



Scale 1:240 Imperial

Well Name: GLENNEMEIER B #1
Surface Location: W/2 E/2 NW NE Sec. 28 - 5S - 21W
Bottom Location:
API: 15-137-20751
License Number: 34916
Spud Date: 2/27/2019 Time: 6:15 PM
Region: NORTON COUNTY KANSAS
Drilling Completed: 3/4/2019 Time: 8:18 PM
Surface Coordinates: 660' FNL & 1800' FEL
Bottom Hole Coordinates:
Ground Elevation: 2274.00ft
K.B. Elevation: 2282.00ft
Logged Interval: 3000.00ft To: 3714.00ft
Total Depth: 3716.00ft
Formation: LANSING - KANSAS CITY; ARBUCKLE; REAGAN
Drilling Fluid Type: FRESH WATER / CHEMICAL GEL

OPERATOR

Company: FOURWINDS OIL CORPORATION
Address: P.O. BOX 1063
HAYS, KS 67601

Contact Geologist: DAN WINDHOLZ
Contact Phone Nbr: (785) 259-8403
Well Name: GLENNEMEIER B #1
Location: W/2 E/2 NW NE Sec. 28 - 5S - 21W
API: 15-137-20751
Pool: State: KANSAS Field: RAY WEST
Country: USA

SURFACE CO-ORDINATES

Well Type: Vertical
Longitude: -99.6900908
Latitude: 39.5942538
N/S Co-ord: 660' FNL
E/W Co-ord: 1800' FEL

LOGGED BY



Company: BIG CREEK CONSULTING, INC

Company: BIG CREEK CONSULTING, INC.
 Address: 1909 MAPLE
 ELLIS, KS 67637

Phone Nbr: (785) 259-3737
 Logged By: GEOLOGIST

Name: JEFF LAWLER

CONTRACTOR

Contractor: DISCOVERY DRILLING
 Rig #: 1
 Rig Type: MUD ROTARY
 Spud Date: 2/27/2019
 TD Date: 3/4/2019
 Rig Release: 3/6/2019
 Time: 6:15 PM
 Time: 8:18 PM
 Time: 10:00 AM

ELEVATIONS

K.B. Elevation: 2282.00ft
 K.B. to Ground: 8.00ft
 Ground Elevation: 2274.00ft

NOTES


DUE TO ECONOMICAL RECOVERY 5 1/2" PRODUCTION CASING WAS RUN.

RESPECTFULLY SUBMITTED,
 JEFF LAWLER

WELL COMPARISON SHEET

FORMATION	GLENNEMEIER B #1								W2 SE SW 21-5-21				SE SE SW 21-5-22				P&A 12-81				P&A			
	GLENNEMEIER A #1				GLENNEMEIER A #2				WILLIAMS #1				WILLIAMS #2											
	W2 SE SW 21-5-21				SE SE SW 21-5-22				NENE 28-5-21				NE 28-5-21											
	KB	2282	GL	2274	KB	2266	SMPL.		KB	2215	SMPL.		KB	2265	SMPL.		KB	2324	SMPL.					
DEPTH	DATUM	DEPTH	DATUM	DEPTH	DATUM	LOG CORR.	SMPL. CORR.	DEPTH	DATUM	LOG CORR.	SMPL. CORR.	DEPTH	DATUM	LOG CORR.	SMPL. CORR.	DEPTH	DATUM	LOG CORR.	SMPL. CORR.					
ANHYDRITE TOP	1886	396	1888	394	1864	402	- 6 - 8	1813	402	- 6 - 8	1857	408	- 12 - 14											
BASE	1903	379	1912	370	1892	374	+ 5 - 4	1842	373	+ 6 - 3	1888	377	+ 2 - 7											
TOPEKA	3230	-948	3231	-949	3213	-947	- 1 - 2	3158	-943	- 5 - 6	3210	-945	- 3 - 4	3268	-944	- 4 - 5								
HEEBNER SHALE	3432	-1150	3436	-1154	3415	-1149	- 1 - 5	3363	-1148	- 2 - 6	3410	-1145	- 5 - 9	3471	-1147	- 3 - 7								
TORONTO	3462	-1180	3462	-1180	3441	-1175	- 5 - 5	3390	-1175	- 5 - 5	3436	-1171	- 9 - 9	3497	-1173	- 7 - 7								
LKC	3478	-1196	3481	-1199	3461	-1195	- 1 - 4	3407	-1192	- 4 - 7	3454	-1189	- 7 - 10	3517	-1193	- 3 - 6								
BKC	3664	-1382	3665	-1383	3646	-1380	- 2 - 3	3593	-1378	- 4 - 5	3639	-1374	- 8 - 9	3700	-1376	- 6 - 7								
GORHAM SAND			3714	-1432				3649	-1434															
REAGAN					3699	-1433						3691	-1426			3751	-1427							
GRANITE																								
TOTAL DEPTH	3714	-1432	3716	-1434	3700	-1434	+ 2 + 0	3648	-1433	+ 1 - 1	3697	-1432	+ 0 - 2	3757	-1433	+ 1 - 1								

DST #1 GORHAM SAND 3710' - 3716'

 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	Fourw inds Oil Corporation	28-5S-21W Norton, KS
	P.O. Box 1063 Hays, KS 67601 ATTN: Jeff Lawler	Glennemeier B #1 Job Ticket: 65344 DST#: 1 Test Start: 2019.03.05 @ 02:00:00

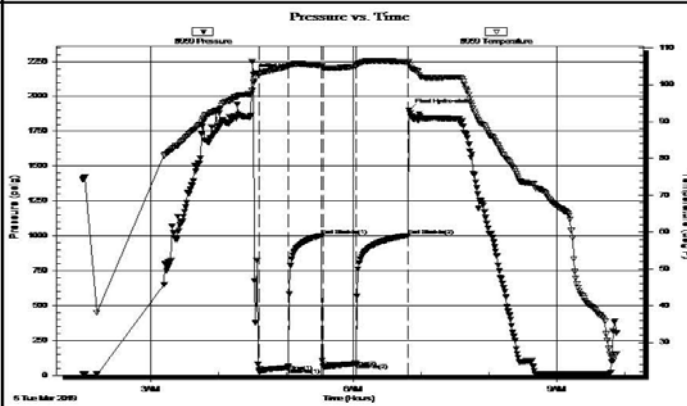
GENERAL INFORMATION:

Formation: **Gorham Sand**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 04:36:30
 Time Test Ended: 09:53:00
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Martine Salinas
 Unit No: 82
 Interval: **3710.00 ft (KB) To 3716.00 ft (KB) (TVD)**
 Total Depth: 3716.00 ft (KB) (TVD)
 Reference Elevations: 2282.00 ft (KB)
 2274.00 ft (CF)
 Hole Diameter: 7.88 inches Hole Condition: Good
 KB to GR/CF: 8.00 ft

Serial #: 8959 Inside

Press@RunDepth: 85.22 psig @ 3711.00 ft (KB)
 Capacity: 8000.00 psig
 Start Date: 2019.03.05 End Date: 2019.03.05
 Last Calib.: 2019.03.05
 Start Time: 02:00:01 End Time: 09:53:00
 Time On Btm: 2019.03.05 @ 04:31:00
 Time Off Btm: 2019.03.05 @ 06:49:00

TEST COMMENT: 30-IF-1/8" blow decreased to surface blow
 30-ISI-No blow
 30-FF-Weak surface blow dead @ 25 mins
 45-FSI-No blow



PRESSURE SUMMARY			
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2156.77	100.73	Initial Hydro-static
6	26.99	103.16	Open To Flow (1)
31	57.29	105.07	Shut-In(1)
61	1002.39	105.17	End Shut-In(1)
63	62.45	104.52	Open To Flow (2)
91	85.22	105.03	Shut-In(2)
138	1002.43	106.10	End Shut-In(2)
138	1900.31	106.22	Final Hydro-static

Recovery		
Length (ft)	Description	Volume (bbl)
30.00	GOCM 20%G, 25%O, 55%M	0.22
161.00	CGO 60%G, 40%O	1.18

Gas Rates			
	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Trilobite Testing, Inc

Ref. No: 65344

Printed: 2019.03.05 @ 12:02:18

ROCK TYPES

- Cht
- shale, grn
- Carbon Sh
- Arg/Shale
- Lmst fw7>
- shale, gry
- shale, red
- Ss

OTHER SYMBOLS

- MISC**

 - Daily Report
 - Digital Photo
 - Document
 - Folder
 - Link
 - Vertical Log File
 - Horizontal Log File
 - Core Log File
 - Drill Cuttings Rpt

DST

 - DST Int
 - DST alt

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Curve Track #1	Depth Intervals	DST	Lithology	Oil Show	Geological Descriptions	Curve Track #3
ROP (min/ft) Gamma (API) Cal (in)	Cored Interval DST Interval					
1:240 Imperial 0 ROP (min/ft) 5 0 Gamma (API) 150 6 Cal (in) 16	3060					1:240 Imperial

3070
3080
3090
3100
3110
3120
3130
3140
3150
3160
3170
3180
3190
3200
3210
3220
3230
3240
3250
3260
3270
3280

ROP (min/ft) 5
Gamma (API) 150
Cal (ppm) 16



1' DRILL TIME THROUGH ANHYDRITE FROM 1860' - 1930'
1' DRILL TIME FROM 3100' - RTD
10' WET/DRY SAMPLES FROM 3150' - RTD

GEOLOGICAL SUPERVISION BY JEFF LAWLER FROM 3100' - RTD

8 5/8" SURFACE PIPE SET @ 221.88' SURVEY 3/4 deg

ANHYDRITE TOP 1888' (+394) E-LOG 1886' (+396)
ANHYDRITE BASE 1912' (+370) E-LOG 1903' (-+379)

Lm- Cream Off White, FXLN, sl fsl, mostly tight w/ sctrd XLN porosity, clean & barren

Sh- Gray Maroon White, waxy & dense, gritty, soft & gummy

Sh- Maroon Green, abundant argillaceous wash, dense & waxy slivers

Lm- Gray Buff, FXLN, fsl, trashy, sctrd XLN porosity, barren

Sh- Maroon Gray, abundant argillaceous clumps

Sh- A/A w/ sl sandy, few pcs of fn grn consolidated & well sorted sub-rounded Ss, w/ light cementation, barren

Lm- Gray Cream, VFXLN, dense, well cemented, tight w/ no vis. porosity, barren

Sh- Gray White, platy, soft, calcareous

Sh- Maroon Green, abundant argillaceous clumps

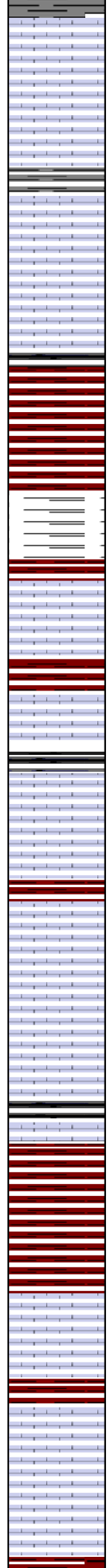
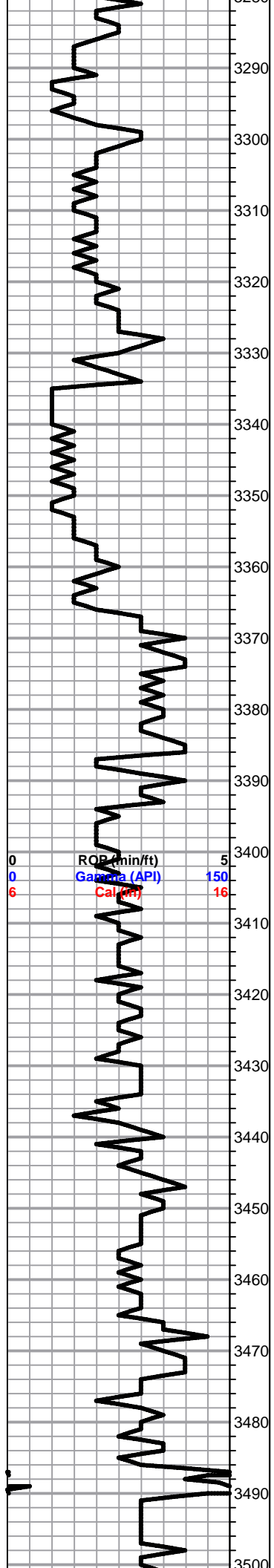
TOPEKA 3231' (-949) E-LOG 3230' (-948) Lm/Ss Lm- Gray, FXLN, dense, well cemented, mostly tight w/ sctrd micro XLN porosity, barren Ss- Mint Green Frosted, Fn Grn, loosely cemented, consolidated & well sorted, sub-rounded, barren

Lm- Cream Off White, Fn Grn, sandy Ls, well cemeneted, poor intergranular porosity, much gummy white chalk, barren

Sh- Gray White, abundant argillaceous clumps

Lm- Off White Cream, FXLN, massive, sl granular, sl sandy, poor vis. porosity, barren, much soft white chalk

A/A w/ some tan VFXLN, dense, sl fsl, sctrd micro XLN porosity, chalk A/A



Lm/Chert- Cream Off White, loosely cemented, dense XLN porosity, sl chalky in part, barren, several pcs of tan fresh bedded sl fsl chert, no vis. porosity

Lm- Cream Buff, FXLN, sl dolomitic, loosely to well cemented, gritty, dense XLN porosity, barren

Lm- Cream Off White, VF-FXLN, dense, well cemented, mostly tight w/ sctrd XLN porosity, clean & barren

Sh- Black Green, fissile & carbonaceous, abundant argillaceous clumps

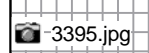
Sh- Maroon, abundant argillaceous clumps

Lm- Mint Green, VF-FXLN, dense, well cemented, tight w/ poor vis. porosity, barren

Sh- Maroon, abundant argillaceous clumps

Lm- Cream Buff Tan, VF-FXLN, dense, well cemented, sl fsl, sctrd XLN porosity, barren

Lm- White, FXLN, oolitic, mod. dev. w/ sctrd ppt porosity, sl chalky in part, SCTRD BLK STN, SL OILY SHEEN, SL TR FR O, MOD ODR



Lm- Cream Off White, VFXLN, dense, well cemented, poor vis. porosity, clean & barren

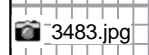
Lm- Cream Off White Buff, FXLN, sl fsl, few loose crinoids, sctrd XLN porosity, barren

HEEBNER 3436' (-1154) E-LOG 3432' (-1150) Sh- Black fissile & carbonaceous

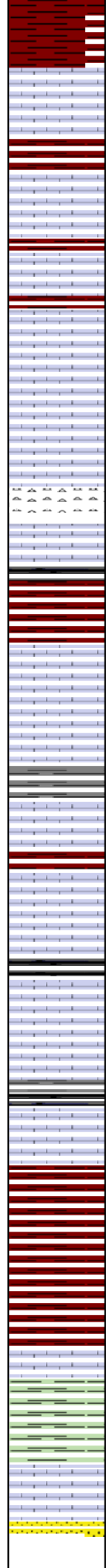
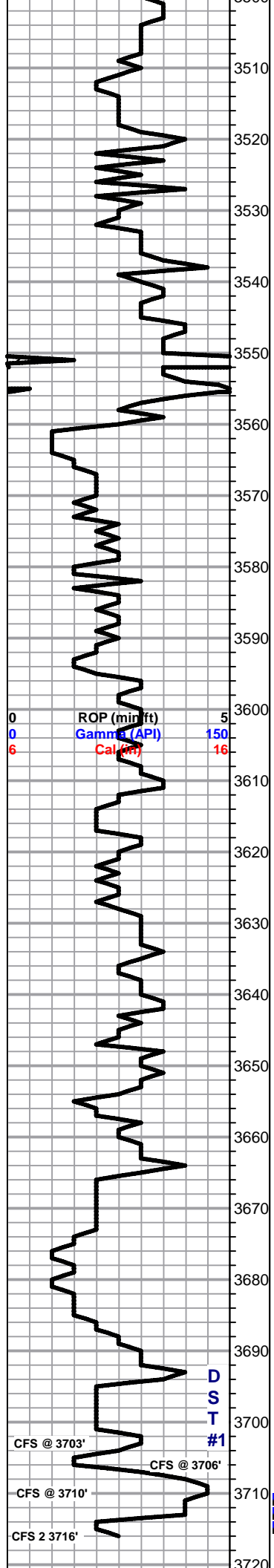
Sh- Maroon Green Gray, gritty & earthy, argillaceous wash

TORONTO 3462' (-1180) E-LOG 3462' (-1180) Lm/Chert Lm- White Cream, FXLN, mix of sl fsl w/ sctrd XLN porosity & sl dolomitic Ls w/ consistent XLN porosity throughout, all clean & barren Chert- Milky Gray Off White, fresh bedded vitreous chert w/o vis. porosity

LKC 3481' (-1199) E-LOG 3478' (-1196) Lm- Off White, FXLN, oolit & mod. dev. w/ sctrd ppt inter oolite porosity, SCTRD DRK STN, SL SFO, NO ODR

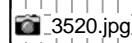


Lm- Off White Cream, VF-FXLN, sl fsl to clean, mostly tight w/ poor vis. porosity, vry clean & barren

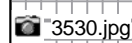


Sh- Maroon Gray, gritty & earthy, semi-waxy

Lm/Chert Lm- FXLN, poorly dev. sl oolitic, loosely cemented & partly chalky, sctrd fn ppt inter oolite porosity, SCTRDRK STN, NSFO, NO ODR, some soft white chalk
Chert- Milky Gray & Semitranslucent, fresh bedded vitreous chert w/o vis. porosity



Lm- White Off White, FXLN, sl fsl, well cemented, poorly dev. w/ sctrd fn ppt inter oolite & micro XLN porosity, 1-2 PCS WK SCTRDRK STN, NSFO, NO ODR



Lm- White Off White, Fn Grn, FXLN, loosely cemented & chalky, poorly dev. w/ poor vis. porosity, vry clean & barren

Lm- Off White Cream, FXLN, sl fsl, poorly dev. loosely cemented & crumbly, dense XLN porosity, some soft white chalk, barren

BIT TRIP @ 3551'

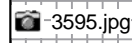
SURVEY 1/4 deg.

Lm/Dol- Cream Off White, FXLN, mix of mod. dev. oolitic w/ sctrd XLN & fn ppt inter oolite porosity & well dev. dolomite/dolomitic Ls w/ consistent XLN porosity throughout, all clean & barren

Chert- Milky White Gray, fresh bedded vitreous w/o vis. porosity

Sh- Black Gray Maroon, fissile & carbonaceous, gritty & earthy

Lm- Cream Off White, FXLN, oolitic, mod well dev. w/ consistent vry fn ppt interoolite porosity, SCTRDRK STN, NSFO, FR ODR

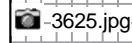


Lm- Mint Green, VFXLN, dense, well cemented, mostly tight w/ poor vis. porosity, barren

Sh- Gray Maroon, argillaceous clumps & gritty & earthy

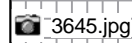
Lm- Cream Buff, VF-FXLN, dense, well cemented cherty Ls, 2-3 pcs w/ sctrd vry fn ppt porosity, SCTRDRK STN, NSFO, NO ODR

Lm- Cream Off White, FXLN, fsl & oolitic, sctrd XLN & fn ppt interoolite porosity, SCTRDRK STN, NSFO, NO ODR

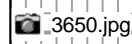


Sh- Black Gray Maroon, carbonaceous, soft & calcareous, gritty & earthy

Lm- White, FXLN, oolitic, mod. dev w/ mostly consistent fn ppt inter oolite porosity, chalky & loosely cemented in part, SCTRDRK STN, TR FRO, FNT ODR, SEVERAL W/ BLK TARRY DO STN



Sh- Black Gray, fissile & carbonaceous, soft & gritty



Lm- Cream Off White, FXLN, oolitic, well to loosely cemented, poorly dev. w/ sctrd XLN porosity, clean & barren

BKC 3665' (-1383) E-LOG 3664' (-1382) Sh/Ss- Maroon Green, gritty & earthy, argillaceous clumps, dense & semi-waxy Ss- Maroon, Fn Grn, mod. cemented, consistent intergranular porosity, shaley, barren

Sh- A/A w/ influx of argillaceous clumps & gritty gray slivers

Lm- Cream Buff, FXLN, sl fsl, well cemented, sctrd XLN porosity, barren

STRAP +2.10'
SURVEY 1/4 deg.
DST #1
GORHAM SAND
3710' - 3716'
30-30-30-45

191' TOTAL FLUID

161' GSY OIL
Gr: 25
60' GOCM
(25%G, 20%O,
55%M)

3706' 40"- Sh- Green, abundant argillaceous clumps

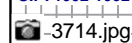
60"- A/A

3710' 40"- Lm- Cream Off White, FXLN Fn Grn, mix of well cemented & sl fsl w/ pyrite inclusions & XLN porosity, loosely cemented arenaceous Ls w/ consistent intergranular porosity, barren

60"- A/A

REAGAN SAND 3714' (-1432)

IFP: 26-57#
FFP: 62-85#
SIP: 1002-1002-#



3716' 40"- Ss- Frosted, Fn-Med Grn, good Ca cementation, consolidated & mod. well

3720
3730
3740

sorted, sub-angular, GD DRK STN, GD SFO, FR ODR
60" - A/A

RTD 3716' (-1434) LTD 3714' (-1432) @ 20:18 3/4/2019

SURVEY 1/4' deg.

3395.jpg

A001 1280x1024 2019/03/03 16:23:25 Unit: mm Magnification: 77.5 x 1



3395'



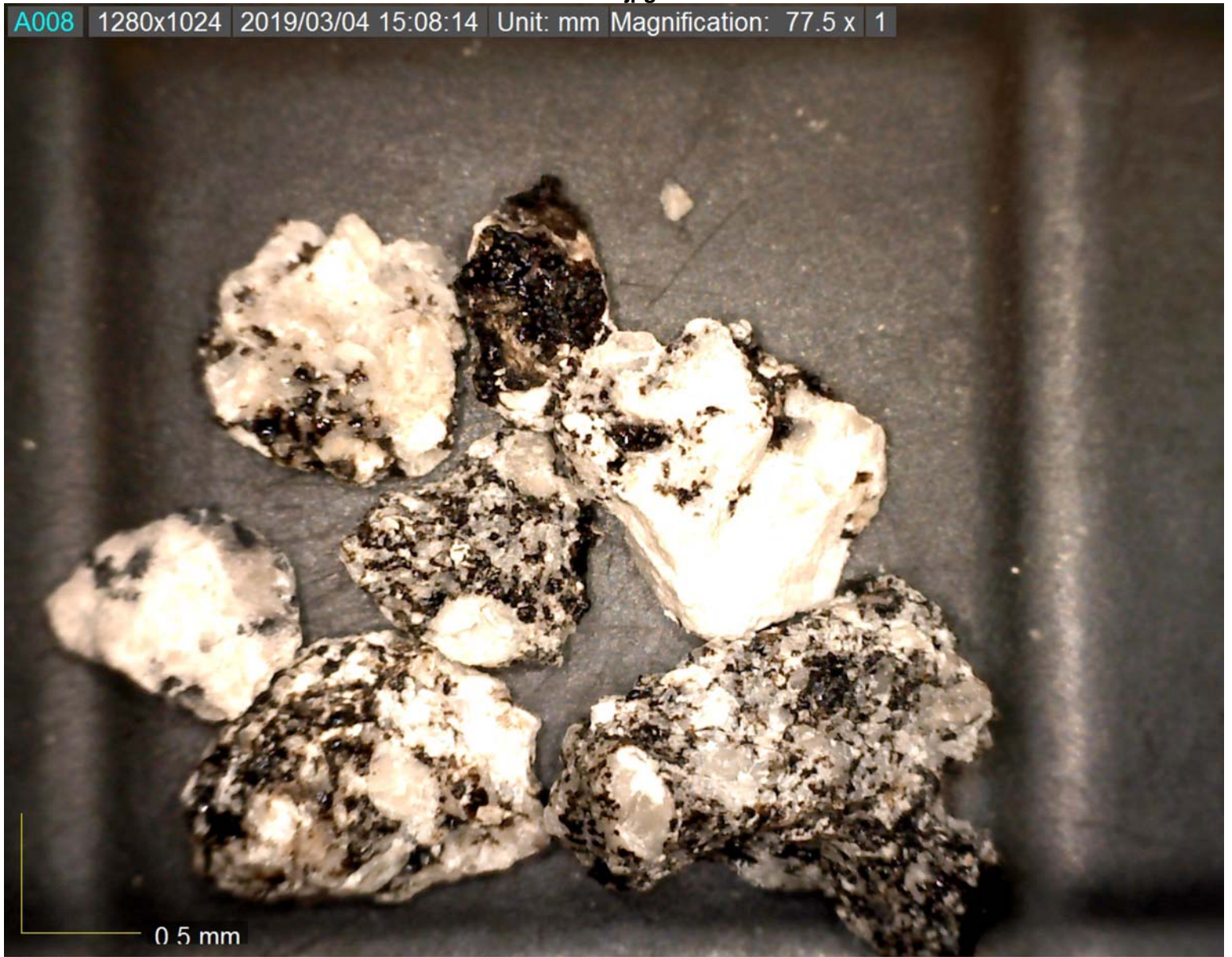














3714