



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1236828
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite: _____

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1236828

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	BEREXCO LLC
Well Name	Achenbach B 4
Doc ID	1236828

Tops

Name	Top	Datum
Heebner (base)	3916	-2391
Toronto	3939	-2414
Douglas	3993	-2468
Lansing	4187	-2662
KS City	4447	-2922
Swope	4626	-3101
Hertha	4656	-3131
KS City (base)	4697	-3172
Marmaton	4715	-3190
Altamount	4757	-3232
Pawnee	4792	-3267
Ft. Scott	4816	-3291
Cherokee	4830	-3305
Cherokee Sand	4859	-3334
Eros. Mississippi	4905	-3380
Mississippi Chert	4913	-3388
RTD	5104	
LTD	5100	-3575

Customer: Berexco LLC	Lease No.	Date: 9-29-2014
Lease: Achenbach B	Well # 4	
Field Order # 11264	Station PRG#11CS	Casing 13 3/8
		Depth 294
Type Job: CNU / 13 3/8 surprise	Formation: T.D. 310	Legal Description: 2-35-13
		County: Berber State: KS

PIPE DATA		PERFORATING DATA		FLUID USED		TREATMENT RESUME		
Casing Size: 13 3/8	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP	
Depth: 294	Depth	From	To	Pre Pad	Max		5 Min.	
Volume: 46	Volume	From	To	Pad	Min		10 Min.	
Max Press	Max Press	From	To	Frac	Avg		15 Min.	
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure	
Plug Depth: 274	Packer Depth	From	To	Flush	Gas Volume		Total Load	

Customer Representative: **Jim** Station Manager: **Kevin Gordley** Treater: **Darin Franklin**

Service Units	27283	19889	19843	19960	21010				
Driver Names	Darin	Essins	Essins	Bosch	Bosch				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
8:30pm					ON LOCATION / Safety Meeting
					Run 294' 13 3/8 15' 8 5/8 L.J. ser. 9230;
					170 SK A serv Lite 6% Gel, 3% CC, 1/4 H
					cellulose 13 pps, 1.77 vels, 9.15 wgr
					100 SK common 20% CC, 1/4 H cellulose
					15.6 pps, 1.20 vels, 5.23 wgr
10:30pm	200		3	5	pump 3 bbls water
	200		54	5	170SK lite cement
	200		22	5	100SK 19.1 cement
	200		44	5	Displace with water
11:30pm					Shut in
					Cement did circulate
					Job complete / Darin & crew
					Thank you!!!

Customer Berexco LLC	Lease No.	Date
Lease Achenbach	Well # B 4	10-7-14
Field Order # 11380	Station Pratt	Casing 5 1/2
		Depth 5100
		County Barber
		State 155
Type Job cnw Long string	Formation	Legal Description 2-35-13

PIPE DATA		PERFORATING DATA		FLUID USED	TREATMENT RESUME		
Casing Size	Tubing Size	Shots/Ft		Acid	RATE	PRESS	ISIP
5 1/2							
Depth 5100	Depth	From	To	Pre Pad	Max		5 Min.
Volume 120	Volume	From	To	Pad	Min		10 Min.
Max Press	Max Press	From	To	Frac	Avg		15 Min.
Well Connection	Annulus Vol.	From	To		HHP Used		Annulus Pressure
Plug Depth 5058	Packer Depth	From	To	Flush	Gas Volume		Total Load

Customer Representative KA	Station Manager Kevin	Treater JOE
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Service Units	77686	19905	19831	19860	28443				
Driver Names	Mike McGraw	Dale			JOE				

Time	Casing Pressure	Tubing Pressure	Bbls. Pumped	Rate	Service Log
10:15:30					ON LOC / safety meeting
					Run 119 JTS of CSG @
					Turbos on 1-3-5-7-9-11-13-15-17-19-21-23
					Basket on 2-7
1815					START Running csq.
1945					csq. on bottom / circ with Big
2030					HOOK UP TO PUMP TRK START START JOB
2030			30	5	mix 100sk A surv. late @ 13#
			50	5	mix 200sk AA2 cement @ 15#
			⊖	⊖	shut down clear pump & lines
2050			⊖	6	DROP Plug START H2O DISP WITH 2% KCL
	400		05	6	List P&T
			110	4	Slow Rate
2130	2000		120	⊖	Plug Down
					Plug BH in H
					JOB COMPLETE
					Thank you
					JOE

LOGS FILE

ROGER L. MARTIN
INDEPENDENT PETROLEUM GEOLOGIST 316-250-6970

GEOLOGIST'S REPORT
DRILLING TIME AND SAMPLE LOG

COMPANY BEREXCO LLC
LEASE ACHENBACH B#4
FIELD HARDNER
LOCATION 2130' FSL & 660' FEL (S/2-N/2-NE-SE/4)
SECTION 2 TOWNSHIP 35S RANGE 13W
COUNTY BARBER STATE KANSAS

ELEVATIONS
KB 1525 GL 1513
Measurements Are All
From KB: 1525
API 15-007-24231-00-00

CONTRACTOR FOSSIL DRLG Rig#3
SPUD 9/29/14 COMP 10/07/14
RTD 5100' (-3575) LTD 5104' (-3579)
ELECTRICAL SURVEYS
Weatherford: Compact Photo Density/ Compensated Neutron,
Microresistivity Log, & Shallow Focused Array Induction E-log.

CASING
SURFACE 7 1/8" 13&3/8" 48# set @ 310' KB.
Cmt'd w/ 170sx (See CHRONOLOGY).
PRODUCTION 118jts 5&1/2" 15.5#
Set @ 5102' KB (See REMARKS).

FORMATION TOPS	LOG	SAMPLES	CHRONOLOGY
B/HIEBNER	3916 (-2991)	3917 (-2992)	9/29/14; Spud 17" hole @ 3:30pm, 9/29/14.
TORONTO	3939 (-2414)	3934 (-2409)	TD surf. hole @ 310' KB @ 6:15pm, 9/20/14.
DOUGLAS	3993 (-2468)	3988 (-2463)	Dev. Survey: 1&3/4 deg @ 310'. Ran 7 jts 13&3/8" 48# surf. csg. Set @ 310' KB.
LANSING	4187 (-2662)	4184 (-2659)	Cmt'd w/ 170sx A Serv Lite w/ 1/4# flakes & 3% CaCl. Finished cementing @ 11:30pm, 9/29/14.
KANSAS CITY	4447 (-2922)	4439 (-2914)	Cement did circ to surface.
SWOPE	4626 (-3101)	4627 (-3102)	9/30/14; WOC @ 310' KB.
HERTHA	4656 (-3131)	4654 (-3129)	10/1/14; Drilg @ 1700'. Dev. Surveys: 1 deg @ 1012'; 1/2 deg @ 1517'.
B/ KANSAS CITY	4697 (-3172)	4695 (-3170)	(Bit #2; Varel; HE-21; 7&7/8", in @ 310')
MARMATON	4715 (-3190)	4714 (-3189)	10/2/14; Drilg @ 2570'. Dev. Surveys: 1/2 deg @ 2023' & 3/4 deg @ 2528'
ALTAMONT	4757 (-3232)	4754 (-3229)	10/3/14; Drilg @ 3350' @ 7:00 am.
PAWNEE	4792 (-3267)	4790 (-3265)	Dev. Survey: 3/4 deg @ 3006'
FT. SCOTT	4816 (-3291)	4815 (-3290)	10/4/14; Drilg @ 4095' @ 7:00 am.
CHEROKEE	4830 (-3306)	4831 (-3306)	Dev. Surveys: 1/4 deg @ 3512', & 3/4 deg @ 3989'
CHEROKEE SAND	4859 (-3334)	4858 (-3333)	10/5/14; Drilg @ 4585' @ 7:00 am.
EROS, MISS.	4905 (-3380)	4899 (-3374)	Dev. Survey: 3/4 deg @ 4242'; & 3/4 deg @ 4495'
MISSISSIPPIAN CHERT	4913 (-3388)	4907 (-3382)	10/6/14; Drilg @ 4885' @ 7:00 am.
TOTAL DEPTH (LTD/RTD)	5100' (-3575)	5104' (-3579)	10/7/14; RTD: 5100'; LTD: 5104'; Logging @ 7:00am. Dev. Survey: 1 deg @ 5100'. Ran 118 jts 5&1/2" 15.5# csg. Set @ 5102' (2' off btm). (See REMARKS for details).

REMARKS: 10/7/14; Ran open hole E-logs; LTD @ 5104'; Ran 118 jts 5&1/2" 15.5# casing.
Tagged TD @ 5104' KB; Set @ 5102' KB; PBTD @ 5060' KB; Ran baskets @ 5115' &
4799'. 21' marker joint from 4647'-4668'. Cemented w/ 100sx A Serv Lite w/ 0.29# flakes
tailed w/ 200sx AA2 0.265# flakes 0.2# C-41P 5.3# salt 0.3# FR, 1# C-44, 05# FL &
3.5# glisonite. Goo circulation throughout job, but cement did not circulate to surface.
Plug landed 9:30 pm, 10/7/14. Had 1500# lift pressure at end. bumped plug to 2000#.
Plugged mouse & rat hies w/ 50sx A serv Lite. Rig released.

5&1/2" production casing was set for a completion in the MISSISSIPPIAN CHERT.
Respectfully submitted,
Roger L. Martin, Geologist (Well-site)

Total Gas 0-100 Units
 Methane 0-100 Units
 Ethane 0-100 Units
 Propane 0-50 Units
 Butane 0-50 Units

SAMPLE DESCRIPTION

Pred SH: gy-bk, sm micac; Rare(Rr) LS: cm-in, microXln(mx) to prt fnXln(fnX) Very rare(Vrr) MdX's-V.CrsX's - sm 2nd FeX, sm pin point(pp) & vug Porosity(Poro). No Show(NS).

Pred SH: AA.; Rr LS: AA & dn & argil LS; NS.

SH: As Above(AA)

Sm LS: AA; Vrr Poro w/ NS; sm dk-gy-bk, argil- dn; NS.

SH: AA; Vrr LS: AA; NS.

LS: dk-gy-bk, dn & argil; & SH- SILTS: sm micac.

SH: md-dk-gy, sm calc.

LS: pred gy. argil Mdst w/ Vpr-NVP; NS.

SH: AA.

LS: Lt-dk-gy, pred dn Mdst, & sl-V.argil; Vpr-NVP; NS; sm dn Lithogr LS w/ No visibl Poro(NVP) w/ NS.

SH- SILTST: dk-ll-gy, sm calc & Lmy.

Sm bk subcarb- carb SH.

LS: gy, dn & argil- Mdst; & tn, dn Lithogr- mx-VfnX- dn; NS.

SH: md-dk-gy, & bk carb.

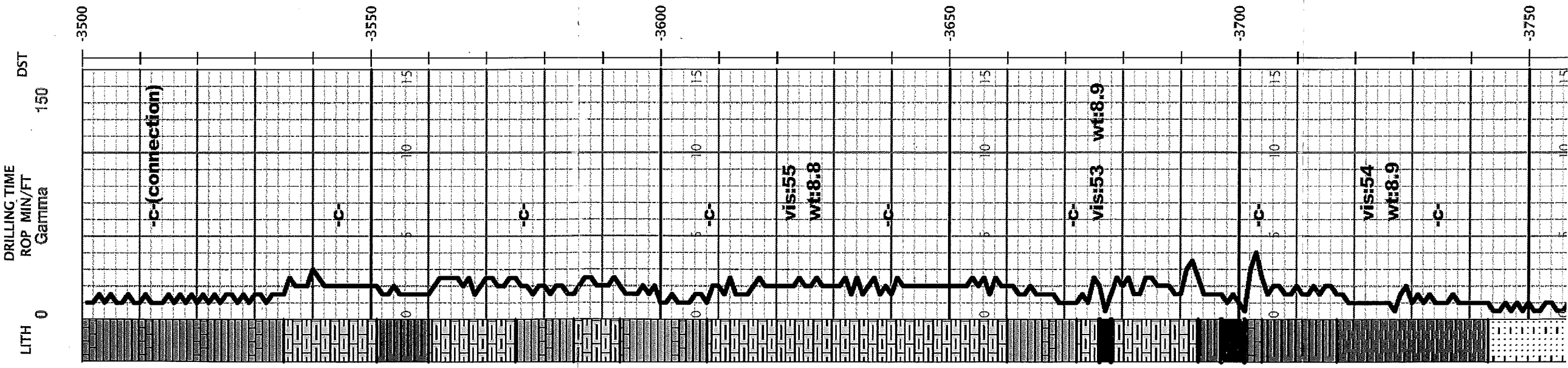
LS: gy-tn, mx-fnX, pred dn, NS; Trc Poro- AA w/ NS.

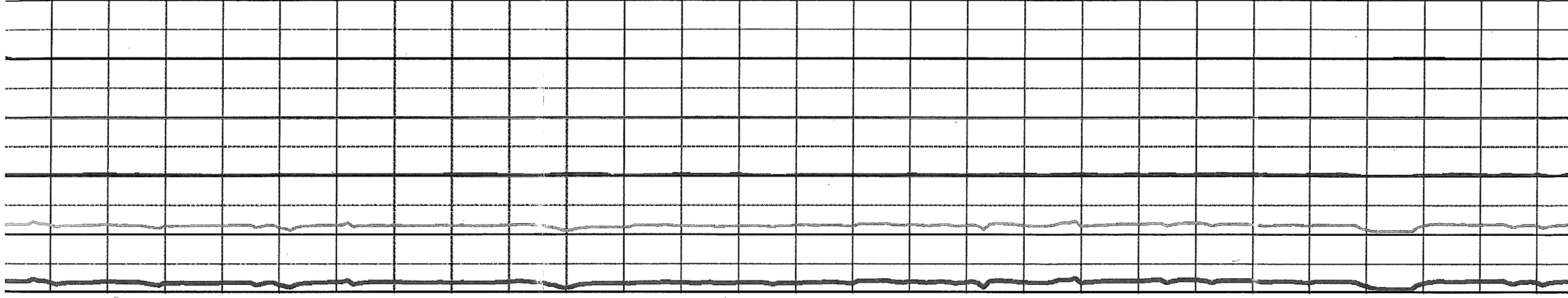
SH: gy-bk, sm carb.

SH: AA; incrs bk carb.

Sndy SILTS: gy, Vfn-fn Grd, & Silty SS w/ pr Poro w/ NS.

SS: Silty Sd Clusters: gy-bf, Vfn-fn Grd, Rnd'd to subanglr, pred silty & micac, pr-Fr Poro; Rr Gd Poro w/ NF; NS; NC (No Cut), Rare(Rr) fn-MdGrd, Rnd'd- subanglr, w/ Fr-Gd Poro w/ NS;





SS: Silty Sd Clusters: gy-bf, Vfn-fn Grd, Rnd'd to subanglr, pred silty & micac, pr-Fr Poro; Fr Gd Poro w/ NF; NS; NC (No Cut), Flare(Fr) fr-MdGrd, Rnd'd- subanglr, w/ Fr-Gd Poro w/ NS; NF; NC.

SILTS: gy, Sndy; AA, & micac; & Silty SS: Sd Clust: AA, w/ pred Vpr-pr Poro; NS; NF; NC.

SS: Abndt Sd Clust: gy-bf, Vfn-MdGrd, & fr-MdGrd, Rnd'd- subanglr, mod to pr sort'd, sm friabl w/ Fr-Gd (Gr Poro w/ NF; NS; NC; sm well cmt'd, silty, micac w/ pr-Fr Poro w/ NS; NF; NC.

SS: V. Abndt Sd Clust: gy-bf, Vfn-MdGrd, Rnd'd- subanglr, sm silty, micac, sm friabl w/ Fr-Gd Poro w/ NS; NF; NC.

SS: Abndt Sd Clust: AA; sm friabl w/ Fr-Gd Poro w/ NS; NF; NC.

SS: sm silty, & Lmy & calc, well cmt'd Sd Clust w/ Vpr-pr Poro w/ NS; NF; NC.

Incrs SH-SILTS: dk-lt-gy, micac.

Sm Sd Clust: AA; pred silty, micac, Vpr-pr Poro; NS.

Sm LS: gy-bk, dn Mdst, argil; & SH: gy-bk, sm carb. (Vfr Sd Clust: AA; NS)

LS: tn-gy-bn, dn & argil; Vrr Xln LS; Vpr-NVP; NS

{HEEBNER} SH: bk carb, sm pyrtc; sm V. carb.

LS: dk-gy-bn, dn hd Mdst, sm argil; Vpr-NVP; NS.

SH: gy-bk sm carb & V. carb.

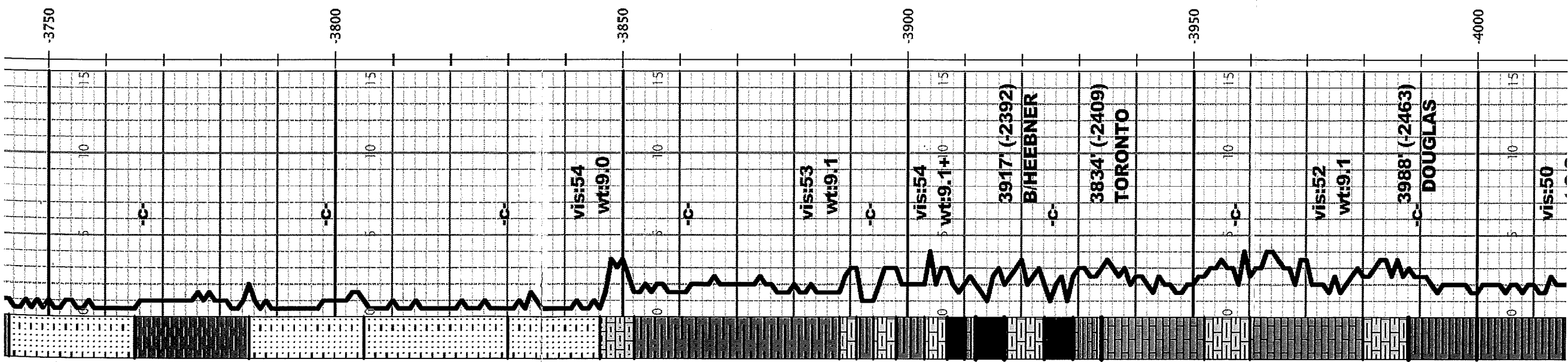
{TORONTO} LS: tn-gy-wh, pred dn Mdst, & mx-VfnX, sm chky, LS; sm argil- shly; pred pr Poro - NVP; NS.

V. Abndt LS: gy-bf-wh, dn & mx-fnX, sm chky, pred pr Poro -NVP; sm pp Poro & IXP w/ NS.

LS: sm AA, sm argil.

Sl incrs SH (4020'spl) pred dk-gy-bk SH.

Pred SH: (4040'spl) gy-bk & gn-gy, sm LS: AA; NS.



-3750

-3800

-3850

-3900

-3950

-4000

vis:54
wt:9.0

vis:53
wt:9.1

vis:54
wt:9.1

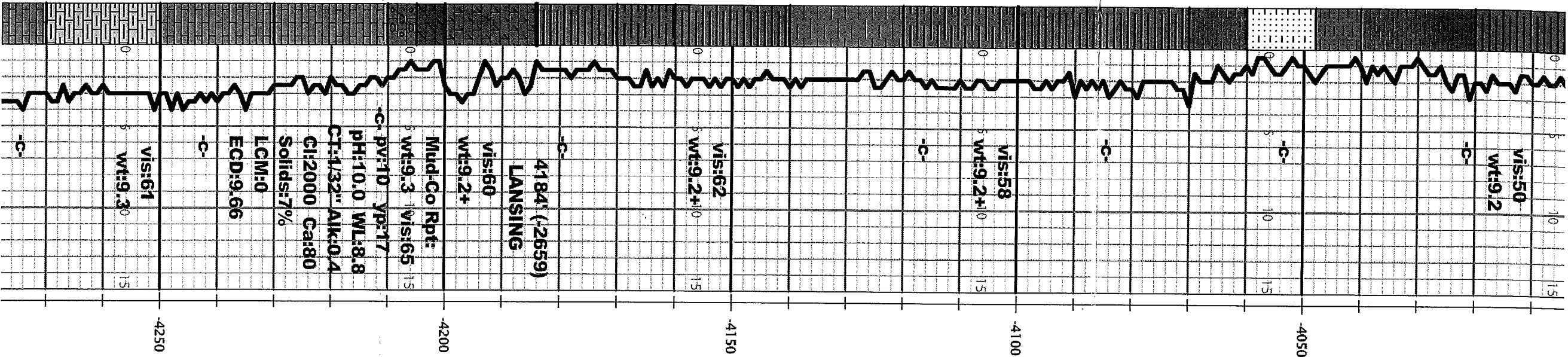
3917' (-2392)
B/HEEBNER

3834' (-2409)
TORONTO

vis:52
wt:9.1

3988' (-2463)
DOUGLAS

vis:50



LS:AA; NS.

Rare(R) Sd Clust: (4060 spl) gy, Vfn-fr Grd, Rnd'd-subanglr; pr-Fr Por; NS; sm V silty & well cmt'd w/ Vpr visbl Por; w/ NS.

Silty SS: Sd Clust: lt-md-gy, Vfn-fr Grd, pred silty, well cmt'd - subfrbl w/ pr-Fr Por; w/ NS; NF; NC (4080 spl).

(4100 spl) Abndt Sd Clust: AA: pred Vfn-fr Grd, Rr fr-MdGrd, frbl w/ Fr-Gd Por; w/ NS.

(4120 spl) pred SH: gy-bk; sm Sd Clust:AA w/ NS & SILTS:gy, micac.

(4140 spl) Pred SH-SILTS: gy, micac: Incr Silty Sd Clust:AA; NS.

(4160 spl) SILTS & Silty Sd Clust: AA: Vfn Grd, well cmt'd w/ pred pr- Vpr Por; w/ NS.

(4180 spl) Pred SH: (Incrs) dk-gy-bk, sm micac & Sndy; sm Silty Sd Clust:AA; NS.

(4200 spl) Incr Sndy SILTS & Silty SS: sm Sd Clust: gy-bk Vfn-fr Grd, pred well cmt'd, Rr fr-MdGrd, frbl w/ Fr-Gd Por; NS; NF; NC.

SH: AA.

(LANSING) 4220 spl) LS: fr, frXln to dn, sm dolomc, sm pr-Fr Por; NS; sm dn w/ NV/P & NS.

(4220' & 4240' spl) Rare(R) DLS: frXln-MdXln w/ Fr-Gd InterXlnPor; (IXP) NS; Sm DOL: bt-fr, mx-frXln, Rr MdXln, pred pr-Fr Por; Vrare(Vr) prt oomldc LS w/ Fr-Gd Por; NS.

(4240' spl) LS:AA: pred dn w/ pr Por; NV/P; NS; sm pr Por; IG & IX Por; w/ NS.

(4260' spl) LS: gy, dn & argll Mdst & mx w/ Vpr-NV/P; NS.

(4380' spl) LS: wh-gy-fr, sm mot; mx-frXln, Vr prt MdXln, sm dolomc, Rr pr-Fr Por; NS; sm argll-dn; NS.

NVP; NS.

SH: gy-bk

LS: cm-tn, mx-fmXln; Sl Cherty, w/ sm Fr-Gd Poros; pin point(pp)- vug, moldc, & InterXln Poros(XP) NS.

Abndt dn LS w/ NVP & pr Poros w/ NS; & LS; gy-tn, dn- mx-fmX; w/ Vpr-NVP; NS; Vsl Chrtly.

LS: cm-tn, mx-fmXln, Vrr MdX's-CrsX's- 2nd ReX; sm Fr-Gd Poros; (Gr, pp, & IXP; w/ NS; Chrtly.

LS: tn-br-gy, mx-fmXln; Rare(Rr) V.oomldc w/ Gd-VGd Poros w/ NS; NC.

LS: AA; pred dn- mx & Mdstd & sm chiky; NS.

SH: sm gy-bk, Lmy & calc. (STAR)SH: bk subcarb- V.carb.

SH: AA & argil LS.

(SWOPE) LS: Lt-gy-tn; mx-fmXln, Grst-Pkst w/ Fr-Gd Poros; LGr & IXP, & l.oal; & Vrr prt oomldc w/ Fr-Gr Poros; <5% w/ FLR & Slight Show Free Oil & Gas Bubbles(SISFO&GB) & Sl Cut; VSl Odor; Sl Chrtly. Pred dn- mx-fmXln & chiky w/ pr Poros- NVP; Pred Barren.

(HUSHPUCKNEY) SH: bk carb- V.carb.

(HERTHA) LS: gy-tn, mx-fmXln, Vrr MdX's; sm granil- Pkst; V.rare(Vrr) Fr- Gd Poros; (Gr & IXP, & pp-vug, & micro(m)-moldc Poros; <5% w/ FLR & VSISFO&GB; Trc STN & VSl Cut; VSl Odor; Sl Chrtly. Sm chiky LS; sm argil- shly LS; dk-gy-bk, dn Mdstd & mx- Lithogr LS; pred Barren w/ pr Poros- NVP. SH: gy-bk; & LS: gy-bk; dn- Mdstd & mx- Lithogr; & argil-shly LS w/ Vpr-NVP; NS.

LS: tn-br-gy, pred dn- mx; & Mdstd w/ Vpr-NVP; NS.

LS: tn-br-gy, pred dn-mx; & Mdstd w/ Vpr-NVP; NS.

(B/KC) SH: gy-bk, sm carb.

Pred SH:AA; (sm LS:AA w/ NS) & LS: argil- shly; & calc- Lmy SH.

SH: bk carb- V.carb.

(MARMATON) LS: tn-cm, pred dn- mx- inX; pred pr Poros-NVP; NS.

Abndt argil LS w/ Vpr-NVP; NS; & SH: calc & Lmy.

SH: gy; gn-gy, calc & Lmy; & LS: gy; argil, dn- Mdstd.

LS: tn-gy-wh, pred dn, sm chiky; Trc Fr Poros w/ NS.

SH: bk carb- V.carb.

LS: tn-gy-wh, pred dn- mx, sm chiky; pred Vpr-NVP; NS.

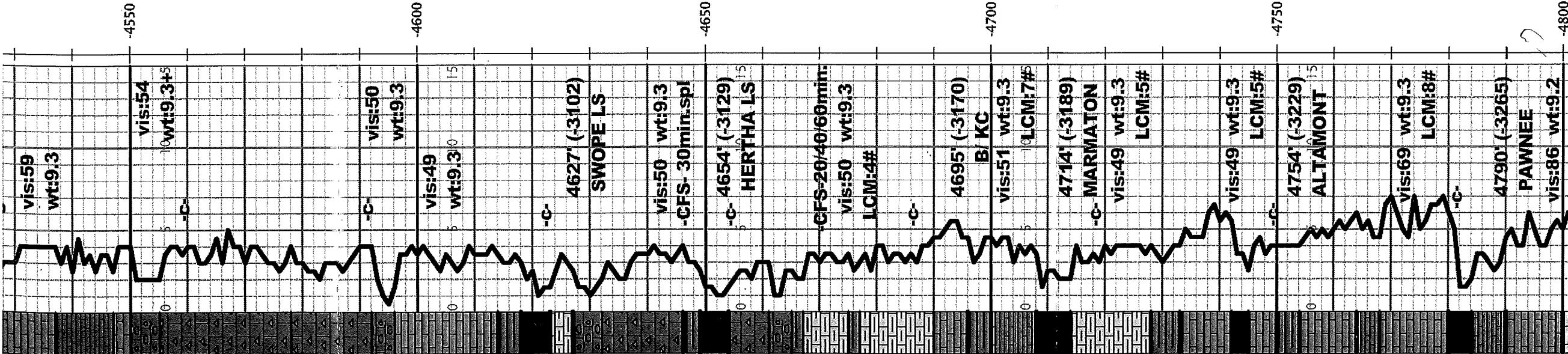
(ALTAMONT) LS: tn-gy-wh, pred dn- mx & Mdstd, sm chiky; pred Vpr-NVP; NS;

& SH: AA, gy- bk.

LS: gy-tn, pred dn- Lithogr- Mdstd w/ Vpr-NVP; NS.

SH: bk carb, & subcarb, sm calc & Lmy.

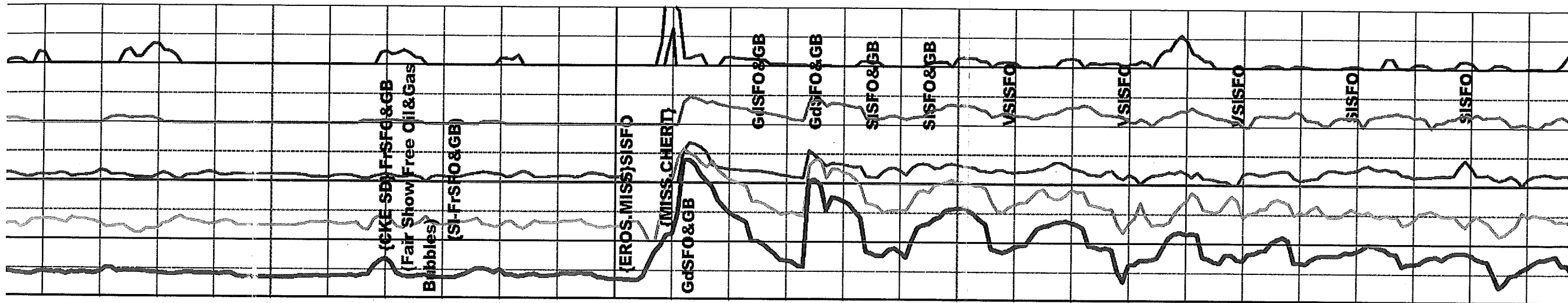
(PAWNEE) LS: tn-gy, pred dn- mx; w/ Vpr-NVP; NS; Vrr Wh-chiky LS; NS.



Power supply failure; lost data from ~4620' -> 4651' (SWOPE LS) <5% w/ VSISFO&GB (Slight Show Free Oil & Gas Bubles)

Mud-Co.Rpt@4664' wt:9.3 vis:52 pv:14 yp:16 pH:10.0 WL:9.0 CT:1/32" Alka:0.4 CH:4000 Ca:80 Solids:6.7% LCM:0 ECD:9.68 (HERTHA LS) <5% w/ VSISFO&GB

-4800



sm argill-shly LS; Vpr-NVP; NS.

SH: bk carb; & gy, gn-gy.

(FT. SCOTT) LS: tn-gy-wh, pred dn-mx-fnx; Vpr-NVP; NS.

(CHEROKEE) SH: bk carb & subcarb; & gn-gy; & LS: gy. argill. NVP; NS.

SH: bk carb - V carb.

LS: tn-gy, pred dn-mx-VfnX; Rr chky; Vpr-NVP; NS.

Trc Shdy LS: tn, mx-VfnX; Vfn Grd w/ pr visbl Poro w/ SFO-FLR-STN&Cut.

SS- Sd Clusters: bf-tn, Vfn Grd, Rnd'd-angulr, V well sort'd, sm well cmt'd, sm fribl w/ Gd l.Gr.Poro; ~10% w/ FrSFO & GB & substat- sat lt tn STN & dull FLR, Fr-Gd Cut, Gd Resid Cut; Fr Odor. Rr Cherty Sd Clust: pred VfnGr'd w/ Vfn Chrt fragmnts. Trc Vfn-fnGr'd, Rr Fr-Gd Poro w/ spt'd bk STN & FrSFO & Cut; Sm silty-argil Sd Clust w/ pr-Fr Poro w/ Vrr spt'd STN, SISFO & Cut, Fr Odor.

LS: tn-gy, pred dn- mx; & argill; NVP.

Pred SH-SILT: gy-bk.

(Rr Sd Clust: AA w/ pr-Fr Poro w/ dull FLR to NF; SISFO-STN-Cut)

(EROS.MISS) Vrr CHERT: cm-gy-bf, withrd- prt Tripolitic w/SISFO & spt'd STN&Cut; sm dd Sln; Trc shrp Chrt; Incrs SH: mnr-rd & gn-gy.

(MISS.CHERT) gy-tn-cm-wh, sm VC, sm shrp & prt Withrd w/ spt'd STN; sm Tripolitic w/ substat-sat STN & brt FLR; Pred Fr to Vgd SFO&GB&Fr-VGd Cut; Fryl Strong Odor. (4930'40min spj)

Pred CHERT: wh-cm-gy, w/ tn-bn & bk STN; Pred Triplic & Withrd w/ Fr-VGd visbl Poro: vug & pp & Triplic.Poro w/ spt'd-sat STN& brt FLR; Pred Gd SFO & GB & Gd Cut; Flyl String Odor.

(spis below 4930') Chert: AA; pred cm-blu-gy; prt Withrd w/ spt'd- substat STN- Incrs bk-STN; Fr-GdSFO & Cut; Rr ool & fos- fnly granlr Chert w/ lGr.Poro w/ STN & SFO & Cut; Fr Odor.

Sm LS & Dolomc.LS(DLS): cm-bf-gy, mx-VfnXln, sm granlr, sm silic & dolomc, pred pr lXP & lGr Poro; sm w/ SISFO spt'd STN & Cut.

Abndt CHERT: sm AA; Decrs in Withrd Chrt; prt fresh-sharp & prt withrd- sl withrd w/ spt'd STN & SFO & Cut.

Sm LS-DLS:AA; sm argil & silic; w/ pred pr visbl Poro w/ VSISFO-STN & Cut;

Abndt CHERT:AA; pred Pr-Fr Poro sm spt'd STN-SFO-Cut.

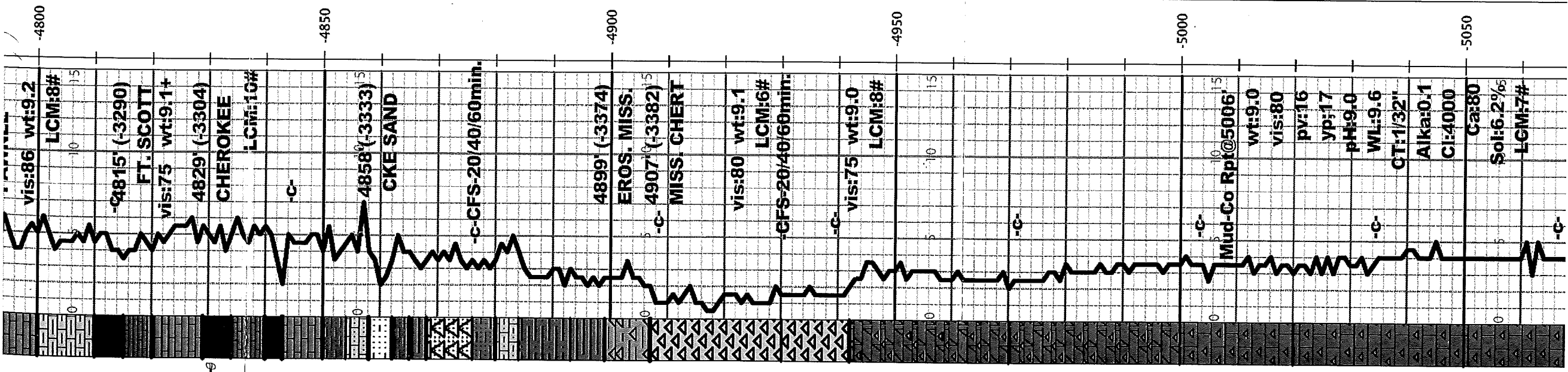
LS-DLS: cm-gy-bf; mx-VfnXln, sm Vfnly granlr- silty & silic; & Chrt; pred Vpr- pr visbl Poro: m-lXP & m-Frac Poro; Vrr spt'd STN & VSISFO & Cut; (~25% Chert:AA).

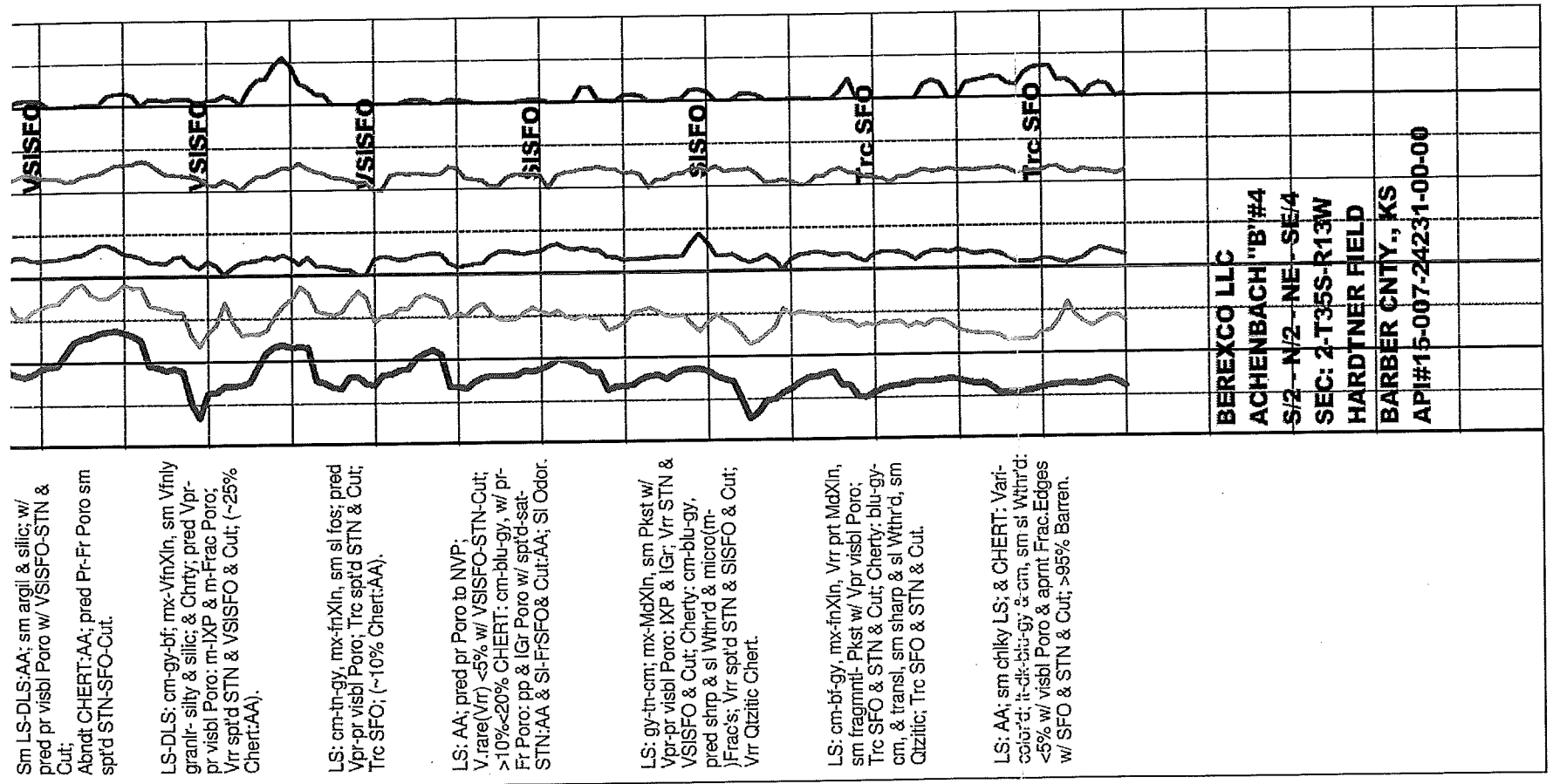
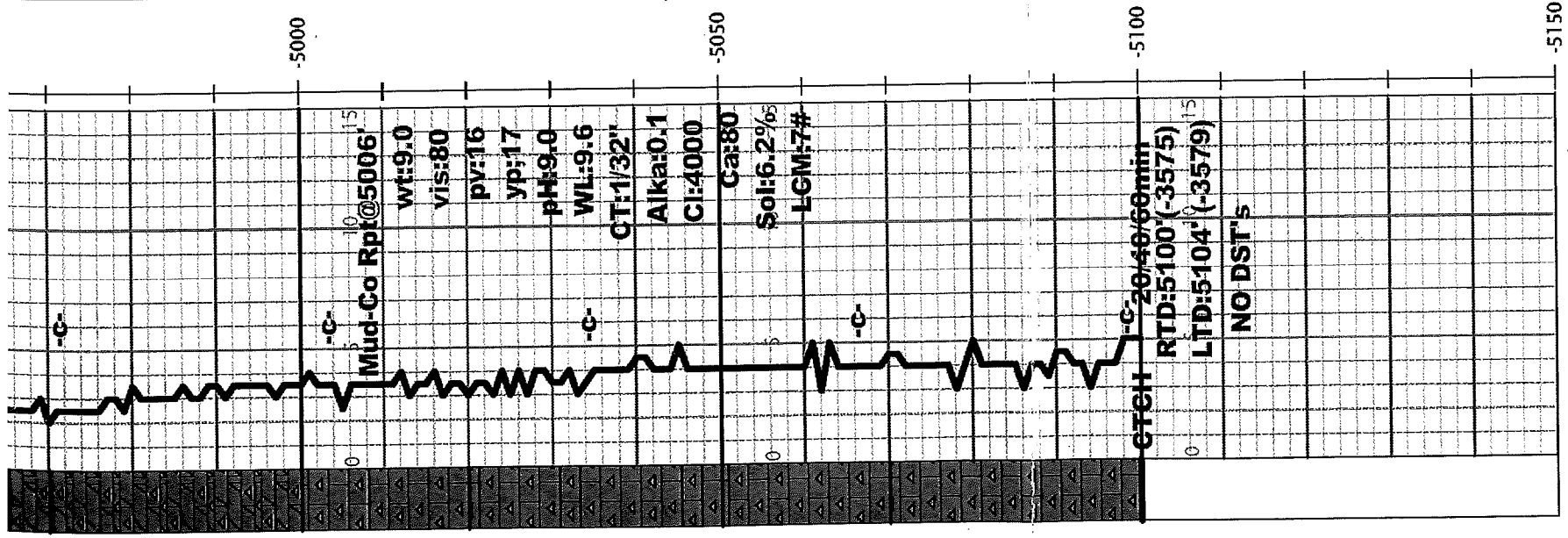
LS: cm-tn-gy, mx-fnxXln, sm sl fos; pred Vpr-pr visbl Poro; Trc spt'd STN & Cut; Trc SFO; (~10% Chert:AA).

LS: AA; pred pr Poro to NVP; V rare(Vrr) ~5% w/ VSISFO-STN-Cut; >10%<20% CHERT: cm-blu-gy, w/ pr-Fr Poro: pp & lGr Poro w/ spt'd-sat STN:AA & Sl-F:SFO & Cut:AA; Sl Odor.

LS: gy-tn-cm; mx-MdXln, sm Plkst w/ Vpr-pr visbl Poro; lXP & lGr; Vrr STN & VSISFO & Cut; Cherty: cm-blu-gy, pred shrp & sl Withrd & micro(m- J)Frac's; Vrr spt'd STN & SISFO & Cut; Vrr Qizitic Chert.

LS: cm-bf-gy, mx-fnxXln, Vrr prt MdXln, sm frammit. Plkst w/ Vrr visbl Poro.





****CELLS WITH BLUE BACKGROUND ARE THE ONLY CELLS TO BE EDITED****

Fracture Start Date/Time:	10/22/14 9:59
Fracture End Date/Time:	10/22/14 11:51
State:	Kansas
County:	Barber
API Number:	15-007-24231-0000 (e.g. XX-XXX-XXXX-0000)
Operator Name:	BEREXCO LLC
Well Name:	Achenbach B #4
Federal Well:	
Longitude:	-98.696164
Latitude:	37.0271327
Long/Lat Projection:	NAD27
True Vertical Depth (TVD):	0'
Total Clean Fluid Volume* (gall):	382,788

Additive	Specific Gravity	Additive Quantity	Mass (lbs)
Water	1.00	382,788	3,194,366
Sand (Proppant)	2.65	282,600	282,600
Plexside B7	1.33	20	222
Plexside B7	1.33	20	222
Plexgel Breaker XPA	1.03	58	499
Plexset 730	0.90	104	781
Plexset 730	0.90	104	781
Plexsurf 580 ME	0.95	93	737
Plexsurf 580 ME	0.95	93	737
Plexsick 957	1.11	232	2,149
Claymax	1.09	185	1,683
Plexgel 907L-EB	1.04	380	3,298
Plexgel 907L-EB	1.04	380	3,298
Plexgel 907L-EB	1.04	380	3,298
Plexgel 907L-EB	1.04	380	3,298
Plexgel 907L-EB	1.04	380	3,298
Plexgel Breaker 10L	1.10	5	46

Ingredients Section:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier Base Fluid	Water	7732-18-5	100.00%	3,194,366	91.2333%	
Sand (Proppant)	Uniman	Proppant	Crystalline Silica in the form of Quartz	14808-60-7 / 238-878-4	99.90%	282,317	8.06319%	
Plexside B7	Chemplex	Biocide	Sodium Hydroxide	1310-73-2	4.99%	11	0.00032%	
Plexside B7	Chemplex	Biocide	Alkaline Bromide Salts (non-hazardous)	NA	0.00%	0	0.00000%	
Plexgel Breaker XPA	Chemplex	Slickwater Breaker	Hydrogen Peroxide	7722-84-1	7.00%	35	0.00100%	
Plexset 730	Chemplex	Activator	Methanol	67-56-1	50.00%	391	0.0115%	
Plexset 730	Chemplex	Activator	Alcohol Ethoxylates	Mixture	60.00%	469	0.0139%	
Plexsurf 580 ME	Chemplex	Product Stabilizer	Methyl Alcohol	67-56-1	10.00%	74	0.00211%	
Plexsurf 580 ME	Chemplex	Product Stabilizer	2-Butoxyethanol	111-76-2	50.00%	369	0.01053%	
Plexsick 957	Chemplex	Friction Reducer	Petroleum Hydrotreated Light Distillate	64742-47-8	25.00%	537	0.01534%	
Claymax	Chemplex	Clay Stabilizer	No Hazardous Ingredient	NA	0.00%	0	0.00000%	
Plexgel 907L-EB	Chemplex	Gelling Agent	Distillates, Hydrotreated Light	64742-47-8	50.00%	1,649	0.04710%	
Plexgel 907L-EB	Chemplex	Gelling Agent	Organophilic Clay	NDA	2.00%	66	0.00188%	
Plexgel 907L-EB	Chemplex	Gelling Agent	Crystalline Silica	14808-60-7	0.06%	2	0.00006%	
Plexgel 907L-EB	Chemplex	Gelling Agent	Alcohol Ethoxylates	34398-01-1	1.00%	33	0.00094%	
Plexgel 907L-EB	Chemplex	Gelling Agent	Guar Gum	9000-30-0	50.00%	1,649	0.04710%	
Plexgel Breaker 10L	Chemplex	Breaker-Gel	No Hazardous Ingredient	NA	0.00%	0	0.00000%	
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component

*Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary," "trade secret," and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.