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
Measured Depth Log

Well Name: SRC KIEHN 32-4CHZ (Horizontal Section)
Well Id: 123
Location: Section 4, T5N, R68W, Weld County, CO.
License Number: API: 05-123-39713 **Region:** Wattenberg
Spud Date: August 17, 2014 **Drilling Completed:** August 28, 2014
Surface Coordinates: SWSE Sec 4 T4N R68W; 201 FSL 1783 FEL
Lat/Long: 40.335808/-105.005299
Bottom Hole Coordinates: Proj. NWNE Sec 4 T4N R68W; 470 FNL 2032 FEL
Ground Elevation (ft): 5064' **K.B. Elevation (ft):** 5078'
Logged Interval (ft): 6500' **To:** 11413' **Total Depth (ft):** 11413' DMTD
Formation: Codell SS
Type of Drilling Fluid: LSND

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

OPERATOR

Company: Synergy Resources Corporation
Address: 20203 Highway 60
Platteville, CO 80651

GEOLOGIST

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

E-logs

MWD GR from 6300' -11356'

Casing

9 5/8'' Surface Casing set @ 558' MD
7'' Intermediate Casing set @ 7527' MD on August 24, 2014
4 1/2'' Production Liner run on August 29, landed @ 11388'

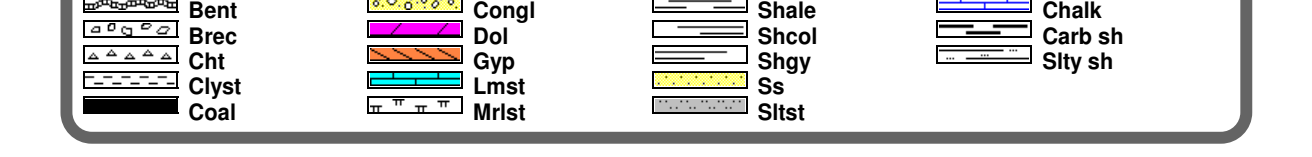
Comments

1) Drilling Contractor: Ensign US Drilling, Rig #131
Toolpusher:

2) Company Man: Dennis Shear

3) Directional Drilling: Ensign Directional
and MWD Pulse Tool:
4) Gas Equipment: Mudlogging Systems Inc.
by Terra Services
Redbox # ML-429 & Ratcliff Agitator

ROCK TYPES


Anhy
Bent
Brec
Cht
Clyst
Coal
Oil sat.
Congl
Dol
Gyp
Lmst
Mrlst
Salt
Shale
Shcol
Shgy
Ss
Sltst
Ss
Chalk
Carb sh
Slty sh

ACCESSORIES

MINERAL
- Anhy
- Arggrn
- Arg
- B Bent
- Bit
- Brecfrag
- Calc
- ■ Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- ● Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- K Kaol
- Marl
- Minxl
- Nodule
- Phos
- P Pyr
- ⊞ Salt
- Sandy
- Silt
- Sil
- S Sulphur
- Tuff

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

STRINGER
- Chlkstg
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE
- BS Boundst
- C Chalky
- CX Cryxln
- e Earthy
- FX Finexln
- GS Grainst
- L Lithogr
- MX Microxln
- MS Mudst
- PS Packst
- WS Wackest

OTHER SYMBOLS

OIL SHOWS
- ● Even
- ◑ Spotted
- ○ Ques
- D Dead
- Vspotty
- near even

POROSITY TYPE
- E Earthy
- Fenest
- F Fracture
- ☒ Inter
- Moldic
- o Organic
- P Pinpoint
- V Vuggy

ROUNDING
- R Rounded
- r Subrnd
- a Subang
- A Angular

SORTING
- W Well
- M Moderate
- P Poor

Data Curves
ROP (min/ft)
Total gas (units)
MWD_GR (API)
Slide/Rotate
Depth
Well Bore Cross Section
Oil Shows
Total Gas, C1-C5
TG (units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
7450
7500
7550
7600
7650
7700
7750
7800
7850
7900
7950
8000
8050
8100
8150
8200
8250
8300
8350
8400
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10400
10450
10500
10550
10600
10650
10700
10750
10800
10850
10900
10950
11000
11050
11100
11150
11200
11250
11300
11350
7100 TVD
7150
7200
Ft Hays
Codell
MD 7401 TVD 7125.48 INC 73.2 AZ 359.1 VS 452.72
MD 7487 TVD 7144 INC 81.9 AZ 357.8 VS 536.24
MD 7569 TVD 7151.29 INC 87.9 AZ 356.4 VS 617.67
MD 7659 TVD 7154.51 INC 88 AZ 357 VS 707.43
MD 7748 TVD 7159.48 INC 85.6 AZ 355.7 VS 796.13
MD 7837 TVD 7166.23 INC 85.7 AZ 356.1 VS 884.77
MD 7927 TVD 7171.09 INC 88.1 AZ 354.5 VS 974.56
MD 8016 TVD 7172.18 INC 90.5 AZ 356.4 VS 1063.46
MD 8105 TVD 7171.48 INC 90.4 AZ 356.1 VS 1152.32
MD 8194 TVD 7170.55 INC 90.8 AZ 355.9 VS 1241.19
MD 8283 TVD 7169 INC 91.2 AZ 355.7 VS 1330.08
MD 8372 TVD 7168.06 INC 90 AZ 354.1 VS 1419.02
MD 8462 TVD 7168.06 INC 90 AZ 354 VS 1509.01
MD 8550 TVD 7167.14 INC 91.2 AZ 353.6 VS 1596.99
MD 8640 TVD 7165.02 INC 91.5 AZ 353.8 VS 1686.96
MD 8729 TVD 7163.86 INC 90 AZ 354.3 VS 1775.94
MD 8818 TVD 7163.62 INC 90.3 AZ 355.4 VS 1864.89
MD 8907 TVD 7163.7 INC 89.6 AZ 354.8 VS 1953.83
MD 8997 TVD 7163.78 INC 90.3 AZ 355.2 VS 2043.78
MD 9086 TVD 7163.08 INC 90.6 AZ 356.3 VS 2132.68
MD 9175 TVD 7162.38 INC 90.3 AZ 356.1 VS 2221.54
MD 9264 TVD 7161.06 INC 91.4 AZ 356.1 VS 2310.4
MD 9354 TVD 7158.86 INC 91.4 AZ 355.4 VS 2400.27
MD 9442 TVD 7157.02 INC 91 AZ 355.4 VS 2488.18
MD 9532 TVD 7156.23 INC 90 AZ 353.6 VS 2578.14
MD 9710 TVD 7160.43 INC 87.8 AZ 354.3 VS 2756.06
MD 9799 TVD 7163.3 INC 88.5 AZ 355 VS 2844.98
MD 9888 TVD 7165.01 INC 89.3 AZ 355.4 VS 2933.9
MD 9978 TVD 7165.17 INC 90.5 AZ 357.3 VS 3023.74
MD 10066 TVD 7164.63 INC 90.2 AZ 356.3 VS 3111.55
MD 10156 TVD 7163.29 INC 91.5 AZ 357.5 VS 3201.33
MD 10245 TVD 7160.96 INC 91.5 AZ 357.5 VS 3290.03
MD 10334 TVD 7159.26 INC 90.7 AZ 357.1 VS 3378.77
MD 10423 TVD 7159.18 INC 89.4 AZ 356.6 VS 3467.57
MD 10512 TVD 7160.03 INC 89.5 AZ 356.4 VS 3556.41
MD 10602 TVD 7160.43 INC 90 AZ 356.4 VS 3646.25
MD 10691 TVD 7160.58 INC 89.8 AZ 355.9 VS 3735.12
MD 10780 TVD 7160.97 INC 89.7 AZ 355.4 VS 3824.02
MD 10869 TVD 7161.51 INC 89.6 AZ 355 VS 3912.96
MD 10957 TVD 7161.82 INC 90 AZ 355.2 VS 4000.9
MD 11046 TVD 7161.04 INC 91 AZ 355.7 VS -505.31
MD 11135 TVD 7160.5 INC 89.7 AZ 355 VS -512.53
MD 11225 TVD 7160.74 INC 90 AZ 355.4 VS -520.06
MD 11314 TVD 7160.42 INC 90.4 AZ 355.6 VS -527.04
IN MW 10.6 VIS 46 OUT 10.5 47
IN MW 9.8 VIS 38 OUT 9.8 37
IN MW 9.9 VIS40 OUT 9.9 39
POLY FLOW CUT
IN MW 9.9 VIS37 OUT 9.9 37
IN MW 10.1 VIS36 OUT 10.2 40
IN MW 10.1 VIS37 OUT 10.2 39
IN MW 10.1 VIS38 OUT 10.2 38
IN MW 10.3 VIS41 OUT 10.2 39
IN MW 10.2 VIS42 OUT 10.2 39
IN MW 10.3 VIS39 OUT 10.3 40
IN MW 10.3 VIS40 OUT 10.3 41
IN MW 10.2 VIS39 OUT 10.2 40
IN MW 10.2 VIS40 OUT 10.2 40
IN MW 10.3 VIS41 OUT 10.3 42
IN MW 10.3 VIS42 OUT 10.3 42
DOWN TIME GAS
IN MW 10.4 VIS57 OUT 10.5 64
IN MW 10.5 VIS54 OUT 10.5 64
IN MW 10.2 VIS43 OUT 10.2 76

BIT #3, 6.125", SMITH, MDI 513, #JH7856, JETS 5x16'S, IN @ 7537', ON AUG 25, 2014, OUT@ 11413', DRILLED 3876' IN 16 BIT HR.

Begin Horizontal Log Section

GBA 1 man wellsite geologist started logging vertical section on Aug 21 , 2014.

LS: v l gy - crmy wht, tn-crmy tn, sbplty, mic xln, sh intbd, frm, occ grn, min flor, sptty rr no stns, wk slow strmg yel cut.

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LS: v l gy - crmy wht, tn-crmy tn, sbplty, mic xln, sh intbd, frm, occ grn, min flor, sptty rr no stns, wk slow strmg yel cut, SH intbd

LS: v l gy - crmy wht, tn-crmy tn, sbplty, mic xln, sh intbd, frm, occ grn, min flor, sptty rr no stns, wk slow strmg yel cut, SH intbd, SS.

CODELL TOP @ 7743'MD, 7156' TVD

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 10-12%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng,

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 10-12%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng,

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2FT FLARE

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 8-11%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng.

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 8-10%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng.

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SS (60%): ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 10-12%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng, LS (40%)

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 10-12%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng.

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 8-10%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng.

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2FT FLARE

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TOOH FOR MWD TOOL

SS: ltgy-dk gy-gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt, mod frm - sft-sl hd, fri, arg, cly infill, sil, slty/shly, dism pyr, est vis por 8-10%, ~5% spty dry cut flour, sl strmg cut w dull bl/gn resid rng.

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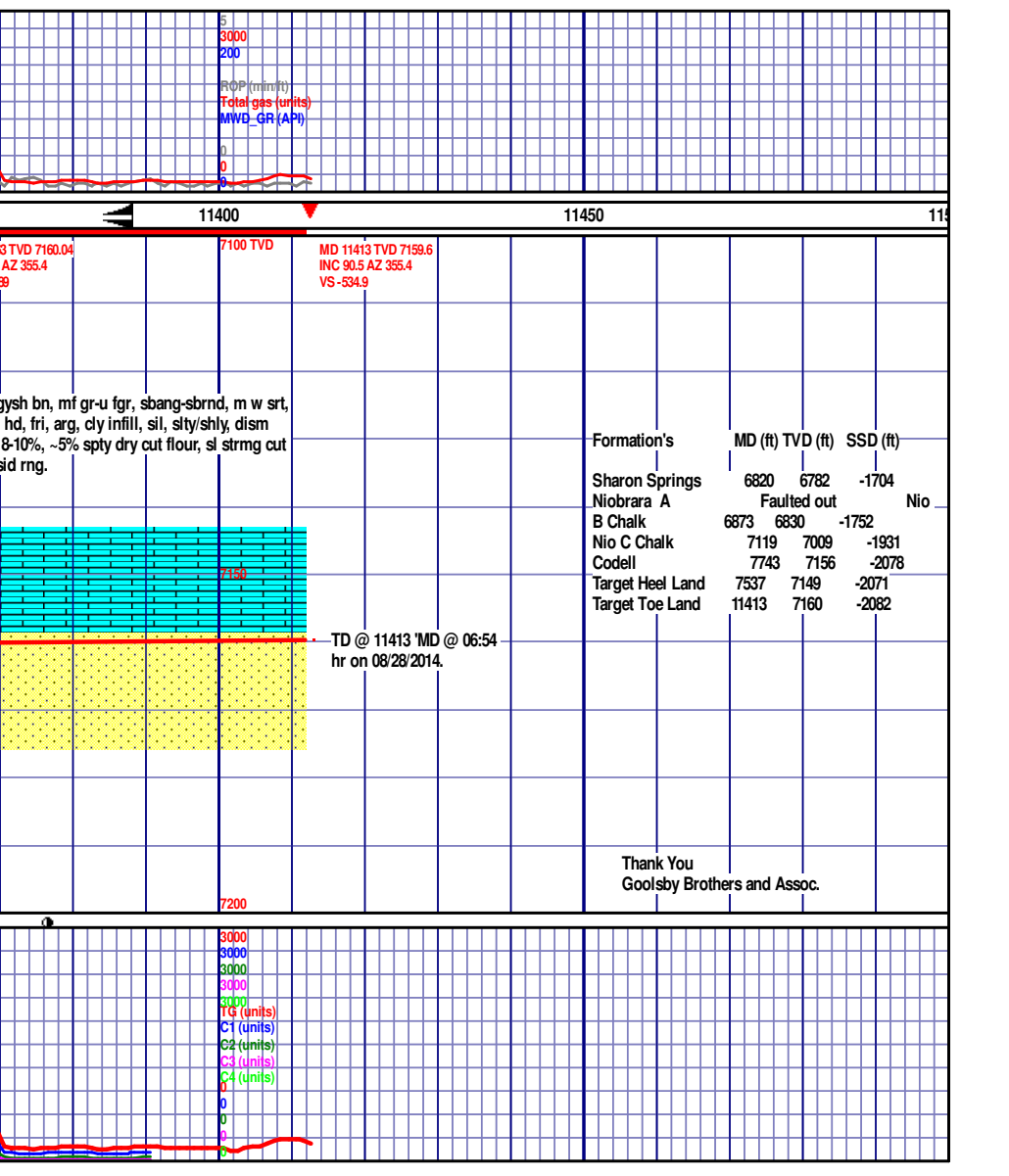
SS: ltgy-dk gy-g



gysh bn, mf gr-u fgr, sbang-sbrnd, m w srt,
hd, fri, arg, cly infill, sil, slty/shly, dism
8-10%, ~5% spty dry cut flour, sl strmg cut
sid rng.

TD @ 11413 'MD @ 06:54 hr on 08/28/2014.

Formation's	MD (ft)	TVD (ft)	SSD (ft)
Sharon Springs	6820	6782	-1704
Niobrara A	Faulted out		Nio
B Chalk	6873	6830	-1752
Nio C Chalk	7119	7009	-1931
Codell	7743	7156	-2078
Target Heel Land	7537	7149	-2071
Target Toe Land	11413	7160	-2082

Thank You
Goolsby Brothers and Assoc.