



Maverick T463 A1-1

*Well Completion Report
(Basic)*

*EP 136
Beetaloo Sub-basin
Northern Territory*

Tamboran Resources Pty Ltd

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- Appendix 2: Casing and Cementing Reports
- Appendix 3: Drilling Fluids Report
- Appendix 4: Mudlogging Data
- Appendix 5: Wireline Log Data and Displays
- Appendix 6: Logging While Drilling (LWD) / Measurements While Drilling (MWD) Data
- Appendix 7: Wellbore Survey

Glossary

Acronym	Description	Acronym	Description
BHA	Bottom Hole Assembly	RT	Rotary Table
BOP	Blow Out Preventer	ST	Sidetrack
CVT	Constant Volume Trap	Sst	Sandstone
DDR	Daily Drilling Report	TD	Total Depth
DF	Drill Floor	TIA	Telescopic Inner Assembly
DFIT	Diagnostic Fracture Injection Test	TIH	Tripping in Hole
DDR	Daily Drilling Report	TOC	Top of cement
DGR	Daily Geological Report	WBM	Water based mud
DST	Drill Stem Test	XLOT	Extended Leak Off Test
EMW	Estimated Mud Weight		
EP	Exploration Permit		
FIT	Formation Integrity Test		
Fm	Formation		
ft	feet		
GVR	Geo-Vision Resistivity		
HF	Hydraulic Fracturing		
ID	Inner Diameter		
JV	Joint Venture		
KB	Kelly bushing		
LOP	Leak Off Pressure		
LOT	Leak Off Test		
LWD	Logging While Drilling		
m	meter		
mbr	Member		
MD	Measured Depth		
mMD	metres, measured depth		
mRT	Meters, Rotary table		
mMDRT	Meters, measured depth, rotary table		
mTVD	Meters, True Vertical Depth		
MW	Mud Weight		
MWD	Measurement While Drilling		
OD	Outer Diameter		
PDC	Polycrystalline Diamond Compact		
POOH	Pull Out Of Hole		
ppg	Pounds per Gallon		
psi	pounds per square inch		
PU	Pick Up		
RCJB	Reverse Circulation Junk Basket		
RIH	Run in Hole		
RSS	Rotary Steerable System		

1 INTRODUCTION

Maverick T463 A1-1 was drilled within Exploration Permit (EP) 136 in the Northern Territory, Australia by Sweetpea Petroleum (a subsidiary of Tamboran Resources Pty Ltd). The well is located approximately 130 km east southeast of the town of Daly Waters (Figure 1 and Figure 2). The well spudded at 11:45 hours on 17 September 2022 and reached TD of 3050 mMDRT (logger's TD - 3053.43 mMDRT) at 22:45 hours on 05 October 2022.

The primary objectives of the Maverick T463 A1-1 well were to investigate the unconventional hydrocarbon potential of the Roper Group, specifically the organic rich shale intervals of the Velkerri Formation Amungee Member (Figure 15), as well as providing depth control and assessment of the geological constraints pertaining to potential future lateral well development.

The primary shale targets for the Maverick T463 A1-1 well was the Velkerri Formation Amungee Member A, B and C shales (Figure 15), with particular focus on the B Shale which has been proven to flow gas in the Beetaloo Basin.

Specific objectives for the well were:

- Fully penetrate the Velkerri Formation by drilling into the Bessie Creek Formation to provide sufficient rathole to enable wireline evaluation over the Velkerri Formation.
- Provide depth control and facilitate target selection for a potential future lateral appraisal well.
- Successfully recover sidewall cores over the Velkerri Formation Amungee Member A, B, and C Shales.

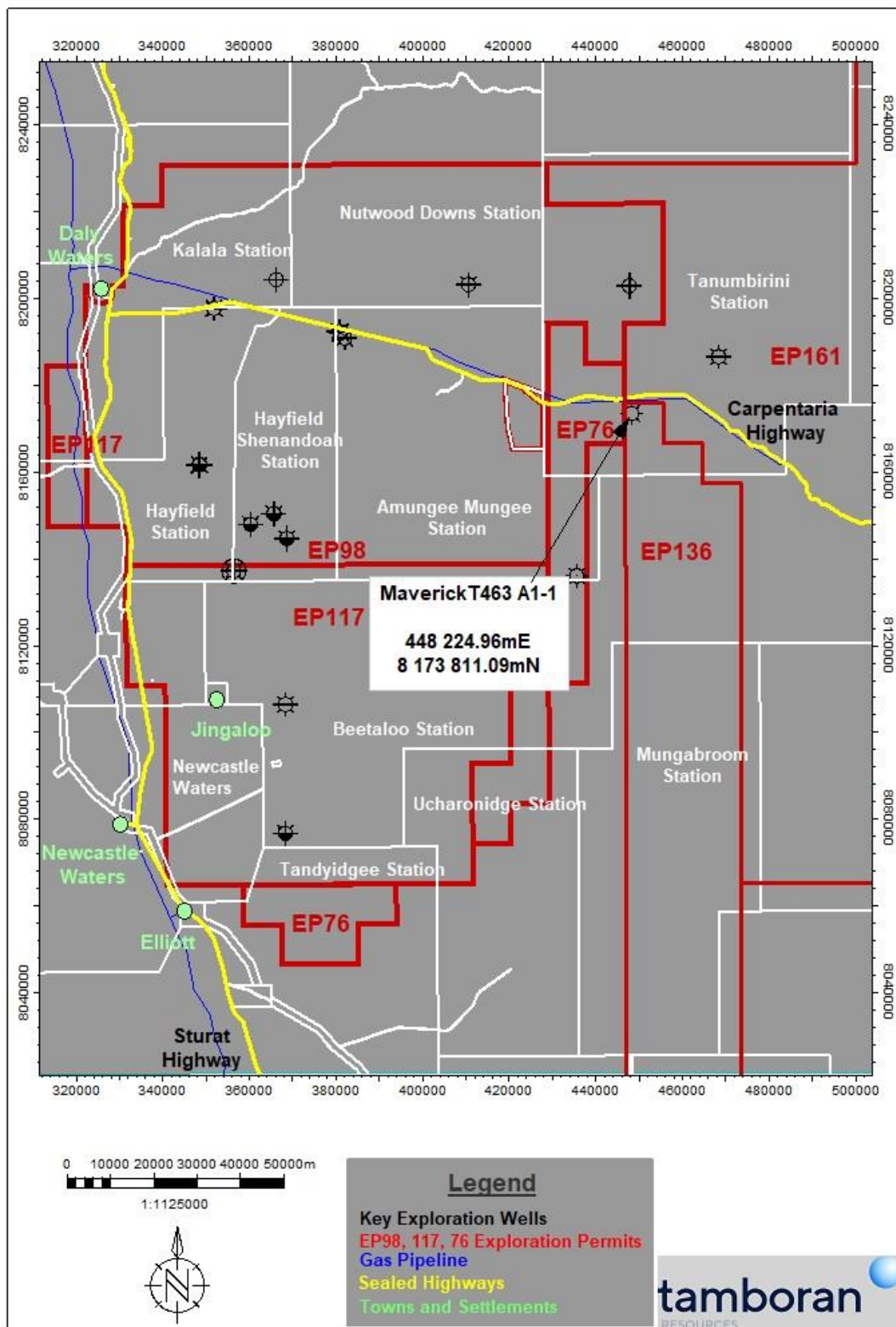


Figure 1. Maverick T463 A1-1 Location Map.



Figure 2 - Location of Maverick T463 A1-1 in relation to Northern Territory and Beetaloo Permits

2 WELL SUMMARY SHEET

Well Name	Maverick T463 A1-1	Petroleum Title	EP 136	Basin	Beetaloo Basin (OT Downs Sub-basin)		
Well Purpose	Exploration	Status	Cased and Suspended	Parent Well Name, if any	NA		
Spud Date	17/09/2022	TD Date	05/10/2022	Rig Release Date	22/10/2022		
Primary Objective		Velkerri Formation - Amungee Member		Rig(s) Name	Ensign 970		
				100K Map Sheet	October (5864)		
Total Depth		mMDRT	mTVDSS	Side-Track / Kick-off Depth, if applicable	NA		
	Driller	3050	-2763.4				
	Logger	3053.43	-2766.83	Drill Datum <input type="checkbox"/> DF <input checked="" type="checkbox"/> RT <input type="checkbox"/> KB	GL Elevation: 272.85 m Drill Datum Elevation: 280.01 m Elevation Datum: mean sea level		
Location (GDA94 Datum with GRS80 Ellipsoid using MGA94 Grid)	Coordinates	Surface	Bottom Hole			Seismic Station, if applicable	NA
	Latitude	16° 31' 1.27" S	16° 31' 3.946" S				
	Longitude	134° 30' 53.35" E	134° 30' 50.295" E				
Zone	Easting	448 224.96	448 134.46				
UTM 53	Northing	8 173 811.09	8 173 728.66				

Well Summary

Maverick T463 A1-1 drilled to evaluate the unconventional potential of the Velkerri Formation Amungee Member organic rich shales.

Maverick T463 A1-1 achieved all technical and data acquisition aims including wireline logs and sidewall cores.

Maverick T463 A1-1 confirmed the presence and reservoir quality of shale targets in the Velkerri Formation.

Hole and Casing Design (Drillers Depths)						Drilling Fluid	
Type	Hole Size (in)	Depth (mMD)	Casing Size	Shoe mMD	Shoe mTVDSS	Mud weight (ppg)	Type
Conductor	24	31.8	20	31.8	248.1		-
Conductor	17 ½	169	13 ¾	168	111.9	8.34 – 8.7	4% KCl/PVA/Polymer Water and Hi-vis sweeps
Surface	12 ¼	607	9 ¾	604	-324.1	8.34	Water and Hi-vis sweeps
Intermediate	8 ¾	3050	7 ¾	2307	-2025.9	9.6 – 11.5	CleanDrill HD

Stratigraphy – Formation Tops (Loggers Depths)					Formation Evaluation				
Formation	Depth				Suite/ Run	Measurement	Depth Interval		
	mMDRT	mTVDRT	mTVDGL	mTVDSS			From (mMDRT)	To (mMDRT)	
Undifferentiated Cretaceous	7.135	7.135	0	272.85	S1/R1	CBL-VDL-CCL-GR	9.49	602.52	
Anthony Lagoon Fm	83	83	75.9	196.95	S1/R2	SP-HRLA-HNGS-PEX-GR	10	3053.43	
Gum Ridge Fm	129	129	121.9	150.95	S1/R3	FMI-SSCAN-PPC-GR	603.65	3052	
Inacumba Unit	251	251	243.9	28.95	S1/R4	CMR-ECS-GR	1340.10	1829.87	
Cox Formation	407.6	407.6	400.5	-127.65			2277.97	2876.86	
Bukalara Sandstone	895.8	895.7	888.6	-615.75	S1/R5	MDT-GR	915	2367	
Kyalla Formation	1032	1031.9	1024.8	-751.95	S1/R6	MSCT-GR (Descent 1)	2692.8	2849.5	
Moroak Sandstone	1500.5	1500.3	1493.2	-1220.35	S1/R7	MSCT-GR (Descent 2)	1426.49	2708.99	
Velkerri Formation	1935.2	1934.7	1927.6	-1654.75	S1/R8	MSCT-GR (Descent 3)	1572.5	2506.15	
Wyworrie Member	1935.2	1934.7	1927.6	-1654.75					
Amungee Member	2436.1	2434.8	2427.7	-2154.85					
Amungee Member C Shale	2469.5	2468.2	2461.1	-2188.25					
Amungee Member B Shale	2668	2665.8	2658.7	-2385.85					
Amungee Member A Shale	2821	2817.4	2810.3	-2537.45					
Kalala Member	2856.5	2852.4	2845.3	-2572.45					
Total Depth	3053.43								
Mud Logging					Formation Testing (DST)		DFIT	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Standard onshore service including chromatograph mud gas analysis (C1-C5+, CO ₂ , H ₂ S) and drill cuttings collection					NIL			HF	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Conventional Coring					Hydrocarbon Shows				
NIL					Gas Shows – Kyalla Formation & Velkerri Formation No Fluorescence observed				
Completion									
Cased and Suspended									

3 DRILLING

3.1 RIG SPECIFICATIONS

The drilling rig utilised for the drilling of Maverick T463 A1-1 was provided by Ensign Energy Services. Drilling rig specifications for the Ensign 970 (Figure 3) utilised can be found below.

Rig Operator – Ensign Energy

Rig Identification – Ensign Rig 970

Drawworks

- Pacific Rim DMI-1500A-3D (1500 hp / 1120 kW)
- Input Baylor AC Electric Motor (1600 hp / 1193kW)

Mast

- A.D.R Triple
- Height 136ft / 41m
- Static Hook Load: 750,000 lbs / 334,000 daN (12 lines)
- Racking Capacity: 5.5 DP – 208 stands

Substructure

- API Pad Self Moving X-Y
- Self Raising - Walk System
- Setback Capacity 500,000 / 222,400daN
- KB to Ground: 23ft / 7.16m
- Clear work height: 21 ft / 6.3m

Mud Pump #1 (Triplex)

- Gardner D PZ11 @ 5000 psi
- Rated: 1600 hp / 1190 kW
- Input: AC Electric Motor (1600 p / 1193 kW)

Mud Pump #1 (Triplex)

- Gardner D PZ11 @ 5000 psi
- Rated: 1600 hp / 1190 kW
- Input: AC Electric Motor (1600 p / 1193 kW)

Mud Pit

- 3 Pits: 1322.7 bbl / 210.3m³
- Shaker: (3) MI Swaco Mongoose
- Transfer Tank
- 2 Mixing Pumps: 100hp / 65 kW

Generators

- Input: MTU 16V2000 (1200 hp / 900kW)
- Input: MTU 16V2000 (1200 hp / 900kW)
- Input: MTU 16V2000 (1200 hp / 900kW)
- Input: MTU 16V2000 (1200 hp / 900kW)
- Input: Detroit Diesel S60 – Egen (600 hp / 400kW)

B.O.P's

- Size: 13.625" / 346mm
- Working Pressure: 10,000 psi / 68,900 kPa

Maverick T463 A1-1 Well Completion Report (Basic)

- NOV Shaffer Annular
- NOV Shaffer LXT Ram Single
- NOV Shaffer LXT Ram Double

Rotary Table

- Alco (37.5" / 1000mm)
- Rating 700,000 lbs / 311,000 daN

Top Drive

- Tesco 400EXI600
- Rating : 800,000lbs / 356,000 daN

Hook Block

- Block: Americal Block 400T
- Rated: 800,000 lbs / 356,000 daN

Choke Manifold

- Size: 3 1/16 in / 78 mm
- Working Pressure: 10,000 psi / 68,900 kPa

Accumulator

- Consolidated Pressure Control – 6 stations 350 gal

Pipe Handling

- Automated Pipe Handling
- Automated Catwalk
- Blohm & Voss I-Roughneck
- Hydraulic Elevator

Aux Equipment

- Trailer Mounted Complex
- BOP Lift System
- Swaco Centrifugal Degasser

Loads

- Highway: 67
- In Field: 62
- Mini Camp: 8
- Main Camp: 16

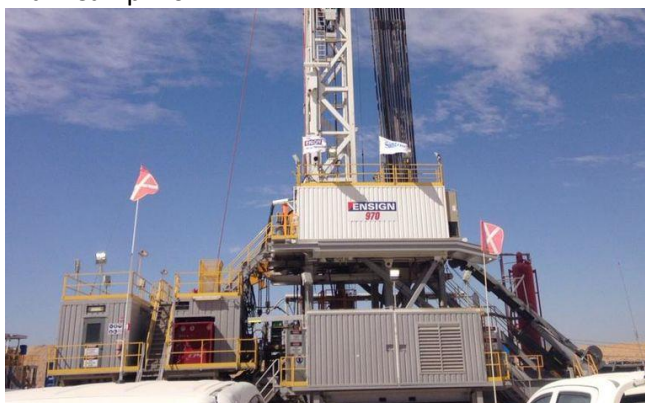


Figure 3 - Ensign Rig 970

3.2 SUMMARY OF DAILY DRILLING REPORTS AND RELATED OPERATIONS

Table 1 lists a summary of the daily drilling activities on Maverick T463 A1-1. Detailed Daily Drilling Reports (DDR) and Daily Geological Reports (DGR) are provided in Appendix 1. A time versus depth curve is shown in Figure 4. Wellbore survey for Maverick T463 A1-1 can be found in Appendix 7.

Table 1. Summary of Daily Drilling Reports and related activities.

DDR #	Report Period		Depth (m)	24hr Operations Summary
	Start Date	End Date		
1	01/09/2022	02/09/2022	31.8	Continue rig up and location preparation
2	02/09/2022	03/09/2022	31.8	Continue rig up and location preparation
3	03/09/2022	04/09/2022	31.8	Continue rig up and location preparation
4	04/09/2022	05/09/2022	31.8	Continue rig up and location preparation
5	05/09/2022	06/09/2022	31.8	Continue rig up and location preparation
6	06/09/2022	07/09/2022	31.8	Continue rig up Ensign 970, 3rd party equipment, water management equipment, and location preparation
7	07/09/2022	08/09/2022	31.8	Continue rig up Ensign 970, 3rd party equipment, water management equipment, and location preparation
8	08/09/2022	09/09/2022	31.8	Continue rig up Ensign 970, 3rd party equipment, water management equipment, and location preparation
9	09/09/2022	10/09/2022	31.8	Continue rig up Ensign 970, 3rd party equipment, water management equipment, and location preparation
10	10/09/2022	11/09/2022	31.8	Break tour for 24hr ops. Continue rig up Ensign 970, 3rd party equipment and services. Rig up and test water management equipment-plan. Pastoral representative finish perimeter fence. Assess overall pre-spud readiness.
11	11/09/2022	12/09/2022	31.8	Continue Ensign 970 pre-acceptance procedures. Continue 3rd party pre-spud preparations. Rig up and test water management equipment-plan. Assess overall pre-spud readiness.
12	12/09/2022	13/09/2022	31.8	Continue Ensign 970 pre-acceptance procedures. Continue 3rd party pre-spud preparations. Rig up and test water management equipment-plan. Assess overall pre-spud readiness.
13	13/09/2022	14/09/2022	31.8	Continue Ensign 970 pre-acceptance procedures. Continue 3rd party pre-spud preparations. Rig up and test water management equipment-plan. Assess overall pre-spud readiness.
14	14/09/2022	15/09/2022	31.8	Finish Ensign 970 and 3rd party pre-acceptance and pre-spud procedures. PSM with SPP management. Standby for corporate approval to spud.
15	15/09/2022	16/09/2022	31.8	Standby for corporate approval to spud.
16	16/09/2022	17/09/2022	31.8	Standby for corporate approval to spud.
17	17/09/2022	18/09/2022	111	Receive corporate approval and spud well.
18	18/09/2022	19/09/2022	161.9	Drill with Casing
19	19/09/2022	20/09/2022	169.18	Drill with Casing to revised interval TD. Primary cement job. Remedial cementation jobs
20	20/09/2022	21/09/2022	169.18	Remedial cementation down 20" x 13-3/8" annulus
21	21/09/2022	22/09/2022	169.18	Cut casing and install landing ring. PU and RIH cleanout BHA.
22	22/09/2022	23/09/2022	175.1	POH cleanout BHA. MU 12-1/4" motor assembly. TIH and drill ahead.

Maverick T463 A1-1 Well Completion Report (Basic)



23	23/09/2022	24/09/2022	515	Drill 12-1/4" vertical interval.
24	24/09/2022	25/09/2022	607	Drill 12-1/4" vertical interval. POOH, L/down BHA, R/up, RIH & cement 9-5/8" casing.
25	25/09/2022	26/09/2022	607	Complete 9 5/8" Top out Cement job, R/D Cementers, Install Wellhead & test, N/U BOPE & Test
26	26/09/2022	27/09/2022	607	Test BOP's, P/up & R/back DP.24hr Forecast
27	27/09/2022	28/09/2022	911	P/up 8-3/4" BHA, RIH, drill shoe track & 3m of new hole, FIT & drill 8-3/4" Section as per program.
28	28/09/2022	29/09/2022	1340	Drill 8-3/4" intermediate hole from 911m to 1340m.
29	29/09/2022	30/09/2022	1505	Drill 8-3/4" intermediate hole to 1369m, POOH for BHA change, RIH and drill 8-3/4" intermediate hole to 1505m.
30	30/09/2022	01/10/2022	1666	Drill 8-3/4" intermediate hole from 1505m to 1666m.
31	01/10/2022	02/10/2022	1915	Drill 8-3/4" intermediate hole from 1666m to 1915m
32	02/10/2022	03/10/2022	2070	Drill 8-3/4" intermediate hole from 1915m to 2070m. POOH for BHA change, RIH to 1625m.
33	03/10/2022	04/10/2022	2382	RIH to 2070m. Drill 8-3/4" intermediate hole from 2070m to 2382m
34	04/10/2022	05/10/2022	2515	POOH, change BHA, RIH and drill 8 3/4" Hole section per Program
35	05/10/2022	06/10/2022	3050	Drill 8 3/4" hole section to TD at 3050m, circulate hole clean.
36	06/10/2022	07/10/2022	3050	POOH, L/down DC's & directional BHA, RIH with dumb iron BHA.
37	07/10/2022	08/10/2022	3050	RIH, Circulate, condition & weigh up active to 11.5ppg, POOH.
38	08/10/2022	09/10/2022	3050	POOH, rig up and commence logging operations. P/U Run #1 run (CBL-VDL-GR-CCL) P/U Run #2 (SP-HRLA-HNGS-PEX-GR) P/U Run #3 (FMI-SSCAN-PPC-GR)
39	09/10/2022	10/10/2022	3050	Continue wireline logging operations Run #3 (FMI-SSCAN-PPC-GR) P/U & Run #4 (CMR-ECS-GR)
40	10/10/2022	11/10/2022	3050	Continue wireline logging operations Run #4 (CMR-ECS-GR) P/U Run #5 (MDT-GR) P/U Run #6 (MSCT-GR)
41	11/10/2022	12/10/2022	3050	Continue wireline logging operations Run #6 (MSCT-GR)
42	12/10/2022	13/10/2022	3050	Continue wireline logging operations Run #6 (MSCT-GR) Run #3 for tool string #6 (MSCT-GR).
43	13/10/2022	14/10/2022	3050	Finish wireline operations, POOH, R/D Logging, RIH for wiper trip, POOH racking back & laying down drill pipe.
44	14/10/2022	15/10/2022	3050	RIH, lay out drill pipe sideways, Rig up and RIH with 7-5/8" casing.
45	15/10/2022	16/10/2022	3050	RIH with 7-5/8" casing.
46	16/10/2022	17/10/2022	3050	Troubleshoot casing packing off. POOH from 2353m to 2307m, Circ hole clean, P/up & land casing hanger and continue circulating.
47	17/10/2022	18/10/2022	3050	Circulate & condition 7-5/8" casing. Lay out CRT, make up cement head and continue circulating at 2308.3m
48	18/10/2022	19/10/2022	3050	Circulate & cement 7-5/8" casing, R/down cement head & lay out landing joint.
49	19/10/2022	20/10/2022	3050	Install pack off and test. N/down BOP, install and test well head. Clean tanks.
50	20/10/2022	21/10/2022	3050	Rig down, clean mud tanks and prepare to release rig.
51	21/10/2022	22/10/2022	3050	Rig down, clean mud tanks.
52	22/10/2022	23/10/2022	3050	Rig down, clean mud tanks. Released rig at 09:00 hrs 22/10/2022

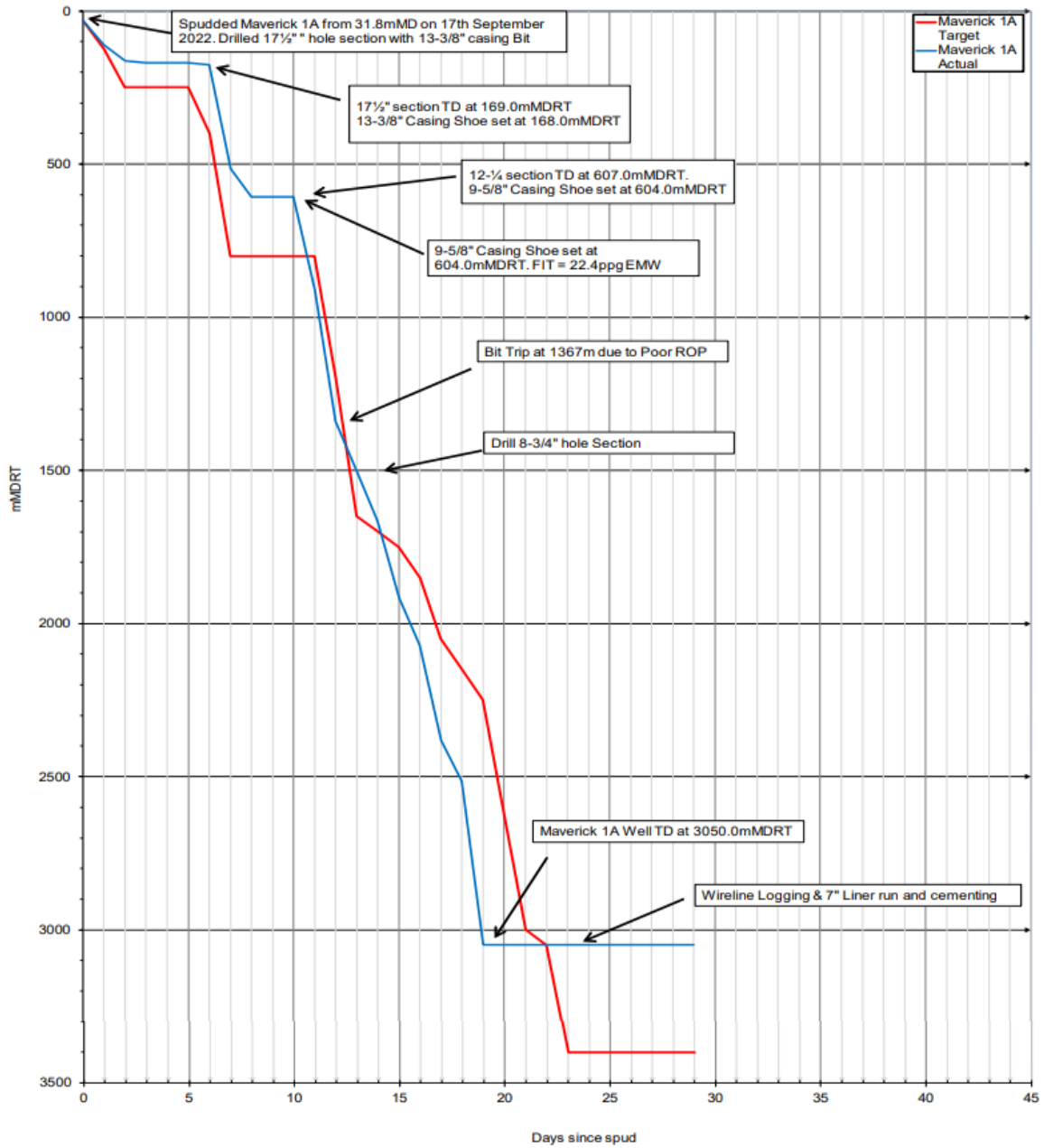


Figure 4. Maverick T463 A1-1 time depth curve.

3.3 CASING AND EQUIPMENT INSTALLED IN OR ON THE WELL

Table 2 summarizes the casing and equipment installed in or on the well. The Maverick T463 A1-1 well as-drilled schematics showing the casing and equipment dimensions are provided in Figure 5,

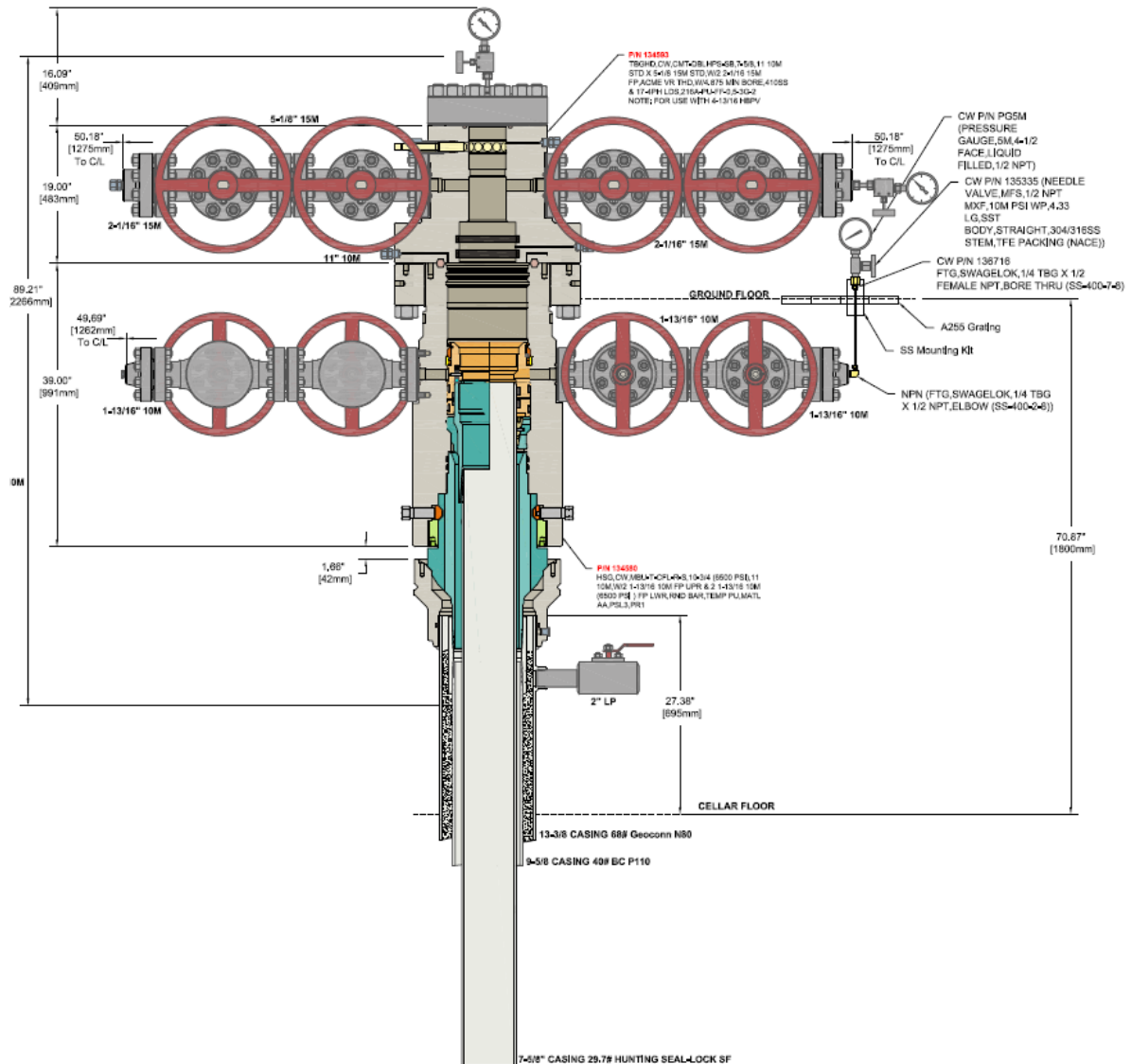


Figure 6 & Figure 7. Detailed Casing information is attached in Appendix 2.

Table 2. Maverick T463 A1 well casing details.

Type	Hole Size (in)	Casing Size OD (in)	Casing Size ID (in)	Weight (lb/ft)	Grade	Thread	Set Depth (mMDRT)
Conductor	24	20	19.122	94	K-55	BTC	31.8
Conductor	17.5	13.375	12.409	68	N-80	GeoConn	168
Surface	12.25	9.625	8.831	40	P-110	BTC	604
Contingent String	8.75	7.625	6.882	29.7	P-110	Seal-Lock Flush	2308

3.4 CEMENTING OPERATIONS CARRIED OUT

Detailed cementing operations can be found in the Daily Drilling Reports (Appendix 1) and the cementing reports (Appendix 2). A summary of the Cementing operations can be found in Table 3.

Table 3 - Summary of cementing operations at Maverick T463 A1-1

Hole Section (in)	Casing Size (in)	Spacer Pumped (bbl)	Spacer to Surface (bbl)	Lead Cement Pumped (bbl)	Tail Cement Pumped (bbl)	Cement to Surface (bbl)	Lost Returns (bbl)
17.5	13.375	5	0	65.6	26	0	0
12.25	9.625	50	0	159.1	31	0	0
8.75	7.625	50	50	131.4	56.5	0	0

3.5 DRILLING FLUIDS

NEWPARK Fluids Systems was contracted to supply and maintain drilling fluids. A summary of drilling fluids operations can be found in Table 4 and Appendix 3.

Table 4 – Summary of Drilling fluids for the drilling of Maverick T463 A1-1

Hole Section (in)	Mud Weight (ppg)	Mud System
17.5	8.34 – 8.66	4% KCL / PVA / Polymer Water and Hivis sweeps
12.25	8.34	Water and Hivis sweeps
8.75	9.6 – 11.55	CleanDrill HD

3.6 WELL SCHEMATIC AND WELL HEAD SPECIFICATIONS

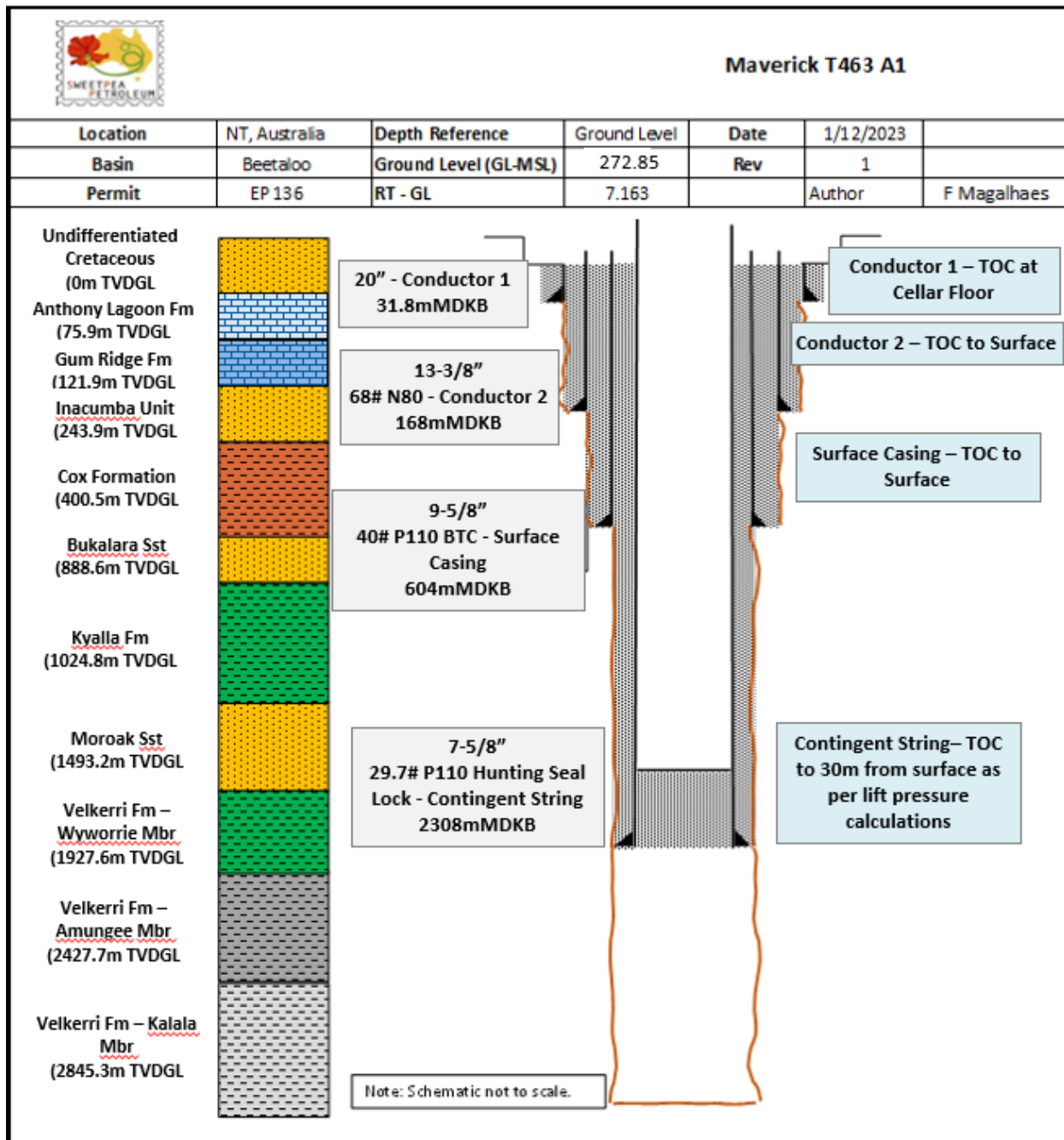


Figure 5. Maverick T463 A1-1 as drilled schematic.

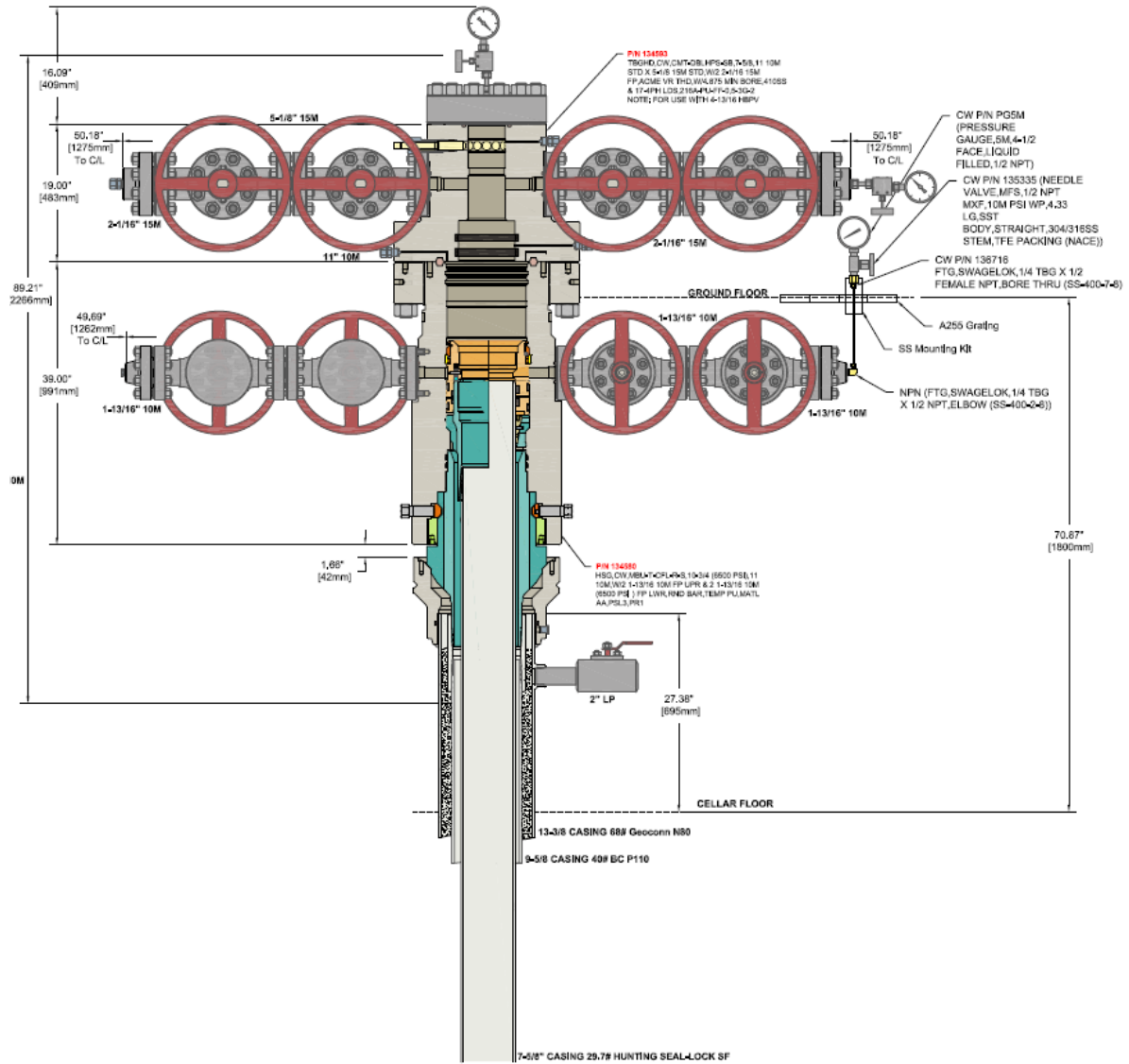


Figure 6. Maverick T463 A1-1 installed wellhead equipment schematic.



Figure 7. Maverick T463 A1-1 installed wellhead equipment photo.

3.7 BHA RECORDS

A summary of the BHAs are provided in Figure 8, Figure 9, Figure 10, Figure 11, Figure 12, Figure 13, Figure 14.

BOTTOM HOLE ASSEMBLY:		TYPE: CWD
ASSEMBLY	13 3/8" Casing (Casing While Drilling)	
LENGTH	168m	

Figure 8. BHA #1 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Rotatory
ASSEMBLY	12-1/4" VM-1 Tricone +2X Junk Basket + Bit Sub W/ Float Valve+ 8" Drill Collar + 12 1/8" String Stab + 9 x 8" Drill Collar + 8" Jar + 3 x 8" Drill Collar + X-Over 6 5/8" Reg P x XT57B + 5 1/2" HWDP - XT57	
LENGTH	242.63m	

Figure 9. BHA #2 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Rotatory Steerable-RSS
ASSEMBLY	12-1/4" Smith MDSi616 PDC + 8" TerraForce Lobe 6/7 - 4.0 stg + 8" Float Sub + 12 1/8" String Stab + 8" HOC W/Dir/Gamma/Telemetry + 10 x 8" x 2.8125" DC +8" Jar +3 x 8" x 2.8125" DC +XO + 5 1/2" HWDP	
LENGTH	288.51m	

Figure 10. BHA #3 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Mud motor Assembly
ASSEMBLY	8 3/4" PDC (Baker DD507TX)+7" GeoForce Lobe 6/7 - 4.5 stg+6 3/4" Float Sb+8 3/8" String Stab+6 3/4" DM Collar w/PCDC+6 3/4" DM Collar w/PCGK+2x6 3/4" Sub (H/C)+6 3/4" PWD+6 3/4" P-P XO (H/C)+6 3/4" EWR-P4 Collar+6 3/4" HCIM Collar+6 3/4" HOC+8 3/8" String Stab+ XO NC50P x NC46B+ 15 x 6 1/2" DC+ XO NC46P x NC50B+7" Jar+ XO NC50P x NC46 B+ 2 x 6 1/2" DC+ XO NC46P x XT57B+ 12 x 5-1/2" HWDP	
LENGTH	317.9m	

Figure 11. BHA #4 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Mud motor Assembly
ASSEMBLY	8 3/4" PDC (Varel 4013697)+7" GeoForce Lobe 6/7 - 4.5 stg+6 3/4" Float Sb+8 3/8" String Stab+6 3/4" DM Collar w/PCDC+6 3/4 DM Collar w/PCGK+2x6 3/4" Sub (H/C)+6 3/4" PWD+6 3/4" P-P XO (H/C)+6 3/4" EWR-P4 Collar+6 3/4" HCIM Collar+6 3/4" HOC+8 3/8" String Stab+ XO NC50P x NC46B+ 18 x 6 1/2" DC+ XO NC46P x NC50B+7" Jar+ XO NC50P x NC46 B+ 2 x 6 1/2" DC+ XO NC46P x XT57B+ 12 x 5-1/2" HWDP	
LENGTH	339.39m	

Figure 12. BHA #5 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Mud motor Assembly
ASSEMBLY	8 3/4" Baker Hughes DD506X PDC+7" GeoForce Lobe 6/7 - 4.5 stg+6 3/4" Float Sub+8 3/8" String Stab+6 3/4" DM Collar w/PCDC+6 3/4 DM Collar w/PCGK+6 3/4" P-P XOVER (H/C)+6 3/4" AFR Collar+6 3/4" PWD+6 3/4" HCIM Collar+6 3/4" HOC+8 3/8" String Stab+ XO NC50P x NC46B+18 x 6 1/2" DC+ XO NC46P x NC50B+7" Jar+ XO NC50P x NC46 B+2 x 6 1/2" DC+ XO NC46P x XT57B+12 x 5-1/2" HWDP	
LENGTH	344.38m	

Figure 13. BHA #6 Summary.

BOTTOM HOLE ASSEMBLY:		TYPE: Mud motor Assembly
ASSEMBLY	8 3/4" Baker Hughes DD506X PDC+8.5" Mud Motor - 4.5 stg+6 3/4" Float Sub+8 3/8" String Stab+6 3/4" DM Collar w/PCDC+6 3/4 DM Collar w/PCGK+6 3/4" P-P XOVER (H/C)+6 3/4" AFR Collar+6 3/4" PWD+6 3/4" HCIM Collar+6 3/4" HOC+8 3/8" String Stab+ XO NC50P x NC46B+18 x 6 1/2" DC+ XO NC46P x NC50B+7" Jar+ XO NC50P x NC46 B+2 x 6 1/2" DC+ XO NC46P x XT57B+12 x 5-1/2" HWDP	
LENGTH	337.83m	

Figure 14. BHA #7 Summary.

3.8 BIT RECORDS

Bit records and drilling parameters are summarised in Table 5.

4 GEOLOGY

4.1 BEETALOO SUB-BASIN STRATIGRAPHY

The Beetaloo Sub-basin (**Beetaloo**) is a 28,000 km² composite depocentre located in the Northern Territory, ~300 km south-southeast of Katherine. It is subdivided into multiple smaller Sub-basins (i.e. Gorrie, Daly OT Downs, and Beetaloo) and represents one of the major depocentres of the southern McArthur Basin (Williams, 2020). The Beetaloo overlies crystalline basement rocks of inferred Archean to Paleoproterozoic age and is overlain by Neoproterozoic and Phanerozoic sedimentary successions that are referred to as the Centralian Superbasin (Walter et al. 1995) and other younger basins. It contains an interpreted 9000 m thick section of sedimentary and minor volcanic rocks assigned to the Palaeoproterozoic Tawallah and McArthur groups, and the Mesoproterozoic Nathan and Roper groups. The Beetaloo has been identified as prospective for hydrocarbons and potential host for conventional and unconventional resources within the Roper Group.

The Mesoproterozoic Roper Group comprises six upward-coarsening cyclic sequences of mudstone and sandstone units (Abbott and Sweet, 2000; Figure 15) interpreted as deposited in a large epeiric sea dubbed the Roper Seaway (Cox et al., 2016). Deposition is set to have occurred under a variety of settings extending from shallow-marine, and nearshore to shelf environments (Powell et al., 1987; Jackson et al., 1988; Cox et al., 2016; Abbott and Sweet, 2000). The first detailed stratigraphic study of the Roper Group was presented by Jackson et al. (1988) and furthered by Jackson and Raiswell (1991), Warren et al. (1998) and Munson and Revie (2018) who supplemented the pre-existing framework with additional regional and local stratigraphic, sedimentological and geochemical information.

The Roper Group is divided into two sub-group separated by a disconformity; the upper the Maiwok Sub-group, representing a ~2000m thick sequence which is more shale-rich with less abundant sandstone formations, and the lower Collara Sub-group dominated by sandstone (some glauconitic) with interbedded silt/mudstone yet to be drilled to its maximum depth (Abbott and Sweet, 2000; Abbott et al., 2001; Munson, 2016). Shale sequences within the Maiwok Sub-group preserve the oldest commercial hydrocarbon reserves worldwide within the Velkerri and Kyalla formations.

The Velkerri Formation is formally subdivided into the Kalala, Amungee and Wyworrie members (from oldest to youngest) with the thickest and most prospective source rock intervals restricted to the Amungee Member -subdivided into A, B and C Shales (from oldest to youngest; Close et al, 2016, Munson and Revie 2018). The B shale has been shown to be the most prospective, and laterally continuous unit within the Amungee Member across the Beetaloo. Detailed sedimentological analysis describes the unit as marine with facies displaying superimposed laminated black-grey, organic-rich (TOC ~4–10%) and grey-green, organic-lean (TOC <2%) mudstone and siltstone with minor fine glauconitic sandstone that transition up-section to the planar to cross-bedded sandstones of the Moroak Sandstone (Abbott et al. 2001, Jackson and Raiswell 1991, Warren et al. 1998). The Velkerri Formation represents a deep-water, high-stand systems track as indicated by tectonic models proposed for the formation of the Roper Group (Abbott & Sweet, 2000; Betts and Giles, 2006). Deposition occurred in stratified waters with a shallow oxic layer overlaid suboxic to anoxic waters, becoming episodically euxinic during high organic deposition (Cox et al., 2022).

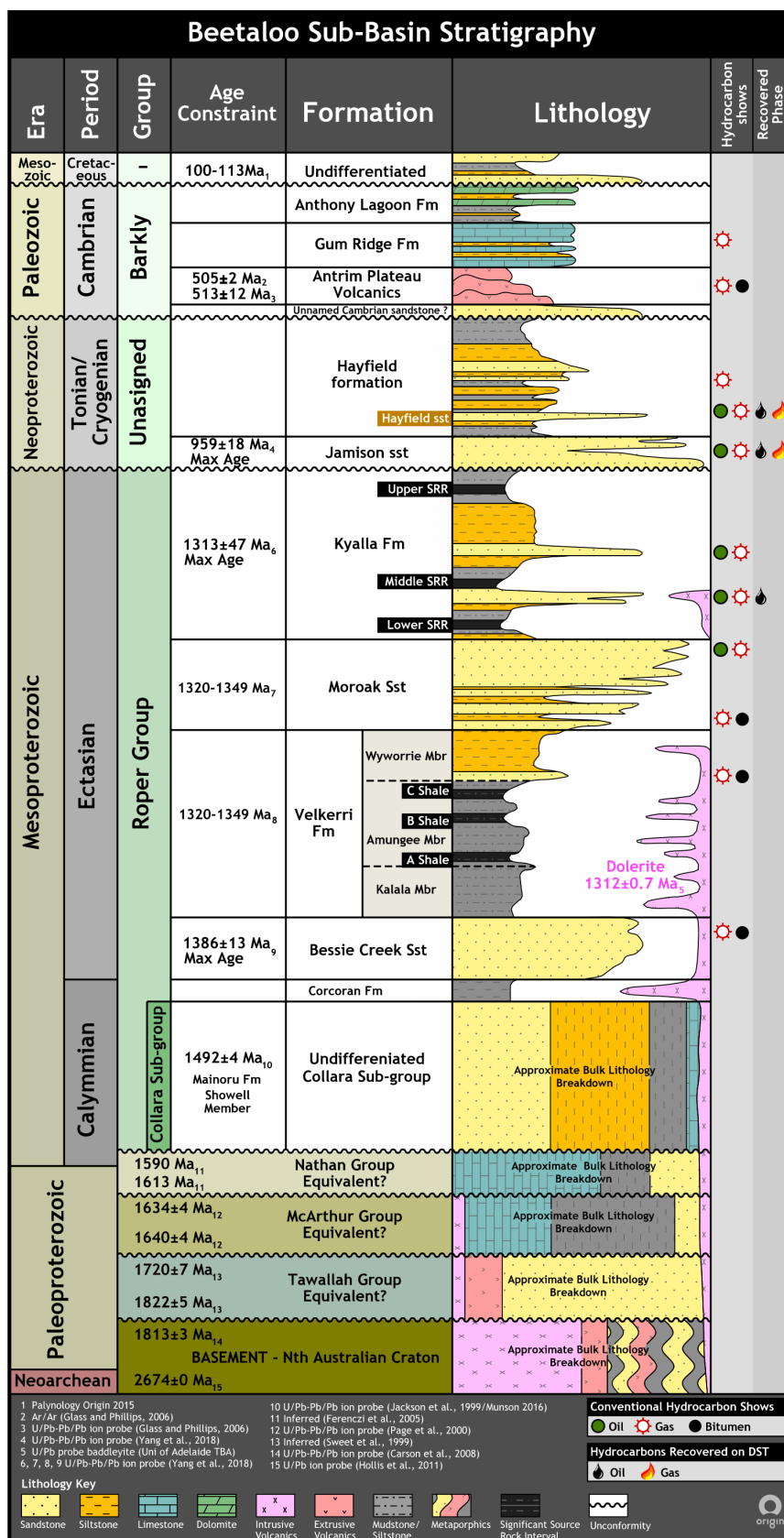


Figure 15 - Generalised Beetaloo Sub-Basin Stratigraphy

4.2 Prognosed vs Actual Stratigraphy

Prognosed vs Actual penetrated stratigraphy summary can be found in Table 6.

Table 6. Prognosed vs Actual Stratigraphy for Maverick T463 A1-1 well.

Stratigraphy – Prognosed vs Actual					
Formation	Prognosed		Actual		Difference (H/L)
	Depth		Depth		
	mTVDRT	mTVDSS	mTVDRT	mTVDSS	mTVDSS
Undifferentiated Cretaceous	7	273	7.135	272.85	-
Anthony Lagoon Fm	90	190	83	196.95	6.95 H
Gum Ridge Fm	122	158	129	150.95	7.05 L
Inacumba Unit	250	30	251	28.95	1.05 L
Cox Formation	477	-197	407.6	-127.65	69.35 H
Bukalara Sandstone	1039	-759	895.7	-615.75	143.25 H
Kyalla Formation	1186	-906	1031.9	-751.95	154.05 H
Moroak Sandstone	1779	-1499	1500.3	-1220.35	278.65 H
Velkerri Formation	2279	-1999	1934.7	-1654.75	344.25 H
Wyworrie Member	2279	-1999	1934.7	-1654.75	344.25 H
Amungee Member	2732	-2452	2434.8	-2154.85	297.15 H
Amungee Member - C Shale	-	-	2468.2	-2188.25	-
Amungee Member - B Shale	3028	-2748	2665.8	-2385.85	362.15 H
Amungee Member - A Shale	-	-	2817.4	-2537.45	-
Kalala Member	3242	-2962	2852.4	-2572.45	389.55 H

4.3 RESERVOIR AND PROSPECTIVE HORIZONS

4.3.1 Velkerri Formation

The Velkerri Formation, comprising green, grey and black mudstone and siltstone sits conformably on the Bessie Creek Sandstone, often showing a gradational contact with the overlying Moroak Sandstone. The formation is subdivided into three units – Kalala, Amungee and Wyworrie Members (oldest to youngest) based on a combination of organic richness, lithological composition, and chemostratigraphic character (Munson and Revie 2018). The shale resource play prospectivity of the Formation is greatest within the organic-rich mudstones of the Amungee Member –subdivided into A, B, and C shales (from oldest to youngest). The Velkerri Formation was partially penetrated at 1051m thick in Maverick T463 A1-1, reaching well TD within the Kalala Member at 3053.43mMDRT (3050 mMDRT - drillers TD).

4.3.2 Preliminary Assessment

- The Velkerri Formation is interpreted to be within the dry gas thermal maturity window in the Maverick T463 A1-1 well.
- The top and base of the Amungee Member was penetrated 298.3mTVDSS and 386.2mTVDSS higher to prognosis respectively.
- Three prospective shale intervals - A, B, and C shales, have been identified in the Amungee Member from preliminary wireline and drilling data interpretation.
- The Amungee Member A, B, and C Shales are black, organic-rich siliceous mudstone as described in drilling cuttings
- Mudgas and preliminary log analysis suggests:
 - The A shale has good reservoir properties.
 - The B Shale has excellent reservoir properties.
 - The C Shale has good reservoir properties.
- Thicknesses
 - The A Shale (35.5 m thick) – thickness falls in between penetrations at the Amungee NW-1, Beetaloo W-1 and Velkerri 76 S2-1 and that of Tanumbrini-1. Given the location of Maverick T463 A1-1 there appears to be a west to east thickening of the A Shale.
 - The B Shale (69.3 m thick) - thickness and gamma ray log signature similar to previous penetrations across the Beetaloo, suggesting a laterally continuous, thickness profile extending across the Beetaloo W-1, Amungee NW-1, Tanumbirini 1, and Velkerri 76 S2-1 offset wells.
 - The C Shale (70.5 m thick)

5 FORMATION SAMPLING

5.1 DRILL CUTTINGS

Drill cutting samples were collected over the interval from 31 to 3050 mMDRT (Driller's TD). Sampling intervals are summarised in Table 7. Detailed drill cuttings lithological descriptions are enclosed in Appendix 4.

Table 7. Maverick T463 A1-1 Drill Cuttings Interval and Sampling Rate Summary.

Cuttings Interval		Sample Rate (m)	Hole Section (")	Comments
From (mMDRT)	To (mMDRT)			
31	100	10	17 ½	
101	169	-		Partial returns from 99m, lost total returns at 101m
169	172	3	12 ¼	
172	180	8		
180	200	10		
202	607	-		Lost total returns at 202m
607	610	3		
610	1300	10	8 ¾	
1305	1380	5		
1380	1400	10		
1400	1460	15		
1460	1510	10		
1510	1580	5		
1580	1810	3		
1810	2070	5		
2070	2150	10		
2150	2165	3		
2165	2170	5		
2170	2200	10		
2200	2205	5		
2205	2220	3		
2220	2340	10		
2340	2380	5		
2380	2382	2		
2382	2390	8		
2390	2500	10		
2500	2540	5		
2540	3050	10		Well TD @ 3050 mMDRT

5.2 CONVENTIONAL CORE

No conventional core acquired.

5.3 SIDEWALL CORES

Sidewall cores were recovered in three runs over the interval 1426.49 to 2849.5mMDRT. A total of 62 were cut but only 35 recovered for a 56% recovery rate. A summary of depths and recovery status is provided in Table 8. Sidewall coring data is enclosed in Appendix 5.

Table 8. Maverick T463 A1-1 Sidewall Core Summary

Sidewall Core Number	Depth (mMDRT)	Recovery (Y/N)	Comments
S1/R6 MSCT-GR (Descent 1)			
1	2849.5	Y	
2	2843.5	Y	
3	2835	Y	
4	2830.4	Y	
5	2829.9	Y	
6	2829.4	Y	
7	2826	Y	
8	2816	Y	
9	2788.4	Y	
10	2772.2	Y	
11	2740.2	Y	
12	2732	Y	
13	2723.2	Y	
14	2712.6	Y	
15	2709.5	Y	
16	2700.5	Y	
17	2693.8	N	
18	2693.3	N	
19	2692.8	N	
S1/R7 MSCT-GR (Descent 2)			
15	2708.99	Y	
16	2700.69	Y	
17	2692.05	Y	
18	2693.05	Y	
19	2691.56	Y	
20	2687.2	Y	
21	2675.19	Y	
22	2672	N	
23	2671.5	N	
24	2671	N	
25	2669	N	
26	2653.99	Y	
27	2625.5	N	
28	2606	Y	
29	2576.4	Y	
30	2532.99	Y	
31	2518.99	Y	
32	2516	N	
33	2506.4	Y	
34	2505.91	N	
35	2505.4	N	
36	2496.61	N	
37	2484.49	N	

38	2469.4	N	
39	2447.5	N	
40	2437	N	
41	2364	N	
42	1655	N	
43	1603.99	N	
44	1585	N	
45	1571.99	N	
46	1539.99	N	
47	1527.19	N	
48	1484.5	N	
49	1464.5	N	
50	1426.49	N	
S1/R8 MSCT-GR (Descent 3)			
34	2506.15	Y	Poor recovery – 10%
35	2505.65	N	
36	2496.85	Y	Poor recovery – rubble
37	2484.75	Y	Good recovery – 80%
43	1603.5	Y	Good recovery – 90%
44	1585.5	Y	Fair recovery – 50%
45	1572.5	Y	Good recovery – 90% friable

5.4 MUD GAS

No mud gas samples acquired.

6 FORMATION EVALUATION

6.1 MUDLOGGING

Halliburton provided mudlogging services for the drilling of Maverick T463 A1-1. These included standard onshore mud logging service, mud gas chromatographic analysis (C₁-C₅, CO₂, H₂S), real time and lagged data acquisition and drill cuttings collection over the interval from 31 to 3050 mMDRT.

Mudlogging data, log displays, and the Mudlogging End of Well Report are enclosed in Appendix 4.

6.2 WIRELINE LOGGING

Table 9 summarizes the wireline logs ran by Schlumberger (SLB) at Maverick T463 A1-1. Field data, processed data and log displays for all wireline logs are provided in Appendix 5.

Table 9. Maverick T463 A1-1 Summary of Wireline Logs

WIRELINE LOGGING					
SUITE/ RUN #	Depth (mMDRT)		Description	Operator	Remarks
	From	To			
S1/R1	9.49	602.52	CBL-VDL-CCL-GR	SLB	
S1/R2	10	3053.43	SP-HRLA-HNGS-PEX-GR	SLB	Logged GR and Density Neutron from shoe to surface
S1/R3	603.65	3052	FMI-SSCAN-PPC-GR	SLB	
S1/R4	1340.1	1829.87	CMR-ECS-GR	SLB	
	2277.97	2876.86			
S1/R5	915	2367	MDT-GR	SLB	2 valid, 6 dry, 4 tight
S1/R6	2692.8	2849.5	MSCT-GR (Descent 1)	SLB	Cut 19, recovered 16 (84% recovery).
S1/R7	1426.49	2708.99	MSCT-GR (Descent 2)	SLB	Cut 36, recovered 13 (36% recovery). Acquired 2 repeat cores (15 and 16) due to missing/misplaced markers in Run #6.
S1/R8	1572.5	2506.15	MSCT-GR (Descent 3)	SLB	Cut 7, recovered 6 (86% recovery). Cores 34 and 35 had poor recovery.
S2/R1	-	-	CBL-VDL-GR-CCL-SCMT-GR	SLB	Unable to pass 68m due to heavy mud in casing

6.3 LOGGING WHILE DRILLING (LWD) / MEASUREMENTS WHILE DRILLING (MWD)

Table 10. summarises LWD / MWD data collected at Maverick T463 A1-1. Log displays, field and processed data for all LWD / MWD logs are provided in Appendix 6.

Table 10. Maverick T463 A1-1 Summary of LWD / MWD logs.

HALLIBURTON Sperry Drilling															
SUMMARY OF MWD RUNS															
Run No.	Rig Run No.	Hole Size (in)	MWD Service	Start Depth (m)	End Depth (m)	Drill/Wipe Distance (m)	Run Start Date Time	Run End Date Time	BRT Hrs	Oper. Hrs	Circ. Hrs	Max Temp. (degC)	Serv Int.	Trip for MWD	Failure Type
300	3	12.25	D/GWD	172.00	607.00	435.00	22-Sep-22 20:15	24-Sep-22 09:00	36.75	36.750	21.300	35.79	No	No	
400	4	8.75	GAMRES	607.00	1369.00	762.00	27-Sep-22 03:30	29-Sep-22 12:00	56.50	56.500	38.700	65.30	No	No	
500	5	8.75	GAMRES	1369.00	2070.00	701.00	29-Sep-22 15:00	02-Oct-22 17:30	74.50	74.250	62.000	78.40	Yes	No	Pulser stopped pulsing, gaps in FE data
600	6	8.75	GAMRES	2070.00	2382.00	312.00	02-Oct-22 20:00	04-Oct-22 08:15	36.25	36.250	23.100	89.00	No	No	
700	7	8.75	GAMRES	2382.00	3050.00	668.00	04-Oct-22 11:30	06-Oct-22 12:45	49.25	49.250	30.850	106.00	No	No	

6.4 HYDROCARBON INDICATIONS

6.4.1 GAS DETECTION WHILST DRILLING

Continuous Mud Gas monitoring and chromatographic breakdown of hydrocarbon gases (C₁ – C₅, CO₂ H₂S) were performed by Halliburton in Maverick T463 A1-1. A summary of gas data collected whilst drilling is enclosed in Appendix 4.

6.4.2 FLUORESCENCE

No fluorescence was noted during the drilling of Maverick T463 A1-1 in lithological cutting samples. Drill cuttings were examined on-site by the wellsite geologist for fluorescence under an ultraviolet (UV) light. Descriptions are included in the “Lithological Cuttings Descriptions” in Appendix 4.

6.5 FORMATION TESTING

6.5.1 LOT #1 – 9.625” Surface Casing Shoe:

See Table 11 for key test data summary, and Figure 16 for graphical summary of test data.

Table 11. LOT #1 summary data

Test Date	Test Type	Test Depth (mRT)	Tested Formation	Fluid Density (ppg)	Fluid Type
27/09/2022	LOT	607	Cox Formation	8.5	WBM
Equivalent Fluid Density (ppg)			Surface Pressure (psi)		
22.4			1439		

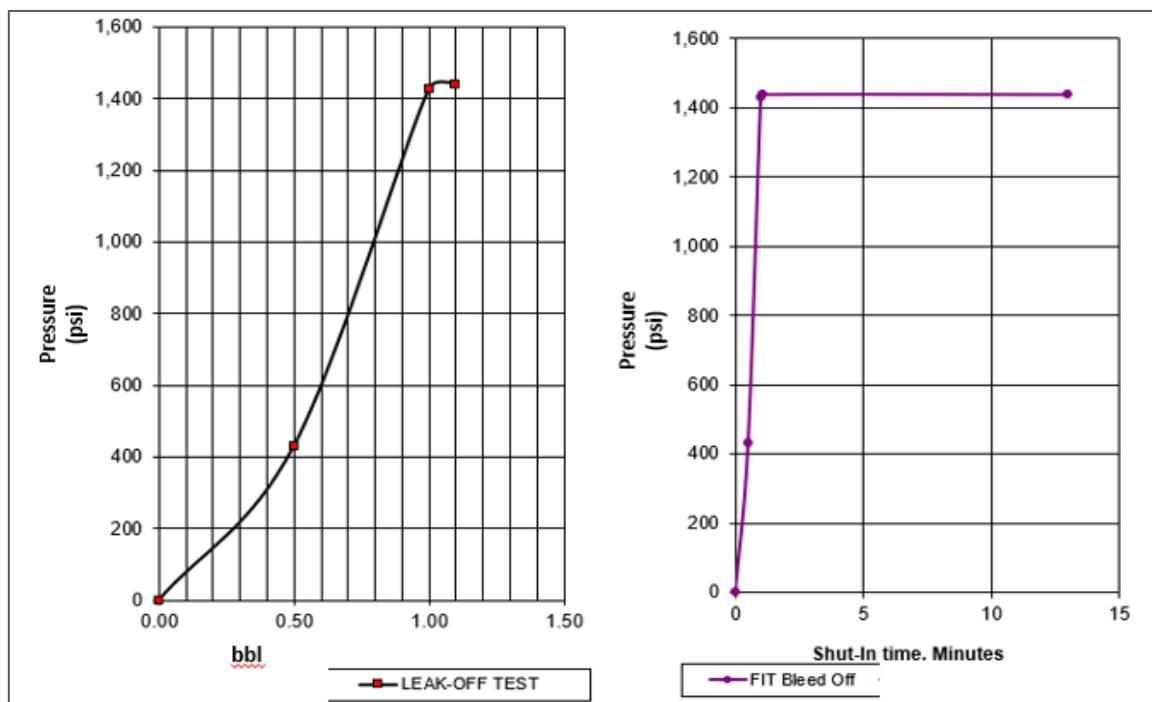


Figure 16 - Leak-off test data from within the Cox Formation

APPENDICES

- Appendix 1: Daily Drilling Reports (DDR) and Daily Geological Reports (DGR)
- Appendix 2: Casing and Cementing Reports
- Appendix 3: Drilling Fluids Report
- Appendix 4: Mudlogging Data
- Appendix 5: Wireline Log Data and Displays
- Appendix 6: Logging While Drilling (LWD) / Measurements While Drilling (MWD) Data
- Appendix 7: Wellbore Survey

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