

March 10, 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 M-31 Well (ACW-2022-SOG-M-31-WID 1122)

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 M-31 well.

During the abandonment of Cameron M-31, while running in a bridge plug as per step 59 of the currently approved program, the mechanical collar locator snagged on a casing collar inside the well. This snag caused the plug setting tool to malfunction and set the bridge plug at 9 mKB.

ELM has prepared a revised program to remove this bridge plug and re place it as originally intended.

ELM requests and exemption to the requirements of Safety Bulletin number 1 to carry out this work. The downhole perforations were successfully abandoned on March 9, 2023 using a pressure tested cement retainer that was capped with 18 meters of cement circulated in place. The well was successfully pressure tested again this morning (March 10, 2023) before running the bridge plug. There are zero downhole open sources for gas to cause pressure under this bridge plug, and the plug did not fully set, so it is not providing a seal for pressure to accumulate under it.

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 HB ET AL CAMERON M-31
300/M31 60-10N 117-00W

Elm Inc. Project Number: STRA050

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

March 10, 2023

ROUTINE ABANDONMENT PROGRAM

BACKGROUND:

- While running the bridge plug to abandon the previously cement squeezed zones the plug set up 9 meters into the well

ABSTRACT:

- Move on wash pipe, drill collars, and power swivel.
- Wash over the plug
- If necessary, run in overshot, latch onto plug, and pull out.
- Abandon previously cement squeezed zone.
- Rig out

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	

March 10, 2023

WELL INFORMATION:WELL NAME: STRATEGIC ET AL CAMERON M-31UNIQUE ID: 300/M31 60-10N 117-00W*Note that there are several different variations of the UWI in the well file*SURFACE LOCATION: 60.015813, -117.124201LICENSE #: 1122STATUS: Zonal AbandonedTOTAL DEPTH: 1060 mKBELEVATIONS: **GL:** 354.7 m **KB:** 358.35 mBGWP: 600.0 mKBPLUG BACK: 730 mKb (Cement top on retainer)H₂S DATA: Slave Point: 0.019% (Gas Analysis March 21, 1981)
Sulphur Point: 0.19% (Gas Analysis March 21, 1980)
Keg River: 0% (per lab analysis, but H₂S reported in field)ICVF: No. Had vent buster monitoring from October 28, 2022, to December 8, 2022.GAS MIGRATION: Yes, observed bubbling in water beside well. Samples collected from site of bubbling confirmed presence of light alkane gas consistent with leaking thermogenic gases from a source at depth. Sept 15, 2022. Tested again with similar results October 28, 2022.SITP: 0 kPaSICP: 0 kPaRESERVOIR PRESSURE: Slave Point: Unknown, 8500 kPa on tubing during abandonment ops. Assume 10 Mpa.
Sulphur Point: Unknown. Assume 10 Mpa.
Keg River: 5430 kPa (March 6, 1980)MAX FLARE VOLUME: 1.5 x wellbore volume at 10 MPa = 1.34 e3m³*Significant flare volumes are not expected during this operation*LANDOWNER: CrownDIRECTIONS: Refer to maps

March 10, 2023**COMPLETION:**

Keg River: 1009.0 – 1013.0 mKB (Abandoned)

Keg River: 1002.5 – 1005.0 mKB (Abandoned)

Keg River: 998.0 – 1001.0 mKB (Abandoned)

Baker “Lock-Set” Packer with Blanking Plug: 990 mKB

Sulphur Point: 886.0 – 887.5 mKB (Abandoned)

Sulphur Point: 884.0 – 885.0 mKB (Abandoned)

Sulphur Point: 879.5 – 881.5 mKB (Abandoned)

Bridge Plug c/w 9.4 m cement: 860.4 – 870.0

Fish (Packer w/ tubing): 860.4 mKB (packer element)

Slave Point: 826.0 – 828.5 (Abandoned)

Slave Point: 819.0 – 822.5 (Abandoned)

Cement Retainer c/w 18m cement: 791.4 – 809.4 mKB

Remedial Perfs: 756.0 – 757.0 (cement squeezed)

*Circulated 12.5 T of cement through remedial perfs and to surface
with 0.5 m3 returns. Shut vent and squeezed to 5 MPA.*

Permanent Bridge Plug: 9.0 mKB

FORMATIONS:

Formation	MD (m)
Beaverhill Lake	738
Slave Point	811
Fort Vermilion	848
Watt Mountain	863
Bistcho	868
Sulphur point	878
Muskeg	890
Keg River	978
Precambrian	1037
TOTAL DEPTH	1060

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TUBULARS:**SURFACE CASING:**

244.5 mm, 48.07 kg/m, H-40, ST&C. Casing landed at 199 mKB. Cemented with 13.5 T Oil Well G Cement + 3% CaCl₂

1 m³ cement Returns

Surface casing broke off while drilling intermediate hole. Broke off at 157 mKb, and lower portion fell. Top at 207.0 and bottom at 251.5 mKb.

Surface casing not part of wellhead. No vent assembly installed.

INTERMEDIATE CSG:

177.8mm, 25.3 kg/m, H-40, ST&C. Casing landed at 796 mKB Cemented with 20.3 T Oil Well G Cement.

10 Barrels (1.58 m³) Cement Returns

Intermediate casing has the vent assembly.

PRODUCTION CASING: 114.3mm, 14.14 kg/m, J-55, ST&C

Casing landed at 1061.4 mKB. Cemented with 6.6T Oil Well G Cement.

“Good returns throughout job”

Bond log was ran January 23, 1996, which was before remedial work that took place

PRODUCTION STRING: No tubing.

Casing size and weight	Casing ID (mm)	Casing Drift (mm)	Casing Capacity (m3/m)	Top of Plugback	Casing Capacity to Plugback (m3)
244.5mm 48.07 kg/m	228.63	224.66	0.041053	N/A	
177.8mm, 25.3 kg/m	166.07	162.89	0.021659	N/A	
114.3mm, 14.14 kg/m	103.89	100.71	0.008476	730	6.19

March 10, 2023**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 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

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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:

NOTE: This program is for an operation currently in progress. The service rig is already rigged up on the well.

Wash Over Bridge Plug

1. Move on tool company representative with power swivel and drilling assembly.
2. Make up and run-in hole with wash shoe on drill collars.
3. Trip in slowly until the plug is felt at is +/- 9 mKB.
4. Rig in the power swivel and the rig's circulating equipment. Wash over the bridge plug.
5. Once through the plug, pull out with the wash shoe. Inspect to see if plug body was recovered.
6. If plug body was not recovered, run in with an overshot, latch onto the plug, and pull out.
7. Run in with a rare earth magnet on sand line to PBTD at 791 mKB and pull out. Repeat as necessary until magnet comes back with no metal debris on it.

March 10, 2023**Re Abandon Existing Remedial Perforations**

8. Make up and run-in hole with 114.3mm permanent bridge plug and setting tool on tubing.
 - NOTE: Trip in slowly and carefully with the plug to avoid prematurely setting.
9. Position bridge plug at 748 mKB and set plug as per manufacturer's procedure.
 - NOTE: A permanent bridge plug may not be placed within 5 meters of a casing collar. The casing collars are located at 753.5 and 741.3 mKB
10. Close pipe rams and pressure test bridge plug to 7000 kPa for 10 minutes.
11. Rotate off the bridge plug as per manufacturer's procedure.
12. Mix 200 L of cement in barrel. Circulate cement down tubing as per attached procedure. Pull tubing above cement as per attached procedure.
13. Circulate well over to fresh water.
14. Pull tubing and lay down, stopping with 5 joints left for a final circulation to fresh water. Pull out last 5 joints but do not top up to prevent wellhead from freezing solid.
15. Remove BOP stack and re install wellhead.
16. Rig out the service rig. Clean the rig tank and send fluid to disposal.
17. Ensure location is cleaned of all garbage and debris.
18. Well will **NOT** be cut and capped this season. Further gas migration testing is required. If the gas migration tests are satisfactory, the well will be a state where it can be cut and capped under the current well abandonment guidelines issued May 25, 2022.

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Final Reporting

19. Prepare a final downhole diagram showing the final well configuration
20. 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.
21. 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

March 10, 2023

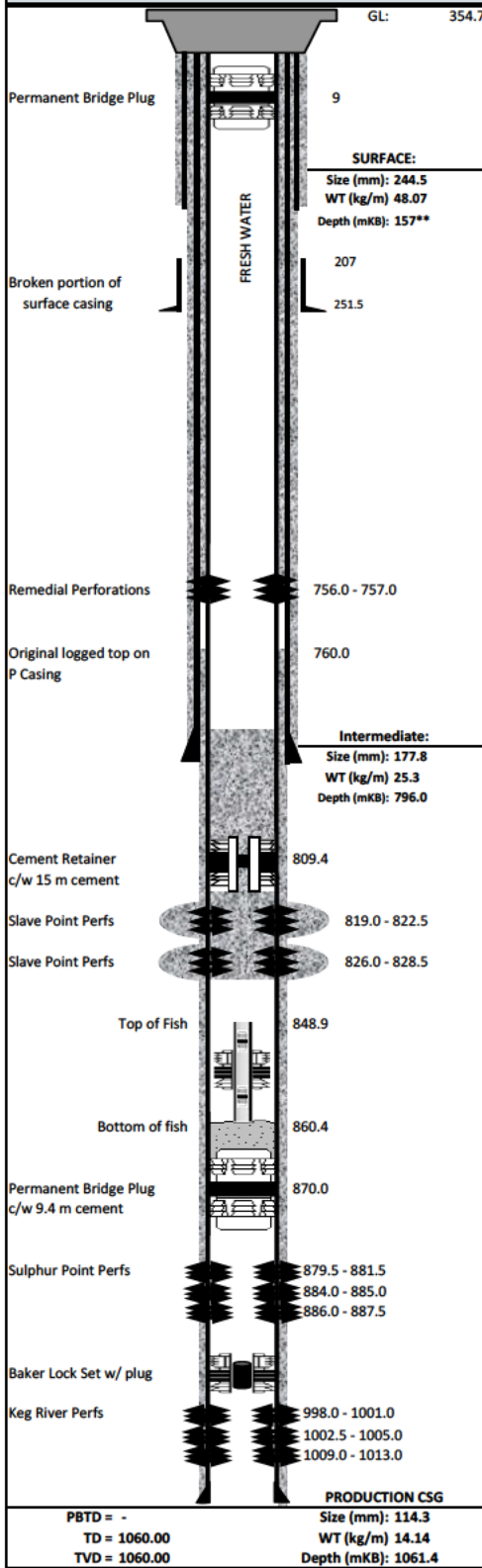
Elm Inc. Terms of Service:

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

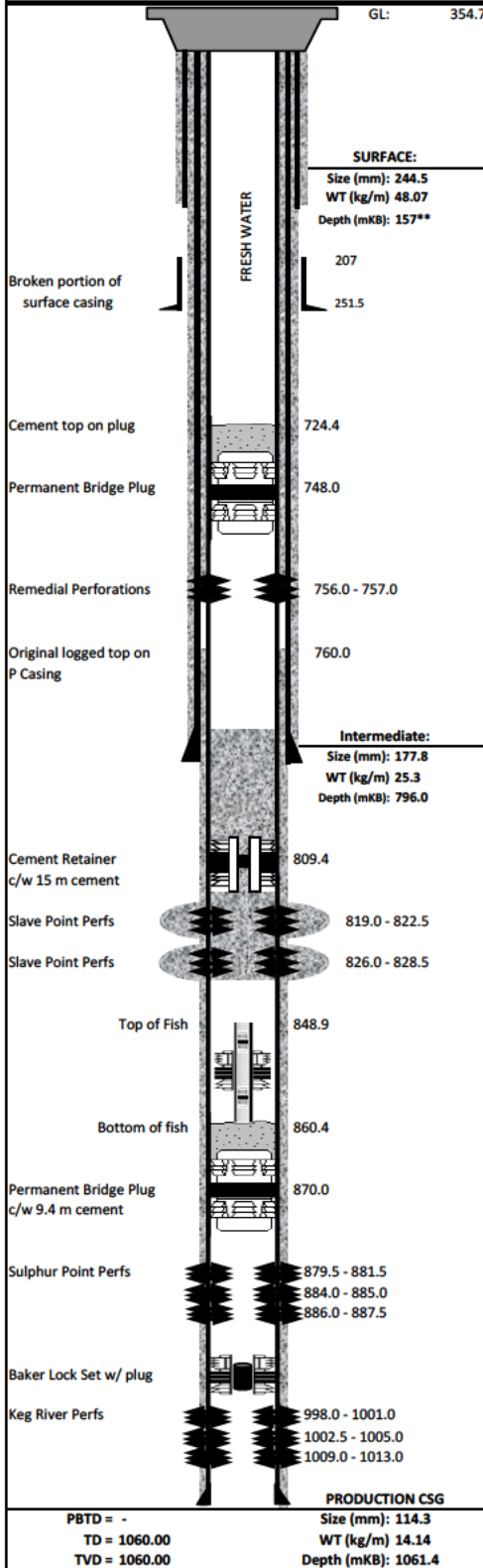


GENERAL DETAILS							REV #	1.0
WELL NAME: Strategic HB et al Cameron M-31			FIELD: Cameron Hills					
UWI: 300/M31 60-10N 117-00W			LICENSE: 1122					
SURFACE:			LATITUDE: 60.015813		LONGITUDE: -117.124201			
COMPANY: Strategic Oil And Gas Ltd			DRAWN BY: C. Gagnon		DATE: 10 Mar 2023			
DEVIATION: Vertical		WELL STATUS: Abandoned						
ELEVATIONS & DEPTHS								
KB (mKB)	GL (m)	KB-SCF (m)	KB-GR (m)	BGWP (mKB)	PBTD (mKB)	TD (mKB)	TVD (mKB)	
358.35	354.7		3.65	600.00		1060	1060	
CASING STRINGS								
STRING	SIZE (mm)	WEIGHT (kg/m)	GRADE	CPLG	DRIFT I.D. (mm)	SHOE DEPTH (mKB)		
Surface:	244.5	48.07	H-40			157**		
Intermediate:	177.8	25.3	H-40			796		
Production:	114.3	14.14	J-55			1061.4		
Liner:								
Open Hole:								
CEMENTING								
STRING	DETAIL			Returns (m ³)	Log Cmt Top (mKB)	Calc'd Top (mKB)		
Surface:	13.5 T Oil Well G + 3% CaCl ₂			1 m ³				
Intermediate:	20.3 T Oil Well G			1.58 m ³				
Production:	6.6 T Oil Well G (Original Cement Job)				760.00			
COMPLETION DATA								
ITEM	DEPTH		STATUS					
Permanent Bridge Plug	9							
Remedial Perforations - 12.5 T Cement circulated through and to surface	756.0 - 757.0		Abandoned					
Cement Retainer capped with 18 meters cement	791.4 - 809.4							
Slave Point Perforations - Cement Squeezed	819.0 - 822.5		Abandoned					
Slave Point Perforations - Cement Squeezed	826.0 - 828.5		Abandoned					
Top of fish	848.86							
Jet Cut tubing (washed over)								
Baker Model "L" Sliding Sleeve								
Pup Joint with permanent tubing plug								
Baker Model FB-1 Permanent Packer (Washed over w/slips milled off)								
Pup Joint with permanent tubing plug								
Baker Model 'F' profile nipple with FSG plug								
Perforated Pup Joint								
Baker Model 'R' profile nipple with FSG plug								
Re Entry guide								
Bottom of fish (sitting on top of PBP)	860.4							
Permanent Bridge Plug capped with 9.4 m cement	860.4 - 870.0							
Sulphur Point Perforations	879.5 - 881.5		Abandoned					
Sulphur Point Perforations	884.0 - 885.0		Abandoned					
Sulphur Point Perforations	886.0 - 887.5		Abandoned					
Baker "Lock-Set" Packer w/ Blanking Plug	990							
Keg River Perforations	998.0 - 1001.0		Abandoned					
Keg River Perforations	1002.5 - 1005.0		Abandoned					
Keg River Perforations	1009.0 - 1013.0		Abandoned					
LANDOWNER			LANDOWNER #		OCCUPANT		OCCUPANT #	
DIRECTIONS:					Sign Off			
REMARKS:								

**Note surface casing was originally landed at 199 mKB. It parted while drilling the intermediate hole. The new bottom of the casing is at 157 meters, and the dropped portion is between 207 to 251.5 mKB.



PROPOSED WELL DIAGRAM



GENERAL DETAILS							REV #	1.0	
WELL NAME: Strategic HB et al Cameron M-31			FIELD: Cameron Hills						
UWI: 300/M31 60-10N 117-00W			LICENSE: 1122						
SURFACE:			LATITUDE: 60.015813		LONGITUDE: -117.124201				
COMPANY: Strategic Oil And Gas Ltd			DRAWN BY: C. Gagnon		DATE: 10 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)		
358.35	354.7		3.65	600.00		1060	1060		
CASING STRINGS									
STRING	SIZE (mm)	WEIGHT (kg/m)	GRADE	CPLG	DRIFT I.D. (mm)	SHOE DEPTH (mKB)			
Surface:	244.5	48.07	H-40			157**			
Intermediate:	177.8	25.3	H-40			796			
Production:	114.3	14.14	J-55			1061.4			
Liner:									
Open Hole:									
CEMENTING									
STRING	DETAIL			Returns (m ³)	Log Cmt Top (mKB)	Calc'd Top (mKB)			
Surface:	13.5 T Oil Well G + 3% CaCl ₂			1 m ³					
Intermediate:	20.3 T Oil Well G			1.58 m ³					
Production:	6.6 T Oil Well G (Original Cement Job)				760.00				
COMPLETION DATA									
ITEM	DEPTH		STATUS						
Permanent Bridge Plug capped with 23.6m cement (200 Litres)	724.4 - 748								
Remedial Perforations - 12.5 T Cement circulated through and to surface	756.0 - 757.0		Abandoned						
Cement Retainer capped with 18 meters cement	791.4 - 809.4								
Slave Point Perforations - Cement Squeezed	819.0 - 822.5		Abandoned						
Slave Point Perforations - Cement Squeezed	826.0 - 828.5		Abandoned						
Top of fish	848.86								
Jet Cut tubing (washed over)									
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Pup Joint with permanent tubing plug									
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Bottom of fish (sitting on top of PBP)	860.4								
Permanent Bridge Plug capped with 9.4 m cement	860.4 - 870.0								
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Sulphur Point Perforations	886.0 - 887.5		Abandoned						
Baker "Lock-Set" Packer w/ Blanking Plug	990								
Keg River Perforations	998.0 - 1001.0		Abandoned						
Keg River Perforations	1002.5 - 1005.0		Abandoned						
Keg River Perforations	1009.0 - 1013.0		Abandoned						
LANDOWNER			LANDOWNER #			OCCUPANT		OCCUPANT #	
DIRECTIONS:						Sign Off			
PBTD = -		TD = 1060.00		TVD = 1060.00		PRODUCTION CSG			
Size (mm): 114.3		WT (kg/m): 14.14		Depth (mKB): 1061.4					
REMARKS:									
Diagram does not include potential perforations and cement squeezes to isolate porosity / repair uphole gas migration sources									
**Note surface casing was originally landed at 199 mKB. It parted while drilling the intermediate hole. The new bottom of the casing is at 157 meters, and the dropped portion is between 207 to 251.5 mKB.									