Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

1215108

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 3882
Name: Samuel Gary Jr. & Associates, Inc.
Address 1: 1515 WYNKOOP, STE 700
Address 2:
City: DENVER State: CO Zip: 80202 + _ _ _ _
Contact Person: DAN PRITCHARD
Phone: (303) 831-4673
CONTRACTOR: License # 34740
Name: Horizontal Well Drillers, LLC
Wellsite Geologist: JORDAN NEWSOME
Purchaser: SAMUEL GARY JR. & ASSOCIATES, INC.

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

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

3/26/2014	4/27/2014	4/29/2014
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-195-22930-01-00
Spot Description:
N2 - S2 - NE - NE Sec. 8 Twp. 12 S. R. 22 ☐ East ☑ West
689 Feet from ☑ North / ☐ South Line of Section
660 Feet from ☑ East / ☐ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☑ NE ☐ NW ☐ SE ☐ SW
GPS Location: Lat: (e.g. xx.xxxxx), Long: (e.g. -xxx.xxxxx)
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Trego
Lease Name: 12-22-8 Well #: H4
Field Name:
Producing Formation: MARMATON
Elevation: Ground: 2377 Kelly Bushing: 2389
Total Vertical Depth: 9234 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 2347 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 1400 ppm Fluid volume: 640 bbls
Dewatering method used: Hauled to Disposal
Location of fluid disposal if hauled offsite:
Operator Name: AMERICAN TANK SERVICE, LLC
Lease Name: STAAB 1 License #: 34590
Quarter SW Sec. 20 Twp. 20 S. R. 22 ☐ East ☑ West
County: TREGO Permit #: D31526

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

Submitted Electronically

KCC Office Use ONLY
☑ **Confidentiality Requested**
Date: 07/22/2014
☑ **Confidential Release Date:** 07/21/2016
☑ **Wireline Log Received**
☑ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☐ **I** ☑ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 07/22/2014

[redacted]
1215108

Operator Name: Samuel Gary Jr. & Associates, Inc. Lease Name: 12-22-8 Well #: H4

Sec. 8 Twp. 12 S. R. 22 ☐ East ☑ West County: Trego

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

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

Drill Stem Tests Taken ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☑ Yes ☐ No

List All E. Logs Run:

GR

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
TOPEKA	3436	-1036
HEEBNER	3690	-1254
LANSING	3737	-1289
MARMATON	4523	-1610
TD	9234	

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
SURFACE	12.25	9.625	36	2347	COMMON CLASS A	710	2% GYPSEAL, 2% NAMS, 2% NACL, 49
PRODUCTION	7.875	5.5	17	9234	COMMON CLASS A	110	3% GYPSEAL
PRODUCTION	7.875	5.5	17	9234	COMMON CLASS A	1000	2% GEL

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
____ Perforate ____ Protect Casing ____ Plug Back TD ____ Plug Off Zone	-			
	-			

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

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

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

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

TUBING RECORD: Size: 2.875 Set At: 4893 Packer At:

Liner Run: ☐ Yes ☐ No

Date of First, Resumed Production, SWD or ENHR. 5/21/2014

Producing Method: ☐ Flowing ☑ Pumping ☐ Gas Lift ☐ Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☐ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)* _____

PRODUCTION INTERVAL:
_____
_____

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	12-22-8 H4
Doc ID	1215108

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	5084-5086		5084-5086
6	5134-5136		5134-5136
6	5184-5186		5184-5186
6	5284-5286		5284-5286
6	5334-5336		5334-5336
6	5384-5386		5384-5386
6	5484-5486		5484-5486
6	5536-5538		5536-5538
6	5584-5586		5584-5586
6	5684-5686		5684-5686
6	5734-5736		5734-5736
6	5790-5792		5790-5792
6	5884-5886		5884-5886
6	5934-5936		5934-5936
6	5984-5986		5984-5986
6	6078-6080		6078-6080
6	6134-6136		6134-6136
6	6184-6186		6184-6186
6	6284-6286		6284-6286
6	6332-6334		6332-6334
6	6384-6386		6384-6386
6	6484-6486		6484-6486
6	6534-6536		6534-6536
6	6584-6586		6584-6586

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	12-22-8 H4
Doc ID	1215108

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	6684-6686		6684-6686
6	6734-3736		6734-3736
6	6784-6786		6784-6786
6	6884-6886		6884-6886
6	6934-6936		6934-6936
6	6984-6986		6984-6986
6	7084-7086		7084-7086
6	7134-7136		7134-7136
6	7180-7182		7180-7182
6	7284-7286		7284-7286
6	7334-7336		7334-7336
6	7384-7386		7384-7386
6	7486-7488		7486-7488
6	7534-7536		7534-7536
6	7584-7586		7584-7586
6	7684-7686		7684-7686
6	7732-7734		7732-7734
6	7784-7786		7784-7786
6	7884-7886		7884-7886
6	7934-7936		7934-7936
6	7984-7986		7984-7986
6	8084-8086		8084-8086
6	8134-8136		8134-8136
6	8184-8186		8184-8186

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	12-22-8 H4
Doc ID	1215108

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	8284-8286		8284-8286
6	8334-8336		8334-8336
6	8384-8386		8384-8386
6	8484-8486		8484-8486
6	8534-8536		8534-8536
6	8580-8582		8580-8582
6	8684-8686		8684-8686
6	8734-8736		8734-8736
6	8784-8786		8784-8786
6	8884-8886		8884-8886
6	8934-8936		8934-8936
6	8984-8986		8984-8986
6	9059-9061		9059-9061
6	9122-9124		9122-9124
6	9185-9187		9185-9187

Form	ACO1 - Well Completion
Operator	Samuel Gary Jr. & Associates, Inc.
Well Name	12-22-8 H4
Doc ID	1215108

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
SURFACE	12.25	9.625	36	2347	COMMON CLASS A	710	2% GYPSEAL, 2% NAMS, 2% NACL, 4% GEL
PRODUCTION	7.875	5.5	17	9234	COMMON CLASS A	110	3% GYPSEAL
PRODUCTION	7.875	5.5	17	9234	COMMON CLASS A	1000	2% GEL

ALLIED OIL & GAS SERVICES, LLC

PO Box 93999
Southlake, TX 76092

Voice: (817) 546-7282
Fax: (817) 246-3361

INVOICE

Invoice Number: 142197
Invoice Date: Mar 30, 2014
Page: 1

Bill To:

Samuel Gary, Jr. & Assoc.
1935 Louie St

Hays, KS 67601

RECEIVED
APR 09 2014
SAMUEL GARY JR. & ASSOCIATES, INC.

4/17

V1404-AP-520

Customer ID	Field Ticket #	Payment Terms	
Gary	62715	Net 30 Days	
Job Location	**Camp Location**	**Service Date**	**Due Date**
KS2-01	Great Bend	Mar 30, 2014	4/29/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Babb #3		
300.00	CEMENT MATERIALS	Class A Common	17.90	5,370.00
11.00	CEMENT MATERIALS	Chloride	64.00	704.00
410.00	CEMENT MATERIALS	Allied Multi Density	25.90	10,619.00
103.00	CEMENT MATERIALS	Flo Seal	2.97	305.91
800.42	CEMENT SERVICE	Cubic Feet Charge	2.48	1,985.04
1,251.99	CEMENT SERVICE	Ton Mileage Charge	2.60	3,255.17
1.00	CEMENT SERVICE	Surface	2,443.75	2,443.75
35.00	CEMENT SERVICE	Pump Truck Mileage	7.70	269.50
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
35.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	154.00
19.00	CEMENT SERVICE	Waiting on Location	440.00	8,360.00
1.00	EQUIPMENT SALES	9-5/8 Saw Tooth Guide Shoe	553.00	553.00
1.00	EQUIPMENT SALES	9-5/8 AFU Float Collar	1,210.00	1,210.00
1.00	EQUIPMENT SALES	9-5/8 Rubber Plug	185.00	185.00
2.00	EQUIPMENT SALES	9-5/8 Basket	595.00	1,190.00
5.00	EQUIPMENT SALES	9-5/8 Centralizer	90.00	450.00
1.00	CEMENT SUPERVISOR	Charles Kinyon		
1.00	EQUIPMENT OPERATOR	Mike Scothorn		
1.00	OPERATOR ASSISTANT	Brian Lang		
1.00	OPERATOR ASSISTANT	Kevin Weighous		

☑ DRLG ☐ COMP ☐ W/O ☐ LOE ☐ GC

Account	8200.138
Well/Prospect	
Deck	
AFE	
Approval	See work ticket
Description	

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

$ 7,614.41

ONLY IF PAID ON OR BEFORE

Apr 24, 2014

Subtotal	37,329.37
Sales Tax	1,574.90
Total Invoice Amount	38,904.27
Payment/Credit Applied	
TOTAL	**38,904.27**

<7614.41>
31,289.86

ALLIED OIL & GAS SERVICES, LLC 062715

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Great Bend

DATE	SEC.	TWP.	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
3-29-14	8	12	22	11:00 pm	2:00 am	1:00 am	3:00 am

LEASE	WELL #	LOCATION	COUNTY	STATE
BaBB	3	Ogallah exit N to H Rd 2 1/4 W 5 clnto	Trego	Ks

OLD OR NEW (Circle one)

CONTRACTOR Val #6

OWNER same

TYPE OF JOB surface

HOLE SIZE 12 1/4 T.D. 2385

CASING SIZE 9 5/8 36# DEPTH 2369.13

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT 42.07

CEMENT LEFT IN CSG. 42.07

PERFS.

DISPLACEMENT H20 180.19

CEMENT

AMOUNT ORDERED 410 sx class A 2% gyp 2% Mento 2% salt 4% gel 1/4 flo
300 sx class A 3% CC

COMMON	300 sx	@ 17.90	5370
POZMIX		@	
GEL		@	
CHLORIDE	11 sx	@ 64	704
ASC		@	
410- allied multi density		@ 25.90	10619
flo seal	103 lb	@ 2.97	305.91
HANDLING	800.42 cu ft	@ 2.48	1985.03
MILEAGE	1251.99 ton mile	2.60	3255.18
		TOTAL	22239.12

EQUIPMENT

PUMP TRUCK # 597 CEMENTER Charles Kinzer
HELPER Mike Scotten

BULK TRUCK #544-198 DRIVER Brian Lang

BULK TRUCK # 603 DRIVER Kevin Weighouse

REMARKS:

Rig Ran 2369' 9 5/8 csg Broke circulation w/ Rig Mud plug Rat hole & mouse hole hook to head 10 BBl H20 ahead mix 410 sx class A 2% gyp 2% Mento 2% salt 4% gel 1/4 flo mix 300 sx class A 3% CC shut down Release plug displace 175 BBl H20 cement did circulate float did hold circulated 50 BBl to pit Plug did land

CHARGE TO: Sam Gerg

STREET

CITY STATE ZIP

SERVICE

DEPTH OF JOB			
PUMP TRUCK CHARGE			2443.75
EXTRA FOOTAGE		@	
MILEAGE	35	@ 7.70	269.50
MANIFOLD		@	275
IVM	35	@ 4.40	154
wait time	19 HRS	@ 440	8360
			11502.25
		TOTAL	~~37329.37~~

PLUG & FLOAT EQUIPMENT

saw tooth guide shoe		553
AFU float collar	@	1210
Rubber plug	@	185
2- cement baskets	@ 595	1190
5- centralizers	@ 90	450
	@	
	TOTAL	3588

SALES TAX (If Any)

TOTAL CHARGES ~~[illegible]~~ 37329.37

DISCOUNT 7614.41 IF PAID IN 30 DAYS

~~[illegible]~~ 29714.96

thank you!

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME

SIGNATURE

ALLIED
OIL & GAS SERVICES, LLC

PO Box 93999
Southlake, TX 76092

Voice: (817) 546-7282
Fax: (817) 246-3361

INVOICE

Invoice Number: 142903
Invoice Date: Apr 29, 2014
Page: 1

Bill To:

Samuel Gary, Jr. & Assoc.
1935 Louie St

Hays, KS 67601

Customer ID	Field Ticket #	Payment Terms	
Gary	62979	Net 30 Days	
Job Location	**Camp Location**	**Service Date**	**Due Date**
KS2-02	Great Bend	Apr 29, 2014	5/29/14

Quantity	Item	Description	Unit Price	Amount
1.00	WELL NAME	Babb #3		
1,110.00	CEMENT MATERIALS	Class A Common	17.90	19,869.00
38.00	CEMENT MATERIALS	Gel	23.40	889.20
425.00	CEMENT MATERIALS	SA-45	3.47	1,474.75
6.00	CEMENT MATERIALS	Gyp Seal	37.60	225.60
31.00	CEMENT MATERIALS	Flo Seal	2.97	92.07
760.00	CEMENT MATERIALS	FI-160	18.90	14,364.00
190.00	CEMENT MATERIALS	CD-31	10.30	1,957.00
2,020.00	CEMENT MATERIALS	Kol Seal	0.98	1,979.60
253.00	CEMENT MATERIALS	Defoamer	9.80	2,479.40
40.00	CEMENT MATERIALS	Allied Spacer	115.00	4,600.00
1,210.09	CEMENT SERVICE	Cubic Feet Charge	2.48	3,001.02
1,928.36	CEMENT SERVICE	Ton Mileage Charge	2.60	5,013.74
1.00	CEMENT SERVICE	Production Casing	5,920.20	5,920.20
35.00	CEMENT SERVICE	Pump Truck Mileage	7.70	269.50
1.00	CEMENT SERVICE	Manifold Rental	275.00	275.00
35.00	CEMENT SERVICE	Light Vehicle Mileage	4.40	154.00
3.00	EQUIPMENT SALES	5-1/2 Basket	85.00	255.00
8.00	EQUIPMENT SALES	5-1/2 Centralizer	395.00	3,160.00
4.00	EQUIPMENT SALES	Thread Lock	57.00	228.00
1.00	CEMENT SUPERVISOR	Charles Kinyon		

ALL PRICES ARE NET, PAYABLE 30 DAYS FOLLOWING DATE OF INVOICE. 1 1/2% CHARGED THEREAFTER. IF ACCOUNT IS CURRENT, TAKE DISCOUNT OF

$ 19,679.97

ONLY IF PAID ON OR BEFORE

May 24, 2014

Subtotal	Continued
Sales Tax	Continued
Total Invoice Amount	Continued
Payment/Credit Applied	
TOTAL	**Continued**

ALLIED OIL & GAS SERVICES, LLC 062979

Federal Tax I.D. # 20-8651475

REMIT TO P.O. BOX 93999
SOUTHLAKE, TEXAS 76092

SERVICE POINT: Great Bend

DATE	SEC	TWP	RANGE	CALLED OUT	ON LOCATION	JOB START	JOB FINISH
4-29-14	8	12	22	5:30 pm	11:30pm	4:00am	5:30am

LEASE	WELL #	LOCATION	COUNTY	STATE
Ball	3	Ogallah Dist N to HRd 2¼ W Schuts	Trego	KS

OLD OR NEW (Circle one)

CONTRACTOR HWD #7

OWNER same

TYPE OF JOB Production

HOLE SIZE 7⅞ T.D.

CASING SIZE 5½ 17# DEPTH 9228

TUBING SIZE DEPTH

DRILL PIPE DEPTH

TOOL DEPTH

PRES. MAX MINIMUM

MEAS. LINE SHOE JOINT 2'

CEMENT LEFT IN CSG. 2'

PERFS.

DISPLACEMENT H20 214 BBl

EQUIPMENT

PUMP TRUCK # 597 CEMENTER Charles Kinze
HELPER Mike Scothorn

BULK TRUCK # 599 DRIVER Josh Isaac

BULK TRUCK # 870-844 DRIVER Brian Lang
609-239 Ben Newell

REMARKS:

Ran 9228' 5½ csg Brok circulation pump 5 BBl H20 40 BBl allied spacer mix 100 sx lead 1010 sx tail shut down wash pump clean. Release plug displace 10 BBl sugar water 204 BBl H20 hand plug @ 1500 # Released & float held pressure to 2500# buest disk pump 1 BBl 70 BBl cement to surface

CHARGE TO: Sam Garg

STREET

CITY STATE ZIP

CEMENT

AMOUNT ORDERED 100 sx class A 3% sa45 3% gyp ¼ flo 1010 sx class A 2% gel .8% fl 110 .15% nams 2% CD 31 2# Kolseal ¼ flo

COMMON	1110 sx	@ 17.90	19869
POZMIX		@	
GEL	38 sx	@ 23.40	889.20
CHLORIDE		@	
ASC		@	
425 lb SA45		@ 3.47	1474.75
gyp sel 6 sx		@ 37.60	225.60
flo seal 31 LB		@ 2.97	92.07
FL 160 760 LB		@ 18.90	14364.00
CD-31 190 LB		@ 10.30	1957.00
Kol seal 2020 LB		@ 0.98	1979.60
Defoamer 253 LB		@ 9.80	2479.40
allied spacer 40 BBl		@ 115	4600
HANDLING	1210.09	@ 2.48	3001.02
MILEAGE	1928.36	2.60	5013.74

TOTAL 47.930.62
(30%) 14.379.19

SERVICE 8014.76

DEPTH OF JOB 9228

PUMP TRUCK CHARGE		$	5920.20
EXTRA FOOTAGE		@	
MILEAGE	35	@ 7.70	269.50
MANIFOLD		@	275
LVM	35	@ 4.40	154
		@	

TOTAL 14.633.46
30% 4.390.04

PLUG & FLOAT EQUIPMENT

3 - Baskets	85	255
8 - centralizer	@ 395	3160
4 - tread lock	@ 57	228
	@	
	@	
	@	

(25%) TOTAL 3643.00
(910.75)

SALES TAX (If Any)

TOTAL CHARGES 66207.08

DISCOUNT 19679.97 IF PAID IN 30 DAYS

46,527.11 (~~30~~/30/25%)

thank you!

To: Allied Oil & Gas Services, LLC.
You are hereby requested to rent cementing equipment and furnish cementer and helper(s) to assist owner or contractor to do work as is listed. The above work was done to satisfaction and supervision of owner agent or contractor. I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the reverse side.

PRINTED NAME Cliff Boland

SIGNATURE Cliff Boland

Survey Report

Company:	Samuel Gary Jr & Associates, Inc.	**Local Co-ordinate Reference:**	Well 12-22-8-H4
Project:	Trego County, KS	**TVD Reference:**	Well @ 2393.0usft
Site:	Section 8-T12S-R22W	**MD Reference:**	Well @ 2393.0usft
Well:	12-22-8-H4	**North Reference:**	Grid
Wellbore:	HWD #7	**Survey Calculation Method:**	Minimum Curvature
Design:	HWD #7	**Database:**	Rocky Mountain R5000 Database

Project Trego County, KS

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas North 1501		

Site Section 8-T12S-R22W

Site Position:		**Northing:**	258,060.00 usft	**Latitude:**	39° 1' 41.668 N
From:	Map	**Easting:**	1,494,118.00 usft	**Longitude:**	99° 46' 50.949 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-1.13 °

Well 12-22-8-H4

Well Position	**+N/-S**	0.0 usft	**Northing:**	258,060.00 usft	**Latitude:**	39° 1' 41.668 N
	+E/-W	0.0 usft	**Easting:**	1,494,118.00 usft	**Longitude:**	99° 46' 50.949 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	2,393.0 usft	**Ground Level:**	2,378.5 usft

Wellbore HWD #7

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	4/5/2014	5.49	66.55	52,573

Design HWD #7

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	1.32

Survey Program **Date** 4/27/2014

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
200.0	9,234.0	Final Survey Report (HWD #7)	MWD	

Survey

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Vertical Section (usft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.27	20.81	200.0	0.4	0.2	0.4	0.14	0.14	0.00
400.0	0.35	59.13	400.0	1.2	0.9	1.2	0.11	0.04	19.16
600.0	0.16	100.89	600.0	1.5	1.7	1.5	0.13	-0.10	20.88
800.0	0.25	316.24	800.0	1.7	1.6	1.8	0.20	0.05	-72.33
1,000.0	0.38	350.82	1,000.0	2.7	1.2	2.7	0.11	0.07	17.29
1,200.0	0.37	326.69	1,200.0	3.9	0.8	3.9	0.08	-0.01	-12.07
1,400.0	0.25	320.75	1,400.0	4.8	0.1	4.8	0.06	-0.06	-2.97
1,600.0	0.65	315.74	1,600.0	5.9	-0.9	5.9	0.20	0.20	-2.51
1,800.0	0.33	329.73	1,800.0	7.2	-2.0	7.2	0.17	-0.16	7.00

Company:	Samuel Gary Jr & Associates, Inc.	**Local Co-ordinate Reference:**	Well 12-22-8-H4
Project:	Trego County, KS	**TVD Reference:**	Well @ 2393.0usft
Site:	Section 8-T12S-R22W	**MD Reference:**	Well @ 2393.0usft
Well:	12-22-8-H4	**North Reference:**	Grid
Wellbore:	HWD #7	**Survey Calculation Method:**	Minimum Curvature
Design:	HWD #7	**Database:**	Rocky Mountain R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,000.0	0.23	154.38	2,000.0	7.4	-2.1	7.3	0.28	-0.05	-87.68
2,200.0	1.90	229.09	2,199.9	4.8	-4.5	4.7	0.93	0.84	37.36
2,361.0	1.96	228.55	2,360.8	1.3	-8.5	1.1	0.04	0.04	-0.34
Surveys from 0 - 2361 Gyro Surveys									
2,410.0	1.60	228.55	2,409.8	0.2	-9.7	0.0	0.73	-0.73	0.00
2,456.0	1.30	228.55	2,455.8	-0.5	-10.6	-0.8	0.65	-0.65	0.00
2,500.0	1.20	228.55	2,499.8	-1.2	-11.3	-1.4	0.23	-0.23	0.00
2,726.0	0.70	228.55	2,725.8	-3.6	-14.1	-4.0	0.22	-0.22	0.00
2,905.0	0.30	228.55	2,904.8	-4.7	-15.3	-5.0	0.22	-0.22	0.00
3,145.0	0.20	228.55	3,144.7	-5.4	-16.0	-5.7	0.04	-0.04	0.00
Surveys from 2361 to 3145 Inc Only Interpolated Azimuth									
3,152.0	0.70	356.30	3,151.7	-5.3	-16.1	-5.7	11.96	7.14	1,825.00
3,197.0	4.00	10.70	3,196.7	-3.5	-15.8	-3.9	7.39	7.33	32.00
3,242.0	7.40	8.50	3,241.5	0.9	-15.1	0.5	7.57	7.56	-4.89
3,287.0	10.90	5.70	3,285.9	8.0	-14.2	7.7	7.84	7.78	-6.22
3,332.0	14.10	5.00	3,329.8	17.7	-13.3	17.4	7.12	7.11	-1.56
3,377.0	17.40	5.70	3,373.1	29.8	-12.2	29.6	7.35	7.33	1.56
3,422.0	20.40	4.40	3,415.7	44.4	-10.9	44.1	6.73	6.67	-2.89
3,467.0	23.60	5.20	3,457.4	61.2	-9.5	60.9	7.14	7.11	1.78
3,512.0	26.50	0.50	3,498.2	80.2	-8.6	80.0	7.81	6.44	-10.44
3,557.0	29.80	355.00	3,537.9	101.4	-9.5	101.1	9.32	7.33	-12.22
3,602.0	33.60	358.20	3,576.1	125.0	-10.8	124.7	9.23	8.44	7.11
3,647.0	36.90	2.00	3,612.9	150.9	-10.7	150.6	8.80	7.33	8.44
3,692.0	40.20	3.50	3,648.1	178.9	-9.4	178.7	7.62	7.33	3.33
3,737.0	43.00	4.00	3,681.7	208.7	-7.4	208.5	6.27	6.22	1.11
3,782.0	46.80	4.10	3,713.6	240.4	-5.2	240.2	8.45	8.44	0.22
3,826.0	50.70	4.80	3,742.6	273.4	-2.6	273.3	8.94	8.86	1.59
3,871.0	54.20	4.20	3,770.0	308.9	0.2	308.9	7.85	7.78	-1.33
3,916.0	57.20	3.50	3,795.4	346.0	2.7	346.0	6.79	6.67	-1.56
3,961.0	60.00	3.90	3,818.8	384.4	5.2	384.4	6.27	6.22	0.89
4,006.0	61.60	4.60	3,840.8	423.5	8.1	423.6	3.81	3.56	1.56
4,051.0	62.50	4.20	3,861.9	463.2	11.1	463.3	2.15	2.00	-0.89
4,096.0	63.70	3.20	3,882.2	503.2	13.7	503.4	3.32	2.67	-2.22
4,141.0	65.50	3.50	3,901.5	543.8	16.1	544.0	4.05	4.00	0.67
4,185.0	67.70	2.60	3,919.0	584.1	18.2	584.4	5.34	5.00	-2.05
4,230.0	70.10	3.90	3,935.2	626.0	20.6	626.3	5.98	5.33	2.89
4,275.0	72.20	3.80	3,949.7	668.5	23.5	668.9	4.67	4.67	-0.22
4,320.0	74.10	3.30	3,962.8	711.5	26.1	711.9	4.35	4.22	-1.11
4,364.0	76.00	2.90	3,974.1	753.9	28.4	754.4	4.41	4.32	-0.91
4,409.0	77.30	2.40	3,984.5	797.7	30.5	798.2	3.08	2.89	-1.11
4,454.0	79.10	3.20	3,993.7	841.7	32.6	842.2	4.36	4.00	1.78
4,499.0	79.70	1.30	4,002.0	885.9	34.3	886.4	4.36	1.33	-4.22
4,544.0	81.80	2.70	4,009.2	930.2	35.9	930.8	5.59	4.67	3.11
4,589.0	83.70	1.60	4,014.9	974.9	37.6	975.5	4.87	4.22	-2.44

Company:	Samuel Gary Jr & Associates, Inc.	**Local Co-ordinate Reference:**	Well 12-22-8-H4
Project:	Trego County, KS	**TVD Reference:**	Well @ 2393.0usft
Site:	Section 8-T12S-R22W	**MD Reference:**	Well @ 2393.0usft
Well:	12-22-8-H4	**North Reference:**	Grid
Wellbore:	HWD #7	**Survey Calculation Method:**	Minimum Curvature
Design:	HWD #7	**Database:**	Rocky Mountain R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,634.0	85.50	1.80	4,019.2	1,019.6	38.9	1,020.3	4.02	4.00	0.44
4,679.0	87.60	3.40	4,021.9	1,064.5	40.9	1,065.2	5.86	4.67	3.56
4,702.6	88.35	3.29	4,022.7	1,088.1	42.3	1,088.8	3.21	3.18	-0.45
12-22-8-H4 LP									
4,723.0	89.00	3.20	4,023.2	1,108.4	43.5	1,109.1	3.21	3.18	-0.45
4,768.0	90.40	3.50	4,023.4	1,153.3	46.1	1,154.1	3.18	3.11	0.67
4,812.0	91.30	2.60	4,022.7	1,197.3	48.4	1,198.1	2.89	2.05	-2.05
4,878.0	92.10	2.70	4,020.8	1,263.2	51.5	1,264.0	1.22	1.21	0.15
4,922.0	92.70	2.50	4,018.9	1,307.1	53.5	1,308.0	1.44	1.36	-0.45
4,967.0	92.30	2.40	4,017.0	1,352.0	55.4	1,352.9	0.92	-0.89	-0.22
5,012.0	91.80	1.80	4,015.4	1,396.9	57.1	1,397.9	1.73	-1.11	-1.33
5,057.0	90.70	0.50	4,014.4	1,441.9	58.0	1,442.9	3.78	-2.44	-2.89
5,102.0	90.90	0.70	4,013.8	1,486.9	58.4	1,487.9	0.63	0.44	0.44
5,147.0	90.70	0.40	4,013.1	1,531.9	58.9	1,532.8	0.80	-0.44	-0.67
5,192.0	89.80	0.20	4,012.9	1,576.9	59.1	1,577.8	2.05	-2.00	-0.44
5,236.0	88.70	359.90	4,013.5	1,620.9	59.1	1,621.8	2.59	-2.50	-0.68
5,281.0	88.70	360.00	4,014.5	1,665.9	59.1	1,666.8	0.22	0.00	0.22
5,326.0	89.20	359.90	4,015.4	1,710.9	59.1	1,711.8	1.13	1.11	-0.22
5,371.0	89.70	0.50	4,015.8	1,755.9	59.2	1,756.8	1.74	1.11	1.33
5,416.0	90.30	0.50	4,015.8	1,800.9	59.6	1,801.8	1.33	1.33	0.00
5,461.0	90.40	0.40	4,015.5	1,845.9	60.0	1,846.8	0.31	0.22	-0.22
5,506.0	89.80	359.90	4,015.4	1,890.9	60.1	1,891.7	1.74	-1.33	-1.11
5,551.0	89.60	359.50	4,015.7	1,935.9	59.8	1,936.7	0.99	-0.44	-0.89
5,596.0	89.10	358.90	4,016.2	1,980.9	59.2	1,981.7	1.74	-1.11	-1.33
5,641.0	89.10	358.70	4,016.9	2,025.8	58.3	2,026.6	0.44	0.00	-0.44
5,686.0	89.30	358.60	4,017.5	2,070.8	57.2	2,071.6	0.50	0.44	-0.22
5,731.0	89.20	358.60	4,018.1	2,115.8	56.1	2,116.5	0.22	-0.22	0.00
5,774.0	89.30	359.00	4,018.7	2,158.8	55.2	2,159.5	0.96	0.23	0.93
5,819.0	89.70	358.60	4,019.1	2,203.8	54.3	2,204.4	1.26	0.89	-0.89
5,863.0	90.20	358.90	4,019.1	2,247.8	53.3	2,248.4	1.33	1.14	0.68
5,908.0	90.30	358.50	4,018.9	2,292.8	52.3	2,293.4	0.92	0.22	-0.89
5,953.0	90.50	358.50	4,018.6	2,337.7	51.1	2,338.3	0.44	0.44	0.00
5,998.0	90.30	358.70	4,018.3	2,382.7	50.0	2,383.2	0.63	-0.44	0.44
6,043.0	90.30	359.10	4,018.0	2,427.7	49.1	2,428.2	0.89	0.00	0.89
6,088.0	90.60	358.60	4,017.7	2,472.7	48.2	2,473.2	1.30	0.67	-1.11
6,133.0	90.50	359.10	4,017.3	2,517.7	47.3	2,518.1	1.13	-0.22	1.11
6,178.0	89.90	359.60	4,017.1	2,562.7	46.8	2,563.1	1.74	-1.33	1.11
6,203.5	89.79	359.32	4,017.2	2,588.2	46.6	2,588.6	1.20	-0.44	-1.11
Target 1									
6,223.0	89.70	359.10	4,017.3	2,607.7	46.3	2,608.1	1.20	-0.44	-1.11
6,268.0	90.30	359.90	4,017.3	2,652.7	45.9	2,653.0	2.22	1.33	1.78
6,313.0	91.00	0.10	4,016.7	2,697.7	45.9	2,698.0	1.62	1.56	0.44
6,359.0	91.00	0.60	4,015.9	2,743.7	46.2	2,744.0	1.09	0.00	1.09
6,404.0	90.80	1.00	4,015.2	2,788.7	46.8	2,789.0	0.99	-0.44	0.89

Company:	Samuel Gary Jr & Associates, Inc.	**Local Co-ordinate Reference:**	Well 12-22-8-H4
Project:	Trego County, KS	**TVD Reference:**	Well @ 2393.0usft
Site:	Section 8-T12S-R22W	**MD Reference:**	Well @ 2393.0usft
Well:	12-22-8-H4	**North Reference:**	Grid
Wellbore:	HWD #7	**Survey Calculation Method:**	Minimum Curvature
Design:	HWD #7	**Database:**	Rocky Mountain R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,449.0	90.70	1.00	4,014.7	2,833.7	47.6	2,834.0	0.22	-0.22	0.00
6,494.0	90.90	1.30	4,014.0	2,878.6	48.5	2,879.0	0.80	0.44	0.67
6,539.0	91.30	2.50	4,013.2	2,923.6	50.0	2,924.0	2.81	0.89	2.67
6,584.0	90.90	2.20	4,012.3	2,968.6	51.9	2,969.0	1.11	-0.89	-0.67
6,629.0	91.20	2.00	4,011.5	3,013.5	53.5	3,014.0	0.80	0.67	-0.44
6,674.0	90.60	2.10	4,010.8	3,058.5	55.1	3,058.9	1.35	-1.33	0.22
6,704.3	90.06	2.57	4,010.6	3,088.8	56.4	3,089.3	2.36	-1.78	1.56
Target 2									
6,719.0	89.80	2.80	4,010.6	3,103.4	57.0	3,103.9	2.36	-1.78	1.56
6,764.0	89.70	2.70	4,010.8	3,148.4	59.2	3,148.9	0.31	-0.22	-0.22
6,808.0	89.30	2.50	4,011.2	3,192.3	61.2	3,192.9	1.02	-0.91	-0.45
6,853.0	88.60	1.70	4,012.0	3,237.3	62.8	3,237.9	2.36	-1.56	-1.78
6,898.0	89.20	1.80	4,012.9	3,282.3	64.2	3,282.9	1.35	1.33	0.22
6,943.0	89.50	0.80	4,013.4	3,327.3	65.2	3,327.9	2.32	0.67	-2.22
6,988.0	89.60	0.60	4,013.7	3,372.3	65.8	3,372.9	0.50	0.22	-0.44
7,031.0	89.60	0.20	4,014.0	3,415.3	66.1	3,415.9	0.93	0.00	-0.93
7,076.0	89.80	0.60	4,014.3	3,460.3	66.4	3,460.9	0.99	0.44	0.89
7,121.0	90.20	0.50	4,014.3	3,505.3	66.8	3,505.9	0.92	0.89	-0.22
7,165.0	90.50	0.90	4,014.0	3,549.3	67.4	3,549.9	1.14	0.68	0.91
7,204.1	90.85	0.99	4,013.5	3,588.3	68.0	3,588.9	0.92	0.89	0.22
Target 3									
7,210.0	90.90	1.00	4,013.5	3,594.2	68.1	3,594.9	0.92	0.89	0.22
7,255.0	91.00	1.20	4,012.7	3,639.2	69.0	3,639.8	0.50	0.22	0.44
7,300.0	90.80	1.10	4,012.0	3,684.2	69.9	3,684.8	0.50	-0.44	-0.22
7,345.0	90.70	1.30	4,011.4	3,729.2	70.8	3,729.8	0.50	-0.22	0.44
7,390.0	90.70	1.20	4,010.9	3,774.2	71.8	3,774.8	0.22	0.00	-0.22
7,435.0	90.70	1.10	4,010.3	3,819.2	72.7	3,819.8	0.22	0.00	-0.22
7,480.0	90.90	1.30	4,009.7	3,864.2	73.7	3,864.8	0.63	0.44	0.44
7,525.0	91.00	1.30	4,008.9	3,909.1	74.7	3,909.8	0.22	0.22	0.00
7,570.0	90.80	1.10	4,008.2	3,954.1	75.6	3,954.8	0.63	-0.44	-0.44
7,615.0	91.00	1.30	4,007.5	3,999.1	76.6	3,999.8	0.63	0.44	0.44
7,660.0	90.90	0.70	4,006.8	4,044.1	77.3	4,044.8	1.35	-0.22	-1.33
7,705.0	91.10	0.60	4,006.0	4,089.1	77.9	4,089.8	0.50	0.44	-0.22
7,750.0	91.30	0.60	4,005.1	4,134.1	78.3	4,134.8	0.44	0.44	0.00
7,795.0	90.60	1.40	4,004.3	4,179.1	79.1	4,179.8	2.36	-1.56	1.78
7,840.0	90.80	1.50	4,003.8	4,224.0	80.2	4,224.8	0.50	0.44	0.22
7,884.0	90.10	1.10	4,003.4	4,268.0	81.2	4,268.8	1.83	-1.59	-0.91
7,929.0	90.20	1.10	4,003.3	4,313.0	82.1	4,313.8	0.22	0.22	0.00
7,974.0	88.80	1.60	4,003.7	4,358.0	83.2	4,358.8	3.30	-3.11	1.11
8,019.0	89.00	1.80	4,004.5	4,403.0	84.5	4,403.8	0.63	0.44	0.44
8,064.0	88.90	1.40	4,005.4	4,448.0	85.8	4,448.7	0.92	-0.22	-0.89
8,109.0	89.70	1.60	4,005.9	4,492.9	86.9	4,493.7	1.83	1.78	0.44
8,154.0	89.50	1.30	4,006.2	4,537.9	88.1	4,538.7	0.80	-0.44	-0.67

Company:	Samuel Gary Jr & Associates, Inc.	**Local Co-ordinate Reference:**	Well 12-22-8-H4
Project:	Trego County, KS	**TVD Reference:**	Well @ 2393.0usft
Site:	Section 8-T12S-R22W	**MD Reference:**	Well @ 2393.0usft
Well:	12-22-8-H4	**North Reference:**	Grid
Wellbore:	HWD #7	**Survey Calculation Method:**	Minimum Curvature
Design:	HWD #7	**Database:**	Rocky Mountain R5000 Database

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.0	89.60	1.50	4,006.6	4,583.9	89.2	4,584.7	0.49	0.22	0.43
8,204.3	89.64	1.46	4,006.6	4,588.2	89.3	4,589.0	1.26	0.89	-0.89
Target 4									
8,245.0	90.00	1.10	4,006.8	4,628.9	90.2	4,629.7	1.26	0.89	-0.89
8,290.0	89.70	0.80	4,006.9	4,673.9	91.0	4,674.7	0.94	-0.67	-0.67
8,335.0	90.20	1.00	4,006.9	4,718.9	91.7	4,719.7	1.20	1.11	0.44
8,379.0	89.50	1.00	4,007.0	4,762.9	92.4	4,763.7	1.59	-1.59	0.00
8,423.0	89.70	0.70	4,007.3	4,806.9	93.1	4,807.7	0.82	0.45	-0.68
8,468.0	90.20	1.20	4,007.4	4,851.9	93.8	4,852.7	1.57	1.11	1.11
8,512.0	89.80	0.60	4,007.4	4,895.9	94.5	4,896.7	1.64	-0.91	-1.36
8,557.0	90.00	1.10	4,007.5	4,940.8	95.2	4,941.7	1.20	0.44	1.11
8,603.0	90.70	1.40	4,007.2	4,986.8	96.2	4,987.7	1.66	1.52	0.65
8,649.0	90.20	1.10	4,006.8	5,032.8	97.2	5,033.7	1.27	-1.09	-0.65
8,694.0	89.80	0.90	4,006.8	5,077.8	98.0	5,078.7	0.99	-0.89	-0.44
8,704.3	90.10	1.06	4,006.8	5,088.1	98.2	5,089.0	3.28	2.89	1.56
Target 5									
8,739.0	91.10	1.60	4,006.5	5,122.8	99.0	5,123.7	3.28	2.89	1.56
8,784.0	90.20	1.50	4,005.9	5,167.8	100.2	5,168.7	2.01	-2.00	-0.22
8,829.0	90.20	1.30	4,005.8	5,212.8	101.3	5,213.7	0.44	0.00	-0.44
8,873.0	89.80	0.70	4,005.8	5,256.8	102.1	5,257.7	1.64	-0.91	-1.36
8,918.0	89.60	0.10	4,006.0	5,301.8	102.4	5,302.7	1.41	-0.44	-1.33
8,963.0	89.30	0.10	4,006.5	5,346.8	102.5	5,347.7	0.67	-0.67	0.00
9,008.0	88.60	359.80	4,007.3	5,391.7	102.4	5,392.7	1.69	-1.56	-0.67
9,053.0	89.70	0.00	4,008.0	5,436.7	102.3	5,437.7	2.48	2.44	0.44
9,098.0	90.60	359.70	4,007.8	5,481.7	102.2	5,482.6	2.11	2.00	-0.67
9,143.0	89.50	359.60	4,007.8	5,526.7	101.9	5,527.6	2.45	-2.44	-0.22
9,180.0	88.80	359.50	4,008.3	5,563.7	101.7	5,564.6	1.91	-1.89	-0.27
9,228.9	88.80	359.50	4,009.4	5,612.6	101.2	5,613.4	0.00	0.00	0.00
12-22-8-H4 PBHL									
9,234.0	88.80	359.50	4,009.5	5,617.7	101.2	5,618.6	0.00	0.00	0.00
Projected Survey to 9,234' MD									

Survey Annotations

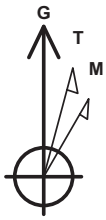
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,361.0	2,360.8	1.3	-8.5	Surveys from 0 - 2361 Gyro Surveys
3,145.0	3,144.7	-5.4	-16.0	Surveys from 2361 to 3145 Inc Only Interpolated Azimuth
9,234.0	4,009.5	5,617.7	101.2	Projected Survey to 9,234' MD

Checked By: _____ Approved By: _____ Date: _____

Samuel Gary Jr & Associates, Inc.
12-22-8-H4
Trego County, KS

Geodetic System: US State Plane 1927 (Exact solution)
Zone: Kansas North 1501
Well @ 2393.0usft
Ground Level: 2378.5
Latitude: 39° 1' 41.668 N
Longitude: 99° 46' 50.949 W
Magnetic North is 5.49° East of True North (Magnetic Declination)

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
3201.8	0.00	0.00	3201.8	0.0	0.0	0.00	0.00	0.0	
3951.8	60.00	1.32	3822.0	358.0	8.2	8.00	1.32	358.1	
4151.8	60.00	1.32	3922.0	531.2	12.2	0.00	0.00	531.3	
4554.5	90.00	1.32	4025.1	915.6	21.1	7.45	0.00	915.8	
4754.5	90.00	1.32	4025.1	1115.5	25.7	0.00	0.00	1115.8	
6227.7	90.55	1.32	4018.0	2588.3	59.6	0.04	0.00	2589.0	Target 1
6727.7	90.14	1.32	4015.0	3088.2	71.2	0.08	180.00	3089.0	Target 2
7227.7	90.32	1.32	4013.0	3588.0	82.7	0.04	0.00	3589.0	Target 3
8227.7	90.25	1.32	4008.0	4587.8	105.7	0.01	180.00	4589.0	Target 4
8727.7	90.89	1.32	4003.0	5087.6	117.2	0.13	0.00	5089.0	Target 5
9253.3	89.11	1.68	4003.0	5613.0	131.0	0.35	168.55	5614.5	

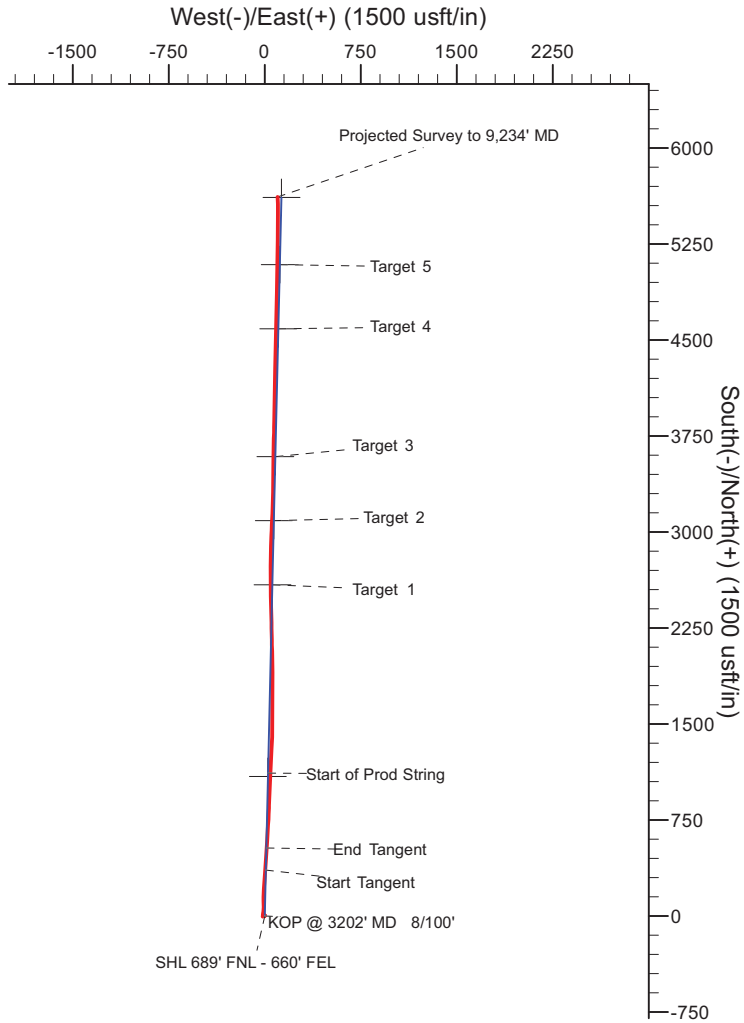


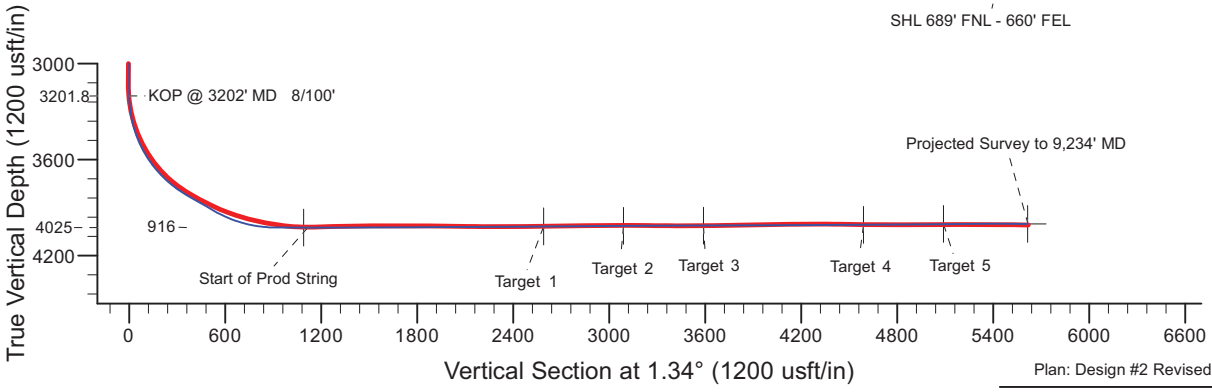
Azimuths to Grid North
True North: 1.13°
Magnetic North: 6.62°

Magnetic Field
Strength: 52573.4snT
Dip Angle: 66.55°
Date: 4/5/2014
Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1838.0	1838.0	Stone Corral
2191.0	2191.0	Hutchinson Salt
2348.0	2348.0	Base Hutchinson
2933.0	2933.0	Neva
3257.0	3257.1	Elmont
3423.0	3426.7	Topeka
3522.0	3533.8	Lecompton
3645.0	3679.7	Heebner
3675.0	3718.7	Lansing
3803.0	3915.3	H-Shale Lansing
3893.0	4093.7	Basal Shale - Lansing
3993.0	4331.6	Marmaton Chert
4018.0	4450.0	Marmaton Target Zone





Plan: Design #2 Revised 04-07-14 (12-22-8-H4/HWD #7)

Created By:	Mike Kirby	Date:	8:28, April 27 2014
Checked:		Date:	
Reviewed:		Date:	
Approved:	x	Date:	x

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

Fracture Start Date/Time:	**5/16/14 0:00**
Fracture End Date/Time:	**5/16/14 0:00**
State:	**Kansas**
County:	**Trego**
API Number:	*(e.g. XX-XXX-XXXXX-0000)*
Operator Number:	
Well Name:	**Babb #3 12-22-8-H4**
Federal Well:	
Longitude:	
Latitude:	
Long/Lat Projection:	**NAD27**
True Vertical Depth (TVD):	
Total Clean Fluid Volume* (gal):	**186,816**

Additive	*Specific Gravity*	*Additive Quantity*	*Mass (lbs)*	
Water	1.00	**742,770**	***6,198,416***	*gal*
Plexsurf 210E	0.95	**965**	***7,650***	*gal*
Biocide AMA 35 DP	1.00	**175**	***175***	*lb*
Plexbreak 134	0.97	**472**	***3,821***	*gal*
Plexbore 101	1.30	**647**	***7,019***	*gal*
Ammonium Persulfate	1.98	**681**	***11,252***	*gal*
DF 100	0.95	**1,690**	***13,398***	*gal*
				gal
				gal
				gal
				gal
				gal
				gal
				gal
				gal
				gal
				gal
				gal
				gal
			Total Slurry Mass (Lbs)	
			6,241,731	

Ingredients Section:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Mass per Component (LBS)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Questa Energy	Carrier/Base Fluid	Water	7732-18-5	100.00%	***6,198,416***	***99.30604%***	
Plexsurf 210E	Chemplex	Flowback Aid	Methyl Alcohol	67-56-1	30.00%	***2,295***	***0.03677%***	
			Alcohol Alkoxylate	NA	20.00%	***1,530***	***0.02451%***	
			Ethyleneglycol Monobutyl Ether	111-76-2	5.00%	***383***	***0.00613%***	
Biocide AMA 35 DP	Chemplex	Treat Frac Water	Dazomet	533-74-4	98.00%	***172***	***0.00275%***	
Plexbreak 134	Chemplex	Nonemulsifier for acid	Isopropyl Alcohol	67-63-0	20.00%	***764***	***0.01224%***	
Plexbore 101	Chemplex	Crosslinker	Potassium Metaborate	13709-94-9	30.00%	***2,106***	***0.03374%***	
			Potassium Hydroxide	1310-58-3	5.00%	***351***	***0.00562%***	
			Ethylene Glycol	107-21-1	10.00%	***702***	***0.01125%***	
Ammonium Persulfate	Chemplex	Breaker	Ammonium Persulfate	7727-54-0	98.00%	***11,027***	***0.17667%***	
DF 100	Drilling Fluid Technology	Foamer	Methanol	67-56-1	10.00%	***1,340***	***0.02147%***	
			Isopropyl Alcohol	67-63-0	15.00%	***2,010***	***0.03220%***	
			Ethylene Glycol Buty Ether	111-76-2	25.00%	***3,349***	***0.05366%***	
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component
								Non-MSDS Component

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

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

3517' RIG SERVICE, TIGHTING UP UNION ON STAND PIPE/ DOWN FOR 1 HR 45 MIN

LS- OFF WHT WHT CRM, HD DNS, F-XLN TO RE-XLN, S-SUCRO, S-CHLKY, TR SFT WHT CHLK THRU TRAY, TR DUL YEL MIN FLO, NO POR, NO CUT OR SHOW

LECOMPTON 3526'(-1133)/ 3550' MD

LS- OFF WHT CRM LT TN, HD DNS, F-XLN RE-XLN, S-SUCRO, S-CHLKY,TR SFT WHT CHLK THRU TRAY, TR DUL YEL MIN FLO, NO VIS POR, NO CUT OR SHOW

SH- LT GY GY DK GY, FRM TO SLI SFT, BLKY SMTH TXT

3607' CHANGED PUMP/ RECYLEING PUMP/ DOWN 1 HR

LS- WHT OFF WHT CRM, HD DNS, V/F-XLN TO F-XLN, S-CHLKY, SLI S-SUCRO, SFT WHT CHLK THRU TRAY, TR DUL YEL MIN FLO, NO VIS POR, NO CUT OR SHOW

LS- CRM LT TN OFF WHT, HD DNS, F-XLN RE-XLN, S-SUCRO, S-CHLKY, SFT WHT CHLK THRU, TR DUL YEL MIN FLO IN 20%, NO VIS POR, NO VIS CUT OR SHOW

HEEBNER 3649' (-1256) TVD/ 3700' MD

LS-CRM WHT LT TN, F-XLN RE-XLNN, S-SUCRO, S-CHLKY, SFT WHT CHLK THRU TRAY, LT TR DUL YEL MIN FLO 30%, NO VIS POR, NO VIS CUT OR SHOW

LANSING 3677'(-1284') TVD/ 3738' MD

LS- OFF WHT LT TN CRM, HD DNS, F-XLN RE-XLN, S-SUCRO, S-CHLKY, SFT WHT CHLK IN TRAY, DUL YEL MIN FLO IN 20%, NO VIS POR, NO CUT OR SHOW

SH- BLK SFT CARB

LS- OFF WHT WHT TO LT TN, HD DNS, F-XLN RE-XLN, S-SUCRO, S-CHLKY, TR GY SH THRU TRAY, SFT WHT CHLK THRU TRAY, DUL YEL MIN FLO IN 30%, NO VIS POR, NO VIS CUT OR SHOW

3854'-3858' LS- OFF WHT TO CRM LT TN BLK (DUE TO LIVE OIL STN IN 40%) HD DNS TO TR BRTT, FN-XLN, RE-XLN MTRX, S-CHLKY IP, IMBD CALC-XLS SCAT THRU, TR FOSS FRGS, SLI TR PYR IN TRAY, DUL YEL GLD FLO THRU, BRT YEL GLD FLO IN 10%, PR TO FR INTER-XLN POR IN 20%, PR TO FR VUG POR IN 20%, FR FLSH CUT, PR, FR TO TR GD SLW STRM IN 40%, LT TN LCH ON DISH, NO OIL ODOR

LS- WHT TO OFF WHT CRM, HD DNS TO BRTT IP, V/FN TO FN-XLN MTRX, RE-XLN IP, S-CHLKY, SCAT IMBD SFT WHT CHLK IN TRAY, TR PYR IN TRAY, SLI TR IMBD CALC-XLS IP, DUL YEL MIN FLO SCAT THRU, PR INTER-XLN POR IP, NO VIS CUT OR SHOW

DRILLED 5' TO SEE IF TOOL WOULD START WORKING

RECYCLE PUMP FOR MWD TROUBLESHOOT MWD/ CHECKED SURFACE FOR FAILURES CHANGE TRANSDUCER/ PUMP SWEEP/ REG SWEEP/ PUMP FRESH WATER SWEEP/ CIRC SWEEP OUT RECYCLE PUMPS AND MWD TOOL

GAMMA TOOL FAILURE @ 12:15 AM @ 3970' MD

T.O.H @ 3975' MD FOR MWD TOOL ON APRIL 6, 2014 @ 3:30 A.M.

H-SHALE LANSING 3950' MD/ 3809.97' (-1416') TVD

B.O.B @ 3965' MD SAME BIT ON APRIL 6, 2014 @ 4:00 P.M.

SWITCHING TO HORIZONTAL LOG

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

Well Name:	SGA 12-22-8-H4 BABB2		
Well Id:			
Location:	Sec. 8-12S-22W	TREGO COUNTY, KANSAS	
License Number:	15-195-2293-01-00	Region:	WILDCAT
Spud Date:	APRIL 1, 2014	Drilling Completed:	4/27/2014
Surface Coordinates:	689' FNL / 660' FEL SEC. 8		
Bottom Hole Coordinates:	400' FNL / 660' FEL SEC. 5		
Ground Elevation (ft):	2378.5'	K.B. Elevation (ft):	2393'
Logged Interval (ft):	2300' To: 9234	Total Depth (ft):	9234
Formation:	Marmaton Chert		
Type of Drilling Fluid:			

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

ROCK TYPES

Bent	Dol	Salt	Shgy
Brec	Gyp	Htshale	Sltst
Cht	Igne	Newhotsh	Ss
Clyst	Lmst	Shale	Till
Coal	Meta	Shlyss	Blank
Congl	Mrlst	Shcol	

Directional Drilling Information

GARRET MANUEL-DD	DRILL RIGHT TECH.
CLARK SUMMERS-DD	9630 POLE RD.
GEORGE HUNT-MWD	OKC, OK 73160
CHARLIE MINYARD-MWD	405-604-2969

GEOLOGIST

Name: Jordan Newsom/ Tom Flowers
Company: Earth Tech OGL, Inc.
Address: P.O. Box 683
Hooker, OK 73945
Off; 888-543-8378 Cell; 580-754-0062

ACCESSORIES

FOSSIL
- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

MINERAL
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg
- Shale gy

TEXTURE
- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING
- Well
- Moderate
- Poor

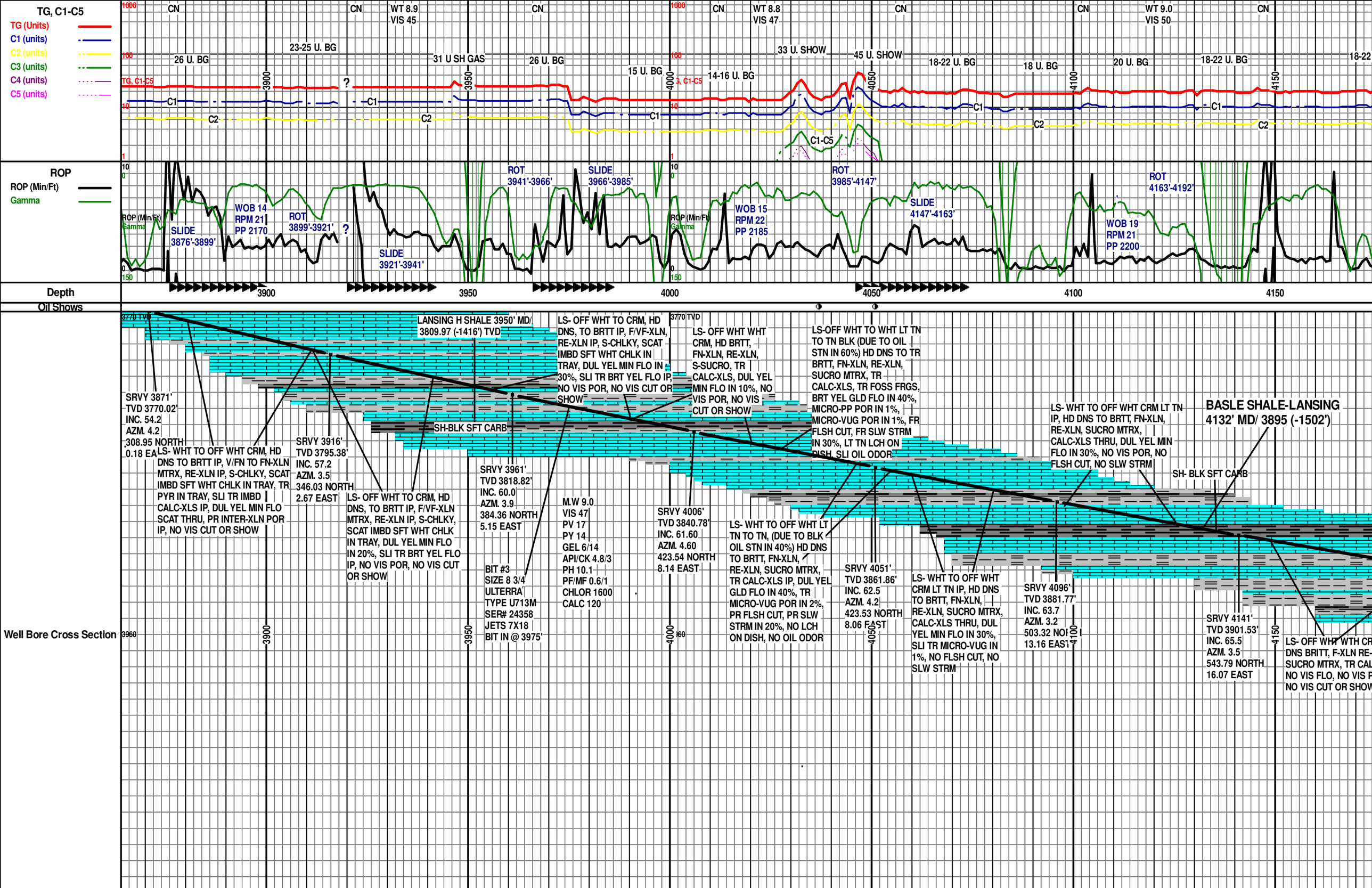
ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

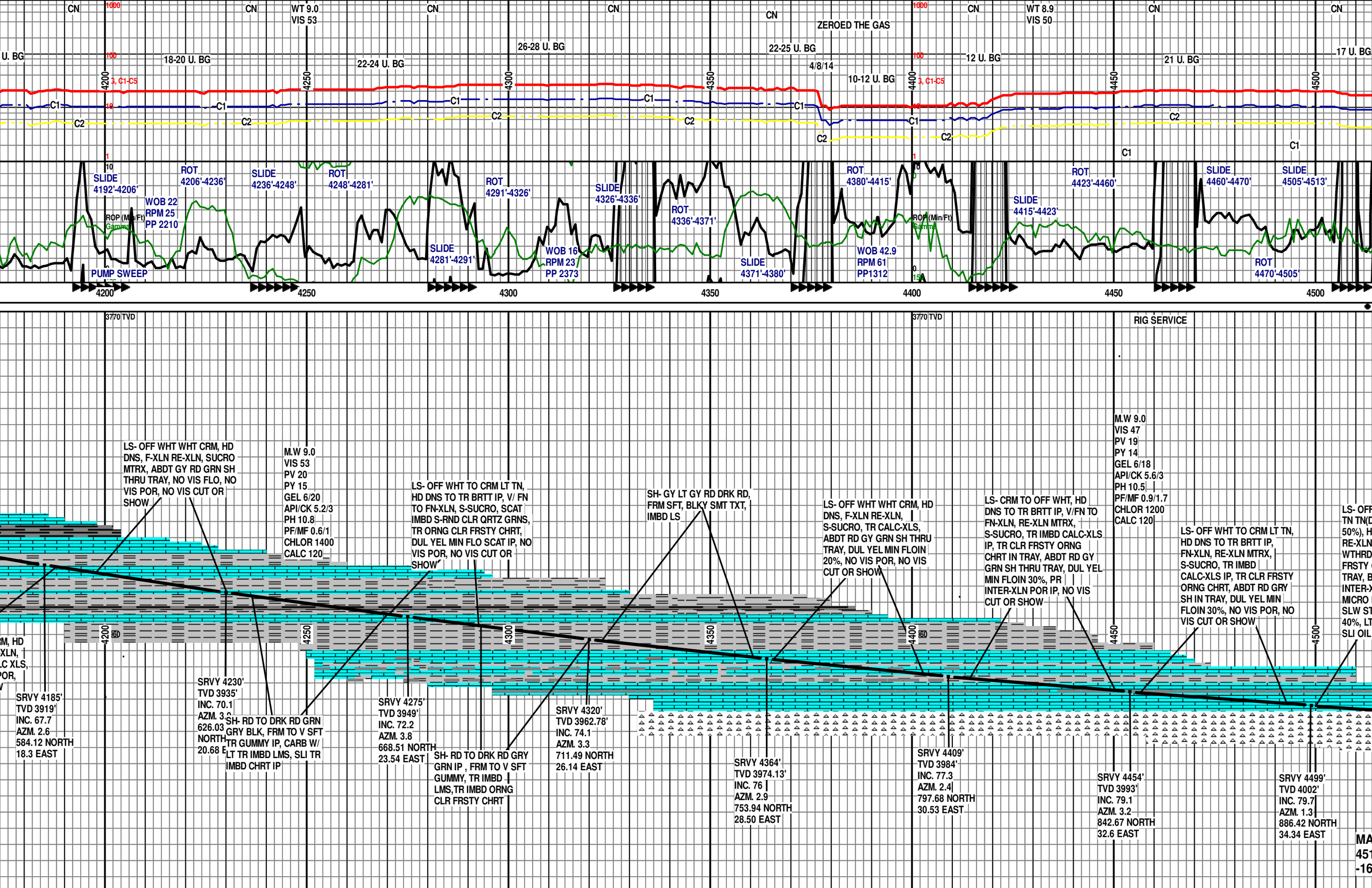
INTERVAL
- None
- Core
- Dst

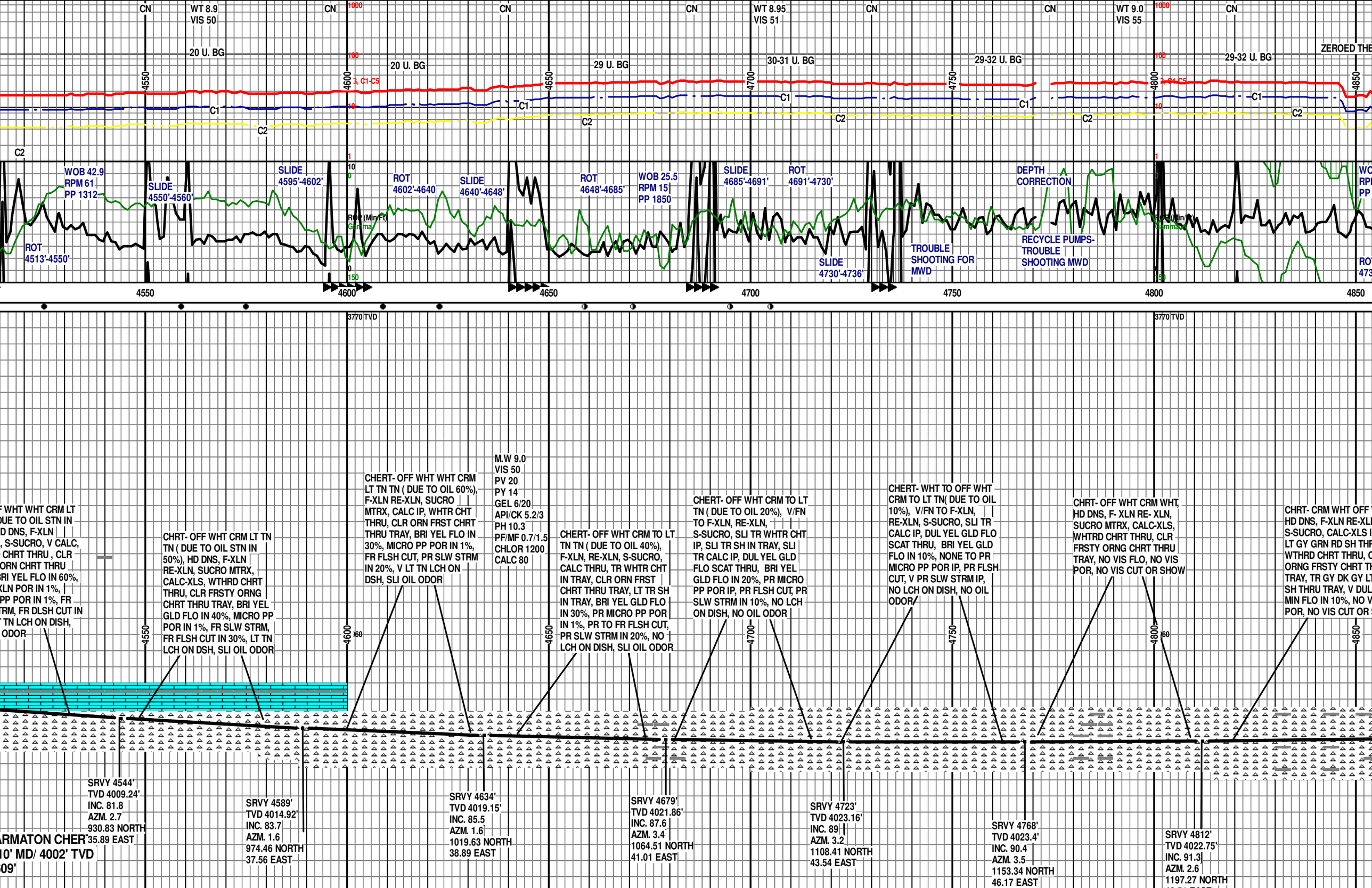
EVENT
- Rft
- Slide
- Perf

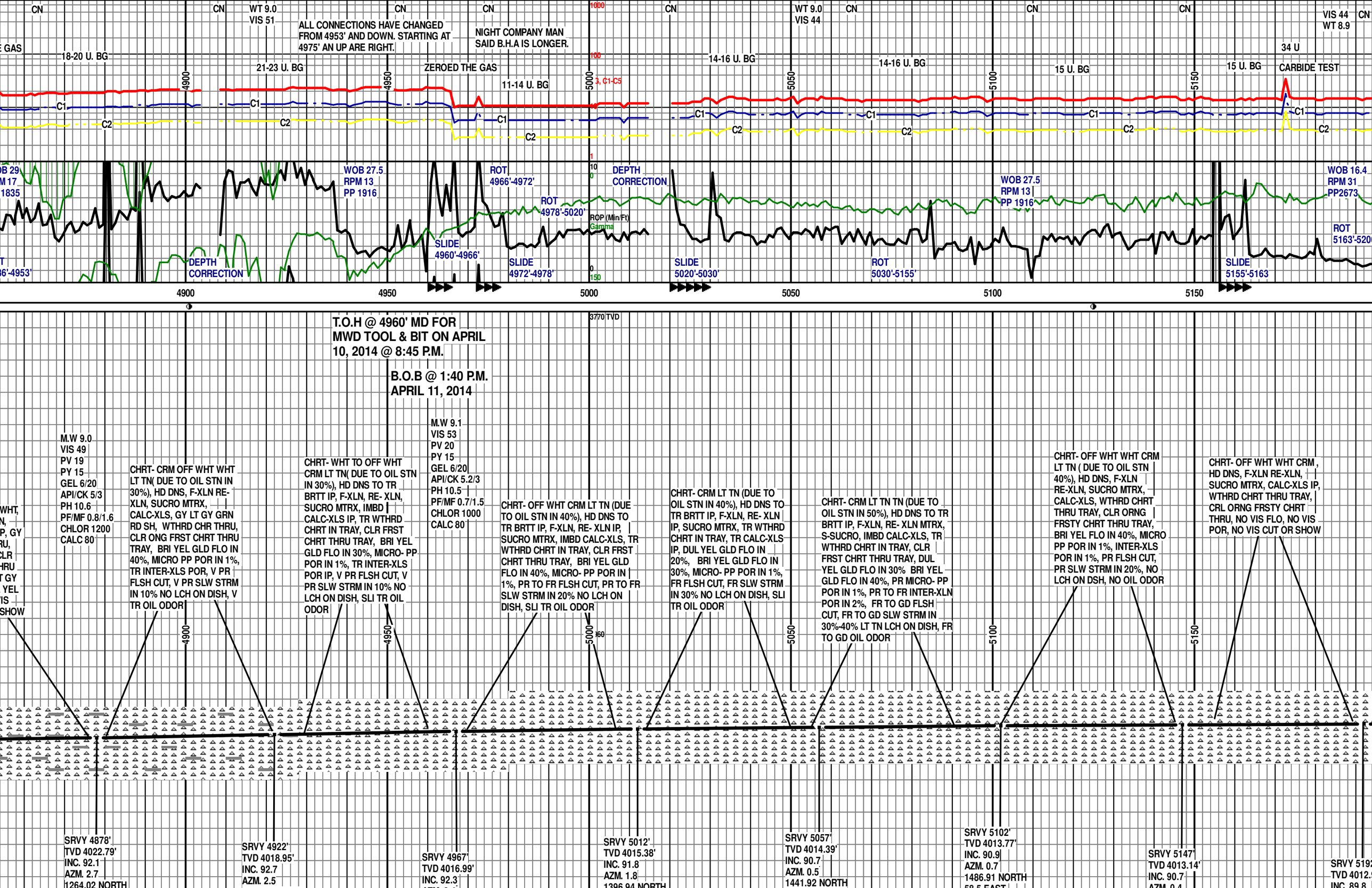
OPERATOR

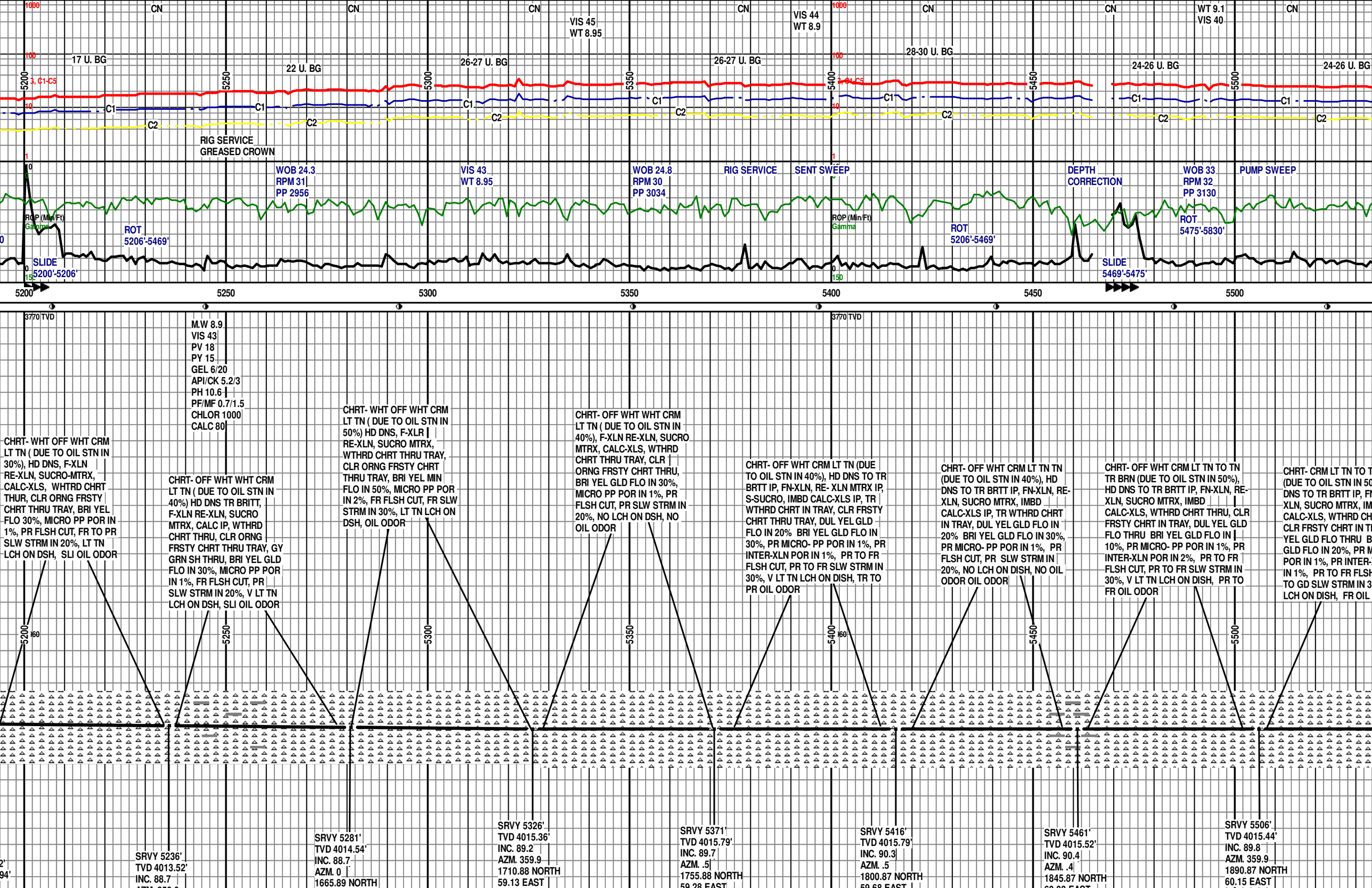
Company: Sam Gary Jr. & Assoc.
Address: 1515 Wynkoop, Ste. # 700
Denver, Co. 80202
Co. Geo: Dan Pritchard

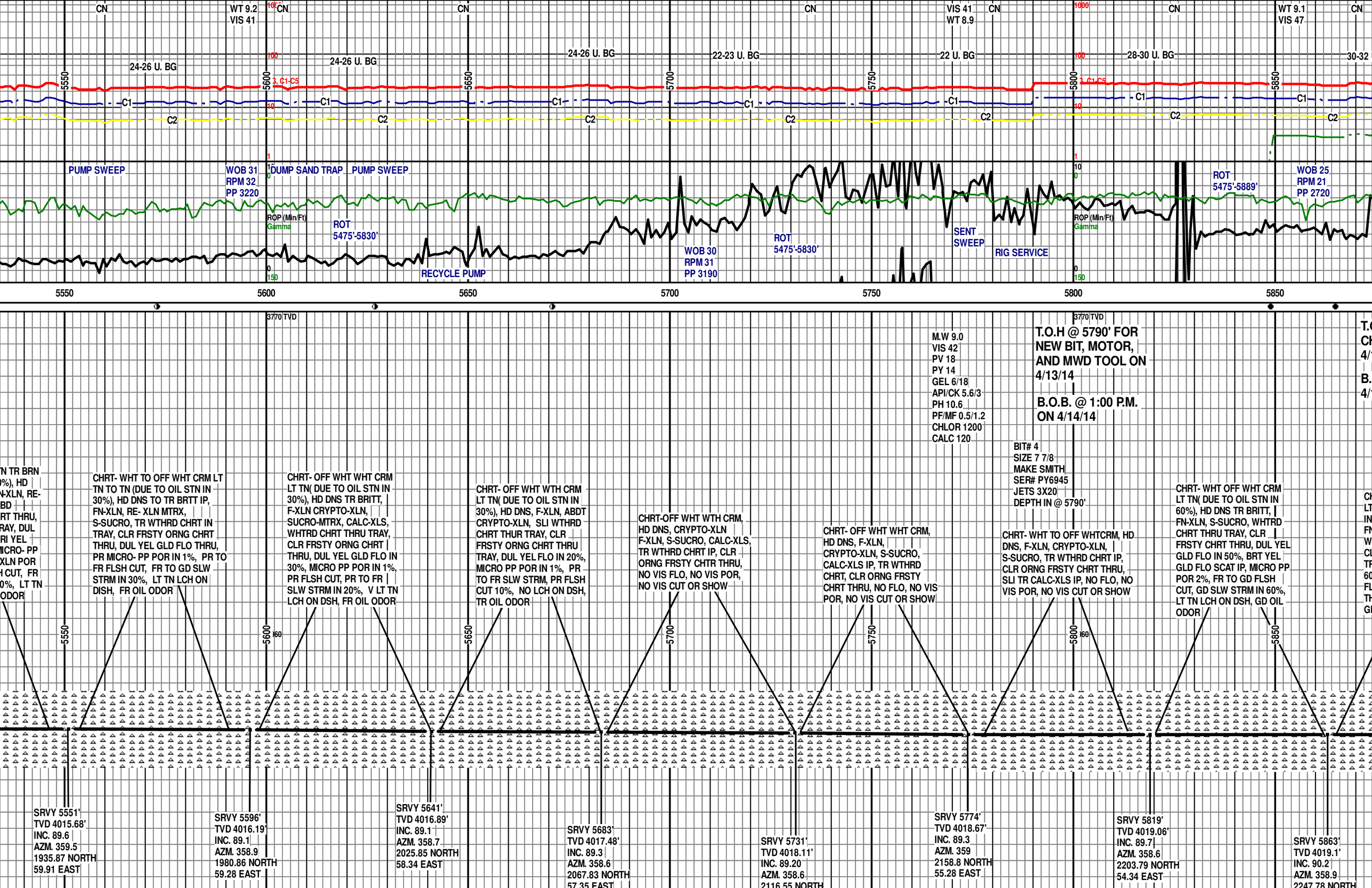

TG, C1-C5
TG (Units)
C1 (units)
C2 (units)
C3 (units)
C4 (units)
C5 (units)
ROP
ROP (Min/Ft)
Gamma
Depth
Oil Shows
Well Bore Cross Section
CN
WT 8.9
VIS 45
WT 8.8
VIS 47
WT 9.0
VIS 50
23-25 U. BG
26 U. BG
31 U SH GAS
15 U. BG
14-16 U. BG
33 U. SHOW
45 U. SHOW
18-22 U. BG
18 U. BG
20 U. BG
C1
C2
C1-C5
SLIDE 3876'-3899'
WOB 14
RPM 21
PP 2170
ROT 3899'-3921'
SLIDE 3921'-3941'
ROT 3941'-3966'
SLIDE 3966'-3985'
WOB 15
RPM 22
PP 2185
ROT 3985'-4147'
SLIDE 4147'-4163'
ROT 4163'-4192'
WOB 19
RPM 21
PP 2200
3900
3950
4000
4050
4100
4150
3770 TVD
LANSING H SHALE 3950' MD/ 3809.97 (-1416') TVD
LS- OFF WHT TO CRM, HD DNS, TO BRTT IP, F/VF-XLN, RE-XLN IP, S-CHLKY, SCAT IMBD SFT WHT CHLK IN TRAY, DUL YEL MIN FLO IN 30%, SLI TR BRT YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW
LS- OFF WHT WHT CRM, HD BRTT, FN-XLN, RE-XLN, S-SUCRO, TR CALC-XLS, DUL YEL MIN FLO IN 10%, NO VIS POR, NO VIS CUT OR SHOW
LS-OFF WHT TO WHT LT TN TO TN BLK (DUE TO OIL STN IN 60%) HD DNS TO TR BRTT, FN-XLN, RE-XLN, SUCRO MTRX, TR CALC-XLS, TR FOSS FRGS, BRT YEL GLD FLO IN 40%, MICRO-PP POR IN 1%, MICRO-VUG POR IN 1%, FR FLSH CUT, FR SLW STRM IN 30%, LT TN LCH ON DISH, SLI OIL ODOR
LS- WHT TO OFF WHT CRM LT TN IP, HD DNS TO BRTT, FN-XLN, RE-XLN, SUCRO MTRX, CALC-XLS THRU, DUL YEL MIN FLO IN 30%, NO VIS POR, NO FLSH CUT, NO SLW STRM
BASLE SHALE-LANSING
4132' MD/ 3895 (-1502')
SH-BLK SFT CARB
SH- BLK SFT CARB
SRVY 3871'
TVD 3770.02'
INC. 54.2
AZM. 4.2
308.95 NORTH
0.18 EA
LS- WHT TO OFF WHT CRM, HD DNS TO BRTT IP, V/FN TO FN-XLN MTRX, RE-XLN IP, S-CHLKY, SCAT IMBD SFT WHT CHLK IN TRAY, TR PYR IN TRAY, SLI TR IMBD CALC-XLS IP, DUL YEL MIN FLO SCAT THRU, PR INTER-XLN POR IP, NO VIS CUT OR SHOW
SRVY 3916'
TVD 3795.38'
INC. 57.2
AZM. 3.5
346.03 NORTH
2.67 EAST
LS- OFF WHT TO CRM, HD DNS, TO BRTT IP, F/VF-XLN MTRX, RE-XLN IP, S-CHLKY, SCAT IMBD SFT WHT CHLK IN TRAY, DUL YEL MIN FLO IN 20%, SLI TR BRT YEL FLO IP, NO VIS POR, NO VIS CUT OR SHOW
SRVY 3961'
TVD 3818.82'
INC. 60.0
AZM. 3.9
384.36 NORTH
5.15 EAST
BIT #3
SIZE 8 3/4
ULTERRA
TYPE U713M
SER# 24358
JETS 7X18
BIT IN @ 3975'
M.W 9.0
VIS 47
PV 17
PY 14
GEL 6/14
API/CK 4.8/3
PH 10.1
PF/MF 0.6/1
CHLOR 1600
CALC 120
SRVY 4006'
TVD 3840.78'
INC. 61.60
AZM. 4.60
423.54 NORTH
8.14 EAST
LS- WHT TO OFF WHT LT TN TO TN, (DUE TO BLK OIL STN IN 40%) HD DNS TO BRTT, FN-XLN, RE-XLN, SUCRO MTRX, TR CALC-XLS IP, DUL YEL GLD FLO IN 40%, TR MICRO-VUG POR IN 2%, PR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DISH, NO OIL ODOR
SRVY 4051'
TVD 3861.86'
INC. 62.5
AZM. 4.2
423.53 NORTH
8.06 EAST
LS- WHT TO OFF WHT CRM LT TN IP, HD DNS TO BRTT, FN-XLN, RE-XLN, SUCRO MTRX, CALC-XLS THRU, DUL YEL MIN FLO IN 30%, SLI TR MICRO-VUG IN 1%, NO FLSH CUT, NO SLW STRM
SRVY 4096'
TVD 3881.77'
INC. 63.7
AZM. 3.2
503.32 NOR
13.16 EAS
SRVY 4141'
TVD 3901.53'
INC. 65.5
AZM. 3.5
543.79 NORTH
16.07 EAST
LS- OFF WHT WTH CR
DNS BRITT, F-XLN RE-
SUCRO MTRX, TR CAL
NO VIS FLO, NO VIS F
NO VIS CUT OR SHOW

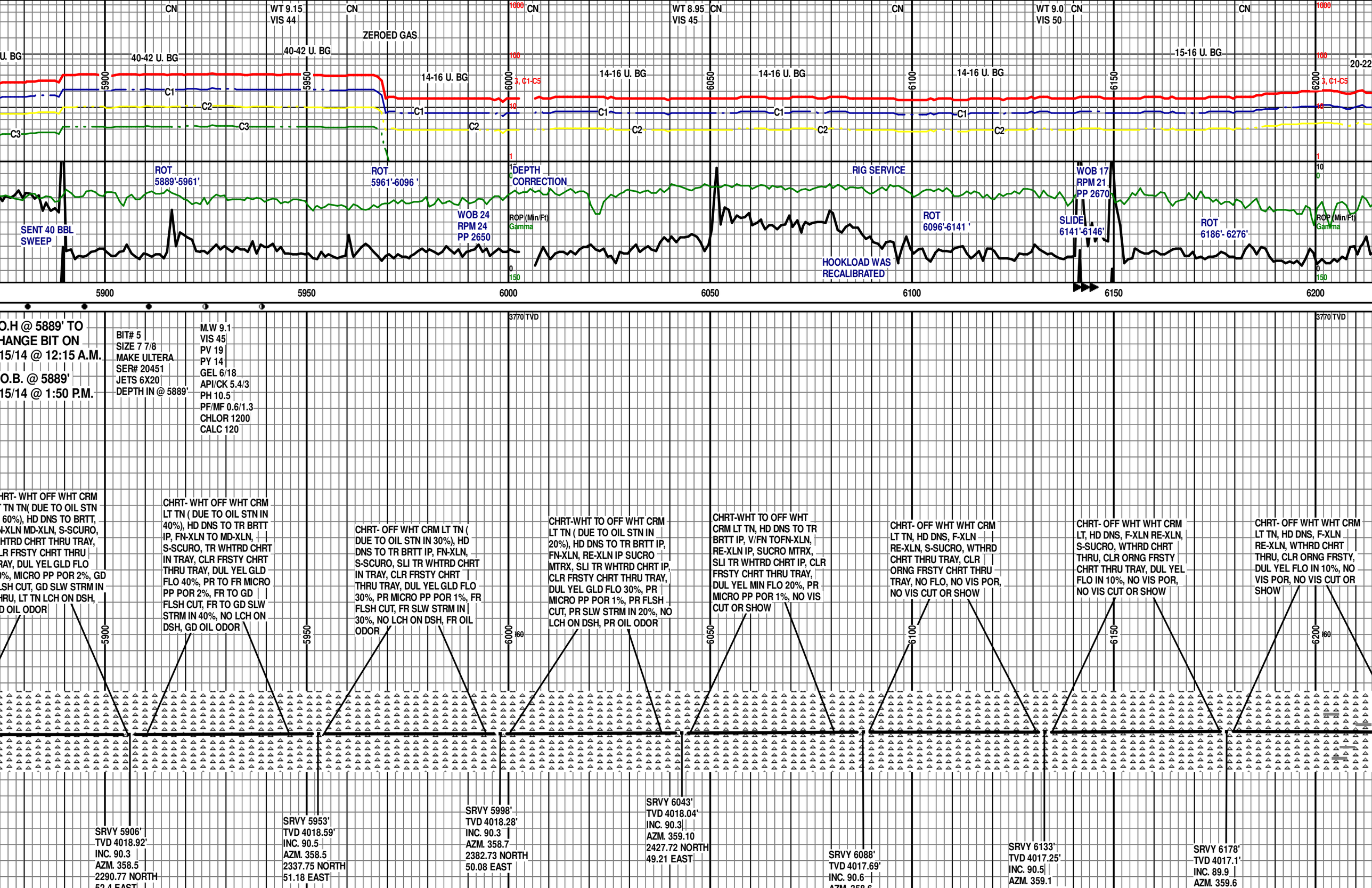

CN
WT 9.0
VIS 53
ZEROED THE GAS
WT 8.9
VIS 50
U. BG
18-20 U. BG
22-24 U. BG
26-28 U. BG
22-25 U. BG
4/8/14
10-12 U. BG
12 U. BG
21 U. BG
17 U. BG
3, C1-C5
C1
C2
4200
4250
4300
4350
4400
4450
4500
SLIDE 4192'-4206'
ROT 4206'-4236'
SLIDE 4236'-4248'
ROT 4248'-4281'
ROT 4291'-4326'
SLIDE 4326'-4336'
ROT 4336'-4371'
ROT 4380'-4415'
SLIDE 4415'-4423'
ROT 4423'-4460'
SLIDE 4460'-4470'
SLIDE 4505'-4513'
WOB 22
RPM 25
PP 2210
ROP (Min/Ft)
Gamma
PUMP SWEEP
SLIDE 4281'-4291'
WOB 16
RPM 23
PP 2373
SLIDE 4371'-4380'
WOB 42.9
RPM 61
PP1312
ROT 4470'-4505'
3770 TVD
RIG SERVICE
M.W 9.0
LS- OFF WHT WHT CRM, HD DNS, F-XLN RE-XLN, SUCRO MTRX, ABDT GY RD GRN SH THRU TRAY, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
M.W 9.0
VIS 53
PV 20
PY 15
GEL 6/20
API/CK 5.2/3
PH 10.8
PF/MF 0.6/1
CHLOR 1400
CALC 120
LS- OFF WHT TO CRM LT TN, HD DNS TO TR BRTT IP, V/ FN TO FN-XLN, S-SUCRO, SCAT IMBD S-RND CLR QRTZ GRNS, TR ORNG CLR FRSTY CHRT, DUL YEL MIN FLO SCAT IP, NO VIS POR, NO VIS CUT OR SHOW
SH- GY LT GY RD DRK RD, FRM SFT, BLKY SMT TXT, IMBD LS
LS- OFF WHT WHT CRM, HD DNS, F-XLN RE-XLN, S-SUCRO, TR CALC-XLS, ABDT RD GY GRN SH THRU TRAY, DUL YEL MIN FLOIN 20%, NO VIS POR, NO VIS CUT OR SHOW
LS- CRM TO OFF WHT, HD DNS TO TR BRTT IP, V/FN TO FN-XLN, RE-XLN MTRX, S-SUCRO, TR IMBD CALC-XLS IP, TR CLR FRSTY ORNG CHRT IN TRAY, ABDT RD GY GRN SH THRU TRAY, DUL YEL MIN FLOIN 30%, PR INTER-XLN POR IP, NO VIS CUT OR SHOW
M.W 9.0
VIS 47
PV 19
PY 14
GEL 6/18
API/CK 5.6/3
PH 10.5
PF/MF 0.9/1.7
CHLOR 1200
CALC 120
LS- OFF WHT TO CRM LT TN, HD DNS TO TR BRTT IP, FN-XLN, RE-XLN MTRX, S-SUCRO, TR IMBD CALC-XLS IP, TR CLR FRSTY ORNG CHRT, ABDT RD GRY SH IN TRAY, DUL YEL MIN FLOIN 30%, NO VIS POR, NO VIS CUT OR SHOW
SRVY 4185'
TVD 3919'
INC. 67.7
AZM. 2.6
584.12 NORTH
18.3 EAST
SRVY 4230'
TVD 3935'
INC. 70.1
AZM. 3.0
626.03 NORTH
20.68 E
SH- RD TO DRK RD GRN GRY BLK, FRM TO V SFT TR GUMMY IP, CARB W/ LT TR IMBD LMS, SLI TR IMBD CHRT IP
SRVY 4275'
TVD 3949'
INC. 72.2
AZM. 3.8
668.51 NORTH
23.54 EAST
SH- RD TO DRK RD GRY GRN IP , FRM TO V SFT GUMMY, TR IMBD LMS,TR IMBD ORNG CLR FRSTY CHRT
SRVY 4320'
TVD 3962.78'
INC. 74.1
AZM. 3.3
711.49 NORTH
26.14 EAST
SRVY 4364'
TVD 3974.13'
INC. 76
AZM. 2.9
753.94 NORTH
28.50 EAST
SRVY 4409'
TVD 3984'
INC. 77.3
AZM. 2.4
797.68 NORTH
30.53 EAST
SRVY 4454'
TVD 3993'
INC. 79.1
AZM. 3.2
842.67 NORTH
32.6 EAST
SRVY 4499'
TVD 4002'
INC. 79.7
AZM. 1.3
886.42 NORTH
34.34 EAST

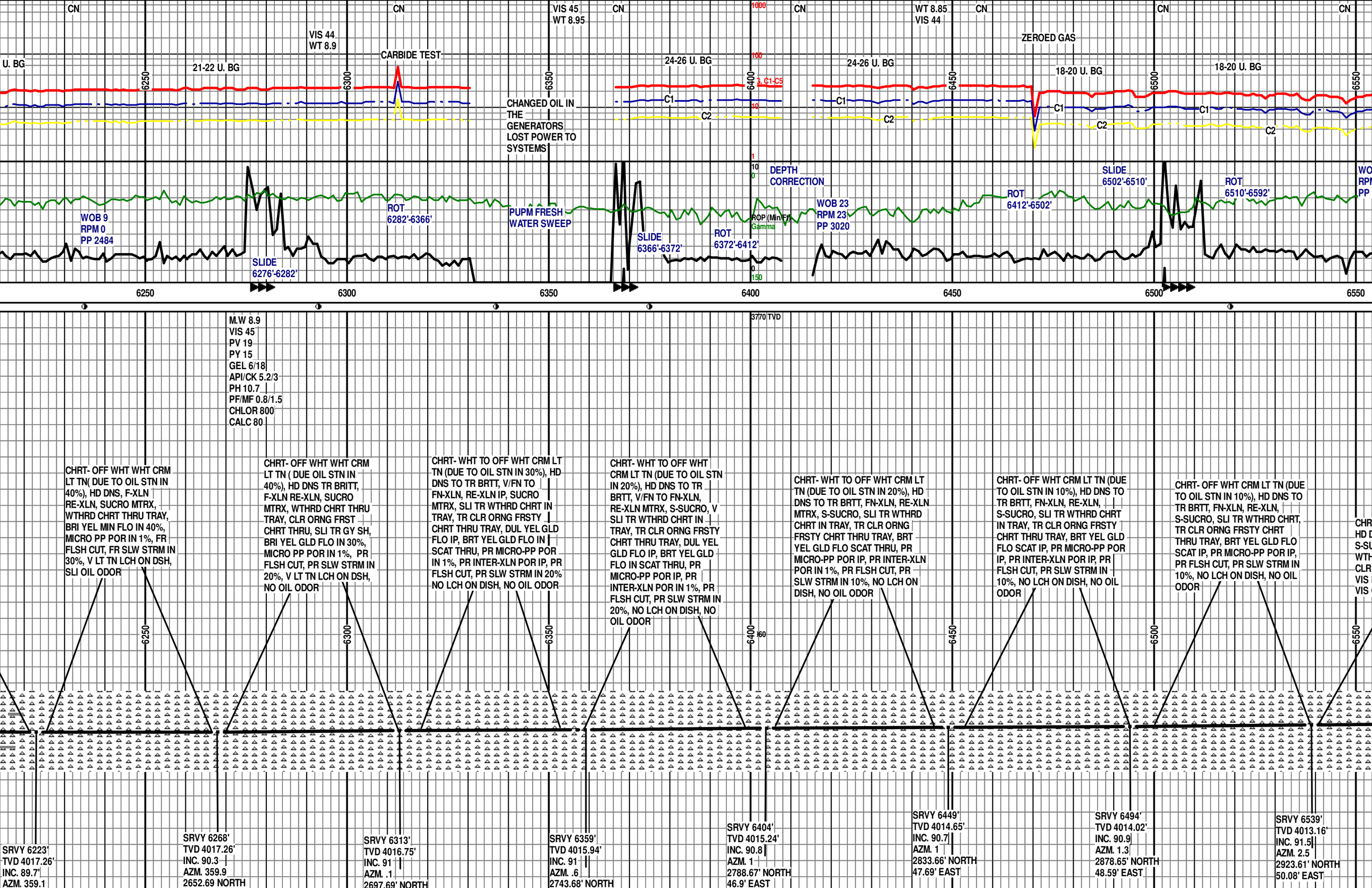

CN
WT 8.9
VIS 50
WT 8.95
VIS 51
WT 9.0
VIS 55
ZEROED THE
20 U. BG
20 U. BG
29 U. BG
30-31 U. BG
29-32 U. BG
29-32 U. BG
C1
C2
WOB 42.9
RPM 61
PP 1312
ROT
4513'-4550'
SLIDE
4550'-4560'
SLIDE
4595'-4602'
ROT
4602'-4640
SLIDE
4640'-4648'
ROT
4648'-4685'
WOB 25.5
RPM 15
PP 1850
SLIDE
4685'-4691'
ROT
4691'-4730'
SLIDE
4730'-4736'
TROUBLE
SHOOTING FOR
MWD
DEPTH
CORRECTION
RECYCLE PUMPS-
TROUBLE
SHOOTING MWD
ROP (Min/Ft)
Gamma
4550
4600
4650
4700
4750
4800
4850
3770 TVD
M.W 9.0
VIS 50
PV 20
PY 14
GEL 6/20
API/CK 5.2/3
PH 10.3
PF/MF 0.7/1.5
CHLOR 1200
CALC 80
F WHT WHT CRM LT
DUE TO OIL STN IN
D DNS, F-XLN
, S-SUCRO, V CALC,
CHRT THRU , CLR
ORN CHRT THRU
BRI YEL FLO IN 60%,
XLN POR IN 1%,
PP POR IN 1%, FR
TRM, FR DLSH CUT IN
T TN LCH ON DISH,
ODOR
CHRT- OFF WHT CRM LT TN
TN (DUE TO OIL STN IN
50%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX,
CALC-XLS, WTHRD CHRT
THRU, CLR FRSTY ORNG
CHRT THRU TRAY, BRI YEL
GLD FLO IN 40%, MICRO PP
POR IN 1%, FR SLW STRM,
FR FLSH CUT IN 30%, LT TN
LCH ON DSH, SLI OIL ODOR
CHERT- OFF WHT WHT CRM
LT TN TN (DUE TO OIL 60%),
F-XLN RE-XLN, SUCRO
MTRX, CALC IP, WHTR CHT
THRU, CLR ORN FRST CHRT
THRU TRAY, BRI YEL FLO IN
30%, MICRO PP POR IN 1%,
FR FLSH CUT, PR SLW STRM
IN 20%, V LT TN LCH ON
DSH, SLI OIL ODOR
CHERT- OFF WHT CRM TO LT
TN TN (DUE TO OIL 40%),
F-XLN, RE-XLN, S-SUCRO,
CALC THRU, TR WHTR CHT
IN TRAY, CLR ORN FRST
CHRT THRU TRAY, LT TR SH
IN TRAY, BRI YEL GLD FLO
IN 30%, PR MICRO PP POR
IN 1%, PR TO FR FLSH CUT,
PR SLW STRM IN 20%, NO
LCH ON DISH, SLI OIL ODOR
CHERT- OFF WHT CRM TO LT
TN (DUE TO OIL 20%), V/FN
TO F-XLN, RE-XLN,
S-SUCRO, SLI TR WHTR CHT
IP, SLI TR SH IN TRAY, SLI
TR CALC IP, DUL YEL GLD
FLO SCAT THRU, BRI YEL
GLD FLO IN 20%, PR MICRO
PP POR IP, PR FLSH CUT, PR
SLW STRM IN 10%, NO LCH
ON DISH, NO OIL ODOR
CHERT- WHT TO OFF WHT
CRM TO LT TN(DUE TO OIL
10%), V/FN TO F-XLN,
RE-XLN, S-SUCRO, SLI TR
CALC IP, DUL YEL GLD FLO
SCAT THRU, BRI YEL GLD
FLO IN 10%, NONE TO PR
MICRO PP POR IP, PR FLSH
CUT, V PR SLW STRM IP,
NO LCH ON DISH, NO OIL
ODOR
CHRT- OFF WHT CRM WHT,
HD DNS, F- XLN RE- XLN,
SUCRO MTRX, CALC-XLS,
WHTRD CHRT THRU, CLR
FRSTY ORNG CHRT THRU
TRAY, NO VIS FLO, NO VIS
POR, NO VIS CUT OR SHOW
CHRT- CRM WHT OFF
HD DNS, F-XLN RE-XL
S-SUCRO, CALC-XLS
LT GY GRN RD SH THR
WTHRD CHRT THRU,
ORNG FRSTY CHRT TH
TRAY, TR GY DK GY LT
SH THRU TRAY, V DUL
MIN FLO IN 10%, NO V
POR, NO VIS CUT OR
SRVY 4544'
TVD 4009.24'
INC. 81.8
AZM. 2.7
930.83 NORTH
35.89 EAST
ARMATON CHER
10' MD/ 4002' TVD
09'
SRVY 4589'
TVD 4014.92'
INC. 83.7
AZM. 1.6
974.46 NORTH
37.56 EAST
SRVY 4634'
TVD 4019.15'
INC. 85.5
AZM. 1.6
1019.63 NORTH
38.89 EAST
SRVY 4679'
TVD 4021.86'
INC. 87.6
AZM. 3.4
1064.51 NORTH
41.01 EAST
SRVY 4723'
TVD 4023.16'
INC. 89
AZM. 3.2
1108.41 NORTH
43.54 EAST
SRVY 4768'
TVD 4023.4'
INC. 90.4
AZM. 3.5
1153.34 NORTH
46.17 EAST
SRVY 4812'
TVD 4022.75'
INC. 91.3
AZM. 2.6
1197.27 NORTH


CN
WT 9.0
VIS 51
ALL CONNECTIONS HAVE CHANGED FROM 4953' AND DOWN. STARTING AT 4975' AN UP ARE RIGHT.
NIGHT COMPANY MAN SAID B.H.A IS LONGER.
WT 9.0
VIS 44
VIS 44
WT 8.9
18-20 U. BG
21-23 U. BG
ZEROED THE GAS
11-14 U. BG
14-16 U. BG
14-16 U. BG
15 U. BG
15 U. BG
34 U
CARBIDE TEST
C1
C2
WOB 27.5
RPM 13
PP 1916
ROT 4966'-4972'
ROT 4978'-5020'
DEPTH CORRECTION
ROP (Min/Ft)
Gamma
SLIDE 4960'-4966'
SLIDE 4972'-4978'
SLIDE 5020'-5030'
ROT 5030'-5155'
WOB 16.4
RPM 31
PP2673
ROT 5163'-5206
SLIDE 5155'-5163
4900
4950
5000
5050
5100
5150
T.O.H @ 4960' MD FOR MWD TOOL & BIT ON APRIL 10, 2014 @ 8:45 P.M.
B.O.B @ 1:40 P.M. APRIL 11, 2014
3770 TVD
M.W 9.0
VIS 49
PV 19
PY 15
GEL 6/20
API/CK 5/3
PH 10.6
PF/MF 0.8/1.6
CHLOR 1200
CALC 80
CHRT- CRM OFF WHT WHT LT TN(DUE TO OIL STN IN 30%), HD DNS, F-XLN RE-XLN, SUCRO MTRX, CALC-XLS, GY LT GY GRN RD SH, WTHRD CHR THRU, CLR ONG FRST CHRT THRU TRAY, BRI YEL GLD FLO IN 40%, MICRO PP POR IN 1%, TR INTER-XLS POR, V PR FLSH CUT, V PR SLW STRM IN 10% NO LCH ON DISH, V TR OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN(DUE TO OIL STN IN 30%), HD DNS TO TR BRTT IP, F-XLN, RE- XLN, SUCRO MTRX, IMBD CALC-XLS IP, TR WTHRD CHRT IN TRAY, CLR FRST CHRT THRU TRAY, BRI YEL GLD FLO IN 30%, MICRO- PP POR IN 1%, TR INTER-XLS POR IP, V PR FLSH CUT, V PR SLW STRM IN 10% NO LCH ON DISH, SLI TR OIL ODOR
M.W 9.1
VIS 53
PV 20
PY 15
GEL 6/20
API/CK 5.2/3
PH 10.5
PF/MF 0.7/1.5
CHLOR 1000
CALC 80
CHRT- OFF WHT CRM LT TN (DUE TO OIL STN IN 40%), HD DNS TO TR BRTT IP, F-XLN, RE- XLN IP, SUCRO MTRX, IMBD CALC-XLS, TR WTHRD CHRT IN TRAY, CLR FRST CHRT THRU TRAY, BRI YEL GLD FLO IN 40%, MICRO- PP POR IN 1%, PR TO FR FLSH CUT, PR TO FR SLW STRM IN 20% NO LCH ON DISH, SLI TR OIL ODOR
CHRT- CRM LT TN (DUE TO OIL STN IN 40%), HD DNS TO TR BRTT IP, F-XLN, RE- XLN IP, SUCRO MTRX, TR WTHRD CHRT IN TRAY, TR CALC-XLS IP, DUL YEL GLD FLO IN 20%, BRI YEL GLD FLO IN 30%, MICRO- PP POR IN 1%, FR FLSH CUT, FR SLW STRM IN 30% NO LCH ON DISH, SLI TR OIL ODOR
CHRT- CRM LT TN TN (DUE TO OIL STN IN 50%), HD DNS TO TR BRTT IP, F-XLN, RE- XLN MTRX, S-SUCRO, IMBD CALC-XLS, TR WTHRD CHRT IN TRAY, CLR FRST CHRT THRU TRAY, DUL YEL GLD FLO IN 30% BRI YEL GLD FLO IN 40%, PR MICRO- PP POR IN 1%, PR TO FR INTER-XLN POR IN 2%, FR TO GD FLSH CUT, FR TO GD SLW STRM IN 30%-40% LT TN LCH ON DISH, FR TO GD OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN 40%), HD DNS, F-XLN RE-XLN, SUCRO MTRX, CALC-XLS, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL FLO IN 40%, MICRO PP POR IN 1%, INTER-XLS POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM , HD DNS, F-XLN RE-XLN, SUCRO MTRX, CALC-XLS IP, WTHRD CHRT THRU TRAY, CRL ORNG FRSTY CHRT THRU, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
SRVY 4878'
TVD 4022.79'
INC. 92.1
AZM. 2.7
1264.02 NORTH
SRVY 4922'
TVD 4018.95'
INC. 92.7
AZM. 2.5
SRVY 4967'
TVD 4016.99'
INC. 92.3
SRVY 5012'
TVD 4015.38'
INC. 91.8
AZM. 1.8
1396.94 NORTH
SRVY 5057'
TVD 4014.39'
INC. 90.7
AZM. 0.5
1441.92 NORTH
SRVY 5102'
TVD 4013.77'
INC. 90.9
AZM. 0.7
1486.91 NORTH
SRVY 5147'
TVD 4013.14'
INC. 90.7
SRVY 5192
TVD 4012.
INC. 89.8

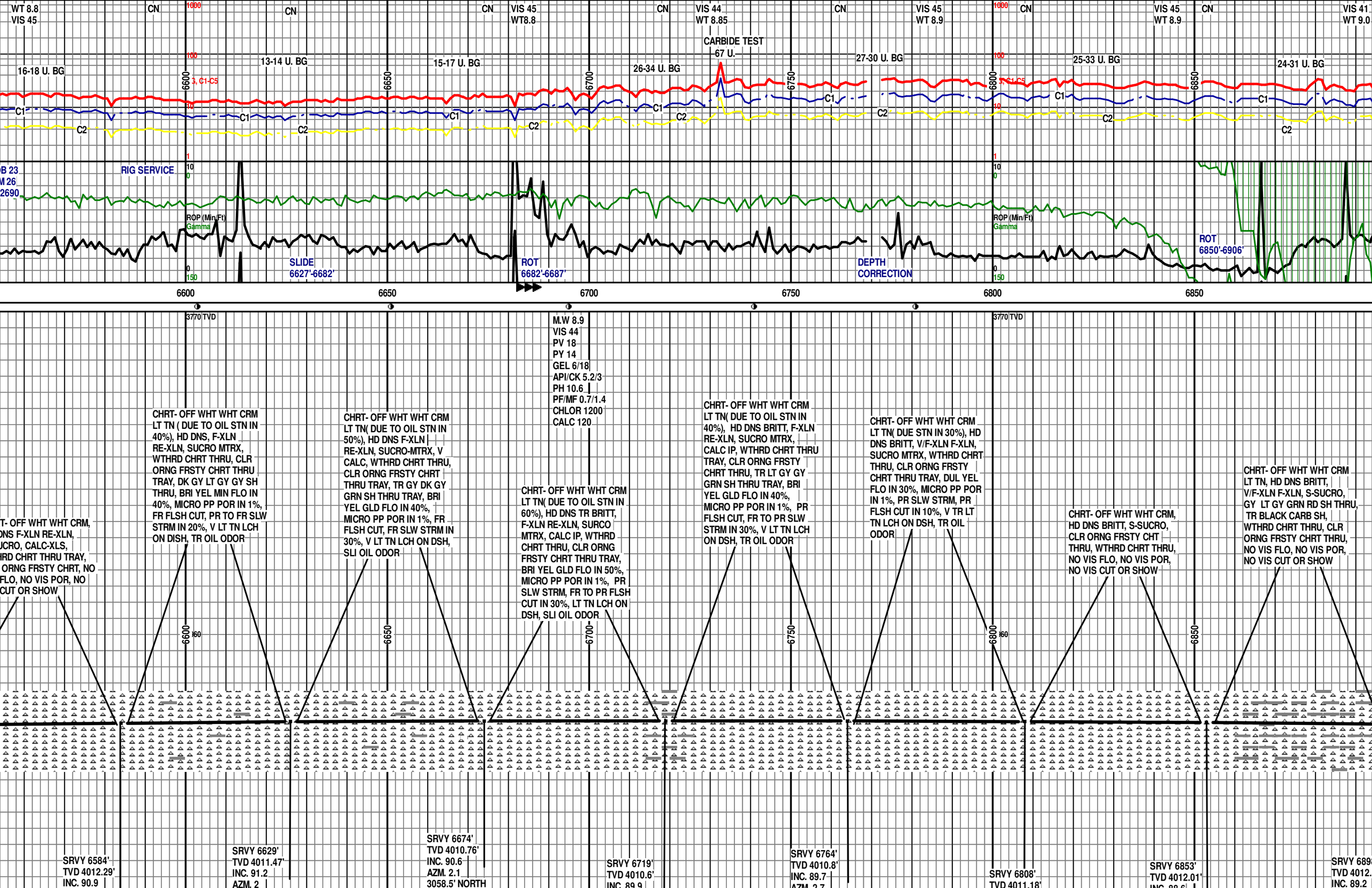

CN
VIS 45
WT 8.95
VIS 44
WT 8.9
WT 9.1
VIS 40
17 U. BG
22 U. BG
26-27 U. BG
28-30 U. BG
24-26 U. BG
C1
C2
RIG SERVICE
GREASED CROWN
WOB 24.3
RPM 31
PP 2956
VIS 43
WT 8.95
WOB 24.8
RPM 30
PP 3034
RIG SERVICE
SENT SWEEP
DEPTH
CORRECTION
WOB 33
RPM 32
PP 3130
PUMP SWEEP
ROP (Min/Ft)
Gamma
ROT
5206'-5469'
ROT
5475'-5830'
SLIDE
5200'-5206'
SLIDE
5469'-5475'
5200
5250
5300
5350
5400
5450
5500
3770 TVD
M.W 8.9
VIS 43
PV 18
PY 15
GEL 6/20
API/CK 5.2/3
PH 10.6
PF/MF 0.7/1.5
CHLOR 1000
CALC 80
CHRT- WHT OFF WHT CRM LT TN (DUE TO OIL STN IN 30%), HD DNS, F-XLN RE-XLN, SUCRO-MTRX, CALC-XLS, WHTRD CHRT THUR, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL FLO 30%, MICRO PP POR IN 1%, PR FLSH CUT, FR TO PR SLW STRM IN 20%, LT TN LCH ON DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 40%) HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, CALC IP, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, GY GRN SH THRU, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, FR FLSH CUT, PR SLW STRM IN 20%, V LT TN LCH ON DSH, SLI OIL ODOR
CHRT- WHT OFF WHT CRM LT TN (DUE TO OIL STN IN 50%) HD DNS, F-XLR RE-XLN, SUCRO MTRX, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL MIN FLO IN 50%, MICRO PP POR IN 2%, FR FLSH CUT, FR SLW STRM IN 30%, LT TN LCH ON DSH, OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 40%), F-XLN RE-XLN, SUCRO MTRX, CALC-XLS, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT CRM LT TN (DUE TO OIL STN IN 40%), HD DNS TO TR BRTT IP, FN-XLN, RE- XLN MTRX IP, S-SUCRO, IMBD CALC-XLS IP, TR WTHRD CHRT IN TRAY, CLR FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IN 20% BRI YEL GLD FLO IN 30%, PR MICRO- PP POR IN 1%, PR INTER-XLN POR IN 1%, PR TO FR FLSH CUT, PR TO FR SLW STRM IN 30%, V LT TN LCH ON DISH, TR TO PR OIL ODOR
CHRT- OFF WHT CRM LT TN TN (DUE TO OIL STN IN 40%), HD DNS TO TR BRTT IP, FN-XLN, RE-XLN, SUCRO MTRX, IMBD CALC-XLS IP, TR WTHRD CHRT IN TRAY, DUL YEL GLD FLO IN 20% BRI YEL GLD FLO IN 30%, PR MICRO- PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DISH, NO OIL ODOR OIL ODOR
CHRT- OFF WHT CRM LT TN TO TN TR BRN (DUE TO OIL STN IN 50%), HD DNS TO TR BRTT IP, FN-XLN, RE-XLN, SUCRO MTRX, IMBD CALC-XLS, WTHRD CHRT THRU, CLR FRSTY CHRT IN TRAY, DUL YEL GLD FLO THRU BRI YEL GLD FLO IN 10%, PR MICRO- PP POR IN 1%, PR INTER-XLN POR IN 2%, PR TO FR FLSH CUT, PR TO FR SLW STRM IN 30%, V LT TN LCH ON DISH, PR TO FR OIL ODOR
CHRT- CRM LT TN TO T (DUE TO OIL STN IN 50 DNS TO TR BRTT IP, FN XLN, SUCRO MTRX, IM CALC-XLS, WTHRD CH CLR FRSTY CHRT IN T YEL GLD FLO THRU B GLD FLO IN 20%, PR M POR IN 1%, PR INTER- IN 1%, PR TO FR FLSH TO GD SLW STRM IN 3 LCH ON DISH, FR OIL
SRVY 5236'
TVD 4013.52'
INC. 88.7
SRVY 5281'
TVD 4014.54'
INC. 88.7
AZM. 0
1665.89 NORTH
SRVY 5326'
TVD 4015.36'
INC. 89.2
AZM. 359.9
1710.88 NORTH
59.13 EAST
SRVY 5371'
TVD 4015.79'
INC. 89.7
AZM. .5
1755.88 NORTH
SRVY 5416'
TVD 4015.79'
INC. 90.3
AZM. .5
1800.87 NORTH
SRVY 5461'
TVD 4015.52'
INC. 90.4
AZM. .4
1845.87 NORTH
SRVY 5506'
TVD 4015.44'
INC. 89.8
AZM. 359.9
1890.87 NORTH
60.15 EAST

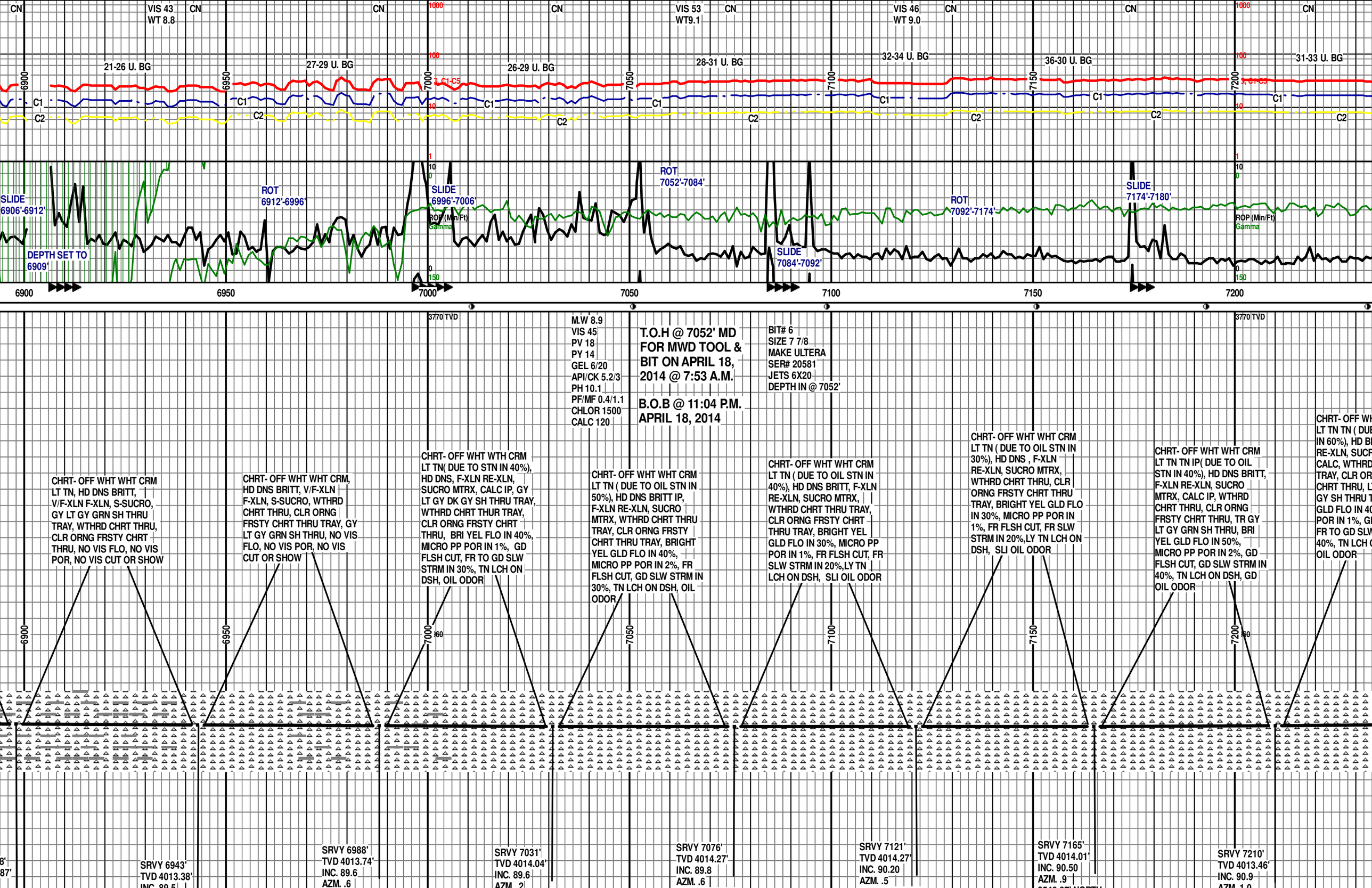

CN
WT 9.2
VIS 41
CN
CN
CN
VIS 41
WT 8.9
CN
CN
WT 9.1
VIS 47
CN
24-26 U. BG
24-26 U. BG
24-26 U. BG
22-23 U. BG
22 U. BG
28-30 U. BG
30-32
C1-C5
C1
C2
PUMP SWEEP
WOB 31
RPM 32
PP 3220
DUMP SAND TRAP
PUMP SWEEP
ROP (Min/Ft)
Gamma
ROT
5475'-5830'
RECYCLE PUMP
WOB 30
RPM 31
PP 3190
ROT
5475'-5830'
SENT
SWEEP
RIG SERVICE
ROP (Min/Ft)
Gamma
ROT
5475'-5889'
WOB 25
RPM 21
PP 2720
5550
5600
5650
5700
5750
5800
5850
3770 TVD
3770 TVD
M.W 9.0
VIS 42
PV 18
PY 14
GEL 6/18
API/CK 5.6/3
PH 10.6
PF/MF 0.5/1.2
CHLOR 1200
CALC 120
T.O.H @ 5790' FOR
NEW BIT, MOTOR,
AND MWD TOOL ON
4/13/14
B.O.B. @ 1:00 P.M.
ON 4/14/14
BIT# 4
SIZE 7 7/8
MAKE SMITH
SER# PY6945
JETS 3X20
DEPTH IN @ 5790'
N TR BRN
%), HD
N-XLN, RE-
BD
RT THRU,
RAY, DUL
RI YEL
ICRO- PP
XLN POR
H CUT, FR
0%, LT TN
ODOR
CHRT- WHT TO OFF WHT CRM LT
TN TO TN (DUE TO OIL STN IN
30%), HD DNS TO TR BRTT IP,
FN-XLN, RE- XLN MTRX,
S-SUCRO, TR WTHRD CHRT IN
TRAY, CLR FRSTY ORNG CHRT
THRU, DUL YEL GLD FLO THRU,
PR MICRO- PP POR IN 1%, PR TO
FR FLSH CUT, FR TO GD SLW
STRM IN 30%, LT TN LCH ON
DISH, FR OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
30%), HD DNS TR BRITT,
F-XLN CRYPTO-XLN,
SUCRO-MTRX, CALC-XLS,
WHTRD CHRT THRU TRAY,
CLR FRSTY ORNG CHRT
THRU, DUL YEL GLD FLO IN
30%, MICRO PP POR IN 1%,
PR FLSH CUT, PR TO FR
SLW STRM IN 20%, V LT TN
LCH ON DSH, FR OIL ODOR
CHRT- OFF WHT WTH CRM
LT TN(DUE TO OIL STN IN
30%), HD DNS, F-XLN, ABDT
CRYPTO-XLN, SLI WTHRD
CHRT THUR TRAY, CLR
FRSTY ORNG CHRT THRU
TRAY, DUL YEL FLO IN 20%,
MICRO PP POR IN 1%, PR
TO FR SLW STRM, PR FLSH
CUT 10%, NO LCH ON DSH,
TR OIL ODOR
CHRT-OFF WHT WTH CRM,
HD DNS, CRYPTO-XLN
F-XLN, S-SUCRO, CALC-XLS,
TR WTHRD CHRT IP, CLR
ORNG FRSTY CHTR THRU,
NO VIS FLO, NO VIS POR,
NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM,
HD DNS, F-XLN,
CRYPTO-XLN, S-SUCRO,
CALC-XLS IP, TR WTHRD
CHRT, CLR ORNG FRSTY
CHRT THRU, NO FLO, NO VIS
POR, NO VIS CUT OR SHOW
CHRT- WHT TO OFF WHTCRM, HD
DNS, F-XLN, CRYPTO-XLN,
S-SUCRO, TR WTHRD CHRT IP,
CLR ORNG FRSTY CHRT THRU,
SLI TR CALC-XLS IP, NO FLO, NO
VIS POR, NO VIS CUT OR SHOW
CHRT- WHT OFF WHT CRM
LT TN(DUE TO OIL STN IN
60%), HD DNS TR BRITT,
FN-XLN, S-SUCRO, WHTRD
CHRT THRU TRAY, CLR
FRSTY CHRT THRU, DUL YEL
GLD FLO IN 50%, BRT YEL
GLD FLO SCAT IP, MICRO PP
POR 2%, FR TO GD FLSH
CUT, GD SLW STRM IN 60%,
LT TN LCH ON DSH, GD OIL
ODOR
SRVY 5551'
TVD 4015.68'
INC. 89.6
AZM. 359.5
1935.87 NORTH
59.91 EAST
SRVY 5596'
TVD 4016.19'
INC. 89.1
AZM. 358.9
1980.86 NORTH
59.28 EAST
SRVY 5641'
TVD 4016.89'
INC. 89.1
AZM. 358.7
2025.85 NORTH
58.34 EAST
SRVY 5683'
TVD 4017.48'
INC. 89.3
AZM. 358.6
2067.83 NORTH
57.35 EAST
SRVY 5731'
TVD 4018.11'
INC. 89.20
AZM. 358.6
2116.55 NORTH
SRVY 5774'
TVD 4018.67'
INC. 89.3
AZM. 359
2158.8 NORTH
55.28 EAST
SRVY 5819'
TVD 4019.06'
INC. 89.7
AZM. 358.6
2203.79 NORTH
54.34 EAST
SRVY 5863'
TVD 4019.1'
INC. 90.2
AZM. 358.9
2247.78 NORTH

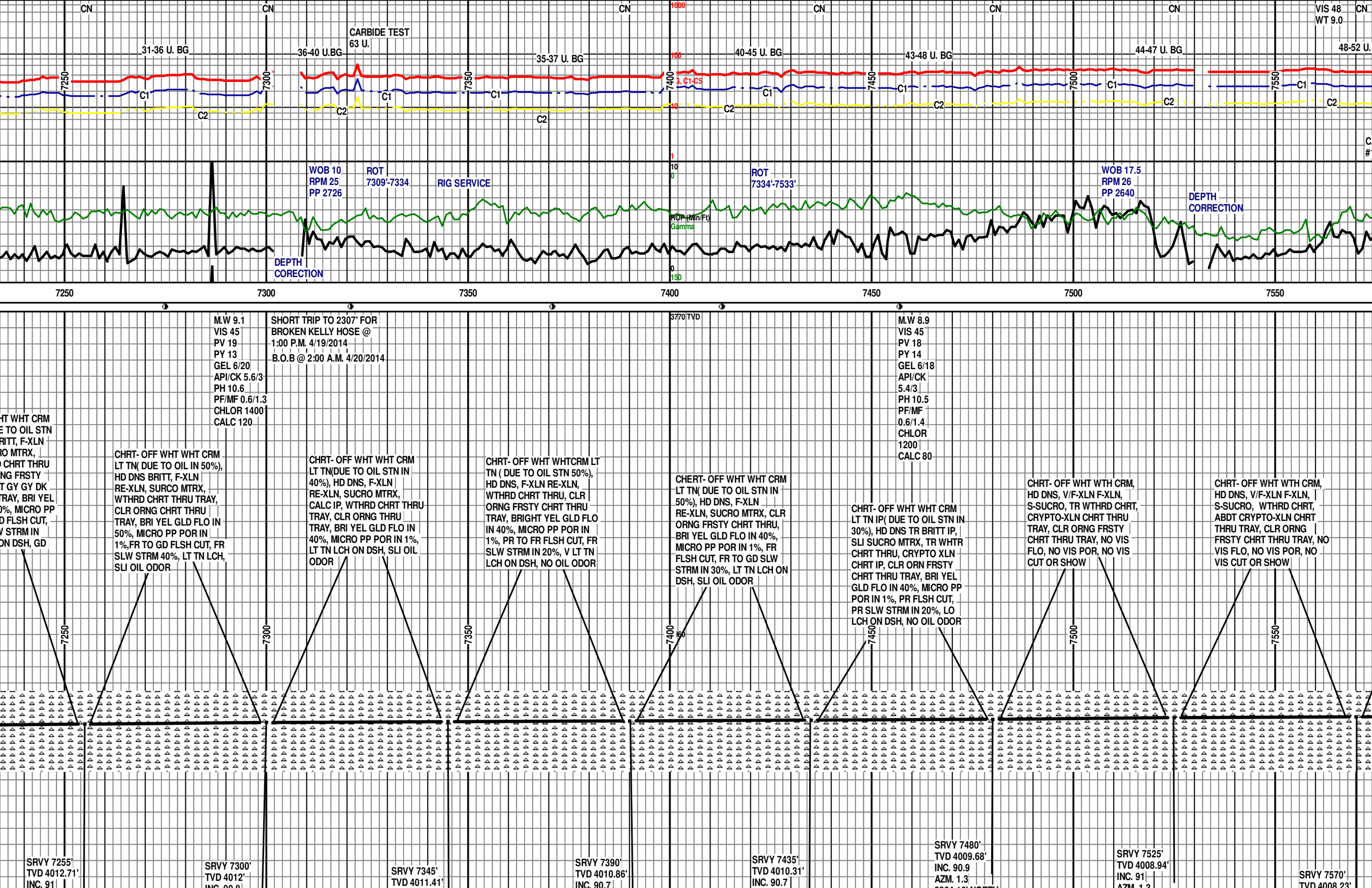

CN
WT 9.15
VIS 44
ZEROED GAS
WT 8.95
VIS 45
WT 9.0
VIS 50
U. BG
40-42 U. BG
14-16 U. BG
15-16 U. BG
20-22
C1
C2
C3
ROT
5889'-5961'
ROT
5961'-6096 '
DEPTH
CORRECTION
RIG SERVICE
WOB 17
RPM 21
PP 2670
SENT 40 BBL
SWEEP
WOB 24
RPM 24
PP 2650
ROP (Min/Ft)
Gamma
ROT
6096'-6141 '
SLIDE
6141'-6146'
ROT
6186'- 6276'
HOOKLOAD WAS
RECALIBRATED
5900
5950
6000
6050
6100
6150
6200
3770 TVD
O.H @ 5889' TO
HANGE BIT ON
15/14 @ 12:15 A.M.
O.B. @ 5889'
15/14 @ 1:50 P.M.
BIT# 5
SIZE 7 7/8
MAKE ULTERA
SER# 20451
JETS 6X20
DEPTH IN @ 5889'
M.W 9.1
VIS 45
PV 19
PY 14
GEL 6/18
API/CK 5.4/3
PH 10.5
PF/MF 0.6/1.3
CHLOR 1200
CALC 120
HRT- WHT OFF WHT CRM
TN TN(DUE TO OIL STN
60%), HD DNS TO BRTT,
-XLN MD-XLN, S-SCURO,
HTRD CHRT THRU TRAY,
LR FRSTY CHRT THRU
RAY, DUL YEL GLD FLO
%, MICRO PP POR 2%, GD
LSH CUT, GD SLW STRM IN
HRU, LT TN LCH ON DSH,
D OIL ODOR
CHRT- WHT OFF WHT CRM
LT TN (DUE TO OIL STN IN
40%), HD DNS TO TR BRTT
IP, FN-XLN TO MD-XLN,
S-SCURO, TR WHTRD CHRT
IN TRAY, CLR FRSTY CHRT
THRU TRAY, DUL YEL GLD
FLO 40%, PR TO FR MICRO
PP POR 2%, FR TO GD
FLSH CUT, FR TO GD SLW
STRM IN 40%, NO LCH ON
DSH, GD OIL ODOR
CHRT- OFF WHT CRM LT TN (
DUE TO OIL STN IN 30%), HD
DNS TO TR BRTT IP, FN-XLN,
S-SCURO, SLI TR WHTRD CHRT
IN TRAY, CLR FRSTY CHRT
THRU TRAY, DUL YEL GLD FLO
30%, PR MICRO PP POR 1%, FR
FLSH CUT, FR SLW STRM IN
30%, NO LCH ON DSH, FR OIL
ODOR
CHRT-WHT TO OFF WHT CRM
LT TN (DUE TO OIL STN IN
20%), HD DNS TO TR BRTT IP,
FN-XLN, RE-XLN IP SUCRO
MTRX, SLI TR WHTRD CHRT IP,
CLR FRSTY CHRT THRU TRAY,
DUL YEL GLD FLO 30%, PR
MICRO PP POR 1%, PR FLSH
CUT, PR SLW STRM IN 20%, NO
LCH ON DSH, PR OIL ODOR
CHRT-WHT TO OFF WHT
CRM LT TN, HD DNS TO TR
BRTT IP, V/FN TOFN-XLN,
RE-XLN IP, SUCRO MTRX,
SLI TR WHTRD CHRT IP, CLR
FRSTY CHRT THRU TRAY,
DUL YEL MIN FLO 20%, PR
MICRO PP POR 1%, NO VIS
CUT OR SHOW
CHRT- OFF WHT WHT CRM
LT TN, HD DNS, F-XLN
RE-XLN, S-SUCRO, WTHRD
CHRT THRU TRAY, CLR
ORNG FRSTY CHRT THRU
TRAY, NO FLO, NO VIS POR,
NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM
LT, HD DNS, F-XLN RE-XLN,
S-SUCRO, WTHRD CHRT
THRU, CLR ORNG FRSTY
CHRT THRU TRAY, DUL YEL
FLO IN 10%, NO VIS POR,
NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM
LT TN, HD DNS, F-XLN
RE-XLN, WTHRD CHRT
THRU, CLR ORNG FRSTY,
DUL YEL FLO IN 10%, NO
VIS POR, NO VIS CUT OR
SHOW
SRVY 5906'
TVD 4018.92'
INC. 90.3
AZM. 358.5
2290.77 NORTH
52.4 EAST
SRVY 5953'
TVD 4018.59'
INC. 90.5
AZM. 358.5
2337.75 NORTH
51.18 EAST
SRVY 5998'
TVD 4018.28'
INC. 90.3
AZM. 358.7
2382.73 NORTH
50.08 EAST
SRVY 6043'
TVD 4018.04'
INC. 90.3
AZM. 359.10
2427.72 NORTH
49.21 EAST
SRVY 6088'
TVD 4017.69'
INC. 90.6
SRVY 6133'
TVD 4017.25'
INC. 90.5
AZM. 359.1
SRVY 6178'
TVD 4017.1'
INC. 89.9
AZM. 359.6

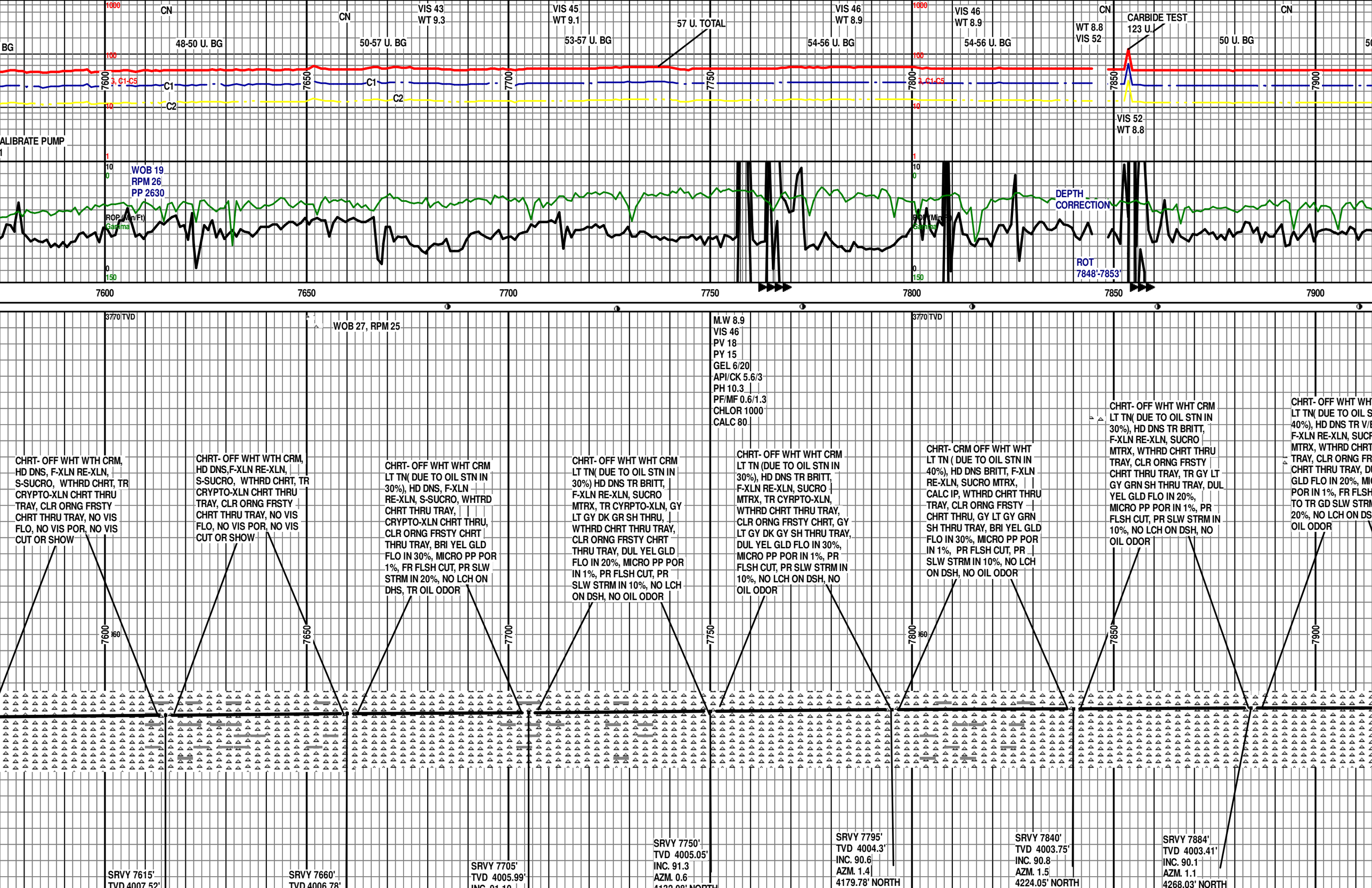


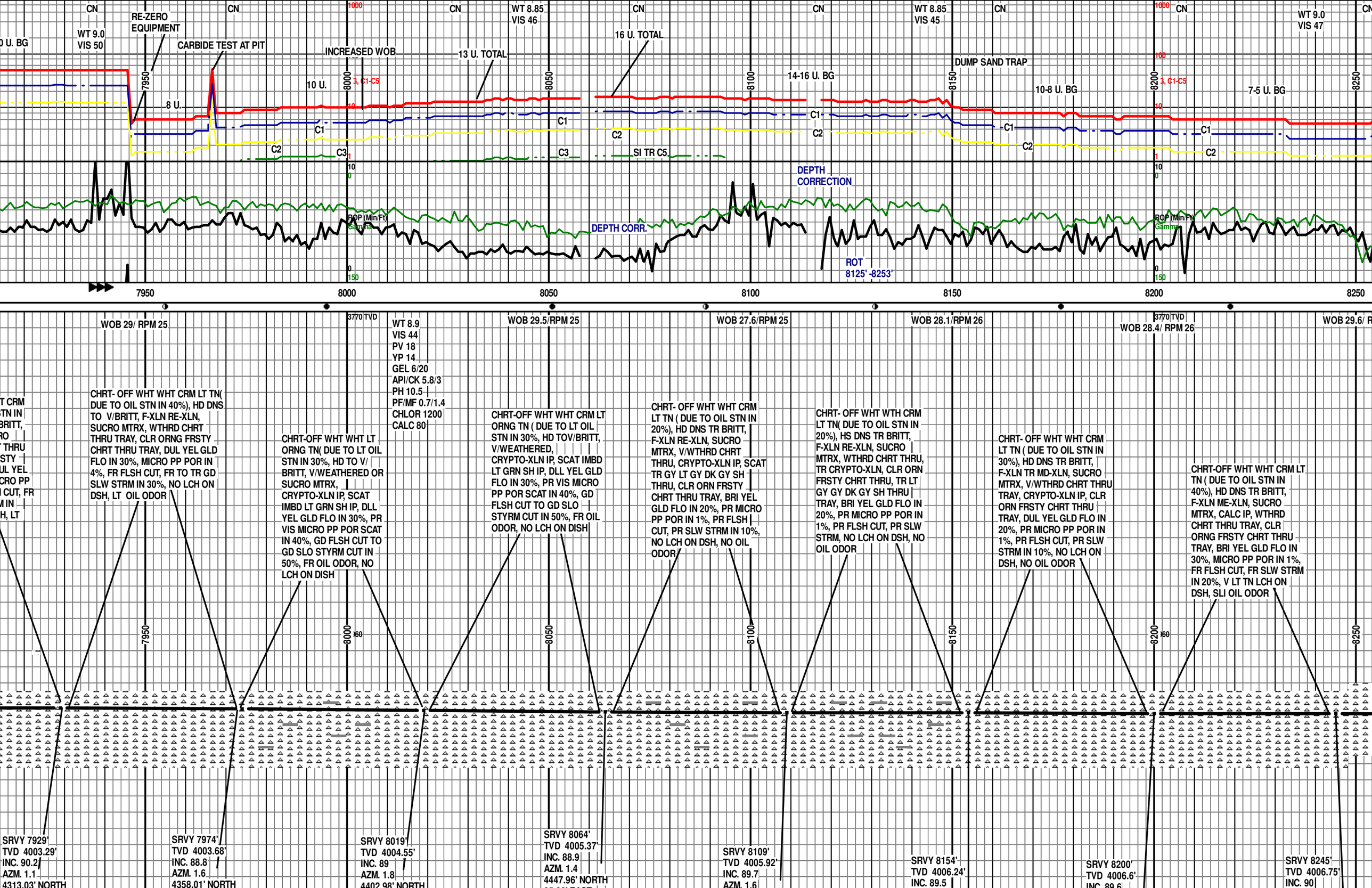
CN
VIS 44
WT 8.9
VIS 45
WT 8.95
WT 8.85
VIS 44
ZEROED GAS
CARBIDE TEST
U. BG
21-22 U. BG
24-26 U. BG
18-20 U. BG
C1
C2
CHANGED OIL IN THE GENERATORS LOST POWER TO SYSTEMS
DEPTH CORRECTION
WOB 9
RPM 0
PP 2484
SLIDE
6276'-6282'
ROT
6282'-6366'
PUPM FRESH WATER SWEEP
SLIDE
6366'-6372'
ROT
6372'-6412'
ROP (Min/Ft)
Gamma
WOB 23
RPM 23
PP 3020
ROT
6412'-6502'
SLIDE
6502'-6510'
ROT
6510'-6592'
6250
6300
6350
6400
6450
6500
6550
M.W 8.9
VIS 45
PV 19
PY 15
GEL 6/18
API/CK 5.2/3
PH 10.7
PF/MF 0.8/1.5
CHLOR 800
CALC 80
3770 TVD
CHRT- OFF WHT WHT CRM LT TN(DUE TO OIL STN IN 40%), HD DNS, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU TRAY, BRI YEL MIN FLO IN 40%, MICRO PP POR IN 1%, FR FLSH CUT, FR SLW STRM IN 30%, V LT TN LCH ON DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE OIL STN IN 40%), HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU TRAY, CLR ORNG FRST CHRT THRU, SLI TR GY SH, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, V LT TN LCH ON DSH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN (DUE TO OIL STN IN 30%), HD DNS TO TR BRTT, V/FN TO FN-XLN, RE-XLN IP, SUCRO MTRX, SLI TR WTHRD CHRT IN TRAY, TR CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IP, BRT YEL GLD FLO IN SCAT THRU, PR MICRO-PP POR IN 1%, PR INTER-XLN POR IP, PR FLSH CUT, PR SLW STRM IN 20% NO LCH ON DISH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN (DUE TO OIL STN IN 20%), HD DNS TO TR BRTT, V/FN TO FN-XLN, RE-XLN MTRX, S-SUCRO, V SLI TR WTHRD CHRT IN TRAY, TR CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IP, BRT YEL GLD FLO IN SCAT THRU, PR MICRO-PP POR IP, PR INTER-XLN POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DISH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN (DUE TO OIL STN IN 20%), HD DNS TO TR BRTT, FN-XLN, RE-XLN MTRX, S-SUCRO, SLI TR WTHRD CHRT IN TRAY, TR CLR ORNG FRSTY CHRT THRU TRAY, BRT YEL GLD FLO SCAT THRU, PR MICRO-PP POR IP, PR INTER-XLN POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DISH, NO OIL ODOR
CHRT- OFF WHT CRM LT TN (DUE TO OIL STN IN 10%), HD DNS TO TR BRTT, FN-XLN, RE-XLN, S-SUCRO, SLI TR WTHRD CHRT IN TRAY, TR CLR ORNG FRSTY CHRT THRU TRAY, BRT YEL GLD FLO SCAT IP, PR MICRO-PP POR IP, PR INTER-XLN POR IP, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DISH, NO OIL ODOR
CHRT- OFF WHT CRM LT TN (DUE TO OIL STN IN 10%), HD DNS TO TR BRTT, FN-XLN, RE-XLN, S-SUCRO, SLI TR WTHRD CHRT, TR CLR ORNG FRSTY CHRT THRU TRAY, BRT YEL GLD FLO SCAT IP, PR MICRO-PP POR IP, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DISH, NO OIL ODOR
SRVY 6223'
TVD 4017.26'
INC. 89.7'
AZM. 359.1
SRVY 6268'
TVD 4017.26'
INC. 90.3
AZM. 359.9
2652.69 NORTH
SRVY 6313'
TVD 4016.75'
INC. 91
AZM. .1
2697.69' NORTH
SRVY 6359'
TVD 4015.94'
INC. 91
AZM. .6
2743.68' NORTH
SRVY 6404'
TVD 4015.24'
INC. 90.8
AZM. 1
2788.67' NORTH
46.9' EAST
SRVY 6449'
TVD 4014.65'
INC. 90.7
AZM. 1
2833.66' NORTH
47.69' EAST
SRVY 6494'
TVD 4014.02'
INC. 90.9
AZM. 1.3
2878.65' NORTH
48.59' EAST
SRVY 6539'
TVD 4013.16'
INC. 91.5
AZM. 2.5
2923.61' NORTH
50.08' EAST

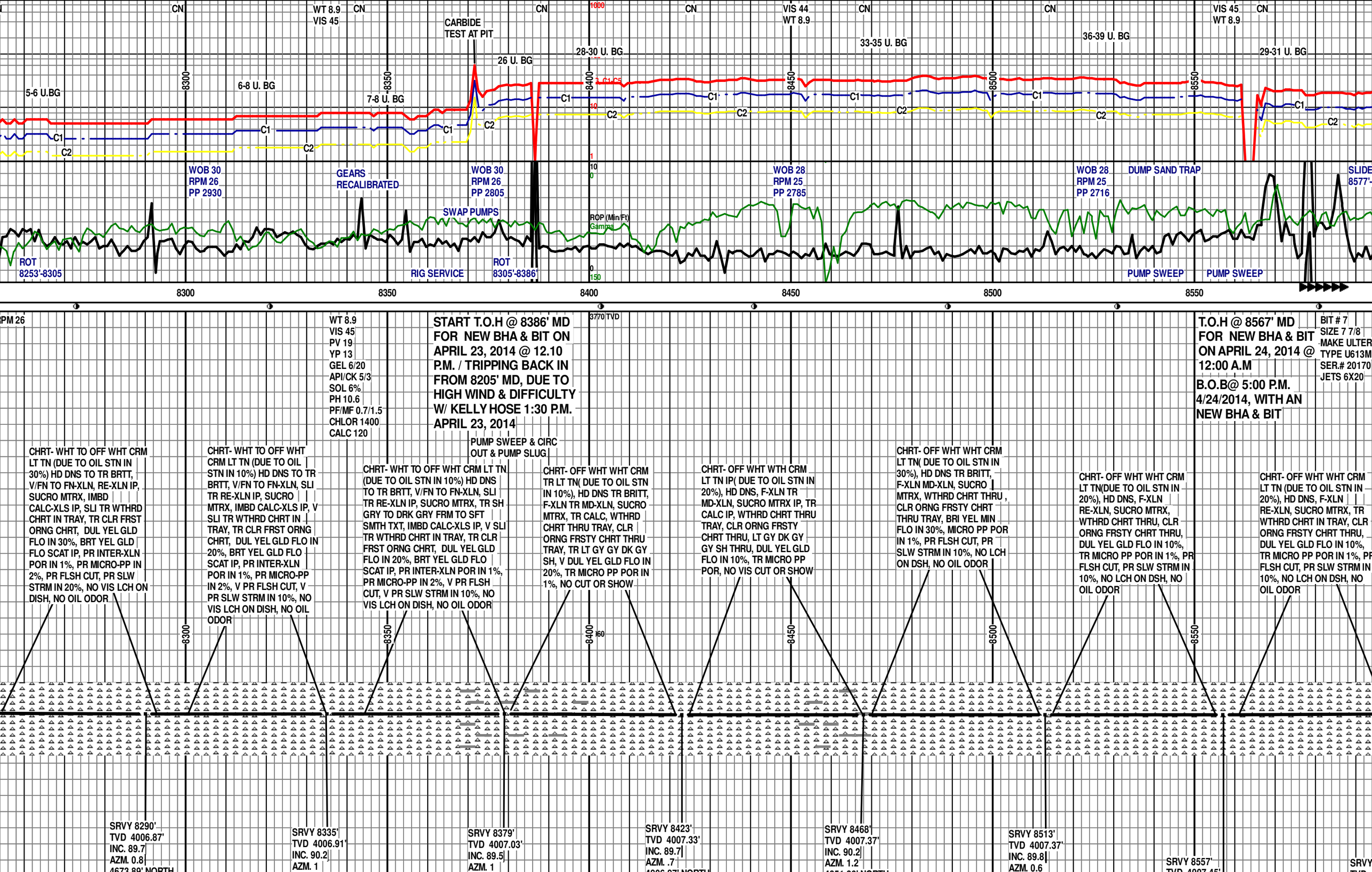

WT 8.8
VIS 45
CN
VIS 45
WT8.8
VIS 44
WT 8.85
VIS 45
WT 8.9
VIS 45
WT 8.9
VIS 41
WT 9.0
CARBIDE TEST
67 U.
16-18 U. BG
13-14 U. BG
15-17 U. BG
26-34 U. BG
27-30 U. BG
25-33 U. BG
24-31 U. BG
C1
C2
RIG SERVICE
ROP (Min/Ft)
Gamma
SLIDE
6627'-6682'
ROT
6682'-6687'
DEPTH
CORRECTION
ROT
6850'-6906'
6600
6650
6700
6750
6800
6850
3770 TVD
M.W 8.9
VIS 44
PV 18
PY 14
GEL 6/18
API/CK 5.2/3
PH 10.6
PF/MF 0.7/1.4
CHLOR 1200
CALC 120
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN 40%), HD DNS, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, DK GY LT GY GY SH THRU, BRI YEL MIN FLO IN 40%, MICRO PP POR IN 1%, FR FLSH CUT, PR TO FR SLW STRM IN 20%, V LT TN LCH ON DISH, TR OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN 50%), HD DNS F-XLN RE-XLN, SUCRO-MTRX, V CALC, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, TR GY DK GY GRN SH THRU TRAY, BRI YEL GLD FLO IN 40%, MICRO PP POR IN 1%, FR FLSH CUT, FR SLW STRM IN 30%, V LT TN LCH ON DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN 60%), HD DNS TR BRITT, F-XLN RE-XLN, SURCO MTRX, CALC IP, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL GLD FLO IN 50%, MICRO PP POR IN 1%, PR SLW STRM, FR TO PR FLSH CUT IN 30%, LT TN LCH ON DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN 40%), HD DNS BRITT, F-XLN RE-XLN, SUCRO MTRX, CALC IP, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU, TR LT GY GY GRN SH THRU TRAY, BRI YEL GLD FLO IN 40%, MICRO PP POR IN 1%, PR FLSH CUT, FR TO PR SLW STRM IN 30%, V LT TN LCH ON DSH, TR OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE STN IN 30%), HD DNS BRITT, V/F-XLN F-XLN, SUCRO MTRX, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL FLO IN 30%, MICRO PP POR IN 1%, PR SLW STRM, PR FLSH CUT IN 10%, V TR LT TN LCH ON DSH, TR OIL ODOR
CHRT- OFF WHT WHT CRM, HD DNS BRITT, S-SUCRO, CLR ORNG FRSTY CHT THRU, WTHRD CHRT THRU, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM
LT TN, HD DNS BRITT, V/F-XLN F-XLN, S-SUCRO, GY LT GY GRN RD SH THRU, TR BLACK CARB SH, WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
SRVY 6584'
TVD 4012.29'
INC. 90.9
SRVY 6629'
TVD 4011.47'
INC. 91.2
AZM. 2
SRVY 6674'
TVD 4010.76'
INC. 90.6
AZM. 2.1
3058.5' NORTH
SRVY 6719'
TVD 4010.6'
INC. 89.9
SRVY 6764'
TVD 4010.8'
INC. 89.7
AZM. 2.7
SRVY 6808'
TVD 4011.18'
SRVY 6853'
TVD 4012.01'
INC. 89.2

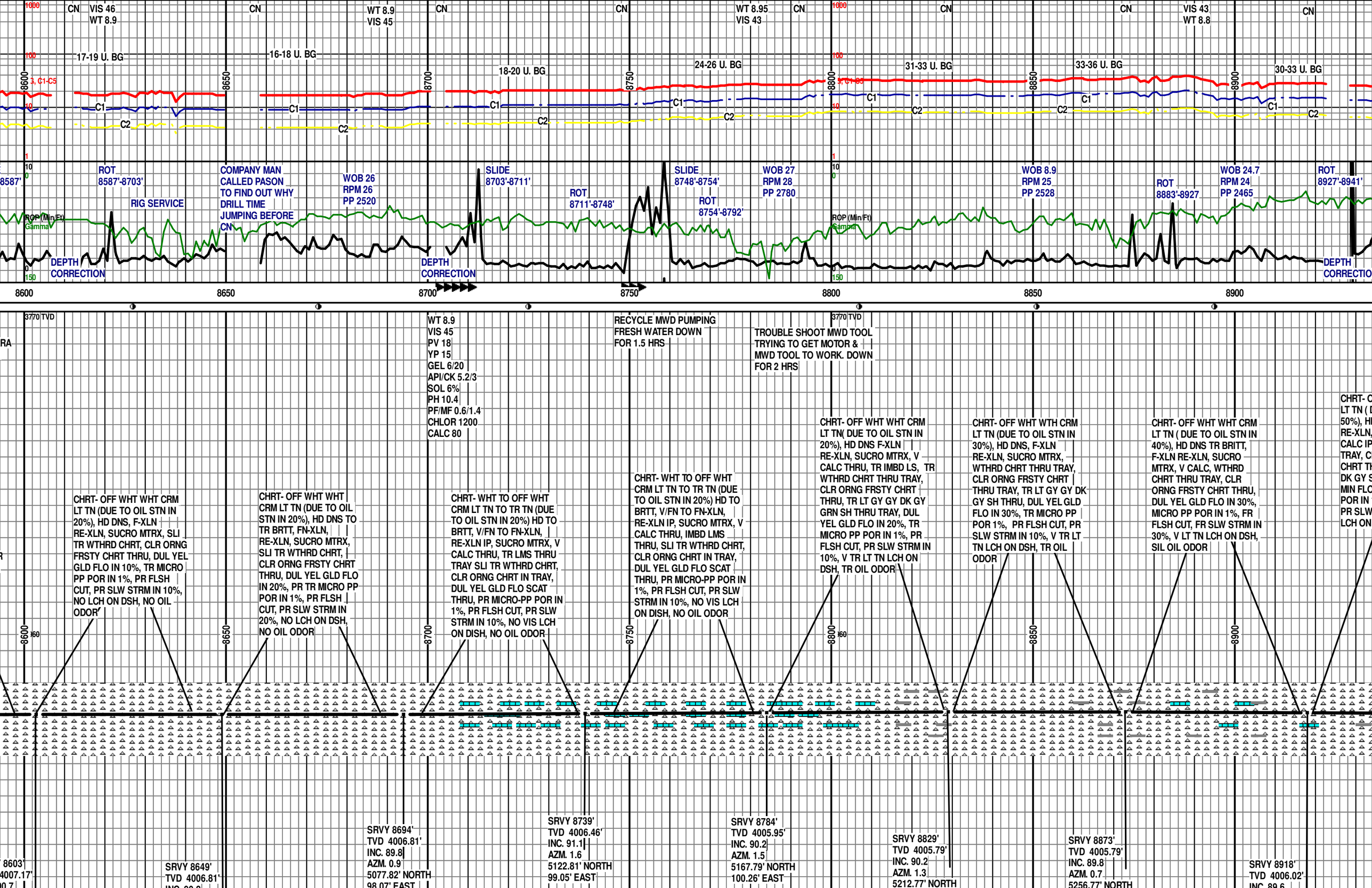

CN
VIS 43
WT 8.8
VIS 53
WT9.1
VIS 46
WT 9.0
21-26 U. BG
27-29 U. BG
26-29 U. BG
28-31 U. BG
32-34 U. BG
36-30 U. BG
31-33 U. BG
C1
C2
SLIDE
6906'-6912'
DEPTH SET TO
6909'
ROT
6912'-6996'
SLIDE
6996'-7006'
ROT
7052'-7084'
SLIDE
7084'-7092'
ROT
7092'-7174'
SLIDE
7174'-7180'
ROP (Min/Ft)
Gamma
6900
6950
7000
7050
7100
7150
7200
3770 TVD
M.W 8.9
VIS 45
PV 18
PY 14
GEL 6/20
API/CK 5.2/3
PH 10.1
PF/MF 0.4/1.1
CHLOR 1500
CALC 120
T.O.H @ 7052' MD
FOR MWD TOOL &
BIT ON APRIL 18,
2014 @ 7:53 A.M.
B.O.B @ 11:04 P.M.
APRIL 18, 2014
BIT# 6
SIZE 7 7/8
MAKE ULTERA
SER# 20581
JETS 6X20
DEPTH IN @ 7052'
CHRT- OFF WHT WHT CRM
LT TN, HD DNS BRITT,
V/F-XLN F-XLN, S-SUCRO,
GY LT GY GRN SH THRU
TRAY, WTHRD CHRT THRU,
CLR ORNG FRSTY CHRT
THRU, NO VIS FLO, NO VIS
POR, NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM,
HD DNS BRITT, V/F-XLN
F-XLN, S-SUCRO, WTHRD
CHRT THRU, CLR ORNG
FRSTY CHRT THRU TRAY, GY
LT GY GRN SH THRU, NO VIS
FLO, NO VIS POR, NO VIS
CUT OR SHOW
CHRT- OFF WHT WTH CRM
LT TN(DUE TO STN IN 40%),
HD DNS, F-XLN RE-XLN,
SUCRO MTRX, CALC IP, GY
LT GY DK GY SH THRU TRAY,
WTHRD CHRT THUR TRAY,
CLR ORNG FRSTY CHRT
THRU, BRI YEL FLO IN 40%,
MICRO PP POR IN 1%, GD
FLSH CUT, FR TO GD SLW
STRM IN 30%, TN LCH ON
DSH, OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
50%), HD DNS BRITT IP,
F-XLN RE-XLN, SUCRO
MTRX, WTHRD CHRT THRU
TRAY, CLR ORNG FRSTY
CHRT THRU TRAY, BRIGHT
YEL GLD FLO IN 40%,
MICRO PP POR IN 2%, FR
FLSH CUT, GD SLW STRM IN
30%, TN LCH ON DSH, OIL
ODOR
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
40%), HD DNS BRITT, F-XLN
RE-XLN, SUCRO MTRX,
WTHRD CHRT THRU TRAY,
CLR ORNG FRSTY CHRT
THRU TRAY, BRIGHT YEL
GLD FLO IN 30%, MICRO PP
POR IN 1%, FR FLSH CUT, FR
SLW STRM IN 20%,LY TN
LCH ON DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
30%), HD DNS , F-XLN
RE-XLN, SUCRO MTRX,
WTHRD CHRT THRU, CLR
ORNG FRSTY CHRT THRU
TRAY, BRIGHT YEL GLD FLO
IN 30%, MICRO PP POR IN
1%, FR FLSH CUT, FR SLW
STRM IN 20%,LY TN LCH ON
DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN TN IP(DUE TO OIL
STN IN 40%), HD DNS BRITT,
F-XLN RE-XLN, SUCRO
MTRX, CALC IP, WTHRD
CHRT THRU, CLR ORNG
FRSTY CHRT THRU, TR GY
LT GY GRN SH THRU, BRI
YEL GLD FLO IN 50%,
MICRO PP POR IN 2%, GD
FLSH CUT, GD SLW STRM IN
40%, TN LCH ON DSH, GD
OIL ODOR
SRVY 6943'
TVD 4013.38'
SRVY 6988'
TVD 4013.74'
INC. 89.6
AZM. .6
SRVY 7031'
TVD 4014.04'
INC. 89.6
SRVY 7076'
TVD 4014.27'
INC. 89.8
AZM. .6
SRVY 7121'
TVD 4014.27'
INC. 90.20
AZM. .5
SRVY 7165'
TVD 4014.01'
INC. 90.50
AZM. .9
SRVY 7210'
TVD 4013.46'
INC. 90.9

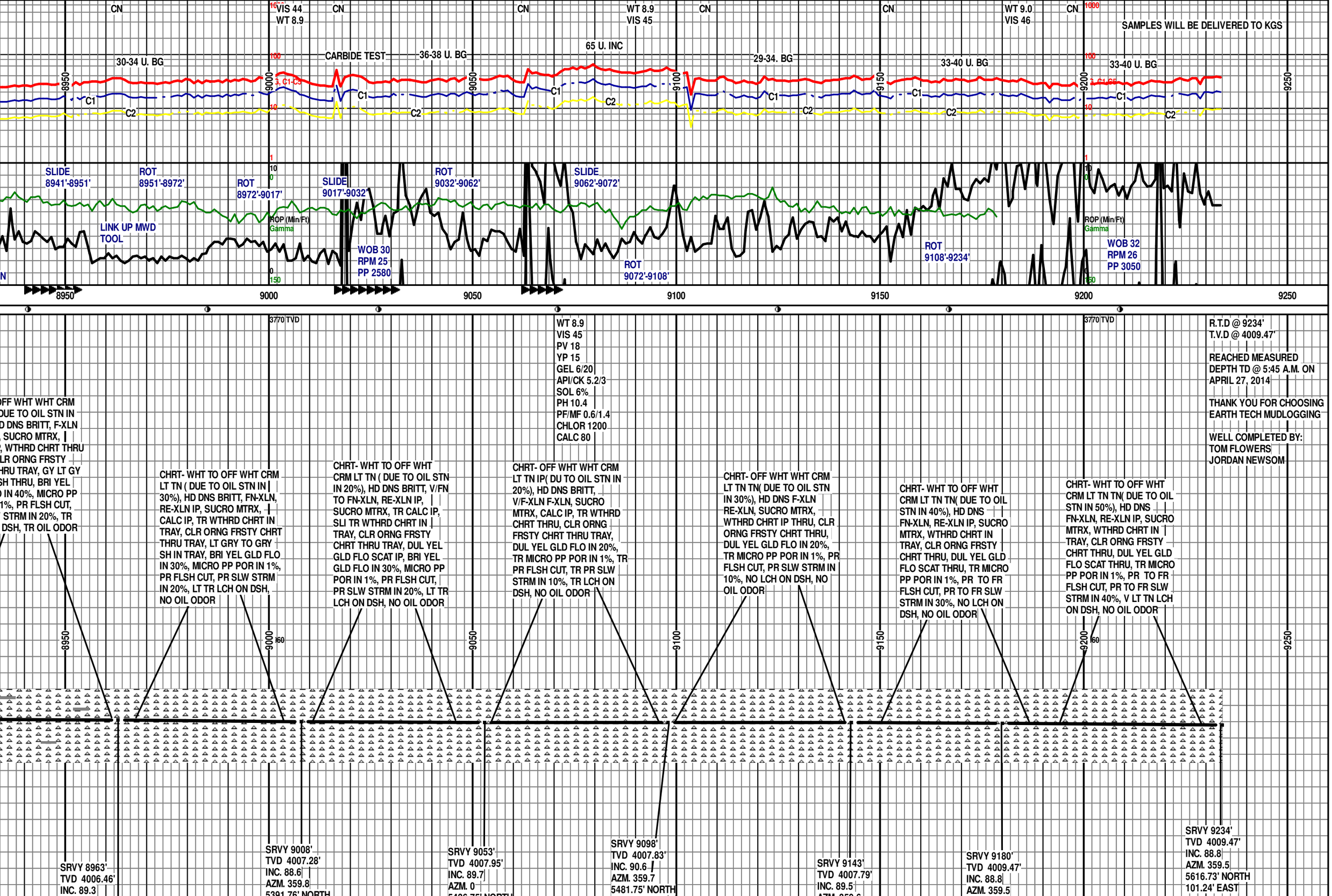

CN
31-36 U. BG
36-40 U.BG
CARBIDE TEST
63 U.
35-37 U. BG
40-45 U. BG
43-48 U. BG
44-47 U. BG
48-52 U.
VIS 48
WT 9.0
C1
C2
C1-C5
WOB 10
RPM 25
PP 2726
ROT
7309'-7334
RIG SERVICE
DEPTH
CORECTION
ROT
7334'-7533'
WOB 17.5
RPM 26
PP 2640
DEPTH
CORRECTION
ROP (Min/Ft)
Gamma
7250
7300
7350
7400
7450
7500
7550
M.W 9.1
VIS 45
PV 19
PY 13
GEL 6/20
API/CK 5.6/3
PH 10.6
PF/MF 0.6/1.3
CHLOR 1400
CALC 120
SHORT TRIP TO 2307' FOR
BROKEN KELLY HOSE @
1:00 P.M. 4/19/2014
B.O.B @ 2:00 A.M. 4/20/2014
3770 TVD
M.W 8.9
VIS 45
PV 18
PY 14
GEL 6/18
API/CK
5.4/3
PH 10.5
PF/MF
0.6/1.4
CHLOR
1200
CALC 80
HT WHT CRM
E TO OIL STN
RITT, F-XLN
RO MTRX,
CHRT THRU
NG FRSTY
T GY GY DK
TRAY, BRI YEL
0%, MICRO PP
D FLSH CUT,
V STRM IN
ON DSH, GD
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL IN 50%),
HD DNS BRITT, F-XLN
RE-XLN, SURCO MTRX,
WTHRD CHRT THRU TRAY,
CLR ORNG CHRT THRU
TRAY, BRI YEL GLD FLO IN
50%, MICRO PP POR IN
1%,FR TO GD FLSH CUT, FR
SLW STRM 40%, LT TN LCH,
SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
40%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX,
CALC IP, WTHRD CHRT THRU
TRAY, CLR ORNG THRU
TRAY, BRI YEL GLD FLO IN
40%, MICRO PP POR IN 1%,
LT TN LCH ON DSH, SLI OIL
ODOR
CHRT- OFF WHT WHTCRM LT
TN (DUE TO OIL STN 50%),
HD DNS, F-XLN RE-XLN,
WTHRD CHRT THRU, CLR
ORNG FRSTY CHRT THRU
TRAY, BRIGHT YEL GLD FLO
IN 40%, MICRO PP POR IN
1%, PR TO FR FLSH CUT, FR
SLW STRM IN 20%, V LT TN
LCH ON DSH, NO OIL ODOR
CHERT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
50%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX, CLR
ORNG FRSTY CHRT THRU,
BRI YEL GLD FLO IN 40%,
MICRO PP POR IN 1%, FR
FLSH CUT, FR TO GD SLW
STRM IN 30%, LT TN LCH ON
DSH, SLI OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN IP(DUE TO OIL STN IN
30%), HD DNS TR BRITT IP,
SLI SUCRO MTRX, TR WHTR
CHRT THRU, CRYPTO XLN
CHRT IP, CLR ORN FRSTY
CHRT THRU TRAY, BRI YEL
GLD FLO IN 40%, MICRO PP
POR IN 1%, PR FLSH CUT,
PR SLW STRM IN 20%, LO
LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WTH CRM,
HD DNS, V/F-XLN F-XLN,
S-SUCRO, TR WTHRD CHRT,
CRYPTO-XLN CHRT THRU
TRAY, CLR ORNG FRSTY
CHRT THRU TRAY, NO VIS
FLO, NO VIS POR, NO VIS
CUT OR SHOW
CHRT- OFF WHT WTH CRM,
HD DNS, V/F-XLN F-XLN,
S-SUCRO, WTHRD CHRT,
ABDT CRYPTO-XLN CHRT
THRU TRAY, CLR ORNG
FRSTY CHRT THRU TRAY, NO
VIS FLO, NO VIS POR, NO
VIS CUT OR SHOW
SRVY 7255'
TVD 4012.71'
INC. 91
SRVY 7300'
TVD 4012'
SRVY 7345'
TVD 4011.41'
SRVY 7390'
TVD 4010.86'
INC. 90.7
SRVY 7435'
TVD 4010.31'
INC. 90.7
SRVY 7480'
TVD 4009.68'
INC. 90.9
AZM. 1.3
SRVY 7525'
TVD 4008.94'
INC. 91
AZM. 1.3
SRVY 7570'


CN
VIS 43
WT 9.3
VIS 45
WT 9.1
57 U. TOTAL
VIS 46
WT 8.9
VIS 46
WT 8.9
CN
CARBIDE TEST
123 U.
CN
WT 8.8
VIS 52
BG
48-50 U. BG
50-57 U. BG
53-57 U. BG
54-56 U. BG
54-56 U. BG
50 U. BG
C1
C2
VIS 52
WT 8.8
ALIBRATE PUMP
WOB 19
RPM 26
PP 2630
ROP (Min/Ft)
Gamma
DEPTH
CORRECTION
ROT
7848'-7853'
7600
7650
7700
7750
7800
7850
7900
3/70 TVD
WOB 27, RPM 25
M.W 8.9
VIS 46
PV 18
PY 15
GEL 6/20
API/CK 5.6/3
PH 10.3
PF/MF 0.6/1.3
CHLOR 1000
CALC 80
CHRT- OFF WHT WTH CRM, HD DNS, F-XLN RE-XLN, S-SUCRO, WTHRD CHRT, TR CRYPTO-XLN CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
CHRT- OFF WHT WTH CRM, HD DNS,F-XLN RE-XLN, S-SUCRO, WTHRD CHRT, TR CRYPTO-XLN CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, NO VIS FLO, NO VIS POR, NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM LT TN(DUE TO OIL STN IN 30%), HD DNS, F-XLN RE-XLN, S-SUCRO, WHTRD CHRT THRU TRAY, CRYPTO-XLN CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL GLD FLO IN 30%, MICRO PP POR 1%, FR FLSH CUT, PR SLW STRM IN 20%, NO LCH ON DHS, TR OIL ODOR
CHRT- OFF WHT WHT CRM LT TN(DUE TO OIL STN IN 30%) HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, TR CYRPTO-XLN, GY LT GY DK GR SH THRU, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IN 20%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 30%), HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, TR CYRPTO-XLN, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT, GY LT GY DK GY SH THRU TRAY, DUL YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- CRM OFF WHT WHT LT TN (DUE TO OIL STN IN 40%), HD DNS BRITT, F-XLN RE-XLN, SUCRO MTRX, CALC IP, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU, GY LT GY GRN SH THRU TRAY, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM LT TN(DUE TO OIL STN IN 30%), HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, TR GY LT GY GRN SH THRU TRAY, DUL YEL GLD FLO IN 20%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WH LT TN(DUE TO OIL S 40%), HD DNS TR V/ F-XLN RE-XLN, SUCR MTRX, WTHRD CHRT TRAY, CLR ORNG FR CHRT THRU TRAY, D GLD FLO IN 20%, MI POR IN 1%, FR FLSH TO TR GD SLW STRM 20%, NO LCH ON DS OIL ODOR
SRVY 7615'
TVD 4007.52'
SRVY 7660'
TVD 4006.78'
SRVY 7705'
TVD 4005.99'
INC. 91.3
AZM. 0.6
SRVY 7750'
TVD 4005.05'
INC. 91.3
AZM. 0.6
SRVY 7795'
TVD 4004.3'
INC. 90.6
AZM. 1.4
4179.78' NORTH
SRVY 7840'
TVD 4003.75'
INC. 90.8
AZM. 1.5
4224.05' NORTH
SRVY 7884'
TVD 4003.41'
INC. 90.1
AZM. 1.1
4268.03' NORTH


CN
WT 9.0
VIS 50
RE-ZERO
EQUIPMENT
CARBIDE TEST AT PIT
INCREASED WOB
13 U. TOTAL
WT 8.85
VIS 46
16 U. TOTAL
WT 8.85
VIS 45
DUMP SAND TRAP
WT 9.0
VIS 47
0 U. BG
8 U.
10 U.
14-16 U. BG
10-8 U. BG
7-5 U. BG
C1
C2
C3
SI TR C5
DEPTH
CORRECTION
DEPTH CORR.
ROT
8125' -8253'
ROP (Min/Ft)
Gamma
7950
8000
8050
8100
8150
8200
8250
WOB 29/ RPM 25
WOB 29.5/RPM 25
WOB 27.6/RPM 25
WOB 28.1/RPM 26
WOB 28.4/ RPM 26
WOB 29.6/ R
37/70 TVD
WT 8.9
VIS 44
PV 18
YP 14
GEL 6/20
API/CK 5.8/3
PH 10.5
PF/MF 0.7/1.4
CHLOR 1200
CALC 80
CHRT- OFF WHT WHT CRM LT TN(DUE TO OIL STN IN 40%), HD DNS TO V/BRITT, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IN 30%, MICRO PP POR IN 4%, FR FLSH CUT, FR TO TR GD SLW STRM IN 30%, NO LCH ON DSH, LT OIL ODOR
CHRT-OFF WHT WHT LT ORNG TN(DUE TO LT OIL STN IN 30%, HD TO V/ BRITT, V/WEATHERED OR SUCRO MTRX, CRYPTO-XLN IP, SCAT IMBD LT GRN SH IP, DLL YEL GLD FLO IN 30%, PR VIS MICRO PP POR SCAT IN 40%, GD FLSH CUT TO GD SLO STYRM CUT IN 50%, FR OIL ODOR, NO LCH ON DISH
CHRT-OFF WHT WHT CRM LT ORNG TN (DUE TO LT OIL STN IN 30%, HD TOV/BRITT, V/WEATHERED, CRYPTO-XLN IP, SCAT IMBD LT GRN SH IP, DLL YEL GLD FLO IN 30%, PR VIS MICRO PP POR SCAT IN 40%, GD FLSH CUT TO GD SLO STYRM CUT IN 50%, FR OIL ODOR, NO LCH ON DISH
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 20%), HD DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, V/WTHRD CHRT THRU, CRYPTO-XLN IP, SCAT TR GY LT GY DK GY SH THRU, CLR ORN FRSTY CHRT THRU TRAY, BRI YEL GLD FLO IN 20%, PR MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WTH CRM LT TN(DUE TO OIL STN IN 20%), HS DNS TR BRITT, F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT THRU, TR CRYPTO-XLN, CLR ORN FRSTY CHRT THRU, TR LT GY GY DK GY SH THRU TRAY, BRI YEL GLD FLO IN 20%, PR MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM, NO LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 30%), HD DNS TR BRITT, F-XLN TR MD-XLN, SUCRO MTRX, V/WTHRD CHRT THRU TRAY, CRYPTO-XLN IP, CLR ORN FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IN 20%, PR MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT-OFF WHT WHT CRM LT TN (DUE TO OIL STN IN 40%), HD DNS TR BRITT, F-XLN ME-XLN, SUCRO MTRX, CALC IP, WTHRD CHRT THRU TRAY, CLR ORNG FRSTY CHRT THRU TRAY, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, FR FLSH CUT, FR SLW STRM IN 20%, V LT TN LCH ON DSH, SLI OIL ODOR
SRVY 7929'
TVD 4003.29'
INC. 90.2
AZM. 1.1
4313.03' NORTH
SRVY 7974'
TVD 4003.68'
INC. 88.8
AZM. 1.6
4358.01' NORTH
SRVY 8019'
TVD 4004.55'
INC. 89
AZM. 1.8
4402.98' NORTH
SRVY 8064'
TVD 4005.37'
INC. 88.9
AZM. 1.4
4447.96' NORTH
SRVY 8109'
TVD 4005.92'
INC. 89.7
AZM. 1.6
SRVY 8154'
TVD 4006.24'
INC. 89.5
SRVY 8200'
TVD 4006.6'
INC. 89.6
SRVY 8245'
TVD 4006.75'
INC. 90


CN
WT 8.9
VIS 45
CARBIDE
TEST AT PIT
VIS 44
WT 8.9
VIS 45
WT 8.9
5-6 U.BG
6-8 U. BG
7-8 U. BG
26 U. BG
28-30 U. BG
33-35 U. BG
36-39 U. BG
29-31 U. BG
C1
C2
8300
8350
8400
8450
8500
8550
WOB 30
RPM 26
PP 2930
GEARS
RECALIBRATED
WOB 30
RPM 26
PP 2805
SWAP PUMPS
WOB 28
RPM 25
PP 2785
WOB 28
RPM 25
PP 2716
DUMP SAND TRAP
SLIDE
8577'-
ROT
8253'-8305
RIG SERVICE
ROT
8305'-8386'
ROP (Min/Ft)
Gamma
PUMP SWEEP
PUMP SWEEP
RPM 26
WT 8.9
VIS 45
PV 19
YP 13
GEL 6/20
API/CK 5/3
SOL 6%
PH 10.6
PF/MF 0.7/1.5
CHLOR 1400
CALC 120
START T.O.H @ 8386' MD
FOR NEW BHA & BIT ON
APRIL 23, 2014 @ 12.10
P.M. / TRIPPING BACK IN
FROM 8205' MD, DUE TO
HIGH WIND & DIFFICULTY
W/ KELLY HOSE 1:30 P.M.
APRIL 23, 2014
3770 TVD
T.O.H @ 8567' MD
FOR NEW BHA & BIT
ON APRIL 24, 2014 @
12:00 A.M
B.O.B@ 5:00 P.M.
4/24/2014, WITH AN
NEW BHA & BIT
BIT # 7
SIZE 7 7/8
MAKE ULTER
TYPE U613M
SER.# 20170
JETS 6X20
PUMP SWEEP & CIRC
OUT & PUMP SLUG
CHRT- WHT TO OFF WHT CRM
LT TN (DUE TO OIL STN IN
30%) HD DNS TO TR BRTT,
V/FN TO FN-XLN, RE-XLN IP,
SUCRO MTRX, IMBD
CALC-XLS IP, SLI TR WTHRD
CHRT IN TRAY, TR CLR FRST
ORNG CHRT, DUL YEL GLD
FLO IN 30%, BRT YEL GLD
FLO SCAT IP, PR INTER-XLN
POR IN 1%, PR MICRO-PP IN
2%, PR FLSH CUT, PR SLW
STRM IN 20%, NO VIS LCH ON
DISH, NO OIL ODOR
CHRT- WHT TO OFF WHT
CRM LT TN (DUE TO OIL
STN IN 10%) HD DNS TO TR
BRTT, V/FN TO FN-XLN, SLI
TR RE-XLN IP, SUCRO
MTRX, IMBD CALC-XLS IP, V
SLI TR WTHRD CHRT IN
TRAY, TR CLR FRST ORNG
CHRT, DUL YEL GLD FLO IN
20%, BRT YEL GLD FLO
SCAT IP, PR INTER-XLN
POR IN 1%, PR MICRO-PP
IN 2%, V PR FLSH CUT, V
PR SLW STRM IN 10%, NO
VIS LCH ON DISH, NO OIL
ODOR
CHRT- WHT TO OFF WHT CRM LT TN
(DUE TO OIL STN IN 10%) HD DNS
TO TR BRTT, V/FN TO FN-XLN, SLI
TR RE-XLN IP, SUCRO MTRX, TR SH
GRY TO DRK GRY FRM TO SFT
SMTH TXT, IMBD CALC-XLS IP, V SLI
TR WTHRD CHRT IN TRAY, TR CLR
FRST ORNG CHRT, DUL YEL GLD
FLO IN 20%, BRT YEL GLD FLO
SCAT IP, PR INTER-XLN POR IN 1%,
PR MICRO-PP IN 2%, V PR FLSH
CUT, V PR SLW STRM IN 10%, NO
VIS LCH ON DISH, NO OIL ODOR
CHRT- OFF WHT WHT CRM
TR LT TN(DUE TO OIL STN
IN 10%), HD DNS TR BRITT,
F-XLN TR MD-XLN, SUCRO
MTRX, TR CALC, WTHRD
CHRT THRU TRAY, CLR
ORNG FRSTY CHRT THRU
TRAY, TR LT GY GY DK GY
SH, V DUL YEL GLD FLO IN
20%, TR MICRO PP POR IN
1%, NO CUT OR SHOW
CHRT- OFF WHT WTH CRM
LT TN IP(DUE TO OIL STN IN
20%), HD DNS, F-XLN TR
MD-XLN, SUCRO MTRX IP, TR
CALC IP, WTHRD CHRT THRU
TRAY, CLR ORNG FRSTY
CHRT THRU, LT GY DK GY
GY SH THRU, DUL YEL GLD
FLO IN 10%, TR MICRO PP
POR, NO VIS CUT OR SHOW
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
30%), HD DNS TR BRITT,
F-XLN MD-XLN, SUCRO
MTRX, WTHRD CHRT THRU ,
CLR ORNG FRSTY CHRT
THRU TRAY, BRI YEL MIN
FLO IN 30%, MICRO PP POR
IN 1%, PR FLSH CUT, PR
SLW STRM IN 10%, NO LCH
ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
20%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX,
WTHRD CHRT THRU, CLR
ORNG FRSTY CHRT THRU,
DUL YEL GLD FLO IN 10%,
TR MICRO PP POR IN 1%, PR
FLSH CUT, PR SLW STRM IN
10%, NO LCH ON DSH, NO
OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
20%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX, TR
WTHRD CHRT IN TRAY, CLR
ORNG FRSTY CHRT THRU,
DUL YEL GLD FLO IN 10%,
TR MICRO PP POR IN 1%, PR
FLSH CUT, PR SLW STRM IN
10%, NO LCH ON DSH, NO
OIL ODOR
SRVY 8290'
TVD 4006.87'
INC. 89.7
AZM. 0.8
4673.89' NORTH
91.04' EAST
SRVY 8335'
TVD 4006.91'
INC. 90.2
AZM. 1
4718.88' NORTH
SRVY 8379'
TVD 4007.03'
INC. 89.5
AZM. 1
4762.88' NORTH
SRVY 8423'
TVD 4007.33'
INC. 89.7
AZM. .7
4806.87' NORTH
93.17' EAST
SRVY 8468'
TVD 4007.37'
INC. 90.2
AZM. 1.2
4851.86' NORTH
93.91' EAST
SRVY 8513'
TVD 4007.37'
INC. 89.8
AZM. 0.6
4896.86' NORTH
SRVY 8557'
TVD 4007.45'
INC. 90
SRVY


CN
VIS 46
WT 8.9
17-19 U. BG
16-18 U. BG
WT 8.9
VIS 45
18-20 U. BG
WT 8.95
VIS 43
24-26 U. BG
31-33 U. BG
33-36 U. BG
VIS 43
WT 8.8
30-33 U. BG
C1
C2
ROT
8587'-8703'
RIG SERVICE
COMPANY MAN
CALLED PASON
TO FIND OUT WHY
DRILL TIME
JUMPING BEFORE
CN
WOB 26
RPM 26
PP 2520
SLIDE
8703'-8711'
ROT
8711'-8748'
SLIDE
8748'-8754'
ROT
8754'-8792'
WOB 27
RPM 28
PP 2780
WOB 8.9
RPM 25
PP 2528
ROT
8883'-8927
WOB 24.7
RPM 24
PP 2465
ROT
8927'-8941'
ROP (Min/Ft)
Gamma
DEPTH
CORRECTION
8600
8650
8700
8750
8800
8850
8900
3770 TVD
WT 8.9
VIS 45
PV 18
YP 15
GEL 6/20
API/CK 5.2/3
SOL 6%
PH 10.4
PF/MF 0.6/1.4
CHLOR 1200
CALC 80
RECYCLE MWD PUMPING
FRESH WATER DOWN
FOR 1.5 HRS
TROUBLE SHOOT MWD TOOL
TRYING TO GET MOTOR &
MWD TOOL TO WORK. DOWN
FOR 2 HRS
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
20%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX, SLI
TR WTHRD CHRT, CLR ORNG
FRSTY CHRT THRU, DUL YEL
GLD FLO IN 10%, TR MICRO
PP POR IN 1%, PR FLSH
CUT, PR SLW STRM IN 10%,
NO LCH ON DSH, NO OIL
ODOR
CHRT- OFF WHT WHT
CRM LT TN (DUE TO OIL
STN IN 20%), HD DNS TO
TR BRTT, FN-XLN,
RE-XLN, SUCRO MTRX,
SLI TR WTHRD CHRT,
CLR ORNG FRSTY CHRT
THRU, DUL YEL GLD FLO
IN 20%, PR TR MICRO PP
POR IN 1%, PR FLSH
CUT, PR SLW STRM IN
20%, NO LCH ON DSH,
NO OIL ODOR
CHRT- WHT TO OFF WHT
CRM LT TN TO TR TN (DUE
TO OIL STN IN 20%) HD TO
BRTT, V/FN TO FN-XLN,
RE-XLN IP, SUCRO MTRX, V
CALC THRU, TR LMS THRU
TRAY SLI TR WTHRD CHRT,
CLR ORNG CHRT IN TRAY,
DUL YEL GLD FLO SCAT
THRU, PR MICRO-PP POR IN
1%, PR FLSH CUT, PR SLW
STRM IN 10%, NO VIS LCH
ON DISH, NO OIL ODOR
CHRT- WHT TO OFF WHT
CRM LT TN TO TR TN (DUE
TO OIL STN IN 20%) HD TO
BRTT, V/FN TO FN-XLN,
RE-XLN IP, SUCRO MTRX, V
CALC THRU, IMBD LMS
THRU, SLI TR WTHRD CHRT,
CLR ORNG CHRT IN TRAY,
DUL YEL GLD FLO SCAT
THRU, PR MICRO-PP POR IN
1%, PR FLSH CUT, PR SLW
STRM IN 10%, NO VIS LCH
ON DISH, NO OIL ODOR
CHRT- OFF WHT WHT CRM
LT TN(DUE TO OIL STN IN
20%), HD DNS F-XLN
RE-XLN, SUCRO MTRX, V
CALC THRU, TR IMBD LS, TR
WTHRD CHRT THRU TRAY,
CLR ORNG FRSTY CHRT
THRU, TR LT GY GY DK GY
GRN SH THRU TRAY, DUL
YEL GLD FLO IN 20%, TR
MICRO PP POR IN 1%, PR
FLSH CUT, PR SLW STRM IN
10%, V TR LT TN LCH ON
DSH, TR OIL ODOR
CHRT- OFF WHT WTH CRM
LT TN (DUE TO OIL STN IN
30%), HD DNS, F-XLN
RE-XLN, SUCRO MTRX,
WTHRD CHRT THRU TRAY,
CLR ORNG FRSTY CHRT
THRU TRAY, TR LT GY GY DK
GY SH THRU, DUL YEL GLD
FLO IN 30%, TR MICRO PP
POR 1%, PR FLSH CUT, PR
SLW STRM IN 10%, V TR LT
TN LCH ON DSH, TR OIL
ODOR
CHRT- OFF WHT WHT CRM
LT TN (DUE TO OIL STN IN
40%), HD DNS TR BRITT,
F-XLN RE-XLN, SUCRO
MTRX, V CALC, WTHRD
CHRT THRU TRAY, CLR
ORNG FRSTY CHRT THRU,
DUL YEL GLD FLO IN 30%,
MICRO PP POR IN 1%, FR
FLSH CUT, FR SLW STRM IN
30%, V LT TN LCH ON DSH,
SIL OIL ODOR
SRVY 8649'
TVD 4006.81'
SRVY 8694'
TVD 4006.81'
INC. 89.8
AZM. 0.9
5077.82' NORTH
98.07' EAST
SRVY 8739'
TVD 4006.46'
INC. 91.1
AZM. 1.6
5122.81' NORTH
99.05' EAST
SRVY 8784'
TVD 4005.95'
INC. 90.2
AZM. 1.5
5167.79' NORTH
100.26' EAST
SRVY 8829'
TVD 4005.79'
INC. 90.2
AZM. 1.3
5212.77' NORTH
SRVY 8873'
TVD 4005.79'
INC. 89.8
AZM. 0.7
5256.77' NORTH
SRVY 8918'
TVD 4006.02'


CN
VIS 44
WT 8.9
CN
CN
WT 8.9
VIS 45
CN
CN
WT 9.0
VIS 46
CN
SAMPLES WILL BE DELIVERED TO KGS
30-34 U. BG
CARBIDE TEST
36-38 U. BG
65 U. INC
29-34. BG
33-40 U. BG
33-40 U. BG
C1
C2
SLIDE 8941'-8951'
ROT 8951'-8972'
ROT 8972'-9017'
SLIDE 9017'-9032'
ROT 9032'-9062'
SLIDE 9062'-9072'
LINK UP MWD TOOL
ROP (Min/Ft)
Gamma
WOB 30
RPM 25
PP 2580
ROT 9072'-9108'
ROT 9108'-9234'
WOB 32
RPM 26
PP 3050
8950
9000
9050
9100
9150
9200
9250
3770 TVD
WT 8.9
VIS 45
PV 18
YP 15
GEL 6/20
API/CK 5.2/3
SOL 6%
PH 10.4
PF/MF 0.6/1.4
CHLOR 1200
CALC 80
R.T.D @ 9234'
T.V.D @ 4009.47'
REACHED MEASURED DEPTH TD @ 5:45 A.M. ON APRIL 27, 2014
THANK YOU FOR CHOOSING EARTH TECH MUDLOGGING
WELL COMPLETED BY:
TOM FLOWERS
JORDAN NEWSOM
OFF WHT WHT CRM DUE TO OIL STN IN D DNS BRITT, F-XLN , SUCRO MTRX, , WTHRD CHRT THRU LR ORNG FRSTY HRU TRAY, GY LT GY GH THRU, BRI YEL D IN 40%, MICRO PP 1%, PR FLSH CUT, STRM IN 20%, TR DSH, TR OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN (DUE TO OIL STN IN 30%), HD DNS BRITT, FN-XLN, RE-XLN IP, SUCRO MTRX, CALC IP, TR WTHRD CHRT IN TRAY, CLR ORNG FRSTY CHRT THRU TRAY, LT GRY TO GRY SH IN TRAY, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, LT TR LCH ON DSH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN (DUE TO OIL STN IN 20%), HD DNS BRITT, V/FN TO FN-XLN, RE-XLN IP, SUCRO MTRX, TR CALC IP, SLI TR WTHRD CHRT IN TRAY, CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO SCAT IP, BRI YEL GLD FLO IN 30%, MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 20%, LT TR LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM LT TN IP(DU TO OIL STN IN 20%), HD DNS BRITT, V/F-XLN F-XLN, SUCRO MTRX, CALC IP, TR WTHRD CHRT THRU, CLR ORNG FRSTY CHRT THRU TRAY, DUL YEL GLD FLO IN 20%, TR MICRO PP POR IN 1%, TR PR FLSH CUT, TR PR SLW STRM IN 10%, TR LCH ON DSH, NO OIL ODOR
CHRT- OFF WHT WHT CRM LT TN TN(DUE TO OIL STN IN 30%), HD DNS F-XLN RE-XLN, SUCRO MTRX, WTHRD CHRT IP THRU, CLR ORNG FRSTY CHRT THRU, DUL YEL GLD FLO IN 20%, TR MICRO PP POR IN 1%, PR FLSH CUT, PR SLW STRM IN 10%, NO LCH ON DSH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN TN(DUE TO OIL STN IN 40%), HD DNS FN-XLN, RE-XLN IP, SUCRO MTRX, WTHRD CHRT IN TRAY, CLR ORNG FRSTY CHRT THRU, DUL YEL GLD FLO SCAT THRU, TR MICRO PP POR IN 1%, PR TO FR FLSH CUT, PR TO FR SLW STRM IN 30%, NO LCH ON DSH, NO OIL ODOR
CHRT- WHT TO OFF WHT CRM LT TN TN(DUE TO OIL STN IN 50%), HD DNS FN-XLN, RE-XLN IP, SUCRO MTRX, WTHRD CHRT IN TRAY, CLR ORNG FRSTY CHRT THRU, DUL YEL GLD FLO SCAT THRU, TR MICRO PP POR IN 1%, PR TO FR FLSH CUT, PR TO FR SLW STRM IN 40%, V LT TN LCH ON DSH, NO OIL ODOR
SRVY 8963'
TVD 4006.46'
INC. 89.3
SRVY 9008'
TVD 4007.28'
INC. 88.6
AZM. 359.8
5391.76' NORTH
SRVY 9053'
TVD 4007.95'
INC. 89.7
AZM. 0
SRVY 9098'
TVD 4007.83'
INC. 90.6
AZM. 359.7
5481.75' NORTH
SRVY 9143'
TVD 4007.79'
INC. 89.5
SRVY 9180'
TVD 4009.47'
INC. 88.8
AZM. 359.5
SRVY 9234'
TVD 4009.47'
INC. 88.8
AZM. 359.5
5616.73' NORTH
101.24' EAST