECAP BOUNDARYLAKE 11-14-085-14 001	BCST0000356 BCST0000365	08-22-084-14W6 11-14-085-14W6	56.2952051 56.3720458	-120.1132038		-120° 6' 47.533" -120° 5' 52.530"	S S	43.95 43.95	187 187	50 N/A	187 187		AC AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 11-14-085-14-001 WHITECAP BOUNDARYLAKE 12-05-085-13 001	BCST0000365	12-05-085-13W6	56.3426465		56° 20' 33.527"	-120° 5 52.530 -120° 1' 42.423"	S	43.95	187	N/A N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-03-085-13 001	BCST0000344	12-03-085-13W6	56.3571880		56° 21' 25.876"	-120 1 42.423 -120° 1' 41.371"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 12-08-085-13-001	BCBT0000343	12-13-084-14W6	56.2844635		56° 17' 4.068"	-120 1 41.371 -120° 4' 47.400"	B	43.93 N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-11-085-14 001	BCOM0007141	13-11-085-14W6	56.3612702			-120° 6' 16.147"	OM	N/A	250	N/A	250		NW
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-11-003-14-001	BCWI00007141	13-29-082-13W6	56.1434285			-120° 0' 24.602"	WI	N/A	ROW	N/A	100		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-23-002-13-001	BCST0000343	13-32-084-13W6	56.3318151			-120° 1' 45.759"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 13-32-064-13-001 WHITECAP BOUNDARYLAKE 14-06-084-13-002	BCBT0000343	14-06-084-13W6	56.2584234	-120.0293777	56° 15' 30.324"	-120 1 45.759 -120° 2' 53.523"	B	100.28	374	N/A	374		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-00-084-13 002	BCBT0002175	14-07-084-13W6	56.2735279			-120° 2' 49.610"	В	N/A	130	50	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-19-084-13 001	BCST0000339	14-19-084-13W6	56.3026017			-120° 2' 49.913"	S	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-19-084-13 003	BCST0000339	14-20-084-13W6	56.3027497			-120° 1' 15.231"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-25-084-14 001	BCST0000340	14-25-084-14W6	56.3171458			-120 1 15.231 -120° 4' 25.037"	S	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 14-28-084-14-001	BCBT0002934	14-28-084-14W6	56.3171646		56° 19' 1.792"	-120° 9′ 9.608"	В	N/A	130	N/A	130		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-11-085-14 001	BCST00002934	16-11-085-14W6				-120° 5' 13.735"	S	43.95	187	50	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-23-084-14 001	BCST0000357		56.3025380	-120.0869191		-120° 5' 12.908"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-24-084-14 001	BCST0000358	16-24-084-14W6	00.00			-120° 3' 37.821"	S	43.95	187	N/A	187		AC
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 16-30-082-13 001	BCWH0016169	16-30-082-13W6	56.1434071		56° 8' 36.265"	-120° 0' 47.881"	WH	N/A	ROW	N/A	100		AC
	WHITECAP BOUNDARYLAKE 16-36-084-14 001		16-36-084-14W6				-120° 3' 37.985"	S	43.95	187	50	187		AC
LO/II NEOCCHOLO INC.	DOOND/INTERNE TO 00-004-14-001	20010001000	10 00 004 1400	00.0010400	.20.0000010	, 55 15 55.505	.20 0 07.000		70.00	107	50	107		/10

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.

EGEND

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 Su-Saletilite DH=Dehydrator UN=Unkernown WI=Water Injection PT=Ppeline Terminal WD=Water Disposal OM=Oil Sales Meter WF=Well Facility PR=Pgging Receiver/Launcher WD=Water Disposal Facility WH=Water Hub

Status: A=Abandoned D=Discontinued O=Operating P=To Be Constructed S=Suspended AC=Active UN=Unknown NW=New RT=Retired CN=Cancelled

Other: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake BC Unit 1 - Sour Wells

								GAS PROD.	H2S		VAPOUR		DISTANCE TO	
LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	RATE (1000	RATE	SOUR HPZ (m)	FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	NEAREST RESIDENT (km)	STATUS
								m3/day)	(m3/s)		= ()			
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-10-085-14	1545	100031008514W602		56 3495	-120.1257	5 500	0.885	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-20-085-13	6889	100031003514W602			-120.0219	1,200	0.871	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY 03-32-084-13	31476	100043308413W600		56.3220	-120.0195	3,600	5.553	0.0002	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-23-084-14	6262	100042308414W600			-120.1035	6,300	0.706	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-05-085-13 WHITECAP ET AL BOUNDARY 05-35-084-14	2864 2729	100050508513W600 100053508414W600			-120.0272 -120.1066	1,400	1.249 1.615	0.0000	100 100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-35-064-14 WHITECAP ET AL BOUNDARY 05-36-084-14	2745	100053508414W600			-120.1000	3,800	0.977	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-01-085-14	761	100060108514W600	06-01-085-14W6		-120.0738	100	2.548	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-03-085-14	362	100060308514W600			-120.1265	3,400	1.423	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-05-085-13	813	100060508513W600			-120.0208	1,300	1.405	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-06-085-13 WHITECAP ET AL BOUNDARY 03-07-085-13	789 2979	100060608513W600 100030708513W600			-120.0471 -120.0469	1,200	1.19	0.0000	100	118 118	130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-07-085-13	763	100060708513W600			-120.0471	800	1.471	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-07-085-13	2980	100110708513W600	06-07-085-13W6		-120.0471	400	0.774	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-11-085-14	282	100061108514W600			-120.0998	1,400	2.748	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-17-085-13 WHITECAP ET AL BOUNDARY A06-18-085-13	760 2738	100061708513W600 100031808513W600			-120.0213 -120.0476	1,000 900	0.38	0.0000	100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-29-084-13	1091	100031808313W600			-120.0476	7,900	0.69	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-31-084-13	931	100063108413W600				28,600	1.19	0.0004	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-32-084-13	965	100063208413W600			-120.0208	1,700	0.532	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-36-084-14	804	100063608414W600			-120.0738 -120.0933	900	0.861	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-02-085-14 WHITECAP ET AL BOUNDARY 07-05-085-13	2865 2730	100070208514W600 100070508513W600	07-02-085-14W6 07-05-085-13W6	56.3396 56.3391	-120.0933 -120.0145	1.000	0.871 1.355	0.0000	100 100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-03-085-13 WHITECAP ET AL BOUNDARY 07-14-085-14	3210	100070308513W600	07-03-085-13W6	56.3681	-120.0143	100	1.074	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-26-084-14	2868	100072608414W600	07-26-084-14W6	56.3102	-120.0940	1,400	0.753	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-35-084-14	2735	100073508414W600		56.3244	-120.0933	1,200	0.48	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-02-085-14 WHITECAP ET AL BOUNDARY 08-03-085-14	788 379	100080208514W600		56.3390 56.3390	-120.0868	4,300 2.900	1.027 0.919	0.0001	100 100	118 118	130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-05-085-14 WHITECAP ET AL BOUNDARY 08-05-085-13	878	100080308514W600 100080508513W600		56.3392	-120.1132 -120.0078	2,300	0.724	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-10-084-14	1023	100081008414W600			-120.1132	400	1.219	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-11-085-14	769	100081108514W600	08-11-085-14W6	56.3535	-120.0868	2,800	0.726	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-15-084-14	1076	100081508414W600	08-15-084-14W6	56.2808	-120.1132	600	1.152	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-17-085-13 WHITECAP ET AL HZ BOUNDARY B08-17-085-13	2568 31690	100081708513W600 100100808513W600		56.3683 56.3686	-120.0067 -120.0073	3.200	1.306 3.803	0.0000	100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-085-13	523	100100000513W600	08-18-085-13W6	00.000	-120.0073	1.900	0.59	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-21-084-14	1120	100082108414W600	08-21-084-14W6	56.2954	-120.1395	400	0.658	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-23-084-14	6718	100082308414W600			-120.0857	600	0.813	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-24-084-14 WHITECAP ET AL BOUNDARY 08-25-084-14	978	100082408414W600 100082508414W600	08-24-084-14W6		-120.0605	1,500	1.984	0.0000	100	118	130		OIL OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-25-064-14 WHITECAP ET AL BOUNDARY 08-26-084-14	928 966	100082508414W600	00 20 001 11110	00.0101	-120.0605 -120.0868	600	1.626 0.98	0.0000	100	118 118	130 130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-27-084-14	743	100082708414W600	08-27-084-14W6		-120.1132	1,000	2.41	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-34-084-14	861	100083408414W600			-120.1132	1,900	1.505	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-01-085-14	2740	100110108514W600			-120.0734	1,000	2.06	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-11-085-14 WHITECAP ET AL BOUNDARY 11-17-085-13	3211 6720	100111108514W600 100111708513W600			-120.0997 -120.0214	100	1.094 0.784	0.0000	100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-17-065-13 WHITECAP ET AL BOUNDARY 11-30-084-13	2867	100111708313W600			-120.0214	4.000	0.784	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-23-084-14	6263	100122308414W600			-120.1048	800	0.43	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-01-085-14	521	100140108514W602			-120.0737	1,400	1.355	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-02-085-14 WHITECAP ET AL BOUNDARY 14-03-085-14	493 363	100140208514W600 100140308514W600	14-02-085-14W6 14-03-085-14W6	56.3463 56.3463	-120.1000 -120.1263	2,000 3.900	1.024	0.0000	100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-03-085-14 WHITECAP ET AL BOUNDARY 14-06-085-13	792	100140308514W600 100140608513W600		56.3463	-120.1263	1,200	0.97	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-085-13	368	100140708513W602	14-07-085-13W6		-120.0471	400	0.37	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-10-084-14	843	100141008414W600		0000	-120.1265	200	0.55	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-11-084-14	841	100141108414W600			-120.1002	100	0.832	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-11-085-14 WHITECAP ET AL BOUNDARY 14-12-085-14	821 759	100141108514W600 100141208514W600			-120.1002 -120.0738	1,300	2.274 1.475	0.0000	100	118 118	130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-003-14 WHITECAP ET AL BOUNDARY 14-13-084-14	1080	100141308414W600	14-13-084-14W6		-120.0738	100	2.235	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-14-084-14	1059	100141408414W600			-120.1002	3,600	1.144	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-14-085-14	10376	102141408514W602	14-14-085-14W6		-120.1006	2,800	1.926	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-15-084-14 WHITECAP HZ BOUNDARY LAKE A14-19-084-13	755 33872	100141508414W600 102083008413W600	14-15-084-14W6 14-19-084-13W6	56.2881 56.3025	-120.1265 -120.0474	100	1.481	0.0000	100	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE A14-19-064-13 WHITECAP ET AL BOUNDARY 14-19-084-13	998	102063006413W600		56.3025	-120.0474	1,200	1.723	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-20-084-13	296	100142008413W600	14-20-084-13W6	56.3027	-120.0208	800	0.861	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-21-084-14	1172	100142108414W600	14-21-084-14W6	56.3029	-120.1529	1,100	1.585	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-22-084-14	794	100142208414W600		56.3027	-120.1265	400	2.017	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-23-084-14 WHITECAP ET AL BOUNDARY 14-26-084-14	929	100142308414W600 100142608414W600		56.3027 56.3172	-120.1002 -120.1002	4,000 8,700	1.055 0.91	0.0000	100	118 118	130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-20-064-14 WHITECAP ET AL BOUNDARY 14-27-084-14	853	100142708414W600		56.3173	-120.1002	1,400	2.786	0.0000	100	118	130		OIL
	WHITECAP HZ BOUNDARY LAKE A14-29-084-13	32470	100122808413W600			-120.0211	7,500	5.744	0.0005	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-084-13	975	100143008413W600	14-30-084-13W6	56.3173	-120.0471	3,500	0.45	0.0000	100	118	130		OIL

Boundary Lake BC Unit 1 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		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 14-31-084-13	888	100143108413W600	14-31-084-13W6		-120.0471	400	1.29	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-32-084-13	935	100143208413W600	14-32-084-13W6	56.3318	-120.0208	900	0.59	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-35-084-14	805	100143508414W600	14-35-084-14W6	56.3318	-120.1002	5,500	1.161	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-36-084-14	793	100143608414W600	14-36-084-14W6	56.3318	-120.0738	7,400	0.7	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 15-06-084-13	26609	100150608413W600	15-06-084-13W6	56.2583	-120.0390	800	0.17	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-08-085-13	889	100160808513W600	16-08-085-13W6	56.3609	-120.0078	1,200	0.658	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-20-084-13	1386	100162008413W600	16-20-084-13W6	56.3027	-120.0078	400	0.823	0.0000	100	118	130		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		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		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	5.94	0.0002	100	118	130		OIL
				WHITECAP	SOUR SUSPE	NDED								
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		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	0.144	0.0000	100	118	130		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-08-085-13	906	100080808513W600	08-08-085-13W6	56.3537	-120.0078	400	3.21	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-11-084-14	1136	100081108414W600	08-11-084-14W6	56.2662	-120.0873	3,200	0.532	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-14-084-14	866	100081408414W600	08-14-084-14W6	56.2802	-120.0868	3,200	0.37	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-16-084-14	1128	100081608414W600	08-16-084-14W6	56.2810	-120.1395	200	0.72	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-17-084-14	1151	100081708414W600	08-17-084-14W6	56.2808	-120.1659	100	0.48	0.0000	100	118	130		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-14-085-14	3179	100121408514W600	12-14-085-14W6	56.3720	-120.1066	900		0.0000	100		110		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		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	12.2	0.0004	100	118	130		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		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-34-084-14	6347	102143408414W600	14-34-084-14W6	56.3314	-120.1261	3,200	0.139	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 16-06-084-14	6105	100160608414W600	16-06-084-14W6	56.2591	-120.1924	9,800	1.116	0.0001	100	118	130		SUSPENDED OIL
				WHITECAP SOU	R DRILLED AI	ND CASED								
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-35-084-14	797	100163508414W602	16-35-084-14W6	56.3317	-120.0868	3,500	11.68	0.0005	100	118	130		DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UW = Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake BC Unit 1 - Sour Gas Pipelines

I KENSEE	VATER ROSS	FROM		то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE		NO.	NO.	LINE SEGMENT MODIFIER PERATING	LINE #	INCLUDES UNIQUE LINE#	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	LICENSED H2S (%)	TEMP (°C)			CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	- '	14-06-084-13W6		08-11-084-14W6	-	-	-	-	-	-	7437	2	-	1	1,2	SG 1	168.3	3.45	3.2	9,726	0.50	5	0.71	50.14237	100.284735	340	71	374	Q
WHITECAP RESOURCES INC.	- (08-11-084-14W6		03-15-084-14W6	-	-	-	-	-	-	24055	3	-	2	1,2	SG 1	168.3	3.45	3.2	9,726	0.50	5	0.71	50.14237	100.284735	340	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	0.070058	0.0700581	100	18	110	Q
WHITECAP RESOURCES INC.	- (08-02-085-14W6	PL	10-10-085-14W6	PL -	-	-	-	-	-	23032	1	-	4	4	SG 1	114.3	3.90	4.8	9,930	2.00	5	0.71	97.34881	97.3488083	330	45	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

																									SEGMENT					
LICENSEE	WATER	FDOM	T0	START	START	START	END	END	END VALVE	LICENSE	LINE .	LINE	UNIQUE	INCLUDES	SIIB OD	SEGMENT LENGTH	WALL	LICENSED PRESSURE	LICENSED	TEMP _	GAS	LIQUID	GLR	GVF	H2S	CUMULATIVE	SOUR	THERMAL	ASSIGNED	CTATUC
LICENSEE	CROSS	FROM	ТО	VALVE	VALVE LATITUDE	VALVE LONGITUDE	VALVE		LONGITUDE		NO. N	EGMENT MODIFIER	LINE#	UNIQUE LINE#	SOB (mm)	LENGIH (km)	(mm)	(kPa)	H2S (%)		(1000 m3/d)	(m2/d)	(m3/m3)	(m3/m3)	VOLUME	H2S RELEASE VOLUME (m3)	HPZ (m)	RADIATION HPZ (m)	EPZ (m)	STATUS
																									(m3)					
WILLIE CAR RECOURSES INC.		00.44.004.441140	40.00.004.44140							1100	WH	ITECAP SO	DUR OPE	1	05 4040	4.47	40.5	0.450	0.00	F 0.4		0050	04.077	44 447	4 40040	10.0515057	470	0.4	407	
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	08-11-084-14W6 08-10-084-14W6	16-23-084-14W6 08-11-084-14W6	-	-	-	-	-	-	1128 1138	5	-	2		SE 124.0 SE 124.0	4.17 1.40	12.5	3,450 3,450	0.32	5 0.8	38 50 38 50	2350	21.277	41.117		43.9515057 43.9515057	170 170	31 31	187 187	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	08-02-085-14W6	-	+ -	-	-	-	-	1242		-	3		OM 254.0		4.8	689	0.32	5 0.9	_	2350		8.3734			170	40	187	Q
WHITECAP RESOURCES INC.	- 1	07-02-085-14W6	08-02-085-14W6	-	-	-	-	-	-	1242		-	4	1 to 138		0.20	4.0	689	0.02	5 0.9	_	2350		8.3734			170	15	187	Q
WHITECAP RESOURCES INC.	-	06-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	1242		-	5			0.62	4.8	689	0.01	5 0.9	_	2350	21.277	8.3734	0.010961	43.9515057	170	27	187	Q
WHITECAP RESOURCES INC.	-	06-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	1242		-	6	1 to 138		0.12	4.0	689	0.01	5 0.9		2350		8.3734	0.000496	43.9515057	170	10	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	06-01-085-14W6 14-02-085-14W6	08-02-085-14W6 06-02-085-14W6	-	-	-	-	-	-	1242 2595		-		1 to 138		0.89	4.8 3.2	689 3,450	0.01	5 0.8	97 50 88 50	2350 2350	21.277	8.3734 41.117	0.015734		170 170	29 13	187 187	Q Q
WHITECAP RESOURCES INC.	+ - +	06-15-085-14W6	11-14-085-14W6	-	-	-		-	-	3164		-	9	1 to 138		1.85	4.0		0.50	5 0.0		2350	21.277	17.496			170	16	187	Q
WHITECAP RESOURCES INC.	-	08-28-084-14W6	06-03-085-14W6	-	-	-	-	-	-	3730		-	10	1 to 138		3.50	4.0	3,450	0.03	5 0.8		2350	21.277	41.117	0.130786	43.9515057	170	28	187	Q
WHITECAP RESOURCES INC.	-	14-01-085-14W6	06-01-085-14W6	-	-	-	-	-	-	3769	1	-	11	1 to 138		0.86	3.2		0.14	5 0.8	88 50	2350	21.277	41.117	0.038557	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	-	07-02-085-14W6	06-02-085-14W6	-	-	•	-	-	-		10	-	12	1 to 138		0.40	3.2		0.02	5 0.8		2350	21.277	41.117			170	12	187	Q
WHITECAP RESOURCES INC.	-	14-11-084-14W6	06-14-084-14W6	-	-	-	-	-	-	3769		-		1 to 138		0.60	3.2		0.01	5 0.8	_	2350		41.117			170	13	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	07-26-084-14W6 14-15-084-14W6	16-23-084-14W6 08-22-084-14W6	-	-	-	-	-	-	3769 3769		-		1 to 138		0.78 1.20	3.2	3,450 3,450	0.14	5 0.8 5 0.8		2350 2350		41.117	0.03497	43.9515057 43.9515057	170 170	13 14	187 187	Q
WHITECAP RESOURCES INC.	-	08-27-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769		-		1 to 138			3.2	3,450	0.10	5 0.8	_	2350			0.05412	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.		14-27-084-14W6	08-22-084-14W6	-	-	-	-	-		3769	34	-	17	1 to 138		3.57	3.2	3,450	0.14	5 0.8		2350	21.277	41.117	0.160055	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	-	14-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	3769	35	-	18			1.18	3.2	3,099	0.04	5 0.8	-	2350	21.277	36.567	0.0145	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	 - 	05-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	39	-	19	1 to 138		1.40	3.2	3,450	0.14	5 0.8		2350		41.117	0.062767	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	1 -	07-05-085-13W6 11-30-084-13W6	12-05-085-13W6 14-25-084-14W6	-	-	-	-	-	-	3769 3769	40 50	-	20 21	1 to 138		1.40	3.2	3,450 3,450	0.10 0.40	5 0.8 5 0.8		2350 2350	21.277	41.117 41.117	0.044833	43.9515057 43.9515057	170 170	14 14	187 187	Q
WHITECAP RESOURCES INC.	+ - +	05-36-084-14W6	14-25-084-14W6	+ -	-	-		-	-		51	-	22	1 to 138		0.75	3.2	3,450	0.40	5 0.8	_	2350	21.277	41.117	0.221605	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 1	07-14-085-14W6	08-14-085-14W6	-	-	-	-	-	-		54	-	23	1 to 138		0.30	3.2	3,450	0.01	5 0.8	_	2350	21.277	41.117	0.000961	43.9515057	170	12	187	Q
WHITECAP RESOURCES INC.	-	05-35-084-14W6	07-35-084-14W6	-	-	-	-	-	-	3769	60	-	24	1 to 138	OE 88.9	0.86	4.0	3,450	0.01	5 0.8	88 50	2350	21.277	41.117	0.006195	43.9515057	170	21	187	Q
WHITECAP RESOURCES INC.	-	06-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-		62	-	25	1 to 138		0.71	3.2	8,275	0.13	5 0.7		2350	21.277	115.27	0.037864		170	13	187	Q
WHITECAP RESOURCES INC.	-	04-23-084-14W6	06-14-084-14W6	-		-	-	-	-	4086	1	-	26	1 to 138		1.20	3.9	3,450	0.63	5 0.8		2350	21.277	41.117		43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	12-23-084-14W6 16-06-084-14W6	10-23-084-14W6 06-09-084-14W6	-	-	-	-	-	-	4086 4176	2	-	27 28	1 to 138		0.60 2.70	3.9 2.8	9,900 3,500	0.08	5 0.7 5 0.8	_	2350 2350	21.277	144.43 41.775		43.9515057 43.9515057	170 170	20 21	187 187	Q Q
WHITECAP RESOURCES INC.	+ - +	11-17-085-13W6	06-17-085-13W6	+ -	+ -	-		-	-	4516	1	-	29	1 to 138		0.25	3.9		0.30	5 0.8		2350	21.277	41.117	0.018089	43.9515057	170	15	187	Q
WHITECAP RESOURCES INC.	- 1	08-23-084-14W6	08-23-084-14W6	-	-	-	-	-	-	4517	1	-	30	1 to 138		0.07	4.0		0.10	5 0.7	_	2350	21.277	144.98	0.006686	43.9515057	170	15	187	Q
WHITECAP RESOURCES INC.	-	04-16-084-14W6	06-16-084-14W6	-	-	-	-	-	-	4518	1	-	31	1 to 138	OE 88.9	0.69	4.0	9,930	0.10	5 0.7	′ 1 50	2350	21.277	144.98	0.065903	43.9515057	170	31	187	Q
WHITECAP RESOURCES INC.	-	06-16-084-14W6	08-16-084-14W6	-	-	•	-	-	-	4518		-	32	1 to 138		0.70	3.9	9,930	0.05	5 0.7		2350	21.277	144.98	0.01405	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	-	07-35-084-14W6	08-35-084-14W6	-	-	-	-	-	-	4586		-	33	1 to 138		0.30	4.0	,	0.12	5 0.8		2350	21.277	41.117	0.025933	43.9515057	170	17	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		08-21-084-14W6 14-20-084-13W6	01-21-084-14W6 16-19-084-13W6	-	-	-		-	-	4586 4586		-	34 35	1 to 138		0.61	4.0	3,450 3,450	0.04	5 0.8 5 0.8		2350 2350	21.277	41.117 41.117	0.030392	43.9515057 43.9515057	170 170	26 27	187 187	Q Q
WHITECAP RESOURCES INC.	-	14-19-084-13W6	16-24-084-14W6	-	- -	-		-	-	4586		-	36	1 to 138		0.91	5.6	3,450	0.00	5 0.8	_	2350	21.277	41.117	0.02472	43.9515057	170	41	187	Q
WHITECAP RESOURCES INC.	-	06-17-085-13W6	12-08-085-13W6	-	-	-	-	-	-	4586		-	37	1 to 138		1.31	4.0		0.10	5 0.8		2350	21.277	41.117	0.094367	43.9515057	170	21	187	Q
WHITECAP RESOURCES INC.	-	06-31-084-13W6	06-36-084-14W6	-	-	-	-	-	-	4586	25	-		1 to 138		1.71	4.0		2.86	5 0.8				41.117	3.522989	43.9515057	170	21	187	Q
WHITECAP RESOURCES INC.	-	06-03-085-14W6	06-02-085-14W6	-	-	-	-	-	-	4586		-		1 to 138			4.0		0.34	5 0.8		2350		41.117		43.9515057	170	28	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	06-36-084-14W6	14-25-084-14W6 06-17-085-13W6	-	-	-	-	-	-	4586	34	-	40	1 to 138		0.72 1.32	3.9		0.09 0.12	5 0.8 5 0.8	_		21.277	41.117			170	20	187 187	Q Q
WHITECAP RESOURCES INC.	+ - +	03-20-085-13W6 16-36-084-14W6	08-02-084-14W6	-	-	-	-	-	-	4695 6120	1	-	41 42	1 to 138		1.74	4.0 5.6		0.12	5 0.8	_	2350 2350	21.277	64.031	0.114331	43.9515057	170 170	21 52	187	Q
WHITECAP RESOURCES INC.	-	14-31-084-13W6	16-36-084-14W6	-	-	-	-	-	-	6120	5	-	43	1 to 138		0.83	4.0	18,000	0.04	5 0.6		2350	21.277	276.39	0.033698	43.9515057	170	42	187	Q
WHITECAP RESOURCES INC.	-	06-31-084-13W6	16-36-084-14W6	-	-	-	-	-	-	6120	6	-	44	1 to 138	OE 88.9	1.63	4.0	3,450	2.86	5 0.8	88 50	2350	21.277	41.117	3.358171	43.9515057	170	21	187	Q
WHITECAP RESOURCES INC.	-	04-34-084-14W6	04-34-084-14W6	-	-	•	-	-	-	7483	1	-	45			0.04	3.9	750	0.15	5 0.9		2350			0.000822	43.9515057	170	10	187	Q
WHITECAR RESOURCES INC.		16-04-085-14W6	06-03-085-14W6	-	-	-	-	-	-	8168		-		1 to 138												43.9515057		14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		08-18-084-14W6 08-26-084-14W6	06-17-084-14W6 16-23-084-14W6	-	-	-	-	-	-	8195 8196		-		1 to 138				3,448 3,448	0.35 0.35							43.9515057 43.9515057		14 13	187 187	Q Q
WHITECAP RESOURCES INC.		06-23-084-14W6	10-23-084-14W6	-	-	-	-	-	-	8196		-		1 to 138				3,448	0.35	5 0.8	88 50	2350	21.277	41.09	0.043491	43.9515057	170	12	187	Q
WHITECAP RESOURCES INC.		14-14-084-14W6	06-23-084-14W6	-	-	-	-	-	-	8196		-	50	1 to 138	CO 60.3	1.02		3,448	0.35	5 0.8	38 50	2350	21.277	41.09	0.108197	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.		06-23-084-14W6	16-23-084-14W6	-	-	-	-	-	-	8196		-	51	1 to 138	CO 60.3	0.96		3,448	0.35	5 0.8	88 50	2350	21.277	41.09	0.101832	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.		16-04-084-14W6	16-04-084-14W6	-	-	-	-	-	-	8197		-		1 to 138				3,448	0.35	5 0.8	8 50	2350	21.277	41.09	0.029701	43.9515057	170	12	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		14-04-084-14W6 13-03-084-14W6	16-04-084-14W6 13-03-084-14W6	-	-	-	-	-	-	8197 8197		-		1 to 138				3,448 3,448	0.35 0.35	5 0.8	88 50	2350	21.277	41.09	0.115622	43.9515057 43.9515057	170 170	14	187 187	Q
WHITECAP RESOURCES INC.		04-10-084-14W6	06-10-084-14W6	-	-	-		-	-	8197		-		1 to 138				3,448	0.35							43.9515057		10 14	187	Q Q
WHITECAP RESOURCES INC.		06-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	8197		-		1 to 138				3,448	0.35							43.9515057		14	187	Q
WHITECAP RESOURCES INC.		13-03-084-14W6	13-03-084-14W6	-	-	-	-	-	<u>-</u>	8197		-		1 to 138				3,448	0.35	5 0.8	38 50	2350	21.277	41.09	0.010608	43.9515057	170	10	187	Q
WHITECAP RESOURCES INC.		04-10-084-14W6	06-10-084-14W6	-	-	-	-	-	-	8197		-		1 to 138				3,448	0.35	5 0.8	38 50	2350	21.277	41.09	0.095468	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.		06-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	8197		-		1 to 138				3,448	0.35							43.9515057		14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		14-03-085-14W6 08-03-085-14W6	06-03-085-14W6 06-03-085-14W6	-	-	-	-	-	-	8198 8198		-		1 to 138				3,448 3,448	0.39 0.35	5 0.8	50 50	2350	21.277 21.277	41.09	0.096922	43.9515057 43.9515057		14 13	187 187	Q
WHITECAP RESOURCES INC.		16-35-084-14W6	06-03-085-14W6	+ -	-	-		-	-	8198		-		1 to 138				3,448	0.35	5 0.8	88 50	2350	21.277	41.09	0.002739	43.9515057		13	187	Q
WHITECAP RESOURCES INC.		14-02-084-14W6	08-11-084-14W6	-	-	-	-	-	-	8203		-		1 to 138				3,448	0.35	5 0.8	38 50	2350	21.277	41.09	0.124108	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	-	06-03-085-14W6	16-34-084-14W6	-	-	-	-	-	-	10655	4	-	64	1 to 138	OE 50.8	1.10	2.0	8,274	0.34	5 0.7	' 4 50	2350	21.277	115.25	0.115494	43.9515057	170	16	187	Q
WHITECAP RESOURCES INC.		08-02-085-14W6	08-02-085-14W6	-	-	-	-	-	-	10655		-		1 to 138			2.0		0.43	5 0.9	7 50	2350	21.277	1.7092	0.003626	43.9515057	170	10	187	Q
WHITECAP RESOURCES INC.		14-27-084-14W6	04-34-084-14W6	-	-	-	-	-	-	11816		-		1 to 138				3,450	0.14							43.9515057		19	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		07-35-084-14W6	08-35-084-14W6 E 07-05-085-13W6 P	- L -	-	-	-	-	-	11816 16219		-		1 to 138				3,450 3,450	0.12 0.23							43.9515057 43.9515057		15 13	187 187	Q Q
WHILLOAF RESOURCES INC.		00-00-000-13VV0 VV	L 01-03-000-13440 P	- -	-	-	-	-	- 1	10219	1	-	00	1 10 130	IVIF 0U.3	0.40	3.9	J,4JU	0.23	J 0.8	JU 3U	2330	41.411	41.11/	0.033400	43.8313037	170	13	101	- Q

Boundary Lake BC Unit 1 - Sour Oil Pipelines

LICENSEE	WATER FROM	то	START VALVE	VALVE	START VALVE	END VALVE	END VALVE LATITUDE	END VALVE	LICENSE LIN	LINE NE SEGMENT	UNIQUE	INCLUDES UNIQUE	SUB OD (mm)	SEGMENT LENGTH	WALL (mm)	LICENSED PRESSURE	LICENSED H2S (%)	TEMP			GLR (m3/m3)	GVF m3/m3)	RELEASE	CUMULATIVE H2S RELEASE		THERMAL RADIATION	ASSIGNED EPZ (m)	STATUS
				LATITUDE	LONGITUDE		LATITUDE			, MODIFIER		LINE #		(km)		(kPa)			m3/c	''			(m3)	VOLUME (m3)		HPZ (m)		
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 08-34-084-14W6 W - 15-06-084-13W6 W		PL - Pl -	-	-	-	-	-	20935 1 22325 1	-	69 70	1 to 138	MP 60.3 OE 88.9	1.30 0.64	3.9		0.24	5 0. 5 0.	_			11.117 144.98	0.094579	43.9515057 43.9515057	170 170	14 31	187 187	Q
WHITECAP RESOURCES INC.	- 06-32-084-13W6 UI		UN -	-	-	-	-	-	23200 3	3 -	71		SE 69.0	0.99	7.5		0.32		84 50			61.949	0.114847	43.9515057	170	18	187	Q
WHITECAP RESOURCES INC.	- 14-32-084-13W6 UI		UN -	-	-	-	-	-	23201 3	-	72		SE 69.0	0.52	7.5	_	0.32		84 50	_		61.949	0.060324	43.9515057	170	17	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 06-06-085-13W6 - 08-06-085-13W6	12-05-085-13W6 12-05-085-13W6	-	-	-	-	-		23239 1 23239 2	-	73 74	1 to 138		1.36 0.55	3.9	3,450 3,450	1.00		88 50 88 50	_		11.117 11.117	0.412267	43.9515057 43.9515057	170 170	14 13	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239 3	_	75	1 to 138		1.35	3.9		1.00		88 50	_		11.117	0.409236	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	- 14-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23239 4	-	76	1 to 138		0.65	3.9		1.00		88 50	_		11.117	0.197039	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 13-28-084-13W6 - 16-08-085-13W6	08-02-085-14W6 12-08-085-13W6	-	-	-	-	-	-	23242 1 23259 1	-	77 78	1 to 138		5.80 1.42	4.8 3.9		0.20 1.00	5 0. 5 0.				11.117 11.117	8.858122 0.430455	43.9515057 43.9515057	170 170	80 14	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23260 1	-	79	1 to 138		0.62	3.9		1.00	5 0.		_		11.117	0.187945	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 06-08-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23260 2	2 -	80	1 to 138		0.63	3.9	3,450	1.00		88 50	_		11.117	0.191122	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 14-07-085-13W6 - 16-07-085-13W6	12-08-085-13W6 12-08-085-13W6	-	-	-	-	-		23261 1 23261 2	-	81 82		OM 60.3 OM 60.3	1.37 0.52	3.9	_	1.00	5 0. 5 0.	88 50 92 50			11.117 28.466	0.415298	43.9515057 43.9515057	170 170	14 13	187 187	Q Q
WHITECAP RESOURCES INC.	- 06-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	23261 3	_	83		OM 60.3	1.40	3.9	3,450	1.00	5 0.				11.117	0.424393	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	- 14-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23267 1	-	84		OM 60.3	0.85	3.9	3,450	1.00		88 50			11.117	0.257667	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 14-35-084-14W6 - 14-10-084-14W6	06-02-085-14W6 14-10-084-14W6	-	-	-	-	-		23270 2 23276 2	_	85 86		OM 60.3 OM 60.3	0.89	3.9	3,450 3,450	1.00		88 50 88 50			11.117 11.117	0.269792	43.9515057 43.9515057	170 170	14 10	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-10-084-14W6	06-15-084-14W6	-	-	-	-	-	-	23276 3	_	87	1 to 138		0.62	3.9	3,450	1.00		88 50	_		11.117	0.187945	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 06-17-084-14W6	08-17-084-14W6	-	-	-	-	-	-	23279 1	-	88		OM 60.3	0.86	3.9		1.00		88 50			11.117	0.260698	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 08-10-084-14W6 - 14-21-084-14W6	08-10-084-14W6 08-21-084-14W6	-	-	-	-	-	-	23281 1 23282 4	- l -	89 90	1 to 138		0.06 1.33	3.9		1.00	5 0. 5 0.	88 50 88 50			11.117 11.117		43.9515057 43.9515057	170 170	10 14	187 187	Q
WHITECAP RESOURCES INC.	- 06-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299 1	-	91	1 to 138		1.10	3.9		1.00	5 0.				11.117	0.333451	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	- 06-13-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23299 2		92	1 to 138		1.21	3.9		1.00	5 0.				11.117	0.366796	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 08-11-085-14W6 - 14-12-085-14W6	16-11-085-14W6 16-11-085-14W6	-	-	-	-	-	-	23299 3 23299 4	-	93 94	1 to 138	OM 60.3 OM 60.3	0.78	3.9	_	1.00	5 0. 5 0.				11.117 11.117	0.236447 0.26373	43.9515057 43.9515057	170 170	13 14	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-11-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23300 2	2 -	95		OM 60.3	0.78	3.9	_	1.00	5 0.				11.117	0.236447	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 06-14-085-14W6	16-11-085-14W6	-	-	-	-	-	-	23301 1	-	96		OM 60.3	1.17	3.9		1.00	5 0.				11.117	0.354671	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 08-24-084-14W6 - 16-29-084-13W6	16-24-084-14W6	-	-	-	-	-	-	23302 1 23308 1	-	97 98	1 to 138	OM 60.3 OM 60.3	0.94 1.93	3.9	3,450 3,450	1.00		88 50 88 50			11.117 11.117	0.284949 0.585055	43.9515057 43.9515057	170 170	14 14	187 187	Q
WHITECAP RESOURCES INC.	- 14-30-084-13W6	14-20-084-13W6 06-31-084-13W6	-	-	-	-	-	-	23312 1	-	99	1 to 138		0.72	3.9		1.00		88 50			41.117 41.117	0.218259	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 14-26-084-14W6	14-25-084-14W6	-	-	-	-	-	-	23328 1	-	100	1 to 138	OM 60.2	1.67	3.9	3,450	1.00		88 50	2350		11.117	0.504312	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 08-19-084-13W6 - 08-30-084-13W6	14-19-084-13W6 14-19-084-13W6	-	-	-	-	-	-	23335 1 23336 1	-	101	1 to 138		1.22 1.10	3.9		1.00	5 0. 5 0.	88 50 88 50			11.117 11.117	0.369828	43.9515057 43.9515057	170 170	14 14	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-18-084-13W6	14-19-084-13W6	 -	-	-	-	-		23337 1	-		1 to 138		1.69	3.9	,	1.00	5 0.				11.117	0.512302	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC.	- 06-11-084-14W6	08-11-084-14W6	-	-	-	-	-	-	23339 1	-		1 to 138		0.82	3.9		1.00	5 0.				11.117	0.248573	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 14-23-084-14W6 - 08-23-084-14W6	16-23-084-14W6 16-23-084-14W6	-	-	-	-	-	-	23366 1 23367 2	-	105 106	1 to 138		0.81	3.9	3,450 3,450	1.00		88 50 88 50			11.117 11.117	0.245541	43.9515057 43.9515057	170 170	14 13	187 187	Q Q
WHITECAP RESOURCES INC.	- 08-25-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23368 1	-	107		OM 60.3	0.69	3.9		1.00	5 0.				41.117 41.117	0.209165	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 14-13-084-14W6	16-24-084-14W6	-	-	-	-	-	-	23369 1	-	108	1 to 138		2.14	3.9		0.01		88 50			11.117	0.006487	43.9515057	170	14	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 06-29-084-13W6 - 14-29-084-13W6	14-20-084-13W6 14-20-084-13W6	-	-	-	-	-	-	23377 1 23377 2	-	109 110	1 to 138	OM 60.3	0.77 1.58	3.9	3,450 3,450	1.00		88 50 88 50			11.117 11.117	0.233416	43.9515057 43.9515057	170 170	13 14	187 187	Q Q
WHITECAP RESOURCES INC.	- 11-20-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23377 4		111	1 to 138		0.46	3.9	3,450	1.00		88 50	_		41.117 41.117	0.139443	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC.	- 16-20-084-13W6	14-20-084-13W6	-	-	-	-	-	-	23378 1	-	112		OM 60.3	0.79	3.9	3,450	1.00		88 50			11.117	0.239479	43.9515057	170	13	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 06-18-085-13W6 - 08-18-085-13W6	08-18-085-13W6 06-17-085-13W6	-	-	-	-	-	-	23439 1 23440 1	-	113	1 to 138	OM 60.3	0.82	3.9	3,450 3,450	1.00		88 50 88 50		21.277	11.117	0.248573	43.9515057 43.9515057	170 170	14 14	187 187	Q
WHITECAP RESOURCES INC.		N 06-17-085-13W6 U		-	-	-	-	-	23481 1	-		1 to 138				3,450	0.32							43.9515057		23	187	Q
WHITECAP RESOURCES INC.	- 08-17-085-13W6 UI	N 06-17-085-13W6 l		-	-	-	-	-	23481 2		116	1 to 138	SE 69.0	1.24	7.5	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.127354	43.9515057	170	16	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		9 14-20-084-13W6 08-11-084-14W6	S -	-	-	-	-	-	23508 1 23625 1			1 to 138 1 to 138		0.68 0.15		3,450 3,450	0.32							43.9515057 43.9515057		15	187 187	Q Q
WHITECAP RESOURCES INC.		06-31-084-13W6	-	-	-	-	-	-	23625 1			1 to 138				3,450	0.32							43.9515057		19 23	187	Q
WHITECAP RESOURCES INC.	- 06-18-084-13W6 S	6 08-14-084-14W6 L		-	-	-	-	-	23628 1	-	120	1 to 138	SE 97.0	2.42	10.0	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.505358	43.9515057	170	23	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		08-14-084-14W6 08-14-084-14W6	-	-	-	-	-	-	23628 2 23629 1	_		1 to 138		1.03 0.58		3,450 3,450	0.32							43.9515057 43.9515057		16 28	187 187	T Q
WHITECAP RESOURCES INC.		N 06-18-084-13W6 U		+ -	-	-	-		23630 1			1 to 138				3,450	0.32							43.9515057		23	187	Q
WHITECAP RESOURCES INC.	- 08-28-084-14W6 UI	N 04-34-084-14W6 U	UN -	-	-	-	-	-	23634 1	-	124	1 to 138	SE 97.0	1.27	10.0	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.265208	43.9515057	170	23	187	Q
WHITECAP RESOURCES INC.		N 13-32-084-13W6 U		-	-	-	-	-	23665 1			1 to 138				4,960	0.36							43.9515057		23	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		08-02-085-14W6 16-11-085-14W6	-	-	-	-	-	-	23668 2 24227 1			1 to 138				3,450 3,450	0.32							43.9515057 43.9515057		31 16	187 187	Q Q
WHITECAP RESOURCES INC.	- 14-29-084-13W6	06-32-084-13W6	-	-	-	-	-	-	24432 1	-	128	1 to 138	SE 69.0	0.85	7.5	3,450	0.75	5 0.	88 50	2350	21.277	11.117	0.204607	43.9515057	170	16	187	Т
WHITECAP RESOURCES INC.		06-03-085-14W6	-	-	-	-	-	-	24631 1			1 to 138				3,450	0.39							43.9515057		23	187	T
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		06-03-085-14W6 08-14-084-14W6	-	-	-	-	-	-	24631 2 24738 1			1 to 138		0.82		3,450 3,450	0.39							43.9515057 43.9515057		29 17	187 187	T Q
WHITECAP RESOURCES INC.	- 08-14-084-14W6	06-14-084-14W6	-	-	-	-	-	-	24738 2	2 -	132	1 to 138	SE 69.0		7.5	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.078055	43.9515057	170	16	187	Q
WHITECAP RESOURCES INC.		08-11-084-14W6	-	-	-	-]	-	-	24772 1			1 to 138		0.84		3,450	0.32							43.9515057		16	187	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- 06-11-084-14W6 - 14-34-084-14W6	08-11-084-14W6 06-03-085-14W6	-	-	-	-	-	-	24772 2 24947 1			1 to 138		0.84		3,450 3,450	0.32							43.9515057 43.9515057		23 16	187 187	Q T
WHITECAP RESOURCES INC.	- 14-29-084-13W6	06-29-084-13W6	-	-	-	-	-	<u>-</u>	25016 1	-	136	1 to 138	SE 69.0	0.83	7.5	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.085245	43.9515057	170	16	187	Т
WHITECAP RESOURCES INC.	- 06-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	25016 2	-	137	1 to 138	SE 69.0	0.81	7.5	3,450	0.32	5 0.	88 50	2350	21.277	11.117	0.083191	43.9515057	170	16	187	Т

Boundary Lake BC Unit 1 - Sour Oil Pipelines

																										SEGMENT					
	WATER			START	START	START	END	END	END VALVE	LICENSE	LINE	LINE		INCLUDES	:	on S	EGMENT	WALL	LICENSED	LICENSED	TEMP	GA		GLR	GVF	H2S	CUMULATIVE	SOUR	THERMAL	ASSIGNED	
LICENSEE	CROSS	FROM	то	VALVE	VALVE	VALVE	VALVE	VALVE	LONGITUDE	NO.	NO.	EGMENT `	LINE#	UNIQUE	SUB (OD I	LENGTH	(mm)	PRESSURE	LICENSED H2S (%)	(°C)	(100	U /m2/d)	(m3/m3)			H2S RELEASE	HPZ (m)	RADIATION	EPZ (m)	STATUS
					LATITUDE	LONGITUDE		LATITUDE	=		M	IODIFIER		LINE#			(km)		(kPa)			m3/	1) ` ′			VOLUME (m3)	VOLUME (m3)		HPZ (m)		
WHITECAP RESOURCES INC		06-29-084-13W6	14-20-084-13W6	-	-	-	-	-	-	25016	3	_	138	1 to 138	SE (97 N	0.81	10.0	3.450	0.32	5 0.9	88 50	2350	21 277	/1 117		43.9515057	170	23	187	Т
WITH EGAL RESOURCES INC	,	00-23-004-13440	14-20-004-1500	_	_	_	-	_	_	20010		ECAP SOU			OL (31.0	0.01	10.0	3,430	0.32	5 0.0	50 50	2000	21.211	41.117	0.109149	43.9313037	170	2.5	107	
WHITECAP RESOURCES INC		06-20-085-13W6	06-17-085-13W6	_	-	-			-	3123	1	-	139	139	OE 8	88 9	1.65	4.0	1.720	0.32										10	V
WHITECAP RESOURCES INC		16-17-085-13W6	06-17-085-13W6	 	_	_	-		_	8170	1	_	140	140		60.3	1.10	3.9	3.448	0.35										10	V
WHITECAP RESOURCES INC		16-27-084-14W6	08-22-084-14W6	 	_	-	-	_	_	8172	1	-	141	141			2.58	3.9	3,448	0.35										10	V
WHITECAP RESOURCES INC		08-09-084-14W6	08-09-084-14W6	† † -	-	_	- 1	-	_	8197	1	-	142	142		60.3	0.18	3.9	3,448	0.35										10	V
WHITECAP RESOURCES INC)	05-10-084-14W6	06-10-084-14W6	-	-	-	-	-	-	8197	4	-	143	143	CO 6	60.3	0.54	3.9	3,448	0.35										10	V
WHITECAP RESOURCES INC)	06-10-084-14W6	08-10-084-14W6	-	-	-	-	-	-	8197	5	-	144	144	CO 6	60.3	0.78	3.9	3,448	0.35										10	V
WHITECAP RESOURCES INC)	07-03-085-14W6	06-03-085-14W6	-	-	-	-	-	-	8198	3	-	145	145	CO 6	60.3	0.40	3.9	3,448	0.35										10	V
WHITECAP RESOURCES INC)	06-20-085-13W6	06-17-085-13W6	-	-	-	-	-	-	8204	1	-	146	146	CO 1	14.3	1.68	6.0	3,448	0.35										10	V
WHITECAP RESOURCES INC)	14-17-085-13W6 WE	06-17-085-13W6	PL -	-	-		-	-	21667	1	-	147	147	OE 6	60.3	0.81	3.9	3,450	0.20										10	V
WHITECAP RESOURCES INC). <u>-</u>	06-32-084-13W6 UN	13-32-084-13W6	UN -	-	-	-	-	-	23200	1	-	148	148	OM 6	60.3	0.97	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC)	08-32-084-13W6	13-32-084-13W6	-	-	-		-	-	23200	2	-	149	149	OM 6	60.3	1.56	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC)	08-05-085-13W6	12-05-085-13W6	-	-	-	-	-	-	23240	1	-	150	150	OM 6	60.3	1.40	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC)	06-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23266	1	-	151	151	OM 6	60.3	1.66	0.0	3,450	1.00										10	V
WHITECAP RESOURCES INC)	08-36-084-14W6	06-01-085-14W6	-	-	-	-	-	-	23266	2	-	152	152	OM 6	60.3	1.98	0.0	2,450	1.00										10	V
WHITECAP RESOURCES INC)	16-36-084-14W6	06-01-085-14W6		-	-	-	-	-	23266	3	-	153	153	OM 6	60.3	1.17	0.0	3,450	1.00										10	V
WHITECAP RESOURCES INC)	08-35-084-14W6	06-02-085-14W6	-	-	-	-	-	-	23270	1	-	154	154	OM 6	60.3	2.06	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC)	16-02-085-14W6	06-02-085-14W6		-	-	-	-	-	23270	3	-	155	155	OM 6	60.3	1.11	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		06-35-084-14W6	06-02-085-14W6		-	-	-	-	-	23270	4	-	156	156		60.3	1.70	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		08-15-084-14W6	06-15-084-14W6	-	-	-	-	-	-	23276	1	-	157	157		60.3	0.80	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		16-17-084-14W6	14-16-084-14W6	-	-	-	-	-	-	23282	5	-	158	158		60.3	1.04	3.9	3,450	1.00									$\overline{}$	10	V
WHITECAP RESOURCES INC		14-16-084-14W6	15-16-084-14W6	-	-	-	-	-	-	23282	6	-	159	159		60.3	0.06	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		15-16-084-14W6	08-21-084-14W6	-	-	-	-	-	-	23282	7	-	160	160		60.3	0.85	3.9	3,450	1.00									-	10	V
WHITECAP RESOURCES INC		16-16-084-14W6	16-16-084-14W6		-	-	-	-	-	23282	8	-	161	161		60.3	0.19	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		16-16-084-14W6	08-21-084-14W6		-	-	-	-	-	23282	9	-	162	162		60.3	0.60	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		06-21-084-14W6	08-21-084-14W6		-	-	-	-	-	23282	10	-	163	163		60.3	1.24	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		08-20-084-14W6	08-21-084-14W6		-	-	-	-	-	23282	11	-	164	164		60.3	1.90	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		08-10-085-14W6	16-11-085-14W6		-	-	-	-	-	23299	5	-	165	165		60.3	1.92	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		08-14-085-14W6	16-11-085-14W6	-	-		-	-	-	23300	1	-	166	166		60.3	0.86	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		08-31-084-13W6	06-31-084-13W6		-	-	-	-	-	23313	1	-	167	167		60.3	0.54	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		16-30-084-13W6	06-31-084-13W6		-	-	-	-	-	23314	1	-	168	168		60.3	1.20	3.9	3,450	1.00			_							10	V
WHITECAR RESOURCES INC		16-25-084-14W6	14-25-084-14W6	-	-	-	-	-	-	23329	7	-	169	169		60.2	0.82	3.9	3,450	1.00										10	V
WHITECAR RESOURCES INC		16-26-084-14W6	14-25-084-14W6		-	-	-	-	 -	23329	2	-	170	170	OM 6		0.86	3.9	3,450	1.00										10	V
WHITECAR RESOURCES INC		06-19-084-13W6	14-19-084-13W6		-	-	-	-	 -	23337	2	-	171	171		60.3	0.88	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		16-19-084-13W6	14-19-084-13W6		-	 	-	-	 -	23337	3	-	172	172		60.3	0.81	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC		06-30-084-13W6 01-23-084-14W6	14-19-084-13W6	-	-	-	-		 -	23338	1	-	173	173		60.3 60.2	0.79	3.9	3,450 3,450	1.00										10	V
WHITECAP RESOURCES INC		01-23-084-14W6 03-25-084-14W6	08-23-084-14W6		-	-	 -	-	 	23367	1	-	174 175	174 175		60.3	0.58	3.9	-,	1.00 1.00										10	
WHITECAP RESOURCES INC		03-25-084-14W6 06-24-084-14W6	16-24-084-14W6 16-24-084-14W6		-	-	-	-	 -	23370		-		175		60.3	1.04	3.9	3,450											10	V
WHITECAP RESOURCES INC		06-24-084-14VV6 06-25-084-14W6	16-24-084-14W6	 		-	-	-	 -	23373	1	-	176 177	176		60.3	1.32	3.9	3,450 3.450	1.00 1.00										10	V
WHITECAP RESOURCES INC		06-25-084-14VV6	11-20-084-14W6		-	-	-	-	 -	23374	3	-	177	177			1.13 0.39	3.9	3,450	1.00										10	V
WHITECAP RESOURCES INC	,. -	00-20-084-13776	11-20-004-13776		-	-		-		23311	3	-	1/0	1/0	OIVI	00.3	0.39	3.9	3,400	1.00										10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator 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 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
			WHITECAP	SWEET OPERATING				. ,			
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 01-02-085-14	6918	100010208514W602		56.3347	-120.0868	0	118	130		BRINE DISPOSAL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-15-084-14	6385	100021508414W600		56.2776	-120.1190	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 02-15-085-14	3189	100021508514W600		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	118	130		BRINE DISPOSAL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-11-085-14 WHITECAP ET AL BOUNDARY 04-16-084-14	3182 6719	100031108514W600 100041608414W600	03-11-085-14W6 04-16-084-14W6	56.3499 56.2769	-120.1001 -120.1600	0	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-16-064-14 WHITECAP ET AL BOUNDARY 04-25-084-14	1219	100041608414W600	04-16-084-14W6	56.3063	-120.1800	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A04-34-084-14	10643	102043408414W600	04-34-084-14W6	56.3200	-120.1314	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 04-34-084-14	7289	100033408414W600	04-34-084-14W6	56.3203	-120.1308	0	118	130		GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-13-085-14	3191	100051308514W600	05-13-085-14W6	56.3681	-120.0802	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-14-085-14	4990	100051408514W602		56.3679	-120.1067	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-14-085-14	4990	100051408514W600	05-14-085-14W6		-120.1067	0	118	130		OBSERVATION
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13 WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W600	05-31-084-13W6	56.3247 56.3247	-120.0534	0	118 118	130 130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13 WHITECAP ET AL BOUNDARY 05-31-084-13	2733 2733	100053108413W604 100053108413W603	05-31-084-13W6 05-31-084-13W6	56.3247	-120.0534 -120.0534	0	118	130		OBSERVATION OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-084-13	2733	100053108413W602	05-31-084-13W6	56.3247	-120.0534	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A06-02-085-14	6223	102060208514W600	06-02-085-14W6	56.3385	-120.0989	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY C06-02-085-14	2911	100050208514W600	06-02-085-14W6	56.3389	-120.1005	0	118	130		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		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-06-085-13	2981	100110608513W600	06-06-085-13W6	56.3394	-120.0471	0	118	130		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		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-09-084-14	5865	100060908414W600		56.2663	-120.1527	0	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-10-084-14 WHITECAP ET AL BOUNDARY 06-11-084-14	1024 1127	100061008414W600 100061108414W600	06-10-084-14W6 06-11-084-14W6	56.2663 56.2661	-120.1265 -120.1002	0	118	130		WATER INJECTOR OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-11-064-14 WHITECAP ET AL BOUNDARY 06-12-084-14	6092	100061108414W600		56.2665	-120.1002	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-13-084-14	989	100061206414W600		56.2809	-120.0738	0	110	WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-13-085-14	758	100061308514W600		56.3681	-120.0738	0	118	130		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		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 RESOURCES INC.	WHITECAP ET AL HZ BOUNDARY 05-18-084-13 WHITECAP ET AL BOUNDARY 06-18-085-13	32401 734	100021308414W600 100061808513W600	06-18-084-13W6 06-18-085-13W6	56.2805 56.3683	-120.0504 -120.0471	0	118 118	130 130		OIL OII
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-16-063-13 WHITECAP ET AL BOUNDARY 06-19-084-13	1098	100061806313W600	06-19-084-13W6	56.2955	-120.0471	0	110	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		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		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	927 802	100062608414W600	06-26-084-14W6	56.3099	-120.1002	0		WLB WLB		WATER INJECTOR
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-27-084-14 WHITECAP ET AL BOUNDARY 06-30-084-13	1019	100062708414W600 100063008413W600	06-27-084-14W6 06-30-084-13W6	56.3099 56.3101	-120.1265 -120.0471	0		WLB		WATER INJECTOR WATER INJECTOR
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-31-084-13	931	100063108413W602	06-31-084-13W6	56.3245	-120.0471	0	118	130		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		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		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		OBSERVATION
WHITECAR RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-08-084-14	6101	100080808414W600		56.2656	-120.1647	0	118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-09-085-14 WHITECAP HZ BOUNDARY LAKE A08-14-084-14	11416 33873	100080908514W600 100111308414W600	08-09-085-14W6 08-14-084-14W6	56.3518 56.2802	-120.1427 -120.0873	0	118 118	130 130		CAPPED GAS OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-18-084-13	1108	100081808413W600	08-18-084-13W6	56.2810	-120.0373	0	118	130		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		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		OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY B08-28-084-14	31471	100162808414W600	08-28-084-14W6	56.3112	-120.1391	0	118	130		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		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		OIL
WHITECAR RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-084-14	814	100083608414W602	08-36-084-14W6	56.3245	-120.0604 -120.0604	0	118 118	130 130		OIL OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-084-14 WHITECAP ET AL BOUNDARY 09-10-085-14	814 1495	100083608414W600 100091008514W600	08-36-084-14W6 09-10-085-14W6	56.3245 56.3578	-120.0604	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-02-085-14	4538	100110208514W600			-120.0990	0	118	130		OIL
		.500		02 000 17770	JU.J-121	0.0000	,	. 10	.50		J.L

Boundary Lake BC Unit 1 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
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		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		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		GAS
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		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-20-084-13	6387	100122008413W600	12-20-084-13W6		-120.0277	0	118	130		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		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		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		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		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-084-13	5873	100140708413W600	14-07-084-13W6		-120.0469	0	118	130		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		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 14-12-084-14	1037	100141208414W600	14-12-084-14W6	56.2736	-120.0738	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-18-084-13	1104	100141808413W600	14-18-084-13W6	56.2882	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE B14-19-084-13	36850	100121908413W600	14-19-084-13W6	56.3025	-120.0477	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE B14-20-084-13	33770	102071908413W600			-120.0217	0		WLB		WATER INJECTOR
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 ET AL HZ BOUNDARY A14-20-084-13	30631	100122108413W600	14-20-084-13W6		-120.0217	0	118	130		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		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		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		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-04-085-14	267	100160408514W600	16-04-085-14W6	56.3463	-120.1395	0	110	WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-05-084-14	5845	100160508414W600	16-05-084-14W6		-120.1658	0	118	130		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	4.40	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		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 WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-11-085-14	356	100161108514W600		56.3608	-120.0868	0	440			WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-14-085-14	895	100161408514W600	16-14-085-14W6	56.3754	-120.0868	0	118 118	130		OIL 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		_
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-17-084-14	1158	100161708414W600	16-17-084-14W6	56.2876	-120.1659	0		WLB WLB		WATER INJECTOR
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-17-085-13 WHITECAP HZ BOUNDARY B16-18-084-13	2641 31399	100161708513W600	16-17-085-13W6 16-18-084-13W6	56.3752 56.2884	-120.0084	0	118	130		WATER INJECTOR OIL
			100141708413W600			-120.0353					OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-084-13 WHITECAP ET AL BOUNDARY 16-18-084-14	6346 1343	100161808413W600 100161808414W600	16-18-084-13W6 16-18-084-14W6	56.2882 56.2884	-120.0353 -120.1922	0	118	130 WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-084-14 WHITECAP ET AL BOUNDARY 16-19-084-13	1343	100161808414W600 100161908413W600	16-18-084-14W6	56.3027	-120.1922	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-19-084-13 WHITECAP ET AL BOUNDARY 16-21-084-14	1122	100161908413W600	16-19-084-13W6	56.3027	-120.0341	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-21-084-14 WHITECAP ET AL BOUNDARY 16-22-084-14	727	100162108414W600	16-21-084-14W6	56.3027	-120.1395	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-22-084-14 WHITECAP ET AL BOUNDARY 16-23-084-14	997	100162208414W600	16-22-084-14W6	56.3027	-120.1127	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-23-084-14 WHITECAP ET AL BOUNDARY 16-24-084-14	872	100162308414W600	16-24-084-14W6	56.3027	-120.0868	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-24-084-14 WHITECAP ET AL BOUNDARY 16-25-084-14	1063	100162408414W600 100162508414W600	16-24-084-14W6 16-25-084-14W6	56.3031	-120.0605	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-084-14 WHITECAP ET AL BOUNDARY 16-30-084-13	1063	100162508414W600 100163008413W600	16-25-084-14W6 16-30-084-13W6	56.3173	-120.0605	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-30-084-13 WHITECAP ET AL BOUNDARY 16-31-084-13	369	100163008413W600			-120.0341	0		WLB		WATER INJECTOR WATER INJECTOR
WITHELAF RESOURCES INC.	WITH LOAF ET AL DOUNDART 10-31-084-13	309	1001031004130000	10-31-004-13006	50.5518	-120.0341	U		VVLD		WATER INJECTOR

Boundary Lake BC Unit 1 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-32-084-13	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		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 ET AL BOUNDARY 03-25-084-14	1010	100142408414W600	03-25-084-14W6	56.3049	-120.0738	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-17-084-13	17584	100051708413W602	05-17-084-13W6	56.2808	-120.0248	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-17-084-13	17584	100051708413W600	05-17-084-13W6	56.2808	-120.0248	0	118	130		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		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		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		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		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		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		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		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-09-084-14	1367	100080908414W600	08-09-084-14W6	56.2663	-120.1395	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-09-085-14	11416	100080908514W602	08-09-085-14W6	56.3518	-120.1427	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-10-085-14	360	100081008514W600	08-10-085-14W6	56.3535	-120.1131	0	118	130		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-35-084-14	815	100083508414W600	08-35-084-14W6	56.3244	-120.0868	0	118	130		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		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		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 14-17-085-13	738	100141708513W600	14-17-085-13W6	56.3755	-120.0208	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A14-28-084-14	5663	102142808414W600	14-28-084-14W6	56.3172	-120.1531	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-30-084-14	25241	102143008414W600	14-30-084-14W6	56.3161	-120.2054	0	118	130		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		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		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-09-085-14	1513	100160908514W600		56.3608	-120.1395	0	118	130		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			-120.0605	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-14-084-14	1175	100161408414W600			-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			-120.1132	0		WLB		SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-36-084-14	798	100163608414W602			-120.0605	0	118	130		SUSPENDED GAS
				ET DRILLED AND CA							
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-084-14	1037	100141208414W602	14-12-084-14W6	56.2736	-120.0738	0		100		DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

 $\underline{\text{Other:}} \quad \text{UWI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{WLB=Well Lease Boundary} \quad \text{HPZ=Hazard Planning Zone} \quad \text{Planning Zone} \quad \text{UVI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{EPZ=Emergency Planning Zone} \quad \text{UVI=Unique Well Identifier} \quad \text{UVI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{UVI=Unique Well Identifier} \quad \text{UVI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{UVI=Unique Well Identifier} \quad \text{UVI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{UVI=Unique Well Identifier} \quad \text{UVI=Unique W$

NOTES

All Whitecap sweet wells in the area are included above.

Wells with no analysis were assigned the H2S of the pipeline they are tied to or assumed to be sweet if not tied to a pipeline.

All vapour flammability HPZs were calculated in ALOHA 5.4.7 utilizing 2500 kPa wellhead pressure and 161.7mm Casing ID.

Table created using October-2019 data.

LICENSEE		WATER CROSS	FROM	то	START VALVE	START VALVE	START VALVE	END VALVE	END VALVE	END VALVE		LINE NO.	LINE SEGMENT	SUB	OD (mm)	SEGMENT LENGTH	WALL (mm)	LICENSED PRESSURE	H2S (%)	THERMAL RADIATION	ASSIGNED EPZ (m)	STATUS
						LATITUDE	LONGITUDE WHITE		LATITUDE ET HVP OP	ERATING			MODIFIER			(km)		(kPa)		HPZ (m)		
WHITECAP RESOURCE	ES INC.	-	01-02-085-14W6	13-11-085-14W6	-	-	-	-	-	-	10449	1	-	HV	88.9	3.22	3.9	8,275	0	250	250	Q
							WHI	ECAP SI	NEET OPER	ATING												
WHITECAP RESOURCE	ES INC.	-	16-24-084-14W6	16-23-084-14W6	-	-	-	-	-	-	1128	1	-	CO	114.3	1.98	0.0	1,550	0	21	24	Q
WHITECAP RESOURCE	ES INC.	-	11-14-085-14W6	16-11-085-14W6	-	-	-	-	-	-	1128	3	-	CO	114.3	1.31	0.0	1,550	0	21	24	Q
WHITECAP RESOURCE		-	08-16-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	2	-	OM	152.4	2.20	0.0	689	0	23	26	Q
WHITECAP RESOURCE		-	08-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	3	-	OM	101.6	0.11	0.0	689	0	10	11	Q
WHITECAP RESOURCE		-	08-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	4	-	ОМ	152.4	0.12	0.0	689	0	12	14	Q
WHITECAP RESOURCE		-	08-22-084-14W6	08-22-084-14W6	-	-	-	-	-	-	1242	5	-	OM	203.2	2.91	0.0	689	0	31	35	Q
WHITECAP RESOURCE		-	16-24-084-14W6	16-26-084-14W6	-	-	-	-	-	-	1242	7	-	OM	152.4	2.11	0.0	689	0	23	26	Q
WHITECAP RESOURCE		-	06-02-085-14W6	07-02-085-14W6	-	-	-	-	-	-	1242	9	-	OM	101.6	0.38	0.0	689	0	12	14	Q
WHITECAP RESOURCE		-	12-05-085-13W6	06-01-085-14W6	-	-	-	-	-	-	1242	12	-	OM	152.4 50.8	2.08	0.0	689	0	23 10	26	Q
WHITECAP RESOURCE WHITECAP RESOURCE		-	08-02-085-14W6	06-02-085-14W6 01-25-084-14W6	-	-	-	-	-	-	1315	1	-	NG NG		0.98 2.36	0.0	861	0		11	Q
WHITECAP RESOURCE		_	01-02-085-14W6 13-29-082-13W6	16-30-082-13W6	 	-	-	_		_	1394 1889	1	_	FW	50.8 273.1	0.45	0.0	861 1,034	0	10	11 10	Q Q
WHITECAP RESOURCE			03-18-083-13W6	15-36-083-14W6		-			_	<u> </u>	1889	9	 	FW	273.1	6.10	4.8	3,800	0		10	Q
WHITECAP RESOURCE			05-13-084-14W6	13-13-084-14W6		-			-	- -	1889	10	-	FW	273.1	1.00	4.8	3,800	0		10	Q
WHITECAP RESOURCE		_	15-36-083-14W6	05-13-084-14W6	_	_	_	_	_	_	1889	11	_	FW	273.1	4.45	4.8	3,800	0		10	Q
WHITECAP RESOURCE		_	16-25-082-14W6	03-18-083-13W6	 	_	_	_	_	_	1889	12	_	FW	273.1	5.40	4.8	3,800	0		10	Q
WHITECAP RESOURCE		-	13-13-084-14W6	04-24-084-14W6	-	-	_	-	_	_	1889	13	_	FW	273.1	0.22	4.8	3,500	0		10	Q
WHITECAP RESOURCE		-	04-24-084-14W6	16-26-084-14W6	-	-	-	-	-	-	1889	14	-	FW	273.1	3.25	4.8	3,500	0		10	Q
WHITECAP RESOURCE		-	16-30-082-13W6	16-25-082-14W6	-	-	-	-	-	-	1889	15	-	FW	273.1	1.50	4.8	3,500	0		10	Q
WHITECAP RESOURCE	ES INC.	-	06-02-085-14W6	16-35-084-14W6	-	-	-	-	-	-	2034	1	-	SW	60.3	1.22	3.9	20,670	0		10	Q
WHITECAP RESOURCE	ES INC.	-	03-10-085-14W6	06-03-085-14W6	-	-	-	-	-	-	2082	2	-	NG	50.8	1.20	2.0	200	0	10	11	Q
WHITECAP RESOURCE	ES INC.	-	06-02-085-14W6	16-11-085-14W6	-	-	-	_	-	-	2438	2	-	SW	60.3	2.71	3.9	18,000	0		10	Q
WHITECAP RESOURCE	ES INC.	-	11-07-085-13W6	12-08-085-13W6	-	-	-	-	-	-	2594	1	-	OE	60.3	0.49	3.2	750	0	10	11	Q
WHITECAP RESOURCE		-	11-02-085-14W6	06-02-085-14W6	-	-	-	-	-	-	2595	1	-	MP	60.3	0.41	3.2	6,895	0	16	18	Q
WHITECAP RESOURCE		-	16-26-084-14W6	01-35-084-14W6	-	-	-	-	-	-	2966	5	-	FW	60.3	0.20	3.9	20,700	0		10	Q
WHITECAP RESOURCE		-	13-32-084-13W6	16-32-084-13W6	-	-	-	-	-	-	2967	10	-	PW	71.1	1.35	10.9	15,169	0		10	Q
WHITECAP RESOURCE		-	06-30-084-13W6	14-20-084-13W6	-	-	-	-	-	-	2967	11	-	FW	60.3	1.69	3.9	18,000	0		10	Q
WHITECAP RESOURCE		-	12-14-085-14W6		-	-	-	-	-	-	2967	26	-	SW	60.3	0.97	0.0	18,000	0		10	Q
WHITECAP RESOURCE		-	11-10-085-14W6			-	-	-	-	-	2967	27	-	FW	73.0	1.10	3.8	18,000	0		10	Q
WHITECAP RESOURCE		-	02-15-085-14W6		PL -	-	-	-	-	-	2967	28	-	FW	73.0	1.17	3.8	18,000	0		10	Q
WHITECAP RESOURCE		-	08-16-084-14W6	01-16-084-14W6	-	-	-	-	-	-	2967	35	-	FW	60.3	0.92	0.0	15,000	0		10	Q
WHITECAP RESOURCE		-	16-09-084-14W6	16-09-084-14W6	-	-	-	-	-	-	2967	36	-	FW	60.3	0.47	0.0	15,000	0		10	Q
WHITECAP RESOURCE WHITECAP RESOURCE		-	16-22-084-14W6 16-03-085-14W6		-	-	-	-	-	-	3003 3004	1 4	-	FW	60.3 60.3	1.10 1.08	3.9	20,700	0		10 10	Q Q
WHITECAP RESOURCE			12-05-085-13W6			-	-	_	-	-	3004	1	-	FW	60.3	1.08	3.9		0		10	Q
WHITECAP RESOURCE		_	12-05-085-13W6			-			_	<u> </u>	3015	1		FW	60.3	1.35	3.9		0		10	Q
WHITECAP RESOURCE		_	06-26-084-14W6			-	_	_	-	_	3325	1		FW	60.3	1.13	3.9	· -	0		10	Q
WHITECAP RESOURCE		_	16-26-084-14W6	-	 	-	_	_	-	-	3386	5	_	FW	168.3	1.30	7.1	15,169	0		10	Q
WHITECAP RESOURCE		_	16-26-084-14W6		_	-	_	_	-	_	3386	6	_	FW	168.3	4.98	7.1	15,169	0		10	Q
WHITECAP RESOURCE		-	03-11-085-14W6		-	-	-	-	-	-	3769	11	_	OE	60.3	1.10	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE		-	09-10-085-14W6		-	-	-	-	-	-	3769	12	_	OE	60.3	2.37	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE		-	06-17-084-14W6		-	-	-	-	-	- 1	3769	17	-	OE	60.3	0.06	0.0		0	10	11	Q
WHITECAP RESOURCE		-	14-17-084-14W6		-	-	-	-	-	-	3769	18	-	OE	60.3	1.31	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE		-	06-10-084-14W6		-	-	-	-	-	-	3769	19	-	OE	60.3	2.88	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE		-	06-22-084-14W6		-	-	-	-	-	-	3769	30	-	OE	60.3	0.85	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE	ES INC.	_	06-27-084-14W6	08-22-084-14W6			-				3769	32		OE	60.3	2.50	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE	ES INC.	-	06-18-084-13W6		-	-	-	-	-	-	3769	36	-	OE	60.3	0.29	0.0	3,450	0	12	14	Q
WHITECAP RESOURCE		-	08-18-084-13W6		-	-	-	-	-	-	3769	37	-	OE	60.3	1.13	0.0	3,450	0	14	16	Q
WHITECAP RESOURCE	ES INC.	-	06-06-085-13W6	12-05-085-13W6	-	-	-	-	-	-	3769	41	-	OE	60.3	1.40	0.0	3,450	0	14	16	Q

LICENSEE	WATER CROSS	FROM	то		START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	06-06-085-13W6	12-05-085-13W6		-	-	-	-	-	-	3769	42	-	OE	60.3	1.40	0.0	3,450	0	14	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	14	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	14	16	Q
WHITECAP RESOURCES INC.	-	06-07-085-13W6	12-08-085-13W6		-	-	-	-	-	-	3769	47	-	OE	60.3	1.40	0.0	3,450	0	14	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	14	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	14	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	13	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	14	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	12	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	13	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	14	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	13	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	13	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	13	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	10	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	15	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		10	Q
WHITECAP RESOURCES INC.	-	06-10-084-14W6	14-04-084-14W6		-	-	-	-	-	_	3994	2	-	FW	60.3	2.20	4.8	20,685	0		10	Q
WHITECAP RESOURCES INC.	-	16-03-084-14W6	16-03-084-14W6		-	-	-	-	-	_	3994	3	-	FW	60.3	0.24	4.8	20,685	0		10	Q
WHITECAP RESOURCES INC.	-	13-02-084-14W6	14-02-084-14W6		-	-	-	-	-	_	3994	4	-	FW	60.3	0.77	4.8	20,685	0		10	Q
WHITECAP RESOURCES INC.	-	06-09-084-14W6	08-16-084-14W6		-	-	-	-	-	-	4042	1	-	OE	88.9	1.80	4.0	3,500	0	21	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	21	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	21	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	_ :	10	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	06-16-084-14W6		_	-	-	_	-	_	4057	6	-	FW	60.3	0.75	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	-	16-21-084-14W6	16-21-084-14W6		-	-	-	-	-	_	4057	8	-	FW	72.5	0.05	3.8	21,500	0		10	Q
WHITECAP RESOURCES INC.	_	16-21-084-14W6	06-22-084-14W6		_	-	_	_	-	_	4057	9	_	FW	60.3	1.20	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	-	16-21-084-14W6	06-27-084-14W6		-	-	-	-	-	_	4057	10	-	FW	60.3	1.20	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	_	16-23-084-14W6	06-24-084-14W6		_	-	_	_	-	_	4057	12	_	FW	60.3	1.50	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	_	16-23-084-14W6	06-23-084-14W6		_	-	-	_	-	_	4057	13	-	FW	60.3	1.18	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	_	16-19-084-13W6	06-19-084-13W6		_	_	-	_	_	_	4057	16	_	FW	60.3	1.40	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	<u> </u>	16-19-084-13W6	06-20-084-13W6		_	_	-	_	_	_	4057	17	_	FW	60.3	1.35	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	_	16-13-084-14W6	06-18-084-13W6		_	_	_	_	_	_	4057	19	_	FW	60.3	1.35	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.	_	16-13-084-14W6	06-13-084-14W6		_	_	_	_	_	_	4057	20	_	FW	60.3	1.50	4.8	20,690	0		10	Q
WHITECAP RESOURCES INC.		12-16-084-14W6	06-21-084-14W6		_	_	_	_	_	_	4057	24	_	FW	60.3	1.30	4.8	20,690	0		10	Q
WHITEGAT RESOURCES INC.	_	14-05-084-14W6	06-09-084-14W6		_	_	_	_	_	<u> </u>	4063	1	_	OE		1.85	4.0		0	24	27	Q
WHITECAP RESOURCES INC.	<u> </u>	06-26-084-14W6	16-23-084-14W6			_					4068	1	<u> </u>	FW		1.20	4.8	20,700	0	24	10	Q
WHITEGAP RESOURCES INC.		06-02-085-14W6	06-02-085-14W6			_	_	_	_	_	4092	1	_	MP	60.3	0.14	3.9	6,900	0	12	14	Q
WHITECAP RESOURCES INC.	<u> </u>	16-18-084-13W6	06-18-084-13W6			_					4143	1	<u> </u>	OE	60.3	1.20	3.9	3,450	0	14	16	Q
WHITEGAL RESOURCES INC.		12-20-084-13W6	11-20-084-14W6			_	_	_	_	_	4170	1	_	OE	60.3	0.41	3.9	9,930	0	18	20	Q
WHITECAP RESOURCES INC.		12-14-084-14W6	06-14-084-14W6			_		_	_		4170	3		OE	88.9	0.41	4.8	3,450	0	20	22	Q
WHITEGAL RESOURCES INC.		14-34-084-14W6	06-03-085-14W6		_	_	-	_	_	_	4195	1	_	OE	60.3	0.82	3.9	9,930	0	21	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	21	10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6	06-30-084-13W6			-	-	-	-	_		2	-	SW		2.65		20,680				
	-				-	-	-	-	-	-	4207	2	-	SW	168.3		7.1		0		10	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	 	06-30-084-13W6	16-13-084-14W6 16-24-084-14W6	-		-	-		-	-	4207 4207	3	-			2.82	6.0	20,680	0		10	Q
WHITECAP RESOURCES INC.	 	16-24-084-14W6			-		-	-	-	-		4	-	SW		0.09	4.8	20,680	0		10	Q
	 -	06-30-084-13W6	16-19-084-13W6		-	-	-	-	-	-	4207	5	-	SW		1.20	6.0	20,680	0		10	Q
WHITECAP RESOURCES INC.	 -	16-19-084-13W6	08-29-084-13W6		-	-	-	-	-	-	4207	6	-	SW	88.9	1.84	4.8	20,680	0		10	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-30-084-13W6	_	-	-	-	-	-	-	4207	7	-	SW		1.14	4.8	20,680	0		10	Q
WHITECAP RESOURCES INC.	-	06-30-084-13W6	16-25-084-14W6		-	-	-	-	-	-	4207	8	-	SW	88.9	1.15	4.8	20,680	0	40	10	Q
WHITECAP RESOURCES INC.	 -	04-19-084-13W6	01-24-084-14W6		-		-	-	-	-	4279	1	-	OE	60.3	0.41	3.9	9,930	0	18	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	11	13	Q

LICENSEE	WATER	FROM		то		START	START VALVE	START VALVE	END	END VALVE	END VALVE	LICENSE	LINENO	LINE	CHD	OD (mm)	SEGMENT LENGTH	WALL	LICENSED PRESSURE	1100 (0/)	THERMAL RADIATION	ASSIGNED	STATUS
LIGENSEE	CROSS	FROW		10		VALVE		LONGITUDE	VALVE	LATITUDE	LONGITUDE	NO.	LINE NO.	MODIFIER	30B	OD (IIIII)	(km)	(mm)	(kPa)	П23 (%)	HPZ (m)	EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	06-17-084-14W6		08-17-084-14W6		-	-	-	-	-	-	4586	8	-	OE	88.9	0.91	0.0	3,450	0	21	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	21	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	20	22	Q
WHITECAP RESOURCES INC.	-	12-08-085-13W6		12-05-085-13W6		-	-	-	-	-	-	4586	21	-	OE	168.3	1.61	0.0	3,450	0	43	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		10	Q
WHITECAP RESOURCES INC.	-	16-16-084-14W6		08-16-084-14W6		-	-	-	-	-	-	4586	31	-	OE	114.3	1.01	0.0	3,450	0	27	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	14	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	27	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		10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6		16-26-084-14W6		-	-	-	-	-	-	4639	2	-	SW	88.9	0.15	4.8	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6		16-36-084-14W6		-	-	-	-	-	-	4639	3	-	WS	88.9	0.11	4.8	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6		16-01-085-14W6		-	-	-	-	-	-	4648	1	-	WS	88.9	2.09	4.8	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6		16-06-085-13W6		-	-	-	-	-	-	4648	2	-	WS	88.9	0.60	4.8	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6		06-15-084-14W6		-	-	-	-	-	-	4941	1	-	FW	114.3	3.93	4.8	13,500	0		10	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6		16-17-085-13W6		-	-	-	-	-	-	5144	1	-	WS	88.9	3.99	4.0	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	13-08-085-13W6		16-07-085-13W6		-	-	-	-	-	-	5144	2	-	WS	88.9	0.50	4.0	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	13-13-084-14W6		16-26-084-14W6		-	-	-	-	-	-	5261	2	-	FW	273.1	3.47	4.8	4,070	0		10	Q
WHITECAP RESOURCES INC.	-	16-11-085-14W6		12-13-085-14W6		-	-	-	-	-	-	5665	1	-	SW	88.9	1.33	5.5	19,500	0		10	Q
WHITECAP RESOURCES INC.	-	16-03-085-14W6		16-04-085-14W6		-	-	-	-	-	-	5701	1	-	SW	88.9	1.63	4.8	19,500	0		10	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6		05-31-084-13W6		-	-	-	-	-	-	5932	1	-	FW	88.9	1.20	5.5	15,620	0		10	Q
WHITECAP RESOURCES INC.	-	16-36-084-14W6	UN		UN	-	-	-	-	-	-	6120	3	-	SW	88.9	1.07	4.0	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	08-36-084-14W6		16-36-084-14W6		-	-	-	-	-	-	6120	7	-	OE	88.9	1.25	4.0	18,000	0	44	49	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6		06-27-084-14W6		-	-	-	-	-	-	6804	1	-	FW	60.3	1.60	3.9	19,500	0		10	Q
WHITECAP RESOURCES INC.	-	13-14-084-14W6		06-14-084-14W6		-	-	-	-	-	-	6804	2	-	FW	60.3	1.07	3.9	19,500	0		10	Q
WHITECAP RESOURCES INC.	-	02-29-084-13W6		02-29-084-13W6		-	-	-	-	-	-	6836	1	-	SW	60.3	0.20	3.9	21,500	0		10	Q
WHITECAP RESOURCES INC.	-	16-17-084-14W6		16-18-084-14W6		-	-	-	-	-	-	6939	1	-	FW	60.3	1.81	3.9	20,700	0		10	Q
WHITECAP RESOURCES INC.	-	14-10-084-14W6		16-09-084-14W6		-	-	-	-	-	-	7258	1	-	FW	60.3	0.84	3.9	13,500	0		10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6		06-02-085-14W6		-	-	-	-	-	-	7735	1	-	FW	114.3	2.98	4.0	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	04-13-085-14W6		13-13-085-14W6		-	-	-	-	-	-	8158	2	-	FW	219.1	1.62	7.9	17,000	0		10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6		16-26-084-14W6		-	-	-	-	-	-	8159	1	-	FW	168.3	0.46	5.9	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6		16-26-084-14W6		-	-	-	-	-	-	8159	2	-	FW	168.3	0.47	5.9	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	16-07-085-13W6		14-08-085-13W6		-	-	-	-	-	-	8160	1	-	SW	60.3	0.73	3.9	18,000	0	40	10	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6		13-08-085-13W6		-	-	-	-	-	-	8164	1	-	OE	88.9	1.93	5.5	14,470	0	40	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		10	Q
WHITECAP RESOURCES INC.	-	06-26-084-14W6		16-22-084-14W6		-	-	-	-	-	-	8169	2	-	FW	60.3	1.11	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	16-26-084-14W6		06-02-085-14W6		-	-	-	-	-	-	8179	1	-		168.3	2.99	7.1	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	_	16-03-085-14W6		-	-	-	-	-	-	8179	3	-	FW		1.16	3.9	14,470	0	0.4	10	Q
WHITECAP RESOURCES INC.	-	16-26-085-14W6		08-02-085-14W6		-	-	-	-	-	-	8185	1	-		273.1	7.24	9.3	1,960	0	64	71	Q
WHITECAR RESOURCES INC.	-	06-30-084-13W6		16-24-084-14W6		-	-	-	-	-	-	8188	2	-	FW		1.12	3.9	14,470	0	4.4	10	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	14-17-084-14W6 16-07-084-14W6		06-17-084-14W6 06-17-084-14W6		-	-	- +	-	-	-	8195	2	-	CO	60.3	1.04 1.35	3.9	3,448 3,448	0	14 14	16	Q Q
	-					-	-	-	-	-	-	8195	3	-		60.3				_		16	
WHITECAP RESOURCES INC.	-	10-23-084-14W6		16-23-084-14W6		-	-	-	-	-	-	8196	3	-	CO	60.3	0.77	3.9	3,448	0	13	15	Q
WHITECAP RESOURCES INC.	-	06-15-084-14W6		08-17-084-14W6		-	-	-	-	-	-	8200	1	-			2.39	6.0	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6		14-08-084-14W6		-	-	-	-	-	-	9703	1	-	FW		1.18	3.9	15,000	0	26	10	Q
WHITECAR RESOURCES INC.	-	14-25-084-14W6		16-26-084-14W6		-	-	-	-	-	-	11816	2	-		114.3	0.67	4.0	3,450	0	26	29	Q
WHITECAR RESOURCES INC.	-	14-03-084-14W6		08-10-084-14W6		-	-	-	-	-	-	11816	4	-	CO	60.3	1.31	3.9	3,450	0	14	16	Q
WHITECAP RESOURCES INC.	-	06-14-084-14W6		16-14-084-14W6		-	-	-	-	-	-	11952	1	-	FW		1.26	11.0	19,500	0		10	Q
WHITECAR RESOURCES INC.	-	14-10-084-14W6		16-10-084-14W6	Di	-	-	-		-	-	11952	2	-	FW		0.77	11.0	18,000	0		10	Q
WHITECAR RESOURCES INC.	-			14-10-084-14W6		-	-	-	-	-	-	14793	1	-	FW		0.95	7.9	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6		02-15-085-14W6	۲L	-	-	-	-	-	-	22249	1	-	FW		3.40	6.1	18,000	0		10	Q
WHITECAR RESOURCES INC.	-	14-10-084-14W6		06-10-084-14W6	Di	-	-	-	-	-	-	22880	1	-	FW		0.88	10.4	18,000	0	24	10	Q
WHITECAP RESOURCES INC.	_	10-10-085-144/6	۷۷E	08-02-085-14W6	۲L	-	-	-	-	-	-	23032	2		FG	88.9	3.90	4.0	4,961	0	24	27	Q

LICENSEE	WATER CROSS	FROM		то		START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)		THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	16-26-084-14W6		13-28-084-13W6		-	-	-	-	-	-	23241	1	-	FW	219.1	5.67	0.0	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	08-17-084-14W6	UN		JN	-	-	-	_	-	-	23553	1	-	FW	71.1	0.75	10.9	20,640	0		10	Q
WHITECAP RESOURCES INC.	-	06-02-085-14W6	-		JN	-	-	-	-	-	-	23615	1	-	PW	97.4	1.11	12.9	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	12-04-085-13W6		16-07-085-13W6		-	-	-	-	-	-	23702	3	-	FW	60.3	2.09	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	12-05-085-13W6		16-31-084-13W6		-	-	-	-	-	-	23702	4	-	FW	60.3	1.44	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC.	-	16-30-084-13W6		14-29-084-13W6		-	-	-	-	-	-	24386	1	-	PW	97.4	0.89	12.9	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	14-29-084-13W6		16-29-084-13W6		-	-	-	-	-	-	24386	2	-	PW	71.1	0.89	10.9	18,000	0		10	Q
WHITECAP RESOURCES INC.	-	14-29-084-13W6		06-32-084-13W6		-	-	-	-	-	-	24432	2	-	PW	71.1	0.85	10.9	20,680	0		10	Т
WHITECAP RESOURCES INC.	-	08-29-084-13W6		16-20-084-13W6		-	-	-	-	-	-	24470	1	-	PW	71.1	0.85	10.9	18,000	0		10	Т
WHITECAP RESOURCES INC.	-	14-20-084-13W6		14-20-084-13W6		-	-	-	-	-	-	24530	1	-	PW	71.1	0.09	10.9	20,680	0		10	Q
WHITECAP RESOURCES INC.	-	12-20-084-13W6		12-20-084-13W6		-	-	-	-	-	-	24531	1	-	PW	71.1	0.08	10.9	20,690	0		10	Q
WHITECAP RESOURCES INC.	-	16-27-084-14W6		14-27-084-14W6		-	-	-	-	-	-	25210	1	-	FW	71.1	1.08	10.9	18,296	0		10	Т
								WHITE	CAP SW	EET DEACT	IVATED												
WHITECAP RESOURCES INC.	-	16-26-085-14W6		08-11-085-14W6		-	-	-	-	-	-	1242	22	-	NG	254.0	5.30	0.0	689	0		10	V
WHITECAP RESOURCES INC.	-	08-11-085-14W6		08-02-085-14W6		-	-	-	-	1	-	1242	23	-	NG	304.8	1.99	0.0	689	0		10	V
WHITECAP RESOURCES INC.	-	16-11-085-14W6		16-11-085-14W6		-	-	-	-	•	-	1253	1	-	NG	114.3	0.26	0.0	689	0		10	V
WHITECAP RESOURCES INC.	-	08-02-085-14W6		16-26-084-14W6		-	-	-	-	•	-	1785	1	-	FG	60.3	2.36	0.0	4,961	0		10	V
WHITECAP RESOURCES INC.	-	08-03-085-14W6		06-03-085-14W6		-	-	-	-	1	-	2082	1	-	CO	50.8	0.82	3.2	6,132	0		10	V
WHITECAP RESOURCES INC.	-	12-05-085-13W6		13-32-084-13W6		-	-	-	-	-	-	2439	1	-	FW	60.3	1.13	3.9	13,500	0		10	V
WHITECAP RESOURCES INC.	-	06-02-085-14W6		02-15-085-14W6		-	-	-	1	ı	-	2967	2	-	FW	114.3	3.40	0.0	18,000	0		10	V
WHITECAP RESOURCES INC.	-	12-14-085-14W6		12-14-085-14W6		-	-	-	-	-	-	2967	7	-	SW	60.3	0.20	0.0	18,000	0		10	V
WHITECAP RESOURCES INC.	-	02-15-085-14W6		11-10-085-14W6		-	-	-	-	-	-	2967	8	-	FW	60.3	1.11	0.0	18,000	0		10	V
WHITECAP RESOURCES INC.	-	01-24-084-14W6		16-24-084-14W6		-	-	-	-	-	-	2967	37	-	OM	60.3	1.40	0.0	15,000	0		10	V
WHITECAP RESOURCES INC.	-	08-29-084-13W6		14-20-084-13W6		-	-	-	-	1	-	2967	39	-	OM	60.3	1.12	3.9	0	0		10	V
WHITECAP RESOURCES INC.	-	08-17-084-14W6		16-17-084-14W6		-	-	-	-	-	-	3014	1	-	FW	60.3	0.77	3.9	20,700	0		10	V
WHITECAP RESOURCES INC.	-	12-05-085-13W6		12-05-085-13W6		-	-	-	-	1	-	3040	1	-	FW	60.3	0.04	3.9	20,690	0		10	V
WHITECAP RESOURCES INC.	-	12-05-085-13W6		16-07-085-13W6		-	-	-	-	-	-	3041	1	-	FW	60.3	2.17	3.9	20,700	0		10	V
WHITECAP RESOURCES INC.	-	16-11-085-14W6		08-02-085-14W6		-	-	-	-	1	-	3327	1	-	OE	168.3	2.57	4.8	3,450	0		10	V
WHITECAP RESOURCES INC.	-	08-01-085-14W6		06-01-085-14W6		-	-	-	-	1	-	3769	2	-	OE	60.3	0.74	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	16-01-085-14W6		06-01-085-14W6		-	-	-	-	-	-	3769	3	-	OE	60.3	0.98	0.0	0	0		10	V
WHITECAP RESOURCES INC.	-	06-03-084-14W6		08-03-084-14W6		-	-	-	-	-	-	3769	13	-	OE	60.3	0.87	4.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	14-03-084-14W6		08-03-084-14W6		-	-	-	-	-	-	3769	15	-	OE	60.3	1.64	4.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	16-03-084-14W6		08-03-084-14W6		-	-	-	-	-	-	3769	16	-	OE	60.3	0.86	4.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	08-14-084-14W6		06-14-084-14W6		-	-	-	-	-	-	3769	23	-	OE	60.3	1.96	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	06-13-084-14W6		03-13-084-14W6		-	-	-	-	-	-	3769	24	-	OE	88.9	0.43	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	14-12-084-14W6		03-13-084-14W6		-	-	-	-	-	-	3769	26	-		88.9	0.41	0.0		0		10	V
WHITECAP RESOURCES INC.	-	05-26-084-14W6		16-23-084-14W6		-	-	-	-	-	-	3769	27	-	OE	60.3	1.65	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	08-20-085-13W6		14-17-085-13W6		-	-	-	-	-	-	3769	43	-	OE	60.3	1.18	3.9	3,450	0		10	V
WHITECAP RESOURCES INC.	-	07-31-084-13W6		06-31-084-13W6		-	-	-	-	-	-	3769	53	-	OE	60.3	0.53	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	08-08-085-13W6		12-08-085-13W6		-	-	-	-	-	-	3769	61	-	OE	60.3	1.45	0.0	8,275	0		10	V
WHITECAP RESOURCES INC.	-	16-11-085-14W6	_	16-11-085-14W6		-	-	-	-	-	-	3769	64	-	MP	60.3	0.06	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	16-11-085-14W6		16-11-085-14W6		-	-	-	-	-	-	3769	66	-	MP	60.3	0.06	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	08-17-084-14W6	-	08-17-084-14W6		-	-	-	-	-	-	4057	7	-	FW		0.23	4.8	20,690	0		10	V
WHITECAP RESOURCES INC.	-	05-16-084-14W6		05-16-084-14W6		-	-	-	-	-	-	4057	23	-	FW		0.18	4.8	20,690	0		10	V
WHITECAP RESOURCES INC.	-	10-15-084-14W6	_	06-15-084-14W6		-	-	-	-	-	-	4062	1	-	OE	60.3	0.68	3.9	9,900	0		10	V
WHITECAP RESOURCES INC.	-	08-13-084-14W6		06-18-084-13W6		-	-	-	-	-	-	4153	1	-	OE	60.3	0.81	3.9	3,450	0		10	V
WHITECAP RESOURCES INC.	-	02-15-084-14W6		06-15-084-14W6		-	-	-	-	-	-	4170	2	-	OE	88.9	0.61	4.8	21,500	0		10	V
WHITECAP RESOURCES INC.	-	06-01-085-14W6		06-36-084-14W6		-	-	-	-	-	-	4586	24	-	OE	114.3	1.80	0.0	3,450	0		10	V
WHITECAP RESOURCES INC.	-	06-15-084-14W6	_	06-16-084-14W6		-	-	-	-	-	-	7465	1	-	FW	88.9	1.63	4.8	13,500	0		10	V
WHITECAP RESOURCES INC.		16-26-084-14W6		13-12-085-14W6		-	-	-	-	-	-	8158	1	-	FW	219.1	5.00	7.9	14,470	0		10	V

LICENSEE	WATER CROSS	FROM	то	ST/ VA	VF	START VALVE ATITUDE	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.	-	12-05-085-13W6			-	-	-	ı	-	-	8163	1	-	FW	60.3	3.58	3.9	14,470	0		10	V
WHITECAP RESOURCES INC.	-	06-03-085-14W6	14-34-084-14W6		-	-	-	•	-	-	10655	3	-	OE	50.8	0.82	2.0	8,274	0		10	V
WHITECAP RESOURCES INC.	-	12-05-085-13W6	04-08-085-13W6		-	-	-	-	-	-	23702	2	-	FW	60.3	0.82	3.9	14,470	0		10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

Facility: B=Battery BE=Blind End CS=Compressor Station DH=Dehydrator GP=Gas Plant GS=Gas Gathering System IP=Injection Plant PN=Plant LH=Line Heater MS=Meter Station PL=Pipeline PS=Pump Station S=Satellite WE=Well HD=Header JN=Junction UG=Underground cap or tie-in WF=Well Facility Substance: AG=Acid Gas CO=Crude Oil FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent SG=Sour Gas FG=Fuel Gas ST=Sweet Gas SW=Salt Water SE=Sour Oilwell Effluent SC=Sour Crude MG=Miscellaneous Gases OM=Oil Emulsion WS=Sour Water PW=Produced Water UN=Unknown ML=Miscellaneous Liquids AA=Air

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed U=Unknown Q=Active I=Inactive S=Suspended R=Removed T=New V=Deactivated Z=Approved J=Out of Jurisdiction

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW = Pipeline Right of Way HPZ=Hazard Planning Zone

Boundary Lake BC Unit 1 - Tanks and Bullets

SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? (1)	ENVIRONMENT CANADA ERP REQUIRED? (2)	HPZ (m)
Corrosion Inhibitor	1	500 gal	No	No	50
Demulsifier	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Scale Itilibitor	'	500 gai	INO	INO	50
Scale Inhibitor	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Coole labibites	4	500 mal	NI-	NI-	
Scale inhibitor	1	500 gai	INO	INO	50
Corrosion Inhibitor	1	500 gal	No	No	50
Demulsifier	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Corrosion Inhibitor	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Corrosion Inhibitor	1	500 gal	No	No	50
Demulsifier	1	500 gal	No	No	50
Paraffin Inhibitor	1	500 gal	No	No	50
Corrosion Inhibitor	1	500 gal	No	No	50
					50
Demulsifier	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Scale Inhibitor	1	500 gal	No	No	50
Demulsifier	1		No	No	50
	1	Ū			50
					50
Demulsifier	1	500 gal	No	No	50
Demulsifier	1	500 gal	No	No	50
	Corrosion Inhibitor Demulsifier Scale Inhibitor Scale Inhibitor Scale Inhibitor Scale Inhibitor Scale Inhibitor Corrosion Inhibitor Corrosion Inhibitor Corrosion Inhibitor Corrosion Inhibitor Corrosion Inhibitor Corrosion Inhibitor Demulsifier Paraffin Inhibitor Corrosion Inhibitor Corrosion Inhibitor Scale Inhibitor Corrosion Inhibitor Corrosion Inhibitor Demulsifier Scale Inhibitor Scale Inhibitor Scale Inhibitor Demulsifier Corrosion Inhibitor Demulsifier Demulsifier Demulsifier Corrosion Inhibitor Demulsifier Demulsifier Demulsifier	Corrosion Inhibitor 1 Demulsifier 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Scale Inhibitor 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Corrosion Inhibitor 1 Demulsifier 1 Scale Inhibitor 1 Corrosion Inhibitor 1 Scale Inhibitor 1 Scale Inhibitor 1 Demulsifier 1 Demulsifier 1 Demulsifier 1	Corrosion Inhibitor 1 500 gal Demulsifier 1 500 gal Scale Inhibitor 1 500 gal Corrosion Inhibitor 1 500 gal Demulsifier 1 500 gal Demulsifier 1 500 gal Demulsifier 1 500 gal	SUBSTANCE NO. OF TANK VOLUME REGISTRATION REQUIRED? (1) Corrosion Inhibitor 1 500 gal No Demulsifier 1 500 gal No Scale Inhibitor 1 500 gal No Corrosion Inhibitor 1 500 gal No Demulsifier 1 500 gal No Scale Inhibitor 1 500 gal No Corrosion Inhibitor 1 500 gal No Demulsifier 1 500 gal No Corrosion Inhibitor 1 500 gal No Corrosion Inhibitor 1 500 gal No Scale Inhibitor 1 500 gal No Corrosion Inhibitor 1 500 gal No Scale Inhibitor 1 500 gal No Corrosion Inhibitor 1 500 gal No Demulsifier 1 500 gal No	SUBSTANCE NO. OF TANK VOLUME TANKS VOLUME REGUIRED? (0) Corrosion Inhibitor 1 500 gal No No No Demulsifier 1 500 gal No No Scale Inhibitor 1 500 gal No No Corrosion Inhibitor 1 500 gal No No Demulsifier 1 500 gal No No Corrosion Inhibitor 1 500 gal No No Demulsifier 1 500 gal No No Corrosion Inhibitor 1 500 gal No No Scale Inhibitor 1 500 gal No No Corrosion Inhibitor 1 500 gal No No Demulsifier 1 500 gal No No No Corrosion Inhibitor 1 500 gal No No No Corrosion Inhibitor 1 500 gal No No No Demulsifier 1 500 gal No No No Corrosion Inhibitor 1 500 gal No No No Corrosion Inhibitor 1 500 gal No No No Demulsifier 1 500 gal No No No No No No No Demulsifier 1 500 gal No No No No No No No No No N

Boundary Lake BC Unit 1 - Tanks and Bullets

FACILITY / LOCATION	SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? (1)	ENVIRONMENT CANADA ERP REQUIRED? (2)	HPZ (m)
06-03 Satellite	Corrosion Inhibitor	1	500 gal	No	No	50
06-03-085-14 W6M 06-06 Well Site						
06-06-084-13 W6M	Demulsifier	1	500 gal	No	No	50
07-02 Gas Plant						
06-03-085-14 W6M	Corrosion Inhibitor	1	500 gal	No	No	50
08-11 Well Site	Scale Inhibitor	1	500 gol	No	No	50
08-11-085-14 W6M	Scale Inhibitor	ı	500 gal	INO	NO	50
08-14 Well Site/Heaer	Demulsifier	1	500 gal	No	No	50
08-14-084-14 W6M	Demaismen	'	Joo yai	140	140	30
08-22 Satellite	Scale Inhibitor	1	500 gal	No	No	50
08-22-084-14 W6M	Coare minister	·	ooo ga		110	00
08-24 Well Site	Scale Inhibitor	1	500 gal	No	No	50
08-24-084-14 W6M		·				
08-25 Well Site 08-25-084-14 W6M	Scale Inhibitor	1	500 gal	No	No	50
	Scale Inhibitor	2	500 gal	No	No	50
08-02 Battery	Corrosion Inhibitor	1	500 gal	No	No	50
08-02-085-14 W6M	Demulsifier	1	500 gal	No	No	50
	Biocide	1	500 gal	No	No	50
08-17 Well Site	Demulsifier	1	500 gal	No	No	50
08-17-085-13 W6M	Scale Inhibitor	1	500 gal	No	No	50
08-28 Well Site	Demulsifier	1	500 gal	No	No	50
08-28-084-14 W6M	Scale Inhibitor	1	500 gal	No	No	50

⁽¹⁾ E2 Schedules 2 only. (2) E2 Schedules 2, 3, 4 and 5.

LEGEND

Other: HPZ=Hazard Planning Zone

Boundary Lake BC Unit 2 - Facilities

LICENSEE	NAME	FACILITY ID	LOCATION	LATITUDE (DECIMAL DEGREES)	(DECIMAL DEGREES)	LATITUDE (DEGREES MIN SEC)	LONGITUDE (DEGREES MIN SEC)	FACILITY TYPE	MAXIMUM ASSOCIATED H2S RELEASE VOLUME (m3)	WELL OR	ASSOCIATED ON-SITE STORAGE HPZ (m)	ASSIGNED EPZ (m)	TO NEAREST RESIDENT (km)	STATUS
					P OPERATING									
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"	В	14.56	130	N/A	130		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"	В	363.46	1100	50	1100		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 06-25-085-14 002	BCBT0000149	06-25-085-14W6	56.3977766	-120.0741954	56° 23' 51.995"	-120° 4' 27.103"	В	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 06-25-085-14 004	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 06-30-085-13 001	BCBT0007588	06-30-085-13W6	56.3965715	-120.0463731	56° 23' 47.657"	-120° 2' 46.943"	В	14.56	164	50	164		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"	В	42.82	187	50	187		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	14.56	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"	В	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"	В	14.56	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	14.56	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	14.56	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	14.56	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"	В	N/A	N/A	N/A	100		AC
					DISCONTINUED									
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
WHITECAP RESOURCES INC.	WHITECAP BOUNDARYLAKE 06-29-086-13 001	BCBT0000157	06-29-086-13W6	56.4845240	-120.0206957	56° 29' 4.286"	-120° 1' 14.504"	В				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 Gl=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 UN=Unknown NW=New RT=Retired CN=Cancelled

Other: EPZ=Emergency Planning Zone ROW=Pipeline Right of Way WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake BC Unit 2 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	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								
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-08-086-13	6456	100020808613W600	02-08-086-13W6	0.24	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-01-086-14	2894	100030108614W600	03-01-086-14W6	0.503	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-06-086-13	3024	100030608613W600	03-06-086-13W6	0.803	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-12-086-14	3029	100031208614W600	03-12-086-14W6	0.435	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-30-085-13	2893	100033008513W600	03-30-085-13W6	0.648	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-31-085-13	2886	100033108513W600	03-31-085-13W6	1.043	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-24-085-14	7093	100042408514W602	04-24-085-14W6	0.619	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-28-085-14	4588	100042808514W600	04-28-085-14W6	0.712	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-01-086-14	6552	100050108614W600	05-01-086-14W6	0.602	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-07-086-13	2478	100050708613W600	05-07-086-13W6	0.853	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-08-086-13	2476	100050808613W600	05-08-086-13W6	0.37	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-19-085-13	2380	100051908513W600	05-19-085-13W6	0.913	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-19-086-13	2513	100051908613W600	05-19-086-13W6	0.465	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-27-085-14	2499	100052708514W600	05-27-085-14W6	0.913	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-29-085-13	2479	100052908513W600	05-29-085-13W6	0.681	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 05-30-085-13	2377	100053008513W602	05-30-085-13W6	0.45	0.0002	100	118	130		CAPPED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-31-085-13	2374	100053108513W600	05-31-085-13W6	0.677	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-06-086-13	101	100060608613W600	06-06-086-13W6	0.502	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-07-086-13	862	100060708613W600	06-07-086-13W6	0.523	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-08-086-13	949	100060808613W600	06-08-086-13W6	0.232	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-12-086-14	829	100061208614W600	06-12-086-14W6	0.33	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-19-086-13	1074	100061908613W600	06-19-086-13W6	0.61	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-24-085-14	639	100062408514W600	06-24-085-14W6	0.997	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W603	06-25-085-14W6	8.09	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W600	06-25-085-14W6	0.803	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-30-085-13	1137	100063008513W603	06-30-085-13W6	32.845	0.0064	108	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-30-086-13	1050	100063008613W600	06-30-086-13W6	0.513	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-32-085-13	2930	100063208513W600	06-32-085-13W6	0.706	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-01-086-14	2375	100070108614W600	07-01-086-14W6	0.68	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-06-086-13	2369	100070608613W600	07-06-086-13W6	0.522	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-07-086-13	2467	100070708613W600	07-07-086-13W6	0.682	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-19-085-13	2485	100071908513W600	07-19-085-13W6	0.532	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-24-085-14	2486	100072408514W600	07-24-085-14W6	0.963	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A07-31-085-13	24760	102073108513W600	07-31-085-13W6	15.861	0.0015	100	118	130		GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-01-086-14	1083	100080108614W600	08-01-086-14W6	0.632	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-19-086-13	1049	100081908613W600		0.702	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-25-085-14	1539	100082508514W600		0.71	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-33-085-14	1717	100083308514W600	08-33-085-14W6	0.59	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP HZ BOUNDARY LAKE A08-33-085-14	36846	100053308514W600	08-33-085-14W6	10.016	0.0004	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-34-085-14	857	100083408514W600	08-34-085-14W6	1.761	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 10-25-085-14	24909	100102508514W600	10-25-085-14W6	6.6	0.0015	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-01-086-14	2895	100110108614W600	11-01-086-14W6	0.778	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-21-085-14	4589	100112108514W600		0.391	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-27-085-14	2889	100112708514W600		1.365	0.0003	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-30-085-13	2892	100113008513W600		0.823	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-01-086-14	664	100140108614W600		0.542	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-06-086-13	152	100140608613W600	14-06-086-13W6	0.377	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-12-086-14	900	100141208614W600	14-12-086-14W6	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	0.571	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-19-085-13	6663	102141908513W602		0.857	0.0001	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-23-085-14	643	100142308514W600		0.677	0.0000	100	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-30-085-13	1171	100143008513W600	14-30-085-13W6	0.61	0.0000	100	118	130		OIL

Boundary Lake BC Unit 2 - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	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	SUSPENDED	,						
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W602	02-25-085-14W6	2.071	0.0008	100	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W600	02-25-085-14W6	4.554	0.0017	100	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 05-13-086-14	6553	100051308614W600	05-13-086-14W6	0.512	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A05-30-085-13	17888	102053008513W600	05-30-085-13W6	1.279	0.0007	100	118	130		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-01-086-14	663	100060108614W600	06-01-086-14W6	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	0.129	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W604	06-25-085-14W6	8.09	0.0023	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY LAKE 06-25-085-14	687	100062508514W605	06-25-085-14W6	8.09	0.0023	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-27-085-14	924	100062708514W600	06-27-085-14W6	0.471	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 06-30-085-13	1137	100063008513W602	06-30-085-13W6	66.61	0.0113	149	118	164		SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 06-31-085-13	183	100063108513W600	06-31-085-13W6	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	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	1.211	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-24-086-14	2500	100072408614W600	07-24-086-14W6	0.22	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-12-086-14	1096	100081208614W600	08-12-086-14W6	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	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	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	0.227	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-30-085-13	1097	100083008513W602	08-30-085-13W6	1.23	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-30-085-13	1097	100083008513W600	08-30-085-13W6	4.15	0.0002	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A08-30-085-13	2931	102083008513W600	08-30-085-13W6	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	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	0.33	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-36-085-14	1058	100083608514W600	08-36-085-14W6	0.399	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 10-25-085-14	24909	100102508514W602	10-25-085-14W6	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	2.9	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-24-085-14	692	100112408514W600	11-24-085-14W6	1.29	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-36-085-14	2475	100113608514W600	11-36-085-14W6	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	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	0.7	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-086-13	1100	100140708613W603	14-07-086-13W6	0.7	0.0000	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-07-086-13	1100	100140708613W602	14-07-086-13W6	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	0.29	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A14-19-085-13	6663	102141908513W600	14-19-085-13W6	1.087	0.0001	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-31-085-13	167	100143108513W600	14-31-085-13W6	0.41	0.0000	100	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY LAKE 14-31-085-13	167		14-31-085-13W6	0.41	0.0000	100	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-085-14	1144	100162508514W602		9.91	0.0004	100	118	130		SUSPENDED OIL
			WHITECAP SOUR DRIL								
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A03-31-085-13	26406	102033108513W600	03-31-085-13W6		0.0000	100	118	130		DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier HPZ=Hazard Planning Zone EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

Boundary Lake BC Unit 2 - Sour Gas Pipelines

LICENSEE	WATER CROSS	FROM		то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE		LINE NO.	LINE SEGMENT MODIFIER	UNIQU LINE		SUB OD	SEGMI LENG (km	IП /m	LICENS LL PRESSU n) (kPa)	RE LICENSE			SEGMENT H2S RELEASE VOLUME (m3)	CUMULATIVE H2S RELEASE VOLUME (m3)	SOUR HPZ (m)	THERMAL RADIATION HPZ (m)		STATUS
										W	HITECAP S	OUR OF	PERATING															
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 6.7	5 4.	8 4,96	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 4.1) 4.	8 4,96	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 0.7	3 4.	0 4,96	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	0.6) 4.	8 4,79	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	0.8) 4.	0 4,96	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 2.4	3.	2 4,96	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 1.1	3 4.	0 5,10	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 5.0	3.	2 9,93	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 1.9) 4.	0 4,96	1.46	5	0.84	11.83655	11.8365512	100	39	110	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.

LEGENI

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 2 - Sour Oil Pipelines

																									SEGMENT					
LICENSEE	WATER	FROM	то	START	VALVE	START VALVE	END	END VALVE	END VALVE	LICENSE	LINE	LINE SEGMENT	UNIQUE IN	ICLUDES UNIQUE SUI	OD	SEGMENT LENGTH	WALL ,	LICENSED PRESSURE	LICENSED		GAS 2 (1000	LIQUID		GVF	H2S RELEASE	CUMULATIVE H2S RELEASE	SOUR	THERMAL RADIATION	ASSIGNED	STATUS
EIGENGEE	CROSS	T IX O III	10	VALVE	LATITUDE	LONGITUDE	VALVE	VALVE LATITUDE	LONGITUDE	NO.	NO.	MODIFIER	LINE #	ICLUDES UNIQUE SUI LINE#	(mm)	(km)	(mm)	(kPa)	H2S (%)	(°C) 2	(1000 m3/d)	(m3/d)	(m3/m3)	(m3/m3)	VOLUME	VOLUME (m3)	HPZ (m)	HPZ (m)	EPZ (m)	STATUS
																									(m3)					
WHITECAP RESOURCES INC		06-25-085-14W6	06-30-085-13W6							4051		HITECAP SO		ATING I to 193 CC	60.3	1.75	3.9	3,920	0.08	5 0.8	12.00	1600	0 105	47 401	0.020994	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC	_	05-01-086-14W6	06-01-086-14W6	+-	+	-	-	-	-	4256	1	-			60.3	0.41	3.2	10,210	0.08	5 0.		1600	8.125	150.05	0.020994	14.5612308	100	18	110	Q
WHITECAP RESOURCES INC	_	03-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	4257	1	-			60.3	0.55	3.2	10,210	0.08	5 0.		1600	8.125	150.05	0.007746	14.5612308	100	20	110	Q
WHITECAP RESOURCES INC		11-18-085-13W6	11-18-085-13W6	-	-	-	-	-	-	4259	1	-	4 1	l to 193 OE		0.11	3.9	9,930	0.08	5 0.	71 13.00	1600	8.125	144.98	0.001464	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC	_	02-08-086-13W6 UN	05-08-086-13W6 UN	1 -	-	-	-	-	-	4285	1	-			69.0	1.10	7.5	3,450	0.35	5 0.8		1600	8.125	41.117	0.059790		100	16	110	Q
WHITECAP RESOURCES INC		04-33-085-14W6 11-19-086-13W6	06-28-085-14W6 11-19-086-13W6	-	-	-	-	-	-	4366 4560	1	-		to 193 SE to 193 OE		1.82 0.04	3.2	3,450 9.928	0.08	5 0.5 5 0.7			8.125 8.125	41.117 144.95	0.022561	14.5612308 14.5612308	100	14 10	110 110	Q
WHITECAP RESOURCES INC	_	11-19-086-13W6	12-19-086-13W6	-	+	-	-	-	-	4560	2	-		to 193 OE		0.49	3.2	9,928	0.08	5 0.				144.95	0.000381	14.5612308	100	19	110	Q
WHITECAP RESOURCES INC		12-19-086-13W6	16-13-086-14W6	-	-	-	CV	56.4625	-120.0598	4560	3	-		to 193 OE			3.2	9,928	0.08	5 0.				144.95	0.018669		100		110	Q
WHITECAP RESOURCES INC)	06-29-085-13W6	05-29-085-13W6	-	-	-	-	-	-	4568	1	-	10 1	l to 193 SE	60.3	0.35	3.9	9,930	1.00	5 0.	71 13.00	1600	8.125	144.98	0.058219	14.5612308	100	17	110	Q
WHITECAP RESOURCES INC		11-19-086-13W6	16-13-086-14W6	-	-	-	CV	56.4625	-120.0598	4747	1	-		l to 193 OE	_	1.39	3.2	9,928	0.08	5 0.		1600	8.125	144.95	0.045711	14.5612308	100	33	110	Q
WHITECAP RESOURCES INC		05-08-086-13W6 05-08-086-13W6	06-06-086-13W6 06-06-086-13W6	-	-	-	ESD	56.4255 56.4255	-120.0475 -120.0475	4748 4748	2	-		to 193 OE to 193 OE		2.18 2.18	3.2	3,450 3,450	0.31	5 0.8 5 0.8			8.125 8.125		0.104562 0.244965	14.5612308 14.5612308	100 100	14 21	110 110	Q
WHITECAP RESOURCES INC	_	14-13-085-14W6	06-24-085-14W6	-	-	-	-	- 30.4233	-120.0473	4875	1	-		to 193 MF		1.00	3.2	3,450	2.00	5 0.8		1600	8.125	41.117	0.244963	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		11-21-085-14W6	14-21-085-14W6	-	-	-	-	-	-	5151	1	-			60.3	0.50	3.9	9,655	0.20	5 0.		1600	8.125	139.92	0.016602	14.5612308	100	19	110	Q
WHITECAP RESOURCES INC	_	16-27-085-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	5163	1	-		l to 193 OE		4.98	4.0	5,103	0.20	5 0.8	3 13.00	1600	8.125	64.031	1.448563	14.5612308	100	53	110	Q
WHITECAP RESOURCES INC		04-24-085-14W6	06-24-085-14W6	-	-	-	-	-	-	5636	1	-		to 193 OE		0.66	3.9	3,450	0.20	5 0.8		1600	8.125	41.117	0.019362	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC		14-19-085-13W6 16-13-086-14W6	15-20-085-13W6 06-06-086-13W6	-	-	-	ESD	56.3900 56.4255	-120.0155 -120.0475	5760 5802	1	-		to 193 SC 1 to 193 OE	_	2.50	4.0 4.8	4,960 3,450	0.72 0.20	5 0.8 5 0.8		1600 1600	8.125 8.125	61.949 41.117	0.665577 1.443259	14.5612308 14.5612308	100 100	24 45	110 110	Q
WHITECAP RESOURCES INC		14-18-085-13W6	16-18-085-13W6	-	-	-	-	- 50.4255	-120.0475	5833	1	-		to 193 OE		0.80	3.9	3,450	0.20	5 0.8					0.023469		100	14	110	Q
WHITECAP RESOURCES INC		16-18-085-13W6	01-19-085-13W6	-	-	-		-	-	5833	2	-		to 193 SE	_		3.9	3,450	0.20	5 0.8				41.117	0.006160	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC		01-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	5833	3	-		l to 193 OE	_		3.9	3,450	0.20	5 0.8				41.117	0.031976	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		06-12-086-14W6	07-12-086-14W6	-	-	-	-		-	5859	1	-		to 193 OE	_	0.20	4.8	10,200	0.20	5 0.		1600	8.125	149.87	0.015218	14.5612308	100	19	110	Q
WHITECAP RESOURCES INC	_	05-19-085-13W6 06-19-085-13W6	06-19-085-13W6 06-19-085-13W6	+ -	-	-	-	-	-	6074 6074	3	-		to 193 SE to 193 SE	60.3	0.33	3.2	3,448	0.35 0.35	5 0.8 5 0.8		1600 1600	8.125 8.125	41.09 41.616	0.017895	14.5612308 14.5612308	100	12 10	110 110	Q
WHITECAP RESOURCES INC	_	07-19-085-13W6	06-19-085-13W6	+ -	-	-	-	-	-	6074	4	-			60.3	0.04	3.2	3,488	0.35	5 0.8		1600	8.125	41.616	0.002174	14.5612308	100	11	110	Q
WHITECAP RESOURCES INC	_	11-19-085-13W6	06-19-085-13W6	-	-	-	-	-	-	6074	5	-			60.3	0.31	3.2	3,488	0.35	5 0.8		1600		41.616	0.016846	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC		06-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6074	6	-			88.9	1.23	3.2	3,448	0.35	5 0.8		1600	8.125	41.09	0.156183	14.5612308	100	21	110	Q
WHITECAP RESOURCES INC		06-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6074	7	-		to 193 SE		1.23	3.2	3,448	0.35	5 0.8		1600	8.125	41.09	0.066700	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC	_	03-01-086-14W6 07-01-086-14W6	06-01-086-14W6 06-01-086-14W6	-	-	-	-	-	-	6075 6075	3	-		to 193 SE to 193 SE		0.29	3.2	3,448	0.35 0.35	5 0.8 5 0.8		1600 1600	8.125 8.125	41.09 41.09	0.015726	14.5612308 14.5612308	100	12 11	110 110	Q Q
WHITECAP RESOURCES INC		11-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	6075	4	-		to 193 SE	_	0.27	3.2	3,448	0.42	5 0.8					0.012472	14.5612308	100	11	110	Q
WHITECAP RESOURCES INC	_	06-01-086-14W6	08-01-086-14W6	-	-	-	-	-	-	6075	5	-		l to 193 SE			3.2	3,448	0.35	5 0.8	88 13.00		8.125		0.129518	14.5612308	100	21	110	Q
WHITECAP RESOURCES INC		06-01-086-14W6	08-01-086-14W6	-	-	-	-	-	-	6075	6	-		l to 193 SE			3.2	3,448	0.35	5 0.8		1600			0.055312		100	14	110	Q
WHITECAP RESOURCES INC		08-01-086-14W6	06-06-086-13W6	-	-	-	ESD	56.4255 56.4255	-120.0475 -120.0475	6075	7	-		to 193 SE to 193 SE		0.70	3.2	3,448 3,448	0.35 0.35	5 0.8		1600	8.125	41.09	0.088885	14.5612308 14.5612308	100	20	110 110	Q
WHITECAP RESOURCES INC		08-01-086-14W6 03-30-085-13W6	06-06-086-13W6 06-30-085-13W6	-	-	-	ESD	56.3966	-120.0475	6075 6076	1	-		to 193 SE	60.3	0.70	3.2	3,448	0.35	5 0.8 5 0.8		1600 1600	8.125 8.125	41.09 41.09	0.037959		100	13 11	110	Q
WHITECAP RESOURCES INC		11-30-085-13W6	06-30-085-13W6	-	-	-	ESD	56.3966	-120.0464		5	-		to 193 SE		0.43	3.2	3,448	0.35	5 0.8		1600	8.125	41.09	0.023318	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC)	06-30-085-13W6	03-30-085-13W6	-	-	-	ESD	56.3921	-120.0464	6076	6	-	39 1	to 193 MF	88.9	0.83	3.2	3,448	1.69	5 0.8	13.00	1600	8.125	41.09	0.508893	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		06-30-085-13W6	03-30-085-13W6	-	-	-	ESD	56.3921	-120.0464		7	-		to 193 MF		0.84	3.2	3,448	1.69	5 0.8	13.00	1600	8.125	41.09	0.219948	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		14-19-085-13W6 14-19-085-13W6	09-19-085-13W6 09-19-085-13W6	-	-	-	-	-	-	6076 6076	8	-		to 193 MF	_	1.02	3.2	3,448 3,448	0.35 0.35	5 0.8 5 0.8		1600 1600	8.125 8.125	41.09 41.09	0.129518	14.5612308 14.5612308	100	21 14	110 110	Q
WHITECAP RESOURCES INC		03-31-085-13W6	06-31-085-13W6	+ -	-	-	-	-	-	6077	1	-		to 193 SE		0.32	3.2	3,448	0.35	5 0.8		1600	8.125	41.09	0.033312	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC	_	05-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	6077	2	-			60.3	0.29	3.2	3,448	0.35	5 0.8		1600	8.125	41.09	0.015726	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC		03-12-086-14W6	06-12-086-14W6	-	-	-	-	-	-	6078	1	-		to 193 SE			3.2	3,448	0.06		13.00				0.002696		100	12	110	Q
WHITECAP RESOURCES INC		11-12-086-14W6	06-12-086-14W6	-		-	-		-		4															14.5612308			110	
WHITECAP RESOURCES INC		06-12-086-14W6 06-12-086-14W6	02-12-086-14W6 02-12-086-14W6	-	-	-	-	-	-	6078 6078		-		to 193 SE				3,448 3,448	0.35 0.35							14.5612308 14.5612308			110 110	
WHITECAP RESOURCES INC		15-01-086-14W6	16-01-086-14W6	+ -	-	-	-	-	-	6078		-		to 193 SE				3,448	0.35							14.5612308			110	Q
WHITECAP RESOURCES INC		05-06-086-13W6	06-06-086-13W6	-	-	-	ESD		-120.0475			-	50 1	to 193 SE	88.9	0.36		3,448	0.35							14.5612308			110	Q
WHITECAP RESOURCES INC		15-01-086-14W6	16-01-086-14W6	-	-	-	-	-	-	6078				to 193 SE	_			3,448	0.35							14.5612308			110	Q
WHITECAR RESOURCES INC		05-06-086-13W6	06-06-086-13W6	-	-	-	ESD	+	-120.0475			-		to 193 SE				3,448	0.35							14.5612308			110	Q
WHITECAP RESOURCES INC		07-07-086-13W6 05-29-085-13W6	06-07-086-13W6 13-20-085-13W6	-	-	-	-	-	-	6079 6080		-		to 193 SE				3,448 3,448	0.28 0.35							14.5612308 14.5612308			110 110	Q
WHITECAP RESOURCES INC		05-29-085-13W6	13-20-085-13W6	-	-	-	-	-	-	6080		-		to 193 SE				3,448	0.35							14.5612308			110	
WHITECAP RESOURCES INC)	05-29-085-13W6	13-20-085-13W6	-	-	-	-	-	-	6080		-	56 1	to 193 SE	60.3	0.77	3.2	3,448	0.35	5 0.8	13.00	1600	8.125	41.09	0.041755	14.5612308	100		110	
WHITECAP RESOURCES INC		13-20-085-13W6	13-20-085-13W6	-	-	-	-	-	-	6080		-		to 193 SE				3,448								14.5612308			110	
WHITECAP RESOURCES INC		16-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323		6	-		to 193 SE				3,448 3,448	0.35							14.5612308 14.5612308			110	
WHITECAP RESOURCES INC		13-20-085-13W6 16-19-085-13W6	13-20-085-13W6 09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6080	8	-		to 193 SE				3,448	0.35 0.35							14.5612308			110 110	Q
WHITECAP RESOURCES INC		13-20-085-13W6	13-20-085-13W6	-	-	-	-	-	-	6080	9	-		to 193 SE		0.32	3.2	3,448	0.35							14.5612308		_	110	Q
WHITECAP RESOURCES INC)	16-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867	-120.0323	6080		-	62 1	to 193 SE	60.3	0.38	3.2	3,448	0.35	5 0.8	13.00	1600	8.125	41.09	0.020607	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC		13-18-086-13W6	16-13-086-14W6	-	-	-	CV	56.4625	-120.0598			-		to 193 SV				17,200								14.5612308			110	Q
WHITECAP RESOURCES INC		06-13-086-14W6 UN 07-18-086-13W6		1 -	-	-	-	-	-	8157 8157		-		to 193 SE to 193 MF				3,448 3,448	0.05 0.35							14.5612308 14.5612308			110 110	Q
WHITECAP RESOURCES INC		06-18-086-13W6	06-18-086-13W6 06-18-086-13W6	-	-	-	-	-	-	8157		-		to 193 MF				3,448	0.35							14.5612308			110	
WHITECAP RESOURCES INC		06-30-086-13W6	04-30-086-13W6	-	-	-	-	-	-	8161	1	-		to 193 CC				3,448	0.35							14.5612308			110	
WHITECAP RESOURCES INC)	08-25-086-14W6	08-25-086-14W6	-	-	-	-	-	-	8161	2	-		to 193 CC				3,448	0.35							14.5612308		11	110	Q
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Boundary Lake BC Unit 2 - Sour Oil Pipelines

																									SEGMENT					
LICENSEE	WATER CROSS	FROM	то	START VALVE		VALVE ,	END ALVE	VALVE END VALVE	LICENSE	LINE NO.	LINE SEGMENT	UNIQUE	UNIQUE	SUB (mm)	SEGMENT LENGTH	WALL (mm)	PRESSURE	ICENSED H2S (%)	TEMP (°C)	z	(1000 /		GLR (m3/m3)	GVF	H2S RELEASE	CUMULATIVE H2S RELEASE	SOUR	THERMAL RADIATION	ASSIGNED EPZ (m)	STATUS
	CRUSS			VALVE	LATITUDE L	ONGITUDE '	ALVE	LATITUDE LONGITUDE	NO.	NO.	MODIFIER	LINE #	LINE#	(11111)	(km)	(111111)	(kPa)	H23 (%)	(0)		m3/d)	ilis/u)	(1113/1113)	(1113/1113)	VOLUME (m3)	VOLUME (m3)	HPZ (m)	HPZ (m)	EPZ (III)	
WHITECAP RESOURCES INC	D	08-19-086-13W6	11-19-086-13W6	-	-	-	-		8161	3	-	69	1 to 193	CO 60.3	1.03	3.9	3,448	0.35	5	0.88	13.00	1600	8.125	41.09	0.052872	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		08-30-086-13W6	01-30-086-13W6	-	-	-	-		8161	4	-	70		CO 60.3	0.62	3.9	3,448	0.35	5			1600	8.125	41.09	0.031826	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC		13-19-086-13W6 11-27-085-14W6	11-19-086-13W6 06-27-085-14W6	-	-	-	-		8161 8162	5	-	71 72		CO 60.3	1.19 0.25	3.9	3,448 3,448	0.35 1.59	5 5			1600 1600	8.125 8.125	41.09 41.09	0.061085	14.5612308 14.5612308	100	14 11	110 110	Q Q
WHITECAP RESOURCES INC	_	05-27-085-14W6	06-27-085-14W6	-	-	-	-		8162	2	-	73		CO 60.3	0.27	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.013860	14.5612308	100	11	110	Q
WHITECAP RESOURCES INC	_	03-27-085-14W6	06-27-085-14W6	-	-	-	-		8162	4	-	74		CO 60.3	0.31	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.015913	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC	_	06-28-085-14W6 12-23-085-14W6	08-28-085-14W6 13-23-085-14W6	-	-	-	-		8162 8162	7	-	75 76		CO 88.9	0.54	5.5 3.9	3,448 3,448	0.35	5 5		13.00 13.00	1600 1600	8.125 8.125	41.09 41.09	0.061107	14.5612308 14.5612308	100	19 12	110 110	Q Q
WHITECAP RESOURCES INC	_	04-23-085-14W6	13-23-085-14W6	-	-	-	-		8162	8	-	77		CO 60.3	1.27	3.9	3,448	0.35			13.00	1600	8.125	41.09	0.065192	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		14-23-085-14W6	13-23-085-14W6	-	-	-	-		8162	9	-	78		CO 60.3	0.46	3.9	3,448	0.35			13.00	1600	8.125	41.09	0.023613	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC		10-23-085-14W6 10-22-085-14W6	11-23-085-14W6 16-22-085-14W6	-	-	-	-		8162 8162	10	-	79 80		CO 60.3	0.43	3.9	3,448 3,448	0.35	5 5		13.00 13.00	1600 1600	8.125 8.125	41.09 41.09	0.022073	14.5612308 14.5612308	100	12 14	110 110	Q Q
WHITECAP RESOURCES INC	_	06-28-085-14W6	16-27-085-14W6	-	-			56.4045 -120.1119	8162	12	-	81		CO 60.3	3.11	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.159642	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC	_	06-27-085-14W6	16-27-085-14W6	-	-			56.4045 -120.1119	8162	13	-	82		CO 88.9	1.14	5.5	3,448	0.35	5		13.00	1600	8.125	41.09	0.129004	14.5612308	100	21	110	Q
WHITECAP RESOURCES INC		06-27-085-14W6 16-22-085-14W6	08-27-085-14W6 16-22-085-14W6	-	-	-	-		8162 8162	14 15	-	83 84		CO 60.3 MP 60.3	0.94	3.9	3,448 3,448	0.35			13.00 13.00	1600 1600	8.125 8.125	41.09 41.09	0.048252	14.5612308 14.5612308	100	14 10	110 110	Q Q
WHITECAP RESOURCES INC	_	16-22-085-14W6	16-22-085-14W6	-	-	-	-		8162	16	-	85		MP 88.9	0.14	5.5	3,448	0.35				1600	8.125	41.09	0.007180	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		06-28-085-14W6	06-28-085-14W6	-	-	-	-		8162	17	-	86		CO 60.3	0.09	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.004620	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC	_	16-22-085-14W6 01-27-085-14W6	16-22-085-14W6 08-27-085-14W6	-	-	-	-		8162 8162	18 19	-	87 88		MP 60.3	0.15	3.9	3,448 3,448	0.35	5				8.125	41.09	0.007700 0.039526	14.5612308 14.5612308	100	10	110 110	Q Q
WHITECAP RESOURCES INC		09-27-085-14W6	16-27-085-14W6	+ -	-	-	- CV	56.4045 -120.1119	8162	20	-	89		MP 60.3	0.77	3.9	3,448	0.35	5 5		13.00	1600	8.125 8.125	41.09 41.09	0.039326	14.5612308	100	13 13	110	Q
WHITECAP RESOURCES INC		16-22-085-14W6	16-22-085-14W6	-	-	-	-		8162	21	-	90		MP 88.9	0.15	5.5	3,448	0.35	5		13.00	1600	8.125	41.09	0.016974	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		01-27-085-14W6	08-27-085-14W6	-	-	-	-		8162	22	-	91		MP 88.9	0.77	5.5	3,448	0.35	5		13.00	1600	8.125	41.09	0.087134	14.5612308	100	20	110	Q
WHITECAP RESOURCES INC		09-27-085-14W6 08-27-085-14W6	16-27-085-14W6 16-27-085-14W6	-	-			56.4045 -120.1119 56.4045 -120.1119	8162 8162	23 24	-	92 93		MP 88.9	0.59	5.5 3.9	3,448 3,448	0.35	5 5			_	8.125 8.125	41.09 41.09	0.066868	14.5612308 14.5612308	100	20 14	110 110	Q Q
WHITECAP RESOURCES INC	_	16-22-085-14W6	16-22-085-14W6	-	-	-	-		8162	25	-	94		CO 60.3	0.08	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.004107	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC		16-22-084-14W6	16-22-085-14W6	-	-	-	-		8162	29	-	95		CO 60.3	0.06	3.9	3,448	0.35					8.125	41.09	0.003080	14.5612308		10	110	Q
WHITECAP RESOURCES INC	_	08-28-085-14W6 05-27-085-14W6	08-28-085-14W6	-	-	-	-		8162	30	-	96		CO 88.9	0.12	5.5 5.5	3,448 3,448	0.35					8.125		0.013579	14.5612308		13	110	Q Q
WHITECAP RESOURCES INC	_	10-27-085-14W6	07-27-085-14W6 16-27-085-14W6	-	-	-	-		8162 8162	32	-	97 98		CO 88.9	0.88	5.5	3,448	0.35	5 5		13.00 13.00	1600	8.125 8.125	41.09 41.09	0.099582	14.5612308 14.5612308	100	21 20	110 110	Q
WHITECAP RESOURCES INC		11-23-085-14W6	14-23-085-14W6	-	-	-	-		8162	33	-	99		CO 60.3	0.35	3.9	3,448	0.35	5		13.00	1600	8.125	41.09	0.017966	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC	_	14-23-085-14W6	13-23-085-14W6	-	-	-	-		8162	34	-	100		CO 60.3	0.45	3.9	3,448	0.35	5			_	8.125	41.09	0.023099	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC	_	16-22-085-14W6 14-12-086-14W6	16-22-085-14W6 14-12-086-14W6	-	-	-	-		8162 8166	35 7	-	101 102		CO 60.3	0.19	3.9	3,448 3,448	0.35	5 5		13.00 13.00	1600 1600	8.125 8.125	41.09 41.09	0.009753	14.5612308 14.5612308	100	10 10	110 110	Q Q
WHITECAP RESOURCES INC		03-12-086-14W6	16-13-086-14W6	-	-	-	-		8166	11	-	103		CO 60.3		3.9	3,448	0.06	5		13.00	1600	8.125	41.09	0.017072	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC	_	06-19-086-13W6	11-19-086-13W6	-	-	-	-		8171	1	-	104		OE 60.3	0.29	3.9	3,448	0.35	5			_	8.125	41.09	0.014886	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC		06-19-086-13W6 07-19-086-13W6	11-19-086-13W6 06-19-086-13W6	-	-	-	-		8171 8171	4	-	105 106		OE 88.9	0.29	5.5 3.9	3,448 3.448	0.35	5		13.00 13.00	1600 1600	8.125 8.125	41.09 41.09	0.032817	14.5612308 14.5612308	100	17	110 110	Q Q
WHITECAP RESOURCES INC	_	05-19-086-13W6	06-19-086-13W6	-	-	-	-		8171	6	-	106		OE 60.3	0.29	3.9	3,448	0.35	5		13.00	1600	8.125		0.014886	14.5612308		12 12	110	Q
WHITECAP RESOURCES INC		06-19-086-13W6	06-19-086-13W6	-	-	-	-		8171	9	-	108	1 to 193	OE 60.3	0.19	3.9	3,448	0.35	5	0.88	13.00	1600	8.125	41.09	0.009753	14.5612308		10	110	Q
WHITECAP RESOURCES INC		05-08-086-13W6	05-08-086-13W6	-	-	-	-		8180	3	-	109		CO 60.3	0.08	3.9	3,448	0.35			13.00	1600	8.125	41.09	0.004107	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC		14-17-086-13W6 05-08-086-13W6	03-17-086-13W6 05-08-086-13W6	-	-	-	-		8180 8180	5 8	-	110 111		CO 60.3	1.45 0.26	3.9	3,448 3,448	0.35	5 5		13.00 13.00	1600 1600	8.125 8.125	41.09	0.074431	14.5612308 14.5612308	100	14 11	110 110	Q Q
WHITECAP RESOURCES INC		05-08-086-13W6	05-08-086-13W6	-	-	-	-		8180	9	-	112		CO 60.3	0.08	3.9	3,448	0.35	5				8.125	41.09	0.004107	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC		06-17-086-13W6	03-17-086-13W6	-	-	-	-		8180	11	-	113		CO 60.3	0.60	3.9	3,448	0.35	5				8.125	41.09	0.030799	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC		14-08-086-13W6 06-32-085-13W6	05-08-086-13W6 06-31-085-13W6		-	-	-		8180 8181	12	-	114	1 to 193 1 to 193	CO 60.3	1.64	3.9	3,448	0.35	5				8.125	41.09	0.084184	14.5612308 14.5612308	100	14 14	110 110	Q
WHITECAP RESOURCES INC		11-24-085-14W6	06-24-085-14W6	-	-	-	-		8182	1	-		1 to 193			3.9	3,448									14.5612308		13	110	Q
WHITECAP RESOURCES INC		07-24-085-14W6	06-24-085-14W6	-	-	-	-		8182	3	-		1 to 193													14.5612308		11	110	Q
WHITECAP RESOURCES INC		11-13-085-14W6 06-24-085-14W6	14-13-085-14W6 08-24-085-14W6	-	-	-	-		8182 8182	5	-		1 to 193 1 to 193			3.9 5.5	3,448 3,448								0.049792	14.5612308 14.5612308		14 21	110 110	Q Q
WHITECAP RESOURCES INC		06-24-085-14W6	08-24-085-14W6	-	-	-	-		8182		-		1 to 193													14.5612308		14	110	Q
WHITECAP RESOURCES INC	C	14-13-085-14W6	06-24-085-14W6	-	-	-	-		8182		-	121	1 to 193	MP 60.3	0.28	3.9	3,448	0.35	5	0.88	13.00	1600	8.125	41.09	0.014373	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC		08-24-085-14W6	08-24-085-14W6	-	-	-	-		8182	8	-		1 to 193			5.5										14.5612308		15	110	Q
WHITECAP RESOURCES INC		05-19-085-13W6 08-24-085-14W6	06-19-085-13W6 08-24-085-14W6	-	-	-	-		8182 8182		-		1 to 193 1 to 193			5.5 3.9	3,448 3,448								0.069028	14.5612308 14.5612308		20 10	110 110	Q Q
WHITECAP RESOURCES INC		05-19-085-13W6	09-19-085-13W6	-	-				8182		-		1 to 193			3.9	3,448									14.5612308		14	110	Q
WHITECAP RESOURCES INC		14-06-086-13W6	11-06-086-13W6	-	-	-	-		8183	1	-		1 to 193			3.9	3,448								0.030799	14.5612308		13	110	Q
WHITECAP RESOURCES INC		06-06-086-13W6	06-06-086-13W6	-	-				8183	2	-		1 to 193			3.9	3,448								0.020019	14.5612308		12	110	Q
WHITECAP RESOURCES INC		11-18-085-14W6 03-19-085-13W6	14-18-085-13W6 06-19-085-13W6	-	-	-	-		8186 8186	2	-		1 to 193 1 to 193			3.9	3,448 3,448								0.032852			13 13	110 110	Q Q
WHITECAP RESOURCES INC	D	14-27-085-14W6	16-27-085-14W6	-	-				8187	1		130	1 to 193	CO 60.3	0.87	3.9	3,448	0.35	5	0.88	13.00	1600	8.125	41.09	0.044659	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC		08-24-085-14W6	08-24-085-14W6	-	-		-		8189	1	-		1 to 193			3.9									0.011806			11	110	Q
WHITECAP RESOURCES INC		08-30-085-13W6 11-20-085-13W6	01-30-085-13W6 09-19-085-13W6	-	-	-	-		8189 8189		-		1 to 193 1 to 193				3,448 3,448									14.5612308 14.5612308		13 13	110 110	Q Q
WHITECAP RESOURCES INC		05-19-085-13W6	09-19-085-13W6	-	-	-	-		8189	7	-		1 to 193			3.9										14.5612308		14	110	Q
WHITECAP RESOURCES INC	C	16-19-085-13W6	09-19-085-13W6	-	-	-	CV	56.3867 -120.0323	8189	10	-	135	1 to 193	CO 60.3	0.66	3.9	3,448	0.35	5	0.88	13.00	1600	8.125	41.09	0.033879	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC		14-13-085-14W6	16-13-085-14W6	-	-	-	-		8192	1	-		1 to 193			3.9	3,448	0.35								14.5612308		14	110	Q
WHITECAP RESOURCES INC	J	16-13-085-14W6	16-13-085-14W6	-	-	-	-		8192		-	13/	1 to 193	CO 60.3	0.21	3.9	3,448	U.35	5	ს.ძბ	13.00	UUOI	0.125	41.09	0.010780	14.5612308	100	10	110	Q

Boundary Lake BC Unit 2 - Sour Oil Pipelines

LIGENSEE	WATER	FROM	T0	START	START	START	END	END	END VALVE	LICENSE	LINE	LINE SEGMENT	UNIQUE	INCLUDES UNIQUE	OLID (OD SEGN	MENT ,	WALL D	ICENSED	LICENSED	TEMP	GAS Z (1000	LIQUID	GLR	GVF	SEGMENT H2S	CUMULATIVE	SOUR	THERMAL RADIATION	ASSIGNED	STATUS
LICENSEE	CROSS	FROM	ТО	VALVE	VALVE LATITUDE	VALVE LONGITUDE	VALVE	VALVE LATITUDE	LONGITUDE	NO.	NO.	MODIFIER	LINE #	LINE #	SUB (n	nm) (ki	n)	(mm)	RESSURE (kPa)	H2S (%)	(°C)	Z (1000 m3/d)		(m3/m3) (m3/m3)	VOLUME (m3)	H2S RELEASE VOLUME (m3)	HPZ (m)	HPZ (m)	EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	13-18-085-13W6	14-18-085-13W6	-	-	-	-	-	-	8192	3	-	138	1 to 193	CO 6	0.0	60	3.9	3,448	0.35	5 0	.88 13.00	1600	8.125	41.09	0.030799	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC.	-	14-18-085-13W6	16-18-085-13W6	-	-	-	-	-	-	8192	4	-	139	1 to 193				3.9	3,448	0.35		.88 13.00			_	0.041066		100	14	110	Q
WHITECAP RESOURCES INC.	-	16-18-085-13W6	16-18-085-13W6	-	-	-	-	-	-	8192	5	-		1 to 193					3,448	0.35		.88 13.00				0.017966		100	12	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	01-19-085-13W6 08-34-085-14W6	09-19-085-13W6 16-27-085-14W6	-	-	-	CV	56.3867	-120.0323	8192 8193	6	-	141 142	1 to 193 1 to 193					3,448 3,448	0.35 0.20	5 0 5 0			8.125 8.125		0.055952	14.5612308 14.5612308	100	14	110 110	Q Q
WHITECAP RESOURCES INC.	-	08-12-086-14W6	08-12-086-14W6	-	-	-	-	-	-	8199	1	-	143	1 to 193					3,448	0.35	5 0		1600	8.125	_	0.011293		100	11	110	Q
WHITECAP RESOURCES INC.	-	14-01-086-14W6	04-06-086-13W6	-	-	-	-	-	-	8199	2	-	144	1 to 193	CO 6	0.3 1.6	68	3.9	3,448	0.35	5 0	.88 13.00	1600	8.125	41.09	0.086238	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	-	08-01-086-14W6	04-01-086-14W6	-	-	-	-	-	-	8199	3	-		1 to 193					3,448	0.35	5 0		_			0.027206		100	13	110	Q
WHITECAP RESOURCES INC.	-	06-36-085-14W6	16-36-085-14W6 14-25-085-14W6	-	-	-	-	-	-	8199	6	-	146	1 to 193					3,448	0.35	5 0			8.125		0.103177	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+ -	14-25-085-14W6 08-25-085-14W6	16-25-085-14W6	-	-	-		-	-	8199 8199	8	-	147 148	1 to 193					3,448 3,448	0.35 0.56	5 0	.88 13.00		8.125 8.125		0.011293	14.5612308 14.5612308	100	11	110 110	Q Q
WHITECAP RESOURCES INC.	-	14-07-086-13W6	06-07-086-13W6	-	-	-	-	-	-	8199	9	-	149	1 to 193					3,448	0.35	5 0			8.125		0.060058	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	-	07-06-086-13W6	07-06-086-13W6	-	-	-	-	-	-	8199	12	-	150	1 to 193	CO 6	0.3	27	3.9	3,448	0.35	5 0	.88 13.00	1600	8.125	41.09	0.013860	14.5612308	100	11	110	Q
WHITECAP RESOURCES INC.	-	03-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	13	-	151	1 to 193					3,448	0.35		.88 13.00			_	0.012320		100	11	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	16-31-085-13W6 14-31-085-13W6	15-31-086-13W6	-	-	-	-	56.4255	100.0475	8199	14 15	-	152	1 to 193 1 to 193					3,448 3,448	0.35 0.35	5 0	.88 13.00			_	0.014886	14.5612308	100	12 13	110 110	Q
WHITECAP RESOURCES INC.	+	08-30-085-13W6	06-06-086-13W6 14-30-085-13W6	-	-	-	ESD -	- 30.4233	-120.0475	8199	17	-		1 to 193					3,448	0.35	5 0				_	0.036446	14.5612308 14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.		04-06-086-13W6	06-06-086-13W6	-	-	-	ESD		-120.0475	8199	22		155	1 to 193					3,448	0.35	5 0					0.044146		100	14	110	Q
WHITECAP RESOURCES INC.	-	04-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475			-	156	1 to 193				3.9	3,448	0.35	5 0				_	0.025153		100	13	110	Q
WHITECAP RESOURCES INC.	-	04-01-086-14W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475		24	-	157	1 to 193					3,448	0.35	5 0			8.125		0.023613		100	13	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+ -	16-36-085-14W6 06-07-086-13W6	06-06-086-13W6 03-07-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199 8199	25 26	-	158 159	1 to 193 1 to 193					3,448 3,448	0.35 0.35	5 0	.88 13.00		8.125 8.125	41.09	0.032339	14.5612308 14.5612308	100	13 13	110 110	Q
WHITECAP RESOURCES INC.	† -	14-06-086-13W6	11-06-086-13W6	-	-	-	-	-	-	8199	27	-	160	1 to 193					3,448	0.35	5 0			8.125	41.09	0.031626		100	14	110	Q
WHITECAP RESOURCES INC.		06-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	28		161	1 to 193					3,448	0.35	5 0			8.125	_	0.029259	14.5612308	100	13	110	Q
WHITECAP RESOURCES INC.	-	02-06-086-13W6	03-06-086-13W6	-	-	-	-	-	-	8199	31	-	162	1 to 193					3,448	0.35		.88 13.00		8.125		0.031313		100	13	110	Q
WHITECAP RESOURCES INC.	-	03-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8199	35	-		1 to 193					3,448	0.35		.88 13.00			_	0.043632		100	14	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	11-31-085-13W6 05-07-086-13W6	06-06-086-13W6 13-06-086-13W6	-	-	-	ESD -	56.4255	-120.0475	8199	36 38	-		1 to 193 1 to 193					3,448 3.448	0.35 0.35	5 0	.88 13.00			_	0.067245		100	14	110 110	Q Q
WHITECAP RESOURCES INC.	-	12-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	8199	39	-	166	1 to 193					3,448	0.35	5 0					0.001010	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	-	05-06-086-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	40	-	167	1 to 193					3,448	0.35		.88 13.00		8.125	_	0.007700	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC.	-	03-36-085-14W6	16-36-085-14W6	-	-	-	-	-	-	8199	41	-	168	1 to 193					3,448	0.35	5 0		1600			0.104717	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	-	01-01-086-14W6	01-01-086-14W6	-	-	-		-	- 400.0475	8199	42	-	169	1 to 193			-		3,448	0.35	5 0			8.125	_	0.002053		100	10	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+ -	04-06-086-13W6 16-25-085-14W6	06-06-086-13W6 06-31-085-13W6	-	-	-	ESD	56.4255	-120.0475	8199 8199	43 44	-	170 171	1 to 193 1 to 193					3,448 3,448	0.35 0.35	5 0 5 0			8.125 8.125		0.035932	14.5612308 14.5612308	100	13 14	110 110	Q Q
WHITECAP RESOURCES INC.	-	06-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	8199	45	-	172	1 to 193					3,448	0.35	5 0			8.125		0.010266	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	8199	46	-	173	1 to 193					3,448	0.35	5 0	.88 13.00		8.125		0.061598		100	14	110	Q
WHITECAP RESOURCES INC.	-	06-08-086-13W6	05-08-086-13W6	-	-	-	-	-	-	10646	2	-		1 to 193				3.5	60	0.34	5 0	.97 13.00		8.125		0.019467	14.5612308	100	10	110	Q
WHITECAP RESOURCES INC.	-	14-13-085-14W6	14-13-085-14W6	-	-	-	-	-	-	13261	1	-	175	1 to 193					10,210	0.46	5 0	.70 13.00	1600	8.125	_	0.008086	14.5612308	100	12	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+ -	08-25-085-14W6 WE	06-30-085-13W6 PL 06-25-085-14W6 PL	-	-	-	-	-	-	18577 21699		-		1 to 193 1 to 193			-		3,448 3,450	0.02 2.00		.88 13.00 .88 13.00				0.002699		100	14 20	110 110	Q Q
WHITECAP RESOURCES INC.	-	06-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	23387	1	-		1 to 193					3,450	1.00	5 0				_	0.040288	14.5612308	100	11	110	Q
WHITECAP RESOURCES INC.	-	11-31-085-13W6	06-06-086-13W6	-	-	-	ESD	56.4255	-120.0475	23387	2	-	179	1 to 193		0.3 1.4		3.2	3,450	1.00	5 0	.88 13.00	1600	8.125	41.117	0.229331	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	-	06-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	23387	3	-	180	1 to 193					3,450	1.00	5 0		1600	8.125		0.090804	14.5612308	100	16	110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	11-31-085-13W6 06-06-086-13W6	06-06-086-13W6 06-06-086-13W6	-	-	-	ESD	56.4255 56.4255	-120.0475 -120.0475	23387	5	-		1 to 193					3,451 3,450	1.00	5 0 5 0					0.516914	14.5612308 14.5612308	100	10	110 110	Q Q
WHITECAP RESOURCES INC.	+	08-30-085-13W6	08-31-085-13W6	-	-	-	-	-	-120.0473	23387	6	-		1 to 193					3,450	1.00	5 0				41.117	0.018394	14.5612308	100	14	110	Q
WHITECAP RESOURCES INC.	<u> </u>	08-31-085-13W6	07-31-085-13W6	-		-	-		-	23387				1 to 193					-,								14.5612308		13	110	Q
WHITECAP RESOURCES INC.		06-31-085-13W6	06-06-086-13W6	-	-	-	ESD		-120.0475			-		1 to 193				3.2		1.00							14.5612308			110	Q
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	14-21-085-14W6	06-28-085-14W6	-	-	-	-	-	-	23416		-		1 to 193 1 to 193					3,450	1.00							14.5612308			110	Q
WHITECAP RESOURCES INC.	+ -	06-18-086-13W6 UN	16-13-086-14W6 HD	-	-	-	-	-	-	23446 23524		-		1 to 193				3.2 4.0		1.00 0.32							14.5612308 14.5612308			110 110	Q T
WHITECAP RESOURCES INC.		06-24-085-14W6 HD			-	-	CV	56.3867	-120.0323			-		1 to 193					3,450	0.32							14.5612308			110	
WHITECAP RESOURCES INC.	-	06-24-085-14W6 HD		-	-	-	CV		-120.0323	23524	3	-	190	1 to 193	OE 11	14.3 2.6	60	4.0	3,450	0.32	5 0	.88 13.00	1600	8.125	41.117	0.500689	14.5612308	100	28	110	Q
WHITECAP RESOURCES INC.		04-28-085-14W6	06-28-085-14W6	-	-	-	-	-	-	24960		-		1 to 193				7.5		0.32							14.5612308			110	
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		04-28-085-14W6 08-33-085-14W6	06-28-085-14W6 16-27-085-14W6	-	-	-	-	-	-	24960 24968				1 to 193 1 to 193				7.5	3,450 3,450	0.32 0.40							14.5612308 14.5612308			110 110	
WITH LOAF RESOURCES INC.	<u> </u>	00-00-1400	10-21-000-14440		-	-	-		-	24900		- HITECAP SOL			JL 0	υσ.υ Z. <i>i</i>	<u>- 1</u>	1.5	3,430	0.40	J 0	.00 13.00	1000	0.123	41.11/	0.141011	14.5012508	100	10	110	Q
WHITECAP RESOURCES INC.	-	05-13-086-14W6	06-13-086-14W6	-	-	-	-	-	-	4258				194			33	3.2	10,210	0.08	5									10	V
WHITECAP RESOURCES INC.		02-30-085-13W6	06-30-085-13W6	-	-	-	-	-	-	4875			195	195	MP 6	0.3	30	3.2	0	2.00	5									10	V
WHITECAP RESOURCES INC.	-	14-36-085-14W6	16-36-085-14W6	-	-	-	-	-	-	5152			196	196					3,450	0.05										10	V
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+	13-31-085-13W6 03-19-085-13W6	06-06-086-13W6 06-19-085-13W6	-	-	-	-	-	-	5152 6074		-	197 198	197 198	MP 6			3.2		0.05 0.35	5									10	V
WHITECAP RESOURCES INC.		06-01-086-14W6	06-01-086-14W6	-	-	-	-	-	-	6075		-	198		SE 6			3.2		0.35										10	V
WHITECAP RESOURCES INC.		05-30-085-13W6	06-30-085-13W6	-	-	-		-		6076			200	200	SE 6	0.3	29	3.2	3,448	0.35										10	V
WHITECAP RESOURCES INC.		07-30-085-13W6	06-30-085-13W6	-	-	-	-	-	-	6076		-	201	201					3,448	0.35										10	V
WHITECAP RESOURCES INC.		11-31-085-13W6	06-31-085-13W6	-	-	-	-	-	-	6077		-	202	202				3.2		0.35										10	V
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		07-31-085-13W6 12-06-086-13W6	06-31-085-13W6 12-06-086-13W6	-	-	-	-	-	-	6077 6078		-	203 204	203 204	SE 8			3.2		0.35 0.35	5									10 10	V
WHITECAP RESOURCES INC.		12-06-086-13W6	12-06-086-13W6	+ -	-	-	-	-	-	6078			204						3,448	0.35										10	V
	1	.2 00 000 10440	.2 00 000 10000	1	ı .			1	1	3070	1 ''	ı	200	200	<u> </u>	0		٥.٢	J, 17J	0.00	J										

Boundary Lake BC Unit 2 - Sour Oil Pipelines

																									SEGMENT					
	WATER			START	START	START	END	END	END VALVE	LICENSE	LINE	LINE	UNIQUE	INCLUDES		SEGMENT	WALL	LICENSED	LICENSED	TEMP	GAS	LIQUID	GLR	GVF	H2S	CUMULATIVE	SOUR	THERMAL	ASSIGNED	
LICENSEE	CROSS	FROM	ТО	VALVE	VALVE	VALVE	VALVE	VALVE	LONGITUDE		NO.	LINE	LINE #	UNIQUE	SUB (mm)	LENGTH	(mm)	PRESSURE	H2S (%)	(°C) Z		(m3/d)		(m3/m3)		H2S RELEASE	HPZ (m)	RADIATION	EPZ (m)	STATUS
					LATITUDE	LONGITUDE		LATITUDE				MODIFIER		LINE #		(km)		(kPa)			m3/d)				VOLUME (m3)	VOLUME (m3)		HPZ (m)		
WHITECAP RESOURCES INC.	_	05-30-086-13W6	04-30-086-13W6	l -	_	_	_	-	-	8161	6	_	206	206	CO 60.3	0.68	3.9	3.448	0.35	5					(1113)				10	V
WHITECAP RESOURCES INC.		13-19-086-13W6	11-19-086-13W6	+		_		-		8161	7		207	207	CO 60.3	1.19	3.9	3,448	0.35	5	_							-	10	V
WHITECAP RESOURCES INC.	-	16-19-086-13W6	11-19-086-13W6	_	_	_	_	_	_	8161	8	_	208	208	CO 60.3	1.61	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	-	06-27-085-14W6	06-27-085-14W6	-	_	_	-		-	8162	3	_	209	209	CO 60.3	0.05	3.9	3.448	0.35	5									10	V
WHITECAP RESOURCES INC.	—	07-27-085-14W6	06-27-085-14W6	-	 	_		_	-	8162	5		210	210	CO 60.3	0.25	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	16-22-085-14W6	16-22-085-14W6	-	 	_		_	_	8162	26		211	211	CO 60.3	0.11	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	16-22-085-14W6	16-22-085-14W6	_	_	_	_	_	-	8162	27		212	212	CO 60.3	0.07	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	—	16-22-085-14W6	16-22-085-14W6	-	 	_		_	_	8162	28		213	213	CO 60.3	0.01	3.9	3.448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	03-30-086-13W6	14-19-086-13W6	_	_	_		_	_	8171	3		214	214	OE 60.3	0.52	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	—	03-19-086-13W6	06-19-086-13W6	-	_	_	_	-	-	8171	7	_	215	215	OE 60.3	0.33	3.9	3.448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	14-19-086-13W6	11-19-086-13W6	-	_	_		_	_	8171	8		216	216	OE 60.3	0.62	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	 _ 	05-17-086-13W6	06-17-086-13W6	_	 	_		_	_	8180	1	_	217	217	CO 60.3	0.02	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	—	06-17-086-13W6	03-17-086-13W6	_	_	_	_	-	-	8180	2		218	218	CO 60.3	0.58	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	 	08-07-086-13W6	05-08-086-13W6	+ -	-	_		-	-	8180	4		219	219	CO 60.3	0.30	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	14-08-086-13W6	05-08-086-13W6	-	 	_		_	_	8180	7		220	220	CO 60.3	1.67	3.9	3.448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	14-08-086-13W6	05-08-086-13W6	_	-	_		-	_	8180	10	_	221	221	CO 60.3	1.20	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	14-29-085-13W6	05-29-085-13W6	_	_	_		_	_	8184	1		222	222	MP 60.3	1.16	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	_	14-20-085-13W6	13-20-085-13W6	_		_		_	_	8189	3	_	223	223	CO 60.3	0.39	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	13-20-085-13W6	13-20-085-13W6	-	_	_		-	_	8189	8		224	224	CO 60.3	0.27	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	16-19-085-13W6	09-19-085-13W6	-	_	-	_	-	-	8189	9		225	225	CO 60.3	0.53	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	-	11-36-085-14W6	11-36-085-14W6	_	_	_	_	-	_	8199	4		226	226	CO 60.3	0.14	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	_	08-36-085-14W6	16-36-085-14W6	+ -	-	_		-	_	8199	5	_	227	227	CO 60.3	1.22	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	 	12-06-086-13W6	12-06-086-13W6	-	-	_		-	-	8199	10		228	228	CO 60.3	0.48	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	08-06-086-13W6	07-06-086-13W6	+ -	<u> </u>	-		_	-	8199	11		229	229	CO 60.3	0.40	3.9	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.		14-30-085-13W6	14-30-085-13W6	+ -		_		-		8199	16		230	230	CO 60.3	0.30	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	1 -	11-36-085-14W6	06-36-085-14W6	 	-	-		-	-	8199	18		231	231	CO 60.3	0.38	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.		05-06-086-13W6	06-06-086-13W6	+ -	-	_		-		8199	29		232	232	CO 60.3	0.14	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	 	06-06-086-13W6	06-06-086-13W6	+ -	<u> </u>	_		-		8199	30		233	233	CO 60.3	0.14	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	06-06-086-13W6	06-06-086-13W6	-	_	_		_	-	8199	32		234	234	CO 60.3	0.42	3.9	3,448	0.04	5								-	10	V
WHITECAP RESOURCES INC.	<u> </u>	03-31-085-13W6	06-31-085-13W6	_	-	_		-	_	8199	33	_	235	235	CO 60.3	0.42	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	 	11-31-085-13W6	06-06-086-13W6	+ -	<u> </u>	-		-	-	8199	34		236	236	CO 60.3	1.31	3.9	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	 _ 	16-19-085-13W6	16-19-085-13W6	_	_	_		_	_	8206	1	_	237	237	CO 114.3	0.21	5.6	3.448	0.35	5									10	V
WHITECAP RESOURCES INC.	 	01-30-085-13W6	14-30-085-13W6		<u> </u>	_				8206	2		238	238	CO 114.3	1.92	5.6	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	—	03-31-085-13W6	06-31-085-13W6	_	 	_		_	_	8206	3		239	239	CO 114.3	0.92	5.6	3,448	0.35	5								-	10	V
WHITECAP RESOURCES INC.	+ -	11-31-085-13W6	06-06-086-13W6	+	 	-		<u> </u>	-	8206	4		240	240	CO 114.3	1.25	5.6	3,448	0.35	5									10	V
WHITECAP RESOURCES INC.	+ -	06-29-085-13W6	05-29-085-13W6	+ -	+	_		<u> </u>		23382	1		241	241	OM 60.3	0.42	3.2	3,448	1.00	5									10	V
WHITECAP RESOURCES INC.		07-28-085-14W6	06-28-085-14W6	+	-	-		-	-	23415	1	_	241	242	OM 60.3	0.42	3.2	3,440	1.00	5									10	V
WHITECAP RESOURCES INC.	+ -	14-19-086-13W6	11-19-086-13W6	+ -	-	-			-	23431	1		242	242	OM 60.3	0.25	3.2	3,448	1.00	5									10	V
WHITECAP RESOURCES INC.		11-19-086-13W6	16-13-086-14W6	+ -	-	-		-		23447	1		243	243	OM 114.3	1.39	4.0	3,447	1.00	5									10	V
WHITECAP RESOURCES INC.	1 -	06-13-086-14W6	16-13-086-14W6	+	 			-	<u> </u>	23448	1		244	244	OM 88.9	1.22	4.0	3,447	1.00	5									10	V
WITH ECAP RESOURCES INC.		00-13-000-1400	10-13-000-1400		1 -	_			_	23448		_	240	240	OIVI 00.9	1.22	4.0	3,441	1.00	5									10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGENI

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

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 2 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY	ASSIGNED EPZ (m)	DISTANCE TO NEAREST	STATUS
								HPZ (m)		RESIDENT (km)	
WILLIE CAR RECOURSES INC.	WALLETS OAD DOLLARD AND ASSOCIATION	10050		WEET OPERATING	50.0045	100.0001		440	400		242
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY A02-25-085-14	16350	102022508514W600			-120.0694	0	118	130		GAS
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-25-085-14	16088	100022508514W602		56.3945	-120.0698	0	118 118	130 130		GAS CAPPED GAS
	WHITECAP BOUNDARY 02-25-085-14 WHITECAP ET AL BOUNDARY 03-29-085-13	16088 6551	100022508514W600 100032908513W600		56.3945	-120.0698 -120.0210	0	118	130		
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 03-29-085-13 WHITECAP ET AL BOUNDARY 04-23-085-14	2383	100032908513W600		56.3790	-120.0210	0	118	130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 04-23-065-14 WHITECAP ET AL BOUNDARY 04-33-085-14	6560	100042308514W600		56.4098	-120.1066	0	118	130		OIL
WHITEGAT RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-17-086-13	918	100043300314W000		56.4555	-120.0208	0	118	130		OIL
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-18-086-13	811	100061808613W600		56.4555	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 06-19-085-13	618	100061908513W600			-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 ET AL BOUNDARY 06-24-086-14	885	100062408614W600	06-24-086-14W6	56.4699	-120.0738	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 BOUNDARY 06-30-085-13	1137	100063008513W600	06-30-085-13W6	56.3968	-120.0461	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-12-086-14	2520	100071208614W600		56.4408	-120.0691	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-27-085-14	2370	100072708514W600		56.3971	-120.1218	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-27-086-14	4466	100072708614W600			-120.1224	0	118	130		CAPPED GAS
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-30-085-13	2376	100073008513W600		56.3970	-120.0422	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-31-085-13	2477	100073108513W600		56.4117	-120.0382	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-23-085-14	652	100082308514W600			-120.0875	0	440	WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 08-28-085-14	1680	100082808514W600		56.3978	-120.1383	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 10-22-085-14	2373	100102208514W600			-120.1196	0	118 118	130		OIL
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 10-23-085-14 WHITECAP ET AL BOUNDARY 11-07-086-13	2487 3019	100102308514W600 100110708613W600	10-23-085-14W6	56.3863 56.4445	-120.0933 -120.0471	0	118	130 130		OIL OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-07-086-13 WHITECAP ET AL BOUNDARY 11-12-086-14	3019	100110708613W600			-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-13-085-14	2381	100111200014W000		56.3718	-120.0738	0	118	130		OIL
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY A11-18-085-13	6550	102111808513W600		56.3722	-120.0736	0	118	130		OIL
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-19-085-13	3035	100111908513W600		56.3852	-120.0471	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-20-085-13	2484	100112008513W600		56.3864	-120.0208	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 11-24-085-14	692	100112408514W602			-120.0745	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 12-06-086-13	1284	100120608613W600		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		56.3900	-120.0470	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-25-085-14	656	100142508514W600			-120.0738	0	118	130		OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 14-27-085-14	971	100142708514W600		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			-120.0208	0	118	130		OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-01-086-14	860	100160108614W600		56.4337	-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-06-086-13	1009 844	100160608613W600		56.4337	-120.0342	0		WLB WLB		WATER INJECTOR
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-07-086-13 WHITECAP ET AL BOUNDARY 16-12-086-14	593	100160708613W600 100161208614W600		56.4481 56.4481	-120.0342 -120.0605	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-12-086-14 WHITECAP ET AL BOUNDARY 16-13-085-14	580	100161208614W600			-120.0605	0		WLB		WATER INJECTOR WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-13-086-14	858	100161308514W600		56.4627	-120.0605	0		WLB		WATER INJECTOR
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-085-13	628	100161808513W600		56.3755	-120.0341	0		WLB		WATER INJECTOR
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-19-085-13	636	100161908513W600		56.3900	-120.0341	0		WLB		WATER INJECTOR
WHITEGAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-21-085-14	1798	100162108514W600		56.3907	-120.1396	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-22-085-14	823	100162208514W600			-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		-120.0605	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-25-085-14	1144	100162508514W600		56.4051	-120.0615	0		WLB		WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-27-085-14	812		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		56.4038	-120.0328	0		WLB		WATER INJECTOR
	WHITECAP ET AL BOUNDARY LAKE 16-31-085-13	218	100163108513W600			-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

Boundary Lake BC Unit 2 - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION		SURFACE LONGITUDE	H2S (ppm)	VAPOUR FLAMMABILITY HPZ (m)	ASSIGNED EPZ (m)	DISTANCE TO NEAREST RESIDENT (km)	STATUS
			WHITECAP S	SWEET SUSPENDED							
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 02-30-085-13	7103	100023008513W600	02-30-085-13W6	56.3943	-120.0395	0	118	130		SUSPENDED OIL
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
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	100071308614W603	07-13-086-14W6	56.4554	-120.0691	0	118	130		SUSPENDED
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 07-27-086-14	4466	100072708614W602	07-27-086-14W6	56.4835	-120.1224	0	118	130		SUSPENDED
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 07-28-085-14	2498	100072808514W600	07-28-085-14W6	56.3974	-120.1468	0	118	130		SUSPENDED OIL
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 A08-30-085-13	2931	102083008513W602	08-30-085-13W6	56.3974	-120.0333	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 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 14-19-086-13	1123	100141908613W600	14-19-086-13W6	56.4772	-120.0471	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 LAKE 14-36-085-14	657	100143608514W600	14-36-085-14W6	56.4190	-120.0738	0	118	130		SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ET AL BOUNDARY 16-18-086-13	1066	100161808613W600			-120.0342	0		WLB		SUSPENDED WATER INJECTOR
				T DRILLED AND CAS							
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY B02-25-085-14	23783	103022508514W603			-120.0696	0		100		DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 08-23-086-14	1125	100082308614W602			-120.0868	0		100		DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 14-13-086-14	952	100141308614W602			-120.0738	0		100		DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP BOUNDARY 16-29-086-13	23891	100162908613W600	16-29-086-13W6	56.4907	-120.0097	0		100		DRILLED AND CASED

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Well locations listed in the table above also have manual block valves at these locations.

LEGEND

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone WLB=Well Lease Boundary HPZ=Hazard Planning Zone

LICENSEE	WATER	FROM	то	START	START VALVE	START VALVE	END	END VALVE	END VALVE		LINE NO	LINE SEGMENT SUB	OD (mm)	SEGMENT LENGTH	WALL	LICENSED PRESSURE	H2S (%)	THERMAL RADIATION	ASSIGNED EPZ (m)	STATUS
	CROSS			VALVE		LONGITUDE	VALVE	LATITUDE	LONGITUDE	NO.		MODIFIER	35 ()	(km)	(mm)	(kPa)	1120 (70)	HPZ (m)	EPZ (m)	CHAICC
						WHI	TECAP S	WEET OPER	ATING											
WHITECAP RESOURCES INC). -	05-08-086-13W6	06-06-086-13W6	-	-	ı	-	-	-	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		10	Q
WHITECAP RESOURCES INC		16-28-085-14W6	16-27-085-14W6	-	-	-	-	-	-	1907	2	- FW	60.3	1.68	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-31-085-13W6	16-31-085-13W6	-	-	-	-	-	-	1907	4	- FW	88.9	0.26	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	5	- FW	88.9	0.92	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-36-085-14W6	06-06-086-13W6	-	-	-	-	-	-	1907	6	- FW	88.9	1.22	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-01-086-14W6	06-06-086-13W6	-	-	-	-	-	-	1907	/	- FW	88.9	1.22	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		13-06-086-13W6	12-06-086-13W6	-	-	-	-	-	-	1907	8	- FW	114.3	0.70	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-31-085-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	9	- FW	88.9	0.61	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	06-06-086-13W6	-	-	-	-	-	-	1907	10	- FW	88.9 88.9	0.35 0.30	0.0	22,048 22,048	0		10	Q Q
WHITECAP RESOURCES INC		06-06-086-13W6 12-06-086-13W6	06-06-086-13W6 06-06-086-13W6	_	-	-	-	-	-	1907 1907	12	E147	114.3	0.30	0.0	22,048	0		10 10	Q
WHITECAP RESOURCES INC		16-06-086-13W6	16-07-086-13W6	-	-	-	_	-	-	2010	4	- FW	88.9	1.83	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		16-31-085-13W6	16-30-085-13W6	 -	-		-	-	-	2010	5	- FW	88.9	1.83	0.0	22,048	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	14-31-085-13W6	 -		<u>-</u>	_	-	-	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	<u> </u>
WHITECAP RESOURCES INC		04-28-085-14W6	06-28-085-14W6	-	_	_	_	_	_	3058	1	- OE	60.3	0.61	3.9	3,450	0	13	15	Q
WHITEGAT RESOURCES INC		16-36-085-14W6	16-25-085-14W6	 -	_	_	_	_	_	3416	1	- SW	88.9	1.58	5.5	22,000	0	10	10	Q
WHITECAP RESOURCES INC		16-25-085-14W6	16-24-085-14W6	_	_	_	_	_	_	3416	2	- SW	88.9	1.73	5.5	22,000	0		10	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		10	Q
WHITECAP RESOURCES INC	. -	16-24-085-14W6	16-13-085-14W6	_	-	-	-	-	-	4044	3	- FW	88.9	1.97	5.5	20,700	0		10	Q
WHITECAP RESOURCES INC)	12-19-086-13W6	16-24-086-14W6	-	-	-	-	-	-	4521	2	- FW	60.3	0.89	3.2	22,070	0		10	Q
WHITECAP RESOURCES INC)	13-07-086-13W6	13-07-086-14W6	-	-	-	-	-	-	4713	1	- FW	60.3	0.08	3.2	22,070	0		10	Q
WHITECAP RESOURCES INC)	13-07-086-13W6	16-12-086-14W6	-	-	-	-	-	-	4713	2	- FW	60.3	0.22	3.2	22,070	0		10	Q
WHITECAP RESOURCES INC)	16-27-085-14W6	16-28-085-14W6	-	-	ı	-	-	-	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		10	Q
WHITECAP RESOURCES INC		08-23-085-14W6	16-23-085-14W6	-	-	-	-	-	-	5919	1	- FW	88.9	0.85	4.8	18,000	0		10	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		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		10	Q
WHITECAP RESOURCES INC		16-22-085-14W6	16-21-085-14W6	-	-	-	-	-	-	7735	3	- FW	114.3	1.73	4.0	18,000	0	04	10	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		11-18-086-13W6	06-18-086-13W6	-	-	-	-	-	-	8157	10	- MP	60.3	0.30	3.9	3,448	0	12	14	Q
WHITECAR 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
WHITECAR 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
WHITECAR RESOURCES INC		04-24-085-14W6	13-24-085-14W6	-	-	-	-	-	-	8158	3	- FW	219.1	1.62	7.9	17,000	0		10	Q
WHITECAP RESOURCES INC	,. <u>-</u>	04-25-085-14W6	04-25-085-14W6	-	-	_	-	-	-	8158	4	- FW	219.1	0.46	7.9	17,000	0		10	Q

LICENSEE	WATER CROSS	FROM	то	START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)		THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC		06-24-086-14W6	16-13-086-14W6	-	-	-	-	-	-	8166	4	-	CO	60.3	1.70	3.9	3,448	0	14	16	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	_	08-18-086-13W6	16-13-086-14W6	-	-	-	-	-	-	8166	9	-	MP	60.3	2.33	3.9	3,448	0	14	16	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		10	Q
WHITECAP RESOURCES INC		11-31-085-13W6	11-31-085-13W6	_	-	-	-	-	-	8167	2	-	FW	114.3	0.25	4.8	14,470	0		10	Q
WHITECAP RESOURCES INC		04-25-085-14W6	16-25-085-14W6	_	-	_	-	-	_	8167	3	-	FW	219.1	1.89	7.9	14,470	0		10	Q
WHITECAP RESOURCES INC		13-25-085-14W6	04-25-085-14W6	-	-	_	-	-	_	8167	6	-	FW	60.3	1.60	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	_	13-24-085-14W6	13-24-085-14W6	-	-	_	-	-	_	8167	7	-	FW	60.3	0.17	3.9	1,447	0		10	Q
WHITECAP RESOURCES INC		16-23-085-14W6	16-23-085-14W6	-	-	_	-	-	_	8167	8	-	FW	60.3	0.17	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC		11-31-085-13W6	06-06-086-13W6	-	-	-	-	-	_	8167	11	-	FW	219.1	1.30	7.9	14,470	0		10	Q
WHITECAP RESOURCES INC		06-31-085-13W6	03-31-085-13W6	_	_	_	_	-	_	8167	14	_	FW	114.3	0.92	4.7	14,470	0		10	Q
WHITECAP RESOURCES INC		14-30-085-13W6	01-30-085-13W6	-	_	_	_	-	_	8167	15	_	FW	114.3	1.97	4.8	14,470	0		10	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		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	13-18-086-13W6	-	-	_	-	-	_	8175	2	-	FW	114.3	0.35	6.0	14,470	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	06-06-086-13W6	-	_	-	_	_	_	8175	3	_	FW	60.3	0.33	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	06-06-086-13W6	 -	_	-	_	_	_	8175	4	_	FW	60.3	0.15	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC		13-07-086-13W6	16-07-086-13W6	_	_	_	_	_	_	8175	5	_	FW	60.3	1.40	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	-	13-07-086-13W6	13-07-086-14W6	<u> </u>	_	-	_	_	_	8175	6	_	FW	60.3	0.02	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	12-06-086-13W6	_	_	_	_	_	_	8175	7	_	FW	60.3	0.82	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	-	12-06-086-13W6	16-01-086-14W6	<u> </u>	_	-	_	_	_	8175	8	_	FW	60.3	0.22	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC		07-06-086-13W6	16-06-086-13W6	_	_	_	_	_	_	8175	9	_	FW	60.3	0.97	3.9	14,470	0		10	Q
WHITEGAP RESOURCES INC		16-06-086-13W6	16-07-086-13W6	 	_		_	_	_	8175	10	_	FW	60.3	1.66	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	-	16-12-086-14W6	16-12-086-14W6	+ -	_	-	_	_	_	8175	11	_	FW	60.3	0.20	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	_	12-19-086-13W6	09-19-086-13W6	 -	_	_	_	_	_	8176	1	_	FW	60.3	1.38	3.9	14,470	0		10	Q
WHITECAP RESOURCES INC	_	12-19-086-13W6	13-24-086-14W6	 _	_	-	_	_	_	8176	2	_	FW	60.3	0.63	3.9	14,470	0		10	Q
WHITEGAP RESOURCES INC		13-18-086-13W6	12-19-086-13W6	 	_	_		_	_	8176	3	_	FW	60.3	1.05	3.9	14,470	0		10	Q
WHITEGAT RESOURCES INC	_	16-24-086-14W6	16-24-086-14W6	<u> </u>	_	_	_	_	_	8176	4	_	FW	60.3	0.20	3.9	14,470	0		10	Q
WHITEGAP RESOURCES INC	_	16-27-085-14W6	15-26-085-14W6	 	_	_	_	_		8177	1	_	FW	88.9	1.09	5.5	14,470	0		10	Q
WHITEGAP RESOURCES INC		06-06-086-13W6	11-31-085-13W6	+ -	_	_			_	8178	1	_	FW	168.3	1.23	6.3	14,470	0		10	Q
WHITECAP RESOURCES INC		06-06-086-13W6	04-06-085-13W6	 	_	_	_	_	-	8178	2	_	FW	88.9	0.65	5.5	14,470	0		10	Q
WHITEGAP RESOURCES INC		11-31-085-13W6	11-31-085-13W6	+ -		_	_	_	_	8178	4	_	FW	114.3	0.16	6.0	14,470	0		10	Q
WHITEGAP RESOURCES INC		11-31-085-13W6	04-31-085-13W6	 	_	_	_	_	_	8178	6	_	FW	114.3	0.70	6.0	14,470	0		10	Q
WHITEGAP RESOURCES INC		04-06-086-13W6	16-36-085-14W6	 		_	_	_	_	8178	8	_	FW		0.70			0		10	Q
WHITECAP RESOURCES INC		16-25-085-14W6	16-25-085-14W6	 	_	_	_	_		8178	9	_	FW	60.3	0.14	3.9	14,470	0		10	Q
WHITEGAP 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	 	_	<u>-</u>	_	-	_	8193	6	-	CO	60.3	2.75	3.9	3,448	0	14	16	Q
WHITECAP RESOURCES INC		08-27-085-14W6	08-27-085-14W6	 	_	<u>-</u>		-			7		CO	60.3		3.9	3,448	0	10	11	Q
WHITECAP RESOURCES INC		06-23-085-14W6	14-23-085-14W6	+ -	-	-	-	-	-	8193 8193	8	-	CO	60.3	0.18	3.9	3,448	0	13	15	Q
	-				-	-	-				_	-	_								
WHITECAR 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
WHITECAR 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	<u> </u>	-	-	-	<u> </u>	-	10647	2	<u> </u>	CO	88.9	0.45	0.0	414	0	10	11	Q

LICENSEE	WATER CROSS	FROM		то		START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	END VALVE LATITUDE	END VALVE LONGITUDE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	THERMAL H2S (%) RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
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.	<u> </u>	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	<u> </u>	08-23-085-14W6		_	_	_	_	_	_	15221	2	_	FW	97.4	2.11	12.9	18,000	0	10	Q
WHITECAP RESOURCES INC.	_		WE	07-31-085-13W6	ΡI	_	_	_	_	_	_	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	LIN		LIN	_	_	_	_	_	_	23517	1	_	NG	60.3	0.07	3.9	1,375	0 10	11	Q
WHITEGAT RESOURCES INC.	_	06-06-086-13W6	011	16-27-085-14W6	011	_	_	_	_	_	_	24301	1	_	PW	168.3	5.26	7.1	18,000	0	10	Q
WHITEON REGORNOES INC.	•	00 00 000 10110		10 27 000 1100				WHITE	ECAP SW	VEET DEACT	IVATED	2 100 1	•		. • •	100.0	0.20	7.1	10,000	O O	10	Q
WHITECAP RESOURCES INC.	-	11-24-085-14W6		08-15-085-14W6		_	-	-	_	_	_	1090	2	-	CO	114.3	3.40	0.0	6,890	0	10	V
WHITECAP RESOURCES INC.	-	06-25-085-14W6		11-24-085-14W6		_	_	_	_	_	_	1096	1	_	NG	114.3	1.32	0.0	7,579	0	10	V
WHITEGAT RESOURCES INC.	_	06-30-085-13W6		06-25-085-14W6		_	_	_	_	_	_	1157	1	_	NG	114.3	1.74	4.8	7,510	0	10	V
WHITEGAT RESOURCES INC.	-	06-06-086-13W6		04-06-086-13W6			_	_	_	_	_	1242	17	_	NG	203.2	0.77	0.0	689	0	10	V
WHITECAP RESOURCES INC.	-	04-06-086-13W6	1	16-26-085-14W6			_	_	_	 _		1242	18	 	NG	254.0	2.54	0.0	689	0	10	V
WHITECAP RESOURCES INC.	<u> </u>	15-26-085-14W6	 	16-26-085-14W6			_	_	_	<u> </u>	_	1242	21		NG	203.2	0.20	0.0	689	0	10	\/
WHITECAP RESOURCES INC.	·	16-26-085-14W6	1	08-11-085-14W6			_		_			1242	22		NG	254.0	5.30	0.0	689	0	10	V
WHITECAP RESOURCES INC.	-	16-13-086-14W6	1	06-06-086-13W6			_	_	_		_	1564	1	<u>-</u>	NG	114.3	4.36	4.5	689	0	10	\/
WHITECAP RESOURCES INC.	· -	06-36-085-14W6		03-36-085-14W6			_					1620	1		FG	50.8	0.64	3.2	482	0	10	V
WHITECAP RESOURCES INC.	-	03-36-085-14W6		14-25-085-14W6			_		_		_	1620	2		FG	50.8	0.04	3.2	482	0	10	V
WHITECAP RESOURCES INC.	· -	14-25-085-14W6		06-25-085-14W6			_				_	1620	3		FG	50.8	0.18	3.2	482	0	10	V
WHITECAP RESOURCES INC.		05-25-085-14W6		16-27-085-14W6			-			-	_	1632	1	-	FW	152.4	1.83	0.0	4,961	0	10	V
WHITECAP RESOURCES INC.	·	16-27-085-14W6		01-35-085-14W6			-	-	-	-	_	1907	3	_	FW	114.3	1.83	0.0	22,048	0	10	V
WHITECAP RESOURCES INC.	+ -						-	-	-	-			3	+						-		V
WHITECAP RESOURCES INC.	. -	11-31-085-13W6	-	16-19-085-13W6 16-24-085-14W6		-	-	-	-	-	-	2010	7	-	FW	114.3	3.05 1.61	0.0	22,048 22,048	0	10	V
		16-19-085-13W6					-	-	-		-	2010	1			60.3				0	10	V
WHITECAP RESOURCES INC.	. -	16-19-085-13W6		09-19-085-13W6		-	-	-	-	-	-	2273	1	-	CO FW	114.3	0.37	3.2	2,756	0	10	V
WHITECAP RESOURCES INC.		12-19-086-13W6		08-19-086-13W6		-	-	-	-	-	-	2381	1	-	-	60.3	1.52	3.2	20,670	0	10	•
WHITECAP RESOURCES INC.		08-23-086-14W6		16-13-086-14W6		-	-	-	-	-	-	2666	1	-	NG	88.9	1.93	3.2	9,922	0	10	V
WHITECAP RESOURCES INC.		13-18-086-13W6		16-13-086-14W6		-	-	-	-	-	-	4040	1	-	FW	60.3	0.33	3.9	17,200	0	10	· ·
WHITECAP RESOURCES INC.		12-06-086-13W6		12-19-086-13W6		-	-	-	-	-	-	4521	1	-	FW	114.3	4.49	5.5	22,070	0	10	V
WHITECAP RESOURCES INC.		06-06-086-13W6		12-06-086-13W6		-	-	-	-	-	-	5066	1	-	SW	114.3	0.93	5.5	19,500	0	10	V
WHITECAP RESOURCES INC.		03-07-086-13W6	-	03-07-086-13W6		-	-	-	-	-	-	6079	7	-	SE	60.3	0.11	3.2	3,448	0	10	V
WHITECAP RESOURCES INC.		06-07-086-13W6		03-07-086-13W6	-	-	-	-	-	-	-	6079	7	-	SE	60.3	0.77	3.2	3,448	0	10	V
WHITECAP RESOURCES INC.		03-07-086-13W6		06-07-086-13W6		-	-	-	-	-	-	6079	8	-	SE	60.3	0.35	3.2	3,448	0	10	V
WHITECAP RESOURCES INC.		12-28-085-14W6		06-28-085-14W6		-	-	-	-	-	-	7471	1	-	SE	60.3	0.75	3.9	9,930	0	10	V
WHITECAP RESOURCES INC.		06-13-086-14W6		16-13-086-14W6		-	-	-	-	-	-	8157	1	-	CO		1.22		3,448	0	10	V
WHITECAP RESOURCES INC.		07-13-086-14W6	 	06-13-086-14W6		-	-	-	-	-	-	8157	4	-	MP	60.3	0.25	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.		03-13-086-14W6	-	06-13-086-14W6		-	-	-	-	-	-	8157	6	-	CO	60.3	0.38	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.		14-24-086-14W6	<u> </u>	16-24-086-14W6		-	-	-	-	 -	-	8166	1	-	MP	60.3	1.00	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.		07-24-086-14W6		16-13-086-14W6		-	-	-	-		-	8166	3	-	MP	60.3	1.11	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.		14-18-086-13W6		16-13-086-14W6		-	-	-	-	-	-	8166	8	-	CO	60.3	0.76	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.		13-19-086-13W6	_	16-13-086-14W6		-	-	-	-	-	-	8166	12	-	MP	60.3	1.79	3.9	3,448	0	10	V
WHITECAP RESOURCES INC.	-	16-18-085-13W6	_	14-18-085-13W6		-	-	-	-	-	-	8167	5	-	FW	60.3	0.78	3.9	14,470	0	10	V
WHITECAP RESOURCES INC.	_	01-36-085-14W6	_	01-36-085-14W6		-	-	-	-	-	-	8167	9	-	FW	219.1	0.45	7.9	14,470	0	10	V
WHITECAP RESOURCES INC.	_	04-31-085-13W6		06-31-085-13W6		-	-	-	-	-	-	8167	10	-	FW	219.1	0.70	7.9	14,470	0	10	V
WHITECAP RESOURCES INC.		14-18-085-13W6		13-18-085-13W6		-	-	-	-	-	-	8167	12	-	FW	60.3	0.63	3.9	14,470	0	10	V
WHITECAP RESOURCES INC.	_	16-13-085-14W6	+	16-13-085-14W6		-	-	-	-	-	-	8167	13	-	FW	60.3	0.24	3.9	14,470	0	10	V
WHITECAP RESOURCES INC.	_	16-19-085-13W6	<u> </u>	16-19-085-13W6		-	-	-	-	-	-	8167	16	-	FG	114.3	0.25	4.8	14,470	0	10	V
WHITECAP RESOURCES INC.		16-27-085-14W6		16-36-085-14W6		-	-	-	-	-	-	8173	1	-	MP	114.3	4.39	6.0	14,470	0	10	V
WHITECAP RESOURCES INC.		04-06-086-13W6		06-06-086-13W6		-	-	-	-	-	-	8173	6	-	MP	114.3	0.71	6.0	14,470	0	10	V
WHITECAP RESOURCES INC.		01-36-085-14W6		01-36-085-14W6		-	-	-	-	-	-	8178	3	-	FW	60.3	0.01	3.9	14,470	0	10	V
WHITECAP RESOURCES INC.		14-30-085-13W6		16-30-085-13W6		-	-	-	-	-	-	8178	5	-	FW	60.3	0.85	3.9	14,470	0	10	V

LICENSEE	WATER CROSS	FROM		то		START VALVE	START VALVE LATITUDE	START VALVE LONGITUDE	END VALVE	VAIVE	END VALVE LONGITUDE		LINE NO.	LINE SEGMENT MODIFIER	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	THERMAL RADIATION HPZ (m)	ASSIGNED EPZ (m)	STATUS
WHITECAP RESOURCES INC.	-	04-31-085-13W6		01-36-085-14W6		-	-	-	-	-	-	8178	7	-	FW	114.3	0.43	6.0	14,470	0		10	V
WHITECAP RESOURCES INC.	-	14-19-085-13W6		09-19-085-13W6		-	-	-	-	-	-	8189	5	-	CO	60.3	1.16	3.9	3,448	0		10	V
WHITECAP RESOURCES INC.	-	08-19-085-13W6		09-19-085-13W6		-	1	-	-	-	-	8189	6	-	CO	60.3	0.52	3.9	3,448	0		10	V
WHITECAP RESOURCES INC.	-	04-34-085-14W6		16-27-085-14W6		-	-	-	-	-	-	8193	2	-	CO	60.3	1.72	3.9	3,448	0		10	V
WHITECAP RESOURCES INC.	-	06-36-085-14W6		16-36-085-14W6		-	1	-	-	-	-	8199	19	-	CO	60.3	1.40	3.9	3,448	0		10	V
WHITECAP RESOURCES INC.	-	16-36-085-14W6		06-06-086-13W6		-		-	-	-	-	8199	20	-	CO	60.3	0.66	3.9	3,448	0		10	V
WHITECAP RESOURCES INC.	-	14-05-086-13W6		05-08-086-13W6		-	ı	ı	-	-	-	10646	1	-	CO	88.9	1.32	3.5	60	0		10	V
WHITECAP RESOURCES INC.	-	06-19-085-13W6		09-19-085-13W6		-	•	-	-	-	-	10647	1	-	CO	88.9	1.12	0.0	414	0		10	V
WHITECAP RESOURCES INC.	-	08-30-085-13W6		09-19-085-13W6		-	1	-	-	-	-	11641	1	-	SG	114.3	1.16	4.0	4,964	0		10	V
WHITECAP RESOURCES INC.	-	02-22-085-14W6 F	٦L	08-23-085-14W6	PL	-	ı	ı	-	-	-	15221	1	-	FW	67.3	2.11	3.5	18,000	0		10	V
WHITECAP RESOURCES INC.	-	09-19-086-13W6		16-19-086-13W6		-	-	-	-	-	-	23429	1	-	FW	60.3	0.60	3.2	14,490	0		10	V
WHITECAP RESOURCES INC.	-	08-19-086-13W6		16-19-086-13W6		-	-	-	-	-	-	23430	1	-	FW	60.3	0.82	3.2	20,670	0		10	V

There may be hazards associated with third party assets in addition to the ones listed in the table above. For more information see the map(s). All Facility, Well and ESD locations listed in the table above also have manual block valves at these locations.

LEGEND

T=New V=Deactivated Z=Approved J=Out of Jurisdiction

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

Other: WALL=Wall Thickness OD=Outside Diameter EPZ=Emergency Planning Zone ROW = Pipeline Right of Way HPZ=Hazard Planning Zone

Boundary Lake BC Unit 2 - Tanks and Bullets

FACILITY / LOCATION	SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? (1)	ENVIRONMENT CANADA ERP REQUIRED? (2)	HPZ (m)
10-23 Well Site 10-23-085-14 W6M	Demulsifier	1	500 gal	No	No	50
10-25 Well Site						
10-25-085-14 W6M	Paraffin Inhibitor	1	500 gal	No	No	50
11-36 Well Site						
11-36-085-14 W6M	Scale Inhibitor	1	500 gal	No	No	50
14-27 Well Site						
14-27-085-14 W6M	Demulsifier	1	500 gal	No	No	50
14-28 Well Site	Demulsifier	1	500 gal	No	No	50
14-28-085-14 W6M		'	_			
16-13 Satellite	Corrosion Inhibitor	1	500 gal	No	No	50
16-13-086-14 W6M	Demulsifier	1	500 gal	No	No	50
16-27 Satellite 16-27-085-14 W6M	Corrosion Inhibitor	2	500 gal	No	No	50
02-25 Gas Plant	0	4	500 I		N.	50
02-25-085-14 W6M	Corrosion Inhibitor	1	500 gal	No	No	50
03-31 Well Site	Demulsifier	1	500 gal	No	No	50
03-31-085-13 W6M	Demuisiner	'	Joo gai	140	140	30
04-28 Well Site	Demulsifier	1	500 gal	No	No	50
04-28-085-14 W6M	Domaionioi	· ·	ooo gai	110	110	00
04-33 Well Site	Demulsifier	1	500 gal	No	No	50
04-33-085-14 W6M			<u> </u>			
05-29 Well Site 05-29-085-13 W6M	Demulsifier	1	500 gal	No	No	50
06-24 Satellite 06-24-085-14 W6M	Scale Inhibitor	1	500 gal	No	No	50
00-24-005-14 WOW	Demulsifier	1	500 gal	No	No	50
06-25 Battery 06-25-085-14 W6M	Demulsifier	1	500 gal	No	No	50
06-28 Well Site	Demulsifier	1	500 gal	No	No	50
06-28-085-14 W6M	Demaigner	ı	Juu yal	INU	INU	50
06-29 Well Site 06-29-085-13 W6M	Demulsifier	1	500 gal	No	No	50
06-30 Battery	Corrosion Inhibitor	1	500 gal	No	No	50
06-30-085-13 W6M	Demulsifier	2	500 gal	No	No	50
	Paraffin Dispersant	1	500 gal	No	No	50
06-30 Well Site 06-30-086-13 W6M	Demulsifier	1	500 gal	No	No	50
06-06 Battery	Corrosion Inhibitor	1	500 gal	No	No	50
06-06-086-13 W6M	Paraffin Dispersant	1	500 gal	No	No	50
	Scale Inhibitor	1	500 gal	No	No	50
06-07 Well Site 06-07-086-13 W6M	Demulsifier	1	500 gal	No	No	50
07-19 Well Site 07-19-085-13 W6M	Demulsifier	1	500 gal	No	No	50
07-31 Battery	Corrosion Inhibitor	1	500 gal	No	No	50
07-31-085-13 W6M	Paraffin Inhibitor	1	500 gal	No	No	50

Boundary Lake BC Unit 2 - Tanks and Bullets

FACILITY / LOCATION	SUBSTANCE	NO. OF TANKS	TANK VOLUME	ENVIRONMENT CANADA REGISTRATION REQUIRED? (1)	ENVIRONMENT CANADA ERP REQUIRED? (2)	HPZ (m)
08-28 Well Site 08-28-085-14 W6M	Demulsifier	1	500 gal	No	No	50
08-33 Well Site 08-33-085-14 W6M	Demulsifier	1	500 gal	No	No	50
09-19 Satellite	Corrosion Inhibitor	1	500 gal	No	No	50
09-19-085-13 W6M	Demulsifier	1	500 gal	No	No	50

LEGEND

Other: HPZ=Hazard Planning Zone

⁽¹⁾ E2 Schedules 2 only. (2) E2 Schedules 2, 3, 4 and 5.

Boundary Lake Field Office

Courier / Mailing Address:

Whitecap Resources Head Office Bus: 403-266-0767 Fax: 403-266-6975

3800, 525 - 8 Avenue SW Courier / Mailing Address: Calgary, AB T2P 1G1

FACILITY & FIELD CONTACTS

BOUNDARY LAKE AB FIELD

Area Superintendent

Lead Operator

HSE Field Advisor CALGARY OFFICE

Operations Engineer

Manager Production

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.

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.

The maximum expected H₂S concentration for the wells is 0.97 %, with a maximum calculated EPZ of 20 m. The maximum licensed H₂S concentration for the pipelines is 0.97 %, with a maximum calculated EPZ of 250 m.

On-Site Storage

There are 400 bbl out of service emulsion tanks at the below shut-in well sites:

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.

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.

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

AREA USERS & TIE-INS

Note: All numbers, unless otherwise indicated, are 24 hours

l	Oil and Gas	
l	Alliance Pipeline	800-884-8811
l	Canadian Natural Resources Limited*	888-878-3700
l	Canlin Energy Corporation	866-409-2744
l	Imperial Oil Resources Limited	877-304-8725
l	Pembina Energy Services Inc.	800-360-4706
l	Sanling Energy Ltd.	888-262-5530
l	TC Energy	888-982-7222
l	Yoho Resources Inc.	888-537-1771

* There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.

No railways have been identified within the Alberta field.

Trappers

Trapper ID	Name	Emergency

Guides & Outfitters - Wildlife Management Unit (WMU) # 525, & 526



There are no grazing leases identified within the EPZ.

Forestry Management Units & Agreements (Po2)

Alberta Energy Regulator (AER)

800-222-6514

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) Grande Prairie / High Level Field Office		800-222-6514*
	Wildfire Reporting *One call number for regulatory agency, Alberta Sustainable Resource Development (lands, fish, Canada. & Climate Change.	Environment, Spil	
	Canada Energy Regulator TSB Incident Line (Pipeline emergencies) CER Incident Line (All other emergencies) Email OERS Website	pipelinenotificati https://apps.ce	819-997-7887 403-807-9473 ons@tsb.gc.ca er-rec.gc.ca/ers
	Clear Hills County	Cell:	780-835-0153
	Alberta Health Services - Z5 North		844-755-1788
	Alberta Emergency Management (AEMA) - Northwe	est	866-618-2362
	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 Grande Prairie District		780-538-5310 780-538-6113
	Alberta Health and Wellness	Admin:	780-427-7164
	Alberta Occupational Health and Safety		866-415-8690
	Workers' Compensation Board	Admin:	866-922-9221
	CANUTEC Toll-Free	1-8	613-996-6666 88-CAN-UTEC (226-8832)
	From Cell Phone Inquiries	Admin:	*666 613-992-4624
	Environment & Climate Change Canada Meteorological Services		780-951-8907
	Department of Fisheries and Oceans Canada (DFO Pacific Region))	604-666-0384
- 1			

EMERGENCY SERVICES

RCMP Fairview	911 780-835-2211
Fire Departments Worsley Fire Department	911
Ambulance Dawson Creek, Fort St. John, Grande Prairie,	911
Air Ambulance (STARS)	888-888-4567
Hospitals Fort St. John Hospital and Peace Villa Central Peace Health Complex - Spirit River Dawson Creek & District Hospital Queen Elizabeth II Hospital - Grande Prairie	250-261-7310 780-864-3993 250-782-8501 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 13786 - 223 Road, Goodlow, BC Evangelical Church of Goodlow 13906 - 211 Road, Goodlow, BC Worsley Gateway Inn 355 Highway 726, Worsley, AB	Admin: 250-781-3333 Office: 250-781-3566 Admin: 780-685-2080 Fax: 780-685-2082

SUPPORT SERVICES

Mobile Air Monitoring*		
United Safety - Fort St. John		800-432-180
Trojan Safety Services - Fort St	. John	250-785-955
Safety Boss - Fort St. John		800-882-496
Firemaster Oilfield Services - G		877-342-347
HSE Integrated - Grande Prairie	9	888-346-826
Oilfield Fire Fighting / Safety Co	ontractors*	
Safety Boss - Fort St. John		800-882-496
Firemaster Oilfield Services - G	rande Prairie	877-342-347
HSE Integrated - Grande Prairie	9	888-346-826
Well Control Specialists*		
Safety Boss - Fort St. John		800-882-496
Firemaster Oilfield Services - G	rande Prairie	877-342-347
Capstone Blowout Recovery - A	Airdie	866-347-391
Ignition Services		
Safety Boss - Fort St. John		800-882-496
Firemaster Oilfield Services - G	rande Prairie	877-342-347
	level of Emergency. Response times	
	pport is coming from Fort St. John an	nd 3 hours if the
support is coming from Grande Pr	airie.	
Emergency Response Managen	nent	
H ₂ Safety Services Inc Calgary	У	403-212-233
Toll Free		888-216-233
Air Traffic Control		
NAV Canada		866-992-743
Highway Services		
LaPrairie Group		780-332-445
Bus Transportation		700 002 110
Homer's Oilfield Services - Daw	rson Crook	250-219-224
Northern Express	3011 CIEEK	780-926-080
'		700-720-000
Helicopter Companies (Day Flying		250 705 222
Yellowhead Helicopters - Fort St		250-785-233
Bailey Helicopters - Fort St. John		250-785-251
Canadian Helicopters Ltd Fort	. St. JUIII	780-429-690
Spill Response		
SWAT Consulting		866-610-792
WCSS - Zone 6 - Coop T*		866-541-888
Regional Custodian: Clean Ha	arbors Admir	1: 780-532-433
•	Cel	l: 780-897-006
Equipment Location	Equipment Summary	
9601 - 156 Avenue	1 OSCAR (Semi-Truck)	
Grande Prairie, AB	1 Winter OSCAR (3/4-ton truck)	with 2 5/ ₁₆ " ball
	hitch)	011 1111 13
	2 Workboats (1/2-ton truck with	
Transport, Centest, Class He	1 Wildlife Trailer (1/2-ton truck w	rith 2" ball hitch)
Transport: Contact - Clean Ha		=======================================
Coop Custodian: CNRL Chinc	haga Gas Plant	780-836-336 Ext. 2
Equipment Location	Equipment Summary	EXI. Z
CNRL Chinchaga Gas Plant	1 20' ISRU Sea-Can (winch tra	ctor / trailer)
01-24-96-05 W6M	. 20 10110 000 0011 (WINOIT II II	oto. / trailor/

01-24-96-05 W6M

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



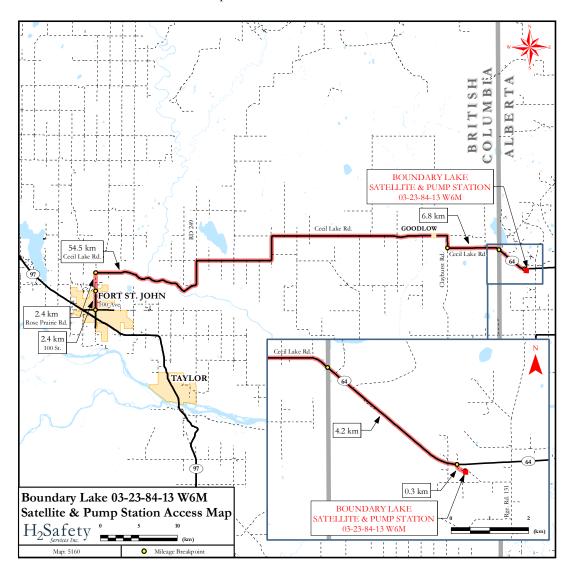


Boundary Lake Alberta Site Access from Fort St. John

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.



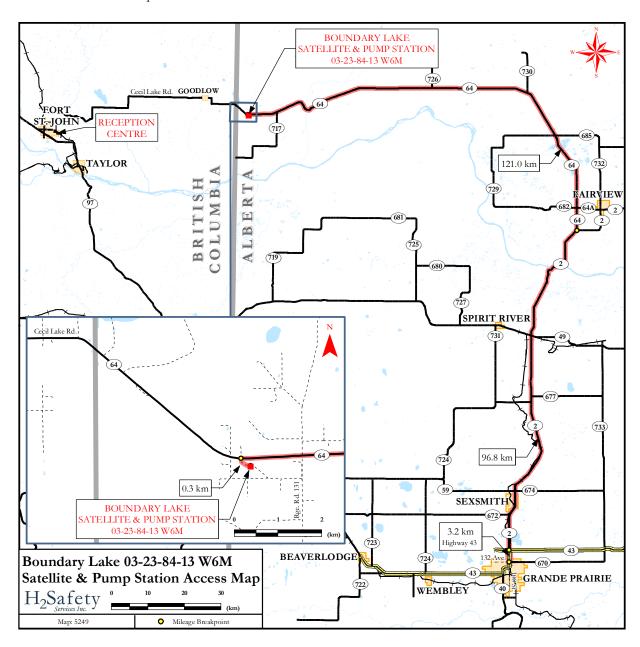


Boundary Lake Alberta Site Access from Grande Prairie

DIRECTIONS TO THE BOUNDARY LAKE 03-23-84-13 W6M SATELLITE & PUMP STATION

From the intersection of Highway 43 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 121.0 km.
- Turn left (south) on Access Rd. and travel 0.3 km to access the Boundary Lake 03-23-84-13 W6M Satellite & Pump Station.



Bounday Lake AB - 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)
			WHITECAP OPER	ATING						
WHITECAP RESOURCES INC.	WHITECAP 01-22-084-13-6	F17029	01-22-084-13W6	56.2934509	-119.9554930	56° 17' 36.423"	-119° 57' 19.774"	В	UN	-
WHITECAP RESOURCES INC.	IMPERIAL BDY LK S TRIAS	F17030	03-23-084-13W6	56.2918880	-119.9417231	56° 17' 30.796"	-119° 56' 30.203"	GS	AC	0.06
WHITECAP RESOURCES INC.	ESSO BOUNDARY S	F17030	03-23-084-13W6	56.2918880	-119.9417231	56° 17' 30.796"	-119° 56' 30.203"	ΙP	AC	0.06
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"	В	UN	0.05 (1)
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	UN	-
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"	В	AC	-
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	UN	0.3
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	UN	0.06
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	UN	0.06
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	UN	0.06
WHITECAP RESOURCES INC.	WHITECAP 16-11-085-13-6	F17074	16-11-085-13W6	56.3603089	-119.9295340	56° 21' 37.112"	-119° 55' 46.322"	В	UN	-

 $^{^{(1)}}$ The largest EPZ of this facility is of a sour well (UWI 100060508612W600) on site.

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
 WS=Water Source
 CT=Central Treating Plants

 Status:
 A=Abandoned
 D=Discontinued
 N=Not Constructed/Approved
 O=Operating
 P=To Be Constructed
 S=Suspended
 AC=Active

UN=Unknown NW=New RT=Retired PE=Permitted

Other: EPZ=Emergency Planning Zone

Boundary Lake AB - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	H₂S RELEASE RATE (m3/s)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
			WHITECAP SOUR OPE								
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 1-12-84-13	128045				0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-11-84-13	42883	100021108413W600		0.02	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-14-84-13	43002	100021408413W600		0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 2-26-84-13	127013		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		03-07-086-12W6	1.95	0.0002	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 3-23-84-13	38289	100032308413W600		0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 4-7-84-12	83271	100040708412W600		0.14	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 5-23-84-13	44090	100052308413W600		0.15	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-1-84-13	38006	100060108413W600		0.08	0.0000	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-5-86-12	379842		06-05-086-12W6	1.95	0.0026	0.05	0.02	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-6-84-12	126725		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		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	0.0002	0.01	0	0	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	1.95	0.0002	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 8-7-86-12	385431	100080708612W600	08-07-086-12W6	1.95	0.0010	0.02	0	0.02	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 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 HZ BDYLKS 13-26-84-13	485405	100132608413W600	13-23-084-13W6	1.95	0.0033	0.05	0.02	0.05	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 HZ BDYLKS 15-10-84-13	478674	100151008413W600	16-15-084-13W6	0.20	0.0005	0.01	0	0.01	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 SOUR SUS	PENDED							
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

 $\underline{\text{Other:}} \quad \text{UWI=Unique Well Identifier} \quad \text{EPZ=Emergency Planning Zone} \quad \text{IIZ=Initial Isolation Zone} \quad \text{PAZ=Protective Action Zone} \quad \text{PAZ=Protec$

Boundary Lake AB - Sour Gas Pipelines

	LICENSEE	WATER CROSS	FR OW		то		START VALVE	END VALVE	LICENSE NO.	LINE NO.	LINE SEGMENT MODIFIER	UNIQUE	: INCLUDES UNIQUE#	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	EXPECTED PRESSURE (kPa)	LICENSED H2S (%)	EXPECTED H2S (%)	TEMP (°C)	Z				SETBACK LEVEL	
											W	VHITECA	SOUR OPE	RATIN	G													
٧	/HITECAP 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	0
V	/HITECAP 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	0
											WH	IITECAP	SOUR DISCO	DNTINU	ED													
V	/HITECAP 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 Crossis 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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated

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 AB - Sour Oil Pipelines

WHITECAP RESOURCES INC. - 14-1096-19W6 WI 502-086-13W6 N. C. V. 1233 5	Level 1 O
WHITECAP RESOURCES INC. - 106-11-086-13W6 Pt. 16-02-086-13W6 S - CV 61233 S - 2 2 0.6 60.3 2.18 3.45	Level 1 O
WHITECAP RESOURCES INC.	Level 1 O
WHITECAP RESOURCES INC. 10-20-081-39W6 E. C. V. 61226 4	Level 1 O
WHITECAP RESOURCES INC. - 0.62-8084-13W6 W 0.56-904-13W6 S C C 61235 1 - 4 4 0.6 60.3 2.57 3.9 3.450 3.450 1.95 1.95 20.0 66.00 30.30 5 0.84 2 0.06 80.30 0.05	Level 1 O
WHITECAP RESOURCES INC 109-2308-13996 WE 05-36-08-13996 Pt 0-20-08-08-13996 Pt 0-20-08-08-08-13996 Pt 0-20-08-08-08-08-1399	Level 1 O
WHITECAP RESOURCES INC. - 022-084-139W B 10-24-094-139W B 10-24-0	Level 1 O
WHITECAP RESOURCES INC 102-408-13WR PL 17-40-408-13WR PL 612-24 3 7 7.8 OE 60.3 1.85 3.9 3.450 3.450 1.95 1.95 2.00 660.0 30.3 5 0.84 2 0.06 603 0.05	Level 1 O
WHITECAP RESOURCES INC 10-24-084-13WB PL 10-24-084-13WB S - CV 61224 1 - 9 110 0 E 168.3 4.10 4.0 3.450 1.95 1.95 2.00 68.00 3.03 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC 10-5-06-084-13WB S 02-32-084-13WB PL - CV 61223 1 - 10 110 0 E 168.3 4.10 4.0 3.450 1.95 1.95 2.00 68.00 3.03 5 0.84 54 0.06 0.02 0.05 WHITECAP RESOURCES INC 10-15-084-13WB WE D 03-23-084-13WB S - ESD 67626 1 - 11 11 0 E 197.0 9.0 10.0 3.450 3.450 1.95 1.95 2.00 68.00 3.03 5 0.84 54 0.06 0.02 0.05 WHITECAP RESOURCES INC 11-23-084-13WB PL 03-23-084-13WB S - CV 7795 46 - 12 12 0 E 60.3 0.60 3.9 6.00 6.00 2.0 0.00 68.00 3.0 5 0.84 54 0.06 0.02 0.05 WHITECAP RESOURCES INC 16-15-084-13WB WE 03-23-084-13WB S - CV 7795 46 - 12 12 0 E 60.3 0.60 3.9 3.450 3.450 1.95 1.95 2.00 68.00 3.0 5 0.84 1 0.00 0.02 0.05 WHITECAP RESOURCES INC 16-15-084-13WB WE 03-23-084-13WB S - CV 81227 1 - 13 13 0 E 60.3 0.60 3.9 3.450 3.450 1.95 1.95 2.00 68.00 3.00 5 0.84 1 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	Level 1 O Level 1 O Level 1 O Level na O Level 1 O
WHITECAP RESOURCES INC. 0.5-36-084-13W6 E 0.32-3084-13W6 S ESD 5738 1 11 11 11 11 11 1	Level 1 O Level 1 O Level na O Level 1 O
WHITECAP RESOURCES INC. - 16-15-084-13W6 WE 03-23-084-13W6 S - ESD 57826 1 - 11 11 10 CE 97.0 0.90 10.0 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.84 1 0.06 0.30 0.00 WHITECAP RESOURCES INC. - 16-15-084-13W6 WE 03-23-084-13W6 S - CV 61227 1 - 13 13 0.06 6.03 0.90 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.84 1 0.06 0.33 0.05 WHITECAP RESOURCES INC. - 15-23-084-13W6 WE 03-23-084-13W6 S - CV 61227 2 - 14 14 0.6 6.03 0.90 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.84 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 13-23-084-13W6 WE 03-23-084-13W6 S - CV 61227 2 - 14 14 0.6 6.03 0.90 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.84 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 13-23-084-13W6 WE 03-23-084-13W6 S - CV 61227 3 - 15 15 0.06 60.3 1.17 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.84 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 07-26-084-13W6 WE 03-23-084-13W6 S - CV 61227 4 - 16 16 0.6 60.3 1.17 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-23-084-13W6 WE 03-23-084-13W6 S - CV 61228 1 - 17 17 0.00 60.3 0.05 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-23-084-13W6 WE 03-23-084-13W6 S - CV 61228 2 - 18 18 0.00 60.03 1.03 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-23-084-13W6 WE 03-23-084-13W6 S - CV 61228 3 - 19 19 0.00 60.03 1.03 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-23-084-13W6 WE 03-23-084-13W6 S - CV 61228 1 - 12 12 10 0.00 60.3 0.05 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-20-084-13W6 WE 03-23-084-13W6 S - CV 61228 1 - 21 21 0.00 60.3 0.05 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 08-20-084-13W6 WE 03-23-084-13W6 S - CV 61228 1 - 21 21 0.00 60.3 0.05 3.9 3.450 3.450 1.95 1.95 2.00 680.00 3.03 5 0.04 1 0.06 0.03 0.05 0.04 1 0.06 0.03 0.05 0.04 1 0.06 0.03 0.05 0.04 1 0.06 0.03 0.05 0.0	Level 1 O
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WHITECAP RESOURCES INC. - 16-11-084-13W6 WE 10-11-084-13W6 S - CV 61241 3 - 29 29 OE 60.3 0.60 3.9 3,450 1.95 1.95 2.00 660.00 30.30 5 0.84 0 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 12-02-084-13W6 WE 11-02-084-13W6 PL - - 61232 2 - 30 30,31 OE 60.3 0.30 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 11-02-084-13W6 WE 10-11-084-13W6 S - CV 61232 1 - 31 30,31 OE 60.3 1.83 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC.	Level 1 O
WHITECAP RESOURCES INC. - 12-02-084-13W6 WE 11-02-084-13W6 WE 11-02-084-13W6 PL - - - 61232 2 - 30 30,31 OE 60.3 0.30 3.450 3.450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 11-02-084-13W6 PL 10-11-084-13W6 S - CV 61232 1 - 31 30,31 OE 60.3 1.83 3.9 3,450 3.450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 10-11-084-13W6 WE 09-11-084-13W6 PL - - - 61234 3 - 32 22 to 46 OE 168.3 0.51 4.0 3,450 3,450 1.95 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.02 0.05 WHITECAP RESOURCES INC. - 08-02-084-13W6 WE 08-02-084-13W6 PL - - - 61234 4 - 33 22 to 46 OE 60.3 0.08 3.9 3,450 3,450 3,450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC. - 11-02-084-13W6 PL 10-11-084-13W6 S - CV 61232 1 - 31 30,31 OE 60.3 1.83 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 2 0.06 0.03 0.05 WHITECAP RESOURCES INC. - 10-11-084-13W6 WE 09-11-084-13W6 PL - - 61226 3 - 32 22 to 46 OE 168.3 0.51 4.0 3,450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.02 0.05 WHITECAP RESOURCES INC. - 08-02-084-13W6 PL - - 61234 4 - 33 22 to 46 0E 60.3 0.08 3.9 3,450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC. - 10-11-084-13W6 WE 09-11-084-13W6 PL - - 61226 3 - 32 22 to 46 OE 168.3 0.51 4.0 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.02 0.05 WHITECAP RESOURCES INC. - 08-02-084-13W6 WE 08-02-084-13W6 PL - - 61234 4 - 33 22 to 46 OE 60.3 0.08 3.9 3,450 1.95 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC 08-02-084-13W6 WE 08-02-084-13W6 PL 61234 4 - 33 22 to 46 OE 60.3 0.08 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC - 08-02-084-13W6 WE 08-02-084-13W6 PI 61232 5 - 34 22 to 46 OF 60.3 0.60 2.0 3.450 3.450 4.05 4.05 4.05 20.00 660.00 30.30 5 0.04 50 0.05 0.05	Level 1 O
	Level 1 O
WHITECAP RESOURCES INC 16-02-084-13W6 WE 08-02-084-13W6 PL - 61232 6 - 35 22 to 46 OE 60.3 0.87 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05 0.0	Level 1 O
	Level 1 O
WHITECAP RESOURCES INC 08-02-084-13W6 PL 06-01-084-13W6 S - - 61234 3 - 37 22 to 46 OE 60.3 0.74 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC 07-01-084-13W6 WE 06-01-084-13W6 S 61232 3 - 39 22 to 46 OE 60.3 0.64 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC 14-36-083-13W6 WE 06-01-084-13W6 S 61233 1 - 40 22 to 46 OE 60.3 0.73 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC 06-06-084-12W6 WE 06-01-084-13W6 S 61233 2 - 41 22 to 46 OE 60.3 1.93 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	Level 1 O
WHITECAP RESOURCES INC 01-12-084-13W6 WE 06-01-084-13W6 S - - 61233 3 - 42 22 to 46 OE 60.3 1.74 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	
WHITECAP RESOURCES INC 04-07-084-12W6 WE 04-07-084-12W6 PL 61248 1 - 43 22 to 46 OE 60.3 0.40 3.9 3,450 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05 0	
WHITECAP RESOURCES INC. C 04-07-084-12W6 PE 06-01-084-13W6 S 61253 1 - 44 22 to 46 OE 60.3 1.69 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05 WHITECAP RESOURCES INC 09-01-084-13W6 WE 06-01-084-13W6 S 61273 1 - 45 22 to 46 OE 60.3 1.01 3.9 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.03 0.05	
WHITECAN RESOURCES INC 06-01-084-13W6 WE 03-23-084-13W6 S - ESD 61226 2 - 46 22 to 46 OE 168.3 5.79 4.0 3,450 1.95 1.95 20.00 660.00 30.30 5 0.84 58 0.06 0.02 0.05	
WHITECAP RESOURCES INC 03-07-086-12W6 WE 08-07-086-12W6 PL 50203 2 - 47 47 to 49 OE 114.3 0.87 3.2 3,450 3,450 1.95 1.95 5.98 3.00 1993.33 5 0.84 31 0.3 0.09 0.26 0.2	Level 1 O
WHITECAP RESOURCES INC 08-07-086-12W6 WE 08-08-086-12W6 PL 50164 1 - 48 47 to 49 OE 114.3 1.72 3.2 3,450 3,450 1.95 1.95 5.98 3.00 1993.33 5 0.84 31 0.3 0.09 0.26	
CANADIAN NATURAL RESOURCES LIMITED - 09-08-086-12W6 WE 06-09-086-12W6 PL 26339 20 - 49 47 to 49 0E 114.3 1.52 4.0 4,960 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.9	Level 1 O
CANADIAN NATURAL RESOURCES LIMITED - 06-04-086-12W6 WE 16-04-086-12W6 PL 26339 30 - 51 50,51 OE 88.9 1.46 3.2 4,960 4,960 0.97 0.97	Level 1 O
WHITECAP SOUR DISCONTINUED WE 10-04-000-12W0 WE	J
WHITECAP RESOURCES INC 12-14-084-13W6 BE 03-23-084-13W6 BE 7795 9 - 52 52 OE 60.3 0.97 3.9 0 0 0.20 0.20	
WHITECAP RESOURCES INC 13-01-085-13W6 BE 15-02-085-13W6 BE 9207 2 - 53 53 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 - 54 54 OE 60.3 0.60 3.2 0 0 0.08	D
WHITECAP RESOURCES INC 16-11-085-13W6 BE 15-02-085-13W6 BE 9207 8 - 55 55 OE 114.3 1.87 4.0 0 0 0.08 0.08 0.08 WHITECAP RESOURCES INC 04-24-084-13W6 BE 03-23-084-13W6 BE 15937 8 - 56 56 OE 60.3 1.43 3.9 0 0 0 0.08 0.08 0.08	D D
WHITECAP RESOURCES INC 15-36-083-13W6 WE 06-01-084-13W6 S 15939 4 - 57 57 OE 60.3 1.13 3.9 0 0 0.08 0.08 0.08 0.08 0.08 0.08 0.0	D D D
WHITECAP RESOURCES INC 10-06-084-12W6 BE 10-06-084-12W6 BE 15939 13 - 58 58 OE 60.3 0.27 3.9 0 0 0.10 0.10	D D
WHITECAP RESOURCES INC. CC 10-06-084-12W6 BE 12-06-084-12W6 BE 15939 15 - 59 59 OE 60.3 0.54 3.9 0 0 0.10 0.10	D D D D

Boundary Lake AB - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	то	START VALVE	END VALVE	LICENSE NO.	NO.	LINE SEGMENT MODIFIER	UNIQUE LINE#	INCLUDES UNIQUE #	SUB (r	OD nm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED E PRESSURE P (kPa)	EXPECTED PRESSURE (kPa)	LICENSED I H2S (%)	EXPECTED H2S (%)	EI OW	LIQUID FLOW RATE (m3/d)	GLR	TEMP (°C)	z	DIR 56 RELEASE EPZ VOLUME (km) (m3)	IIZ P. (km) (k	AZ SETBACK m) LEVEL	SILITATS
WHITECAP RESOURCES INC.	С	12-06-084-12W6 BE 06	6-01-084-13W6 B	E -	-	15939	20		60	60	OE 6	0.3	1.73	3.9	0	0	0.10	0.10									D
WHITECAP RESOURCES INC.	-	02-13-084-13W6 BE 10	0-11-084-13W6 B	E -	-	15945	9	-	61	61	OE 6	0.3	2.18	3.9	0	0	0.10	0.10									D
WHITECAP RESOURCES INC.	-	14-36-084-13W6 BE 05	5-36-084-13W6 B	E -	-	15946	4	-	62	62	OE 6	0.3	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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated

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 AB - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	uwi	SURFACE LOCATION	H2S (%)	STATUS
	V	VHITECAP SWE	ET OPERATING			
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 4-24-84-13	38760	100042408413W600	04-24-084-13W6	0	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 5-14-84-13	42882	100051408413W600	05-14-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-36-84-13	38366	100063608413W600	06-36-084-13W6	0	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-11-84-13	37761	100101108413W600	10-11-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 10-23-84-13	42135	100102308413W600	10-23-084-13W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 11-26-84-13	97061	100112608413W600	11-26-084-13W6	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 13-1-85-13	44601	100130108513W600	13-01-085-13W6	0	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 13-35-84-13	38851	100133508413W600	13-35-084-13W6	0	OBSERVATION
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 15-23-84-13	43048	100152308413W600	15-23-084-13W6	0	OBSERVATION
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 16-22-84-13	46321	100162208413W600	16-22-084-13W6	0	WATER INJECTOR
	W	VHITECAP SWEI	ET SUSPENDED			
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 8-10-85-13	106110	100081008513W600	08-10-085-13W6	0	SUSPENDED OIL
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.	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
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-10-85-13	104213	100161008513W600	16-10-085-13W6	0	SUSPENDED OIL
	WHITI	ECAP SWEET D	RILLED AND CASED			
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 6-13-85-13	27344	100061308513W604	06-13-085-13W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	ONE-EX BDYLKS 9-16-85-12	367452	100091608512W602		0	DRILLED AND CASED
WHITECAP RESOURCES INC.	BARRICK BDYLKS 12-12-87-12	345744	100121208712W600		0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP BDYLKS 16-1-84-13	239421	100160108413W602	16-01-084-13W6	0	DRILLED AND CASED

LEGEND

Other: UWI=Unique Well Identifier

Boundary Lake AB - Sweet Pipelines

LICENSEE	WATER CROSS	FROM	то	I	LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
			WHITECAP S	SWEET	OPERATI	ING							
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	0
WHITECAP RESOURCES INC.	-	06-01-084-13W6 S	12-06-084-12W6		8385	18	FW	60.3	1.80	3.9	15,000	0	0
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	0
WHITECAP RESOURCES INC.	-	16-02-084-13W6 MS	14-02-084-13W6	WE	8385	23	FW	60.3	0.77	3.9	15,000	0	0
WHITECAP RESOURCES INC.	-	16-02-084-13W6 PL	16-02-084-13W6	MS	8385	24	FW	88.9	0.24	4.0	15,000	0	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
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	0
WHITECAP RESOURCES INC.	-	14-02-084-13W6 PL	16-03-084-13W6	WE	8385	48	FW	71.1	0.89	10.9	15,000	0	0
WHITECAP RESOURCES INC.	-	11-23-084-13W6 PL	15-23-084-13W6	PL	8385	49	FW	60.3	0.60	3.9	15,000	0	0
WHITECAP RESOURCES INC.	-	15-23-084-13W6 PL	11-26-084-13W6	WE	8385	50	FW	60.3	1.47	3.9	15,000	0	0
WHITECAP RESOURCES INC.	-	10-23-084-13W6 PL	11-23-084-13W6	PL	8385	51	FW	71.1	0.17	10.9	15,000	0	Р
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	0
			WHITECAP SV	VEET D	ISCONTIN	NUED							
WHITECAP RESOURCES INC.	-	03-23-084-13W6 BE	05-36-084-13W6		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
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.	-	06-36-083-13W6 BE	01-06-084-12W6	BE	36018	1	NG	114.3	3.14	3.2	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

Boundary Lake AB - Sweet Pipelines

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
WHITECAP RESOURCES INC.	-	08-10-085-13W6	BE	16-10-085-13W6	BE	57475	2	NG	60.3	0.62	3.9	0	0	D
WHITECAP RESOURCES INC.	-	16-10-085-13W6	BE	10-15-085-13W6	BE	57753	1	NG	60.3	1.40	3.9	0	0	D

LEGEND

Water Crossing 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

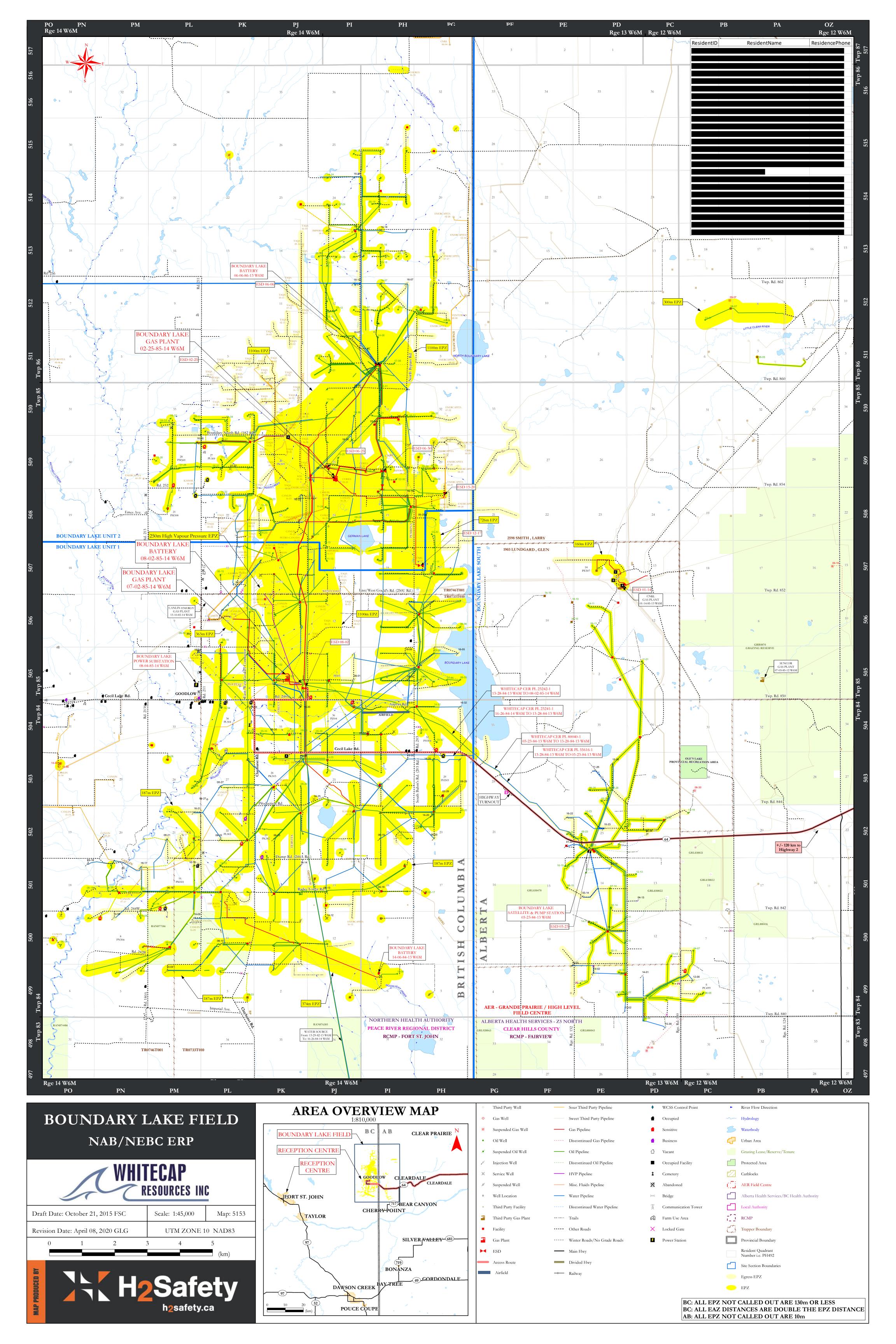
MS=Meter Station PL=Pipeline PS=Pump Station S=Satellite WE=Well LR=Loading Rack TL=Terminals RE=Reservoir

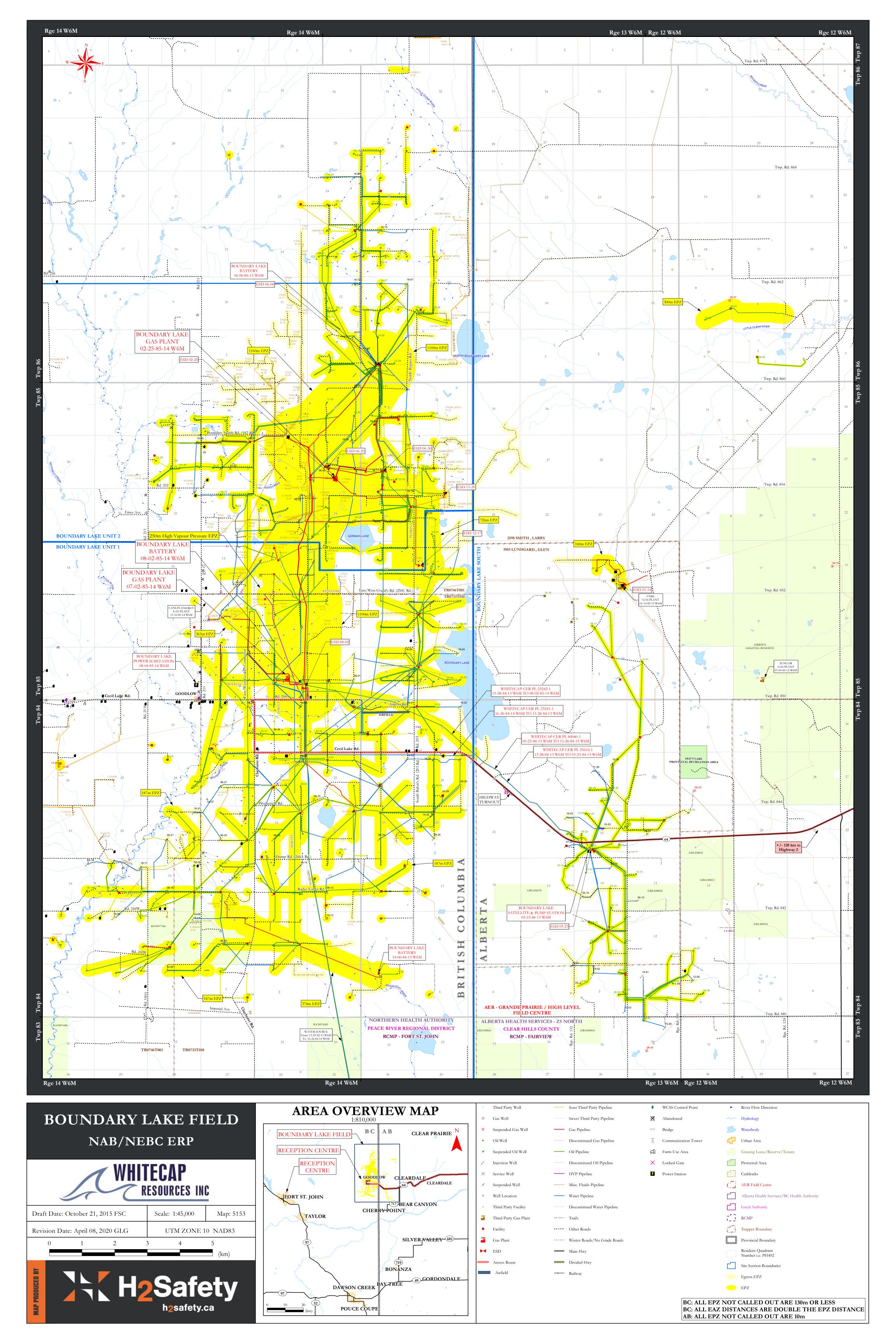
Substance: CO=Crude Oil FG=Fuel Gas FW=Fresh Water HV=High Vapour Pressure LV=Low Vapour Pressure NG=Natural Gas OE=Oil Effluent

SG=Sour Gas SW=Salt Water NL=NGL

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 X=Not AER Regulated Other: Wall=Wall Thickness OD=Outside Diameter





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

ELMWORTH / WAPITI FIELD

Area Superintendent

Lead Operator

HSE Field Advisor

CALGARY OFFICE

Operations Engineer

Manager Production

VP Operations

VP Production & Operations

VP HSE

For a detailed contact list, refer to the Field Response Teams Phone List at the front of

OPERATIONS SUMMARY

The Elmworth / Wapiti field consists of sweet oil wells and pipelines, located within the M.D. of Greenview. Oil production from the field is gathered at the 05-30-68-06 W6M Battery which is trucked out for sales. The natural gas lines flow to CNRL.

The 13-05-67-08-W6M Battery is equipped with separators, a treater, 4 compressors, a fuel gas separator, a generator and storage tanks for fluid. There is also a camp & office trailer, and a sewage storage tank. Produced fluids are trucked to various points. The natural gas is sent to 13-36 CNRL for further processing and sales.

The is a residence 200m from the 05-30-68-06 W6M Battery.

1000 bbl

EPZ Information

The maximum expected H₂S concentration for the well at 14-19-68-06 W6M is 0.11% with a 10m EPZ. All other wells and pipelines have an expected H₂S concentration of

On-Site Storage

05-30 site storage includes:

Oil Tank 1000 bbl 750 bbl

Water Tank

13-05 site storage includes:

4 Oil Tank 2000 bbl

Emulsion 1000 bbl Water / Oil Tank 1000 bbl

13-24 and 04-14 site storage includes:

4 Oil Tank

05-23 site storage includes: 2 Oil Tank

Closest Urban Centre

The City of Grande Prairie is located approximately 26 km north of the field and has a population of +/- 63,166.

Hvdrology

There are various waterbodies located within the field including Wilson Lake, Wilson Creek, Bald Mountain Creek, Stony Creek, Campbell Creek, and a few other unnamed streams and lakes.

Highways

No major highways run through the field.

Site Access

Refer to the following pages for access maps and directions. Various locations are gated and locked - Operators have a the key to access. Poor (muddy) driving

SAFETY EQUIPMENT

Operator / Truck Safety Equipment Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, vehicle emergency tool kit, first aid kit, roadblock kit, 4-head monitor, hand held gas detector, and cell phone.

Additional equipment is located at 13-05-67-08 W6M battery including first aid kit, AED, SCBA, flare gun, roadblock kit and spill response equipment.

Operators attend to the facility, wells and gathering system 7 days a week. Facilities are equipped with SCADA callout systems 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.

The primary method of communication is by cellular phone and the secondary communication is by two-way radios. The following radio controlled roads are in the

Two Lakes Road Freq. 168.840 Bald Mountain Road Freq. 172.035 Freq. 162.210 South Block Road Freq. 168.640 Odum Ridge Road Wapiti Road Freq. 162,210

Roadblock Kits

Each operator carries one roadblock kit. Roadblock kits contain the following: stop signs, safety vest, flashlight(s) and a flashing beacon. There is a flare gun located within the Wapiti field. 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

AREA USERS & TIE-INS

Oil and Gas

877-235-9232 403-538-8500 Alliance Pipeline 800-884-8811 Modern Resources CNRL* 800-465-9239 NuVista Energy **Enerplus** 877-576-5636 Rimfire Energy 866-716-8558 877-294-1336 TransCanada 888-982-7222 Gain Energy 877-262-2111 Velvet Energy* 877-504-4253

There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.

No railways have been identified within the field

паррыз		
Trapper ID	Name	Emergency
		<u> </u>

Guides & Outfitters - Wildlife Management Unit (WMU) # 356

Company Emergency

No grazing leases have been identified within the field.

Forestry Management Units & Agreements

G15 - Canadian Forest Products 780-831-6488 780-539-8944 G16 - Weverhaeuser Canada - Grande Prairie Office

Natural Protected Areas

No natural protected areas have been identified within the field.

LEAD AGENCIES & PRIORITY CONTACTS

Note. All Humbers, unless offici wise maleated, are 24 floars.	
Alberta Energy Regulator (AER) Grande Prairie / High Level Field Centre	800-222-6514*
Wildfire Reporting * One call number for regulatory agency, Alberta Environment, S Sustainable Resource Development (lands, fish, forest, wildlife) Canada.	
M.D. of Greenview	866-524-7608
Alberta Health Services - Z5 North	844-755-1788
Alberta Emergency Management (AEMA) - Northwest	866-618-2362
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		

Alberta Occupational Health and Safety	866-415-8690
Workers' Compensation Board	Admin: 866-922-9221
CANUTEC Toll-Free	613-996-6666 1-888-CAN-UTEC
	(226-8832)
From Cell Phone	*666

Admin: 780-427-7164

800-332-1414

Fax: 780-402-6835

Alberta Health and Wellness

Inquiries Admin: 613-992-4624 Environment & Climate Change Canada Meteorological Services 780-951-8907

Department of Fisheries and Oceans Canada (DFO) 604-666-0384 Pacific Region

EMERGENCY SERVICES

Note. All Hambers, ariless offici wise indicated, are 24 floars.	
RCMP Grande Prairie	911 780-830-5701
Fire Departments Grovedale	911 780-402-4253
Ambulance Grande Prairie Air Ambulance (STARS)	911 888-888-4567
Hospitals Queen Elizabeth II Hospital - Grande Prairie	780-538-7100

Alberta One-Call 800-242-3447 www.albertaonecall.com Reception Centres Four Points by Sheraton 587-771-1300 Fax: 587-771-1301 6702 106 Street, Grande Prairie, AB Holiday Inn - Conference Ctr. 780-402-6886

Alberta Poison and Drug Information Service

9816 107 Street , Grande Prairie, AB

SUPPORT SERVICES

Mobile Air Monitoring*	
Firemaster Oilfield Services - Central Dispatch	877-342-3473
Trojan Safety Services - Grande Prairie	780-567-3440
Bravo Target Safety - Central Dispatch	866-513-3779
HSE Integrated - Central Dispatch	888-346-8260
* Due to response time, dispatch mobile air monitoring at a	Level 1 Emergency.
Response time is expected to be approximately 1 hour from Gran	nde Prairie AB and 3.5

hours from Fort St. John, BC.

Oilfield Fire Fighting / Safety Contractors
HSE Integrated - Central Dispatch
Superior Fire Control - Grande Prairie

Bravo Target Safety - Central Dispatch 866-513-3779 Well Control Specialists Firemaster Oilfield Services - Central Dispatch 877-342-3473 Capstone Blowout Recovery - Central Dispatch 866-347-3911 Superior Fire Control - Grande Prairie 587-298-5444 Bravo Target Safety - Central Dispatch 866-513-3779

Emergency Response Management H₂Safety Services Inc. - Calgary 403-212-2332 Toll Free 888-216-2332 Air Traffic Control

NAV Canada 866-992-7433 **Bus Transportation** Northern Express - Grande Prairie 780-926-0808 Golden Arrow Motor Coaches - Central Dispatch 877-447-1538

Helicopter Companies (Day Flying Only) Synergy Aviation - Grande Prairie 780-750-4994 Canadian Helicopters - Grande Prairie 780-429-6900 Highland Helicopters - Grande Prairie 780-539-3112

WCSS - Zone 6 - Coop T* 866-541-8888 Regional Custodian: Clean Harbors Admin: 780-532-4331 Cell: 780-897-0065

Spill Response SWAT Consulting Inc.

Equipment Location Equipment Summary 1 OSCAR (Semi-Truck) 9601 - 156 Avenue Grande Prairie, AB 1 Winter OSCAR (3/4-ton truck with 2 5/16" ball

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 Summary Equipment Location**

CNRL Chinchaga Gas Plant 1 20' Skid-mounted Sea-Can 01-24-96-05 W6M Transport: Silvertip Oilfield Services

*See website for more info (http://www.wcss.ab.ca).

RESIDENT INFORMATION

Resident Information has not been gathered for this field. In the event of an incident, assign Rovers to patrol the area.



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March 2020

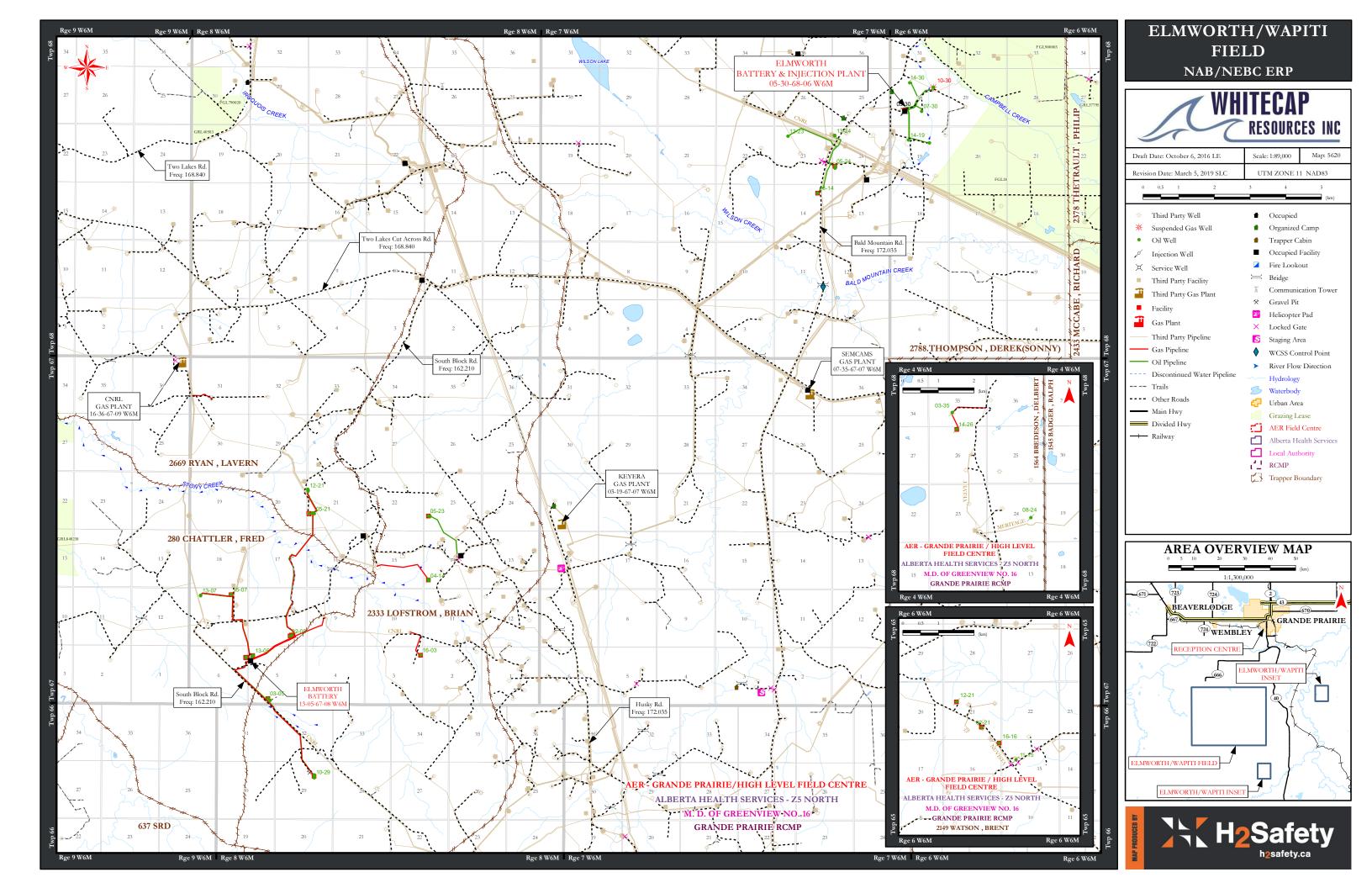
www.h2safetv.ca

888-346-8260

587-298-5444

866-610-7928

780-836-3792



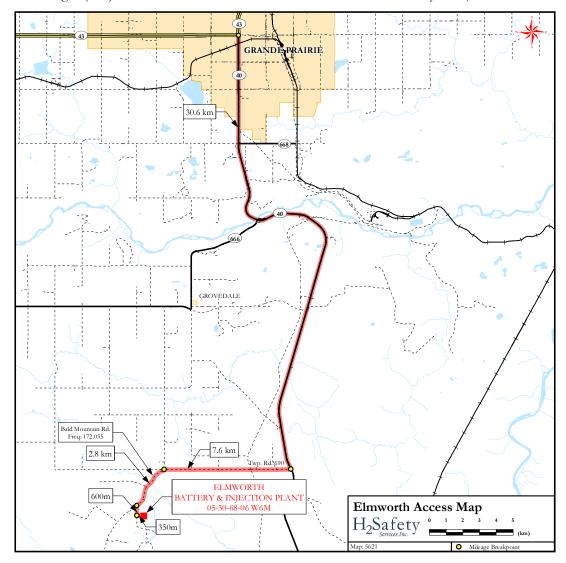


Elmworth Site Access

DIRECTIONS TO THE ELMWORTH 05-30-68-06 W6M BATTERY & INJECTION PLANT

From the intersection of Highway 43 and Highway 40 in Grande Prairie, Alberta:

- Travel south on Highway 40 for 30.6 km to the turnoff for Township Rd. 690 (Rd. will curve east and then south again before reaching the Township Rd. 690 turn off).
- Turn right (west) onto Township Rd. 690 and travel 7.6 km to the intersection of Township Rd. 690, Range Rd. 65 (North) and Bald Mountain Rd. (south) Freq: 172.035.
- Turn left (southwest) onto Bald Mountain Rd. Freq: 172.035 and travel 2.8 km to the turn off for the facility Access Rd.
- Turn left (south) and travel 600 m.
- Turn right (east) and travel 350 m to reach the 05-30-68-06 W6M Battery & Injection Plant.



Elmworth / Wapiti - 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)
			WHITECAP OPERA	ATING						
WHITECAP RESOURCES INC.	WHITECAP 02-08-067-08-6	F51232	02-08-067-08W6	54.7804000	-119.1770000	54° 46' 49.440"	-119° 10' 37.2"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 03-05-067-08-6	F50272	03-05-067-08W6	54.7647480	-119.1866302	54° 45' 53.092"	-119° 11' 11.868"	S	UN	-
WHITECAP RESOURCES INC.	WAPITI 4-14-67-8W6 MWB	F48387	04-14-067-08W6	54.7946651	-119.1170030	54° 47' 40.794"	-119° 7' 1.210"	В	AC	-
WHITECAP RESOURCES INC.	WHITECAP 05-07-067-08-6	F51630	05-07-067-08W6	54.7838000	-119.2190000	54° 47' 1.679"	-119° 13' 8.399"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 05-21-067-08-6	F47046	05-21-067-08W6	54.8112150	-119.1692099	54° 48' 40.374"	-119° 10' 9.155"	В	UN	-
WHITECAP RESOURCES INC.	WHITECAP 05-21-067-08-6	F49621	05-21-067-08W6	54.8112150	-119.1692099	54° 48' 40.374"	-119° 10' 9.155"	S	UN	-
WHITECAP RESOURCES INC.	05-23-067-08W6 MWGB	F50263	05-23-067-08W6	54.8124098	-119.1160980	54° 48' 44.675"	-119° 6' 57.952"	В	AC	-
WHITECAP RESOURCES INC.	WHITECAP 05-24-068-07-6	F48366	05-24-068-07W6	54.8988420	-118.9400389	54° 53' 55.831"	-118° 56' 24.140"	S	UN	-
WHITECAP RESOURCES INC.	ARC ELM 5-30 CR-OIL PRORATION BTY	F14796	05-30-068-06W6	54.9142937	-118.9126252	54° 54' 51.457"	-118° 54' 45.450"	В	AC	-
WHITECAP RESOURCES INC.	STAR OIL & GAS LTD	F21721	05-30-068-06W6	54.9142937	-118.9126252	54° 54' 51.457"	-118° 54' 45.450"	CS	AC	-
WHITECAP RESOURCES INC.	PLACE ELMWORTH	F23037	05-30-068-06W6	54.9142937	-118.9126252	54° 54' 51.457"	-118° 54' 45.450"	ΙP	AC	-
WHITECAP RESOURCES INC.	WHITECAP 07-28-066-08-6	F51618	07-28-066-08W6	54.7414000	-119.1410000	54° 44' 29.040"	-119° 8' 27.6"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 12-02-067-08-6	F51605	12-02-067-08W6	54.7714000	-119.1180000	54° 46' 17.039"	-119° 7' 4.799"	S	UN	-
WHITECAP RESOURCES INC.	WAPATI 13-5-67-8W6	F47080	13-05-067-08W6	54.7754330	-119.1933659	54° 46' 31.558"	-119° 11' 36.117"	В	AC	-
WHITECAP RESOURCES INC.	WHITECAP 15-07-067-08-6	F49656	15-07-067-08W6	54.7907720	-119.2029559	54° 47' 26.779"	-119° 12' 10.641"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 15-29-066-08-6	F49108	15-29-066-08W6	54.7452052	-119.1664264	54° 44' 42.738"	-119° 9' 59.135"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 16-06-067-08-6	F51062	16-06-067-08W6	54.7750145	-119.1963489	54° 46' 30.052"	-119° 11' 46.856"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 16-14-068-07-6	F50241	16-14-068-07W6	54.8920600	-118.9475624	54° 53' 31.416"	-118° 56' 51.224"	S	UN	-
			WHITECAP SUSPE	NDED						
WHITECAP RESOURCES INC.	IMPERIAL ELMWORTH 5-30	F14796	05-30-068-06W6	54.9142937	-118.9126252	54° 54' 51.457"	-118° 54' 45.450"	В	S	

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 WS=Water Source CT=Central Treating Plants
Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed S=Suspended AC=Active

UN=Unknown NW=New RT=Retired PE=Permitted

Other: EPZ=Emergency Planning Zone

Elmworth / Wapiti - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	H₂S RELEASE RATE (m3/s)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
WHITECAP SOUR OPERATING											
WHITECAP RESOURCES INC.	WHITECAP ELM 14-19-68-6	198632	100141906806W600	14-19-068-06W6	0.11	0.0000	0.01	0	0	Level na	PUMPING OIL

LEGEND

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone IIZ=Initial Isolation Zone PAZ=Protective Action Zone

NOTES

All Whitecap sour wells in the area are included above. Last H2S value was used for all calculations. 41.4 mm tubing ID was used for all calculations. Table created using October-2019 data.

Elmworth / Wapiti - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	STATUS
	W	HITECAP SWE	ET OPERATING			
WHITECAP RESOURCES INC.	CABRE WAPITI 10-18-67-8	167917	100101806708W603	01-18-067-08W6	0	OBSERVATION
WHITECAP RESOURCES INC.	WHITECAP 103 HZ WAPITI 6-10-67-8	488595	103061006708W600	02-08-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 3-10-67-8	488593	100031006708W600	02-08-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 6-10-67-8	488594	102061006708W600	02-08-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	SIPHON BILBO 2-21-65-6	128694	100022106506W600	02-21-065-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 4-6-67-8	487554	100040606708W602	03-05-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 3-4-67-8	484502	100030406708W600	03-05-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 5-6-67-8	484501	100050606708W600	03-05-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 14-33-66-8	487556	102143306608W600	03-05-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 3-4-67-8	487555	102030406708W600	03-05-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	CANAMAX WAPITI 4-15-67-8	470220	100041506708W600	04-14-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 103 HZ WAPITI 5-15-67-8	484500	104051506708W602	04-14-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 5-15-67-8	484499	103051506708W600	04-14-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 4-20-67-8	478844	100042006708W600	05-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 5-20-67-8	481516	100052006708W600	05-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 8-21-67-8	484366	100082106708W600	05-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	PETROFORTE WAPITI 9-21-67-8	461104	100092106708W600	05-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP WAPITI 4-22-67-8	435927	100042206708W600	05-23-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 5-22-67-8	485335	100052206708W600	05-23-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 4-22-67-8	493332	102042206708W600	05-23-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ 102 ELM 8-24-68-7	474434	103082406807W600	05-24-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 1-24-68-7	464988	100012406807W600	05-24-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 5-30-68-6	216217	1F1053006806W600	05-30-068-06W6	0	WATER SOURCE
WHITECAP RESOURCES INC.	WHITECAP ELM 5-30-68-6	87405	100053006806W600	05-30-068-06W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 3-33-66-8	489502	100033306608W600	05-32-066-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 7-30-68-6	203046	100073006806W600	07-30-068-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 10-19-68-6	73986	100101906806W600	10-19-068-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 9-28-66-8	486315	100092806608W600	10-29-066-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 13-30-66-8	488444	102133006608W600	10-29-066-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 10-30-68-6	91855	100103006806W600	10-30-068-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	SIPHON BILBO 11-15-65-6	128300	100111506506W600	11-15-065-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 12-20-67-8	482373	100122006708W600	12-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 13-20-67-8	482374	100132006708W600	12-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-21-67-8	486070	100162106708W600	12-21-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 16-21-67-8	486069	102162106708W600	12-21-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-4-67-8	478692	100160406708W600	13-05-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP WAPITI 12-6-67-8	462271	100120606708W600	13-05-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 11-4-67-8	484496	100110406708W600	13-05-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 11-4-67-8	489711	102110406708W600	13-05-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP WAPITI 13-6-67-8	462272	100130606708W600	13-05-067-08W6	0	FLOWING OIL

Elmworth / Wapiti - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	uwi	SURFACE LOCATION	H2S (%)	STATUS
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 13-18-67-8	486117	100131806708W602	13-07-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 13-18-67-8	486616	102131806708W600	13-07-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 14-18-67-8	486118	100141806708W600	13-07-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 13-26-68-7	465508	100132606807W600	13-23-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ 102 ELM 16-26-68-7	455449	102162606807W600	13-24-068-07W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ ELM 13-23-68-7	455451	100132306807W600	13-24-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 14-30-68-6	202999	100143006806W600	14-30-068-06W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-18-67-8	478843	100161806708W600	15-07-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 15-18-67-8	481288	100151806708W600	15-07-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-28-66-8	478269	102162806608W600	15-29-066-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 13-30-66-8	478673	100133006608W600	15-29-066-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP WAPITI 6-10-67-8	418510	100061006708W600	16-03-067-08W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 16-7-67-8	488692	102160706708W600	16-06-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-7-67-8	488693	100160706708W600	16-06-067-08W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ ELM 15-23-68-7	484577	100152306807W600	16-14-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ ELM 16-23-68-7	484576	100162306807W600	16-14-068-07W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	SIPHON BILBO 16-16-65-6	176285	100161606506W600	16-16-065-06W6	0	PUMPING OIL
	W	HITECAP SWE	ET SUSPENDED			
WHITECAP RESOURCES INC.	WHITECAP GOLDCK 3-35-68-4	318831	100033506804W604	03-35-068-04W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP GOLDCK 9-19-68-3	475690	100091906803W600	08-24-068-04W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP ELM 10-30-68-6	91855	100103006806W602	10-30-068-06W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	SIPHON BILBO 12-21-65-6	129262	100122106506W600	12-21-065-06W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP GOLDCK 11-2-69-4	475696	100110206904W600	14-26-068-04W6	0	SUSPENDED OIL
	WHITE	CAP SWEET D	RILLED AND CASED			
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 6-4-67-8	494337	102060406708W600	03-05-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 15-36-66-9	494338	100153606609W600	03-05-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 4-6-67-8	494339	102040606708W600	03-05-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 15-13-67-9	494278	100151306709W600	05-07-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 15-13-67-9	494279	102151306709W600	05-07-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-13-67-9	494280	100161306709W600	05-07-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP ELM 5-30-68-6	216217	1F1053006806W602	05-30-068-06W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 15-33-66-8	494360	100153306608W600	07-28-066-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP 102 HZ WAPITI 16-33-66-8	494362	102163306608W600	07-28-066-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 16-33-66-8	494361	100163306608W600	07-28-066-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	SIPHON BILBO 9-15-65-6	238215	100091506506W602	09-15-065-06W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 15-4-67-8	494273	100150406708W600	12-02-067-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP HZ WAPITI 10-4-67-8	494272	100100406708W600	12-02-067-08W6	0	DRILLED AND CASED

LEGEND

Other: UWI=Unique Well Identifier

Elmworth / Wapiti - Sweet Pipelines

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
				WHITECAP	SWEE	T OPERAT	ING			,				
WHITECAP RESOURCES INC. OC 10-30-068-06W6 WE 05-30-068-06W6 B 1998					19980	1	OE	88.9	1.01	2.8	4,960	0	0	
WHITECAP RESOURCES INC.	-	14-30-068-06W6	WE	05-30-068-06W6	В	19980	2	OE	88.9	1.02	4.0	9,000	0	0
WHITECAP RESOURCES INC.	-	07-30-068-06W6	WE	05-30-068-06W6	В	19980	3	OE	88.9	0.49	4.0	9,000	0	0
WHITECAP RESOURCES INC.	-	14-19-068-06W6	PL	05-30-068-06W6	В	19980	4	OE	88.9	1.13	4.0	9,000	0	0
WHITECAP RESOURCES INC.	-	14-19-068-06W6	WE	05-30-068-06W6	В	19980	5	OE	88.9	0.93	4.0	9,000	0	0
WHITECAP RESOURCES INC.	-	10-19-068-06W6	WE	14-19-068-06W6	PL	19980	6	OE	60.3	0.45	3.2	9,000	0	0
WHITECAP RESOURCES INC.	-	05-23-067-08W6	WE	10-14-067-08W6	В	53601	1	OE	114.3	1.47	3.2	8,300	0	0
WHITECAP RESOURCES INC.	-	05-24-068-07W6	WE	13-24-068-07W6	В	56008	1	OE	168.3	1.23	4.8	9,930	0	0
WHITECAP RESOURCES INC.	-	13-23-068-07W6	WE	12-24-068-07W6	PL	56008	2	OE	114.3	1.60	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	15-14-068-07W6	S	05-24-068-07W6	PL	56008	4	OE	168.3	1.10	4.8	9,930	0	0
WHITECAP RESOURCES INC.	-	13-05-067-08W6	В	06-09-067-08W6	PL	56357	1	NG	114.3	2.52	4.0	8,620	0	0
WHITECAP RESOURCES INC.	-	04-14-067-08W6	WE	05-15-067-08W6	PL	56932	1	NG	101.0	1.72	12.0	8,620	0	0
WHITECAP RESOURCES INC.	-	03-35-068-04W6	WE	08-35-068-04W6	PL	56940	1	NG	114.3	1.02	4.0	9,310	0	0
WHITECAP RESOURCES INC.	-	14-26-068-04W6	WE	03-35-068-04W6	PL	56940	2	NG	101.0	0.51	12.0	9,310	0	0
WHITECAP RESOURCES INC.	-	16-03-067-08W6	WE	08-10-067-08W6	PL	57473	1	NG	88.9	0.90	3.2	8,620	0	0
WHITECAP RESOURCES INC.	-	06-31-067-08W6	WE	05-31-067-08W6	PL	57474	1	NG	114.3	0.70	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	15-29-066-08W6	S	03-32-066-08W6	PL	57929	1	OE	114.3	0.86	4.0	9,930	0	0
WHITECAP RESOURCES INC.	CC	03-32-066-08W6	PL	13-05-067-08W6	В	57929	2	OE	168.3	3.48	4.8	9,930	0	0
WHITECAP RESOURCES INC.	CC	15-07-067-08W6	S	08-07-067-08W6	PL	57929	3	OE	114.3	1.15	4.0	9,930	0	0
WHITECAP RESOURCES INC.	CC	05-21-067-08W6	S	13-05-067-08W6	В	57929	4	OE	168.3	5.63	4.8	9,930	0	0
WHITECAP RESOURCES INC.	-	12-21-067-08W6	WE	05-21-067-08W6	S	57929	5	OE	130.0	0.79	15.5	9,930	0	0
WHITECAP RESOURCES INC.	-	12-21-067-08W6	WE	05-21-067-08W6	S	57929	6	OE	101.0	0.79	12.0	9,930	0	0
WHITECAP RESOURCES INC.	-	13-07-067-08W6	WE	15-07-067-08W6	S	57929	7	OE	88.9	0.93	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	13-07-067-08W6	WE	15-07-067-08W6	S	57929	8	OE	114.3	0.93	4.0	9,930	0	0
WHITECAP RESOURCES INC.	С	05-32-066-08W6	WE	11-32-066-08W6	PL	57929	9	OE	114.3	0.53	4.0	9,930	0	Р
WHITECAP RESOURCES INC.	С	05-07-067-08W6	S	13-05-067-08W6	В	57929	10	OE	219.1	2.56	5.6	9,930	0	Р
WHITECAP RESOURCES INC.	-	05-02-067-08W6	WE	12-02-067-08W6	S	57929	12	OE	88.9	0.56	3.2	9,930	0	Р
WHITECAP RESOURCES INC.	-	05-02-067-08W6	WE	12-02-067-08W6	S	57929	13	OE	88.9	0.56	3.2	9,930	0	Р
WHITECAP RESOURCES INC.	-	05-02-067-08W6	WE	12-02-067-08W6	S	57929	14	OE	88.9	0.56	3.2	9,930	0	Р
WHITECAP RESOURCES INC.	-	12-02-067-08W6	S	03-10-067-08W6	PL	57929	15	OE	114.3	2.05	4.0	9,930	0	Р
WHITECAP RESOURCES INC.	С	03-10-067-08W6	PL	13-05-067-08W6	В	57929	16	OE	219.1	4.40	5.6	9,930	0	Р
WHITECAP RESOURCES INC.	С	07-28-066-08W6	S	03-32-066-08W6	PL	57929	17	OE	114.3	2.69	4.0	9,930	0	Р
WHITECAP RESOURCES INC.	CC	15-29-066-08W6	S	13-05-067-08W6	В	57930	1	FG	69.0	4.34	7.5	4,960	0	0
WHITECAP RESOURCES INC.	CC	13-05-067-08W6	S	15-07-067-08W6	WE	57930	2	FG	69.0	2.25	7.5	4,960	0	0
WHITECAP RESOURCES INC.	CC	13-05-067-08W6	В	05-21-067-08W6	S	57930	3	FG	69.0	5.60	7.5	4,960	0	0
WHITECAP RESOURCES INC.	-	05-21-067-08W6	S	12-21-067-08W6	WE	57930	4	FG	69.0	0.79	7.5	4,960	0	0
WHITECAP RESOURCES INC.	-	15-07-067-08W6	S	13-07-067-08W6	WE	57930	5	FG	69.0	0.93	7.5	4,960	0	0
WHITECAP RESOURCES INC.	С	11-32-066-08W6	PL	05-32-066-08W6	WE	57930	6	FG	69.0	0.53	7.5	4,960	0	Р
WHITECAP RESOURCES INC.	С	13-05-067-08W6	В	08-07-067-08W6	PL	57930	7	FG	114.3	1.10	4.0	9,930	0	0
WHITECAP RESOURCES INC.	С	08-07-067-08W6	PL	05-07-067-08W6	S	57930	8	FG	114.3	1.50	4.0	9,930	0	Р

Elmworth / Wapiti - Sweet Pipelines

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
WHITECAP RESOURCES INC.		12-02-067-08W6	S	05-02-067-08W6	WE	57930	9	FG	88.9	0.55	3.2	4,960	0	Р
WHITECAP RESOURCES INC.	-	03-10-067-08W6	PL	12-02-067-08W6	S	57930	10	FG	88.9	2.05	3.2	4,960	0	Р
WHITECAP RESOURCES INC.	С	13-05-067-08W6	В	03-10-067-08W6	PL	57930	11	FG	114.3	4.40	4.0	4,960	0	Р
WHITECAP RESOURCES INC.	C	03-32-066-08W6	PL	07-28-066-08W6	S	57930	12	FG	69.0	2.69	7.5	4,960	0	Р
WHITECAP RESOURCES INC.	C	05-07-067-08W6	S	13-07-067-08W6	WE	61217	1	NG	114.3	1.04	6.0	24,820	0	Р
WHITECAP SWEET DISCONTINUED														
WHITECAP RESOURCES INC.	-	05-30-068-06W6	BE	05-19-068-06W6	BE	30748	1	SW	88.9	2.07	4.0	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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated Other: Wall=Wall Thickness OD=Outside Diameter

Bus: 403-266-0767 Whitecap Resources Head Office Fax: 403-266-6975

Courier / Mailing Address: 3800, 525 - 8 Avenue SW

Calgary, AB T2P 1G1

FACILITY & FIELD CONTACTS

KARR FIELD

Area Superintendent Lead Operator

HSE Field Advisor

CALGARY OFFICE

Operations Engineer

Manager Production **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.

OPERATIONS SUMMARY

The Karr field consists of sweet oil wells, pipelines and facilities located within the M.D. of Greenview. The Karr 16-12-66-04 W6M Battery is equipped with separators, a treater, a compressor, a fuel gas separator, a generator and storage tanks for fluid. There is also a camp trailer with a sea-can for storage, back-up diesel generation and a sewage storage tank. Oil is pumped into the pipeline and water is trucked off location. The natural gas is sent to CNRL Karr Creek for further processing and sales.

EPZ Information

The maximum expected H₂S concentration for the wells and pipelines is 0.5ppm (through the 16-12-66-04 W6M battery); however, there is no EPZ within the field.

On-Site Storage 16-12 site storage includes:

Oil Tank 750 bbl 750 bbl Emulsion Water Tank 750 bbl 13-01 site storage includes:

4 Oil Tank

Closest Urban Centre

The City of Grande Prairie is located approximately 65 km north of the Karr field and has a population of +/- 63,166.

Hydrology

There are various waterbodies located within the Karr field including Smoky River and a few other unnamed streams and lakes.

Highways

No major highways run through the Karr field.

Site Access

Refer to the following pages for access maps and directions. Various locations are gated and locked - Operators have a the key to access. Poor (muddy) driving conditions can occur with rain/snow.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment

Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, vehicle emergency tool kit, first aid kit, roadblock kit, 4-head monitor, hand held gas detector, and cell phone. Additional equipment is located at 16-12-66-04 W6M battery including first aid kit,

AED, SCBA, roadblock kit and spill response equipment.

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 and the secondary communication is by two-way radios. The following radio-controlled roads are in the

Freq. 171.915 D Road Freq. 158.940 Pit Road Canfor 2000 Road Freq. 170.700

Roadblock Kits

Each operator carries one roadblock kit. Roadblock kits contain the following: stop signs, safety vest, flashlight(s) and a flashing beacon. There is an eyewash station, triangle reflector, and ignition kit located at Karr 16-12-66-04 W6M. 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

AREA USERS & TIE-INS

Note: All numbers, unless otherwise indicated, are 24 hours

800-465-9239
877-431-5716
866-377-7110
866-221-2984
866-712-5553

* There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.

Canadian National Railway 800-465-9239

ır	a	р	p	e	rs	

 4660.0		
Trapper ID	Name	Emergenc

Guides & Outfitters - Wildlife Management Unit (WMU) # 356

Company	Name	Emergency

No grazing leases have been identified within the Karr field.

Forestry Management Units & Agreements

G15 - Canadian Forest Products 780-831-6488

Natural Protected Areas

No natural protected areas have been identified within the Karr field

LEAD AGENCIES & PRIORITY CONTACTS

Note: All numbers, unless otherwise indicated, are 24 hours.

Alberta Energy Regulator (AER) Grande Prairie / High Level Field Centre	;	800-222-6514*
Wildfire Reporting * One call number for regulatory agency, Alberta Environn	nent, Spill	
Sustainable Resource Development (lands, fish, forest, v Canada.	vildlife) &	Environment
M.D. of Greenview		866-524-7608
Alberta Health Services - Z5 North		844-755-1788
Alberta Emergency Management (AEMA) - Northwest		866-618-2362
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		
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

Inquiries

From Cell Phone

Pacific Region

Meteorological Services

Environment & Climate Change Canada

Department of Fisheries and Oceans Canada (DFO)

1-888-CAN-UTEC

Admin: 613-992-4624

(226-8832)

780-951-8907

604-666-0384

EMERGENCY SERVICES

١	RCMP		911
١	Grande Prairie		780-830-5701
	Fire Departments Municipal District of Greenview No.16 Valleyview		911
	Ambulance Grande Prairie Air Ambulance (STARS)		911 888-888-4567
	, ,		000-000-4307
	Hospitals Queen Elizabeth II Hospital - Grande Prairie		780-538-7100
١	Alberta Poison and Drug Information Service		800-332-1414
	Alberta One-Call	www.albe	800-242-3447 rtaonecall.com
١	Reception Centres		
١	Four Points by Sheraton		587-771-1300
١	6702 106 Street , Grande Prairie, AB	Fax:	587-771-130
١	Holiday Inn - Conference Ctr.		780-402-6886
١	9816 107 Street, Grande Prairie, AB	Fax:	780-402-6835

SUPPORT SERVICES

	Note: All Hullibers, ul	liess offierwise fruicateu, are 24 i	iouis.	
	Mobile Air Monitoring*			
	Firemaster Oilfield Services - Centr	ral Dispatch		877-342-3473
	Trojan Safety Services - Grande Pr	rairie .		780-567-3440
	Bravo Target Safety - Central Disp			866-513-3779
	HSE Integrated - Central Dispatch			888-346-8260
	* Due to response time, dispatch	mobile air monitoring at	a Level	
	Response time is expected to be app			
	3.5 hours from Fort St. John , BC.	, ,		,
	Oilfield Fire Fighting / Safety Contr	actors		
	HSE Integrated - Central Dispatch			888-346-8260
	Superior Fire Control - Grande Prai	irie		587-298-5444
	Bravo Target Safety - Central Disp	atch		866-513-3779
	Well Control Specialists			
	Firemaster Oilfield Services - Centr	ral Disnatch		877-342-3473
	Capstone Blowout Recovery - Cen			866-347-3911
	Superior Fire Control - Grande Prai			587-298-5444
	Bravo Target Safety - Central Disp			866-513-3779
	0 , 1			000 313 3777
	Emergency Response Managemen	IL		402 212 2222
	H ₂ Safety Services Inc Calgary			403-212-2332
	Toll Free			888-216-2332
	Air Traffic Control NAV Canada			866-992-7433
	Transportation			
	Northern Express - Grande Prairie			780-926-0808
	Golden Arrow Motor Coaches - Ce	ntral Dispatch		877-447-1538
	Helicopter Companies (Day Flying Onl	v)		
	Synergy Aviation - Grande Prairie	y)		780-750-4994
	Canadian Helicopters - Grande Pra	nirie		780-429-6900
	Highland Helicopters - Grande Prai			780-539-3112
	Spill Response			
	SWAT Consulting Inc.			866-610-7928
	ŭ			
	WCSS - Zone 6 - Coop T*			866-541-8888
	Regional Custodian: Clean Harbo	ors		780-532-4331
			Cell:	780-897-0065
	Equipment Location	Equipment Summary		
	9601 - 156 Avenue	1 OSCAR (Semi-Truck)		
	Grande Prairie, AB	1 Winter OSCAR (3/4-tor	ı truck wi	ith 2 ⁵ / ₁₆ " ball
		hitch)		II I II I. I. I. I. I.
	Transment Contact Class Hasha	2 Workboats (1/2-ton true	CK WITH 2"	ball nitch)
	Transport: Contact - Clean Harbor			
	Coop Custodian: CNRL Chinchag	ja Gas Plant		780-836-3364
	Fauinment Legation	Faulament Cummeru		Ext. 25
	Equipment Location CNRL Chinchaga Gas Plant	Equipment Summary	Con	
	01-24-96-05 W6M	i zu Skiu-illounteu Sea	-Call	
	Transport: Silvertip Oilfield Service	00		780-836-3792
	' '			100-030-3192
ı	*See website for more info (http://www	w.wcss.ab.ca).		
1				

RESIDENT INFORMATION

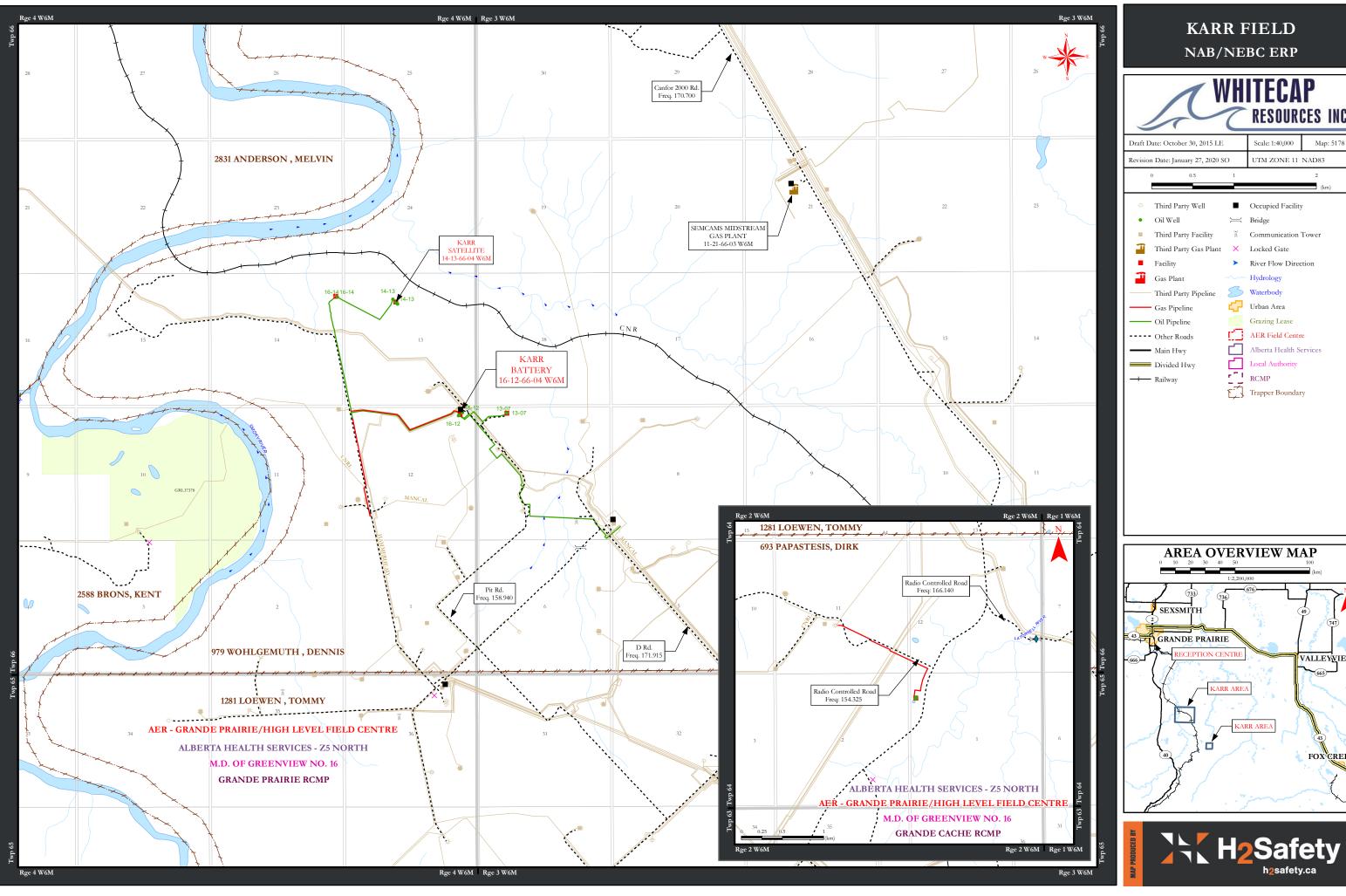
Resident Information has not been gathered for this field. In the event of an incident, assign Rovers to patrol the area.

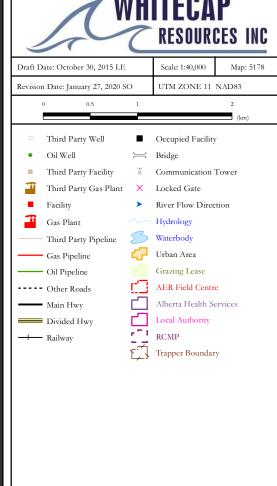


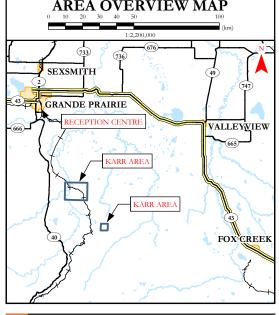
March 2020

www.h2safetv.ca











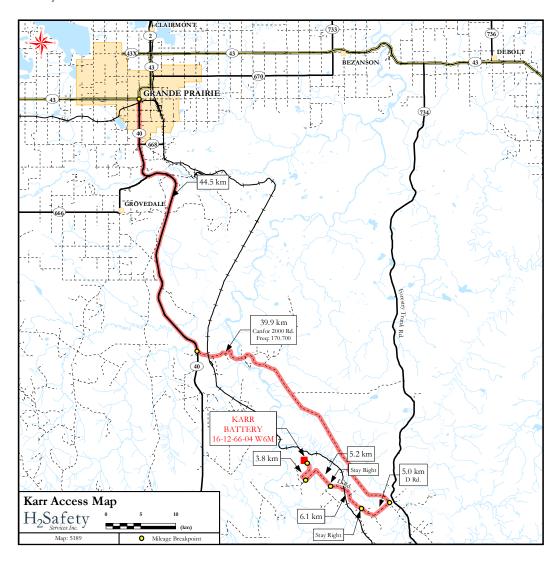


Karr Site Access

DIRECTIONS TO THE KARR 16-12-66-04 W6M BATTERY

From the intersection of Highway 43 and Highway 40 in Grande Prairie, Alberta:

- Travel south on Highway 40 for 44.5 km to turnoff for Canfor Rd. 2000 Freq: 170.700 (Rd. will curve east and then south again before reaching the Canfor turn off).
- Turn left (east) onto Canfor Rd. 2000 Freq: 170.700 and travel southeast 39.9 km.
- Turn right (southwest) onto D Rd. and travel 5.0 km.
- Stay right to keep on D Rd. and continue straight (northwest) 6.1 km.
- Stay right to keep on D Rd. and continue straight (northwest) 5.2 km.
- Turn right (north) onto the Access Rd. and travel 3.8 km to access the Karr 16-12-66-04 W6M Battery.



Karr - 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)
			WHITECAP OPERA	TING						
WHITECAP RESOURCES INC.	WHITECAP KARR 13-01-064-02W6 MWPB	F50892	13-01-064-02W6	54.5133700	-118.1751846	54° 30' 48.131"	-118° 10' 30.664"	В	AC	-
WHITECAP RESOURCES INC.	WHITECAP 13-07-066-03-6	F49632	13-07-066-03W6	54.7044610	-118.4477614	54° 42' 16.059"	-118° 26' 51.941"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 14-13-066-04-6	F46922	14-13-066-04W6	54.7166268	-118.4686201	54° 42' 59.856"	-118° 28' 7.032"	S	UN	-
WHITECAP RESOURCES INC.	KARR 00/16-12-066-04W6	F46740	16-12-066-04W6	54.7043580	-118.4565799	54° 42' 15.688"	-118° 27' 23.687"	В	AC	-
WHITECAP RESOURCES INC.	WHITECAP 16-14-066-04-6	F49056	16-14-066-04W6	54.7173020	-118.4799299	54° 43' 2.287"	-118° 28' 47.747"	S	UN	-

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 WS=Water Source CT=Central Treating Plants

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed S=Suspended AC=Active

UN=Unknown NW=New RT=Retired PE=Permitted

Other: EPZ=Emergency Planning Zone

Karr - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	uwi	SURFACE LOCATION	H2S (%)	STATUS
	WHITE	CAP SWEET OP	ERATING			
WHITECAP RESOURCES INC.	WHITECAP HZ KARR 12-2-64-2	488446	100120206402W600	13-01-064-02W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 HZ KARR 12-2-64-2	489832	102120206402W600	13-01-064-02W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ KARR 13-2-64-2	488445	100130206402W600	13-01-064-02W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ 102 KARR 14-19-66-3	480763	102141906603W600	13-07-066-03W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP HZ 102 KARR 13-19-66-3	480762	102131906603W600	13-07-066-03W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 13-24-66-4	461286	100132406604W600	14-13-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 16-24-66-4	470188	100162406604W600	14-13-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 15-24-66-4	470142	100152406604W600	14-13-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 14-24-66-4	458016	100142406604W600	14-13-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 15-13-66-4	461764	100151306604W600	16-12-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 14-13-66-4	464378	100141306604W600	16-12-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 16-13-66-4	458227	100161306604W600	16-12-066-04W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP KARR 16-23-66-4	450271	100162306604W600	16-14-066-04W6	0	PUMPING OIL

LEGEND

Other: UWI=Unique Well Identifier

Karr - Sweet Pipelines

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
				WHITECAP S	WE	T OPERAT	TING							
WHITECAP RESOURCES INC.	-	13-12-066-04W6	PL	04-12-066-04W6	PL	54714	2	NG	114.3	1.20	4.0	7,940	0	0
WHITECAP RESOURCES INC.	-	16-12-066-04W6	В	13-12-066-04W6	PL	54714	3	NG	114.3	1.52	4.0	7,940	0	0
WHITECAP RESOURCES INC.	-	14-13-066-04W6	S	16-14-066-04W6	PL	55266	1	OE	114.3	0.91	4.0	7,940	0	0
WHITECAP RESOURCES INC.	-	13-12-066-04W6	PL	16-12-066-04W6	В	55266	2	OE	114.3	1.52	4.0	7,940	0	0
WHITECAP RESOURCES INC.	-	16-14-066-04W6	WE	13-12-066-04W6	PL	55266	3	OE	114.3	1.60	4.0	7,940	0	0
WHITECAP RESOURCES INC.	CC	16-12-066-04W6	В	04-08-066-03W6	PL	57872	1	OE	114.3	3.12	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	13-07-066-03W6	S	16-12-066-04W6	В	58778	1	OE	114.3	0.60	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	13-01-064-02W6	В	06-11-064-02W6	PL	60146	1	NG	114.3	1.66	4.0	7,940	0	0

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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated Other: Wall=Wall Thickness OD=Outside Diameter Deep Basin Field Office (13-5-67-8 W6M)

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

SIMONETTE FIELD

Area Superintendent

Lead Operator

HSE Field Advisor

CALGARY OFFICE Operations Engineer

Manager Production

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.

OPERATIONS SUMMARY

The Simonette field consists of sweet oil wells, pipelines and facilities located within the M.D. of Greenview.

EPZ Information

The expected H₂S concentrations for the wells and pipelines is 0 %. Therefore there are no EPZ's within the field.

On-Site Storage

No on-site storage has been identified within the field.

Closest Urban Centre

The Town of Fox Creek is located approximately 114 km east of the field and has a population of +/- 1,971.

Hydrology

There are a various waterbodies located within the field including Deep Valley Creek and a few other unnamed streams and lakes.

Highways

No major highways run through the field.

Site Access

Refer to the following pages for access maps and directions. Various locations are gated and locked - Operators have a the key to access. Poor (muddy) driving conditions can occur with rain/snow.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment

This field is operated by Gain Energy. Operators perform regular inspections of gathering systems. It would take operators from 5 minutes up to approximately 90 minutes to arrive to site dependent on road and weather conditions between 7 am and 5 PM, and up to 3 hours during night time conditions.

Wells, pipelines and facilities are mostly monitored by SCADA and have high and low pressure shutdowns. Operators perform daily or weekly inspections depending on the type of active well.

Communications

The primary method of communication is by cellular phone and the secondary communication is by two-way radios. The following radio-controlled roads are in the

Deep Valley Road Freq. 153.335 Freq. 165.900 Unnamed Road

Roadblock Kits

There are two roadblock kits available within the operating area. These roadblock kits are stored at the 11-06 and 16-01 battery.

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

AREA USERS & TIE-INS

Oil and Gas	
Cequence Energy Ltd.*	866-764-4569
Gain Energy*	877-294-1336
Keyera Corp.	866-377-7110
XTO Energy Canada ULC	877-901-8622

* There are tie-ins between Whitecap and the starred companies. The Whitecap ERP does not cover emergencies for other operations.

No railways have been identified within the Simonette field.

rappers

l iruppois		
Trapper ID	Name	Emergen

Guides & Outfitters - Wildlife Management Unit (WMU) # 353 Company Emergency

Grazing

No grazing leases have been identified within the Simonette field.

Forestry Management Units & Agreements

780-831-6488 G15 - Canadian Forest Products

Natural Protected Areas

No natural protected areas have been identified within the Simonette field.

LEAD AGENCIES & PRIORITY CONTACTS

Note: All numbers, unless otherwise indicated, are 24 hours.									
Alberta Energy Regulator (AER) Grande Prairie / High Level Field Centre	800-222-6514*								
Wildfire Reporting	310-FIRE (3473)								
* One call number for regulatory agency, Alberta Environn Sustainable Resource Development (lands, fish, forest, v Canada.									
M.D. of Greenview	866-524-7608								
Alberta Health Services - Z5 North	844-755-1788								
Alberta Emergency Management (AEMA) - Northwest	866-618-2362								
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 Grande Prairie District	Admin: 780-538-5310								
Alberta Health and Wellness	Admin: 780-427-7164								
Alberta Occupational Health and Safety	866-415-8690								
Workers' Compensation Board	Admin: 866-922-9221								
CANUTEC Toll-Free	613-996-6666 1-888-CAN-UTEC (226-8832)								
From Cell Phone Inquiries	*666 Admin: 613-992-4624								

EMERGENCY SERVICES

780-622-3740

Fox Creek 780-827-2222 Grande Cache Fire Departments 911

Municipal District of Greenview No.16 Valleyview Ambulance 911 Fox Creek, Grande Prairie, Valleyview Air Ambulance (STARS) 888-888-4567

Hospitals Fox Creek Health Care Centre 780-622-3545 Queen Elizabeth II Hospital - Grande Prairie 780-538-7100 Valleyview Hospital 780-524-3356

Alberta Poison and Drug Information Service 800-332-1414 800-242-3447 Alberta One-Call

Reception Centres Four Points by Sheraton 587-771-1300 Fax: 587-771-1301 6702 106 Street, Grande Prairie, AB

Fox Creek Inn 116 Highway Avenue, Fox Creek, AB

Environment & Climate Change Canada

Department of Fisheries and Oceans Canada (DFO)

Meteorological Services

Pacific Region

RCMP

SUPPORT SERVICES

Mobile Air Monitoring*	
Firemaster Oilfield Services - Central Dispatch	877-342-3473
Trojan Safety Services - Grande Prairie	780-567-3440
Bravo Target Safety - Central Dispatch	866-513-3779
HSE Integrated - Central Dispatch	888-346-8260

Due to response time, dispatch mobile air monitoring at a Level 1 Emergency. Response time is expected to be approximately 2.5 hours from Grande Prairie, AB and 4.5 hours from Fort St. John , BC.

Oilfield Fire Fighting / Safety Contractors

Official field ighting / Safety Contractors	
HSE Integrated - Central Dispatch	888-346-8260
Superior Fire Control - Grande Prairie	587-298-5444
Bravo Target Safety - Central Dispatch	866-513-3779
Well Control Specialists	
Firemaster Oilfield Services - Central Dispatch	877-342-3473
Capstone Blowout Recovery - Central Dispatch	866-347-3911
Superior Fire Control - Grande Prairie	587-298-5444
Bravo Target Safety - Central Dispatch	866-513-3779
Emergency Response Management	
H ₂ Safety Services Inc Calgary	403-212-2332
Toll Free	888-216-2332

Air Traffic Control NAV Canada 866-992-7433 Transportation

Northern Express - Grande Prairie 780-926-0808 877-447-1538 Golden Arrow Motor Coaches - Central Dispatch Helicopter Companies (Day Flying Only)

Synergy Aviation - Grande Prairie 780-750-4994 Canadian Helicopters - Grande Prairie 780-429-6900 Highland Helicopters - Grande Prairie 780-539-3112

Spill Response SWAT Consulting Inc. 866-610-7928 WCSS - Zone 6 - COOP E* 866-541-8888

COOP Custodian 1: Dwayne Jones, Pembina Pipelines Cell: 780-524-8877

Office: 780-524-3392 Ext: 2844

Equipment Summary Equipment Location Pembina Valleyview Pump Station 120' Sea-Can (Bed Truck)

12-10-69-22 W5M COOP Custodian 2:

780-951-8907

604-666-0384

911

www.albertaonecall.com

780-622-3821

Michael Doerksen, SemCAMS ULC Cell: 780-622-6274 Office: 780-622-6250

Equipment Location **Equipment Summary** Fox Creek - SemCAMS Kaybob 1 20' Sea-Can (Bed Truck) Amalgamated Gas Plant

14-01-62-20 W5M *See website for more info (http://www.wcss.ab.ca).

RESIDENT INFORMATION

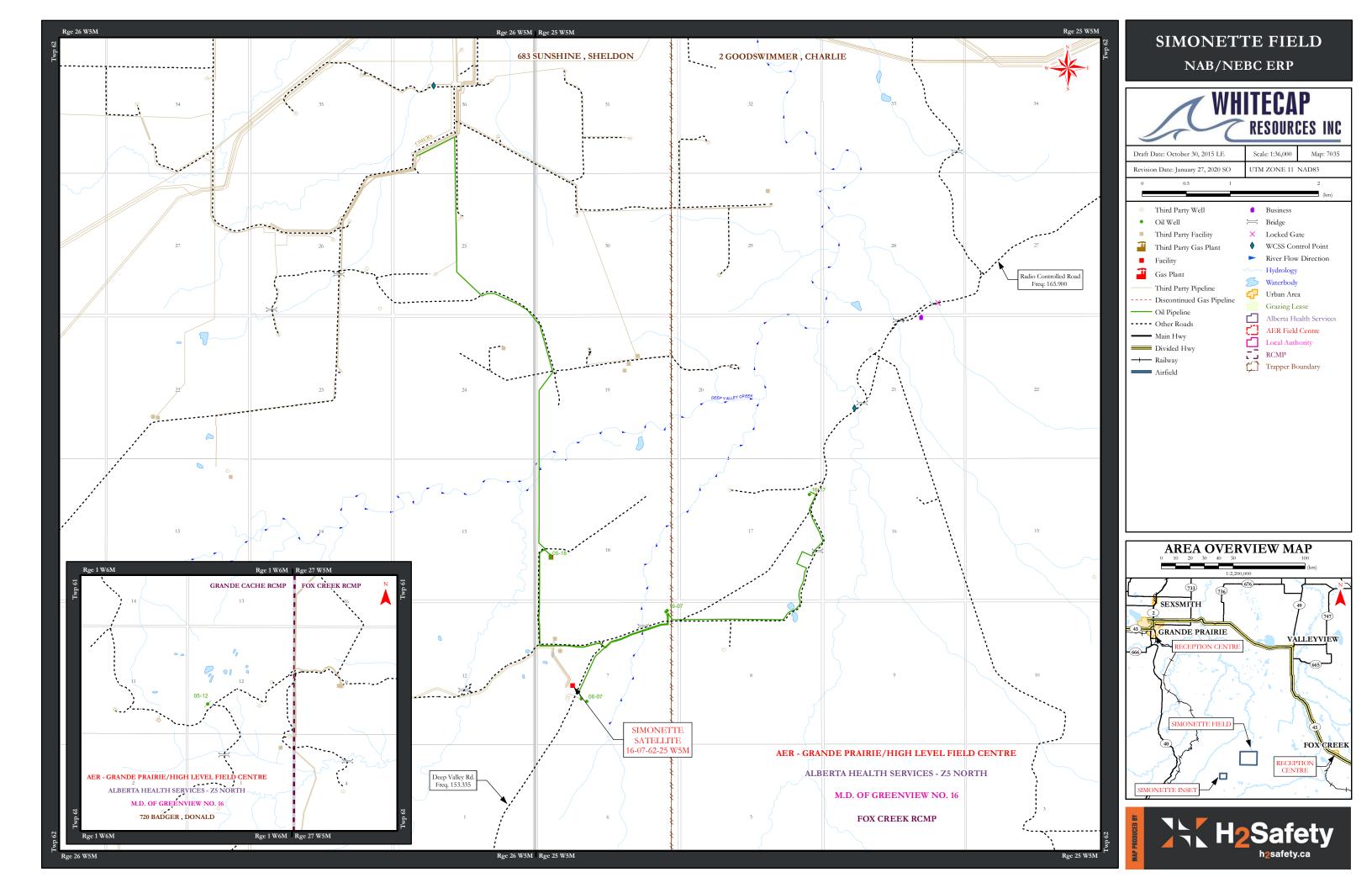
Resident Information has not been gathered for this field. In the event of an incident, assign Rovers to patrol the area.



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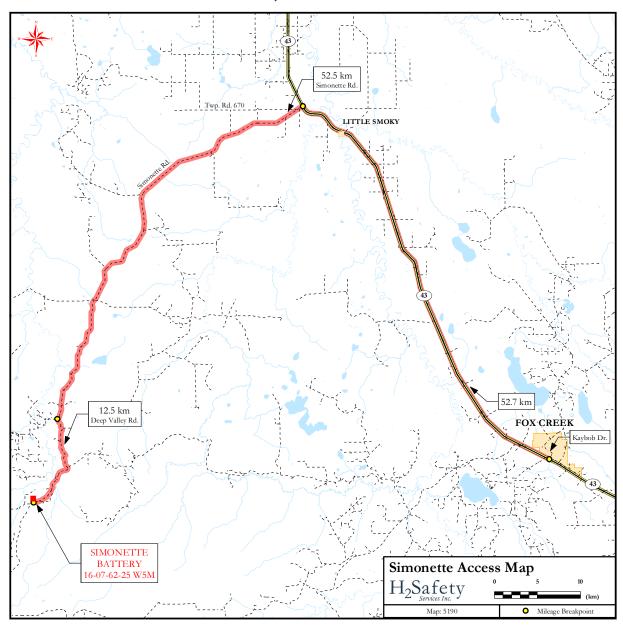


Simonette Site Access

DIRECTIONS TO THE SIMONETTE 16-07-62-25 W5M BATTERY

From the intersection of Highway 43 and Kaybob Drive in Fox Creek, Alberta:

- Travel northwest on Highway 43 for 52.7 km to the intersection of Simonette Rd.
- Turn left (southwest) onto Simonette Rd. and travel 52.5 km. Simonette Rd. will become Deep Valley Rd.
- Turn right (southwest) and continue straight to stay on Deep Valley Rd. and travel 12.5 km to access the Simonette 16-07-62-25 W5M Battery.



Simonette - 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)
WHITECAP OPERATING										
WHITECAP RESOURCES INC.	WHITECAP 05-18-062-25-5	F49514	05-18-062-25W5	54.3604551	-117.7484373	54° 21' 37.638"	-117° 44' 54.374"	S	UN	-
WHITECAP RESOURCES INC.	WHITECAP 06-07-062-25-5	F48385	06-07-062-25W5	54.3473711	-117.7446883	54° 20' 50.535"	-117° 44' 40.877"	S	UN	-
WHITECAP SUSPENDED										
WHITECAP RESOURCES INC.	SIMONETTE 16-07-062-25W5	F47069	16-07-062-25W5	54.3548134	-117.7281690	54° 21' 17.328"	-117° 43' 41.408"	В	S	

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 WS=Water Source CT=Central Treating Plants

Status: A=Abandoned D=Discontinued N=Not Constructed/Approved O=Operating P=To Be Constructed S=Suspended AC=Active

UN=Unknown NW=New RT=Retired PE=Permitted

Other: EPZ=Emergency Planning Zone

Simonette - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	uwi	SURFACE LOCATION	H2S (%)	STATUS			
	WHITECAP	SWEET OPERA	TING						
WHITECAP RESOURCES INC. WHITECAP HZ SIMON 4-13-62-26 480519 100041306226W500 05-18-062-25W5 0 PUM									
WHITECAP RESOURCES INC.	WHITECAP SIMON 5-13-62-26	472239	100051306226W500	05-18-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP HZ SIMON 12-13-62-26	480520	100121306226W500	05-18-062-25W5	0	FLOWING OIL			
WHITECAP RESOURCES INC.	WHITECAP SIMON 13-18-62-25	462782	100131806225W500	06-07-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP SIMON 14-18-62-25	473825	100141806225W500	06-07-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP SIMON 16-18-62-25	438918	102161806225W500	16-07-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP SIMON 15-18-62-25	474301	100151806225W500	16-07-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP SIMON 10-6-62-25	471118	100100606225W500	16-07-062-25W5	0	PUMPING OIL			
WHITECAP RESOURCES INC.	WHITECAP HZ WAHIGAN 9-15-62-25	477927	100091506225W500	16-17-062-25W5	0	FLOWING OIL			
	WHITECAP	WEET SUSPE	NDED						
WHITECAP RESOURCES INC.	WHITECAP HZ SMOKY 4-11-61-1	477446	100041106101W600	05-12-061-01W6	0	SUSPENDED OIL			

LEGEND

Other: UWI=Unique Well Identifier

Simonette - Sweet Pipelines

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
				WHITECAP S	SWEE	T OPERAT	ING							
WHITECAP RESOURCES INC.	-	06-07-062-25W5	S	11-07-062-25W5	PL	55881	1	OE	114.3	0.66	4.0	9,930	0	0
WHITECAP RESOURCES INC.	CC	11-07-062-25W5	PL	16-07-062-25W5	В	55881	2	OE	114.3	0.90	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	05-18-062-25W5	WE	11-07-062-25W5	PL	55881	3	OE	114.3	1.97	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	11-07-062-25W5	PL	05-18-062-25W5	PL	55881	4	OE	168.3	1.97	4.8	9,930	0	0
WHITECAP RESOURCES INC.	CC	05-18-062-25W5	PL	12-19-062-25W5	PL	55881	5	OE	168.3	2.19	4.8	9,930	0	0
WHITECAP RESOURCES INC.	CC	12-19-062-25W5	PL	04-36-062-26W5	PL	55881	6	OE	168.3	3.71	4.8	9,930	0	0
WHITECAP RESOURCES INC.	CC	16-07-062-25W5	В	11-07-062-25W5	PL	55881	7	OE	114.3	0.90	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	09-17-062-25W5	PL	16-07-062-25W5	WE	55881	8	OE	88.9	3.14	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	16-17-062-25W5	WE	09-17-062-25W5	PL	55881	9	OE	88.9	0.08	3.2	9,930	0	0
				WHITECAP SV	NEET	DISCONTI	NUED							
WHITECAP RESOURCES INC.	-	09-17-062-25W5	BE	16-17-062-25W5	BE	53871	2	NG	88.9	0.16	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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated

Other: Wall=Wall Thickness OD=Outside Diameter

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

VALHALLA FIELD

Area Superintendent Lead Operator

HSE Field Advisor

CALGARY OFFICE
Operations Engineer

Manager Production

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.

OPERATIONS SUMMARY

The Valhalla / Progress field consists of sweet and sour oil and gas wells and pipelines located within the counties of Grande Prairie and Saddle Hills. Sweet and sour production from the field flows to the 03-27-75-09 W6M Injection Plant and Battery for processing. From there, sour gas production is sent to Encana Sexsmith 04-08-75-07 W6M Gas Plant for further processing and distribution. Sour gas wells in the Valhalla Area are equipped with pressure-activated Emergency Shut Down (ESD) valves, which are sensitized by pressure changes.

EPZ Information

The maximum expected H_2S concentration for the wells is 14.3 %, with a maximum calculated EPZ of 160 m.

The maximum expected $\rm H_2S$ concentration for the pipeline is 15.5 %, with a maximum calculated EPZ of 2450 m.

On-Site Storage

03-27 site storage includes:

3 Oil Tanks 2000 bbl 3 Water Tanks 1000 bbl

1 Slop Tank 400 bbl 14-21, 08-16, 08-17, 03-03, 09-16 site storage includes:

1 Oil Tank 400 b 02/08-23 site storage includes:

1 Oil Tank 1000 bbl 16-06, 16-07, 16-08 site storage includes: 1 Oil Tank 500 bbl

Closest Urban Centr

The Town of Beaverlodge is located approximately 36 km south of the Valhalla / Progress field and has a population of +/- 2,465.

Hydrolog

There are a various waterbodies located within the fields including Bear River, Boone Lake, Boone Creek, Webber Creek and various other unnamed streams and lakes.

Highways

No major highways run through the fields.

Site Access

Refer to the following pages for access maps and directions. Various locations are gated and locked - Operators have a the key to access. Poor (muddy) driving conditions can occur with rain/snow.

SAFETY EQUIPMENT

Operator / Truck Safety Equipment

Each operator carries the following equipment in their vehicles: ERP truck book, 20 lb fire extinguisher, vehicle emergency tool kit, first aid kit, SCBA, roadblock kit, 4-head monitor, hand held gas detector, and cell phone.

Extra emergency contacts are located at the entrance to the Valhalla 03-27-75-09 W6M Injection Plant & Battery, including: 2 SCBA, (1 spare tank), and roadblock kit, safety vests, hard hats, gloves and fire blankets.

Notification

Operators attend to the facility, wells and gathering system 7 days a week. Facilities are equipped with SCADA callout systems 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 and the secondary communication is by two-way radios. The following radio controlled roads are in the area:

Northern Valhalla Roads Freq. 169.545 Boone Creek Road Freq. 169.545 Eastern Valhalla Roads Freq. 158.940 Spring Lake Road Freq. 169.545 Roadblock Kits / Ignition Kits

Each operator carries one roadblock kit. There are additional roadblock kits located in the Valhalla Field at 02-30-75-09, and the Valhalla Field Office. Roadblock kits contain the following: stop signs, safety vest, flashlight(s) and a flashing beacon. There is a flare gun located at the Valhalla 03-27-75-09 Battery. 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

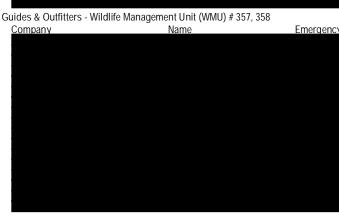
lote: All numbers, unless otherwise indicated, are 24 hou

C)il and Gas			
	Advantage Oil & Gas	866-266-5623	Longshore Resources*	855-919-3623
	Alliance Pipeline	800-884-8811	NuVista Energy Ltd.	403-538-8500
	Anegada Öil	844-772-1141	Ovintiv*	403-645-3333
	ATCO Gas & Pipelines	877-496-9380	Pembina Pipeline*	800-360-4706
	Barnwell of Canada	403-531-1560	Storm Resources*	866-307-9312
	Chinook Energy	877-365-1619	Surge Energy*	403-261-7355
	CNRL	888-878-3700	TAQA North*	800-216-8062
	Cenovus Energy	877-458-8080	Tidewater Midstream*	866-544-9875
	Insignia Energy Ltd.	866-313-8765	TC Energy	888-982-7222
	Kelt Exploration	855-845-9787	Tyrannex Energy Ltd.	888-264-2704

* 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 Valhalla / Progress field.

Trappers
Trapper ID Name Emergency



Forestry Management Agreements (FMA)

Weyerhaeuser Company Ltd. 780-723-6963 G11, G12, G16, Go1

Grazing Leases

Grazing ID Name Emergency

LEAD AGENCIES & PRIORITY CONTACTS

Note: All numbers unless otherwise indicated, are 24 hour

Alberta Energy Regulator (AER) Grande Prairie / High Level Field Centre		800-222-6514*
Wildfire Reporting		310-FIRE (3473)
*One call number for regulatory agency, Alberta Environment tainable Resource Development (lands, fish, forest, wildlife) Climate Change.	nt, Spill Re	porting & Sus- (
County of Grande Prairie No. 1		780-832-6625
Saddle Hills County		780-864-3760
Alberta Health Services - Z5 North		844-755-1788
Alberta Emergency Management (AEMA) - Northwest		866-618-2362
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		
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	1-8	88-CAN-UTEC
		(226-8832)

Admin: 613-992-4624

780-951-8907

604-666-0384

EMERGENCY SERVICES

Note: All numbers, unless otherwise indicated, are 24 hours

From Cell Phone Inquiries

Pacific Region

Meteorological Services

Environment & Climate Change Canada

Department of Fisheries and Oceans Canada (DFO)

RCMP	911
Beaverlodge	780-354-2485
Spirit River	780-864-3533
Fire Departments	911
County of Grande Prairie Regional Fire Service	780-532-9727
Ambulance	911
Beaverlodge, Grande Prairie	855-618-7833
Air Ambulance (STARS)	888-888-4567
Hospitals	
Beaverlodge Municipal Hospital	780-354-2136
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	
Beaverlodge Motor Inn	780-354-2291
116 - 6A Street, Box 419, Beaverlodge, AB	Fax: 780-354-2225
Hampton Inn & Suites by Hilton	780-538-0722
10405 117 St, Grande Prairie, AB	Fax: 780-538-0767
Paradise Inn & Conference Centre	780-539-6000
11201 - 100 Avenue, Grande Prairie, AB	Fax: 780-532-1961

SUPPORT SERVICES

ote: All numbers, unless otherwise indicated, are 24 h

Note: All numbers, unless otherwise indicated, are 24 hours.	
Mobile Air Monitoring* Firemaster Oilfield Services - Grande Prairie Trojan Safety Services - Grande Prairie HSE Integrated - Grande Prairie Bravo Target Safety - Red Deer * Due to response time, dispatch mobile air monitoring at a Leve Response time is expected to be approximately 1.5 hours from Grande 6.5 hours from Red Deer, AB.	
Oilfield Fire Fighting / Safety Contractors HSE Integrated - Grande Prairie Superior Fire Control - Grande Prairie Bravo Target Safety - Red Deer	888-346-8260 877-882-0035 866-513-3779
Well Control Specialists Firemaster Oilfield Services - Grande Prairie HSE Integrated - Grande Prairie Superior Fire Control - Grande Prairie Bravo Target Safety - Red Deer	877-342-3473 888-346-8260 877-882-0035 866-513-3779
Ignition Services Firemaster Oilfield Services - Grande Prairie Safety Boss - Fort St. John	877-342-3473 800-882-4967
Emergency Response Management H ₂ Safety Services Inc Calgary Toll Free	403-212-2332 888-216-2332
Air Traffic Control NAV Canada	866-992-7433
Bus Transportation	

Golden Arrow Motor Coaches - Central Dispatch

Helicopter Companies (Day Flying Only)

Synergy Aviation - Grande Prairie
Canadian Helicopters - Grande Prairie
Highland Helicopters - Grande Prairie

Spill Response
SWAT Consulting Inc.

877-447-1538

780-750-4994
780-750-4994
780-429-6900
780-539-3112

Spill Response
SWAT Consulting Inc.

WCSS - Zone 6 - Coop T* 866-541-8888

Regional Custodian: Clean Harbors Admin: 780-532-4331

Cell: 780-897-0065

Equipment Summary
1 OSCAR (Semi-Truck)

780-926-0808

9601 - 156 Avenue 1 OSCAR (Semi-Truck)
Grande Prairie, AB 1 Winter OSCAR (3/4-ton truck with 2 5/16" ball

hitch)

2 Workboats (1/2-ton truck with 2" ball hitch) Wildlife Trailer (1/2-ton truck with 2" ball hitch)

Transport: Contact Clean Harbors

Equipment Location

Northern Express - Grande Prairie

Coop Custodian: CNRL Chinchaga Gas Plant 780-836-3364

Equipment Location Equipment Summary
CNRL Chinchaga Gas Plant 1 20' ISRU Sea-can (Winch tractor/trailer)

1-24-96-05 WoM 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 34 surface developments within the Valhalla field. This includes 24 occupied residences, 5 vacant residences, 1 hall and 4 manned oil & gas facilities.

Schools

Hythe Regional School Admin: 780-356-3934
Laglace School Admin: 780-568-2430
Valhalla Community School Admin: 780-356-2370
School Rus Transportation

School Bus Transportation
Peace Wapiti School Division No. 76
Valhalla School Foundation
Admin: 403-356-2370

*For Resident IDs, names and phone numbers, refer to the "Confidential Information Tab" following this site section.



March 2020

www.h2safetv.ca



Valhalla Site Access

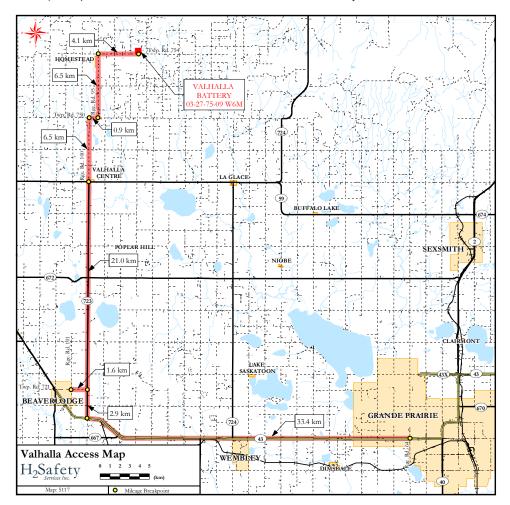
DIRECTIONS TO THE VALHALLA 03-27-75-09 W6M BATTERY

From the intersection of Highway 43 and Range Rd. 64 in Grande Prairie, Alberta:

- Travel west on Highway 43 for 33.4 km.
- Turn right (north) onto Highway 723 for 23.9 km.
- Continue north onto Range Rd. 100 and travel 6.5 km.
- Turn right (east) onto Township Rd. 750 and travel 0.9 km.
- Turn left (north) onto Range Rd. 95 and travel 6.5 km.
- Turn right (east) onto Township Rd. 754 and travel 4.1 km.
- Turn left (north) to reach the Valhalla 03-27-75-09 W6M Battery.

From the intersection of Township Rd. 721 and Range Rd. 101 in Beaverlodge, Alberta:

- Travel east on Township Rd. 721 for 1.6 km to Highway 723.
- Turn left (north) on Highway 723 and travel 21.0 km.
- Continue north on Range Rd. 100 and travel 6.5 km.
- Turn right (east) on Township Rd. 750 and travel 0.9 km.
- Turn left (north) on Range Rd. 95 and travel 6.5 km.
- Turn right (east) on Township Rd. 754 and travel 4.1 km.
- Turn left (north) to reach the Valhalla 03-27-75-09 W6M Battery.



Valhalla / Progress - 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)
			WHITECAP OPERATI	NG						
WHITECAP RESOURCES INC.	WHITECAP 01-16-076-09-6	F21624	01-16-076-09W6	55.5806368	-119.3241572	55° 34' 50.292"	-119° 19' 26.965"	В	UN	0.4
WHITECAP RESOURCES INC.	VALHALLA 3-27 WATER SOURCE BATTERY	N/A	01-27-075-09W6	55.5233159	-119.2994319	55° 31' 23.937"	-119° 17' 57.954"	В	AC	-
WHITECAP RESOURCES INC.	AEC VALHALLA	N/A	01-29-075-09W6	55.5201998	-119.3503931	55° 31' 12.719"	-119° 21' 1.415"	GS	AC	-
WHITECAP RESOURCES INC.	WHITECAP 01-30-075-08-6	F27446	01-30-075-08W6	55.5213051	-119.2210405	55° 31' 16.698"	-119° 13' 15.745"	В	UN	-
WHITECAP RESOURCES INC.	WHITECAP 02-24-076-09-6	F26852	02-24-076-09W6	55.5942219	-119.2547018		-119° 15' 16.926"	В	UN	-
WHITECAP RESOURCES INC.	AEC WEST VALHALLA 3-27	N/A	02-27-075-09W6	55.5221707	-119.3072587	55° 31' 19.814"	-119° 18' 26.131"	IP	AC	-
WHITECAP RESOURCES INC.	WHITECAP 02-29-075-08-6	F27200	02-29-075-08W6	55.5204167	-119.1964736	55° 31' 13.500"	-119° 11' 47.304"	В	UN	0.72
WHITECAP RESOURCES INC.	CONWEST VALHALLA 2-30	F21621	02-30-075-09W6	55.5213373	-119.3804103	55° 31' 16.814"	-119° 22' 49.477"	В	AC	0.39
WHITECAP RESOURCES INC.	WHITECAP 03-25-075-10-6	F31741	03-25-075-10W6	55.5201557	-119.4105796	55° 31' 12.560"	-119° 24' 38.086"	В	UN	-
WHITECAP RESOURCES INC.	WHITECAP 03-26-075-10-6	N/A	03-26-075-10W6	55.5206403	-119.4372299	55° 31' 14.305"	-119° 26' 14.027"	LH	0	0.94
WHITECAP RESOURCES INC.	VALHALLA 3-27 TERMINAL	N/A	03-27-075-09W6	55.5221707	-119.3072587	55° 31' 19.814"	-119° 18' 26.131"	TL	AC	1.93 ⁽¹⁾
WHITECAP RESOURCES INC.	WHITECAP 03-27-075-09-6	F15720	03-27-075-09W6	55.5221707	-119.3072587	55° 31' 19.814"	-119° 18' 26.131"	В	0	1.93 ⁽²⁾
WHITECAP RESOURCES INC.	WHITECAP 04-02-079-11-6	F31255	04-02-079-11W6	55.8125589	-119.6124160	55° 48' 45.212"	-119° 36' 44.697"	В	UN	-
WHITECAP RESOURCES INC.	AEC VALHALLA 4-10	F22197	04-10-076-09W6	55.5650123	-119.3157818	55° 33' 54.044"	-119° 18' 56.814"	В	AC	0.63
WHITECAP RESOURCES INC.	TRILOGY HZ VALHALLA 01-33-075-10W6	F43443	04-35-075-10W6	55.5353136	-119.4473224	55° 32' 7.128"	-119° 26' 50.360"	В	AC	0.94 (2)
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-27	F15858	05-04-076-09W6	55.5541627	-119.3416382	55° 33' 14.985"	-119° 20' 29.897"	В	AC	0.57
WHITECAP RESOURCES INC.	WHITECAP 05-08-076-09-6	F21618	05-08-076-09W6			55° 34' 5.296"	-119° 21' 56.024"	В	UN	0.25
WHITECAP RESOURCES INC.	BARRICK 06-11-077-09W6 BATTERY	F27857	06-11-077-09W6	55 6558861	-119.2834157	55° 39' 21.189"	-119° 17' 0.296"	В	AC	0.22 (3)
WHITECAP RESOURCES INC.	WHITECAP 06-25-075-09-6	F40809	06-25-075-09W6		-119.2592300		-119° 15' 33.228"	S	UN	0.57
WHITECAP RESOURCES INC.	BP CANADA ENERGY COMPANY	F15759	06-25-075-10W6	55.5250399	-119.4126142	55° 31' 30.143"	-119° 24' 45.411"	CS	AC	-
WHITECAP RESOURCES INC.	WHITECAP 06-36-075-09-6	F29843	06-36-075-09W6	55.5387390	-119.2604439	55° 32' 19.460"	-119° 15' 37.598"	S	0	-
WHITECAP RESOURCES INC.	BP CANADA ENERGY COMPANY	F15751	07-13-075-10W6	55.4959488	-119.4062307	55° 29' 45.415"	-119° 24' 22.430"	CS	AC	-
WHITECAP RESOURCES INC.	WHITECAP 08-20-075-08-6	F29313	08-20-075-08W6				-119° 11' 43.139"	В	UN	0.68
WHITECAP RESOURCES INC.	VALHALLA 13-36-075-09W6 GAS BATTERY	F30325	09-29-075-08W6	55.5277952	-119.1950098	55° 31' 40.062"	-119° 11' 42.035"	В	AC	0.72
WHITECAP RESOURCES INC.	WHITECAP 10-20-075-08-6	F21616	10-20-075-08W6	55.5150734	-119.2030703	55° 30' 54.264"	-119° 12' 11.053"	В	UN	0.7
WHITECAP RESOURCES INC.	WHITECAP 13-05-075-08-6	F26090	13-05-075-08W6	55.4740721	-119.2098908	55° 28' 26.659"	-119° 12' 35.606"	В	UN	-
WHITECAP RESOURCES INC.	WHITECAP RESOURCES INC.	F42683	13-35-075-09W6	55.5443370	-119.2907548	55° 32' 39.613"	-119° 17' 26.717"	CS	AC	1.22
WHITECAP RESOURCES INC.	WHITECAP 14-21-075-09-6	F32153	14-21-075-09W6	55.5189275	-119.3332124	55° 31' 8.139"	-119° 19' 59.564"	В	UN	0.7
WHITECAP RESOURCES INC.	WHITECAP 15-23-075-10-6	F21619	15-23-075-10W6	55.5170365	-119.4289627	55° 31' 1.331"	-119° 25' 44.265"	S	0	0.25
WHITECAP RESOURCES INC.	WHITECAP 16-07-077-09-6	F31499	16-07-077-09W6	55.6621809	-119.3746979	55° 39' 43.851"	-119° 22' 28.912"	В	UN	-
WHITECAP RESOURCES INC.	WHITECAP 16-19-075-08-6	F26028	16-19-075-08W6	55.5160021	-119.2167168	55° 30' 57.607"	-119° 13' 0.180"	В	UN	0.7
WHITECAP RESOURCES INC.	WHITECAP 16-29-075-09-6	F15736	16-29-075-09W6	55.5311639	-119.3489046	55° 31' 52.190"	-119° 20' 56.056"	S	0	0.57
			WHITECAP SUSPEND	ED						
WHITECAP RESOURCES INC.	CONWEST VALHALLA 1-29	N/A	01-29-075-09W6	55.5201998	-119.3503931	55° 31' 12.719"	-119° 21' 1.415"	В	S	
WHITECAP RESOURCES INC.	VALHALLA 04-21-075-09W6	F43988	04-21-075-09W6	55.5055509	-119.3381049	55° 30' 19.983"	-119° 20' 17.177"	В	S	
WHITECAP RESOURCES INC.	IMPERIAL VALHALLA 8-20	N/A	08-20-075-09W6	55.5099422	-119.3503740	55° 30' 35.791"	-119° 21' 1.346"	В	S	
WHITECAP RESOURCES INC.	CONWEST VALHALLA 15-23	F15737	15-23-075-10W6	55.5176487	-119.4320882	55° 31' 3.535"	-119° 25' 55.517"	В	S	
WHITECAP RESOURCES INC.	MORRISON VALHALLA 16-03	F26054	16-03-076-09W6	55.5614000	-119.2964644	55° 33' 41.040"	-119° 17' 47.271"	В	S	
WHITECAP RESOURCES INC.	16-20-75-9W6 SOURCE WATER BATTERY	N/A	16-20-075-09W6	55.5201998	-119.3503931	55° 31' 12.719"	-119° 21' 1.415"	В	S	
WHITECAP RESOURCES INC.	AECOG VALHALLA 16-22	F15757	16-22-075-10W6	55.5176631	-119.4515836	55° 31' 3.587"	-119° 27' 5.700"	В	S	

⁽¹⁾ The largest EPZ associated with this facility is of a sour third party Encana pipeline (PL 27659-14) calculated at expected conditions.

LEGEND

 Eacility:
 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
 WS=Water Source
 CT=Central Treating Plants

 Status:
 A=Abandoned
 D=Discontinued
 N=Not Constructed/Approved
 O=Operating
 P=To Be Constructed
 S=Suspended
 AC=Active

 UN=Unknown
 NW=New
 RT=Retired
 PE=Permitted

Other: EPZ=Emergency Planning Zone

⁽²⁾ The largest EPZ associated with this facility is of a sour third party Insignia Energy pipeline (PL 53473-1) calculated at licensed conditions.

⁽³⁾ The largest EPZ associated with this facility is of a sour third party Longshore pipeline (PL 39038-1) calculated at licensed conditions.

Valhalla / Progress - Sour Wells

				011054.05		H ₂ S				0570401/	
LICENSEE	WELLNAME	NO.	UWI	SURFACE LOCATION	H2S (%)	RELEASE RATE (m3/s)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
			WHITECAP SOU	R OPERATING		(1113/5)					
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-16-76-9	176855	100011607609W600		3.34	0.0014	0.02	0	0.02	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 13-25-75-9	434151	100132507509W600		4.12	0.0042	0.04	0.02	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-25-75-9	433582	100152507509W600		9.58	0.0220	0.15	0.06	0.13	Level 1	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-5-76-9	451496	100010507609W600		1.60	0.0008	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-32-75-9	445364	100153207509W600		1.20	0.0014	0.02	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-3-76-9	283931	100020307609W600		3.56	0.0018	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-7-76-9	213376	100020707609W600	02-07-076-09W6	1.32	0.0003	0.01	0	0	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-26-75-9	176718	100022607509W600		9.22	0.0012	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 2-29-75-8	267506		02-29-075-08W6	9.50	0.0091	0.07	0.03	0.06	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-26-75-10	317938	100032607510W600	03-26-075-10W6	0.98	0.0002	0.01	0	0	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-27-75-9	165391	102062707509W600	03-27-075-09W6	6.63	0.0006	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-22-75-10	454876	100062207510W600		0.27	0.0002	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-32-75-9	208310	100033207509W600	03-32-075-09W6	1.24	0.0004	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-26-75-9	188417		04-26-075-09W6	9.35	0.0016	0.03	0	0.03	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-27-75-9	190895	100042707509W600	04-27-075-09W6	8.60	0.0012	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-28-75-9	462755	100012807509W600		5.49	0.0005	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-29-75-9	422670	102082907509W600	04-32-075-09W6	1.74	0.0003	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-36-75-9	241081	100043607509W602	04-36-075-09W6	5.86	0.0019	0.03	0	0.03	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 5-26-75-9	420194	100052607509W600	05-26-075-09W6	7.60	0.0014	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-28-75-9	443902	103152807509W600		1.69	0.0028	0.05	0.02	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-33-75-9	442281	100153307509W600	05-33-075-09W6	1.71	0.0021	0.03	0.01	0.03	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 5-35-75-9	170148	100053507509W600	05-35-075-09W6	4.16	0.0039	0.04	0.02	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-3-76-9	220530	100060307609W600	06-03-076-09W6	2.61	0.0010	0.02	0.02	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-13-75-9	171259	102061307509W600		1.90	0.0011	0.02	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-33-75-9	188965	102063307509W600	06-33-075-09W6	1.46	0.0004	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-34-75-9	189845	102063407509W600	06-34-075-09W6	3.99	0.0015	0.02	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 7-2-76-9	192531		07-02-076-09W6	4.00	0.0100	0.1	0.04	0.09	Level 1	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP 103 VALHALLA 8-19-75-8	150967	103081907508W600		10.47	0.0031	0.05	0.01	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 7-26-75-9	201382	100072607509W600		9.90	0.0011	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-33-75-9	436942		07-28-075-09W6	3.15	0.0033	0.04	0.01	0.03	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-33-75-9	164029	100063307509W600		3.81	0.0012	0.02	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 8-20-75-8	288118	102082007508W600		10.73		0.07	0.02	0.06	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-27-75-9	172646	100082707509W600	08-27-075-09W6	10.41	0.0007	0.02	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-28-75-9	169886	100082807509W600	08-28-075-09W6	4.33	0.0003	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-29-75-9	193270		08-29-075-09W6	1.80	0.0003	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-34-75-9	189943	100083407509W602	08-34-075-09W6	3.30	0.0041	0.04	0.02	0.04	Level na	COMMINGLED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-34-75-9	189943	100083407509W600	08-34-075-09W6	3.31	0.0042	0.04	0.02	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 103 VALHALLA 9-17-75-8	339412	103091707508W600	09-17-075-08W6	10.71	0.0068	0.07	0.02	0.06	Level na	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-27-75-9	189937		09-27-075-09W6	4.66	0.0011	0.02	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 9-29-75-8	292487	102092907508W600	09-29-075-08W6	9.70	0.0039	0.05	0.01	0.05	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-26-75-10	210910	100102607510W600	10-26-075-10W6	1.07	0.0011	0.02	0	0.02	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-27-75-9	188419	100102707509W600	10-27-075-09W6	6.15	0.0013	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-28-75-9	195163	100102807509W600		3.78	0.0008	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 11-7-76-9	324995	100110707609W600	11-07-076-09W6	1.20	0.0003	0.01	0	0	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 10-20-75-8	212928		11-20-075-08W6	10.67	0.0024	0.04	0.01	0.04	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 11-25-75-10	219369	100112507510W600	11-25-075-10W6	0.49	0.0001	0.01	0	0	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 11-29-75-9	209474	100112907509W600		1.71	0.0003	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 11-32-75-9	321495	100113207509W600	11-32-075-09W6	1.41	0.0002	0.01	0	0	Level na	PUMPING OIL

Valhalla / Progress - Sour Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	H ₂ S RELEASE RATE (m3/s)	EPZ (km)	IIZ (km)	PAZ (km)	SETBACK LEVEL	STATUS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 13-36-75-9	219766	100133607509W600	11-36-075-09W6	3.87	0.0084	0.09	0.04	0.08	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 12-19-75-8	203719	102121907508W600	12-19-075-08W6	9.38	0.0066	0.07	0.02	0.05	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 12-35-75-9	188322	100123507509W600	12-35-075-09W6	6.32	0.0015	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-35-75-9	428601	100013507509W600	12-35-075-09W6	3.87	0.0098	0.1	0.04	0.08	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 13-35-75-9	190646	100133507509W600	13-35-075-09W6	3.81	0.0007	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-4-76-9	209889	100140407609W600	14-04-076-09W6	1.73	0.0016	0.02	0	0.02	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 13-13-75-9	333406	102131307509W600	14-13-075-09W6	6.24	0.0024	0.04	0.01	0.03	Level na	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP 103 VALHALLA 14-17-75-8	151470	103141707508W600	14-17-075-08W6	10.47	0.0036	0.05	0.01	0.04	Level na	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-26-75-9	435825	102092607509W600	14-24-075-09W6	1.60	0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-24-75-9	187716	100142407509W600	14-24-075-09W6	7.54	0.0034	0.05	0.01	0.04	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-27-75-9	186662	100142707509W600	14-27-075-09W6	4.63	0.0005	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-28-75-9	169294	100142807509W600	14-28-075-09W6	2.74	0.0004	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-34-75-9	188310	100143407509W600	14-34-075-09W6	2.38	0.0018	0.03	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-20-75-9	192053	100152007509W600	15-20-075-09W6	0.48	0.0002	0.01	0	0	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-23-75-10	219698	100152307510W600	15-23-075-10W6	0.58	0.0004	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-34-75-9	453519	102083407509W600	15-26-075-09W6	0.21	0.0009	0.02	0	0.02	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-28-75-9	160892	100152807509W600	15-28-075-09W6	3.67	0.0006	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-29-75-9	193978	100152907509W600	15-29-075-09W6	3.42	0.0011	0.02	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 15-30-75-9	339570	102153007509W600	15-30-075-09W6	0.46	0.0002	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-3-76-9	161476	100160307609W600	16-03-076-09W6	3.60	0.0077	0.09	0.04	0.08	Level na	GAS LIFT OIL
WHITECAP RESOURCES INC.	WHITECAP 103 VALHALLA 16-19-75-8	255484	103161907508W600	16-19-075-08W6	10.60	0.0074	0.07	0.03	0.06	Level na	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-21-75-9	304846	100162107509W600	16-21-075-09W6	4.23	0.0009	0.01	0	0.01	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-22-75-10	229215	100162207510W600	16-22-075-10W6	0.37	0.0001	0.01	0	0	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 15-26-75-9	437027	100152607509W600	16-23-075-09W6	13.45	0.0071	0.08	0.03	0.07	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-24-75-9	187568	100162407509W600	16-24-075-09W6	9.10	0.0042	0.06	0.02	0.05	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 11-26-75-9	431202	100112607509W600	16-27-075-09W6	5.71	0.0069	0.06	0.03	0.05	Level na	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-30-75-8	171975	100163007508W600	16-30-075-08W6	8.94	0.0006	0.02	0	0.01	Level na	FLOWING GAS
			WHITECAP SOU	R SUSPENDED							
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-30-75-8	272260	100013007508W600	01-30-075-08W6	9.95						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-33-75-9	187225	100013307509W600	01-33-075-09W6	2.78						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-30-75-9	163095	100023007509W600	02-30-075-09W6	0.68						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-24-76-9	259637	100022407609W605	03-24-076-09W6	4.92						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-25-75-10	303795	100032507510W600	03-25-075-10W6	0.50						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-4-76-9	210111	100040407609W600	04-04-076-09W6	1.43						SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-10-76-9	190204	100041007609W600	04-10-076-09W6	8.00						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 5-28-75-9	421661	100052807509W600	04-28-075-09W6	0.02						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-34-75-9	189941	100043407509W600	04-34-075-09W6	1.34						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP 104 VALHALLA 8-19-75-8	332541	104081907508W600	08-19-075-08W6	10.16						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 8-24-75-9	152398	102082407509W600	08-24-075-09W6	7.72						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-30-75-9	208176	100093007509W600	09-30-075-09W6	1.30						SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-28-76-10	193567	100102807610W600	10-28-076-10W6	0.03						SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-26-75-9	189847	100142607509W600	14-26-075-09W6	1.63						SUSPENDED OIL

LEGEND

Other: UWI=Unique Well Identifier EPZ=Emergency Planning Zone IIZ=Initial Isolation Zone PAZ=Protective Action Zone

Valhalla / Progress - Sour Gas Pipelines

														DIR 56											
LICENSEE	WATER	FROM	то			LICENS	E LINE	LINE	UNIQUE	INCLUDES	SUB	OD	SEGMENT LENGTH	WALL	LICENSED PRESSURE		LICENSED	EXPECTED	TEMP	7	RELEASE	EPZ	IIZ PA	Z SETBACK	STATUS
EIGENGEE	CROSS			VAL	VE VAL	E NO.	NO.	SEGMENT MODIFIER	LINE#	UNIQUE #	COL	(mm)	(km)	(mm)	(kPa)	(kPa)	H2S (%)	H2S (%)	(°C)	_		(km)	(km) (km) LEVEL	OTATOO
																					(m3)				
WILLITECAD DESCUIDEES INC	10.00.0	7E 10\MC \ME	10 00 075 10/4/6	וח		2450			71111=GAI	SOUR OPE		1442	0.05	4.0	0.700	2.500	F 00	2.00	F	0.71	2226	0.05	0.00 0.0	1 Javal 2	
WHITECAR RESOURCES INC.			10-26-075-10W6 08-30-075-09W6			3150		-	2	1 to 13	SG 1		0.05 3.68	4.0	8,700	2,500	5.00	2.00	5	0.71	2336 2336	0.25		1 Level 3 3 Level 3	
WHITECAP RESOURCES INC.							_	-		1 to 13	SG 1	168.3			8,700	2,500	5.00	2.00	5						
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.			08-30-075-09W6			31508 31508		+	3	1 to 13 1 to 13	SG 1		4.63 1.66	4.0	8,100 8,100	2,500 2,500	5.00	2.00	5	0.72 0.72	2140 2140	0.39	0.12 0.3	3 Level 3	0
WHITECAP RESOURCES INC.			10-26-075-10W6		-	3150	_	-	5	1 to 13	SG 1		1.46	3.2	8,700	2,500	5.00	2.00 2.00	5 5	0.72	2336	0.25	0.08 0.2		
WHITECAP RESOURCES INC.			11-25-075-10W6		-	3150		+	6	1 to 13	SG 1		0.18	3.2	8,700	2,500	5.00	2.00	5	0.71	2336	0.25	0.08 0.2	_	0
WHITECAP RESOURCES INC.			02-26-075-10W6			3150		-	7	1 to 13	SG 1		0.16	3.2	8,700	2,500	5.00	2.00	5	0.71	2336	0.25	0.08 0.2	_	0
WHITECAP RESOURCES INC.			10-06-076-09W6		-	3150	_	•	8	1 to 13			0.07	8.6	8,100	2,500	5.00	2.00	5	0.71	2140	0.23	0.08 0.2	_	
WHITECAP RESOURCES INC.			15-23-075-10W6			31508			9	1 to 13			1.65	3.2		2,500	5.00	2.00	5	0.72	2336	0.23		7 Level 3	
WHITECAP RESOURCES INC.			07-07-076-09W6		- -	31508		•	10	1 to 13		114.3	0.32	3.2	8,100	2,500	5.00	2.00	5	0.71	2140	0.19	0.08 0.1		0
WHITECAP RESOURCES INC.			08-30-075-09W6			5176		-	11	1 to 13		168.3	0.95	4.0	8,700	2,500	11.50	2.00	5	0.72	5622	0.39		3 Level 3	
WHITEGAP RESOURCES INC.			08-30-075-09W6			5176		ļ	12	1 to 13		168.3	2.11	4.0	8,700	2,500	11.50	2.00	5	0.64	5622	0.39	0.12 0.3		0
WHITECAP RESOURCES INC.			03-27-075-09W6		ES				13	1 to 13		168.3	4.90	4.0	8,700	2,500	11.50	2.00	5	0.64	5622	0.39		3 Level 3	
WHITECAP RESOURCES INC.			16-03-076-09W6		-	3249		-	14	14 to 18		168.3	1.40	4.0	8,500	2,500	8.00	4.50	5	0.69	1267	0.63		4 Level 2	
WHITECAP RESOURCES INC.			16-03-076-09W6		_	3249			15	14 to 18			2.36	3.2	8,500	2,500	8.00	4.50	5	0.69	1267	0.4	0.13 0.3		0
WHITECAP RESOURCES INC.			07-02-076-09W6		_	3249	_	-	16	14 to 18		168.3	1.63	4.0	8,500	2,500	8.00	4.50	5	0.69	1267	0.63	0.2 0.5	_	0
WHITECAP RESOURCES INC.			04-10-076-09W6		_	3249		_	17	14 to 18			1.86	4.0	8,500	2,500	8.00	4.50	5	0.69	1267	0.4	0.13 0.3	_	0
WHITECAP RESOURCES INC.			13-35-075-09W6		ES			-	18	14 to 18		168.3	1.45	4.0	8,500	2,500	8.00	4.50	5	0.69	1267	0.63	0.2 0.5		0
WHITECAP RESOURCES INC.			05-35-075-09W6					_	19	19	SG 1		0.97	4.0	8,500	2,500	11.50	11.50	5	0.66	302	1.2		2 Level 2	
WHITECAP RESOURCES INC.			02-29-075-08W6		-	5176		-	20	20 to 27			0.88	3.2	8,700	2,500	11.50	11.50	5	0.7	2685	0.72		1 Level 3	
WHITECAP RESOURCES INC.			10-20-075-08W6		-	5176	_	-	21	20 to 27			0.97	3.2	8,700	2,500	11.50	10.00	5	0.69	2685	0.66		7 Level 3	Ō
WHITECAP RESOURCES INC.			10-20-075-08W6		-	5176	_	-	22	20 to 27			0.67	3.2	8,700	2,500	11.50	11.00	5	0.65	2871	0.68		8 Level 3	0
WHITECAP RESOURCES INC.			16-30-075-08W6		-	4834	_	-	23	20 to 27			1.08	4.0	4,650	2,500	6.50	6.50	5	0.83	693	0.51		4 Level 2	Ō
WHITECAP RESOURCES INC.			16-30-075-08W6		-	5176	_	-	24	20 to 27		114.3	2.43	3.2	8,700	2,500	11.50	11.50	5	0.65	2871	0.7	0.23 0.6	_	0
WHITECAP RESOURCES INC.			16-30-075-08W6		-	5176		-	25	20 to 27		114.3	2.00	3.2	8,700	2,500	11.50	11.50	5	0.65	2871	0.7	0.23 0.6		0
WHITECAP RESOURCES INC.	CC 16-30-07	75-08W6 WE	11-36-075-09W6	PL -	-	3763	1 5	-	26	20 to 27		168.3	2.97	4.0	8,500	2,500	11.50	11.50	5	0.66	2794	1.22	0.37 1.0	4 Level 3	0
WHITECAP RESOURCES INC.	- 11-36-07	75-09W6 PL	13-35-075-09W6	PL -	ES	3763	1 4	-	27	20 to 27	SG 1	168.3	2.39	4.0	8,500	2,500	11.50	11.50	5	0.66	2794	1.22	0.37 1.0	4 Level 3	0
WHITECAP RESOURCES INC.	CC 06-11-07	77-09W6 WE	16-32-076-09W6	PL -	-	35539) 1	-	28	28	NG 1	114.3	5.19	3.2	9,930	2,500	0.20	0.20	5	na	na	0.05	0.01 0.0	4 na	0
WHITECAP RESOURCES INC.	- 05-35-07	75-09W6 PL	16-27-075-09W6	PL ES	D ES	3763	1 2	-	29	29	SG 1	168.3	1.30	4.0	8,500	2,500	11.50	11.50	5	0.66	404	1.21	0.35 1.0	3 Level 2	0
WHITECAP RESOURCES INC.	- 16-27-07	75-09W6 PL	03-27-075-09W6	B ES	D -	3763	1 3	-	30	30,31	SG 1	168.3	1.19	4.0	8,500	2,500	11.50	11.50	5	0.66	386	1.21	0.35 1.0	3 Level 2	0
WHITECAP RESOURCES INC.	- 03-27-07	75-09W6 PL	03-27-075-09W6	6 B -	-	5176	3	-	31	30,31	SG 1	168.3	0.05	4.0	8,700	2,500	11.50	11.50	5	0.65	396	1.21	0.35 1.0	2 Level 2	0
WHITECAP RESOURCES INC.	- 14-21-07	75-09W6 B	03-27-075-09W6	6 B -	-	3763	1 6	-	32	32	SG 1	114.3	1.90	3.2	8,500	2,500	11.50	11.50	5	0.66	268	0.7	0.21 0.6	Level 1	0
WHITECAP RESOURCES INC.	CC 03-27-07	75-09W6 B	08-24-075-09W6	B PL -	-	59369	2	-	33	33 to 35	SG 1	114.3	4.54	3.2	4,960	4,960	14.30	14.30	5	0.74	703	1.24	0.39 1.0	6 Level 2	0
WHITECAP RESOURCES INC.	- 08-24-07	75-09W6 PL	14-13-075-09W6	B PL -	-	59369	1	-	34	33 to 35	SG 1	114.3	1.03	3.2	4,960	4,960	14.30	14.30	5	0.74	703	1.24	0.39 1.0	6 Level 2	0
WHITECAP RESOURCES INC.	CC 14-13-07	75-09W6 WE	06-18-075-08W6	B PL -	-	5175	1	-	35	33 to 35	SG 1	114.3	2.22	4.0	5,700	5,700	15.50	7.00	5	0.68	909	0.88	0.28 0.7	5 Level 2	0
								WH	IITECAP S	OUR DISCO															
WHITECAP RESOURCES INC.			11-25-075-10W6			31508		-	36	36	SG 1			3.2	0	0	5.00	5.00							D
WHITECAP RESOURCES INC.			06-12-079-11W6		-	0000		-	37	37	SG 1		3.09	4.0	0	0	2.00	2.00							D
WHITECAP RESOURCES INC.			13-35-075-09W6		-	0.00		-	38	38			6.78	3.2	0	0	11.50	11.50							D
WHITECAP RESOURCES INC.			04-02-079-11W6			4554		-	39	39	NG		0.16	3.2	0	0	0.56	0.56							D
WHITECAP RESOURCES INC.			16-06-075-10W6		-	46670		-	40	40	SG 1			3.2	0	0	6.88	6.88							D
WHITECAP RESOURCES INC.			02-30-075-08W6		-	5176			41	41	SG 1		0.05	3.2	0	0	11.50	11.50							D
WHITECAP RESOURCES INC.	- 08-19-07	75-08W6 BE	16-19-075-08W6	BE -	-	5176	11	-	42	42	SG 1	114.3	0.65	3.2	0	0	11.50	11.50							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 RE=Reservoir

<u>Valve</u>: 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 NL=NGL

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 X=Not AER Regulated 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

Valhalla / Progress - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	то		END VALVE	LICENSE NO.	LINE NO.		E INCLUDES		OID	SEGMENT LENGTH	WALL (mm)	PRESSURE		LICENSED H2S (%)	EXPECTED H2S (%)	GAS FLOW RATE (1000	LIQUID FLOW RATE	GLR	TEMP (°C)	z		EPZ IIZ (km) (km		
								MODIFIER				(km)		(kPa)	(kPa)			m3/d)	(m3/d)				(m3)			
									WH			PERATING	,													
WHITECAP RESOURCES INC.	-	15-28-075-09W6 WE		S -	ESD	28545	1	- 1	1		88.9	0.10	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	5	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	07-33-075-09W6 WE		S -	ESD	28545	2	- <u>2</u>	2	OE		1.18	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	<u>5</u>	0.74	55	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	+ -	14-28-075-09W6 WE 08-28-075-09W6 WE		S - B -	ESD ESD	28545 28545	7	- 3	3		88.9 88.9	0.73 1.01	4.8 3.2	4,970 4,970	4,970 4,970	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	5 5	0.74	31 47	0.57 0.2 0.57 0.2		Level 1 O
WHITEGAT RESOURCES INC.	-	03-27-075-09W6 WE		В -	ESD	28545	8	- 5	5		88.9	0.30	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	14	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-			B ESD	ESD	28545	11	- 6	6		114.3	1.19	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	95	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-	08-27-075-09W6 WE		В -	ESD	28545	13	- 7	7		88.9	0.58	4.8	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	25	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	CC	02-26-075-09W6 WE		В -	ESD	28545	15	- 8	8		88.9	1.80	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	84	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	14-24-075-09W6 WE 14-24-075-09W6 WE		S -	-	28545	94	- 9	9 to 15		88.9	0.60	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	1110	0.57 0.2		Level 2 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	CC	16-23-075-09W6 WE		_	-	28545 28545	95 97	- 10 - 11	9 to 15		88.9 88.9	0.60 1.30	4.0	4,970 9,930	4,970 9,930	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	5 5	0.74	1110 2205	0.57 0.23 0.57 0.23		Level 2 O
WHITECAP RESOURCES INC.	-	01-25-075-09W6 WE		_	-	31372	3	- 12	9 to 15		88.9	1.02	4.8	4,970	4,970	11.00	11.00	140.00	290.00	482.76	5	0.05	845	0.48 0.1		Level 2 O
WHITECAP RESOURCES INC.	-		06-25-075-09W6	S -	-	31372	4	- 13	9 to 15		88.9	1.02	4.8	4,970	4,970	11.00	11.00	140.00	290.00	482.76	5	0.75	845	0.48 0.1		Level 2 O
WHITECAP RESOURCES INC.	-	06-25-075-09W6 S	04-25-075-09W6 F		-	30541	3	- 14	9 to 15	OE		0.24	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	2205	0.57 0.23	3 0.49	Level 3 O
WHITECAP RESOURCES INC.	CC			B ESD	ESD	28545	16	- 15	9 to 15		168.3	4.93	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	2205	0.57 0.2		Level 3 O
WHITECAP RESOURCES INC.	CC	06-13-075-09W6 WE		가 -	ESD	28545	18	- 16	16		114.3	0.70	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	111	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- -	14-27-075-09W6 WE 04-27-075-09W6 WE		5 -	ESD ESD	28545 28545	20	- 17 - 18	17 18		88.9 88.9	0.80	3.2	4,970 4,970	4,970 4,970	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	<u>5</u>	0.74	37 28	0.57 0.2 0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	+-	04-26-075-09W6 WE		B -	ESD	28545	24	- 19	19	OE		1.12	4.8	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	48	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	10-27-075-09W6 WE		S -	ESD	28545	26	- 20	20		88.9	0.97	5.5	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	40	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-	09-27-075-09W6 WE	16-27-075-09W6	S -	ESD	28545	27	- 21	21	OE		0.54	5.5	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	22	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-	06-34-075-09W6 WE		S -	ESD	28545	31	- 22	22		88.9	1.46	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	130	0.57 0.23	3 0.48	Level 1 O
WHITECAP RESOURCES INC.	-		05-35-075-09W6	S -	ESD	28545	32	- 23	23			0.77	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	69	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-	16-26-075-09W6 WE			-	28545	48	- 24	24,25		88.9	0.56	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	101	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	CC	14-26-075-09W6 WE 10-28-075-09W6 WE	15-27-075-09W6	S -	ESD ESD	28545 28545	33	- <u>25</u> - <u>26</u>	24,25 26	OE	88.9	1.70 0.49	4.0	4,970 4,970	4,970 4,970	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	<u>5</u>	0.74	101 22	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	 -	14-24-075-09W6 WE		S -	ESD	28545	38	- 27	27		88.9	1.21	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	108	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-		08-24-075-09W6	S -	ESD	28545	39	- 28	28		88.9	1.02	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	91	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	12-19-075-08W6 WE	08-24-075-09W6	S -	ESD	28545	40	- 29	29	OE	88.9	1.08	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	96	0.57 0.2	3 0.48	Level 1 O
WHITECAP RESOURCES INC.	CC		15-28-075-09W6 F	PL ESD	ESD	28545	43	- 30	30		114.3	1.50	3.2	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	120	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	15-29-075-09W6 WE		S -	ESD	28545	44	- 31	31		88.9	0.56	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	25	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	CC	08-29-075-09W6 WE 15-28-075-09W6 S	16-29-075-09W6	5 - B ESD	ESD ESD	28545 28545	47 51	- 32 - 33	32 33		88.9 168.3	1.00	4.0	4,970 9,930	4,970 9,930	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	5 5	0.74	45 664	0.57 0.2 0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	+ -	12-35-075-09W6 WE		S -	ESD	28545	52	- 34	34		88.9	0.64	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	<u>5</u>	0.63	57	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	14-34-075-09W6 WE		S -	ESD	28545	53	- 35	35		88.9	2.46	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	219	0.57 0.23		Level 1 O
WHITECAP RESOURCES INC.	-		15-28-075-09W6 F	L ESD	ESD	28545	54	- 36	36		168.3	2.68	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	472	0.57 0.2	3 0.49	Level 2 O
WHITECAP RESOURCES INC.	-	06-33-075-09W6 WE		S -	ESD	28545	55	- 37	37		88.9	1.81	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	81	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	-	05-04-076-09W6 WE		S -	ESD	28545	56	- 38	38		88.9	0.10	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	4	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	- -	15-30-075-09W6 WE 09-30-075-09W6 S		S -	- ESD	28545 28545	81 59	- 39 - 40	39,40 39.40	OE OE		0.97 1.52	4.8	4,970 4.970	4,970 4.970	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	5	0.74	110 110	0.57 0.2		Level 1 O
WHITECAP RESOURCES INC.	+-	11-29-075-09W6 WE		-		28545		- 40	41		88.9	0.99	4.0	4,970	4,970	14.30	14.30		290.00			0.74		0.57 0.2		
WHITECAP RESOURCES INC.		03-32-075-09W6 WE				28545		- 42			88.9		4.0	4,970	4,970	14.30	14.30	140.00		482.76		0.74		0.57 0.2		
WHITECAP RESOURCES INC.	-	16-29-075-09W6 PL	16-29-075-09W6	S -	-	28545	63	- 43	43 to 45	OE	88.9	0.15	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	74	0.57 0.23		
WHITECAP RESOURCES INC.		16-29-075-09W6 PL			-	28545		- 44	43 to 45			0.15	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74		0.57 0.23		
WHITECAP RESOURCES INC.	CC	04-32-075-09W6 WE				28545		- 45	43 to 45			1.36	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	74	0.57 0.23		
WHITECAP RESOURCES INC.		07-26-075-09W6 WE			ESD	28545	66	- 46 - 47	46 47,48		88.9	1.78 1.64	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	80 260	0.57 0.2 0.5 0.2		
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.		04-36-075-09W6 WE 11-36-075-09W6 WE			- ESD	35923 28545	68	- 47 - 48	47,48		88.9 88.9	2.39	3.2	8,500 9,930	8,500 9,930	11.50 14.30	11.50 14.30	140.00 140.00	290.00 290.00	482.76 482.76	<u>5</u> 5	0.66	373	0.57 0.2		
WHITEGAT RESOURCES INC.		13-35-075-09W6 WE			-	28545		- 49	49,50		88.9	0.43	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63		0.57 0.2		
WHITECAP RESOURCES INC.	-	12-35-075-09W6 PL	05-35-075-09W6	s -	ESD	28545		- 50	49,50		88.9	0.67	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63		0.57 0.2		
WHITECAP RESOURCES INC.	CC	06-03-076-09W6 WE			-	28545		- 51	51,52		88.9	2.19	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	265	0.57 0.23		
WHITECAP RESOURCES INC.	-	12-35-075-09W6 PL				28545		- 52	51,52		88.9	0.67	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63	265	0.57 0.23		
WHITECAP RESOURCES INC.	-	12-35-075-09W6 WE				28545		- 53	53		88.9	0.67	3.2	9,930	9,930	14.30	14.30	140.00	290.00	482.76		0.63		0.57 0.2		
WHITECAP RESOURCES INC. WHITECAP RESOURCES INC.	-	02-03-076-09W6 WE 16-21-075-09W6 WE				28545 28545		- 54 - 55	54 55		88.9 88.9	2.14 1.50	4.0 3.2	9,930 4,970	9,930 4,970	14.30 14.30	14.30 14.30	140.00 140.00	290.00 290.00	482.76 482.76	5 5	0.63		0.57 0.23 0.57 0.23		
WHITECAP RESOURCES INC.	+ -	11-35-075-09W6 WE				28545		- 56	56		88.9	0.22	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.74		0.57 0.23		
WHITECAP RESOURCES INC.	† -	11-32-075-09W6 WE				28545		- 57	57		88.9	2.12	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76		0.74		0.57 0.23		
WHITECAP RESOURCES INC.	-	05-26-075-09W6 WE	10-27-075-09W6 F	PL -	-	28545	87	- 58	58,59	OE	88.9	1.03	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	52	0.57 0.2	3 0.49	Level 1 O
WHITECAP RESOURCES INC.		10-27-075-09W6 PL				28545		- 59	58,59		88.9	0.13	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76		0.74		0.57 0.23		
WHITECAP RESOURCES INC.	-	12-35-075-09W6 WE				28545		- 60	60		88.9	0.67	4.0	9,930	9,930	14.30	14.30	140.00	290.00	482.76	5	0.63		0.57 0.2		
WHITECAP RESOURCES INC.		16-27-075-09W6 WE	16-27-075-09W6	S -	ESD	28545	92	- 61	61	ÜΕ	88.9	0.42	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	19	0.57 0.2	0.49	Level 1 O

Valhalla / Progress - Sour Oil Pipelines

LICENSEE	WATER CROSS	FROM	то		END VALVE	LICENSE NO.		LINE SEGMENT MODIFIER		INCLUDES UNIQUE #	SUB	OD	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		EPZ IIZ (km) (km			STATUS
WHITECAP RESOURCES INC)	07-28-075-09W6 WE	15-28-075-09W6 S	-	ESD	28545	96	-	62	62	OE	88.9	0.92	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	41	0.57 0.2	0.49	Level 1	0
WHITECAP RESOURCES INC)	01-32-075-09W6 WE	05-33-075-09W6 PI	L -	ESD	28545	103	-	63	63	OE	88.9	1.08	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	48	0.57 0.2	3 0.49	Level 1	0
WHITECAP RESOURCES INC)	01-32-075-09W6 WE	05-33-075-09W6 PI	L -	ESD	28545	105	-	64	64	OE	88.9	1.08	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	48	0.57 0.2	3 0.49	Level 1	0
WHITECAP RESOURCES INC)	05-33-075-09W6 WE	05-04-076-09W6 S	-	-	28545	98	-	65	65 to 68	OE	88.9	1.69	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	303	0.57 0.2	3 0.49	Level 2	0
WHITECAP RESOURCES INC)	05-33-075-09W6 WE	05-04-076-09W6 S	-	-	28545	99	-	66	65 to 68	OE	88.9	1.69	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	303	0.57 0.2	3 0.49	Level 2	0
WHITECAP RESOURCES INC)	05-33-075-09W6 PL	05-04-076-09W6 S	ESD	-	28545	100	-	67	65 to 68	OE	88.9	1.69	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	303	0.57 0.2	3 0.49	Level 2	0
WHITECAP RESOURCES INC)	05-33-075-09W6 PL	05-04-076-09W6 S	ESD	-	28545	102	-	68	65 to 68	OE	88.9	1.69	4.0	4,970	4,970	14.30	14.30	140.00	290.00	482.76	5	0.74	303	0.57 0.2	3 0.49	Level 2	0
WHITECAP RESOURCES INC)	07-28-075-09W6 WE	01-28-075-09W6 PI	L -	-	28545	108	-	69	69 to 72	OE	88.9	0.53	3.2	4,960	4,960	14.30	14.30	140.00	290.00	482.76	5	0.74	155	0.57 0.2	3 0.49	Level 1	0
WHITECAP RESOURCES INC)	01-28-075-09W6 PL	04-27-075-09W6 PI	L -	-	28545	109	-	70	69 to 72	OE	88.9	0.85	3.2	4,960	4,960	14.30	14.30	140.00	290.00	482.76	5	0.74	155	0.57 0.2	0.49	Level 1	0
WHITECAP RESOURCES INC	· -	04-27-075-09W6 WE	05-27-075-09W6 PI	L -	-	28545	106	-	71	69 to 72	OE	114.3	0.14	3.2	4,960	4,960	14.30	14.30	140.00	290.00	482.76	5	0.74	155	0.57 0.2	3 0.48	Level 1	0
WHITECAP RESOURCES INC)	05-27-075-09W6 PL	03-27-075-09W6 B	3 -	ESD	28545	107	-	72	69 to 72	OE	114.3	1.00	3.2	4,960	4,960	14.30	14.30	140.00	290.00	482.76	5	0.74	155	0.57 0.2	3 0.48	Level 1	0
WHITECAP RESOURCES INC). -	13-19-078-09W6 WE	03-29-078-09W6 S	-	-	53243	1	-	73	73	OE	97.0	2.18	9.9	4,960	4,960	0.10	0.10	0.59	1.80	327.78	5	0.74	84	0.03 0.0	0.02	Level 1	0
WHITECAP RESOURCES INC)	06-24-078-10W6 WE	11-24-078-10W6 B	3 -	-	48284	1	-	74	74	OE	88.9	0.40	3.2	9,930	9,930	0.10	0.10	-	-	>1000	5	0.7	0	0.04 0	0.03	Level na	0
WHITECAP RESOURCES INC)	11-13-078-10W6 WE	04-24-079-10W6 PI	L -	-	48284	2	-	75	75	OE	88.9	0.96	3.2	9,930	9,930	0.10	0.10	-	-	>1000	5	0.7	1	0.04 0.0	0.03	Level na	0
WHITECAP RESOURCES INC)	03-27-075-10W5 WE	03-26-075-10W6 PI	L -	-	55208	1	-	76	76	OE	114.3	1.91	4.0	8,700	8,700	5.00	5.00	-	-	>1000	5	0.72	94	0.94 0.2	7 0.8	Level 1	0
										WHITE	CAP	SOUR DIS	CONTINUE	D														
WHITECAP RESOURCES INC)	15-28-075-09W6 BE	05-27-075-09W6 BE	E -	-	28545	6	-	77	77	OE	114.3	0.73	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	16-27-075-09W6 BE	16-27-075-09W6 BE	E -	-	28545	10	-	78	78	OE	88.9	0.05	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	16-27-075-09W6 BE	03-27-075-09W6 BE	E -	-	28545	12	-	79	79	OE	88.9	1.19	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC). C	07-19-075-08W6 BE	08-24-075-09W6 BE	E -	-	28545	17	-	80	80	OE	114.3	1.54	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	16-30-075-08W6 BE	07-19-075-08W6 BE	E -	-	28545	19	-	81	81	OE	88.9	2.10	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	01-33-075-09W6 BE	15-28-075-09W6 BE	E -	-	28545	28	-	82	82	OE	88.9	0.91	5.5	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	04-34-075-09W6 BE	01-33-075-09W6 BE	E -	-	28545	29	-	83	83	OE	88.9	0.57	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	01-33-075-09W6 BE	15-28-075-09W6 BE	E -	-	28545	30	-	84	84	OE	88.9	0.81	4.8	0	0	14.30	14.30										D
WHITECAP RESOURCES INC	C. CC	14-26-075-09W6 BE	16-27-075-09W6 BE	E -	-	28545	34	-	85	85	OE	88.9	1.70	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	07-28-075-09W6 BE	15-28-075-09W6 BE	E -	-	28545	36	-	86	86	OE	88.9	1.09	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	16-29-075-09W6 BE	16-29-075-09W6 BE	E -	-	28545	62	-	87	87	OE	88.9	0.15	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	16-29-075-09W6 BE	16-29-075-09W6 BE	E -	-	28545	65	-	88	88	OE	88.9	0.15	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	15-28-075-09W6 BE	08-28-075-09W6 BE	E -	-	28545	67	-	89	89	OE	88.9	0.72	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	05-08-076-09W6 BE	05-04-076-09W6 BE	E -	-	28545	76	-	90	90	OE	88.9	2.78	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	08-19-075-08W6 BE	07-19-075-08W6 BE	E -	-	28545	80	-	91	91		88.9	0.47	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	07-28-075-09W6 BE	03-28-075-09W6 BE	E -	-	28545	83	-	92	92	OE	88.9	0.28	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	04-28-075-09W6 BE	10-28-075-09W6 BE	E -	-	28545	88	-	93	93	OE	88.9	1.25	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	05-33-075-09W6 BE	05-04-076-09W6 BE	E -	-	28545	101	-	94	94	OE	88.9	1.69	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC	· -	01-32-075-09W6 BE	05-33-075-09W6 BE	E -	-	28545	104	-	95	95	OE	88.9	1.08	4.0	0	0	14.30	14.30										D
WHITECAP RESOURCES INC		06-08-075-08W6 BE			-	51762	1	-	96	96	_	114.3	1.55	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC)	13-05-075-08W6 BE	06-08-075-08W6 BE	E -	-	51762	2	-	97	97		114.3	1.20	3.2	0	0	14.30	14.30										D
WHITECAP RESOURCES INC	CC CC	04-17-075-08W6 BE	04-18-075-08W6 BE	E -	-	51762	3	-	98	98	OE	114.3	1.56	4.0	0	0	14.30	14.30										D

LEGEND

<u>Water Cross</u>: 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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated

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

Valhalla / Progress - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	STATUS
	WHITEC	AP SWEET OP	ERATING			
WHITECAP RESOURCES INC.	WHITECAP 102 HZ VALHALLA 9-16-76-9	418575	100091607609W600	01-16-076-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-28-75-9	440623	1F1012807509W600	01-28-075-09W6	0	WATER SOURCE
WHITECAP RESOURCES INC.	WHITECAP 102 HZ VALHALLA 15-28-75-9	417341	102152807509W600	01-28-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-32-75-9	445361	100163207509W600	01-32-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP HZ VALHALLA 11-27-75-9	416781	100112707509W600	01-33-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-3-76-9	283931	100020307609W602	02-03-076-09W6	0	COMMINGLED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-27-75-9	190762	100022707509W600	02-27-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-28-75-9	195337	100022807509W600	02-28-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-34-75-9	426710	100033407509W600	03-03-076-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-24-76-9	259637	100022407609W603	03-24-076-09W6	0	COMMINGLED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-24-76-9	259637	100022407609W606	03-24-076-09W6	0	COMMINGLED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-26-75-9	165907	100062607509W600	03-26-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-28-75-9	168287	102062807509W600	03-28-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 4-25-75-9	192854	100042507509W600	04-25-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-27-75-9	462798	100032707509W600	04-27-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-35-75-9	378101	100083507509W600	04-36-075-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-4-76-9	176701	100060407609W600	05-04-076-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-2-76-9	81002	100060207609W600	06-02-076-09W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	BARRICK PROGRESS 6-11-77-9	242353	100061107709W602	06-11-077-09W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-18-76-9	90945	100061807609W602	06-18-076-09W6	0	PUMPING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-25-75-9	185270	100062507509W600	06-25-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-36-75-9	186808	100063607509W600		0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 7-27-75-9	416783	102072707509W600	07-27-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP HZ VALHALLA 16-29-75-9	417825	100162907509W600	07-28-075-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA PROGRESS 7-31-76-8	143624	100073107608W602	07-31-076-08W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-5-76-9	422199	100030507609W600	07-32-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-16-75-9	104747	100081607509W600	08-16-075-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-17-75-9	109887	100081707509W600	08-17-075-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-18-75-9	124925	100081807509W602	08-18-075-09W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	BARRICK 102 VALHALLA 8-23-75-10	410008	102082307510W600	08-23-075-10W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	SURGE ENERGY LA GLACE 1-31-75-8	339078	100013107508W600	08-31-075-08W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-25-75-9	202741	100092507509W600	09-25-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-26-75-9	187762	100092607509W600	09-26-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 9-29-75-9	187636	100092907509W600	09-29-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-6-76-9	333405	100100607609W600	10-06-076-09W6	0	FLOWING GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-24-75-9	203596	100102407509W600	10-24-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 12-25-75-9	193454	100122507509W600	12-25-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 12-27-75-9	188342	100122707509W600	12-27-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 12-28-75-9	200963	100122807509W600	12-28-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-34-75-9	214359	100163407509W600	12-35-075-09W6	0	FLOWING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-21-75-9	305326	100142107509W602	14-21-075-09W6	0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-25-75-9	190043	100142507509W600	14-25-075-09W6	0	WATER INJECTOR

Valhalla / Progress - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE	H2S (%)	STATUS
		LIGENGE NO.		LOCATION	1120 (70)	
WHITECAP RESOURCES INC.	WHITECAP PROGRESS 14-36-78-10	238360	102143607810W600	14-36-078-10W6	0	DRAIN
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-6-75-9	127662	100160607509W600		0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-7-75-9	127801	100160707509W600		0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-8-75-9	126683	100160807509W600		0	PUMPING OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-26-75-9	201770		16-26-075-09W6	0	WATER INJECTOR
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-27-75-9	178038	100162707509W600	16-27-075-09W6	0	WATER INJECTOR
		AP SWEET SUS				
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-27-75-9	189327	1F1012707509W600		0	SUSPENDED WATER SOURCE
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 1-29-75-9	127428	1F1012907509W600		0	SUSPENDED WATER SOURCE
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-30-75-9	161185	1F1023007509W600		0	SUSPENDED WATER SOURCE
WHITECAP RESOURCES INC.	BARRICK VALHALLA 3-7-75-10	339246		03-07-075-10W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 2-24-76-9	259637	100022407609W604		0	SUSPENDED GAS
WHITECAP RESOURCES INC.	KI PCOUPES 4-2-79-11	227156	100040207911W600		0	SUSPENDED GAS
WHITECAP RESOURCES INC.	KI PCOUPES 4-2-79-11	227156	100040207911W602	04-02-079-11W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP GORD 5-6-79-9	242087		04-06-079-09W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	BARRICK PROGRESS 6-11-77-9	242353	100061107709W600	06-11-077-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-19-75-8	159061	102061907508W600	06-19-075-08W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	ESSO ET AL VALHALLA 6-19-75-9	102375	100061907509W600	06-19-075-09W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-33-75-9	164029	100063307509W602	07-33-075-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 8-24-75-9	152398	102082407509W602	08-24-075-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-25-75-9	161923	100082507509W602	08-25-075-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	BARRICK 102 PROGRESS 4-13-78-10	358427	102041307810W600	11-13-078-10W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 12-17-75-9	191369	102121707509W600	12-17-075-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	BARRICK PROGRESS 12-31-78-9	144947	100123107809W600	12-31-078-09W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 13-5-75-8	254882	100130507508W600	13-05-075-08W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	BARRICK VALHALLA 13-22-75-10	281138	100132207510W602	13-22-075-10W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-16-75-9	106653	100141607509W602	14-16-075-09W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-21-75-9	305326	100142107509W600	14-21-075-09W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP PROGRESS 14-36-78-10	238360	100133607810W602	14-36-078-10W6	0	SUSPENDED OIL
WHITECAP RESOURCES INC.	BARRICK PROGRESS 15-12-78-10	320572	100151207810W600	15-12-078-10W6	0	SUSPENDED GAS
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 16-20-75-9	440468	1F1162007509W600	16-20-075-09W6	0	SUSPENDED WATER SOURCE
WHITECAP RESOURCES INC.	WHITECAP PROGRESS 16-36-78-10	136046	100163607810W600	16-36-078-10W6	0	SUSPENDED WATER INJECTOR
WHITECAP RESOURCES INC.	BARRICK 102 PROGRESS 16-36-78-10	323440	102163607810W600	16-36-078-10W6	0	SUSPENDED GAS
	WHITECAP S	WEET DRILLE	D AND CASED			
WHITECAP RESOURCES INC.	BARRICK VALHALLA 3-7-75-10	339246	100030707510W602	03-07-075-10W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 3-32-75-9	208310	100033207509W602	03-32-075-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-18-76-9	90945	100061807609W600	06-18-076-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP 102 VALHALLA 6-19-75-8	159061	102061907508W602	06-19-075-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 6-36-75-9	244900	102063607509W603	06-36-075-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA PROGRESS 7-31-76-8	143624	100073107608W600	07-31-076-08W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 8-25-75-9	161923	100082507509W600	08-25-075-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 10-15-76-9	197995	100101507609W600	10-15-076-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	BARRICK PROGRESS 10-34-78-10	311253	100103407810W600	10-34-078-10W6	0	DRILLED AND CASED

Valhalla / Progress - Sweet Wells

LICENSEE	WELLNAME	LICENSE NO.	UWI	SURFACE LOCATION	H2S (%)	STATUS
WHITECAP RESOURCES INC.	BARRICK HZ PROGRESS 15-30-78-9	334140	100153007809W600	13-29-078-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP VALHALLA 14-16-75-9	106653	100141607509W600	14-16-075-09W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	WHITECAP PROGRESS 10-36-78-10	245263	100103607810W602	14-36-078-10W6	0	DRILLED AND CASED
WHITECAP RESOURCES INC.	BARRICK PROGRESS 15-12-78-10	320572	100151207810W602	15-12-078-10W6	0	DRILLED AND CASED

LEGEND

Other: UWI=Unique Well Identifier

LICENSEE	WATER CROSS	FROM	то	LIC	CENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
			WHITECAP	SWEET	T OPER	TING							
WHITECAP RESOURCES INC.	-	06-18-076-09W6 WE	07-32-075-09W6	PL 2	22495	1	NG	168.3	5.55	4.0	4,970	0	0
WHITECAP RESOURCES INC.	-	07-31-076-08W6 WE	07-31-076-08W6	B 2	25990	1	NG	88.9	0.15	3.2	4,960	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	16-27-075-09W6	S 2	28543	2	SW	88.9	1.19	4.8	17,240	0	0
WHITECAP RESOURCES INC.	-	15-28-075-09W6 PL		PL 2	28543	6	SW	88.9	2.68	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	15-28-075-09W6 S	12-27-075-09W6 \	WE 2	28543	8	SW	88.9	0.96	5.5	17,240	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	02-27-075-09W6 \	WE 2	28543	9	SW	88.9	0.21	4.8	17,240	0	0
WHITECAP RESOURCES INC.	CC	03-27-075-09W6 B	03-26-075-09W6 \	WE 2	28543	10	SW	88.9	1.86	4.8	17,240	0	0
WHITECAP RESOURCES INC.	CC	16-29-075-09W6 PL	12-28-075-09W6 \	WE 2	28543	12	SW	88.9	0.88	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	12-28-075-09W6 \		28543	13	SW	114.3	3.10	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	01-28-075-09W6 PL			28543	14	SW	88.9	0.20	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	03-27-075-09W6 B	07-27-075-09W6 \	WE 2	28543	15	SW	88.9	0.54	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	07-27-075-09W6 PL		WE 2	28543	16	SW	88.9	0.65	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	02-27-075-09W6 B		S 2	28543	17	SW	114.3	2.90	4.8	17,240	0	0
WHITECAP RESOURCES INC.	-	07-28-075-09W6 PL	03-28-075-09W6 \		28543	18	SW	88.9	0.29	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	06-25-075-09W6 PL	14-25-075-09W6 \	WE 2	28543	20	SW	88.9	0.72	4.4	17,240	0	0
WHITECAP RESOURCES INC.	CC	06-25-075-09W6 PL	09-26-075-09W6 \	WE 2	28543	21	SW	88.9	0.87	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	06-25-075-09W6 PL	09-25-075-09W6 \	WE 2	28543	22	SW	88.9	1.15	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	09-26-075-09W6 PL	16-26-075-09W6 \	WE 2	28543	23	SW	88.9	0.62	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	06-25-075-09W6 PL	12-25-075-09W6 \	WE 2	28543	24	SW	88.9	0.95	4.8	9,930	0	0
WHITECAP RESOURCES INC.	CC	06-25-075-09W6 S	04-25-075-09W6 \	WE 2	28543	25	SW	88.9	0.65	4.8	9,930	0	0
WHITECAP RESOURCES INC.	-	15-28-075-09W6 S	01-33-075-09W6 \	WE 2	28543	26	SW	114.3	0.99	6.0	4,970	0	0
WHITECAP RESOURCES INC.	-	01-28-075-09W6 WE	03-27-075-09W6	B 2	28543	27	SW	88.9	1.33	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	12-28-075-09W6 PL	16-29-075-09W6	PL 2	28543	28	SW	97.4	0.78	12.9	17,240	0	0
WHITECAP RESOURCES INC.	-	12-28-075-09W6 WE	15-28-075-09W6	S 2	28543	29	SW	97.4	1.02	12.9	17,240	0	0
WHITECAP RESOURCES INC.	-	16-29-075-09W6 PL	09-29-075-09W6 \	WE 2	28543	30	SW	88.9	0.19	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	16-29-075-09W6 S	07-32-075-09W6 \	WE 2	28543	31	SW	88.9	0.96	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	03-26-075-09W6 PL	03-26-075-09W6 \	WE 2	28543	32	SW	114.3	0.20	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	08-24-075-09W6 PL	08-24-075-09W6 \	WE 2	28543	33	SW	168.3	0.10	4.0	17,240	0	0
WHITECAP RESOURCES INC.	CC	02-27-075-09W6 PL	08-24-075-09W6	PL 2	28543	34	SW	168.3	4.93	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	08-24-075-09W6 PL	10-24-075-09W6 \	WE 2	28543	35	SW	88.9	0.62	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	02-27-075-09W6 PL	02-27-075-09W6 \	WE 2	28543	36	SW	73.0	0.08	11.9	17,240	0	0
WHITECAP RESOURCES INC.	-	02-27-075-09W6 PL	02-27-075-09W6	PL 2	28543	37	SW	97.4	0.13	12.9	17,240	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	02-27-075-09W6	PL 2	28543	38	SW	97.4	0.13	12.9	17,240	0	0
WHITECAP RESOURCES INC.	-	01-28-075-09W6 PL	04-27-075-09W6 \	WE 2	28543	39	SW	73.0	0.85	11.9	17,240	0	0
WHITECAP RESOURCES INC.	-	05-04-076-09W6 PL	04-04-076-09W6 \	WE 2	28543	40	SW	88.9	0.35	4.0	17,240	0	0
WHITECAP RESOURCES INC.	-	07-32-075-09W6 PL	01-32-075-09W6 \	WE 2	28543	41	SW	71.1	0.92	10.9	17,240	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	10-28-075-09W6	S 2	28544	1	FG	60.3	1.73	6.7	690	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6 B	16-27-075-09W6	S 2	28544	2	FG	60.3	1.19	6.7	690	0	0
WHITECAP RESOURCES INC.	CC	16-27-075-09W6 PL	05-35-075-09W6	PL 2	28544	3	FG	60.3	1.30	6.7	690	0	0
WHITECAP RESOURCES INC.	CC	03-27-075-09W6 B	08-24-075-09W6	S 2	28544	4	FG	60.3	4.53	6.7	690	0	0

LICENSEE	WATER CROSS	FROM	то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
WHITECAP RESOURCES INC.	-	08-24-075-09W6 PL	07-19-075-08W6	S	28544	5	FG	60.3	1.55	6.7	690	0	0
WHITECAP RESOURCES INC.	CC	08-24-075-09W6 PL	06-13-075-09W6	PL	28544	6	FG	60.3	1.73	6.7	690	0	0
WHITECAP RESOURCES INC.	CC	15-28-075-09W6 S	16-29-075-09W6	S	28544	7	FG	60.3	1.50	6.7	690	0	0
WHITECAP RESOURCES INC.	-	05-35-075-09W6 S	14-34-075-09W6 V	NΕ	28544	8	FG	88.9	2.46	9.9	690	0	0
WHITECAP RESOURCES INC.	-	10-28-075-09W6 PL	05-04-076-09W6	S	28544	9	FG	88.9	2.68	9.9	690	0	0
WHITECAP RESOURCES INC.	-	16-29-075-09W6 S	09-30-075-09W6	S	28544	10	FG	88.9	1.52	9.9	690	0	0
WHITECAP RESOURCES INC.	-	09-30-075-09W6 PL	10-30-075-09W6	PL	28544	11	FG	88.9	0.40	9.9	690	0	0
WHITECAP RESOURCES INC.	-	10-30-075-09W6 PL	02-07-076-09W6 V	NΕ	28544	12	FG	88.9	4.40	9.9	690	0	0
WHITECAP RESOURCES INC.	-	08-30-075-09W6 PL	10-30-075-09W6	PL	28544	13	FG	88.9	0.20	9.9	690	0	0
WHITECAP RESOURCES INC.	-	02-07-076-09W6 PL	05-08-076-09W6	PL	28544	15	FG	88.9	1.66	9.9	690	0	0
WHITECAP RESOURCES INC.	-	01-29-075-09W6 GP	08-30-075-09W6	PL	28544	16	FG	168.3	1.98	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	02-03-076-09W6 PL	02-03-076-09W6 V	NΕ	28544	18	FG	60.3	0.06	3.2	690	0	0
WHITECAP RESOURCES INC.	-	05-35-075-09W6 S	11-35-075-09W6 V	NΕ	28544	19	FG	60.3	0.22	3.2	690	0	0
WHITECAP RESOURCES INC.	-	10-06-076-09W6 PL	10-06-076-09W6 V	NΕ	28544	20	FG	60.3	0.07	5.5	690	0	0
WHITECAP RESOURCES INC.	-	07-07-076-09W6 PL	11-07-076-09W6	В	28544	21	FG	88.9	0.32	9.9	690	0	0
WHITECAP RESOURCES INC.	-	15-30-075-09W6 PL	15-30-075-09W6 V	NΕ	28544	23	FG	60.3	0.25	6.7	690	0	0
WHITECAP RESOURCES INC.	-	06-25-075-09W6 S	14-24-075-09W6 V	NΕ	28544	24	FG	60.3	0.60	6.7	690	0	0
WHITECAP RESOURCES INC.	CC	03-25-075-09W6 PL	16-23-075-09W6 V	NΕ	28544	25	FG	60.3	1.30	6.7	690	0	0
WHITECAP RESOURCES INC.	-	05-04-076-09W6 S	05-33-075-09W6 V	NΕ	28544	26	FG	60.3	1.69	6.7	690	0	0
WHITECAP RESOURCES INC.	-	05-33-075-09W6 PL	01-32-075-09W6 V	NΕ	28544	27	FG	60.3	1.08	5.5	690	0	0
WHITECAP RESOURCES INC.	-	08-30-075-09W6 PL	02-30-075-09W6	PL	29149	1	FG	60.3	0.95	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	08-30-075-09W6 PL	15-20-075-09W6 V	NΕ	29149	2	FG	60.3	2.11	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	04-25-075-09W6 PL	06-25-075-09W6	S	30542	1	FG	60.3	0.24	3.2	690	0	0
WHITECAP RESOURCES INC.	-	08-17-075-09W6 WE	10-17-075-09W6	PL	31913	1	NG	60.3	0.39	3.2	4,960	0	0
WHITECAP RESOURCES INC.	CC	10-28-076-10W6 WE	14-28-076-10W6	PL	38179	1	NG	114.3	0.70	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	14-28-076-10W6 PL	10-28-076-10W6 V	NΕ	38180	1	FG	60.3	0.70	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	08-18-075-09W6 WE	12-17-075-09W6	PL	38818	1	NG	88.9	0.90	3.2	4,960	0	0
WHITECAP RESOURCES INC.	-	12-17-075-09W6 WE	11-20-075-09W6	PL	38818	2	NG	114.3	1.83	4.0	4,960	0	0
WHITECAP RESOURCES INC.	-	11-20-075-09W6 WE	01-29-075-09W6 (GP	38818	3	NG	114.3	1.26	4.0	4,960	0	0
WHITECAP RESOURCES INC.	-	07-09-076-09W6 WE	07-09-076-09W6	PL	45070	2	NG	88.9	0.31	4.0	4,970	0	0
WHITECAP RESOURCES INC.	-	16-30-075-08W6 WE	08-31-075-08W6	PL	46858	1	FG	60.3	1.08	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	06-02-076-09W6 WE	03-02-076-09W6	PL	49300	21	NG	88.9	0.41	3.2	4,970	0	0
WHITECAP RESOURCES INC.	CC	09-29-075-09W6 PL	09-29-075-09W6	PL	49403	1	NG	219.1	0.09	0.0	4,960	0	0
WHITECAP RESOURCES INC.	-	03-02-076-09W6 PL	04-03-076-09W6	PL	49586	1	NG	114.3	2.00	3.2	4,970	0	0
WHITECAP RESOURCES INC.	-	16-20-075-09W6 B	15-20-075-09W6	PL	49728	5	NG	88.9	0.43	4.0	4,960	0	0
WHITECAP RESOURCES INC.	-	08-25-075-09W6 WE	02-25-075-09W6	PL	51758	3	NG	168.3	0.30	4.0	9,930	0	0
WHITECAP RESOURCES INC.	-	10-26-075-10W6 PL	10-26-075-10W6 V	NΕ	51760	1	FG	60.3	0.05	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	16-30-075-08W6 PL	10-20-075-08W6 V	ΝE	51760	3	FG	60.3	2.43	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	16-30-075-08W6 PL	04-10-076-09W6 V	NΕ	51760	4	FG	60.3	9.85	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	16-03-076-09W6 PL	14-04-076-09W6 V	NΕ	51760	5	FG	60.3	2.36	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	10-26-075-10W6 PL	15-23-075-10W6	PL	51760	6	FG	60.3	1.46	3.2	6,000	0	0

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
WHITECAP RESOURCES INC.	-	11-25-075-10W6 F	2L	11-25-075-10W6	WE	51760	7	FG	60.3	0.18	3.2	6,390	0	0
WHITECAP RESOURCES INC.	-	08-30-075-09W6 F	٦L	10-26-075-10W6	PL	51760	8	FG	60.3	3.68	2.8	6,390	0	0
WHITECAP RESOURCES INC.	-	04-10-076-09W6 F	٦L	01-16-076-09W6	WE	51760	9	FG	60.3	1.86	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	11-36-075-09W6 F	٦L	04-36-075-09W6	WE	51760	10	FG	60.3	1.64	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	16-30-075-08W6 F	٦L	16-19-075-08W6	WE	51760	11	FG	60.3	2.00	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	06-08-075-08W6 F	2L	13-05-075-08W6	WE	51760	12	FG	60.3	1.20	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	13-35-075-09W6 W	۷E	03-24-076-09W6	PL	51760	13	FG	60.3	6.78	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	10-20-075-08W6 F	٦L	02-29-075-08W6	WE	51760	14	FG	60.3	0.97	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	02-30-075-08W6 F	٦L	01-30-075-08W6	WE	51760	15	FG	60.3	0.05	3.2	9,930	0	0
WHITECAP RESOURCES INC.	CC	10-20-075-08W6 F	٦L	08-20-075-08W6	В	51760	16	FG	60.3	0.67	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	02-29-075-08W6 F	٦L	09-29-075-08W6	В	51760	17	FG	60.3	0.88	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	03-27-075-09W6	В	14-21-075-09W6	В	51760	19	FG	60.3	1.90	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	02-26-075-10W6 F	٦L	03-26-075-10W6	Ţ	51760	20	FG	60.3	0.54	3.2	6,000	0	0
WHITECAP RESOURCES INC.	-	16-19-075-08W6 F	٦L	08-19-075-08W6	WE	51760	21	FG	60.3	0.65	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	15-23-075-10W6 F	٦L	16-22-075-10W6	WE	51760	22	FG	60.3	1.65	3.2	6,000	0	0
WHITECAP RESOURCES INC.	-	03-26-075-10W6 F	٦L	03-27-075-10W6	WE	51760	23	FG	60.3	1.91	3.2	6,000	0	0
WHITECAP RESOURCES INC.	CC	06-18-075-08W6 F	٦L	14-13-075-09W6	WE	52360	1	FG	60.3	2.22	3.2	9,930	0	0
WHITECAP RESOURCES INC.	-	16-27-075-09W6	S	16-27-075-09W6	WE	53403	1	FG	88.9	0.42	4.0	4,970	0	0
WHITECAP RESOURCES INC.	-	08-23-075-10W6 W	۷E	15-23-075-10W6	PL	54662	1	NG	88.9	1.05	3.2	8,700	0	0
				WHITECAP	SWEE	T DISCON	TINUE	D						
WHITECAP RESOURCES INC.	-	07-31-076-08W6 E	3E	08-20-076-09W6	BE	25576	1	NG	114.3	10.83	3.2	0	0	D
WHITECAP RESOURCES INC.	CC	08-32-078-09W6 E	3E	16-36-078-10W6	BE	26127	1	SW	60.3	4.04	3.2	0	0	D
WHITECAP RESOURCES INC.	-	03-27-075-09W6 E	3E	08-28-075-09W6	BE	28543	1	SW	88.9	1.01	4.8	0	0	D
WHITECAP RESOURCES INC.	-	01-27-075-09W6 E	3E	03-27-075-09W6	BE	28543	3	SW	114.3	0.75	3.2	0	0	D
WHITECAP RESOURCES INC.	-	16-27-075-09W6 E	3E	16-27-075-09W6	BE	28543	4	SW	88.9	0.05	4.8	0	0	D
WHITECAP RESOURCES INC.	CC	15-28-075-09W6 E	3E	16-29-075-09W6	BE	28543	5	SW	88.9	1.50	4.0	0	0	D
WHITECAP RESOURCES INC.	-	08-28-075-09W6 E	3E	15-28-075-09W6	BE	28543	7	SW	88.9	0.72	4.8	0	0	D
WHITECAP RESOURCES INC.	-	07-28-075-09W6 E	3E	02-28-075-09W6	BE	28543	19	SW	88.9	0.39	4.0	0	0	D
WHITECAP RESOURCES INC.	-	13-35-075-09W6 E	3E	12-35-075-09W6	BE	28544	14	FG	88.9	0.43	9.9	0	0	D
WHITECAP RESOURCES INC.	-	06-06-079-09W6 E	3E	16-36-078-10W6	BE	34435	1	OE	60.3	0.56	3.2	0	0	D
WHITECAP RESOURCES INC.	-	06-36-075-09W6 E	3E	04-06-076-08W6	BE	35986	1	NG	114.3	2.71	3.2	0	0	D
WHITECAP RESOURCES INC.	-	14-36-078-10W6 E	3E	16-36-078-10W6	BE	38273	1	OE	88.9	0.59	3.2	0	0	D
WHITECAP RESOURCES INC.	-	04-06-079-09W6 E	3E	16-36-078-10W6	BE	38273	2	OE	88.9	0.30	3.2	0	0	D
WHITECAP RESOURCES INC.	CC	16-36-078-10W6 E	3E	08-32-078-09W6	BE	38273	3	OE	114.3	4.04	4.0	0	0	D
WHITECAP RESOURCES INC.	CC	16-34-076-09W6 E	3E	06-11-077-09W6	BE	38280	1	NG	114.3	3.01	3.2	0	0	D
WHITECAP RESOURCES INC.	-		3E	10-28-075-10W6	BE	40204	1	NG	88.9	1.66	3.2	0	0	D
WHITECAP RESOURCES INC.	-	14-17-075-08W6 E	BE.	07-19-075-08W6	BE	40443	1	OE	88.9	2.10	4.0	0	0	D
WHITECAP RESOURCES INC.	CC	15-12-078-10W6 E	3E	08-12-078-10W6	BE	45015	1	NG	88.9	0.79	3.2	0	0	D
WHITECAP RESOURCES INC.	-	02-03-076-09W6 E	BE.	04-02-076-09W6	BE	45070	1	NG	88.9	0.96	3.2	0	0	D
WHITECAP RESOURCES INC.	-	03-03-076-09W6 E	3E	02-03-076-09W6	BE	45070	3	NG	88.9	0.29	4.0	0	0	D
WHITECAP RESOURCES INC.	CC	16-36-078-10W6 E	ΒE	01-36-078-10W6	BE	45249	1	NG	114.3	1.85	3.2	0	0	D

LICENSEE	WATER CROSS	FROM		то		LICENSE NO.	LINE NO.	SUB	OD (mm)	SEGMENT LENGTH (km)	WALL (mm)	LICENSED PRESSURE (kPa)	H2S (%)	STATUS
WHITECAP RESOURCES INC.	-	14-22-075-09W6	BE	09-22-075-09W6	BE	45538	3	FW	88.9	0.90	4.8	0	0	D
WHITECAP RESOURCES INC.	-	14-22-075-09W6	BE	14-22-075-09W6	BE	45931	1	SW	65.0	0.32	6.5	0	0	D
WHITECAP RESOURCES INC.	-	14-22-075-09W6	BE	03-27-075-09W6	BE	45931	2	SW	65.0	0.21	6.5	0	0	D
WHITECAP RESOURCES INC.	-	16-06-075-10W6	BE	03-07-075-10W6	BE	46746	1	FG	60.3	0.77	3.2	0	0	D
WHITECAP RESOURCES INC.	-	14-31-074-10W6	BE	16-06-075-10W6	BE	46746	2	FG	60.3	1.61	3.2	0	0	D
WHITECAP RESOURCES INC.	-	06-25-075-10W6	BE	14-30-075-09W6	BE	48351	1	NG	88.9	1.91	3.2	0	0	D
WHITECAP RESOURCES INC.	CC	06-19-075-08W6	BE	08-24-075-09W6	BE	51758	1	NG	168.3	1.17	4.0	0	0	D
WHITECAP RESOURCES INC.	-	15-28-075-09W6	BE	04-28-075-09W6	BE	51758	4	NG	168.3	1.53	4.0	0	0	D
WHITECAP RESOURCES INC.	-	01-29-075-09W6	BE	01-29-075-09W6	BE	51758	5	NG	168.3	0.04	4.0	0	0	D
WHITECAP RESOURCES INC.	-	06-18-075-08W6	BE	06-19-075-08W6	BE	51758	6	NG	168.3	1.64	4.0	0	0	D
WHITECAP RESOURCES INC.	-	03-07-075-08W6	WE	06-18-075-08W6	PL	51758	7	NG	168.3	2.40	4.0	0	0	D
WHITECAP RESOURCES INC.	-	12-34-075-09W6	BE	07-33-075-09W6	BE	51758	8	NG	114.3	0.83	4.0	0	0	D
WHITECAP RESOURCES INC.	-	07-33-075-09W6	BE	15-28-075-09W6	BE	51758	9	NG	168.3	1.14	4.0	0	0	D
WHITECAP RESOURCES INC.	-	03-27-075-09W6	BE	03-27-075-09W6	BE	51758	11	NG	168.3	0.05	4.0	0	0	D
WHITECAP RESOURCES INC.	-	02-27-075-09W6	BE	01-29-075-09W6	BE	51758	13	NG	168.3	2.95	4.0	0	0	D
WHITECAP RESOURCES INC.	-	14-25-075-11W6	BE	10-26-075-10W6	BE	51760	2	FG	168.3	8.57	4.0	0	0	D
WHITECAP RESOURCES INC.	-	11-25-075-10W6	BE	03-25-075-10W6	BE	51760	18	FG	60.3	0.94	3.2	0	0	D
WHITECAP RESOURCES INC.	-	10-28-075-10W6	BE	07-33-075-10W6	BE	54173	1	NG	114.3	1.25	3.2	0	0	D
WHITECAP RESOURCES INC.	_	01-29-075-09W6	BE	14-22-075-09W6	BE	54217	1	SW	88.9	2.65	4.8	0	0	D
WHITECAP RESOURCES INC.	CC	02-30-075-09W6	BE	16-20-075-09W6	BE	54217	2	SW	87.6	2.30	3.3	0	0	D
WHITECAP RESOURCES INC.	-	16-20-075-09W6	BE	01-29-075-09W6	BE	54217	3	SW	81.5	0.22	2.9	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 RE=Reservoir

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 NL=NGL

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 X=Not AER Regulated Other: Wall=Wall Thickness OD=Outside Diameter

