

**CONFIDENTIAL**



**Alta Mesa  
Holdings, LP**

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

Well Name:	DJS Properties 2-14	ALTA MESA SERVICES
API:	11-075-20023	
Location:	Sec 14, T8N, R4W	Payette County, ID
License Number:	AFE: 113DC1592	Region: Wildcat
Spud Date:	9/12/2014	Drilling Completed: 9/16/2014
Surface Coordinates:	See drilling report	
Bottom Hole Coordinates:	See drilling report	
Ground Elevation (ft):	2480'	K.B. Elevation (ft): 2494'
Logged Interval (ft):	100' To: 5500'	Total Depth (ft): 5500'
Formation:	Wildcat Sand	
Type of Drilling Fluid:	WBM to SCP, Invert Emulsion to TD	

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 [www.WellSight.com](http://www.WellSight.com)

**OPERATOR**

Company: Alta Mesa Services  
Address: 15021 Katy Freeway  
Ste 400  
Houston, TX 77094-1813

**GEOLOGIST**

Name: Phil Littlefield, Adam Johnson  
Company: King Canyon Buffalo, Inc.  
Address: 33 King Canyon Rd.  
Chadron, NE 69337

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Comments

Company Man: Jesse Tatman, Mike Dumas  
 Alta Mesa Engineer: David Tubbs  
 Alta Mesa Geologist: Mike McMennamy  
 Contractor: PGDS Rig #7 (Paul Graham Drilling Service)  
 Tool Pusher: Jeff Lopez, Dave Landers  
 Mud Company: Newpark Drilling Fluids  
 Mud Engineer: Richard Magee, Brett Karasek  
 KCB Wellsite Geology: Phil Littlefield, Adam Johnson, Brent Weeks, Angela Gelfer

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ROCK TYPES

	Dol gy		Sh medgy		Carbshdkgy		clyst lt-mgy
	Anhy rose		Sltst brn		Sh carb		Coal
	Anhy wh		sltst wh		Sh dkgy		Tuff ltgy
	Bent		sltst ltgy		Sh grn		Tuff ltgrn
	Cht		Sltst tn		Sh medgy		Tuff white
	Coal		sltst mgy		Sh ltgy		Tuff dkgy
	Ls off wh		Sltst		nosmpl		Tuff orng
	Ls crmtn		Ss loose qtz		Csgpt		Basalt flow top
	Congl		Ss gy		clyst tan/buff		Basalt entab
	Dol brn		Ss		clyst brn		Basalt columnade
	Ls ltgy		Sh rdbrn		clyst mar		Carbsh
	Ls tn		Shale sndy		clyst wh		clyst m-mdkgy
	Ls wh		Sh brn		clyst ltgrn		
	Ls med brn		Sh tan		clyst rdbrn		
	Ls medgy		Sh ltblu		clyst blgy		

ACCESSORIES

<b>MINERAL</b>		Marl		Crin		Ls
	Vertfrac		Qtz or calct xls		Mrst	Mrst
	Anhy		Nodule			Sltstrg
	Arggrn		Phos			Ssstrg
	Arg		Pyr			Clyst gy
	Mica		Salt			Lsgy
	Bent		Sandy			Lscrmtn
	Bit		Silt			
	Brecfrag		Sil		<b>TEXTURE</b>	
	Calc		Sulphur			Boundst
	Carb	<b>FOSSIL</b>				Chalky
	Chtdk		Algae			Cryxln
	Chtlt		Amph			Earthy
	Dol		Belm			Finexln
	Feldspar		Bioclst	<b>STRINGER</b>		Grainst
	Ferrpel		Brach			Lithogr
	Ferr		Bryozoa			Microxln
	Glau		Cephal			Mudst
	Gyp		Coral			Packst
	Hvymin					Wackest
	Kaol					

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OTHER SYMBOLS

**POROSITY**  
 [E] Earthy  
 [F] Fenest  
 [X] Fracture  
 [I] Inter  
 [M] Moldic  
 [O] Organic  
 [P] Pinpoint  
 [V] Vuggy

**SORTING**  
 [W] Well  
 [M] Moderate  
 [P] Poor

**ROUNDING**  
 [R] Rounded  
 [r] Subrnd  
 [a] Subang  
 [A] Angular

**OIL SHOW**  
 [●] Even  
 [○] Spotted  
 [□] Ques  
 [D] Dead

**INTERVAL**  
 [■] Core  
 [◻] Dst  
 [□] Casing

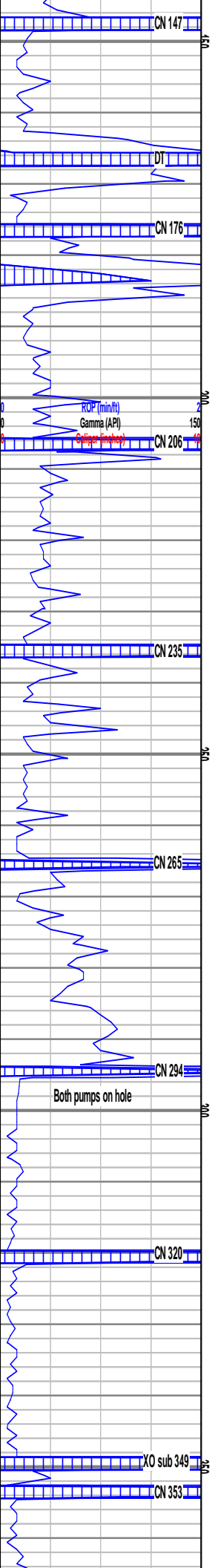
**EVENT**  
 [▽] Rft  
 [▲] Sidewall  
 [▲] New bit

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ROP (min/ft)	Gamma (API)	Caliper (inches)	Lithology	Geological Descriptions	Rig/Mud Data	Mass Spec Total Gas MS Total Gas (Units)	Resistivity AT90 (ohmm) AT60 (ohmm) AT30 (ohmm) AT20 (ohmm)	Porosity NPOR (c/cf) DPHZ (c/cf)		
2	150	10				250		0.6		
<p>KING CANYON BUFFALO, INC.                      33 King Canyon Rd, Chadron, NE 69337                      109 E 17th St, Ste 4159, Cheyenne, WY 82001                      kcbison@yahoo.com  <a href="http://www.kingcanyonbuffalo.com/wellsite/">http://www.kingcanyonbuffalo.com/wellsite/</a></p> <p>Mr. Chris Nerud,                      President                      (970) 212-6868                      jcnerud@yahoo.com</p>			<p>ALTA MESA SERVICES                      DJS Properties 2-14                      API # 11-075-20023                      AFE: # 113DC1592                      GL Elevation: 2480 ft                      KB Elevation: 2494 ft</p> <p>King Canyon Buffalo, Inc.                      On location 9/11/2014 @ 10:30 hrs,                      Rigged up &amp; fully operational 9/11/2014 @ 15:30 hrs</p> <p>SPUD on 9-12-2014 @ 0730 hrs MST</p> <p>KCB mudloggers catching 30' lagged samples starting at 100'</p> <p>13 3/8" Conductor casing set at 80' (94' KB)</p>		<p>Mud Type:                      Water                      Base Mud</p> <p>Rig / Mud Data</p> <p>MW In/Out                      Vis In/Out</p> <p>Drilling 12 1/4" Surface hole</p> <p>NB #1 (RR), 12 1/4", Hughes, VM-1, 3x18-1x12 jets, Tricone in at 134', w/ set of Jars, No Mud Mtr</p> <p>SPM 122/0</p> <p>Transfer fluid to active</p> <p>Drig w/ wt</p>		<p>BGG = Background Gas                      BIB = Break in Bit                      CN = Connection                      CG = Connection gas                      CO = Circulate out                      DOT = Dropped on trip                      DT = Downtime                      DTG = Downtime gas                      FMG = Formation gas                      LTC = Lagged to Connection                      LTD = Lagged to Downtime                      NB = New Bit                      STG = Short Trip Gas                      TG = Trip Gas                      WLS = Wireline Survey</p>		<p>AT90 (ohmm) 100                      AT60 (ohmm) 100                      AT30 (ohmm) 100                      AT20 (ohmm) 100</p>	<p>NPOR (c/cf) 0.6                      DPHZ (c/cf) 0.6</p>
<p>Well Logged by Phil Littlefield, Adam Johnson, Angie Geller &amp; Brent Weeks with FIT "dq1000" Mass Spectrometer (#1078) and Gas Cannibal Trap</p>			<p>SS (60%) unconsol Qtz clr-trnsl-opq, occ trntd yel, v/crs-crsgr, tr umgr, sb/ rnd - sl sbang, psrt, pcmt, NFSOC, w/ CMT (30%), w/ CLYST (10%) tnyel-yel, sft-sl frm, mshy ip, rr w/ sl stly ip, n-rr w/ sl calc, rr tr free musc/biot</p>		<p>SS (90%) unconsol Qtz clr-trnsl-opq, tr trntd yel, v/crs-crsgr, tr umgr, sbmd - sl sbang, psrt, pcmt, NFSOC, w/ CMT (30%), w/ CLYST (10%) tnyel-yel, sft-sl frm, mshy ip, rr w/ sl stly ip, n-rr w/ sl calc, rr tr free musc/biot</p>					

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psrt, pcmt, tr inbd biot, NFSOC, w/ CLYST (10%) tn, occ trnd yeltn, sft-sl frm, mshy ip, mod-w/ slty, n-rr v/sl calc, w/ tr free biot/musc/vermic, w/ tr cmt

SS (60%) unconsol Qtz clr-trnsl-opq, trnd ltn, crs-umgr, sbmd - sl sbang, msrt, pcmt, rr inbd biot, NFSOC, w/ CLYST (40%) tn, v/ sft / mshy, sl slty, n-calc, w/ tr free biot/musc

SS (85%) unconsol Qtz clr-trnsl-opq, trnd ltn, m-crsgr, sbmd - sl sbang, msrt, pcmt, v/ rr inbd biot, NFSOC, w/ CLYST (15%) tn, v/ sft / mshy, sl slty, n-calc, w/ tr free biot/musc, tr vermic

CLYST (70%) tn, v/ sft / mshy, v/ slty, n-calc, w/ SS (30%) unconsol Qtz clr-trnsl-opq, trnd ltn, m-ufgr, sbmd - sl sbang, msrt, pcmt, NFSOC, w/ tr free biot/musc

CLYST (55%) tn, v/ sft / mshy, v/ slty, n-calc, 15% ltgy, sft, tr inbd mic biot, w/ SS (30%) unconsol Qtz clr-trnsl-opq, m-ufgr, sbmd - sl sbang, msrt, pcmt, NFSOC, w/ tr free biot/musc/vermic

CLYST (70%) ltgy, v/ sft / mshy, n-calc, rr slty, tr inbd mic biot, w/ CLYST (30%) tn, v/ sft / mshy, v/ slty, n-calc, w/ tr SS unconsol Qtz clr-trnsl-opq, m-ufgr, sbmd - sl sbang, msrt, pcmt, NFSOC, w/ no vis mica

CLYST (95%) ltgy, v/ sft / mshy, n-calc, occ sl slty, fr inbd mic biot, w/ CLYST (5%) tn, v/ sft / mshy, v/ slty, n-calc, w/ fr free mic biot

SS (100%) unconsol Qtz clr-trnsl-opq, m-crsgr, tr lv/crsgr & ufgr, sbmd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ no vis CLYST in spl, w/ tr-fr free biot/musc, rr tr vermic

MW 8.4

DT - Rot mir

Transfer fluid to active

SPM 122/0

No mud chks

WLS @ 253' = 0.5°

SPM 122/0

294' - CO for WLS

Both pumps on hole

116/116

Both pumps on hole

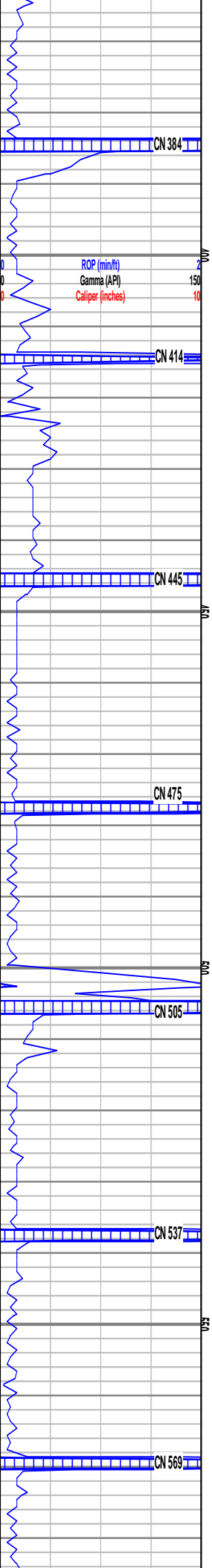
114/116



MS Total Gas (Units)	250	AT90 (ohmm)	100	0.6	NPQR (c/cf)	0
		AT60 (ohmm)	100	0.6	DPHZ (c/cf)	0
		AT30 (ohmm)	100			
		AT20 (ohmm)	100			

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CLYST (85%) ltgy, v/ltgy, v/sft/mshy, n-calc, occ sl slty, tr inbd mic biot, w/ SS (15%) unconsol Qtz clr-trnsl-opq, m-crsgr, tr lv/crsgr & ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (90%) ltgy, v/ltgy, v/sft/mshy, n-calc, occ sl slty, tr inbd mic biot, w/ SS (10%) unconsol Qtz clr-trnsl-opq, m-crsgr, tr lv/crsgr & ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (100%) v/ltgy, ltgy, v/sft/mshy, n-calc, rr sl slty, tr inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, m-ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (100%) v/ltgy, ltgy, v/sft/mshy, n-calc, rr sl slty, tr inbd mic biot, w/ rr SS unconsol Qtz clr-trnsl-opq, m-ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ rr tr free mic biot

SPLS v/ POOR, wash to mush

CLYST (100%) v/ltgy, ltgy, v/sft/mshy, n-calc, rr sl slty, tr inbd mic biot, w/ tr SS unconsol Qtz clr-trnsl-opq, m-ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ rr tr free mic biot

CLYST (100%) v/ltgy, ltgy, v/sft/mshy, n-calc, rr sl slty, tr inbd mic biot, w/ tr SS unconsol Qtz clr-trnsl-opq, m-ufgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (100%) v/ltgy, ltgy, v/sft/mshy, n-calc, rr sl slty, tr inbd mic biot, w/ occ SS unconsol Qtz clr-trnsl-opq, m-lwcrsgr, sbmrd-sl sbang, psrt, pcmt, v/rr vis inbd biot, NFSOC, w/ tr free mic biot

No mud chks

117/116

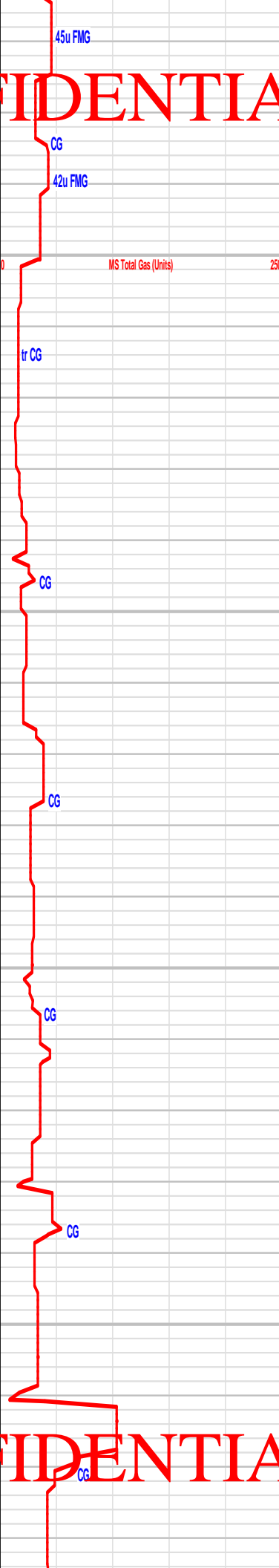
Transfer fluid to active

117/118

116/116

No mud chks

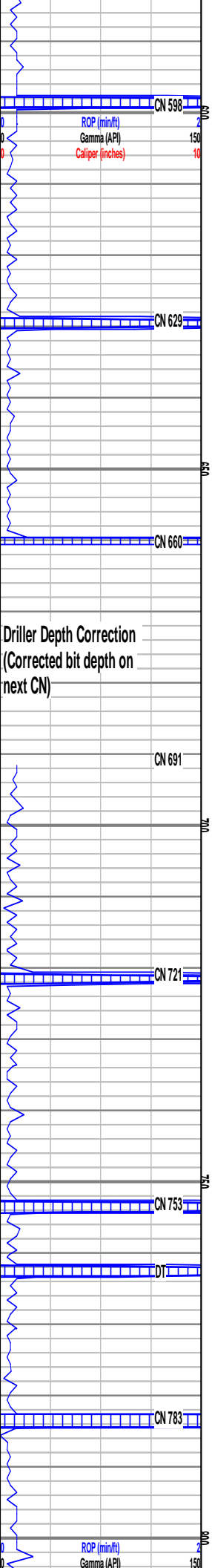
Transfer fluid to



1	AT90 (ohmm)	10	100	0.6	NPOR (c/cf)	0
1	AT60 (ohmm)	10	100	0.6	DPHZ (c/cf)	0
1	AT30 (ohmm)	10	100			
1	AT20 (ohmm)	10	100			

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active

CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ tr SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ rr SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ rr free mic biot

SPLS v/ POOR, wash to mush

CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ occ SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ rr free mic biot

CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ occ SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ rr free mic biot

SS (70%) ltgy-mgy, v/gr, sft-fm, ncalc, consol, v/ slty, inbd mic biot, occ grdg to v/ sdy/sltst, NFSOC, w/ CLYST (30%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ occ SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ tr free mic biot

SS (50%) ltgy-mgy, v/gr, sft-fm, ncalc, consol, v/ slty, inbd mic biot, occ grdg to v/ sdy/sltst CLYST, NFSOC, w/ CLYST (50%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ occ SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (70%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ SS (30%) ltgy-mgy, v/gr, sft-fm, ncalc, consol, v/ slty, inbd mic biot, occ grdg to v/ sdy/sltst CLYST, NFSOC, w/ occ SS unconsol Qtz clr-trnsl-opq, m-crsgr, sbrnd - sl sbang, psrt, pcmt, v/ rr vis inbd biot, NFSOC, w/ tr free mic biot

CLYST (95%) v/ ltgy, ltgy, v/ sft / mshy, n-calc, rr sl slty, tr inbd mic biot, w/ SS (5%) ltgy-mgy, v/gr, sft-fm, ncalc, consol, v/ slty, inbd mic biot, occ grdg to v/ sdy/sltst CLYST

active

118/117

117/116

119/120

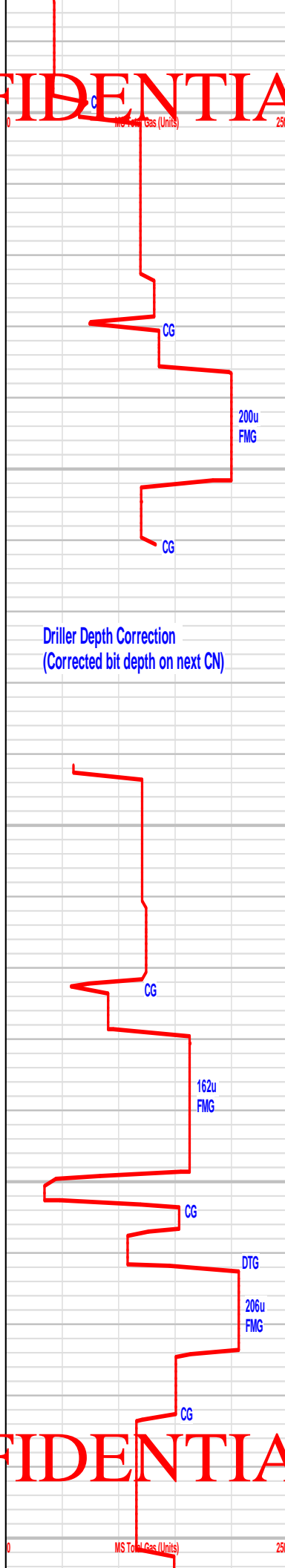
No mud chks

WLS @ 742' = 0.25°

Flow line Packed Off, CO Working DP

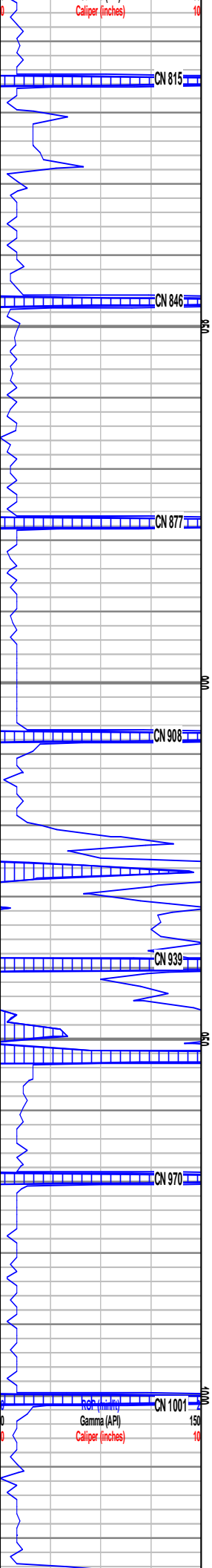
Transfer fluid to active

118/117



1	AT90 (ohmm)	10	100	0.6	NPQR (clcf)
1	AT60 (ohmm)	10	100	0.6	DPHZ (clcf)
1	AT30 (ohmm)	10	100		
1	AT20 (ohmm)	10	100		

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NFSOC, w/ occ SS unconsol Qtz  
 clr-trnsl-opq, m-lcrsgr, sbrnd - sl sbang,  
 psrt, pcmt, v/ tr vis inbd biot, NFSOC, w/ rr  
 free mic biot  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ occ SS  
 unconsol Qtz clr-trnsl-opq, m-lcrsgr, sbrnd -  
 sl sbang, psrt, pcmt, v/ tr vis inbd biot,  
 NFSOC, w/ tr free mic biot, w/ tr consol SS  
 aa  
  
 SPLS v/ POOR, wash to mush  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ occ SS  
 unconsol Qtz clr-trnsl-opq, m-lcrsgr, sbrnd -  
 sl sbang, psrt, pcmt, v/ tr vis inbd biot,  
 NFSOC, w/ rr free mic biot, w/ rr consol SS  
 aa  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ tr SS  
 unconsol Qtz clr-trnsl-opq, m-lcrsgr, sbrnd -  
 sl sbang, psrt, pcmt, v/ tr vis inbd biot,  
 NFSOC, w/ tr consol SS aa, w/ rr free mic  
 biot  
  
 CLYST (95%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ SS (5%)  
 ltgy-mgy, vigr, sft-fm, ncalc, consol, v/ sl ty,  
 inbd mic biot, occ grgd to v/ sdy SLTST,  
 NFSOC, w/ tr SS unconsol Qtz clr-trnsl-opq,  
 m-lcrsgr, sbrnd - sl sbang, psrt, pcmt, v/ tr  
 vis inbd biot, NFSOC, w/ rr free mic biot  
  
 SPLS v/ POOR, wash to mush  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ tr SS  
 unconsol Qtz clr-trnsl-opq, m-ufgr, sbrnd - sl  
 sbang, psrt, pcmt, v/ rr vis inbd biot,  
 NFSOC, w/ tr free mic biot  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, rr sl stly, tr inbd mic biot, w/ no vis  
 SS unconsol Qtz  
  
 SPLS Fair-Good  
  
 CLYST (100%) v/ ltgy, ltgy, v/ sft / mshy,  
 n-calc, tr sl stly, tr inbd mic biot, w/ no vis  
 SS unconsol Qtz

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118/115

No mud chks

119/116

Poss bit balling  
up

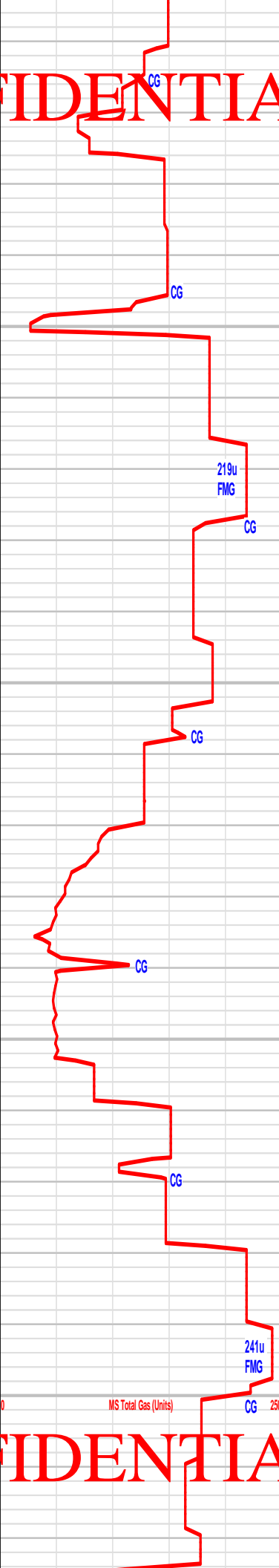
Transfer wtr to  
active

Poss bit balling  
up

No mud chks

120/124

WLS @ 1053' =  
0.25°



219u  
FMG

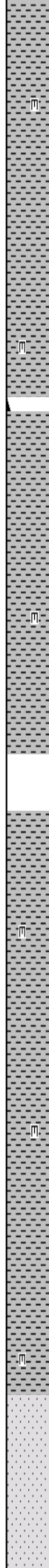
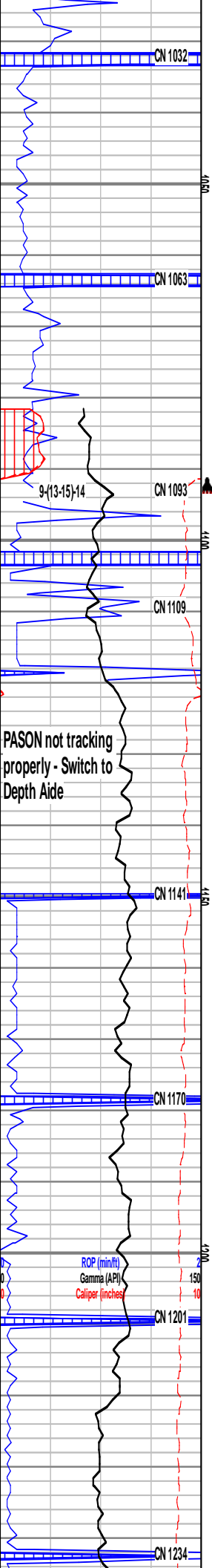
241u  
FMG

1	AT60 (ohmm)	10	100
1	AT30 (ohmm)	10	100
1	AT20 (ohmm)	10	100
1	AT90 (ohmm)	10	100
1	AT60 (ohmm)	10	100
1	AT30 (ohmm)	10	100
1	AT20 (ohmm)	10	100

0.6 NPQR (clct)  
0.6 DPHZ (clct)

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CLYST (100%) v/ Itgy, Itgy, v/ sft / mshy, n-calc, rr sl sly, tr inbd mic biot, w/ no vis SS unconsol Qtz

SPLS Fair-Good

CLYST (100%) v/ Itgy, Itgy, v/ sft / mshy, n-calc, rr sl sly, tr inbd mic biot, w/ no vis SS unconsol Qtz

TD @ SCP on 9-12-14 @ 2230 hrs @ 1093'

CLYST (90%) v/ Itgy, Itgy, v/ sft / mshy, sl frm ip, n-calc, rr sl sly, tr inbd mic biot, w/ 10% Cmt, w/ no vis SS unconsol Qtz

NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT All data shifted 8' downhole (1130'-5500') shifted to 1138'-5508' including spl descriptions

CLYST (100%) v/ Itgy, Itgy, sft, sl frm ip, n-calc, rr sl sly, tr inbd mic biot, w/ tr Cmt, w/ no vis SS unconsol Qtz

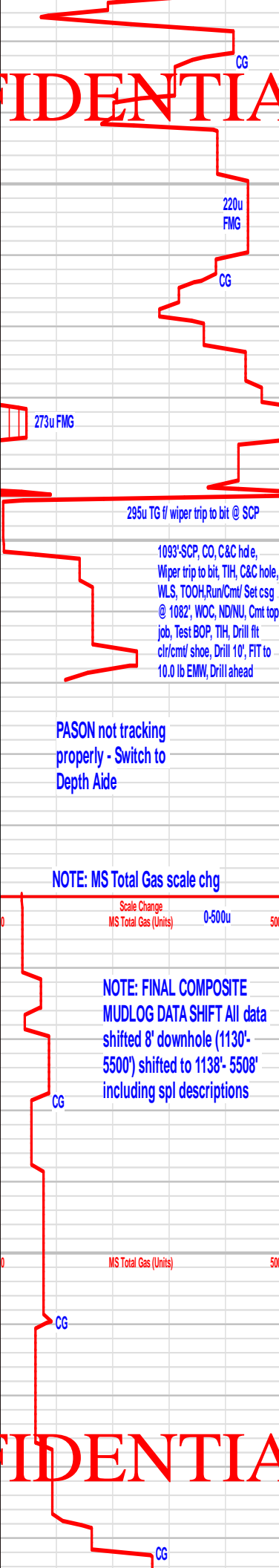
CLYST (100%) Itgy, v/ Itgy, sft-frm ip, n-calc, rr sl sly, tr inbd mic biot, w/ no vis SS unconsol Qtz

CLYST (90%) Itgy, v/ Itgy, sft-frm ip, n-calc, rr sl sly, tr inbd mic biot, w/ SS (10%) Itgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod- abnd cly fil cmt, rr glauc, rr inbd biot, NFSO, no vis poro

CLYST (85%) Itgy, v/ Itgy, sft-frm ip, n-calc, rr sl sly, tr inbd mic biot, w/ SS (15%) Itgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl

1024' Slow ROP to pick SCP in spls  
Mud Check @ 1093'  
Wt 8.4  
Vis 28  
Pv 2  
Yp 2  
Gels 2/2  
Fil 29.0  
Ck 1  
Sol 4.0  
Sd 0.75  
pH 8.6  
Chl 300  
Ca 100  
Bit #1 drld 999' in 14.5 hrs (avg 68.9 ft/hr)  
NB #2, 8 3/4", Hughes, DP505, 7x16 jets, PDC, in at 1093', w/ Mtr & Jars  
IE Mud Chk @ 1093'  
Wt 9.5  
Vis 40  
Pv 16  
Yp 14  
Gels 4/8  
Fil 5.0  
Ck 1  
Sol 12.0  
ES 780  
Lime 12.9  
OW 78/22

SPM 0/123  
NOTE: No spl cuts made on cuttings, everything cutting in Invert Emulsion mud  
Both pumps on hole  
SPM 100/100



NOTE: MS Total Gas scale chg

NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT All data shifted 8' downhole (1130'-5500') shifted to 1138'-5508' including spl descriptions

1093'-SCP, CO, C&C hde, Wiper trip to bit, TIH, C&C hole, WLS, TOOH, Run/Cmt/ Set csg @ 1082', WOC, ND/NU, Cmt top job, Test BOP, TIH, Drill fit clr/cmt/ shoe, Drill 10', FIT to 10.0 lb EMW, Drill ahead

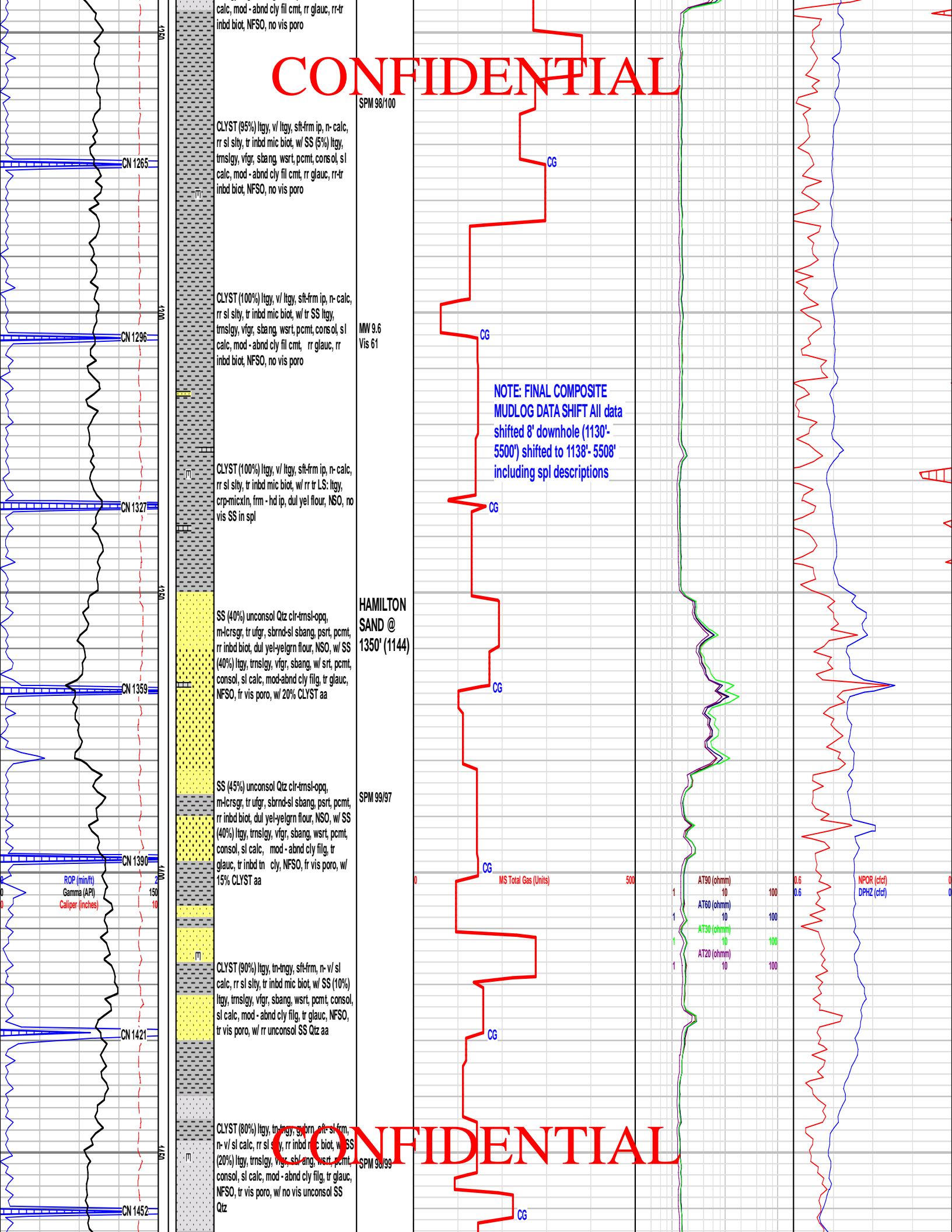
PASON not tracking properly - Switch to Depth Aide

AT90 (ohmm)	10	100	0.6	NPOR (clct)	0
AT60 (ohmm)	10	100		DPHZ (clct)	0
AT30 (ohmm)	10	100			
AT20 (ohmm)	10	100			

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calc, mod - abnd cly fil cmt, rr glauc, rr-tr inbd biot, NFSO, no vis poro

CLYST (95%) ltgy, v/ ltgy, sft-frm ip, n-calc, rr sl stly, tr inbd mic biot, w/ SS (5%) ltgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod - abnd cly fil cmt, rr glauc, rr-tr inbd biot, NFSO, no vis poro

CLYST (100%) ltgy, v/ ltgy, sft-frm ip, n-calc, rr sl stly, tr inbd mic biot, w/ tr SS ltgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod - abnd cly fil cmt, rr glauc, rr inbd biot, NFSO, no vis poro

CLYST (100%) ltgy, v/ ltgy, sft-frm ip, n-calc, rr sl stly, tr inbd mic biot, w/ rr tr LS: ltgy, crp-micxln, frm - hd ip, dul yel flour, NSO, no vis SS in spl

SS (40%) unconsol Qtz clr-trnsl-opq, m-hcrsgr, tr uigr, sbrnd-sl sbang, psrt, pcmt, rr inbd biot, dul yel-yelgrn flour, NSO, w/ SS (40%) ltgy, trnslgy, vfg, sbang, w/ srt, pcmt, consol, sl calc, mod-abnd cly filg, tr glauc, NFSO, fr vis poro, w/ 20% CLYST aa

SS (45%) unconsol Qtz clr-trnsl-opq, m-hcrsgr, tr uigr, sbrnd-sl sbang, psrt, pcmt, rr inbd biot, dul yel-yelgrn flour, NSO, w/ SS (40%) ltgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod - abnd cly filg, tr glauc, tr inbd tn cly, NFSO, fr vis poro, w/ 15% CLYST aa

CLYST (90%) ltgy, tn-tingy, sft-frm, n-v/ sl calc, rr sl stly, tr inbd mic biot, w/ SS (10%) ltgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod - abnd cly filg, tr glauc, NFSO, tr vis poro, w/ rr unconsol SS Qtz aa

CLYST (80%) ltgy, tn-tingy, sbrnd-sft-frm, n-v/ sl calc, rr sl stly, tr inbd mic biot, w/ SS (20%) ltgy, trnslgy, vfg, sbang, wsrt, pcmt, consol, sl calc, mod - abnd cly filg, tr glauc, NFSO, tr vis poro, w/ no vis unconsol SS Qtz

SPM 98/100

MW 9.6  
Vis 61

HAMILTON SAND @ 1350' (1144)

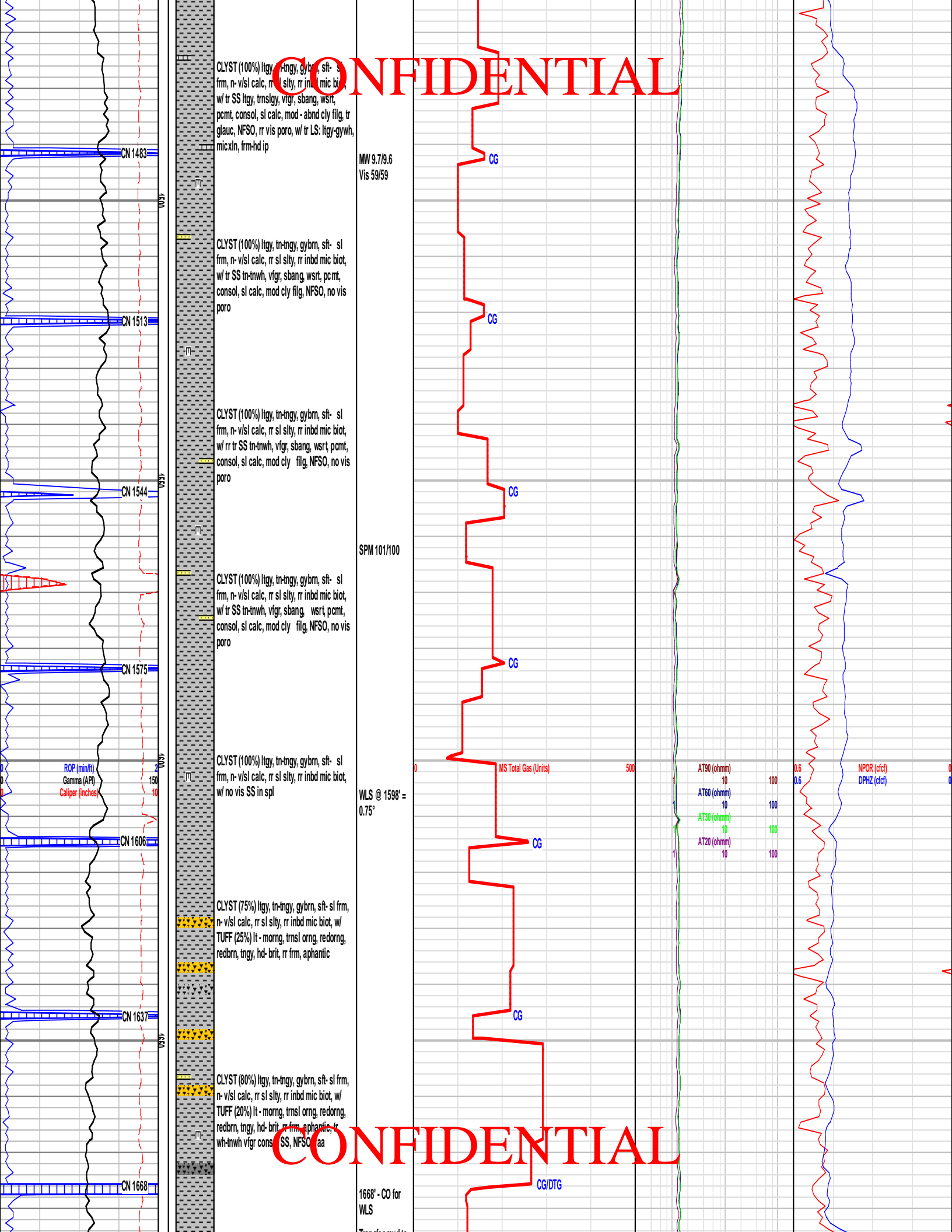
SPM 99/97

SPM 99/99

NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT All data shifted 8' downhole (1130'-5500') shifted to 1138'-5508' including spl descriptions

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CLYST (100%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ tr SS ltgy, trnslgy, vfg, sbang, wsr, pamt, consol, sl calc, mod - abnd cly filg, tr glauc, NFSO, rr vis poro, w/ tr LS: ltgy-gywh, micxin, frm-hd ip

MW 9.7/9.6  
Vis 59/59

CLYST (100%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ tr SS tn-twh, vfg, sbang, wsr, pamt, consol, sl calc, mod cly filg, NFSO, no vis poro

CLYST (100%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ tr SS tn-twh, vfg, sbang, wsr, pamt, consol, sl calc, mod cly filg, NFSO, no vis poro

CLYST (100%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ tr SS tn-twh, vfg, sbang, wsr, pamt, consol, sl calc, mod cly filg, NFSO, no vis poro

CLYST (100%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ no vis SS in spl

WLS @ 1598' =  
0.75°

CLYST (75%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ TUFF (25%) lt - mornng, trnsl org, redorg, redbrn, tngy, hd- brit, rr frm, aphanic

CLYST (80%) ltgy, tn-tngy, gybrn, sft- sl frm, n- v/sl calc, rr sl stly, rr inbd mic biot, w/ TUFF (20%) lt - mornng, trnsl org, redorg, redbrn, tngy, hd- brit, rr frm, aphanic, tr wh-twh vfgr consol, SS, NFSO, aa

1668' - CO for  
WLS

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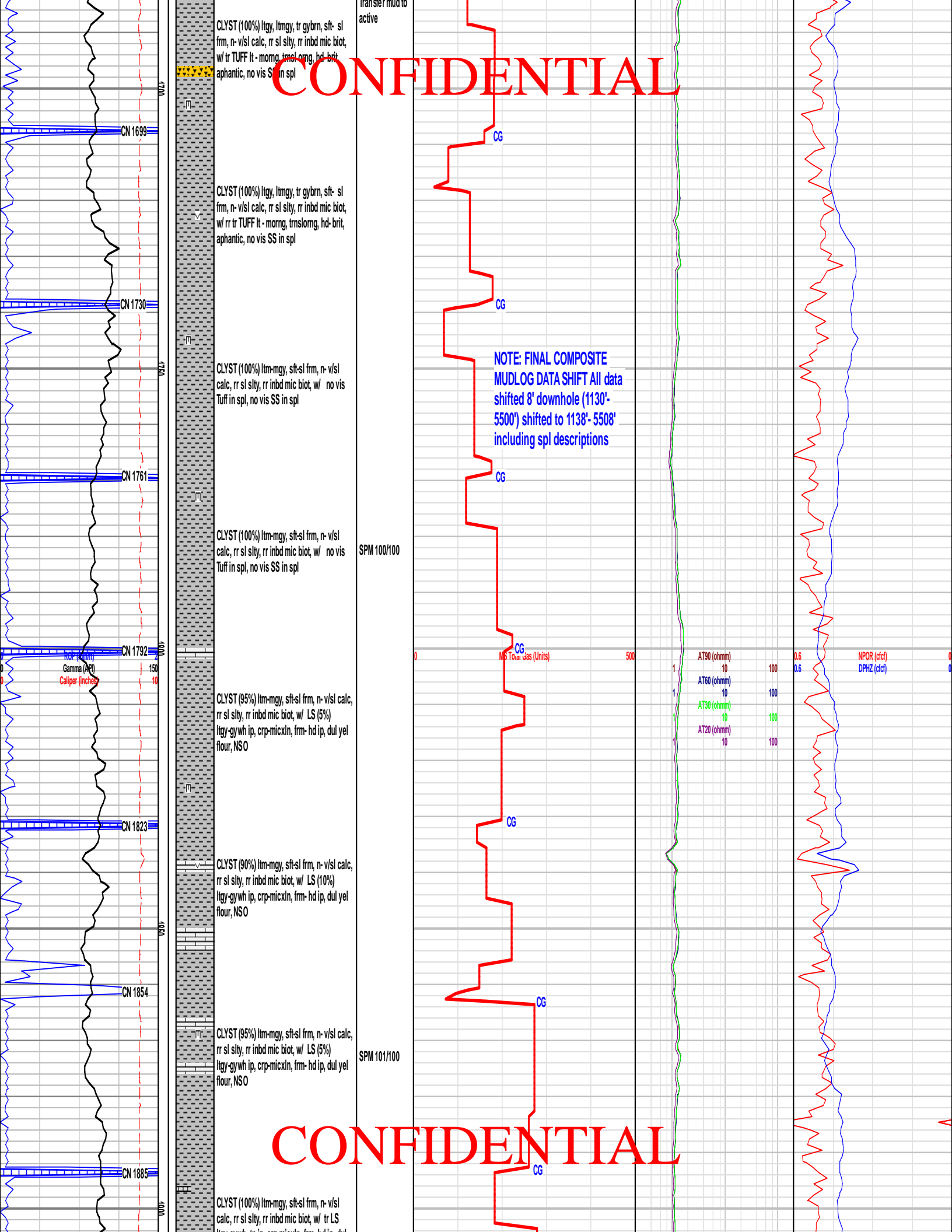
ROP (min/ft)  
Gamma (API)  
Caliper (inches)

MS Total Gas (Units)

AT90 (ohmm)  
10 100  
AT60 (ohmm)  
10 100  
AT30 (ohmm)  
10 100  
AT20 (ohmm)  
10 100

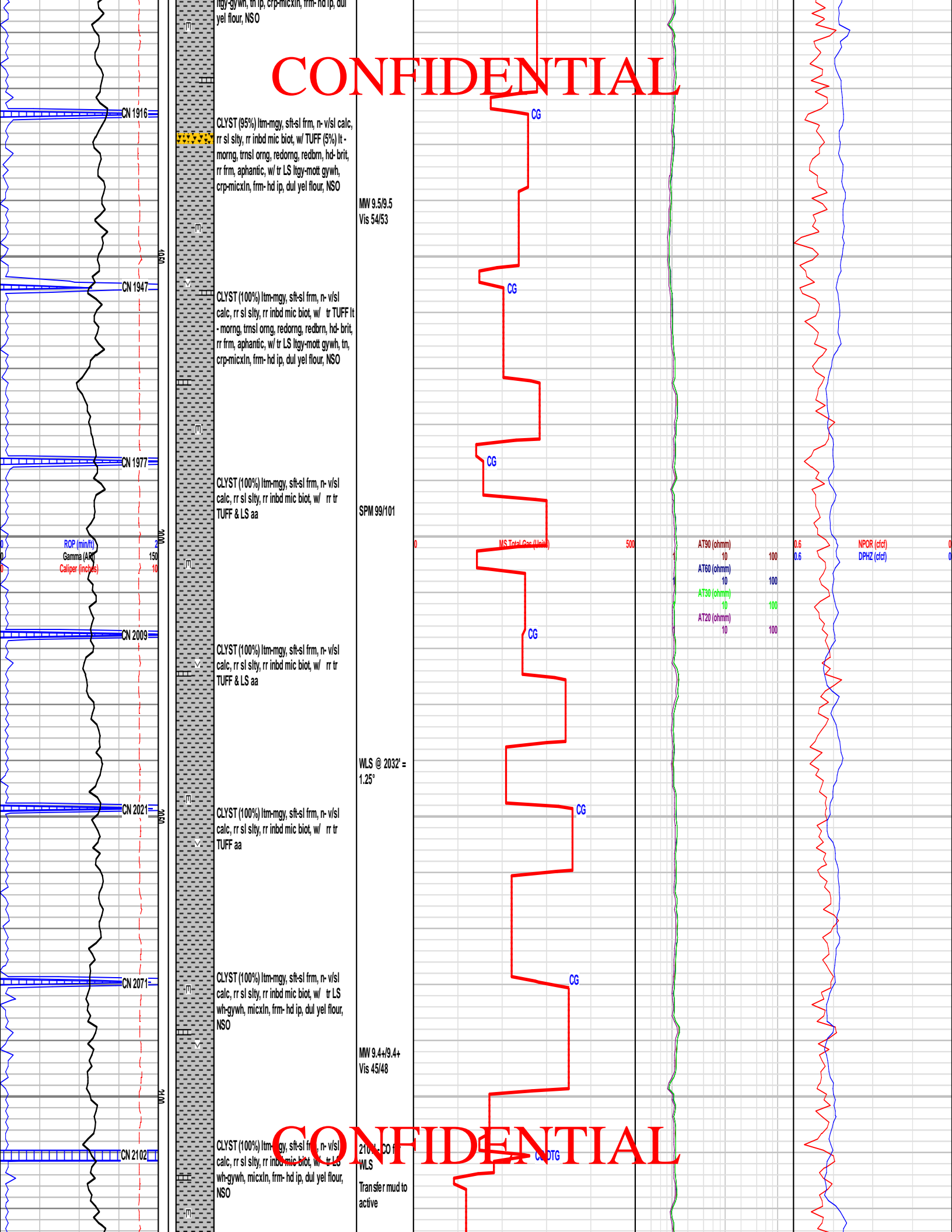
NPOR (c/cf)  
DPHZ (c/cf)

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CN 1916  
 CLYST (95%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ TUFF (5%) lt-morg, trnsl org, redorg, redbrn, hd-brit, rr frm, aphantic, w/ tr LS ltgy-mott gywh, crp-micxln, frm-hd ip, dul yel flour, NSO

MW 9.5/9.5  
 Vis 54/53

CN 1947  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ tr TUFF lt-morg, trnsl org, redorg, redbrn, hd-brit, rr frm, aphantic, w/ tr LS ltgy-mott gywh, tn, crp-micxln, frm-hd ip, dul yel flour, NSO

CN 1977  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ rr tr TUFF & LS aa

SPM 99/101

ROP (min/ft)  
 Gamma (API)  
 Caliper (inches)

CN 2009  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ rr tr TUFF & LS aa

WLS @ 2032' =  
 1.25°

CN 2021  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ rr tr TUFF aa

CN 2071  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ tr LS wh-gywh, micxln, frm-hd ip, dul yel flour, NSO

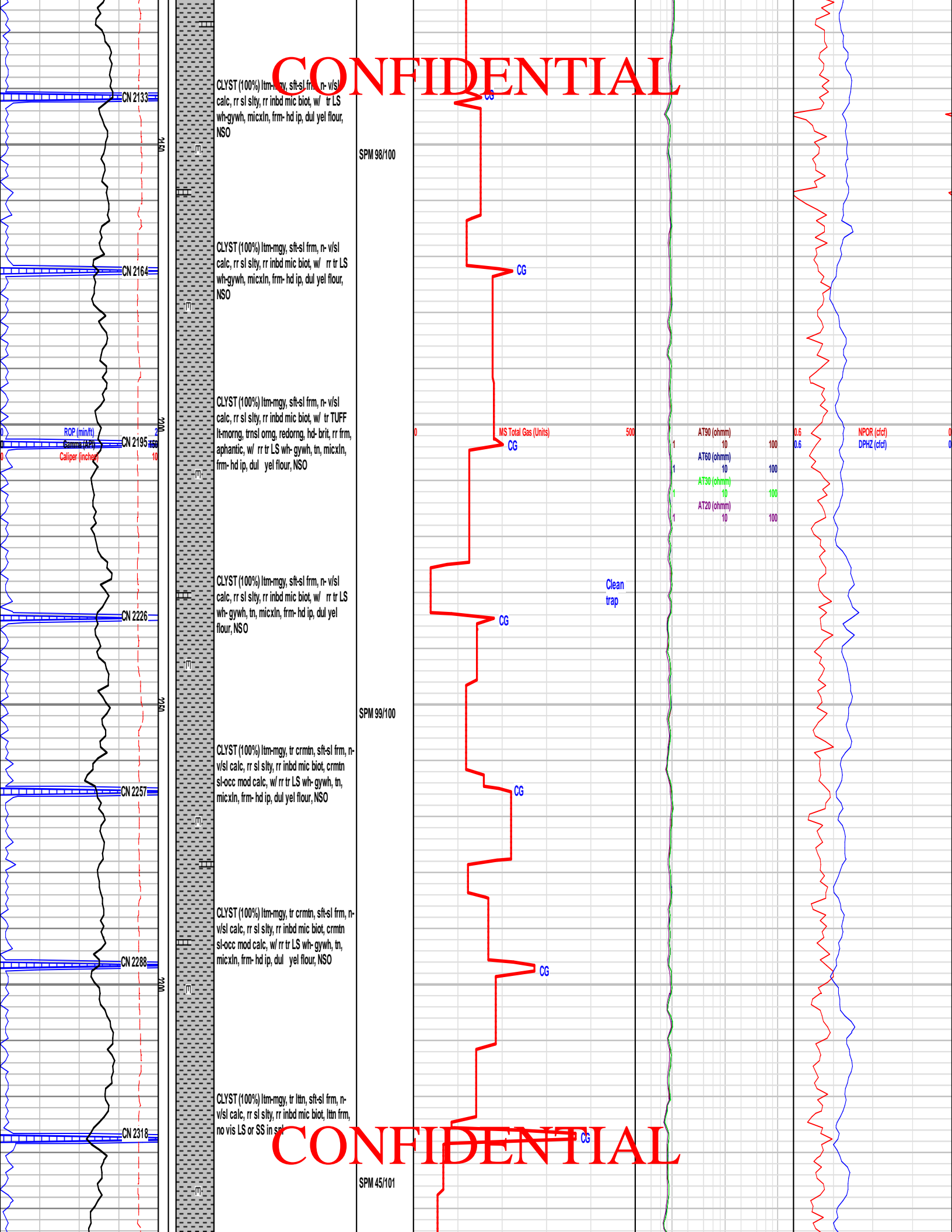
MW 9.4+/9.4+  
 Vis 45/48

CN 2102  
 CLYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, rr inbd mic biot, w/ tr LS wh-gywh, micxln, frm-hd ip, dul yel flour, NSO

2102 CO f  
 WLS  
 Transfer mud to active

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CLYST (100%) ltm-mgy, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, w/ tr LS wh-gywh, micxn, frm-hd ip, dul yel flour, NSO

SPM 98/100

CLYST (100%) ltm-mgy, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, w/ tr LS wh-gywh, micxn, frm-hd ip, dul yel flour, NSO

CLYST (100%) ltm-mgy, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, w/ tr TUFF lt-morg, trsl org, redorg, hd-brit, rr fr, aphantic, w/ rr tr LS wh-gywh, tn, micxn, frm-hd ip, dul yel flour, NSO

CLYST (100%) ltm-mgy, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, w/ tr LS wh-gywh, tn, micxn, frm-hd ip, dul yel flour, NSO

SPM 99/100

CLYST (100%) ltm-mgy, tr crmin, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, crmin sl-occ mod calc, w/ rr tr LS wh-gywh, tn, micxn, frm-hd ip, dul yel flour, NSO

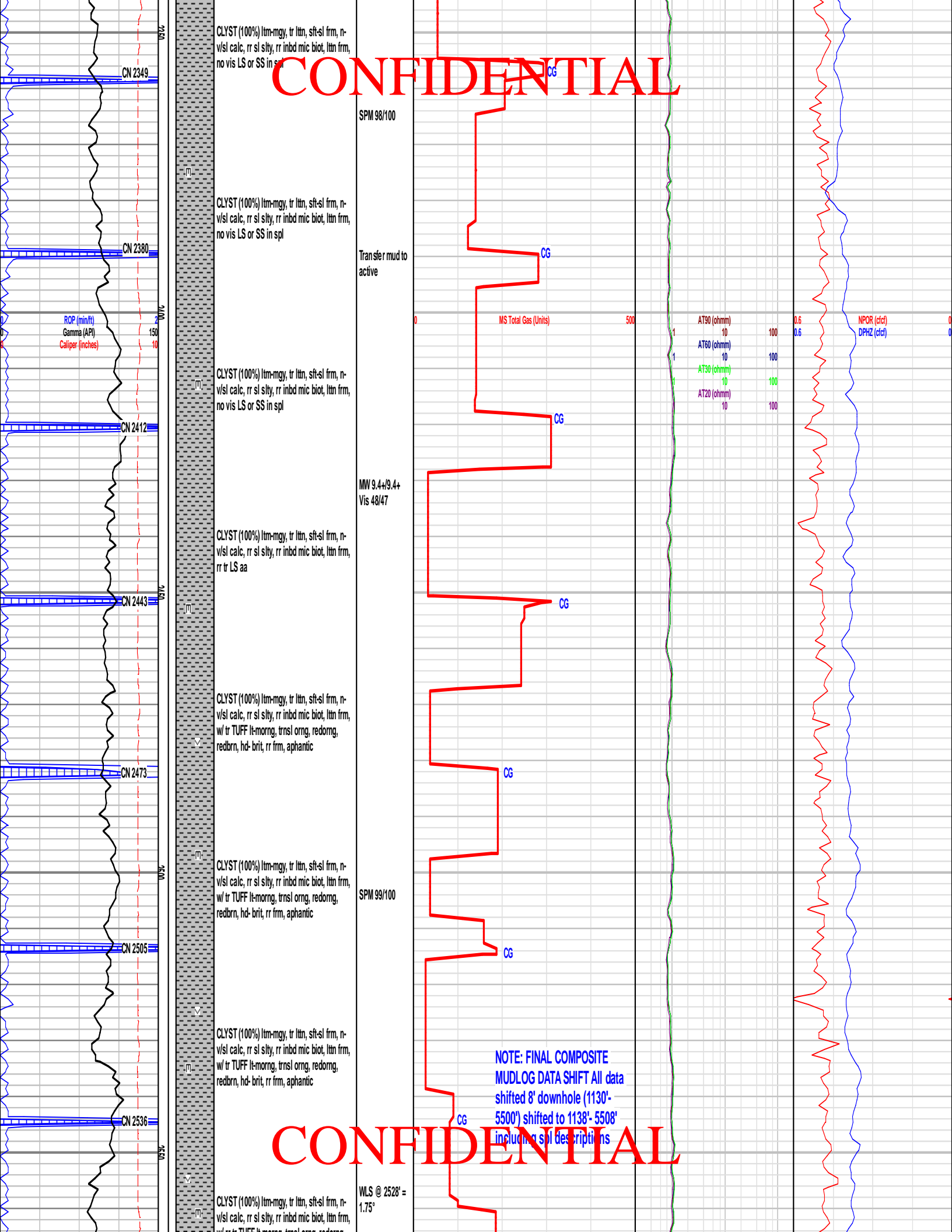
CLYST (100%) ltm-mgy, tr crmin, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, crmin sl-occ mod calc, w/ rr tr LS wh-gywh, tn, micxn, frm-hd ip, dul yel flour, NSO

CLYST (100%) ltm-mgy, tr ltn, sft-sl frm, n-vsl calc, rr sl slty, rr inbd mic biot, ltn frm, no vis LS or SS in s

SPM 45/101

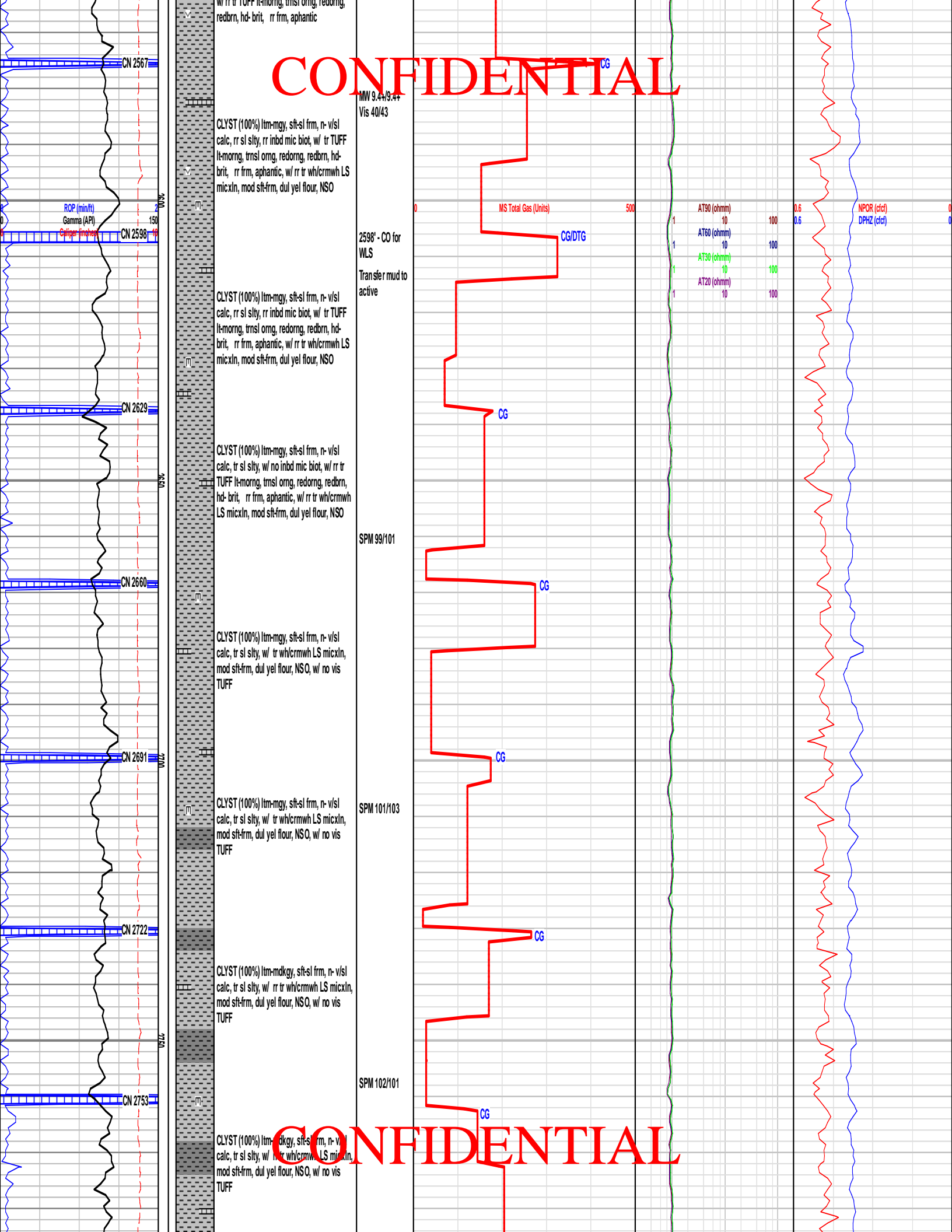
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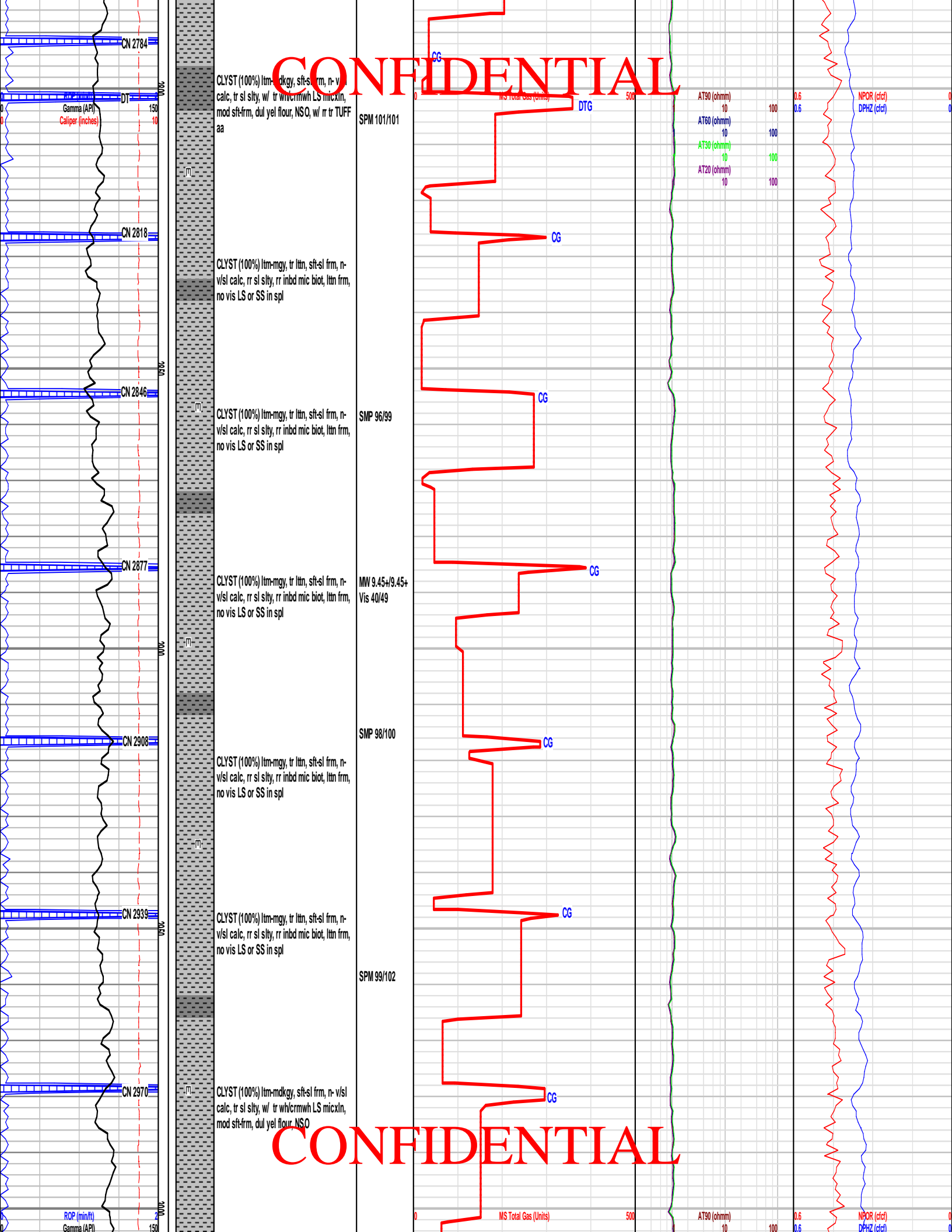
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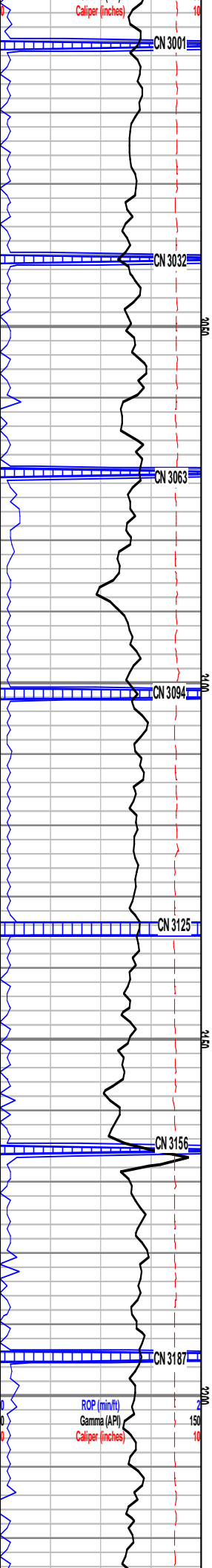
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CN 3001  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, tr sl slty, w/ tr wh/crmwh LS micxln, mod sft-frm, dul yel flour, NSO

CN 3032  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, tr sl slty, w/ tr wh/crmwh LS micxln, mod sft-frm, dul yel flour, NSO

CN 3063  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/crs-mgr, sbang-ang, psrt, pcmt, w/ tr SS ltm-tmwh, vfgr, sbang, wrst, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CN 3094  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/crs-mgr, sbang-ang, psrt, pcmt, w/ tr SS ltm-tmwh, vfgr, sbang, wrst, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CN 3125  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ tr SS ltm-tmwh, vfgr, sbang, wrst, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CN 3156  
 CLYST (100%) ltm-mdkgy, sft-sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ tr SS ltm-tmwh, vfgr, sbang, wrst, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CN 3187  
 CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CN 3218  
 CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr sl slty, rr inbd mic biot, w/ tr SS unconsol Qtz: clr-trnsl- opq, v/ m-crsgr,

SPM 99/100  
 WLT 9.45/9.45  
 VIS 47/46

SPM 99/101  
 WLS @ 3055' = 2.5°

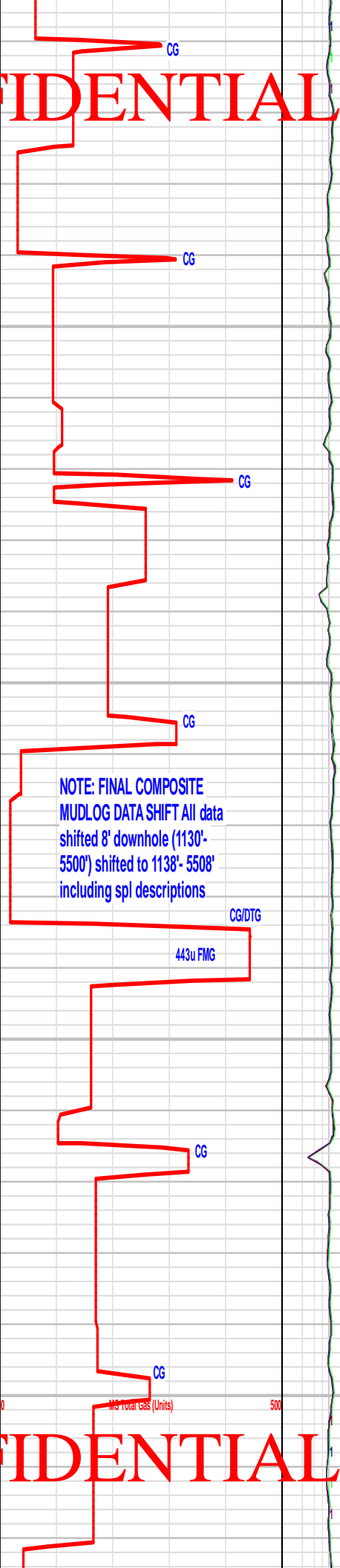
SPM 99/101

3125' - CO for WLS  
 Transfer mud to active

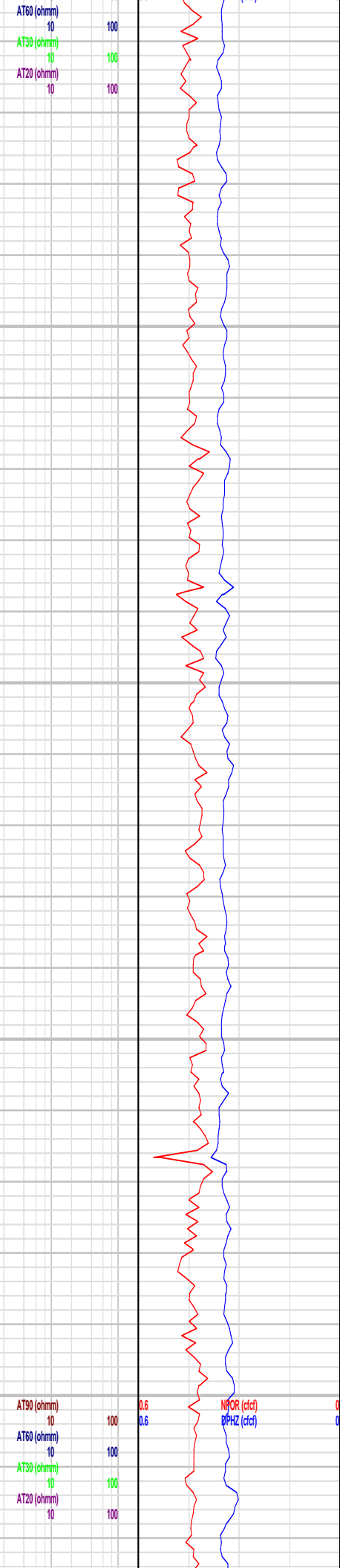
SPM 99/102

SPM 101/10

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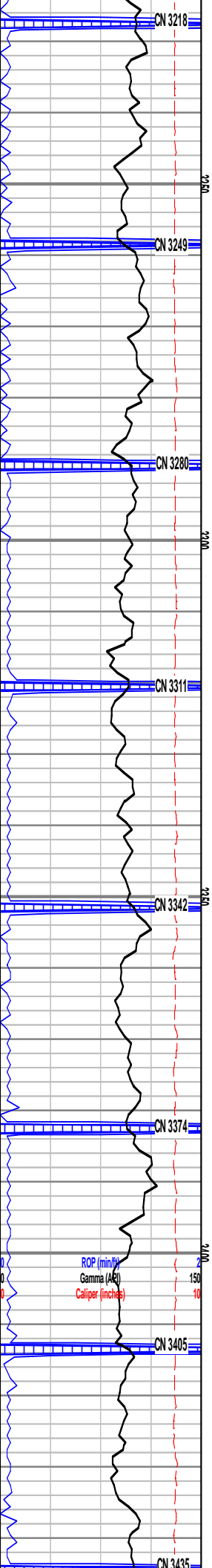


NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT ALL data shifted 8' downhole (1130'- 5500') shifted to 1138'- 5508' including spl descriptions



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sbang-ang, psrt, pcmt, w/ no vis consol SS

CN 3218

CN 3249

CN 3280

CN 3311

CN 3342

CN 3374

CN 3405

CN 3435

CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr SS unconsol Qtz clt-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr tr sl slty, no vis inbd mic biot, w/ rr SS unconsol Qtz clt-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr tr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clt-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CLYST (100%) m-mdkgy, sft- sl frm, n- v/sl calc, rr tr sl slty, no vis inbd mic biot, w/ no vis SS unconsol Qtz, w/ no vis consol SS

CLYST (100%) m-mdkgy, sft- sl frm, n- v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clt-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ rr SS ltr-tmwh, v/ gr, sbang, wsr, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CLYST (100%) ltm-mdkgy, sft- sl frm, n- v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clt-trnsl- opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ rr tr SS ltr-tmwh, v/ gr, sbang, wsr, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

SPM 100/102

SPM 104/104

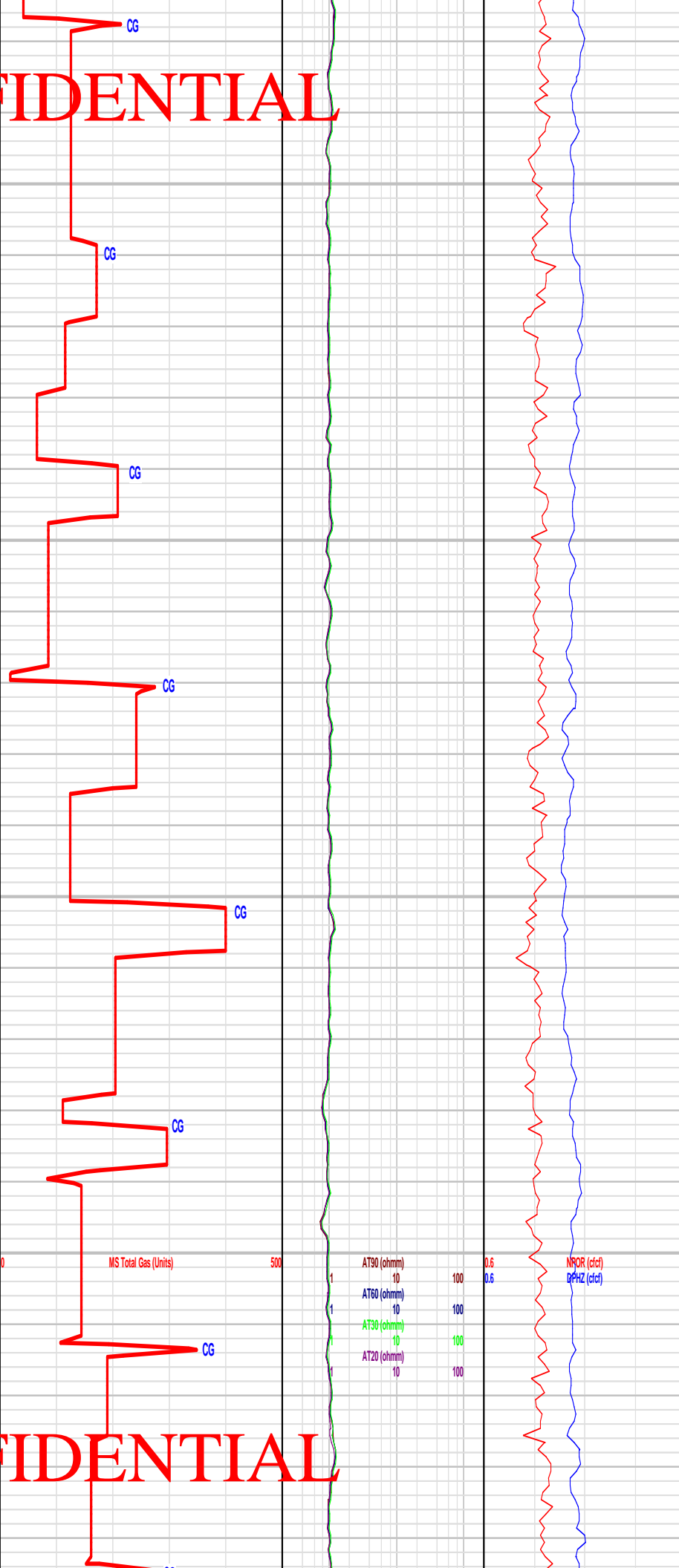
MWT 9.5/9.45  
VIS 42/45

SPM 101/101

SPM 101/102

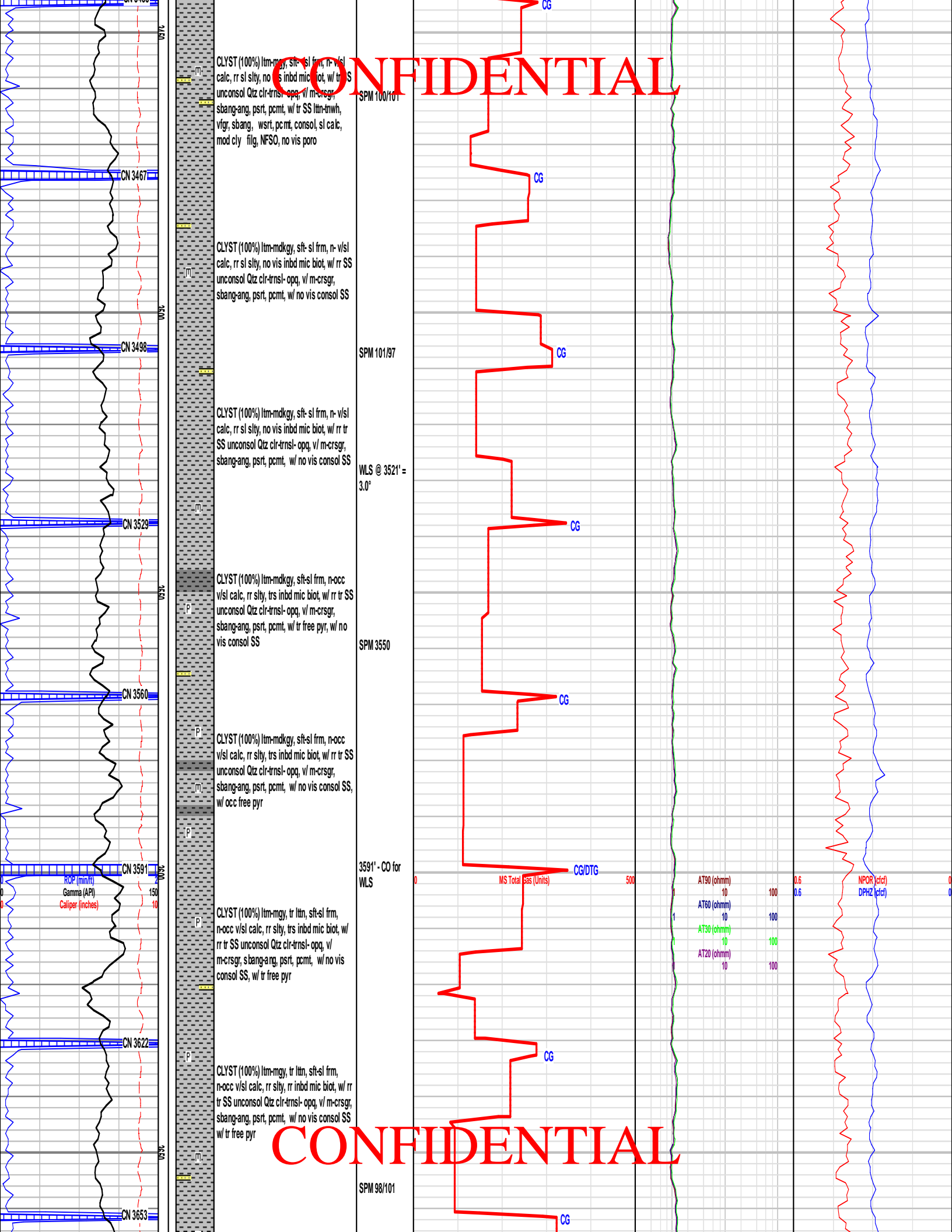
Transfer mud to active

Transfer mud to active



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CYST (100%) ltm-mgy, sft-sl frm, n-v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ tr SS ltm-tnwh, v/ gr, sbang, wsr, pcmt, consol, sl calc, mod cly filg, NFSO, no vis poro

CYST (100%) ltm-mdkgy, sft-sl frm, n-v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CYST (100%) ltm-mdkgy, sft-sl frm, n-v/sl calc, rr sl slty, no vis inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS

CYST (100%) ltm-mdkgy, sft-sl frm, n-occ v/sl calc, rr slty, trs inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ tr free pyr, w/ no vis consol SS

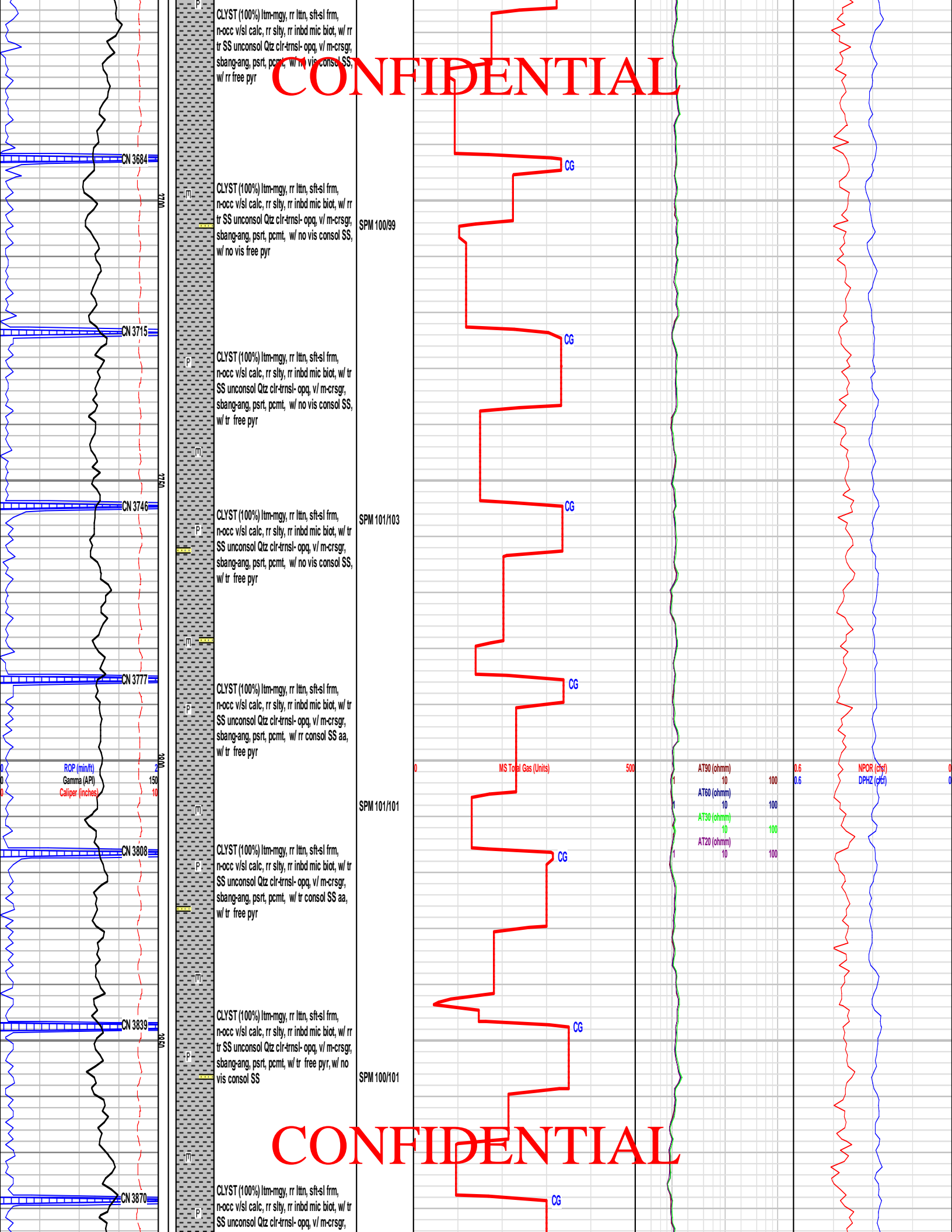
CYST (100%) ltm-mdkgy, sft-sl frm, n-occ v/sl calc, rr slty, trs inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS, w/ occ free pyr

CYST (100%) ltm-mgy, tr ltm, sft-sl frm, n-occ v/sl calc, rr slty, trs inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS, w/ tr free pyr

CYST (100%) ltm-mgy, tr ltm, sft-sl frm, n-occ v/sl calc, rr slty, trs inbd mic biot, w/ rr tr SS unconsol Qtz clr-trnsl-opq, v/ m-crsgr, sbang-ang, psrt, pcmt, w/ no vis consol SS w/ tr free pyr

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CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
tr SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ no vis consol SS,  
w/ rr free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
tr SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ no vis consol SS,  
w/ no vis free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ no vis consol SS,  
w/ tr free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ no vis consol SS,  
w/ tr free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ tr  
SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ rr consol SS aa,  
w/ tr free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ tr consol SS aa,  
w/ tr free pyr

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
tr SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,  
sbang-ang, psrt, pcmt, w/ tr free pyr, w/ no  
vis consol SS

CLYST (100%) ltm-mgy, rr ltn, sft-sl frm,  
n-occ v/sl calc, rr stly, rr inbd mic biot, w/ rr  
SS unconsol Qtz clr-trnsl- opq, v/ m-crsgr,

SPM 100/99

SPM 101/103

SPM 101/101

SPM 100/101

CG

CG

CG

CG

CG

CG

CG

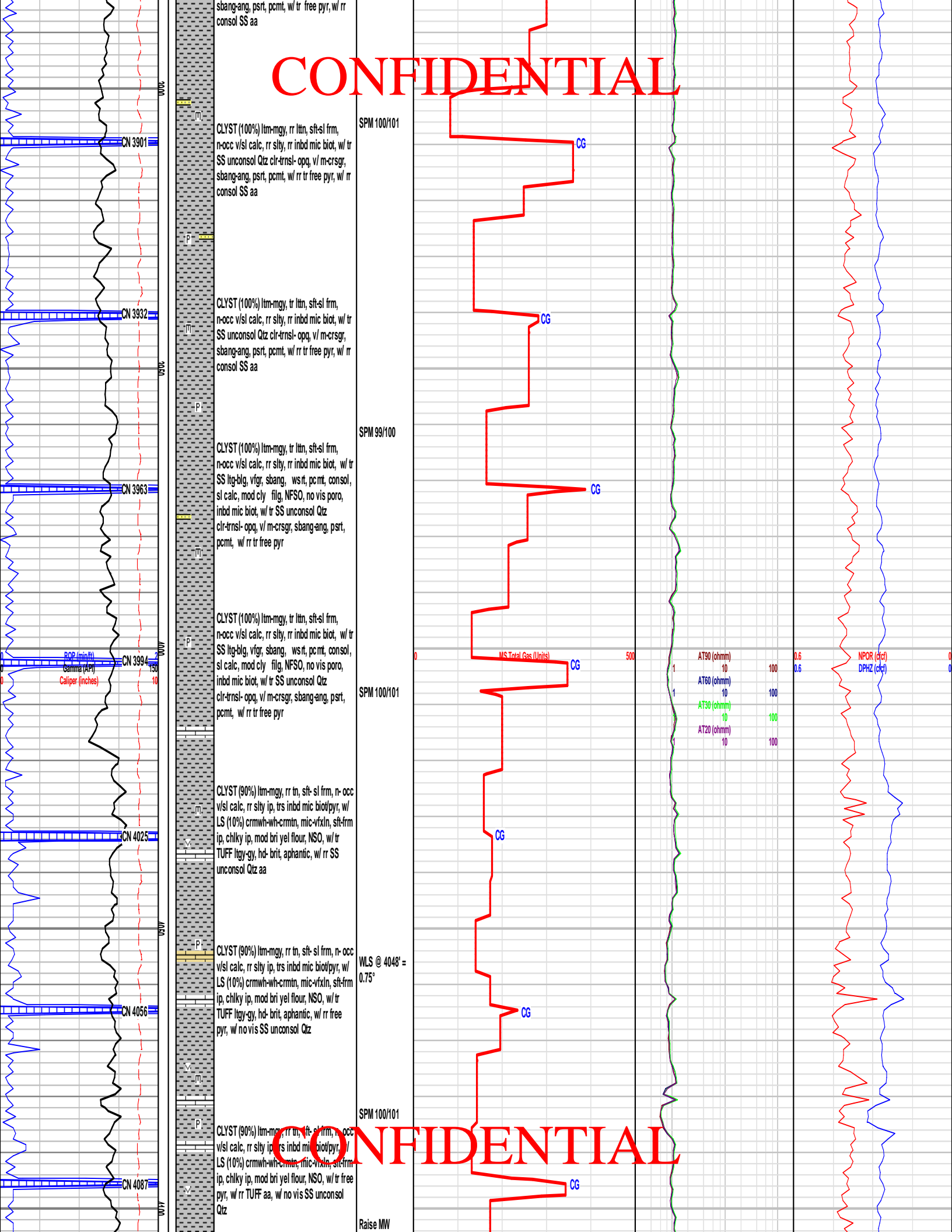
MS Total Gas (Units)

AT90 (ohmm) 10 100  
AT60 (ohmm) 10 100  
AT30 (ohmm) 10 100  
AT20 (ohmm) 10 100

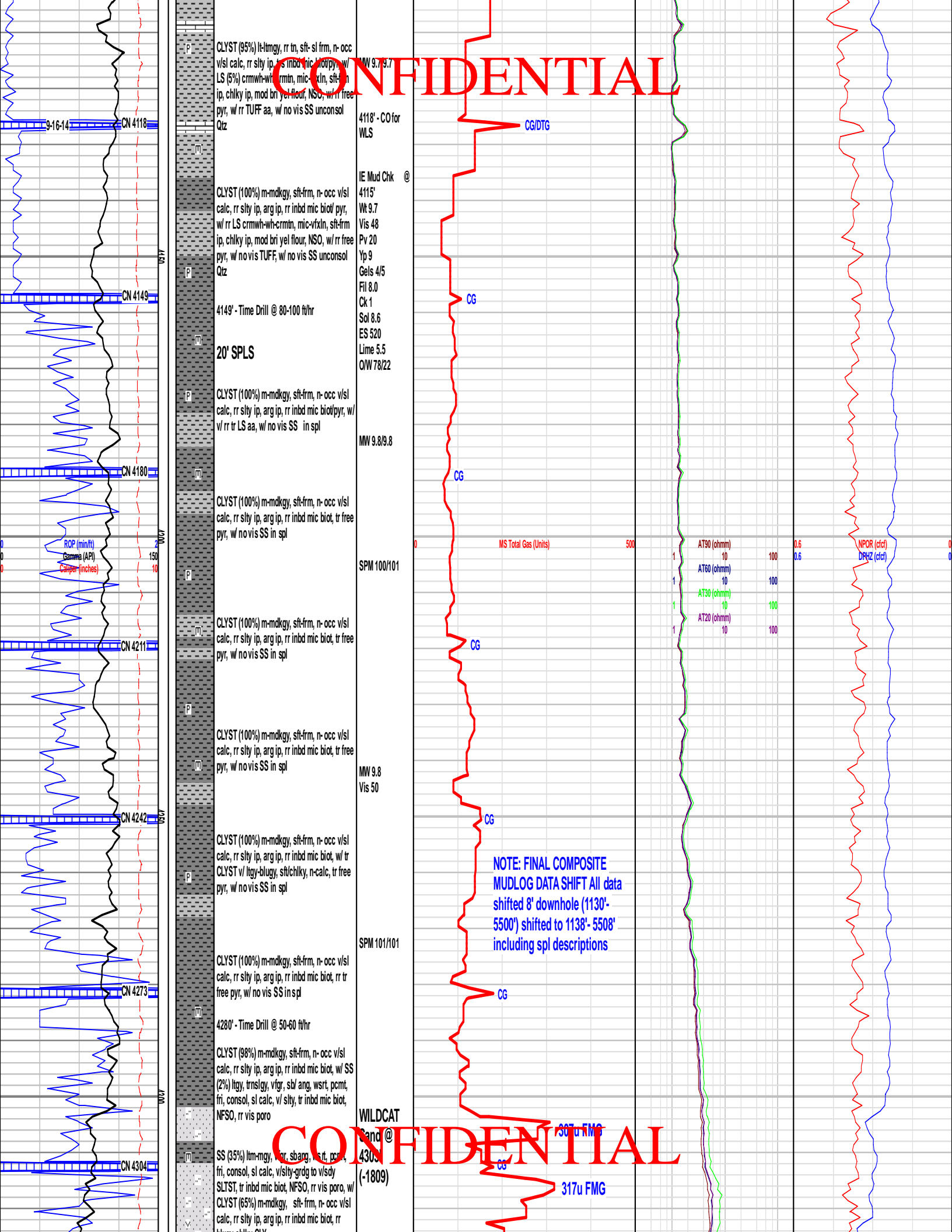
NPOR (cst) 0.6  
DPHZ (cst) 0.6

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CLYST (95%) lt-lmgy, rr tn, sft- sl frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot/ pyr, w/ LS (5%) crmwht-w/ crmin, mic- xln, sft- in ip, chiky ip, mod brn yel flour, NSO, w/ rr free pyr, w/ rr TUFF aa, w/ no vis SS unconsol Qtz

MW 9.7/9.7  
4118' - CO for WLS

IE Mud Chk @ 4115'  
Wt 9.7  
Vis 48  
Pv 20  
Yp 9  
Gels 4/5  
Flt 8.0  
Ck 1  
Sol 8.6  
ES 520  
Lime 5.5  
QW 78/22

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot/ pyr, w/ rr LS crmwht-w/ crmin, mic-v/xln, sft-frm ip, chiky ip, mod brn yel flour, NSO, w/ rr free pyr, w/ no vis TUFF, w/ no vis SS unconsol Qtz

4149' - Time Drill @ 80-100 ft/hr

20' SPLS

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot/ pyr, w/ rr tr LS aa, w/ no vis SS in spl

MW 9.8/9.8

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, tr free pyr, w/ no vis SS in spl

SPM 100/101

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, tr free pyr, w/ no vis SS in spl

MW 9.8  
Vis 50

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, w/ tr CLYST v/ ltyg-blugy, sft/chiky, n-calc, tr free pyr, w/ no vis SS in spl

SPM 101/101

CLYST (100%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, rr tr free pyr, w/ no vis SS in spl

4280' - Time Drill @ 50-60 ft/hr

CLYST (98%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, w/ SS (2%) ltyg, trnslyg, vlygr, sb/ ang, wsrp, pcmt, fri, consol, sl calc, v/ sity, tr inbd mic biot, NFSO, rr vis poro

WILDCAT Sand @ 4300' (-1809)

SS (35%) ltm-mgy, w/ sb ang, v/ sity, pcmt, fri, consol, sl calc, v/sity-grdg to v/sdy SLTST, tr inbd mic biot, NFSO, rr vis poro, w/ CLYST (65%) m-mdkgy, sft-frm, n-occ v/sl calc, rr sly ip, arg ip, rr inbd mic biot, rr

MS Total Gas (Units)	500
AT90 (ohmm)	10
AT60 (ohmm)	10
AT30 (ohmm)	10
AT20 (ohmm)	10

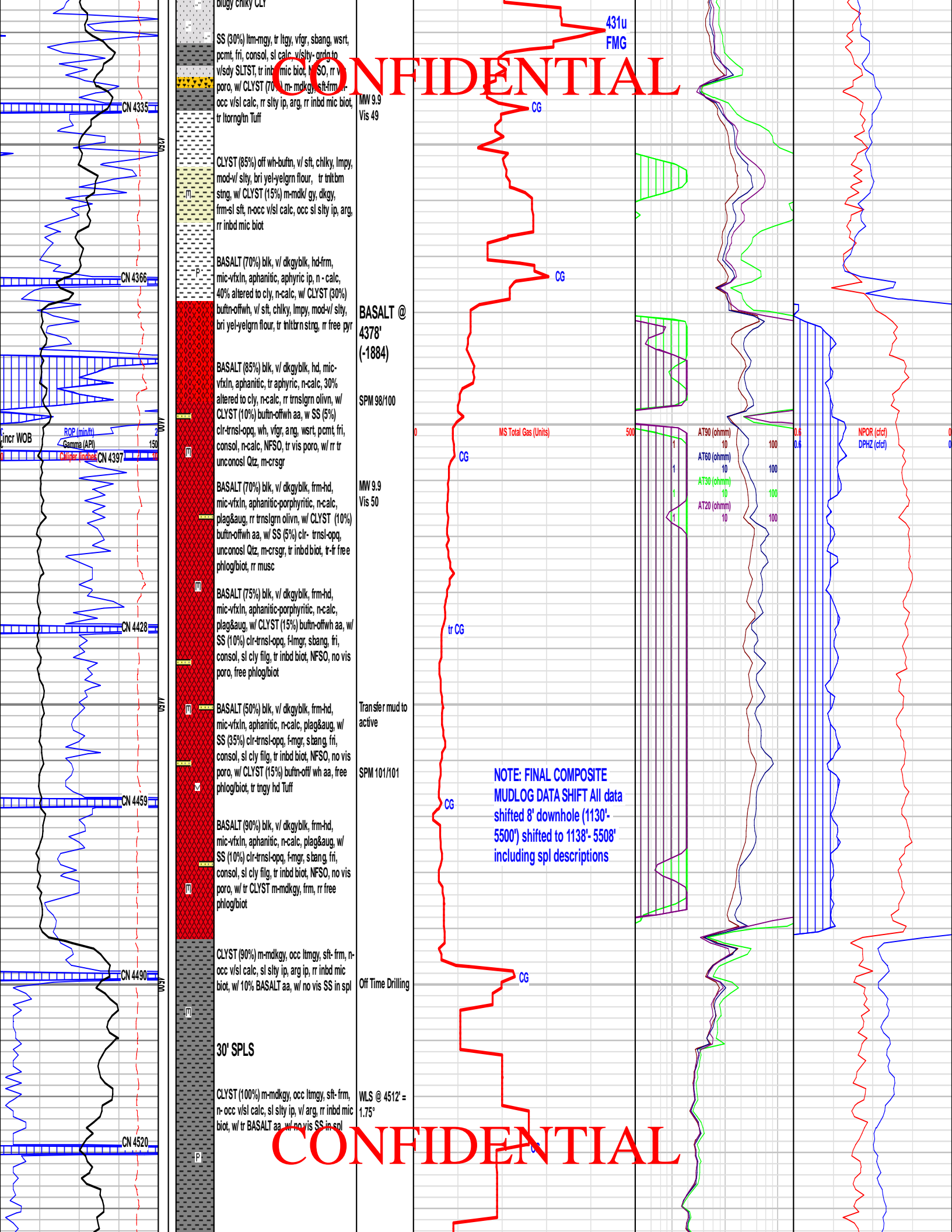
NPOR (c/cf)	0.6
DPHZ (c/cf)	0.6

NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT All data shifted 8' downhole (1130'-5500') shifted to 1138'-5508' including spl descriptions

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317u FMG

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bugly chky CLY  
 SS (30%) ltm-mgy, tr ltgy, vfg, sbang, wrst, pamt, fri, consol, sl calc, v/slty-ordg to v/sdy SLTST, tr int mic biot, NFSO, rr v poro, w/ CLYST (70%) m-mdkgy, sft-fm, r occ vsl calc, rr slty ip, arg, rr inbd mic biot, tr ltorgn Tuff

CLYST (85% off wh-bufn, v/ sft, chky, lmpy, mod-v/ slty, bri yel-yelgrn flour, tr trltbm stng, w/ CLYST (15%) m-mdk/ gy, dkgy, frm-sl sft, n-occ vsl calc, occ sl slty ip, arg, rr inbd mic biot

BASALT (70%) blk, v/ dkgyblk, hd-fm, mic-vfxln, aphanitic, aphyric ip, n- calc, 40% altered to cly, n-calc, w/ CLYST (30%) bufn-offwh, v/ sft, chky, lmpy, mod-v/ slty, bri yel-yelgrn flour, tr inlttrn strg, rr free pyr

**BASALT @ 4378' (-1884)**

BASALT (85%) blk, v/ dkgyblk, hd, mic-vfxln, aphanitic, tr aphyric, n-calc, 30% altered to cly, n-calc, rr trnslgrn olivn, w/ CLYST (10%) bufn-offwh aa, w SS (5%) clr-trnsl-opq, wh, vfg, ang, wrst, pamt, fri, consol, n-calc, NFSO, tr vis poro, w/ rr tr unconosl Qtz, m-crsg

SPM 98/100

BASALT (70%) blk, v/ dkgyblk, frm-hd, mic-vfxln, aphanitic-porphyrific, n-calc, plag&aug, rr trnslgrn olivn, w/ CLYST (10%) bufn-offwh aa, w SS (5%) clr- trnsl-opq, unconosl Qtz, m-crsg, tr inbd biot, r-fr free phlog/biot, rr musc

MW 9.9 Vis 50

BASALT (75%) blk, v/ dkgyblk, frm-hd, mic-vfxln, aphanitic-porphyrific, n-calc, plag&aug, w/ CLYST (15%) bufn-offwh aa, w SS (10%) clr-trnsl-opq, f-mgr, sbang, fri, consol, sl cly filg, tr inbd biot, NFSO, no vis poro, free phlog/biot

BASALT (50%) blk, v/ dkgyblk, frm-hd, mic-vfxln, aphanitic, n-calc, plag&aug, w/ SS (35%) clr-trnsl-opq, f-mgr, sbang, fri, consol, sl cly filg, tr inbd biot, NFSO, no vis poro, w/ CLYST (15%) bufn-off wh aa, free phlog/biot, tr tngy hd Tuff

Transfer mud to active

SPM 101/101

BASALT (90%) blk, v/ dkgyblk, frm-hd, mic-vfxln, aphanitic, n-calc, plag&aug, w/ SS (10%) clr-trnsl-opq, f-mgr, sbang, fri, consol, sl cly filg, tr inbd biot, NFSO, no vis poro, w/ tr CLYST m-mdkgy, frm, rr free phlog/biot

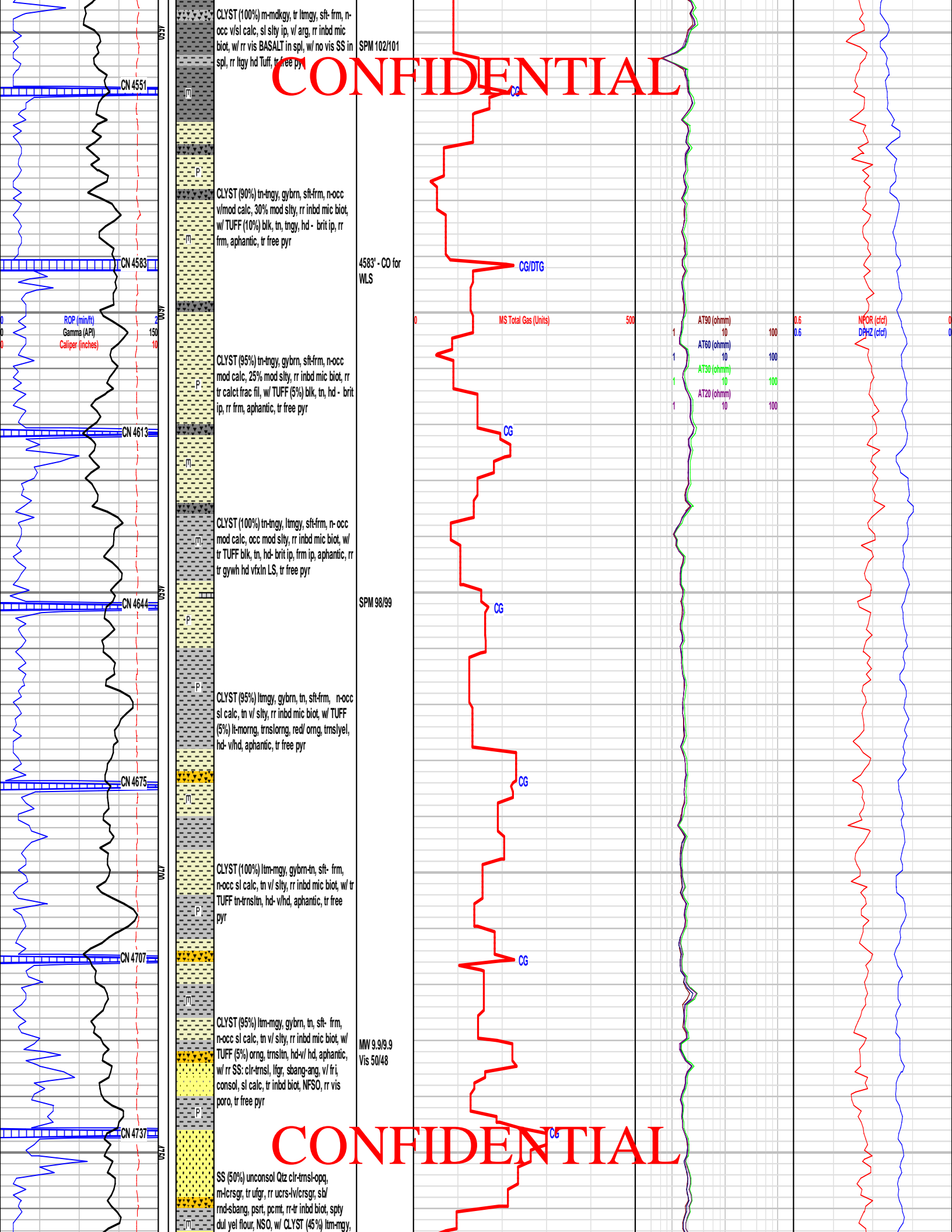
Off Time Drilling

CLYST (90%) m-mdkgy, occ ltmgy, sft-fm, n-occ vsl calc, sl slty ip, arg ip, rr inbd mic biot, w/ 10% BASALT aa, w/ no vis SS in spl

CLYST (100%) m-mdkgy, occ ltmgy, sft-fm, n-occ vsl calc, sl slty ip, v/ arg, rr inbd mic biot, w/ tr BASALT aa, w/ no vis SS in spl

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CLYST (100%) n-mdkgy, tr lmgly, sft-frm, n-occ v/si calc, sl sily ip, v/ arg, rr inbd mic biot, w/ rr vis BASALT in spl, w/ no vis SS in spl, rr lity hd Tuff, tr free pyr

SPM 102/101

CLYST (90%) tn-ngy, gybrn, sft-frm, n-occ v/mod calc, 30% mod sily, rr inbd mic biot, w/ TUFF (10%) blk, tn, tngy, hd- brit ip, rr frm, aphantic, tr free pyr

4583'-CO for WLS

CLYST (95%) tn-ngy, gybrn, sft-frm, n-occ mod calc, 25% mod sily, rr inbd mic biot, rr tr calc frac fil, w/ TUFF (5%) blk, tn, hd- brit ip, rr frm, aphantic, tr free pyr

SPM 98/99

CLYST (100%) tn-ngy, lmgly, sft-frm, n-occ mod calc, occ mod sily, rr inbd mic biot, w/ tr TUFF blk, tn, hd- brit ip, frm ip, aphantic, rr tr gywh hd v/xln LS, tr free pyr

CLYST (95%) lmgly, gybrn, tn, sft-frm, n-occ sl calc, tn v/ sily, rr inbd mic biot, w/ TUFF (5%) lt-morg, trnslong, red/ org, trnsllyel, hd- v/hd, aphantic, tr free pyr

MW 9.9/9.9 Vis 50/48

CLYST (100%) ltm-mgy, gybrn-tn, sft-frm, n-occ sl calc, tn v/ sily, rr inbd mic biot, w/ tr TUFF tn-trnsltn, hd- v/hd, aphantic, tr free pyr

CLYST (95%) ltm-mgy, gybrn, tn, sft-frm, n-occ sl calc, tn v/ sily, rr inbd mic biot, w/ TUFF (5%) org, trnsltn, hd-v/ hd, aphantic, w/ rr SS: cl-trnsl, lfg, sbang-ang, v/ fri, consol, sl calc, tr inbd biot, NFSO, rr vis poro, tr free pyr

SS (50%) unconsol Qtz cl-trnsl-opq, m-crsgr, tr uigr, rr ucrr-lv/crsgr, sb/ rnd-sbang, psrt, pcmt, rr-tr inbd biot, sply dul yel flour, NSO, w/ CLYST (45%) ltm-mgy,

ROP (min/ft)  
Gamma (API)  
Caliper (inches)

CG/DTG

MS Total Gas (Units)

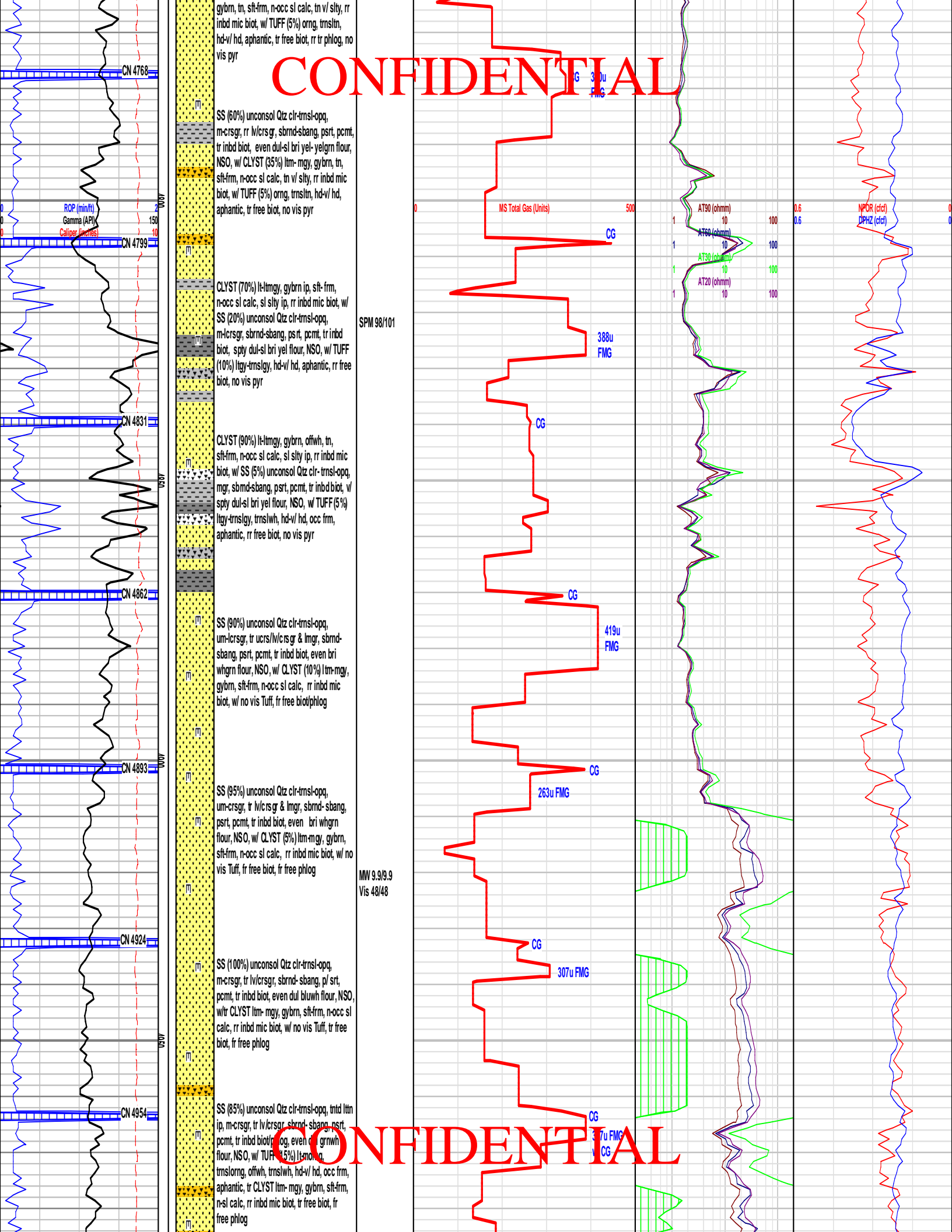
AT90 (ohmm)  
10  
100  
AT60 (ohmm)  
10  
100  
AT30 (ohmm)  
10  
100  
AT20 (ohmm)  
10  
100

NPOR (c/cf)  
DPHZ (c/cf)

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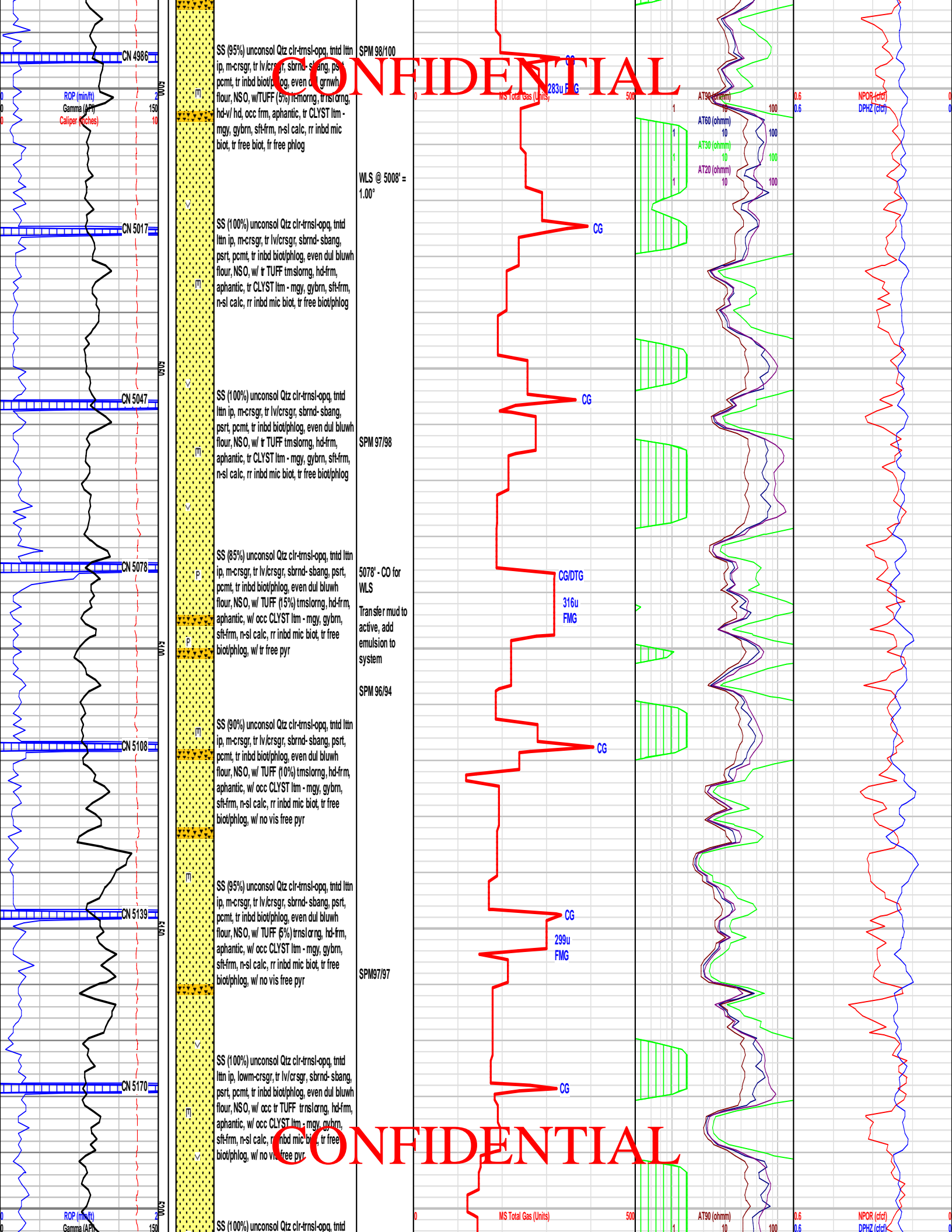


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SS (95%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, tr inbd biot/phlog, even dul grnwh flour, NSO, w/ TUFF (5%) tmslorg, hd-frm, hd-v/ hd, occ frm, aphantic, tr CLYST ltm - mgy, gybrn, sft-frm, rr inbd mic biot, tr free biot, fr free phlog

SPM 98/100  
WLS @ 5008' = 1.00°

SS (100%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ TUFF (5%) tmslorg, hd-frm, aphantic, tr CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog

SPM 97/98

SS (100%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ TUFF (5%) tmslorg, hd-frm, aphantic, tr CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog

5078' - CO for WLS  
Transfer mud to active, add emulsion to system

SS (85%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ TUFF (15%) tmslorg, hd-frm, aphantic, w/ occ CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog, w/ tr free pyr

SPM 96/94

SS (90%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ TUFF (10%) tmslorg, hd-frm, aphantic, w/ occ CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog, w/ no vis free pyr

SPM 97/97

SS (95%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ TUFF (5%) tmslorg, hd-frm, aphantic, w/ occ CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog, w/ no vis free pyr

SPM 97/97

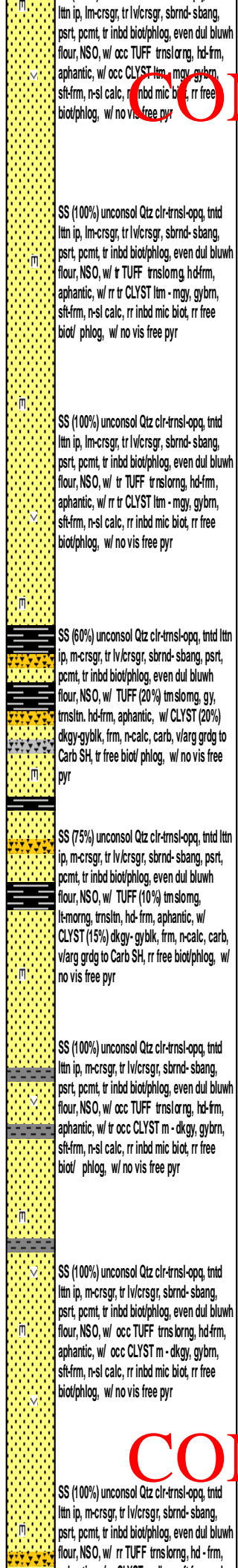
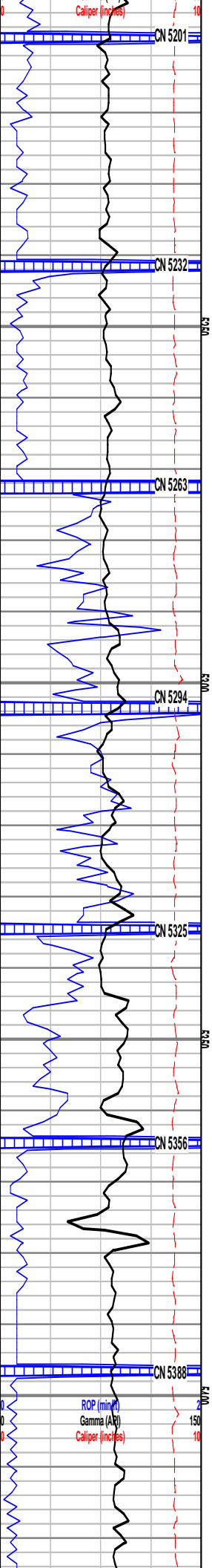
SS (100%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, lowm-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ occ tr TUFF trnslorg, hd-frm, aphantic, w/ occ CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog, w/ no vis free pyr

SPM 97/97

SS (100%) unconsol Qtz clr-trnsl-opq, tnid ltn ip, lowm-crsgr, tr lv/crsgr, sbrnd-sbang, psrnt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ occ tr TUFF trnslorg, hd-frm, aphantic, w/ occ CLYST ltm - mgy, gybrn, sft-frm, n-sl calc, rr inbd mic biot, tr free biot/phlog, w/ no vis free pyr

SPM 97/97

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SPM 96/96

One pump on hole

SPM 0/123

SPM 0/123

Both pumps on hole

SPM 95/95

lttn ip, lm-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw h flour, NSO, w/ occ TUFF trnslong, hd-fm, aphantic, w/ rr tr CLYST ltm - mgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (100%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, lm-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ tr TUFF trnslong, hd-fm, aphantic, w/ rr tr CLYST ltm - mgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (100%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, lm-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ tr TUFF trnslong, hd-fm, aphantic, w/ rr tr CLYST ltm - mgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (60%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ TUFF (20%) trnslong, gy, trnsltn, hd-fm, aphantic, w/ CLYST (20%) dkgy-gyblk, frm, n-calc, carb, v/larg grd to Carb SH, tr free biot/phlog, w/ no vis free pyr

SS (75%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ TUFF (10%) trnslong, lt-morg, trnsltn, hd-fm, aphantic, w/ CLYST (15%) dkgy-gyblk, frm, n-calc, carb, v/larg grd to Carb SH, rr free biot/phlog, w/ no vis free pyr

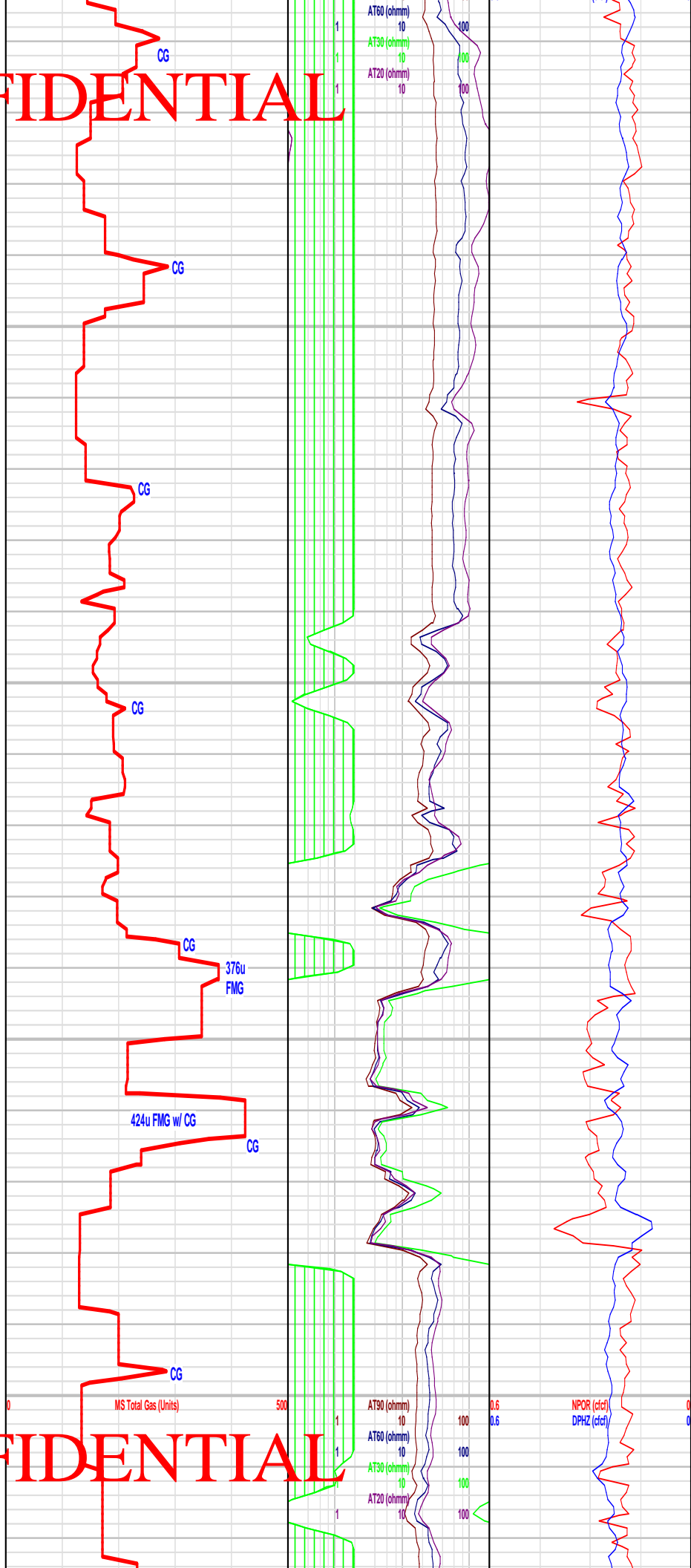
SS (100%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ occ TUFF trnslong, hd-fm, aphantic, w/ rr occ CLYST m - dkgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (100%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ occ TUFF trnslong, hd-fm, aphantic, w/ occ CLYST m - dkgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (100%) unconsol Qtz clr-trnsl-opq, trnd lttn ip, m-crsgr, tr lv/crsgr, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ rr TUFF trnslong, hd-fm, aphantic, w/ rr occ CLYST m - dkgy, gybrn, sft-fm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

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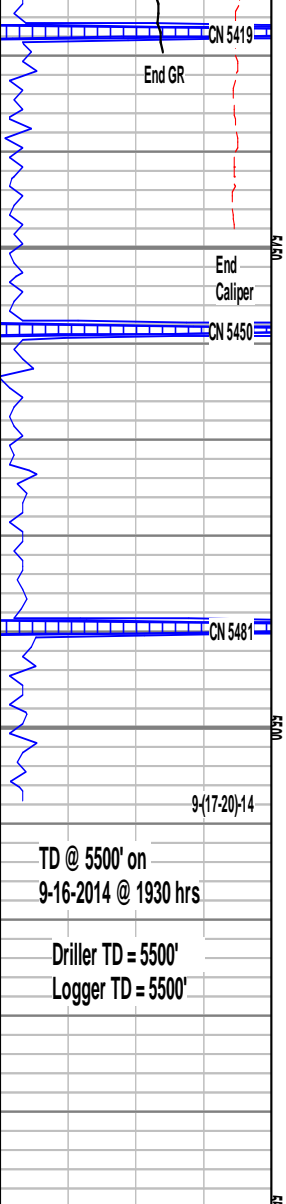


AT60 (ohmm) 10  
AT30 (ohmm) 10  
AT20 (ohmm) 10

AT90 (ohmm) 10  
AT60 (ohmm) 10  
AT30 (ohmm) 10  
AT20 (ohmm) 10

NPOR (d/cf) 0.6  
DPHZ (d/cf) 0.6

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aphantic, w rr CLYST m-dkgy, st-frm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (100%) unconsol Qtz clt-trnsl-opq, tnid ltn ip, m-crsg, tr lv/crsg, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ rr TUFF trns lorn, hd-frm, aphantic, w/ rr CLYST m - dkgy, gybrn, st-frm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

SS (90%) unconsol Qtz clt-trnsl-opq, tnid ltn ip, m-crsg, tr lv/crsg, sbrnd-sbang, psrt, pcmt, tr inbd biot/phlog, even dul bluw flour, NSO, w/ TUFF (10%) tmslom, lt-morg, hd-frm, w/hd, aphantic, w/ tr CLYST m - dkgy, gybrn, st-frm, n-sl calc, rr inbd mic biot, rr free biot/phlog, w/ no vis free pyr

TD - CO, C&C hole, Wiper trip to bit, LD PDC bit, PU RR Tricone bit, TIH, CO, C&C hole, TOOH, Run ELOGS/SW Cores, TIH, CO, C&C hole, TOOH sideways (LD DP), Run/set/cmt casing

KCB Logging Unit released on 9-20-2014 @ 1830 hrs

THANK YOU FOR USING KING CANYON BUFFALO, INC

Phil Littlefield / Adam Johnson

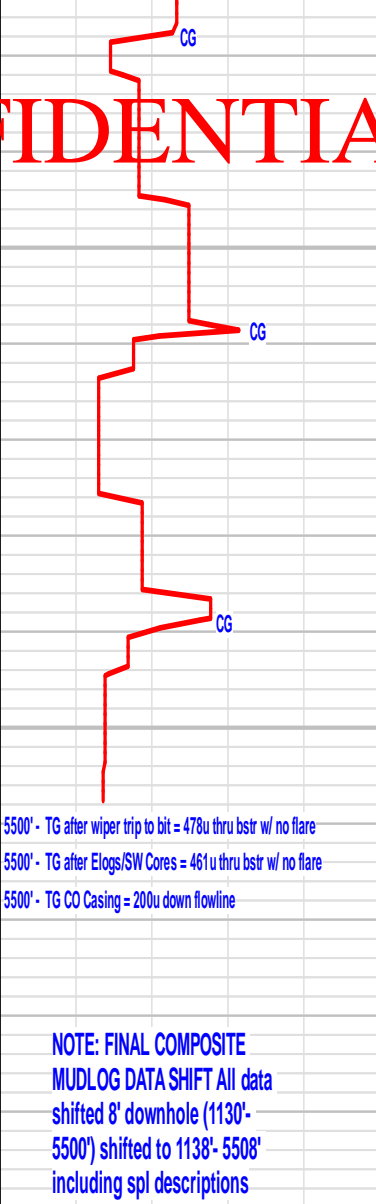
SPM 95/97

MW 9,9/9.9  
Vis 49/50

SPM 95/93

Bit #2 drid 4407' in 29.5 hrs (avg 149.4 ft/hr)

5500' - TD @ 1930 hrs on 9-16-2014

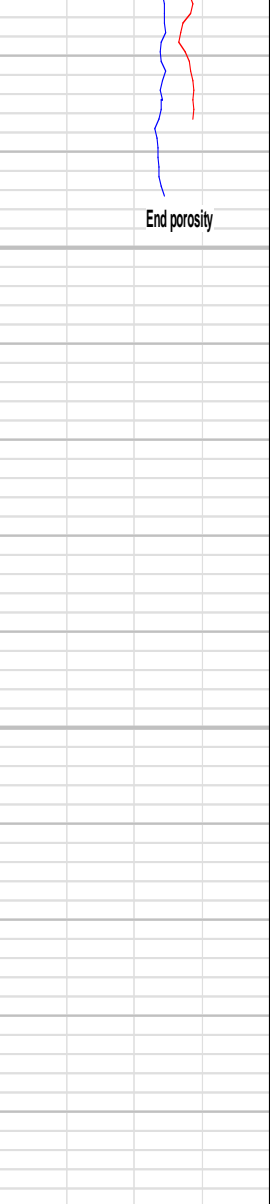


5500' - TG after wiper trip to bit = 478u thru bstr w/ no flare

5500' - TG after ELOGS/SW Cores = 461u thru bstr w/ no flare

5500' - TG CO Casing = 200u down flowline

NOTE: FINAL COMPOSITE MUDLOG DATA SHIFT All data shifted 8' downhole (1130'-5500') shifted to 1138'- 5508' including spl descriptions



TD @ 5500' on 9-16-2014 @ 1930 hrs

Driller TD = 5500' Logger TD = 5500'

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