Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/14/11

Project/Site: KAFB	**Casing:** PVC	**Shaw QC GP:** D. Castaneda
Location: Arizona St.	**Diameter:** 5"	**Logging Firm:** Jet West
Hole ID: KAFB-106051	**Well Depth:** 540 ↳ bottom of sump @ 521 ft	**Screen Type/ Size:** PVC

Tool 1 - Induction and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a

2) Induction Cal. Coil Test (cps) Pre-log (D) n/a Post-log (D) n/a

Pre-log (M) n/a Post-log (M) n/a

3) Induction Zero Test (cps) Pre-log (D) n/a Post-log (D) n/a

Pre-log (M) n/a Post-log (M) n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): ~~518.74 ft~~ DC 6/14 521.06	Repeat Interval (ft): 365 → 265

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1115	Start Time: 1138
Logging Speed (ft/min): 29	Logging Speed (ft/min): 29
End Time: 1133	End Time: 1141
Start Depth/End Depth (ft): 8.53 - 8.80	Start Depth/End Depth (ft): 8.53 - 8.75
Depth Error (ft): 0.27	Depth Error (ft): 0.22

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a

2) Neutron Attached Source (cps) Pre-log n/a Post-log n/a

3) Neutron Removed Source (cps) Pre-log n/a Post-log n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): ~~518.74 ft~~ DC 6/14 521.32	Repeat Interval (ft): will use first run after shifting depth

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1019	Start Time: 1046
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1038	End Time: 1103
Failed Start Depth/End Depth (ft): 9.15 - 6.83	Start Depth/End Depth (ft): 9.15 - 9.43
Depth Error (ft): 2.32	Depth Error (ft): 0.28

Comments: re-did neutron log b/c depth error was off by a lot repeat section area specifies stats for main log. will use the 380 - 280 ft section of the first log as our repeat.

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/15/11

Project/Site: KAFB	**Casing:** PVC	**Shaw QC GP:** D. Castañeda
Location: San Pedro	**Diameter:** 5"	**Logging Firm:** Jet West
Hole ID: KAFB-106031	**Well Depth:** 540ft	**Screen Type/ Size:** PVC

Tool 1 - Induction and Natural Gamma Ray Logs AM check

1) GR Background and Sleeve (cps)	Pre-log 63 + 156	Post-log N/a
2) Induction Cal. Coil Test (cps)	Pre-log (D) 4473	Post-log (D) N/a
	Pre-log (M) 7202	Post-log (M) N/a
3) Induction Zero Test (cps)	Pre-log (D) 904	Post-log (D) N/a
	Pre-log (M) 1129	Post-log (M) N/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 516.09	Repeat Interval (ft): 160 -> 60

Log Survey Information	**Repeat Log Survey Information**
Start Time: 0754	Start Time: 0815
Logging Speed (ft/min): 29	Logging Speed (ft/min): 29
End Time: 0811	End Time: 0819
Start Depth/End Depth (ft): 8.53 - 8.77	Start Depth/End Depth (ft): 8.53 - 8.58
Depth Error (ft): 0.24	Depth Error (ft): 0.05

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs AM check

1) GR Background and Sleeve (cps)	Pre-log 57 + 160	Post-log N/a
2) Neutron Attached Source (cps)	Pre-log 339	Post-log N/a
3) Neutron Removed Source (cps)	Pre-log 0.6	Post-log N/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 516.21	Repeat Interval (ft): 220 -> 120

Log Survey Information	**Repeat Log Survey Information**
Start Time: 0841	Start Time: 0902
Logging Speed (ft/min): 30	Logging Speed (ft/min): 30'
End Time: 0859	End Time: 0906
Start Depth/End Depth (ft): 9.15 - 9.39	Start Depth/End Depth (ft): 9.15 - 9.22
Depth Error (ft): 0.24	Depth Error (ft): 0.07

Comments:

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/15/11

Project/Site: KAFB **Casing:** PVC **Shaw QC GP:** D. Castaneda
Location: California & Gibson **Diameter:** 5" **Logging Firm:** Jet West
Hole ID: KAFB-106093 **Well Depth:** 600ft **Screen Type/ Size:** PVC
↳ according to driller

Tool 1 - Induction and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a
2) Induction Cal. Coil Test (cps) Pre-log (D) n/a Post-log (D) n/a
Pre-log (M) n/a Post-log (M) n/a
3) Induction Zero Test (cps) Pre-log (D) n/a Post-log (D) n/a
Pre-log (M) n/a Post-log (M) n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 563.26	Repeat Interval (ft): 220 → 120

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1316	Start Time: 1337
Logging Speed (ft/min): 28	Logging Speed (ft/min): 29
End Time: 1334	End Time: 1341
Start Depth/End Depth (ft): 8.53 - 8.77	Start Depth/End Depth (ft): 8.53 - 8.54
Depth Error (ft): 0.24	Depth Error (ft): 0.01

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a
2) Neutron Attached Source (cps) Pre-log n/a Post-log n/a
3) Neutron Removed Source (cps) Pre-log n/a Post-log n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 563.48	Repeat Interval (ft): 240 → 140

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1356	Start Time: 1420
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1416	End Time: 1424
Start Depth/End Depth (ft): 9.15 - 9.37	Start Depth/End Depth (ft): 9.15 - 9.20
Depth Error (ft): 0.22	Depth Error (ft): 0.05

Comments:

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/16/11

Project/Site: KAFB	**Casing:** PVC	**Shaw QC GP:** O. Castaneda
Location: Bullhead Park	**Diameter:** 5"	**Logging Firm:** Jet West
Hole ID: KAFB-106068	**Well Depth:** 620 ft	**Screen Type/ Size:** PVC

Tool 1 - Induction and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a

2) Induction Cal. Coil Test (cps) Pre-log (D) n/a Post-log (D) n/a

Pre-log (M) n/a Post-log (M) n/a

3) Induction Zero Test (cps) Pre-log (D) n/a Post-log (D) n/a

Pre-log (M) n/a Post-log (M) n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 600.42	Repeat Interval (ft): 170 → 40
Log Survey Information	**Repeat Log Survey Information**
Start Time: 1239	Start Time: 1301
Logging Speed (ft/min): 29	Logging Speed (ft/min): 29
End Time: 1259	End Time: 1306
Start Depth/End Depth (ft): 8.53 - 8.72	Start Depth/End Depth (ft): 8.53 - 8.58
Depth Error (ft): 0.19	Depth Error (ft): 0.05

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a

2) Neutron Attached Source (cps) Pre-log n/a Post-log n/a

3) Neutron Removed Source (cps) Pre-log n/a Post-log n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 600.62	Repeat Interval (ft): 120 → 20
Log Survey Information	**Repeat Log Survey Information**
Start Time: 1156	Start Time: 1219
Logging Speed (ft/min): 29	Logging Speed (ft/min): 27
End Time: 1217	End Time: 1223
Start Depth/End Depth (ft): 9.15 - 9.93	Start Depth/End Depth (ft): 9.15 - 9.19
Depth Error (ft): 0.28	Depth Error (ft): 0.04

Comments:

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/17/11

Project/Site: KAFB **Casing:** PVC **Shaw QC GP:** D. Castaneda
Location: VA hospital employee lot **Diameter:** 5" **Logging Firm:** Jet West
Hole ID: KAFB-106074 **Well Depth:** 620 ft **Screen Type/ Size:** PVC
→ bottom of sump @ 589 ft

Tool 1 - Induction and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a
2) Induction Cal. Coil Test (cps) Pre-log (D) n/a Post-log (D) n/a
Pre-log (M) n/a Post-log (M) n/a
3) Induction Zero Test (cps) Pre-log (D) n/a Post-log (D) n/a
Pre-log (M) n/a Post-log (M) n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 589.29	Repeat Interval (ft): 270 → 170

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1014	Start Time: 1039
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1035	End Time: 1043
Start Depth/End Depth (ft): 8.53 - 8.74	Start Depth/End Depth (ft): 8.53 - 8.62
Depth Error (ft): 0.21	Depth Error (ft): 0.09

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

1) GR Background and Sleeve (cps) Pre-log n/a Post-log n/a
2) Neutron Attached Source (cps) Pre-log n/a Post-log n/a
3) Neutron Removed Source (cps) Pre-log n/a Post-log n/a

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 589.55	Repeat Interval (ft): 300 → 190

Log Survey Information	**Repeat Log Survey Information**
Start Time: 0933	Start Time: 0957
Logging Speed (ft/min): 29	Logging Speed (ft/min): 28
End Time: 0952	End Time: 1001
Start Depth/End Depth (ft): 9.15 - 9.31	Start Depth/End Depth (ft): 9.15 - 9.27
Depth Error (ft): 0.16	Depth Error (ft): 0.12

Comments:

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/17/11

Project/Site: KAFB **Casing:** PVC **Shaw QC GP:** D. Castaneda
Location: VA hospital overflow lot **Diameter:** 5" **Logging Firm:** Jet West
Hole ID: KAFB-106100 **Well Depth:** 570 ft **Screen Type/ Size:** PVC
↳ bottom of sump @ 546 ft

Tool 1 - Induction and Natural Gamma Ray Logs

PM check

1) GR Background and Sleeve (cps) Pre-log n/a Post-log 46 & 142
2) Induction Cal. Coil Test (cps) Pre-log (D) n/a Post-log (D) 4235
Pre-log (M) n/a Post-log (M) 6974
3) Induction Zero Test (cps) Pre-log (D) n/a Post-log (D) 832
Pre-log (M) n/a Post-log (M) 1013

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 546.49	Repeat Interval (ft): 220 → 120

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1536	Start Time: 1559
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1556	End Time: 1603
Start Depth/End Depth (ft): 8.53 - 8.70	Start Depth/End Depth (ft): 8.53 - ~~8.82~~ DC 6/17 8.7
Depth Error (ft): 0.17	Depth Error (ft): ~~0.29~~ DC 6/17 0.21

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

PM check

1) GR Background and Sleeve (cps) Pre-log n/a Post-log 55 + 148
2) Neutron Attached Source (cps) Pre-log n/a Post-log 341
3) Neutron Removed Source (cps) Pre-log n/a Post-log 1.4

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 547.03	Repeat Interval (ft): 300 → 200

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1445	Start Time: 1508
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1503	End Time: 1512
Start Depth/End Depth (ft): 9.15 - 9.33	Start Depth/End Depth (ft): 9.15 - 9.23
Depth Error (ft): 0.18	Depth Error (ft): 0.08

Comments:

Shaw Group Inc.

KAFB Geophysical Logging QC Form

Date: 6/18/11

Project/Site: KAFB	**Casing:** PVC	**Shaw QC GP:** D. Castañeda
Location: Ridgecrest	**Diameter:** 5"	**Logging Firm:** Jet West
Hole ID: KAFB-~~106071~~ DC 6AB106071	**Well Depth:** 595ft	**Screen Type/ Size:** PVC

↳ BoS @ 568 ft

Tool 1 - Induction and Natural Gamma Ray Logs

PM check

1) GR Background and Sleeve (cps)	Pre-log n/a	Post-log 51 + 149
2) Induction Cal. Coil Test (cps)	Pre-log (D) n/a	Post-log (D) 4374
	Pre-log (M) n/a	Post-log (M) 7141
3) Induction Zero Test (cps)	Pre-log (D) n/a	Post-log (D) 868
	Pre-log (M) n/a	Post-log (M) 1095

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 567.83	Repeat Interval (ft): 470 -> 370

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1124	Start Time: 1149
Logging Speed (ft/min): 30	Logging Speed (ft/min): 28
End Time: 1144	End Time: 1153
Start Depth/End Depth (ft): 8.53 - 8.76	Start Depth/End Depth (ft): 8.53 - 8.69
Depth Error (ft): 0.23	Depth Error (ft): 0.16

Comments:

Tool 2 - Neutron and Natural Gamma Ray Logs

PM check

1) GR Background and Sleeve (cps)	Pre-log n/a	Post-log 57 + 160
2) Neutron Attached Source (cps)	Pre-log n/a	Post-log 353
3) Neutron Removed Source (cps)	Pre-log n/a	Post-log 1.2

Survey Depth Information	**Repeat Log Depth Information**
Reference: ground surface	Reference: ground surface
Total Depth (ft): 567.54	Repeat Interval (ft): 470 -> 370

Log Survey Information	**Repeat Log Survey Information**
Start Time: 1219	Start Time: 1245
Logging Speed (ft/min): 28	Logging Speed (ft/min): 28
End Time: 1239	End Time: 1249
Start Depth/End Depth (ft): 9.15 - 8.96	Start Depth/End Depth (ft): 9.15 - 9.29
Depth Error (ft): 0.19	Depth Error (ft): 0.14

Comments: