



**NWT Facility
SUNCOR AMACO TATHLINA N-18
Abandonment Program**

Bottom Hole Location: 300N18602011800

Click here to enter text.

Project Name:
IO #:
AFE Amount: \$268,800

Rev #0

Corporate Head Office
Suncor Energy Inc.
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I. OBJECTIVE

The objective is to pressure test the wellbore, perform and evaluate a CBL, change the fluids in the wellbore from inhibited to fresh water. Once OROGO has received the CBL results and approval provided, the well can be cut and capped as per the OROGO letter dated July 17, 2019.

II. WELL DATA

Well Name: SUNCOR AMOCO TATHLINA N-18

Permit Number:	4593	U.W.I:	300N18602011800
AFE Number:		Working Interest %	100%
AFE Amount:	\$268,800		
Spud Date:	Jan 28/73	Rig Release:	Feb 19/73
Elevations:	KB: 396.88 m	GL: 393.19 m	CF: N/A
Depths:	TD: 1339.60 mKB	PBTD: 1124.10 mKB	BGWP: 88.0 m
Directional:	TVD: Vertical	Angle: n/a	KOP: n/a
Latitude:	60° 17' 46" N	Longitude:	118° 03' 00" W

III. TUBULAR & WELLHEAD DATA

Surface Casing: 13 jts – 219.1 mm, 35.72 kg/m, K-55, ST&C csg set @ **164.90 mKB**

Cemented w/: 325 sasks of construction cement with 2% CaCl₂, bumped plug with 820 psi or 5.7 MPa. Held okay, Good cement returns approximately 5 bbls or .8 m³.

Production Casing: 116 jts – 114.3 mm, 17.3 kg/m, Armco Seal-Loc csg set @ **1128.98 mKB**

Cemented w/: scavenger of 30 sacks + 2% gel, with a lead was 200 sasks of 2:1 Poz + 8% gel + 0.5% CFR2 + 0.15% HR7 followed by tail of 200 sasks of 1.1 Poz + 2% gel + 0.5% CFR2 (total volume was 570 cu. Ft or 16.14 m³, plug bump with 2000 psi or 3.8 MPa. Beld off. Held okay.

0.0 m3 of cement returns to surface

Wellhead: 279.4 mm x 219.1 mm Casing Bowl, 21 MPa, Cameron
279.4 mm x 179.4 mm Tubing Head, 21 MPa Cameron
179.4 mm x 52.4 mm, Tubing Head Adapter Flange, 21 MPa
52.4 mm, 21 MPa, Master Valve
52.4 mm, 21 MPa, Secondary Valve
52.4 mm x 52.4 mm 21 MPa Flow Tee
52.4 mm, 21 MPa, Wing Valve

IV. ATTACHMENTS

- Reliance Swabbing Quote
- Wellbore diagram

Well History

Jan 1973	Drilled to a total depth of 1339.6 m. DST testing was completed, and the well was plug back with two cement plugs. Casing was landed at 1128.98 m and cemented into place.
Sept 2014	Lease and wellhead were inspected.
Aug 2019	A OROGO inspection report was done by Barlon Engineering. The inspection of the well and lease indicated no vent blow or gas migration.

V. TUBULAR PROPERTIES

O.D. (mm)	Weight (kg/m)	Grade	Thread	I.D. (MIN) (Pin) (mm)	Drift Diameter (MIN) (mm)	Coupling O.D. (S&B) (mm)	Capacity (MAX) (m ³ /m)	Collapse (MPa)	Burst Body Connection (MPa)	Tensile (1000daN)
219.1	35.72	K-55	STC	205.7	202.5	244.5	0.033882	9.45	20.34	117.0
114.3	17.3	J-55	LT&C	101.6	98.43	127.0	0.008108	34.2	36.89	72.1

NOTE: Reports do not state Grade of casing and only reference is Armco Seal-Loc assuming this is the thread.

VI. LANDING DEPTHS

Description	Landing Depth, mGL
Surface Casing	164.9
Production Casing	1128.98

VII. FORMATION TOPS

Formation Top	mSS	mKB	mTVD
Muskwa	-659.28	1056.13	
Slave Point	-693.73	1090.57	
Watt Mountain	-741.58	1138.43	
Sulphur Point	-769.01	1165.86	
Elk Point	-794.61	1191.46	
Keg River Limestone	-865.02	1261.87	
Chinchaga Detrital	-906.17	1303.02	

RESERVOIR PROPERTIES

Formation:**Fluid Type:****Interval (mKB):****Length (m):****TVD (m):****Pressure (kPa):****Temperature (°C):****Max H₂S / CO₂ (%):**

VIII. SUNCOR REQUIREMENTS

General:

This well is part of a project which is proprietary to Suncor Energy Inc., Information is to be held strictly confidential, document not to be copied.

Well site Supervisors must ensure that the applicable Suncor Safe Work Practices are observed, including the following:

- Safety Orientation - All Onsite personnel must be oriented to site hazards and signed in on the sign-in log.
- All personnel performing work must have a valid Completions Work Permit prior to commencing work.
- Ground Disturbance deeper than 30 cm (including rig anchors) is not to be carried out without the direction of a Logistics representative.
- Hydrocarbon Exposure LEL monitors will be used by all personnel on any job where hydrocarbon vapors may be present.
- H2S Safe Work Practice will be observed by providing H2S detection equipment, trained personnel, and specified safety equipment when required.
- Ensure a Field Level Hazard Assessments (FLHA) to identify and document site specific hazards are completed prior to commencing work, before all critical tasks and at any change in scope during the task as per the Suncor Completions SWP.
- Directive 33 Well Servicing and Completions Operations—Requirement Regarding the Potential for Explosive Mixtures and Ignition in Wells – have documented practices available at the well site for the safe management of the potential for explosive mixtures and ignition in wells and associated surface equipment. A Fire and Explosion Hazard Management Plan is to be posted at the work site.

Ensure current MSDS sheets are onsite for all controlled products including produced fluids. Ensure that workers are made aware of the Hazards and safeguards.

All unplanned events that occur that cause or could have caused loss are to be reported to the Completions Superintendent immediately. Incidents with or without loss must reports must be utilized as directed by the Completions Superintendent.

All wastes must be manifested and tracked when leaving the facility, to a non-Suncor owned disposal site, as per AER Directive 58. A fully completed AER Alberta Environment Waste Manifest is to be submitted with the final report for all Dangerous Oilfield Wastes (DOWs).

Conduct all operations in accordance with applicable IRP's, provincial acts and regulations pertaining to the AER.

Ensure a copy of the Suncor Corporate ERP is available on site. Complete and post the Suncor Completions Site Specific ERP.

An Assignment of Supervisor form must be completed and posted at location.

An injured worker transportation form must be posted on location. If the work site is greater than 40 minutes from an approved medical facility an alternate form of injured worker transportation with qualified emergency medical personnel must be present on location. Note: Suncor medic clinics qualify as an approved medical facility.

All employees and contractors certification of First Aid, H₂S, WHMIS and TDG etc. must be verified before they are allowed access to work on site.

All contractors' competency must be verified before they are allowed access to work onsite. Frequent, task-specific, on-going competency assessments must also be conducted for the duration of a contractor's term in a specific position.

A site walk inspection must be conducted every day in conjunction with a morning operational / safety meeting outlining all safety hazards and planned procedures for the day. This must be recorded on the daily tour report.

Road use and pipeline crossing agreements and Temporary Diversion Licenses, when required, must be in place prior to commencing any operations.

Any operation outlined in this program or otherwise implied by the nature of the work to be conducted that requires clarification shall be discussed with Operations.

Calgary office, Completions Analyst, Completions@Suncor.com will submit required AER DDS notifications.

IX. CONTACTS**SUNCOR PRIMARY CONTACTS**

Name	Title/Location	Office	Cellular
Matt Crockett	Completions Engineer	403-296-5439	587-284-1549
Jonathan Koteles	Completions Supt.	403-296-8916	403-510-7217

REGULATORY, HEALTH, & SAFETY AGENCIES

Name	Emergency #	Emergency #	
SEC Calgary	403-296-3000		
Air Ambulance Service	1-800-661-3822		
RCMP – Fort McMurray	780-799-8888 (24hr)		
Regional Hospital			
W.C.B.	1-866-922-9221		
FOREST FIRE NWT	1-877-698-3473 (1-877-NWTFIRE)		
GNWT (Office of the Regulator of Oil and Gas Operations)	1-867-920-8130 (24hr) (Spill Response) 1-867-445-8551 (Incident Response) 1-867-767-9067		
Sathu Land and Water Board (SLWB)	1-867-598-2413		
Mackenzie Valley Land and Water Board (MVLWB)	1-867-669-0506		
NWT – Environment and Natural Resources Sahtu Regional Office	1-867-587-2422 (General) 1-867-587-2422 (Wildfire)		
NWT – Environment and Natural Resources Decho Regional Office	1-867-695-7450 (General) 1-867-695-7433 (Wildfire)		

SERVICE COMPANY CONTACTS

Service Type	Company	Contact Name	Office Number	Cellular

X. PROCEDURE

This program is to be used as a guide only. Field conditions and engineering decisions may change throughout the course of the job. However, do not change or deviate from this procedure without approval from the responsible Completions Superintendent.

1. Review the previous WellView report for this well. Flag any potential issues and discuss with the Calgary Superintendent.
2. Inspect the wellhead valves for sign of damage and discuss with the Permit Issuer before signing off on the permit. Obtain work permits (e.g. Hot Work Permit) and approvals to begin well work.
3. Hold a safety orientation with a procedural meeting and conduct a pre-job hazard assessment with all onsite personnel and document in the Daily Report. Scout the location for construction requirements and confirm wellhead specifications.
4. If applicable ensure the Well Abandonment/Flaring notifications have been submitted at least 24 hours prior to the respective operations to the Calgary office, c/o Completions Analyst – completions@suncor.com
5. Monitor LEL and H₂S with personal monitors throughout the program.
6. Perform a 10-minute Surface Casing Vent Flow bubble test as per the outlined procedures in OROGO “Well Suspension and Abandonment Guidelines and Interpretation Notes” Section 4A. Notify the Operations Supervisor of the results and document the results in the Day #1 daily report.
7. Measure and record casing pressure. Notify Calgary operations if pressure exists.
8. Fly in equipment and personal using Highland Helicopters. Nitrogen bottle cage, wireline skid, 3 empty totes (1.0 m³ capacity), pump to inject water, hose to connect from wellhead to tote and to pump.
9. Using nitrogen bottles pressure test the casing to 7 MPa for 15 minutes.
10. Move in rig up Reliance heli portable wireline skid. Rig up to working valve and wireline control components (179.4 mm, 21 MPa adapter flange, B.O.P’s, and Lubricator).
11. Stand mast or hang sheave spool and make equipment and tools ready for wireline operations.

12. Ensure the wellbore is full of water. A CBL will be run and a full water column is required. The water column should also be in a stabilized state (limited bubbles). Contract Superintendent on water level found and if a top up is required.
13. Run in the hole with a xx mm gauge ring. Run in the hole with a RBL/GR/CCL and log from PB to surface. Correlate to an open hole log supplied. Send the results to Matt Crockett mcrockett@suncor.com and Jonathan Koteles jkoteles@suncor.com. A 7.0 MPa pressure pass may be required depending on cement quality. Send log to Becky Harish (bharish@suncor.com) to fill out DDS submission.
 - The CBL will be used to determine the cement top, evaluate the cement bond behind casing and assess any repairs or remedial cementing required to isolate all oil or gas bearing zone, discrete pressure zones and potable water zone, including consideration of any lost circulation zones.
 - Suncor must submit the details of the cement evaluation to OROGO for approval prior to abandonment of the Tathlina N-18 well.
14. Rig in swabbing equipment. Swabbing the wellbore fluid back to the totes on site. Once the first tote is full fly it out to the Indian Cabins. A water truck will be waiting at Indian Cabins.
15. Mobilize water truck with pup trailer. The truck will be to take the wellbore fluid from the wells. The pup will be full of fresh water to fill the well back up. Have the helicopter land the tote near the truck. He can release the load and come back for another load. The truck driver can suck the fluid on from the tot and wait for the next load. Expected fluid volume is 9.1 m³.
16. Once the well is swabbed dry then fresh water can be flown in and pumped into the wellbore until it is full. Then swab the well down 3 m to ensure it is winterized.
17. Rig out and release all services. Move all equipment off location.
18. Fill out the attached "Surface Abandonment Handover Form" and turn the well over to logistics for cut and cap. Note the date of the gas migration test in the document. Send form to Greg & Jonathan.
19. Rig out and release all services. Move all equipment off location.

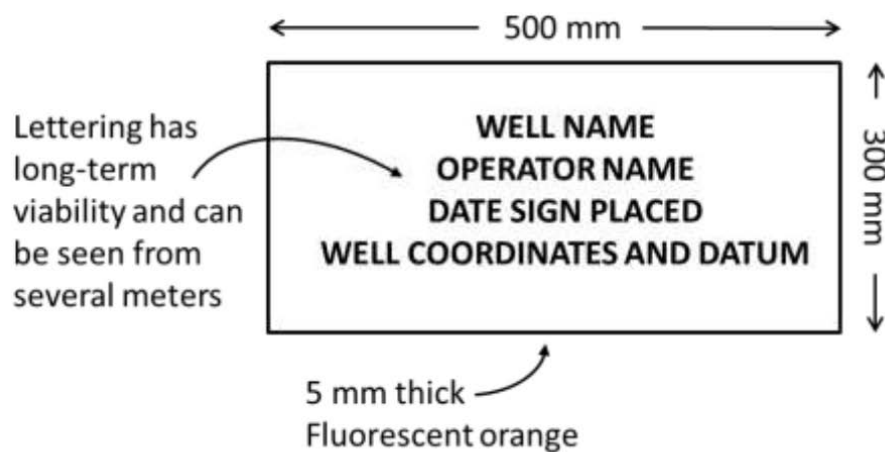
Surface Abandonment Requirements

20. To comply with OROGO Abandonment Section 6E Surface Abandonment Guidelines. Immediately upon Completion of the downhole abandonment work, Suncor Logistics team will receive the "Surface Abandonment Handover Form".

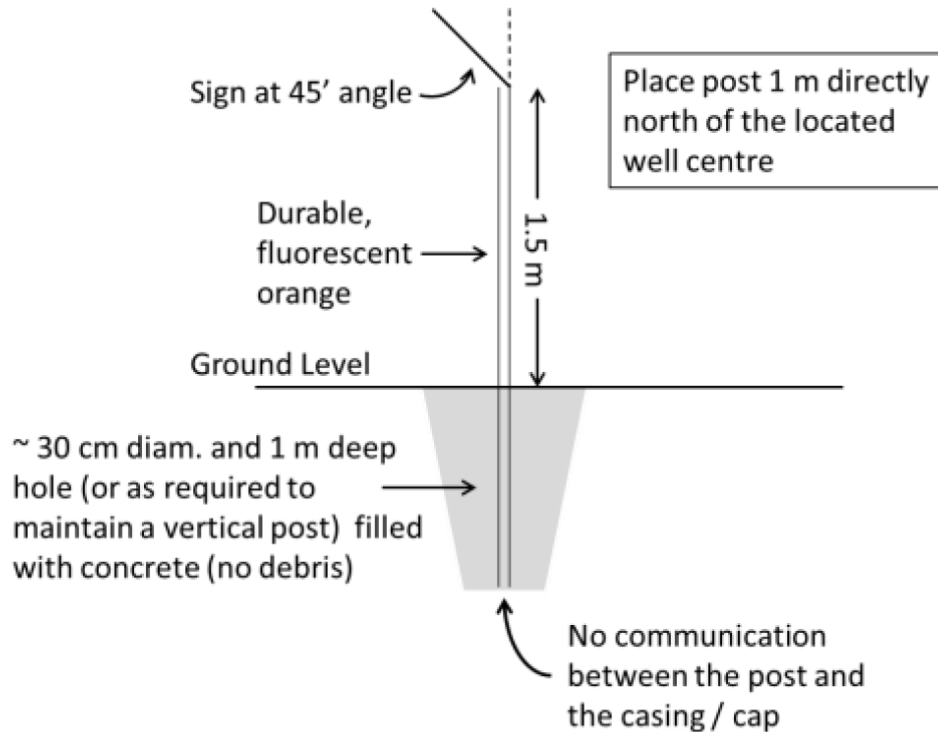
21. Suncor Logistics will move onto location and perform the below procedure:

- Remove the Wellhead
- Cut off casing strings minimum 1 meter below natural ground level
- Surface, intermediate and production casing strings must be capped at surface with a vented capping system: a steel plate that is fastened and installed in a manner as to prevent any potential for pressure to build up within the casings from the shallowest zonal abandonment to the surface, while restricting access to the casing strings at surface.
- Field verified coordinates for the well center must be provide to OROGO as part of the Well Operations report. Geodetic datum must be specified NAD83 recommended. Coordinates must be to 4 decimal places or in degrees, minutes and seconds to 2 decimal places.
- A field sketch of the area must also be submitted as part of the Well Operations Report.
- After surface abandonment is completed, the well must be marked with a durable post and sign as shown below.

Sign Requirements



Post Requirements



- Ensure all debris associated with entire well operation is removed.
- Take pictures of lease and cut and capped well with signage.
- Submit all information and pictures to mcrockett@suncor.com and applicable Logistics team lead.

22. Finalize Documentation

- Ensure tubing tallies are entered and correct in Wellview.
- Ensure WellView schematic is accurate, as built, drawing.
- Take a picture of final wellhead and add as WellView attachment.
- Attach electronic copies of well related information to WellView file, if applicable.
- Well Site Supervisor emails Project Engineer of the end date of the operation in Wellview and files end of well (EOW) documentation in the Completion Microsoft Teams EOW WSS Entry
 - Completion Teams Folder>General> EOW> End of Well WSS Entry
 - License # _ Well Name_ EOW
- Issue Work Orders to vendors - following completion of the requested work, field operations will confirm that the field ticket is complete and accurate in writing, by signing the field ticket and providing a separate work order.

END OF PROGRAM

PROGRAM SIGN OFF

PREPARED BY:

<hr/> Matt Crockett Sr. Engineer, Completions	<hr/> Date
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APPROVED BY:

Tier 1:

<hr/> Jonathan Koteles Superintendent, Completions	<hr/> Date
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APPROVED BY:

Tier 1 /2/3:

<hr/> Bill Plaxton Specialist, Engineering Completions	<hr/> Date
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APPROVED BY:

Tier 1/2/3:

<hr/> Dean Tymko Director, Engineering, Completions	<hr/> Date
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