



PERFORM - Drilling Mechanics

2 in / hr Time Based

Real Time Log

Company: ExxonMobil Oil Corporation

Well: Piceance Creek Unit 197 34B7

Field: Piceance Creek

County: Rio Blanco

State: Colorado

Country: U.S.A.

| | | | |
|-----------|-----|-----------|-----------------|
| Section: | 34 | APIN: | 051031108600 |
| Township: | 1S | Rig Name: | H&P 320 |
| Range: | 97W | Rig Type: | Flex 4 Land Rig |

FL: NAD 27 Colorado Northern Zone
 FL1: Y: 224197.00 ft Latitude: N 39° 54' 56.62"
 FL2: X: 1225773.00 ft Longitude: W 108° 15' 37.96"

Log Measured From - Drill Floor: 6668.0 ft
 Ground Level: 6638.0 ft



Permanent Datum - Mean Sea Level

| | | | |
|--------------------|------------------------|-----------------|----------------------|
| Acquisition Dates: | 15 Sep 09 to 20 Sep 09 | Other Services: | Directional Drilling |
|--------------------|------------------------|-----------------|----------------------|

| | |
|-----------------|----------------------------------------------|
| Print Interval: | 9/15/2009 4:40:36 AM to 9/20/2009 3:04:39 AM |
|-----------------|----------------------------------------------|

| | |
|--------------|------|
| Index Types: | Time |
|--------------|------|

| | |
|---------------|----------------|
| Index Scales: | 2" / 3600 secs |
|---------------|----------------|

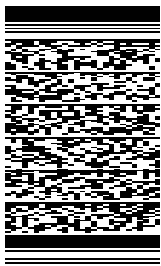
| | |
|---------------|-----------------|
| Depth Source: | Driller's Depth |
|---------------|-----------------|

| | |
|---------------|-----------------|
| Depth Sensor: | 3rd Party Depth |
|---------------|-----------------|

| | |
|-------------|------------|
| Conveyance: | Drill Pipe |
|-------------|------------|

| | |
|-------------|-------|
| Print Type: | Final |
|-------------|-------|

| | |
|------------|------------|
| Spud Date: | 12/06/2008 |
|------------|------------|



Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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001

PERFORM - Drilling Mechanics Run 001

Software Version

| | | | |
|---------------------------|--------------------|--------------------------------|-------------------------|
| Acquisition System | | Version | |
| MaxWell | | 1.2.8706.0 | |
| Framework Patch | | FWK-BGC-20090709-1.2.8706.1016 | |
| Application Patch | | APL-BGC-DnM-1.2.8706.1021 | |
| Tool Elements | Description | Software Version | Firmware Version |
| DRILLING_SURFACE | DRILLING_SURFACE | 1.2.8706.1009 | |

Pass Summary

| Run Name | Pass Objective | Direction | Start | Stop | Acquisition Start Date | Acquisition Start Time |
|----------|----------------|-----------|-------------------------|-------------------------|------------------------|------------------------|
| 001 | TimeLogicalAcq | Down | 15-Sep-2009 04:40:37 | 18-Sep-2009 22:55:32 | 15-Sep-2009 | 04:40:37 |

Log

001: TimeLogicalAcq B067AB73-7643-44D3-A290-36404CB3A77F

Description: PowerPulse Drilling Mechanics Time RT Format: Log (PERFORM - Drilling Mechanics Time Log 2) Index Scale: 2 in per 3600 s Index Type: Time
 Creation Date: 22-Sep-2009 16:18:52

| | | |
|------------|------------------|----------|
| AJAM | TELE675:TELE675 | ACQ - RT |
| BLKP | DRILLING_SURFACE | ACQ - RT |
| CRPM | TELE675:TELE675 | ACQ - RT |
| DEPTH | DnMWorkflow | ACQ - RT |
| GENERIC_01 | DRILLING_SURFACE | ACQ - RT |
| HKLA | DRILLING_SURFACE | ACQ - RT |
| OBTM | DnMWorkflow | ACQ - RT |
| ROP | DRILLING_SURFACE | ACQ - RT |
| SHKPK | TELE675:TELE675 | ACQ - RT |
| SPPA | DRILLING_SURFACE | ACQ - RT |
| STICK | TELE675:TELE675 | ACQ - RT |
| STOR | DRILLING_SURFACE | ACQ - RT |
| SWOB | DRILLING_SURFACE | ACQ - RT |
| TEMP_DNI | TELE675:TELE675 | ACQ - RT |
| TFLO | DRILLING_SURFACE | ACQ - RT |
| TRPM | TELE675:TELE675 | ACQ - RT |
| VIB_LAT | TELE675:TELE675 | ACQ - RT |
| VIB_X | TELE675:TELE675 | ACQ - RT |



Shock Peak (SHKPK)

200 gn 0

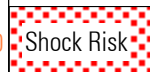
Number of

MWD Turbine Rotation

High SticknSlip

Stick Slip Indicator (STICK)

0 c/min 400



Shock Risk

RMS

3871.4
3871.3
3871.3
3871.4
3871.4
3871.4
3871.3
3871.3
3871.4
3871.4
3871.3
3871.4
3871.4
3871.4
3871.4
3871.4
3871.4
3871.4
3871.4
3871.4
3874.3
3874.6
3895.0
3913.6
3919.7
3919.7
3920.4
3917.5
3921.0
3921.1
3921.7
3940.6
3960.9

20:30:00
21:00:00
21:30:00
22:00:00
22:30:00
23:30:00
00:30:00
01:00:00
01:30:00

Drilling
Cement

Sep. 16
09:16:00

HKLA

TRPM

AJAM

SPPA

BLKP

TFLO

STICK

VIB_LAT

TEMP_DNI

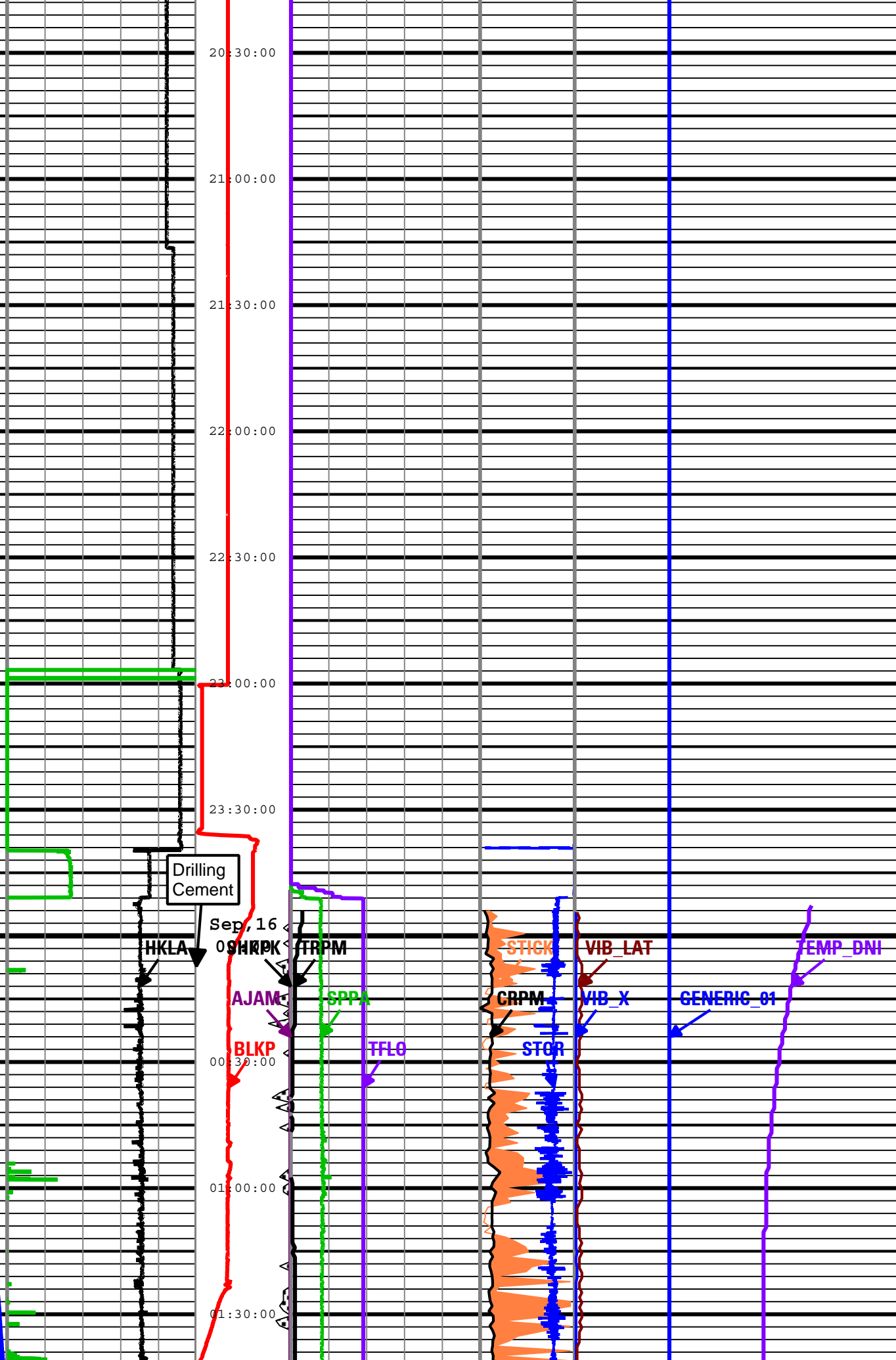
CRPM

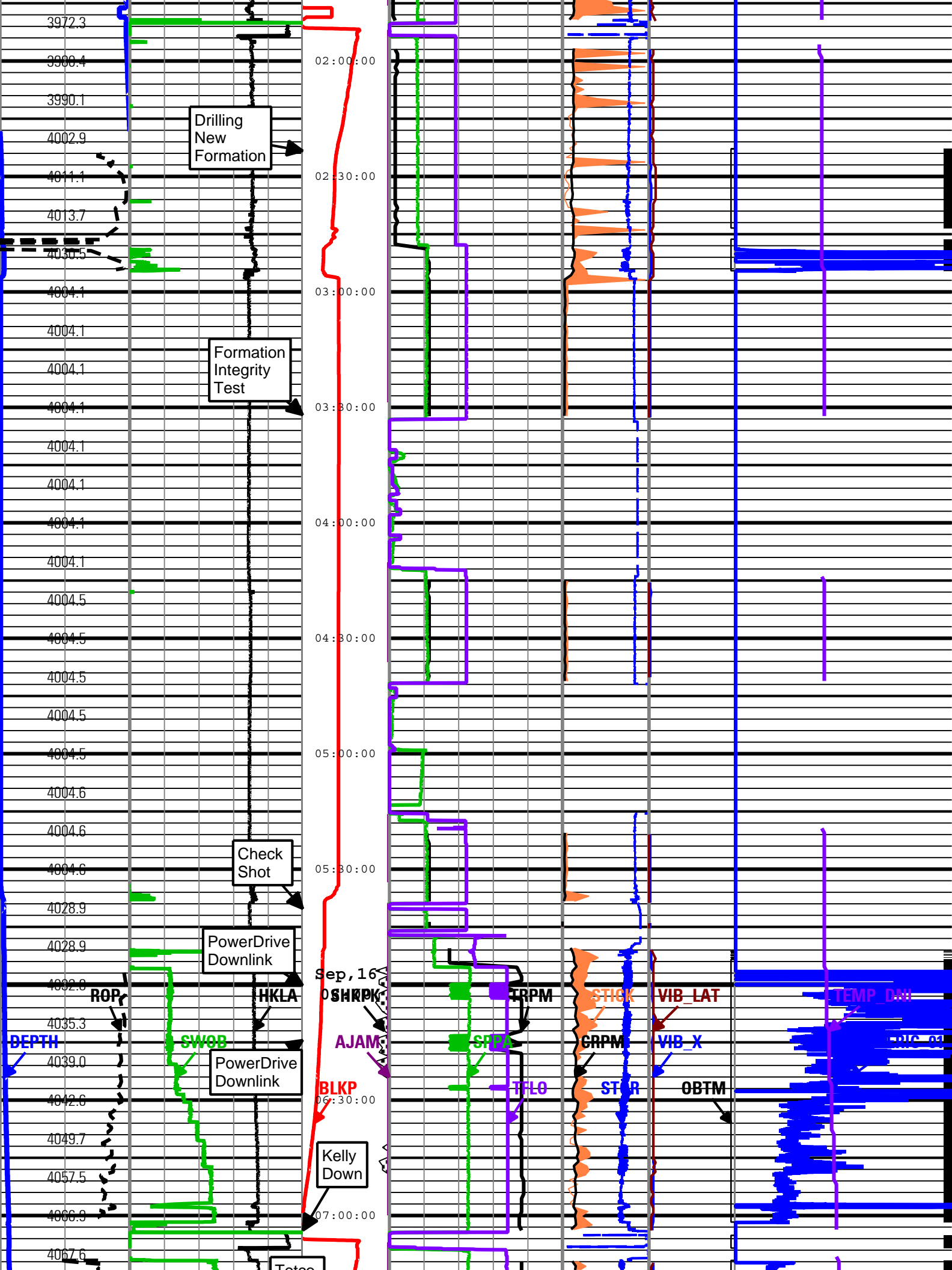
VIB_X

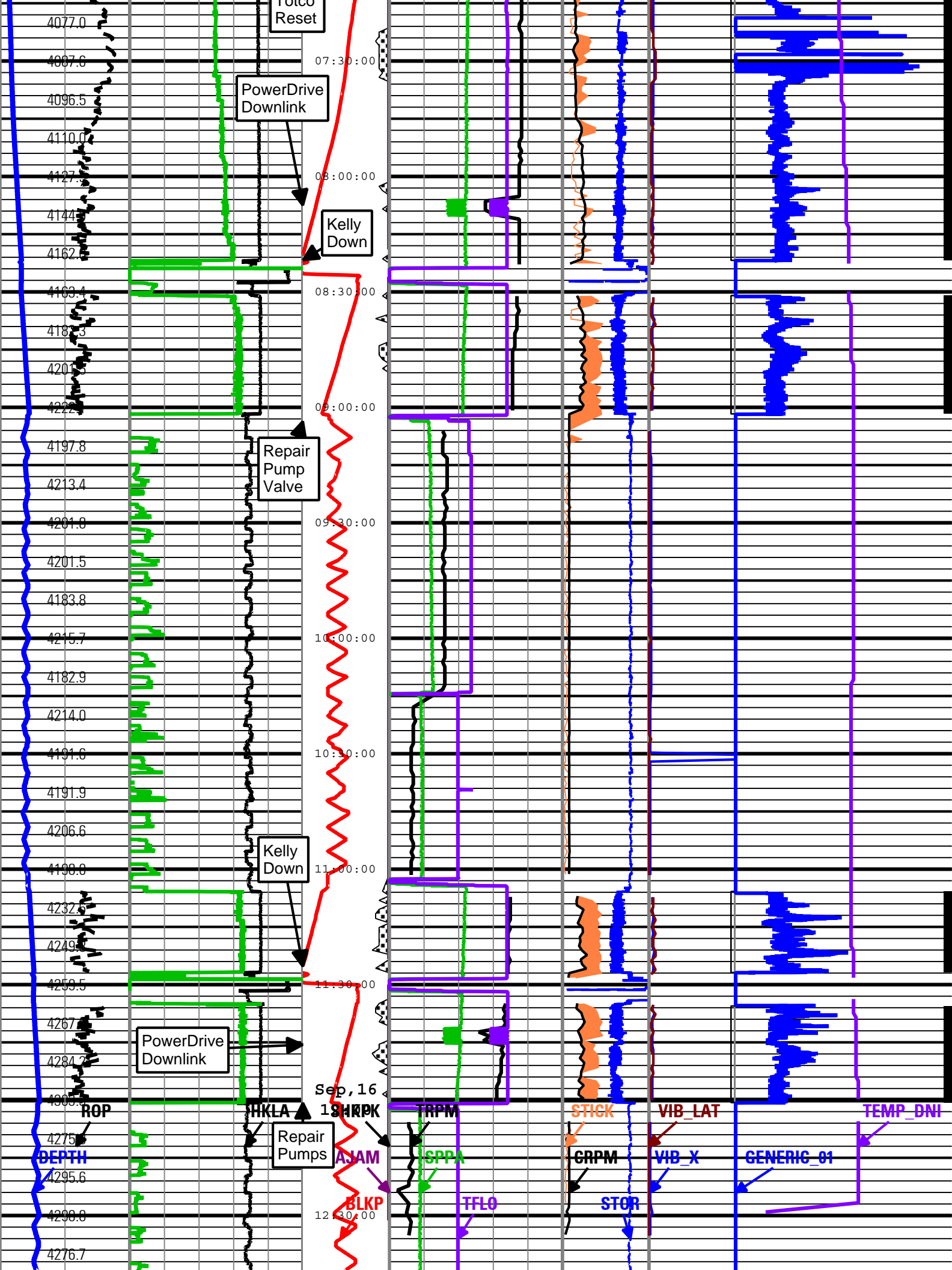
GENERIC_01

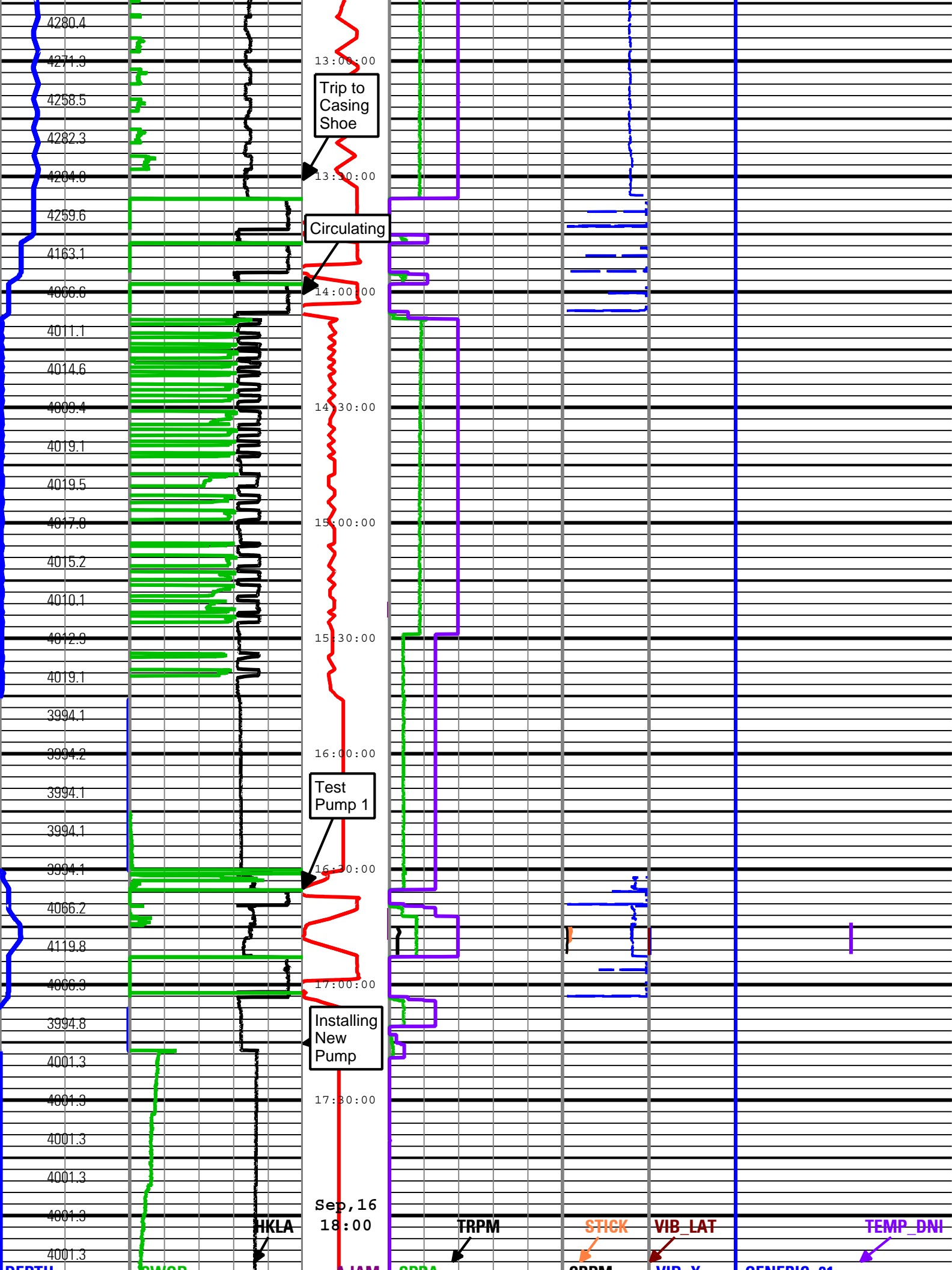
STOR

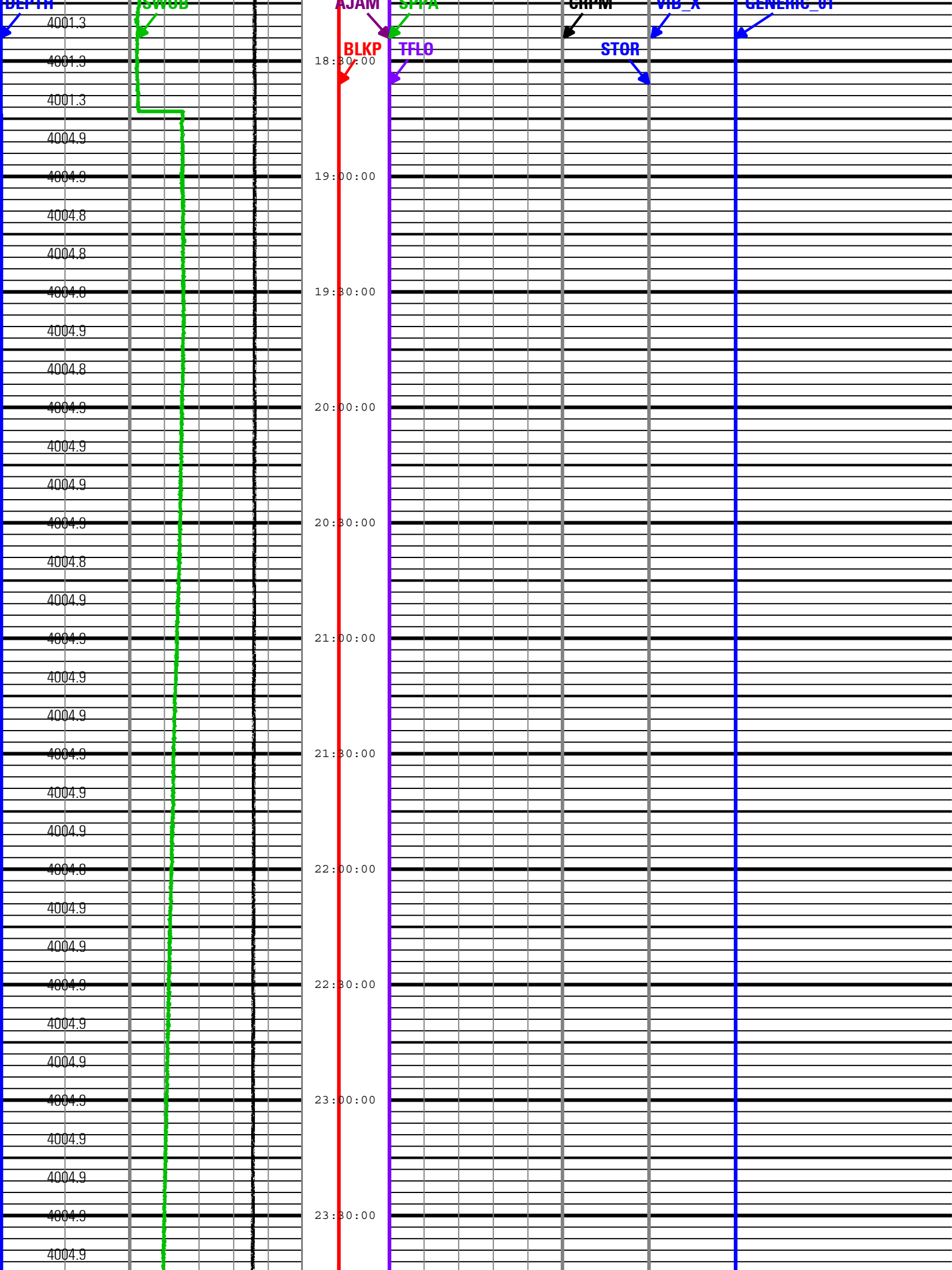
DEPTH

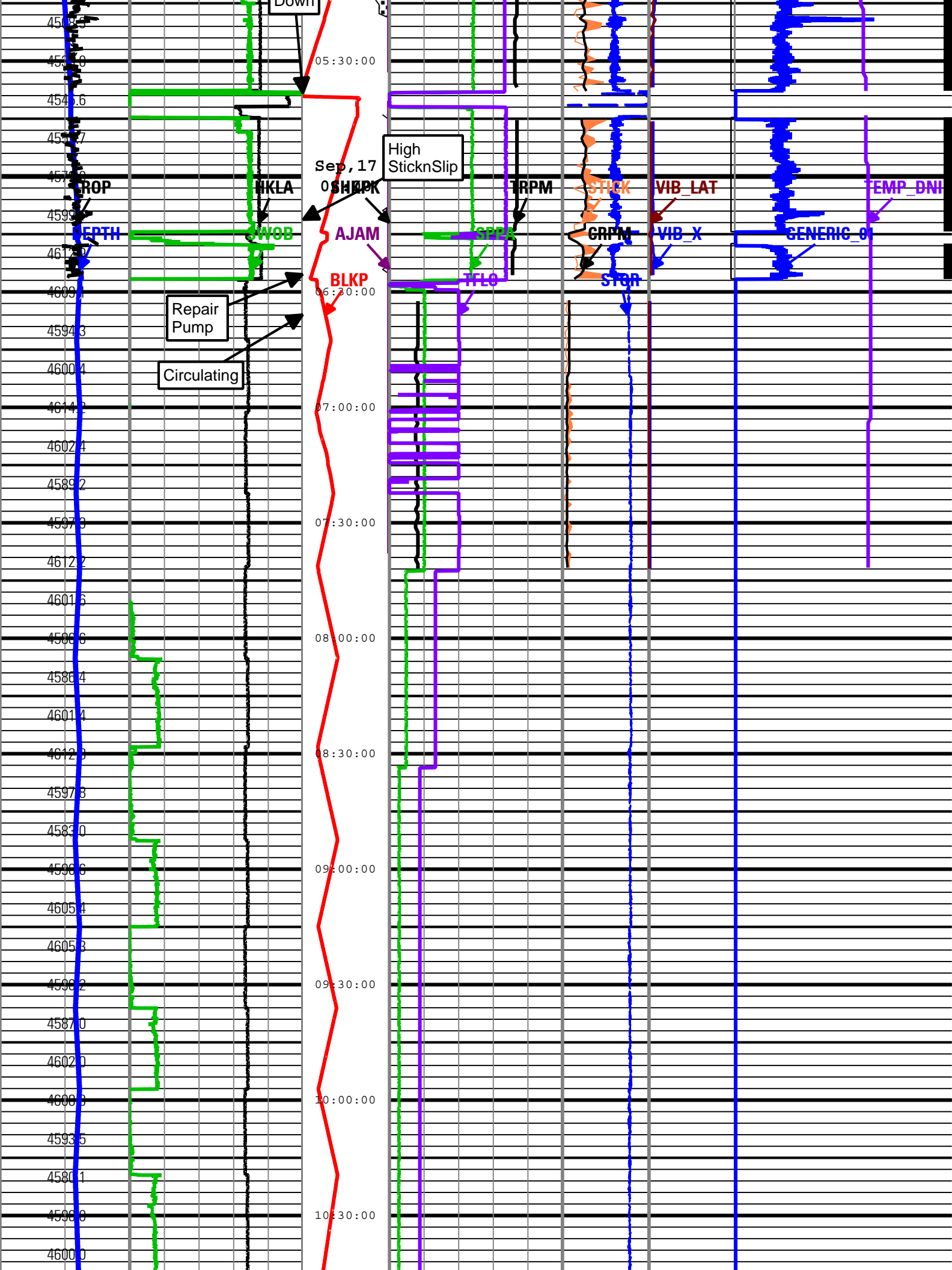


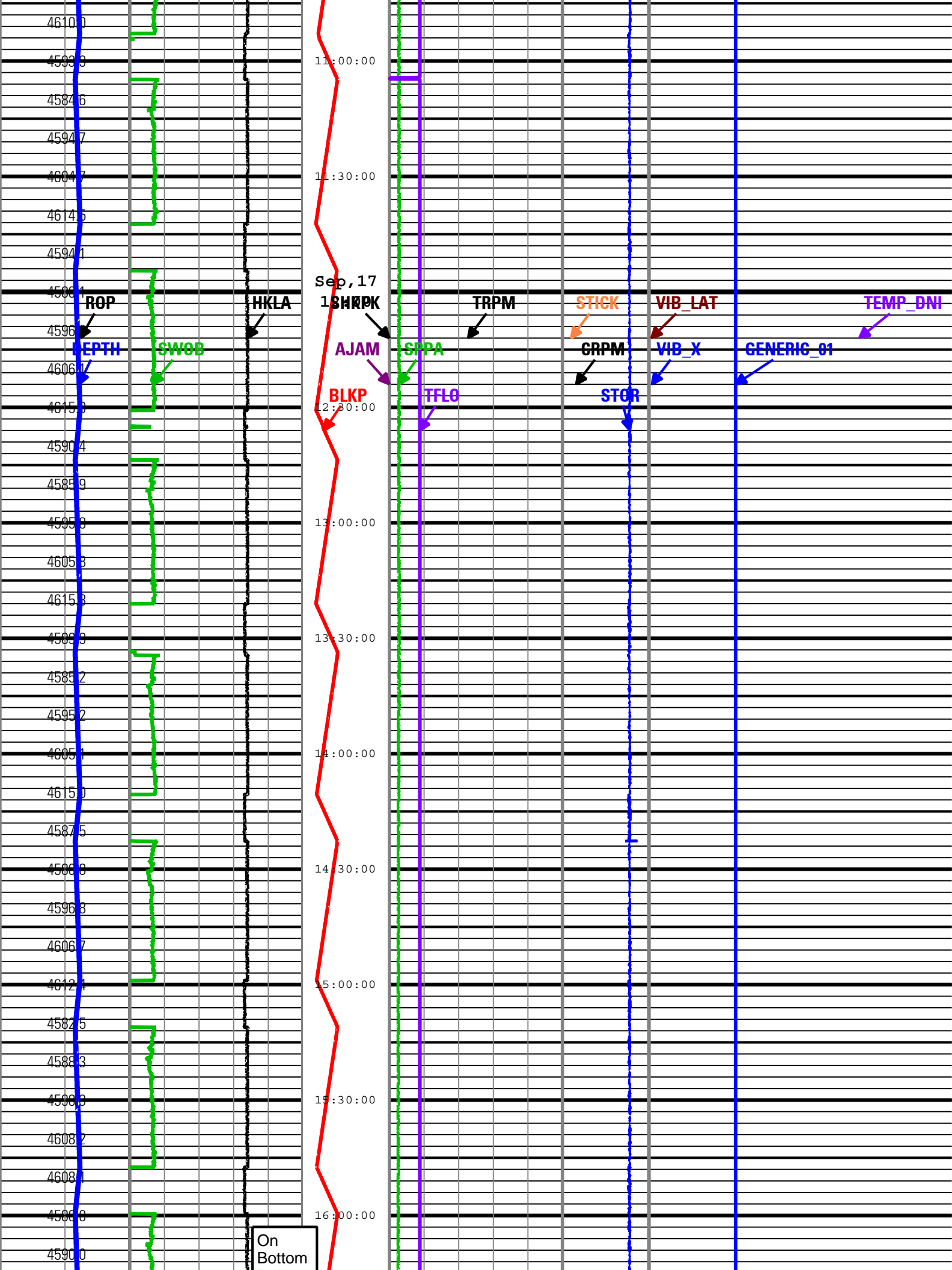


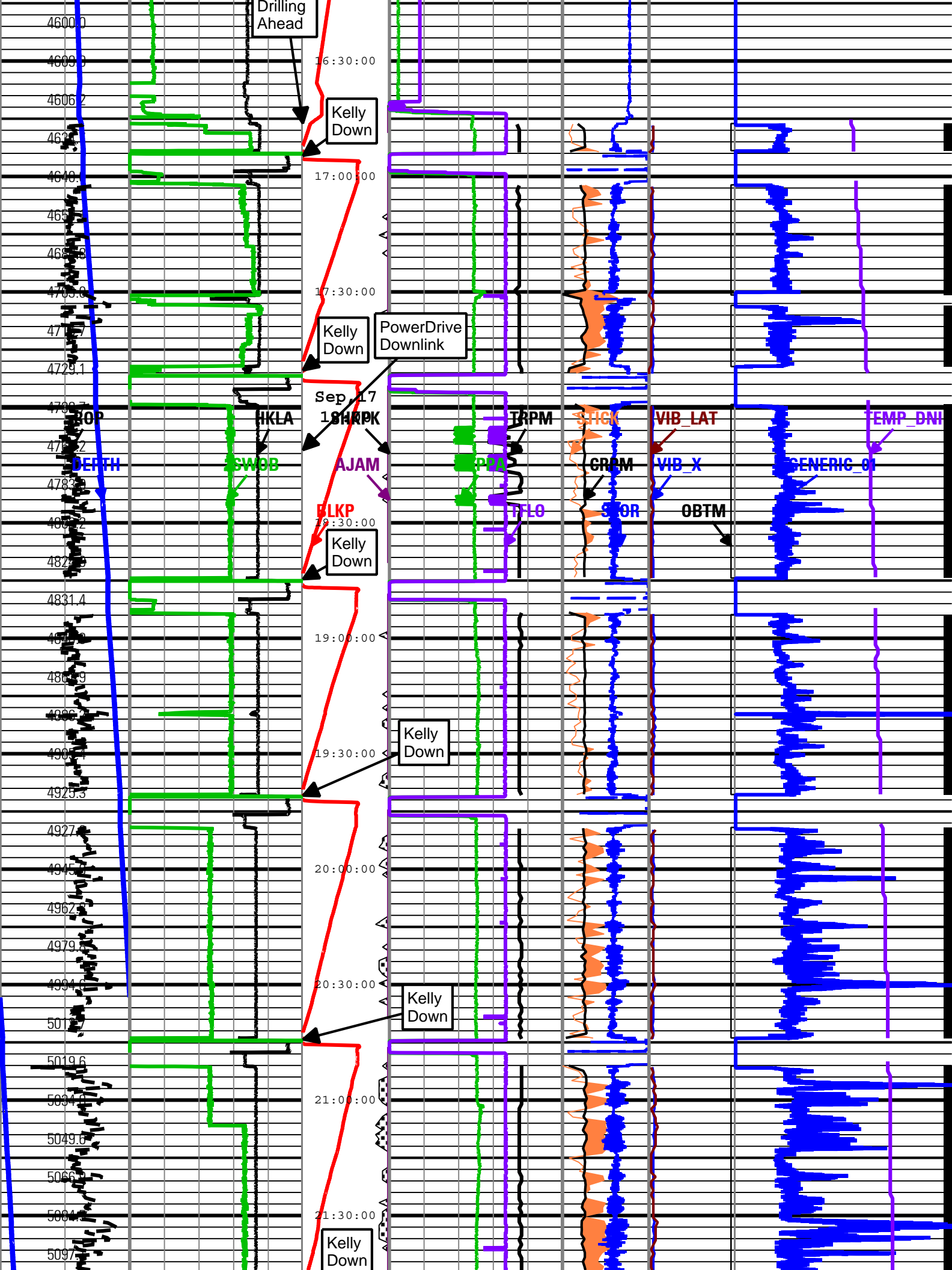


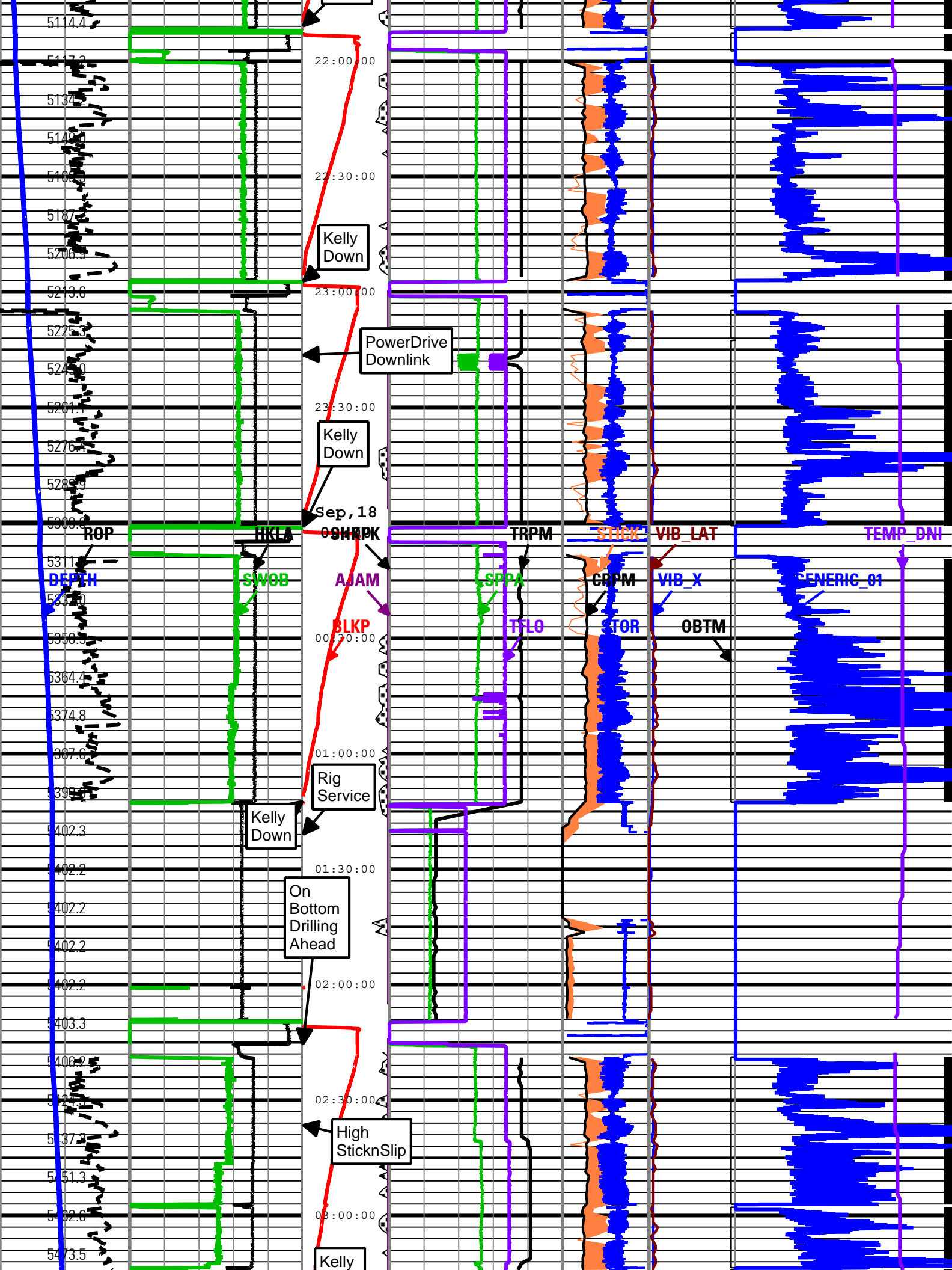


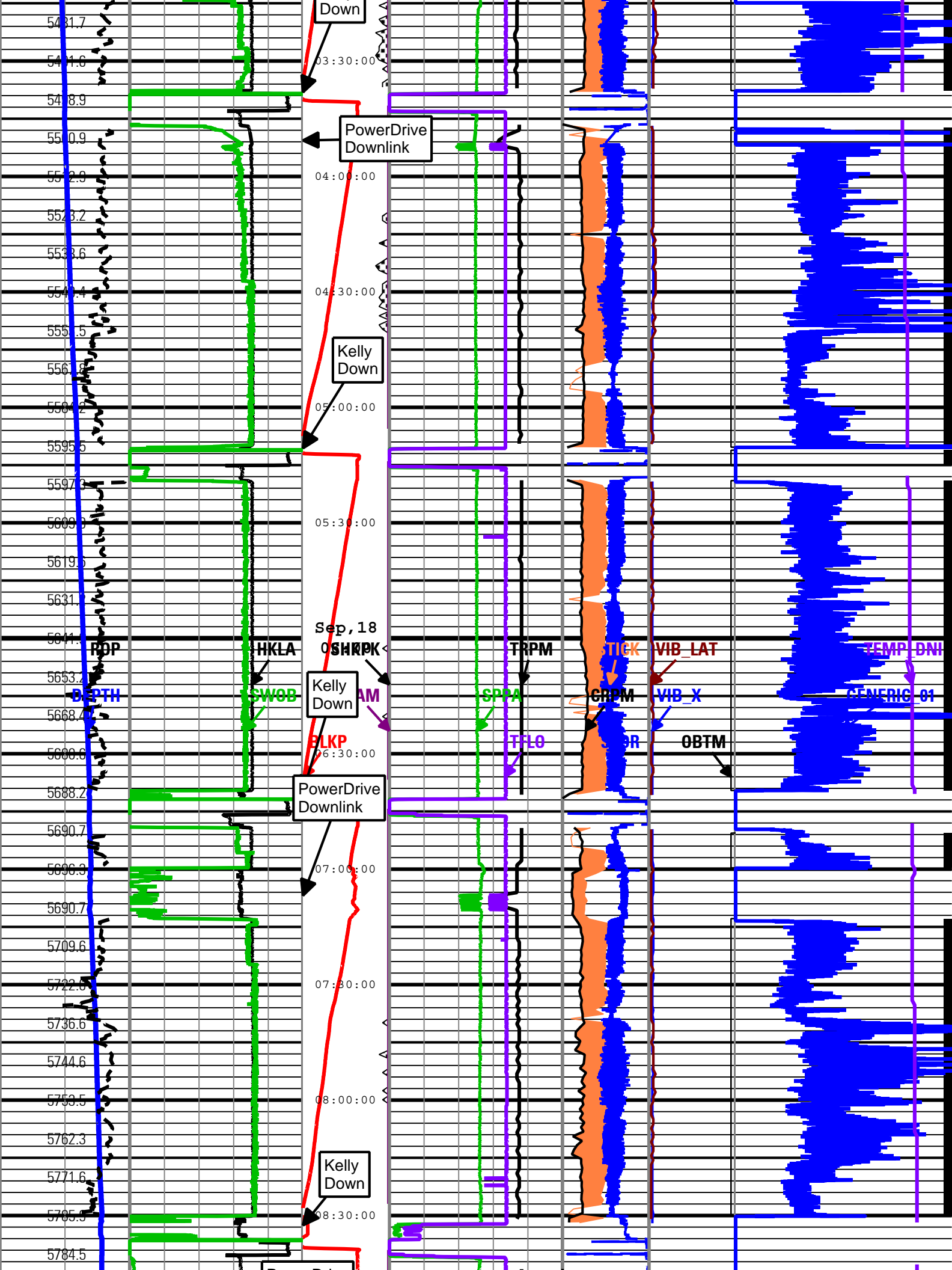


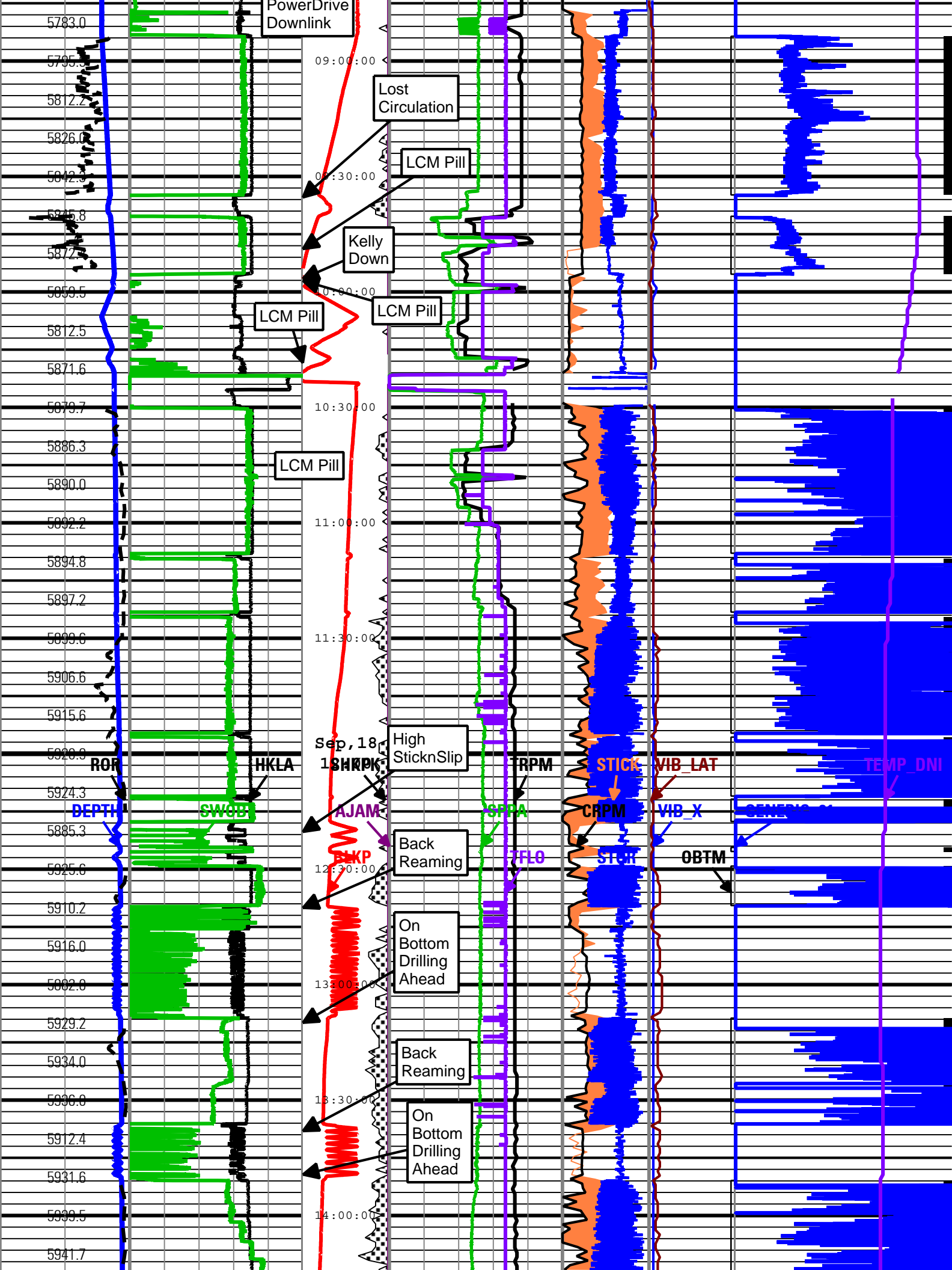


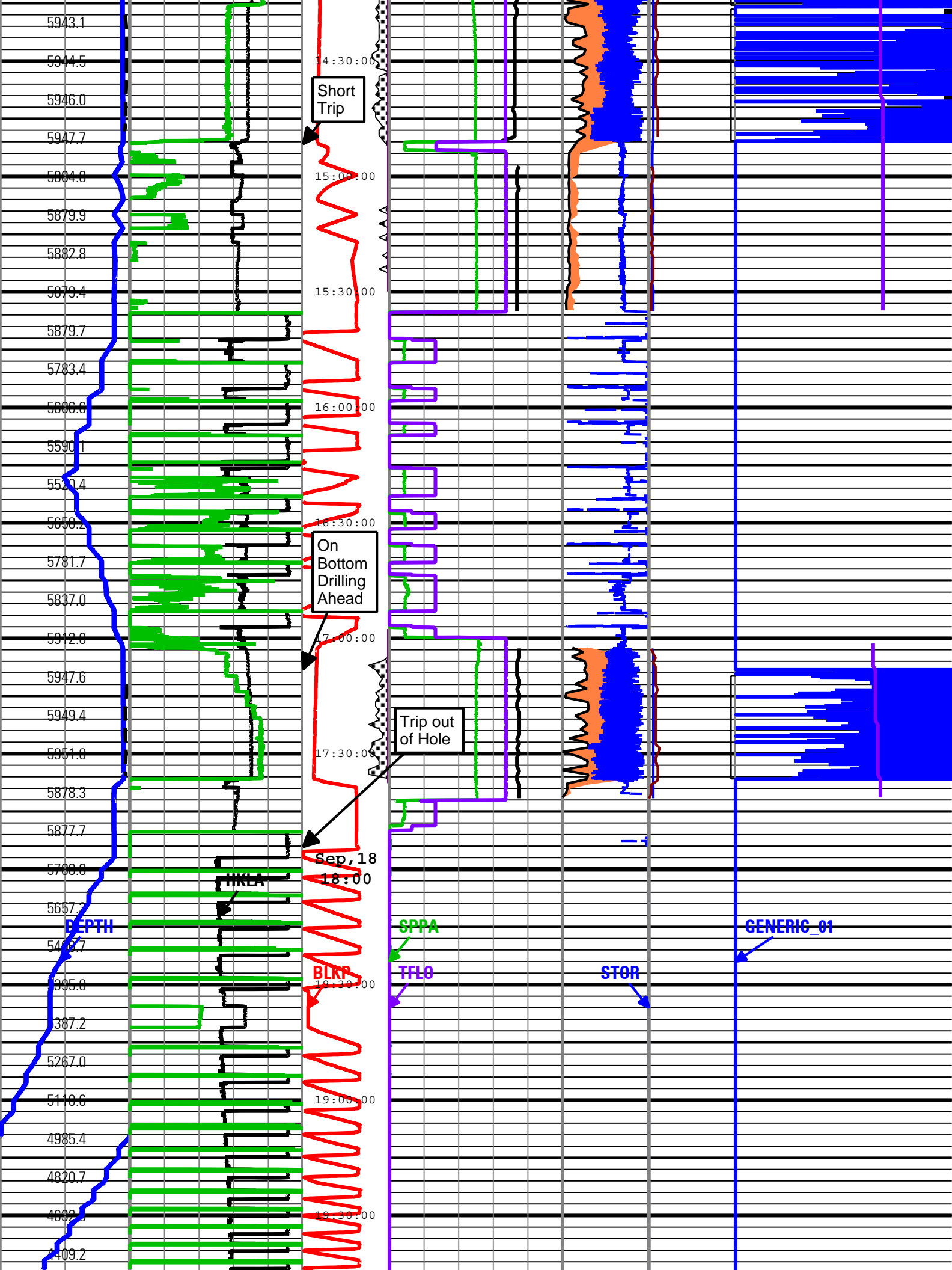


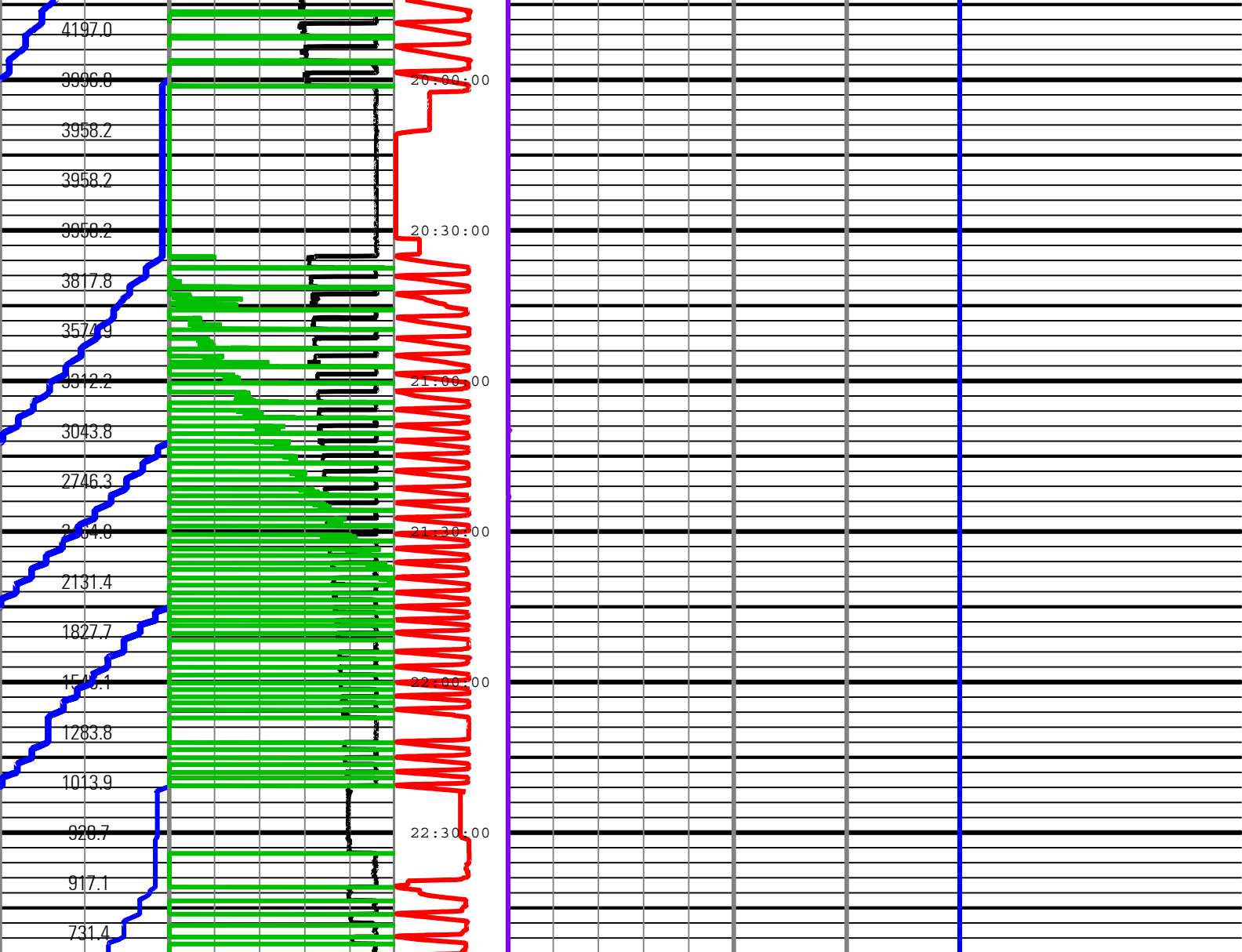












| | | | | | | |
|--------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------|
| Depth Index (DEPTH) ft | Average Hookload (HKLA) 500 1000 lbf 0 | Shock Peak (SHKPK) 200 gn 0 | MWD Turbine Rotation Speed (TRPM) 1500 c/min 4500 | High StickSlip Stick Slip Indicator (STICK) 0 c/min 400 | Shock Risk RMS Vibration, X-Axis (VIB_X) 0 gn 10 | On Bottom Generic Channel One (GENERIC_01) 0 100 |
| Rate of Penetration (ROP) 300 ft/h 0 | Surface Weight On Bit (SWOB) 0 1000 lbf 50 | Number of Anti-Jams Detected (AJAM) 5 0 | Standpipe Pressure (SPPA) psi 5000 | Collar Rotational Speed (CRPM) 0 c/min 400 | Transverse RMS Vibration (VIB_LAT) 0 gn 10 | Direction and Inclination Sensor Temperature (TEMP_DNI) 50 degF 175 |
| | | Height of block above rig floor (BLKP) 0 ft 150 | Total flow rate of all active pumps (TFLO) gal/min 1000 | Surface Torque (STOR) 40 0 1000 ft.lbf | | |

Description: PowerPulse Drilling Mechanics Time RT Format: Log (PERFORM - Drilling Mechanics Time Log 2) Index Scale: 2 in per 3600 s Index Type: Time
 Creation Date: 22-Sep-2009 16:18:52

| Tool Control Parameters | | | | |
|-------------------------|------------------------------------------------------|-------------|------------|------|
| Parameter | Description | ToolPath | Value | Unit |
| OFFBTM_TH | Threshold for deciding whether the bit is off bottom | DnMWorkflow | Time Zoned | ft |

Time Zone Parameters

| Parameter | Value | Start | Stop |
|-----------|-------|----------------------|----------------------|
| OFFBTM_TH | 0 | 15-Sep-2009 04:40:36 | 15-Sep-2009 04:41:26 |
| OFFBTM_TH | 0.25 | 15-Sep-2009 04:41:26 | 18-Sep-2009 22:55:33 |

002

PERFORM - Drilling Mechanics Run 002

Software Version

| Acquisition System | Version |
|--------------------|--------------------------------|
| MaxWell | 1.2.8706.0 |
| Framework Patch | FWK-BGC-20090709-1.2.8706.1016 |
| Application Patch | APL-BGC-DnM-1.2.8706.1021 |

| Tool Elements | Description | Software Version | Firmware Version |
|------------------|------------------|------------------|------------------|
| DRILLING_SURFACE | DRILLING_SURFACE | 1.2.8706.1009 | |

Pass Summary

| Run Name | Pass Objective | Direction | Start | Stop | Acquisition Start Date | Acquisition Start Time |
|----------|----------------|-----------|----------------------|----------------------|------------------------|------------------------|
| 002 | TimeLogicalAcq | Down | 19-Sep-2009 01:11:27 | 20-Sep-2009 03:04:37 | 19-Sep-2009 | 01:11:27 |

Log

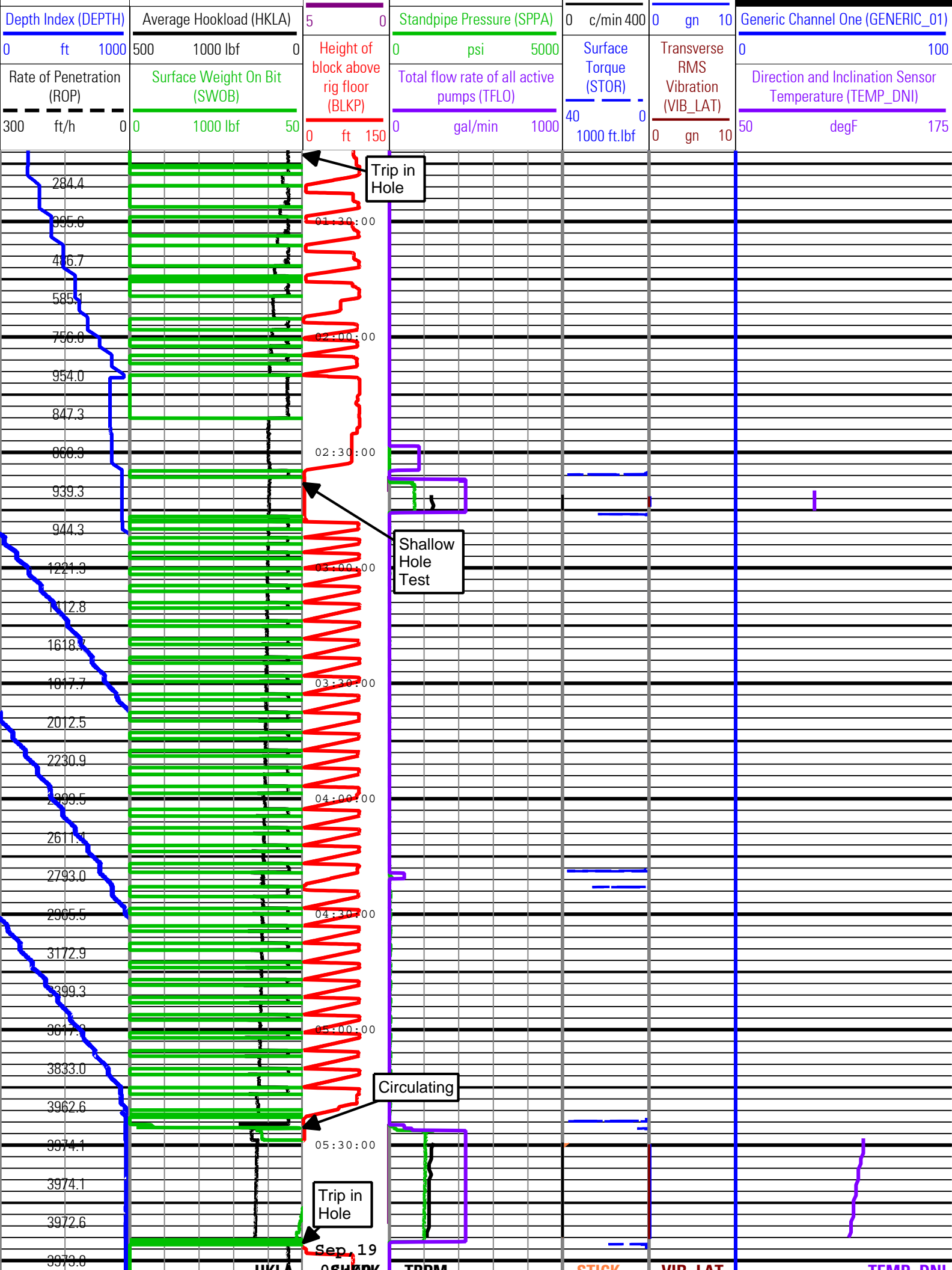
002: TimeLogicalAcq FF34896F-E09A-4DB8-967A-A82566B88A25

Description: PowerPulse Drilling Mechanics Time RT Format: Log (PERFORM - Drilling Mechanics Time Log 2) Index Scale: 2 in per 3600 s Index Type: Time
 Creation Date: 22-Sep-2009 16:19:05

| | | |
|------------|------------------|----------|
| AJAM | TELE675:TELE675 | ACQ - RT |
| BLKP | DRILLING_SURFACE | ACQ - RT |
| CRPM | TELE675:TELE675 | ACQ - RT |
| DEPTH | DnMWorkflow | ACQ - RT |
| GENERIC_01 | DRILLING_SURFACE | ACQ - RT |
| HKLA | DRILLING_SURFACE | ACQ - RT |
| OBTM | DnMWorkflow | ACQ - RT |
| ROP | DRILLING_SURFACE | ACQ - RT |
| SHKPK | TELE675:TELE675 | ACQ - RT |
| SPPA | DRILLING_SURFACE | ACQ - RT |
| STICK | TELE675:TELE675 | ACQ - RT |
| STOR | DRILLING_SURFACE | ACQ - RT |
| SWOB | DRILLING_SURFACE | ACQ - RT |
| TEMP_DNI | TELE675:TELE675 | ACQ - RT |
| TFLO | DRILLING_SURFACE | ACQ - RT |
| TRPM | TELE675:TELE675 | ACQ - RT |
| VIB_LAT | TELE675:TELE675 | ACQ - RT |
| VIB_X | TELE675:TELE675 | ACQ - RT |

| | | | | |
|---------------------------|----------------------------------------------|---------------------------------------------------------|---------------------------------------------------|----------------------------------------|
| Depth Index (DEPTH) ft | Shock Peak | High SticknSlip | Stick Slip Indicator (STICK) 0 c/min 400 | Shock Risk |
| | Shock Peak (SHKPK) 200 gn 0 | | | |
| | Number of Anti-Jams Detected (AJAM) | MWD Turbine Rotation Speed (TRPM) 1500 c/min 4500 | Collar Rotational Speed (CRPM) | RMS Vibration, X-Axis (VIB_X) |

On Bottom



Trip in Hole

Shallow Hole Test

Circulating

Trip in Hole

Sep. 19

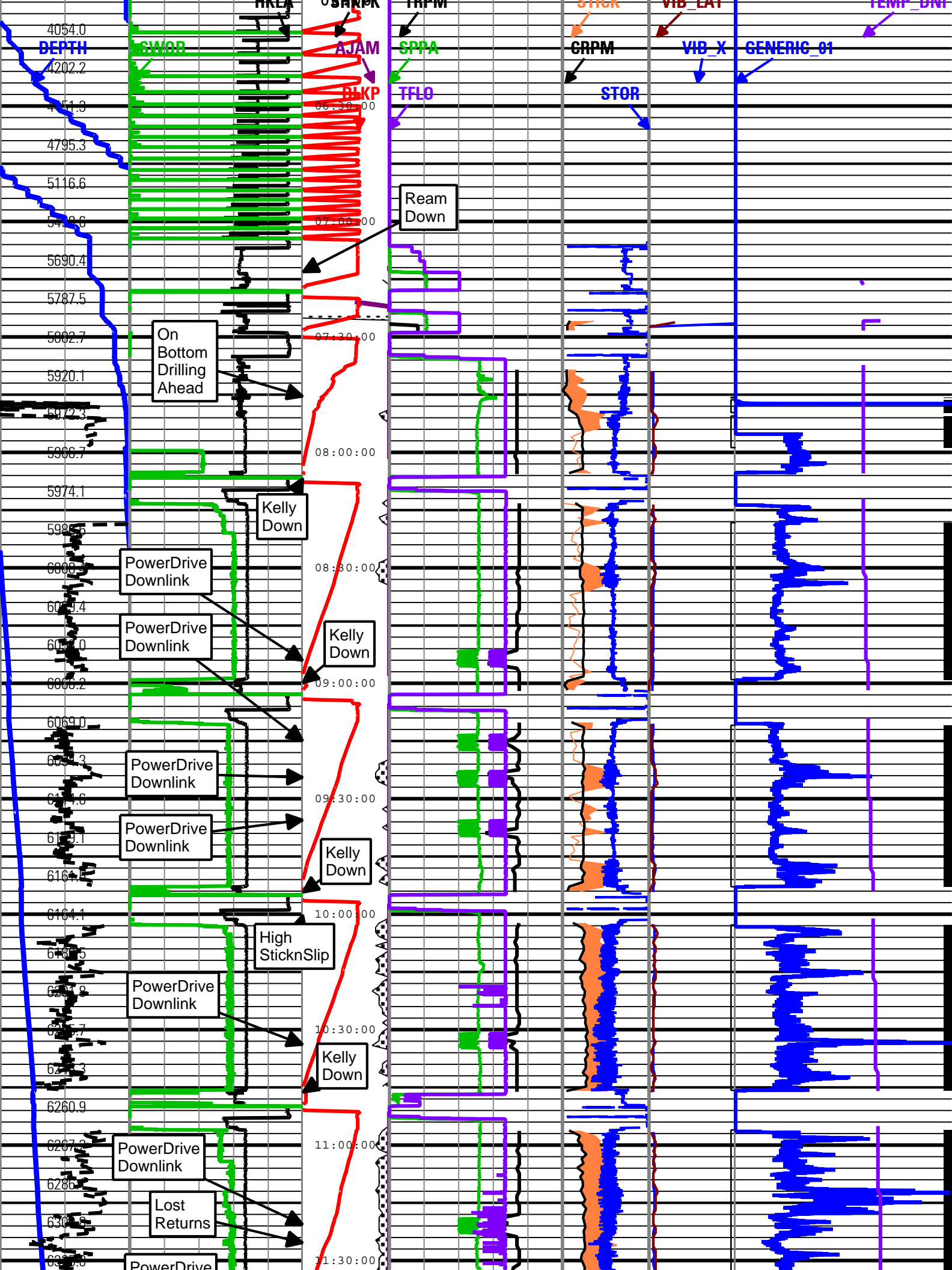
HKLA

TFLO

STOR

VIB_LAT

TEMP_DNI



4054.0
DEPTH

SWOB

AJAM

SPPA

GRPM

STOR

VIB_X

GENERIC_01

TEMP_DNT

4202.2

4451.3

4795.3

5116.6

5448.6

5690.4

5787.5

5882.7

5920.1

5972.3

5986.7

5974.1

5986.5

6000.0

6009.4

6015.0

6066.2

6069.0

6091.3

6114.6

6118.1

6164.5

6164.1

6166.5

6211.8

6216.7

6221.3

6260.9

6267.2

6266.0

6300.0

6300.0

USHRPK

TRFM

STICK

VIB_LAT

GENERIC_01

TEMP_DNT

BLKP

TFLO

GRPM

STOR

GENERIC_01

TEMP_DNT

Ream Down

On Bottom Drilling Ahead

Kelly Down

PowerDrive Downlink

Kelly Down

PowerDrive Downlink

PowerDrive Downlink

Kelly Down

PowerDrive Downlink

High SticknSlip

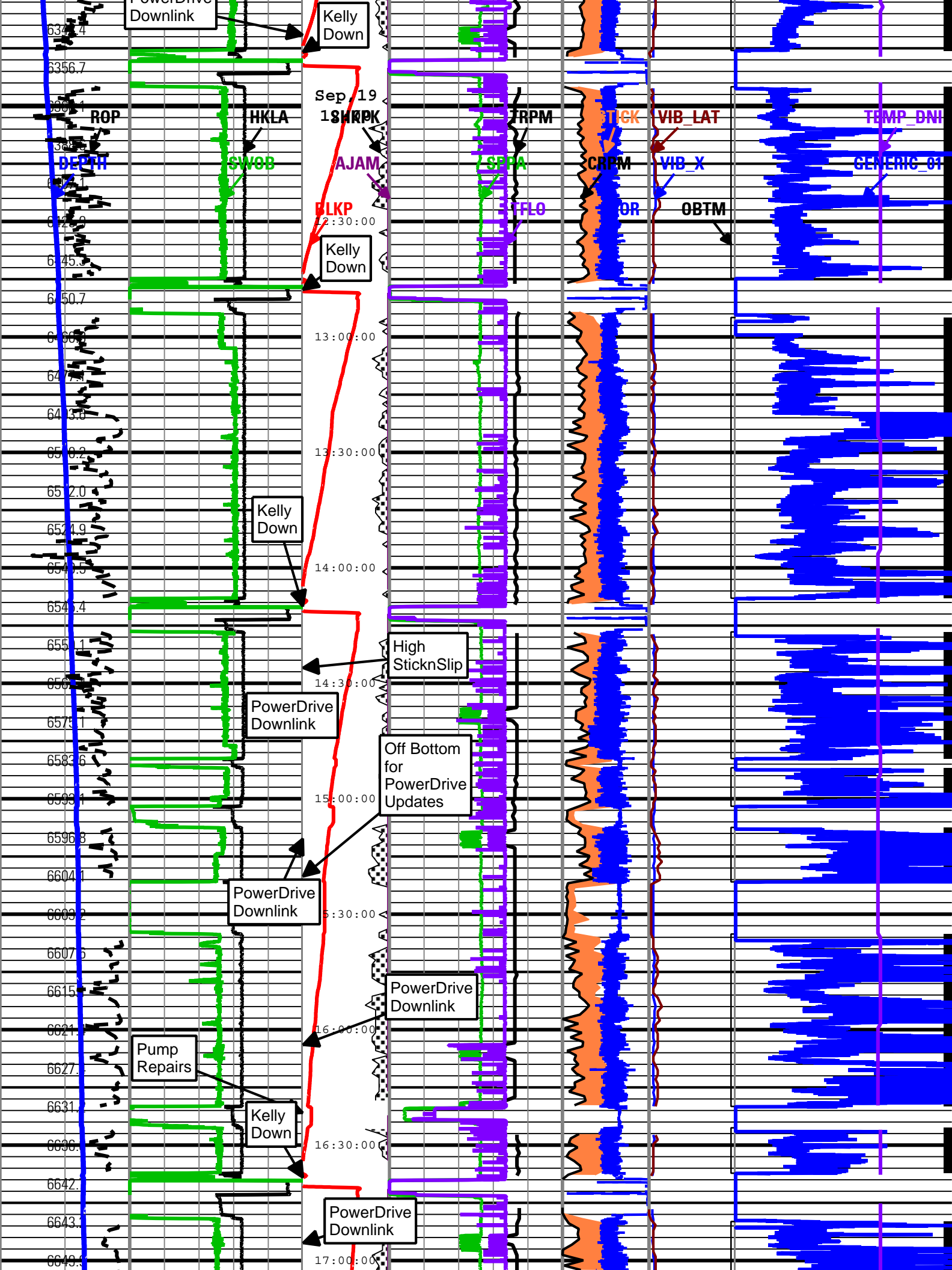
PowerDrive Downlink

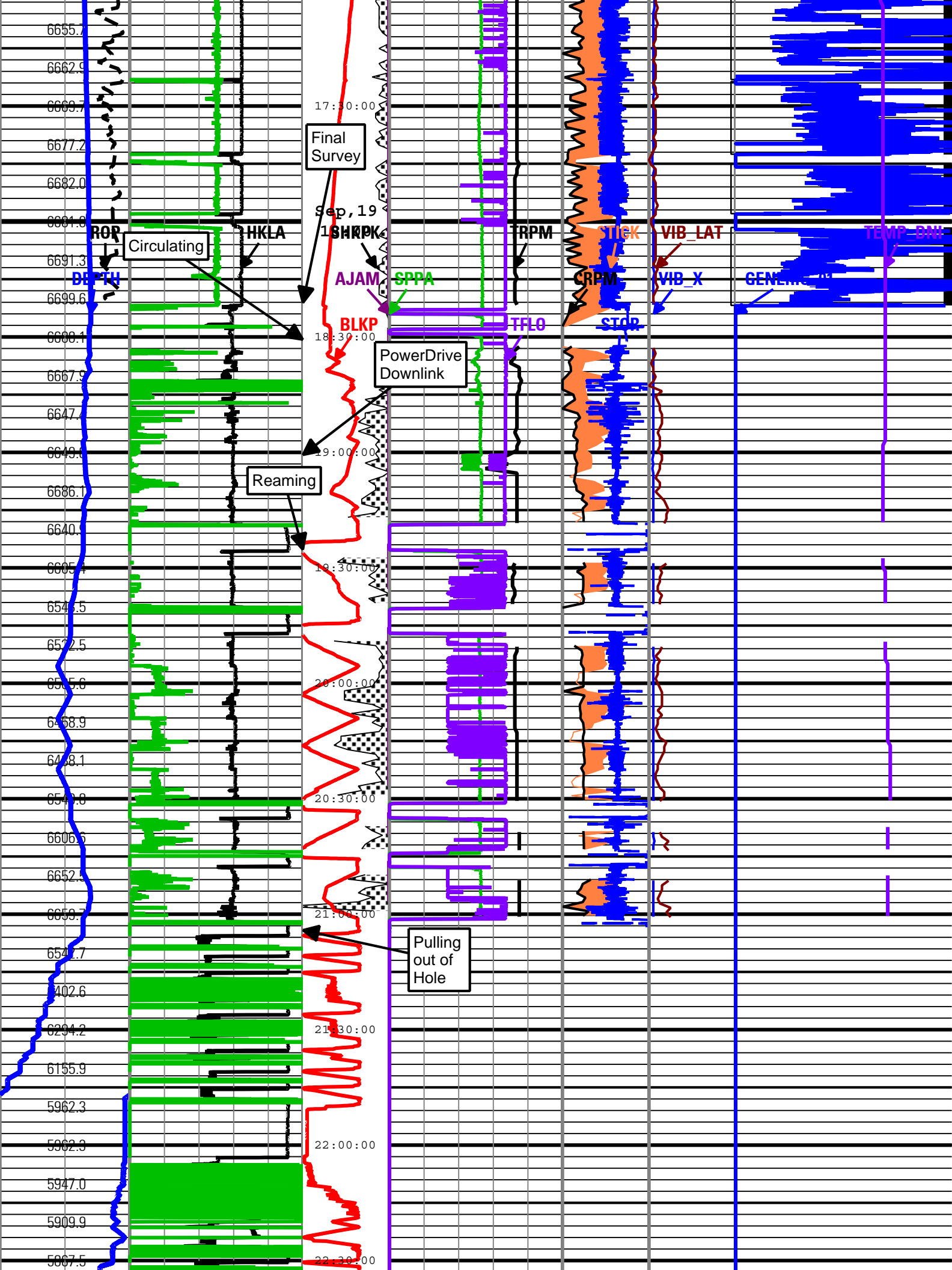
Kelly Down

PowerDrive Downlink

Lost Returns

PowerDrive





6655.7
6662.9
6669.7
6677.2
6682.0
6684.0
6691.3
6699.6
6680.1
6667.9
6647.7
6649.6
6686.1
6640.1
6605.7
6546.5
6522.5
6505.6
6458.9
6458.1
6547.0
6606.0
6652.3
6659.7
6547.7
402.6
6294.2
6155.9
5962.3
5962.3
5947.0
5909.9
5867.5

17:30:00
Final Survey
Sep, 19
18:30:00
19:00:00
19:30:00
20:00:00
20:30:00
21:00:00
21:30:00
22:00:00
22:30:00

ROP
Circulating
HKLA
SPPA
TRPM
STCK
VIB_LAT
TEMP-DHW
CRPM
VIB_X
GENERATOR

Circulating

Final Survey

Sep, 19

BLKP

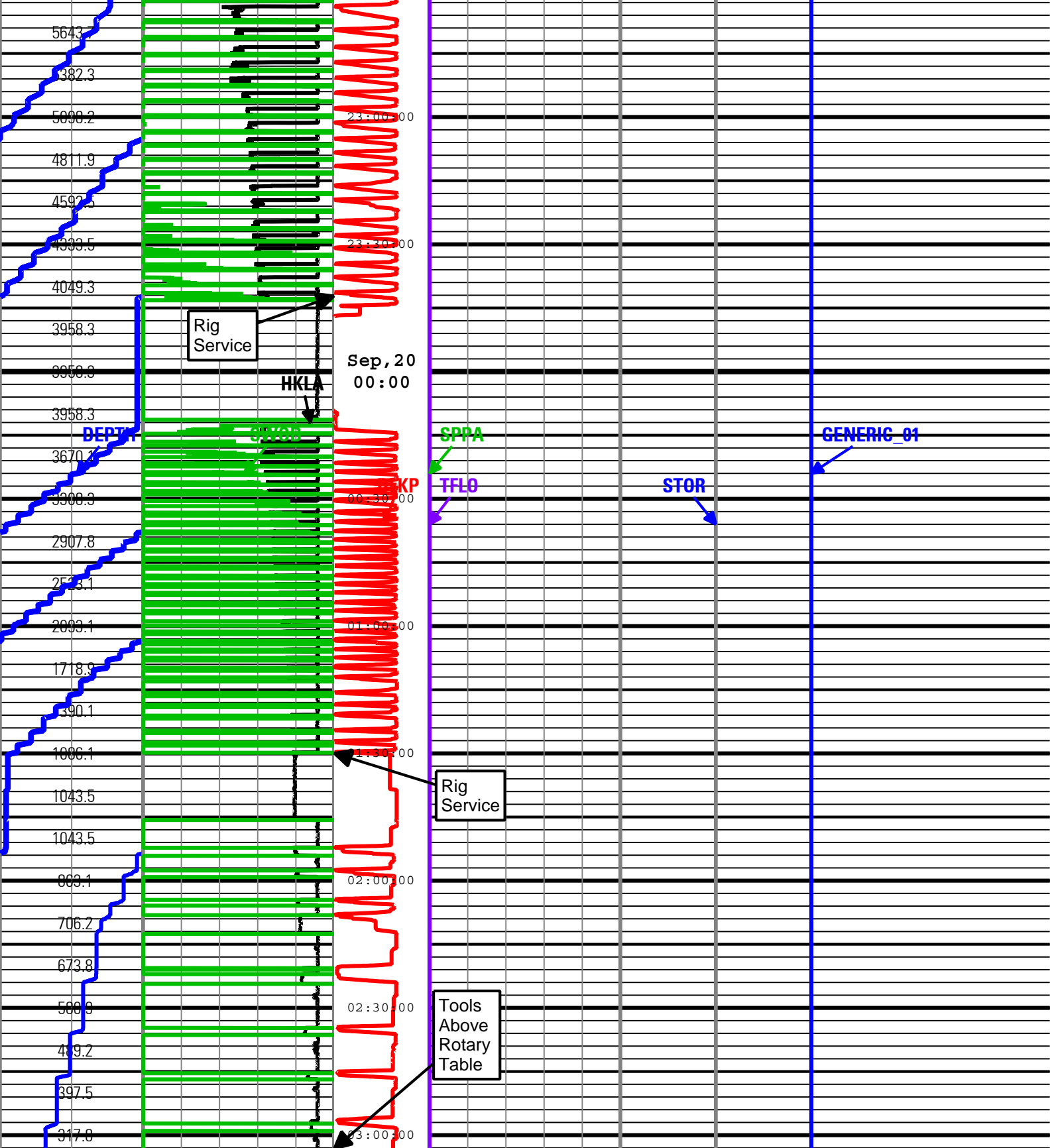
SPPA

TFLO

PowerDrive Downlink

Reaming

Pulling out of Hole



| | | | | | | |
|--------------------------------------------|--------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------|
| Depth Index (DEPTH) ft | Average Hookload (HKLA) 500 1000 lbf 0 | Shock Peak (SHKPK) 200 gn 0 | MWD Turbine Rotation Speed (TRPM) 1500 c/min 4500 | High StickSlip | Shock Risk | On Bottom |
| <u>Depth Index (DEPTH)</u> 0 ft 1000 | Surface Weight On Bit (SWOB) 0 1000 lbf 50 | Number of Anti-Jams Detected (AJAM) | Standpipe Pressure (SPPA) 0 psi 5000 | Stick Slip Indicator (STICK) 0 c/min 400 | RMS Vibration, X-Axis (VIB_X) 0 gn 10 | Generic Channel One (GENERIC_01) 0 100 |
| Rate of Penetration (ROP) 300 ft/h 0 | | | Total flow rate of all active pumps (TFLO) 0 gal/min 1000 | Collar Rotational Speed | Transverse RMS Vibration | Direction and Inclination Sensor Temperature (TEMP_DNI) 50 degF 175 |

5 0
 Height of
 block above
 rig floor
 (BLKP)
 0 ft 150

(CRPM) (VIB_LAT)
 0 c/min 400 0 gn 10
 Surface
 Torque
 (STOR)
 40 0
 1000 ft.lbf

Description: PowerPulse Drilling Mechanics Time RT Format: Log (PERFORM - Drilling Mechanics Time Log 2) Index Scale: 2 in per 3600 s Index Type: Time
 Creation Date: 22-Sep-2009 16:19:05

Tool Control Parameters

| Parameter | Description | ToolPath | Value | Unit |
|-----------|------------------------------------------------------|-------------|------------|------|
| OFFBTM_TH | Threshold for deciding whether the bit is off bottom | DnMWorkflow | Time Zoned | ft |

Time Zone Parameters

| Parameter | Value | Start | Stop |
|-----------|-------|----------------------|----------------------|
| OFFBTM_TH | 0 | 19-Sep-2009 01:11:35 | 19-Sep-2009 01:13:48 |
| OFFBTM_TH | 0.25 | 19-Sep-2009 01:13:48 | 20-Sep-2009 03:04:39 |

Company: ExxonMobil Oil Corporation

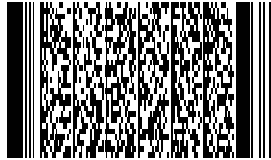
Well: Piceance Creek Unit 197 34B7


Field: Piceance Creek

County: Rio Blanco

State: Colorado

Country: U.S.A.





PERFORM - Drilling Mechanics

2 in / hr Time Based

Real Time Log