GOOLSBY BROTHERS and associates, inc.

575 Union Blvd, Suite 208
Lakewood, CO 80228
303-945-2860 Office

Geological Wellsite Supervision

PETCOM

www.goolsbybrothers.com

Scale 1:240 (5"=100') Imperial
True Vertical Depth Log

Well Name:	Gobbler 34C-23HZ (Vertical Hole Section)
Location:	Section 22, T2N, R66W, Weld County, CO.
License Number:	API: 05-123-36476 — Region: Wattenberg, DJ Basin
Spud Date:	July 24, 2013 — Drilling Completed: July 30, 2013
Surface Coordinates:	NENE Sec 22 T2N R66W; 556' FNL 279' FEL Lat N 40.129380 Long W -104.754897
Bottom Hole Coordinates:	SWSW Sec 23 T2N R66W; 4222.23' FNL; 325.73' FEL
Ground Elevation (ft):	5085' — K.B. Elevation (ft): 5101'
Logged Interval (ft):	7000' To: 12,075' — Total Depth (ft): 12,075' DMTD
Formation:	Pierre Sands/Shales, Niobrara, Codell Sand Target
Type of Drilling Fluid:	Water & Poly to 6743', LSND 6743'-12,075'

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Kerr-McGee Oil & Gas Onshore LP
Address: Granite Tower - 1099 18th St, Ste 1800
Denver, CO 80202
CO Geologist, John Morgan

GEOLOGIST

Name: Larry Goolsby & Ian Harris
Company: Goolsby Brothers & Assoc. (GBA), Inc. (www.goolsbybrothers.com)
Address: 575 Union Blvd.
Suite 208,
Lakewood CO. 80228

E-Logs

MWD GR 7000' - 12034'
MWD Resistivity 7926'-12027'

Comments

1) Drilling Contractor: Xtreme Drilling, Rig #20
Toolpusher: Shaun Cox
2) Company Man: Marvin Hackworth, Ricky Carroll
3) Mud Company : AES
Engineer: Ray Brewer
4) Directional Drilling: Baker Hughes
Pulse Tool
Drillers: Travis Wilcox & Scott Sanford
MWD: Mark Dix & Jeremiah Davidson
5) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-333 & Ratcliff Agitator
6) Wellsite Geology: Goolsby Brothers & Associates
Geologists: Larry Goolsby, Ian Harris

ROCK TYPES

Anhy, Bent, Brec, Cht, Clyst, Coal, Congl, Dol, Gyp, Igne, Lmst, Meta, Mrlst, Salt, Shale, Shcol, Shgy, Sltst, Ss, Till, Slty sh, Arg ss, Fracture, Chalk, Carb sh, Arg lmy ss, Cmt

ACCESSORIES

MINERAL: Anhy, Arggrn, Arg, Bent, Bit, Brecfrag, Calc, Carb, Chtdk, Chtlt, Dol, Feldspar, Ferrpel, Ferr, Glau, Gyp, Hvymin, Kaol, Marl, Minxl, Nodule, Phos, Pyr, Salt, Sandy, Silt, Sil, Sulphur, Tuff

FOSSIL: Algae, Amph, Belm, Bioclst, Brach, Bryozoa, Cephal, Coral, Crin, Echin, Fish, Foram, Fossil, Gastro, Oolite, Ostra, Pelec, Pellet, Pisolite, Plant, Strom

STRINGER: Anhy, Arg, Bent, Coal, Dol, Gyp, Ls, Mrst, Sltstrg, Ssstrg

TEXTURE: Boundst, Chalky, Cryxln, Earthy, Finexln, Grainst, Lithogr, Microxln, Mudst, Packst, Wackest

OTHER SYMBOLS

POROSITY: Earthy, Fenest, Fracture, Inter, Moldic, Organic, Pinpoint, Vuggy

SORTING: Well, Moderate, Poor

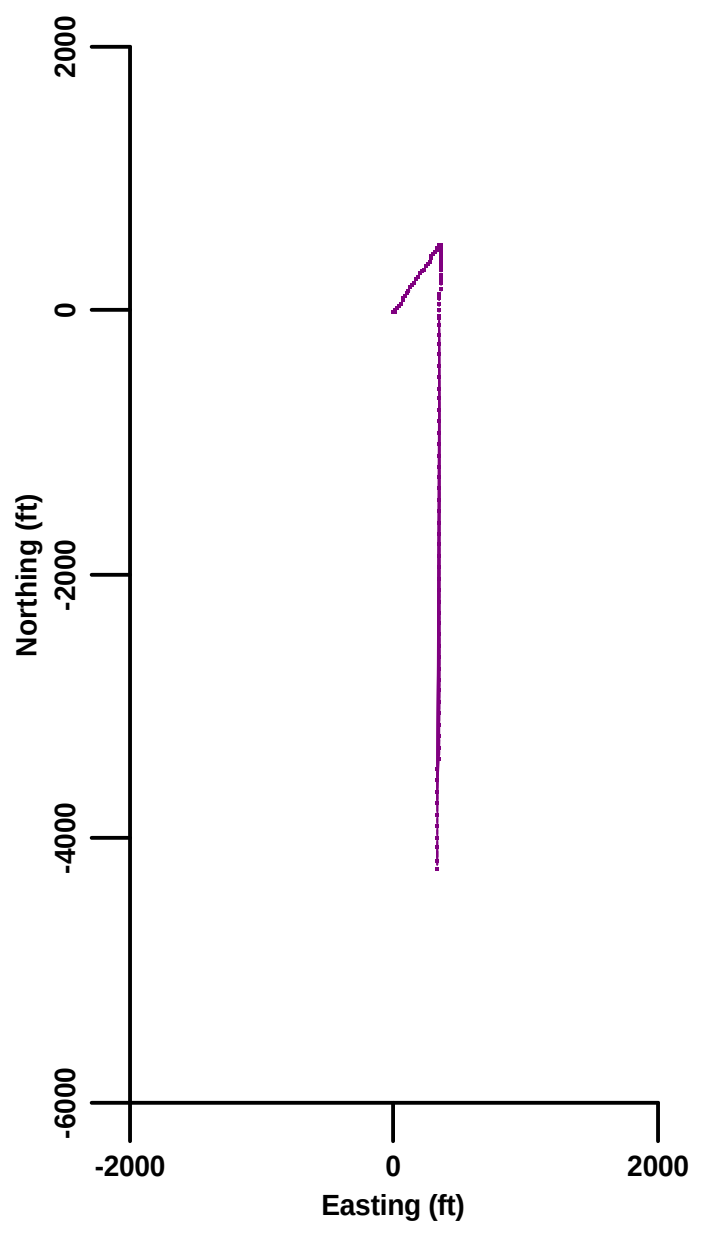
ROUNDING: Rounded, Subrnd, Subang, Angular

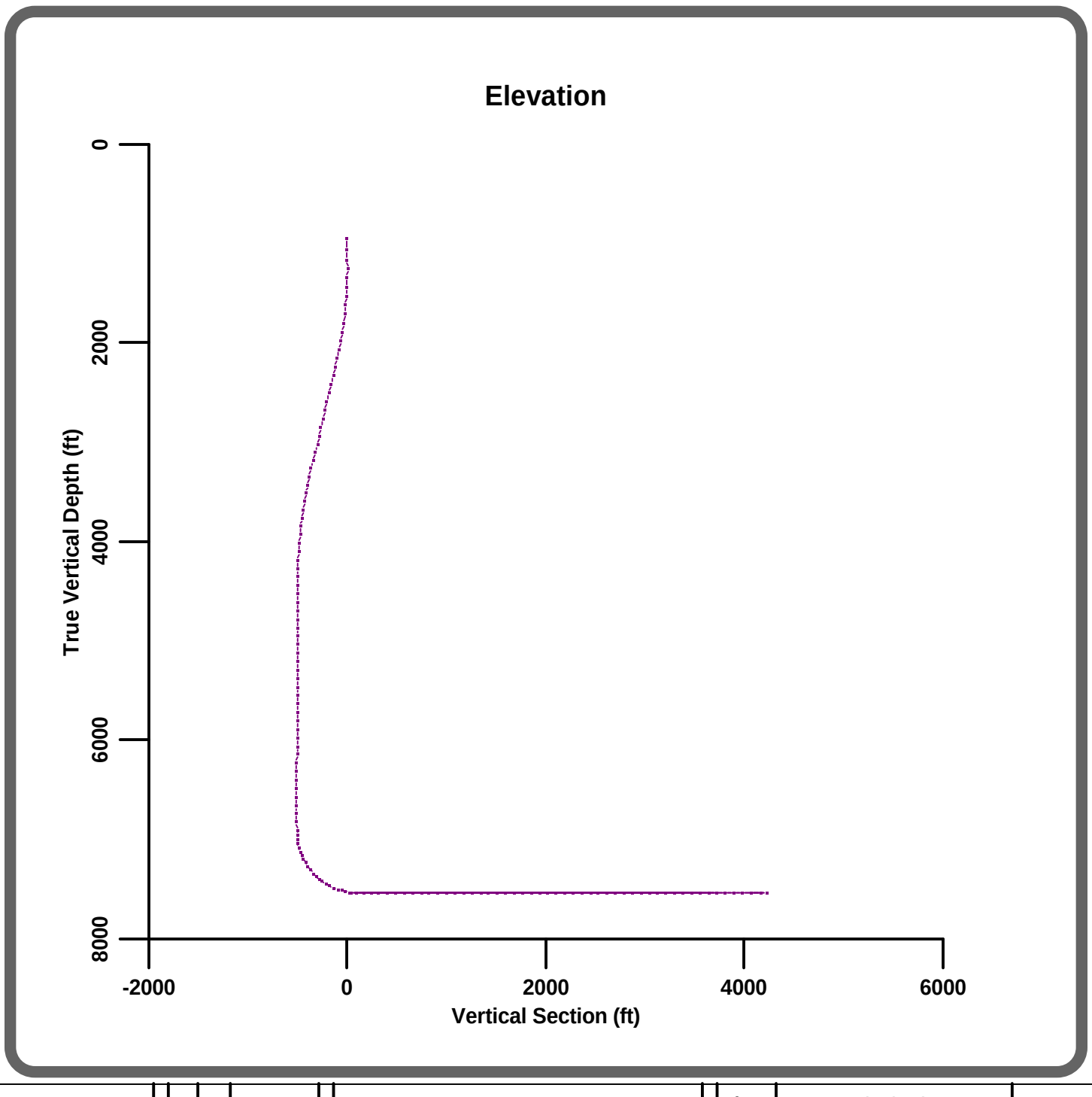
OIL SHOW: Even, Spotted, Ques, Dead

INTERVAL: Core, Dst

EVENT: New bit, Rft, Off btm, Conn, Casing, Casing_right

Plan





ROP (min/ft)	MWD GR (API)	WOB (kLBS)	Slide / Rotate	Conn	Depth	Lithology	Oil Show	Geological Descriptions	s	Flare	TG, C1-C4	Porosity
0 – 4	0 – 200	0 – 50								0 – Flare 10	TGAS (u) 0 – 2000; C1 (units) 0 – 2000; C2 (units) 0 – 2000; C3 (units) 0 – 2000; C4 (units) 0 – 2000	MWI (ppg) 6 – 12; MWO (ppg) 6 – 12

2 man wellsite geology team on location and rigged up July 25, 2013

Begin drilling curve F/7000' (KOP) @ 01:20 hrs on 7/26/2013

6900

9 5/8" Surface Casing Set @ 1016'

NB #1, 8 3/4", SMITH SDi611, #JG9987, 3X14 & 3X15, In @ 1026'.

ROP 353
WOB 12
RPM 60
SPM 77-80
PP 3656

6950

D.S. 7027' MD, INC 3.15, AZI 182.6, TVD 6954.32 VS -507.8

CN

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses

MW 9.9
VIS 39

D.S. 7070' MD, INC 6.66, AZI 169.78, TVD 6997.16 VS -504.16

7000

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses.

D.S. 7112' MD, INC 11.43, AZI 171.79, TVD 7038.62 VS -497.65

7050

CN

No smpl

MW 9.9
VIS 41

D.S. 7155' MD, INC 15.35, AZI 172.85, TVD 7080.44 VS -487.79

7100

D.S. 7197' MD, INC 19.52, AZI 175.1, TVD 7120.51 VS -475.29

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses. No hc indicators.

CN

7150

D.S. 7240' MD, INC 23.75, AZI 176.52, TVD 7160.47 VS -459.49

SH: lt med-med drk gry, rthy w abndt sbgrtty cttngs, sbtab-sbplty, semi bldd & shrp ip, non calc, frm, frly uni w occ thn slty lenses. No hc indicators.

Sharon Springs Top 7258' MD (7177' TVD) based on GR & samples

MW 9.9
VIS 41

7200

D.S. 7282' MD, INC 27.56, AZI 179.3, TVD 7198.32 VS -441.33

CN

SH: drk gry-gryblk, dcrsng med gry, sbrthy-sbwxy, sm/slky feel, pred plty-sbblky, hghly fiss thru, frm, non-v sl calc, w cmt

D.S. 7325' MD, INC 30.8, AZI 179.63, TVD 7235.86 VS -420.37

7250

Niobrara A Top 7334' MD (7244' TVD)

MRLSTN: drk gry-sl gry blk, sbrthy-sbwxy, plty-sb plnr tab thru, jggd, rr calct frac fil, no vis por or perm, inffrd frac por, no ini fl, pred wk cuts, shly ip.

D.S. 7367' MD, INC 33.44, AZI 178.3, TVD 7271.43 VS -398.05

Niobrara B Top 7371' MD (7275' TVD)

CN

Niobrara B Chalk Top 7397' MD (7296' TVD)

7300

MRLSTN: drk gry-sl gry blk, sbrthy-sbwxy, plty-sb plnr tab thru, jggd, rr calct frac fil, no vis por or perm, inffrd frac por, no ini fl, pred wk cuts, shly ip.

D.S. 7410' MD, INC 36.55, AZI 180.44, TVD 7306.65 VS -373.4

Niobrara B Shale Top 7447' MD (7335' TVD)

MW 9.9
VIS 41

CARB CHLK(50%): lt med-med drk gry, hghly mttld w ltr crm mcro spcks, chlky-v rthy txt, sbblky occ sbfiss ip, mstly frm, sl crmbly, no pri fluor, slw wk-mod wht cut fl w/occ strmrs, no vis cut, mod ylw resid rng fl, abndt MRLSTN(50%) thru.

7350

CN

D.S. 7453' MD, INC 41.49, AZI 181.08, TVD 7340.05 VS -346.33

Niobrara C Chalk Top 7489' MD (7366' TVD)

D.S. 7496' MD, INC 45.98, AZI 181.37, TVD 7371.11 VS -316.62

MRLSTN: drk gry-sl gry blk, sbrthy-sbwxy, plty-sb plnr tab thru, jggd, rr calct frac fil, no vis por or perm, inffrd frac por, no ini fl, pred wk cuts, shly ip.

ROP 115
WOB 21-25
RPM 0-35
SPM 70-72
PP 3220

D.S. 7538' MD, INC 50.56, AZI 181.81, TVD 7399.06 VS -285.29

CARB CHALK (micrite): med-med drk gry, abndt ltr gry brn, abndt mttld w v smll lent tan spcks, pred sbchlky, sbrthy-wxy ip, sbplty-sbblky, rr shrp/jggd thru, v frm-hd, micrite w 20% arg mtx, no vis perm or por, no ini fluor, wk hzy yel cuts, drk yel o res rng, sl o odor.

D.S. 7581' MD, INC 55.29, AZI 182.29, TVD 7424.98 VS -251.01

CARB SH: med drk gry-gryblk ip, sbrthy-sl grtty & rgh, sbplty-plty, abndt jggd/shrp c ttngs thru, fm-sl hd, pred non-wk calc, no vis por or perm, no ini fluor, wk mlky dul yel cuts, dim hzy ylw oily res. Tr CHLK, TR MARL

MW 9.9
VIS 41

D.S. 7623' MD, INC 60.29, AZI 182.57, TVD 7447.36 VS -215.5

CARB SH(90%): med drk gry-gryblk ip, sbrthy-sl grtty & rgh, sbplty-plty, abndt jggd/shrp c ttngs thru, fm-sl hd, pred non-wk calc, no vis por or perm, no ini fluor, wk mlky dul yel

D.S. 7666' MD, INC 63.46, AZI 182.63, TVD 7467.62 VS -177.62

CARB CHLK(60%): lt med-med drk gry, hghly mttld w ltr crm mcro spcks, chlky-v rthy txt, sbblky occ sbfiss ip, mstly frm, sl crmbly, no pri fluor, slw wk-mod wht cut fl w/occ strmrs, no vis cut, mod ylw resid rng fl. MRLSTN(30%). CARB SH(10%).

D.S. 7708' MD, INC 68.25, AZI 182.41, TVD 7484.80 VS -139.33

D.S. 7751' MD, INC 71.76, AZI 180.53, TVD 7499.50 VS -98.94

Ft Hays Top 7771' MD (7505' TVD)

MW 9.9
VIS 41

D.S. 7794' MD, INC 75.64, AZI 179.37, TVD 7511.57 VS -57.67

D.S. 7837' MD, INC 78.22, AZI 179.63, TVD 7521.29 VS -15.80

Codell Top 7882' MD (7529' TVD)

MW 10.0
VIS 40

D.S. 7879' MD, INC 81.77, AZI 180.11, TVD 7528.59 VS 25.56

D.S. 7895' MD, INC 82.71, AZI 180.43, TVD 7530.75 VS 41.41

MW 10.0
VIS 44
PV 15
YP 10
Gels 6/10
Fil 5.0
Sol 7.6
pH 8.3
Cl- 1700
LGS 2.2

Proj to Bit D.S. 7953' MD, INC 89.50, AZI 180.43, TVD 7534.68 VS 99.24

Reached ICLP of 7953' @ 20:25 hrs on 7/26/2013

END Vertical Hole Log Section, Begin Horizontal Log Section