



EMPIRICA

The Surface Logging Company

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

Well Name: 15077219460100 Jones 3506 1-13H SandRidge Energy, Inc.
Location: SEC: # 13, T-35S / R-6W-----HARPER CO., KANSAS
License Number: AFE # DC 12944 Region: WAKITA
Spud Date: 07/01/2013 Drilling Completed: 07/18/2013
Surface Coordinates: SURFACE: 200' FSL & 1,320' FWL of SEC: 13, T35S-R-6W, SPOT LOCATION: SE SE
SW SW, HARPER COUNTY KANSAS
Bottom Hole Coordinates: PBHL: 660' FEL & 1,530' FSL of SEC: 12, T35S-R-6W
Ground Elevation (ft): 1,240' K.B. Elevation (ft): 1,258' (+20' Est)
Logged Interval (ft): 695' To: 9,906' Total Depth (ft): 9,906' T.D.
Formation: MISSISSIPPIAN (HORIZONTAL WELL)
Type of Drilling Fluid: DRILLING ON WATER-BASE MUD FROM 695 ft.
Printed by MUD.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: SANDRIDGE ENERGY, INC.
Address: 123 ROBERT S KERR AVE
OKLAHOMA CITY, OK 73102-6406

GEOLOGIST

Name: Tammy Alcorn, Geologist
Company: SandRidge Energy, Inc. Oklahoma City, OK 73102
Address: 123 Robert S. Kerr Ave. Oklahoma City, OK 73102
Tammy Alcorn, Office Phone: (405) 429-5723
Cell Phone:(405)651-2825 talcorn@sandridgeenergy.com;

WELL SITE GEOLOGIST

Wayne Nix Cell-----(870)-826-6197
Betty Nix Cell-----(870)-826-6196
Verizon Cell------(870)-331-0572
wnix@empirica-logging.com;
bnix@empirica-logging.com
Empirica Logging, Inc.
P.O. Box 6005
Edmond, OK 73083-6005
PHONE: (405) 340-5545
FAX: (405) 348-8303

COMPANY MAN

COMPANY MEN: Tony Leija & Michael Kulchisky

DRILLING CONTRACTOR

Unit Drilling

Operator License # 34192
 Texas Rig # 310
 API: # 15-077-21946-01-00
 AFE: # DC 12944
 Drilled on Water Base Mud,
 HORIZONTAL WELL

Comments

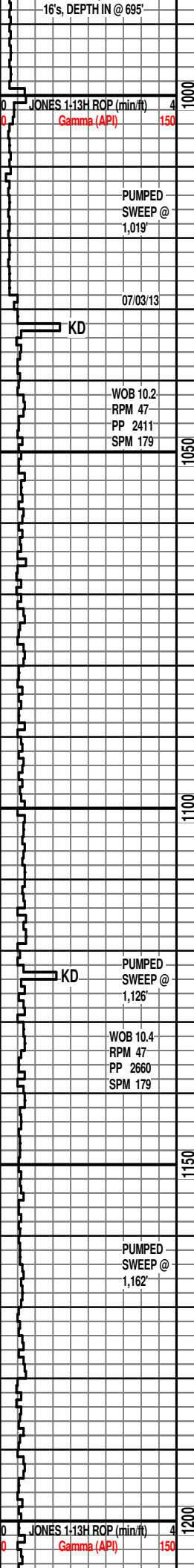
2 Manned Logging Services,
 Start Logging Date: 07/02/2013 @ 695'
 (Called in per CoMan)
 SET 9.625 SURFACE CASING TO 695'
 ON THE 07/02/2013 K.O.P. = ft.
 SET 7" INTERMEDIATE CASING @ ' 07/0/2013
 T.D. Depth @ ft. M.D. --- T.D. on the 07//2013
 RAN E-LOGS ON THE 07//2013
 (FINAL LOG PDF) sent out on the: 07//2013 Thank You!

ROCK TYPES

<table border="0"> <tr><td></td><td>Anhy</td></tr> <tr><td></td><td>Bent</td></tr> <tr><td></td><td>Brec</td></tr> <tr><td></td><td>Cht</td></tr> <tr><td></td><td>Clyst</td></tr> <tr><td></td><td>Coal</td></tr> <tr><td></td><td>Congl</td></tr> </table>		Anhy		Bent		Brec		Cht		Clyst		Coal		Congl	<table border="0"> <tr><td></td><td>Dol</td></tr> <tr><td></td><td>Gyp</td></tr> <tr><td></td><td>Igne</td></tr> <tr><td></td><td>Lmst</td></tr> <tr><td></td><td>Meta</td></tr> <tr><td></td><td>Mrlst</td></tr> <tr><td></td><td>Salt</td></tr> </table>		Dol		Gyp		Igne		Lmst		Meta		Mrlst		Salt	<table border="0"> <tr><td></td><td>Shale</td></tr> <tr><td></td><td>Shcol</td></tr> <tr><td></td><td>Shgy</td></tr> <tr><td></td><td>Sltst</td></tr> <tr><td></td><td>Ss</td></tr> <tr><td></td><td>Till</td></tr> <tr><td></td><td>Sandstn</td></tr> </table>		Shale		Shcol		Shgy		Sltst		Ss		Till		Sandstn	<table border="0"> <tr><td></td><td>Siltstn</td></tr> <tr><td></td><td>Granwash</td></tr> <tr><td></td><td>Dolowash</td></tr> <tr><td></td><td>Cement</td></tr> <tr><td></td><td>Granite</td></tr> <tr><td></td><td>Hotshale</td></tr> </table>		Siltstn		Granwash		Dolowash		Cement		Granite		Hotshale
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ACCESSORIES

<p>FOSSIL</p> <table border="0"> <tr><td></td><td>Algae</td></tr> <tr><td></td><td>Amph</td></tr> <tr><td></td><td>Belm</td></tr> <tr><td></td><td>Bioclst</td></tr> <tr><td></td><td>Brach</td></tr> <tr><td></td><td>Bryozoa</td></tr> <tr><td></td><td>Cephal</td></tr> <tr><td></td><td>Coral</td></tr> <tr><td></td><td>Crin</td></tr> <tr><td></td><td>Echin</td></tr> <tr><td></td><td>Fish</td></tr> <tr><td></td><td>Foram</td></tr> <tr><td></td><td>Fossil</td></tr> <tr><td></td><td>Gastro</td></tr> <tr><td></td><td>Oolite</td></tr> <tr><td></td><td>Ostra</td></tr> <tr><td></td><td>Pelec</td></tr> <tr><td></td><td>Pellet</td></tr> <tr><td></td><td>Pisolite</td></tr> </table>		Algae		Amph		Belm		Bioclst		Brach		Bryozoa		Cephal		Coral		Crin		Echin		Fish		Foram		Fossil		Gastro		Oolite		Ostra		Pelec		Pellet		Pisolite	<table border="0"> <tr><td></td><td>Plant</td></tr> <tr><td></td><td>Strom</td></tr> </table> <p>MINERAL</p> <table border="0"> <tr><td></td><td>Anhy</td></tr> <tr><td></td><td>Arggrn</td></tr> <tr><td></td><td>Arg</td></tr> <tr><td></td><td>Bent</td></tr> <tr><td></td><td>Bit</td></tr> <tr><td></td><td>Brecfrag</td></tr> <tr><td></td><td>Calc</td></tr> <tr><td></td><td>Carb</td></tr> <tr><td></td><td>Chtdk</td></tr> <tr><td></td><td>Chtlt</td></tr> <tr><td></td><td>Dol</td></tr> <tr><td></td><td>Feldspar</td></tr> <tr><td></td><td>Ferrpel</td></tr> <tr><td></td><td>Ferr</td></tr> <tr><td></td><td>Glau</td></tr> <tr><td></td><td>Gyp</td></tr> </table>		Plant		Strom		Anhy		Arggrn		Arg		Bent		Bit		Brecfrag		Calc		Carb		Chtdk		Chtlt		Dol		Feldspar		Ferrpel		Ferr		Glau		Gyp	<table border="0"> <tr><td></td><td>Hvymin</td></tr> <tr><td></td><td>Kaol</td></tr> <tr><td></td><td>Marl</td></tr> <tr><td></td><td>Minxl</td></tr> <tr><td></td><td>Nodule</td></tr> <tr><td></td><td>Phos</td></tr> <tr><td></td><td>Pyr</td></tr> <tr><td></td><td>Salt</td></tr> <tr><td></td><td>Sandy</td></tr> <tr><td></td><td>Silt</td></tr> <tr><td></td><td>Sil</td></tr> <tr><td></td><td>Sulphur</td></tr> <tr><td></td><td>Tuff</td></tr> </table> <p>STRINGER</p> <table border="0"> <tr><td></td><td>Anhy</td></tr> <tr><td></td><td>Arg</td></tr> <tr><td></td><td>Bent</td></tr> <tr><td></td><td>Coal</td></tr> <tr><td></td><td>Dol</td></tr> </table>		Hvymin		Kaol		Marl		Minxl		Nodule		Phos		Pyr		Salt		Sandy		Silt		Sil		Sulphur		Tuff		Anhy		Arg		Bent		Coal		Dol	<table border="0"> <tr><td></td><td>Gyp</td></tr> <tr><td></td><td>Ls</td></tr> <tr><td></td><td>Mrst</td></tr> <tr><td></td><td>Sltstrg</td></tr> <tr><td></td><td>Ssstrg</td></tr> </table> <p>TEXTURE</p> <table border="0"> <tr><td></td><td>Boundst</td></tr> <tr><td></td><td>Chalky</td></tr> <tr><td></td><td>Cryxln</td></tr> <tr><td></td><td>Earthy</td></tr> <tr><td></td><td>Finexln</td></tr> <tr><td></td><td>Grainst</td></tr> <tr><td></td><td>Lithogr</td></tr> <tr><td></td><td>Microxln</td></tr> <tr><td></td><td>Mudst</td></tr> <tr><td></td><td>Packst</td></tr> <tr><td></td><td>Wackest</td></tr> </table>		Gyp		Ls		Mrst		Sltstrg		Ssstrg		Boundst		Chalky		Cryxln		Earthy		Finexln		Grainst		Lithogr		Microxln		Mudst		Packst		Wackest
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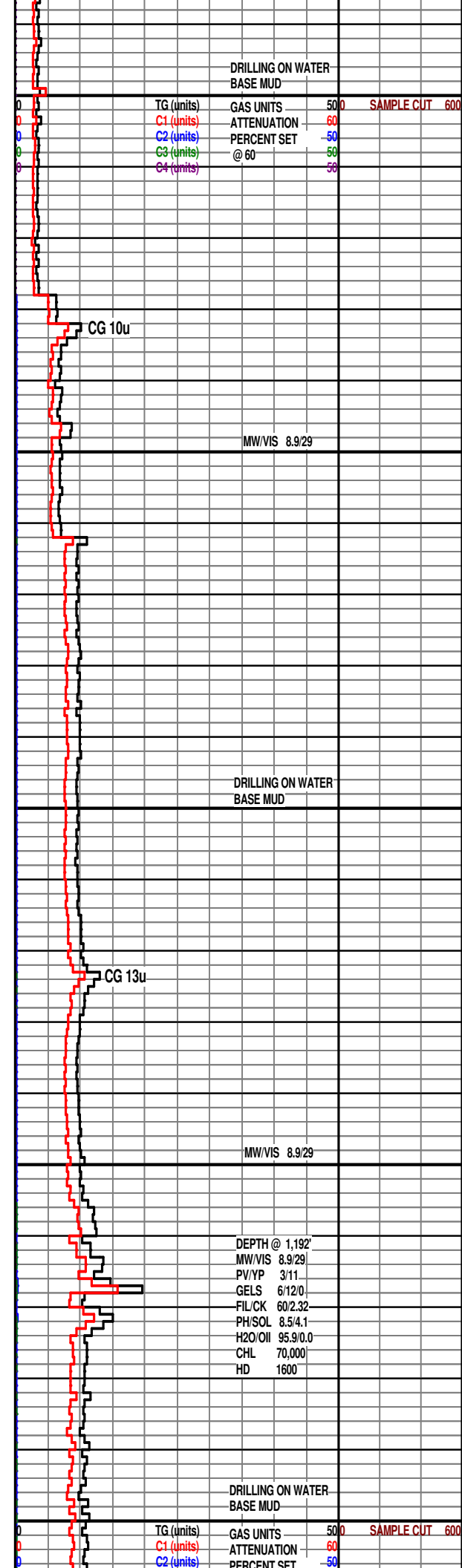


NO SAMPLES UNTILL 3,200'

SURVEY: 1,094' MD 1,093'TVD
 INC. 4.71 / AZ. 118.56
 NO SAMPLES UNTILL 3,200'

SURVEY: 1,185' MD 1,184'TVD
 INC. 6.33 / AZ. 108.27

NO SAMPLES UNTILL 3,200'



DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	50.0	SAMPLE CUT	600
C1 (units)	ATTENUATION	60		
C2 (units)	PERCENT SET	50		
C3 (units)	@ 60	50		
C4 (units)		50		

MW/VIS 8.9/29

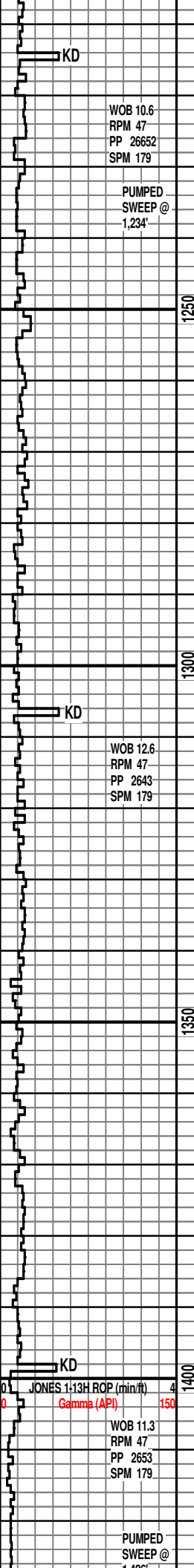
DRILLING ON WATER
BASE MUD

MW/VIS 8.9/29

DEPTH @ 1,192'
 MW/VIS 8.9/29
 PV/YF 3/11
 GELS 6/12/0
 FIL/CK 60/2.32
 PH/SOL 8.5/4.1
 H2O/OIL 95.9/0.0
 CHL 70,000
 HD 1600

DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	50.0	SAMPLE CUT	600
C1 (units)	ATTENUATION	60		
C2 (units)	PERCENT SET	50		

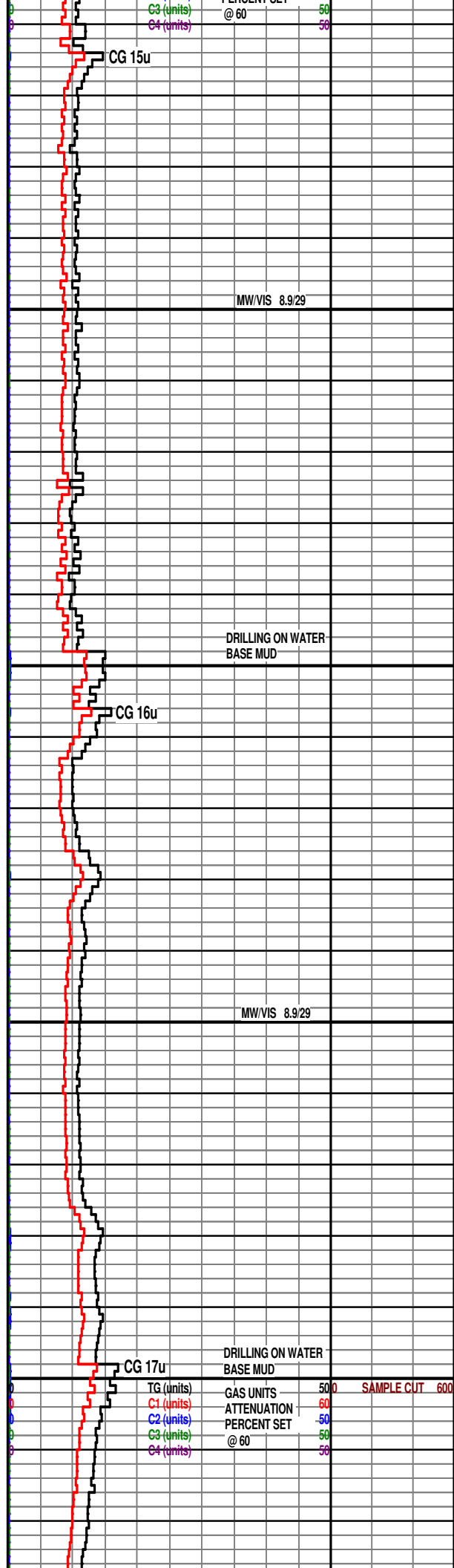


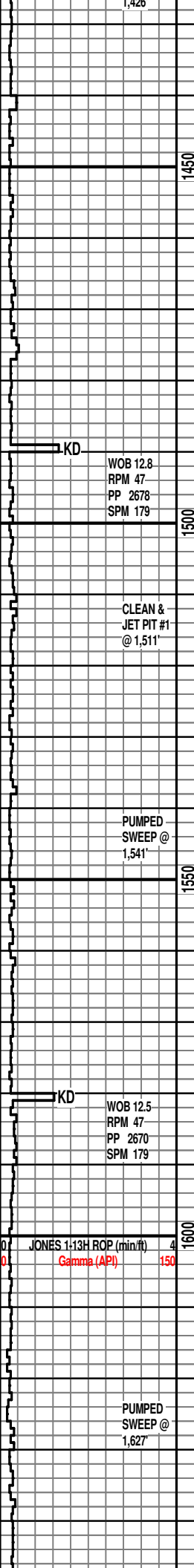
SURVEY: 1,277' MD 1,276'TVD
INC. 7.49 / AZ. 100.61

NO SAMPLES UNTILL 3,200'

SURVEY: 1,368' MD 1,366'TVD
INC. 7.76 / AZ. 99.45

NO SAMPLES UNTILL 3,200'





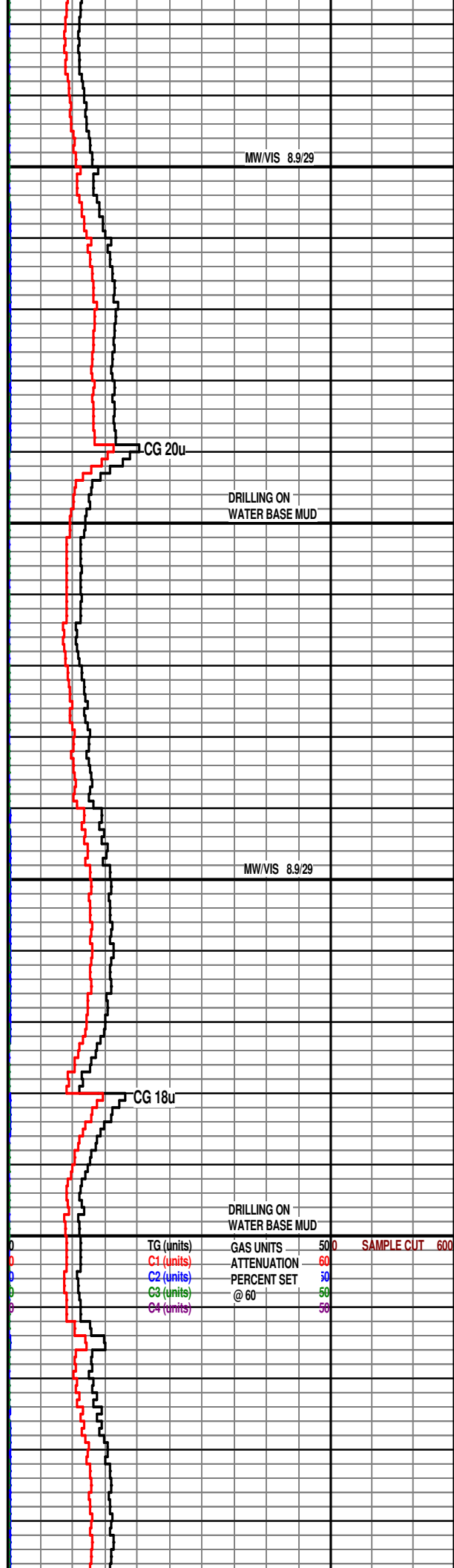
SURVEY: 1,460' MD 1,457'TVD
INC. 8.05 / AZ. 96.44

NO SAMPLES UNTILL 3,200'

SURVEY: 1,551' MD 1,547'TVD
INC. 6.15 / AZ. 97.10

NO SAMPLES UNTILL 3,200'

SURVEY: 1,642' MD 1,638'TVD
INC. 6.88 / AZ. 101.15



MW/VIS 8.9/29

CG 20u

DRILLING ON
WATER BASE MUD

MW/VIS 8.9/29

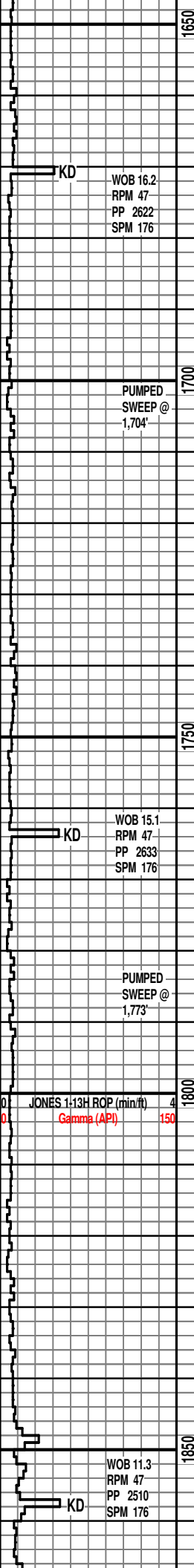
CG 18u

DRILLING ON
WATER BASE MUD

TG (units)	GAS UNITS	50	SAMPLE CUT	600
C1 (units)	ATTENUATION	60		
C2 (units)	PERCENT SET	30		
C3 (units)	@ 60	50		
C4 (units)		50		

INC. 8.89 / AZ. 101.15

MW/VIS 8.9/29

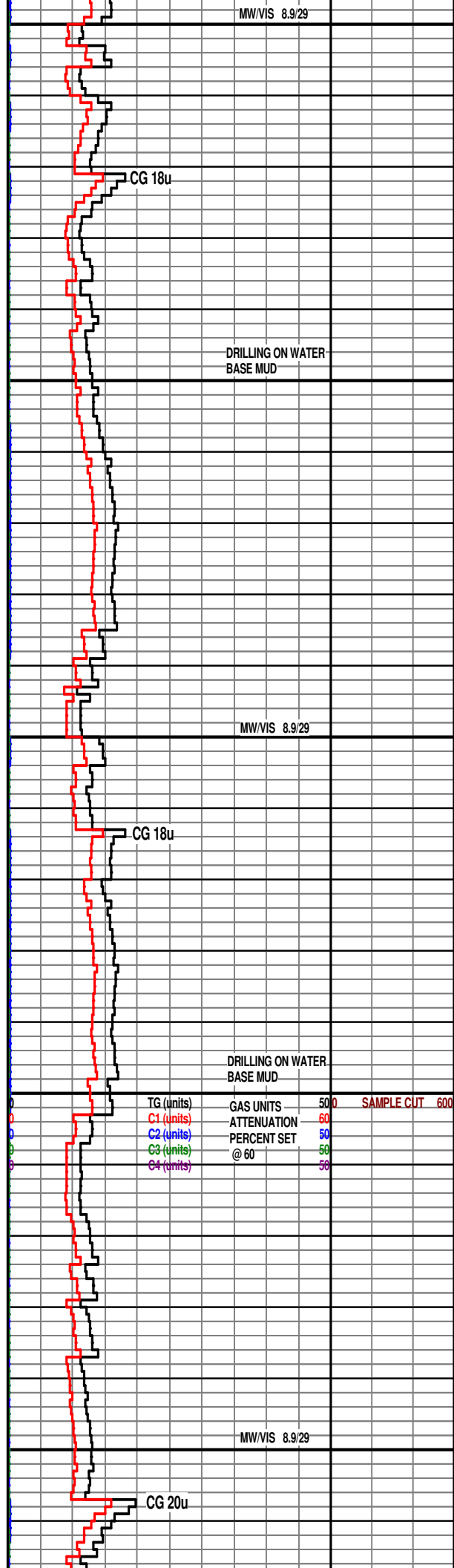


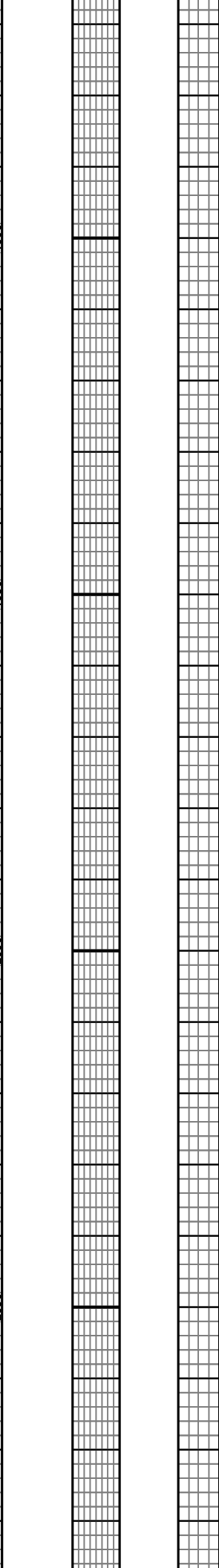
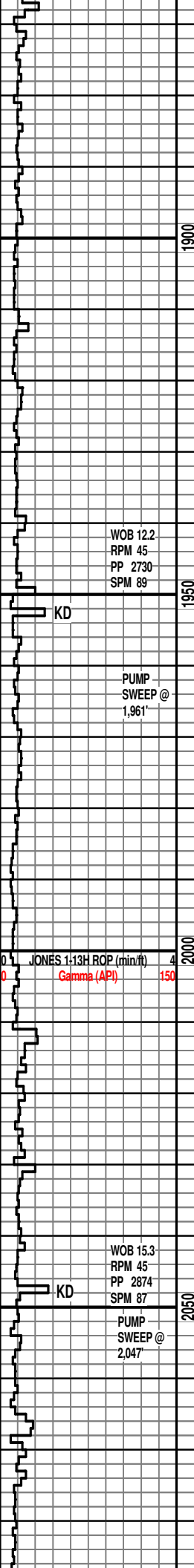
NO SAMPLES UNTILL 3,200'

SURVEY: 1,733' MD 1,728'TVD
INC. 8.13 / AZ. 80.66

NO SAMPLES UNTILL 3,200'

SURVEY: 1,828' MD 1,822'TVD
INC. 8.16 / AZ. 94.61



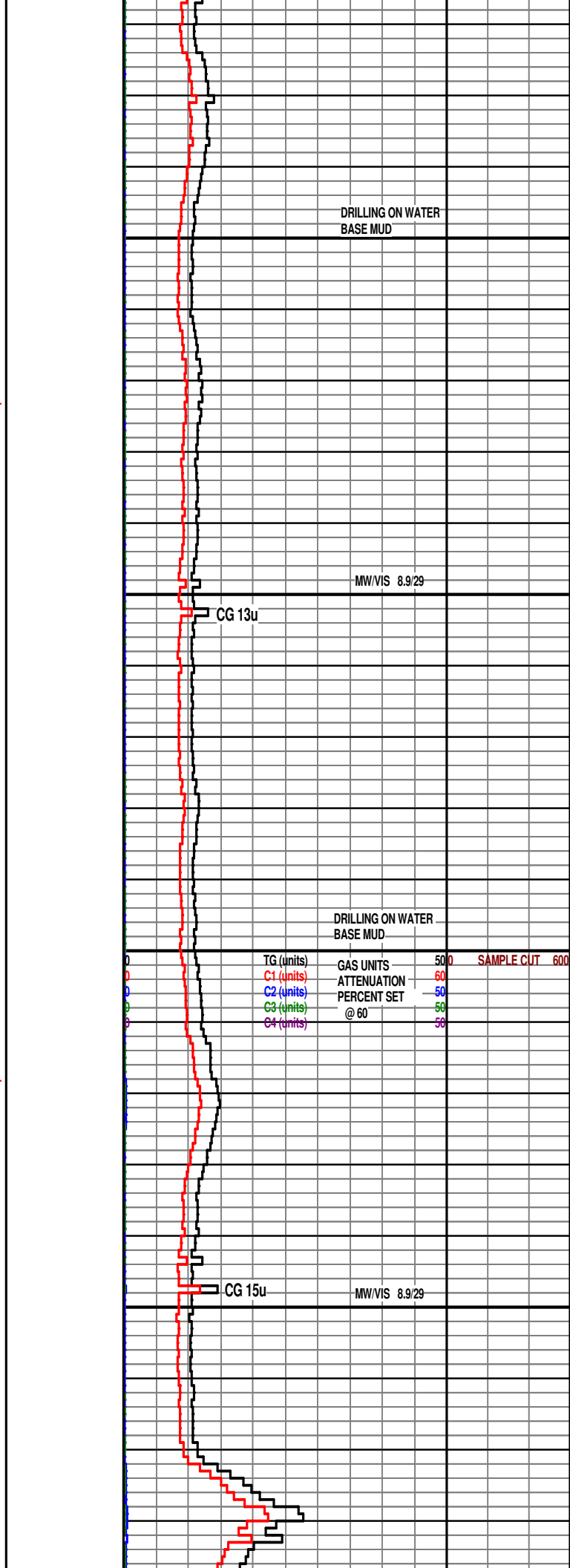


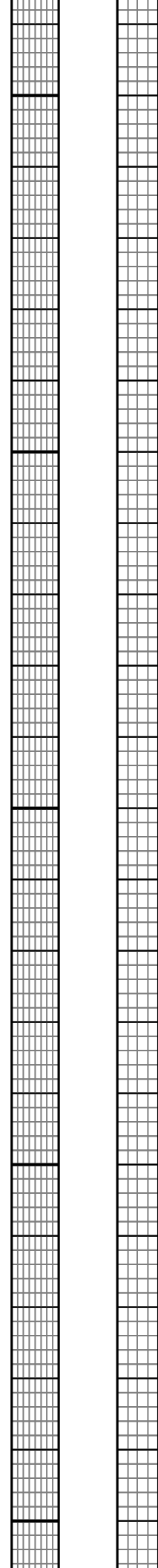
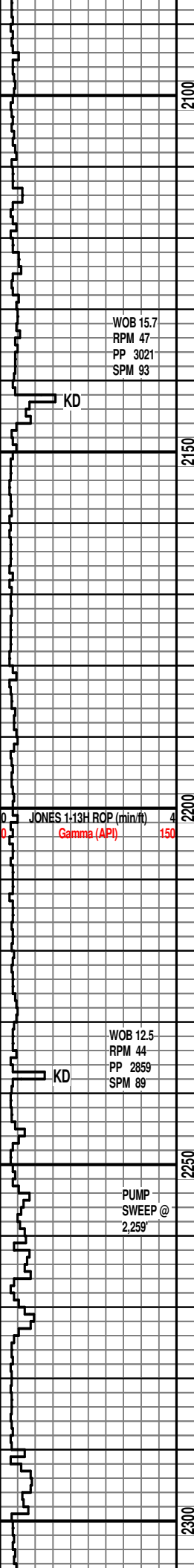
NO SAMPLES UNTILL 3,200'

SURVEY: 1,923' MD 1,916'TVD
INC. 8.02 / AZ. 96.19

NO SAMPLES UNTILL 3,200'

SURVEY: 2,018' MD 2,010'TVD
INC. 7.64 / AZ. 95.79





NO SAMPLES UNTILL 3,200'

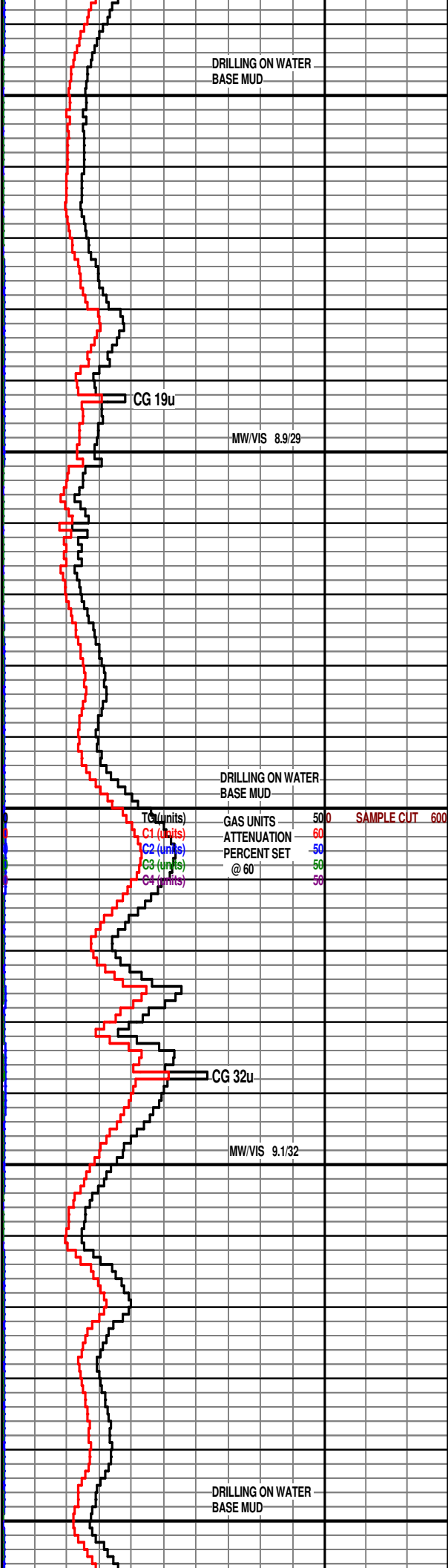
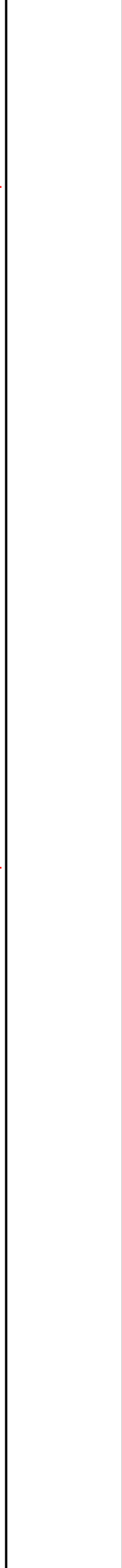
SURVEY: 2,113' MD 2,104'TVD
INC. 7.78 / AZ. 96.12

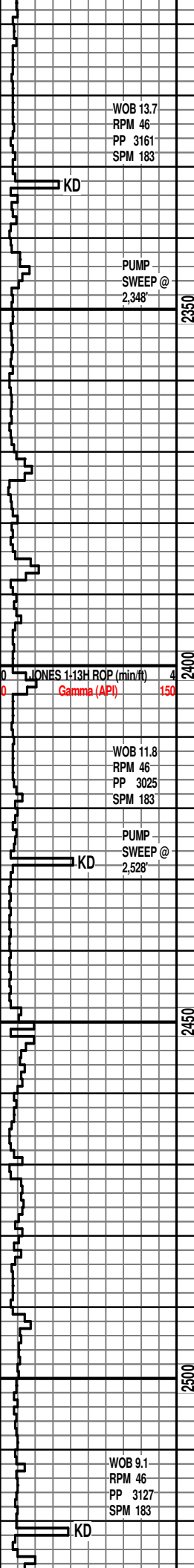
NO SAMPLES UNTILL 3,200'

SURVEY: 2,208' MD 2,198'TVD
INC. 8.08 / AZ. 100.20

NO SAMPLES UNTILL 3.200'

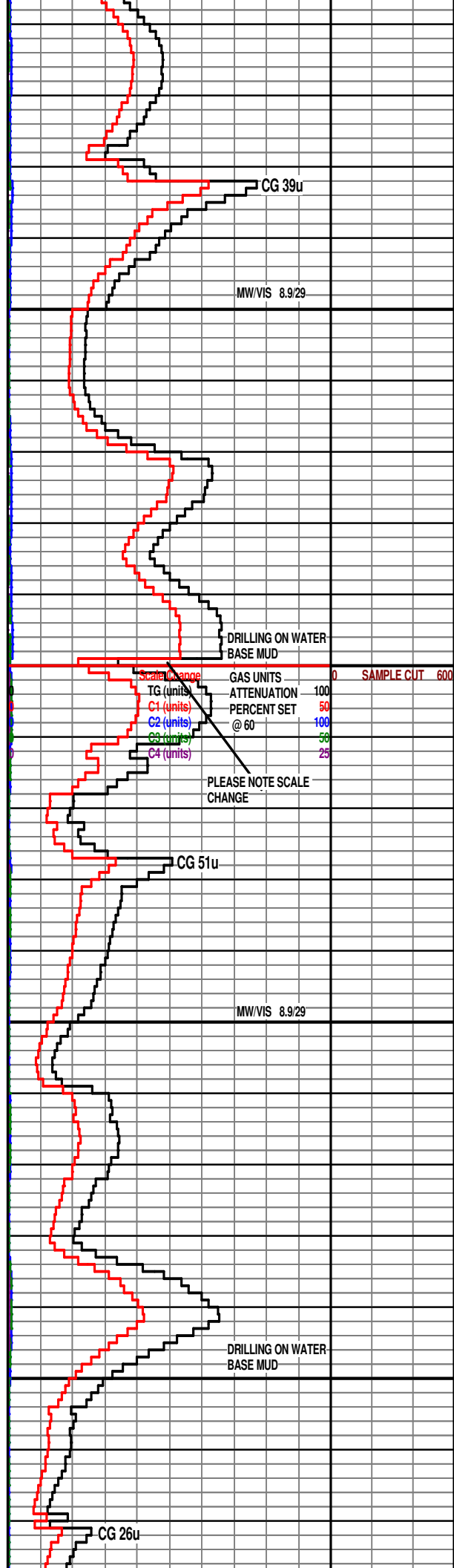
SURVEY: 2,303' MD 2,292'TVD

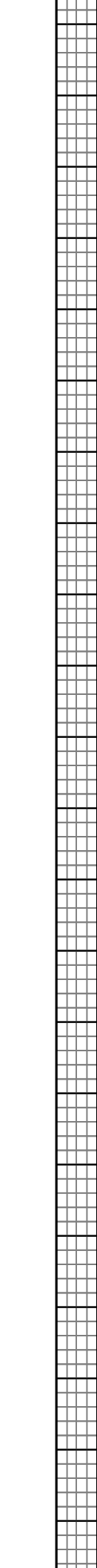
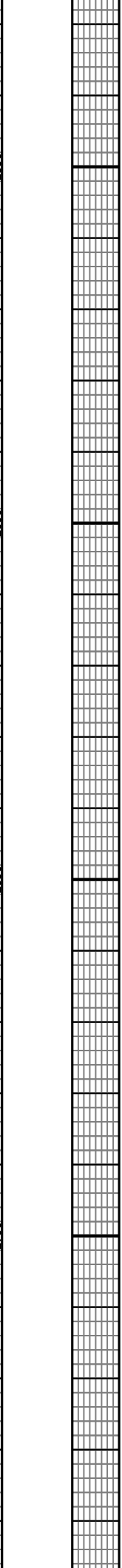
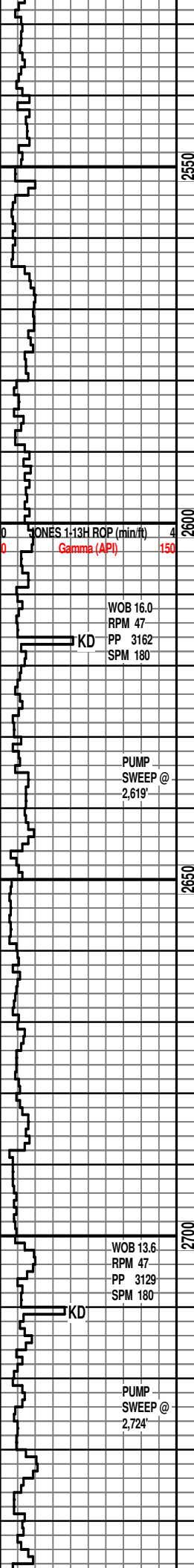




SURVEY: 2,397' MD 2,385'TVD
INC. 8.01 / AZ. 109.84
NO SAMPLES UNTILL 3,200'

SURVEY: 2,492' MD 2,480'TVD
INC. 7.50 / AZ. 107.72
NO SAMPLES UNTILL 3,200'



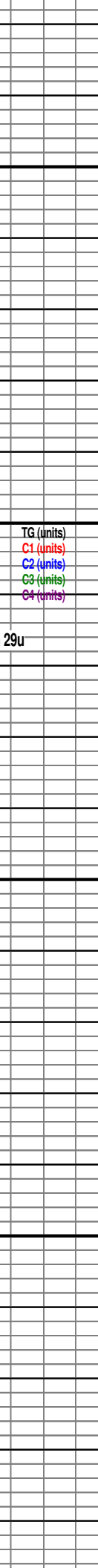
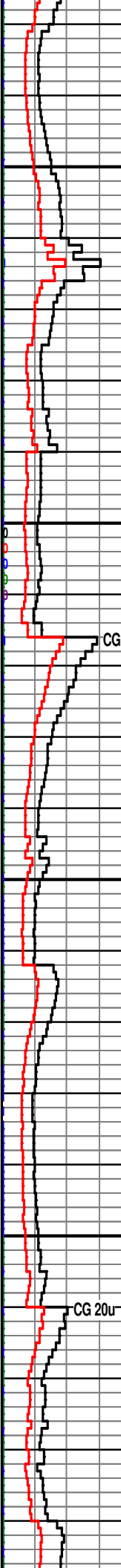
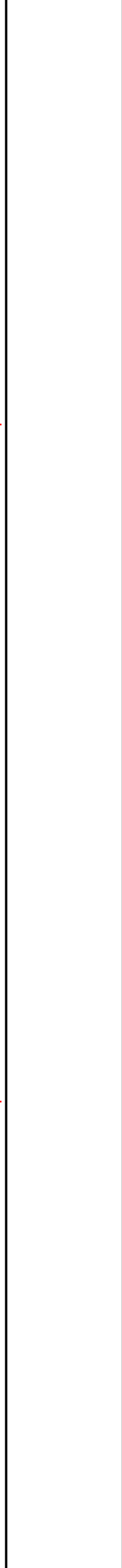


SURVEY: 2,586' MD 2,573'TVD
INC. 7.82 / AZ. 108.48

NO SAMPLES UNTILL 3,200'

SURVEY: 2,681' MD 2,667'TVD
INC. 6.41 / AZ. 110.70

NO SAMPLES UNTILL 3,200'



MW/VIS 9.0/35

DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	100	SAMPLE CUT	600
C1 (units)	ATTENUATION	150		
C2 (units)	PERCENT SET	00		
C3 (units)	@ 60	50		
C4 (units)		25		

CG 29u

MW/VIS 9.0/35

DRILLING ON WATER
BASE MUD

CG 20u

06/04/2013

2750

SURVEY: 2,776' MD 2,762'TVD
INC. 5.31 / AZ. 108.04

NO SAMPLES UNTILL 3,200'

JONES 1-113H ROP (min/ft) 4
Gamma (API) 150
KD
WOB 15.0
RPM 48
PP 3139
SPM 182

PUMP
SWEEP @
2,816'

2800

2850

SURVEY: 2,871' MD 2,856'TVD
INC. 7.91 / AZ. 106.74

NO SAMPLES UNTILL 3,200'

KD
WOB 13.5
RPM 46
PP 2256
SPM 95

PUMP
SWEEP @
2,938'

2900

2950

MW/VIS 9.0/35

DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	100	SAMPLE CUT	600
C1 (units)	ATTENUATION	150		
C2 (units)	CG 52u PERCENT SET	50		
C3 (units)	@ 60	25		
C4 (units)				

MW/VIS 9.0/35

DEPTH @ 2,895'
MW/VIS 9.0/30
PV/YP 2/12
GELS 7/14/0
FIL/CK 60/2.32
PH/SOL 8.5/4.2
H2O/OIL 95.8/0.0
CHL 30,000
HD 1200

DRILLING ON
WATER BASE MUD

CG 30u

MW/VIS 9.0/35

SURVEY: 2,966' MD 2,950'TVD
INC. 7.73 / AZ. 106.48

WOB 10.4
RPM 47
PP 2505
SPM 93

KD

JONES 1:13H ROP (min/ft) 4
Gamma (API) 150

3000

3050

NO SAMPLES UNTILL 3,200'

SURVEY: 3,061' MD 3,044'TVD
INC. 8.90 / AZ. 107.03

KD

WOB 16.7
RPM 47
PP 2949
SPM 84

3100

3150

NO SAMPLES UNTILL 3,200'

SURVEY: 3,156' MD 3,138'TVD
INC. 8.63 / AZ. 108.88

CG 31u

DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	100	SAMPLE CUT	600
C1 (units)	ATTENUATION	150		
C2 (units)	PERCENT SET	100		
C3 (units)	@ 60	50		
C4 (units)		25		

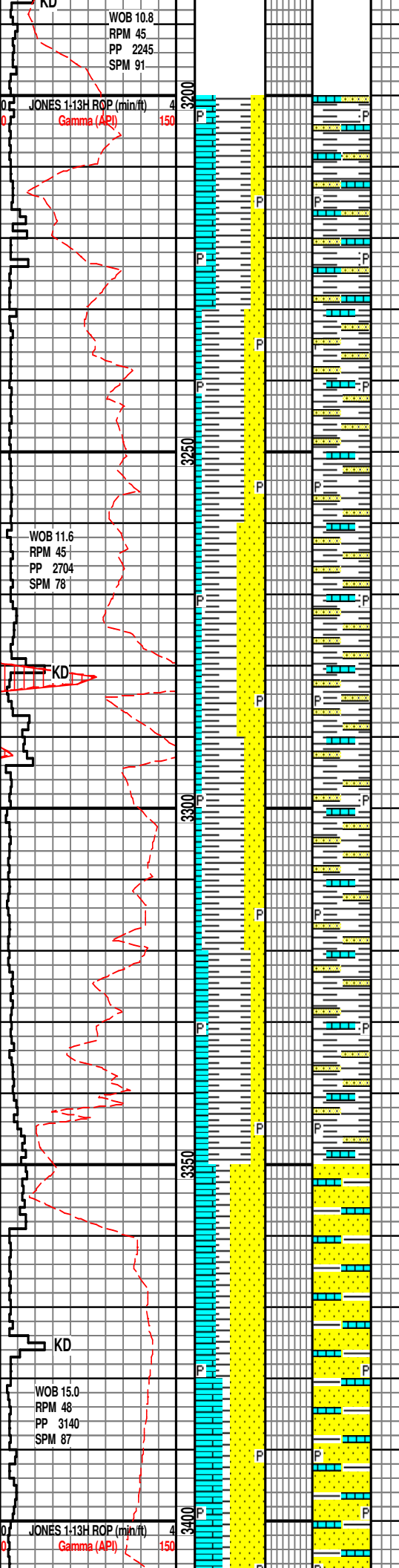
MW/VIS 9.0/35

CG 20u

DRILLING ON WATER
BASE MUD

MW/VIS 8.5/39

CG 25u



SH: ABUN GRY-LT GRY, SME DRK GRY, SCAT REDISH BRN, SME BLK, SMTH-SUB WXY TO RGH TXT, SFT-MOD FRM, PRED BLKY-PLTY, NO VIS FLOR, NO VIS CUT, NO RESD RING, LS: MED-DK GY, WHT-TAN, OCC DRK TAN-CRM, MICRO-XLN, BLKY, CHUKY, MOD FRM TO HD, SME MTTLD TAN, SME FN-MED XLN, SL/DNS, TRS PYR, NO VIS FLOR, NO VIS CUT, NO RESD RING

**SURVEY: 3,251' MD 3,232'TVD
INC. 9.21 / AZ. 108.33**

LS: MSTLY OFF WHT-WHT, SME LT TAN, PRED BLKY, TR SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, CALC CMT, SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, TRS PYR, NO CUT NO RING

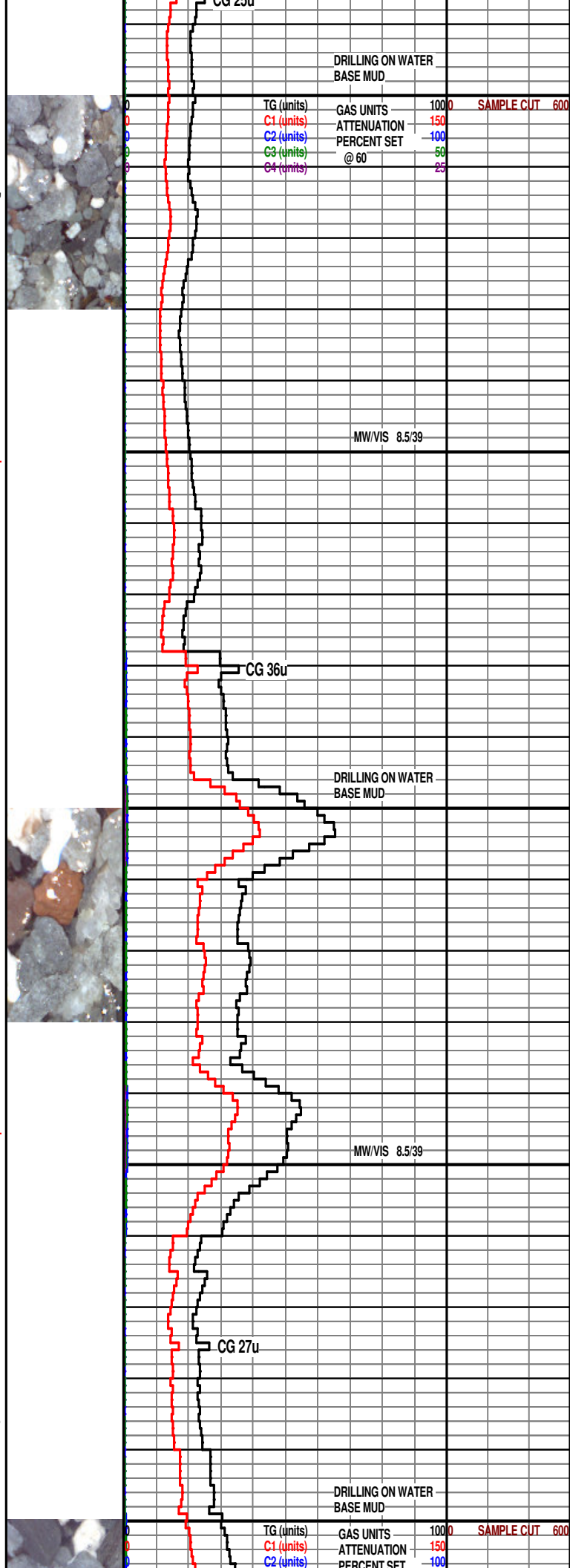
**BASE HEEBNER SHALE
3,295' MD/TVD 3,275'**

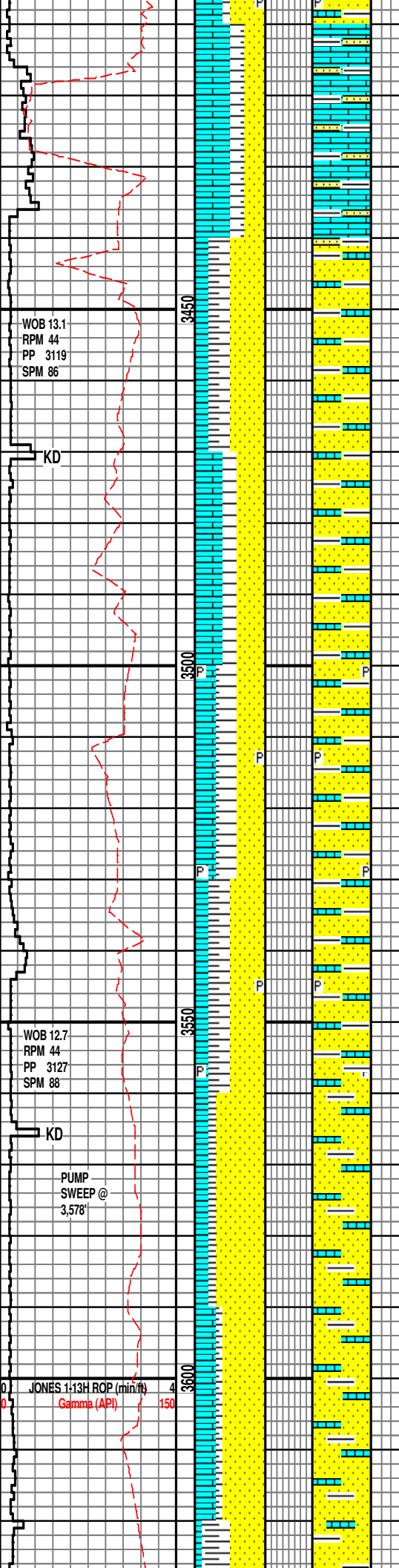
SH: DK GRY, BLK GRY, SCAT LT GRY, ORG RCH, CALC, SPLTY, INCRS BLK CARB, SMTH- SUB WXY LSTR, MOD FRM-FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, CALC CMT, LS: PRED LT TAN- MED TAN, OCC DRK TA, CRM, SME MTTLD TAN FN-MED XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING, TRS PYR

**SURVEY: 3,346' MD 3,326'TVD
INC. 8.41 / AZ. 108.74**

SH: DK GRY, BLK GRY, SCAT LT GRY, ORG RCH, CALC, SPLTY, INCRS BLK CARB, SMTH- SUB WXY LSTR, MOD FRM-FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, CALC CMT, LS: PRED LT TAN- MED TAN, OCC DRK TA, CRM, SME MTTLD TAN FN-MED XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING, TRS PYR

SH: DK GRY, BLK GRY, SCAT LT GRY, ORG RCH, CALC, SPLTY, CARB, SMTH-SUB WXY LSTR, MOD FRM-FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: PRED LT TAN- MED TAN, OCC DRK TA, CRM, SME MTTLD TAN FN-MED XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING, TRS PYR





SH: DK GRY, BLK GRY, SCAT LT GRY, SME ORG RCH, CALC, SPLTY, SME BLK CARB, SMTH- SUB WXY LSTR, MOD FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: LT TAN- MED TAN, OCC DRK TAN, MICRO-XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING

**SURVEY: 3,441' MD 3,419'TVD
INC. 8.73 / AZ. 110.88**

SH: DK GRY, BLK GRY, SCAT LT GRY, SME ORG RCH, CALC, SPLTY, SME BLK CARB, SMTH- SUB WXY LSTR, MOD FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: LT TAN- MED TAN, OCC DRK TAN, MICRO-XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING

SH: DK GRY, BLK GRY, SCAT LT GRY, SME ORG RCH, CALC, SPLTY, SME BLK CARB, SMTH- SUB WXY LSTR, MOD FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: LT TAN- MED TAN, OCC DRK TAN, MICRO-XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING

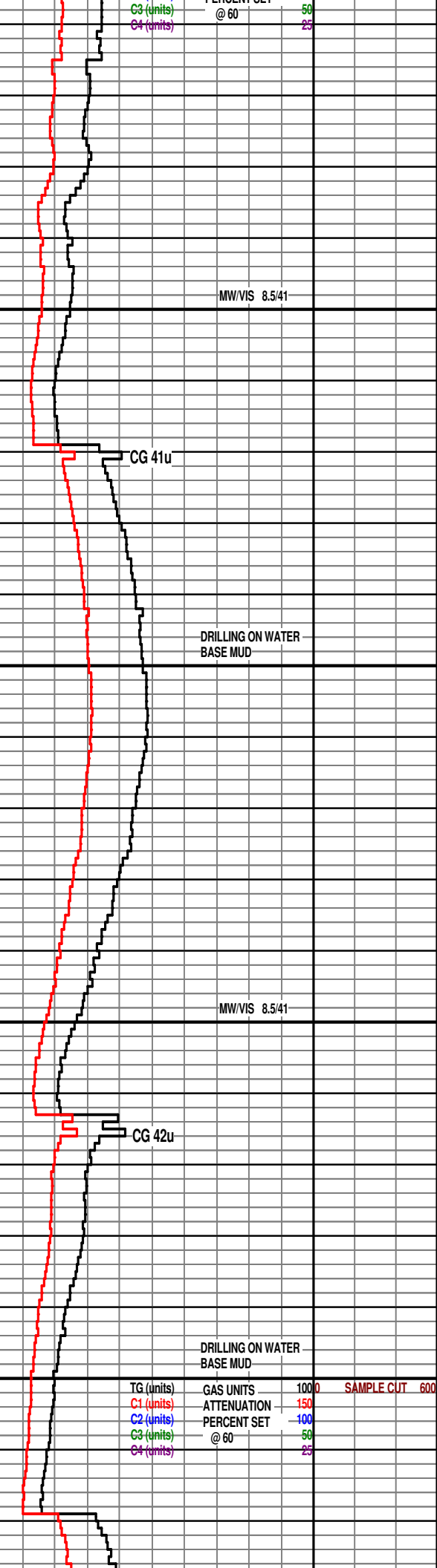
SH: DK GRY, BLK GRY, SCAT LT GRY, SME ORG RCH, CALC, SPLTY, SME BLK CARB, SMTH- SUB WXY LSTR, MOD FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: LT TAN- MED TAN, OCC DRK TAN, MICRO-XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING

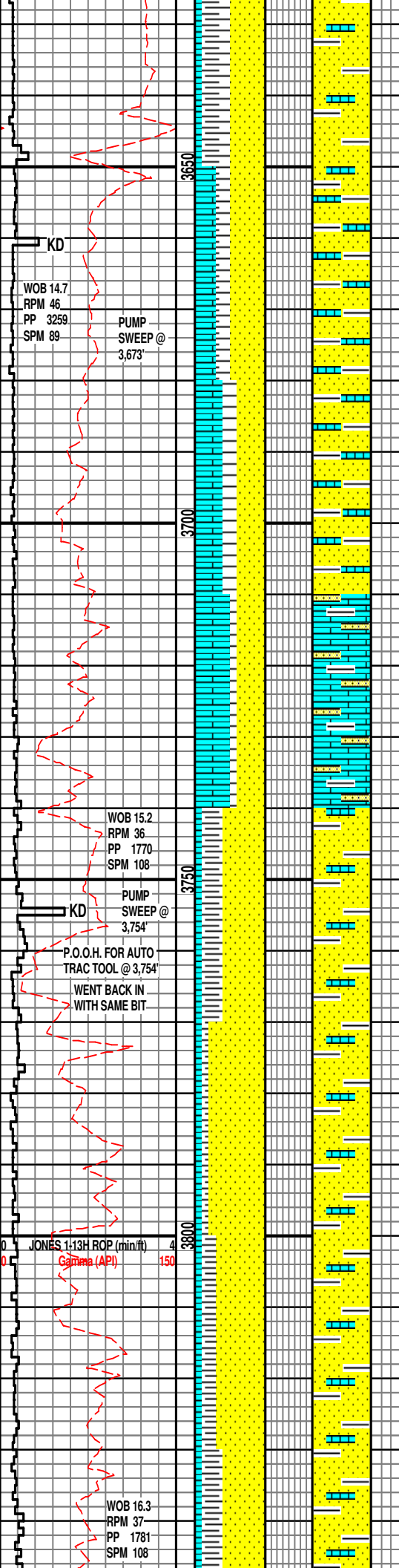
**SURVEY: 3,535' MD 3,512'TVD
INC. 8.98 / AZ. 115.58**

SH: DK GRY, BLK GRY, SCAT LT GRY, SME ORG RCH, CALC, SPLTY, SME BLK CARB, SMTH- SUB WXY LSTR, MOD FRM, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, LS: LT TAN- MED TAN, OCC DRK TAN, MICRO-XLN, MOD FRM-FRM, NO VIS FLOR, NO VIS CUT, NO RESD RING

LS: MSTLY OFF WHT-WHT, SME LT TAN, PRED BLKY, TR SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, TRS PYR, NO CUT NO RING

TRS LS: MSTLY OFF WHT-WHT, SME LT TAN, PRED BLKY, TR SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, VF GRN, W/CONSOL, SUB-ANG, MOD HD, SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, NO CUT NO RING





**SURVEY: 3,630' MD 3,606'TVD
INC. 8.33 / AZ. 110.46**

TRS LS: MSTLY OFF WHT-WHT, SME LT TAN, PRED BLKY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-ANG, MOD HD SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, NO CUT NO RING

**LANSING LIMESTONE
3,658' MD/TVD 3,654'**

LS: MSTLY OFF WHT-WHT, SME LT TAN, PRED BLKY, TR SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-ANG, MOD HD TO HD, CALC CMT, SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, NO CUT NO RING

LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, MOD FRM, SMTH TXT, NO CUT NO RING

**SURVEY: 3,725' MD 3,700'TVD
INC. 9.29 / AZ. 112.35**

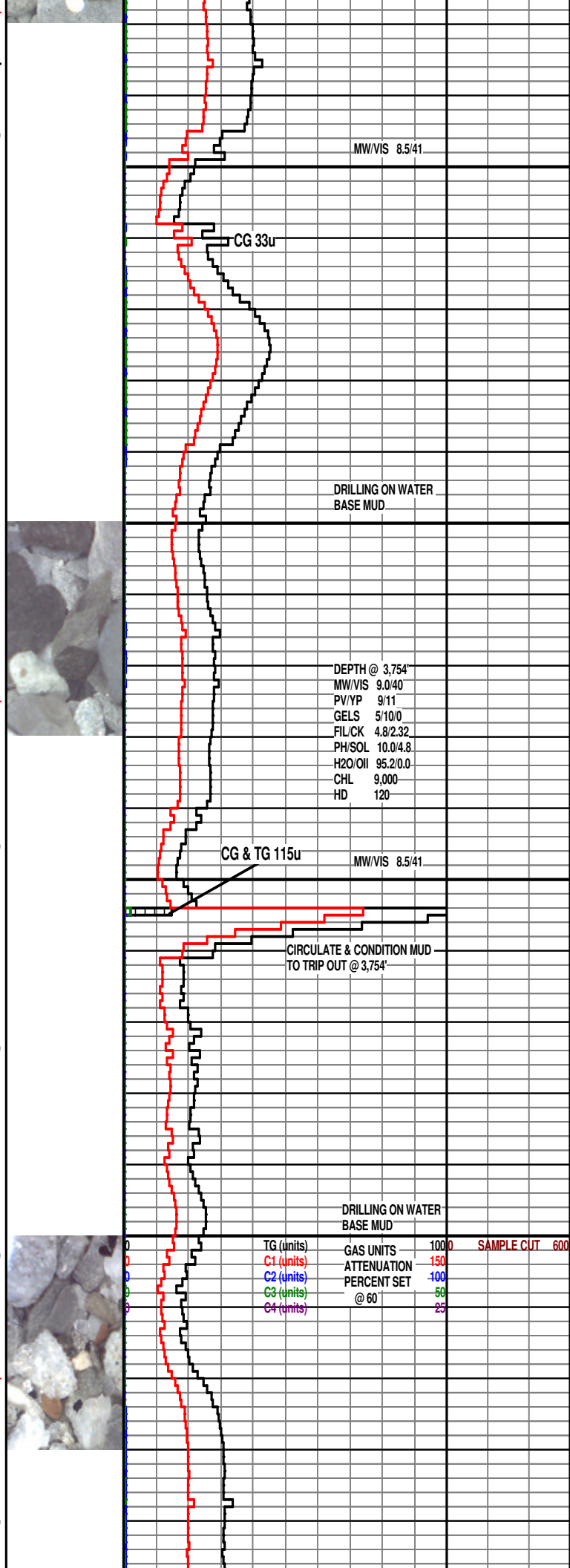
LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING

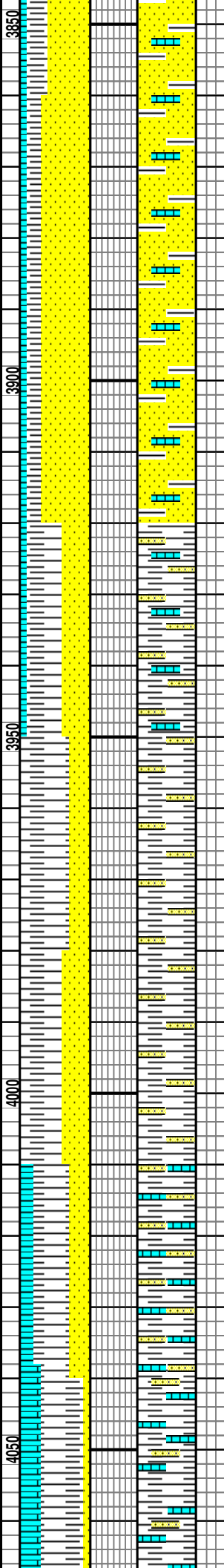
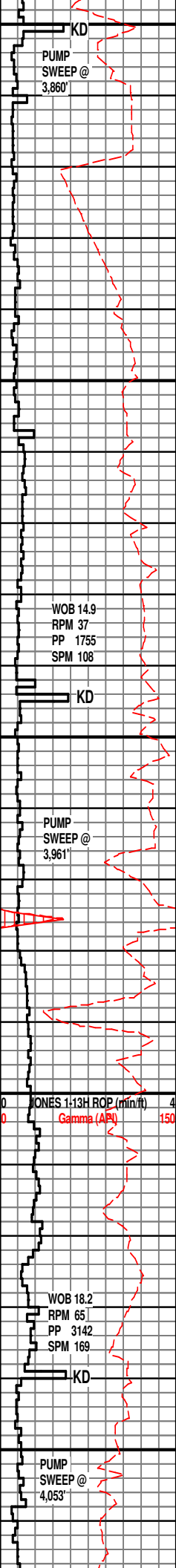
LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING

LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING

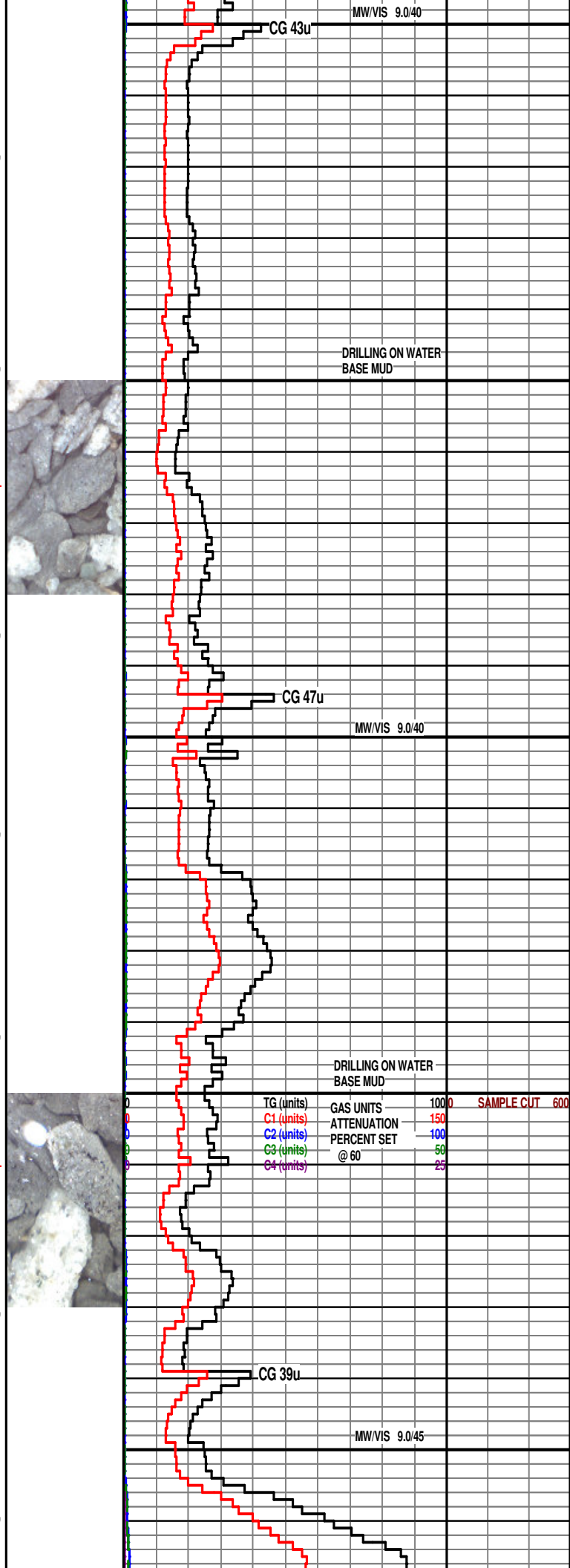
**SURVEY: 3,820' MD 3,794'TVD
INC. 9.52 / AZ. 108.14**

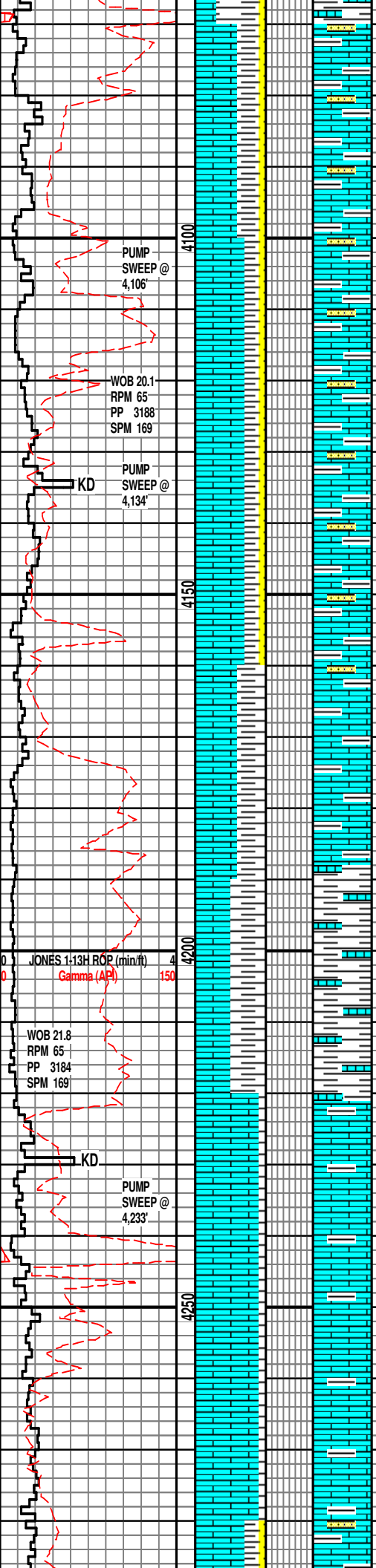
LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM- FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY,





SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
SURVEY: 3,915' MD 3,888'TVD INC. 9.24 / AZ. 108.97
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
SURVEY: 4,010' MD 3,981'TVD INC. 8.82 / AZ. 110.55
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING
 LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING





SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING

LS: MSTLY MED TAN- LT TAN, SME OFF WHT, PRED BLKY, CHNKY TR/SPLNTY, MICRO-XLN, MOD FRM-FRM, OCC BRIT, SME SNDY, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD TO HD, SH: GY-DRK GY, OCC BLK, CHNKY, SPLIN, SLTY, MOD FRM, SMTH TXT, NO CUT NO RING

**SURVEY: 4,105' MD 4,075'TVD
INC. 8.70 / AZ. 108.61**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

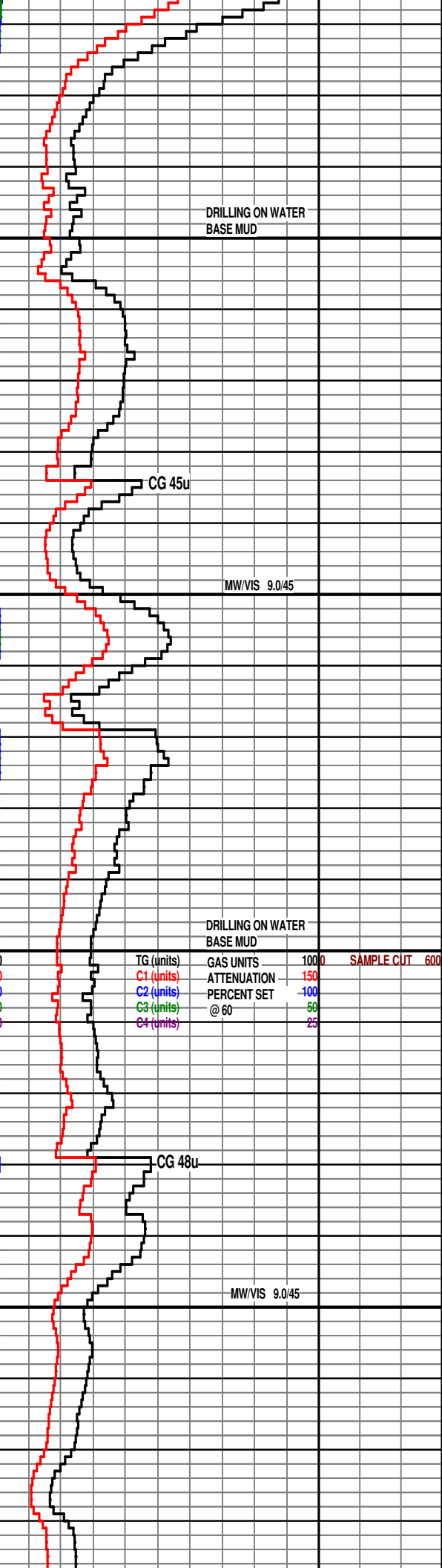
**SURVEY: 4,200' MD 4,169'TVD
INC. 9.02 / AZ. 105.22**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM-FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING



DRILLING ON WATER BASE MUD

CG 45u

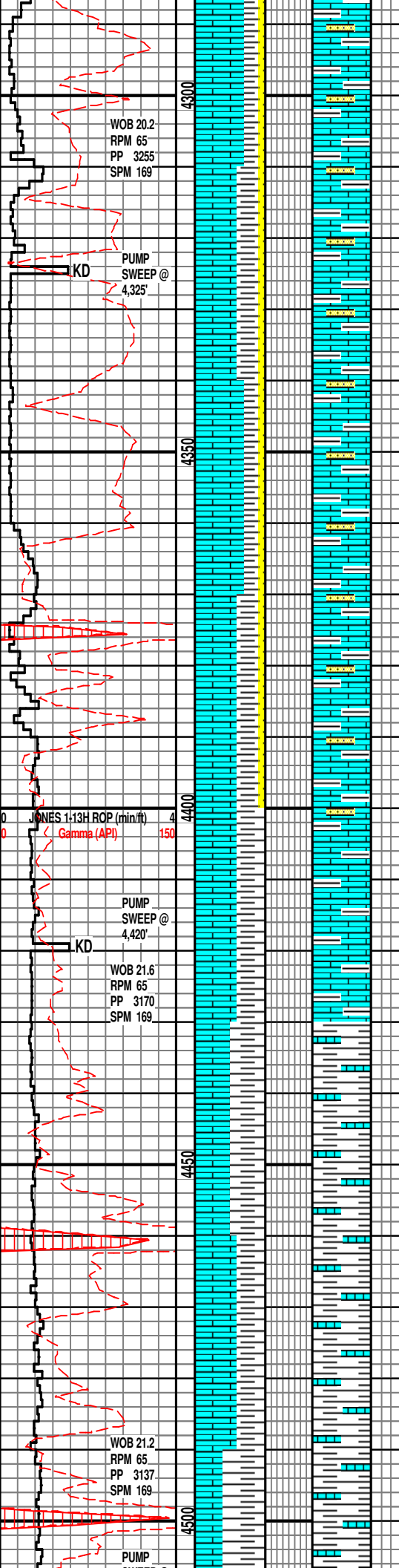
MW/VIS 9.0/45

DRILLING ON WATER BASE MUD

TG (units)	GAS UNITS	100	SAMPLE CUT	600
C1 (units)	ATTENUATION	150		
C2 (units)	PERCENT SET	-100		
C3 (units)	@ 60	50		
C4 (units)		25		

CG 48u

MW/VIS 9.0/45



**SURVEY: 4,295' MD 4,263'TVD
INC. 9.12 / AZ. 102.53**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING

**SURVEY: 4,358' MD 4,325'TVD
INC. 8.71 / AZ. 101.72**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, SS: OFF WHT TO WHT, F-MED GRN, W/CONSOL, SUB-RND, SUB-ANG, MOD HD, NO CUT, NO RING

**SURVEY: 4,390' MD 4,357'TVD
INC. 9.26 / AZ. 100.93**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

**SURVEY: 4,421' MD 4,387'TVD
INC. 8.80 / AZ. 90.56**

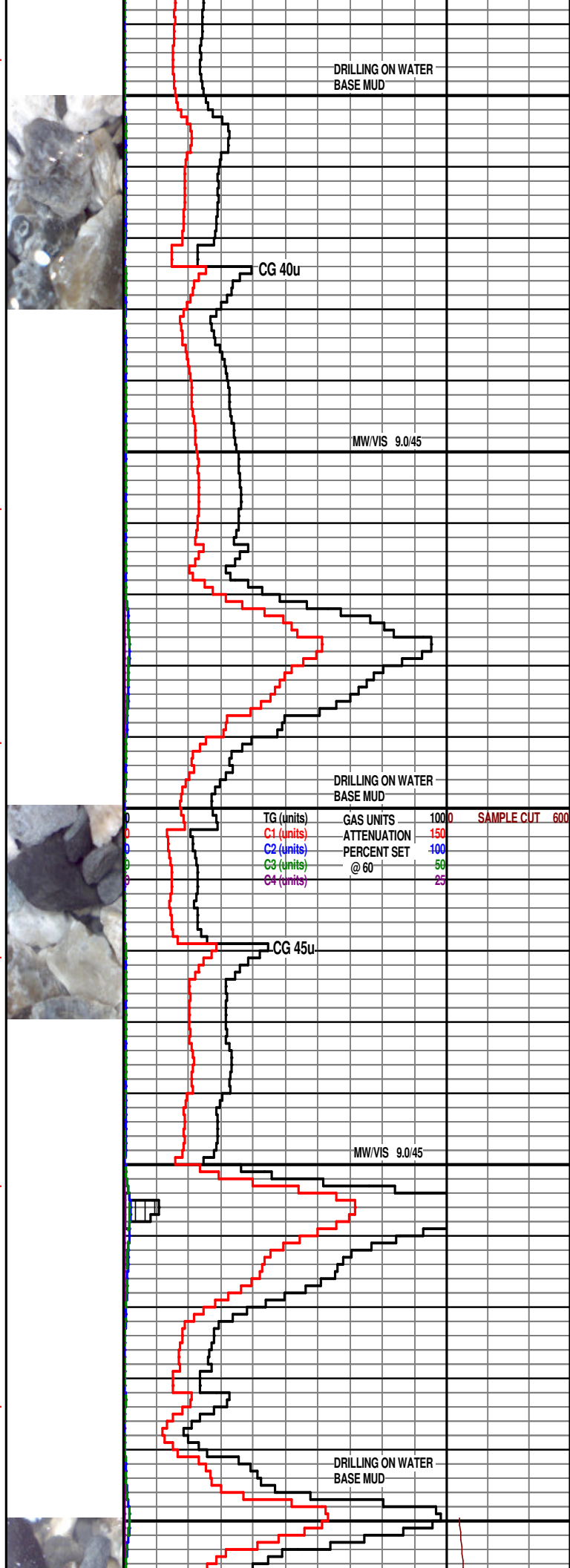
LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

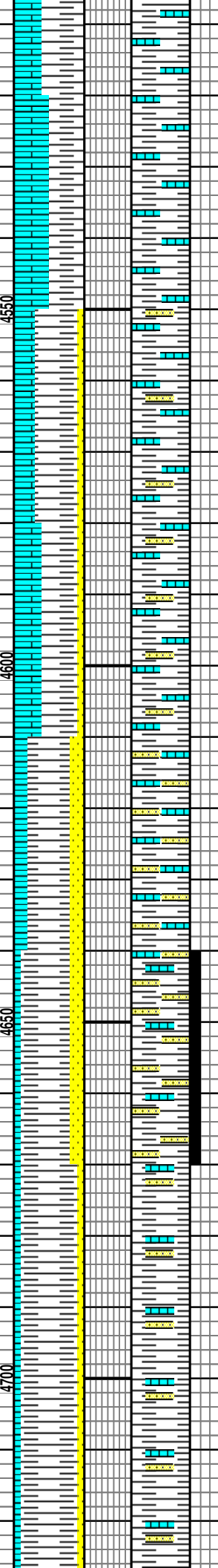
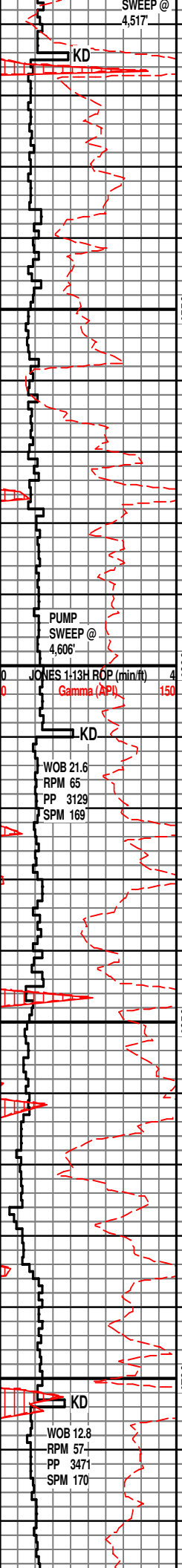
**SURVEY: 4,453' MD 4,419'TVD
INC. 9.50 / AZ. 75.27**

LS: MOSTLY LT-MED-DRK GRY, SME OFF WHT, CRM, BLKY, MICRO/F-XLN, SME MOD FRM- FRM, SL/OOL, SNDY, DNSE, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, NO CUT, NO RING

**SURVEY: 4,484' MD 4,450'TVD
INC. 10.86 / AZ. 61.93**

**CHEROKEE GROUP
4,496' MD/TVD 4,461'**





**SURVEY: 4,516' MD 4,481'TVD
INC. 12.89 / AZ. 51.80**

SH: LT-MED GRY, SME RED, ABDT BLK, ORG RCH, INCRS BLK CARB, RGH TXT, MICA, SPLIN, SL/TRS FREE/EMBD PYR, LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, SME F-XLN, MOD FRM- FRM, SNDY, DNSE, NO CUT, NO RING

**SURVEY: 4,548' MD 4,512'TVD
INC. 14.78 / AZ. 44.47**

LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SNDY, DNSE, SH: LT-MED-DRK GRY, SME RED, ABDT BLK, ORG RCH, SLTY TXT, MICA, SPLIN, SS: OFF WHT-WHT, W/CONSOL, SL/QTZ, NO CUT, NO RING

**SURVEY: 4,579' MD 4,542'TVD
INC. 16.64 / AZ. 41.05**

LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SH: LT-MED-DRK GRY, SME GRY BLK TO BLK, SME RED, ORG RCH, MICA, SS: OFF WHT-WHT, GRY, W/CONSOL, HD, SL/QTZ, NO CUT, NO RING

**SURVEY: 4,611' MD 4,572'TVD
INC. 18.56 / AZ. 37.58**

LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SH: LT-MED-DRK GRY, SME GRY BLK TO BLK, SME RED, ORG RCH, MICA, SS: OFF WHT-WHT, GRY, W/CONSOL, HD, SL/QTZ, NO CUT, NO RING

**SURVEY: 4,642' MD 4,601'TVD
INC. 21.16 / AZ. 34.45**

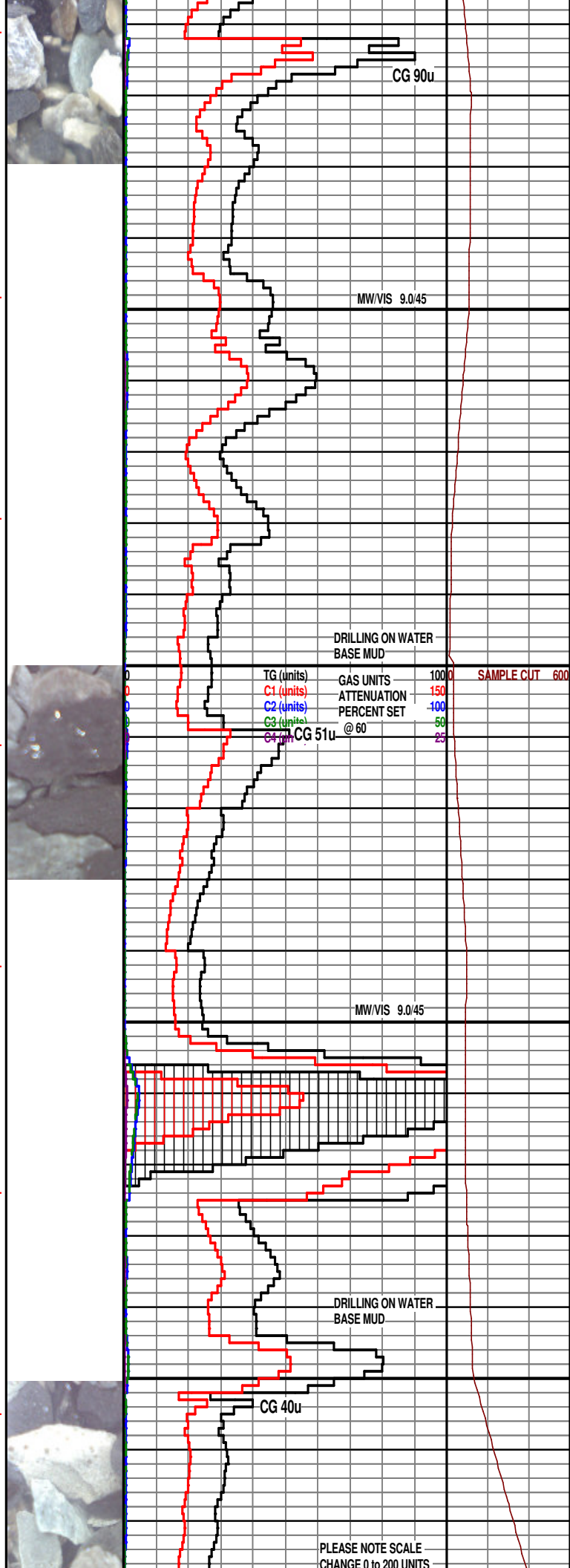
LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SH: LT-MED-DRK GRY, SME GRY BLK TO BLK, SME RED, ORG RCH, MICA, SS: OFF WHT-WHT, GRY, W/CONSOL, HD, SL/QTZ, WK CUT, THIN BLU-GRN RING

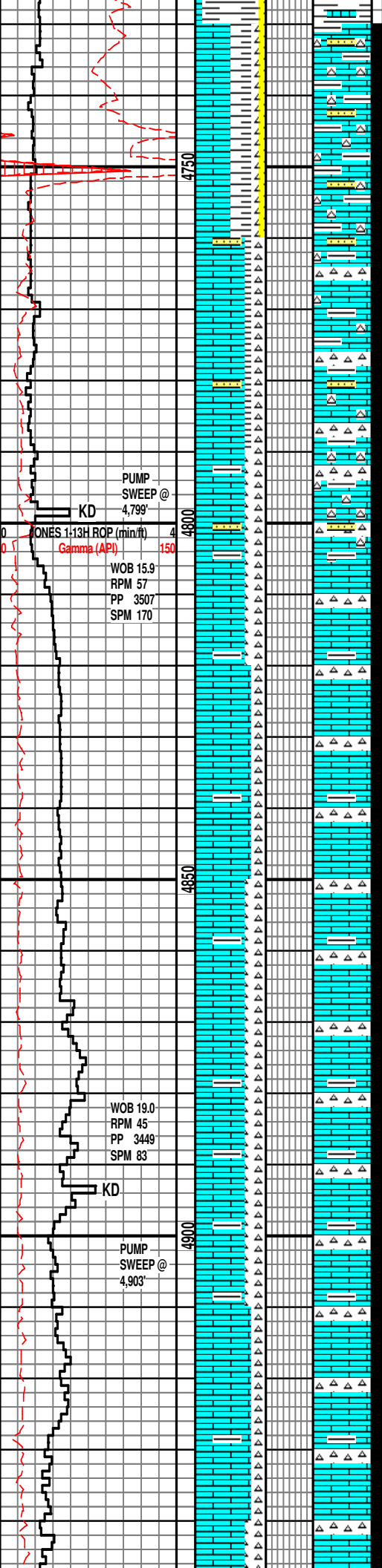
**SURVEY: 4,674' MD 4,631'TVD
INC. 22.51 / AZ. 32.10**

LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SH: LT-MED-DRK GRY, SME GRY BLK TO BLK, SME RED, ORG RCH, MICA, SS: OFF WHT-WHT, GRY, W/CONSOL, HD, SL/QTZ, NO CUT, NO RING

**SURVEY: 4,705' MD 4,660'TVD
INC. 24.36 / AZ. 29.80**

LS: OFF WHT-WHT, CRM, BLKY, MICRO-XLN, MOD FRM- FRM, SH: LT-MED-DRK GRY, SME GRY BLK TO BLK, SME RED, ORG RCH, MICA, SS: OFF WHT-WHT, GRY, W/CONSOL, HD, SL/QTZ, NO CUT, NO RING





OFF-WHT, WHT, GRY, W/CONSL, HD, SL/QTZ, NO CUT, NO RING

**SURVEY: 4,737' MD 4,689'TVD
INC. 26.40 / AZ. 27.81**

**MISSISSIPPI LIME
4,753' MD/TVD 4,702'**

**SURVEY: 4,769' MD 4,717'TVD
INC. 28.64 / AZ. 25.90**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, V/SL TRS SH: POSS UPPER HOLE DEBRE, GRY, SME RED & BLK, CHRT: TRIP, WTHD, OFF WHT-WHT, MICR-XLN, MOD HD-HD, V/SL TRS SS, WK CUT, THIN BLU-GRN RING

**SURVEY: 4,801' MD 4,745'TVD
INC. 31.17 / AZ. 22.96**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 4,832' MD 4,771'TVD
INC. 32.92 / AZ. 21.22**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 4,864' MD 4,798'TVD
INC. 34.8 / AZ. 19.92**

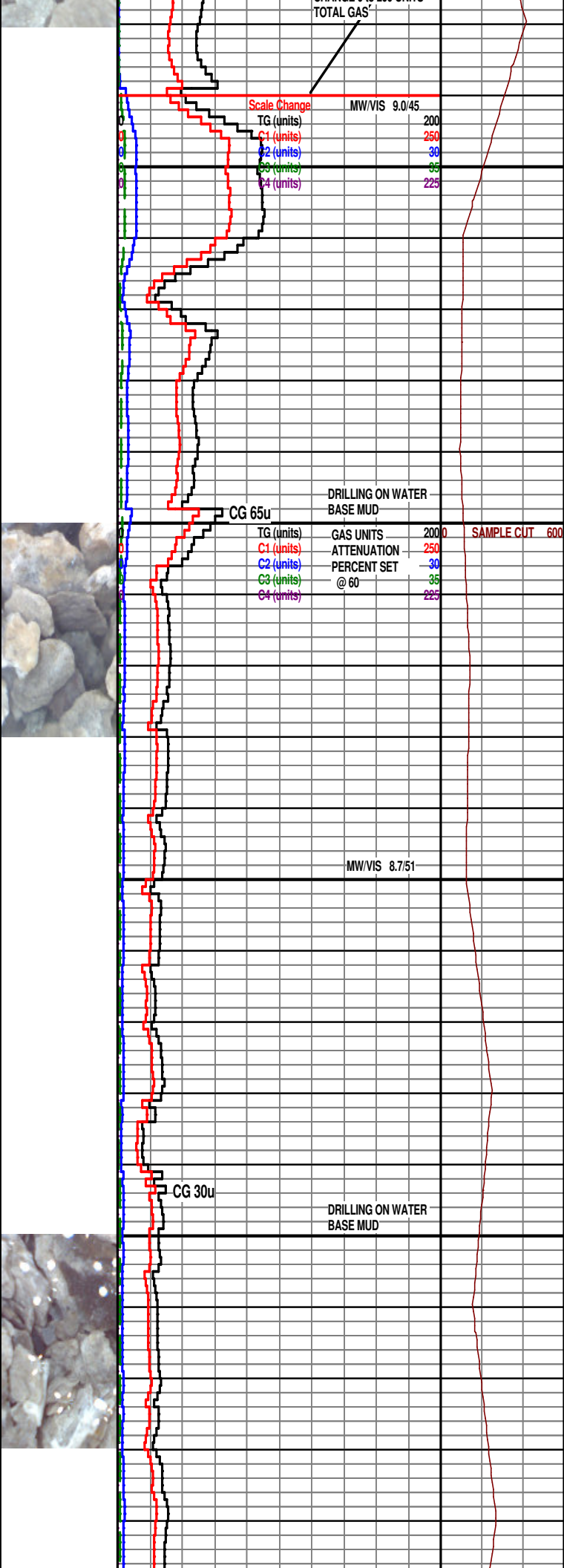
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, THICK BLU-GRN RESD RING, FR MKY CUT

**SURVEY: 4,895' MD 4,823'TVD
INC. 35.9 / AZ. 18.81**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

**SURVEY: 4,927' MD 4,849'TVD
INC. 35.64 / AZ. 16.43**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD,



Scale Change

TG (units)	200
C1 (units)	250
C2 (units)	30
C3 (units)	35
C4 (units)	225

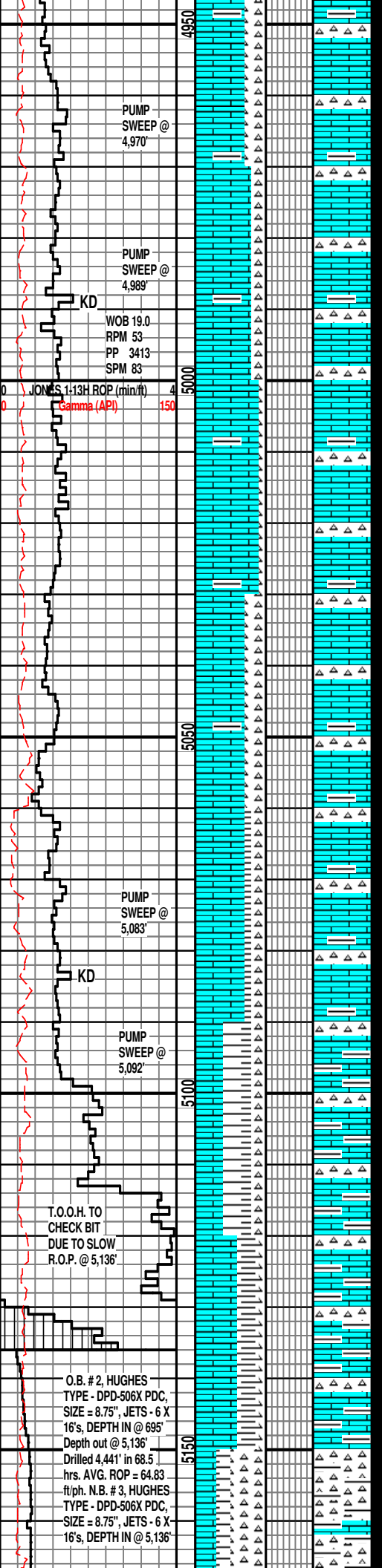
DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET	30		
C3 (units)	@ 60	35		
C4 (units)		225		



MW/VIS 8.7/51

DRILLING ON WATER
BASE MUD



MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 4,959' MD 4,874'TVD
INC. 37.24 / AZ.15.66**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 4,990' MD 4,899'TVD
INC. 39.65 / AZ.14.89**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

**SURVEY: 5,021' MD 4,923'TVD
INC. 42.48 / AZ.15.17**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

**SURVEY: 5,053' MD 4,946'TVD
INC. 44.74 / AZ.14.75**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 5,085' MD 4,968'TVD
INC. 47.61 / AZ.14.34**

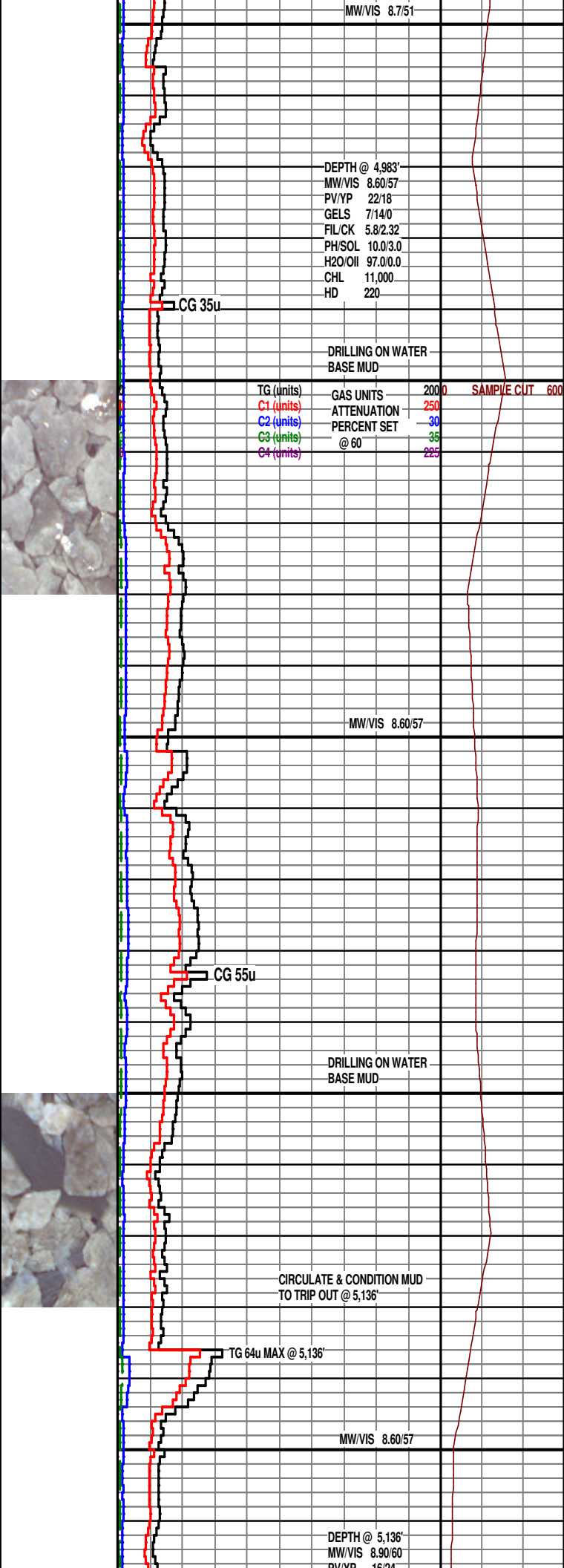
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

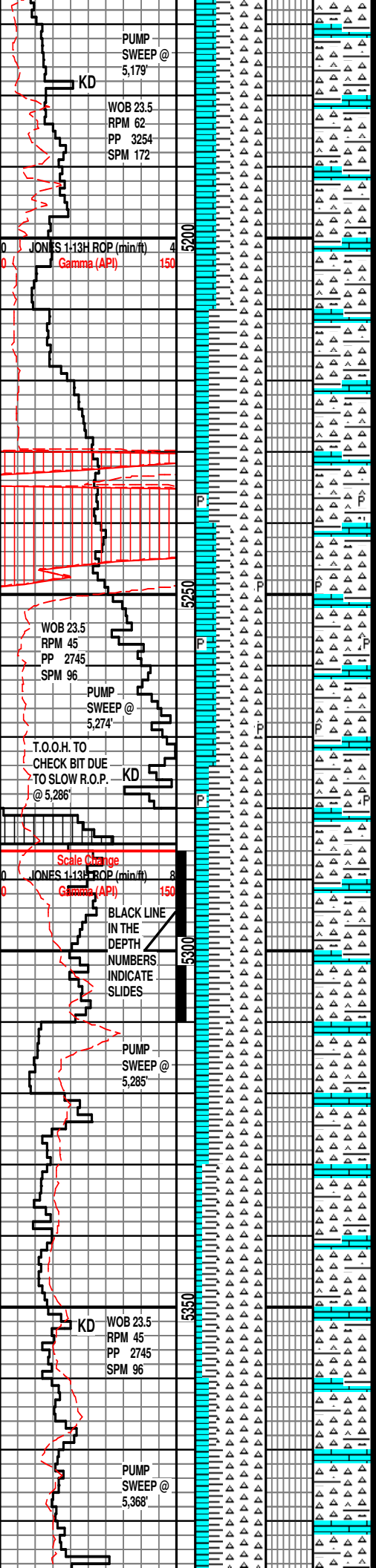
**SURVEY: 5,117' MD 4,989'TVD
INC. 50.1 / AZ.12.76**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 5,149' MD 5,009'TVD
INC. 52.69 / AZ.10.70**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD





CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 5,180' MD 5,027'TVD
INC. 54.83 / AZ. 9.77**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

**SURVEY: 5,212' MD 5,045'TVD
INC. 55.90 / AZ. 9.86**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: POSS FRAC, GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THIN BLU-GRN RING

**SURVEY: 5,243' MD 5,062'TVD
INC. 58.92 / AZ. 8.98**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, TRS PYR, GD-EX CUT, THICK BLU-GRN RING

**SURVEY: 5,276' MD 5,078'TVD
INC. 62.60 / AZ. 8.08**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, TRS PYR, FR-GD CUT, THICK BLU-GRN RING

**SURVEY: 5,307' MD 5,092'TVD
INC. 65.74 / AZ. 7.75**

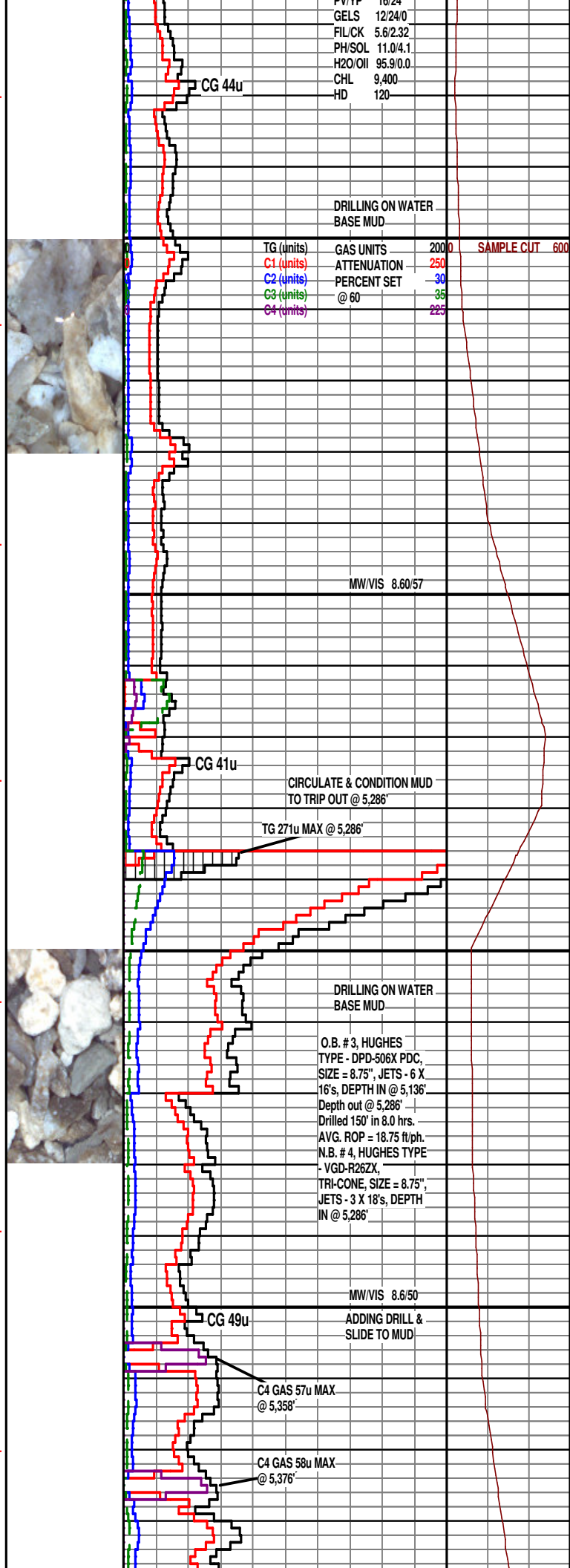
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

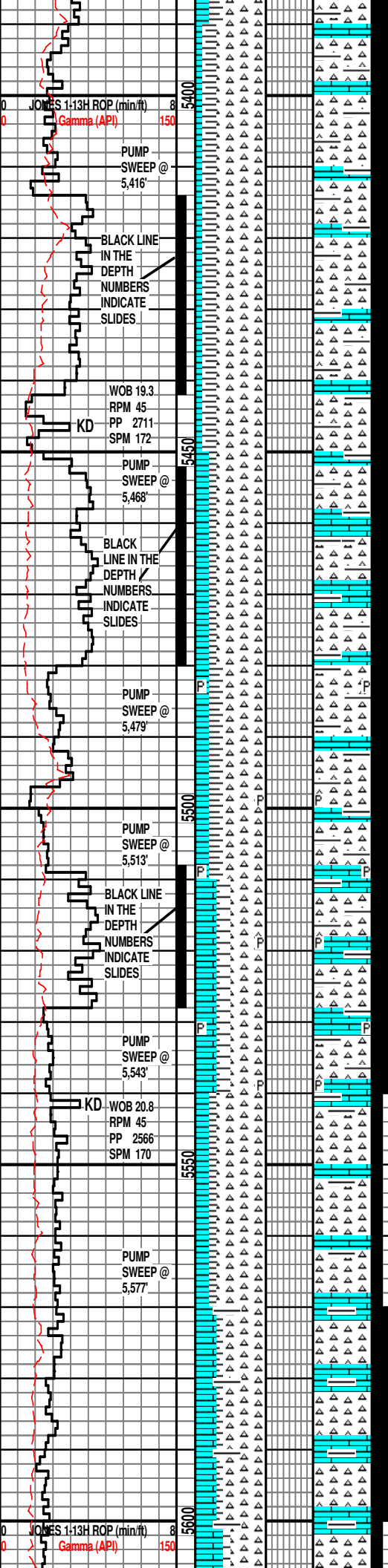
**SURVEY: 5,339' MD 5,104'TVD
INC. 67.88 / AZ. 5.60**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THICK BLU-GRN RING

**SURVEY: 5,370' MD 5,115'TVD
INC. 71.19 / AZ. 4.88**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK,





CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THICK BLU-GRN RING

**SURVEY: 5,402' MD 5,125'TVD
INC. 74.27 / AZ. 4.55**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU-GRN RING

**SURVEY: 5,433' MD 5,132'TVD
INC. 77.95 / AZ. 4.11**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT THIN BLU-GRN RING

**SURVEY: 5,465' MD 5,138'TVD
INC. 81.30 / AZ. 3.68**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, TRS PRY, FR-GD CUT, THICK BLU-GRN RING

**SURVEY: 5,497' MD 5,142'TVD
INC. 84.31 / AZ. 3.60**

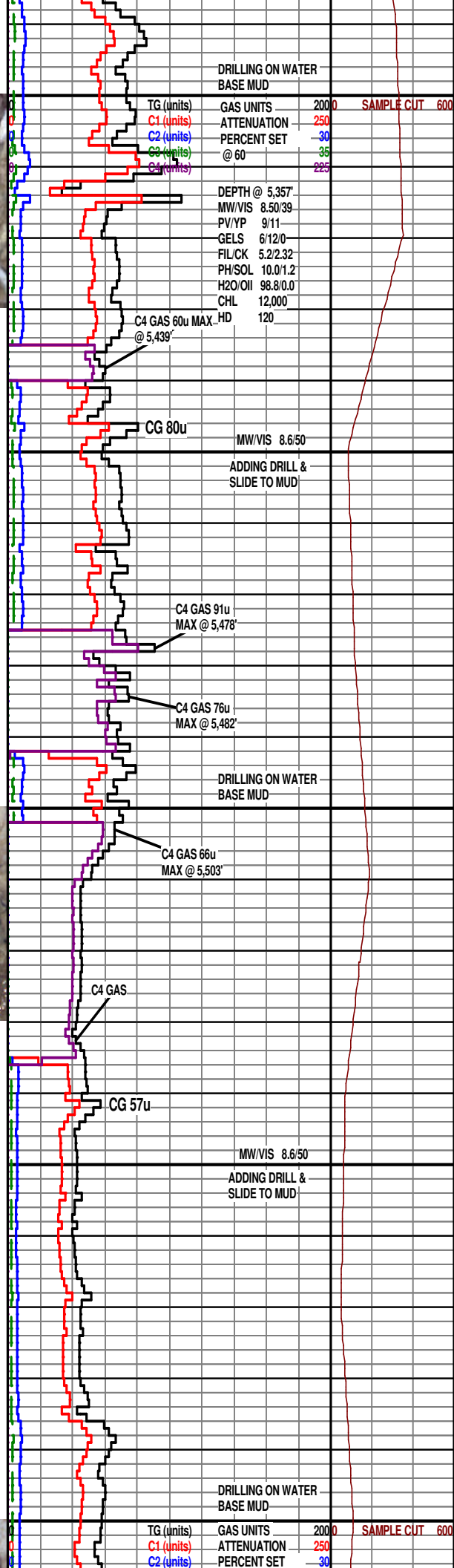
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, TRS PRY, FR CUT, THIN BLU-GRN RING

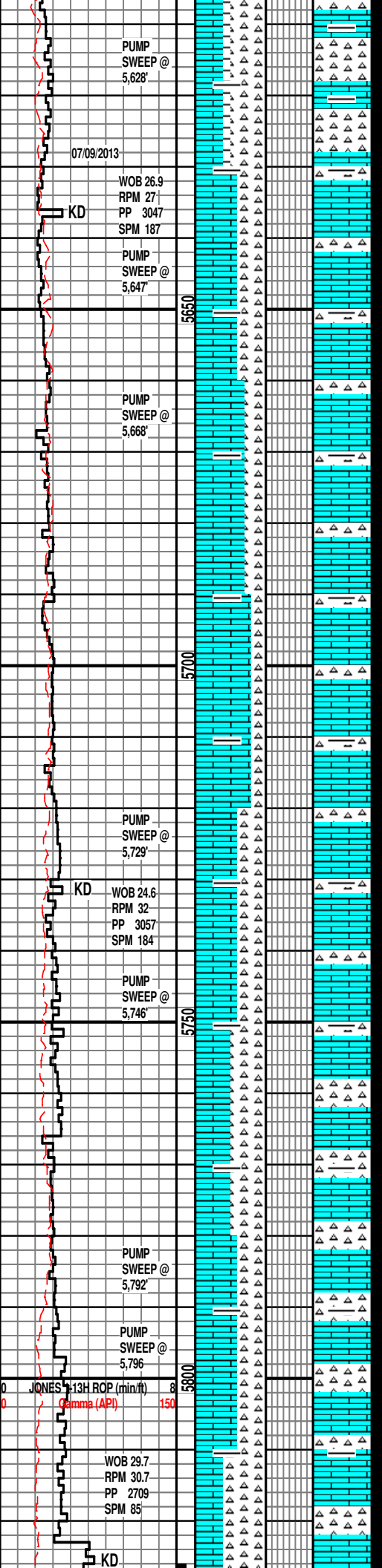
**SURVEY: 5,544' MD 5,146'TVD
INC. 87.07 / AZ. 4.51**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, SME RED & BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU-GRN RING

**SURVEY: 5,592' MD 5,148'TVD
INC. 87.94 / AZ. 4.11**

LS: CRM, SME YELLISH/BRN





LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, SH: GRY, BLK, CHRT: TRIP,
OFF WHT-WHT, WTHD, MICR-XLN, MOD
HD-HD, HL FRAC, TRS OIL ON PITS,
WK CUT, THIN BLU-GRN RING

**SURVEY: 5,639' MD 5,149'TVD
INC. 88.25 / AZ. 4.15**

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,
MICR-XLN, MOD HD-HD, HL FRAC, TRS
OIL ON PITS, V/WK BLU-GRN RING

**SURVEY: 5,687' MD 5,150'TVD
INC. 89.08 / AZ. 3.67**

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,
MICR-XLN, MOD HD-HD, HL FRAC, TRS
OIL ON PITS, WK-FR CUT, THIN
BLU-GRN RING

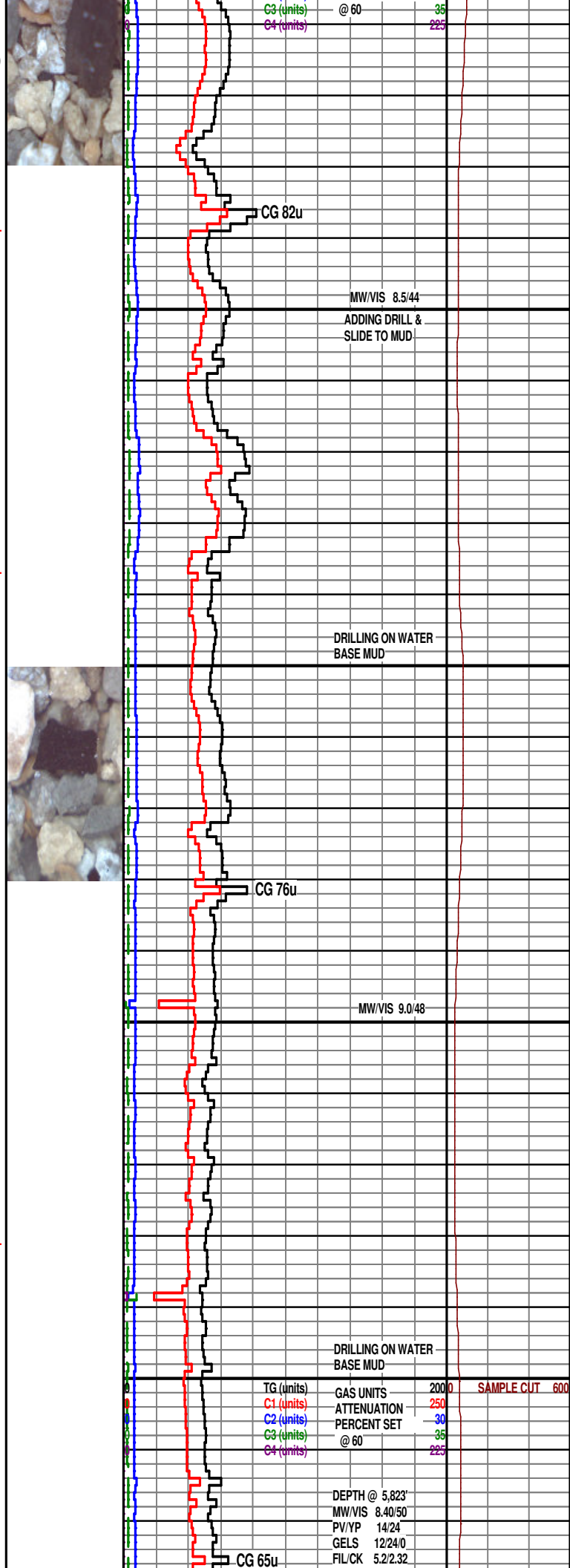
LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,
MICR-XLN, MOD HD-HD, HL FRAC, TRS
OIL ON PITS, V/WK CUT, V-THIN
BLU-GRN RING

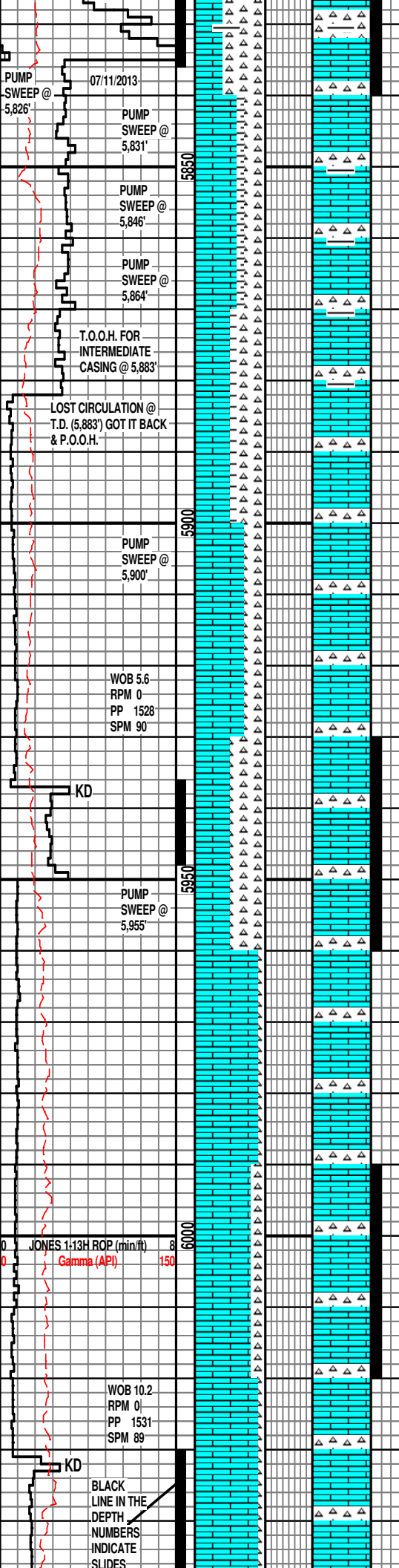
LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,
MICR-XLN, MOD HD-HD, HL FRAC, TRS
OIL ON PITS, V/WK CUT, V-THIN
BLU-GRN RING

**SURVEY: 5,781' MD 5,151'TVD
INC. 89.94 / AZ. 4.28**

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,
MICR-XLN, MOD HD-HD, HL FRAC, TRS
OIL ON PITS, V/WK CUT, V-THIN
BLU-GRN RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, TRS SH: GRY, BLK, CHRT:
TRIP, OFF WHT-WHT, WTHD,





MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 5,838' MD 5,152'TVD
INC. 89.17 / AZ. 3.04**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

**SURVEY: 5,881' MD 5,152'TVD
INC. 87.81 / AZ. 1.73**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: GRY, BLK, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 5,975' MD 5,156'TVD
INC. 87.93 / AZ. 2.65**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

LS: CRM, SME YELLISH/BRN

PH/SOL 9.5/1.2
H2O/OIL 98.8/0.0
CHL 11,000
HD 120

MW/VIS 8.9/50

CIRCULATE & CONDITION MUD TO TRIP @ 5,883'

DRILLING ON WATER BASE MUD

O.B. # 4, HUGHES TYPE - VGD-R26ZX, TRI-CONE, SIZE = 8.75", JETS - 3 X 18's, DEPTH IN @ 5,286' Depth out @ 5,883' Drilled 597' in 30.5 hrs. AVG. ROP = 19.57 ft/ph. N.B. # 5, HUGHES TYPE - DPD-406-X, PDC, SIZE = 6 1/8", JETS - 6 X 12's, DEPTH IN @ 5,883'

CG 38u

MW/VIS 8.3/29

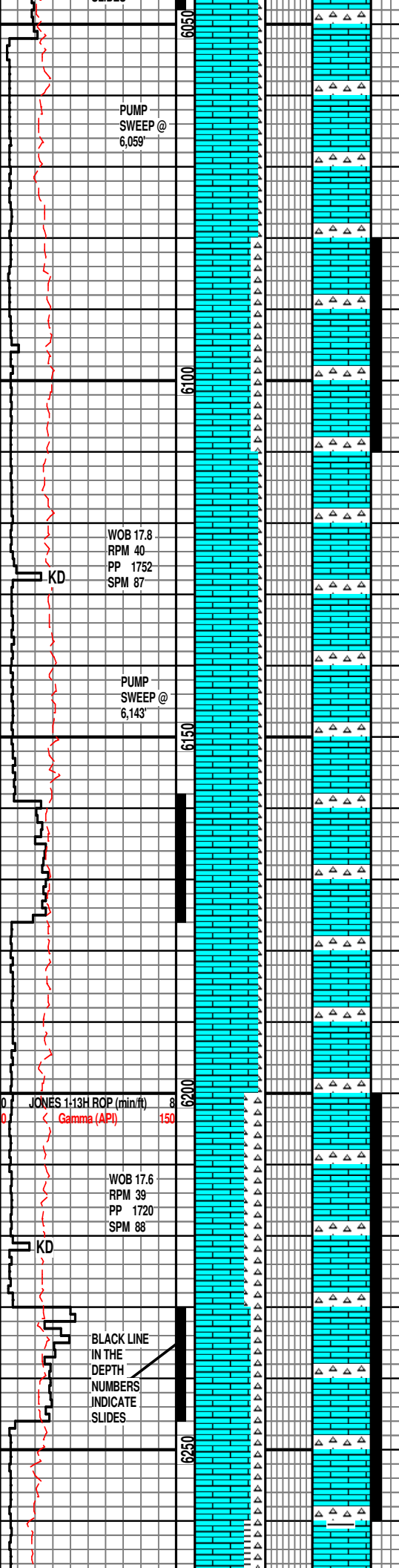
DEPTH @ 5,883'
MW/VIS 8.35/27
PV/YP 1/1
GELS 1/1/0
FIL/CK 60.0/2.32
PH/SOL 9.0/0.5
H2O/OIL 99.5/0.0
CHL 500
HD 80

DRILLING ON WATER BASE MUD

TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET	30		
C3 (units)	@ 60	35		
C4 (units)		225		

CG 37u

BLACK LINE IN THE DEPTH NUMBERS INDICATE SLIDES



LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, NO CUT NO
RING

**SURVEY: 6,070' MD 5,158'TVD
INC. 90.03 / AZ. 2.43**

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, V/WK CUT,
V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, NO CUT NO
RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, NO CUT NO
RING

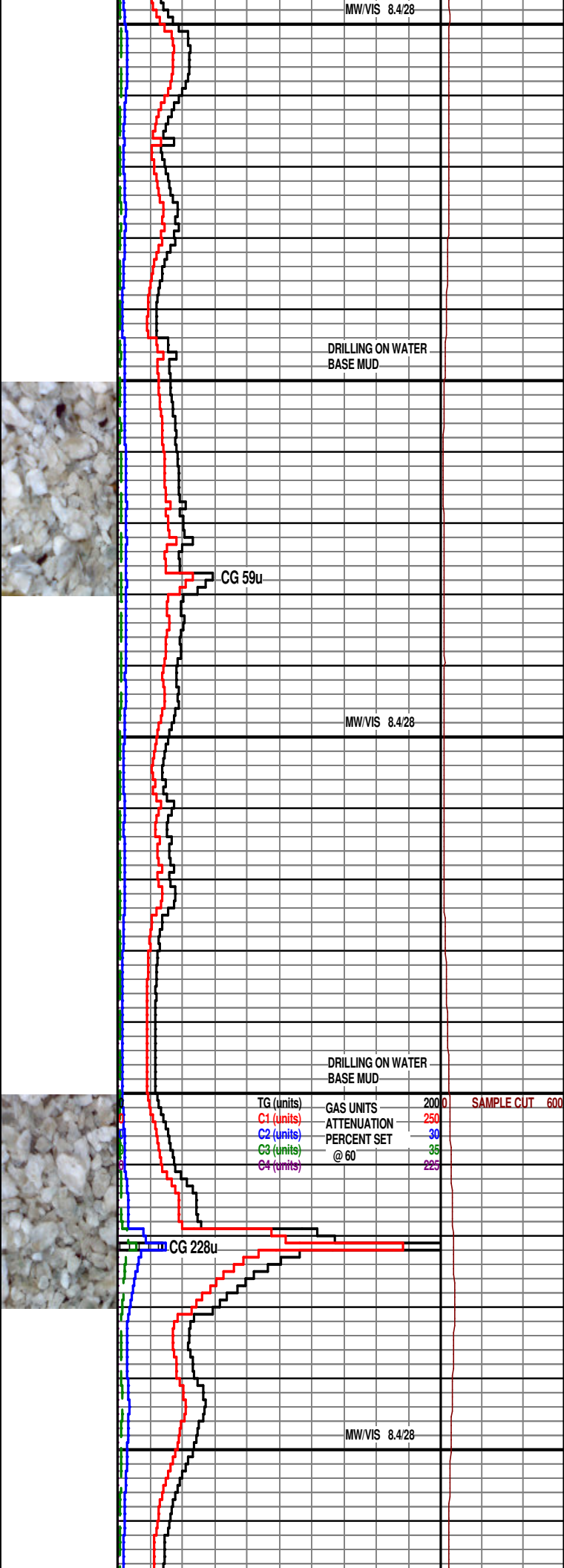
**SURVEY: 6,165' MD 5,157'TVD
INC. 90.37 / AZ. 1.44**

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, NO CUT NO
RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, V/WK CUT,
V-THIN BLU-GRN RING

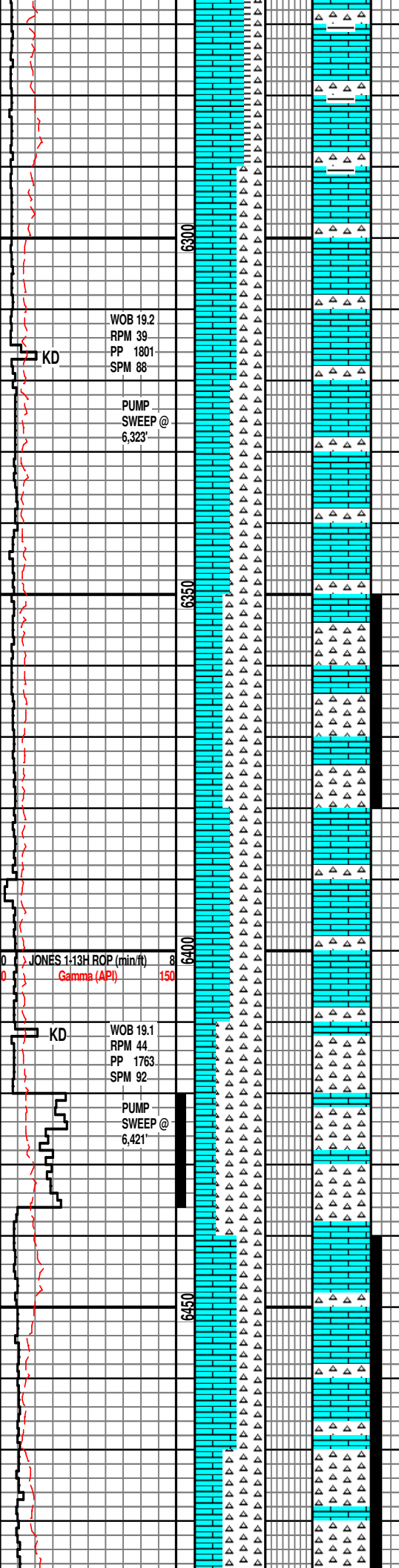
LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, V/WK CUT,
V-THIN BLU-GRN RING

**SURVEY: 6,259' MD 5,156'TVD
INC. 91.29 / AZ. 0.06**



DRILLING ON WATER BASE MUD		
TG (units)	GAS UNITS	200.0
C1 (units)	ATTENUATION	250
C2 (units)	PERCENT SET	30
C3 (units)	@ 60	35
C4 (units)		225

SAMPLE CUT 600



LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

SURVEY: 6,354' MD 5,154'TVD
INC. 91.08 / AZ. 0.60

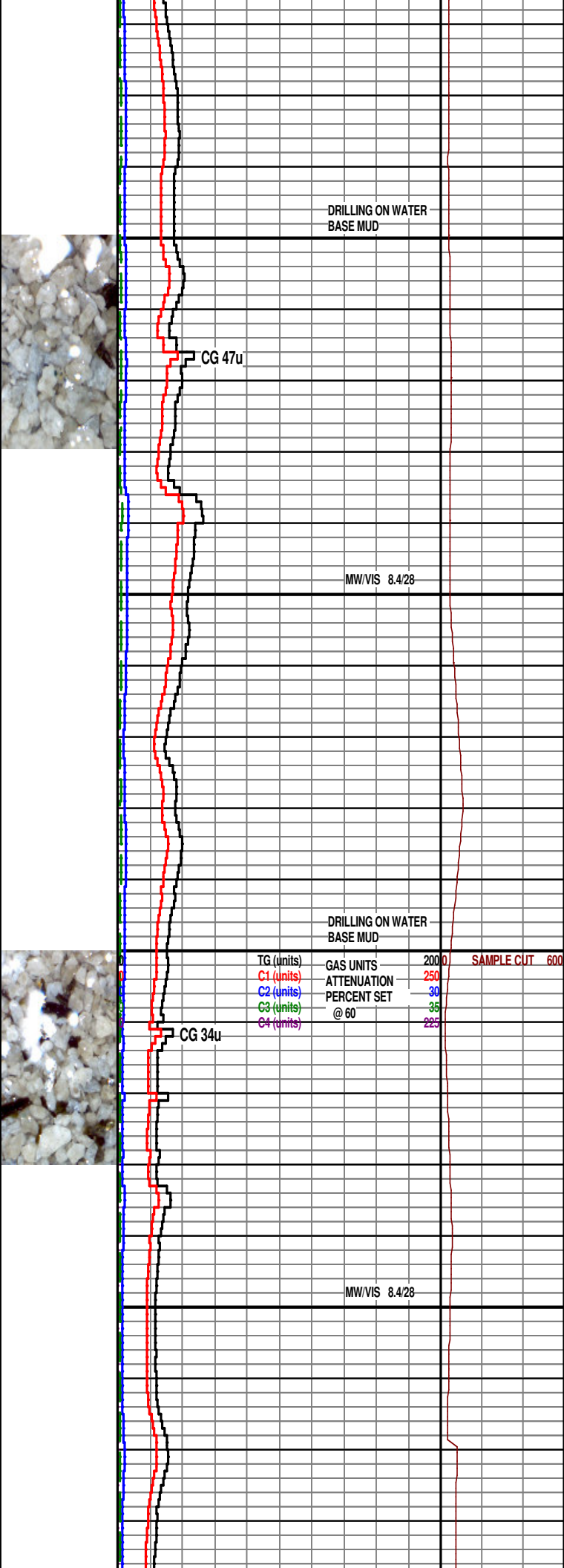
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, TRS SH: GRY, BLK CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

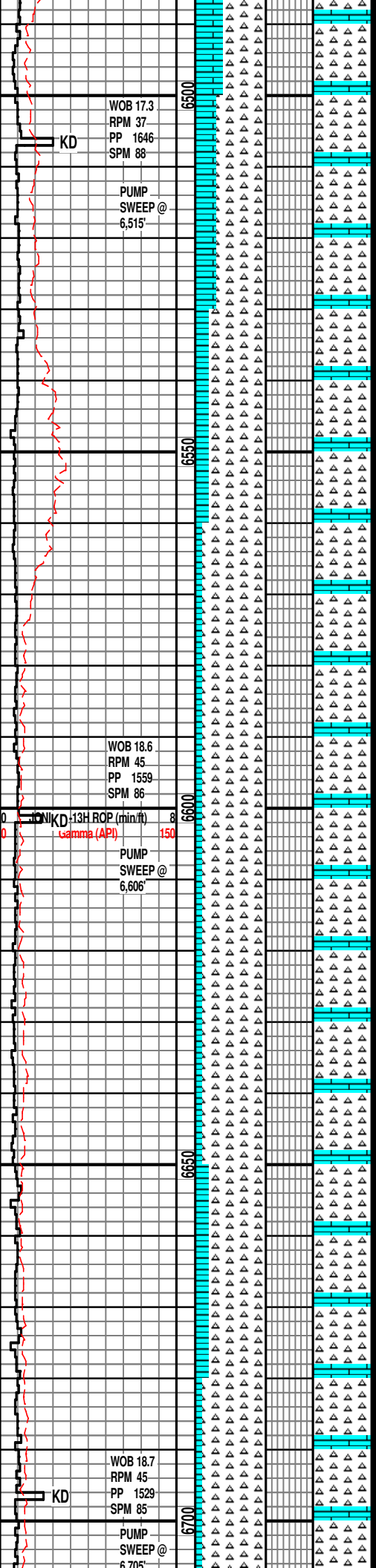
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, TRS SH: GRY, BLK CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT NO RING

SURVEY: 6,449' MD 5,151'TVD
INC. 91.94 / AZ. 1.55

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING





LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

SURVEY: 6,544' MD 5,148'TVD
INC. 92.03 / AZ. 0.93

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

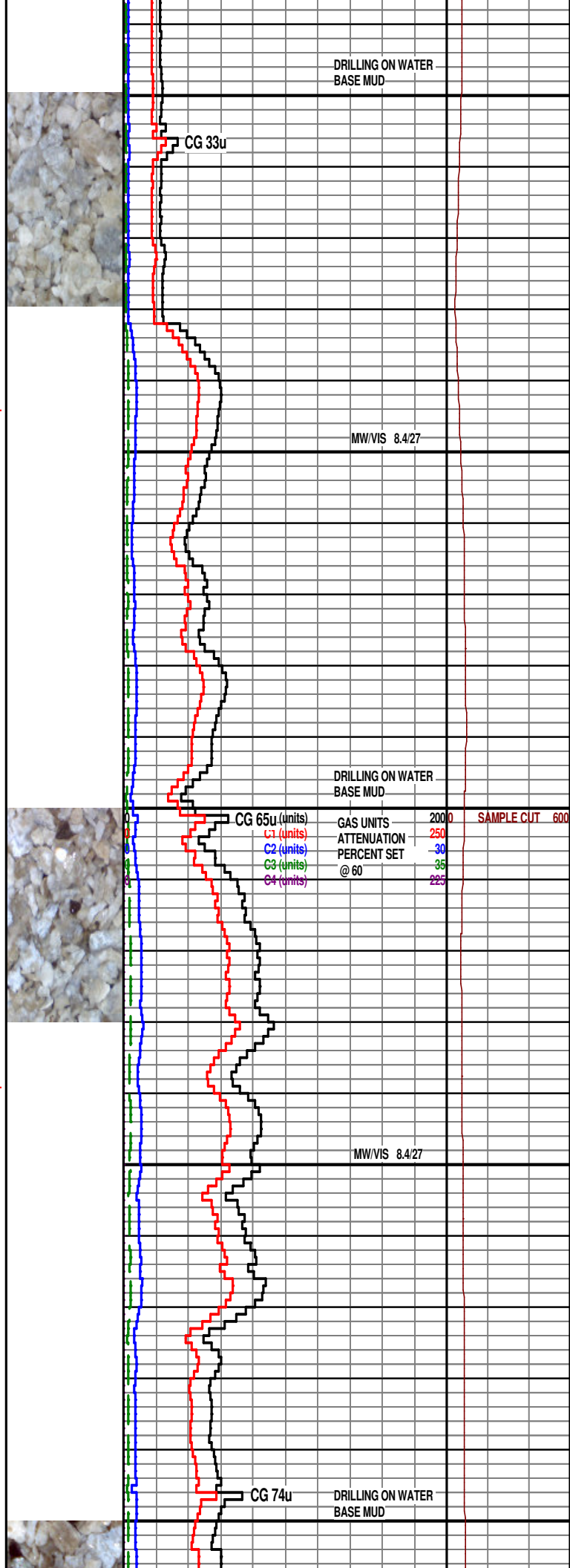
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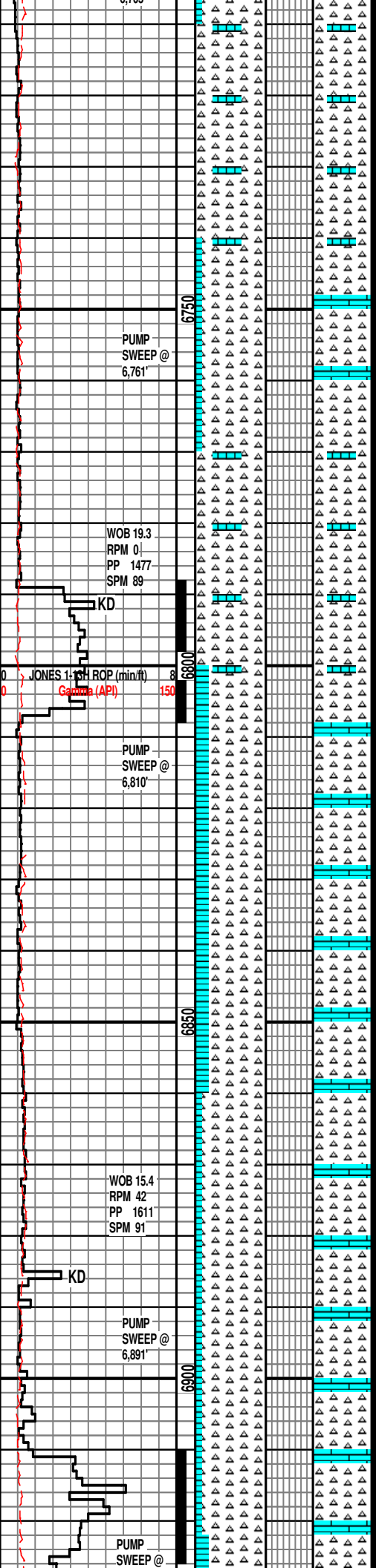
LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

SURVEY: 6,639' MD 5,145'TVD
INC. 91.85 / AZ. 1.13

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING





LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, V/WK CUT,
V-THIN BLU-GRN RING

SURVEY: 6,734' MD 5,144'TVD
INC. 89.38 / AZ. 1.19

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, WK-FR CUT,
THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, WK-FR CUT,
THIN BLU-GRN RING

SURVEY: 6,829' MD 5,143'TVD
INC. 92.28 / AZ. 0.95

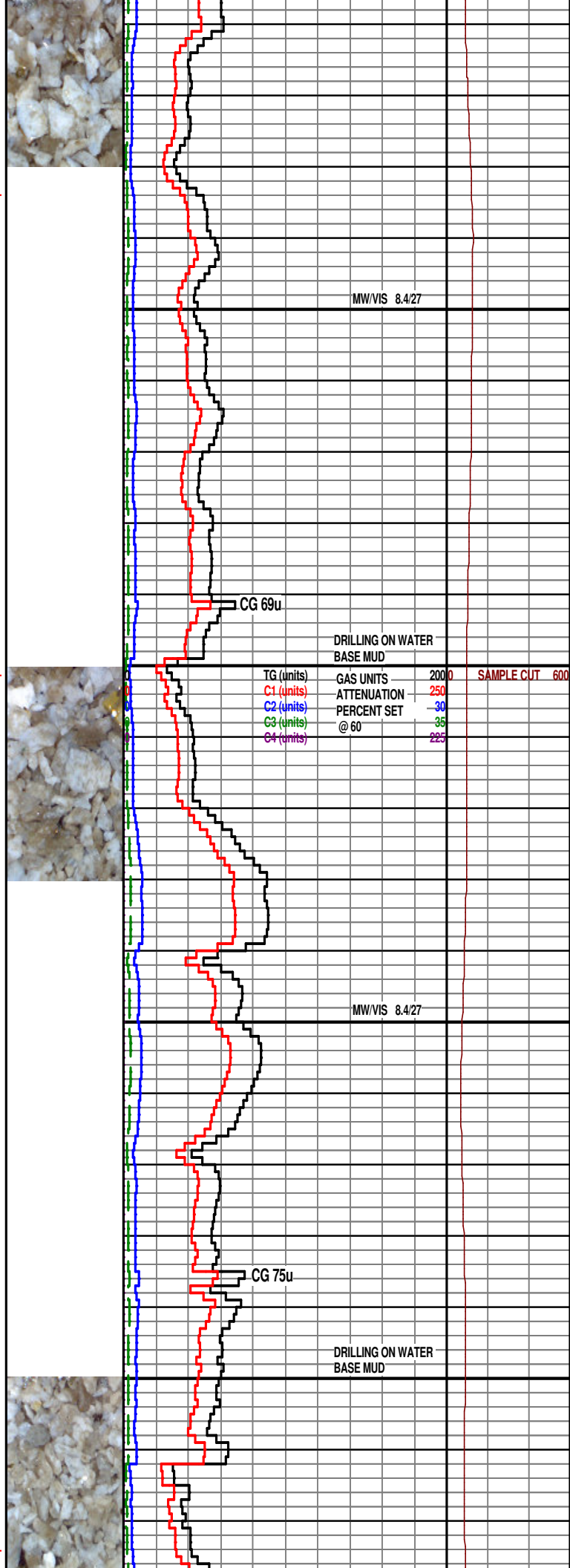
LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, WK-FR CUT,
THIN BLU-GRN RING

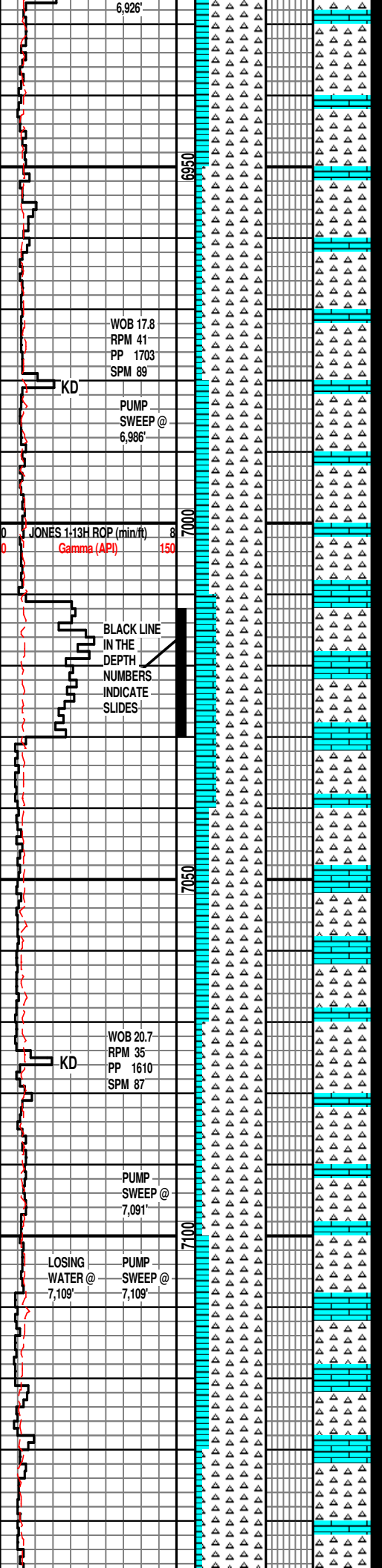
LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, WK-FR CUT,
THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, V/WK CUT,
V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN,
MICRO-XLN, FRM TO SL/BRIT, TRS OIL
ON PITS, CHRT: TRIP, OFF WHT-WHT,
WTHD, MICR-XLN, MOD HD-HD, HL
FRAC, TRS OIL ON PITS, WK-FR CUT,
THIN BLU-GRN RING

SURVEY: 6,924' MD 5,139'TVD





**SURVEY: 6,924' MD 5,135'TVD
INC. 92.37 / AZ. 1.13**

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, MICRO-XLN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

**SURVEY: 7,018' MD 5,136'TVD
INC. 90.34 / AZ. 0.47**

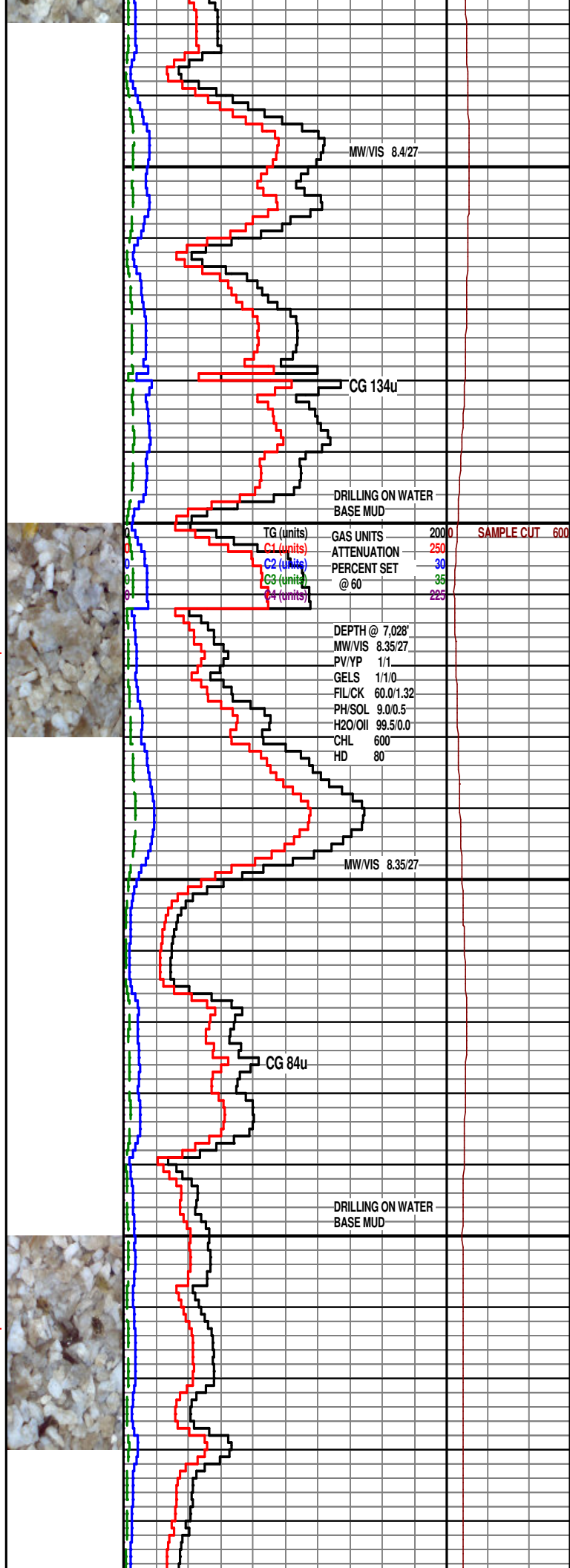
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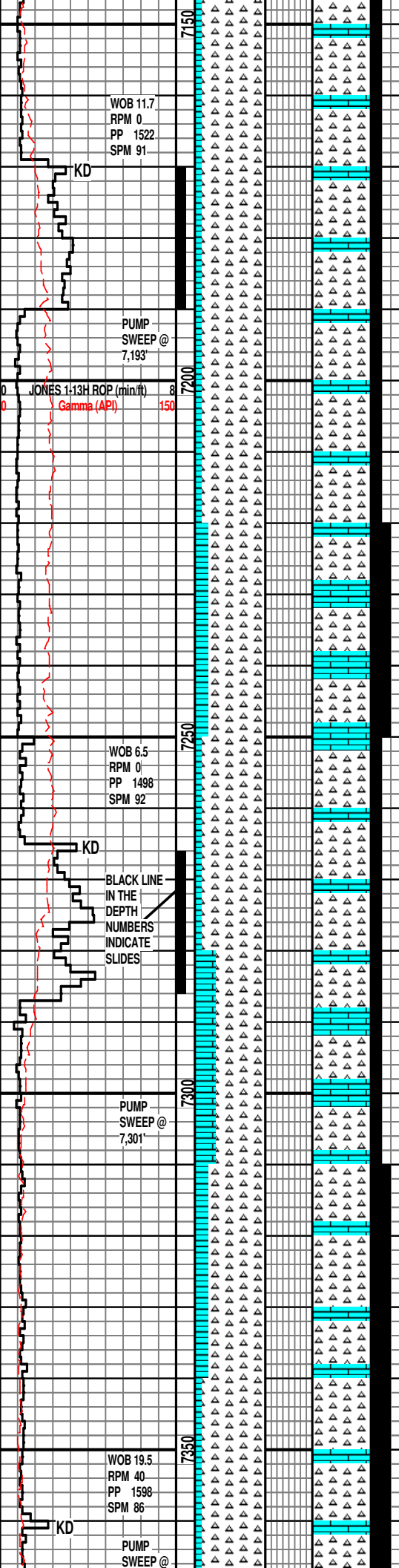
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 7,113' MD 5,138'TVD
INC. 88.09 / AZ. 1.84**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING





LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

SURVEY: 7,209' MD 5,140'TVD
INC. 88.83 / AZ. 1.50

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

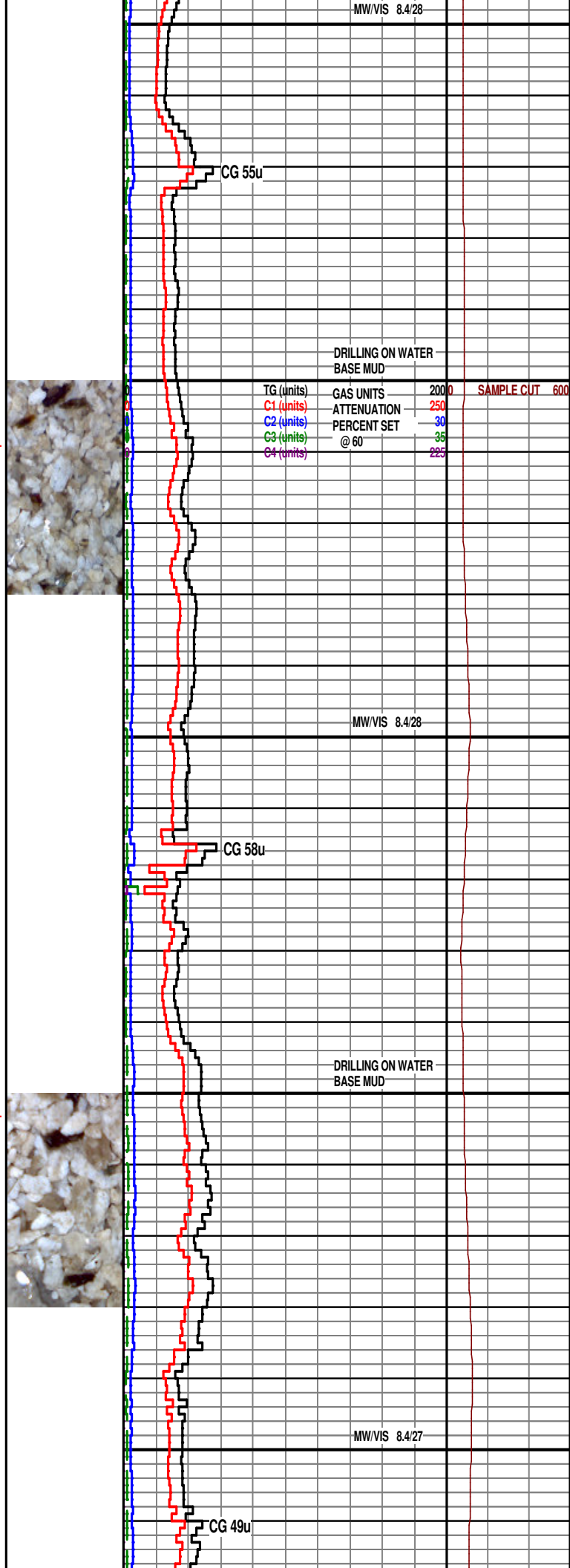
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

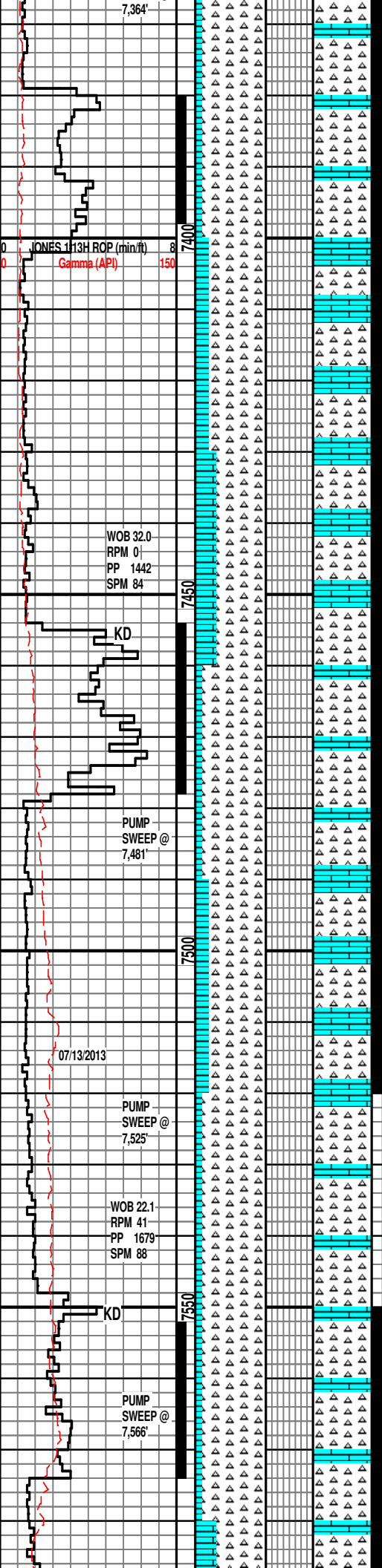
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

SURVEY: 7,303' MD 5,140'TVD
INC. 91.45 / AZ. 2.91

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING





LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

SURVEY: 7,398' MD 5,139'TVD
INC. 90.43 / AZ. 1.41

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

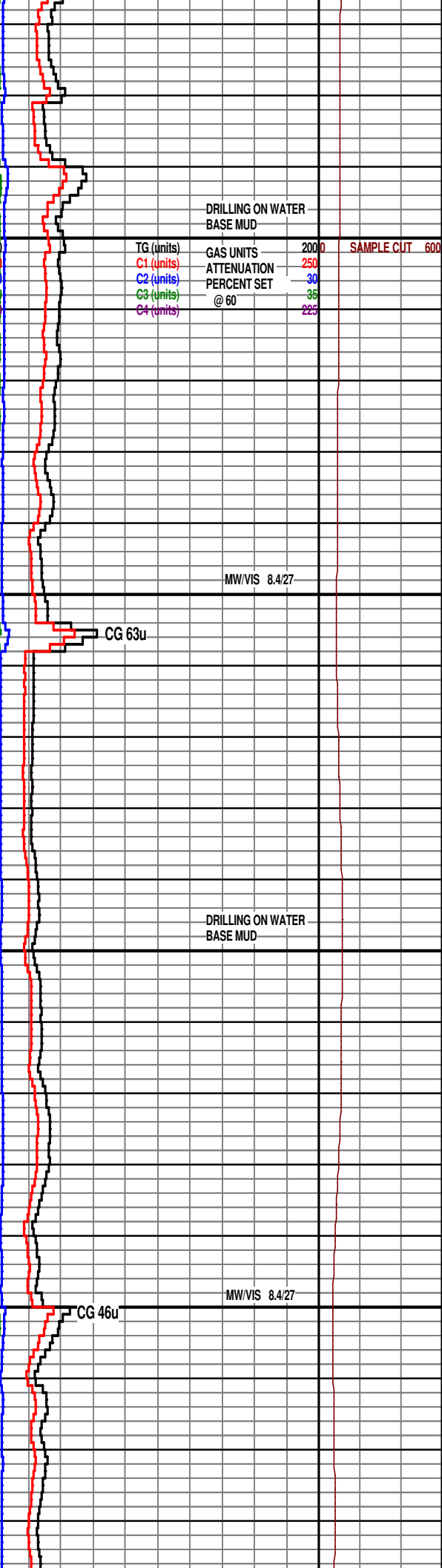
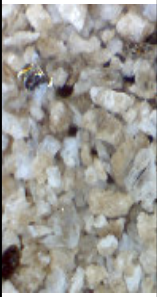
SURVEY: 7,493' MD 5,139'TVD
INC. 88.89 / AZ. 359.74

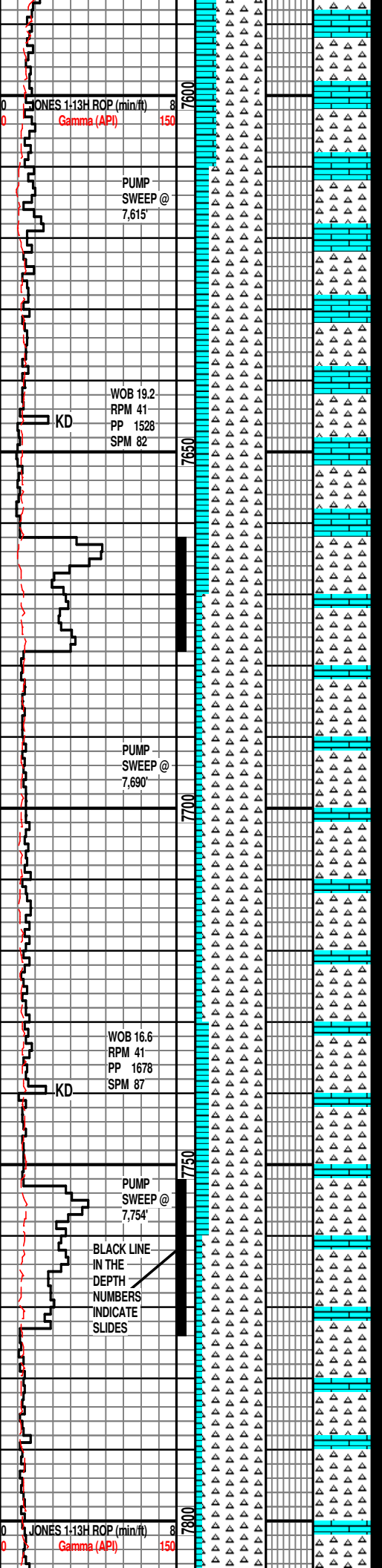
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, NO CUT, NO RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING





**SURVEY: 7,588' MD 5,138'TVD
INC. 92.00 / AZ. 1.38**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, MICR-XLN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 7,683' MD 5,138'TVD
INC. 88.89 / AZ. 0.35**

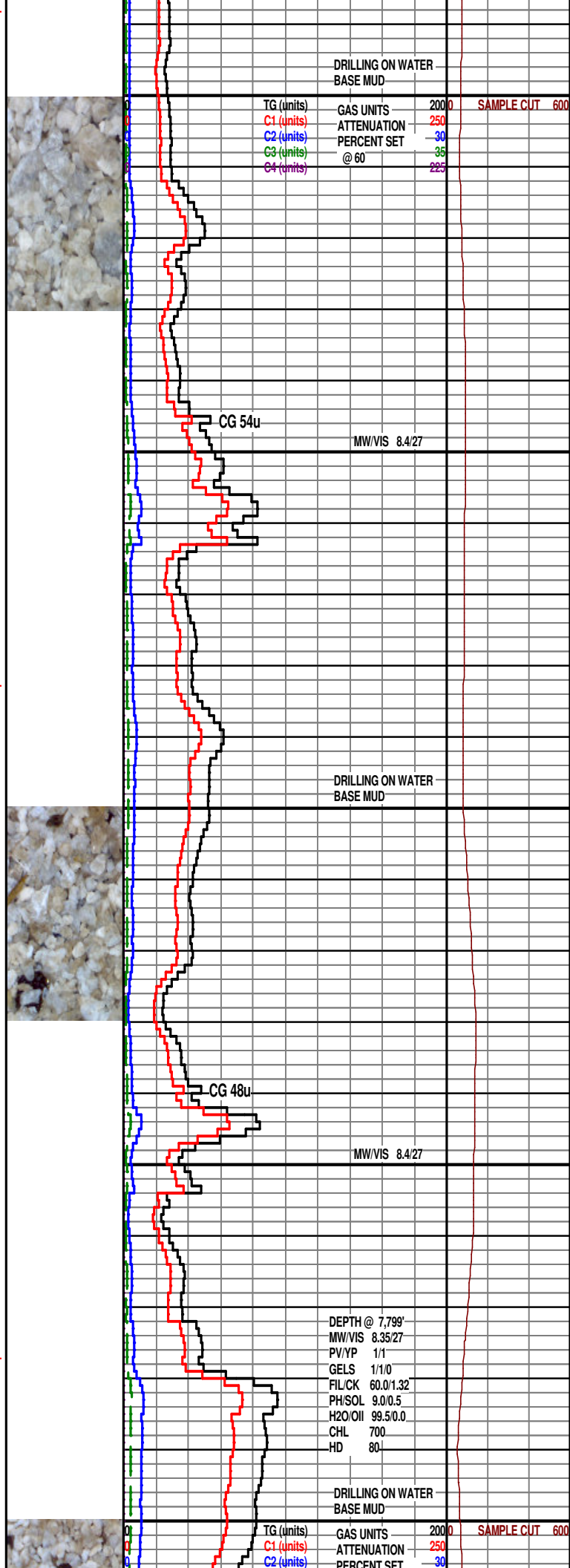
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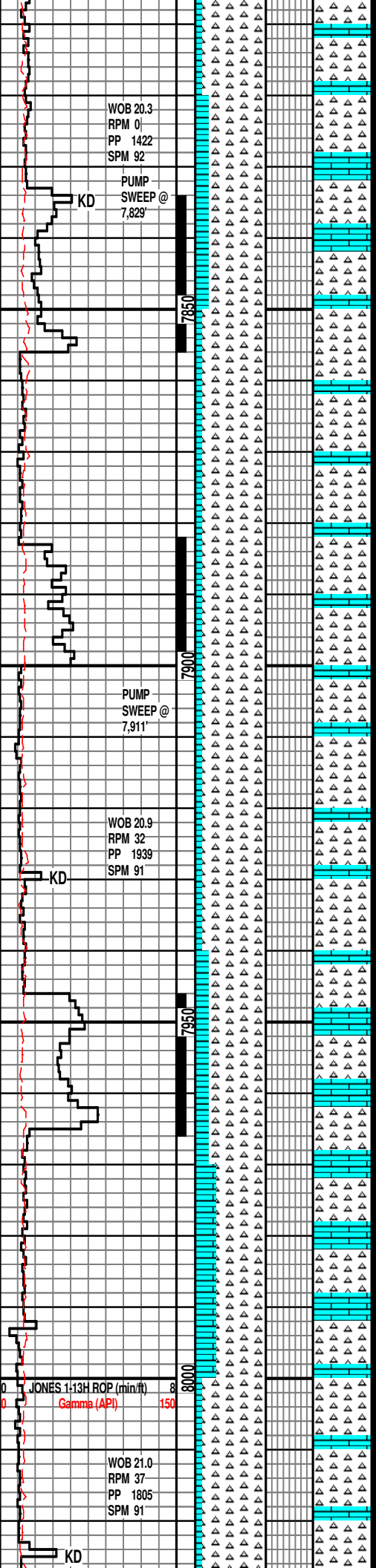
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LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

**SURVEY: 7,777' MD 5,138'TVD
INC. 90.18 / AZ. 359.71**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING





LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 7,872' MD 5,138'TVD
INC. 90.15 / AZ. 0.66**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

**SURVEY: 7,904' MD 5,138'TVD
INC. 91.14 / AZ. 1.44**

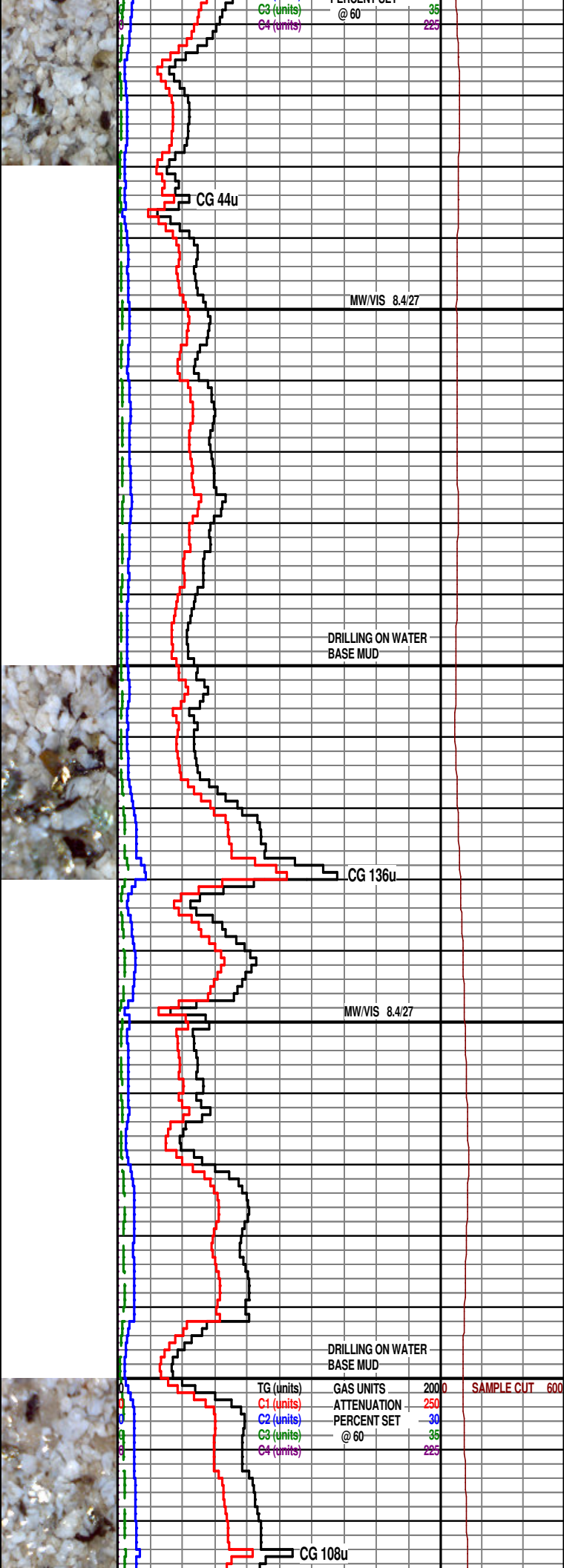
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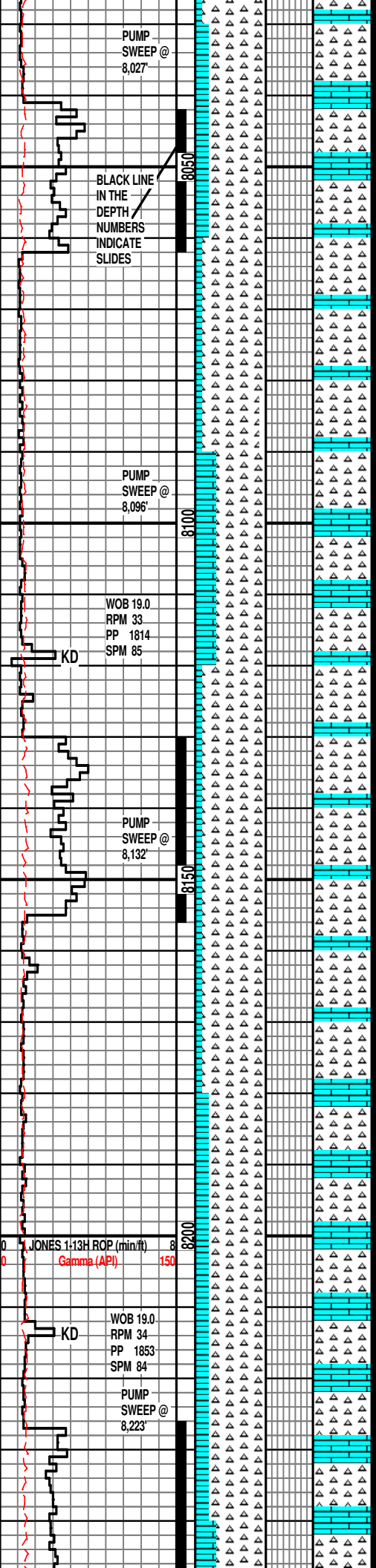
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**SURVEY: 7,967' MD 5,137'TVD
INC. 90.92 / AZ. 1.70**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING





LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V-THIN BLU-GRN RING

SURVEY: 8,062' MD 5,136'TVD
INC. 90.46 / AZ. 1.37

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

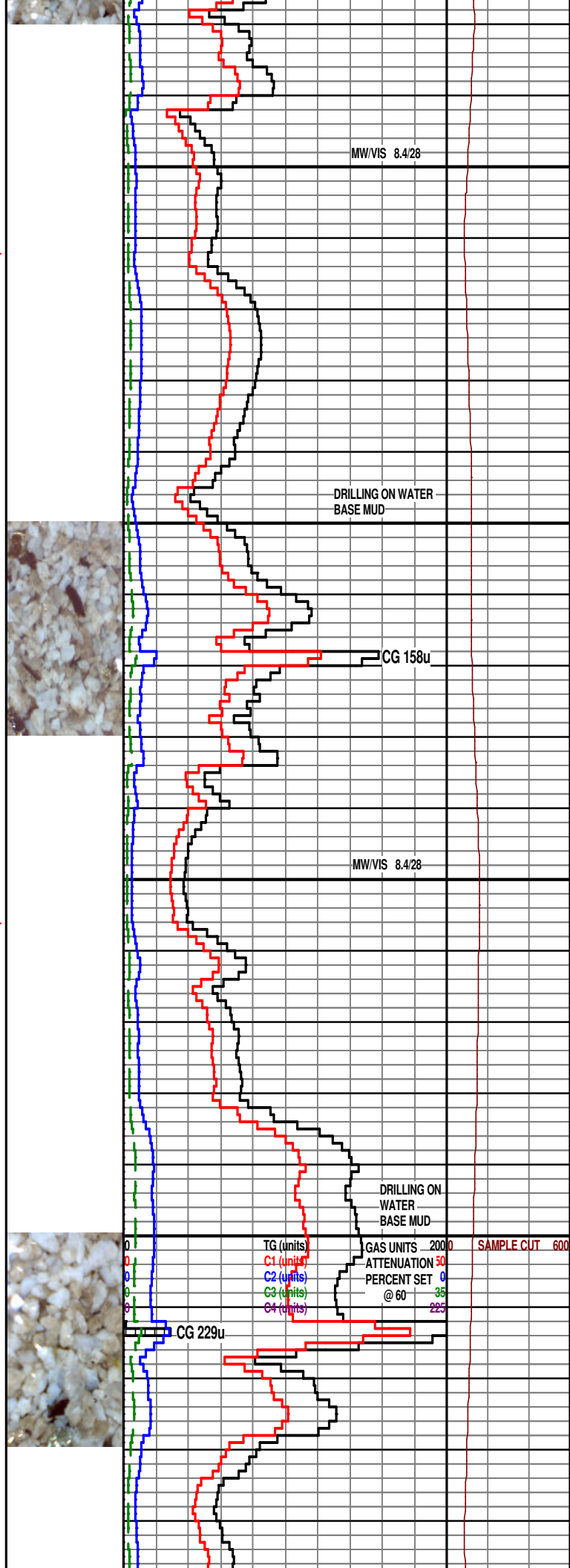
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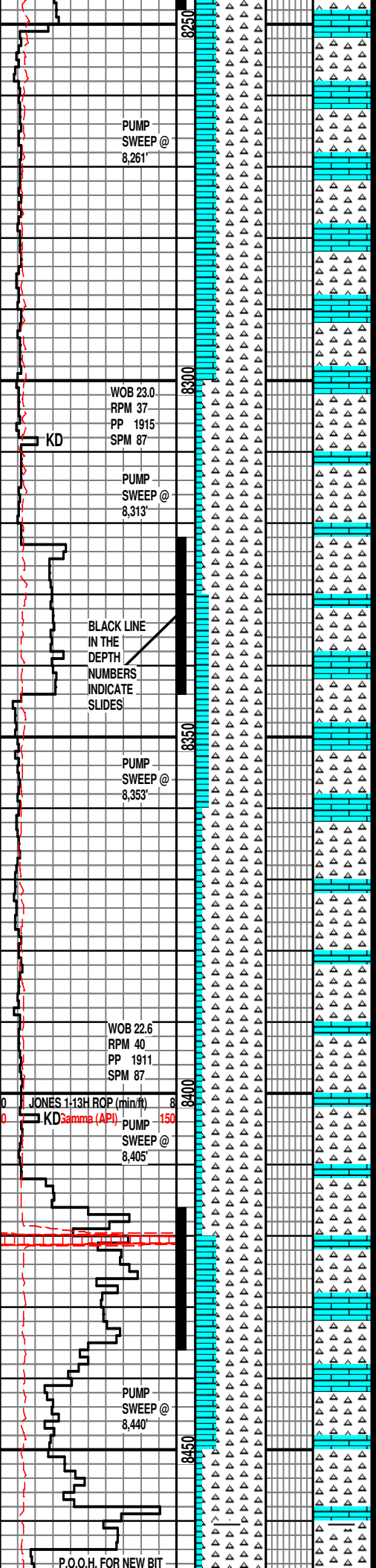
SURVEY: 8,156' MD 5,134'TVD
INC. 91.88 / AZ. 1.46

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING





**SURVEY: 8,252' MD 5,131'TVD
INC. 91.70 / AZ. 1.04**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

**SURVEY: 8,347' MD 5,129'TVD
INC. 90.59 / AZ. 0.58**

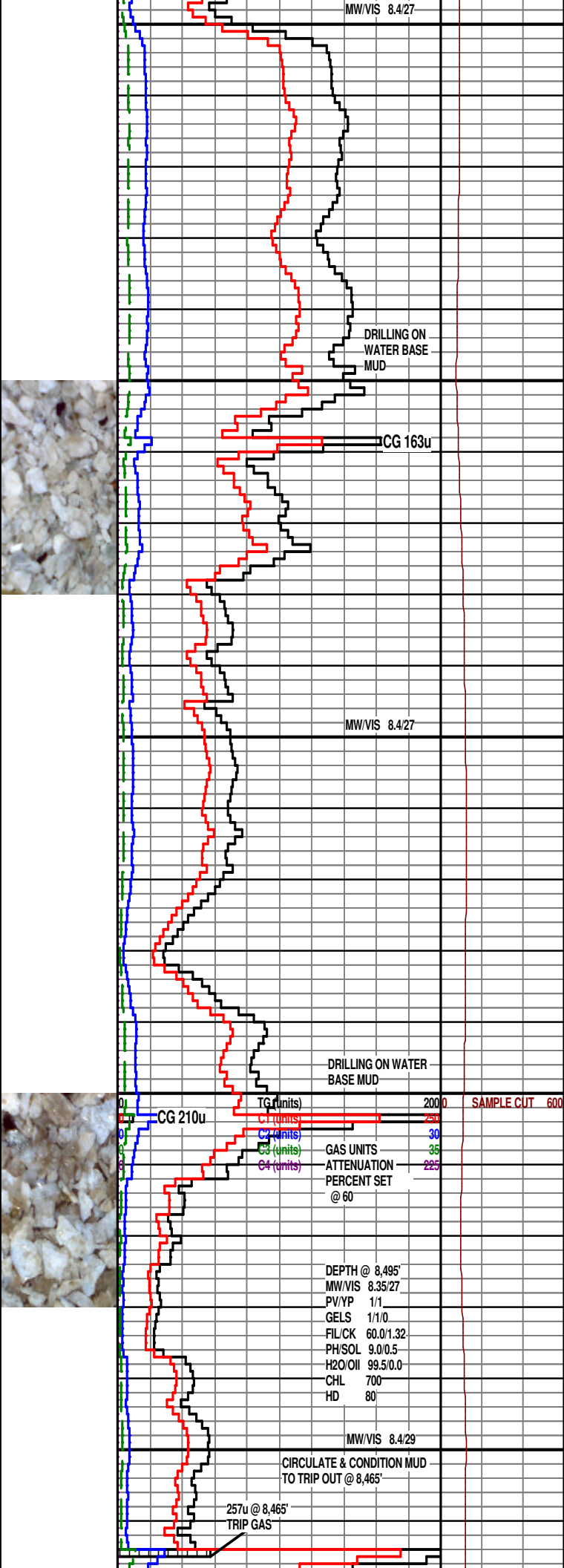
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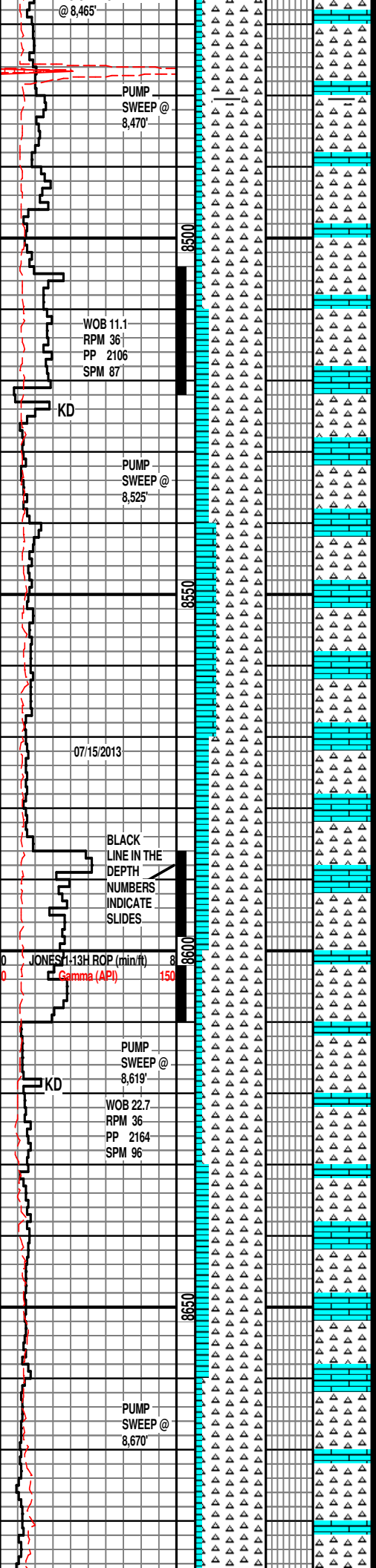
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LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THICK BLU-GRN RING

**SURVEY: 8,439' MD 5,128'TVD
INC. 90.25 / AZ. 359.34**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, V/SL TRS SH, BLK, GRY, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL





FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU-GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS,

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THIN-THICK BLU GRN RING

**SURVEY: 8,529' MD 5,129'TVD
INC. 88.83 / AZ. 358.05**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THIN-THICK BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, GD-EX CUT, THICK BLU GRN RING

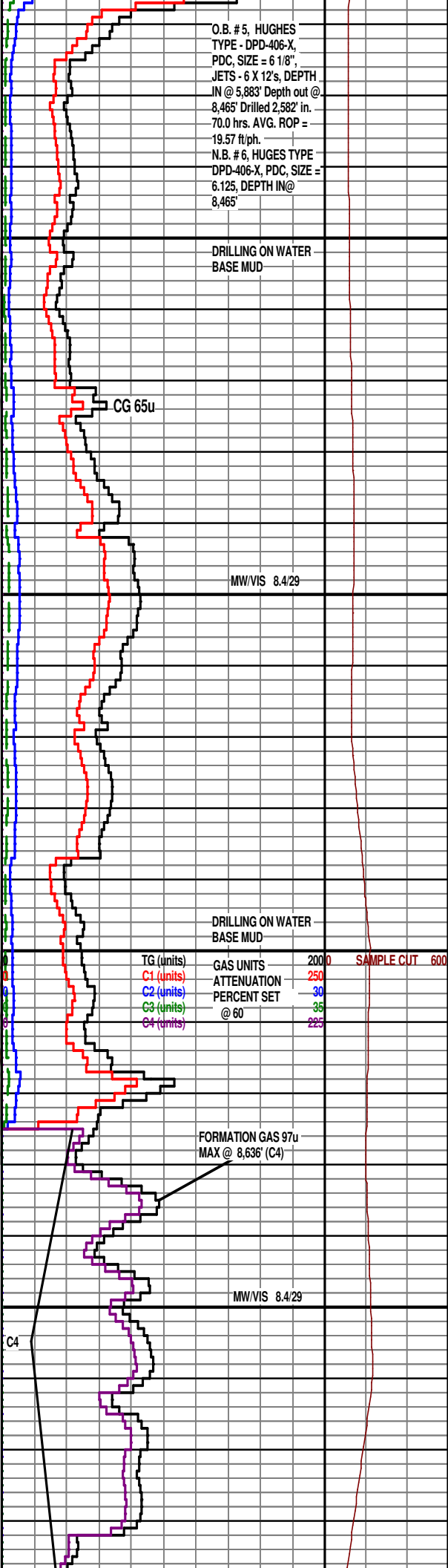
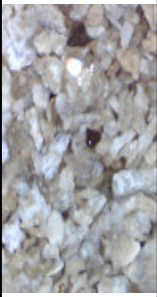
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, GD-EX CUT, THICK BLU GRN RING

**SURVEY: 8,624' MD 5,129'TVD
INC. 91.45 / AZ. 358.74**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, GD-EX CUT, THICK BLU GRN RING

**SURVEY: 8,656' MD 5,127'TVD
INC. 92.16 / AZ. 358.33**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING



O.B. # 5, HUGHES TYPE - DPD-406-X, PDC, SIZE = 6 1/8", JETS - 6 X 12's, DEPTH IN @ 5,883' Depth out @ 8,465' Drilled 2,582' in. 70.0 hrs. AVG. ROP = 19.57 ft/ph. N.B. # 6, HUGHES TYPE - DPD-406-X, PDC, SIZE = 6.125, DEPTH IN @ 8,465'

DRILLING ON WATER BASE MUD

MW/VIS 8.4/29

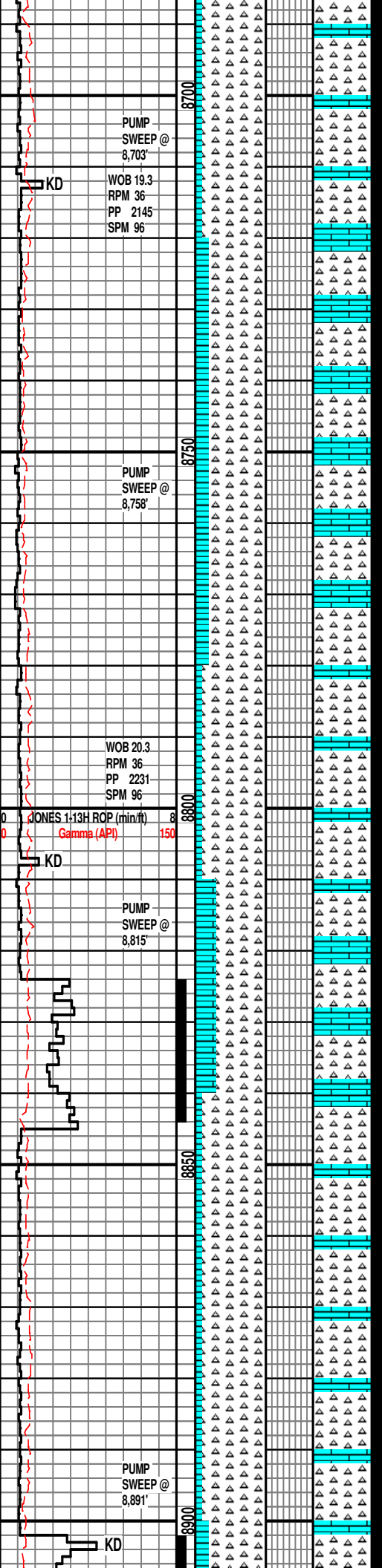
DRILLING ON WATER BASE MUD

TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET	30		
C3 (units)	@ 60	35		
C4 (units)		225		

FORMATION GAS 97u MAX @ 8,636' (C4)

MW/VIS 8.4/29

C4



LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, THIN BLU GRN RING

**SURVEY: 8,751' MD 5,126'TVD
INC. 89.69 / AZ. 358.57**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, THIN BLU GRN RING

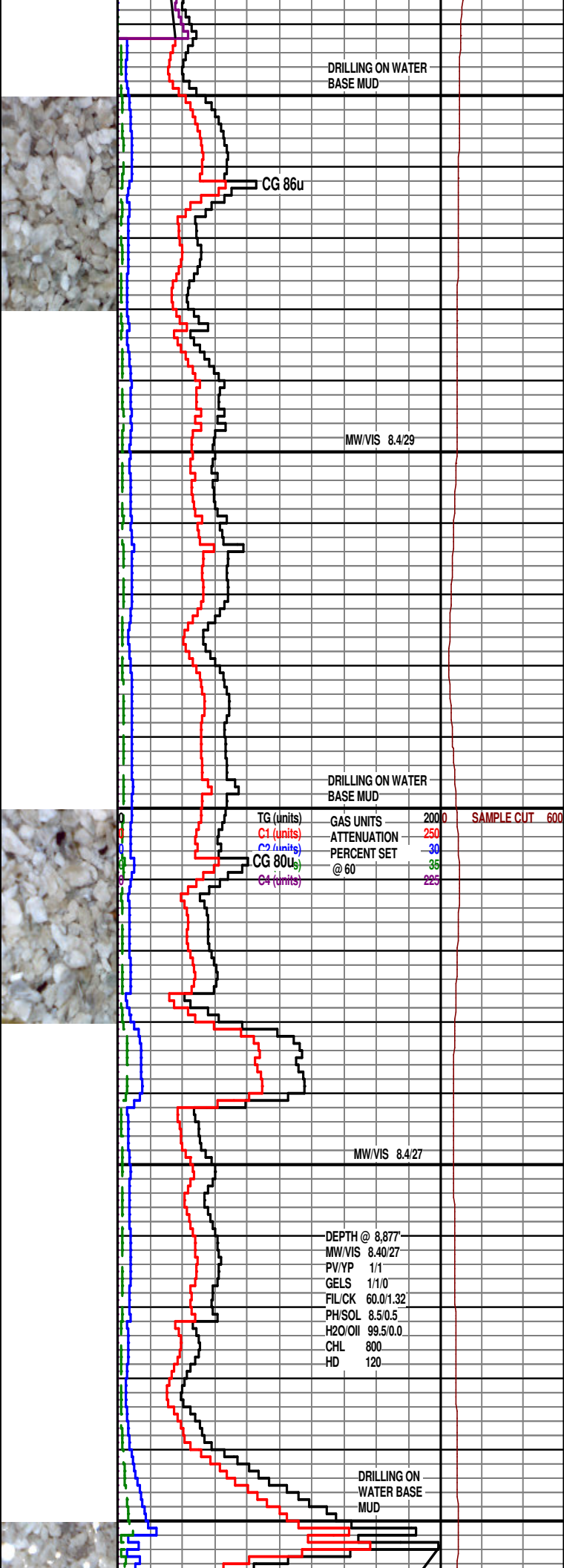
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LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V- WK-FR CUT, THIN BLU GRN RING

**SURVEY: 8,846' MD 5,127'TVD
INC. 89.63 / AZ. 358.82**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V- WK-FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING



DRILLING ON WATER BASE MUD

CG 86u

MW/VIS 8.4/29

DRILLING ON WATER BASE MUD

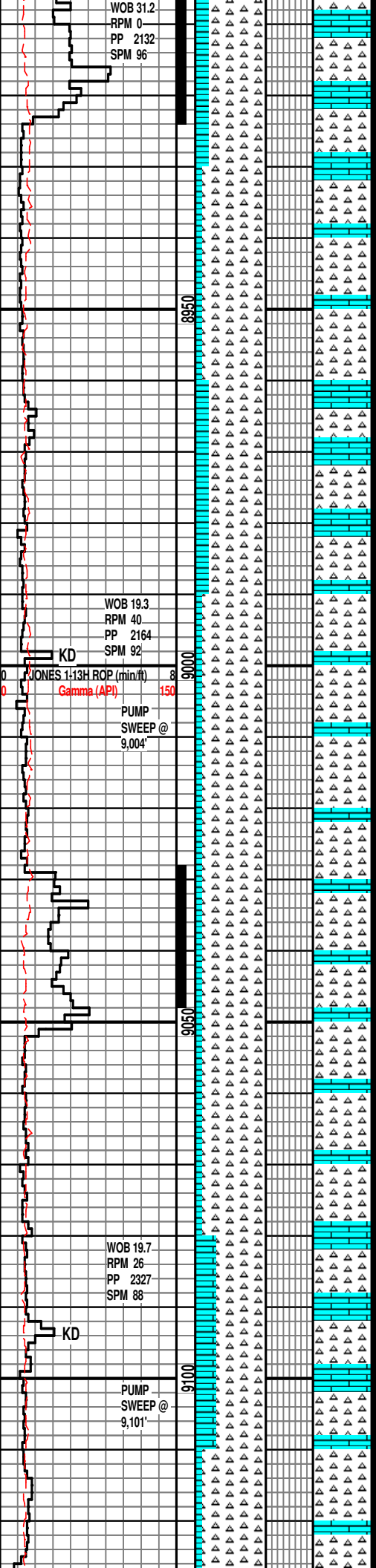
TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET	30		
CG 80Us	@ 60	35		
C4 (units)		225		

MW/VIS 8.4/27

DEPTH @ 8,877'	
MW/VIS	8.40/27
PV/YP	1/1
GELS	1/1/0
FIL/CK	60.0/1.32
PH/SOL	8.5/0.5
H2O/OIL	99.5/0.0
CHL	800
HD	120

DRILLING ON WATER BASE MUD

WOB 31.2
RPM 0
PP 2132
SPM 96



**SURVEY: 8,923' MD 5,126'TVD
INC. 91.33 / AZ. 358.70**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

**SURVEY: 8,973' MD 5,126'TVD
INC. 89.54 / AZ. 358.59**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

WOB 19.3
RPM 40
PP 2164
SPM 92

KD
ONES 1:13H ROP (min/ft)
Gamma (API)

PUMP SWEEP @
9,004'

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU GRN RING

**SURVEY: 9,036' MD 5,125'TVD
INC. 91.05 / AZ. 357.63**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

WOB 19.7
RPM 26
PP 2327
SPM 88

KD

PUMP SWEEP @
9,101'

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

CG 199u

MW/VIS 8.4/28

CG 73u

DRILLING ON WATER
BASE MUD

TG (units) 200
C1 (units) 250
C2 (units) 30
C3 (units) 35
C4 (units) 225

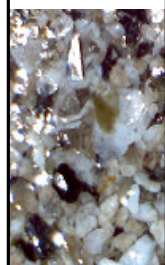
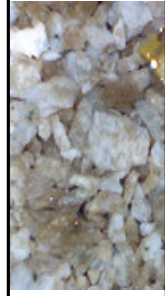
SAMPLE CUT 600

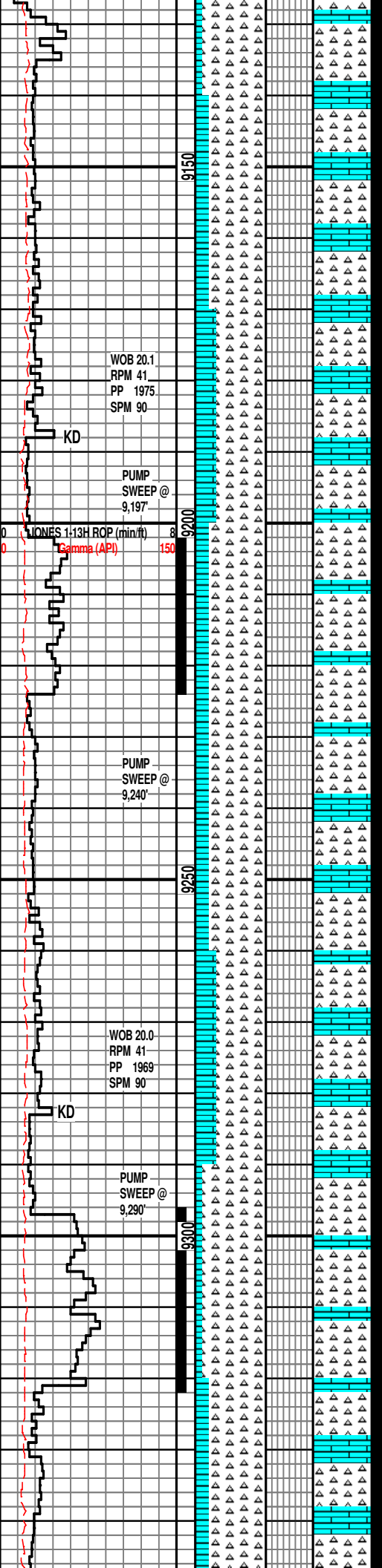
MW/VIS 8.4/28

FORMATION GAS 47u MAX
@ 9,058' (C4)

CG 79u

DRILLING ON WATER
BASE MUD





**SURVEY: 9,131' MD 5,125'TVD
INC. 89.63 / AZ. 358.63**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR-GD CUT, THIN-THICK BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU GRN RING

**SURVEY: 9,226' MD 5,126'TVD
INC. 89.29 / AZ. 358.27**

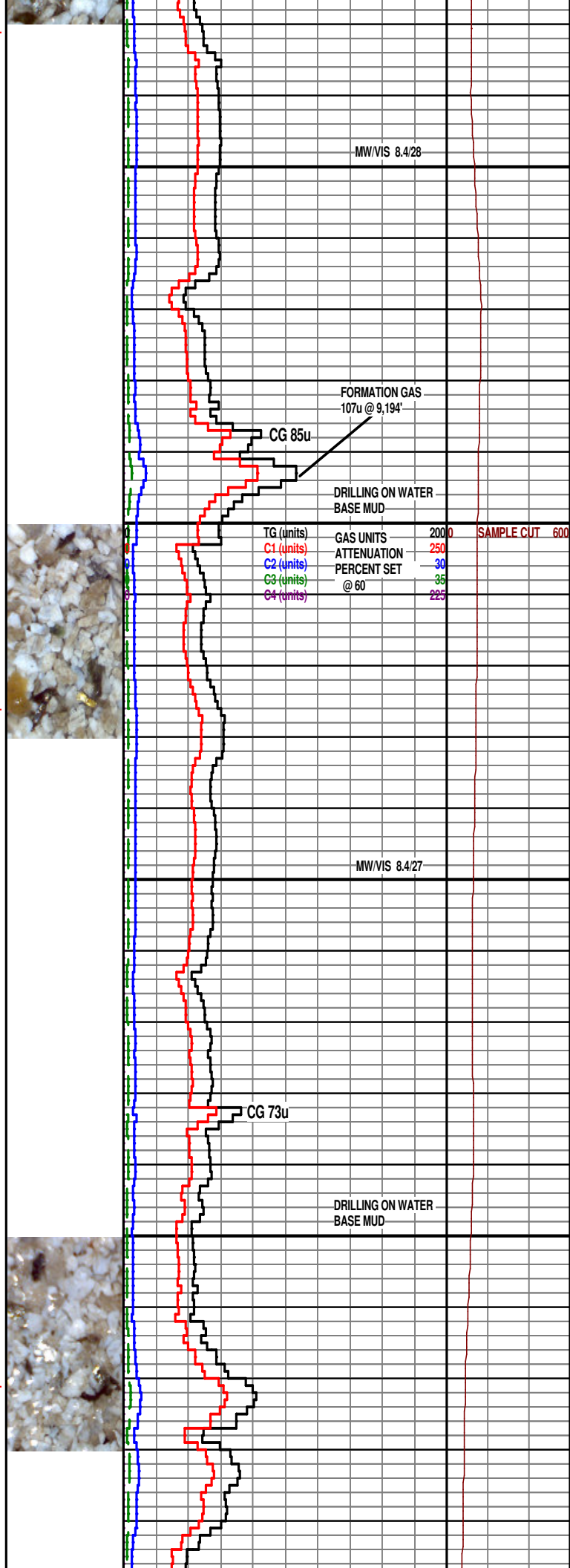
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

**SURVEY: 9,321' MD 5,127'TVD
INC. 89.20 / AZ. 357.04**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING



MW/VIS 8.4/28

FORMATION GAS
107u @ 9,194'

CG 85u

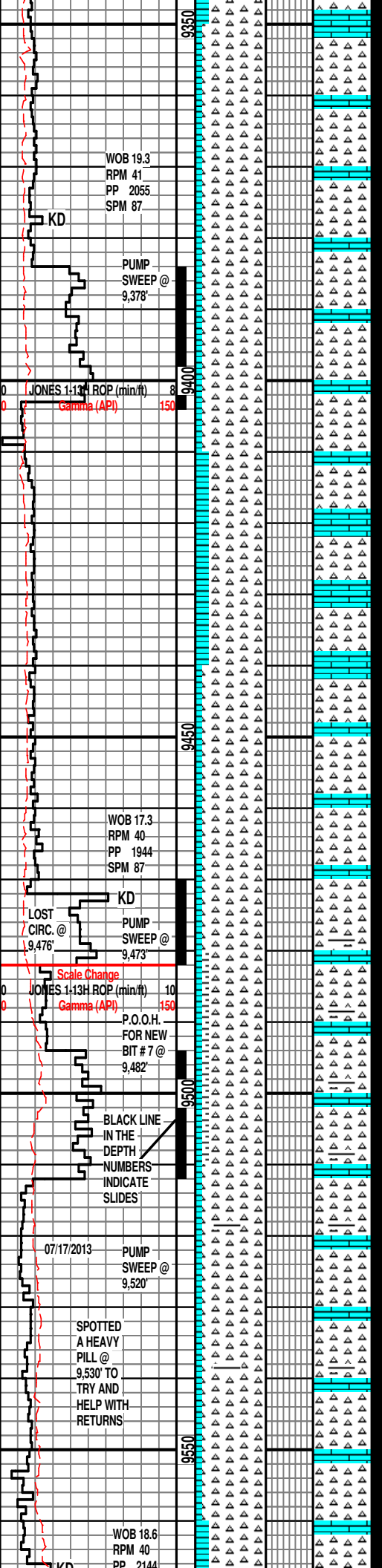
DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET	30		
C3 (units)	@ 60	35		
C4 (units)		225		

MW/VIS 8.4/27

CG 73u

DRILLING ON WATER
BASE MUD



LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, FR CUT, THIN BLU GRN RING

**SURVEY: 9,415' MD 5,128'TVD
INC. 88.86 / AZ. 357.47
VS / 4449.63'**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK-FR CUT, THIN BLU GRN RING

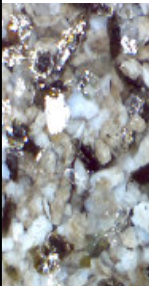
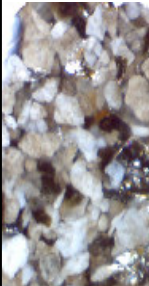
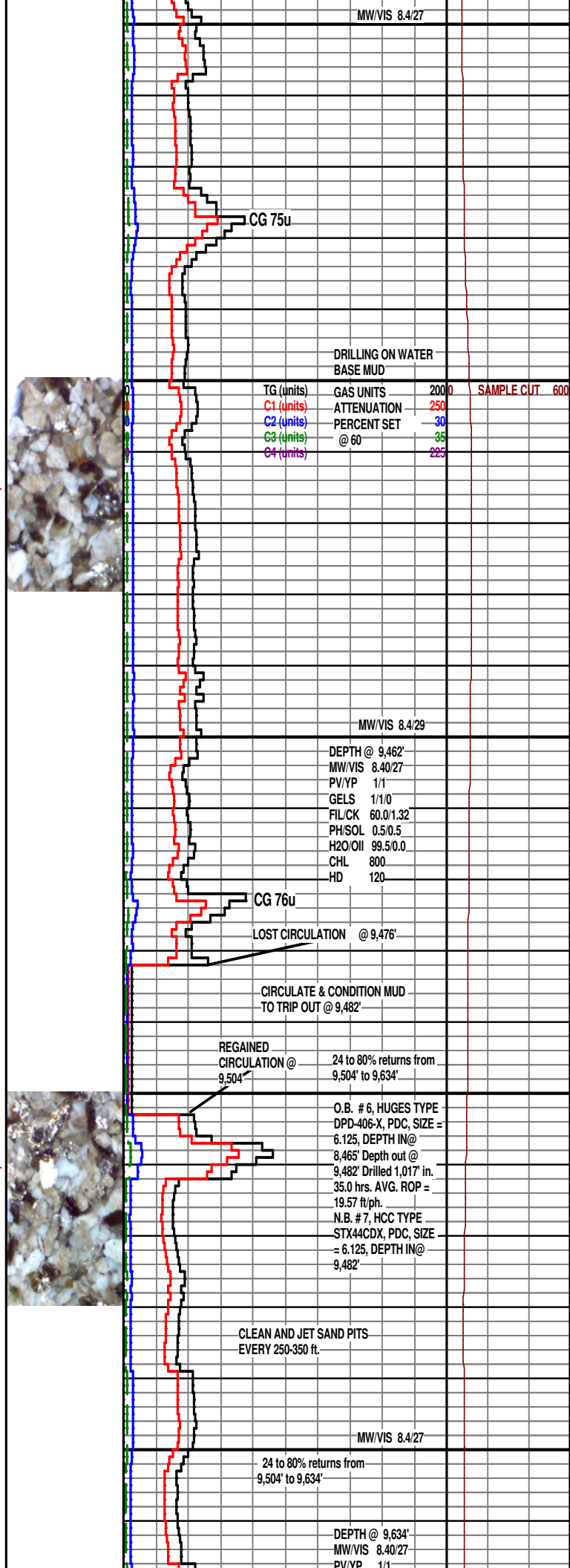
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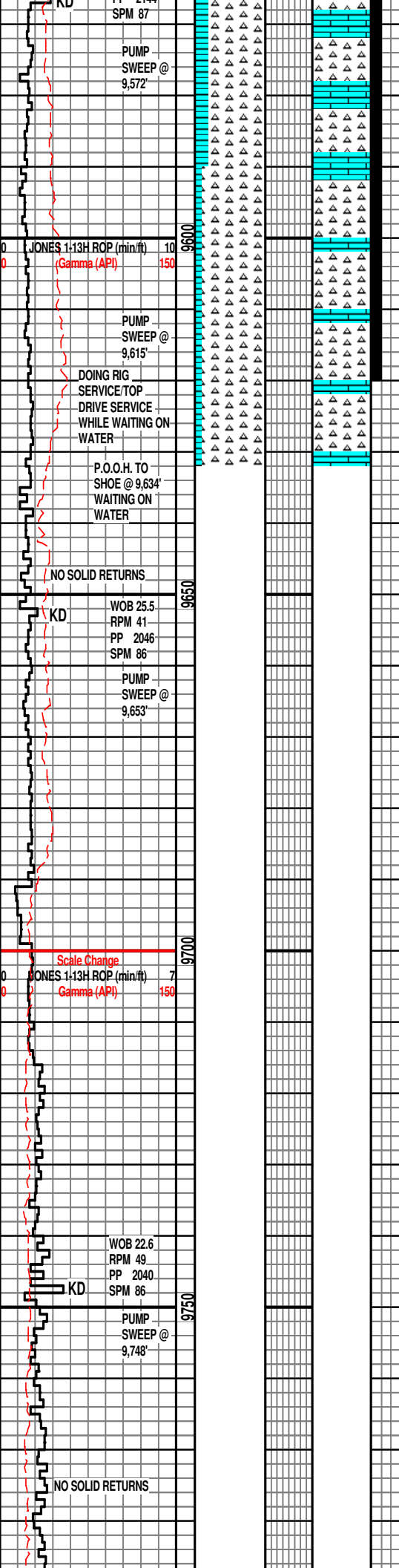
LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, WK CUT, THIN BLU GRN RING

**SURVEY: 9,510' MD 5,127'TVD
INC. 92.22 / AZ. 358.06
VS / 4543.24'**

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, SL/TRS SH: LT-MED-DRK GRY, SME GRY BLK, SME RED, RGH TXT, MICA, SPLIN, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V/THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT





NET/GR, TRS OIL ON PITS, V/WK CUT, V/THIN BLU GRN RING

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS, V/WK CUT, V/THIN BLU GRN RING

SURVEY: 9,604' MD 5,124'TVD
INC. 92.55 / AZ. 357.85
VS / 4635.86'

LS: CRM, SME YELLISH/BRN, CRSE ANG GRN, FRM TO SL/BRIT, TRS OIL ON PITS, CHRT: TRIP, OFF WHT-WHT, WTHD, CRSE ANG GRN, MOD HD-HD, HL FRAC, TRS OIL ON PITS

NO SOLID RETURNS

SURVEY: 9,699' MD 5,119'TVD
INC. 92.74 / AZ. 358.23
VS / 4729.47'

NO SOLID RETURNS

GELS 1/10
FIL/CK 60.0/1.32
PH/SOL 8.5/0.5
H2O/OIL 99.5/0.0
CHL 800
HD 120

DRILLING ON WATER
BASE MUD

TG (units)	GAS UNITS	200	SAMPLE CUT	600
C1 (units)	ATTENUATION	250		
C2 (units)	PERCENT SET @ 60	30		
C3 (units)		35		
C4 (units)		225		

24 to 80% returns from 9,504' to 9,634'

CIRCULATE & CONDITION MUD TO TRIP OUT TO SHOE @ 9,634'

WAITING ON WATER @ 9,634'

FORMATION / TRIP GAS 63u @ 9,634'

CLEAN AND JET SAND PITS. EVERY 250-350 ft.

DOING RIG SERVICE/TOP DRIVE SERVICE WHILE WAITING ON WATER

CG 54u

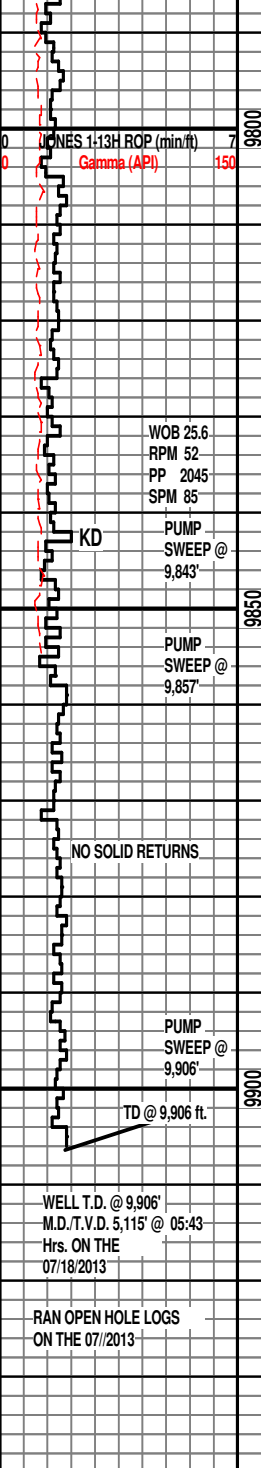
(APPROX)
5 to 15% Gas returns from 9,634' to 9,841'

DRILLING ON WATER
BASE MUD

CG 60u

MW/VIS 8.4/27

(APPROX)
5 to 15% Gas returns from 9,634' to 9,841'



NO SOLID RETURNS

SURVEY: 9,794' MD 5,117'TVD
INC. 90.25 / AZ. 358.55
VS / 4823.23'

NO SOLID RETURNS

SURVEY: 9,858' MD 5,116'TVD
INC. 91.05 / AZ. 358.83
VS / 4886.47'

NO SOLID RETURNS

PROJ. TO THE BIT BELOW

SURVEY: 9,906' MD 5,115'TVD
INC. 91.05 / AZ. 358.83
VS / 4933.92'

WELL T.D. @ 9,906'
M.D./T.V.D. 5,115' @ 05:43
Hrs. ON THE
07/18/2013

RAN OPEN HOLE LOGS
ON THE 07//2013

