



Partner Drilling Report

Well Name: UNIVERSITY 3-35 #102HB

Report Date: 6/20/2017
Report #: 18.0, DFS: 16.48
Time Log DFS: 16.48
Depth Progress: 1,149.00

API/UWI No. 42461405920000	Surface Legal Location A-U47; SEC. 11; BLK. 4 CCSD&RGNG RR CO	Well License/Permit No. 826301	State/Province TEXAS
Original Spud/Spud Rig Date 6/3/2017 18:30	Rig Release Date	KB to GL (ft) 25.00	KB-Casing Flange Distance (ft)
Original Spud/Spud Rig Date 6/3/2017	Weather CLEAR	Temperature (°F) 76.0	Road Condition GOOD
Current Status/OART DRILL 8 1/2" PRODUCTION LATERAL @ REPORT TIME.	24 Hour Forecast DRILL, SLIDE AND SRUYEY 8 1/2" PRODUCTION LATERAL.	Hole Condition GOOD	

Short Report
TIH TO 7761'. SLIP AND CUT DRILL LINE. TIH F/ 7761' TO 8298'. BUILD 8 1/2" CURVE AND SURVEY F/ 8298' TO 8915'. LAND CURVE. DRILL, SLIDE AND SURVEY F/ 8915' TO 9447'.

Mud Volumes						
Active Volume (bbl) 1,871.7	Var Active Vol (bbl) 78.0	Balance (bbl) 76.4	Tank Volume (bbl) 1,289.0	Additions (bbl) 33.1	Losses (bbl) 31.5	Hole Volume (bbl) 582.7

Time Log						
Start Time	End Time	Dur (hr)	Phase	Ops Code	Sub Code	Time Code
06:00	10:30	4.50	22PHCD, Prod Hole Curve Drill	TR	p	D
10:30	11:00	0.50	22PHCD, Prod Hole Curve Drill	TR	p	O
11:00	13:00	2.00	22PHCD, Prod Hole Curve Drill	TR	p	D
13:00	13:30	0.50	22PHCD, Prod Hole Curve Drill	TR	p	D
13:30	21:30	8.00	22PHCD, Prod Hole Curve Drill	DR	b	O
21:30	04:30	7.00	23PHLD, Prod Hole Lat Drill	DR	c	O
04:30	05:00	0.50	23PHLD, Prod Hole Lat Drill	RM	b	O
05:00	06:00	1.00	23PHLD, Prod Hole Lat Drill	DR	c	O

Mud Checks						
Time 15:00	Type INVERMUL	Depth (ftKB) 8,298.0	Density (kg/m³) (lb/g... 9.50	Funnel Viscosity (s/qt) 69	PV Calc (cP) 16.0	YP Calc (lb/100ft²) 14.006
Gel 10 sec (kPa) (lb... 12.005	Gell 10 min (kPa) (l... 19.008	Gel 30 min (kPa) (lb... 25.010	Filtrate (mL/30min) 25.010	Filter Cake (1/32") pH	Solids (%) 10.5	
MBT (lb/bbl) 68.0	Percent Oil (%) 68.0	Percent Water (%) 21.5	Chlorides (kg/m³) (... 45,000.000	Calcium (kg/m³) (m... 23,000.000	Potassium (mg/L) 800.0	Electric Stab (V) 800.0
Time 05:00	Type INVERMUL	Depth (ftKB) 8,814.0	Density (kg/m³) (lb/g... 9.45	Funnel Viscosity (s/qt) 60	PV Calc (cP) 14.0	YP Calc (lb/100ft²) 17.007
Gel 10 sec (kPa) (lb... 14.006	Gell 10 min (kPa) (l... 18.007	Gel 30 min (kPa) (lb... 20.008	Filtrate (mL/30min) 20.008	Filter Cake (1/32") pH	Solids (%) 11.0	
MBT (lb/bbl) 67.0	Percent Oil (%) 67.0	Percent Water (%) 22.0	Chlorides (kg/m³) (... 38,000.000	Calcium (kg/m³) (m... 22,400.000	Potassium (mg/L) 720.0	Electric Stab (V) 720.0

Mud Volumes			
Tank/Addition/Loss	Type	Volume (bbl)	Subtype
Addition	Water	18.0	
Hole	Hole	582.7	
Tank	Reserve	859.0	
Loss	SURFACE EQUIPMENT	31.5	
Tank	TOTAL CIRC		
Tank	INVERMUL	430.0	
Addition	CHEMICALS	15.1	

AFE Number DD.17.30779.CAP.DRL	AFE+Supp Amt (Cost) 2,177,000.00
Day Total (Cost) 69,709	Cum To Date (Cost) 1,470,470
Mud Field Est (Cost) 5,942	Cum Mud Field Est (Co... 75,702
Start Depth (ftKB) 8,298.0	End Depth (ftKB) 9,447.0
Planned Formation WOLFCAMP B	Planned TMD (ftKB) 19,216.0
Last Casing String Intermediate Casing, 7,787.0ftKB	

Daily Contacts	
Job Contact	Mobile
BRIAN ALLEMAN, Engineer	214-978-8000
DAVID LANKFORD, Foreman	281-220-5828
KEVIN GOTTE, Consultant	281-220-5828
TRAVIS PERSCHE, Rig Clerk/Logistics	281-220-5829

Personnel Log	
Head Count	23.0

Rigs	
HELMERICH & PAYNE DRILLING, 3	
Contractor HELMERICH & PAYNE DRILLING	Rig Number 394
Rig Supervisor JARED CARPENTER, Toolpusher	Phone Mobile 918-936-7394

1, Gardner-Denver, PZ-11			
Pump Number 1	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b... 0.067	
P (psi) 620.0	Slow Spd Yes	Strokes (s... 40	Eff (%) 95
P (psi) 700.0	Slow Spd Yes	Strokes (s... 60	Eff (%) 95

2, Gardner-Denver, PZ-11			
Pump Number 2	Pwr (hp) 1,300.0	Rod Diameter...	
Liner Size (in) 5	Stroke (in) 11.00	Vol/Stk OR (b... 0.067	
P (psi) 690.0	Slow Spd Yes	Strokes (s... 60	Eff (%) 95
P (psi) 550.0	Slow Spd Yes	Strokes (s... 20	Eff (%) 95

Mud Additive Amounts		
Mud Additive Description	Field Est (Cost/unit)	Consumed
12 HR MUD ENGINEER	700.00	1.0
BARABLOK 400	85.00	20.0
CALCIUM CHL 95 -98%	17.10	68.0
CON DET	59.00	5.0
GELTONE V	65.00	8.0
RIG WASH	786.59	1.0
SCALE CHARGE	10.00	1.0
TRANSPORTATI ON	1.00	767.55

Job Supplies		
Supply Item Description DIESEL FOR OBM	Unit Label Gal	
Total Received 13,294.6	Total Consumed 5,418.0	On Loc 7,876.6



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Drill Strings

BHA #8, Curve

Bit Run	Drill Bit	IADC Bit Dull	TFA (incl Noz) (in ²)
8 1/2in, MMD55DM, 12871270	-----	1.86	
Nozzles (1/32")	BHA Length (ft)	String Wt (1000lbf)	Bit ROP (ft/hr)
22/22/22/22/22	12,130.33		71.9

Mud Motors

Motor Bend	Bit to Bend	Rotor Nozzle Diameter (in)
2.12 FIXED	4.04	

Drill String Components

Item Des	Manual/Tally Jts	OD (in)	ID (in)	Len (ft)	Top Thread
HWDP	21	5	3.00	664.93	IF
Drill Pipe	306	5	4.28	9,638.80	IF
Agitator		6 7/8	2.44	24.22	IF
Drill Pipe	54	5	4.28	1,702.49	IF
Drill Collar - Non Mag		6 1/2	3.25	30.02	IF
Non-Mag Hangoff Sub		6 1/2	3.25	5.46	IF
Drill Collar - Non Mag		6 1/2	3.25	29.67	IF
Mud Motor - Bent Housing		6 1/2	2.50	33.74	IF

Drilling Parameters

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,298.0	8,385.0	87.00	2.18	2.18	39.9	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
25	0	2,900.0	172	197	207	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...)

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70
Error				

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,385.0	8,392.0	94.00	0.33	2.51	21.2	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
15	30	2,935.0	185	206	197	9.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...)

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433.8	445.3	97.7	106.8	9.70
Error				

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,392.0	8,419.0	121.00	0.43	2.94	62.8	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
26	0	2,879.0	171	210	200	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...)

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
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433.8	445.3	97.7	106.8	9.70
Error				

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,419.0	8,440.0	142.00	0.48	3.42	43.8	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
20	35	3,029.0	179	212	199	10.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...)

Job Supplies

Supply Item Description	Unit Label
DRILLING CUTTINGS	Cu. Yds
Total Received	Total Consumed On Loc
70.0	70.0 0.0

Supply Item Description	Unit Label
DRILLING WATER	Bbl
Total Received	Total Consumed On Loc
6,436.7	6,436.7 0.0

Supply Item Description	Unit Label
DRILLING WATER	Bbl
Total Received	Total Consumed On Loc
9,718.0	9,718.0 0.0

Supply Item Description	Unit Label
FUEL	Gal
Total Received	Total Consumed On Loc
33,333.5	23,880.5 9,453.0

Supply Item Description	Unit Label
LIQUID DRILLING WASTE	Bbl
Total Received	Total Consumed On Loc
370.0	370.0 0.0

Supply Item Description	Unit Label
POTABLE WATER	Gal
Total Received	Total Consumed On Loc
17,300.0	17,300.0 0.0

Supply Item Description	Unit Label
SEWAGE	Gal
Total Received	Total Consumed On Loc
23,400.0	23,400.0 0.0

Supply Item Description	Unit Label
THREAD PROTECTORS	Box
Total Received	Total Consumed On Loc
1.0	1.0 0.0

Supply Item Description	Unit Label
TRASH/GENERAL WASTE	Ea
Total Received	Total Consumed On Loc
2.0	2.0 0.0

Safety Checks

Time	Type	Safety Topic
17:30	Pre-Tour	MAN LIFT OPERATIONS
05:30	Pre-Tour	PROPER HYDRATION

Wellbores

Wellbore Name
UNIVERSITY 3-35 #102HB

Kick Offs & Key Depths

Type	Top Depth (ftKB)



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24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 8,440.0	End Depth (ftKB) 8,468.0	Cum Depth (ft) 170.00	Drilling Time (hr) 0.40	Cum Drill Time (hr) 3.82	Interval ROP (ft/hr) 70.0	Flow Rate (gpm) 545
WOB (1000lbf) 24	Rotary RPM (rpm) 0	SPP (psi) 2,917.0	Drill Str Wt (1000... 173	PU Str Wt (1000lbf) 210	SO Str Wt (1000lbf) 199	Drilling Torque 0.0	Off Btm Tq
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 8,468.0	End Depth (ftKB) 8,487.0	Cum Depth (ft) 189.00	Drilling Time (hr) 0.35	Cum Drill Time (hr) 4.17	Interval ROP (ft/hr) 54.3	Flow Rate (gpm) 545
WOB (1000lbf) 20	Rotary RPM (rpm) 30	SPP (psi) 2,966.0	Drill Str Wt (1000... 179	PU Str Wt (1000lbf) 204	SO Str Wt (1000lbf) 195	Drilling Torque 9.0	Off Btm Tq
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 8,487.0	End Depth (ftKB) 8,516.0	Cum Depth (ft) 218.00	Drilling Time (hr) 0.41	Cum Drill Time (hr) 4.58	Interval ROP (ft/hr) 70.7	Flow Rate (gpm) 545
WOB (1000lbf) 25	Rotary RPM (rpm) 0	SPP (psi) 2,875.0	Drill Str Wt (1000... 171	PU Str Wt (1000lbf) 200	SO Str Wt (1000lbf) 200	Drilling Torque 0.0	Off Btm Tq
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 8,516.0	End Depth (ftKB) 8,534.0	Cum Depth (ft) 236.00	Drilling Time (hr) 0.45	Cum Drill Time (hr) 5.03	Interval ROP (ft/hr) 40.0	Flow Rate (gpm) 545
WOB (1000lbf) 29	Rotary RPM (rpm) 30	SPP (psi) 2,939.0	Drill Str Wt (1000... 179	PU Str Wt (1000lbf) 216	SO Str Wt (1000lbf) 189	Drilling Torque 9.0	Off Btm Tq
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB) 8,534.0	End Depth (ftKB) 8,565.0	Cum Depth (ft) 267.00	Drilling Time (hr) 0.60	Cum Drill Time (hr) 5.63	Interval ROP (ft/hr) 51.7	Flow Rate (gpm) 545
WOB (1000lbf) 21	Rotary RPM (rpm) 0	SPP (psi) 2,845.0	Drill Str Wt (1000... 180	PU Str Wt (1000lbf) 214	SO Str Wt (1000lbf) 189	Drilling Torque 0.0	Off Btm Tq
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...



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24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

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Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
	8,565.0	8,580.0	282.00	0.39	6.02	38.5	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
28	30	2,952.0	177	212	196	9.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

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24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
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	8,580.0	8,606.0	308.00	0.44	6.46	59.1	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
23	0	2,833.0	179	211	203	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
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	8,606.0	8,628.0	330.00	0.49	6.95	44.9	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
28	30	2,989.0	175	191	188	10.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

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	8,628.0	8,651.0	353.00	0.43	7.38	53.5	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
18	0	2,857.0	181	212	188	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.70

Error

Wellbore UNIVERSITY 3-35 #102HB	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
	8,651.0	8,732.0	434.00	1.04	8.42	77.9	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
29	45	3,003.0	176	214	195	10.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...



Partner Drilling Report

Report Date: 6/20/2017
Report #: 18.0, DFS: 16.48
Time Log DFS: 16.48
Depth Progress: 1,149.00

Well Name: UNIVERSITY 3-35 #102HB

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.71

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,732.0	8,744.0	446.00	0.26	8.68	46.2	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
16	0	2,814.0	186	214	207	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.71

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	8,744.0	9,111.0	813.00	3.63	12.31	101.1	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
29	70	2,995.0	178	209	159	10.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.72

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,111.0	9,124.0	826.00	0.30	12.61	43.3	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
15	0	2,862.0	183	216	204	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.72

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,124.0	9,206.0	908.00	0.85	13.46	96.5	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
29	70	3,048.0	184	213	194	11.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.72

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,206.0	9,215.0	917.00	0.23	13.69	39.1	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
17	0	2,891.0	179	212	207	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...



Partner Drilling Report

Report Date: 6/20/2017
Report #: 18.0, DFS: 16.48
Time Log DFS: 16.48
Depth Progress: 1,149.00

Well Name: UNIVERSITY 3-35 #102HB

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.72

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,215.0	9,384.0	1,086.00	1.28	14.97	132.0	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
30	70	3,093.0	184	213	194	12.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.3	0.4	94.3	76.5	2
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.72

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,384.0	9,394.0	1,096.00	0.40	15.37	25.0	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
30	70	3,115.0	184	213	194	11.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.2	0.4	94.3	76.1	2
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.66

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,394.0	9,405.0	1,107.00	0.23	15.60	47.8	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
17	0	2,953.0	184	213	194	0.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.2	0.4	94.3	76.1	3
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.66

Error

Wellbore	Start Depth (ftKB)	End Depth (ftKB)	Cum Depth (ft)	Drilling Time (hr)	Cum Drill Time (hr)	Interval ROP (ft/hr)	Flow Rate (gpm)
UNIVERSITY 3-35 #102HB	9,405.0	9,447.0	1,149.00	0.37	15.97	113.5	545
WOB (1000lbf)	Rotary RPM (rpm)	SPP (psi)	Drill Str Wt (1000...)	PU Str Wt (1000lbf)	SO Str Wt (1000lbf)	Drilling Torque	Off Btm Tq
30	70	3,069.0	184	213	194	12.0	
Q Gas Inj (ft ³ /min)	T Inj (°F)	P BH Ann (psi)	T BH (°F)	P Surf Annulus (p...)	T Surf Annulus (°F)	Q Liq Return (gpm)	Q Gas Return (f...

Hydraulic Calculations

Bit Hydraulic Power (hp)	HP/Area (hp/in ²)	Bit Jet Velocity (ft/s)	Bit Pressure Drop (psi)	% P @ bit (%)
24.2	0.4	94.3	76.1	2
Max Casing AV (ft/min)	Max Open Hole AV (ft/min)	Min Casing AV (ft/min)	Min Open Hole AV (ft/min)	ECD End (lb/gal)
433.8	445.3	97.7	106.8	9.66

Error

Kicks

Kick Date	Kick Depth (ftKB)	Control Date	Control Depth (ftKB)	Kick Class
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Kill Notes

Lost Circulation

Start Date	Top Depth (ftKB)	Bottom Depth (ftKB)	Ops In Prog	Vol Lost Tot (bbl)	End Date
6/3/2017 20:30	192.0				



Partner Drilling Report

Well Name: UNIVERSITY 3-35 #102HB

Report Date: 6/20/2017
Report #: 18.0, DFS: 16.48
Time Log DFS: 16.48
Depth Progress: 1,149.00

Interval Problems

Problem Type	Problem Subtype	Start Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost (Cost)	Est Lost Time (hr)
Action Taken						

Interval Lessons

Lesson Type	Start Date	End Date	Start Depth (ftKB)	End Depth (ftKB)	Est Cost Saving (Co..)	Est Time Saving (hr)
Comment						

Safety Incidents

Time	Category	Type	Subtype	Cause	Lost time?	Severity

Leak Off and Formation Integrity Tests

Run Date 6/4/2017	OD (in) 13 3/8	Set Depth (ft...) 684.0	Set Depth (T...) 684.0	Comment	MACP Press... 500.0
Test Date 6/8/2017	Test Type Casing Test		Fluid Density (lb/gal) 9.10	EMW (lb/gal) 23.17	
Run Date 6/12/2017	OD (in) 9 5/8	Set Depth (ft...) 7,787.0	Set Depth (T...) 7,781.9	Comment 9 5/8" INTERMEDIATE CASING TEST ABOVE DV TOOL.	MACP Press... 1,500.0
Test Date 6/13/2017	Test Type Casing Test		Fluid Density (lb/gal) 8.80	EMW (lb/gal)	
Run Date 6/12/2017	OD (in) 9 5/8	Set Depth (ft...) 7,787.0	Set Depth (T...) 7,781.9	Comment 9 5/8" INTERMEDIATE CASING TEST ABOVE SHOE TRACK.	MACP Press... 1,500.0
Test Date 6/13/2017	Test Type Casing Test		Fluid Density (lb/gal) 8.80	EMW (lb/gal)	
Run Date 6/12/2017	OD (in) 9 5/8	Set Depth (ft...) 7,787.0	Set Depth (T...) 7,781.9	Comment PERFORM F.I.T. AS FOLLOWS: MW USED WBM @ 8.6 PPG. PUMPED 12.5 BBLs @ .5 BPM. PRESSURE UP TO 975 PSI 11.0 PPG EMW. HELD FOR 5 MINUTES.	MACP Press... 986.0
Test Date 6/13/2017	Test Type F.I.T.		Fluid Density (lb/gal) 8.60	EMW (lb/gal) 11.03	

Survey Data

MD (ftKB)	Inclination (°)	Azimuth (°)	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
8,292.00	44.23	358.53	8,253.16	72.57	73.38	-136.71	13.69
8,338.00	52.40	358.03	8,283.73	106.87	107.69	-137.75	17.78
8,386.00	60.54	359.17	8,310.22	146.83	147.65	-138.71	17.07
8,432.00	65.13	359.64	8,331.21	187.74	188.57	-139.13	10.02
8,481.00	69.46	357.94	8,350.12	232.91	233.75	-140.10	9.40
8,527.00	74.34	359.33	8,364.41	276.60	277.44	-141.13	10.99
8,575.00	79.82	359.31	8,375.14	323.36	324.21	-141.69	11.42
8,764.00	89.33	0.69	8,387.20	511.70	512.56	-143.07	2.07
8,859.00	89.80	0.65	8,387.92	606.70	607.55	-141.96	0.50
8,953.00	90.67	0.39	8,387.54	700.70	701.55	-141.11	0.97
9,048.00	91.85	359.96	8,385.45	795.67	796.52	-140.82	1.32
9,142.00	91.51	1.82	8,382.69	889.62	890.46	-139.36	2.01
9,236.00	90.34	1.16	8,381.18	983.59	984.42	-136.91	1.43
9,331.00	91.31	1.68	8,379.81	1,078.56	1,079.38	-134.56	1.16
9,447.00	90.64	1.68	8,377.83	1,194.51	1,195.31	-131.16	0.58