



Partner - Drilling

Well Name: Fcu 7620

Date: 5/13/2017

Well Name Fcu 7620	API/UWI 4200347446	State/Province Texas	County Andrews
Permit Number 821059	Spud Date	Ground/Corrected Ground Elevation (ft) 3,301.00	KB-Ground Distance (ft) 13.00

Mud Properties

Dens (lb/gal)	Vis (s/qt)

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)

Daily Summary

Report Start Date 5/13/2017 03:00	Report End Date 5/13/2017 06:00	Footage (ftKB)	End Depth (ftKB) 0.0	Daily Field Est Total (Cost) 62,964.00	Cum Field Est To Date (Cost) 62,964.00
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Activity
Waiting on Trucks

24hr Activity

Com
Rig Down on FCU 7218. Prepare to MIRU on FCU 7620. Wait on Trucks

**Partner - Drilling****Well Name: Fcu 7620****Date: 5/13/2017**

Well Name Fcu 7620	API/UWI 4200347446	State/Province Texas	County Andrews
Permit Number 821059	Spud Date 5/14/2017 00:30	Ground/Corrected Ground Elevation (ft) 3,301.00	KB-Ground Distance (ft) 13.00

Mud Properties

Dens (lb/gal)	Vis (s/qt)
8.30	28

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date 5/13/2017	Description MWD	EW Tie In (ft) 0.00	NS Tie In (ft) 0.00	Azimuth Tie In (°) 0.0	Inclination Tie In (°) 0.0	MD Tie In (ftKB) 0.00	TVD Tie In (ftKB) 0.00
MD (ftKB) 230.00	Incl (°) 0.80	Azm (°) 0.00	TVD (ftKB) 229.99	NS (ft) 1.61	EW (ft) 0.00	VS (ft) 1.61	DLS (°/100ft) 0.35
497.00	0.70	0.00	496.97	5.10	0.00	5.10	0.04

Daily Summary

Report Start Date 5/13/2017 06:00	Report End Date 5/14/2017 06:00	Footage (ftKB) 827.00	End Depth (ftKB) 880.0	Daily Field Est Total (Cost) 51,101.10	Cum Field Est To Date (Cost) 114,065.10
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Activity
Drilling Surface Hole @ 880'

24hr Activity

Com
Move Rig & Rig Up Basic Rig 37, Raise Derrick @ 12:55 hrs, Weld on conductor pipe, Rig up, Slip & Cut 70' of drill line, Rig up Trash Pump for Jetting Flowline, Strap & Caliper DC's, Install Flow line, Pre-spud Rig inspection. P/U & M/U 11" CapRock PDC Bit, Bit Sub w/ solid float, Inclination tool & 1 x 8" DC Rot Drlg f/ 53' - 880', 827', avg rop 150 fph, 15-30K wob, 115 rpm, 522 gpm, 1,160 psi SPP. (Spud @ 00:30 hr, 5/14/2017)



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Mud Properties

Dens (lb/gal)	Vis (s/qt)
8.40	29

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
230.00	0.80	0.00	229.99	1.61	0.00	1.61	0.35
497.00	0.70	0.00	496.97	5.10	0.00	5.10	0.04
931.00	0.30	0.00	930.95	8.89	0.00	8.89	0.09
1,405.00	0.10	0.00	1,404.95	10.54	0.00	10.54	0.04
1,710.00	0.30	0.00	1,709.95	11.61	0.00	11.61	0.07

Daily Summary

Report Start Date 5/14/2017 06:00	Report End Date 5/15/2017 06:00	Footage (ftKB) 842.00	End Depth (ftKB) 1,722.0	Daily Field Est Total (Cost) 45,119.49	Cum Field Est To Date (Cost) 159,184.59
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Activity
Testing BOP

24hr Activity

Com
Rot Drilg f/ 880' - 1,722', 842', avg rop 160 fph, 25-30K wob, 115 rpm, 522 gpm, 1,160 psi SPP. Pump 50 bbls high vis sweep & circulate wellbore clean. Held PJSM. Trip out Hole racking back 4-1/2" DP & 6-1/4" DC's in derrick. L/D 11" CapRock PDC Bit, Bit Sub w/ Solid float, Invictus Inclination Tool, RR & 3 x 8" DC's. Held PJSM, Rig up US Thompson Csg Crew and Lay Down Machine. Run 8-5/8" Surface Csg. as follows: 1 - 8 5/8" Guide Shoe (0.80'), 1 - joint 8 5/8" 24 lb/ft J-55 STC (42.09'), 1 - 8 5/8" Float Collar (1.15'), 40 - joints 8 5/8" 24 lb/ft J-55 STC (1,681.60'), Ran a total of 41 joints 1,725.64'. Set @ 1,722'. Top of Guide Shoe @ 1,721.20' & Top of FC @ 1,678', Dressed w/ Weatherford Float Equipment & Centralizers, Thread Locked GS, SJ, FC, & 2nd joint, Torque Casing to Opt 2,440 ft/lb, Place 11 Centralizers as per Program. Washed and Worked joint 18, 40, 41 to bottom. Circulate wellbore @ 341 gpm w/ 196 psi SPP. While Circulating Rig Down US Thompson Casing Crew & Laydown Machine. Wait on Bulk Cement Trucks Rig up Halliburton Cement Equipment, Cement 8 5/8" Casing as follows, Test Lines to 2,500 psig, Pump 20 bbls/ Gel Spacer Ahead of 365 sxs Lead Econocem Class "C" Cement Mixed @ (Density 12.50 ppg, Yield 2.11 cu.ft/sk, Water 11.52 gal/sk Total 137 bbls/slurry = 770 cu/ft), Pumped @ 6.1 bbl/min, w/ 120 psig, Followed by 195 sxs Tail Halcem Class "C" Cement Mixed @ (Density 14.80 ppg, Yield 1.35 cu.ft/sk, Water 6.51 gal/sk, Total 47 bbls/slurry = 263 cu/ft), Pumped @ 5.3 bbl/min, w/ 200 psig. Release Plug & Displace with 107 bbls of 8.4 ppg FW @ 6 bbls/min, @ 590 psig, Bump Plug 420 psig over @ 3 bbls/min to Final Bump 1,010 psig @ 21:51 hrs. 5/14/2017. Release Pressure Bleed Back 3/4 bbl to Tank. Float Held, Full returns entire job, circulated 37 bbls = 99 sks of cement to surface. RD Halliburton Equipment. PJSM, Cut off Conductor & 8 5/8" Casing, Weld on 11" 3M x 8 5/8" SOW GE Casing Head. Test to 1000 psig / 5 min (Test ok). Safety Meeting, Nipple up Shaffer 11"5M Double Ram BOP, Annular Hydrill , Rotating Head & 3-1/8" 5M x 2-1/16" 5M Choke Manifold & Kill Lines, Connected the Accumulator Closing Unit. Function Test BOP. Pump through BOP & Choke Manifold, Test w/ Rig Pump, Test Blind Rams, 4" Manual Valve, Upper Kelly Valve & Choke Manifold 250 psig low & 1,500 psig high. Test each for 5 minutes. (Test ok)



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Mud Properties

Dens (lb/gal)	Vis (s/qt)
10.10	28

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
2,340.00	0.80	0.00	2,339.92	17.25	0.00	17.25	0.25
2,498.00	1.10	0.00	2,497.90	19.87	0.00	19.87	0.19
2,656.00	1.60	0.00	2,655.85	23.59	0.00	23.59	0.32
2,815.00	1.90	0.00	2,814.78	28.45	0.00	28.45	0.19
2,941.00	1.60	0.00	2,940.72	32.30	0.00	32.30	0.24

Daily Summary

Report Start Date 5/15/2017 06:00	Report End Date 5/16/2017 06:00	Footage (ftKB) 1,294.00	End Depth (ftKB) 3,016.0	Daily Field Est Total (Cost) 20,283.86	Cum Field Est To Date (Cost) 179,568.45
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Activity
Drilling production hole at 3,016'

24hr Activity

Com
Pump through BOP & Choke Manifold, Test w/ Rig Pump, Test Blind Rams, 4" Manual Valve, Upper Kelly Valve & Choke Manifold 250 psig low & 1,500 psig high. Test each for 5 minutes. (Test ok)
Test 8 5/8" Surface Casing to 1,000 psig for 30 minutes per TRRC. (Test ok)
Pick up BHA Motor and Surefire Inclination tool, IBS,
Trip in Hole w/ Bit #2 CapRock 616SRK
Install Rotating Head & Displace hole to 10# brine.
Test Pipe Rams & Annular @ 250 psig low & 1,500 psig high (Test ok)
Drlg Plug, Float Collar & 42' of Cement. Tagged Cement @ 1,650'. wob: 10-12, rpm: 55, motor 107 rpm, Total rpm 162, spm 110 spp: 1,157 psi. 383 gpm.
Rot Drlg f/ 1,722' - 3,016', 1,294', avg rop 80.9 fph, 15 - 19K wob, Rotary 75 rpm, Motor 146 rpm, Total rpm 221. spp 2,335 psi. 522 gpm.



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Mud Properties

Dens (lb/gal)	Vis (s/qt)
10.10	28

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
3,825.00	0.60	0.00	3,824.52	50.60	0.00	50.60	0.56
3,952.00	0.80	0.00	3,951.52	52.15	0.00	52.15	0.16
4,142.00	0.90	0.00	4,141.49	54.97	0.00	54.97	0.05
4,332.00	0.80	0.00	4,331.47	57.78	0.00	57.78	0.05
4,522.00	0.80	0.00	4,521.45	60.44	0.00	60.44	0.00

Daily Summary

Report Start Date 5/16/2017 06:00	Report End Date 5/17/2017 06:00	Footage (ftKB) 1,675.00	End Depth (ftKB) 4,691.0	Daily Field Est Total (Cost) 24,342.41	Cum Field Est To Date (Cost) 203,910.86
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Activity
Drilling production hole at 4,691'

24hr Activity

Com
Rot Drlg f/ 3,016' - 3,743', 727', avg rop 67 fph, 15-28K wob, Rotary 75 rpm, Motor 142 rpm, Total rpm 217. spp 2,500 psi. 508 gpm. Lubricate Rig.
Rot Drlg f/ 3,743' - 4,691', 948', avg rop 74 fph, 28-35K wob, Rotary 75 rpm, Motor 142 rpm, Total rpm 222. spp 2,650 psi. 522 gpm.



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Mud Properties

Dens (lb/gal)	Vis (s/qt)
10.10	28

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
5,091.00	0.90	0.00	5,090.43	65.90	0.00	65.90	0.26
5,280.00	0.30	0.00	5,279.42	67.88	0.00	67.88	0.32
5,470.00	0.30	0.00	5,469.41	68.87	0.00	68.87	0.00
5,817.00	0.20	0.00	5,816.41	70.39	0.00	70.39	0.03
6,258.00	0.40	0.00	6,257.40	72.70	0.00	72.70	0.05

Daily Summary

Report Start Date 5/17/2017 06:00	Report End Date 5/18/2017 06:00	Footage (ftKB) 2,022.00	End Depth (ftKB) 6,713.0	Daily Field Est Total (Cost) 17,133.85	Cum Field Est To Date (Cost) 214,494.71
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Activity
Drilling production hole at 6,713'

24hr Activity

Com
Rot Drlg f/ 4,691' - 5,639', 948', avg rop 90 fph, 35-38K wob, Rotary 75 rpm, Motor 136 rpm, Total rpm 211. spp 2,690 psi. 488 gpm. Lubricate Rig.
Rot Drlg f/ 5,639' - 6,713', 1,074', avg rop 84 fph, 35-38K wob, Rotary 70 rpm, Motor rpm 126, Total rpm 196, spp 2,730 psi. 450 gpm.



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Mud Properties

Dens (lb/gal)	Vis (s/qt)
10.20	30

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
5,817.00	0.20	0.00	5,816.41	70.39	0.00	70.39	0.03
6,258.00	0.40	0.00	6,257.40	72.70	0.00	72.70	0.05
6,733.00	0.30	0.00	6,732.39	75.60	0.00	75.60	0.02
7,141.00	0.40	0.00	7,140.39	78.09	0.00	78.09	0.02
7,267.00	0.90	0.00	7,266.38	79.52	0.00	79.52	0.40

Daily Summary

Report Start Date 5/18/2017 06:00	Report End Date 5/19/2017 06:00	Footage (ftKB) 597.00	End Depth (ftKB) 7,310.0	Daily Field Est Total (Cost) 19,339.29	Cum Field Est To Date (Cost) 233,834.00
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Activity
Logging

24hr Activity

Com
Rot Drlg f/ 6,713' - 7,057', 344', avg rop 72 fph, 38K wob, Rotary 75 rpm, Motor 117 rpm, Total rpm 192. spp 2,326 psi. 420 gpm. Lubricate Rig. Rot Drlg f/ 7,057' - 7,310', 253', avg rop 77.8 fph, 38K wob, Rotary 75 rpm, Motor 117 rpm, Total rpm 192. spp 2,552 psi. 418 gpm. Pump 60 bbl high vis sweep & Circulate hole clean. While circulating held PJSM on Lay Down drill pipe operations & R/U of Gabe's Lay Down Machine. Lay Down Drill Pipe Freely from 7,310' to 603', L/D 211 jts of 4-1/2" DP, Break Kelly. Lay Down BHA from 603' to Surface, Lay Down BHA Motor, 2 x 7 7/8" IBS & Invictus Survey Tool. Rig Down Gabe's Laydown Machine. Lay Down Kelly and Swivel. PJSM, Rig up Halliburton Logging Unit, Logged in hole w/ Spectral Density, Dual Spaced Neutron, Dual Laterolog, Gamma Ray, Tool. 8 5/8" Csg Shoe located @ 1,719' WLM. Wireline tag bottom at 7,301' WLM.



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Mud Properties

Dens (lb/gal)	Vis (s/qt)

Rig Info

Rig
Basic, 37

Rig Release Date

RR Date
5/20/2017 00:00

Survey Information

Date	Description	EW Tie In (ft)	NS Tie In (ft)	Azimuth Tie In (°)	Inclination Tie In (°)	MD Tie In (ftKB)	TVD Tie In (ftKB)
5/13/2017	MWD	0.00	0.00	0.0	0.0	0.00	0.00
MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)
5,817.00	0.20	0.00	5,816.41	70.39	0.00	70.39	0.03
6,258.00	0.40	0.00	6,257.40	72.70	0.00	72.70	0.05
6,733.00	0.30	0.00	6,732.39	75.60	0.00	75.60	0.02
7,141.00	0.40	0.00	7,140.39	78.09	0.00	78.09	0.02
7,267.00	0.90	0.00	7,266.38	79.52	0.00	79.52	0.40

Daily Summary

Report Start Date 5/19/2017 06:00	Report End Date 5/20/2017 00:00	Footage (ftKB) 0.00	End Depth (ftKB) 7,310.0	Daily Field Est Total (Cost) 109,017.90	Cum Field Est To Date (Cost) 342,851.90
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Activity
Rigging Down

24hr Activity

Com
Finish Logging in hole w/ Spectral Density, Dual Spaced Neutron, Dual Laterolog, Gamma Ray, Tool. 8 5/8" Csg Shoe located @ 1,719' WLM. Wireline tag bottom at 7,301' WLM. AHVT = 1,663 cu/ft, R/D Halliburton Logging Unit.
PJSM, Rig up Gabe's Casing Crew & Lay Down Machine.
Run 5 1/2" J-55 17# LT&C Csg As Follows 1- 5 1/2" Float Shoe (1.31'), 1- jnt 5 1/2" J-55 17# LTC (45.11'), 1- 5 1/2" Float Collar (1.21'), 39 jnts 5 1/2" J-55 17# LTC (1,757.65'), 1- Marker jnt 5 1/2" J-55 17# LTC (21.45'), 122 jnts 5 1/2" J-55 17# LTC (5,485.62'), Ran a Total of 162 jnts,(7,312.31') Set @ (7,310'), Dressed w/ Weatherford Float Equipment, Top of Float Shoe @ 7,308', Float Collar @ 7,262.40', Marker jnt @ 5,483.30', Thd Locked FS, SJ, FC/ Torqued csg to Opt 2,470 ft/lb. Place 52 Cent. as per program.
Circulate Casing on Bottom with Full Returns. 287 gpm at 227 psi. Rig Down Gabe's Casing Crew & Laydown Machine. Held PJSM w/ Halliburton personnel.
PJSM, R/U Halliburton Cement Head and Cement 5 1/2" Csg as Follows, Test Lines to 4,100 psig, Pump 20 bbls FW w/ Gel Spacer containing 2.50 lbm/bbl CHEM,FDP-S1050-12 + 0.10 lbm/bbl Red Liquid Dye # 2 Pump Ahead of 645 sxs Lead Econocem Class "C" Cement containing + 5 lbm Microbond + 0.125 lbm Poly-E-Flake + 0.30% Halad R-322 + 0.25 lbm D-Air 5000, Mixed @ Density 11.5 ppg, Yield 2.91 cu.ft/sk, Water 17.3 gal/sk, Total 335 bbls/slurry = 1,877 cu/ft Pumped @ 6.6 bbl/min, w/ 142 psig. Followed by 805 sxs Tail, Versacem Class "C" Cement containing + 0.20% CFR-3 + 0.30% Halad R-344 + 5 lbm Microbond + 1 lbm Salt + 0.10% HR-800 Mixed @ Density 14.2 ppg, Yield 1.36 cu.ft/sk, Water 6.35 gal/sk, Total 196 bbls/slurry= 1,094 cu/ft, Pumped @ 5 bbl/min, w/ 150 psig. Release Plug & Displace with 169 bbls of 8.4 ppg FW Pumped @ 6.6 bbl/min, w/ 1,951 psig. Did Not Bump plug @ 3 bbl/min, Final psi 2,330 psig, Plug Down @ 20:35 hr 5/19/2017, Release Pressure Bleed Back 1 bbls to Tanks, Float Held, Full returns during cement job, Circulate 100 bbls = 193 sx of Cement to Surface. Rig Down Halliburton Equipment.
PJSM, Nipple Down & Hang BOP, Set Slips w/ 100K Tension, Cut off 5 1/2" Csg.
Finish Nipple Down & Lay BOP Over, Install Tubing Head & Test to 3,000 psig. (Test ok) Rig Down, Rig Release @ 00:00 hrs 5/20/2017.