

TABU-B19

Report No: 18 Progress: 502.00

Reg Name:

Wellbore:

Rig Name: Sapura T-9

Phase: Drilling, Drill 8-1/2" Hole Section (216mm), Drill 8-1/2" Production Hole, Exclude: No

	Planned	Actual (Cum)
Days (original)	33.00	17.25
MD/TVD	3,158/	2,690/ 1,742
Cost (w/suppl)	13,700,000	4,595,556

ExxonMobil Exploration & Production Malaysia, Inc
Proprietary

Units: Mixed Currency: USD

Reference Datum: 32.07m - OTH - must be OTH!

Well Working Elev: 32.07 mKB1 - depths must match!

Rpt Period: 6/21/2020 00:00 to 6/22/2020 00:00

Well Information

Country Malaysia	Field Name Tabu	Operating Facility TABU_B	Slot/Conductor 27	Regulatory Well ID	
Territory/State	Lease 2008 PSC		Local Latitude (°) 5° 40' 33.443" N	Local Longitude (°) 104° 53' 50.564" E	Drilling Purpose Service
Original KB Elevation (m) 32.07	Ground Elevation (m) 0.00	Working Elevation 32.07 mKB1	Working-Ground Distanc... 32.07	Water Depth (m) 63.30	Spud Date 10/19/1995 00:00

Daily Operations Information

Rig / Unit (Names) Sapura T-9		Days From Spud (days) 84	Days Ahead/Behind	Daily Cost Total (Cost) 214,157		Cum Percent NPT (%) 3.62
Daily Personnel Count 137.0			Daily Personnel (hr) 3,288.00		Drill Time (hr) 14.93	
Activity at Report Time Drill and survey 8-1/2" production hole section. Depth: 2690 m.				Next Activity Drill and survey 8-1/2" production hole section to section TD +/- 3160 m.		
Performance Limiter Integrity / ECD				Mitigation Attempts/Results Control ROP to 40 m/hr and backream.		
Average Background Gas 0.30	Average Connection Gas 0.00	Average Trip Gas 0.00	Average Drilling Gas 0.30	Formation Description 80 % claystone 20 % sandstone at 2660 m.		
Time Log (hr) 24.00	Last Casing String 9-5/8" 47 ppf L-80 VT HC at 1790.5 m.		Next Casing String			Last Mud Check Density (lb/gal) 10.30

Time Log

Start Time	Elapsed Time (hr)	End MD (mKB1)	Category	Comments																																								
00:00	24.00	2,690.00	DRLG	<p>Drill and survey 8-1/2" production hole with 10.3 ppg NAF from 2188 m to 2690 m.</p> <ul style="list-style-type: none">- 640 gpm, 3220 psi.- 150 rpm, Torque: 10 - 13 kft-lbs.- WOB: 10 - 18 klbs, Instantaneous ROP: 30 - 40 m/hr. Average ROP: 20.91 m/hr.- ECD: 11.72 - 11.89 ppg. Control ROP and backream 1 std for hole cleaning and reduce ECD.- P/U wt: 255 klbs, S/O wt: 134 klbs, Rot wt: 173 klbs. T&D FF: 0.2- Background gas: 0.3 - 0.4 %. Max gas 2.35 % at 2228 m.- Acoustic caliper: 8.69" - 8.81"- 1/4" PDC ribbons cutting structure. No signs of borehole instability. Average cutting weight: 10 - 30 kg/min.- MW out: 10.3 ppg. Run active centrifuge for solid control. <p>- Take survey 1 jt off bottom prior making connection.</p> <p>- Last survey at 2640.3 mMD, 1724.13 mTVDDF. Inclination: 69.15 deg. Azimuthal: 325.01 deg.</p> <p>- Compare to plan: 0.69 m above. 0.02 m right. 0.69 m center-to-center.</p> <p>Reservoir</p> <table><tr><td>- I-10 sand</td><td>1808 mMD</td><td>1427.1 mTVDDF</td><td>6.5 mTVD shallower</td></tr><tr><td>- I-25 sand</td><td>1982.4 mMD</td><td>1489.4 mTVDDF</td><td>8.3 mTVD shallower</td></tr><tr><td>- I-28 sand</td><td>2035 mMD</td><td>1509.1 mTVDDF</td><td>6.6 mTVD shallower</td></tr><tr><td>- I-30 sand</td><td>2120 mMD</td><td>1538.7 mTVDDF</td><td>9.7 mTVD shallower</td></tr><tr><td>- I-35 sand</td><td>2199.5 mMD</td><td>1567.3 mTVDDF</td><td>8.3 mTVD shallower</td></tr><tr><td>- I-45 sand</td><td>2392.6 mMD</td><td>1636.0 mTVDDF</td><td>0.2 mTVD deeper</td></tr><tr><td>- I-48/49 sand</td><td>2430.5 mMD</td><td>1649.7 mTVDDF</td><td>4.1 mTVD shallower</td></tr></table> <p>Coal:</p> <table><tr><td>- I-20 coal</td><td>1894 - 1897 mMD</td></tr><tr><td>- I-37 coal</td><td>2276 - 2279 mMD</td></tr><tr><td>- I-40 coal</td><td>2293 - 2295 mMD</td></tr><tr><td>- I-60FS4 coal</td><td>2583 - 2587 mMD</td></tr><tr><td>- I-60FS3 coal</td><td>2606 - 2608 mMD</td></tr><tr><td>- I-60FS1 coal</td><td>2660 - 2663 mMD</td></tr></table>	- I-10 sand	1808 mMD	1427.1 mTVDDF	6.5 mTVD shallower	- I-25 sand	1982.4 mMD	1489.4 mTVDDF	8.3 mTVD shallower	- I-28 sand	2035 mMD	1509.1 mTVDDF	6.6 mTVD shallower	- I-30 sand	2120 mMD	1538.7 mTVDDF	9.7 mTVD shallower	- I-35 sand	2199.5 mMD	1567.3 mTVDDF	8.3 mTVD shallower	- I-45 sand	2392.6 mMD	1636.0 mTVDDF	0.2 mTVD deeper	- I-48/49 sand	2430.5 mMD	1649.7 mTVDDF	4.1 mTVD shallower	- I-20 coal	1894 - 1897 mMD	- I-37 coal	2276 - 2279 mMD	- I-40 coal	2293 - 2295 mMD	- I-60FS4 coal	2583 - 2587 mMD	- I-60FS3 coal	2606 - 2608 mMD	- I-60FS1 coal	2660 - 2663 mMD
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Daily Offline Time Log Summary

Start Time	Dur (hr)	End Time	Category	Start Depth (TVD) (mKB1)	End Depth (mKB1)	Com

Drilling Parameters (Fast Drill)

Start MD (mKB1)	End MD (mKB1)	Hole Made (Int) (m)	Avg ROP (Int) (m/hr)	Drill Time (hr)	Total Circ Time (hr)	WOB (1000lbf)	Total RPM (rpm)	Circ Rate (gpm)	Standpipe Pres (psi)	Rotating HL (1000lbf)	Pickup HL (1000lbf)	Slackoff HL (1000lbf)	Drilling Torque
2,188.00	2,690.00	502.00	33.6	14.93	22.60	22	150	660	2,930.0	162	220	133	12,000.0

Management Summary

Management Summary

Tabu-B 19 ST1: Continue drill and survey 8-1/2" production hole section to section from 2188 m to 2690 m.

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Mud Checks

Source Pit	Date 6/21/2020 20:00	Fluid Type NAF	Fluid Category Low Toxicity Mineral Oil	MD (mKB1) 2,621	Density (lb/gal) 10.30	ECD (lb/gal) 11.80
Funnel Viscosity (s/qt) 61	FL Temp (°C) 72.8	Plastic Viscosity (cP) 35.0	Yield Point (lb/100ft²) 14	10-Sec Gel (lb/100ft²) 11	10-Min Gel (lb/100ft²) 21	30-Min Gel (lb/100ft²) 24
600 RPM Dial Reading 84	300 RPM Dial Reading 49	200 RPM Dial Reading 32	100 RPM Dial Reading 20	6 RPM Dial Reading 9	3 RPM Dial Reading 8	Visc Temp (°C) 48.9
API FL (mL/30min)	API FC (1/32")	HTHP FL (mL/30min) 3.6	HTHP FC (1/32") 2	HTHP Temperature (°C) 135.0	HTHP Pressure (psi) 500.0	BHST (°C) 110.0
Excess Lime (lb/bbl) 3.1	Ca++ (mg/L)	Chlorides (mg/L) 231,066	n (Calc) 0.26	K (Calc) 26.68	Wellbore TABU-B19ST1	
pH	Pm (mL/mL)	Pf (mL/mL)	Mf (mL/mL)	Potassium (mg/L)	MBT (lb/bbl)	Activity 0.67
Alkalinity (mL/mL) 2.4	WPS (ppm) 182,764	Electrical Stability (V) 651.0	Filter Size (µm)	Iron Content (mg/L)	NTU	TCT (°C)
Volume % Water (%) 17.0	Volume % Oil (%) 68.0	Oil/Water Ratio 80/20	Sand Content (%) 0.3	Volume % Solids (%) 15.0	LGS (%) 6.4	HGS (%) 6.6

Evaporation Volume Added (bbl)

Comments

Active Pit

Mud Volume Summary

Addition/Loss Addition			Type Additives	Subtype	Volume (bbl) 52.7
Addition/Loss Loss			Type Surface	Subtype	Volume (bbl) 165.7
Active Volume (bbl) 3,145.0	Var Active Volume (bbl) -113.0	Balance (bbl) 0.0	Tank Volume (bbl) 2,549.6	Additions (bbl) 52.7	Cum Additions (bbl) 1,233.9
Losses (bbl) 165.7	Cum Losses (bbl) 3,229.9	Additions - Losses (bbl) -113.0	Cum Additions - Losses (...) -1,996.0	Hole Volume (bbl) 595.4	Var Hole Volume (bbl) 125.4

Daily Job Supply Summary

Type	Unit Sz	Unit Label	Consumed	Cum Consumed	Received	Cum Received	Returned	Cum Returned	On Loc
Barite	1 MT		0.0	10.0	0.0	310.0	0.0	152.0	148.0
Base Oil	1 bbl		66.0	530.0	0.0	817.0	0.0	817.0	-530.0
Bentonite	1 MT		0.0	0.0	0.0	20.0	0.0	20.0	0.0
Cement Blend	1 MT		0.0	39.0	0.0	213.0	0.0	144.0	30.0
Cement Neat	1 MT		0.0	7.0	0.0	105.0	0.0	0.0	98.0
Fuel - Diesel	1 bbl		116.0	1,278.0	0.0	8,731.0	0.0	4,344.0	3,109.0
Water - Fresh - Purchased Non-Potable	1 bbl		1,285.0	4,130.0	380.0	30,890.0	0.0	13,634.0	13,126.0
Water - Fresh - Purchased Potable	1 bbl		287.0	4,088.0	195.0	11,183.0	0.0	3,676.0	3,419.0

String No. 3

Drill String Name 8 1/2" Drilling BHA		String Number 3	Date In 6/20/2020 00:00	Dt Lst Drig Parm 6/22/2020 00:00	MD In (mKB1) 1,791.50	MD Lst Drig Par (mKB1) 2,690.00
Min WOB (1000lbf) 22	Min Total RPM (rpm) 150	Min Circ Rate (gpm) 660	Min SPP (psi) 2,930.0	Min Pickup HL (1000lbf) 220	Min Slackoff HL (1000lbf) 133	Min Rotate HL (1000lbf) 162
Max WOB (1000lbf) 22	Max Total RPM (rpm) 150	Max Circ Rate (gpm) 660	Max SPP (psi) 2,930.0	Max Pickup HL (1000lbf) 220	Max Slackoff HL (1000lbf) 133	Max Rotate HL (1000lbf) 162

Comments

String No. 3 - Bit Information

Bit 8 1/2in, Baker Hughes, TD505X, 5303488-RR1	Bit And Run Number B2R2	Bit Type PDC	Nozzles (1/32")	Total Bit TFA (in²) 0.98
IADC Classification	Hole Made (Run) (m) 898.50	Hours Drl (Run) (hr) 22.43	ROP (m/hr) 40.1	IADC Dull Grade -----

String Components

Item Des	Nominal OD (in)	Nominal ID (in)	Nominal Weight (lb/ft)	Grade	Btm Conn Size (in)	Btm Conn Thread	Length (m)	Serial Number	Blade OD (in)	Cum Len to Bit (m)	Cum Vol Disp (bbl)	Cum Weight (1000lbf)
HWDP	5				4 1/2	GPDS50	46.35	Rig T-9		135.25	11.4	0
Accelerator	6 1/2	3.00			4 1/2	IF	9.13	478-65085		88.90	7.7	0
HWDP	5	2.75			4 1/2	GPDS50	9.29	Rig T-9		79.77	6.7	0
Drilling Jars - Hydraulic	6 1/2	3.00			4 1/2	IF	9.96	W-1190696-1		70.48	6.2	0
HWDP	5	2.75			4 1/2	GPDS50	36.85	Rig T-9		60.52	5.1	0

TABU-B19

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Float Sub	6 3/4	3.00			4 1/2	IF	0.50	OSS11-010696		23.67	3.1	0
Downhole Filter Sub	6 3/4	2.81			4 1/2	IF	1.72	15124889		23.17	3.0	0
Orientation Sub	6 3/4	2.81			4 1/2	IF	0.40			21.45	2.8	0
Gyro MWD Sub	6 3/4	2.28			6 3/4	T2 MOD	1.31			21.05	2.8	0
	6 3/4	2.26			6 3/4	T2 MOD	2.77			19.74	2.6	0
Drill Collar - Non Mag	6 3/4	2.26			6 3/4	T2 MOD	2.06			16.97	2.2	0
	6 3/4	2.30			6 3/4	T2 MOD	3.03			14.91	2.0	0
	6 3/4	1.88			6 3/4	T2 MOD	3.19			11.88	1.6	0
Gyro MWD Sub	6 3/4	2.17			6 3/4	T2 MOD	5.16			8.69	1.2	0
Rotary Steerable Tool	7.0241	1.43			6 3/4	REG	3.18	15149783		3.53	0.5	0

Daily Drilling Parameters and Hydraulics - If hydraulics are blank, check "String Detail by Job - Hydr & AV" report for errors

Start MD (mKB1)	End MD (mKB1)	Avg ROP (Int) (m/hr)	Drill Time (hr)	Total Circ Time (hr)	WOB (1000lbf)	Total RPM (rpm)	Circ Rate (gpm)	Standpipe Pres (psi)	Rotating HL (1000lbf)	Pickup HL (1000lbf)	Slackoff HL (1000lbf)	Drilling Torque	HP/Area (hp/in ²)	Jet Vel (m/s)	Bit dP (psi)	% P @ bit (%)
2,188.00	2,690.00	33.6	14.93	22.60	22	150	660	2,930.0	162	220	133	12,000.0				

Wellbore Information

Wellbore Name TABU-B19ST1	Purpose Geologic Sidetrack	Profile Type 3D Designer Well	Regulatory Name	Regulatory ID
Parent Wellbore TABU-B19	Starting MD (mKB1)	Job Drilling and Completion, 3/30/2020 00:00 - <dttmend>, <dttmstartplan>		
Actual Directional Survey TABU-B19 Actual Survey	Proposed Directional Survey Tabu-B19 ST1_Rev G.O 030620_Plan Listings	VS Azimuth (°) 310.18	VS EW Origin (m)	VS NS Origin (m)

Min Kick Off Depth (mKB1)

660.00 Method Whipstock

Min Kick Off Depth (mKB1)

660.00 Method

Wellbore (Hole) Sections

Start Date	End Date	Section	Diameter (in)	Actual Top MD (mKB1)	Bottom MD (mKB1)

Deviation Survey (Tie point) - TABU-B19 Actual Survey

Date 6/12/2020 00:00	Description TABU-B19 Actual Survey		Azimuth North Type Grid North	Job Drilling and Completion, 3/30/2020 00:00 - <dttmend>, <dttmstartplan>		
Tie-In MD (mKB1) 608.42	Tie-In Inclination (°) 57.63	Tie-In Azimuth (°) 159.53	Tie-In TVD (mKB1) 524.75	VS Tie In (m) -198.93	TieIn NS Offset... -247.42	TieIn EW Offset (m) 51.43
Declination (°) -0.04	Convergence (°) 0.01	Comments				

Survey Data - Shows all surveys entered during the report period

MD (mKB1)	Inclination (°)	Azimuth (°)	TVD (mKB1)	VS (m)	NS Offset (m)	EW Offset (m)	DLS (°/30m)
2,178.97	69.18	325.23	1,560.01	222.50	-96.56	-372.76	0.21
2,208.48	69.14	324.86	1,570.51	249.16	-73.95	-388.56	0.35
2,237.59	69.18	324.55	1,580.86	275.49	-51.75	-404.28	0.30
2,266.71	69.14	324.37	1,591.22	301.87	-29.60	-420.10	0.18
2,295.66	69.14	324.52	1,601.53	328.09	-7.59	-435.83	0.15
2,324.43	69.18	324.80	1,611.77	354.12	14.34	-451.39	0.28
2,353.40	69.14	324.89	1,622.07	380.31	36.48	-466.98	0.10
2,382.39	69.15	325.16	1,632.39	406.50	58.67	-482.50	0.26
2,411.29	69.16	325.43	1,642.68	432.57	80.88	-497.88	0.26
2,440.19	69.17	325.52	1,652.96	458.63	103.13	-513.19	0.09
2,468.76	69.19	325.57	1,663.11	484.38	125.15	-528.30	0.05
2,497.65	69.15	325.54	1,673.38	510.41	147.42	-543.57	0.05
2,526.40	69.14	325.58	1,683.62	536.32	169.57	-558.76	0.04
2,553.28	69.18	325.68	1,693.18	560.53	190.31	-572.95	0.11
2,582.40	69.17	325.60	1,703.53	586.76	212.78	-588.31	0.08
2,611.54	69.21	325.32	1,713.89	613.04	235.22	-603.75	0.27
2,640.30	69.15	325.01	1,724.11	639.01	257.28	-619.11	0.31
2,668.82	69.14	324.84	1,734.26	664.78	279.09	-634.42	0.17
2,690.00	69.17	326.06	1,741.80	683.87	295.39	-645.65	1.62

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Casing Strings - Only shows information for the longest casing component in a string - for other components see casing detail report

Wellbore	Description	Nominal OD (in)	Nominal ID (in)	Nominal Weight (lb/ft)	Nominal Grade	Nom Top Conn	Length (m)	Leak Off Dens (lb/gal)	Top MD (mKB1)	Cut/Pull MD (mKB1)	Bottom MD (mKB1)
TABU-B19	Drive Pipe	26	24.500	202.50	L-80	BTC	191.00		0.00		191.00
TABU-B19	Surface Casing	13 3/8	12.615	54.50	K-55	BTC	1,173.00	11.67	0.00		1,173.00
TABU-B19	Production Casing	9 5/8	8.835	40.00	N-80	BTC	2,332.80		0.00	720.00	2,332.80
TABU-B19	Production Casing	9 5/8	8.681	47.00	N-80	BTC	605.20		2,332.80		2,938.00
TABU-B19ST1	Intermediate Casing	9 5/8	8.681	47.00	L-80	Top HC	1,774.60		15.90		1,790.50