



## GEOLOGIST'S REPORT

OPERATOR <b>WHITE EXPLORATION, INC.</b>			ELEVATIONS KB <b>3714 Ft.</b> GL <b>3703 Ft.</b>		
LEASE <b>SPRING VALLEY RANCH # 1-14</b>			ALL MEASUREMENTS FROM K.B.		
LOCATION <b>2542 FNL &amp; 826 FEL</b>			<b>CASING RECORD</b> Conductor None Surface 8 5/5" @ 330' Production None		
SEC. <b>14</b> TWSP <b>14S</b> RGE <b>41W</b>			<b>ELECTRICAL SURVEYS:</b> No Electrical Surveys		
COUNTY <b>WALLACE</b> STATE <b>KANSAS</b>			FORMATION NAME      LOG TOP DATUM      SAMPLE TOP DATUM		
FIELD <b>WILDCAT</b>			Stone Corral                      2826      +888 Base/Anhydrite                      2856      +585 Topeka                                      3940      -226 Heebner Shale                              4162      -448		
CONTRACTOR <b>Murfin Drilling Company</b> RIG NO. <b>22</b>			Total Depth                      4175      -461		
COMMENCED <b>9 August 2014</b> COMPLETED <b>15 August 2014</b>					
MUD DISPLACED <b>3540</b> MUD TYPE <b>Chemical</b>					
DRILLING TIME KEPT FROM <b>3800</b> TO <b>4175</b>					
SAMPLES SAVED FROM <b>3800</b> TO <b>4175</b>					
SAMPLES EXAMINED FROM <b>4000</b> TO <b>4175</b>					
GEOLOGICAL SUPERVISION FROM <b>3916</b> TO <b>4175</b>					
GEOLOGIST ON WELL <b>Paul Gunzelman</b>					

**REMARKS**

API 15-199-20414-00-00

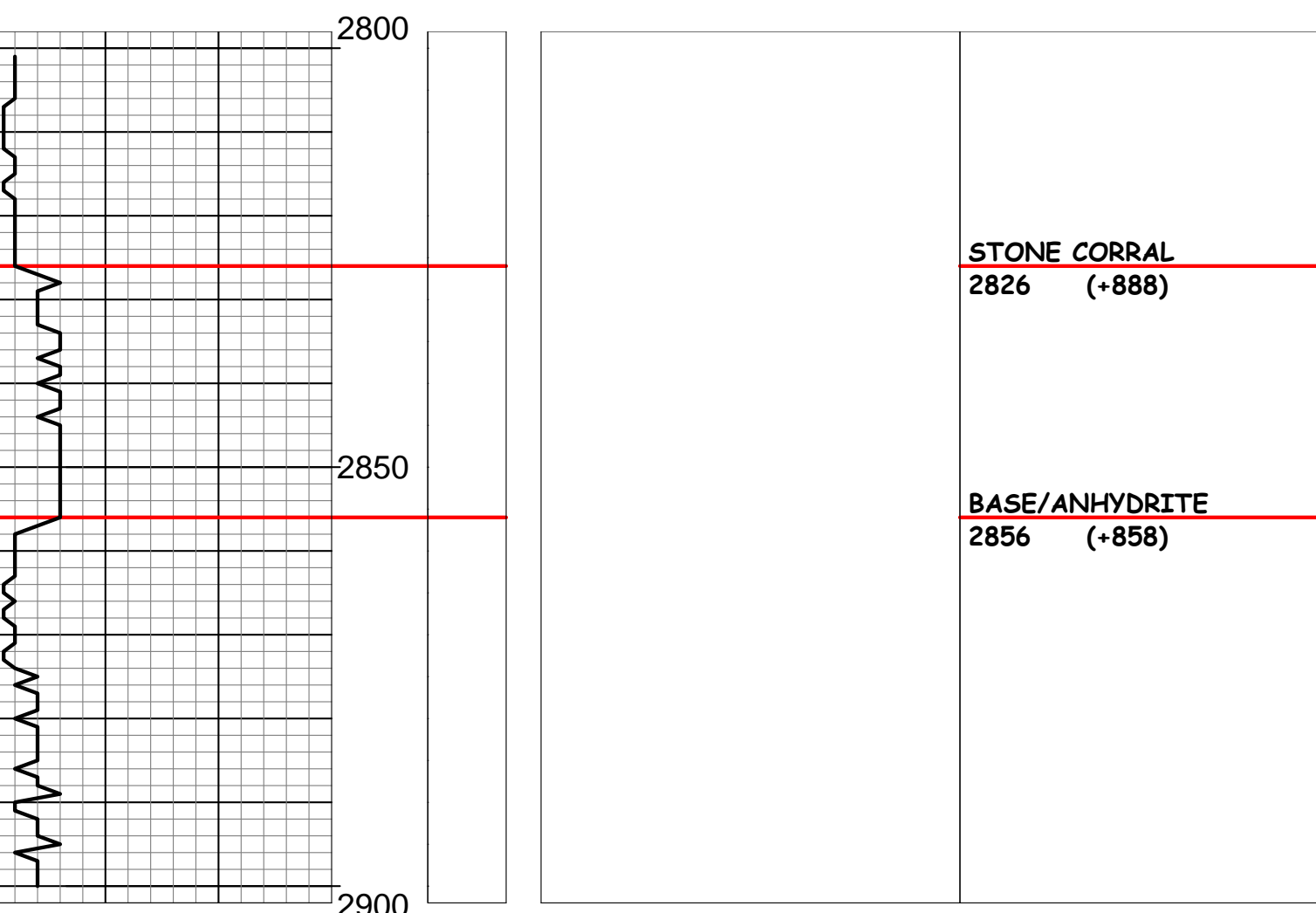
Drilling Fluids: Mud-Co/Service Mud, Inc. (Tony Maestas, engineer)

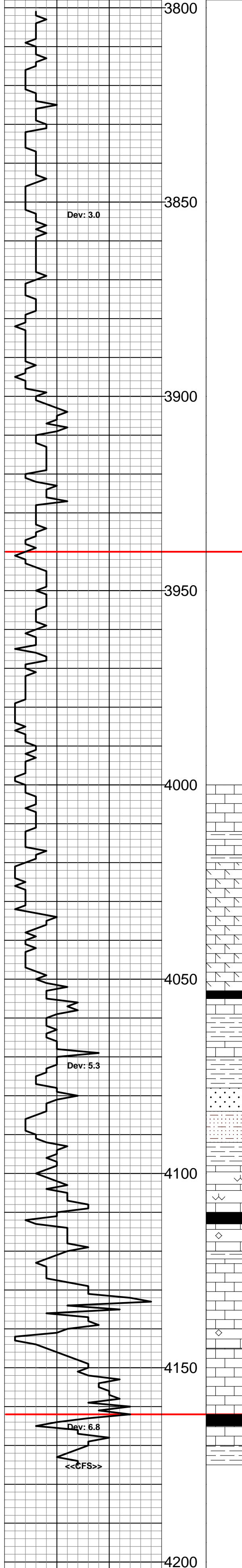
Drill Stem Testing: No Tests

Gas Trailer: No Gas Trailer

Reserve Pit Chlorides:

DRILL TIME (MIN/FT)	DEPTH	LITHOLOGY	SHOWS	SAMPLE DESCRIPTIONS	REMARKS
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Mud-Co mud check @ 3884'  
 Vis: 53, Wt: 8.7, WL: 8.0  
 Chlor: 3,800 ppm, LCM: 7#

**TOPEKA**  
**3940 (-226)**

- Ls: Crm gran, occ sbchky, sli ool, cons spr calc, n/s.
- Ls: Crm-v.lt gy, gran, sli foss, cons spr calc, intbd gy-gn fis sh.
- Ls: Wh-crm, fxln-gran, sbchky tr org rem, occ wh op frs cht, some dol, n/s.
- Ls: Tn-gy, frag-gran, abd foss frag, tr ool, sli dol, fr intrfrag por, n/s.
- Ls: Wh-crm, gran, sbchky, dol, tr org rem, cons sec calc, fr intgran por, n/s.

- Sh: Blk, thn fis, carb..
- Ls: Brn, vfxln, dns, sli arg.
- Sh: Gy-gn gy-brn & olv gn, fis, some calc.
- Ls: Tn-brn, fxln, tr org rem, some arg, intbd gy & gy-gn fis sh, some brn-dk rd-brn v.arg sltst.
- Sltst: Crm-gy & lt gy, calc-lmy in pt, some v.arg, tr pyr, bcm gy-gn arg sli glauc sdy sltst, intbd gy-gn slty sh.

- Sh: Gy-gn & lt gn, fis slty, occ calc-lmy, tr mica.
- Ls: Crm, fxln, sli ool, cons org rem, abd spr calc, tr wh & tn mott op cht, n/s.
- Ls: Tn-dk gy-brn fn-vfxln, sli arg.
- Sh: Blk, fis, carb.
- Ls: Wh-crm, fxln, tr frag, ool, sbchky, cons spr calc, n/s.
- Sh: Gy blk, calc-lmy.
- Ls: Wh-v.lt gy, vfxln-crpxln, dns, tr sbchky, n/s.
- Ls: Crm-tn, some lt gy, fn-vfxln, tr org rem, some arg, n.v.p, n/s.

- Ls: Wh, frag ool, tr org rem, occ spr calc, withd, fr-gd intool por, n/s.
- Ls: Crm, tr crm-tn, fxln, tr gran, sli ool, foss, some amor calc, pr-fr scat pp por, n/s.

Mud-Co mud check @ 4173'  
 Vis: 56, Wt: 8.8, WL: 8.0  
 Chlor: 3,500 ppm, LCM: 7#

**HEEBNER SHALE**  
**4162 (-448)**

- Sh: Blk, thn fis, carb, some thn bd w/ dk brn sh.
- Ls: Tn-lt brn, vfxln, some org rem, dns.
- Sh: Gy-gn, gy, & dk olv gn, fis-blky, some slty, occ calc-lmy.

**TOTAL DEPTH**  
**4175 (-461)**

Operator: WHITE EXPLORATION, INC.  
 Lease: SPRING VALLEY RANCH # 1-14  
 Location: 2542 FNL & 826 FEL SEC. 14 TWSP 14S RGE 41W  
 County: WALLACE State: KANSAS