



Mudgrove

Petroleum Geology
212 Main Street, Claflin KS

NOTES

Company: H&B Petroleum Corp.

Lease: Wellman #1

Location: NE-SW-SE-SW (537' FSL & 1901' FWL)

Sec: 33 Twsp: 21S Rge: 9W

County: Rice State: Kansas

Field: Rino

KB: 1706' GL: 1697'

Contractor: Southwind Drilling, Inc. (Rig #9)

Spud: 04/20/2017 Comp: 04/28/2017

RTD: 3600' LTD: 3598'

Mud Up: 2600' Type Mud: Chemical

API #: 15-159-22841-00-00

Samples Saved From: 2700' to RTD

Drilling Time Kept From: 2700' to RTD

Samples Examined From: 2700' to RTD

Geological Supervision from: 2700' to RTD

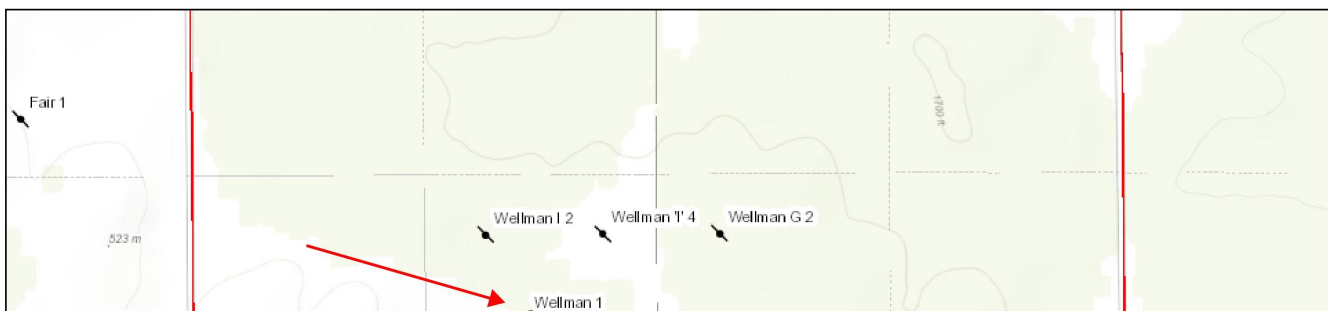
Geologist on Well: Wyatt Urban

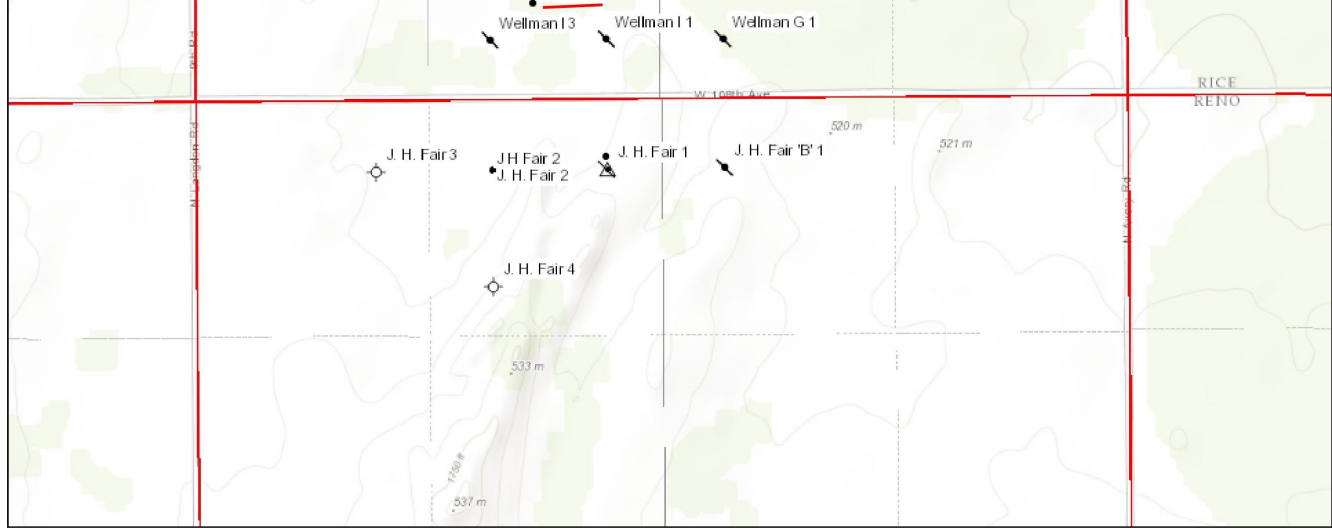
Surface Casing: 8 5/8" @ 351'

Production Casing: 5 1/2" @ 3598'

Electronic Surveys: Logged by ELI: CDL/CNL, DIL, MEL, SONIC

H&B Petroleum Corp- Wellman #1





H&B Petroleum Corporation

well comparison sheet

DRILLING WELL					COMPARISON WELL				COMPARISON WELL			
H&B Petroleum - Wellman #1					Thunderbird Drlg-Wellman #3				NCRA- I #2 WELLMAN			
NE-SW-SE-SW 33-21S-9W					SW-SE-SW 33-21S-9W				NW-SE-SW 33-21S-9W			
1706 KB					1703 KB				1703 KB			
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	2825	-1119	2823	-1117	2824	-1121	2	4	2831	-1128	9	11
Toronto	2841	-1135	2840	-1134	2841	-1138	3	4				
Douglas	2860	-1154	2859	-1153	2859	-1156	2	3				
Brown Lime	2964	-1258	2956	-1250	2964	-1261	3	11	2969	-1266	8	16
Lansing	2998	-1292	2993	-1287	2994	-1291	-1	4	3002	-1299	7	12
BKC	3270	-1564	3275	-1569	3279	-1576	12	7				
Viola	3386	-1680	3385	-1679	3374	-1671	-9	-8	3440	-1737	57	58
Simpson Sh .	3440	-1734	3440	-1734	3426	-1723	-11	-11				
Simpson Sd.	3452	-1746	3451	-1745	3433	-1730	-16	-15	3498	-1795	49	50
Arbuckle	3508	-1802	3506	-1800	3491	-1788	-14	-12	3564	-1861	59	61
RTD	3600	-1894	3600	-1894	3499	-1796	-98	-98	3569	-1866	-28	-28
RTD	3598	-1892	3600	-1894	3498	-1795	-97	-99				

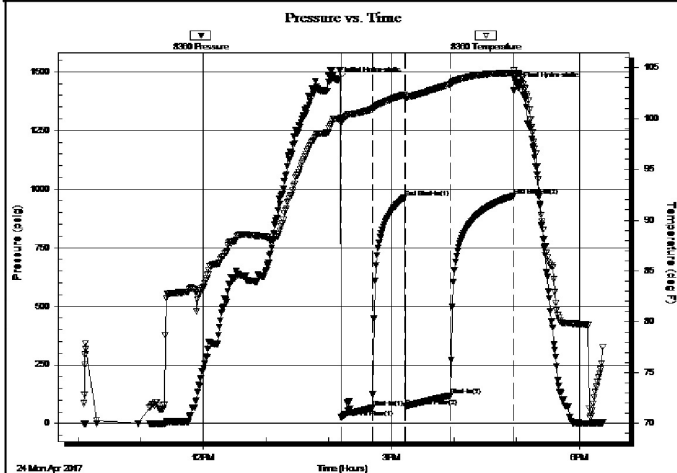
 TRILOBITE TESTING, INC.	DRILL STEM TEST REPORT	
	H&B Petroleum Corp PO Box 1305 Hutchinson Ks 67504-1305 ATTN: Al HammerSmith, Wyatt	33-21s-9w Rice Wellman #1 Job Ticket: 64141 DST#: 1 Test Start: 2017.04.24 @ 10:05:47

GENERAL INFORMATION:

Formation: LKC A-C Deviated: No Whipstock: ft (KB) Time Tool Opened: 14:11:42 Time Test Ended: 18:22:26 Interval: 3010.00 ft (KB) To 3052.00 ft (KB) (TVD) Total Depth: 3052.00 ft (KB) (TVD) Hole Diameter: 7.85 inches Hole Condition: Fair	Test Type: Conventional Bottom Hole (Initial) Tester: Ray Schwager Unit No: 77 Reference Elevations: 1706.00 ft (KB) 1697.00 ft (CF) KB to GR/CF: 9.00 ft
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Serial #: 8360 Inside Press@RunDepth: 118.88 psig @ 3016.00 ft (KB) Start Date: 2017.04.24 End Date: 2017.04.24 Start Time: 10:05:47 End Time: 18:22:26	Capacity: 8000.00 psig Last Calib.: 2017.04.24 Time On Btm: 2017.04.24 @ 14:09:27 Time Off Btm: 2017.04.24 @ 17:00:26
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TEST COMMENT: 30-IFP-w k to a gd bl 1/2to 9" bl
 30-ISIP- no bl
 45-FFP-w k to a gd bl 1/2"to 9"bl
 33-FFP-w k to a gd bl 1/2"to 9"bl



PRESSURE SUMMARY

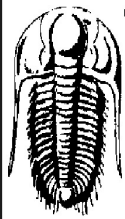
Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1464.66	99.99	Initial Hydro-static
3	27.05	99.51	Open To Flow (1)
33	67.97	100.92	Shut-In(1)
64	963.88	102.34	End Shut-In(1)
64	73.99	102.09	Open To Flow (2)
107	118.88	103.38	Shut-In(2)
168	971.12	104.47	End Shut-In(2)
171	1441.50	104.44	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	Water	1.68
90.00	MW 30%M70%W w/show of oil	1.26
2.00	CO	0.03
0.00	60 GIP	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

H&B Petroleum Corp

33-21s-9w Rice

PO Box 1305
Hutchinson Ks 67504-1305

Wellman #1

Job Ticket: 64142

DST#: 2

ATTN: Al HammerSmith, Wyatt

Test Start: 2017.04.25 @ 00:55:30

GENERAL INFORMATION:

Formation: LKC D-F

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 03:13:55

Time Test Ended: 07:29:54

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: 3054.00 ft (KB) To 3087.00 ft (KB) (TVD)

Total Depth: 3087.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1706.00 ft (KB)

1697.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8360

Inside

Press@RunDepth: 130.75 psig @ 3060.00 ft (KB)

Start Date: 2017.04.25

End Date:

2017.04.25

Start Time: 00:55:30

End Time:

07:29:54

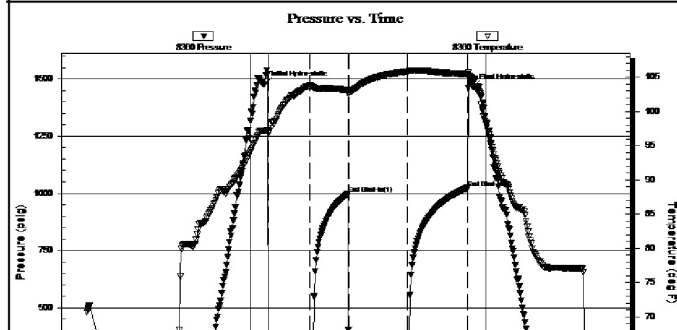
Capacity: 8000.00 psig

Last Calib.: 2017.04.25

Time On Btm: 2017.04.25 @ 03:10:55

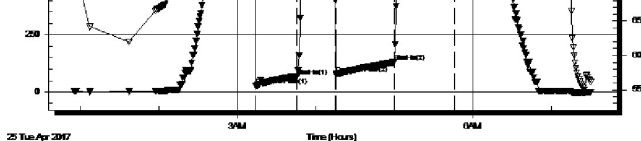
Time Off Btm: 2017.04.25 @ 05:50:09

TEST COMMENT: 30-IFP-w k bl thru-out 1/2" to 1 1/4" bl
 30-ISIP-no bl
 45-FFP-w k bl thru-out 1/2 " to 2" bl
 45-FSIP-no bl



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1475.97	97.18	Initial Hydro-static
3	26.21	96.79	Open To Flow (1)
35	69.21	103.80	Shut-In(1)
64	998.96	103.06	End Shut-In(1)
65	78.18	102.83	Open To Flow (2)
109	130.75	105.85	Shut-In(2)
155	1024.04	105.47	End Shut-In(2)
160	1465.63	104.82	Final Hydro-static



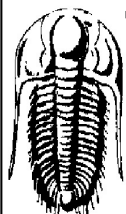
Recovery

Length (ft)	Description	Volume (bbl)
120.00	Water	1.68
60.00	MMW 10%M90%W w/show of oil	0.84
40.00	SOCMW 1%O40%M59%W	0.56
5.00	CO	0.07
0.00	75'GIP	0.00

* Recovery from multiple tests

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&B Petroleum Corp

PO Box 1305
Hutchinson Ks 67504-1305

ATTN: Al HammerSmith, Wyatt

33-21s-9w Rice

Wellman #1

Job Ticket: 64143

DST#: 3

Test Start: 2017.04.26 @ 16:35:16

GENERAL INFORMATION:

Formation: **Simp. Sd**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 18:28:11

Time Test Ended: 23:01:25

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: **3410.00 ft (KB) To 3465.00 ft (KB) (TVD)**

Total Depth: 3465.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1706.00 ft (KB)

1697.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: 8360

Inside

Press@RunDepth: 194.22 psig @ 3412.00 ft (KB)

Start Date: 2017.04.26

End Date:

2017.04.26

Start Time: 16:35:16

End Time:

23:01:25

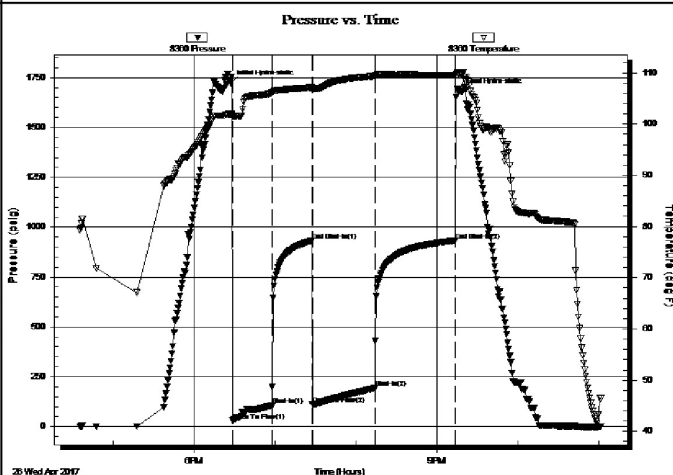
Capacity: 8000.00 psig

Last Calib.: 2017.04.26

Time On Btm: 2017.04.26 @ 18:26:56

Time Off Btm: 2017.04.26 @ 21:16:40

TEST COMMENT: 30-IFP-BOB in 11 min
30-ISIP-w k surface bl bk
45-FFP-BOB in 14 min
60-FSIP-w k surface bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1720.81	101.92	Initial Hydro-static
2	31.07	101.45	Open To Flow (1)
31	105.19	106.12	Shut-In(1)
60	931.81	107.14	End Shut-In(1)
61	110.63	106.88	Open To Flow (2)
107	194.22	109.36	Shut-In(2)
167	932.55	109.51	End Shut-In(2)
170	1681.42	109.79	Final Hydro-static

Recovery

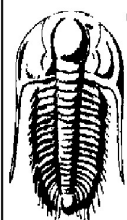
Length (ft)	Description	Volume (bbl)
120.00	SOCW 1%O 99%W	1.68
180.00	GOCMW 30%G 6%O 20%M 44%W	2.52
80.00	O&GCM 5%G 8%O 5%W 82%M	1.12
0.00	52'GIP	0.00

Gas Rates

Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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0.00	535' GIP	0.00

* Recovery from multiple tests



**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&B Petroleum Corp

33-21s-9w Rice

PO Box 1305
Hutchinson Ks 67504-1305

Wellman #1

Job Ticket: 64144

DST#: 4

ATTN: Al HammerSmith, Wyatt

Test Start: 2017.04.27 @ 09:05:59

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 11:24:54

Time Test Ended: 15:55:53

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: **3508.00 ft (KB) To 3516.00 ft (KB) (TVD)**

Reference Elevations: 1706.00 ft (KB)

Total Depth: 3516.00 ft (KB) (TVD)

1697.00 ft (CF)

Hole Diameter: 7.85 inches Hole Condition: Fair

KB to GR/CF: 9.00 ft

Serial #: 8360

Inside

Press@RunDepth: 143.32 psig @ 3510.00 ft (KB)

Capacity: 8000.00 psig

Start Date: 2017.04.27

End Date:

2017.04.27

Last Calib.: 2017.04.27

Start Time: 09:05:59

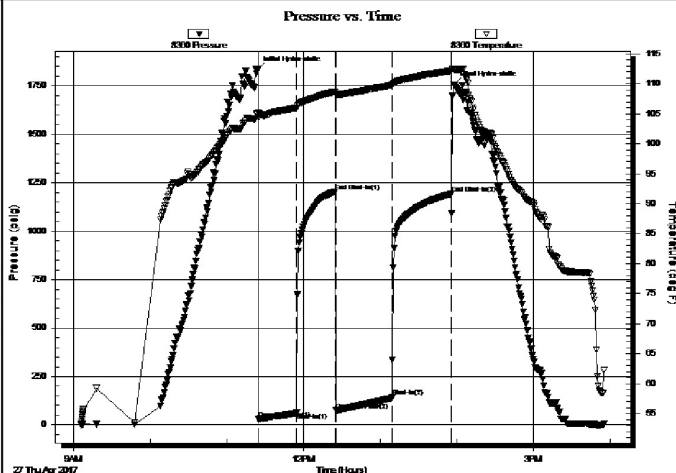
End Time:

15:55:53

Time On Btm: 2017.04.27 @ 11:23:39

Time Off Btm: 2017.04.27 @ 13:57:38

TEST COMMENT: 30-IFP-BOB in 5 min
30-ISIP-3/4"bl bk
45-FFP-BOB in 10min
45-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1831.59	105.09	Initial Hydro-static
2	28.81	104.41	Open To Flow (1)
31	62.22	105.97	Shut-In(1)
62	1203.82	108.66	End Shut-In(1)
62	75.70	108.26	Open To Flow (2)
106	143.32	109.79	Shut-In(2)
153	1192.36	112.15	End Shut-In(2)
154	1754.03	112.41	Final Hydro-static

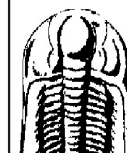
Recovery

Length (ft)	Description	Volume (bbl)
20.00	GMO 35%G20%M45%O	0.28
330.00	CO	4.63
0.00	515' GIP	0.00

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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**TRILOBITE
TESTING, INC.**

DRILL STEM TEST REPORT

H&B Petroleum Corp

33-21s-9w Rice

PO Box 1305
Hutchinson Ks 67504-1305

Wellman #1

GENERAL INFORMATION:

Formation: **Arbuckle**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 00:19:05

Time Test Ended: 03:53:19

Test Type: Conventional Bottom Hole (Reset)

Tester: Ray Schwager

Unit No: 77

Interval: **3517.00 ft (KB) To 3535.00 ft (KB) (TVD)**

Total Depth: 3535.00 ft (KB) (TVD)

Hole Diameter: 7.85 inches Hole Condition: Fair

Reference Elevations: 1706.00 ft (KB)

1697.00 ft (CF)

KB to GR/CF: 9.00 ft

Serial #: **8360**

Inside

Press@RunDepth: 1302.51 psig @ 3518.00 ft (KB)

Start Date: 2017.04.27

End Date:

2017.04.28

Capacity: 8000.00 psig

Last Calib.: 2017.04.28

Start Time: 22:55:25

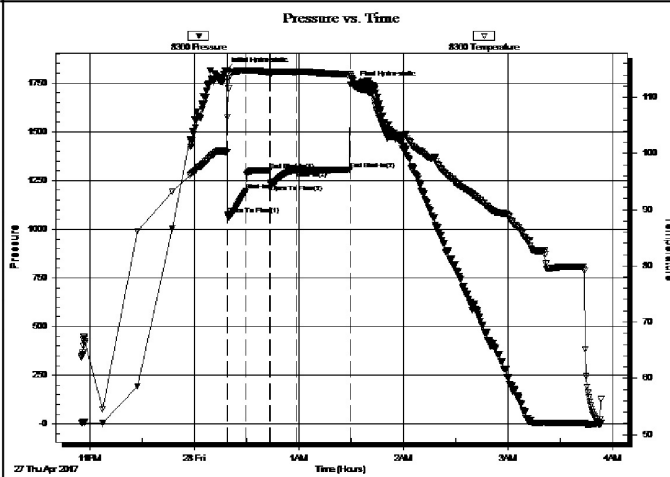
End Time:

03:53:19

Time On Btm: 2017.04.28 @ 00:17:50

Time Off Btm: 2017.04.28 @ 01:31:35

TEST COMMENT: 10-IFP-BOB thru-out
15-ISIP-no bl bk
15-FFP-BOB thru-out
30-FSIP-no bl bk



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	1812.16	100.26	Initial Hydro-static
2	1073.49	106.46	Open To Flow (1)
12	1196.01	114.73	Shut-In(1)
26	1301.79	114.40	End Shut-In(1)
26	1228.21	114.09	Open To Flow (2)
41	1302.51	114.51	Shut-In(2)
72	1303.79	113.99	End Shut-In(2)
74	1744.31	111.96	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	MW 20% M80% W	1.68
2760.00	Water	38.72

* Recovery from multiple tests

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
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ROCK TYPES

	Cht vari		Lmst fw<7		shale, gry		shale, red
	Dolprim		shale, grn		Carbon Sh		Ss

ACCESSORIES

STRINGER

Sandstone

OTHER SYMBOLS

Oil Show

- Good Show
- Fair Show
- Poor Show
- Spotted or Trace
- Questionable Stn
- Dead Oil Stn
- Fluorescence
- * Gas

DST

- DST Int
- DST alt
- Core
- tail pipe

