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February 4, 2025

Office of the Regulator of Oil and Gas Operations (OROGO)
4th Floor Northwest Tower
5201 – 50th Avenue Yellowknife NT
X1A 3S9
Email: OROGO@gov.nt.ca

Sent Via Email

Attention: Pauline de Jong, Executive Director, OROGO
Re: Information Request No. 9: Updates to Management Systems OA-2021-003-SUN

Dear Pauline:

Please find the information requested by OROGO in the letter dated December 19, 2024 as follows.

9.1 and 9.2 Request:

Please provide an updated Safety Plan and an updated ERP that addresses the requirements listed under sections 5A and 5B of the Safety Plan Guidelines and Interpretation Notes.

9.1 and 9.2 Response Concordance Table:

The amended Safety Plan and Project Specific Emergency Response Plan provided as Attachment 4 and 5 of Suncor's September 27, 2024, submission has been revised and re-submitted.

Specific References Requested	Response Text	Where information is found. (Doc name, section, page #)
Location and availability of rotary-wing and fixed wing aircraft during operations to provide timely egress from the site and transportation to a medical facility.	Additional details regarding the location of operational and emergency rotary and fixed wing support has been included in the updated Safety Plan addendum submission.	Attachment 4: Project Specific Emergency Response Addendum, Rev. 1. p. 6.
Location of the medic during operations.	Suncor has listed a medic in resource personnel, it has been clarified that this medic will be onsite during operations at M-47, A-67 and O-35.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec 3, p. 4.
Location and types of forest fire suppression equipment.	Suncor does not intend to bring in forest fire suppression equipment. Suncor will maintain a basic supply of hand tools to take action if any fires may arise as a result of our operation. We will have fire extinguishers for the wireline unit and supporting equipment.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec 4, p. 4.

Location and quantities of safety equipment necessary to mitigate injuries related to potential risks to human health (burns, chemical contact with skin/eyes, inhalation, etc.).	Suncor has listed a medic in resource personnel, it has been clarified that this medic will be onsite during operations at M-47, A-67 and O-35 and have a first aid kit onsite.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec 3, p. 4.
Updated contact list for the Regulatory Health and Safety Agencies.	Contact list has been updated.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec 5, p. 5.
Equipment and personnel for the mitigation of hazards associated with predator defense.	Suncor will have a wildlife monitor onsite during operations and is presently working with Colville Lake to supply the personnel.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. PDF Sec 3, p. 4.
Communication equipment and procedures.	Communication equipment is a combination of satellite phones and radios with the satellite phone being the primary source for off-lease communications.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec 3, p. 3.

9.3.1 Request:

Please provide the EPP (dated February 2022) and WMP (dated December 2021) submitted to the SLWB.

9.3.1 Response:

The EPP and WMP requested by the SLWB for the purposes of the Land Use Permit application are available to the public on their public registry at <https://slwb.com/registry/s22a-001>. Please note the SLWB requested to postpone our January 29th meeting till February 11/13th. Suncor will be resubmitting our EPP and WMP to support LUP amendment in mid-February once we've had the opportunity to consult with the Board regarding the amended plans.

9.3.2 and 9.3.3 Request:

Please provide an updated EPP that includes a hazard assessment and description of appropriate measures to address those hazards and includes approaches to waste management which reflects summer, heli-portable operations.

9.3.2 and 9.3.3 Response Concordance Table:

The amended EPP provided as Attachment 5 of Suncor's September 27, 2024, submission has been revised and re-submitted.

Specific References Requested	Response Text	Where information is found. (Doc name, section, page #)
Fuel storage and handling.	Fuel for Program activities onsite is anticipated to be minimal and will be transported via Jerry cans or fuel drums depending on quantity needed. Spill response kits will accompany all fuel types in sufficient quantities according to fuel type and volume.	Attachment 5: Environmental Protection Plan Addendum, Rev. 1, Section 3, Management Systems.

Noise.	Program-related residual effects generated by increased noise are expected to be negligible under normal operating conditions.	Attachment 5: Environmental Protection Plan Addendum, Rev. 1, Section 4.
Soil.	Helicopter-supported abandonment activities are focused at the wellhead with low to no-risk of degradation resulting from erosion.	Attachment 5: EPP Addendum, Rev. 1, Sec. 4.
Permafrost.	Helicopter-supported abandonment activities virtually eliminate risk of permafrost exposure.	Attachment 5: EPP Addendum, Rev. 1, Sec. 4.
Vegetation.	The significance of the contribution of the Program to the residual effects on vegetation is expected to be low.	Attachment 5: EPP Addendum, Rev. 1, Sec. 4.
Wildlife.	Suncor is committed to limiting the effects of the Program on wildlife and wildlife habitat. Mitigation measures employed to provide protection from potential effects.	Attachment 5: EPP Addendum, Rev. 1, P. 1 and Sec. 4.
Plans to manage contaminated soil.	No contaminated soils are anticipated. Should a spill occur, soils potentially impacted by spills would be handled as per section 8 Waste Management in the EPP. The amendment has clarified the potential use of totes/drums being hauled off site and storage in a lined, bermed temporary storage area at Colville Lake.	Attachment 5: EPP Addendum, Rev. 1, Sec. 8
Plans for the removal of waste from the well sites and the project area.	Wastes that will be disposed of off-site will be properly stored at a temporary storage area in Colville Lake until the following winter season when they can be removed via winter road.	Attachment 5: EPP Addendum, Rev. 1, Sec. 8

9.3.4 Request:

Please provide an updated EPP that includes a comprehensive list of all structures, facilities, equipment, and systems critical to environmental protection and a summary of the system in place for their inspection, testing and maintenance.

9.3.4 Response Concordance Table:


The amended EPP provided as Attachment 5 of Suncor’s September 27, 2024, submission has been revised and re-submitted.

Specific References Requested	Response Text	Where information to meet requirements of Section 6 (j) is found. (Document name, section, page #)
Structures, facilities, equipment and systems critical to environmental protection.	Resource Equipment included in the execution planning program. The heli -portable wireline unit has gone through extensive pre-operation inspection and maintenance.	Attachment 3B: Execution Planning Program Addendum, Rev. 1. Sec. 3, p. 3. Attachment 5: EPP Addendum, Rev. 1. Sec. 3

Closure

We trust that the description provided will satisfy your current requirements and provides suitable documentation for your records.

Thank you,

DocuSigned by:

53E3D15DBBFC4D1...

Dara Schmidt

Development Lead, Legacy Properties

Suncor Energy Inc.

daraschmid@suncor.com

ATTACHMENTS:

- ATTACHMENT 3B: EXECUTION PLANNING PROGRAM ADDENDUM OA VARIATION #3 REQUEST EXECUTION PLAN DESCRIPTION UPDATES, REV. 1, FEBRUARY 3, 2025.
- ATTACHMENT 4: SAFETY PLAN PROJECT SPECIFIC INFORMATION – ADDENDUM, SITE SPECIFIC SAFETY PLAN (SSSP) EMERGENCY RESPONSE PLAN (ERP) & CONTINGENCY ERP - ADDENDUM, REV. 1, FEBRUARY 3, 2025.
- ATTACHMENT 5: ENVIRONMENTAL PROTECTION PLAN – ADDENDUM, REV. 1, FEBRUARY 3, 2025.

ATTACHMENT 3B: EXECUTION PLANNING PROGRAM ADDENDUM
OA VARIATION #3 REQUEST EXECUTION PLAN DESCRIPTION UPDATES



NWT Facility
SUNCOR TWEED LAKE M-47, A-67 & BELE O-35
EXECUTION PLAN
Wells Onshore

Addendum Rev #1

Corporate Head Office
Suncor Energy Inc.
P.O. Box 2844, 150 - 6 Avenue S.W.
Calgary, Alberta
Canada T2P 3E3
T: 403-296-8000

I. OBJECTIVE

As per OROGO's direction, the following wells must be abandoned within the Colville Lake Area prior to March 31, 2025 or otherwise specified by the regulator. A request was made September 9, 2024 to OROGO to extend the deadline to Oct 31, 2025, and is presently pending OROGO approval.

- TWEED LAKE M-47 (Well ID: 1476)
- TWEED LAKE A-67 (Well ID: 1555)
- PCI CANTERRA BELE O-35 (Well ID: 1600)

Completions pre-abandonment testing: Summer 2024.

Abandonment: May 2025 + contingency.

The objective is to mobilize supporting equipment in February 2025 for abandonment operations utilizing helicopter, wireline unit & water jet cutting tool during spring/summer months as per the **Well Suspension and Abandonment Guidelines** from OROGO. Suncor has obtained the required Land Use Permit for these wells (SS22A-001).

II. PROJECT AREA

The three wells are located within the Colville Lake area in the Northwest Territories.

PCI CANTERRA BELE O-35

UWI: 300O356640126150

Lat: 66 34' 58.1357" N

Long: -126 21' 34.10" W

PCI CANTERRA TWEED LAKE A-67

UWI: 300A6767000125450

Lat: 66 56' 11.6"

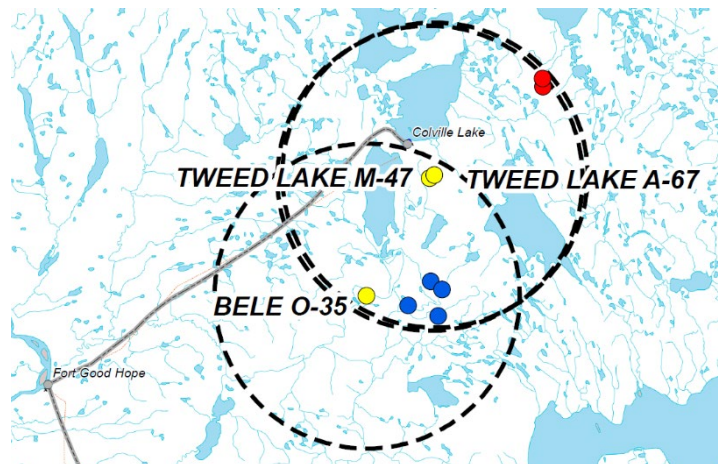
Long: -125 56' 18.8"

PCI CANTERRA TWEED LAKE M-47

UWI: 300M476700125450

Lat: 66 56' 47.11"

Long: -125 54' 9.42"



III. GENERAL SCOPE

1. Scope planning & Surface Inspection at Field Level

To allow for the successful application to the regulators and the safe & efficient execution of the operations in the Colville Lake Area, Suncor requires engagement with local communities & officials, sourcing local equipment and workforce where possible, and gathering of operational data/field scouting (filtered water sources, laydown area, lease, environmental considerations, and EH&S). Regulatory requirements will include but may not be limited to:

- SLWB - Land Use Permit(s) & Water License(s)
- OROGO – Alter Condition of a Well (ACW) & Operation Authorization (OA)

Proposed Schedule: September 2024, 7 days including travel.

- Day 1 – Mobilization to Norman Wells
- Day 2 – Assessment of Bele O-45
- Day 3 – Assessment of Tweed Lake A-67
- Day 4 – Assessment of Tweed Lake M-47
- Day 5 – Contingency day 1
- Day 6 – Contingency day 2
- Day 7 – Demobilization

Resource Equipment:

- 1 Helicopter – A-Star B350
- 1 Emergency equipment / Spill Kit

Resource Personnel:

- 1 Suncor Personnel
- 1 Pilot
- 1 Wildlife Monitor
- 2 Environmental Assessment

2. Pressure and Gas Migration Testing (Completions)

In alignment of NWT OROGO Well Suspension and Abandonment Guidelines and Interpretation Notes, Gas migration and Surface casing vent flow testing is required prior to downhole abandonment.

Schedule: This was successfully completed in August 2024.

3. Abandonment Operations

Well to be completed as per the ACW and programs sent in on September 9, 2024, with the cut/cap of casing as per regulatory requirements for all three wells.

Schedule: February 2025 to February 2026.

- February 2025:
 - Mobilization of equipment including wireline unit, fuel, totes and supporting equipment.
- May/June 2025:
 - Heli-portable abandonment operations begin on or around May 15th for approx. 30 days.
 - Store inhibited wellbore fluids into totes with secondary containment for future winter transportation in the laydown yard in Colville Lake.
 - Surface casing cutting & sign install.
- February 2026
 - Transport of inhibited fluids from Colville Lake to approved location.

Resource Equipment:

- Laydown in Colville Lake w/ secondary containment
- Fuel Drums and/or tanks
- Pumps
- Onion & pumpkin tanks
- Spill kit
- Generators
- Communication equipment - satellite phones and radios.
- Water Jet Cutting Tool - Heli-portable

- Fire suppression equipment (2 water bags (Wajax) , 2 pulaskis, 2 shovels , water supply c/w trash pump w/ 200' layflat hose. supporting equipment.
- *Wireline Unit - Heli-portable (pictured)*



Resource Personnel:

- 2 Suncor Wellsite Supervisor
- 1 Medic with first-aid kit (onsite during operations at M-47, A-67 and O-35)
- 1 Wildlife Monitor
- 2 loadmasters
- 1 pilot
- 3 operators (wireline unit)
- 2 operators (waterjet cutting tool)

4. Signage Installation

After completing the cut and cap, the abandoned well will be marked with a durable post and signage in accordance with OROGO's Well Suspension Guidelines and Interpretation Notes.

IV. OTHER LOGISTICS/RESOURCES

1. Accommodations

- With a peak resource of 12-15 personnel, Suncor will be staging out of Colville Lake in an existing camp to support operations.

2. Laydown

- The main laydown to support the project will be situated in Colville Lake, east of the airport.

3. Water Source

- Water requirements (filtered or potable water) will be provided by Colville Lake Community.

4. Consumables

- Fuel (Clear Diesel, Gasoline) will be sourced as available from Colville Lake. Jet Fuel requirements to be handled by Helicopter Vendor.

5. Fire Suppression Equipment and Extinguishers

- Suncor will maintain a basic supply of tools to take action if any fire may arise as a result of operation. Tools will include two water bags, two pulaskis, and two shovels. A water supply will be on hand c/w trash pump and a limited supply of hose.
- Suncor will have fire extinguishers for the wireline unit and supporting equipment. Three 20 lb ABC extinguisher units.

V. CONTACTS

SUNCOR PRIMARY CONTACTS

Name	Title/Location	Office	Cellular
Chris Moger	Surface Landman	(403) 296-4960	(403) 620-0281
Greg Hundseth	I&CR	(403) 880-5254	
Greg Heffel	Completions Engineer	(403) 296-5549	
Dara Schmidt	Regulatory & Project Lead	(403) 296-3006	
Paul Carpentier	Logistics Superintendent	(403) 296-6291	(587) 646-9482
Jonathan Koteles	Completions Superintendent	(403) 296-8916	(403) 510-7217

REGULATORY, HEALTH, & SAFETY AGENCIES (To be updated prior to mobilization)

Name	Emergency #
GNWT (Office of the Regulator of Oil & Gas Operations)	1-867-920-8130 (24hr Spill Response) 1-867-445-8551 (incident Response) 1-867-767-9097
Sahtu Land & Water Board	1-867-598-2413
GNWT Infrastructure (Sahtu Region)	1-867-874-5000
GNWT Department of Lands	1-855-698-5263
NWT Environment & Natural Resources (Sahtu Regional)	1-867-587-2422 (Wildfire)
Forest Fire NWT	1-877-698-3473 (1-877-NWTFIRE)
Air Ambulance Service (Access Air)	Updated Pre-Mob
Great Slave Helicopter	1-867-873-2081
Hospital Yellowknife	1-867-669-4111
Workers' Safety & Compensation Commission	1-800-661-0792 (Incident & Injury Reporting) 1-867-920-3888 (General Inquiries)

SERVICE COMPANY CONTACTS (To be updated prior to mobilization)

Service Type	Company	Contact Name	Office Number	Cellular

END OF PROGRAM

ATTACHMENT 4:
SAFETY PLAN PROJECT SPECIFIC INFORMATION - ADDENDUM

OA-2021-003-SUN
TWEED LAKE M-47, A-67 & BELE O-35
Abandonment Program
Site Specific Safety Plan (SSSP)¹ Emergency Response Plan (ERP)
& Contingency ERP - Addendum

The purpose of this addendum to the Project Site Specific Safety Plan with Contingency is to demonstrate that Suncor Energy Inc. (Suncor) understand the regulatory expectations to conduct the operation.

The SSMP sets out the procedures, practices, resources and monitoring necessary to ensure effective safety management of the personnel, environment and equipment associated with the worksite for the duration of the program.

It is expected that all project personnel will meet or exceed the requirements described in the plan. Subcontractors are expected to comply with any additional regulatory requirements applicable to their work and must adhere to their own company policies and procedures.

The intent of the Plan is to be a living document that will grow with the project to address hazards and controls. Any questions regarding intent or interpretation of this document may be directed to the Suncor Site Supervisor for clarification. All work is completed under the Operations Authorization OA-2021-003-SUN and the well specific ACWs.

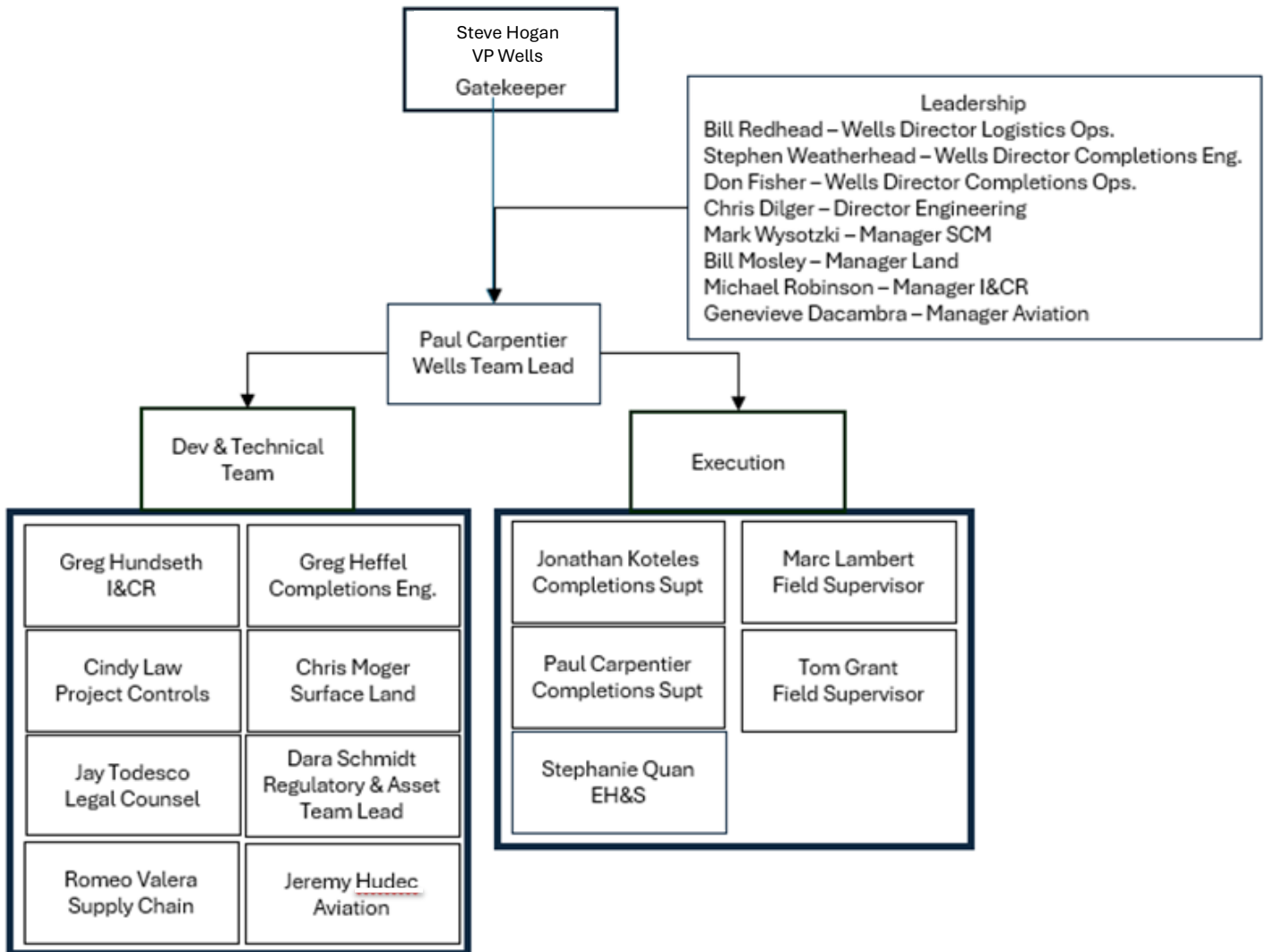
SITE SPECIFIC SAFETY PLAN (SSSP), EMERGENCY RESPONSE PLAN (ERP) & CONTINGENCY ERP ADDENDUM
PROJECT DESCRIPTION UPDATES – CONCORDANCE TABLE

Site Specific Safety Plan Section		Update/Comment
APP 1	Project Organization Structure	Updated structure, Attachment A4-1
APP 3	Risk Assessment	Updated risk assessment, Attachment A4-2
APP 8	Contingency Emergency Response	Updated project description, Attachment A4-3

Addendum Rev #1

¹ Suncor Energy Inc., NWT Facility Suncor Tweed Lake M-47, Tweed Lake A-67 & Bele O-35, Suncor Amaco Tathlina N-18, Abandonment Program – Safety Management Plan, Completions & Logistics (DCLL). Rev#0, May 20, 2021.

ATTACHMENT A4-1: PROJECT ORGANIZATION STRUCTURE UPDATES (FEBRUARY 3, 2025)



ATTACHMENT A4-2: RISK ASSESSMENT UPDATES (SEPTEMBER 9, 2024)

Risk Context & Background	Risk Status	Risk Title	Risk Description / Statement	Inherent Consequence Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Level	Inherent Risk Consequence & Likelihood Rationale	Controls / Safeguards	Residual Consequence Level	Residual Likelihood Level	Residual Risk Level	Residual Risk Consequence & Likelihood Rationale
Operational	Active	Completions Wireline rig or Logistics Water Jet cutting tool functioning correctly	With operations in a remote area, it is critical to have functioning equipment after transportation and staging for efficient operations		C3	L4	III	Financial: The inefficient use of the wireline unit or jet cutting tool will incur Non-Productive Time including helicopter minimums, crew staging, hotel, transport etc.	1. Operational Readiness Checkpoint including the startup and checks of the major equipment 2. Mobilization of redundancy equipment such as hoses, generators, spark plugs etc. 4. Requesting experienced crew members or equipment. 3. Review of lesson learn from Tathlina N-18 with similar issues in a much impactful remoteness	C3	L3	III	Following the Classification of the project, it does include operational readiness, which engage vendors to start up equipment prior to mobilization and ensure redundancy
Operational	Accept/Monitor	Forest Fires impacting our operations or safety of personnel	Forest Fires are impacting yearly NWT communities and potential operations	H&S: (Fatality potential) Financial: (Delay of program which cause financial impact)	C6	L3	I	H&S: Forest Fire has likelihood cause a or many fatalities when unmanaged due to smoke, heat, stranded w/ inoperable transportation etc. Fin: The project may also be delayed due to nearby forest fires w/ Tathlina being an example	1. All Suncor equipment must be inspected for clear exhausts and hot surfaces from dry fuels. 2. No Smoking on Wellsites 3. Follow Emergency Response Plan (1-877-698-3473 NWT) 4. Great Slave Helicopter & Suncor Field Sup to monitor weather, smoke & fires from visuals and government reports. Chief Pilot have final call for evacuation and/or weather delays. 5. Suncor to have firefighting equipment (hand tools) at site as per regulations 6. Safing energized equipment prior to leaving site in case of evacuation 6. Review lessons learned from Tathlina N-18	C6	L1	II	With proper controls, the credible scenario falls into Financial impact due to delay of program midway and/or destroy the on lease equipment
Operational	Accept/Monitor	Helicopter Operation	Helicopter Operations may lead to multiple fatalities in the event of an unplanned landing	H&S: Multiple Fatalities on unplanned landing	C6	L5	I+	H&S: Helicopter Operations may result in multiple Fatalities during an unplanned landing in challenging remote areas. H&S: Long Lining Operations & Drops may result in equipment falling at heights (LSR, SIFp)	1. Suncor Aviation to audit Great Slave Helicopter compliance to federal aviation standards including and not limited to competency, maintenance, hours of services etc. 2. Emergency Response Plan daily review with helicopter pilot & crew. 3. Review of JSA, Hazards, Risk Assessment w/ GSH & Crew. 4. Lifting & long lining plan is to be reviewed by dedicated and competent load masters & pilot 5. Exclusion zones (no-go) to be implemented around helicopter operations. 6. No loads paths shall go over personnel on ground (Fail Safety). 7. Review and implement GSH Emergency Response Plan in case of emergency. 8. Wellsites & Laydown to be registered with NWT "Stars" equivalent. 9. Personnel loading/offloading shall have a completely shut down helicopter / rotors 10. GSH mgmt / chief pilot to be involve in the planning and execution w/ Suncor and vendors (weights, loads, distances etc.) - planned. 11. Emergency Mock Exercise on Day 1 of execution	C6	L3	I	Our highest risk based on C6 consequence. Great Slave Helicopter and Suncor Aviation has the expertise to mitigate the risk to an acceptable level.
Operational RSK.3334	Accept/Monitor	Wildlife Interaction	Operation are in a remote areas where wildlife interactions may cause a serious injury or fatality	H&S: Serious Injury or Fatality	C5	L4	I	H&S: Fatality or Serious Injury due to startling of wildlife (Bear, Muskox) within the vicinity of our operations	1. Wildlife Intermediate training with bear spray deployment. 2. Assessment of work area and wildlife risks utilizing helicopter prior to landing. 3. Wildlife Monitor in place to support deterrant operations (e.g. Bearscares). 4. All organic waste materials removed at end of day and disposed in approved facilities. 5. Follow Suncor standard - RHS00041 Wildlife Standard. 6. Report sightings to wellsite supervisor (logistics or completions)	C5	L3	II	

Risk Context & Background	Risk Status	Risk Title	Risk Description / Statement	Inherent Consequence Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Level	Inherent Risk Consequence & Likelihood Rationale	Controls / Safeguards	Residual Consequence Level	Residual Likelihood Level	Residual Risk Level	Residual Risk Consequence & Likelihood Rationale
Operations	Accept/Monitor	Weather impacting operations	Unpredictable & Variability in weather in sub-alpine & montaneous weather may impact flight conditions spontaneously	H&S: Remote operations where evacuation to norman wells not possible (remote site). Financial: Delay of operations	C3	L4	III	H&S: Potential stranding of personnel due to weather condition changes (fog, smoke). Financial: Delay of project (weather days) while paying stand-by rates	1. Setup vendor for chartered flights from Colville Lake to Norman wells as emergency (CONFIRM IF POSSIBLE) 2. Ensure emergency shelter on sites w/ 24 hours dry food options? 3. GSH and Chief Pilot has say to evacuate due to weather and other emergencies as required. 4. GSH has emergency response plan to follow should there be weather event while on site. 5. Work to be planned prior to September due to probabilities of higher weather events	C3	L3	III	
Operations	Accept/Monitor	Water Jet Cutting Tool	Cutting of Casing w/ NuWave waterjet cutting tool may be challenging due to casing size, conducting cementing and other challenges	Financing	C2	L4	III	Financial: May require more days for operations per well, which impact helicopter & nuWave time resulting in a cost of 100-300K potential	1. NuWave Waterjet Cutting operations to review wellsite files including casing size & photos - completed. Added double time contingency & water supply 2. Bring additional tools such as jack hammer to dismantle some of the cement bonding	C2	L3	IV	
Operations	Accept/Monitor	Remote Site Operations	Distance of Remote Wellsites may lead to increase response time of emergency services	Wellsite location is hell-access only: Incident Response Time / Medevac & Weather impacting flight return during worksite operations Risk of Injury or death to worker due to working in remote locations. Reduced communications options and effectiveness. The risk is increased if the worker is subject to an injury or incident that causes reduced mobility, unconsciousness due to the time and effort required	C4	L4	II	H&S: Medical Treatment	1. Emergency Response Plan - Qualified Medic w/ equipment and resources - Great Slave Helicopter to ensure basket stretcher compatible w/ B212S. - Communicate with Norman Wells Hospital (ensure waypoints in place). - Chief Pilot / Flight Crew responsible to ensure evacuation can happen (watch for adverse weather conditions) - Wellsite registered w/ Stars or similar (GSH is the operator in region). - Radios for communication required (Helicopter, Loadmaster, Wellsite supervisors) - All personnel to have Standard First Aid - Emergency Shelter available at wellsite - Satellite Phones, In Reach available w/ redundancy - Consideration in clothing to include bug net, insect repellent, rain gear, warm dry clothes, extra food etc.	C4	L2	III	
Operations		Competency of personnel in non-routine operations (RSK.4052 - Contractor Management)	Competency of personnel w/ concurrent contractors & specialized equipment	Health & Safety	C5	L2	II	H&S: Single Fatality or SIFa Fin: C4-L5 (I)	1. Wells Onshore Best Practice 2. Wells Integrated Risk Review w/ Vendors 3. Utilized experienced workforce similar to Tathlina N18 4. Procurement strategy w/ SCM to ensure satisfactory onboarding. 5. Field Review of Risk Assessment, JSA, Hazard ID, Scope of Work, FHSA, Critical Tasks & Controls, CCA	C5	L2	II	
Operations	Accept/Monitor	Journey Management	Personnel to mobilize in Norman Wells & daily flights to wellsites	Health & Safety	C5	L3	II	Health & Safety	1. Wells Onshore Journey Management 2. Daily reports from Field to Supt 3. ERP activated when required	C5	L1	III	

Risk Context & Background	Risk Status	Risk Title	Risk Description / Statement	Inherent Consequence Receptor	Inherent Consequence Level	Inherent Likelihood Level	Inherent Risk Level	Inherent Risk Consequence & Likelihood Rationale	Controls / Safeguards	Residual Consequence Level	Residual Likelihood Level	Residual Risk Level	Residual Risk Consequence & Likelihood Rationale
Operations		H2S Release from Wellbore	Release of Significant H2S levels from wellbore due to contact during completions operations	H&S : SIFp	C5	L1	III	H&S: H2S risk in low due to the reservoir being non-sour and well being abandoned downhole.	<ol style="list-style-type: none"> 1. Review Potential H2S or other specific hazards from wellbore 2. Review Working Around Infrastructure procedure 3. Critical Task - within 5m of wellbore 4. Personal Gas Detection monitors on site 5. Hazard Assessment / Risk Review w/ Vendors 6. Review incident E-2022-0000005227 - Wellhead And Panel Damage 7. Handover document from Completions to Logistics 	C5	L1	III	
Regulatory Environmental		NWT Reportable Spill impacting regulatory permits with SLWB	Storing of Inhibited fluids or other hazards such as Fuel spilling onto competent grounds		C3	L3	III	Reg / Env: Regulatory non compliance of Land Use Permit Env: Cleanup on-site of spills	<ol style="list-style-type: none"> 1. Follow Site Specific ERP (Approved by OROGO) 2. Spill kits as per requirements for fueling locations & totes. 3. Laydown for totes to be bermed/lined. 4. Handing over management of laydown/fluids to 3rd party (as a warehouse) where Suncor would not be liable. 5. Fueling of aviation provided to GSH at aerodrome - no involvement of Suncor 6. No fueling or storing of inhibited water within sensitive features including water bodies. 7. Pumping of any surfacewater from liner or site, must be tested to meet criteria 	C3	L2	IV	
Operations		Surface Abandonment - Pulling of Casing - Stored Energy	Pulling of the tight casing in soil w/ helicopter (stored energy) which could result in a unexpected reaction to the helicopter	H&S - SIFp	C5	L2	II		<ol style="list-style-type: none"> 1. Similar to Tathlina - use of Hydraulic & Hand tools to loosen casing prior to lifting. 2. GSH / Nu'wave has experience w/ scope 3. Cut casing in smaller pieces and/or twice 4. Review risk assessment w/ GSH 	C5	L1	III	

ATTACHMENT A4-3: PROJECT SPECIFIC EMERGENCY RESPONSE PLAN (ERP) - ADDENDUM

Location:

The project is the permanent abandonment of three wells in the Sahtu region of the NWT, specifically in the vicinity of Colville Lake, NWT.

- Two wells are approximately 15 km southeast of the community of Colville Lake (M-47, A-67)
- One well is approximately 63 km southwest of the A-67 wellsite (O-35).
- All locations are only accessible by helicopter.

Project Scope:

Permanent abandonment of the three specified wells in accordance with the Oil and Gas Drilling and Production Regulations and OROGO Well Suspension and Abandonment Guidelines and Interpretation Notes.

Operational and Emergency Support:

- This operation will be supported with local resources from Norman Wells and Colville Lake. Specialized oilfield services (e.g. wireline) will be brought from Alberta.
- Helicopter support will be supplied from Norman Wells.
- Fixed wing support will be to/from Norman Wells (1800m asphalt) and Colville Lake (1200m gravel).
- The rotary-wing aircraft will be used throughout the operation and will travel between the active leases (M-47, A-67, and O-35) and the laydown site (in Colville Lake). The rotary-wing aircraft will be used to transport the equipment and fresh water to the leases and transport wellbore fluids back to the laydown site. If there is an event the rotary-wing aircraft will be diverted to the required location to perform the egress to a medical facility.
- Medevac would be by helicopter, or fixed wing to Norman Wells Hospital (or direct to Yellowknife/Edmonton) as required.
- 1 medic onsite during operations at M-47, A-67 and O-35.

Equipment Critical to the Safety of the Operation:

Wireline Unit

- The heli-portable wireline unit will be used to set plugs and related abandonment operations.

Responsible Personnel:

- Paul Carpentier, Superintendent Logistics, Suncor Energy Inc. has overall responsibility and is accountable for the Project Site Specific Safety Plan.
- Stephen Weatherhead, Director Completions Engineering, Suncor Energy Inc. is responsible for implementing the well abandonment programs.

ATTACHMENT 5: ENVIRONMENTAL PROTECTION PLAN – ADDENDUM

OA-2021-003-SUN **TWEED LAKE M-47, A-67 & BELE O-35** **Abandonment Program** **Environmental Protection Plan¹ Addendum**

The activities to be completed at the Tweed Lake M-47, Tweed Lake A-67 and Bele O-35 wellsites are part of an abandonment and reclamation program being undertaken by Suncor. The program components started in the summer of 2022 with field scouting for water sources and are finishing with abandonment and reclamation activities during spring/summer 2025.

After efficient and successful helicopter-supported downhole and surface abandonment operations at Tathlina N-18 (in the South Slave Region) Suncor is proposing to conduct similar operations for the three-well abandonment program in the Colville Lake Area.

Heli-portable abandonment operations provide considerable environmental benefits including:

- significant decrease in water use, fuel use, and fuel storage requirements;
- eliminate winter road wildlife encounters/mortality;
- virtually eliminate risk of permafrost exposure;
- reduced footprint through this phase of the operation; and
- reduced length of time required for abandonment operations (anticipated 30 days vs. 3 months).

Suncor understands that operating in this different time window may require modifications to operations including:

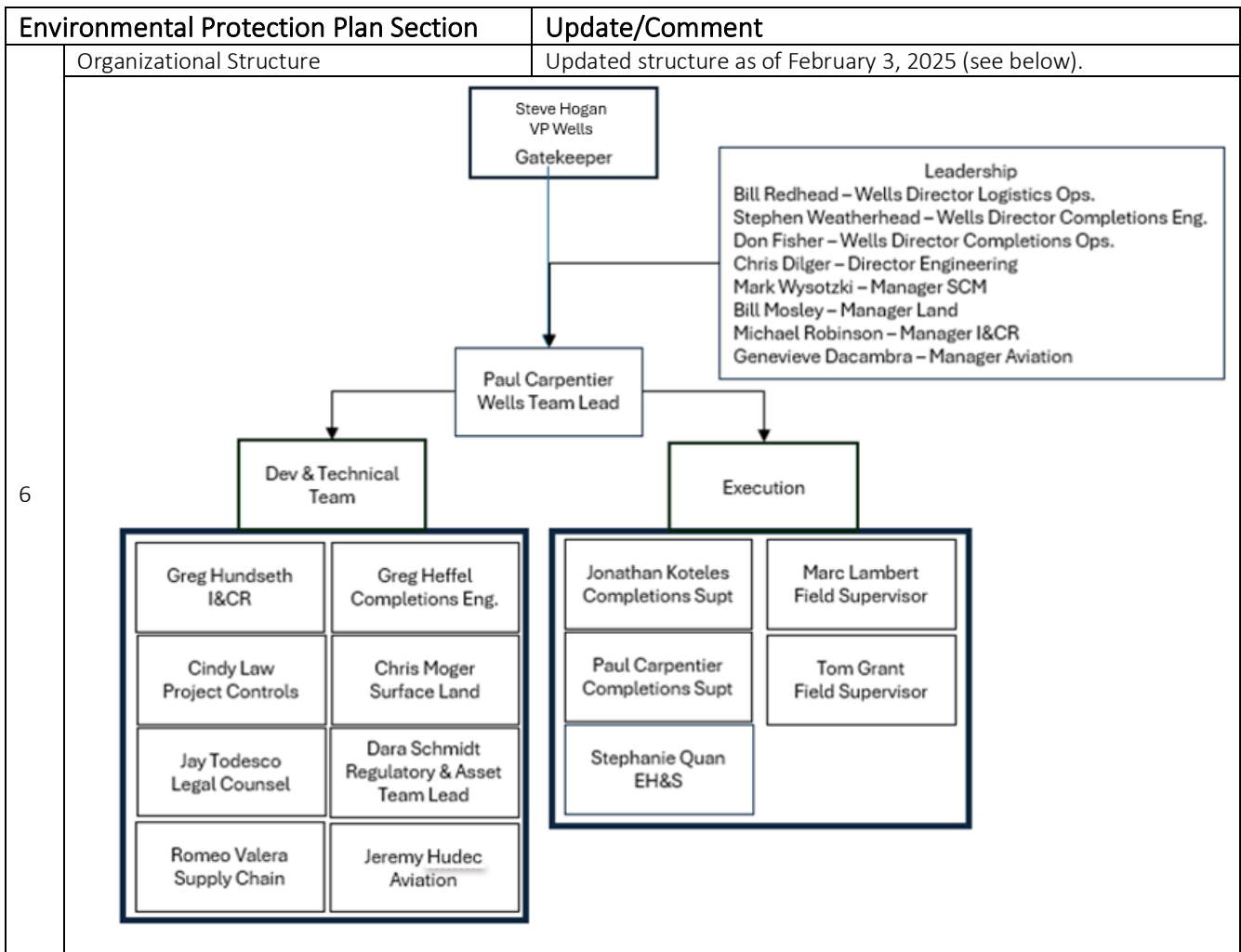
- conducting sweeps for dens and nests, if required, to maintain setback distances;
- increased fire hazard awareness/diligence; and
- cleaning equipment to prevent introduction of non-native vegetation

ENVIRONMENTAL PROTECTION PLAN PROJECT DESCRIPTION UPDATES – CONCORDANCE TABLE

Environmental Protection Plan Section	Update/Comment
1	<p>“Program activities are planned for the summer and winter months depending on the tasks being undertaken between 2021 and 2023.”</p> <p>Program activities are planned for fall 2024, winter 2024/2025 and spring/summer 2025.</p>
1	<p>“Abandonment and reclamation activities include helicopter scouting for water sources and access road availability, pressure testing of surface casing, Surface Casing Vent Flow (SCVF) testing, Gas Migration testing, winter access and lease construction for minimal disturbance,”</p> <p>Abandonment and reclamation activities will be by helicopter operation and no longer include the need for winter access and lease construction.</p>

¹ EnviroSearch Ltd., OROGO Environmental Protection Plan, Suncor Tweed Lake M-47, Tweed Lake A-67 & Bele O-35 Abandonment and Reclamation Program Colville Lake, Sahtu Region, Northwest Territories. Prepared for Suncor. File No. 21NT0254, May 2021.

Environmental Protection Plan Section		Update/Comment
3.1	Management Systems (Structures, facilities, equipment and systems)	Suncor will be contracting a Reliance Oilfield Services heli -portable wireline unit. This unit has gone through an extensive inspection and replacement of all hydraulic hoses, maintenance to the engine and inspection of all the remaining equipment. Suncor will oversee that Reliance will follow the manufacturer maintenance schedule for this unit. Other equipment that will be required for this operation is the helicopters which Great Slave Helicopter will be responsible for.
3.1	Management Systems (Fuel Storage and Handling)	It is anticipated that fuel types will include oil and gasoline for equipment, diesel for machinery and jet fuel for the helicopter. Fuel for Program activities onsite is anticipated to be minimal and will be transported via Jerry cans or fuel drums depending on quantity needed. Spill response kits will accompany all fuel types in sufficient quantities according to fuel type and volume. For small fuel containers, such as drums, secondary containment may be used to reduce the risk of a spill. Drip trays will be used to capture minor spills and drips while refuelling equipment. All fuel stored on-site will be handled and stored in accordance with the guidelines specified under GNWT's Environmental Protection Act (1988). Personnel will be made aware of Suncor's spill prevention measures.
4	A summary of the identified hazards and mitigations provided in Suncor's Environmental Risk Assessment of Worst Credible Scenario includes cement as a hazard.	Cement is an unlikely hazard with updated abandonment plans.
4	Environmental Hazards	
4	<p>Program-related residual effects generated by increased noise are expected to be negligible under normal operating conditions.</p> <p>Helicopter-supported abandonment activities are focused at the wellhead with low to no-risk of degradation resulting from erosion.</p> <p>Helicopter-supported abandonment activities virtually eliminate risk of permafrost exposure.</p> <p>The significance of the contribution of the Program to the residual effects on vegetation is expected to be low.</p> <p>Residual effects of the Program on wildlife and birds are species-specific and will vary with the type, intensity, and duration of the disturbance. Residual effects are not expected to be present for most species. The Program is not predicted to result in significant environmental effects since the duration of the disturbance will be short.</p>	
8	<p>No contaminated soils are anticipated. Should a spill occur contaminated soils or liquid residue will be placed in drums/totes, hauled off site via helicopter and temporarily stored in a lined bermed area at Colville Lake. Any impacted soils resulting from spills will be removed the following winter season and disposed of at an approved disposal facility offsite.</p> <p>Wastes that will be disposed of off-site will be properly stored at a temporary storage area in Colville Lake until the following winter season when they can be removed via winter road. Suncor will ensure that transportation and disposal of waste will be completed by approved carriers and receivers that are registered with territorial and/or provincial authorities and hold all applicable licenses and permits.</p>	



Paul Carpentier (Logistics) remains accountable for EPP execution with respect to the project. Tom Grant (Logistics Field Supervisor) is responsible for implementing the EPP. Their contact information remains unchanged.