**Century**
**WIRELINE SERVICES**

# GAMMA - CALIPER
# COMPENSATED DENSITY
# DHGH-14-08

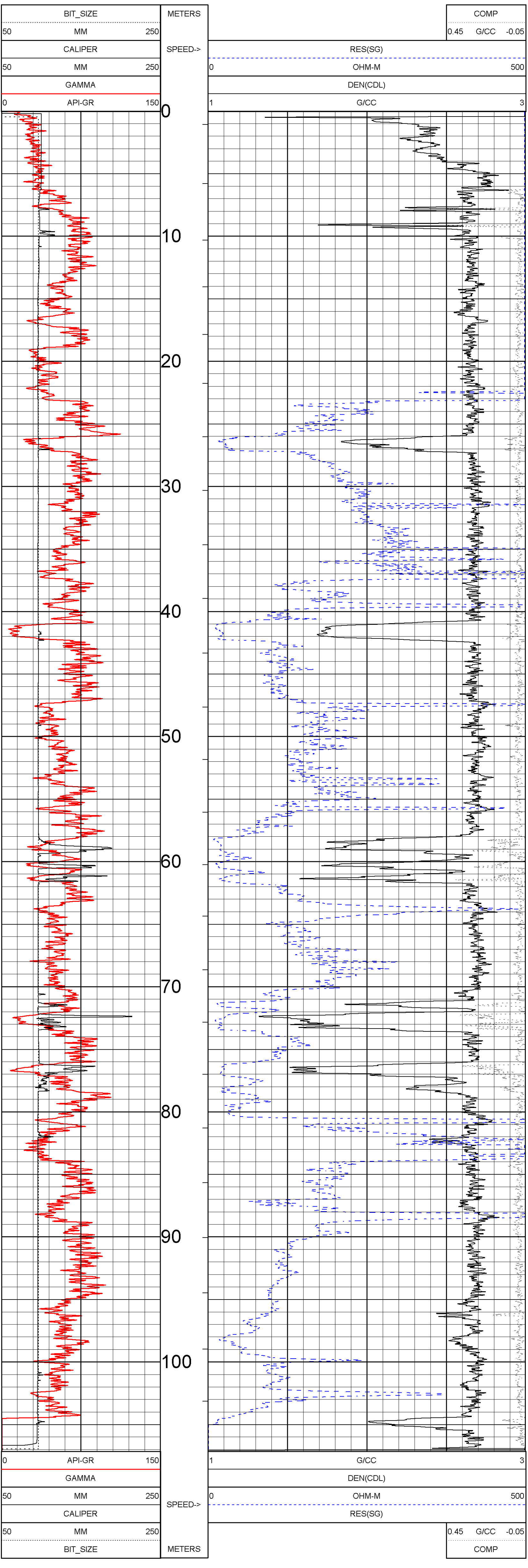
| | | | |
|---|---|---|---|
| COMPANY | :ATRUM COAL | OTHER SERVICES: | |
| WELL | :DHGH-14-08 | DIP<br>NEUTRON<br>SONIC | |
| FIELD | :GROUNDHOG | | |
| COUNTRY | :CANADA | | |
| PROVINCE | :BRITISH COLUMBIA | | |
| LSD | :GROUNDHOG | | |
| SECTION | :N/A | | |
| TOWNSHIP | :N/A | | |
| RANGE | :N/A | | |
| LICENSE NO. | :N/A | | |
| UNIQUE WELL ID. | :N/A | | |
| PERMANENT DATUM | :GL | ELEVATION KB | :N/A |
| LOG MEASURED FROM | :GL | ELEVATION DF | :N/A |
| DRL MEASURED FROM | :GL | ELEVATION GL | :N/A |
| DATE | :06/05/14 | RIG NUMBER | :2 |
| DEPTH DRILLER | :108.81 | LOGGER TD | :107.54 |
| BIT SIZE | :97.00 | ARRIVAL TIME | :19:00 |
| LOG TOP | :-1.90 | DEPARTURE TIME | :7:30 |
| LOG BOTTOM | :107.11 | CIRC STOPPED | :N/A |
| CASING LOGGER | :7.32 | | |
| CASING DRILLER | :7.32 | | |
| CASING TYPE | :STEEL | | |
| BOREHOLE FLUID | :WATER | | |
| RM TEMPERATURE | :N/A | | |
| MUD RES | :N/A | | |
| MUD WEIGHT | :1.00 | | |
| WITNESSED BY | :N/A | | |
| RECORDED BY | :T. NEAL | | |
| REMARKS 1 | :VERTICAL | | |
| REMARKS 2 | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

## DENSITY LOG 1:200 DHGH-14-08 06/05/14

### LOG PARAMETERS

| | | |
|---|---|---|
| MATRIX DENSITY : 2.65 | NEUTRON MATRIX : SANDSTONE | MATRIX DELTA T : 177 |
| MAGNETIC DECL : 19.5 | ELECT. CUTOFF : 75000 | BIT SIZE : 97.00 |
| PRESENTATION NAME/DATE = | Atrum_9239-(200 scale).0 04/07/2014 | VERSION = 3.64KX |



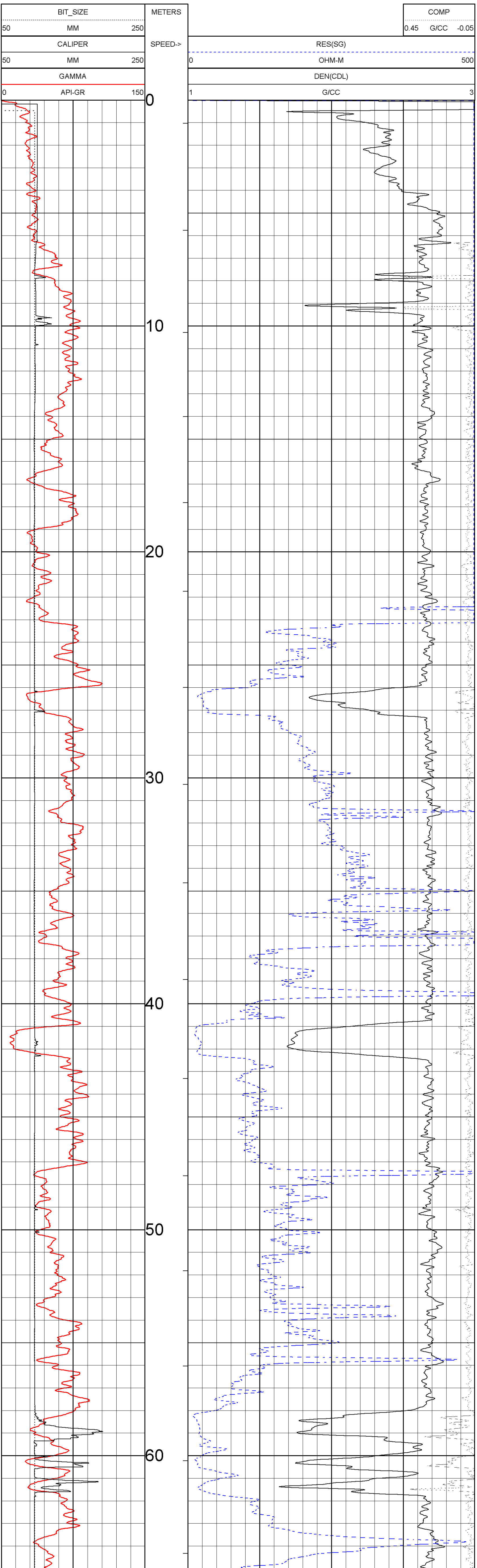
# DENSITY LOG 1:200 DHGH-14-08 06/05/14

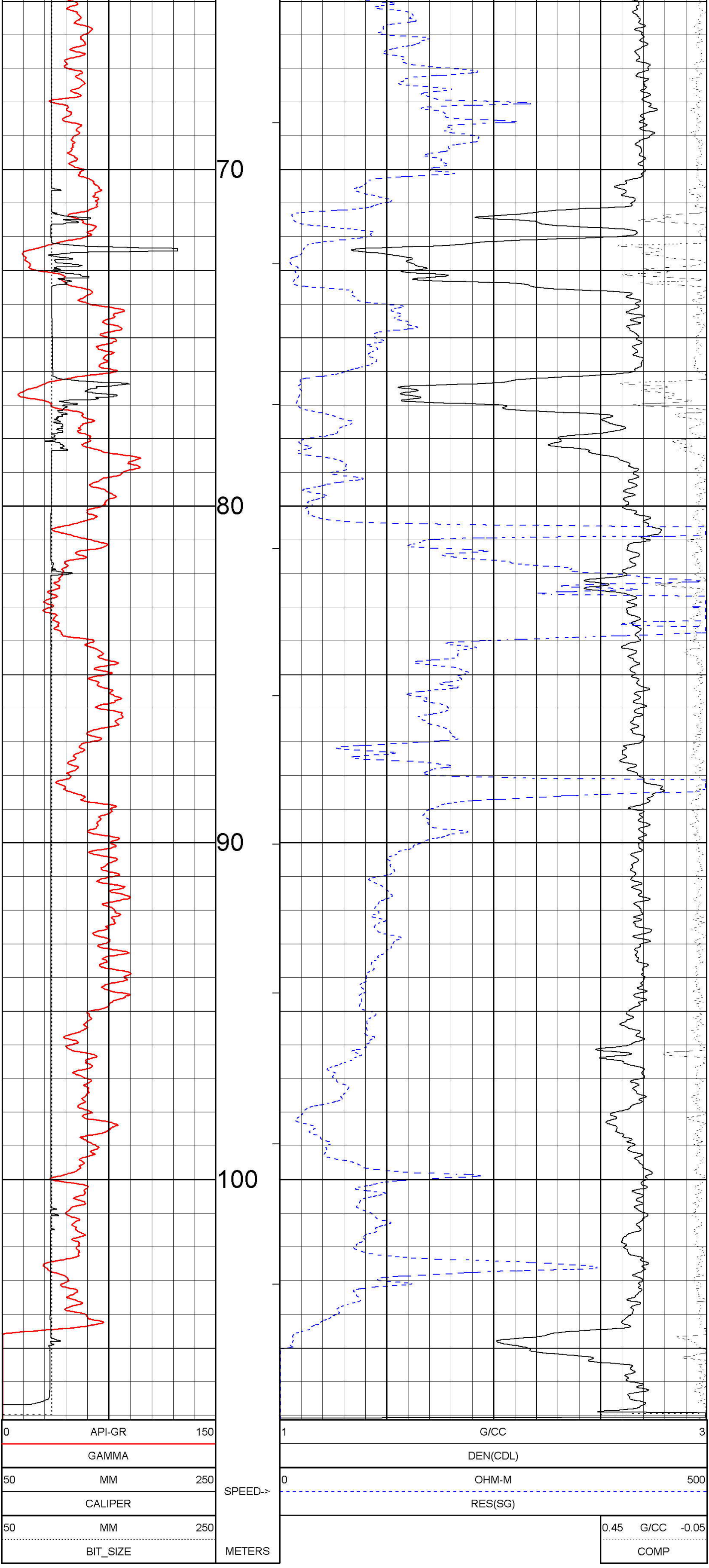
## LOG PARAMETERS

MATRIX DENSITY : 2.65
MAGNETIC DECL : 19.5
PRESENTATION NAME/DATE = Atrum_9239-(200 scale).0 04/07/2014

NEUTRON MATRIX : SANDSTONE
ELECT. CUTOFF : 75000

MATRIX DELTA T : 177
BIT SIZE : 97.00
VERSION = 3.64KX





TOOL CALIBRATION DHGH-14-08 06/05/14 01:23
TOOL 9239C TM VERSION 2025
SERIAL NUMBER 2477

| | DATE | TIME | SENSOR | STANDARD | | RESPONSE | |
|---|---|---|---|---|---|---|---|
| 1 | Mar21,14 | 14:16:58 | GAMMA | 0.100 | [API-GR ] | 4.000 | [CPS] |
| | Mar21,14 | 14:16:58 | GAMMA | 545.000 | [API-GR ] | 589.000 | [CPS] |
| 2 | Jun14,13 | 08:36:44 | VOLTAGE | 26.400 | [MV ] | 8050.000 | [CPS] |
| | Jun14,13 | 08:36:44 | VOLTAGE | 229.200 | [MV ] | 35258.000 | [CPS] |
| 3 | Mar21,14 | 13:07:48 | CALIPER | 100.000 | [MM ] | 168300.000 | [CPS] |
| | Mar21,14 | 13:07:48 | CALIPER | 200.000 | [MM ] | 423180.000 | [CPS] |
| 4 | Mar21,14 | 13:58:29 | DEN(LS) | 1.620 | [G/CC ] | 8686.000 | [CPS] |
| | Mar21,14 | 13:58:29 | DEN(LS) | 2.612 | [G/CC ] | 1205.000 | [CPS] |
| 5 | Mar21,14 | 13:59:03 | DEN(SS) | 1.590 | [G/CC ] | 31905.000 | [CPS] |
| | Mar21,14 | 13:59:03 | DEN(SS) | 2.580 | [G/CC ] | 14021.000 | [CPS] |
| 6 | Jun14,13 | 07:59:07 | CALIPERL | Default | [CPS] | Default | [CPS] |
| | Jun14,13 | 07:59:07 | CALIPERL | Default | [CPS] | Default | [CPS] |
| 7 | Mar21,14 | 13:27:18 | CURRENT | 26.400 | [UA ] | 6623.000 | [CPS] |
| | Mar21,14 | 13:27:18 | CURRENT | 229.200 | [UA ] | 23884.000 | [CPS] |
| 8 | Jun14,13 | 07:59:07 | F | Default | [CPS] | | |
| 9 | Jun14,13 | 07:59:07 | X | Default | [CPS] | | |