

March 17th, 2023

Office of the Regulator of Oil and Gas Operations
PO Box 1320
Yellowknife NT, X1A 2L9

By Email: orogo@gov.nt.ca

RE: Abandonment of the Cameron L-44 Well (ACW-2022-SOG-L-44-WID 1743)

ELM Inc, acting on behalf of Alvarez & Marsal Canada Inc in their capacity as the receiver for Strategic Oil and Gas Ltd requests a variation to the well approval for the Cameron L-44 well.

In carrying out the abandonment program, ELM has determined that this well has two casing leaks. The first is caused by the stage tool and external casing packer. ELM proposes to abandon this leak using a permanent bridge plug and cement. The second leak starts at 33.5 mKB and its total size is not yet known.

The revised abandonment program has steps to abandon the stage tool and external casing packer, then determine the extent of the casing failure. If required, there is steps to carry out a cement squeeze on the casing failure.

Should you have any questions or require further information, please contact the undersigned at christopher@elminc.ca

Sincerely,

Christopher Gagnon, EIT

ELM Inc, acting as a consultant to Alvarez & Marsal Canada Inc



ELM
Environmental Liability Management

Routine Well Abandonment Program

Strategic Oil and Gas Ltd. C/O Alvarez & Marsal Canada
Inc.

STRATEGIC ET AL CAMERON L-44
300/L-44 60-10N 117-30W

Elm Inc. Project Number: STRA050

Developed by: Christopher Gagnon EIT
Reviewed by: Malcolm McKean P.Eng

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ROUTINE ABANDONMENT PROGRAM

BACKGROUND:

- Suspended vertical well.
- Completed in the Keg River, Muskeg, Sulphur Point and Slave Point.
- Keg River, Muskeg, Sulphur Point, and Slave Point abandoned with permanent bridge plugs and cement.
- Stage tool / External casing packer are leaking.
- Well has a shallow casing failure.
- Bond log ran February 13, 2023 no isolations are required.

ABSTRACT:

- Abandon the leaking stage tool and external casing packer with a bridge plug and cement.
- Delineate the extent of the casing failure.
- If necessary, carry out remedial cementing.
- Cut and cap the well.

CONTACTS:

Elm Inc. Calgary Office

Elm Inc. Calgary Office		
Malcolm McKean P.Eng, Vice President Liability	██████████ – Cell	Malcolm@elminc.ca
Christopher Gagnon EIT, Operations Engineer	██████████ – Cell	Christopher@elminc.ca

Elm Inc. Field Staff

Elm Inc. Field Staff		
To be determined	To be determined	To be determined

Client Contact

Client Contact		
Duncan MacRae – Director, A&M	██████████ - Cell	dmacrae@alvarzeandmarsal.com

Regulator Contact

Regulator Contact		
OROGO - Office	867-767-9097	orogo@gov.nt.ca
OROGO - 24-hour emergency line	1-867-445-8551	
NWT Spill Line	1-867-920-8130	

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WELL INFORMATION:

WELL NAME: STRATEGIC ET AL CAMERON L-44
UNIQUE ID: 300/L44 60-10N 117-30W
SURFACE LOCATION: 60.05861, -117.65083
LICENSE #: 1743
STATUS: Suspended
TOTAL DEPTH: 1634.0 mKB
ELEVATIONS: **GL:** 745.5 m **KB:** 749.1 m
BGWP: 600.0 mKB
PLUG BACK: 1402.0 mKB (Permanent Bridge Plug)
H₂S DATA: Unknown, assume 2%
SCVF: None, tested September 15, 2022
GAS MIGRATION: None, tested September 15, 2022
SITP: 0 kPa
SICP: 0 kPa
RESERVOIR PRESSURE: Unknown, assume less than 10 MPa

MAX FLARE VOLUME: 1.5 x wellbore volume at 10 MPa = 2.5 e3m³

Significant flare volumes are not expected.

LANDOWNER: Crown

DIRECTIONS: Refer to maps

COMPLETION: Keg River: 1529.0 – 1531.0 mKB (abandoned)
 Permanent Bridge Plug and cement: 1504.9 – 1517.1 mKB
 Muskeg: 1499.0 – 1501.0 mKB (abandoned)
 Permanent Bridge Plug and cement: 1478.9 – 1497.0 mKB
 Sulphur Point: 1430.5 – 1433.0 mKB (abandoned)
 Sulphur Point: 1425.5 – 1429.5 mKB (abandoned)
 Permanent Bridge Plug and cement 1400.9 – 1419.0 mKB
 Slave Point: 1385.0 – 1390.0 mKB (abandoned)
 Slave Point: 1371.5 – 1374.0 mKB (abandoned)
 Permanent Bridge Plug and cement: 1347 – 1365 mKB
 External Casing Packer (leaking): 1354.4 mKb
 Stage Tool (leaking): 1343.8 mKB
 Casing failure: 30 mKB to unknown depth.

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FORMATIONS:

<u>Formation</u>	<u>MD (m)</u>
Wabamun	526.0
Twin Falls	854.0
Slave Point	1361.0
Watt Mountain	1411.0
Sulphur Point	1423.0
Muskeg	1476.0
Keg River	1528.0
Pre-Devonian	1614.0
TOTAL DEPTH	1636.5

TUBULARS:

SURFACE CASING: 244.5 mm, 53.57 kg/m, J-55, ST&C. Casing landed at 389.2 mKB. Cemented with 30.0 T 0-1-0 Class G Cement + 2% CaCl₂.

No record of returns.

PRODUCTION CASING: 139.7mm, 23.07 kg/m, IK-55, LT&C. Casing landed at 1634.0 mKB. External Casing Packer at 1354.4 mKB
Cement Stage #1 13 T Class G + 0.8% NFL-3 + 0.1% SPC-12000

Cement Stage #2 77.5 T 0-1-8 cement + 0.75% T-10.

No cement returns to surface. Logged over zones of interest only.

PRODUCTION STRING: None

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Casing size and weight	Casing ID (mm)	Casing Drift (mm)	Casing Capacity (m3/m)	Top of Plugback	Casing Capacity to Plugback (m3)
244.5mm 53.57 kg/m	226.590	222.62	0.040325	N/A	N/A
139.7mm, 23.07 kg/m	125.730	124.12	0.012416	1402	17.41

DOCUMENTATION & REPORTING:

Daily operation reports are to be emailed prior to 7:00 am the next day following operations. They are to be sent to the ELM Inc office via ElmDownholeOffice@elminc.ca

Daily reports are to include a detailed description of the day's events along with all third party services that were utilized and their respective billing charges. These billing charges are to be added and represented by a daily operational cost. These total daily operational costs are to be reflected in a to-date accumulative cost. Along with the daily report the email must include a brief description of the work that was done that day, as well as a 24 hour forecast for the work to be done the following day.

Any incident or injury is to be reported immediately, after appropriate first- and/or medical-aid has been administered to the Elm Inc. office staff in Calgary. After the situation has been placed under control and all affected parties have been aided or corrected, an incident investigation is to take place and attempt to gather all necessary information via written witness statements and summarized in an incident investigation form. Elm Inc. Calgary office staff will then inform the appropriate client representatives of what has taken place.

After the abandonment has been completed, the well site supervisor is to provide the office staff in Calgary with all third-party purchase orders and field tickets/service reports, material transfers, waste manifests along with all appropriate field safety documents. This needs to be completed immediately following the job.

SAFETY:

A safety meeting is to be held with all service company personnel prior to each job. Wellsite supervisor must notify contractors of known hazards of which contractor(s) may be unaware. Wellsite supervisor must ensure that workers are aware of their responsibilities and duties under OH&S regulations and that worker comply with regulations. All service companies supplying

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materials will review Safety Data Sheets at this meeting for all products supplied and maintain these Safety Data Sheets available for worker's examination on location in compliance with WHIMIS regulations. All Safety meetings will be recorded on the daily reports.

Whenever possible, plan and conduct all workover procedures in a manner which will avoid the mixing of air & hydrocarbons in the well bore and connected surface piping. If mixing does occur, purge prior to pressurizing or exposing mixture to any other possible source of ignition.

All applicable regulations, including, but not limited to the NWT Office of the Regulator of Oil and Gas Operations (OROGO) and Occupational Health and Safety regulations, are to be strictly adhered to. Written instructions must be posted in the doghouse or other conspicuous area prior to the wellsite supervisor leaving the lease. Wellsite supervisor must designate, in writing, a competent person to carry out principal contractor's responsibilities. All verbal notifications and approvals from government regulatory agencies will be recorded on the daily report. The name of the individual contacted, and the subject matter of approval or notification should be recorded on the same.

REGULATORY:

OROGO regulations require that the Well Approval as signed by the regulator must be posted in a clearly visible location on the work site. The well approval, its additional terms, and this well abandonment program must be precisely followed. Any deviations from the program must be approved by OROGO and clearly documented on the morning report. Include the time, name of person approving changes, and the important points of the phone conversation.

ABANDONMENT PROGRAM:

This program is for an operation currently in progress. The rig is already on the well.

Abandon the leaking ECP and Stage Tool

1. Make up and run-in hole with a 139.7mm permanent bridge plug on "baker style" setting tool, and packer in tandem.
2. Land bridge plug at 1336 mKB. Set plug as per tool company's instructions.
 - NOTE: A bridge plug must not be set within 5 meters of a casing collar. The casing collars are located at 1347.2 mKB and 1329.1 mKB

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3. Pull up and set packer as per manufacturer's instructions.
4. Pressure test the bridge plug to 7000 kPa for 10 minutes.
 - NOTE: If pressure test is unsuccessful, unset and re set packer. If issues persist, pull out and run in with a freshly rebuilt packer.
5. Pull out of hole and lay down packer.
6. Run in hole with tubing open ended. Land tubing just above the bridge plug.
7. Mix 250 L of cement in mixing barrel. Pour cement into tubing and circulate onto bridge plug as per attached procedure.
 - NOTE: Depending on how the Baker setting tool is set up, it may be possible to circulate cement through the tool rather than pull out and run in open ended.
8. Slowly pull out of the cement plug, then pull up 30 meters. Forward circulate to clean all cement out of the setting tool.

Delineate the casing failure

9. Set packer at 900 mKB. Pressure test down tubing to 7000 kPA for 10 minutes.
10. Run in or out of the hole with packer and pressure test various intervals to delineate the extent of the casing failure.
11. Once the casing failure is narrowed down to within 10 meters, contact Calgary to determine next steps. If required, proceed to remedial cementing section. Method of remedial cementing will be determined by Calgary office. If the casing is over a relatively short interval and contained within the surface casing, Calgary office will ask for permission to leave as is without remedial cementing.

Remedial Cementing – Balanced Plug

12. Run in hole with tubing open ended and land 16 meters below the casing failure.
13. Move on remedial cementing crew and vacuum truck.
14. Hold and record a safety and procedure meeting with all personnel on location. Perform a walk around inspection to ensure no hazards on the site. Document meeting topics and modify site specific ERP if necessary.

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15. Mix cement as per cementing program.
 - NOTE: Minimum cement plug volume is 1 m³
16. Pump cement down tubing and balance in well as per cementing program.
17. Slowly pull tubing above estimated cement top and reverse circulate 2 tubing volumes of fresh water to clean up tubing.
18. Squeeze cement into formation as per cementing program. Final squeeze pressure must exceed 7 Mpa.
19. Once cement has flat lined, close in well with pressure and rig off cementers. Clean up equipment into vacuum truck and mix sugar in truck to prevent cement from setting up.
20. After cement has set up (overnight at minimum) run in with tubing and probe cement plug. Apply 1800 decanewtons to confirm top of plug.
21. Pressure test plug and casing to 7 MPA for 10 minutes.
22. Pull tubing and lay down. Do not top up the well to prevent the wellhead from freezing solid.
23. Proceed to “Rig Out Service Rig”.

Rig out service rig

24. Circulate well to fresh water.
25. Remove BOP stack and re install wellhead.
26. Rig out the service rig. Clean the rig tank and take to next location for kill fluid or to slop tank at battery for transfer to disposal.
27. Ensure location is cleaned of all garbage and debris.
28. Proceed to “Wellhead cut and cap” section.

Wellhead Cut and Cap

29. Move in waterjet cut and cap crew and equipment.

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30. Hold and record a safety and procedure meeting with all personnel on location. Perform a walk around inspection to ensure no hazards on the site. Document meeting topics and prepare a site-specific ERP.
31. Install a bottle and hose type tester on the vent assembly. Watch tester and ensure there are no bubbles in 10 minutes. Document test on daily report and on the "Surface Casing Vent Flow" form. If using a non-freezing liquid (example windshield washer fluid) for the test, document the liquid used and the density.
32. Rig in the waterjet cut and cap crew. Cut and cap the well 1.5 meters below ground level following the waterjet company procedures. Take pictures of the well before the cut, with the wellhead removed, the cut surface, and the vented cap before and during instillation.
33. Backfill open excavation. Photograph the backfill.
34. Install abandoned well sign 1 meter north of the well. Sign is to meet the requirements as outlined in the attachment.
35. Release all services. Field operations are complete.

Final Reporting

36. Prepare a final downhole diagram showing the final well configuration.
37. Ensure that all tickets and costs are recorded on the morning reports. If a vendor has not submitted their tickets, then put in an estimated cost.
38. Tickets are to be coded with the well name, AFE number, date, and field supervisor's signature. Ensure vendors electronically send all invoices to

ELM Inc
#1000, 205 – 5th Ave SW
Calgary AB T2P 2V7
AP@Elminc.ca

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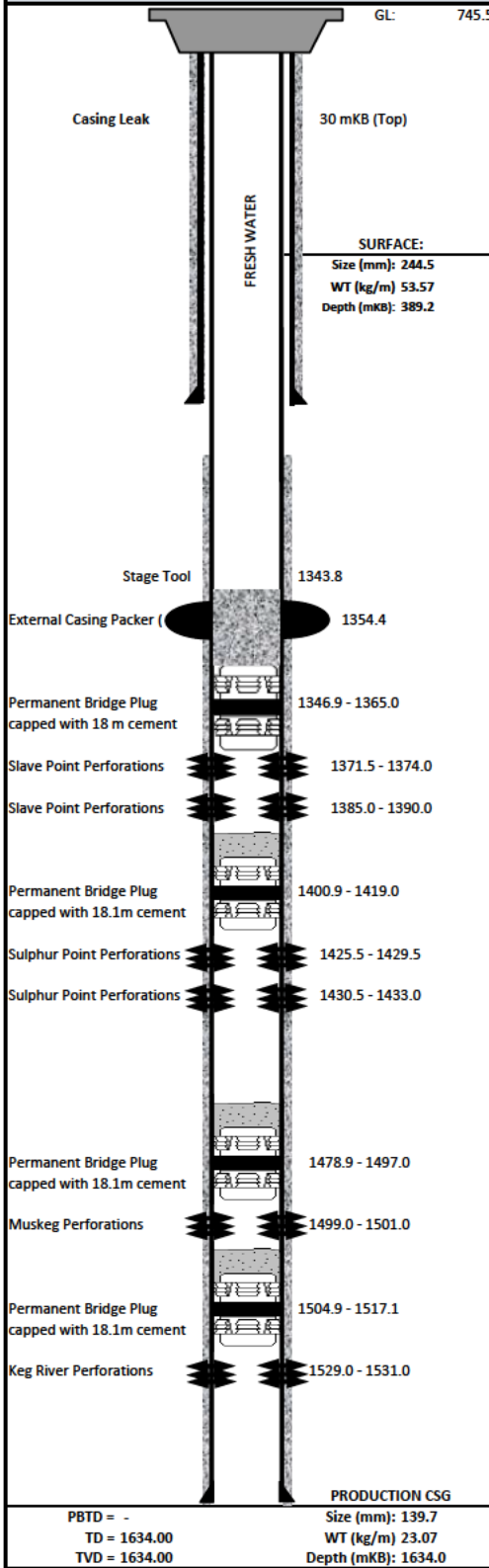
Elm Inc. Terms of Service:

1. The price estimate for this well is presented as a most probable cost based on similar repair operations and is to be used for AFE purposes only. This estimate is only as good as the information provided to Elm. Elm will co-ordinate and supervise the entire operation, pay all third party services and submit a final invoice based on actual costs incurred for equipment and services. Depending on the complexity of the abandonment, location and age of the well, Elm recommends adding 10-25% contingency to the estimates attached.
2. This estimate does not contain any lease clean up costs other than back filling around the wellhead after it has been cut off. If requested Elm's Reclamation Division will perform a site assessment that will be used to determine a cost estimate for surface reclamation. A preferential price to do the site assessment will be given if done in conjunction with the downhole abandonment.
3. Elm does not accept any liability for the well, lease, facility and or property it is working on. Elm acts as an independent consultant, providing mainly consulting and supervision services, with some specialized equipment included.
4. Elm will accept liability for the proper placement of bridge plugs and / or cement plugs that we set, however we do not accept liability for any unforeseen or unmentioned down hole problems. This would include failure of the casing to pressure test, collapsed casing, stuck pipe, tubing or rods, scale and or wax build up, surface casing vent flows, gas migration etc.
5. Elm does accept the responsibility of Prime Contractor for sites that have an agreement assigning the Prime Contractor Status.
6. The cost estimate included services and third party costs as listed, if other services are required they will be billed as per our cost schedule. The client will be informed of any costs to be incurred outside of this summary prior to the work being done. These services usually include: disposal costs, stuck and towing or cat work for access, rental and / or trucking of work strings, trucking of tubing, rods, and / or well heads, sour service, required safety equipment and extra charges associated working in hot or cold temperatures.

Elm's objective is to offer the safest and most efficient abandonment while saving the operator both time and money. We feel that by working with you on this project, we can achieve our goals and maintain the high level of professionalism that is reflected in the end product.



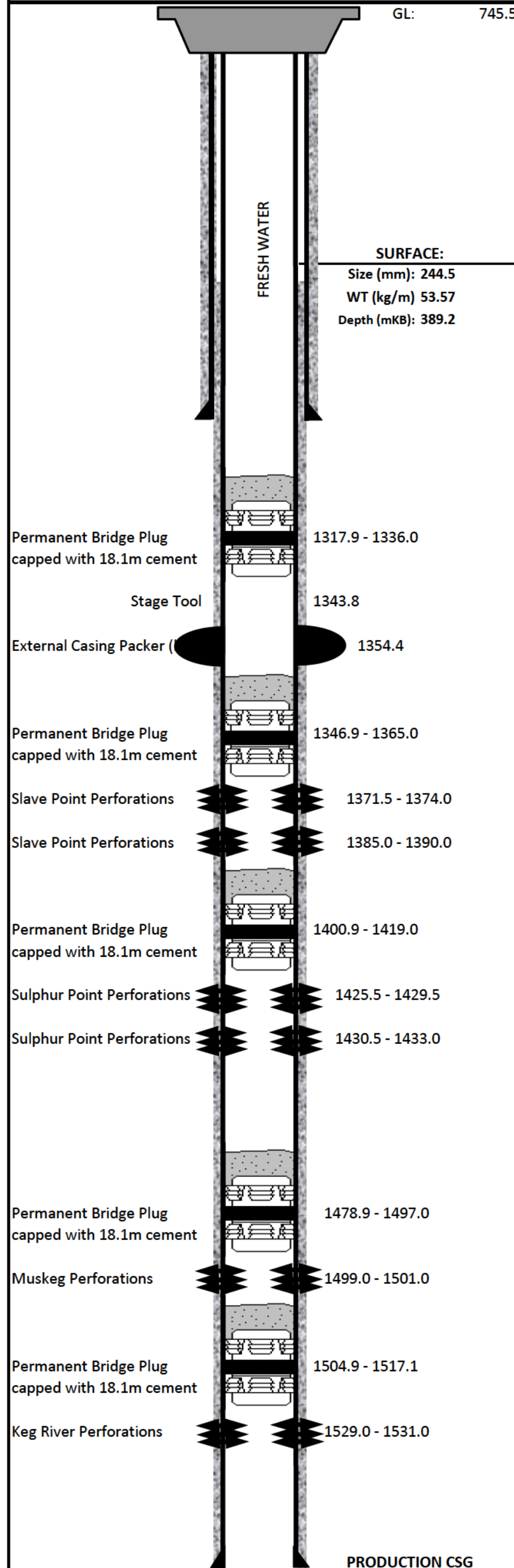
CURRENT WELL DIAGRAM - March 17 2023



GENERAL DETAILS				REV # 1.0			
WELL NAME: Strategic et al Cameron L-44		FIELD: Cameron Hills					
UWI: 300/L-44 60-10N 117-30W		LICENSE: 1743					
SURFACE:		LATITUDE: 60.05861		LONGITUDE: -117.65083			
COMPANY: Strategic Oil And Gas Ltd		DRAWN BY: C. Gagnon		DATE: 17 Mar 2023			
DEVIATION: Vertical		WELL STATUS: Suspended					
ELEVATIONS & DEPTHS							
KB (mKB)	GL (m)	KB-SCF (m)	KB-GR (m)	BGWP (mKB)	PBTD (mKB)	TD (mKB)	TVD (mKB)
749.1	745.5		3.60	600.00		1634	1634
CASING STRINGS							
STRING	SIZE (mm)	WEIGHT (kg/m)	GRADE	CPLG	DRIFT I.D. (mm)	SHOE DEPTH (mKB)	
Surface:	244.5	53.57	J-55	ST&C		389.2	
Intermediate:							
Production:	139.7	23.07	IK-55	LT&C		1634	
Liner:							
Open Hole:							
CEMENTING							
STRING	DETAIL			Returns (m ³)	Log Cmt Top (mKB)	Calc'd Top (mKB)	
Surface:	30 T 0-1-0 Class G + 2% CaCl ₂			Not Reported			
Intermediate:	Stage 1: 13 T Class G + 0.8% NFL-3 + 0.1% SPC-12000 Stage 2: 77.5 T 0-1-8 Class G + 0.75% T-10			No Returns			
COMPLETION DATA							
ITEM		DEPTH (mKB)		STATUS			
Casing leak (top)		30					
Stage Tool		1343.8					
External Casing Packer (leaking)		1354.4					
Permanent Bridge Plug capped with 18.1 m cement		1346.9 - 1365.0					
Slave Point Perforations		1371.5 - 1374.0					
Slave Point Perforations		1385.0 - 1390.0					
Permanent Bridge Plug capped with 18.1 m cement		1400.9 - 1419.0					
Sulphur Point Perforations		1425.5 - 1429.5		Abandoned			
Sulphur Point Perforations		1430.5 - 1433.0		Abandoned			
Permanent Bridge Plug capped with 18.1 m cement		1478.9 - 1497.0					
Muskeg Perforations		1499.0 - 1501.0		Abandoned			
Permanent Bridge Plug capped with 18.1 m cement		1504.9 - 1517.1					
Keg River Perforations		1529.0 - 1531.0		Abandoned			
LANDOWNER		LANDOWNER #		OCCUPANT		OCCUPANT #	
DIRECTIONS:				Sign Off			
REMARKS:							



PROPOSED WELL DIAGRAM



GENERAL DETAILS				REV #	1.0
WELL NAME:	Strategic et al Cameron L-44	FIELD:	Cameron Hills		
UWI:	300/L-44 60-10N 117-30W	LICENSE:	1743		
SURFACE:		LATITUDE:	60.05861	LONGITUDE:	-117.65083
COMPANY:	Strategic Oil And Gas Ltd	DRAWN BY:	C. Gagnon	DATE:	17 Mar 2023
DEVIATION:	Vertical	WELL STATUS:	Abandoned		

ELEVATIONS & DEPTHS							
KB (mKB)	GL (m)	KB-SCF (m)	KB-GR (m)	BGWP (mKB)	PBTD (mKB)	TD (mKB)	TVD (mKB)
749.1	745.5		3.60	600.00		1634	1634

CASING STRINGS						
STRING	SIZE (mm)	WEIGHT (kg/m)	GRADE	CPLG	DRIFT I.D. (mm)	SHOE DEPTH (mKB)
Surface:	244.5	53.57	J-55	ST&C		389.2
Intermediate:						
Production:	139.7	23.07	IK-55	LT&C		1634
Liner:						
Open Hole:						

CEMENTING				
STRING	DETAIL	Returns (m ³)	Log Cmt Top (mKB)	Calc'd Top (mKB)
Surface:	30 T 0-1-0 Class G + 2% CaCl ₂	Not Reported		
Intermediate:	Stage 1: 13 T Class G + 0.8% NFL-3 + 0.1% SPC-12000 Stage 2: 77.5 T 0-1-8 Class G + 0.75% T-10	No Returns	Logged ok	

COMPLETION DATA		
ITEM	DEPTH (mKB)	STATUS
Casing leak (top)	30	
Permanent Bridge plug capped with 18.1 m cement	1317.9 - 1336.0	
Stage Tool	1343.8	
External Casing Packer (leaking)	1354.4	
Permanent Bridge Plug capped with 18.1 m cement	1346.9 - 1365.0	
Slave Point Perforations	1371.5 - 1374.0	
Slave Point Perforations	1385.0 - 1390.0	
Permanent Bridge Plug capped with 18.1 m cement	1400.9 - 1419.0	
Sulphur Point Perforations	1425.5 - 1429.5	Abandoned
Sulphur Point Perforations	1430.5 - 1433.0	Abandoned
Permanent Bridge Plug capped with 18.1 m cement	1478.9 - 1497.0	
Muskeg Perforations	1499.0 - 1501.0	Abandoned
Permanent Bridge Plug capped with 18.1 m cement	1504.9 - 1517.1	
Keg River Perforations	1529.0 - 1531.0	Abandoned

LANDOWNER	LANDOWNER #	OCCUPANT	OCCUPANT #

DIRECTIONS:	Sign Off

REMARKS:
 Remedial cementing may be required depending on the extent of the casing failure.