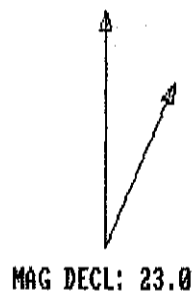


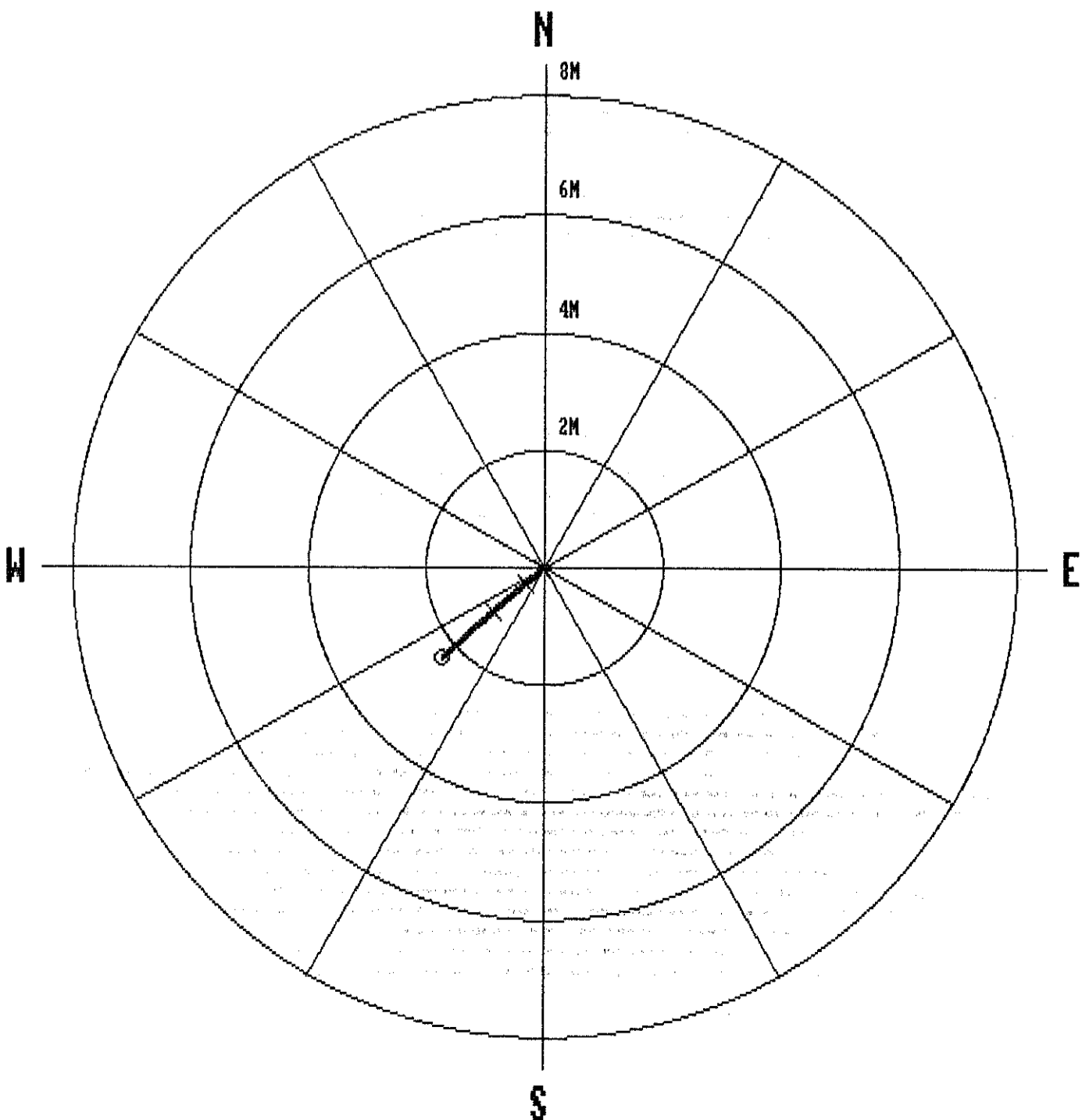
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.02 | 0.0 | 253.4 | 1.6 | 223.8 |
| 4.0 | 4.00 | -0.02 | -0.02 | 0.0 | 232.7 | 1.2 | 119.8 |
| 5.0 | 5.00 | -0.02 | -0.02 | 0.0 | 219.4 | 1.3 | 351.0 |
| 6.0 | 6.00 | -0.01 | -0.00 | 0.0 | 190.3 | 0.9 | 66.8 |
| 7.0 | 7.00 | -0.00 | 0.00 | 0.0 | 110.4 | 0.6 | 355.7 |
| 8.0 | 8.00 | -0.00 | 0.00 | 0.0 | 112.4 | 0.3 | 229.8 |
| 9.0 | 9.00 | -0.01 | -0.01 | 0.0 | 225.0 | 0.8 | 241.9 |
| 10.0 | 10.00 | -0.02 | -0.02 | 0.0 | 230.5 | 1.9 | 247.9 |
| 11.0 | 11.00 | -0.04 | -0.05 | 0.1 | 230.2 | 2.5 | 231.3 |
| 12.0 | 12.00 | -0.08 | -0.08 | 0.1 | 228.4 | 2.7 | 242.8 |
| 13.0 | 12.99 | -0.13 | -0.14 | 0.2 | 228.0 | 5.2 | 228.7 |
| 14.0 | 13.99 | -0.20 | -0.22 | 0.3 | 227.6 | 5.8 | 240.3 |
| 15.0 | 14.98 | -0.27 | -0.31 | 0.4 | 229.3 | 7.3 | 234.1 |
| 16.0 | 15.97 | -0.35 | -0.41 | 0.5 | 229.0 | 8.5 | 242.4 |
| 17.0 | 16.96 | -0.44 | -0.51 | 0.7 | 229.3 | 8.3 | 226.5 |
| 18.0 | 17.95 | -0.53 | -0.62 | 0.8 | 229.4 | 8.4 | 227.4 |
| 19.0 | 18.94 | -0.63 | -0.73 | 1.0 | 229.1 | 9.7 | 248.2 |
| 20.0 | 19.93 | -0.73 | -0.85 | 1.1 | 229.3 | 9.0 | 235.6 |
| 21.0 | 20.92 | -0.84 | -0.96 | 1.3 | 229.0 | 8.9 | 219.4 |
| 22.0 | 21.90 | -0.95 | -1.09 | 1.4 | 229.0 | 9.8 | 222.8 |
| 23.0 | 22.89 | -1.06 | -1.22 | 1.6 | 229.0 | 10.2 | 233.6 |
| 24.0 | 23.87 | -1.18 | -1.34 | 1.8 | 228.6 | 10.1 | 226.8 |
| 25.0 | 24.86 | -1.30 | -1.47 | 2.0 | 228.5 | 10.6 | 221.5 |
| 26.0 | 25.84 | -1.43 | -1.61 | 2.2 | 228.4 | 11.3 | 213.6 |
| 26.7 | 26.54 | -1.53 | -1.73 | 2.3 | 228.4 | 12.7 | 230.5 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96181
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



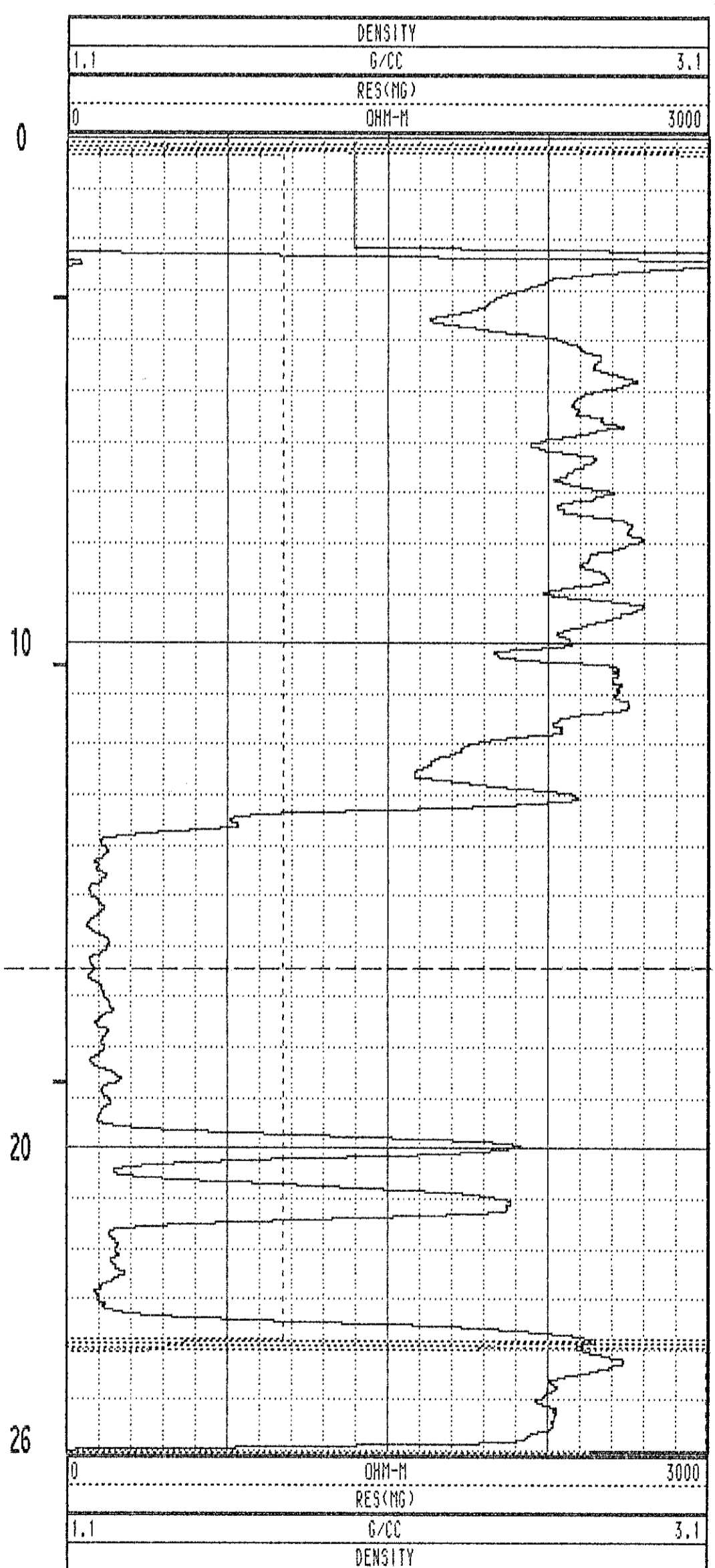
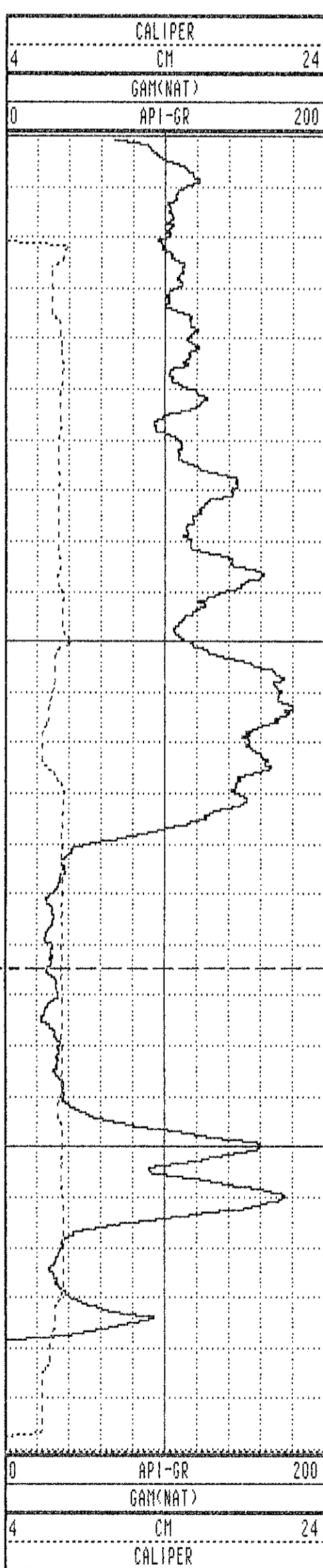
SCALE: 1 M/CM
 TRUE DEPTH: 26.54 M
 AZIMUTH: 228.4
 DISTANCE: 2.3 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96181 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/20/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 31 ELEV. PERM. DATUM: KB : LOG BOTTOM : 26.07 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.12 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 8 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



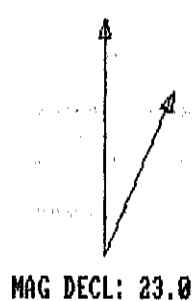
WRH-96181 09/20/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

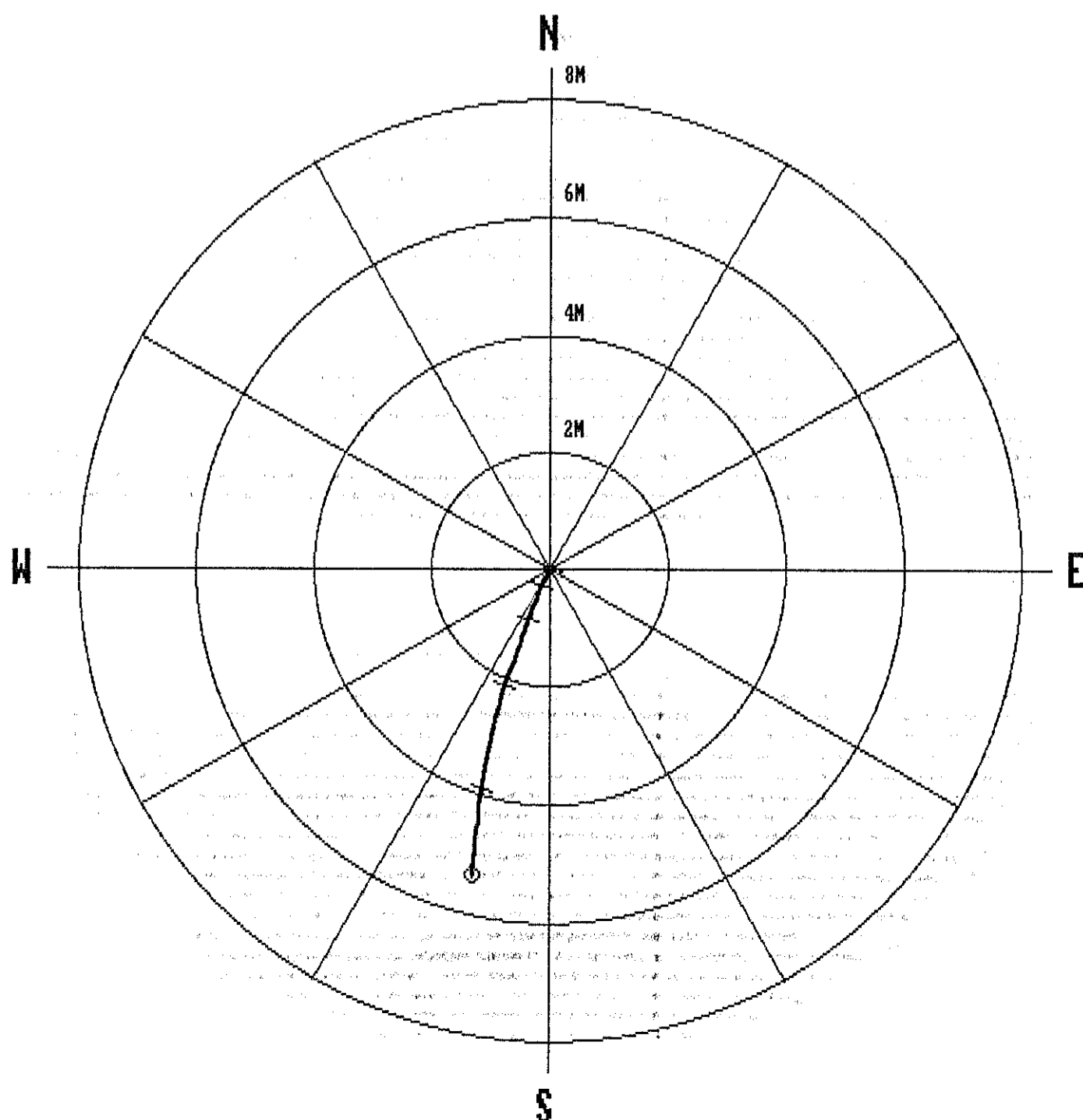
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 49.8 | 1.1 | 40.6 |
| 4.0 | 4.00 | 0.01 | 0.03 | 0.0 | 78.1 | 1.4 | 343.6 |
| 5.0 | 5.00 | 0.01 | 0.05 | 0.0 | 80.7 | 1.8 | 205.2 |
| 6.0 | 6.00 | -0.02 | 0.03 | 0.0 | 131.7 | 2.9 | 209.7 |
| 7.0 | 7.00 | -0.07 | -0.00 | 0.1 | 180.6 | 3.8 | 223.6 |
| 8.0 | 7.99 | -0.12 | -0.04 | 0.1 | 198.2 | 4.6 | 217.6 |
| 9.0 | 8.99 | -0.19 | -0.09 | 0.2 | 204.6 | 4.4 | 203.9 |
| 10.0 | 9.99 | -0.27 | -0.13 | 0.3 | 205.4 | 5.4 | 207.8 |
| 11.0 | 10.98 | -0.36 | -0.17 | 0.4 | 205.2 | 5.3 | 204.9 |
| 12.0 | 11.98 | -0.45 | -0.19 | 0.5 | 203.4 | 5.9 | 196.0 |
| 13.0 | 12.97 | -0.56 | -0.23 | 0.6 | 202.4 | 7.6 | 204.3 |
| 14.0 | 13.96 | -0.69 | -0.30 | 0.7 | 203.3 | 9.0 | 206.3 |
| 15.0 | 14.94 | -0.84 | -0.36 | 0.9 | 202.9 | 9.8 | 190.4 |
| 16.0 | 15.93 | -1.02 | -0.41 | 1.1 | 202.0 | 12.2 | 203.2 |
| 17.0 | 16.90 | -1.22 | -0.48 | 1.3 | 201.4 | 12.4 | 192.7 |
| 18.0 | 17.88 | -1.43 | -0.55 | 1.5 | 201.2 | 13.2 | 196.2 |
| 19.0 | 18.85 | -1.66 | -0.64 | 1.8 | 201.1 | 15.0 | 201.8 |
| 20.0 | 19.81 | -1.91 | -0.74 | 2.0 | 201.2 | 16.5 | 193.5 |
| 21.0 | 20.76 | -2.19 | -0.82 | 2.3 | 200.6 | 17.8 | 192.4 |
| 22.0 | 21.71 | -2.51 | -0.91 | 2.7 | 199.9 | 19.8 | 194.0 |
| 23.0 | 22.65 | -2.84 | -0.98 | 3.0 | 199.0 | 21.6 | 189.7 |
| 24.0 | 23.58 | -3.19 | -1.05 | 3.4 | 198.3 | 20.7 | 183.3 |
| 25.0 | 24.52 | -3.53 | -1.12 | 3.7 | 197.6 | 20.6 | 194.3 |
| 26.0 | 25.45 | -3.88 | -1.17 | 4.1 | 196.8 | 21.2 | 205.5 |
| 27.0 | 26.38 | -4.24 | -1.20 | 4.4 | 195.8 | 21.4 | 184.2 |
| 28.0 | 27.30 | -4.61 | -1.27 | 4.8 | 195.4 | 23.1 | 171.1 |
| 29.0 | 28.23 | -4.99 | -1.30 | 5.2 | 194.6 | 26.3 | 203.1 |
| 29.5 | 28.65 | -5.17 | -1.30 | 5.3 | 194.1 | 23.3 | 180.8 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96182
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



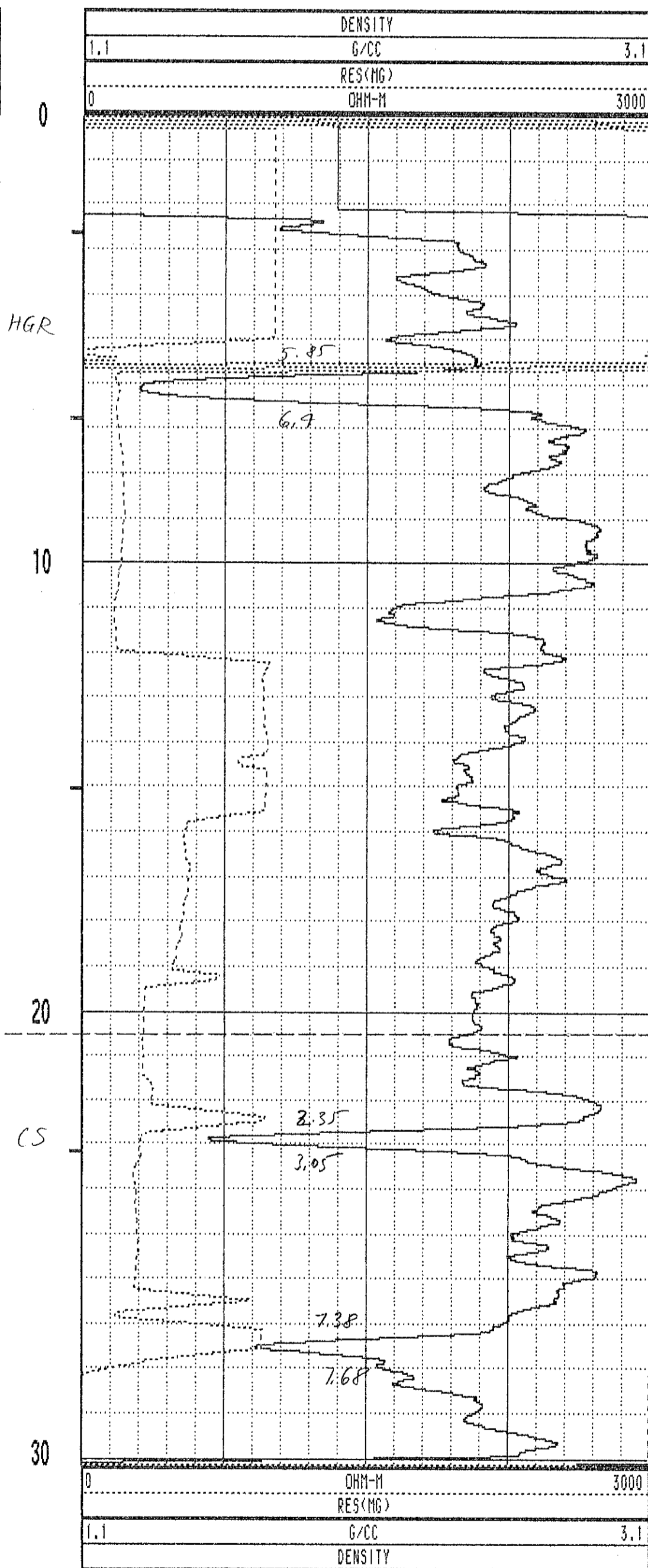
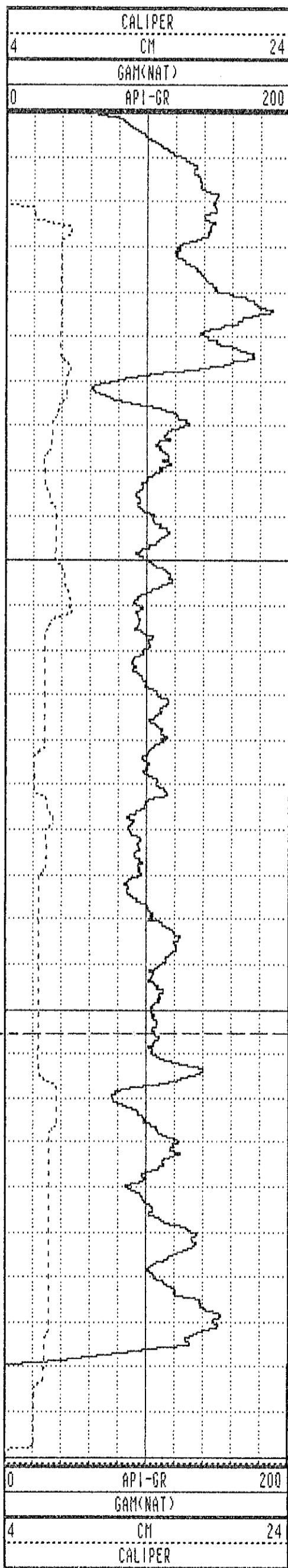
SCALE: 1 M/CM
 TRUE DEPTH: 28.65 M
 AZIMUTH: 194.1
 DISTANCE: 5.3 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



GAMMA-RES-DENSITY

| | |
|---|---|
| <p> COMPANY : PINE VALLEY COAL WELL : WRH-96182 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE : </p> <p> DATE : 09/20/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB : LOG BOTTOM : 30.17 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.08 DRL MEASURED FROM: GL : </p> <p> CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS </p> <p> BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 8 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE </p> | <p style="text-align: center;">OTHER SERVICES:</p> |
|---|---|

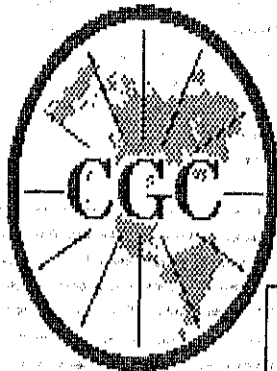
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96182 09/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|--------|----------|--------------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CM |



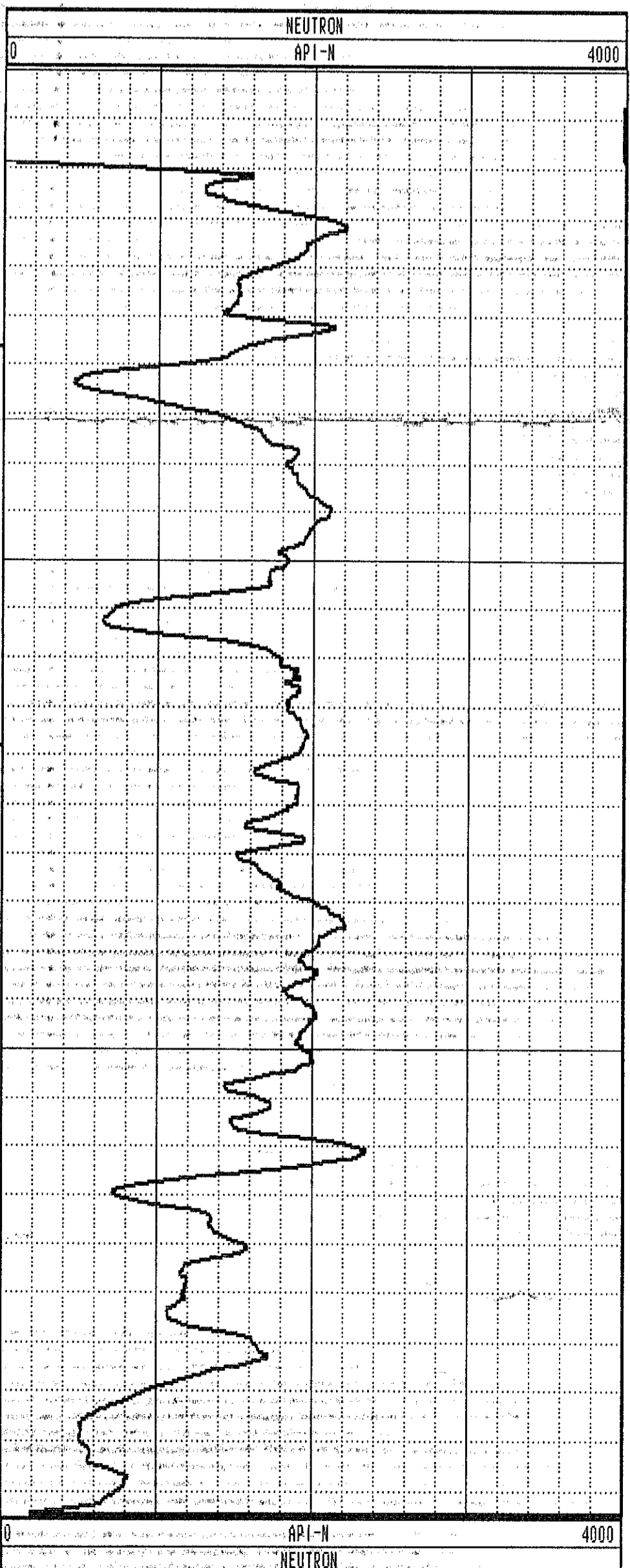
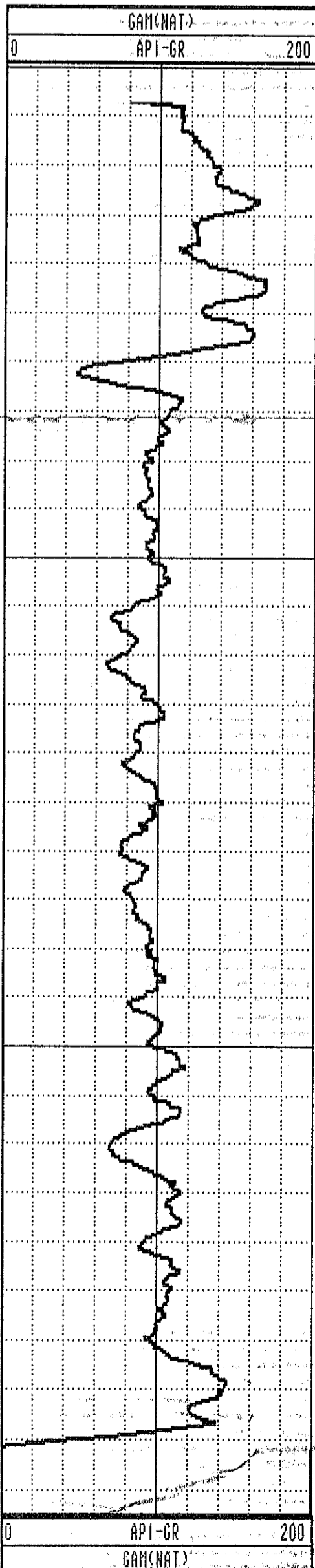
Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96182 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.51 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.74 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 1 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

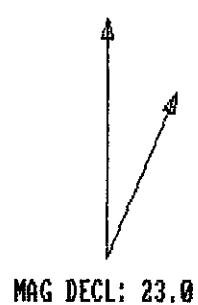
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



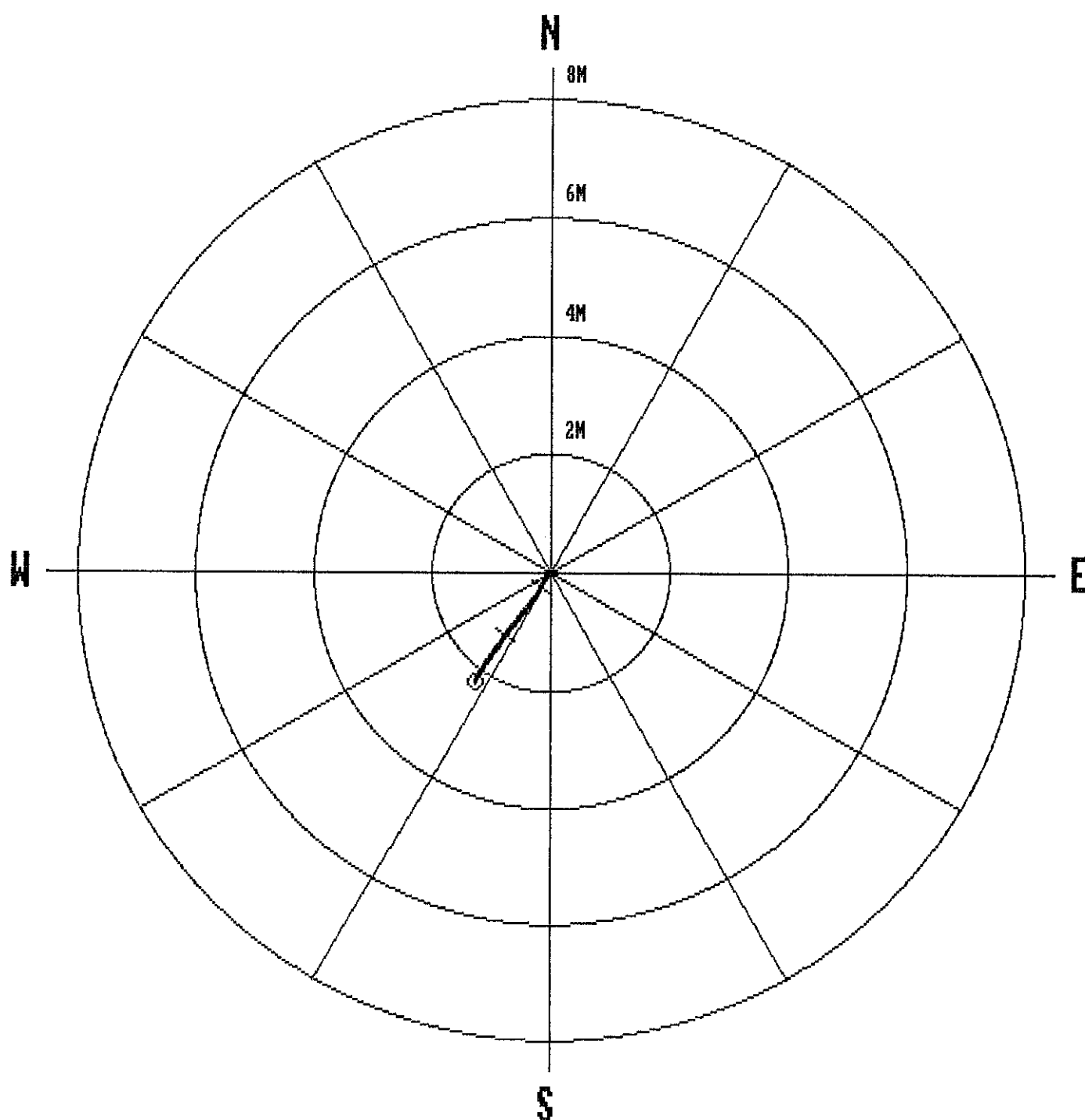
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.00 | 0.0 | 26.0 | 1.4 | 11.2 |
| 4.0 | 4.00 | -0.01 | -0.00 | 0.0 | 192.2 | 2.0 | 223.8 |
| 5.0 | 5.00 | -0.02 | -0.03 | 0.0 | 239.6 | 2.6 | 238.5 |
| 6.0 | 6.00 | -0.05 | -0.06 | 0.1 | 228.1 | 2.7 | 214.3 |
| 7.0 | 7.00 | -0.10 | -0.09 | 0.1 | 222.0 | 3.0 | 207.1 |
| 8.0 | 7.99 | -0.14 | -0.12 | 0.2 | 219.8 | 2.9 | 207.6 |
| 9.0 | 8.99 | -0.19 | -0.14 | 0.2 | 216.3 | 3.0 | 201.9 |
| 10.0 | 9.99 | -0.24 | -0.16 | 0.3 | 213.1 | 3.5 | 184.8 |
| 11.0 | 10.99 | -0.30 | -0.18 | 0.3 | 211.8 | 3.5 | 216.4 |
| 12.0 | 11.99 | -0.35 | -0.22 | 0.4 | 212.1 | 4.8 | 232.6 |
| 13.0 | 12.98 | -0.42 | -0.27 | 0.5 | 212.6 | 4.8 | 207.8 |
| 14.0 | 13.98 | -0.49 | -0.33 | 0.6 | 214.0 | 5.9 | 227.3 |
| 15.0 | 14.97 | -0.57 | -0.39 | 0.7 | 214.3 | 5.9 | 207.0 |
| 16.0 | 15.97 | -0.66 | -0.46 | 0.8 | 214.6 | 6.4 | 205.1 |
| 17.0 | 16.96 | -0.75 | -0.54 | 0.9 | 215.4 | 7.4 | 234.1 |
| 18.0 | 17.95 | -0.85 | -0.61 | 1.0 | 215.5 | 7.0 | 225.5 |
| 19.0 | 18.95 | -0.94 | -0.68 | 1.2 | 215.9 | 6.7 | 213.0 |
| 20.0 | 19.94 | -1.04 | -0.76 | 1.3 | 216.1 | 7.5 | 230.1 |
| 21.0 | 20.93 | -1.16 | -0.82 | 1.4 | 215.5 | 8.2 | 209.1 |
| 22.0 | 21.92 | -1.26 | -0.91 | 1.5 | 215.9 | 8.0 | 227.2 |
| 23.0 | 22.91 | -1.38 | -0.99 | 1.7 | 215.8 | 8.5 | 208.4 |
| 24.0 | 23.90 | -1.49 | -1.08 | 1.8 | 215.9 | 9.0 | 207.6 |
| 25.0 | 24.88 | -1.63 | -1.16 | 2.0 | 215.4 | 9.3 | 195.0 |
| 26.0 | 25.87 | -1.76 | -1.23 | 2.2 | 214.9 | 9.6 | 201.2 |
| 26.3 | 26.15 | -1.80 | -1.26 | 2.2 | 214.9 | 9.5 | 212.9 |

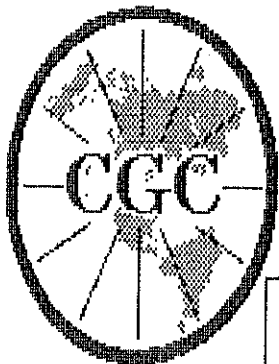
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96183
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 26.15 M
 AZIMUTH: 214.9
 DISTANCE: 2.2 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96183
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :

DATE : 10/02/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 26.33
 LOG TOP : 1.23

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

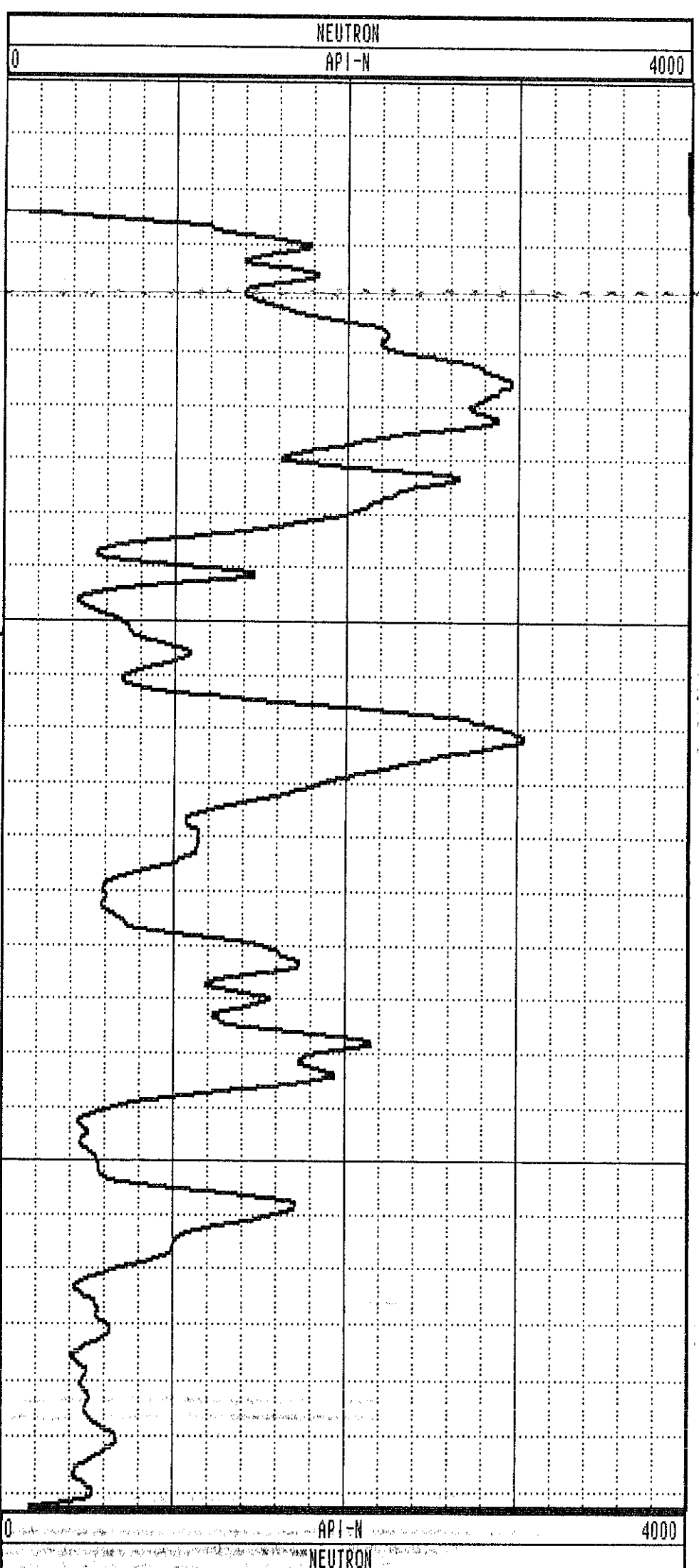
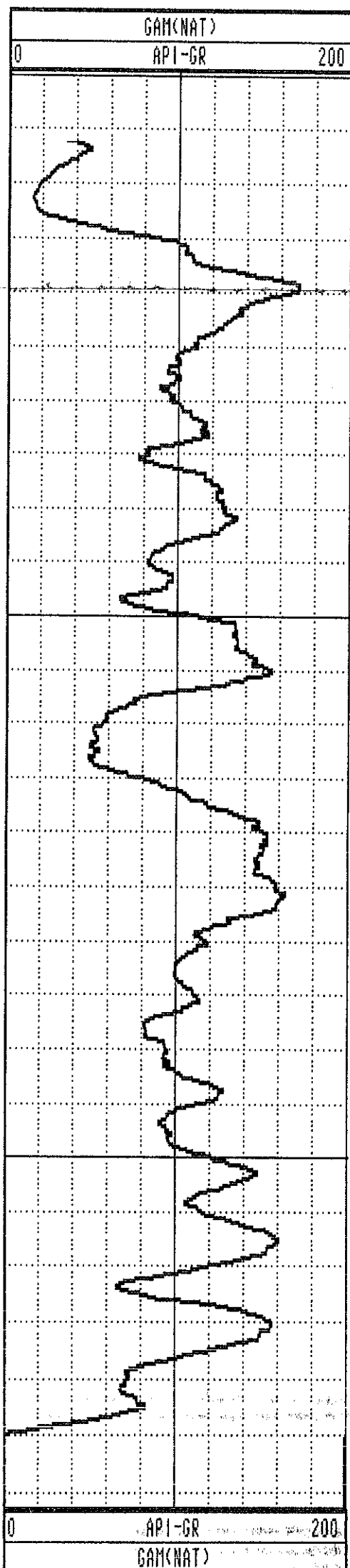
BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 2
 PLOT : PINE 4
 THRESH: 10000

REMARKS :
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96183
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/19/96
 DEPTH DRILLER : 29
 LOG BOTTOM : 30.31
 LOG TOP : 0.64

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

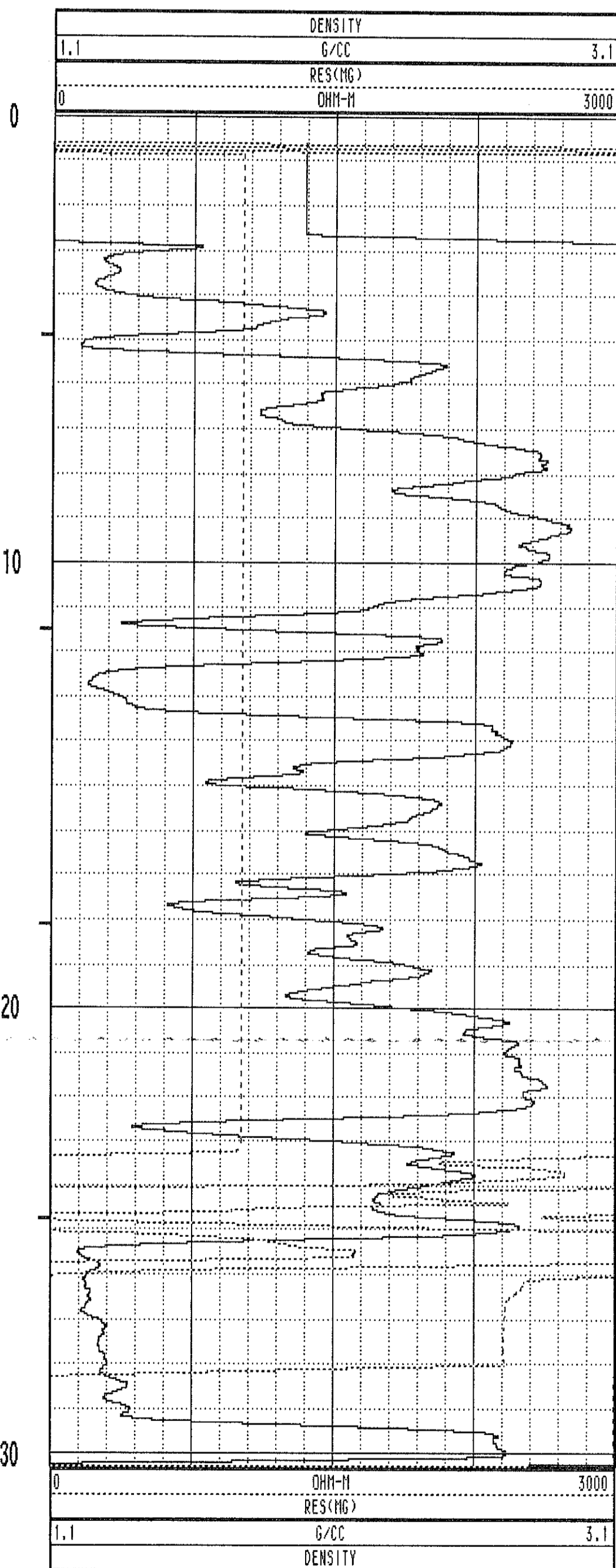
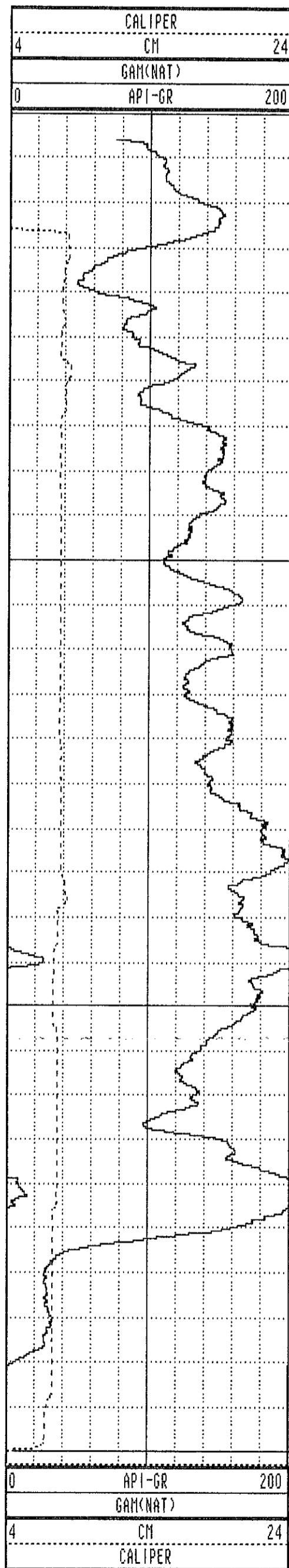
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9033AA
 LOG : 3
 PLOT : PINE 5
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96183 09/19/96 958

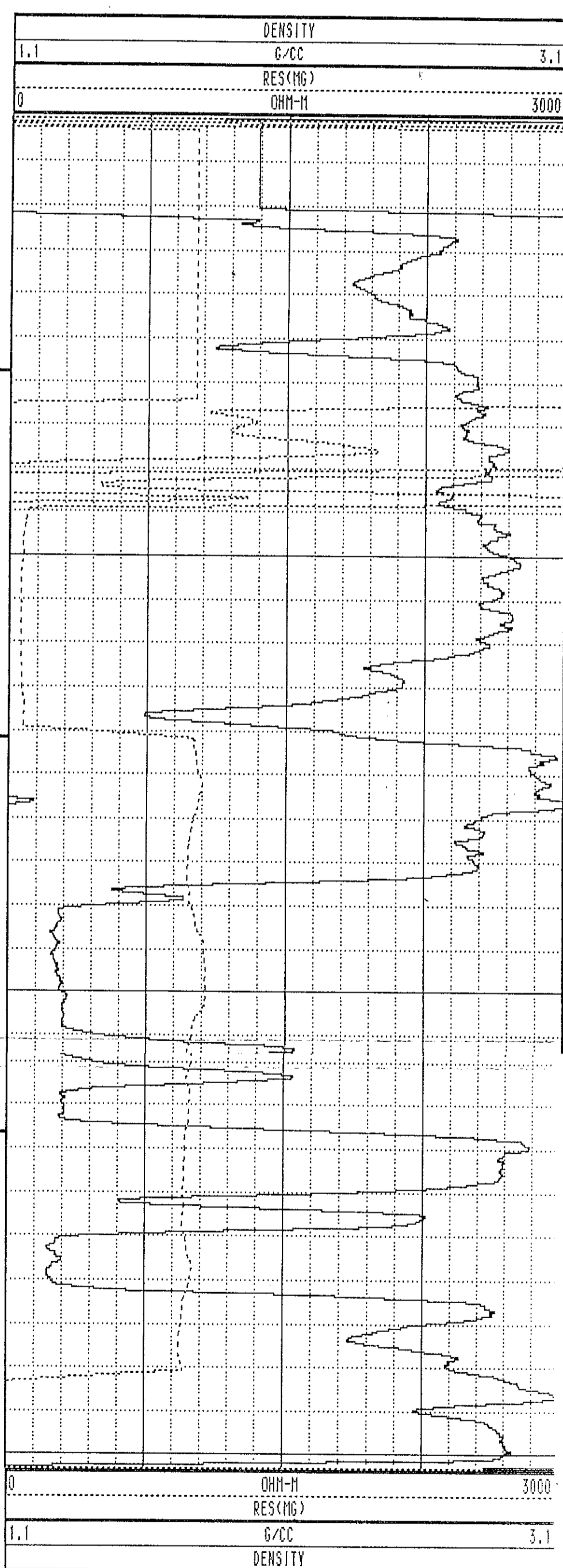
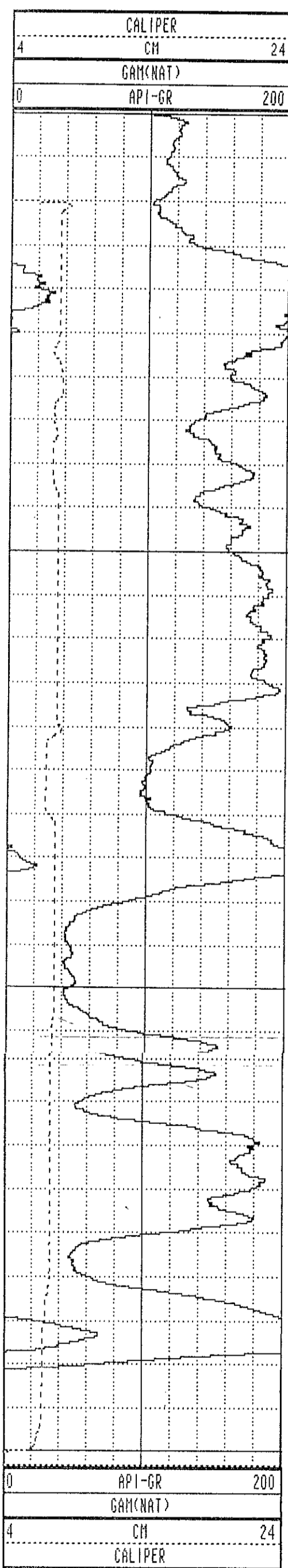
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96184 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/20/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 30.35 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96184 09/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.96 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

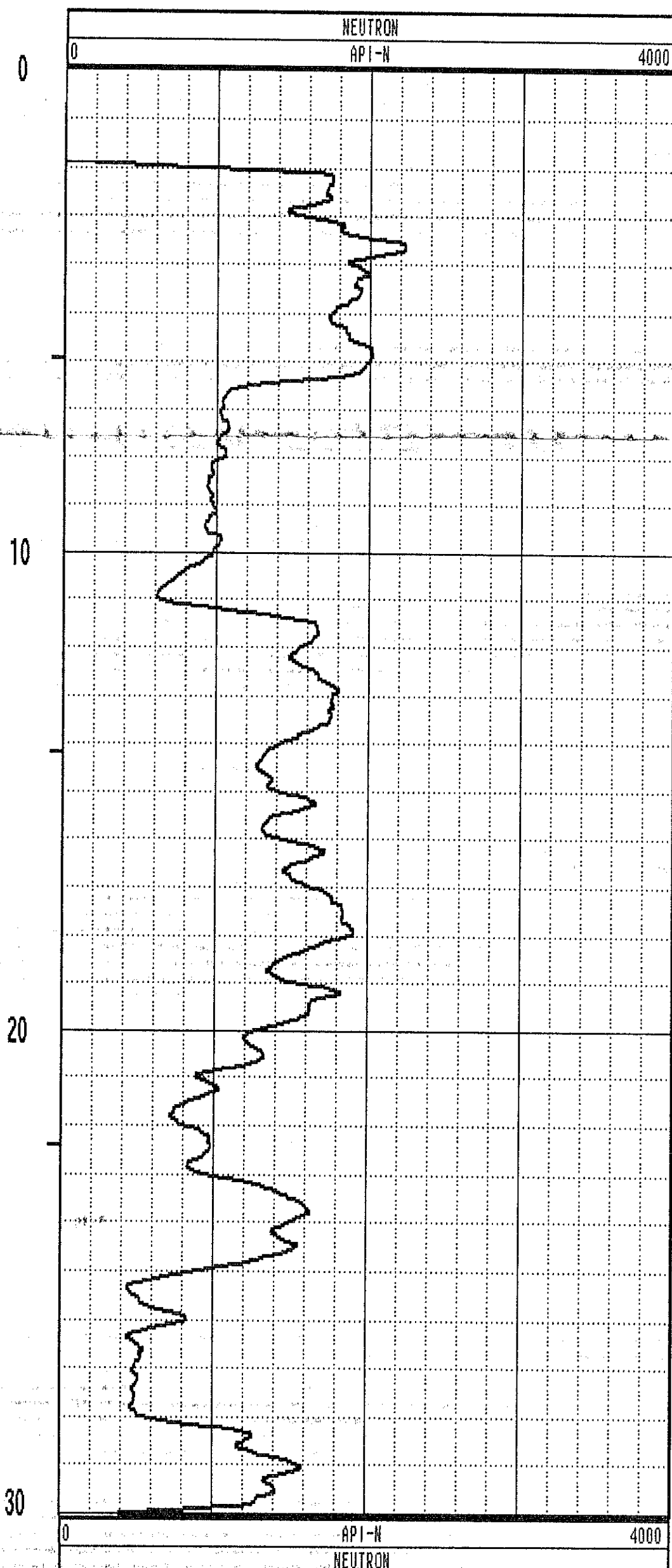
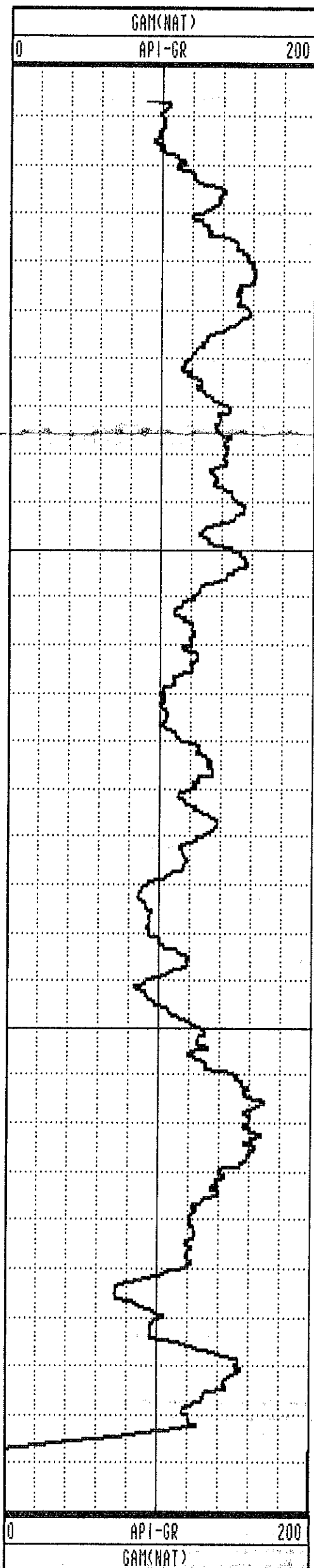


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96185 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 09/29/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | ELEVATIONS |
| LOG BOTTOM | : 30.07 | LOG MEASURED FROM: G.L. | KB : |
| LOG TOP | : 0.72 | DRL MEASURED FROM: | DF : |
| | | | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 7 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

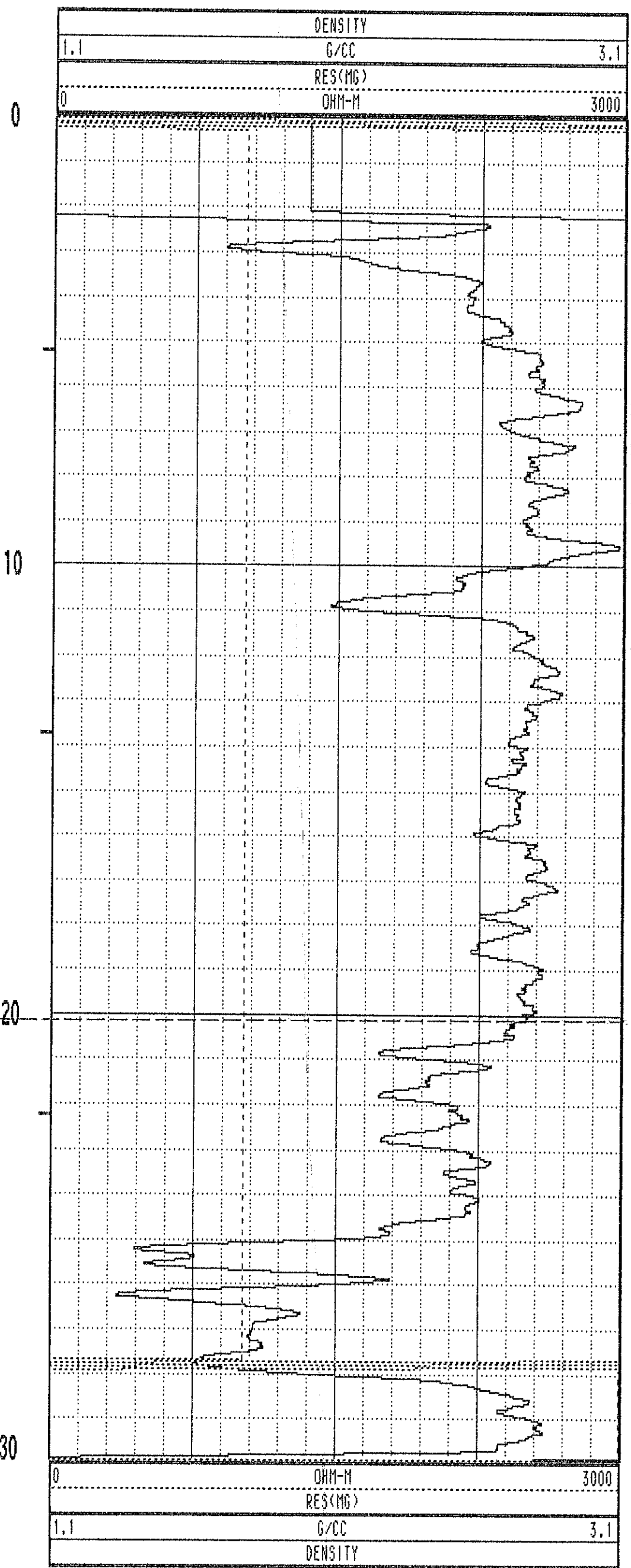
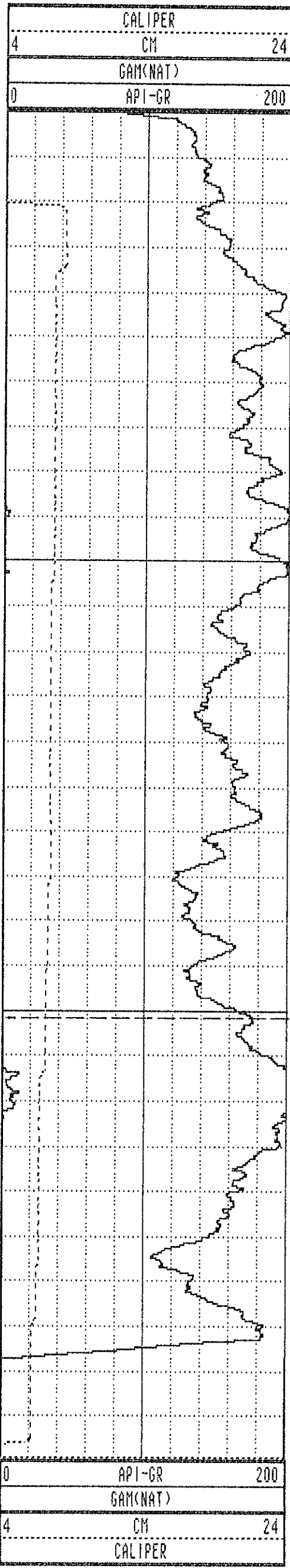
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96185 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/20/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.95 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.06 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.00 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96185 09/20/96 958

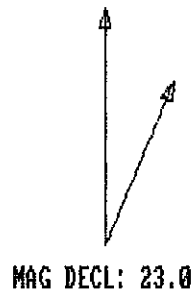
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

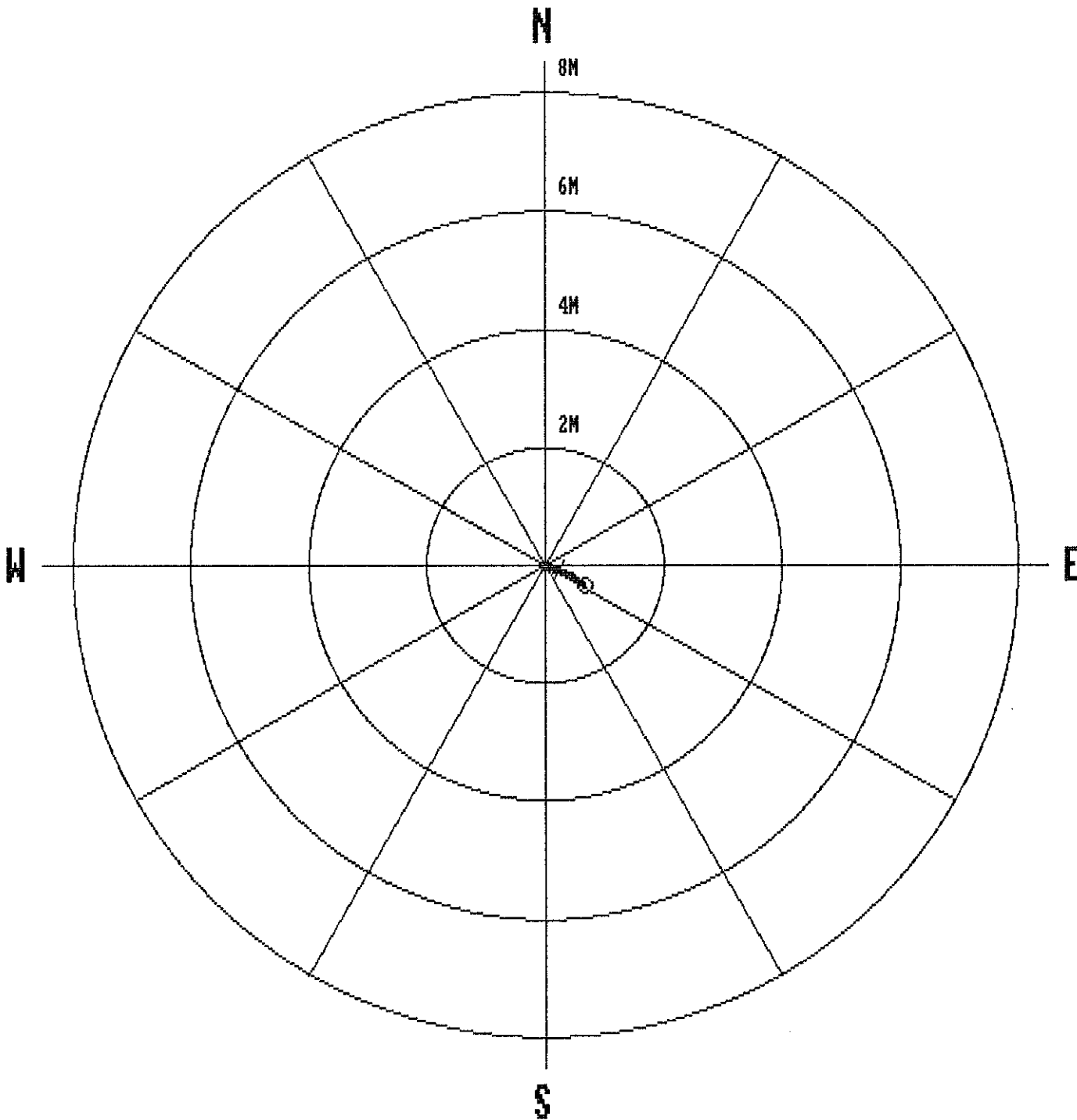
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.02 | -0.03 | 0.0 | 232.9 | 2.3 | 234.3 |
| 4.0 | 4.00 | -0.04 | -0.02 | 0.0 | 207.4 | 3.0 | 82.4 |
| 5.0 | 5.00 | -0.04 | 0.02 | 0.0 | 151.5 | 2.9 | 98.2 |
| 6.0 | 6.00 | -0.04 | 0.06 | 0.1 | 125.3 | 1.8 | 82.2 |
| 7.0 | 7.00 | -0.05 | 0.10 | 0.1 | 117.8 | 2.1 | 110.5 |
| 8.0 | 7.99 | -0.06 | 0.14 | 0.2 | 114.6 | 2.8 | 114.7 |
| 9.0 | 8.99 | -0.08 | 0.19 | 0.2 | 112.3 | 2.9 | 114.4 |
| 10.0 | 9.99 | -0.10 | 0.24 | 0.3 | 111.6 | 3.2 | 112.2 |
| 11.0 | 10.99 | -0.12 | 0.30 | 0.3 | 111.6 | 3.6 | 116.4 |
| 12.0 | 11.99 | -0.14 | 0.36 | 0.4 | 111.4 | 3.9 | 109.2 |
| 13.0 | 12.99 | -0.17 | 0.42 | 0.4 | 111.7 | 3.9 | 126.3 |
| 14.0 | 13.98 | -0.20 | 0.48 | 0.5 | 112.5 | 3.8 | 123.1 |
| 15.0 | 14.98 | -0.23 | 0.53 | 0.6 | 113.9 | 4.1 | 134.1 |
| 16.0 | 15.98 | -0.27 | 0.58 | 0.6 | 115.2 | 3.3 | 117.6 |
| 17.0 | 16.98 | -0.31 | 0.63 | 0.7 | 116.3 | 3.4 | 127.5 |
| 18.0 | 17.97 | -0.35 | 0.68 | 0.8 | 117.4 | 3.9 | 129.9 |
| 18.1 | 18.09 | -0.36 | 0.69 | 0.8 | 117.5 | 3.7 | 131.7 |

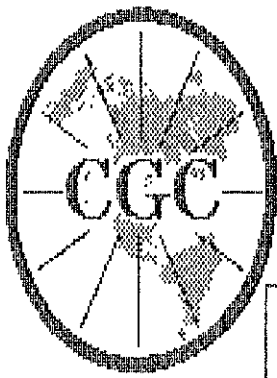
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96186
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 18.09 M
 AZIMUTH: 117.5
 DISTANCE: 0.8 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96186
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION :

OTHER SERVICES:

DATE : 10/03/96
DEPTH DRILLER : 28
LOG BOTTOM : 18.17
LOG TOP : 0.68

PERMANENT DATUM :
ELEV. PERM. DATUM:
LOG MEASURED FROM: G.L.
DRL MEASURED FROM:

ELEVATIONS
KB :
DF :
GL :

CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS: .25

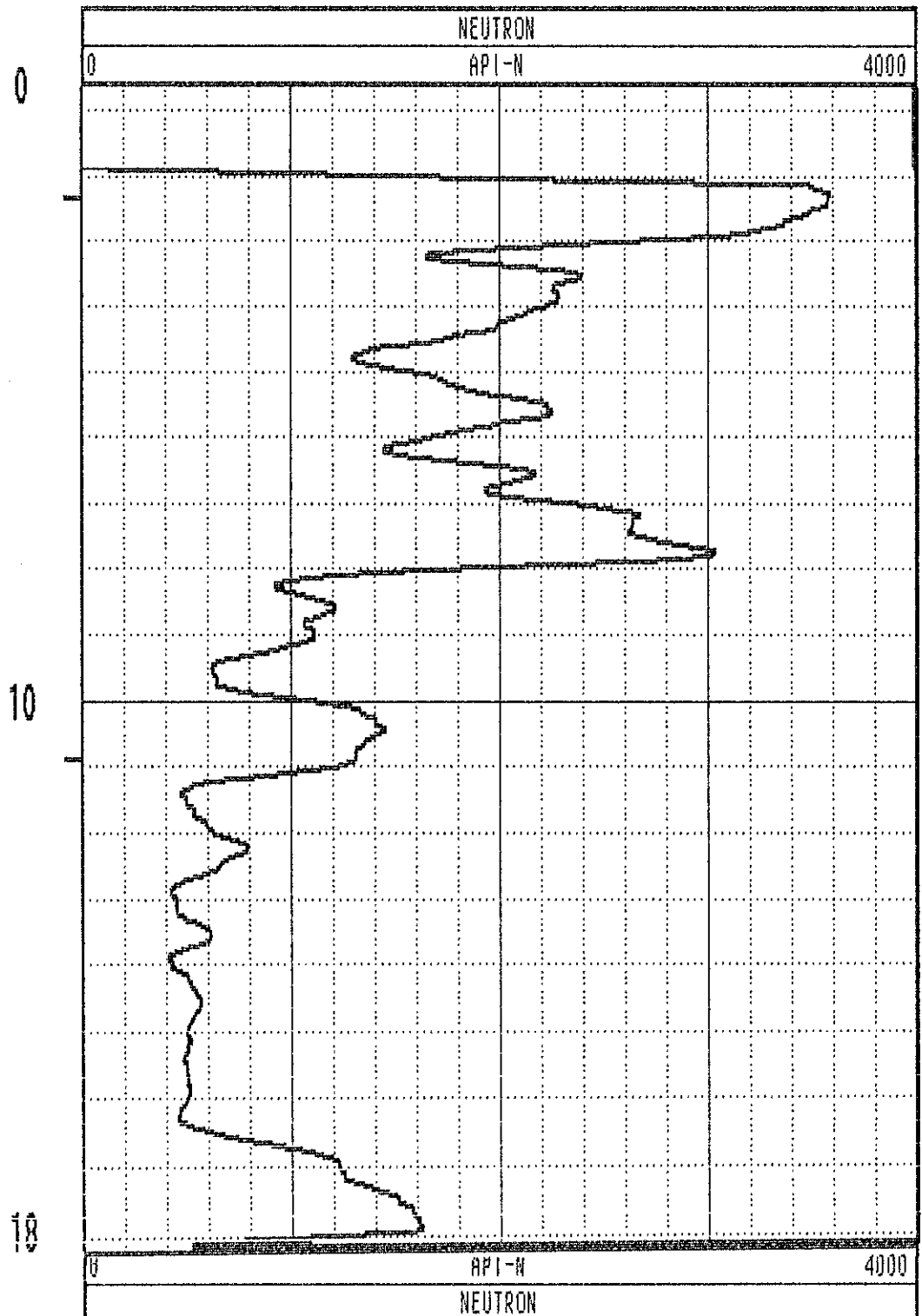
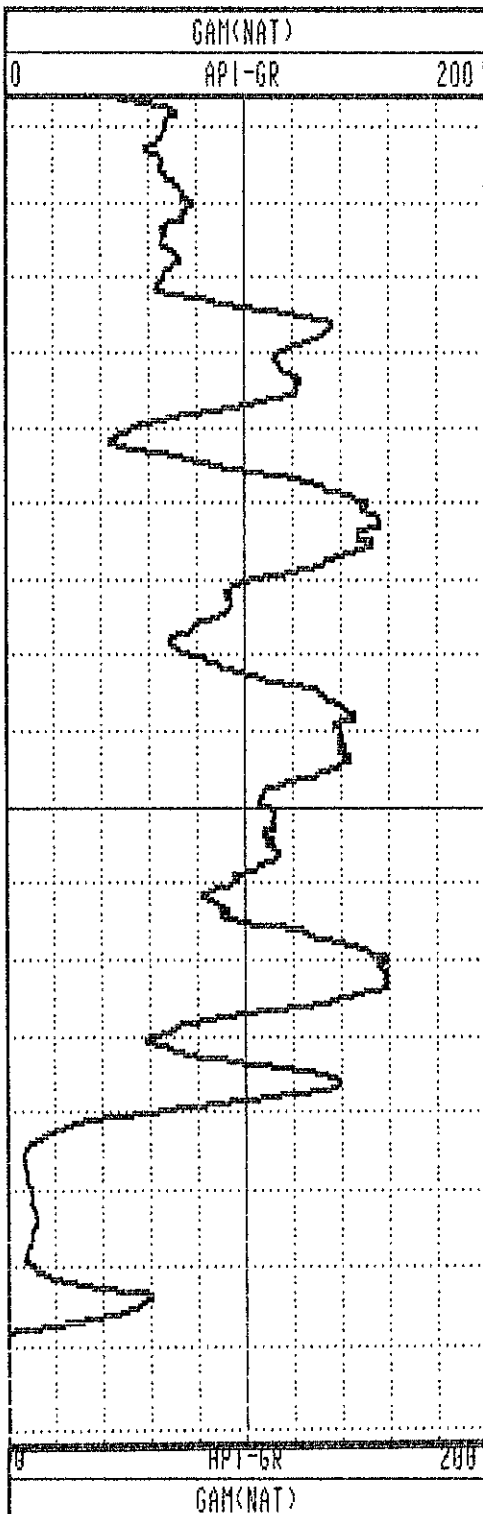
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23.000
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :
NONE

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : ORIGINAL
TYPE : 9055A
LOG : 2
PLOT : PINE 4
THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

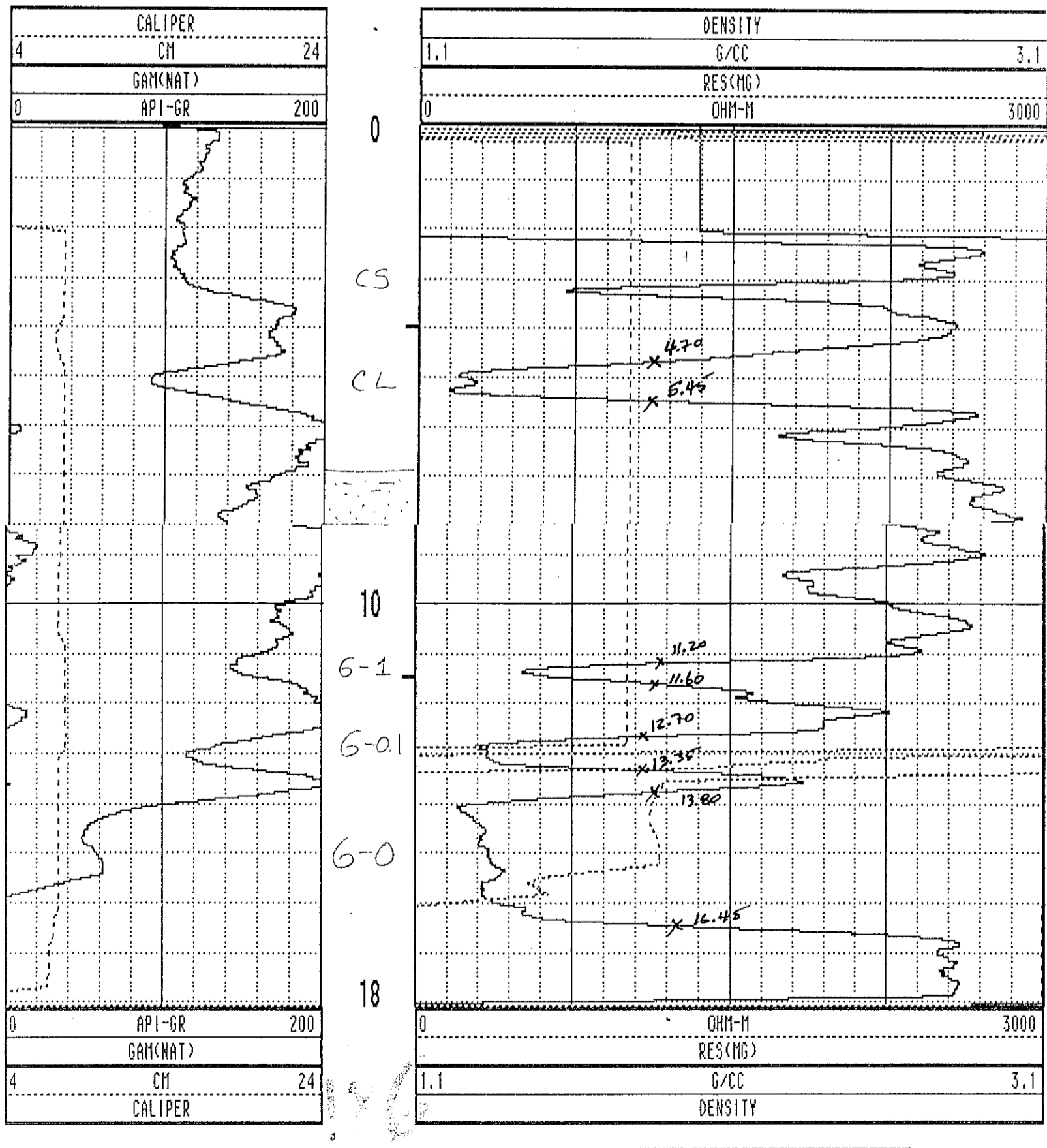


Picks

GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96186 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/21/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 18 ELEV. PERM. DATUM: KB : LOG BOTTOM : 18.11 LOG MEASURED FROM: G.L. DF : LOG TOP : -0.02 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R.THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 8 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96186 09/21/96 958

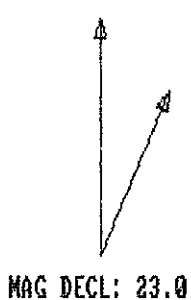
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

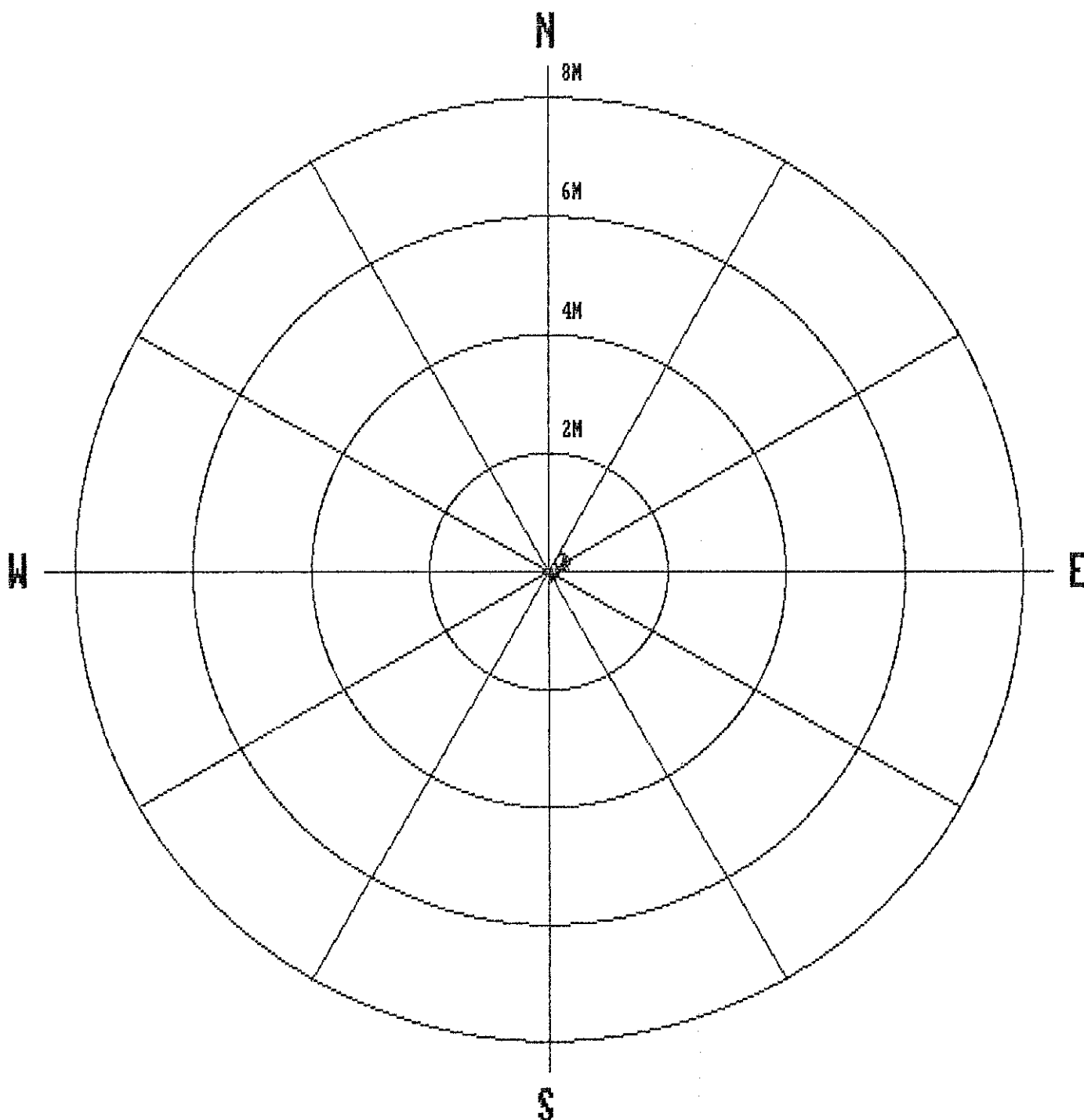
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 199.1 | 1.7 | 149.1 |
| 4.0 | 4.00 | -0.04 | 0.01 | 0.0 | 159.4 | 2.1 | 160.1 |
| 5.0 | 5.00 | -0.07 | 0.03 | 0.1 | 156.4 | 2.7 | 138.5 |
| 6.0 | 6.00 | -0.12 | 0.05 | 0.1 | 156.0 | 3.3 | 186.9 |
| 7.0 | 7.00 | -0.10 | 0.07 | 0.1 | 142.2 | 3.3 | 50.6 |
| 8.0 | 7.99 | -0.06 | 0.11 | 0.1 | 119.4 | 1.6 | 21.0 |
| 9.0 | 8.99 | -0.03 | 0.14 | 0.1 | 101.7 | 2.6 | 30.6 |
| 10.0 | 9.99 | 0.01 | 0.16 | 0.2 | 87.1 | 2.4 | 39.0 |
| 11.0 | 10.99 | 0.04 | 0.19 | 0.2 | 77.2 | 0.3 | 320.7 |
| 12.0 | 11.99 | 0.07 | 0.22 | 0.2 | 71.3 | 2.6 | 40.8 |
| 13.0 | 12.99 | 0.10 | 0.24 | 0.3 | 66.9 | 2.1 | 36.6 |
| 14.0 | 13.99 | 0.13 | 0.26 | 0.3 | 64.0 | 1.3 | 28.1 |
| 15.0 | 14.99 | 0.14 | 0.27 | 0.3 | 61.8 | 0.7 | 18.7 |
| 16.0 | 15.99 | 0.15 | 0.27 | 0.3 | 61.1 | 0.5 | 6.9 |
| 17.0 | 16.99 | 0.16 | 0.28 | 0.3 | 60.4 | 0.2 | 351.5 |
| 18.0 | 17.99 | 0.16 | 0.28 | 0.3 | 60.4 | 0.6 | 77.2 |
| 19.0 | 18.99 | 0.17 | 0.29 | 0.3 | 59.3 | 0.6 | 37.1 |
| 20.0 | 19.99 | 0.17 | 0.29 | 0.3 | 59.2 | 0.6 | 353.4 |
| 21.0 | 20.99 | 0.18 | 0.29 | 0.3 | 58.7 | 0.2 | 49.4 |
| 22.0 | 21.99 | 0.18 | 0.30 | 0.3 | 58.7 | 0.4 | 79.1 |
| 23.0 | 22.99 | 0.19 | 0.30 | 0.4 | 58.1 | 0.2 | 59.9 |
| 24.0 | 23.99 | 0.19 | 0.31 | 0.4 | 58.3 | 0.2 | 30.0 |
| 25.0 | 24.99 | 0.19 | 0.30 | 0.4 | 58.1 | 0.4 | 285.6 |
| 26.0 | 25.99 | 0.19 | 0.29 | 0.3 | 57.2 | 1.0 | 247.2 |
| 27.0 | 26.99 | 0.18 | 0.27 | 0.3 | 56.0 | 1.5 | 253.7 |
| 27.8 | 27.83 | 0.18 | 0.24 | 0.3 | 53.6 | 2.9 | 253.9 |

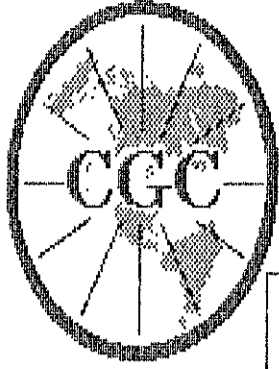
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96187
DATE OF LOG: 10/02/96
PROBE: 9055A 71



SCALE: 1 M/CM
TRUE DEPTH: 27.83 M
AZIMUTH: 53.6
DISTANCE: 0.3 M
+ = 20 M INCR
○ = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96187
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

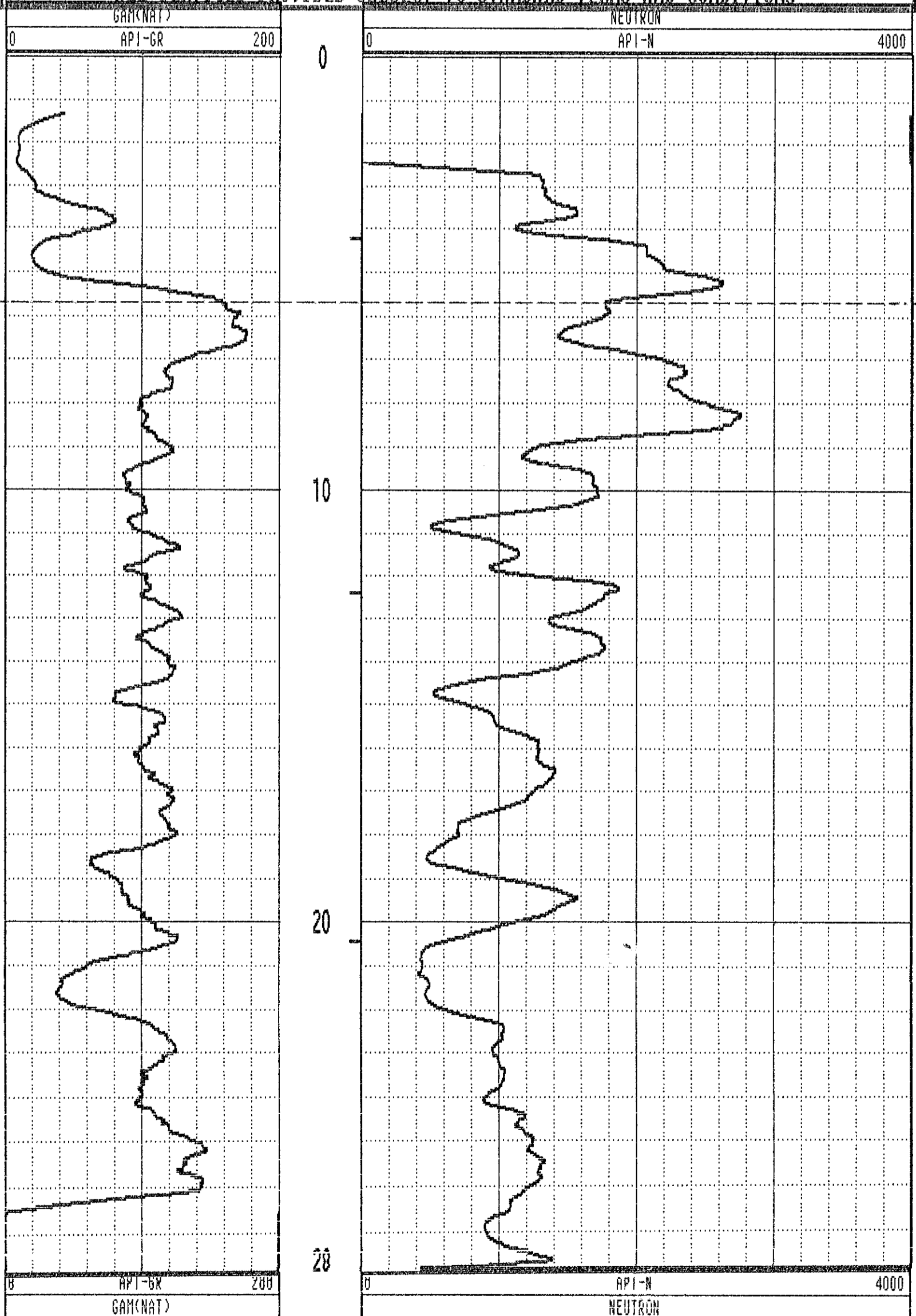
DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEU. PERM. DATUM: KB :
 LOG BOTTOM : 27.90 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 1.31 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000

REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

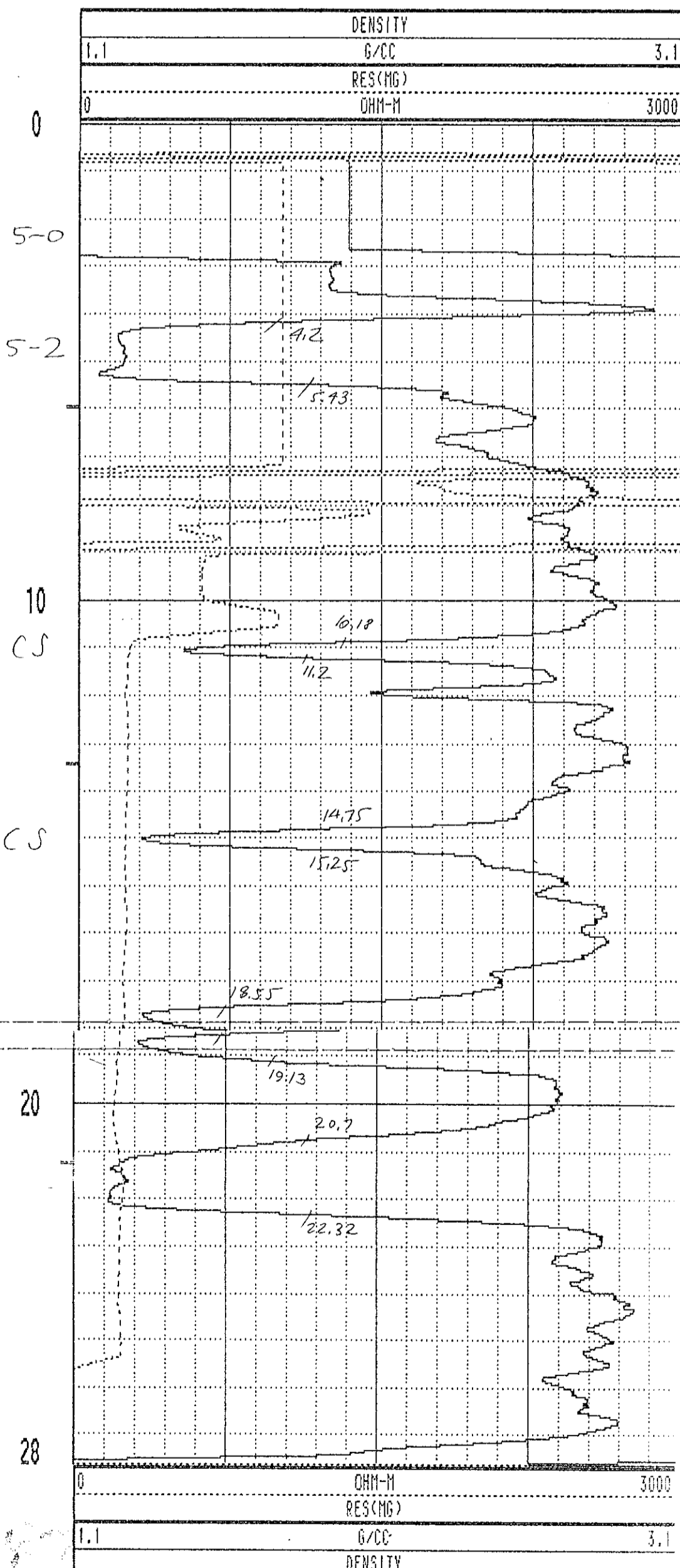
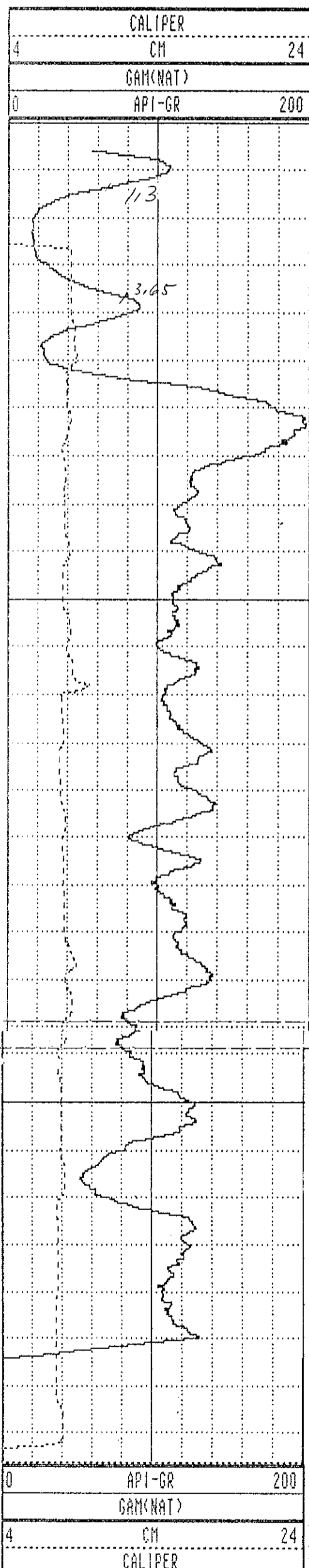
COMPANY : PINE VALLEY COAL
 WELL : WRH-96187
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

DATE : 09/22/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 27.66 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.62 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R.THOMAS

OTHER SERVICES:

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96187 09/22/96 958

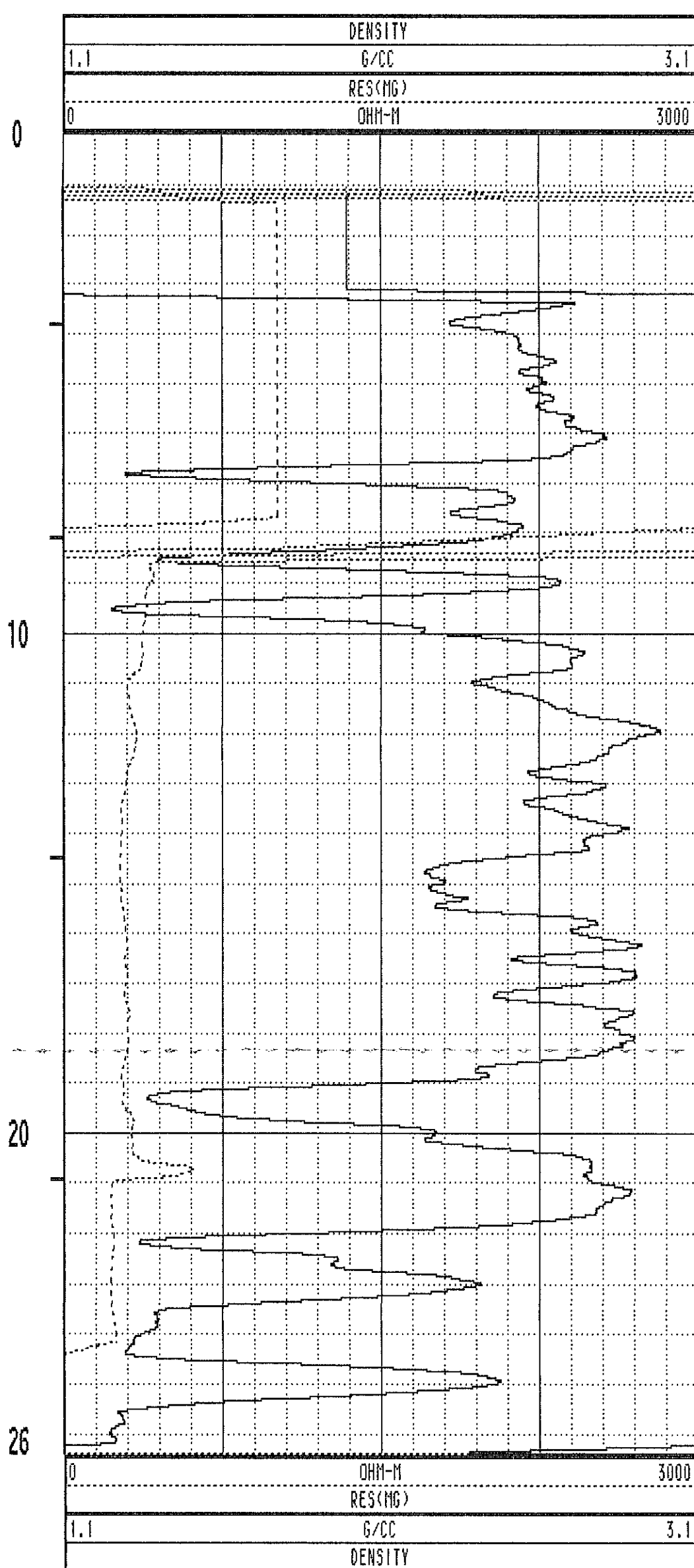
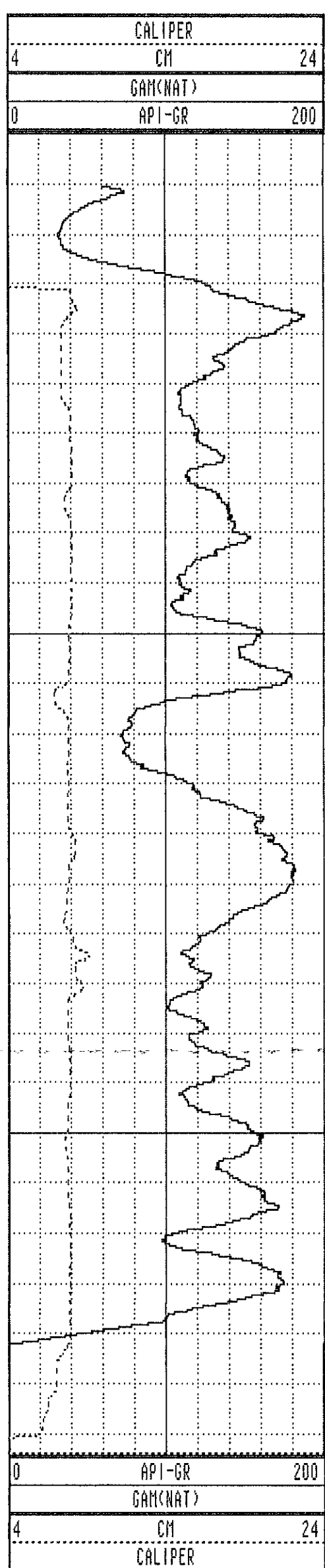
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1000.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH=96188 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/22/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 26 ELEU. PERM. DATUM: KB : LOG BOTTOM : 26.43 LOG MEASURED FROM: G.L. DF : LOG TOP : 1.07 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH=96188 09/22/96 958

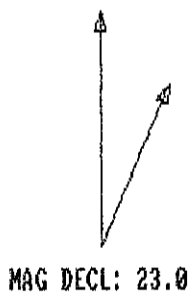
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 2770.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

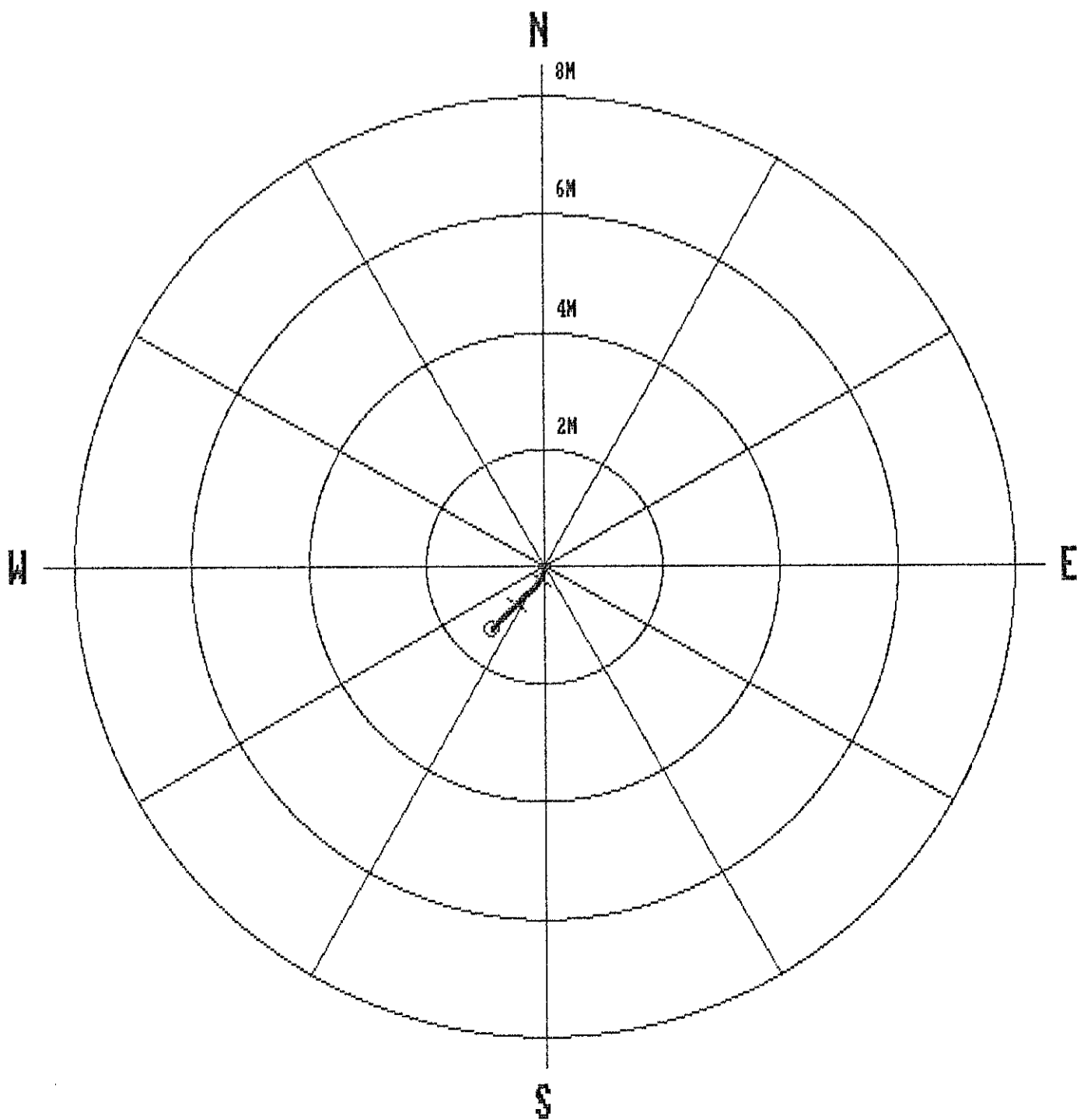
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 271.2 | 1.2 | 271.3 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 20.0 | 1.0 | 257.1 |
| 4.0 | 4.00 | -0.02 | 0.00 | 0.0 | 170.0 | 2.1 | 144.1 |
| 5.0 | 5.00 | -0.03 | 0.01 | 0.0 | 153.1 | 1.9 | 276.6 |
| 6.0 | 6.00 | -0.06 | 0.01 | 0.1 | 171.7 | 2.3 | 189.5 |
| 7.0 | 7.00 | -0.10 | 0.00 | 0.1 | 177.7 | 2.5 | 203.1 |
| 8.0 | 8.00 | -0.15 | -0.01 | 0.1 | 182.0 | 2.4 | 201.2 |
| 9.0 | 9.00 | -0.19 | -0.02 | 0.2 | 186.2 | 2.5 | 204.0 |
| 10.0 | 9.99 | -0.23 | -0.04 | 0.2 | 190.0 | 2.6 | 203.9 |
| 11.0 | 10.99 | -0.27 | -0.07 | 0.3 | 193.8 | 2.5 | 213.1 |
| 12.0 | 11.99 | -0.30 | -0.10 | 0.3 | 197.8 | 2.7 | 223.4 |
| 13.0 | 12.99 | -0.33 | -0.13 | 0.4 | 201.3 | 2.8 | 220.4 |
| 14.0 | 13.99 | -0.36 | -0.16 | 0.4 | 204.4 | 2.9 | 235.1 |
| 15.0 | 14.99 | -0.40 | -0.20 | 0.4 | 206.8 | 2.9 | 210.4 |
| 16.0 | 15.99 | -0.44 | -0.24 | 0.5 | 209.0 | 3.4 | 219.6 |
| 17.0 | 16.98 | -0.48 | -0.30 | 0.6 | 211.6 | 4.1 | 234.6 |
| 18.0 | 17.98 | -0.53 | -0.34 | 0.6 | 213.0 | 4.1 | 227.6 |
| 19.0 | 18.98 | -0.59 | -0.40 | 0.7 | 214.4 | 5.0 | 233.4 |
| 20.0 | 19.97 | -0.64 | -0.46 | 0.8 | 215.8 | 4.9 | 215.8 |
| 21.0 | 20.97 | -0.71 | -0.53 | 0.9 | 216.8 | 5.3 | 225.0 |
| 22.0 | 21.97 | -0.78 | -0.60 | 1.0 | 217.5 | 5.3 | 223.6 |
| 23.0 | 22.96 | -0.84 | -0.66 | 1.1 | 218.1 | 6.2 | 213.7 |
| 24.0 | 23.96 | -0.91 | -0.74 | 1.2 | 219.1 | 5.5 | 236.1 |
| 25.0 | 24.95 | -0.99 | -0.81 | 1.3 | 219.4 | 6.2 | 224.7 |
| 26.0 | 25.94 | -1.07 | -0.89 | 1.4 | 219.8 | 6.6 | 218.2 |
| 26.0 | 25.94 | -1.07 | -0.89 | 1.4 | 219.8 | 6.6 | 218.2 |

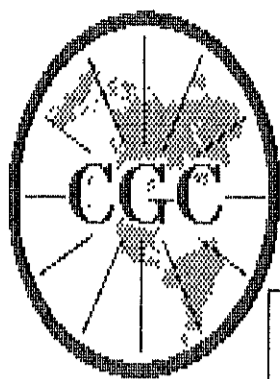
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96190
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 25.94 M
 AZIMUTH: 219.8
 DISTANCE: 1.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96190
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :

DATE : 10/02/96
 DEPTH DRILLER : 25
 LOG BOTTOM : 26.05
 LOG TOP : 0.58

PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

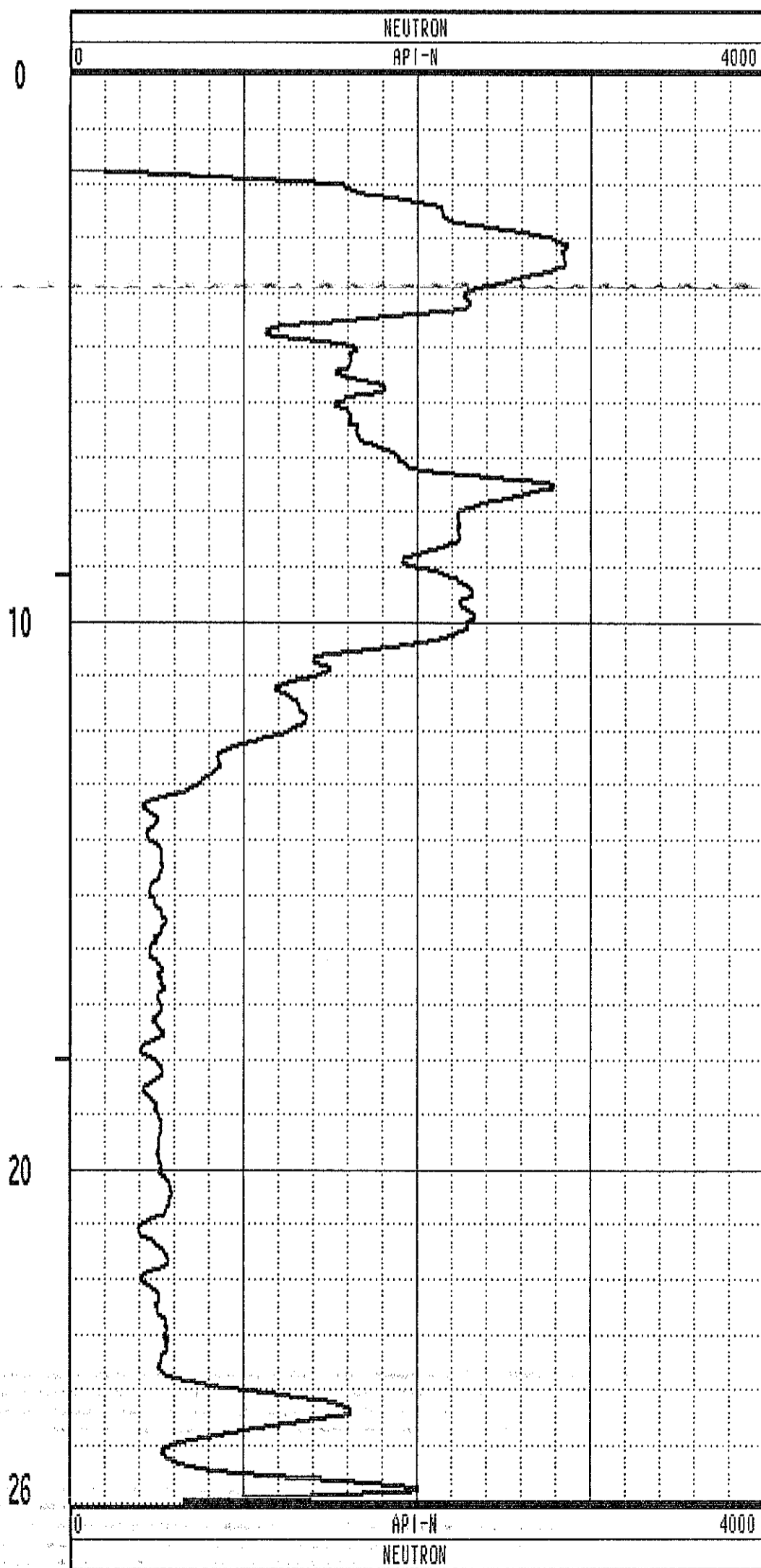
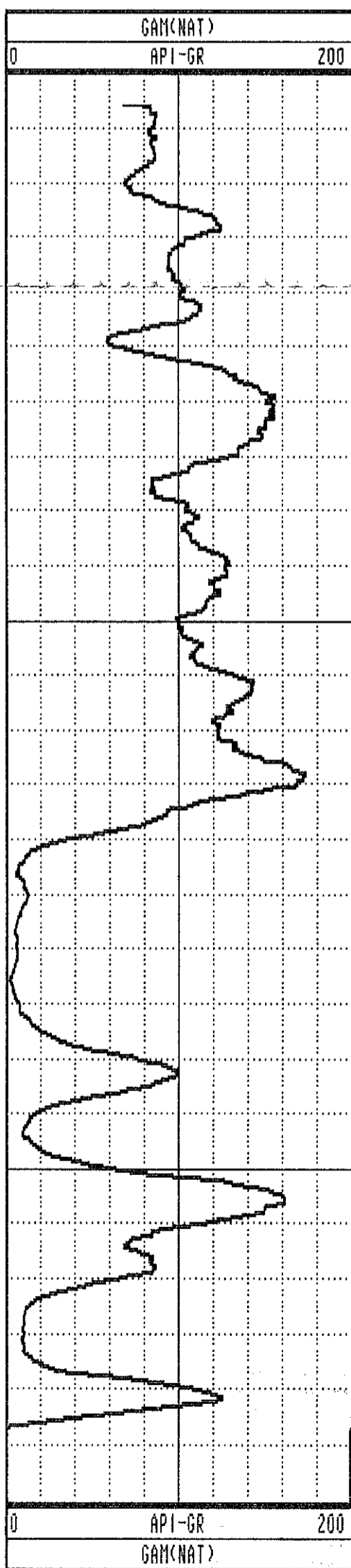
BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 2
 PLOT : PINE 4
 THRESH: 10000

REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96190
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

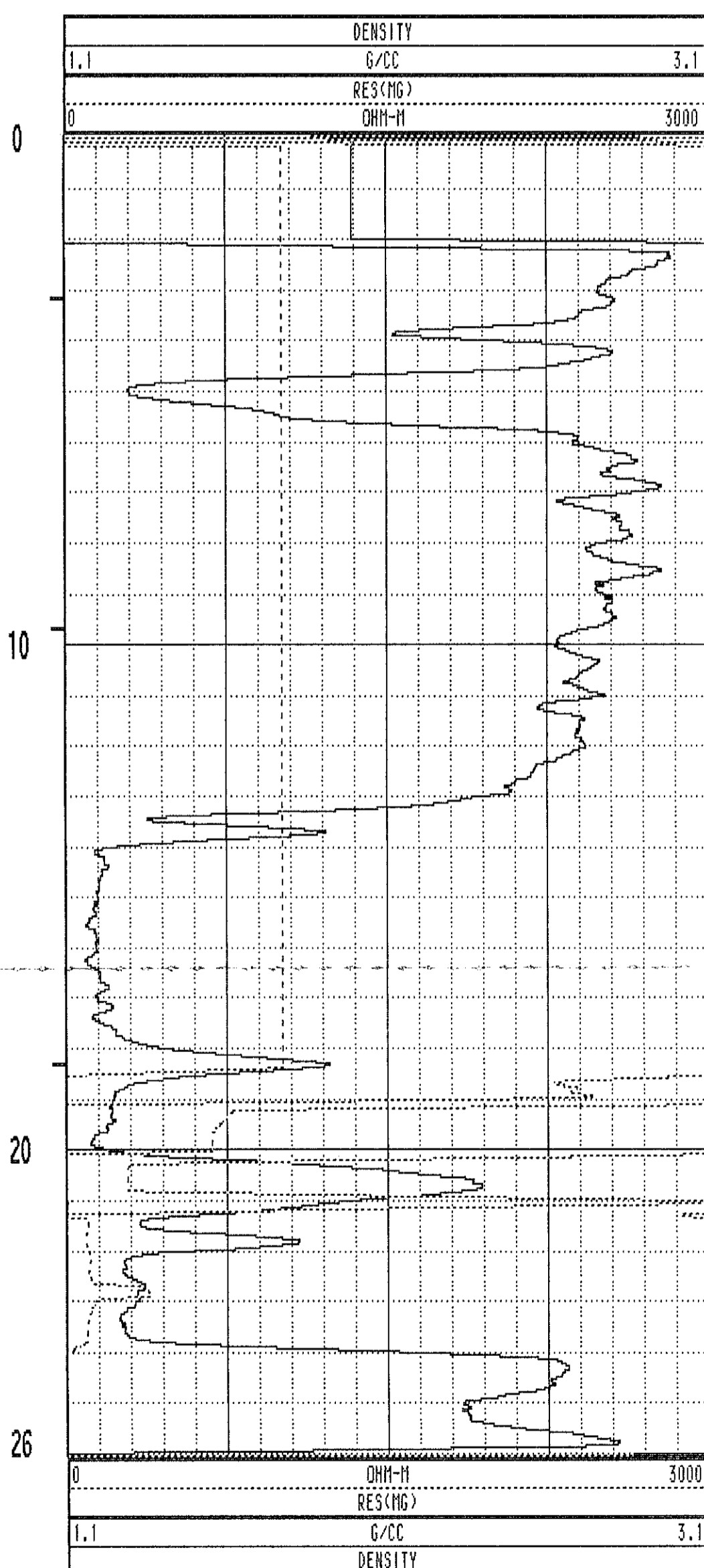
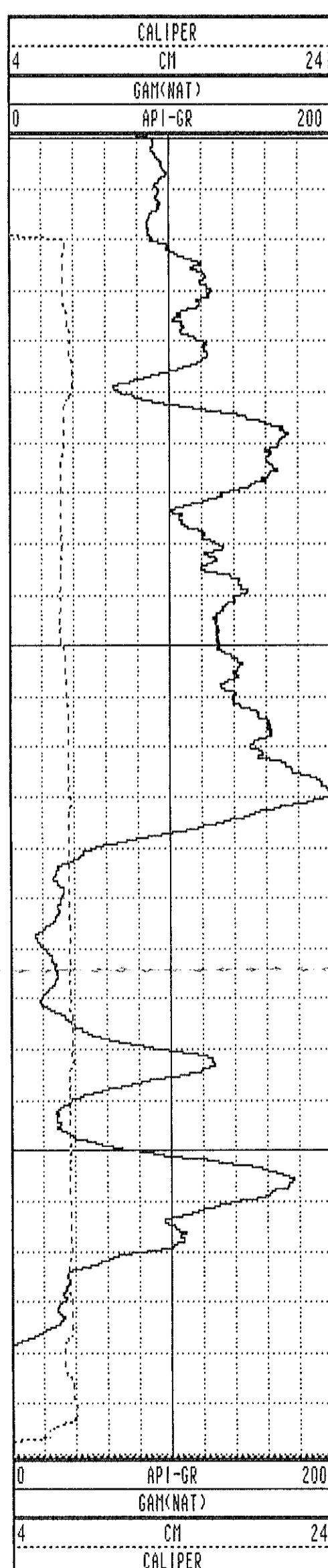
OTHER SERVICES:

DATE : 09/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 26.07 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.06 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96190 09/18/96 958

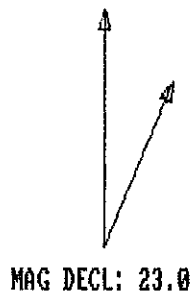
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

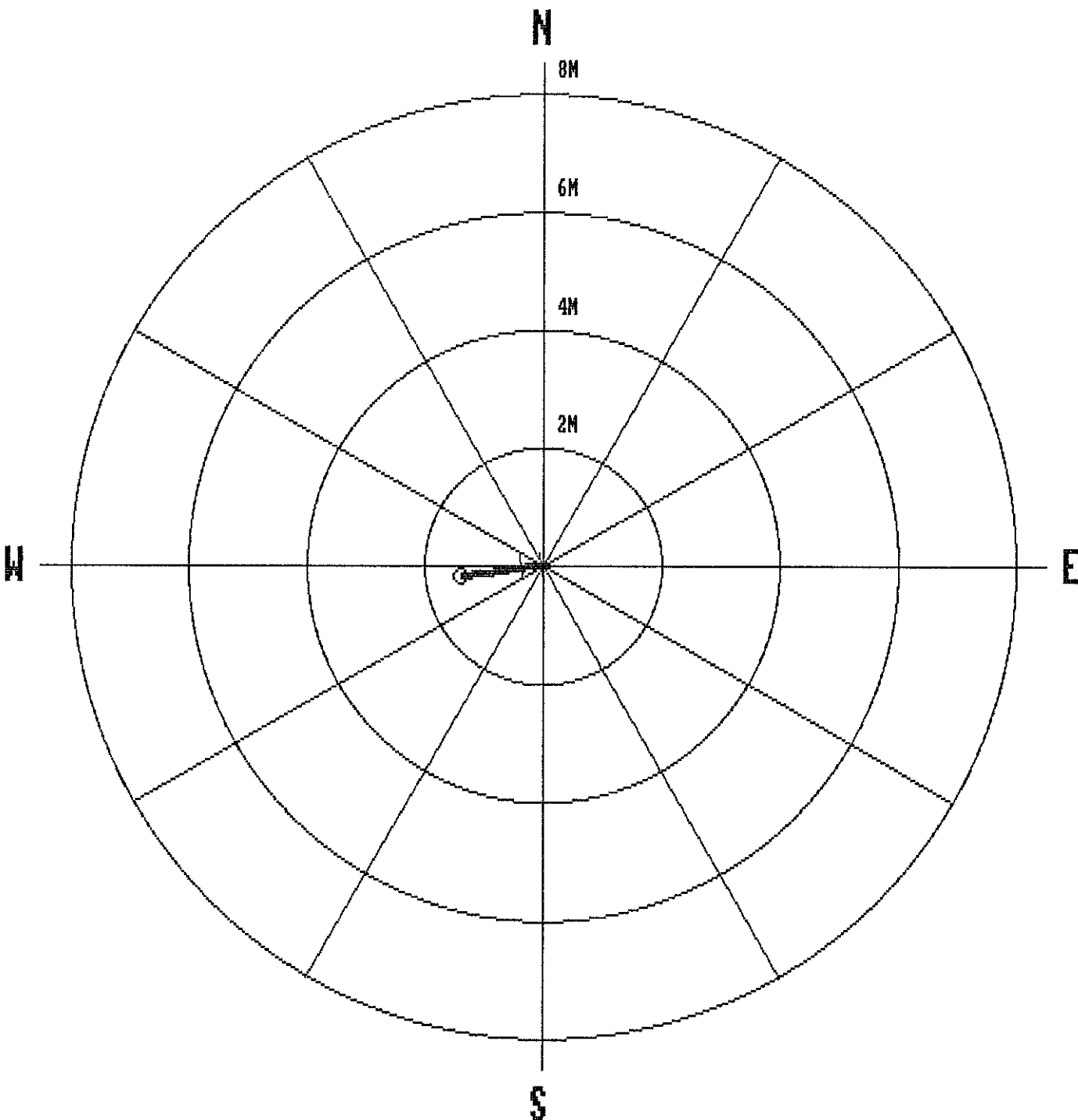
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 224.3 | 0.2 | 188.7 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 245.1 | 0.3 | 216.9 |
| 5.0 | 5.00 | -0.00 | -0.01 | 0.0 | 237.9 | 0.3 | 290.3 |
| 6.0 | 6.00 | -0.00 | -0.01 | 0.0 | 260.3 | 0.2 | 203.9 |
| 7.0 | 7.00 | 0.00 | -0.01 | 0.0 | 270.8 | 0.1 | 114.5 |
| 8.0 | 8.00 | 0.00 | -0.02 | 0.0 | 281.6 | 0.5 | 296.6 |
| 9.0 | 9.00 | 0.00 | -0.02 | 0.0 | 281.6 | 0.2 | 287.5 |
| 10.0 | 10.00 | 0.00 | -0.03 | 0.0 | 277.8 | 0.6 | 243.3 |
| 11.0 | 11.00 | 0.01 | -0.04 | 0.0 | 277.3 | 0.9 | 310.3 |
| 12.0 | 12.00 | 0.01 | -0.05 | 0.1 | 276.7 | 1.0 | 255.1 |
| 13.0 | 13.00 | 0.01 | -0.07 | 0.1 | 275.3 | 1.1 | 271.8 |
| 14.0 | 14.00 | 0.01 | -0.10 | 0.1 | 274.4 | 1.3 | 275.1 |
| 15.0 | 15.00 | 0.01 | -0.13 | 0.1 | 273.3 | 2.0 | 270.5 |
| 16.0 | 16.00 | 0.01 | -0.16 | 0.2 | 272.3 | 2.2 | 267.3 |
| 17.0 | 17.00 | 0.00 | -0.20 | 0.2 | 270.7 | 2.6 | 267.2 |
| 18.0 | 18.00 | -0.01 | -0.25 | 0.3 | 268.4 | 3.2 | 260.0 |
| 19.0 | 18.99 | -0.02 | -0.31 | 0.3 | 265.7 | 3.7 | 237.8 |
| 20.0 | 19.99 | -0.04 | -0.37 | 0.4 | 264.0 | 4.6 | 248.0 |
| 21.0 | 20.99 | -0.05 | -0.45 | 0.5 | 263.6 | 4.7 | 252.1 |
| 22.0 | 21.98 | -0.06 | -0.54 | 0.5 | 263.8 | 5.4 | 262.0 |
| 23.0 | 22.98 | -0.07 | -0.63 | 0.6 | 263.4 | 6.1 | 258.9 |
| 24.0 | 23.98 | -0.09 | -0.73 | 0.7 | 262.9 | 5.5 | 255.8 |
| 25.0 | 24.97 | -0.11 | -0.83 | 0.8 | 262.7 | 5.7 | 261.3 |
| 26.0 | 25.97 | -0.11 | -0.93 | 0.9 | 263.1 | 5.6 | 279.3 |
| 27.0 | 26.96 | -0.12 | -1.03 | 1.0 | 263.1 | 6.2 | 252.5 |
| 28.0 | 27.95 | -0.14 | -1.14 | 1.2 | 262.8 | 7.1 | 267.9 |
| 29.0 | 28.94 | -0.16 | -1.27 | 1.3 | 262.9 | 7.7 | 261.4 |
| 29.9 | 29.82 | -0.18 | -1.39 | 1.4 | 262.5 | 8.3 | 260.8 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96191
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



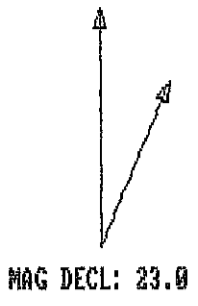
SCALE: 1 M/CM
 TRUE DEPTH: 29.82 M
 AZIMUTH: 262.5
 DISTANCE: 1.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



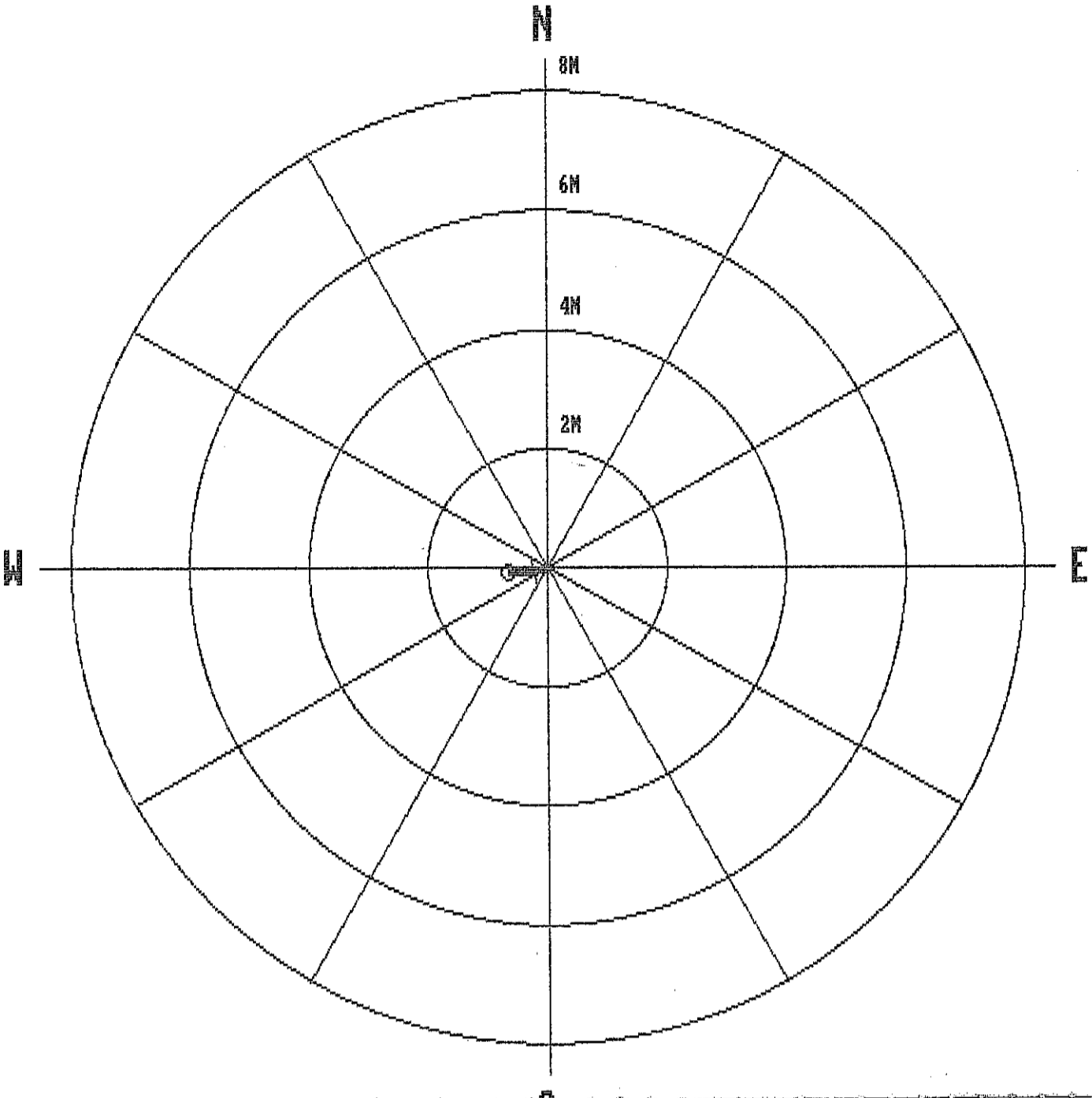
PLAN VIEW

COMPU-LOG DEVIATION

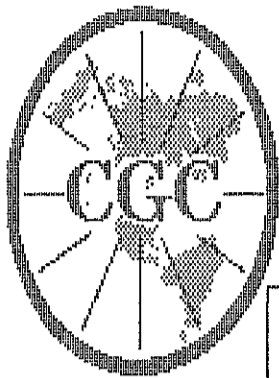
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96051
 DATE OF LOG: 07/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 16.38 M
 AZIMUTH: 260.9
 DISTANCE: 0.7 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| .0 | 2.00 | 0.00 | -0.00 | 0.0 | 277.3 | 1.5 | 277.3 |
| 3.0 | 3.00 | 0.00 | -0.01 | 0.0 | 288.5 | 1.6 | 258.4 |
| 4.0 | 4.00 | -0.02 | -0.02 | 0.0 | 235.5 | 1.4 | 185.7 |
| 5.0 | 5.00 | -0.03 | -0.02 | 0.0 | 209.2 | 1.6 | 127.6 |
| 6.0 | 6.00 | -0.04 | -0.04 | 0.1 | 226.2 | 2.0 | 255.3 |
| 7.0 | 7.00 | -0.05 | -0.08 | 0.1 | 238.6 | 2.3 | 258.6 |
| 8.0 | 8.00 | -0.06 | -0.12 | 0.1 | 244.0 | 2.5 | 255.4 |
| 9.0 | 9.00 | -0.06 | -0.17 | 0.2 | 249.0 | 2.6 | 270.6 |
| 10.0 | 9.99 | -0.07 | -0.21 | 0.2 | 252.9 | 2.9 | 265.2 |
| 11.0 | 10.99 | -0.07 | -0.27 | 0.3 | 255.6 | 2.9 | 272.1 |
| 12.0 | 11.99 | -0.07 | -0.33 | 0.3 | 257.5 | 3.8 | 264.8 |
| 13.0 | 12.99 | -0.08 | -0.40 | 0.4 | 259.1 | 4.3 | 265.2 |
| 14.0 | 13.99 | -0.08 | -0.47 | 0.5 | 259.8 | 4.2 | 261.4 |
| 15.0 | 14.98 | -0.09 | -0.54 | 0.6 | 260.5 | 4.6 | 267.7 |
| 16.0 | 15.98 | -0.10 | -0.62 | 0.6 | 260.9 | 4.0 | 263.6 |
| 16.4 | 16.38 | -0.10 | -0.65 | 0.7 | 260.9 | 4.3 | 259.9 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL LTD.
WELL : WRH-96051
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

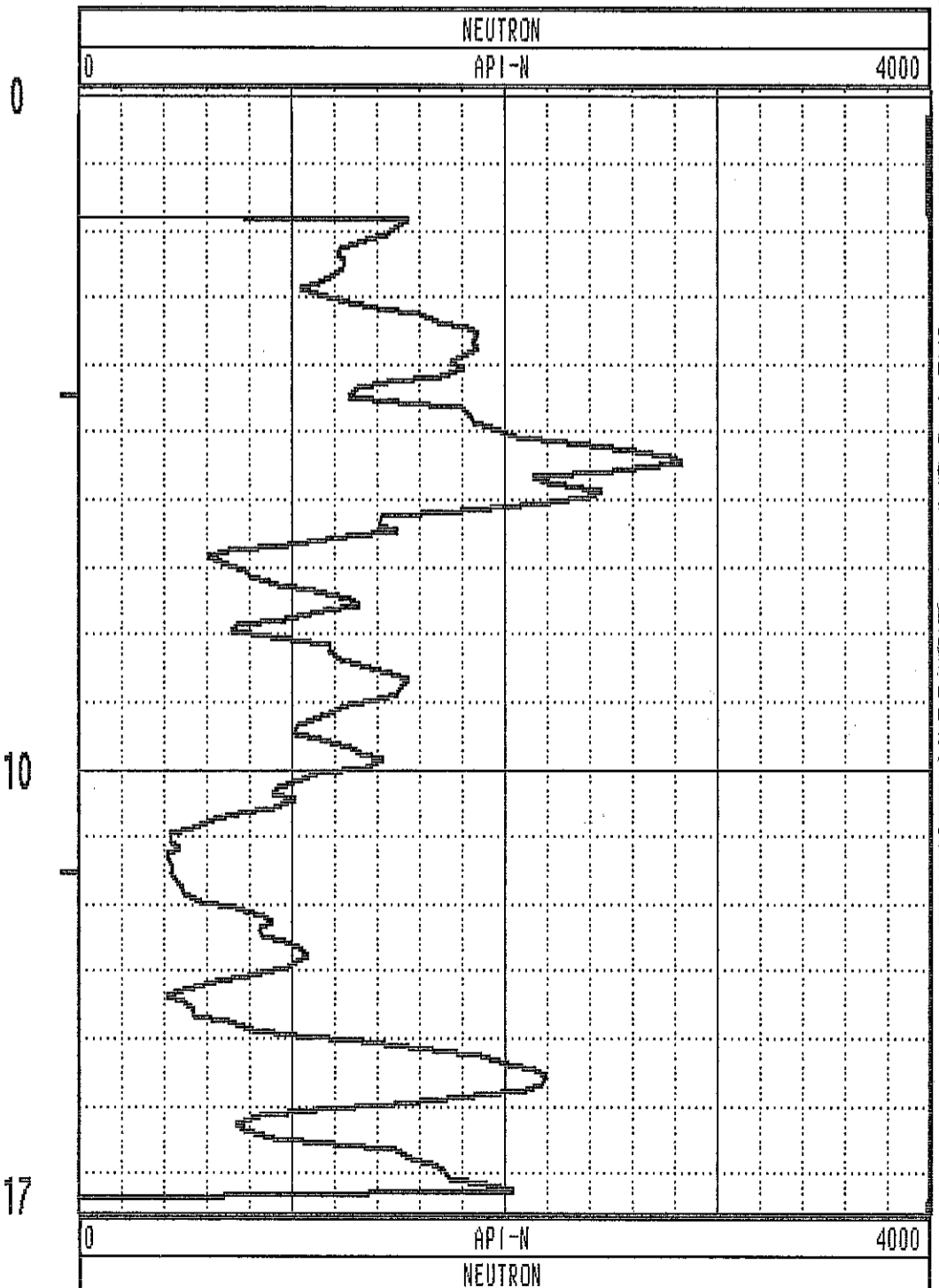
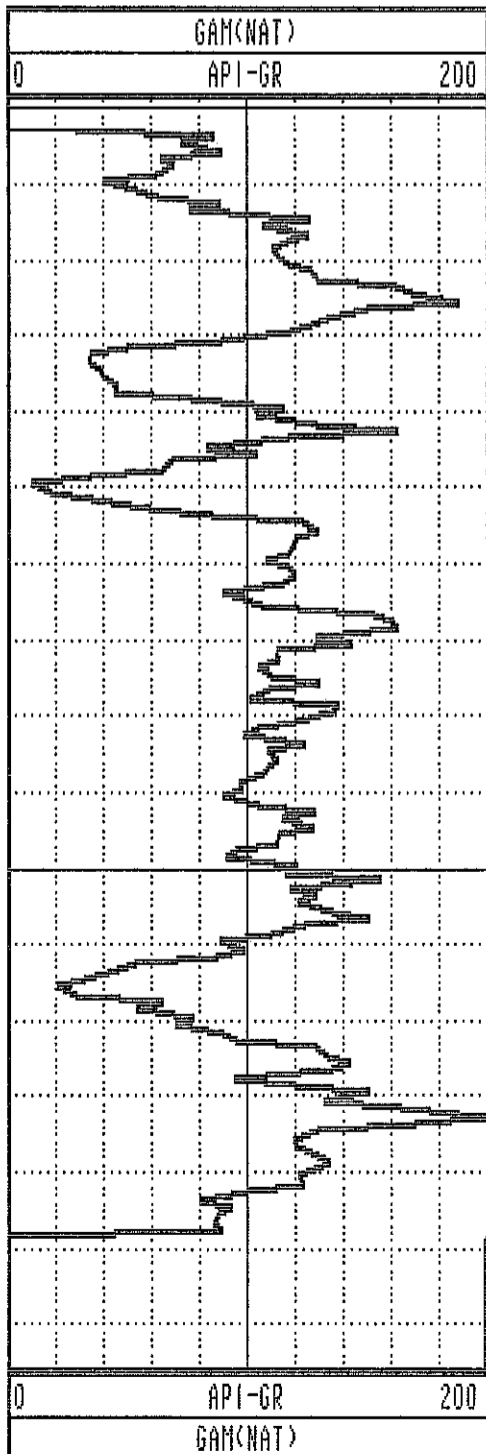
OTHER SERVICES:

DATE : 07/14/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 10 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 16.70 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.40 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 0
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 2
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96051
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

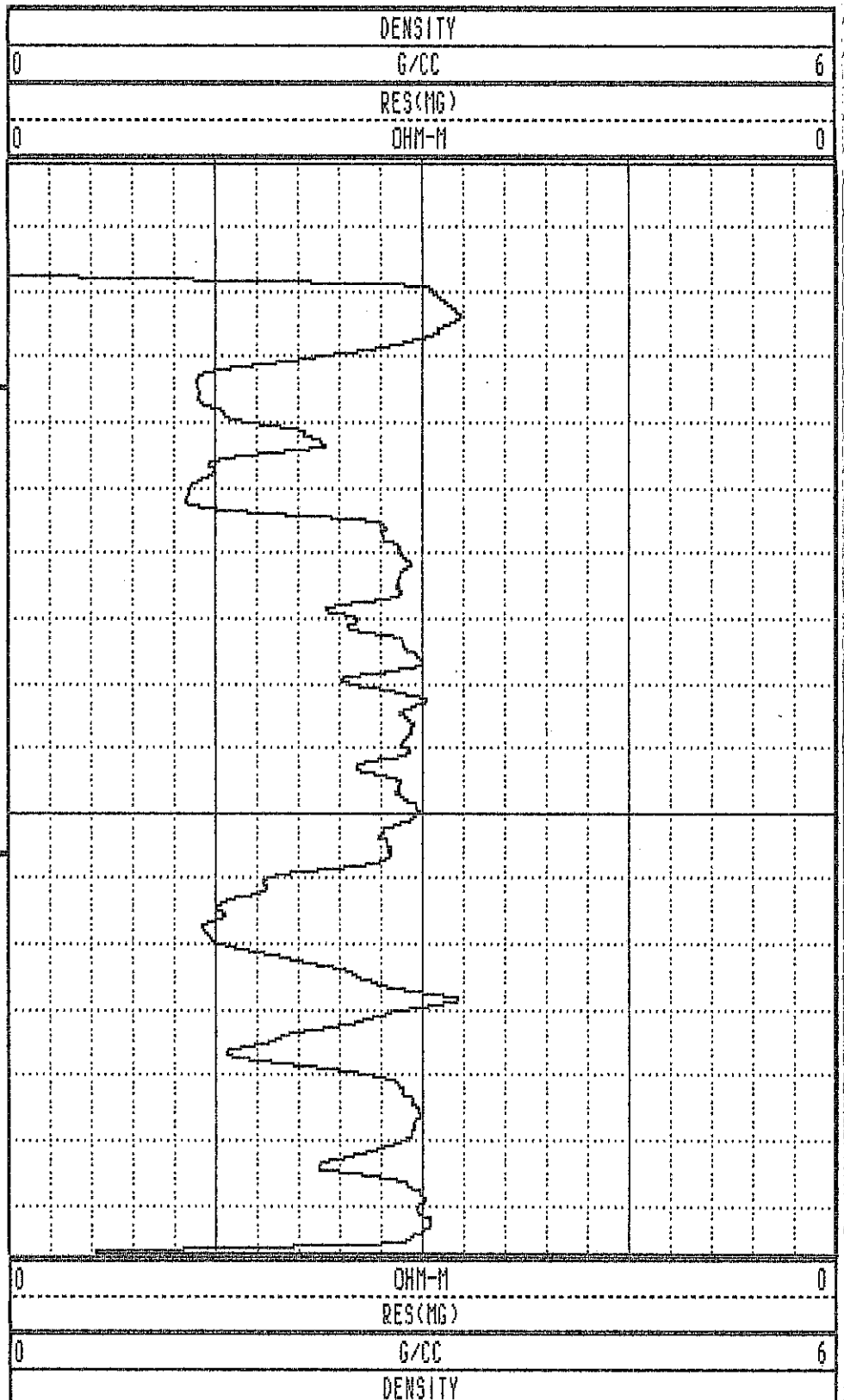
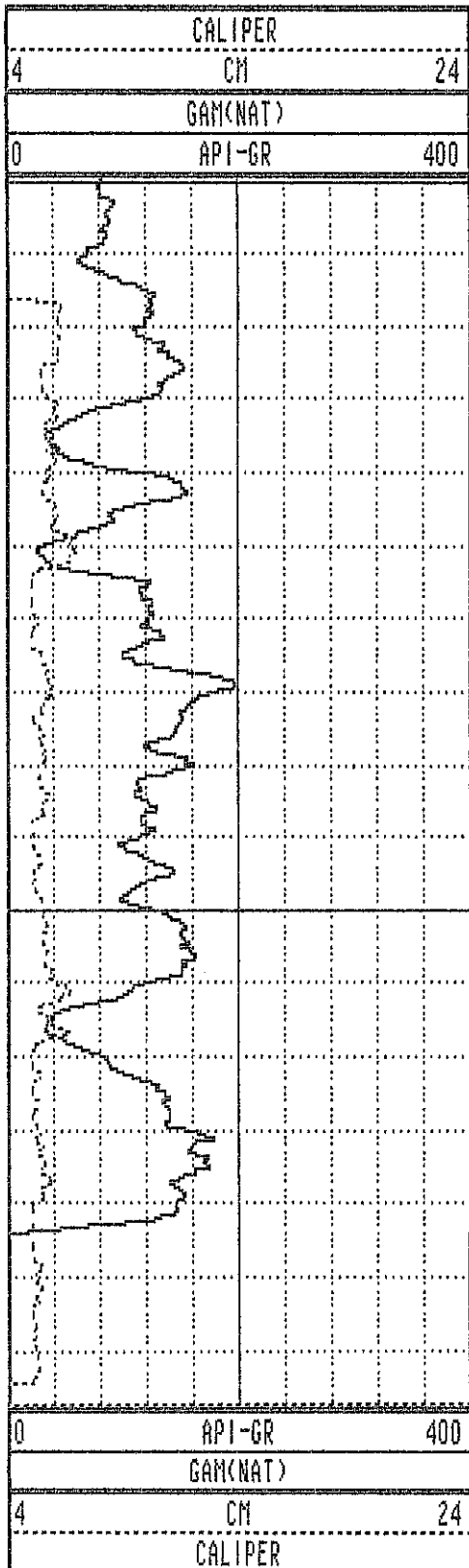
OTHER SERVICES:

DATE : 07/14/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 14 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 16.78 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.38 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9030AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 0
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

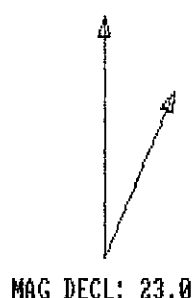
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



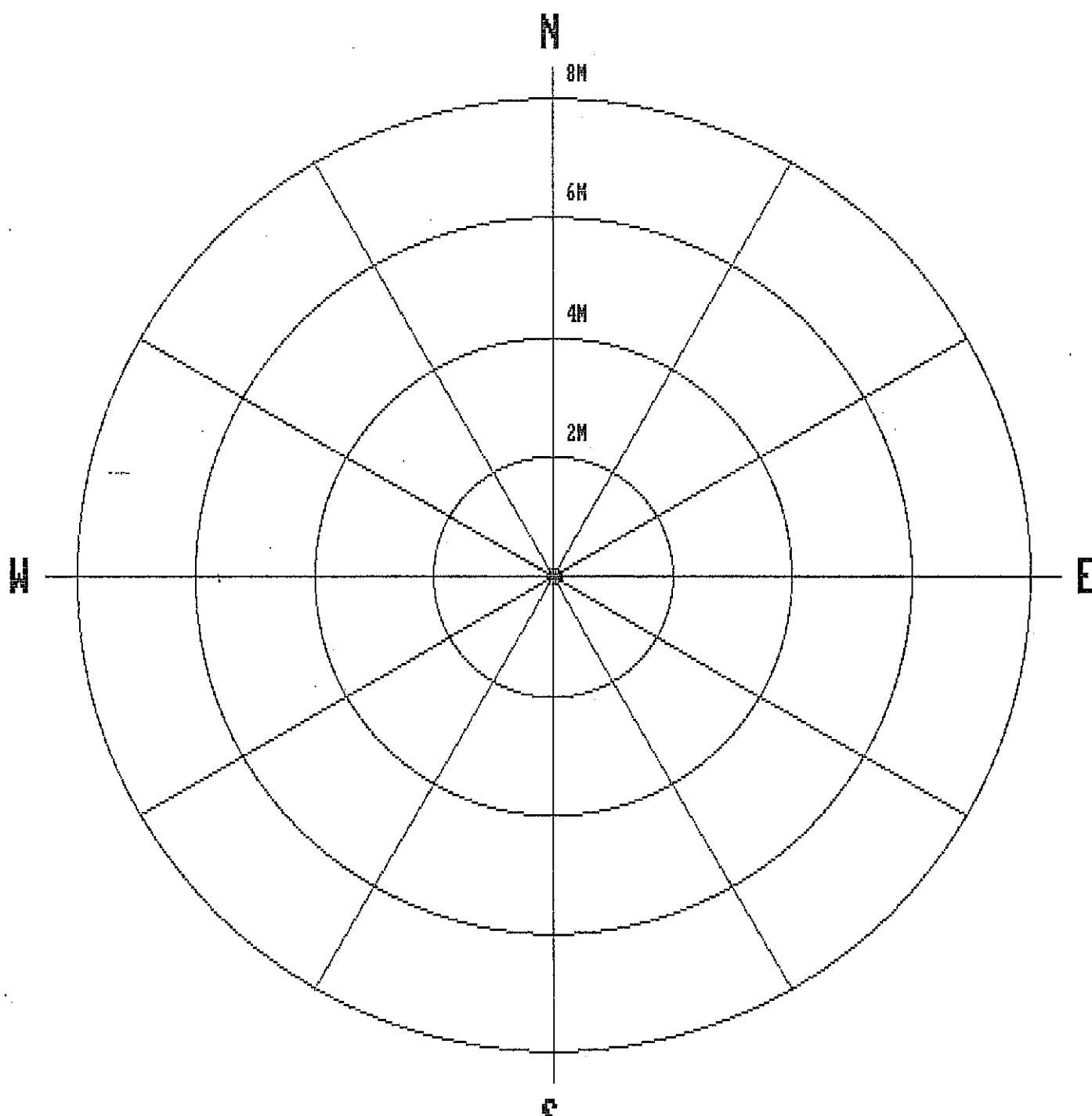
PLAN VIEW

COMPU-LOG DEVIATION

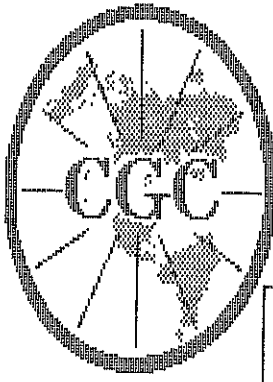
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96052
 DATE OF LOG: 07/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 4.60 M
 AZIMUTH: 59.3
 DISTANCE: 0.0 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|-----|------|------|------|-----|------|-----|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 42.7 | 0.8 | 54.9 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 55.1 | 0.6 | 74.1 |
| 4.6 | 4.60 | 0.02 | 0.03 | 0.0 | 59.3 | 0.7 | 70.9 |



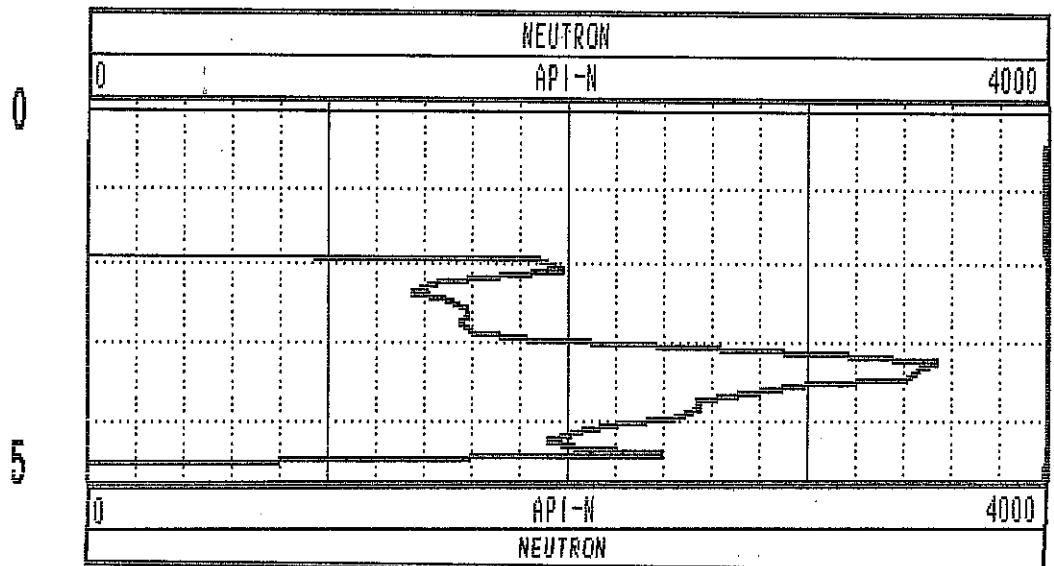
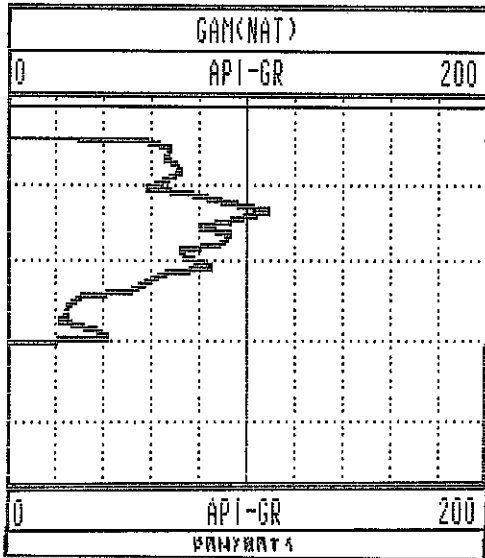
Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|-------------------|-------------------------|-----------------------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: |
| WELL | : WRH-96052 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 07/14/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 8 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 4.90 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.50 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : AIR |
| MAGNETIC DECL. | : 23 | RM : |
| MATRIX DENSITY | : | RM TEMPERATURE : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : |
| REMARKS | : | FILE : ORIGINAL |
| | | TYPE : 9055A |
| | | LOG : 8 |
| | | PLOT : PINE 4 |
| | | THRESH: 500000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

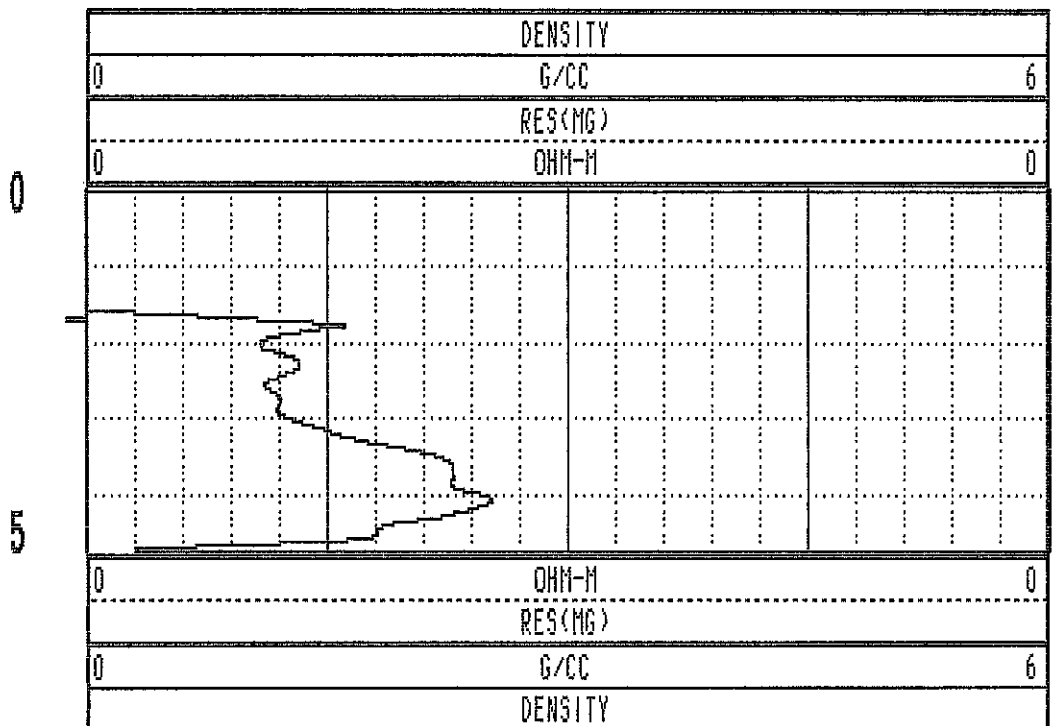
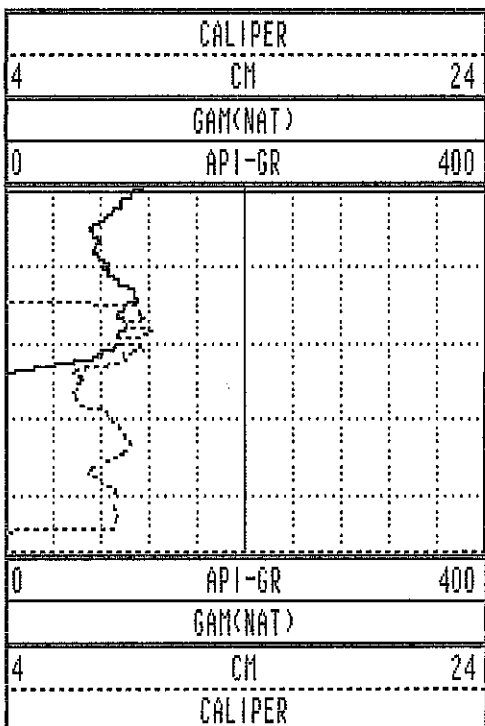
COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96052
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/14/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 5 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 4.76 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.60 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9030AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE Ø
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



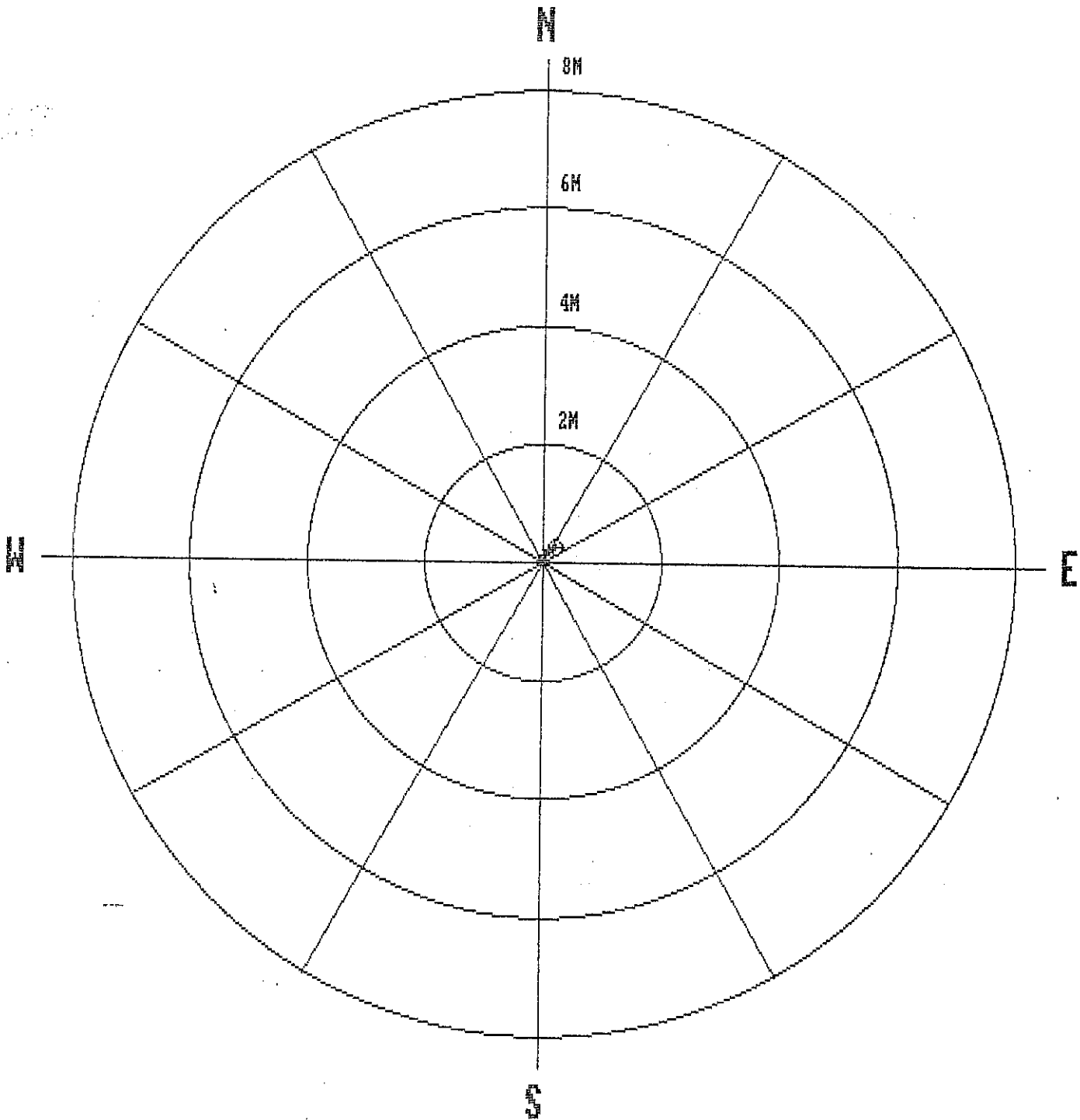
WRH-96052 07/14/96 409

PLAN VIEW COMPU-LOG DEVIATION

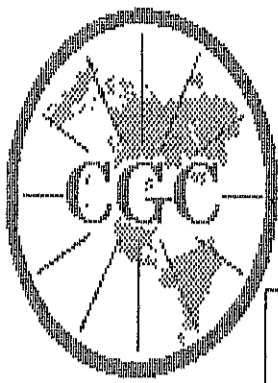
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96053
 DATE OF LOG: 07/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 20.49 M
 AZIMUTH: 39.8
 DISTANCE: 0.3 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 0.2 | 0.4 | 348.5 |
| 4.0 | 4.00 | 0.01 | -0.02 | 0.0 | 304.7 | 2.2 | 270.6 |
| 5.0 | 5.00 | 0.02 | -0.02 | 0.0 | 315.1 | 0.8 | 294.8 |
| 6.0 | 6.00 | 0.02 | -0.03 | 0.0 | 300.6 | 0.7 | 288.2 |
| 7.0 | 7.00 | 0.02 | -0.04 | 0.0 | 296.7 | 0.5 | 297.3 |
| 8.0 | 8.00 | 0.02 | -0.05 | 0.1 | 294.8 | 0.5 | 287.2 |
| 9.0 | 9.00 | 0.03 | -0.06 | 0.1 | 294.5 | 0.9 | 313.6 |
| 10.0 | 10.00 | 0.03 | -0.07 | 0.1 | 294.1 | 0.3 | 280.7 |
| 11.0 | 11.00 | 0.03 | -0.07 | 0.1 | 293.5 | 0.2 | 292.4 |
| 12.0 | 12.00 | 0.03 | -0.07 | 0.1 | 296.3 | 0.3 | 53.3 |
| 13.0 | 13.00 | 0.04 | -0.07 | 0.1 | 302.5 | 1.0 | 5.1 |
| 14.0 | 14.00 | 0.05 | -0.06 | 0.1 | 314.4 | 1.1 | 54.3 |
| 15.0 | 15.00 | 0.07 | -0.04 | 0.1 | 330.6 | 1.6 | 44.7 |
| 16.0 | 16.00 | 0.09 | -0.01 | 0.1 | 351.8 | 2.1 | 49.3 |
| 17.0 | 17.00 | 0.11 | 0.02 | 0.1 | 10.7 | 2.7 | 52.1 |
| 18.0 | 18.00 | 0.15 | 0.06 | 0.2 | 23.3 | 3.2 | 53.2 |
| 19.0 | 18.99 | 0.18 | 0.11 | 0.2 | 31.6 | 4.5 | 50.9 |
| 20.0 | 19.99 | 0.23 | 0.18 | 0.3 | 37.3 | 5.4 | 55.2 |
| 20.5 | 20.49 | 0.26 | 0.22 | 0.3 | 39.8 | 5.5 | 52.6 |



Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

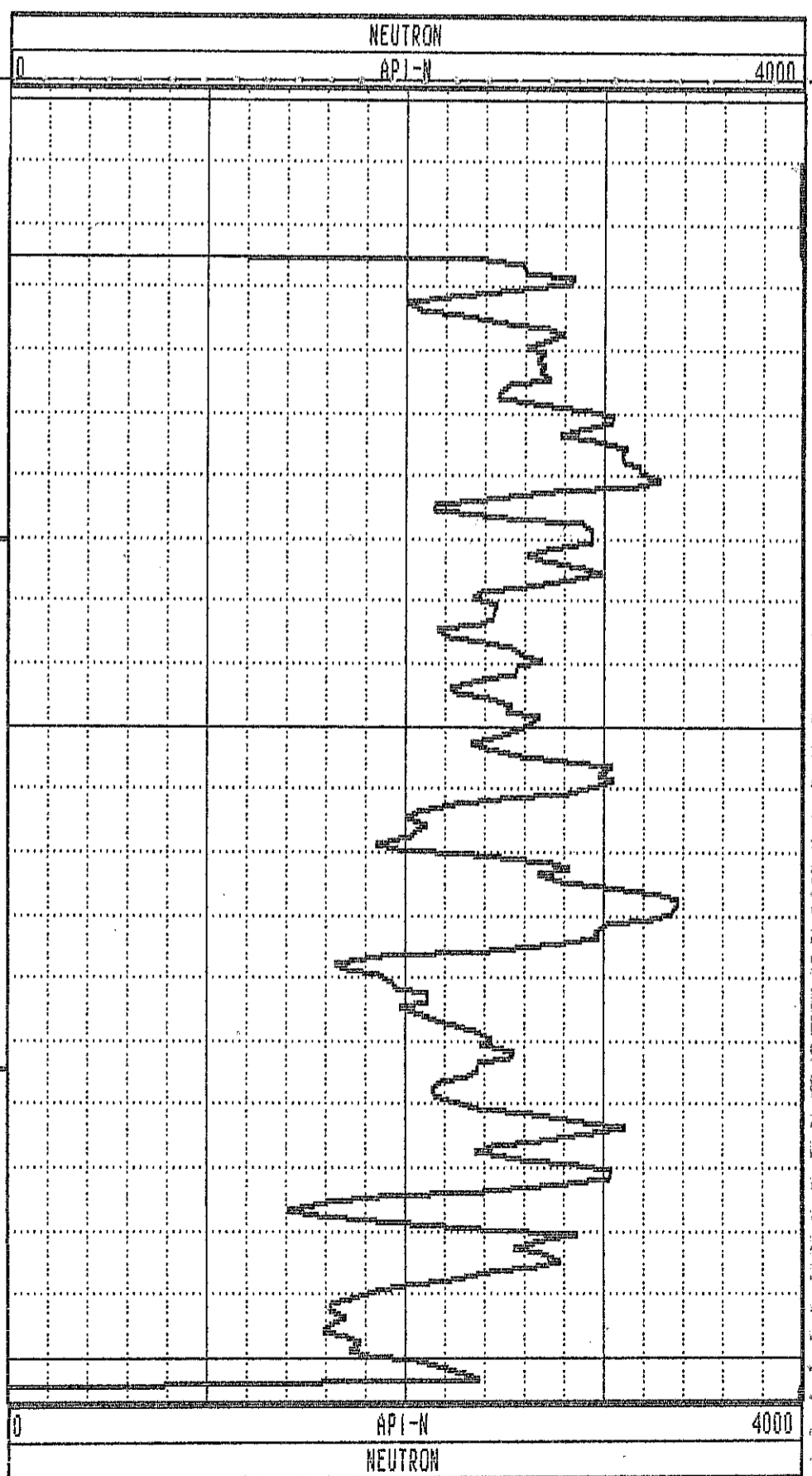
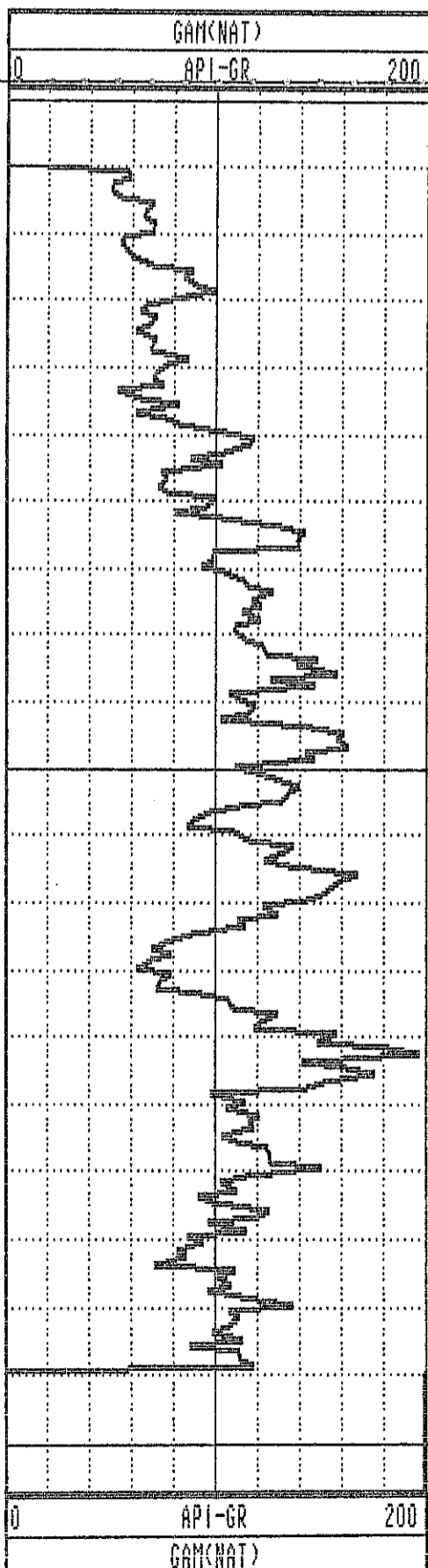
COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96053
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/14/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 16 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 20.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 1.10 DRL MEASURED FROM: GL :
 CASING DRILLER : 10 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

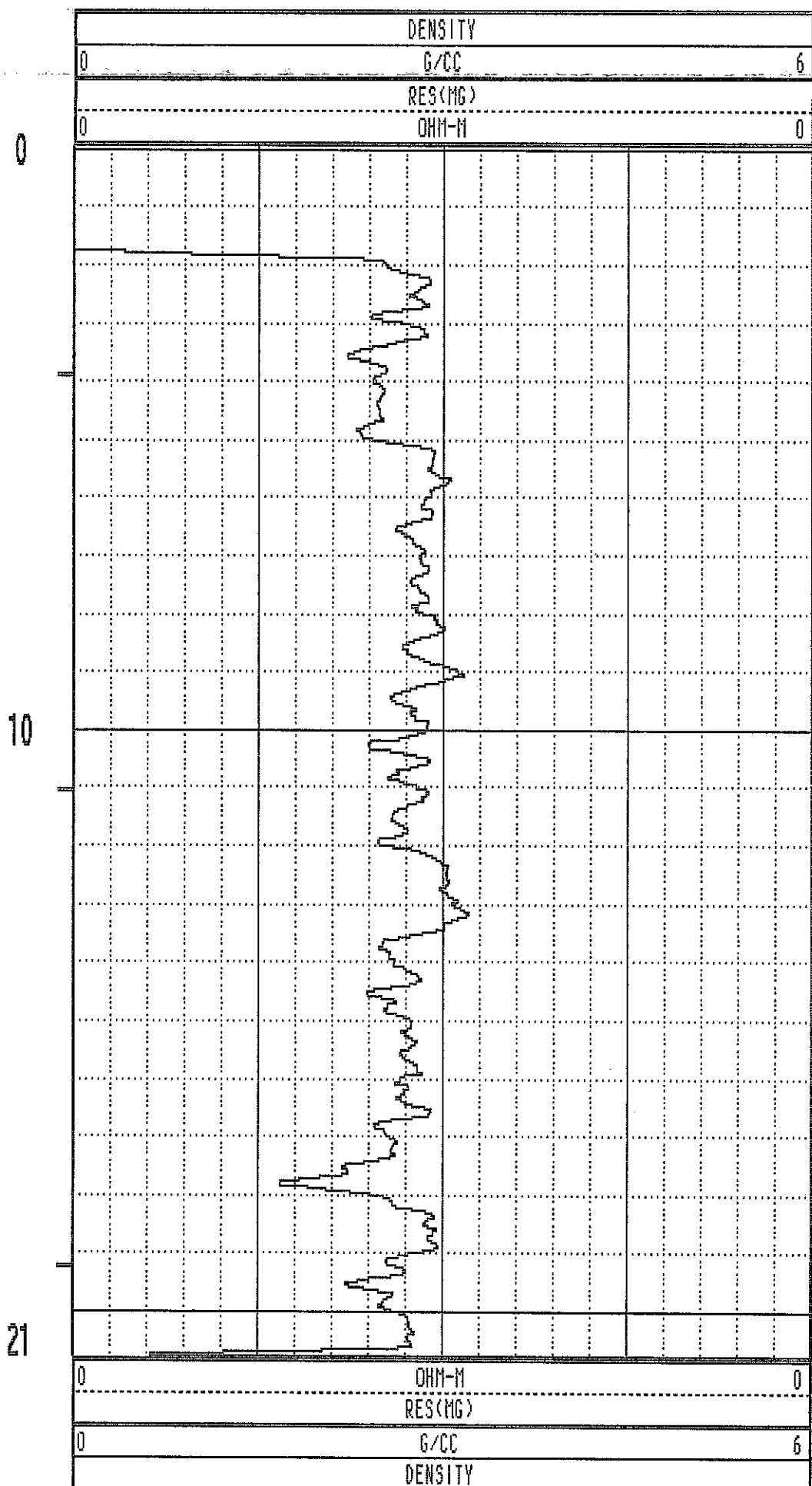
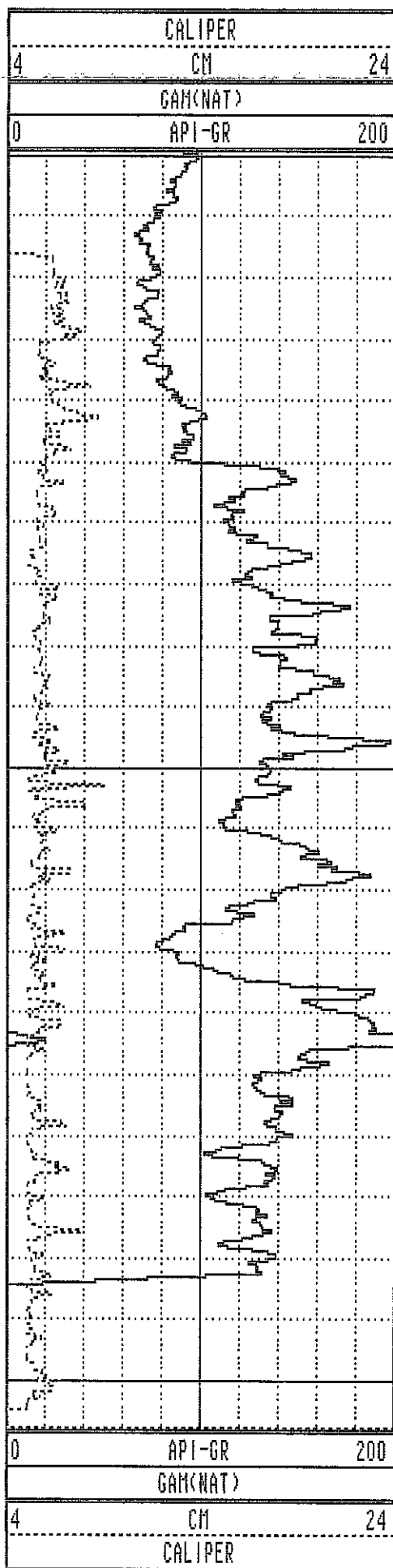
COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96053
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/14/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 21 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 20.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.36 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

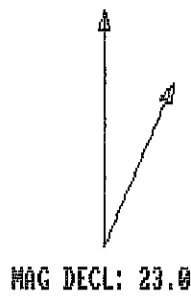
BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9030AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 0
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

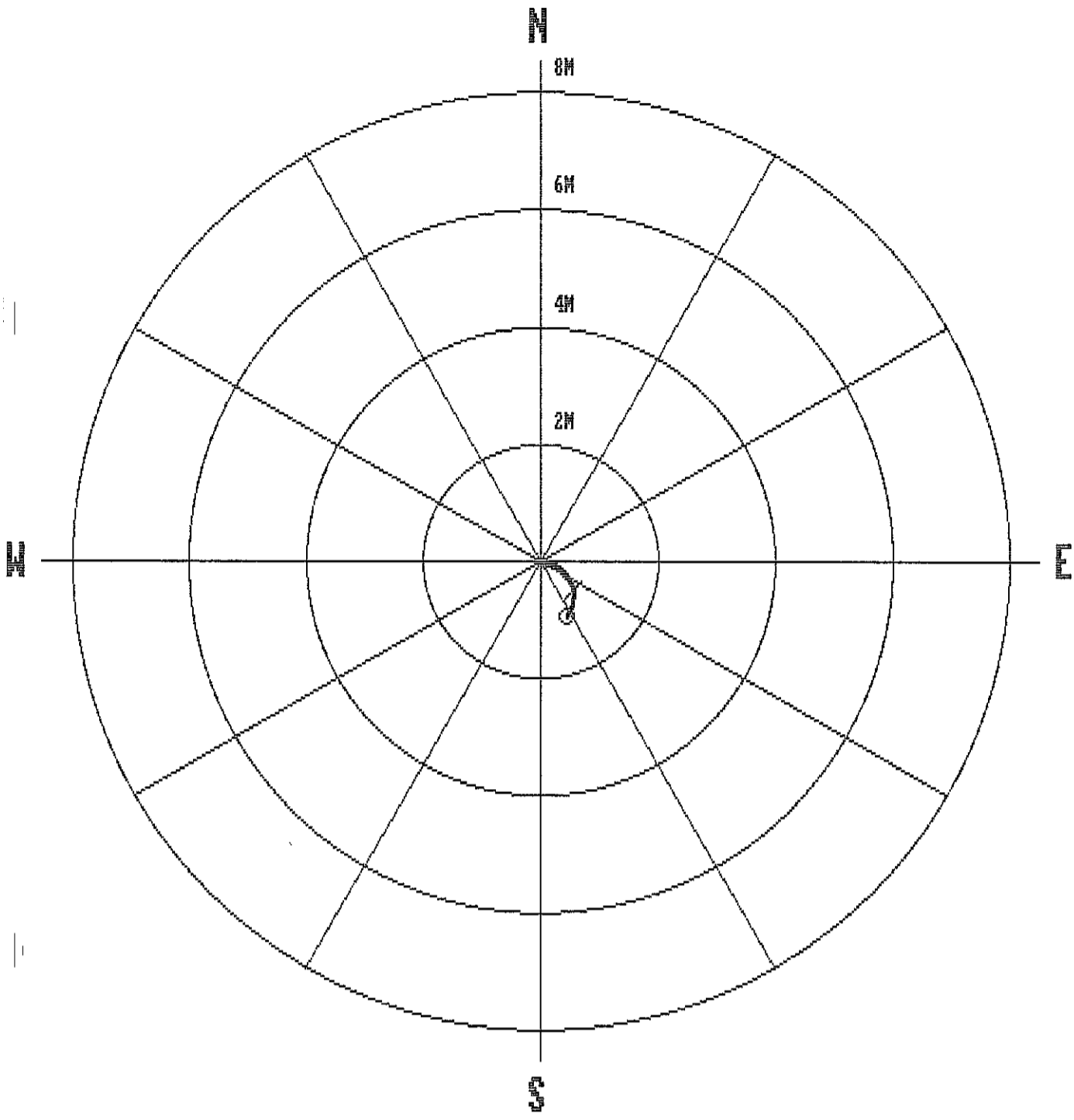


PLAN VIEW COMPU-LOG DEVIATION

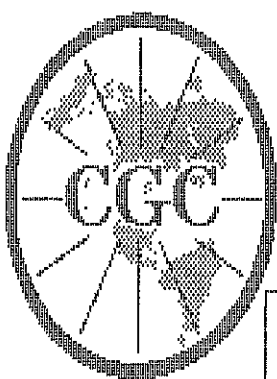
CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96054
 DATE OF LOG: 07/23/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.77 M
 AZIMUTH: 153.9
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.01 | 0.01 | 0.0 | 119.2 | 2.6 | 121.8 |
| 3.0 | 3.00 | -0.02 | 0.05 | 0.1 | 115.5 | 2.7 | 125.7 |
| 4.0 | 4.00 | -0.02 | 0.05 | 0.1 | 107.8 | 3.2 | 20.6 |
| 5.0 | 5.00 | -0.02 | 0.08 | 0.1 | 101.1 | 3.0 | 106.0 |
| 6.0 | 5.99 | -0.03 | 0.13 | 0.1 | 104.2 | 3.4 | 110.7 |
| 7.0 | 6.99 | -0.05 | 0.18 | 0.2 | 105.7 | 2.8 | 117.9 |
| 8.0 | 7.99 | -0.08 | 0.22 | 0.2 | 108.7 | 3.2 | 129.7 |
| 9.0 | 8.99 | -0.10 | 0.27 | 0.3 | 110.4 | 2.9 | 121.5 |
| 10.0 | 9.99 | -0.13 | 0.31 | 0.3 | 112.2 | 2.7 | 117.1 |
| 11.0 | 10.99 | -0.15 | 0.35 | 0.4 | 113.5 | 2.6 | 129.6 |
| 12.0 | 11.99 | -0.18 | 0.38 | 0.4 | 115.6 | 2.1 | 142.6 |
| 13.0 | 12.99 | -0.21 | 0.41 | 0.5 | 117.9 | 2.7 | 136.2 |
| 14.0 | 13.98 | -0.25 | 0.44 | 0.5 | 119.6 | 2.9 | 125.1 |
| 15.0 | 14.98 | -0.29 | 0.47 | 0.6 | 121.0 | 2.5 | 146.3 |
| 16.0 | 15.98 | -0.32 | 0.50 | 0.6 | 122.8 | 2.5 | 142.7 |
| 17.0 | 16.98 | -0.36 | 0.52 | 0.6 | 124.6 | 2.7 | 149.7 |
| 18.0 | 17.98 | -0.40 | 0.54 | 0.7 | 126.5 | 2.5 | 165.3 |
| 19.0 | 18.98 | -0.44 | 0.56 | 0.7 | 128.5 | 2.7 | 161.0 |
| 20.0 | 19.98 | -0.49 | 0.57 | 0.8 | 130.5 | 2.6 | 161.7 |
| 21.0 | 20.98 | -0.53 | 0.58 | 0.8 | 132.4 | 2.5 | 178.4 |
| 22.0 | 21.98 | -0.58 | 0.58 | 0.8 | 134.8 | 2.5 | 190.7 |
| 23.0 | 22.98 | -0.62 | 0.58 | 0.8 | 137.2 | 2.4 | 190.0 |
| 24.0 | 23.97 | -0.67 | 0.56 | 0.9 | 139.9 | 3.1 | 203.5 |
| 25.0 | 24.97 | -0.72 | 0.56 | 0.9 | 142.2 | 2.8 | 190.5 |
| 26.0 | 25.97 | -0.76 | 0.54 | 0.9 | 144.5 | 2.7 | 209.8 |
| 27.0 | 26.97 | -0.80 | 0.53 | 1.0 | 146.8 | 2.4 | 207.4 |
| 28.0 | 27.97 | -0.84 | 0.51 | 1.0 | 149.0 | 3.2 | 211.2 |
| 29.0 | 28.97 | -0.89 | 0.48 | 1.0 | 151.6 | 3.2 | 199.2 |
| 29.8 | 29.77 | -0.94 | 0.46 | 1.0 | 153.9 | 4.3 | 202.4 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96054
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

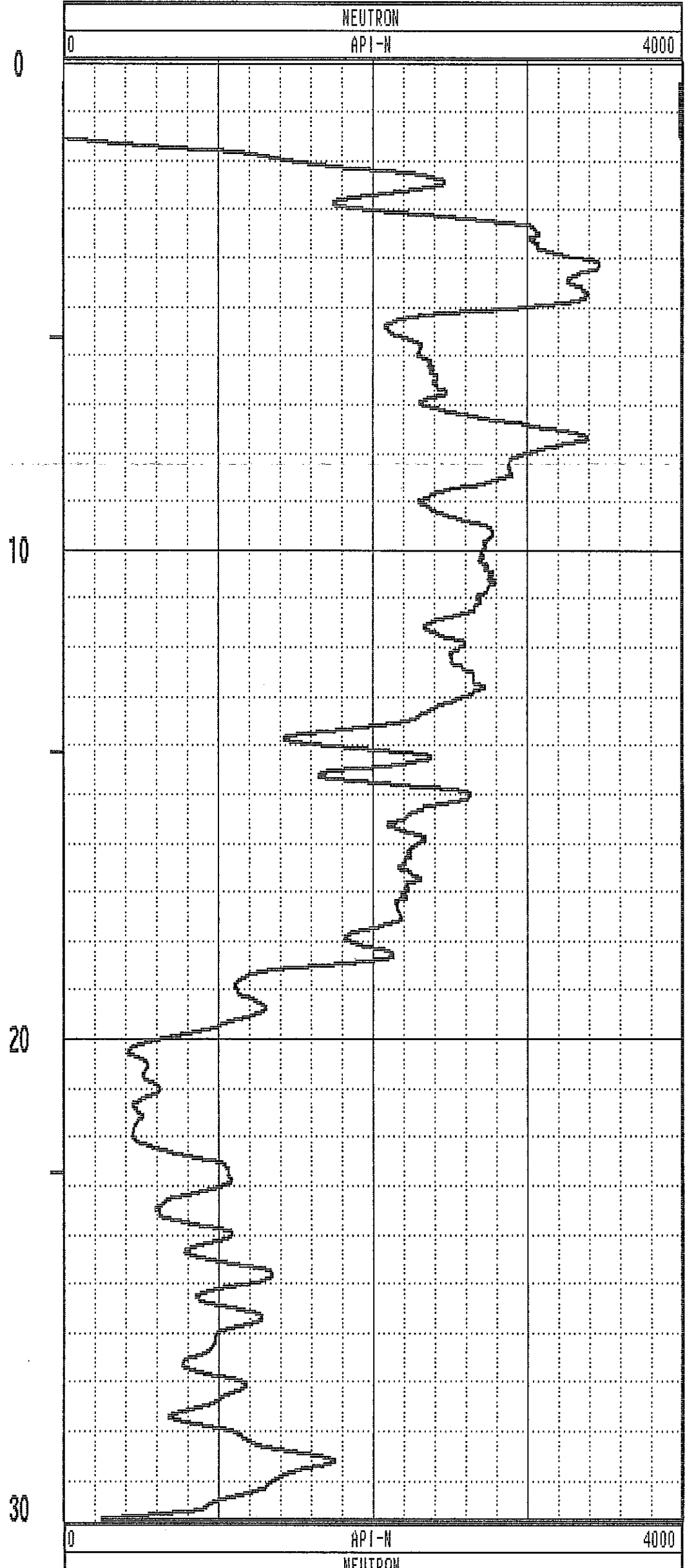
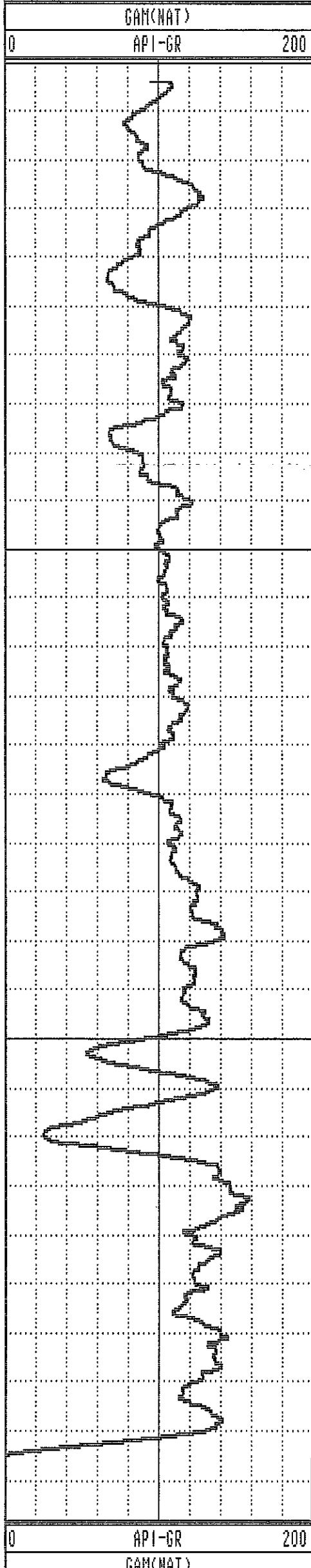
OTHER SERVICES:

DATE : 07/23/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.85 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.40 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

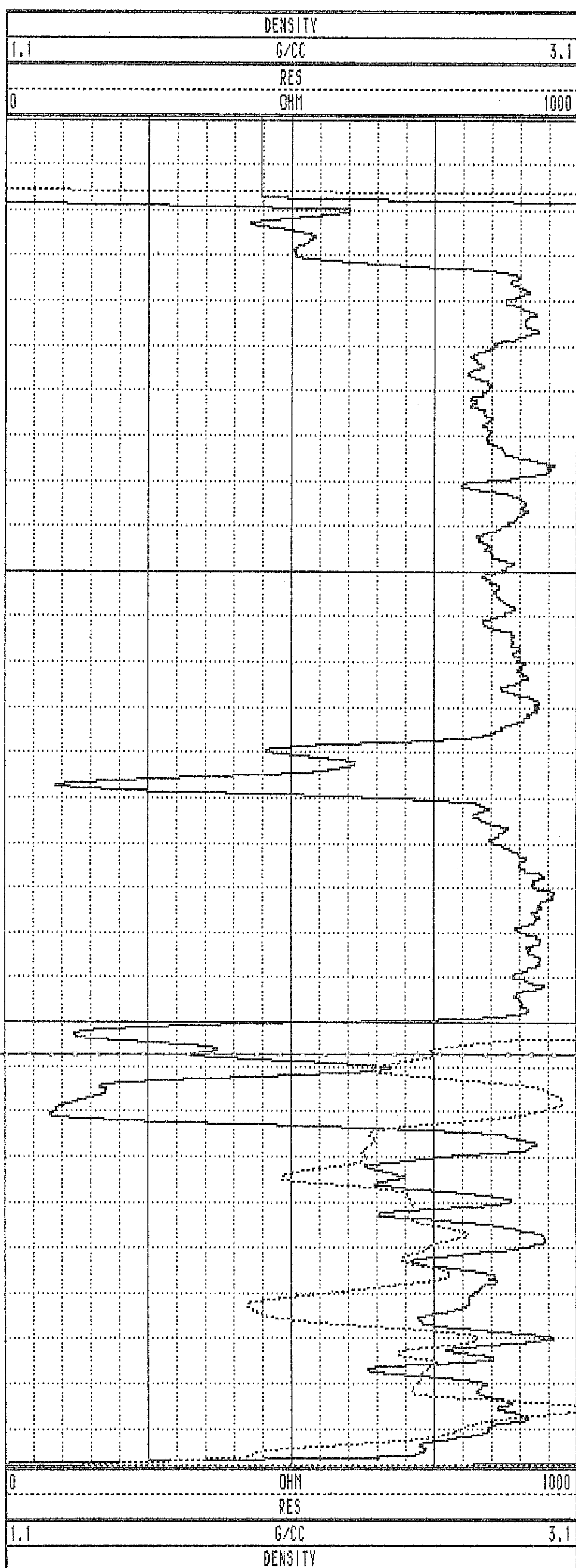
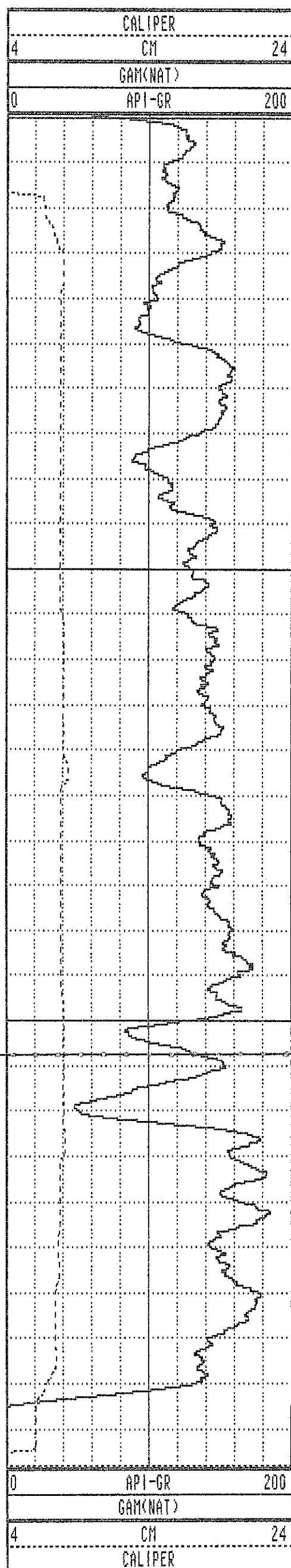
COMPANY : PINE VALLEY COAL
 WELL : WRH-96054
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/23/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 29 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.86 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



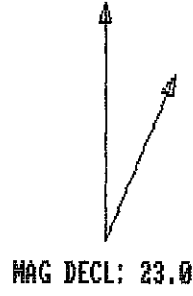
WRH-96054 07/23/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

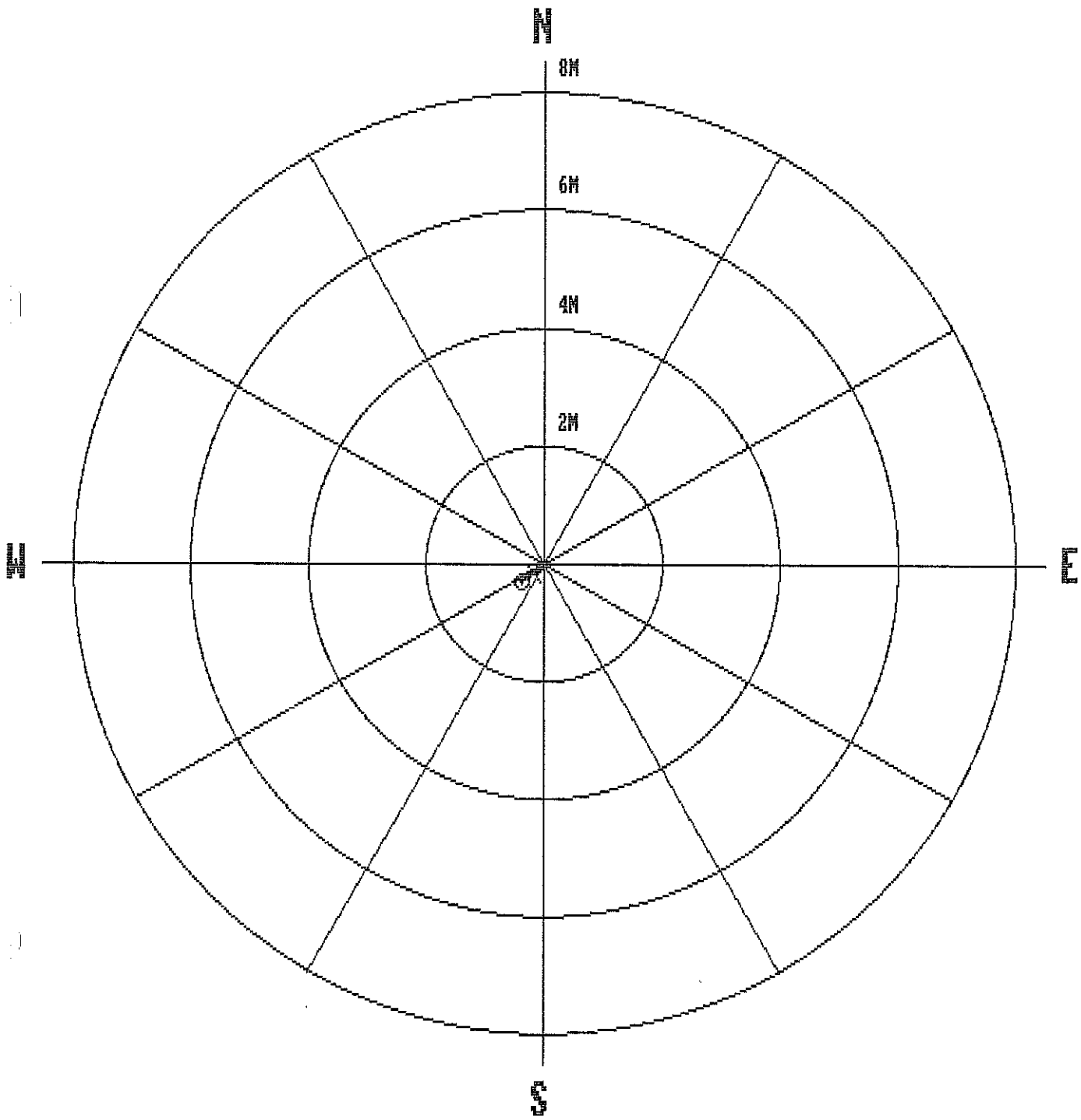
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

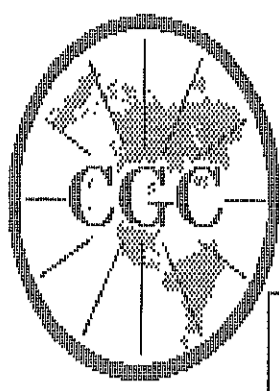
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96055
 DATE OF LOG: 07/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.69 M
 AZIMUTH: 232.6
 DISTANCE: 0.5 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.6 | 1.60 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.6 | 2.60 | 0.00 | 0.00 | 0.0 | 60.0 | 1.0 | 105.9 |
| 3.6 | 3.60 | 0.00 | 0.01 | 0.0 | 75.4 | 0.4 | 7.7 |
| 4.6 | 4.60 | 0.00 | 0.01 | 0.0 | 76.4 | 0.4 | 120.1 |
| 5.6 | 5.60 | 0.00 | 0.02 | 0.0 | 88.5 | 0.3 | 143.3 |
| 6.6 | 6.60 | -0.00 | 0.02 | 0.0 | 103.1 | 0.4 | 214.9 |
| 7.6 | 7.60 | -0.01 | 0.01 | 0.0 | 134.4 | 1.0 | 213.1 |
| 8.6 | 8.60 | -0.02 | 0.01 | 0.0 | 158.0 | 0.7 | 231.6 |
| 9.6 | 9.60 | -0.03 | 0.00 | 0.0 | 177.2 | 0.6 | 255.3 |
| 10.6 | 10.60 | -0.04 | -0.01 | 0.0 | 188.9 | 0.6 | 229.0 |
| 11.6 | 11.60 | -0.04 | -0.02 | 0.0 | 202.1 | 0.4 | 232.1 |
| 12.6 | 12.60 | -0.05 | -0.03 | 0.1 | 209.8 | 1.0 | 264.8 |
| 13.6 | 13.60 | -0.06 | -0.04 | 0.1 | 215.1 | 0.8 | 250.0 |
| 14.6 | 14.60 | -0.07 | -0.06 | 0.1 | 219.5 | 1.1 | 251.9 |
| 15.6 | 15.60 | -0.08 | -0.07 | 0.1 | 222.5 | 1.2 | 228.1 |
| 16.6 | 16.60 | -0.09 | -0.09 | 0.1 | 225.1 | 1.2 | 255.7 |
| 17.6 | 17.60 | -0.10 | -0.12 | 0.2 | 228.0 | 1.6 | 241.5 |
| 18.6 | 18.60 | -0.11 | -0.14 | 0.2 | 231.5 | 1.7 | 232.1 |
| 19.6 | 19.60 | -0.13 | -0.17 | 0.2 | 233.1 | 1.4 | 255.3 |
| 20.6 | 20.60 | -0.14 | -0.20 | 0.2 | 234.7 | 2.0 | 244.7 |
| 21.6 | 21.60 | -0.15 | -0.23 | 0.3 | 236.1 | 1.8 | 246.5 |
| 22.6 | 22.60 | -0.17 | -0.25 | 0.3 | 236.6 | 1.8 | 231.4 |
| 23.6 | 23.60 | -0.18 | -0.28 | 0.3 | 237.0 | 1.9 | 244.5 |
| 24.6 | 24.59 | -0.20 | -0.31 | 0.4 | 237.2 | 1.9 | 235.5 |
| 25.6 | 25.59 | -0.22 | -0.34 | 0.4 | 237.2 | 1.4 | 241.2 |
| 26.6 | 26.59 | -0.23 | -0.35 | 0.4 | 237.0 | 1.1 | 229.0 |
| 27.6 | 27.59 | -0.24 | -0.36 | 0.4 | 236.2 | 1.1 | 205.5 |
| 28.6 | 28.59 | -0.26 | -0.37 | 0.5 | 234.9 | 1.1 | 207.1 |
| 29.6 | 29.59 | -0.28 | -0.38 | 0.5 | 232.8 | 1.5 | 184.3 |
| 29.7 | 29.69 | -0.29 | -0.38 | 0.5 | 232.6 | 1.5 | 182.4 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96055
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

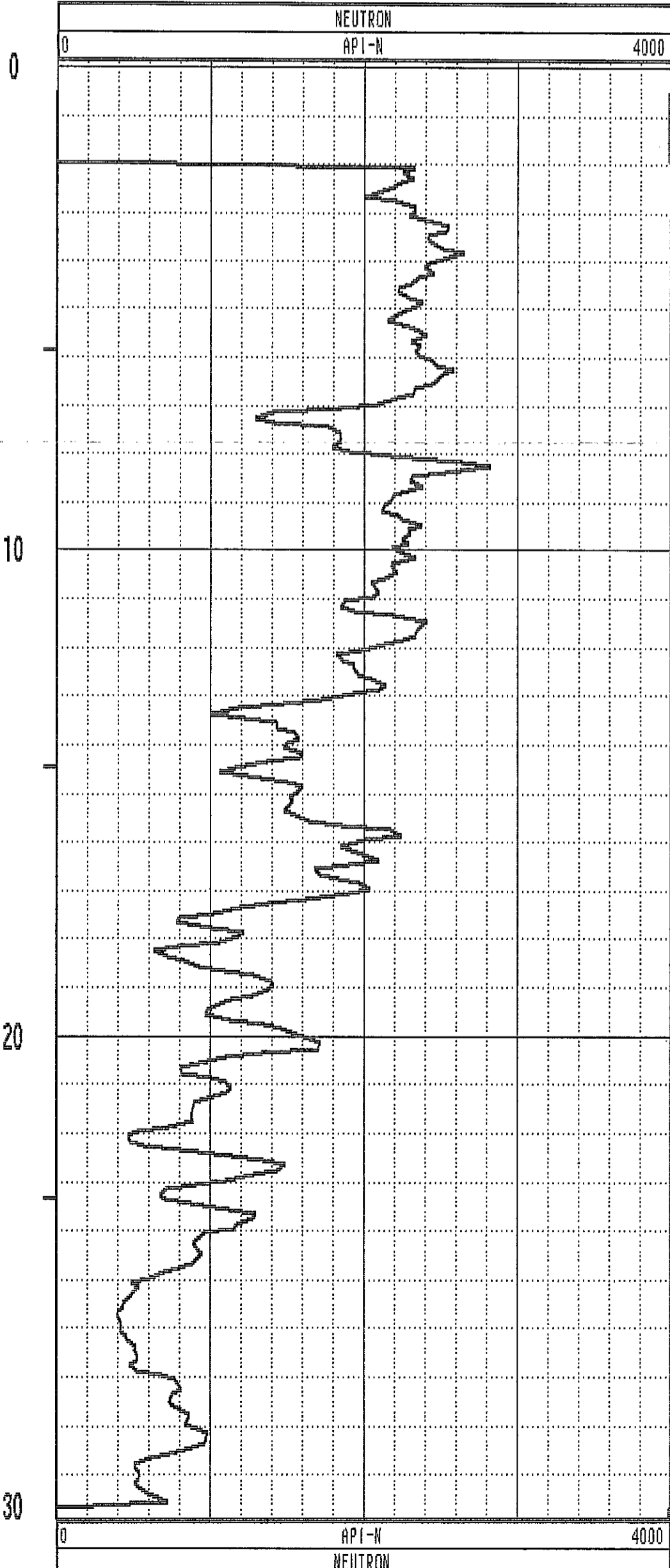
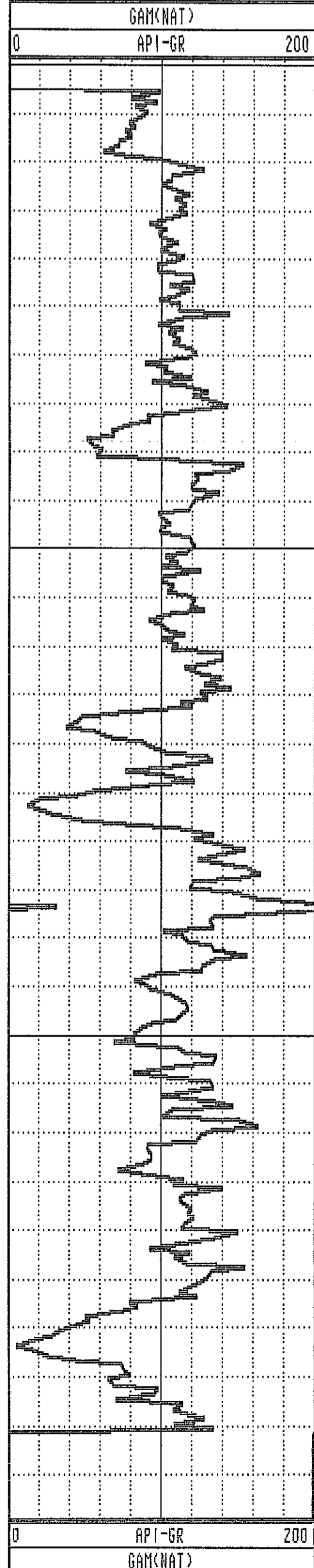
OTHER SERVICES:

DATE : 07/15/96 PERMANENT DATUM :
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.00 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.60 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96055
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

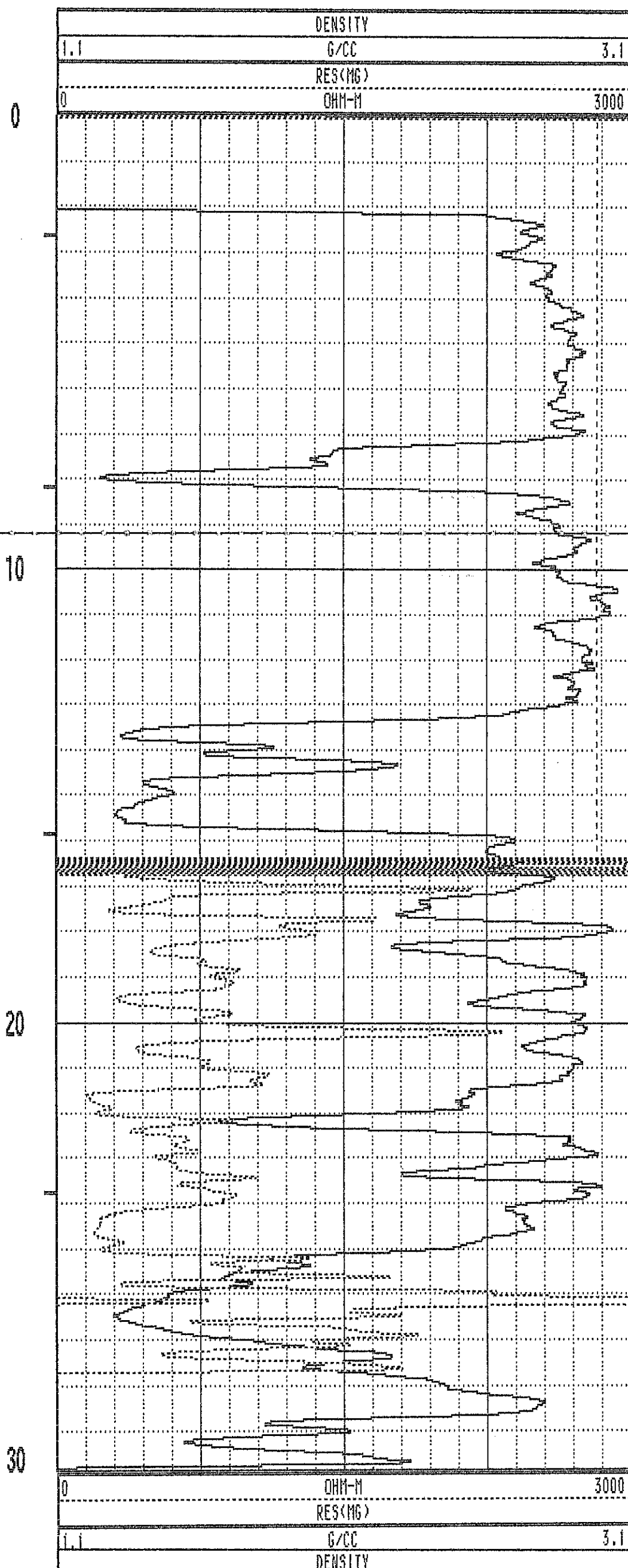
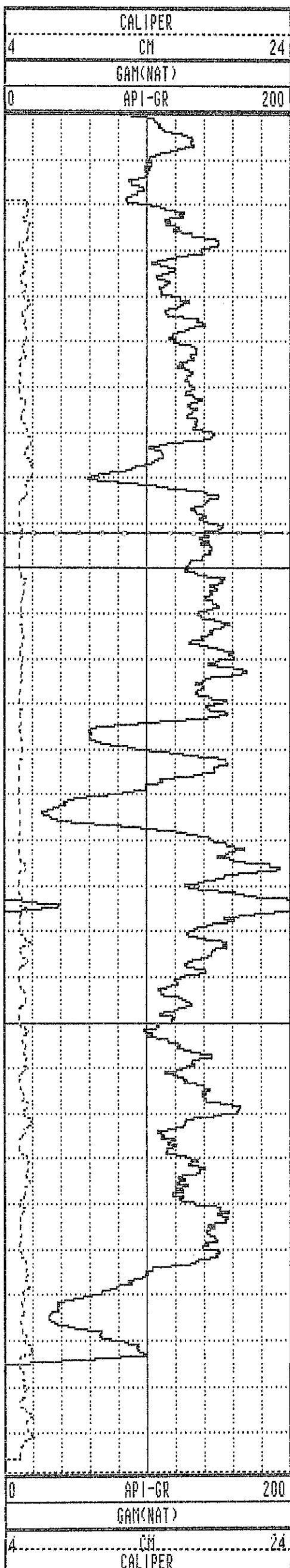
OTHER SERVICES:

DATE : 07/15/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.87 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.08 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9030AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 3
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

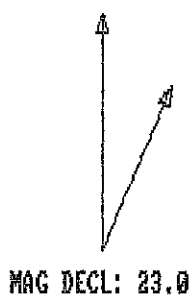
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



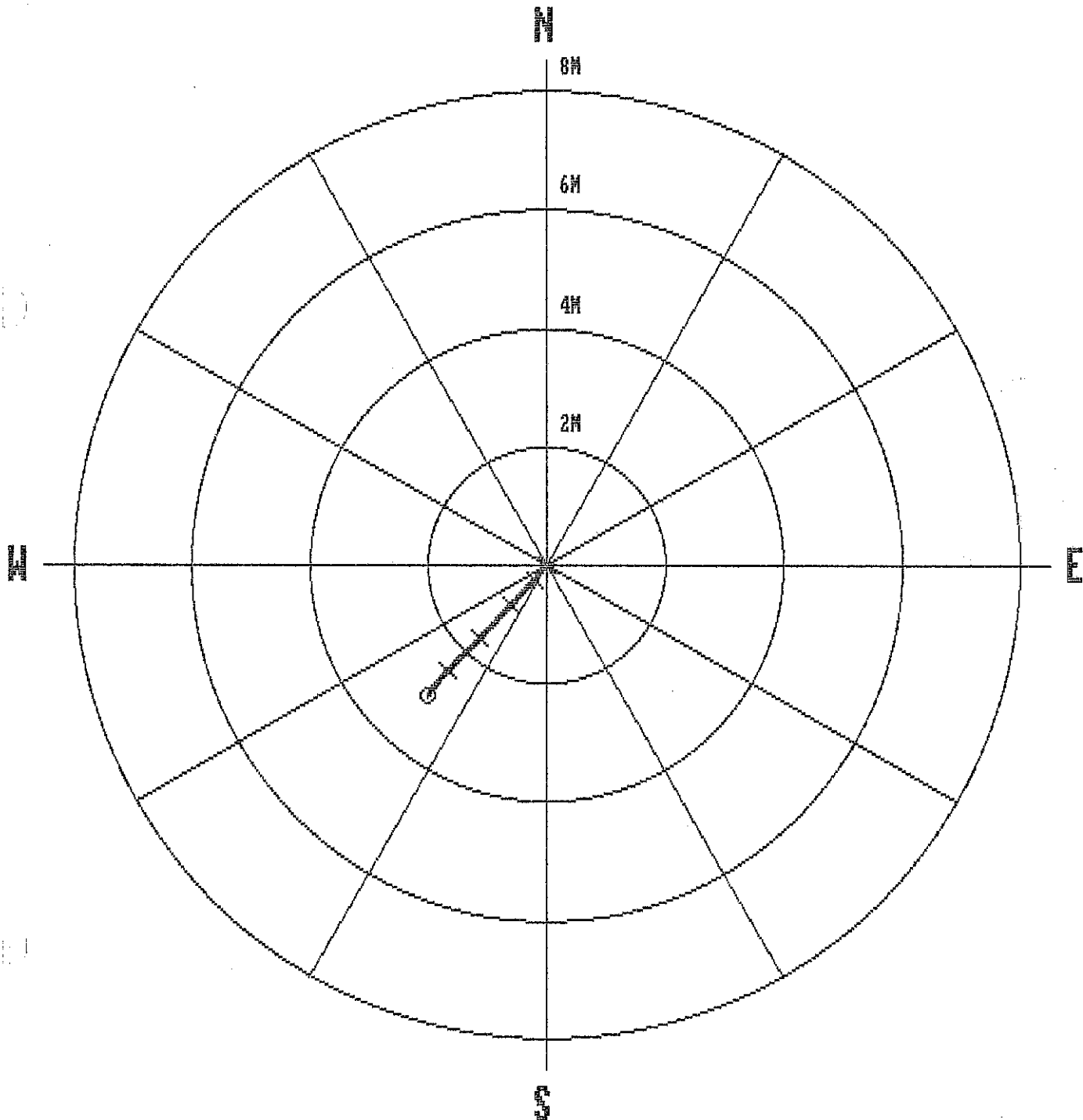
PLAN VIEW

COMPU-LOG DEVIATION

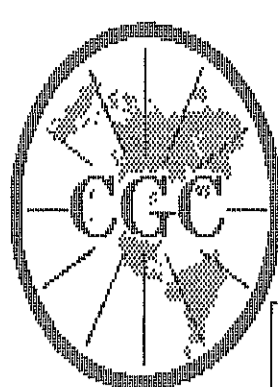
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96056
 DATE OF LOG: 07/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.30 M
 AZIMUTH: 222.2
 DISTANCE: 3.0 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.4 | 1.40 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.4 | 2.40 | -0.00 | 0.00 | 0.0 | 139.1 | 0.5 | 76.6 |
| 3.4 | 3.40 | 0.01 | 0.01 | 0.0 | 51.0 | 1.0 | 29.6 |
| 4.4 | 4.40 | 0.02 | 0.02 | 0.0 | 51.0 | 1.3 | 45.8 |
| 5.4 | 5.40 | -0.00 | 0.00 | 0.0 | 176.0 | 2.3 | 226.3 |
| 6.4 | 6.40 | -0.04 | -0.03 | 0.0 | 217.8 | 3.0 | 221.6 |
| 7.4 | 7.40 | -0.08 | -0.06 | 0.1 | 218.8 | 2.9 | 219.7 |
| 8.4 | 8.39 | -0.13 | -0.10 | 0.2 | 218.7 | 4.4 | 218.9 |
| 9.4 | 9.39 | -0.20 | -0.16 | 0.3 | 219.0 | 4.9 | 220.2 |
| 10.4 | 10.39 | -0.27 | -0.22 | 0.3 | 219.7 | 6.4 | 223.7 |
| 11.4 | 11.38 | -0.35 | -0.29 | 0.5 | 220.3 | 6.1 | 222.0 |
| 12.4 | 12.37 | -0.43 | -0.37 | 0.6 | 220.7 | 6.7 | 219.2 |
| 13.4 | 13.37 | -0.52 | -0.45 | 0.7 | 221.0 | 7.1 | 223.3 |
| 14.4 | 14.36 | -0.61 | -0.54 | 0.8 | 221.2 | 7.4 | 224.8 |
| 15.4 | 15.35 | -0.71 | -0.63 | 0.9 | 221.4 | 7.7 | 227.2 |
| 16.4 | 16.34 | -0.81 | -0.72 | 1.1 | 221.7 | 8.1 | 222.3 |
| 17.4 | 17.33 | -0.92 | -0.82 | 1.2 | 221.8 | 8.4 | 218.1 |
| 18.4 | 18.32 | -1.03 | -0.92 | 1.4 | 221.8 | 8.9 | 224.0 |
| 19.4 | 19.30 | -1.15 | -1.03 | 1.5 | 222.0 | 9.5 | 223.8 |
| 20.4 | 20.29 | -1.27 | -1.15 | 1.7 | 222.1 | 9.9 | 226.4 |
| 21.4 | 21.28 | -1.39 | -1.26 | 1.9 | 222.2 | 9.4 | 228.9 |
| 22.4 | 22.26 | -1.50 | -1.37 | 2.0 | 222.5 | 8.6 | 223.9 |
| 23.4 | 23.25 | -1.61 | -1.48 | 2.2 | 222.7 | 9.1 | 226.9 |
| 24.4 | 24.24 | -1.71 | -1.58 | 2.3 | 222.7 | 7.5 | 219.5 |
| 25.4 | 25.23 | -1.80 | -1.68 | 2.5 | 223.1 | 7.3 | 214.7 |
| 26.4 | 26.22 | -1.90 | -1.76 | 2.6 | 222.9 | 7.3 | 218.6 |
| 27.4 | 27.22 | -2.00 | -1.84 | 2.7 | 222.7 | 7.4 | 222.8 |
| 28.4 | 28.21 | -2.09 | -1.93 | 2.8 | 222.6 | 7.2 | 211.9 |
| 29.4 | 29.20 | -2.20 | -2.00 | 3.0 | 222.2 | 7.2 | 210.8 |
| 29.5 | 29.30 | -2.21 | -2.00 | 3.0 | 222.2 | 7.2 | 212.6 |



Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

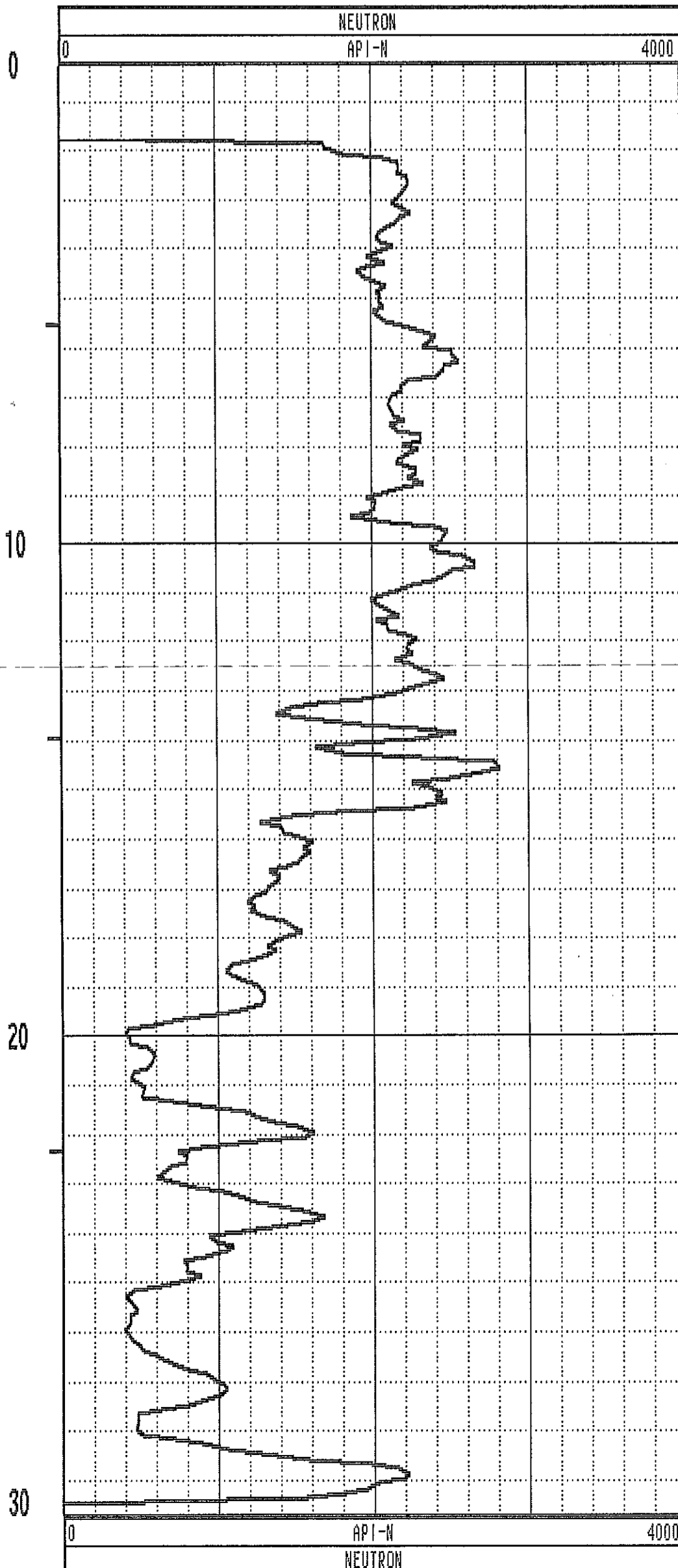
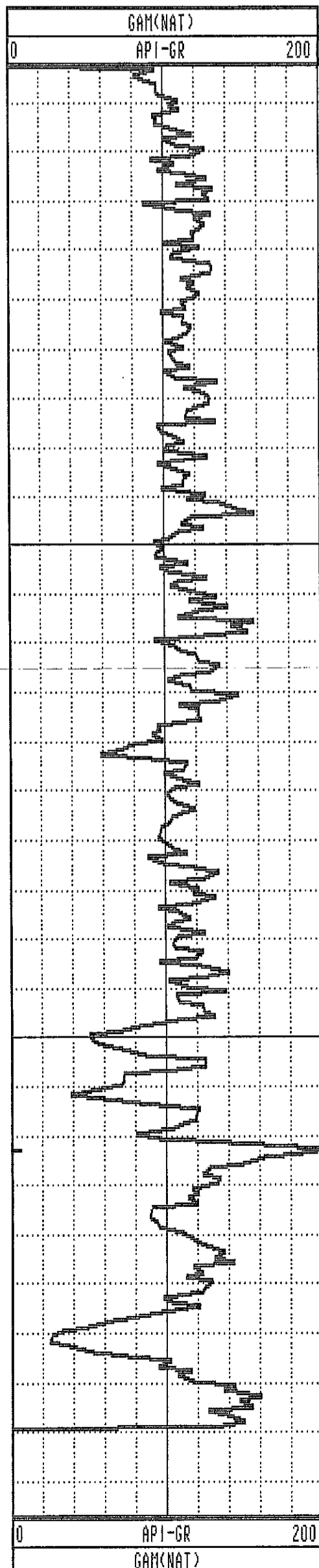
COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96056
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/15/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.40 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 500000
 REMARKS :

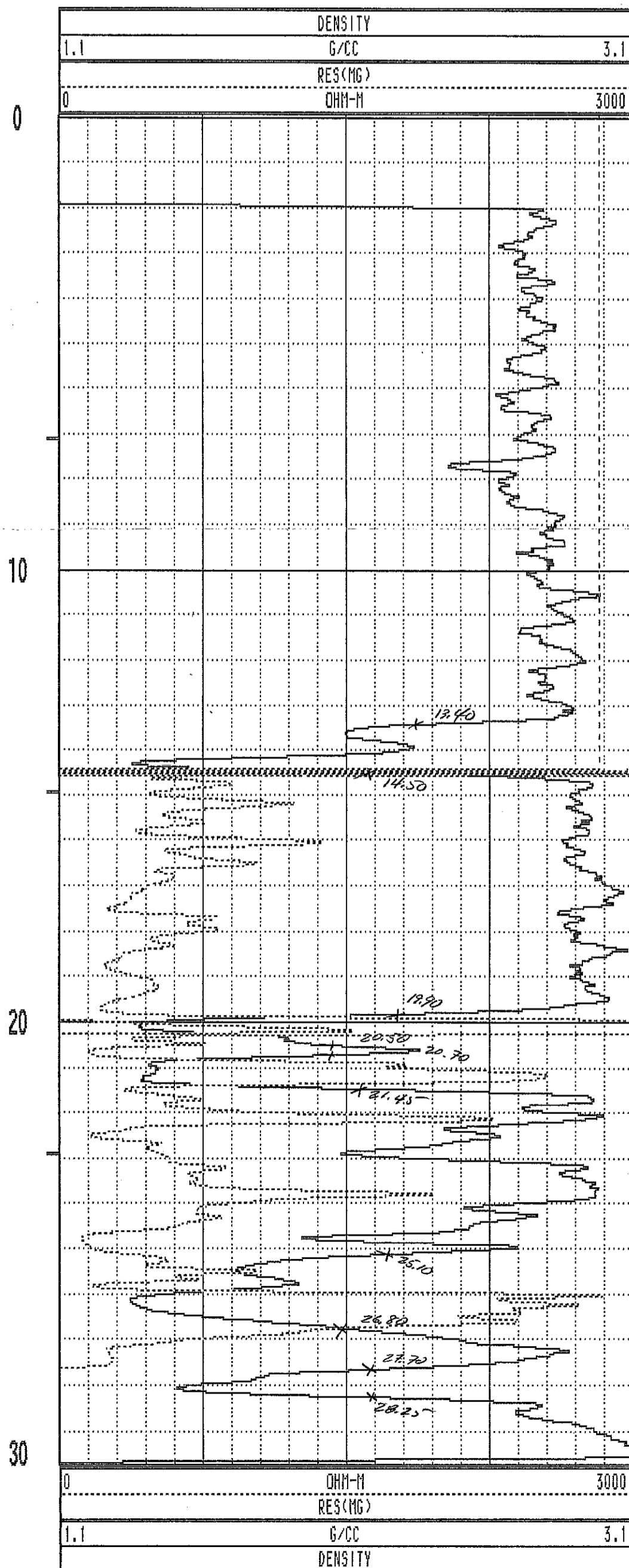
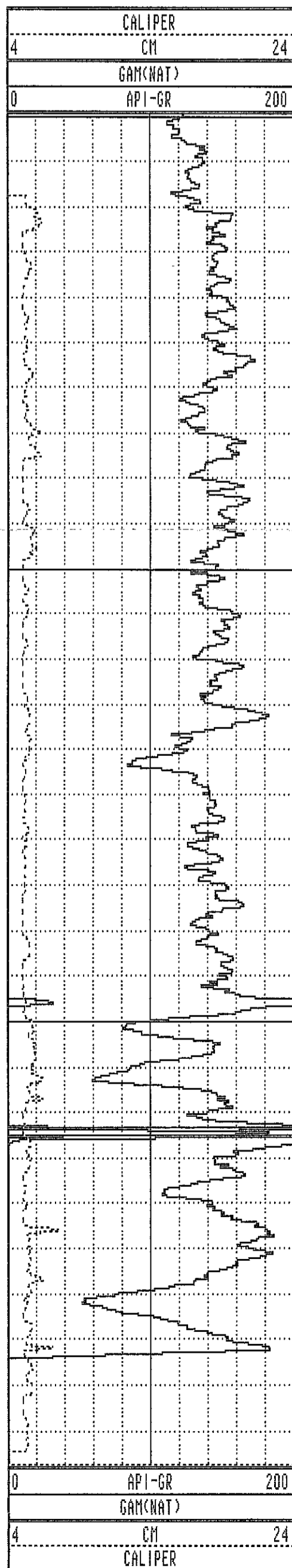
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96056 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/15/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.77 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.22 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9030AA |
| | | LOG | : 4 |
| | | PLOT | : PINE 3 |
| | | THRESH | : 500000 |

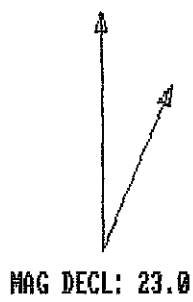
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



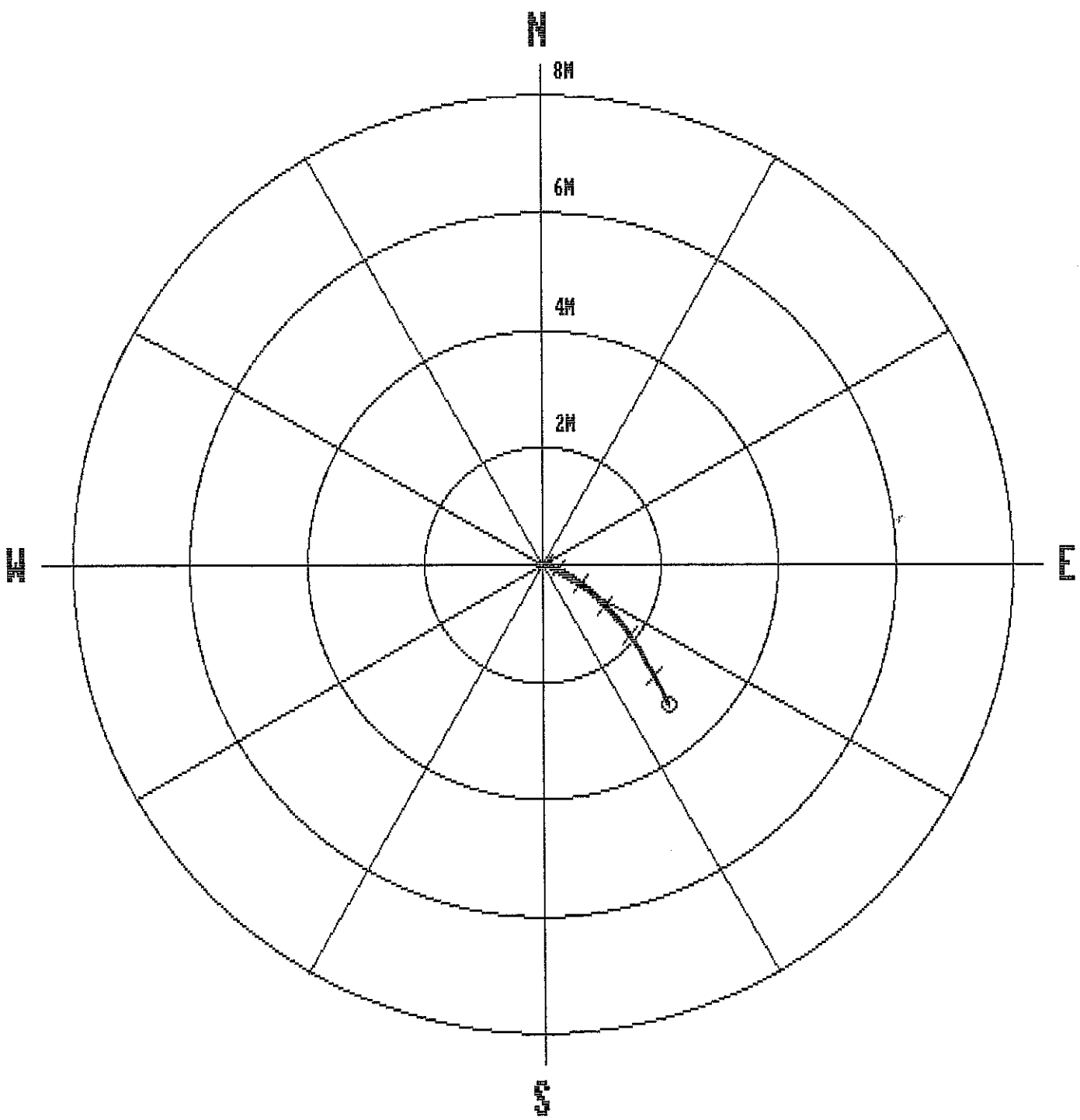
PLAN VIEW

COMPU-LOG DEVIATION

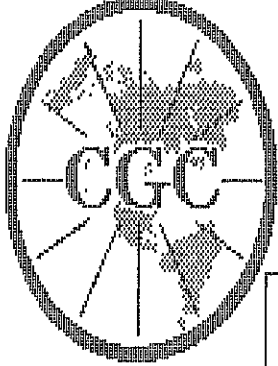
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96057
 DATE OF LOG: 07/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 32.68 M
 AZIMUTH: 137.9
 DISTANCE: 3.2 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 74.0 | 1.3 | 83.3 |
| 4.0 | 4.00 | 0.01 | 0.04 | 0.0 | 75.0 | 1.4 | 65.4 |
| 5.0 | 5.00 | 0.02 | 0.05 | 0.1 | 73.0 | 1.8 | 152.3 |
| 6.0 | 6.00 | 0.00 | 0.08 | 0.1 | 86.9 | 2.0 | 108.1 |
| 7.0 | 7.00 | -0.01 | 0.12 | 0.1 | 94.3 | 2.4 | 109.9 |
| 8.0 | 8.00 | -0.02 | 0.16 | 0.2 | 98.7 | 3.1 | 116.8 |
| 9.0 | 9.00 | -0.05 | 0.21 | 0.2 | 102.9 | 3.4 | 112.9 |
| 10.0 | 9.99 | -0.08 | 0.27 | 0.3 | 106.1 | 4.0 | 118.2 |
| 11.0 | 10.99 | -0.11 | 0.34 | 0.4 | 108.7 | 4.8 | 118.3 |
| 12.0 | 11.99 | -0.16 | 0.41 | 0.4 | 110.9 | 5.0 | 118.6 |
| 13.0 | 12.98 | -0.21 | 0.49 | 0.5 | 112.9 | 5.6 | 125.7 |
| 14.0 | 13.98 | -0.26 | 0.57 | 0.6 | 114.3 | 5.8 | 124.2 |
| 15.0 | 14.97 | -0.32 | 0.66 | 0.7 | 115.9 | 6.2 | 124.2 |
| 16.0 | 15.97 | -0.38 | 0.74 | 0.8 | 117.3 | 6.3 | 125.1 |
| 17.0 | 16.96 | -0.45 | 0.82 | 0.9 | 118.8 | 6.3 | 134.7 |
| 18.0 | 17.95 | -0.53 | 0.90 | 1.0 | 120.3 | 6.4 | 132.7 |
| 19.0 | 18.95 | -0.61 | 0.98 | 1.2 | 121.8 | 6.7 | 135.6 |
| 20.0 | 19.94 | -0.70 | 1.06 | 1.3 | 123.2 | 7.0 | 139.3 |
| 21.0 | 20.93 | -0.79 | 1.14 | 1.4 | 124.5 | 6.9 | 142.1 |
| 22.0 | 21.93 | -0.88 | 1.23 | 1.5 | 125.6 | 7.2 | 136.0 |
| 23.0 | 22.92 | -0.97 | 1.31 | 1.6 | 126.5 | 7.6 | 139.0 |
| 24.0 | 23.91 | -1.07 | 1.39 | 1.8 | 127.6 | 7.4 | 145.9 |
| 25.0 | 24.90 | -1.18 | 1.47 | 1.9 | 128.8 | 8.0 | 145.3 |
| 26.0 | 25.89 | -1.30 | 1.55 | 2.0 | 129.9 | 8.6 | 144.3 |
| 27.0 | 26.88 | -1.43 | 1.64 | 2.2 | 131.2 | 9.1 | 149.4 |
| 28.0 | 27.86 | -1.57 | 1.72 | 2.3 | 132.5 | 9.3 | 151.6 |
| 29.0 | 28.85 | -1.72 | 1.80 | 2.5 | 133.7 | 9.9 | 147.5 |
| 30.0 | 29.83 | -1.87 | 1.88 | 2.7 | 134.9 | 10.5 | 149.2 |
| 31.0 | 30.82 | -2.03 | 1.98 | 2.8 | 135.8 | 10.6 | 155.3 |
| 32.0 | 31.80 | -2.21 | 2.05 | 3.0 | 137.1 | 11.2 | 178.1 |
| 32.9 | 32.78 | -2.36 | 2.14 | 3.2 | 137.9 | 0.0 | 0.0 |
| 32.9 | 32.68 | -2.36 | 2.14 | 3.2 | 137.9 | 11.9 | 148.1 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL LTD.
 WELL : MRH-96057
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/14/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 33.20
 LOG TOP : 0.90

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

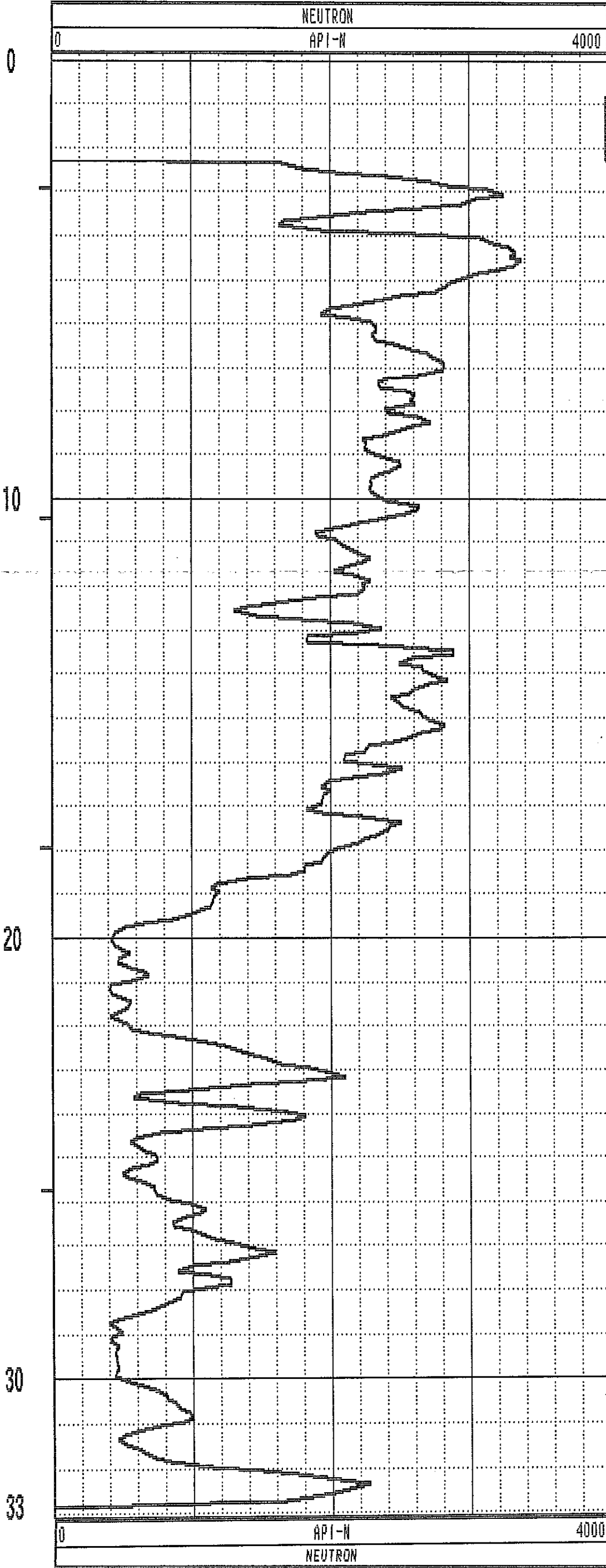
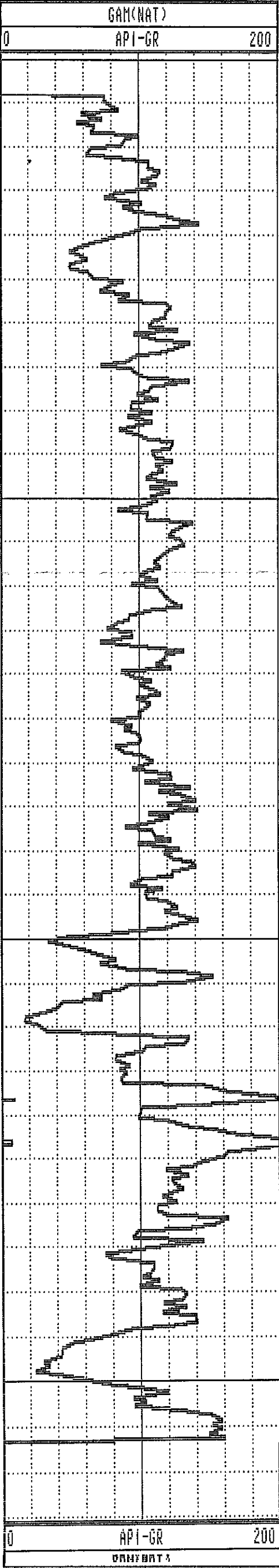
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 2
 THRESH: 500000

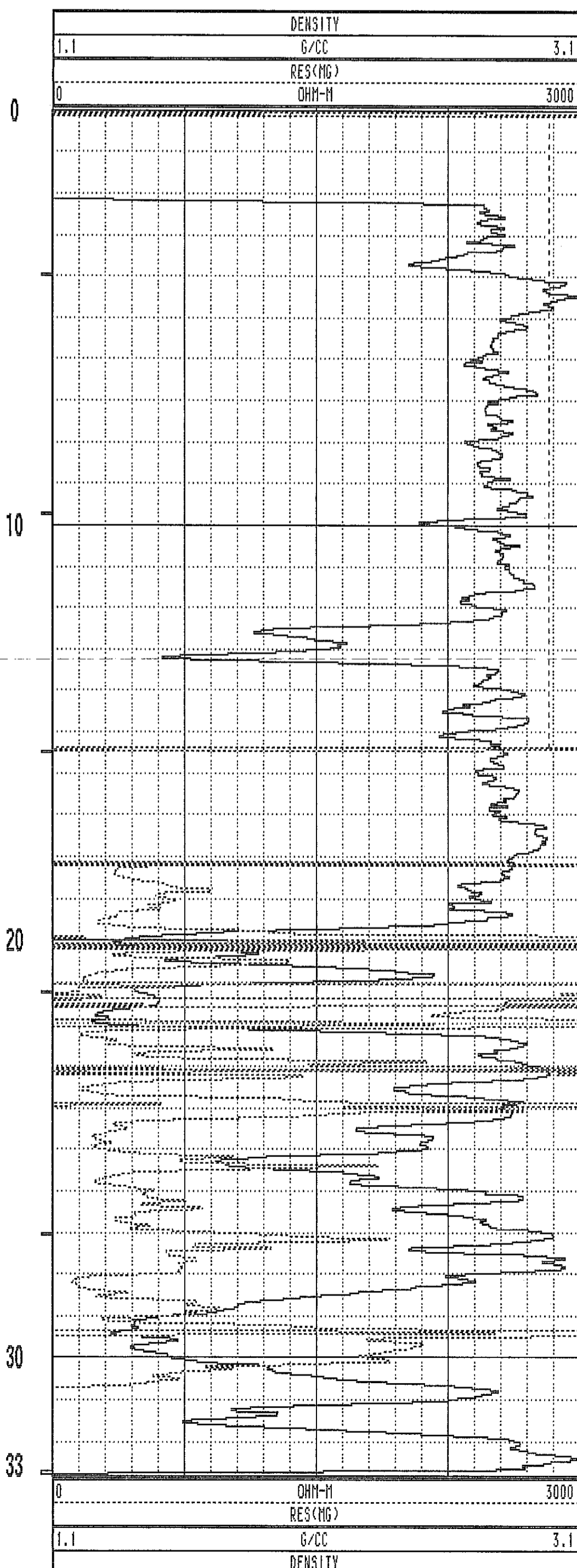
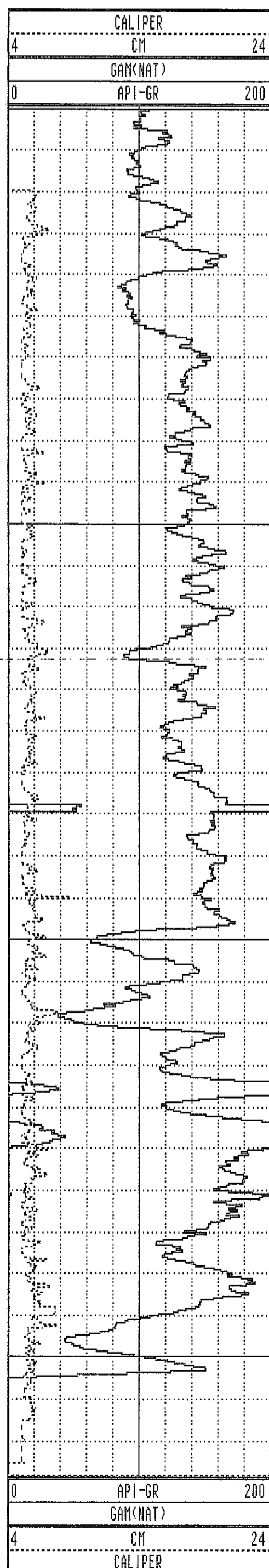
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

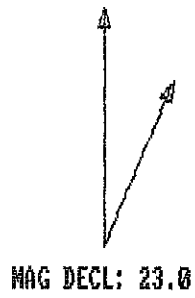
| | | | |
|-------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96057 | | |
| LOCATION/FIELD | : MILLON CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 32.85 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.02 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9030AA |
| | | LOG | : 3 |
| | | PLOT | : PINE 0 |
| | | THRESH | : 500000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

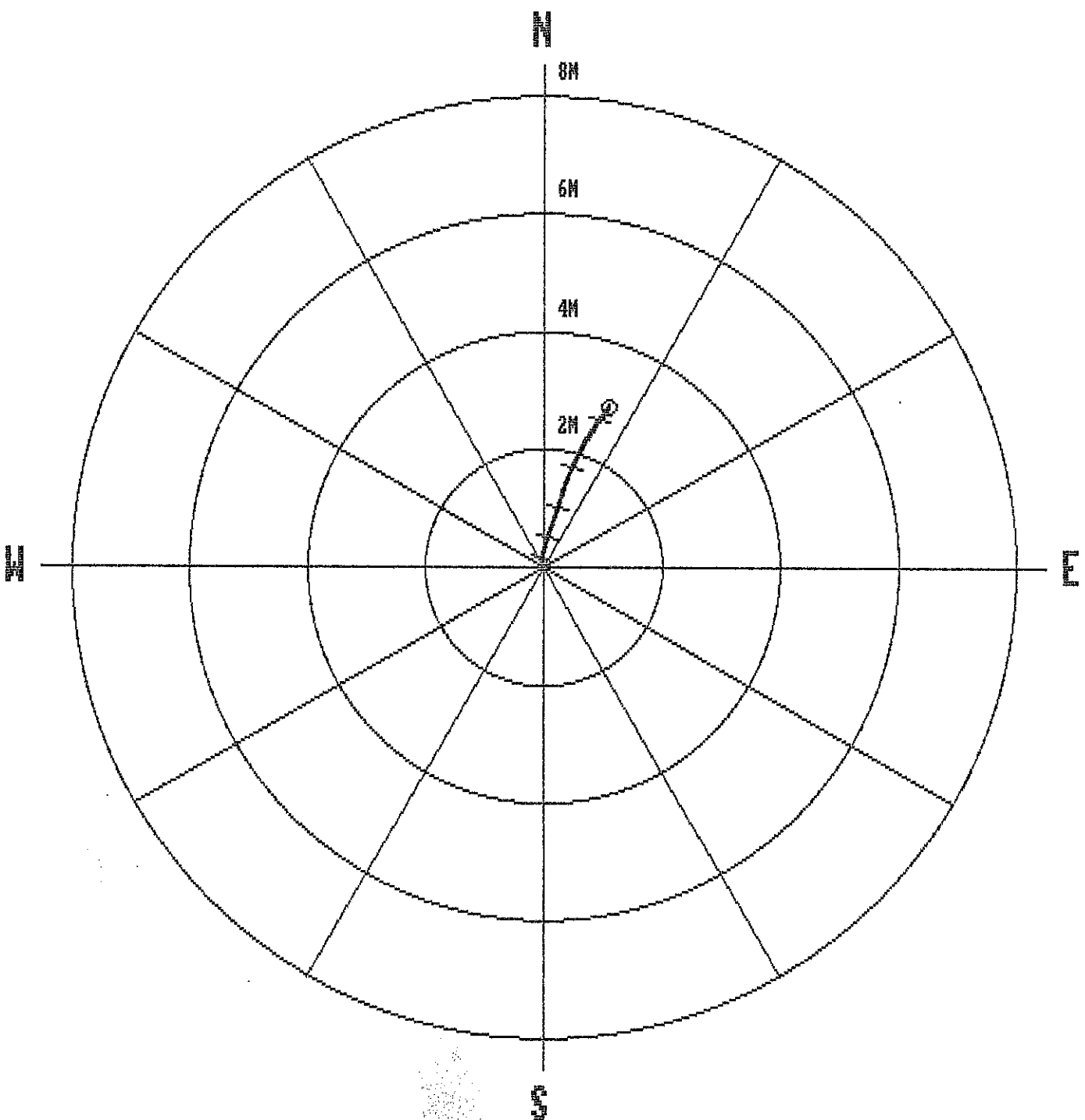


PLAN VIEW COMPU-LOG DEVIATION

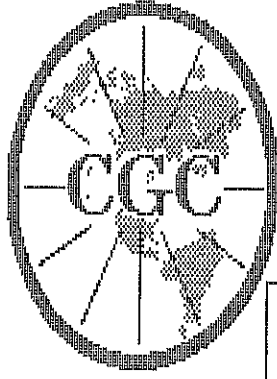
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96050
 DATE OF LOG: 07/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 26.18 M
 AZIMUTH: 22.2
 DISTANCE: 2.9 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|------|-------|-----|-------|------|-------|
| 1.6 | 1.60 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| .6 | 2.60 | 0.01 | -0.03 | 0.0 | 280.1 | 3.0 | 275.9 |
| 3.6 | 3.60 | 0.06 | -0.04 | 0.1 | 327.3 | 3.2 | 358.4 |
| 4.6 | 4.59 | 0.12 | -0.03 | 0.1 | 346.8 | 3.8 | 8.8 |
| 5.6 | 5.59 | 0.19 | -0.02 | 0.2 | 354.4 | 4.0 | 9.7 |
| 6.6 | 6.59 | 0.25 | -0.00 | 0.3 | 359.1 | 3.9 | 14.0 |
| 7.6 | 7.59 | 0.32 | 0.01 | 0.3 | 2.4 | 4.4 | 16.6 |
| 8.6 | 8.58 | 0.40 | 0.04 | 0.4 | 5.2 | 4.6 | 18.6 |
| 9.6 | 9.58 | 0.48 | 0.06 | 0.5 | 7.4 | 4.9 | 18.2 |
| 10.6 | 10.58 | 0.56 | 0.09 | 0.6 | 9.1 | 5.2 | 19.5 |
| 11.6 | 11.57 | 0.65 | 0.12 | 0.7 | 10.5 | 5.9 | 20.2 |
| 12.6 | 12.57 | 0.75 | 0.16 | 0.8 | 11.7 | 6.2 | 19.8 |
| 13.6 | 13.56 | 0.86 | 0.19 | 0.9 | 12.6 | 6.2 | 18.5 |
| 14.6 | 14.55 | 0.96 | 0.23 | 1.0 | 13.4 | 6.5 | 19.9 |
| 15.6 | 15.55 | 1.08 | 0.27 | 1.1 | 13.9 | 7.3 | 18.8 |
| 16.6 | 16.54 | 1.20 | 0.31 | 1.2 | 14.3 | 7.9 | 16.7 |
| 17.6 | 17.53 | 1.34 | 0.35 | 1.4 | 14.6 | 8.5 | 16.0 |
| 18.6 | 18.52 | 1.48 | 0.40 | 1.5 | 15.1 | 8.8 | 21.0 |
| 19.6 | 19.50 | 1.62 | 0.46 | 1.7 | 15.8 | 9.0 | 25.3 |
| 20.6 | 20.49 | 1.78 | 0.53 | 1.9 | 16.5 | 9.6 | 23.5 |
| 21.6 | 21.48 | 1.93 | 0.60 | 2.0 | 17.2 | 10.3 | 25.7 |
| 22.6 | 22.46 | 2.09 | 0.69 | 2.2 | 18.2 | 10.8 | 30.5 |
| 23.6 | 23.44 | 2.25 | 0.79 | 2.4 | 19.3 | 11.1 | 33.4 |
| 24.6 | 24.42 | 2.41 | 0.90 | 2.6 | 20.4 | 10.8 | 34.6 |
| 25.6 | 25.40 | 2.58 | 1.01 | 2.8 | 21.4 | 11.7 | 35.3 |
| 26.6 | 26.38 | 2.71 | 1.11 | 2.9 | 22.2 | 0.0 | 0.0 |
| 26.4 | 26.18 | 2.71 | 1.11 | 2.9 | 22.2 | 12.1 | 36.1 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96058
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/15/96
 DEPTH DRILLER : 27
 LOG BOTTOM : 26.70
 LOG TOP : 0.60

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

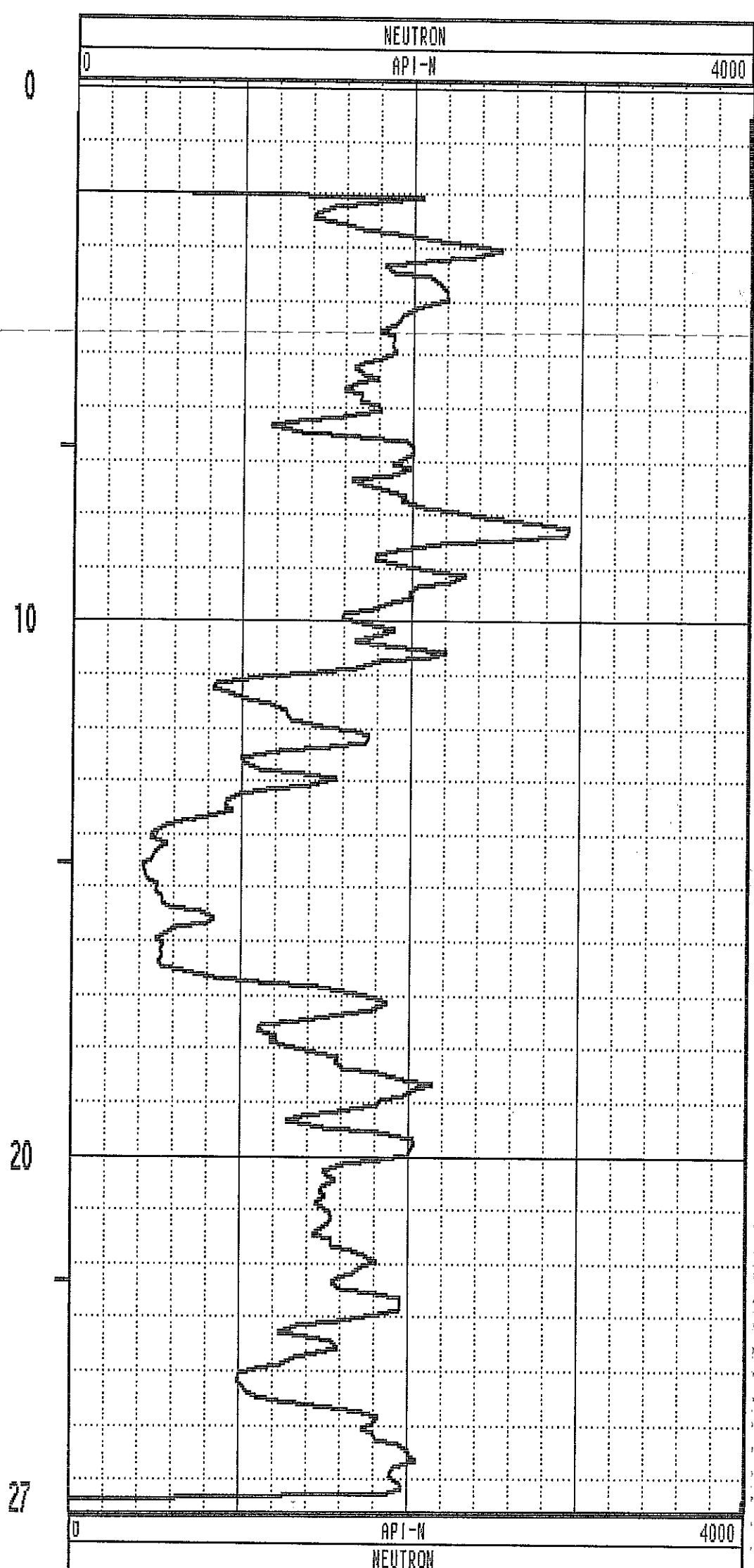
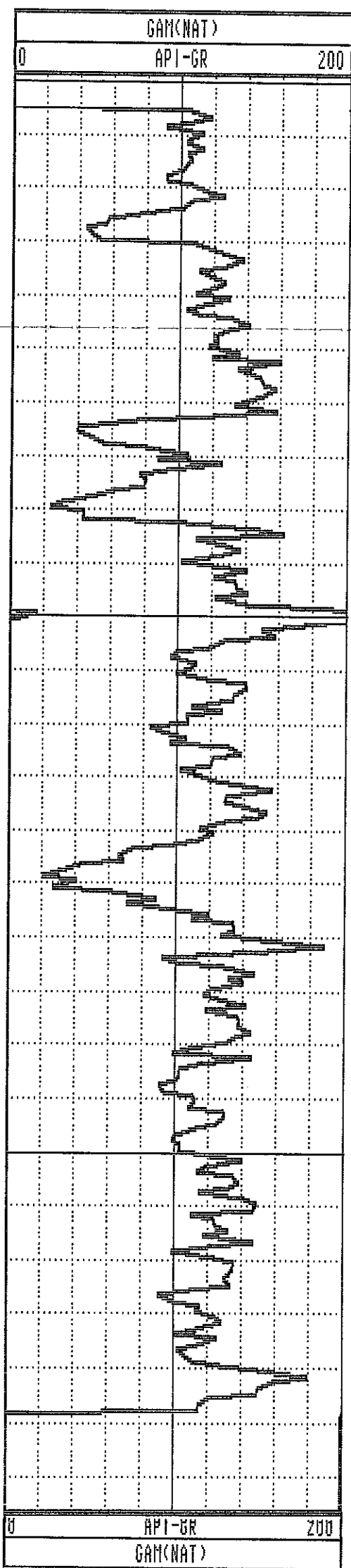
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 8
 PLOT : PINE 4
 THRESH: 500000

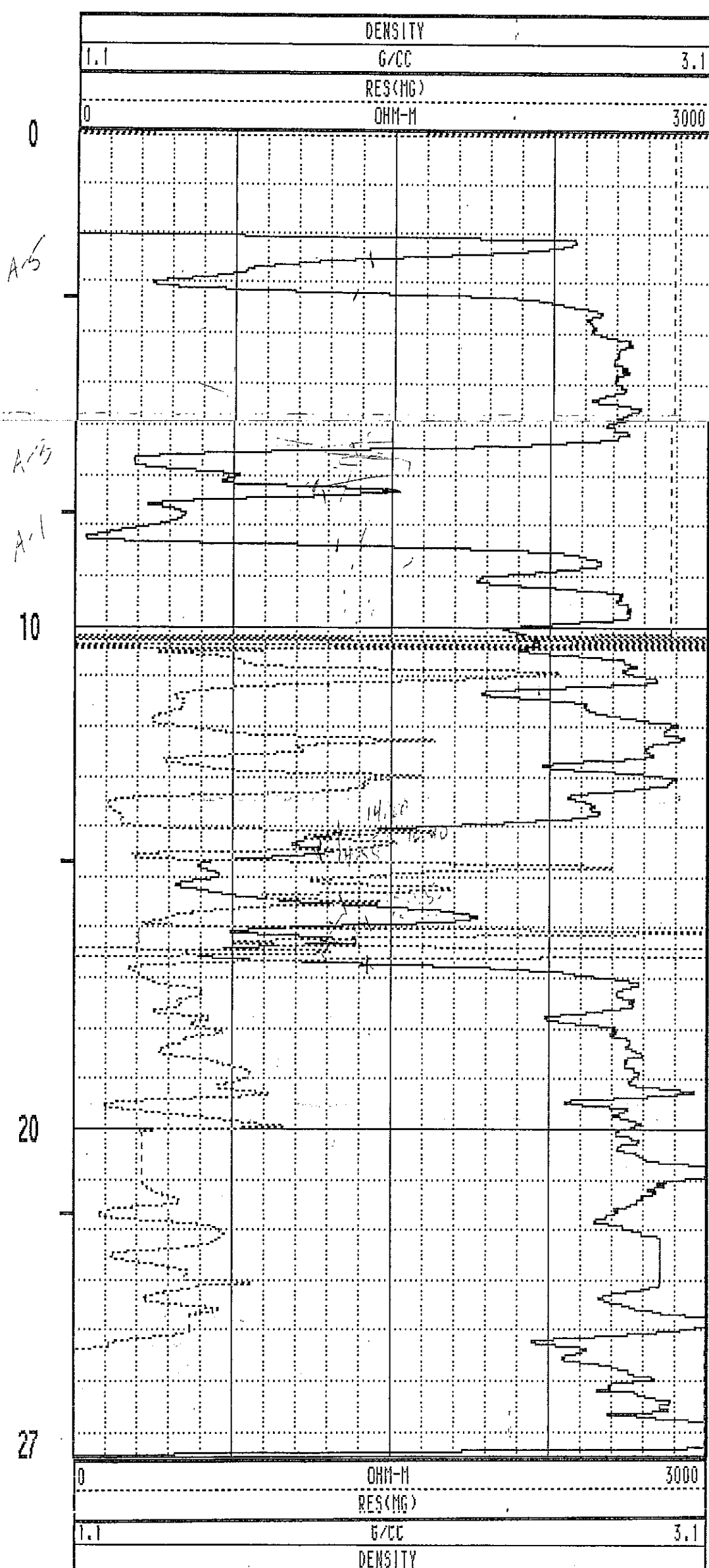
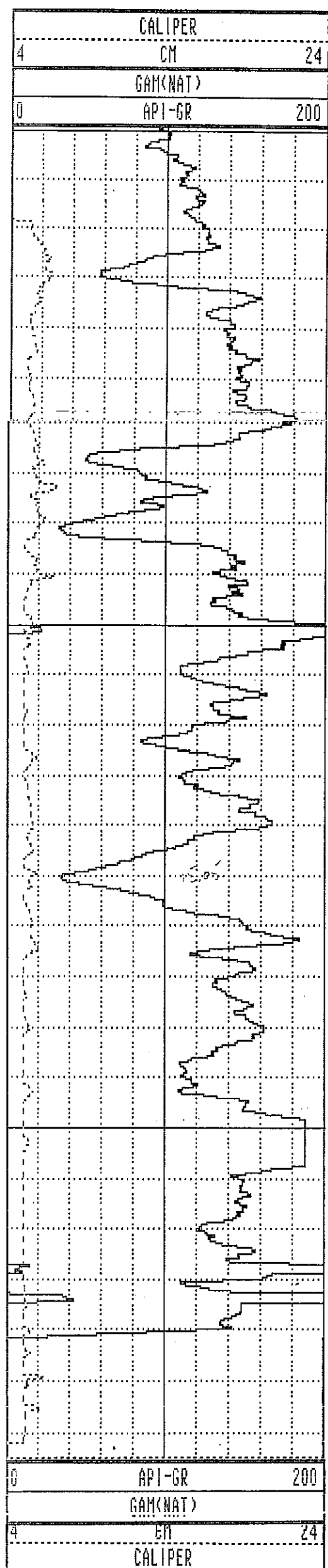
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96058 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 07/15/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 26.51 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.12 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9030AA |
| | | LOG | : 7 |
| | | PLOT | : PINE 3 |
| | | THRESH | : 500000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

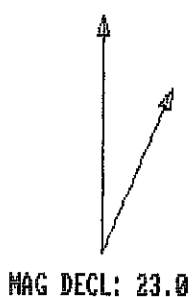


17200N

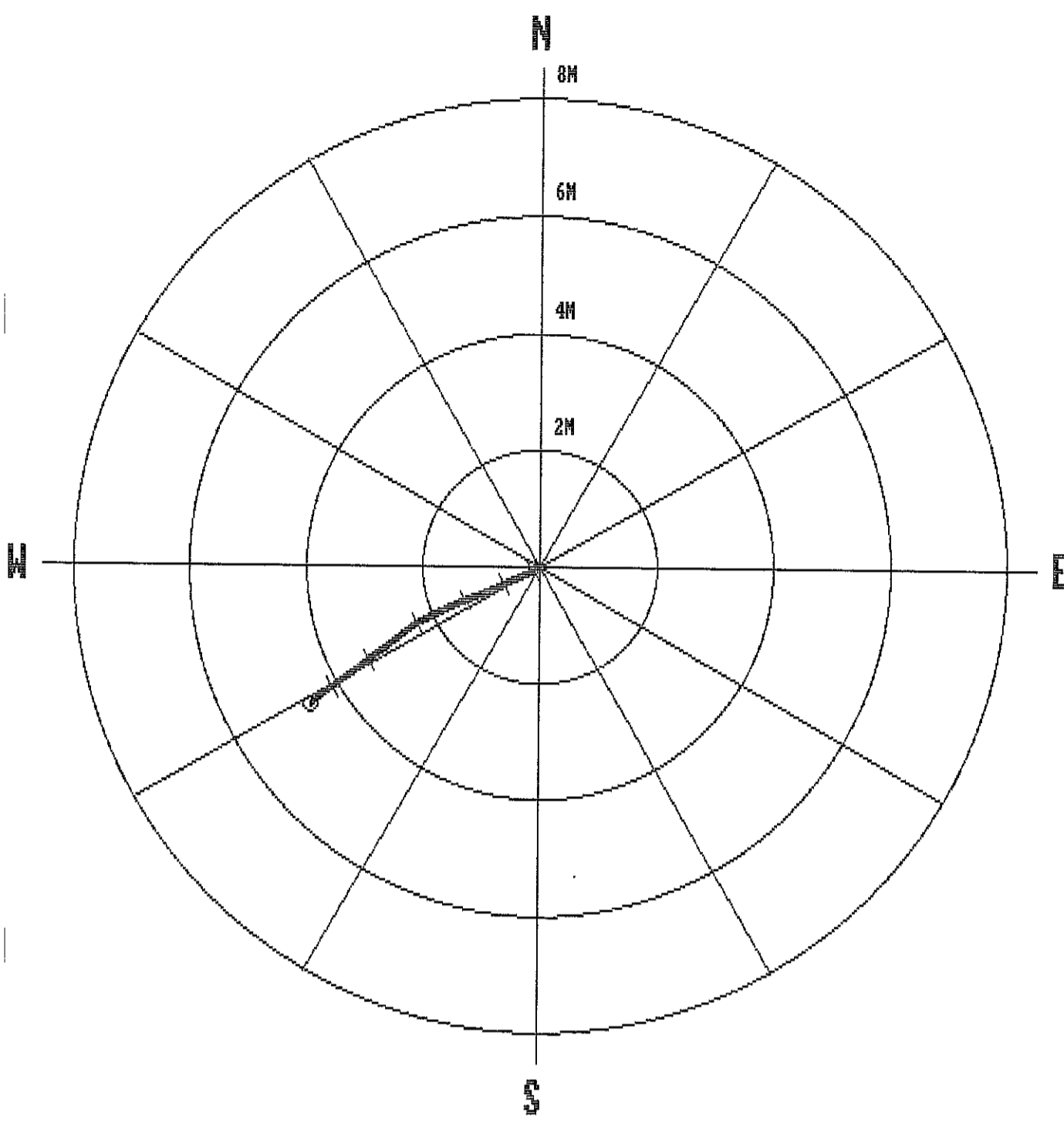
WRH-96058 07/15/96 409 96-58

PLAN VIEW COMPU-LOG DEVIATION

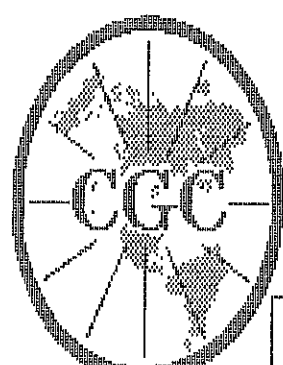
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96059
 DATE OF LOG: 07/23/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 33.32 M
 AZIMUTH: 238.8
 DISTANCE: 4.6 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.03 | -0.04 | 0.0 | 306.7 | 3.5 | 299.7 |
| 4.0 | 4.00 | 0.01 | -0.09 | 0.1 | 273.9 | 4.2 | 188.1 |
| 5.0 | 4.99 | -0.06 | -0.10 | 0.1 | 237.5 | 5.4 | 215.7 |
| 6.0 | 5.99 | -0.11 | -0.19 | 0.2 | 240.7 | 6.0 | 245.2 |
| 7.0 | 6.98 | -0.15 | -0.28 | 0.3 | 242.3 | 6.5 | 247.6 |
| 8.0 | 7.98 | -0.19 | -0.38 | 0.4 | 243.1 | 6.2 | 248.8 |
| 9.0 | 8.97 | -0.24 | -0.48 | 0.5 | 243.6 | 6.7 | 241.7 |
| 10.0 | 9.96 | -0.29 | -0.60 | 0.7 | 244.0 | 6.9 | 244.4 |
| 11.0 | 10.95 | -0.35 | -0.72 | 0.8 | 244.1 | 8.3 | 243.8 |
| 12.0 | 11.94 | -0.40 | -0.85 | 0.9 | 244.5 | 8.2 | 247.6 |
| 13.0 | 12.93 | -0.46 | -0.98 | 1.1 | 244.7 | 8.1 | 244.2 |
| 14.0 | 13.92 | -0.51 | -1.11 | 1.2 | 245.1 | 8.4 | 247.0 |
| 15.0 | 14.91 | -0.57 | -1.25 | 1.4 | 245.6 | 8.9 | 255.7 |
| 16.0 | 15.90 | -0.63 | -1.39 | 1.5 | 245.8 | 9.1 | 249.7 |
| 17.0 | 16.88 | -0.70 | -1.55 | 1.7 | 245.8 | 9.9 | 245.9 |
| 18.0 | 17.87 | -0.78 | -1.71 | 1.9 | 245.4 | 10.7 | 250.6 |
| 19.0 | 18.85 | -0.87 | -1.88 | 2.1 | 245.3 | 11.4 | 248.0 |
| 20.0 | 19.83 | -0.95 | -2.06 | 2.3 | 245.1 | 11.3 | 236.4 |
| 21.0 | 20.81 | -1.06 | -2.22 | 2.5 | 244.4 | 11.4 | 235.9 |
| 22.0 | 21.79 | -1.19 | -2.38 | 2.7 | 243.4 | 12.3 | 237.4 |
| 23.0 | 22.77 | -1.31 | -2.54 | 2.9 | 242.7 | 12.3 | 223.7 |
| 24.0 | 23.75 | -1.44 | -2.71 | 3.1 | 242.0 | 12.1 | 226.5 |
| 25.0 | 24.72 | -1.56 | -2.87 | 3.3 | 241.5 | 11.4 | 230.4 |
| 26.0 | 25.71 | -1.67 | -3.01 | 3.4 | 241.0 | 10.6 | 233.8 |
| 27.0 | 26.69 | -1.79 | -3.14 | 3.6 | 240.4 | 9.0 | 235.1 |
| 28.0 | 27.68 | -1.88 | -3.27 | 3.8 | 240.2 | 8.3 | 236.8 |
| 29.0 | 28.67 | -1.96 | -3.39 | 3.9 | 239.9 | 8.3 | 245.2 |
| 30.0 | 29.66 | -2.04 | -3.49 | 4.0 | 239.7 | 7.7 | 231.1 |
| 31.0 | 30.65 | -2.12 | -3.61 | 4.2 | 239.6 | 7.9 | 229.1 |
| 32.0 | 31.64 | -2.21 | -3.72 | 4.3 | 239.3 | 8.2 | 222.9 |
| 33.0 | 32.63 | -2.30 | -3.82 | 4.5 | 238.9 | 8.7 | 208.7 |
| 33.7 | 33.32 | -2.36 | -3.90 | 4.6 | 238.8 | 7.9 | 230.6 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96059
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP :

OTHER SERVICES:

DATE : 07/23/96
 DEPTH DRILLER : 29
 LOG BOTTOM : 33.75
 LOG TOP : 0.86

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

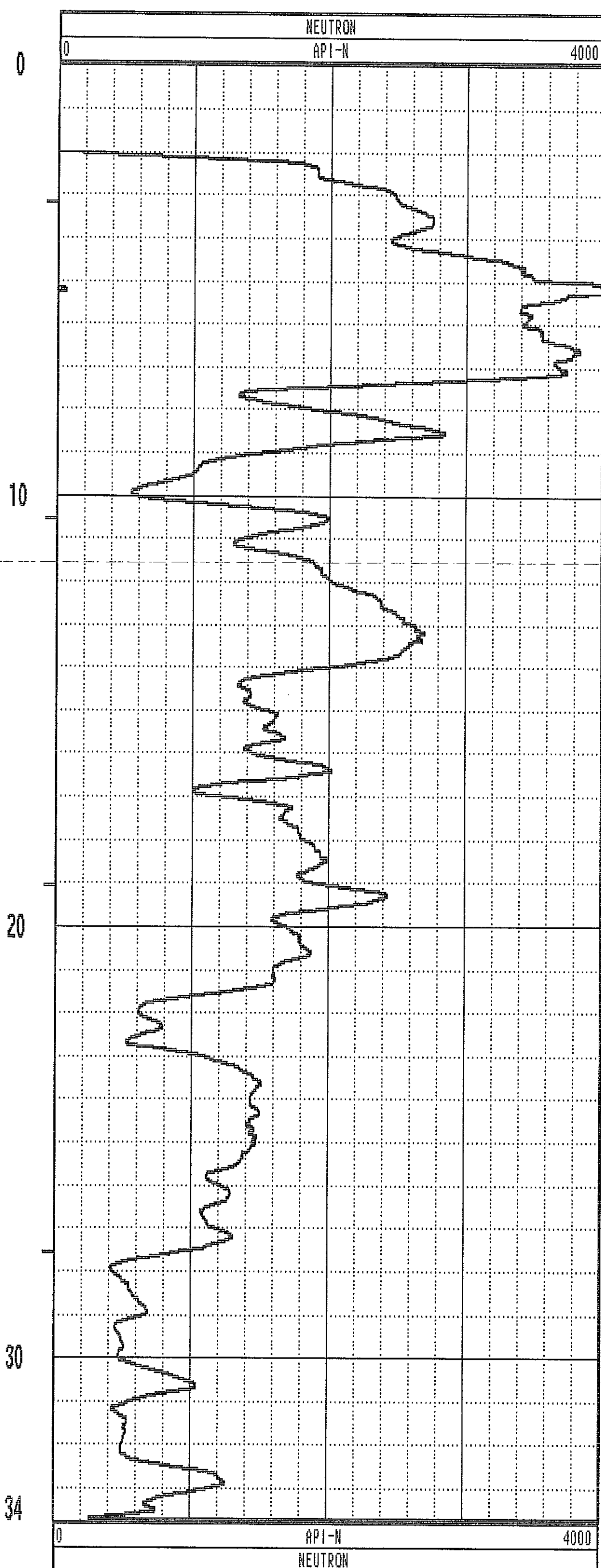
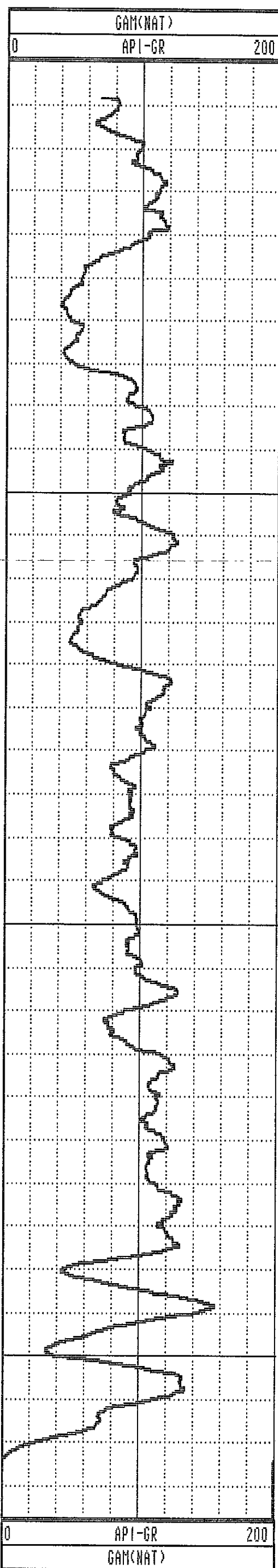
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 1
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

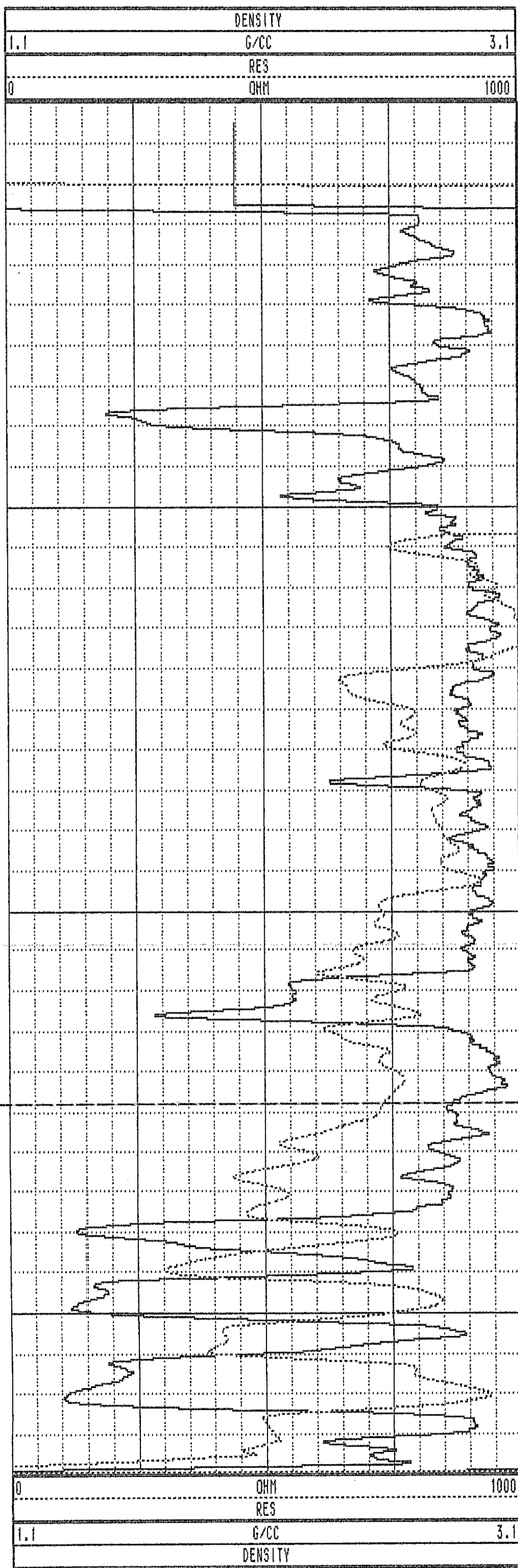
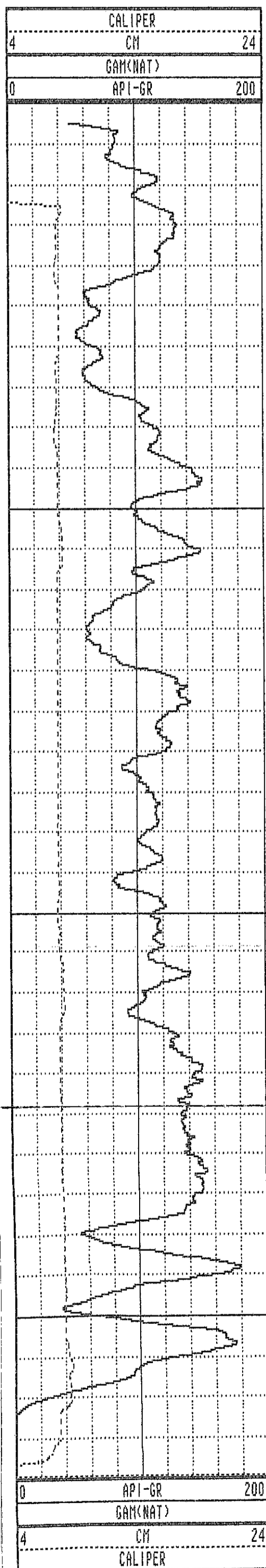
COMPANY : PINE VALLEY COAL
 WELL : WRH-96059
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/23/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 29 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 33.98 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.52 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R.THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96059 07/23/96 958

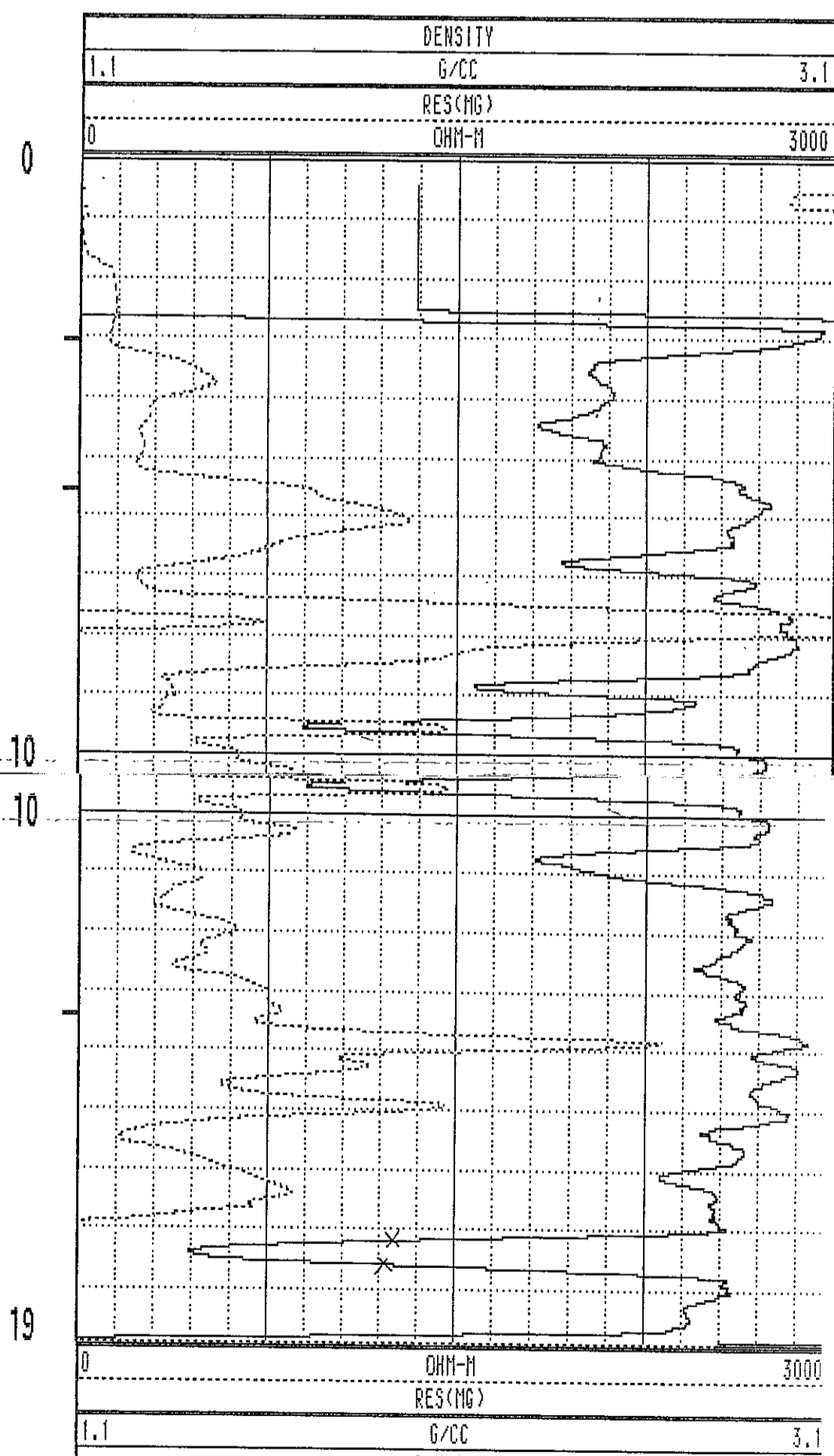
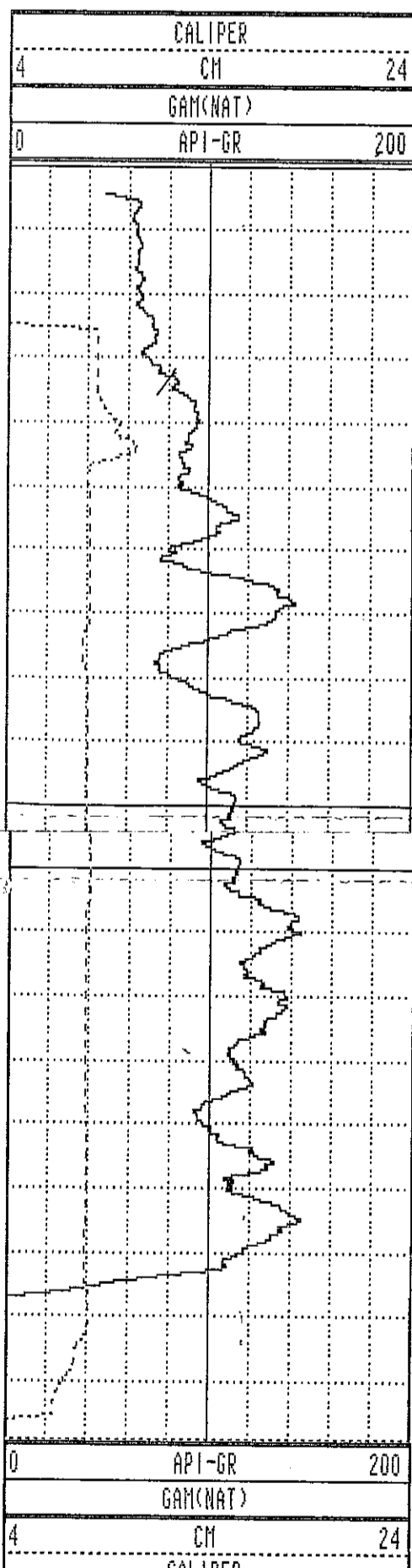
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | JUL19.96 | 19:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

| | | | |
|------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96060 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 07/20/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.94 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.48 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9033AA |
| | | LOG | : 2 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96060 07/20/96 958

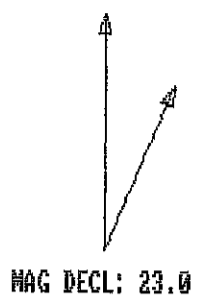
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

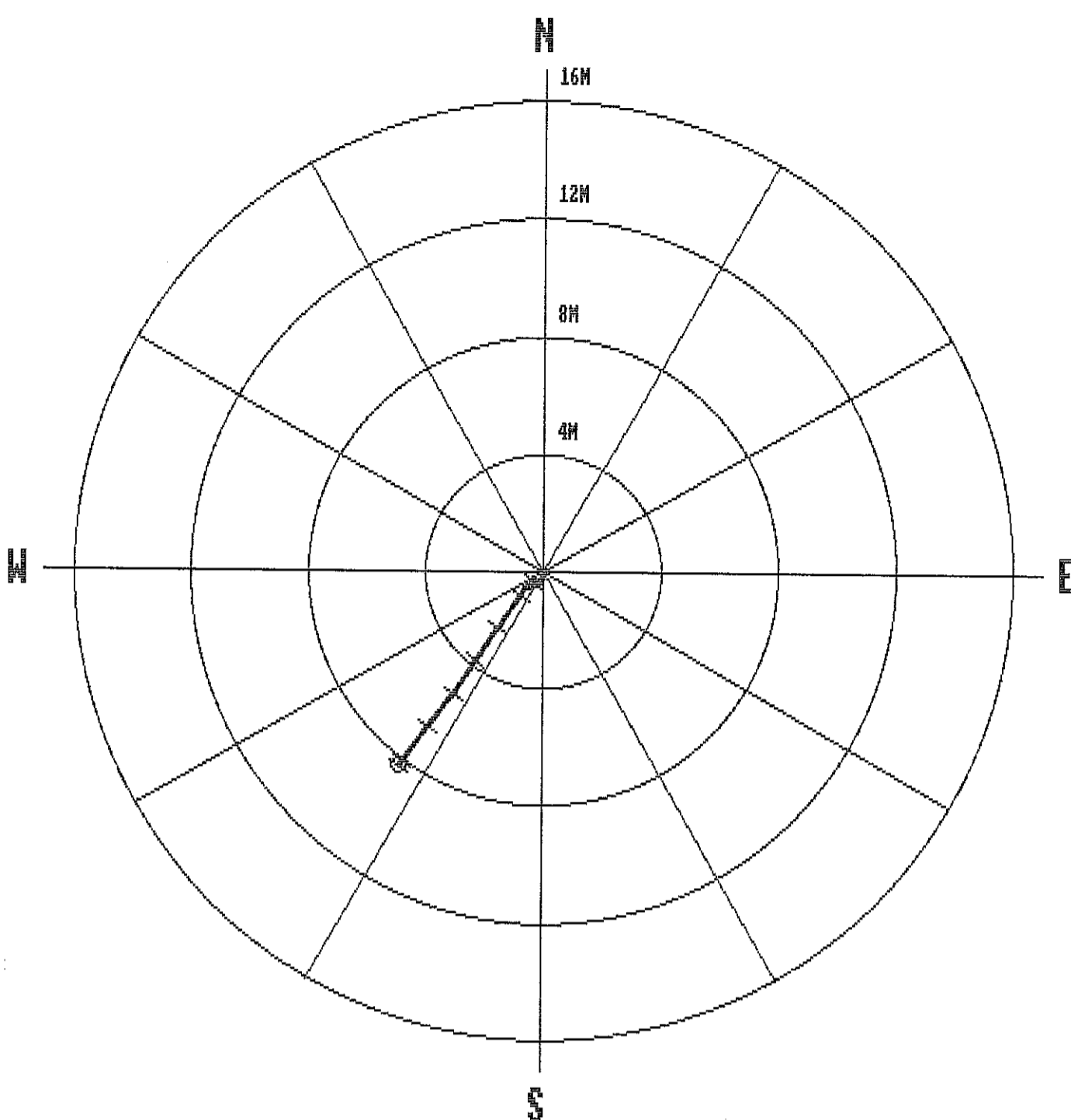
PLAN VIEW

COMPU-LOG DEVIATION

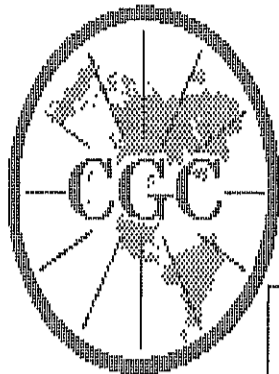
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: MILLOW CREEK
 HOLE ID: MRN-96061
 DATE OF LOG: 07/20/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 16.22 M
 AZIMUTH: 216.3
 DISTANCE: 8.2 M
 + = 2 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.98 | -0.05 | -0.01 | 0.1 | 185.6 | 33.3 | 185.6 |
| 4.0 | 3.82 | -0.42 | -0.27 | 0.5 | 212.6 | 33.5 | 262.0 |
| 5.0 | 4.65 | -0.36 | -0.35 | 0.5 | 223.6 | 34.0 | 28.5 |
| 6.0 | 5.48 | -0.54 | -0.56 | 0.8 | 226.2 | 34.1 | 239.9 |
| 7.0 | 6.31 | -1.00 | -0.88 | 1.3 | 221.5 | 34.5 | 213.8 |
| 8.0 | 7.13 | -1.46 | -1.20 | 1.9 | 219.4 | 33.9 | 214.9 |
| 9.0 | 7.96 | -1.92 | -1.51 | 2.4 | 218.3 | 33.9 | 221.7 |
| 10.0 | 8.79 | -2.38 | -1.82 | 3.0 | 217.5 | 34.0 | 211.8 |
| 11.0 | 9.62 | -2.84 | -2.14 | 3.6 | 216.9 | 34.4 | 222.0 |
| 12.0 | 10.44 | -3.32 | -2.44 | 4.1 | 216.2 | 34.6 | 208.3 |
| 13.0 | 11.27 | -3.79 | -2.76 | 4.7 | 216.0 | 34.6 | 214.6 |
| 14.0 | 12.09 | -4.26 | -3.08 | 5.3 | 215.9 | 34.7 | 220.3 |
| 15.0 | 12.91 | -4.70 | -3.43 | 5.8 | 216.1 | 35.3 | 218.2 |
| 16.0 | 13.72 | -5.16 | -3.79 | 6.4 | 216.3 | 35.5 | 221.8 |
| 17.0 | 14.53 | -5.63 | -4.14 | 7.0 | 216.4 | 36.2 | 214.4 |
| 18.0 | 15.34 | -6.11 | -4.49 | 7.6 | 216.3 | 36.3 | 222.8 |
| 19.0 | 16.14 | -6.59 | -4.83 | 8.2 | 216.2 | 36.6 | 217.9 |
| 19.1 | 16.22 | -6.63 | -4.87 | 8.2 | 216.3 | 36.8 | 225.3 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

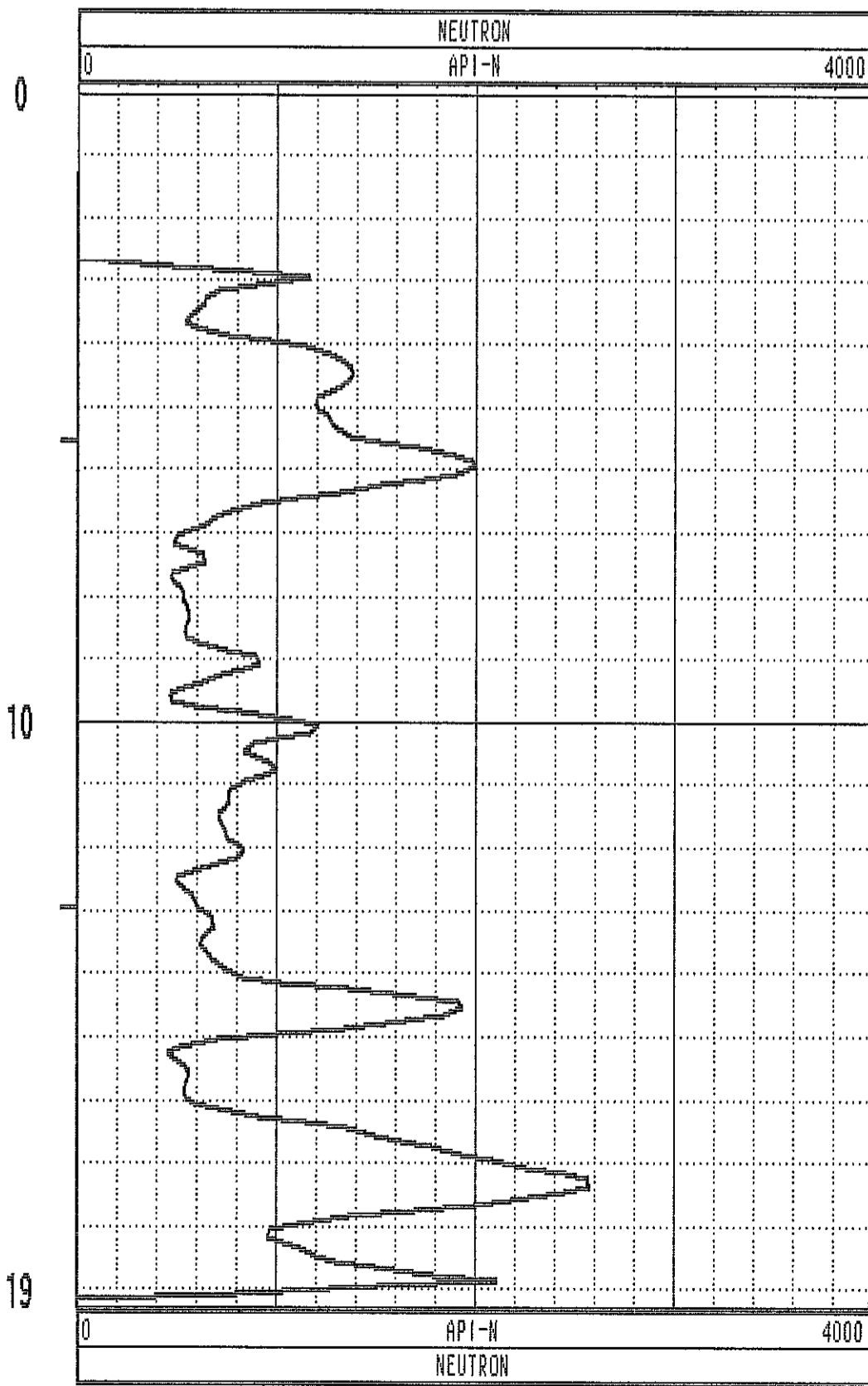
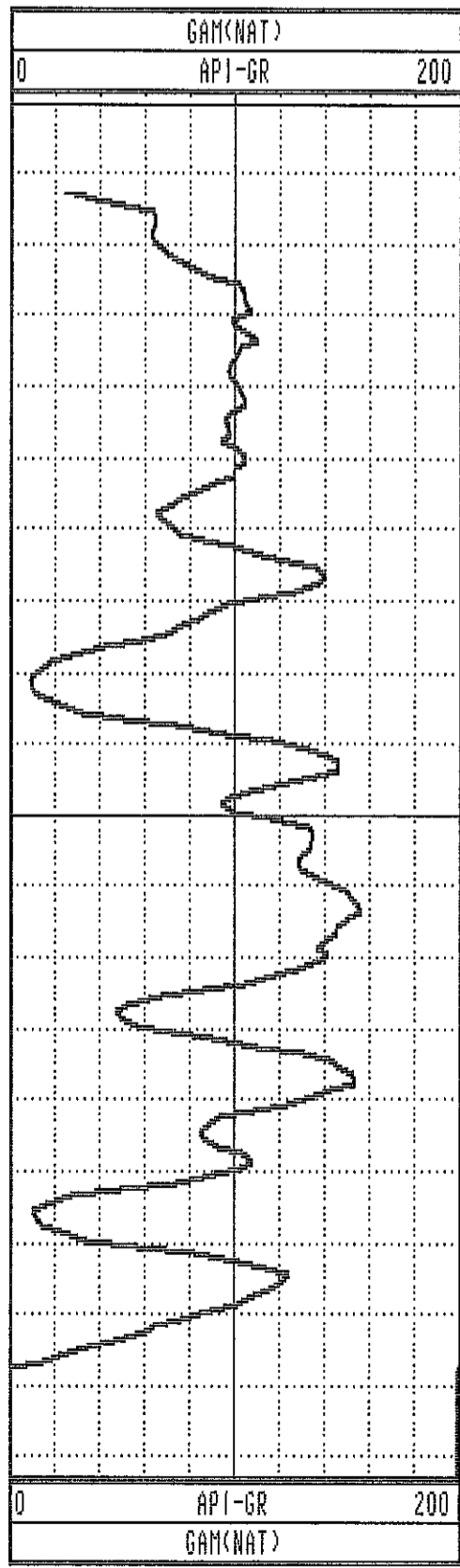
COMPANY : PINE VALLEY COAL LTD.
WELL : WRH-96061
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/20/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 19.40 LOG MEASURED FROM: G.L. DF :
LOG TOP : 1.40 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 8
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

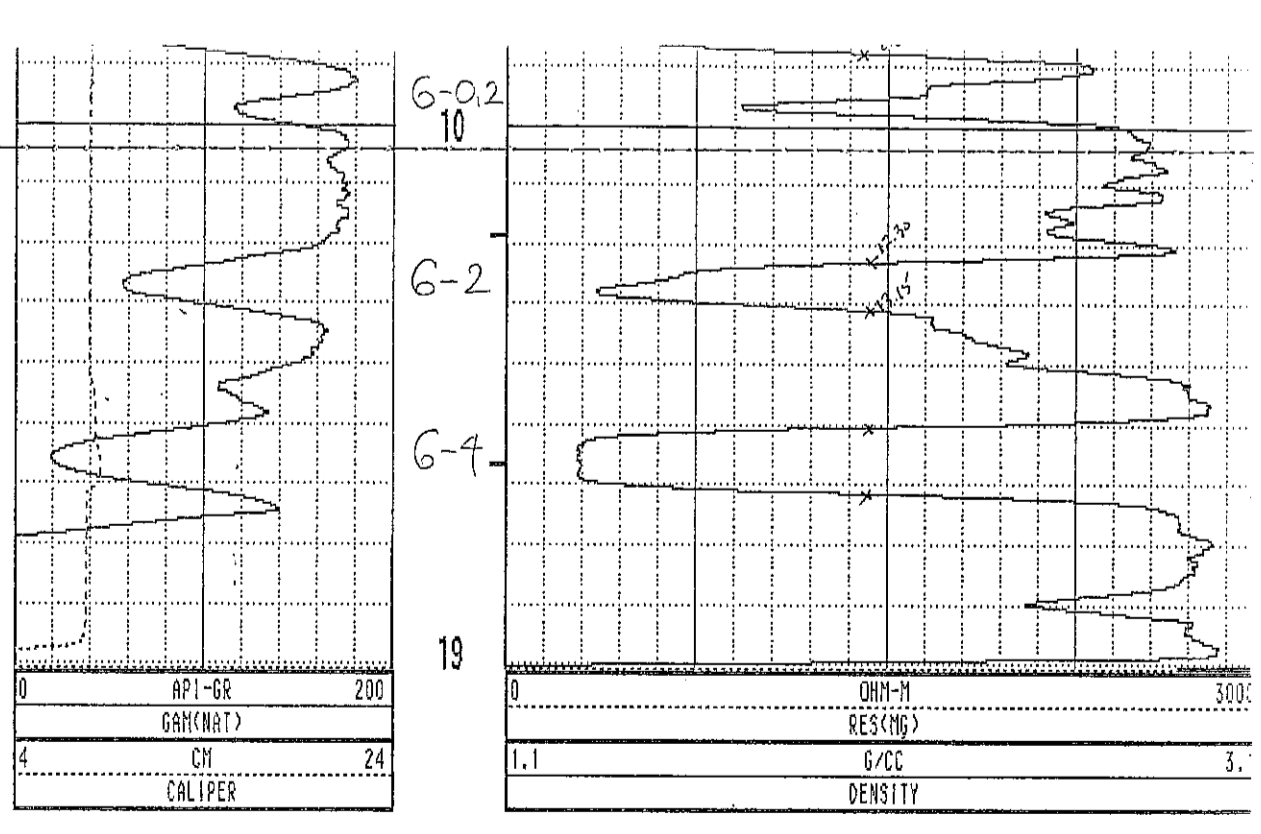
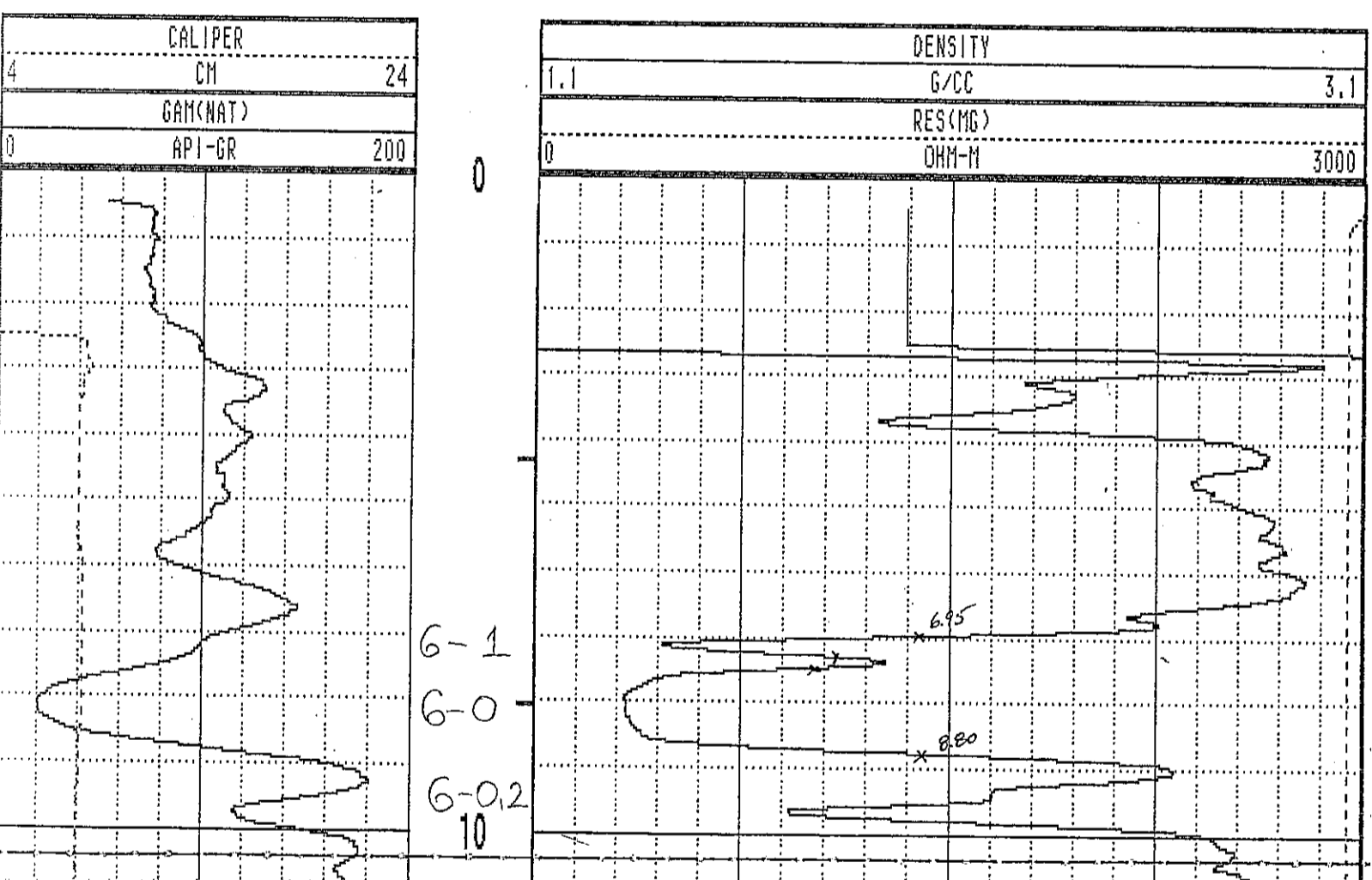
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL LTD. WELL : WRH-96061 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 07/20/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB : LOG BOTTOM : 19.12 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.48 DRL MEASURED FROM: GL : CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 9 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96061 07/20/96 958

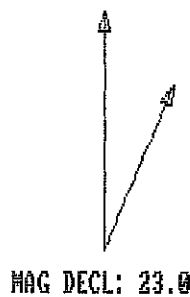
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | | |
|------------------|----------|---------------|---------------------|----------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.105 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | NOV14.95 | 00:35:18 | 0 | DENSITY | 4777.000 CPS | 1.106 G/CC |
| 5 | NOV14.95 | 00:35:18 | 0 | DENSITY | 1803.000 CPS | 2.120 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:33 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:33 | 0 | CALIPER | 1000.000 CPS | 17.000 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

26-61

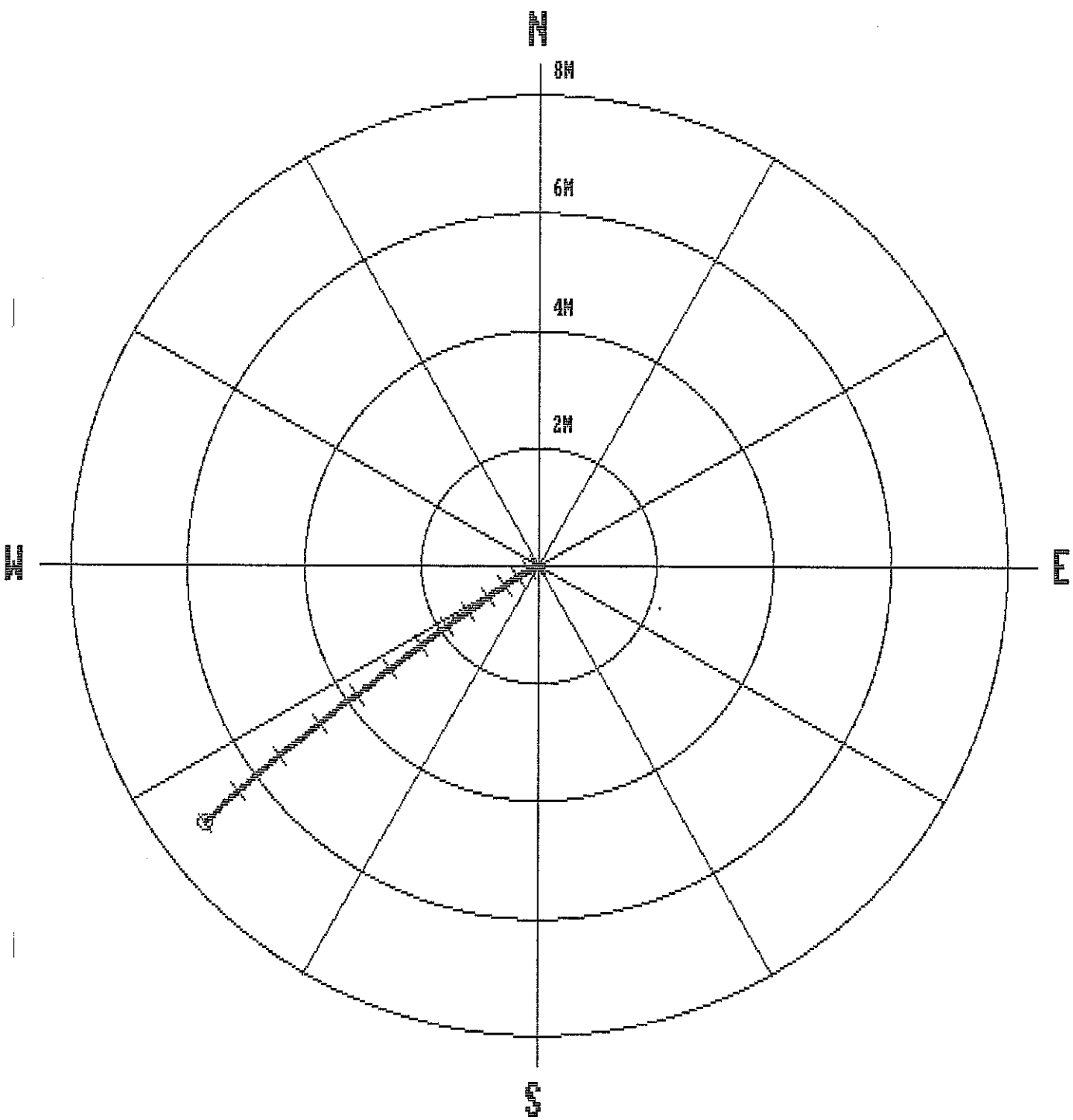
PLAN VIEW

COMPU-LOG DEVIATION

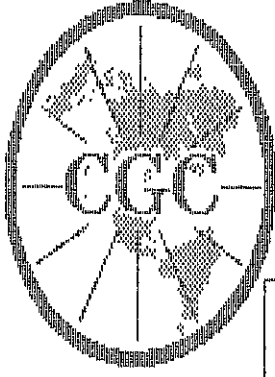
CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96062
 DATE OF LOG: 07/16/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 31.61 M
 AZIMUTH: 232.4
 DISTANCE: 7.2 M
 + = 2 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 103.9 | 0.8 | 63.8 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 55.6 | 1.1 | 348.7 |
| 5.0 | 5.00 | 0.02 | 0.01 | 0.0 | 41.9 | 2.0 | 252.2 |
| 6.0 | 6.00 | -0.00 | -0.02 | 0.0 | 264.3 | 2.6 | 241.4 |
| 7.0 | 7.00 | -0.03 | -0.08 | 0.1 | 247.5 | 4.5 | 242.1 |
| 8.0 | 7.99 | -0.08 | -0.16 | 0.2 | 244.1 | 5.3 | 239.2 |
| 9.0 | 8.99 | -0.13 | -0.25 | 0.3 | 242.9 | 6.4 | 235.7 |
| 10.0 | 9.98 | -0.19 | -0.35 | 0.4 | 241.1 | 7.7 | 233.9 |
| 11.0 | 10.97 | -0.26 | -0.46 | 0.5 | 240.8 | 7.9 | 238.6 |
| 12.0 | 11.96 | -0.34 | -0.58 | 0.7 | 239.2 | 9.3 | 237.3 |
| 13.0 | 12.95 | -0.43 | -0.71 | 0.8 | 238.9 | 9.3 | 249.5 |
| 14.0 | 13.93 | -0.53 | -0.86 | 1.0 | 238.1 | 10.7 | 233.2 |
| 15.0 | 14.91 | -0.66 | -1.01 | 1.2 | 236.8 | 11.0 | 238.4 |
| 16.0 | 15.89 | -0.78 | -1.18 | 1.4 | 236.6 | 12.1 | 235.9 |
| 17.0 | 16.87 | -0.89 | -1.36 | 1.6 | 236.7 | 12.8 | 243.9 |
| 18.0 | 17.84 | -1.04 | -1.53 | 1.8 | 235.9 | 13.6 | 230.0 |
| 19.0 | 18.81 | -1.17 | -1.73 | 2.1 | 236.0 | 14.9 | 239.6 |
| 20.0 | 19.77 | -1.32 | -1.96 | 2.4 | 236.1 | 16.6 | 238.4 |
| 21.0 | 20.73 | -1.51 | -2.19 | 2.7 | 235.4 | 17.8 | 232.3 |
| 22.0 | 21.67 | -1.70 | -2.44 | 3.0 | 235.2 | 18.9 | 231.7 |
| 23.0 | 22.62 | -1.90 | -2.71 | 3.3 | 234.9 | 20.0 | 225.5 |
| 24.0 | 23.55 | -2.12 | -2.98 | 3.7 | 234.6 | 21.4 | 234.0 |
| 25.0 | 24.49 | -2.32 | -3.26 | 4.0 | 234.5 | 20.7 | 237.2 |
| 26.0 | 25.42 | -2.55 | -3.55 | 4.4 | 234.3 | 21.8 | 234.7 |
| 27.0 | 26.35 | -2.79 | -3.85 | 4.7 | 234.1 | 22.8 | 236.3 |
| 28.0 | 27.27 | -3.03 | -4.15 | 5.1 | 233.9 | 23.7 | 234.8 |
| 29.0 | 28.18 | -3.28 | -4.47 | 5.5 | 233.7 | 24.4 | 226.5 |
| 30.0 | 29.09 | -3.56 | -4.79 | 6.0 | 233.4 | 24.0 | 226.4 |
| 31.0 | 29.99 | -3.84 | -5.11 | 6.4 | 233.1 | 26.1 | 229.0 |
| 32.0 | 30.89 | -4.13 | -5.43 | 6.8 | 232.7 | 25.9 | 218.5 |
| 33.0 | 31.81 | -4.37 | -5.68 | 7.2 | 232.4 | 0.0 | 0.0 |
| 32.8 | 31.61 | -4.37 | -5.68 | 7.2 | 232.4 | 26.2 | 228.1 |

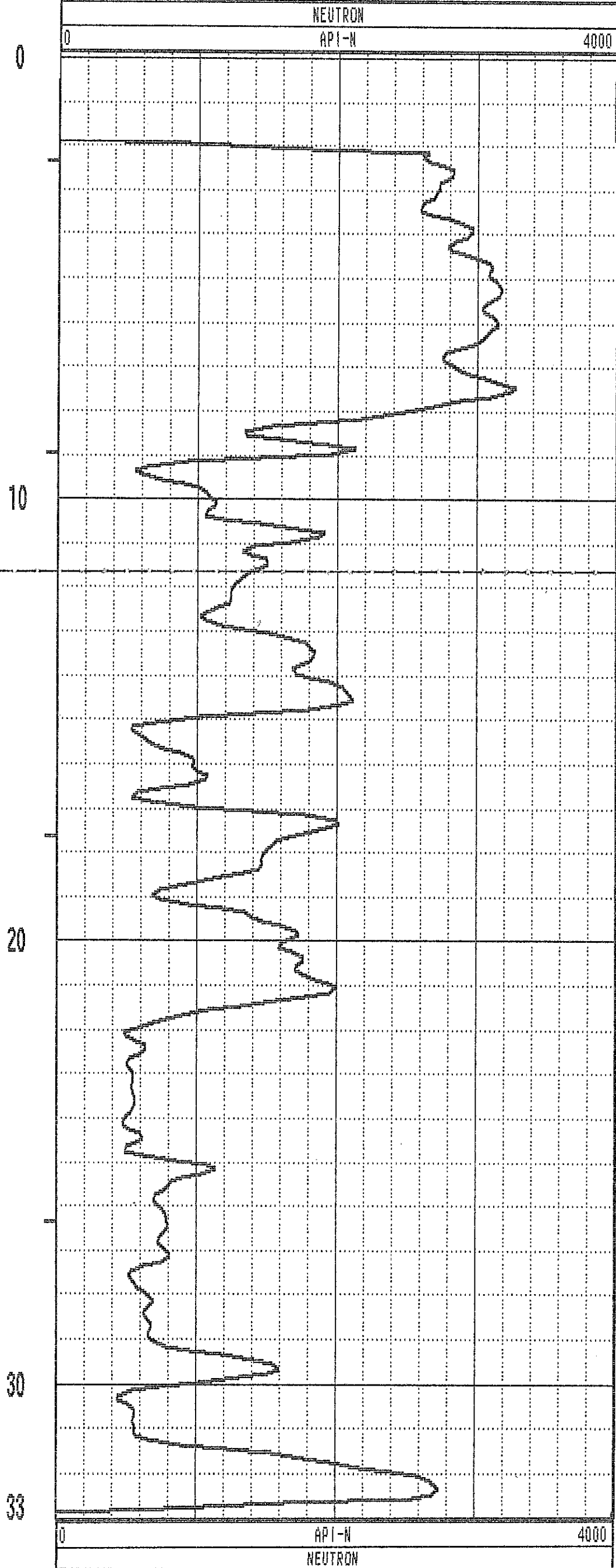
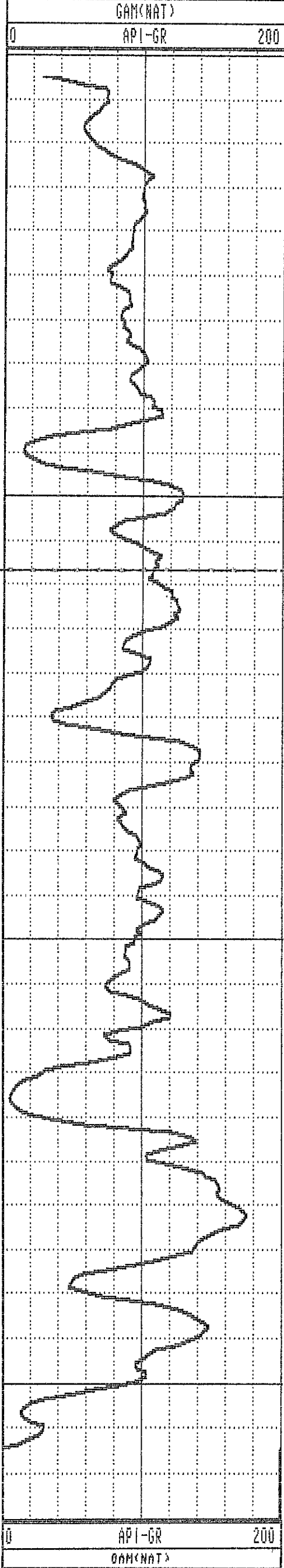


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96062 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 07/16/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 33.10 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.60 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 500000 |

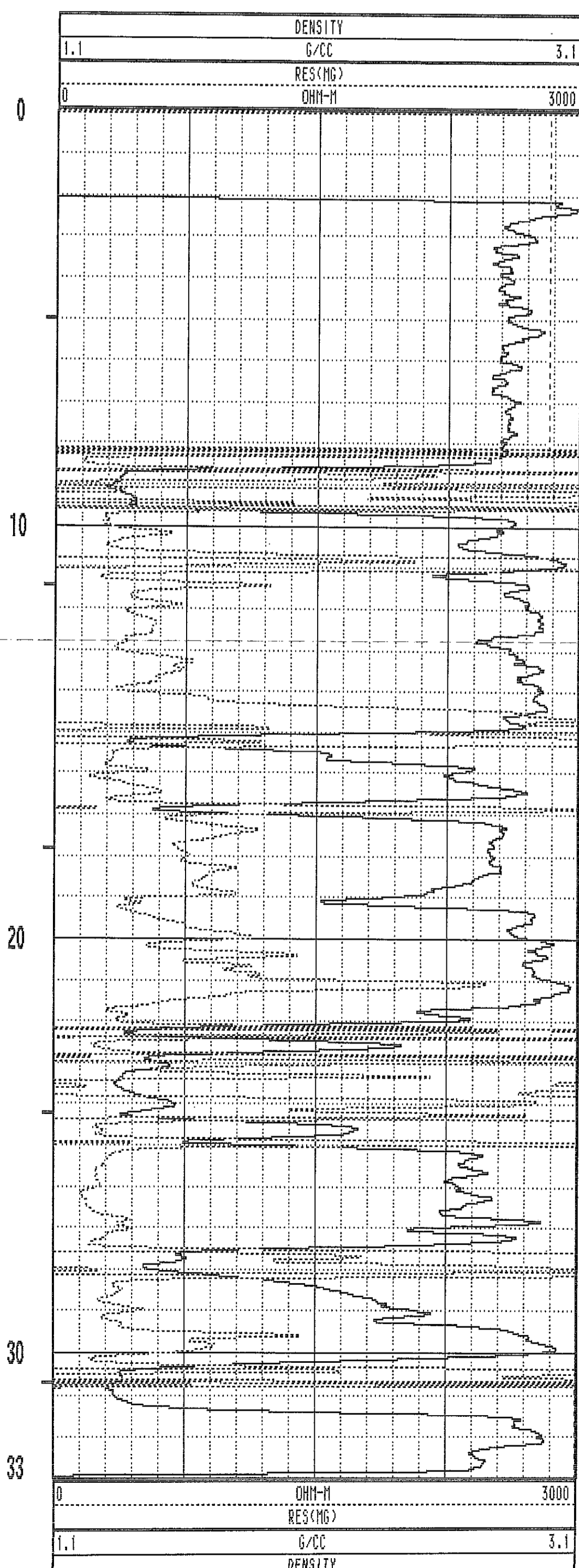
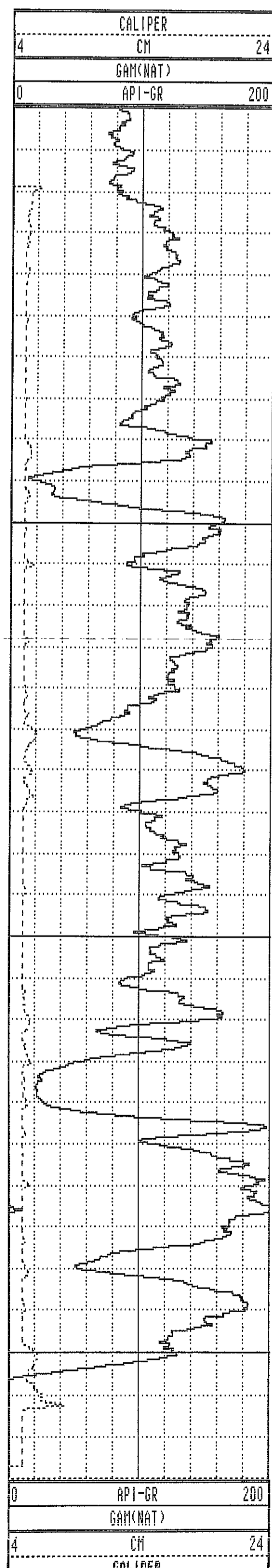
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96062 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | : |
| DATE | : 07/16/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 33.01 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9030AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 3 |
| | | THRESH | : 500000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

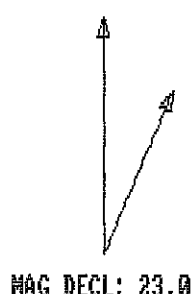


| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.01 | 0.0 | 258.8 | 2.2 | 257.1 |
| 3.0 | 3.00 | -0.01 | -0.04 | 0.0 | 249.2 | 1.6 | 258.8 |
| 4.0 | 4.00 | -0.00 | -0.07 | 0.1 | 269.1 | 2.1 | 290.6 |
| 5.0 | 5.00 | -0.01 | -0.10 | 0.1 | 264.7 | 2.7 | 267.1 |
| 6.0 | 6.00 | -0.01 | -0.15 | 0.1 | 265.8 | 3.0 | 259.0 |
| 7.0 | 7.00 | -0.02 | -0.20 | 0.2 | 265.1 | 3.2 | 270.0 |
| 8.0 | 7.99 | -0.02 | -0.26 | 0.3 | 266.2 | 3.6 | 261.6 |
| 9.0 | 8.99 | -0.03 | -0.33 | 0.3 | 265.0 | 3.9 | 264.1 |
| 10.0 | 9.99 | -0.04 | -0.39 | 0.4 | 264.8 | 4.0 | 260.2 |
| 11.0 | 10.99 | -0.06 | -0.47 | 0.5 | 263.1 | 5.2 | 240.4 |
| 11.5 | 11.48 | -0.07 | -0.50 | 0.5 | 262.5 | 4.8 | 250.0 |

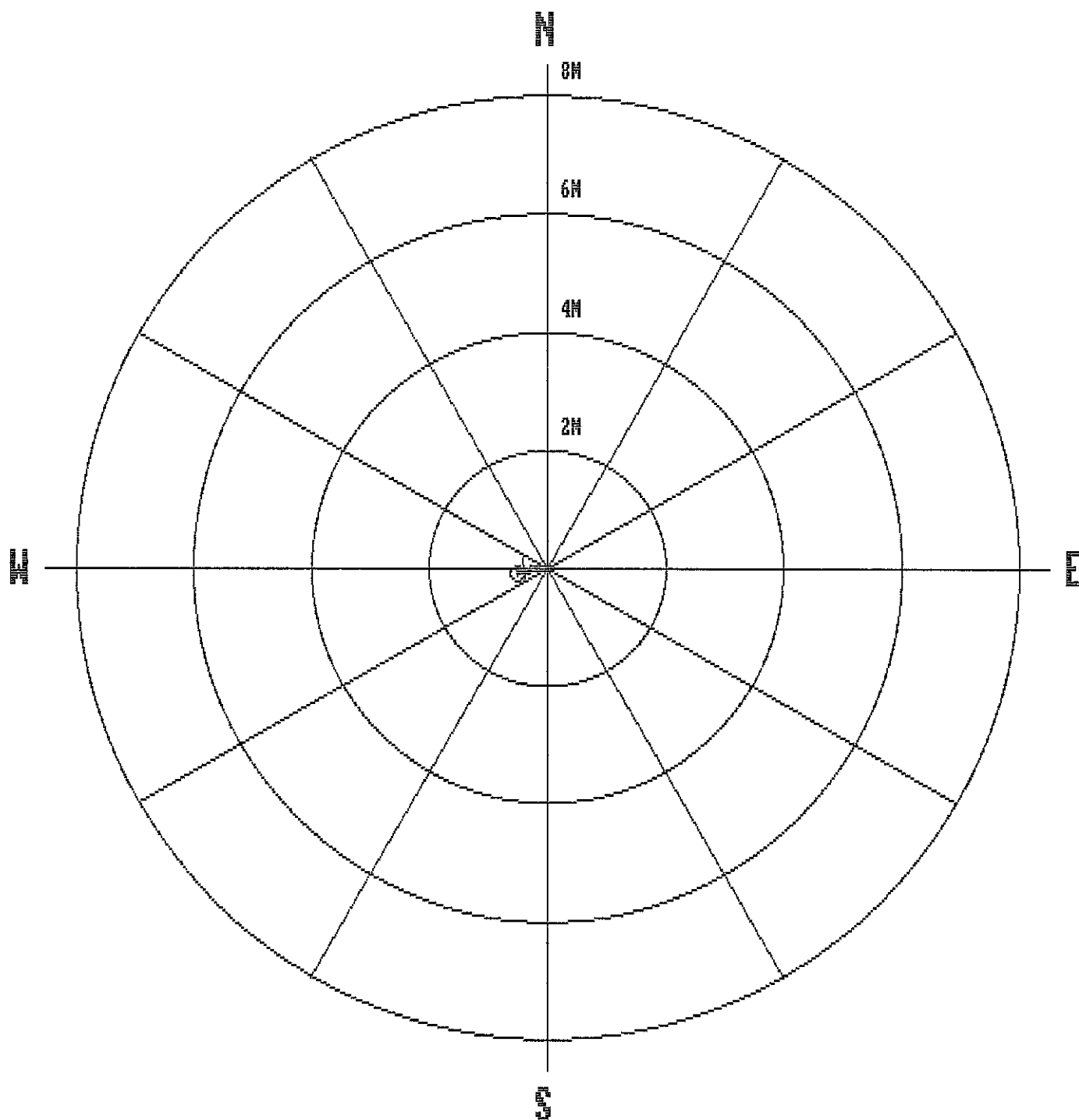
WRH 96063

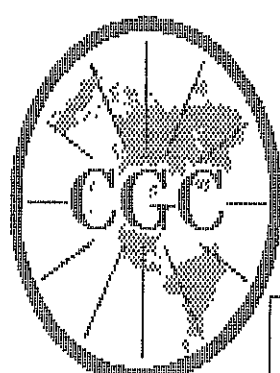
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL LTD.
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96063
 DATE OF LOG: 07/20/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 11.48 M
 AZIMUTH: 262.5
 DISTANCE: 0.5 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

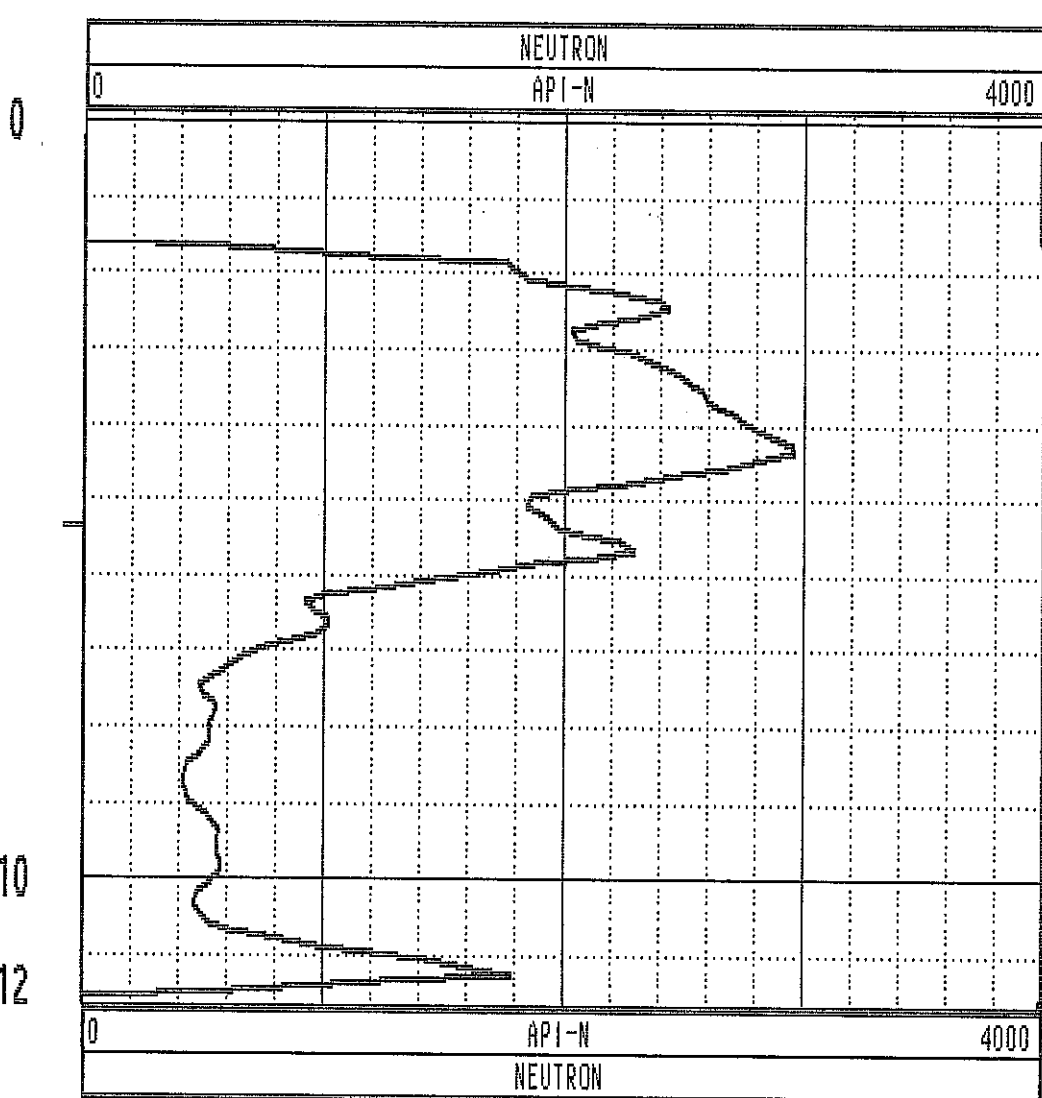
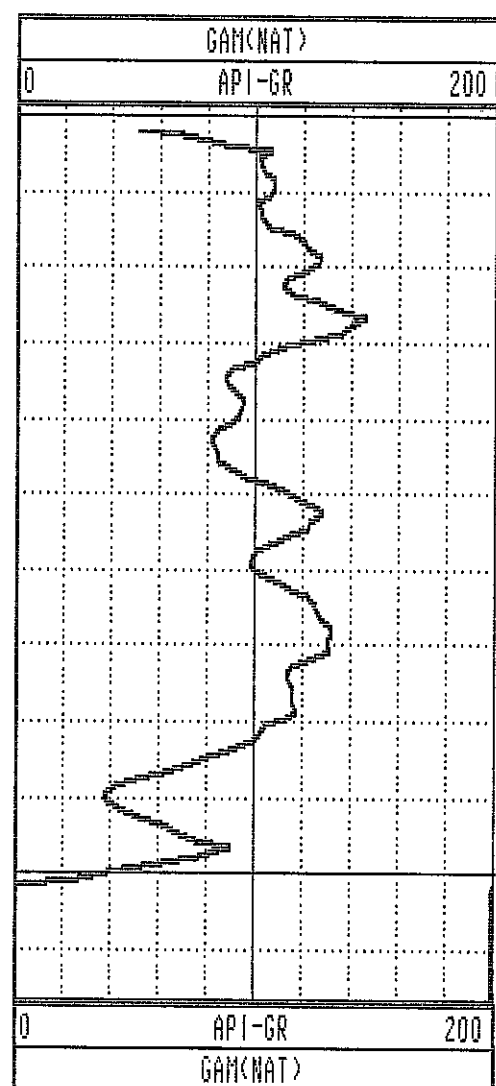
COMPANY : PINE VALLEY COAL LTD.
 WELL : WRH-96063
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/20/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 9 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 11.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.30 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

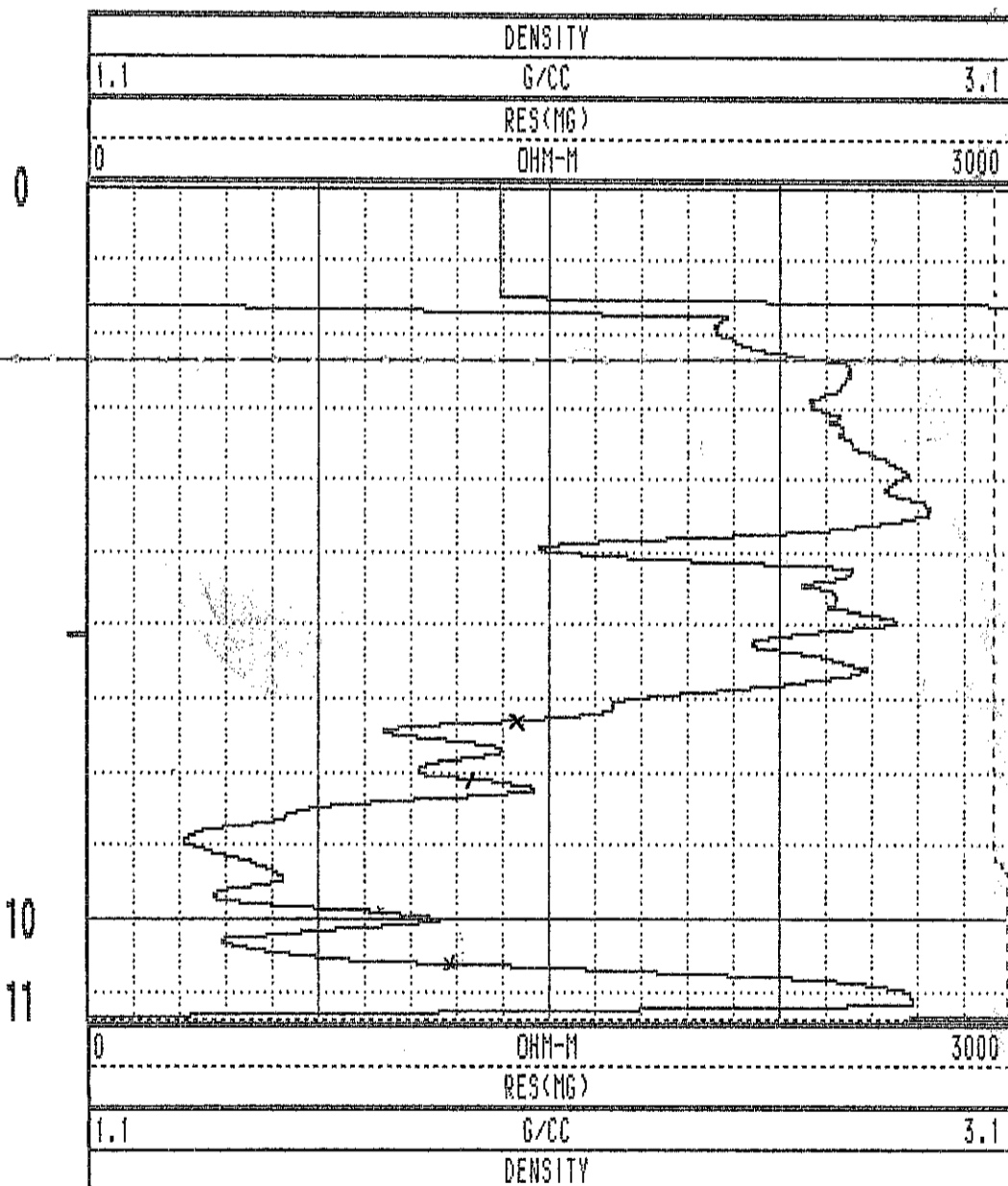
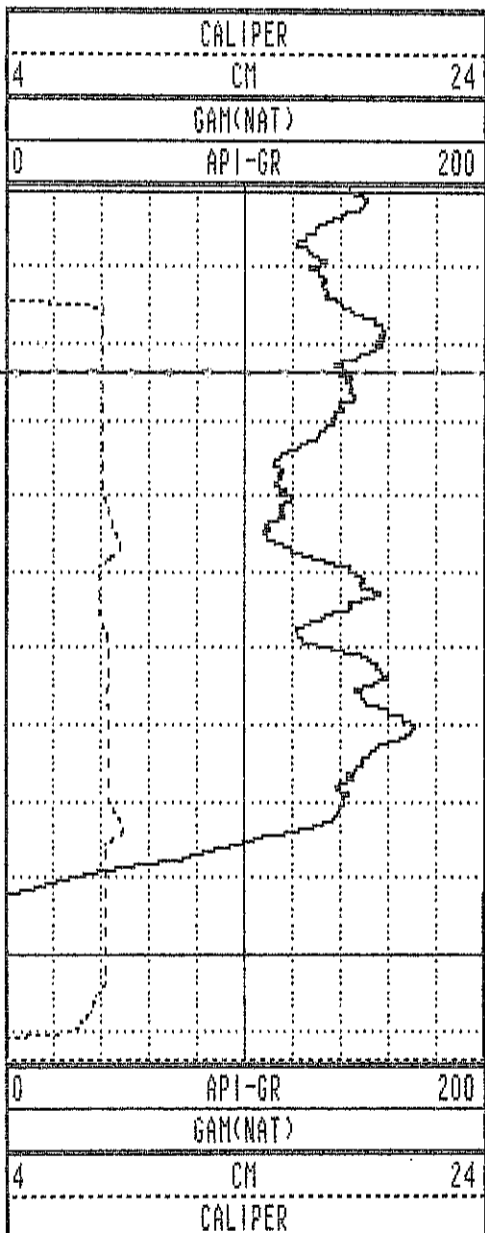
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|-------------------------|--------------------|-----------------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96063 | | |
| LOCATION/FIELD | : MILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/20/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 9 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 11.44 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.60 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 6 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96063 07/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | NOV14,95 | 00:35:18 | 0 DENSITY | 4777.000 CPS | 1.106 G/CC |
| 5 | NOV14,95 | 00:35:18 | 0 DENSITY | 1803.000 CPS | 2.120 G/CC |
| 6 | JUL18,96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18,96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV12,95 | 12:31:21 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV15,95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15,95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15,95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.01 | 0.0 | 259.6 | 1.6 | 206.9 |
| 3.0 | 3.00 | -0.02 | -0.01 | 0.0 | 205.9 | 1.1 | 345.9 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 149.5 | 1.6 | 94.7 |
| 5.0 | 5.00 | 0.00 | 0.03 | 0.0 | 85.7 | 2.0 | 96.7 |
| 6.0 | 6.00 | -0.02 | 0.06 | 0.1 | 110.0 | 2.1 | 133.4 |
| 7.0 | 7.00 | -0.05 | 0.10 | 0.1 | 117.3 | 2.5 | 131.5 |
| 8.0 | 8.00 | -0.08 | 0.14 | 0.2 | 119.7 | 3.3 | 122.0 |
| 9.0 | 8.99 | -0.11 | 0.20 | 0.2 | 119.8 | 3.6 | 125.3 |
| 10.0 | 9.99 | -0.15 | 0.26 | 0.3 | 120.2 | 4.3 | 121.5 |
| 11.0 | 10.99 | -0.18 | 0.33 | 0.4 | 119.3 | 4.6 | 117.9 |
| 12.0 | 11.98 | -0.22 | 0.40 | 0.5 | 118.6 | 4.8 | 115.5 |
| 13.0 | 12.98 | -0.25 | 0.48 | 0.5 | 118.0 | 4.9 | 114.5 |
| 14.0 | 13.98 | -0.29 | 0.57 | 0.6 | 116.8 | 6.0 | 108.4 |
| 15.0 | 14.97 | -0.32 | 0.66 | 0.7 | 116.1 | 5.8 | 110.7 |
| 16.0 | 15.97 | -0.36 | 0.75 | 0.8 | 115.6 | 6.0 | 109.7 |
| 17.0 | 16.96 | -0.39 | 0.85 | 0.9 | 114.8 | 6.1 | 109.6 |
| 18.0 | 17.95 | -0.43 | 0.95 | 1.0 | 114.5 | 6.4 | 111.9 |
| 19.0 | 18.95 | -0.49 | 1.06 | 1.2 | 114.6 | 6.8 | 119.1 |
| 20.0 | 19.94 | -0.54 | 1.16 | 1.3 | 114.9 | 6.9 | 115.4 |
| 21.0 | 20.93 | -0.60 | 1.27 | 1.4 | 115.0 | 7.2 | 120.0 |
| 22.0 | 21.92 | -0.66 | 1.38 | 1.5 | 115.4 | 7.4 | 117.5 |
| 23.0 | 22.92 | -0.73 | 1.50 | 1.7 | 115.9 | 7.9 | 122.1 |
| 24.0 | 23.91 | -0.81 | 1.62 | 1.8 | 116.5 | 8.6 | 122.9 |
| 25.0 | 24.89 | -0.90 | 1.73 | 2.0 | 117.4 | 8.8 | 129.7 |
| 26.0 | 25.88 | -1.00 | 1.85 | 2.1 | 118.3 | 9.0 | 132.0 |
| 27.0 | 26.87 | -1.11 | 1.96 | 2.3 | 119.5 | 9.5 | 136.8 |
| 28.0 | 27.86 | -1.22 | 2.07 | 2.4 | 120.6 | 9.3 | 139.0 |
| 29.0 | 28.84 | -1.35 | 2.17 | 2.6 | 121.9 | 9.3 | 145.3 |
| 30.0 | 29.83 | -1.49 | 2.27 | 2.7 | 123.3 | 9.6 | 145.1 |
| 31.0 | 30.82 | -1.63 | 2.35 | 2.9 | 124.7 | 9.7 | 154.6 |
| 32.0 | 31.80 | -1.77 | 2.44 | 3.0 | 126.0 | 9.6 | 154.5 |
| 32.7 | 32.49 | -1.88 | 2.49 | 3.1 | 127.0 | 9.7 | 152.4 |

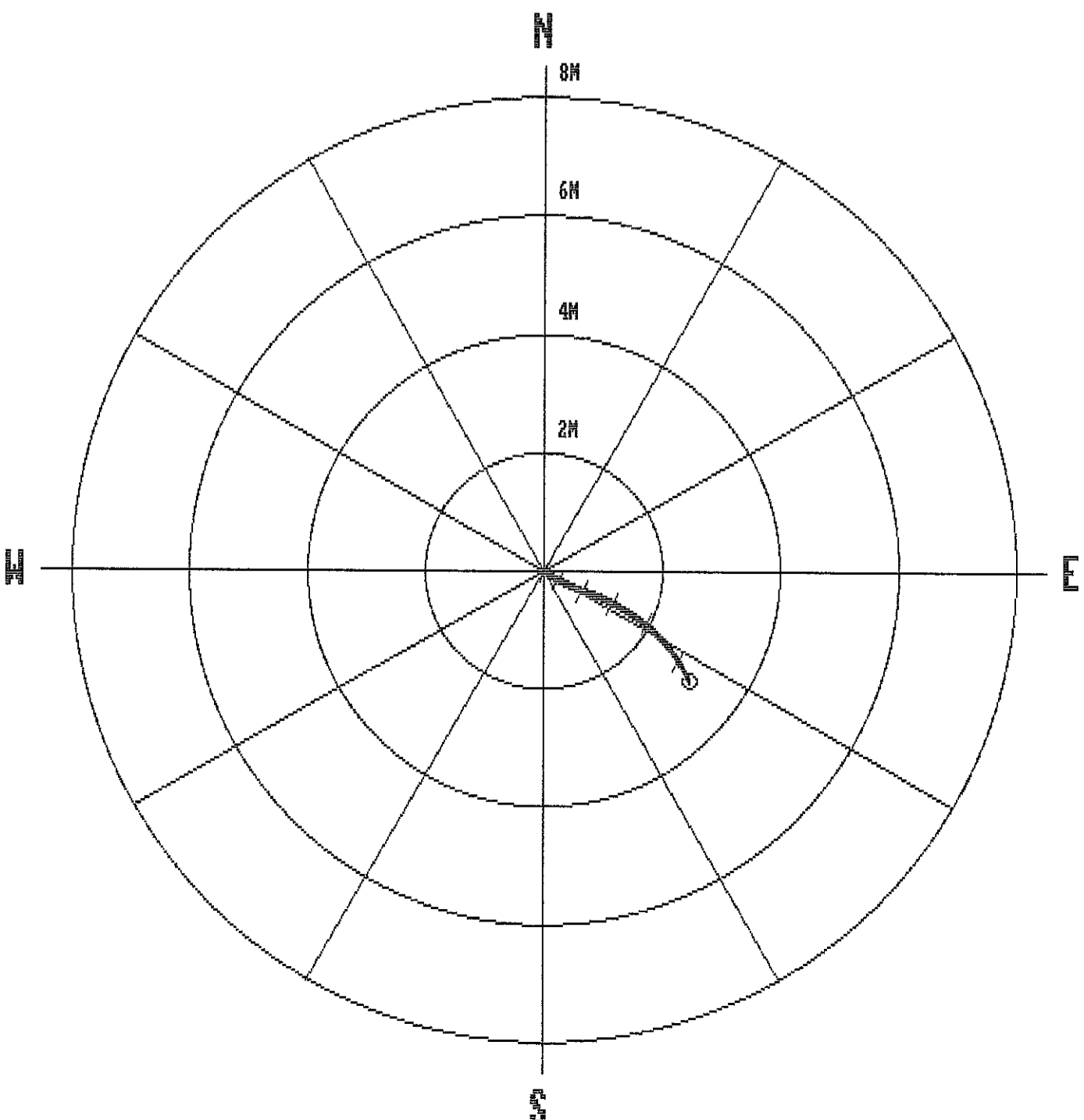
WRH 96064

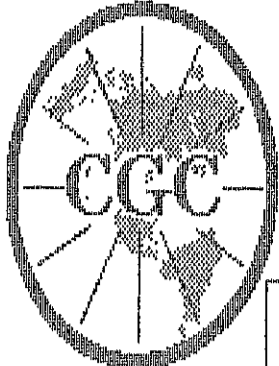
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL LTD.
LOCATION: WILLOW CREEK
HOLE ID: WRH-96064
DATE OF LOG: 07/20/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 32.49 M
AZIMUTH: 127.0
DISTANCE: 3.1 M
+ = 5 M INCR
O = BOTTOM OF HOLE



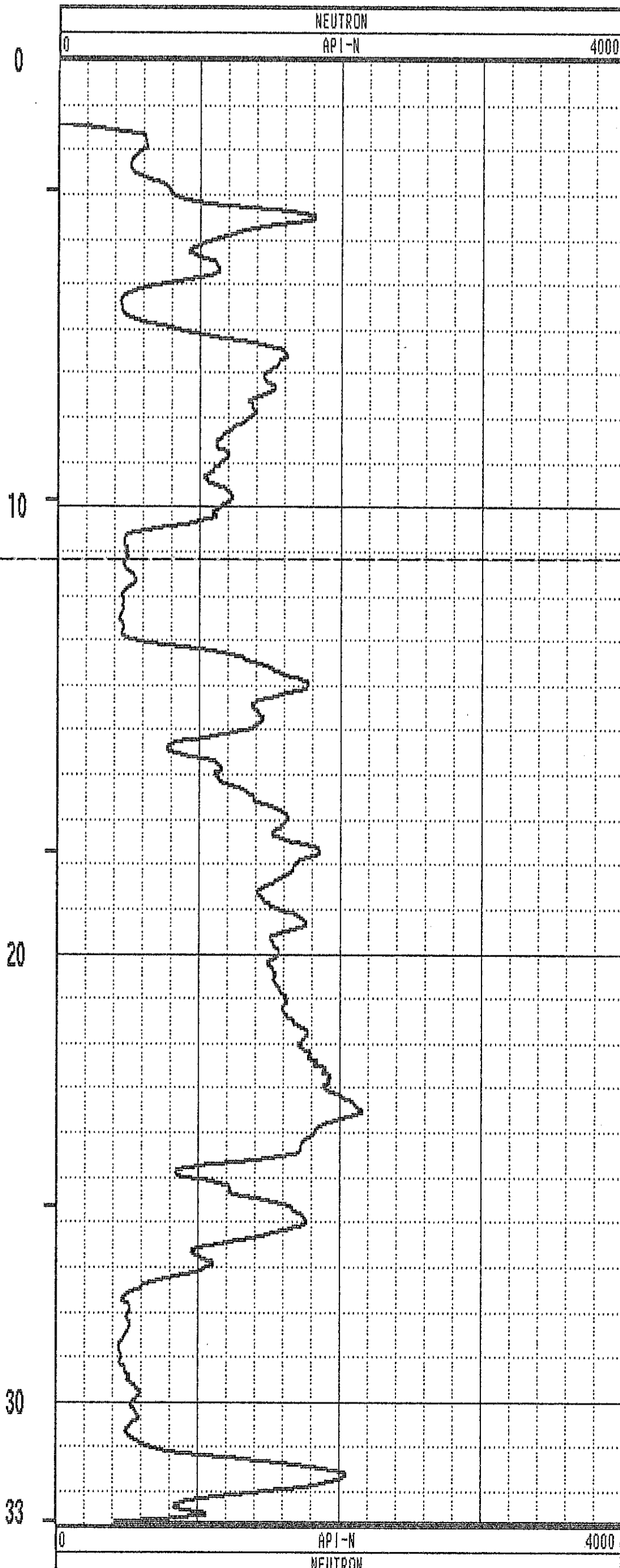
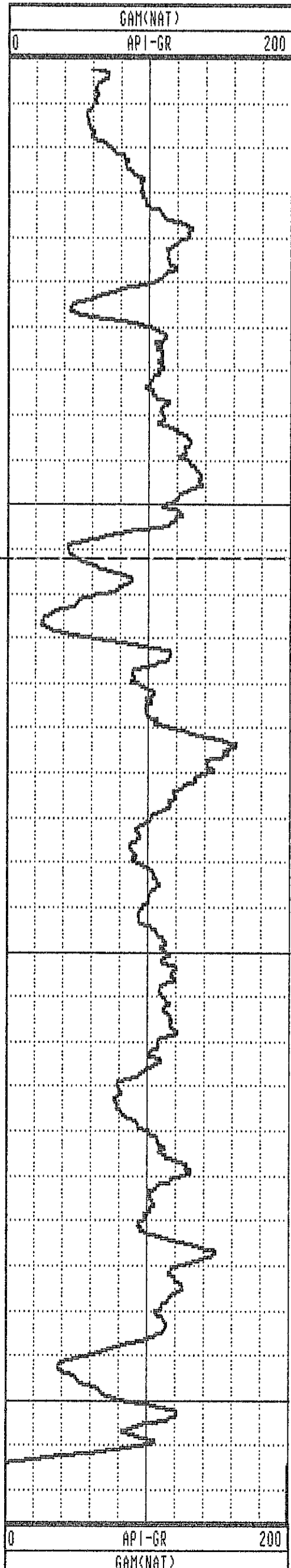


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|-------------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: | |
| WELL | : WRH-96064 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 07/20/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 32.76 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.28 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 3 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

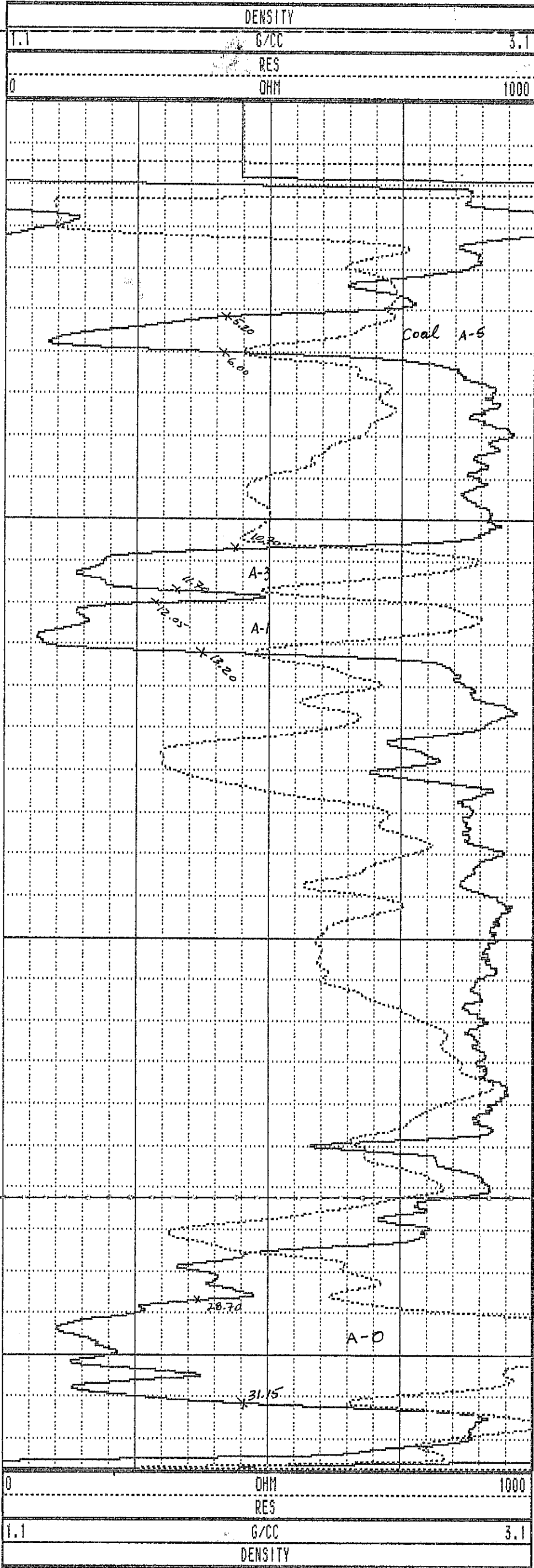
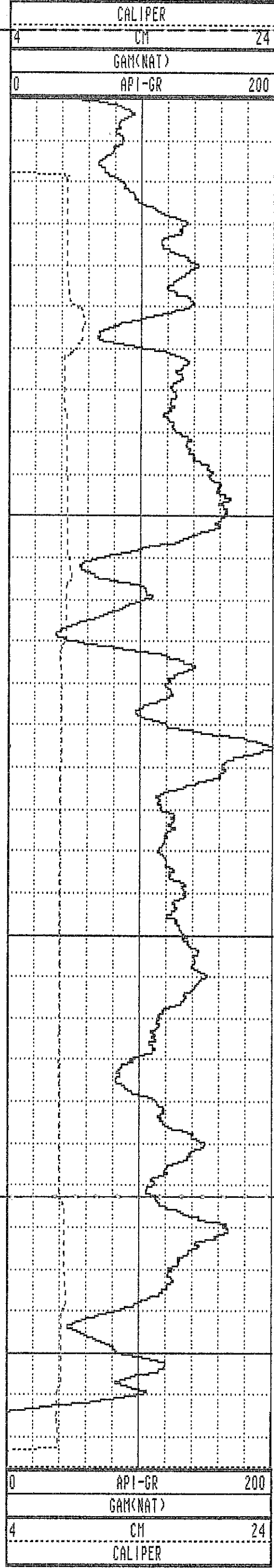
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|-------------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL LTD. | OTHER SERVICES: |
| WELL | : MRH-96064 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE |
| DATE | : 07/20/96 | PERMANENT DATUM |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM |
| LOG BOTTOM | : 32.76 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | FILE |
| | | TYPE |
| | | LOG |
| | | PLOT |
| | | THRESH |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



MRH-96064 07/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

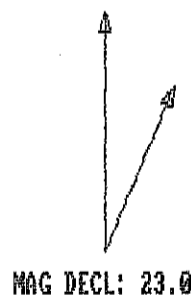
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 305.4 | 0.6 | 308.1 |
| 3.0 | 3.00 | -0.01 | 0.00 | 0.0 | 177.7 | 0.6 | 102.2 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 143.2 | 0.8 | 121.4 |
| 5.0 | 5.00 | -0.02 | 0.02 | 0.0 | 139.2 | 0.9 | 208.1 |
| 6.0 | 6.00 | -0.02 | 0.00 | 0.0 | 173.8 | 1.2 | 261.4 |
| 7.0 | 7.00 | -0.02 | -0.02 | 0.0 | 217.0 | 1.2 | 273.9 |
| 8.0 | 8.00 | -0.02 | -0.04 | 0.0 | 237.9 | 1.1 | 270.1 |
| 9.0 | 9.00 | -0.02 | -0.05 | 0.1 | 249.5 | 0.8 | 303.7 |
| 10.0 | 10.00 | -0.01 | -0.07 | 0.1 | 257.3 | 0.7 | 300.4 |
| 11.0 | 11.00 | -0.01 | -0.08 | 0.1 | 263.4 | 0.6 | 304.7 |
| 12.0 | 12.00 | -0.00 | -0.09 | 0.1 | 268.8 | 0.7 | 308.6 |
| 13.0 | 13.00 | 0.01 | -0.09 | 0.1 | 274.1 | 0.5 | 342.0 |
| 14.0 | 14.00 | 0.02 | -0.10 | 0.1 | 281.0 | 0.9 | 0.4 |
| 15.0 | 15.00 | 0.03 | -0.10 | 0.1 | 289.3 | 0.9 | 12.6 |
| 16.0 | 16.00 | 0.05 | -0.09 | 0.1 | 299.1 | 1.3 | 28.2 |
| 17.0 | 17.00 | 0.07 | -0.07 | 0.1 | 315.1 | 2.1 | 50.6 |
| 18.0 | 18.00 | 0.10 | -0.04 | 0.1 | 337.7 | 2.6 | 55.8 |
| 19.0 | 19.00 | 0.12 | -0.00 | 0.1 | 359.1 | 3.0 | 56.1 |
| 20.0 | 19.99 | 0.15 | 0.05 | 0.2 | 16.4 | 3.0 | 61.8 |
| 21.0 | 20.99 | 0.18 | 0.10 | 0.2 | 29.3 | 4.1 | 64.4 |
| 22.0 | 21.99 | 0.21 | 0.17 | 0.3 | 38.0 | 4.4 | 65.2 |
| 23.0 | 22.99 | 0.25 | 0.24 | 0.3 | 44.3 | 5.4 | 62.1 |
| 24.0 | 23.98 | 0.29 | 0.33 | 0.4 | 49.0 | 5.8 | 66.0 |
| 24.0 | 23.98 | 0.29 | 0.33 | 0.4 | 49.0 | 5.8 | 66.0 |

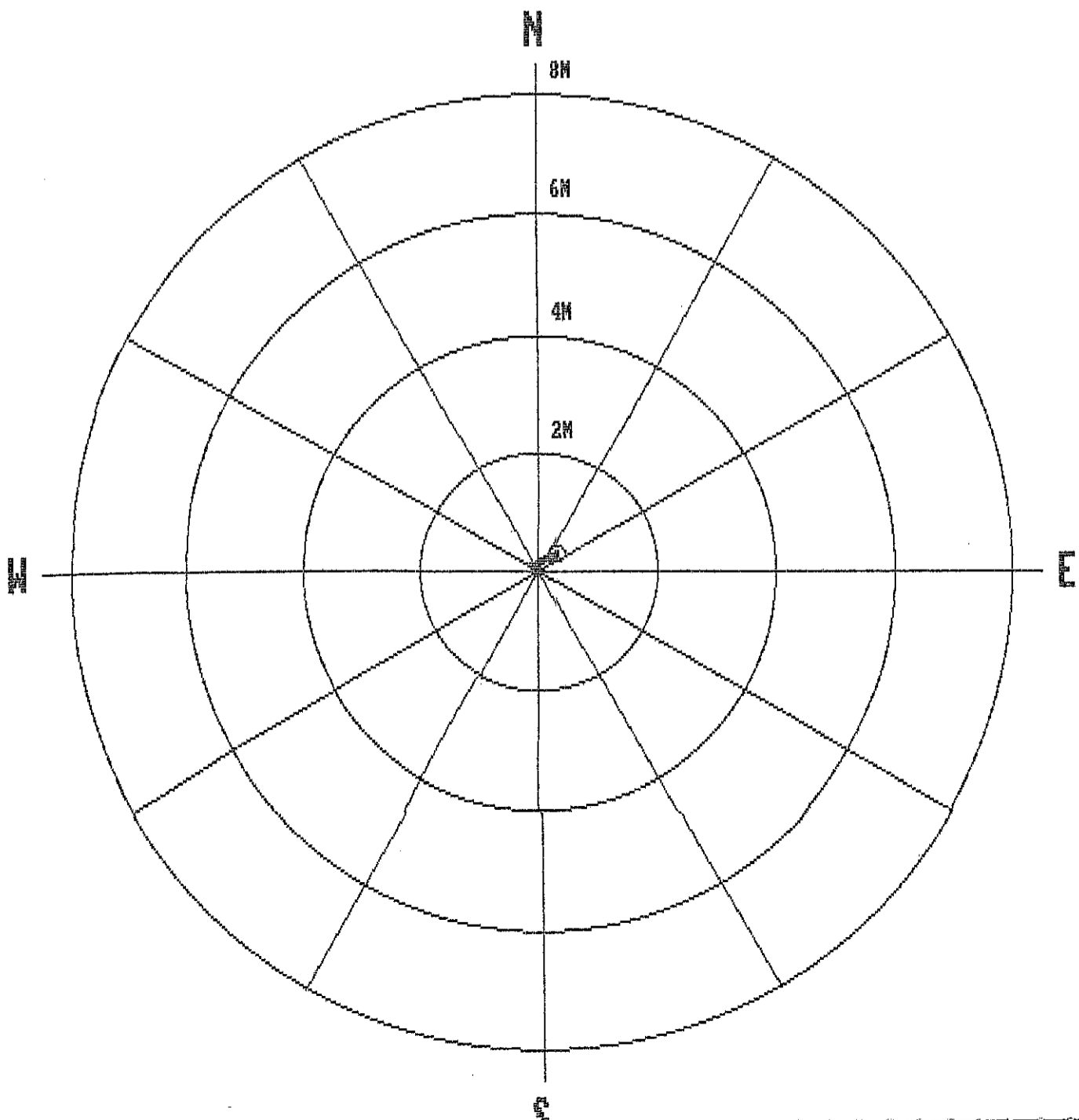
WRH 96065

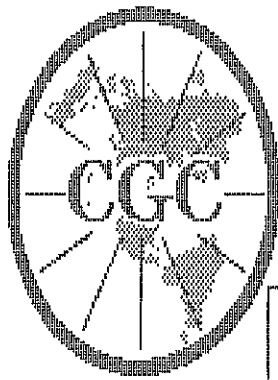
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96065
 DATE OF LOG: 07/24/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 23.98 M
 AZIMUTH: 49.0
 DISTANCE: 0.4 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : MRH-96065
 LOCATION/FIELD : MILLON CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/24/96
 DEPTH DRILLER : 23
 LOG BOTTOM : 24.06
 LOG TOP : 0.54

PERMANENT DATUM : ELEVATIONS
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

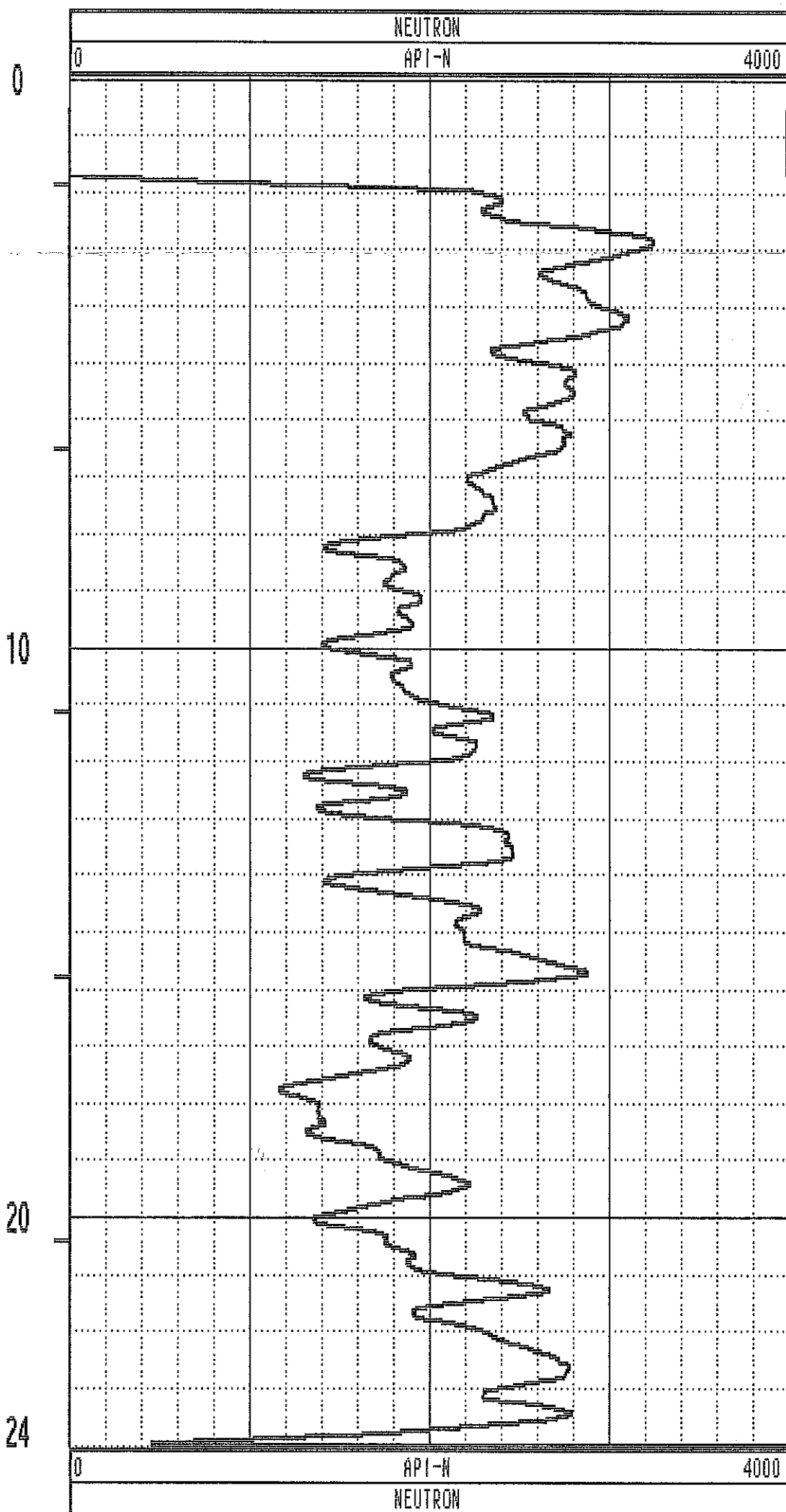
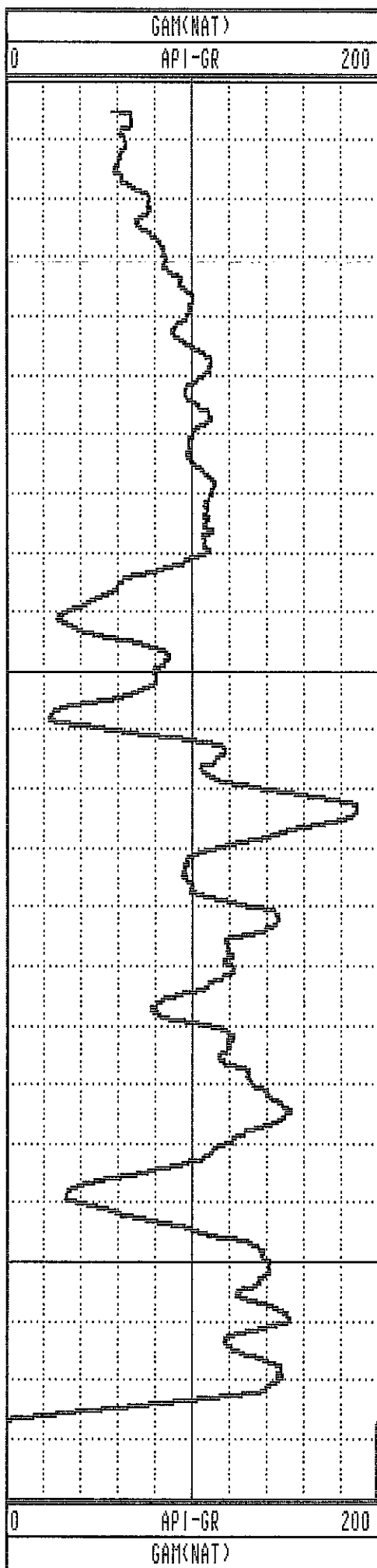
CASING DRILLER : 4
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR FILE : ORIGINAL
 RM : TYPE : 9055A
 RM TEMPERATURE : LOG : 0
 MATRIX DELTA T : PLOT : PINE 4
 FLUID DELTA T : THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

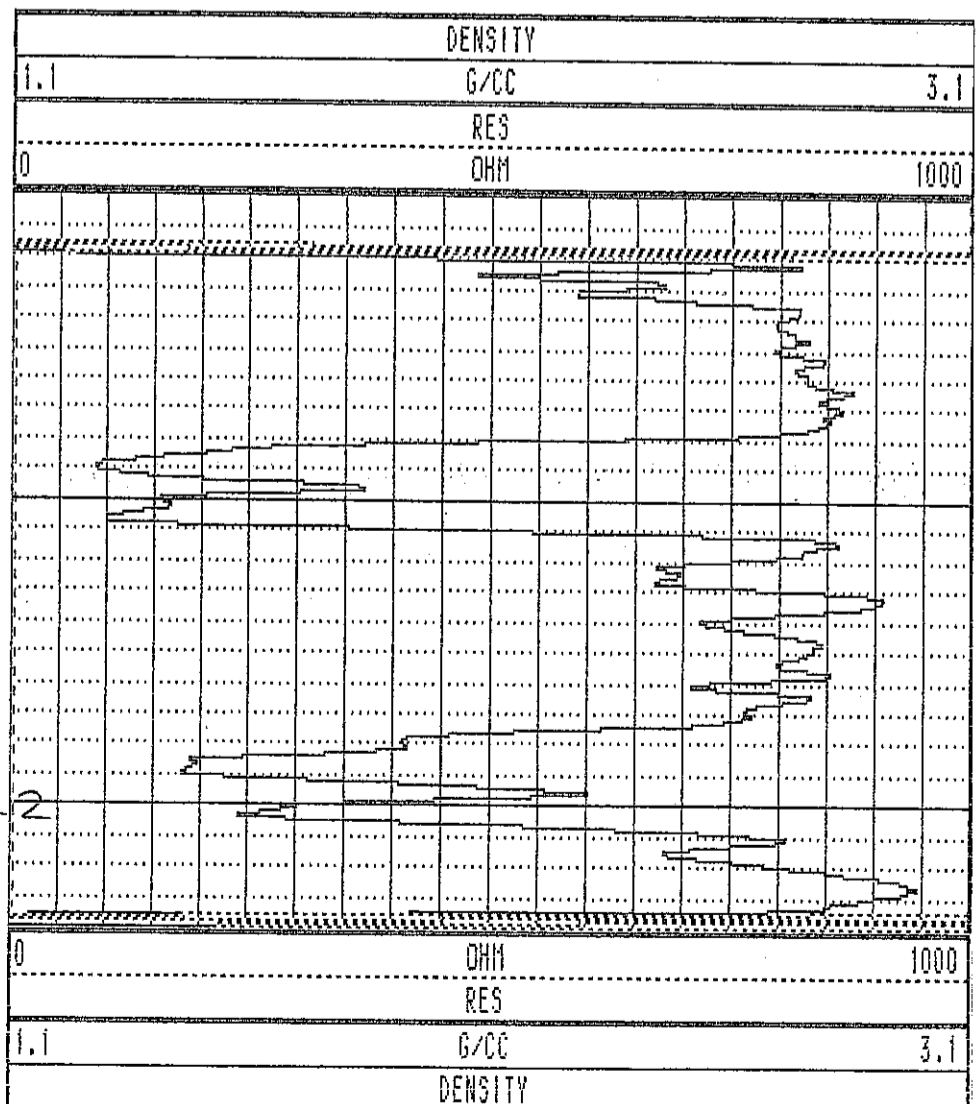
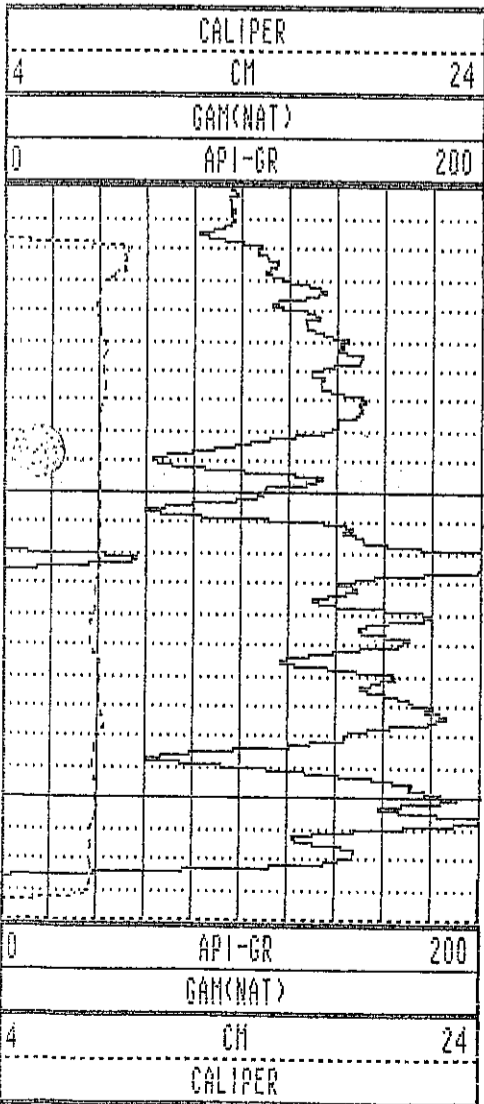
COMPANY : PINE VALLEY COAL
 WELL : MRH-96065
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/24/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 21 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 24.06 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



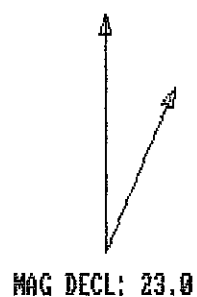
MRH-96065 07/24/96 958

065

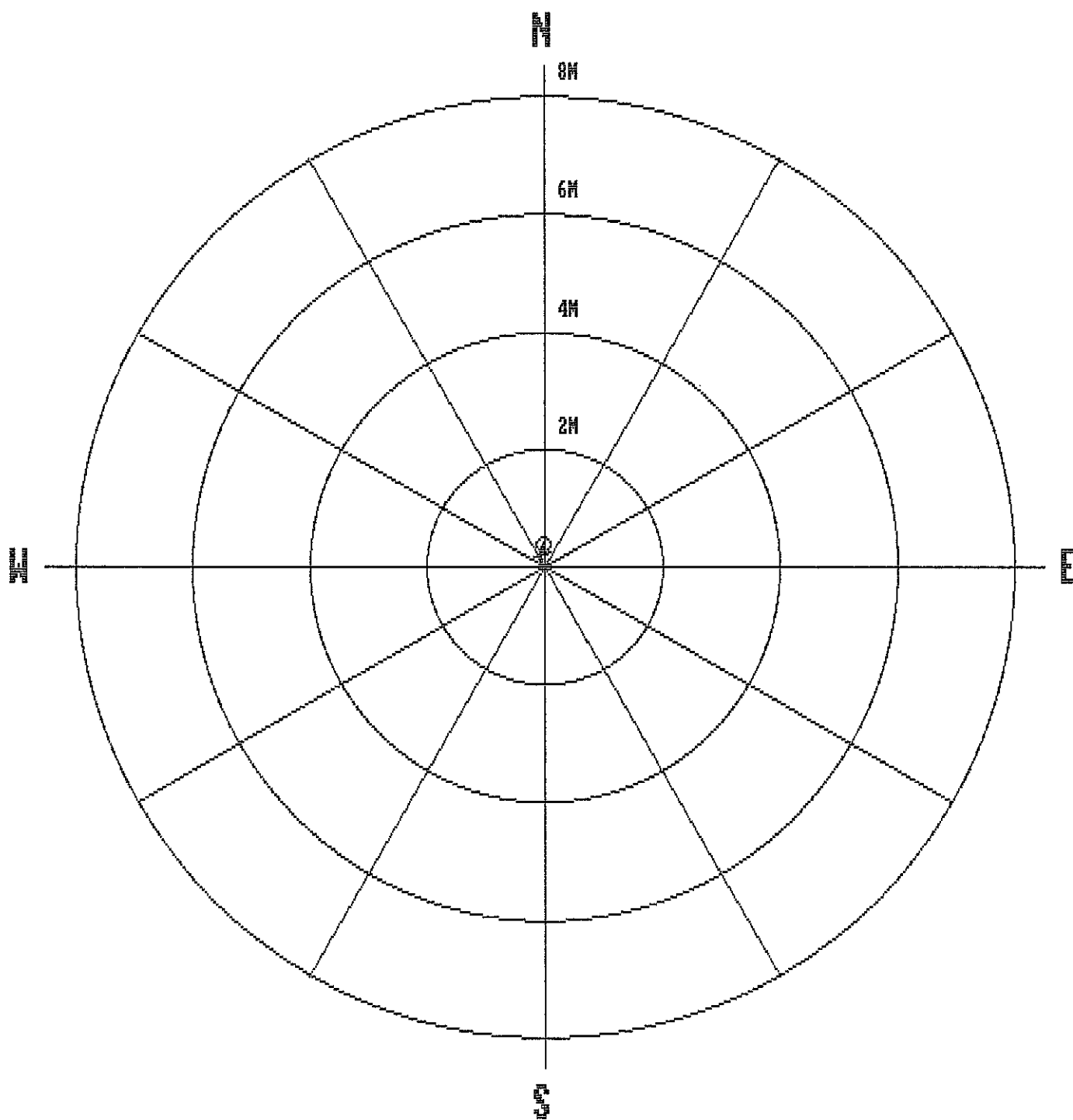
PLAN VIEW

COMPU-LOG DEVIATION

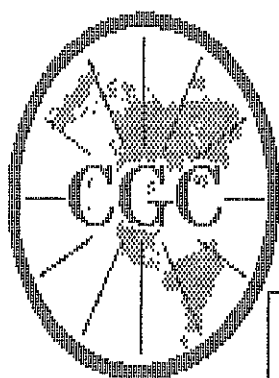
CLIENT: PINE VALLEY COAL
 LOCATION: MILLOW CREEK
 HOLE ID: MRH-96066
 DATE OF LOG: 07/24/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 14.03 M
 AZIMUTH: 358.5
 DISTANCE: 0.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 291.6 | 1.4 | 290.1 |
| 3.0 | 3.00 | 0.01 | -0.02 | 0.0 | 299.2 | 1.4 | 305.5 |
| 4.0 | 4.00 | 0.03 | -0.04 | 0.1 | 309.7 | 1.9 | 327.6 |
| 5.0 | 5.00 | 0.06 | -0.05 | 0.1 | 320.8 | 2.0 | 335.0 |
| 6.0 | 6.00 | 0.09 | -0.06 | 0.1 | 327.6 | 1.7 | 349.1 |
| 7.0 | 7.00 | 0.12 | -0.06 | 0.1 | 331.5 | 1.3 | 355.2 |
| 8.0 | 8.00 | 0.14 | -0.07 | 0.2 | 334.3 | 1.1 | 349.8 |
| 9.0 | 9.00 | 0.16 | -0.07 | 0.2 | 336.9 | 1.7 | 358.4 |
| 10.0 | 10.00 | 0.20 | -0.07 | 0.2 | 341.1 | 2.3 | 4.7 |
| 11.0 | 11.00 | 0.24 | -0.06 | 0.2 | 345.9 | 2.6 | 18.3 |
| 12.0 | 11.99 | 0.28 | -0.05 | 0.3 | 350.3 | 2.5 | 6.0 |
| 13.0 | 12.99 | 0.33 | -0.03 | 0.3 | 354.0 | 2.9 | 20.4 |
| 14.0 | 13.99 | 0.38 | -0.01 | 0.4 | 358.3 | 3.5 | 28.4 |
| 14.0 | 14.03 | 0.38 | -0.01 | 0.4 | 358.5 | 3.5 | 27.5 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96066
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

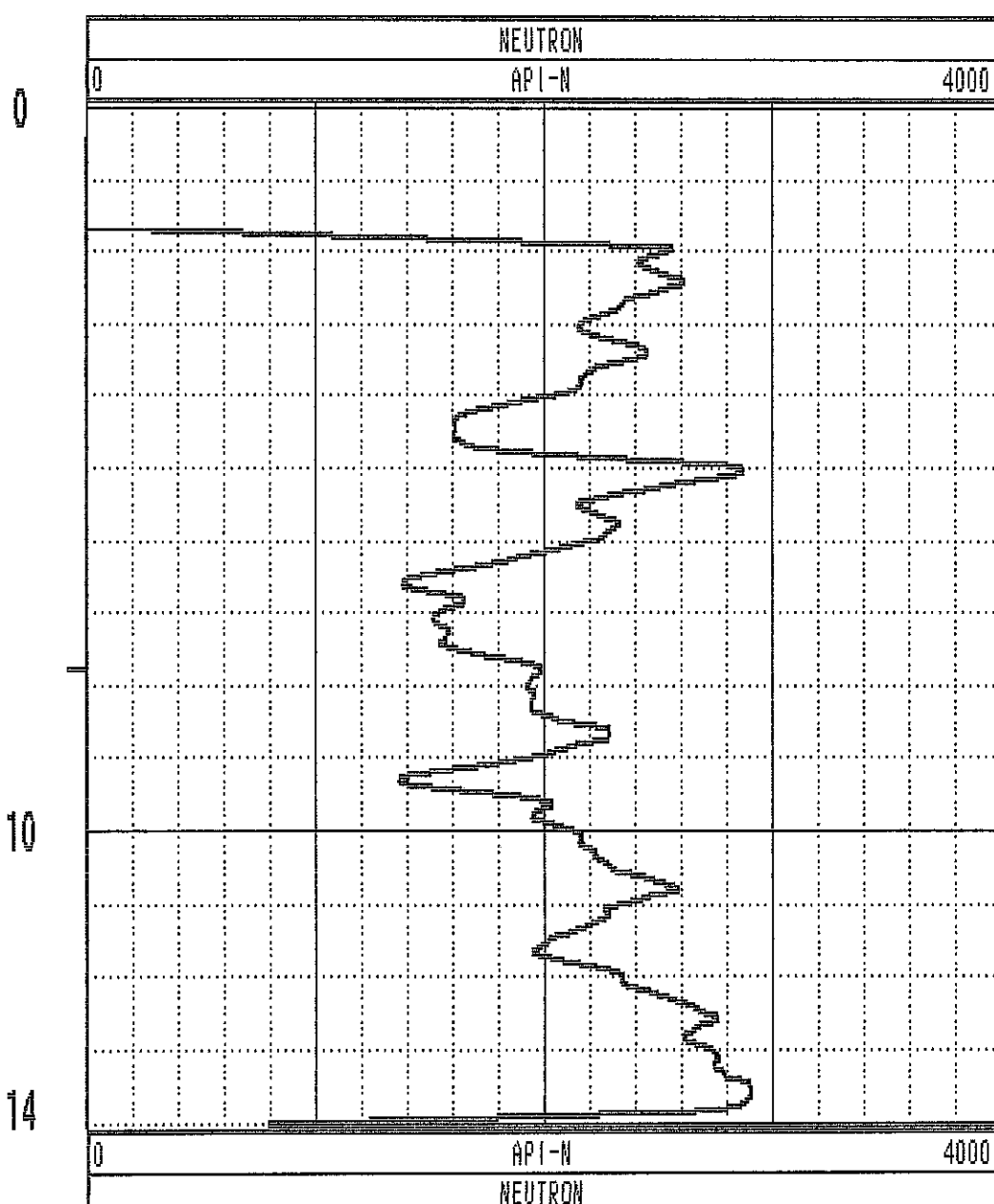
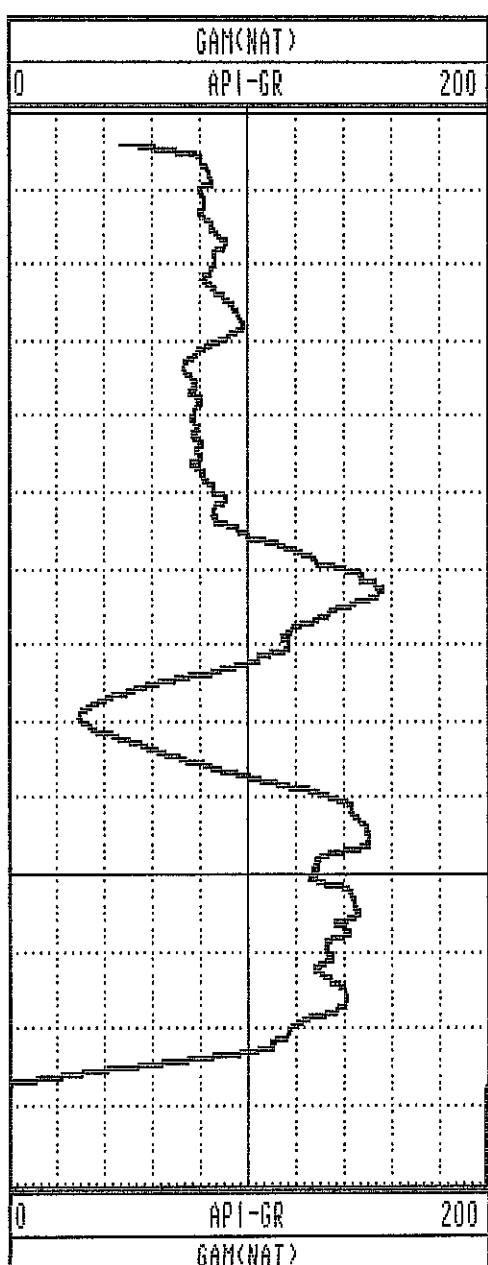
OTHER SERVICES:

DATE : 07/24/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 16 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 14.09 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.46 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

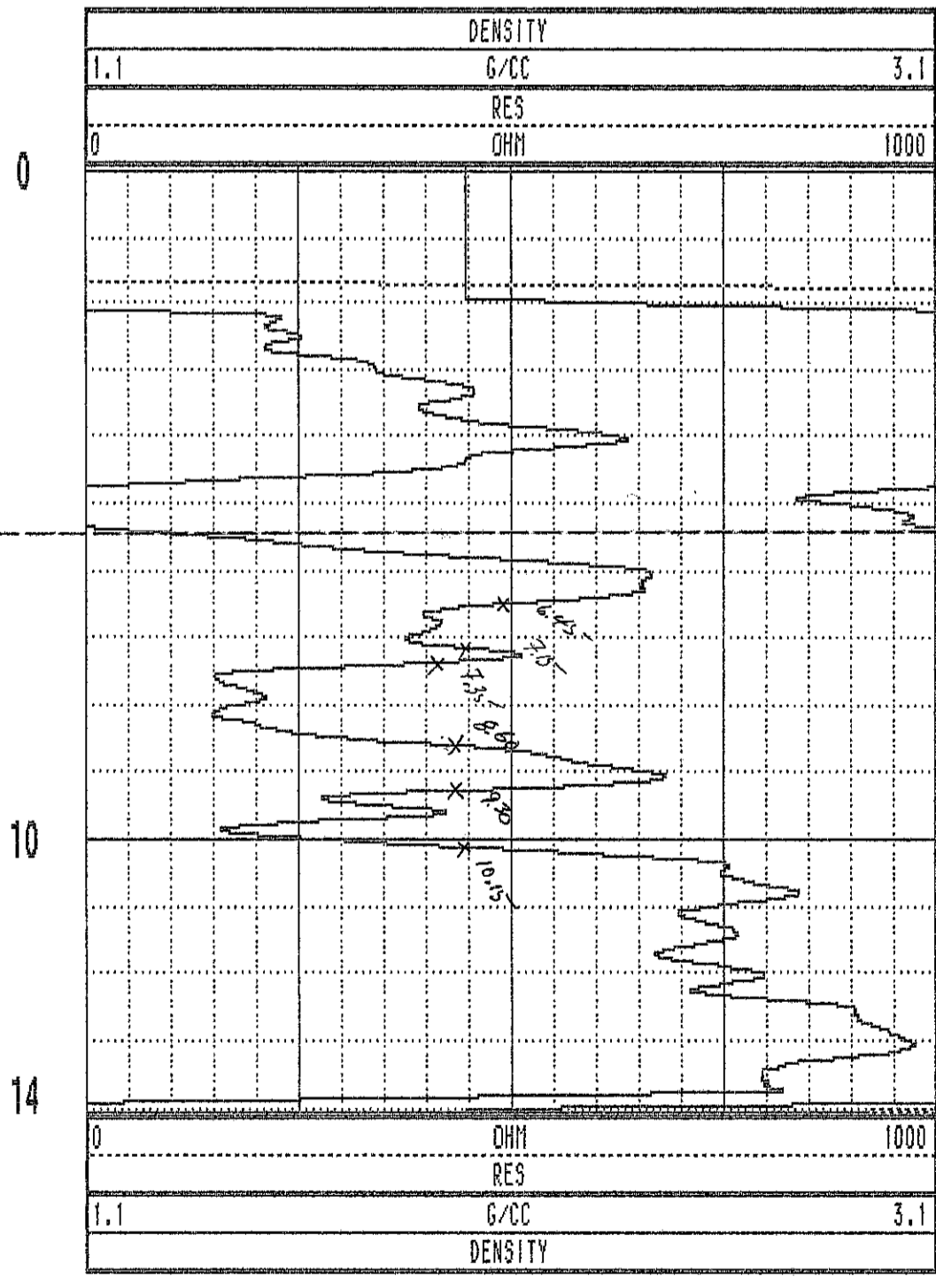
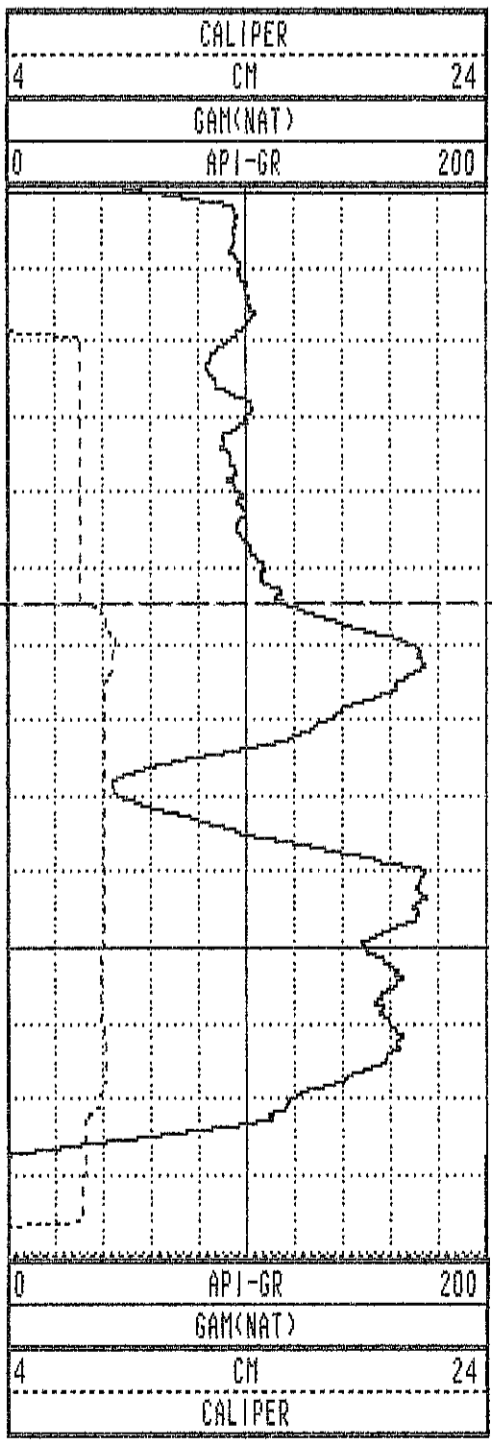
COMPANY : PINE VALLEY COAL **OTHER SERVICES:**
WELL : WRH-96066
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

DATE : 07/24/96 **PERMANENT DATUM** : **ELEVATIONS**
DEPTH DRILLER : 14 **ELEV. PERM. DATUM:** KB :
LOG BOTTOM : 14.10 **LOG MEASURED FROM:** G.L. **DF** :
LOG TOP : 0.00 **DRL MEASURED FROM:** GL :

CASING DRILLER : 4 **LOGGING UNIT** : 9612
CASING TYPE : STEEL **FIELD OFFICE** : CALGARY, AB.
CASING THICKNESS: .25 **RECORDED BY** : R. THOMAS

BIT SIZE : **BOREHOLE FLUID** : AIR **FILE** : PROCESSED
MAGNETIC DECL. : 23 **RM** : **TYPE** : 9033AA
MATRIX DENSITY : **RM TEMPERATURE** : **LOG** : 6
FLUID DENSITY : 1.1 **MATRIX DELTA T** : **PLOT** : PINE 7
NEUTRON MATRIX : 2.65 **FLUID DELTA T** : **THRESH:** 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96066 07/24/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

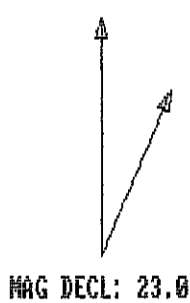
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|---------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 177.6 | 0.9 | 178.5 |
| 3.0 | 3.00 | -0.02 | 0.00 | 0.0 | 175.3 | 1.1 | 188.9 |
| 4.0 | 4.00 | -0.04 | 0.00 | 0.0 | 174.7 | 1.2 | 182.5 |
| 5.0 | 5.00 | -0.06 | 0.00 | 0.1 | 178.7 | 0.9 | 184.9 |
| 6.0 | 6.00 | -0.08 | -0.00 | 0.1 | 183.3 | 0.8 | 206.4 |
| 7.0 | 7.00 | -0.09 | -0.01 | 0.1 | 188.4 | 1.5 | 231.9 |
| 8.0 | 8.00 | -0.11 | -0.04 | 0.1 | 200.2 | 2.1 | 237.1 |
| 9.0 | 9.00 | -0.13 | -0.07 | 0.1 | 210.4 | 2.8 | 244.1 |
| 10.0 | 10.00 | -0.15 | -0.12 | 0.2 | 218.2 | 3.4 | 242.4 |
| 11.0 | 10.99 | -0.18 | -0.18 | 0.3 | 223.7 | 3.9 | 244.9 |
| 12.0 | 11.99 | -0.21 | -0.24 | 0.3 | 228.2 | 4.3 | 243.3 |
| 13.0 | 12.99 | -0.25 | -0.31 | 0.4 | 231.2 | 4.5 | 236.6 |
| 14.0 | 13.99 | -0.29 | -0.38 | 0.5 | 233.4 | 4.8 | 245.4 |
| 15.0 | 14.98 | -0.32 | -0.46 | 0.6 | 234.9 | 4.8 | 241.1 |
| 16.0 | 15.98 | -0.36 | -0.53 | 0.6 | 235.6 | 5.0 | 236.8 |
| 17.0 | 16.97 | -0.41 | -0.61 | 0.7 | 235.9 | 5.1 | 236.5 |
| 18.0 | 17.97 | -0.46 | -0.68 | 0.8 | 235.9 | 5.5 | 230.8 |
| 19.0 | 18.97 | -0.52 | -0.75 | 0.9 | 235.3 | 5.4 | 235.2 |
| 20.0 | 19.96 | -0.59 | -0.83 | 1.0 | 234.7 | 6.0 | 227.3 |
| 21.0 | 20.96 | -0.65 | -0.91 | 1.1 | 234.3 | 6.1 | 231.7 |
| 22.0 | 21.95 | -0.72 | -0.98 | 1.2 | 233.6 | 6.2 | 226.9 |
| 23.0 | 22.94 | -0.79 | -1.06 | 1.3 | 233.4 | 5.5 | 233.8 |
| 23.8 25 | 23.76 | -0.84 | -1.13 | 1.4 | 233.5 | 6.1 | 231.9 |

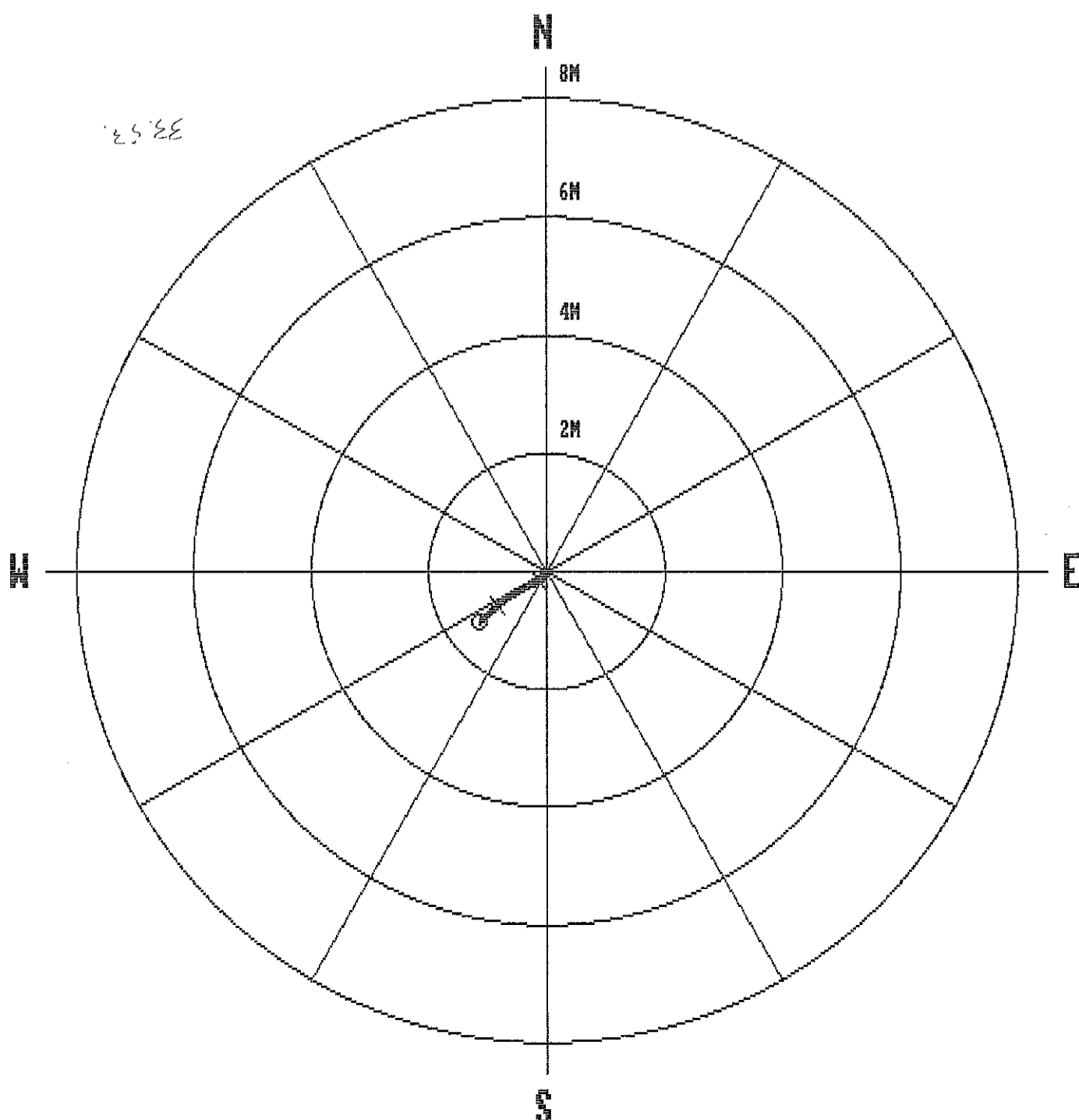
WRH 96067

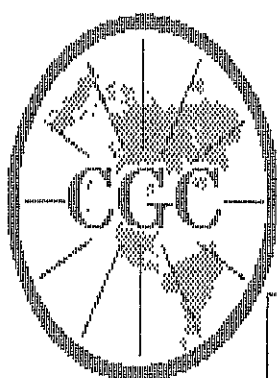
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96067
 DATE OF LOG: 07/27/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 23.76 M
 AZIMUTH: 233.5
 DISTANCE: 1.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96067
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :

DATE : 07/27/96
 DEPTH DRILLER : 23
 LOG BOTTOM : 23.88
 LOG TOP : 0.52

PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

CASING DRILLER : 4
 CASING TYPE : PLASTIC
 CASING THICKNESS: .25

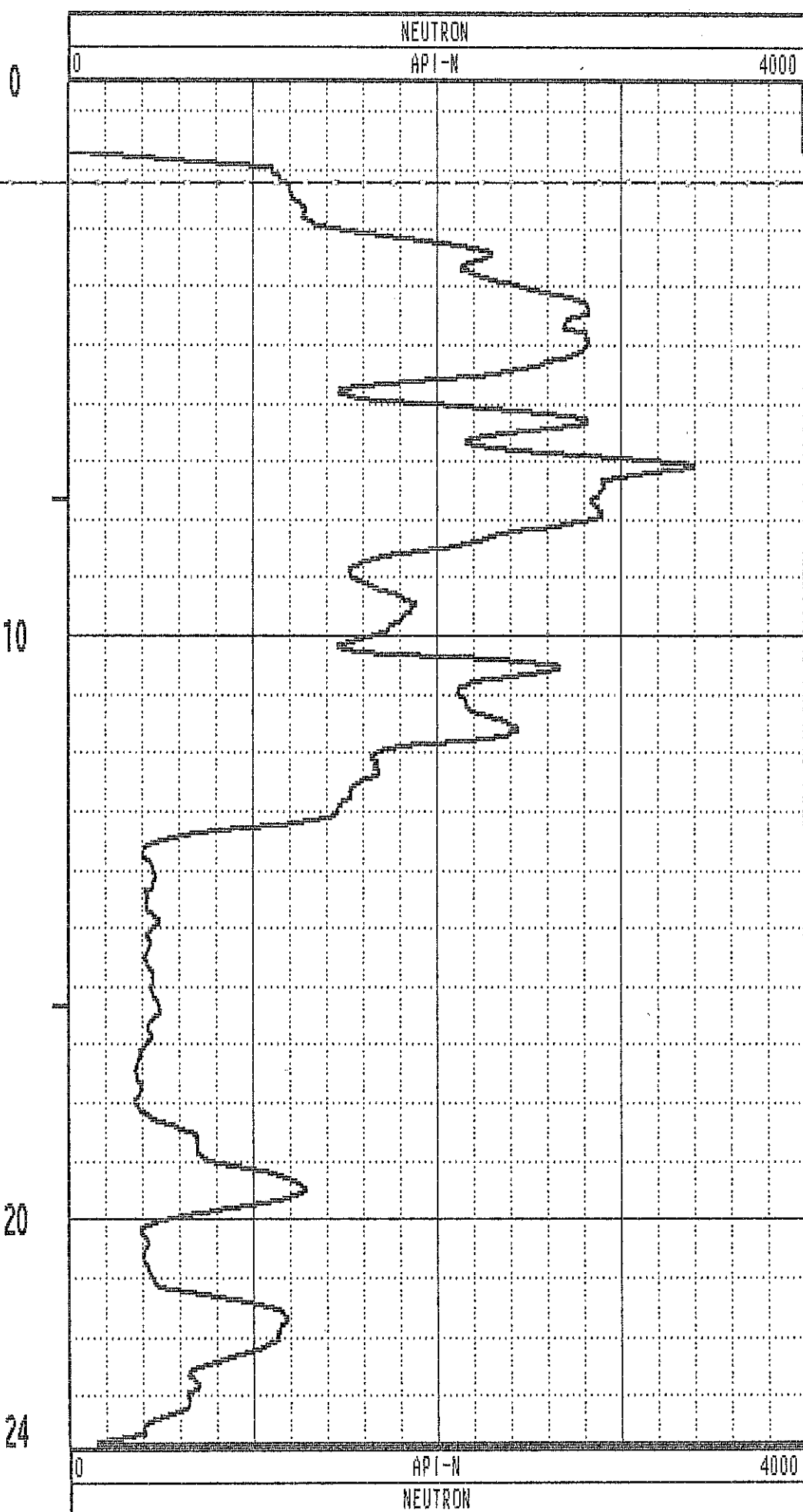
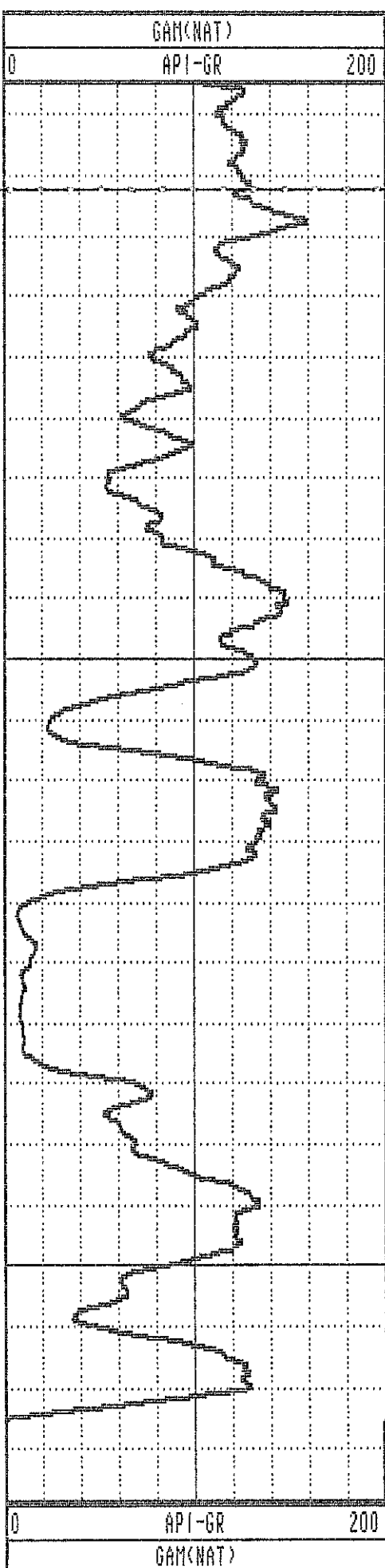
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 4
 THRESH: 10000

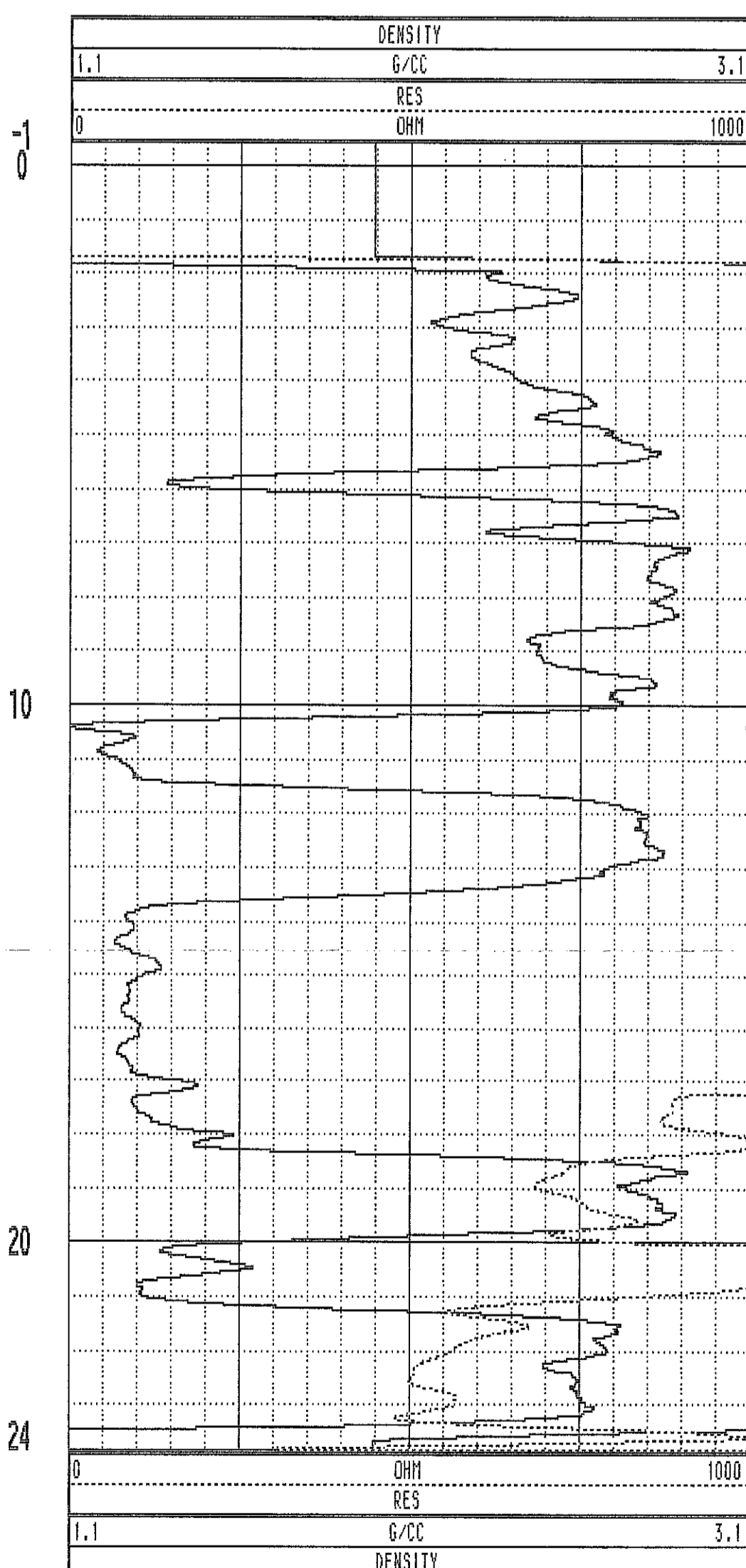
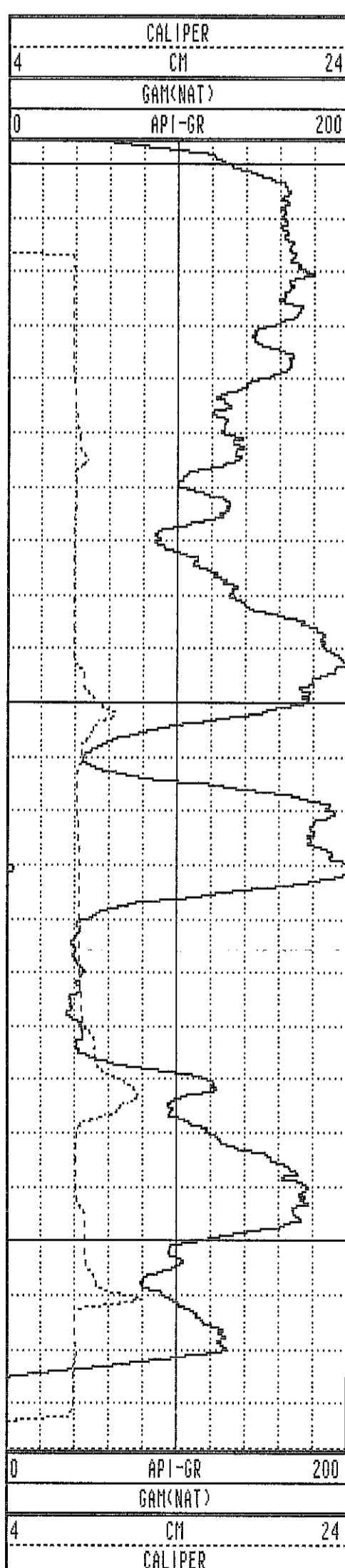
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96067 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 07/27/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB : LOG BOTTOM : 23.88 LOG MEASURED FROM: G.L. DF : LOG TOP : -0.34 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 4 LOGGING UNIT : 9612 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96067 07/27/96 958

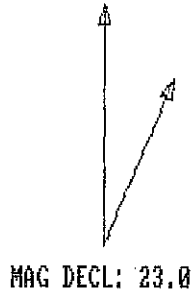
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

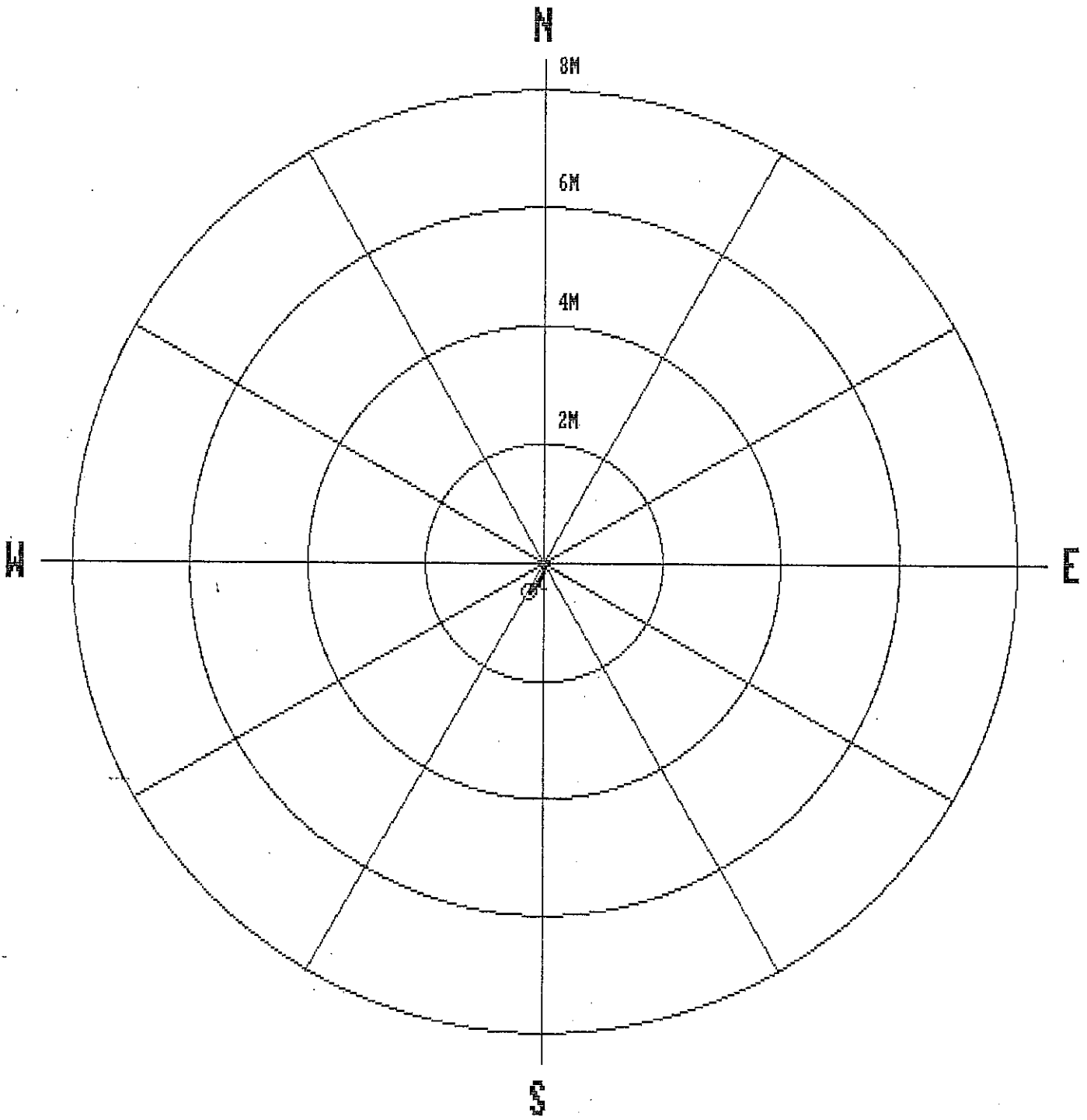
PLAN VIEW

COMPU-LOG DEVIATION

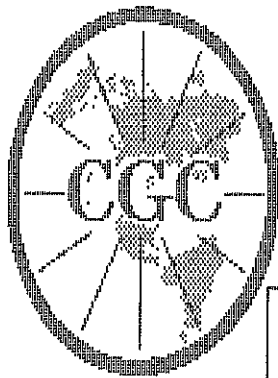
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96068
 DATE OF LOG: 07/25/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 11.72 M
 AZIMUTH: 207.2
 DISTANCE: 0.5 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 160.3 | 1.3 | 162.0 |
| 3.0 | 3.00 | -0.03 | 0.01 | 0.0 | 159.0 | 1.6 | 160.2 |
| 4.0 | 4.00 | -0.06 | 0.02 | 0.1 | 162.1 | 2.0 | 173.3 |
| 5.0 | 5.00 | -0.10 | 0.02 | 0.1 | 169.4 | 2.5 | 198.9 |
| 6.0 | 6.00 | -0.14 | 0.01 | 0.1 | 176.7 | 2.9 | 193.0 |
| 7.0 | 7.00 | -0.19 | -0.01 | 0.2 | 183.1 | 3.4 | 204.6 |
| 8.0 | 7.99 | -0.25 | -0.04 | 0.3 | 189.1 | 4.0 | 209.9 |
| 9.0 | 8.99 | -0.31 | -0.08 | 0.3 | 194.2 | 4.5 | 204.0 |
| 10.0 | 9.99 | -0.37 | -0.13 | 0.4 | 199.1 | 4.8 | 226.9 |
| 11.0 | 10.98 | -0.43 | -0.19 | 0.5 | 204.0 | 5.3 | 230.4 |
| 11.7 | 11.72 | -0.47 | -0.24 | 0.5 | 207.2 | 5.7 | 230.3 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96068
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

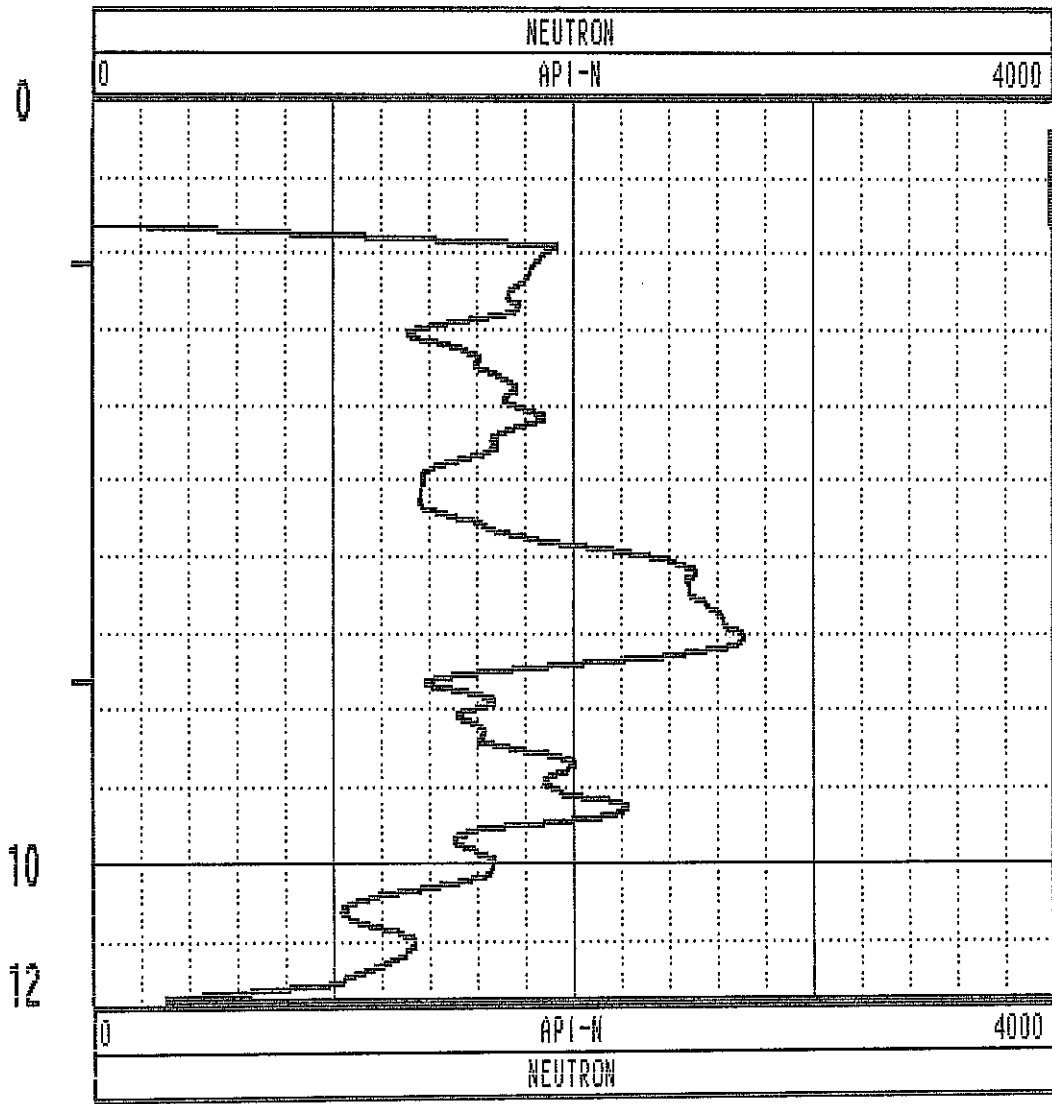
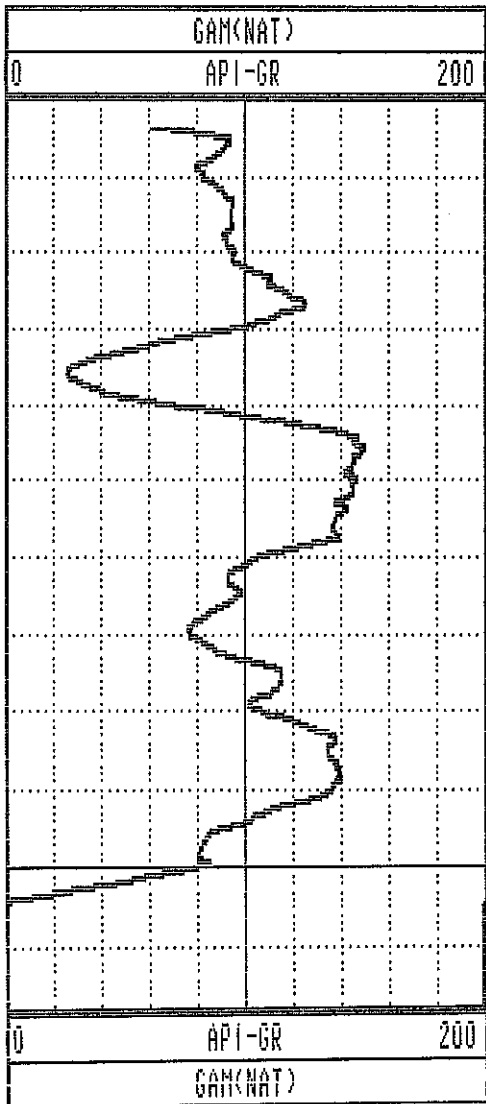
OTHER SERVICES:

DATE : 07/25/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 11.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.40 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

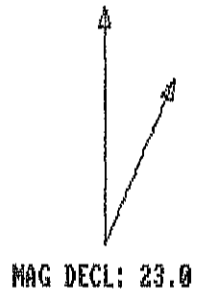


WRH 96069

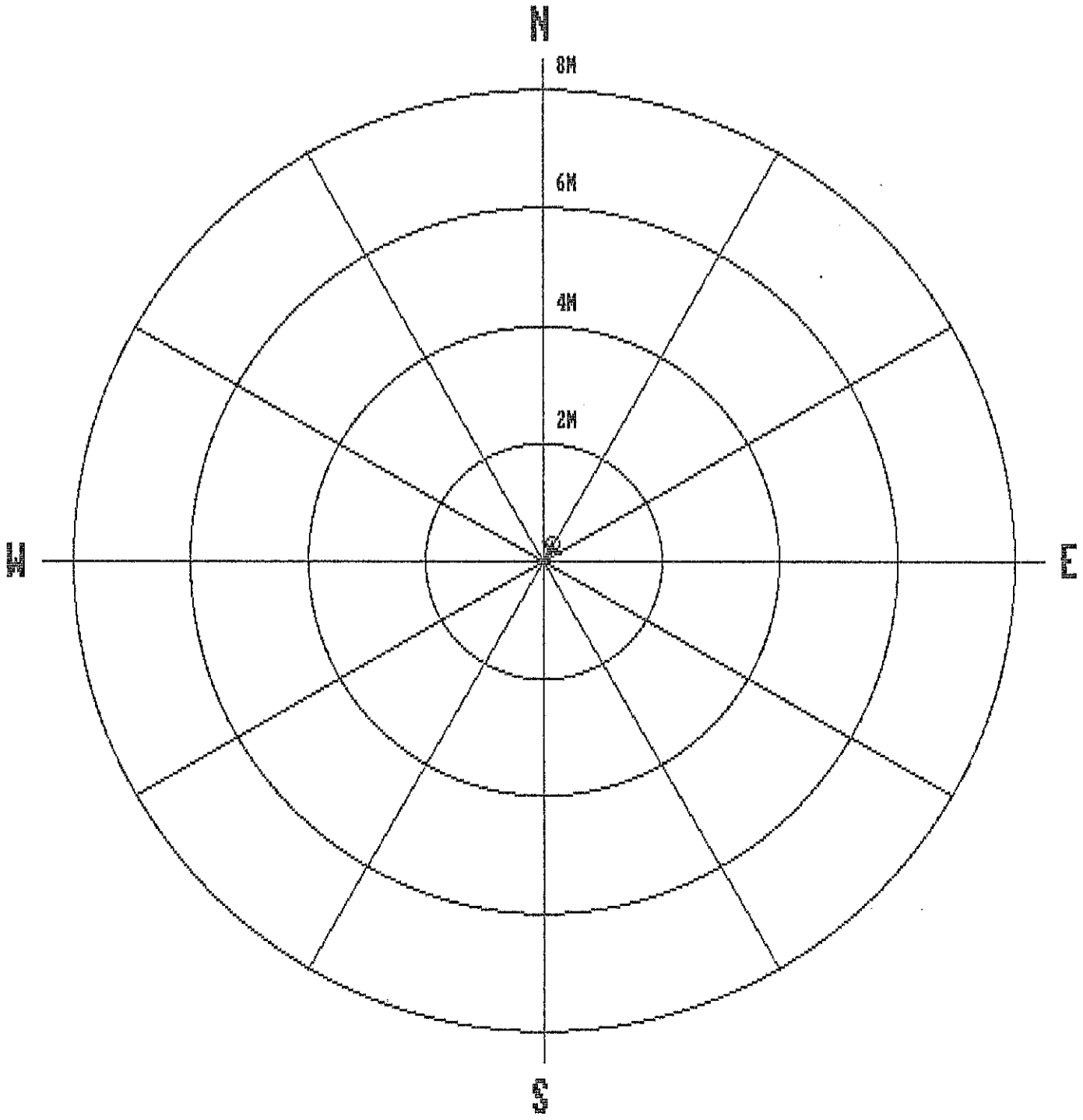
| | | | | | | | |
|------|-------|------|------|-----|------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.01 | 0.00 | 0.0 | 20.5 | 1.6 | 23.7 |
| 3.0 | 3.00 | 0.03 | 0.02 | 0.0 | 28.5 | 1.7 | 37.7 |
| 4.0 | 4.00 | 0.06 | 0.04 | 0.1 | 33.1 | 1.8 | 41.6 |
| 5.0 | 5.00 | 0.08 | 0.06 | 0.1 | 35.3 | 1.6 | 31.3 |
| 6.0 | 6.00 | 0.10 | 0.07 | 0.1 | 33.2 | 1.9 | 41.7 |
| 7.0 | 7.00 | 0.13 | 0.09 | 0.2 | 34.5 | 1.9 | 36.5 |
| 8.0 | 8.00 | 0.16 | 0.11 | 0.2 | 34.8 | 2.6 | 31.4 |
| 9.0 | 9.00 | 0.20 | 0.13 | 0.2 | 34.1 | 2.5 | 29.7 |
| 10.0 | 9.99 | 0.23 | 0.15 | 0.3 | 32.9 | 2.3 | 23.6 |
| 11.0 | 10.99 | 0.28 | 0.16 | 0.3 | 30.1 | 2.4 | 6.7 |
| 11.5 | 11.51 | 0.30 | 0.16 | 0.3 | 28.0 | 2.8 | 356.1 |

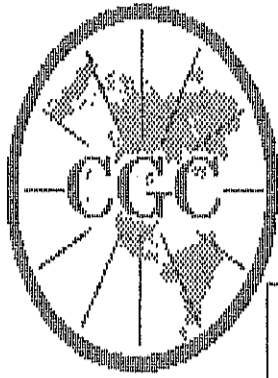
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96069
 DATE OF LOG: 07/25/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 11.51 M
 AZIMUTH: 28.0
 DISTANCE: 0.3 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96069
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOMNSHIP : RANGE :

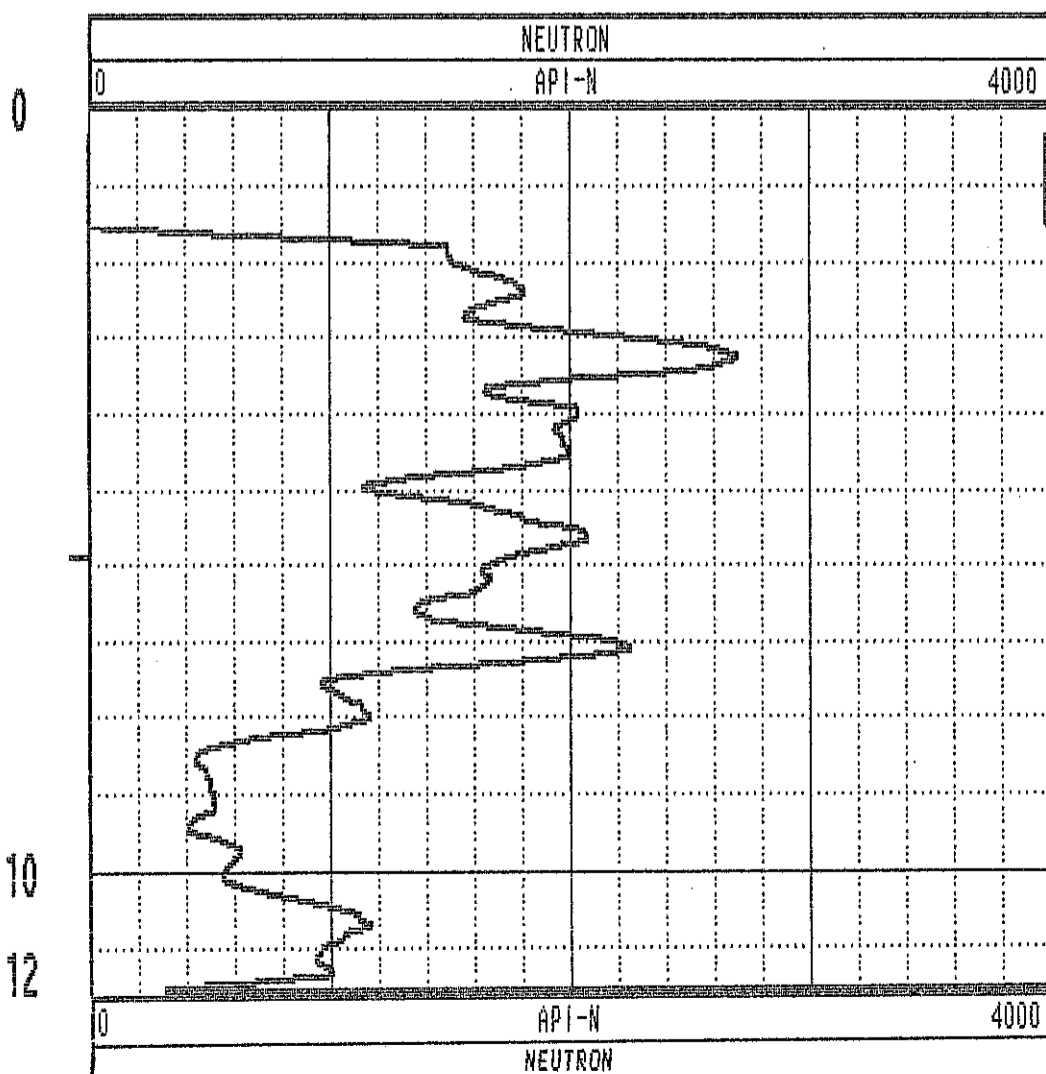
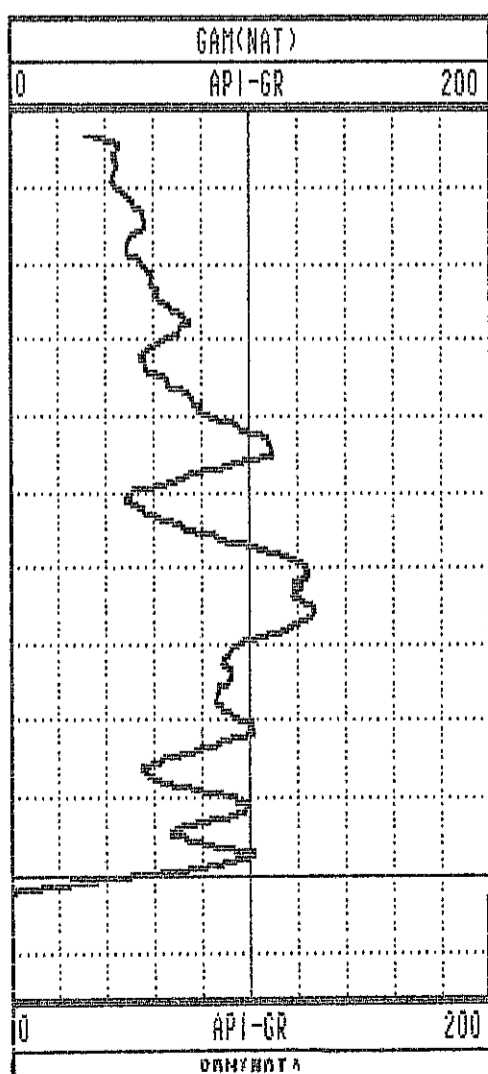
OTHER SERVICES:

DATE : 07/25/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 11 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 11.58 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.32 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

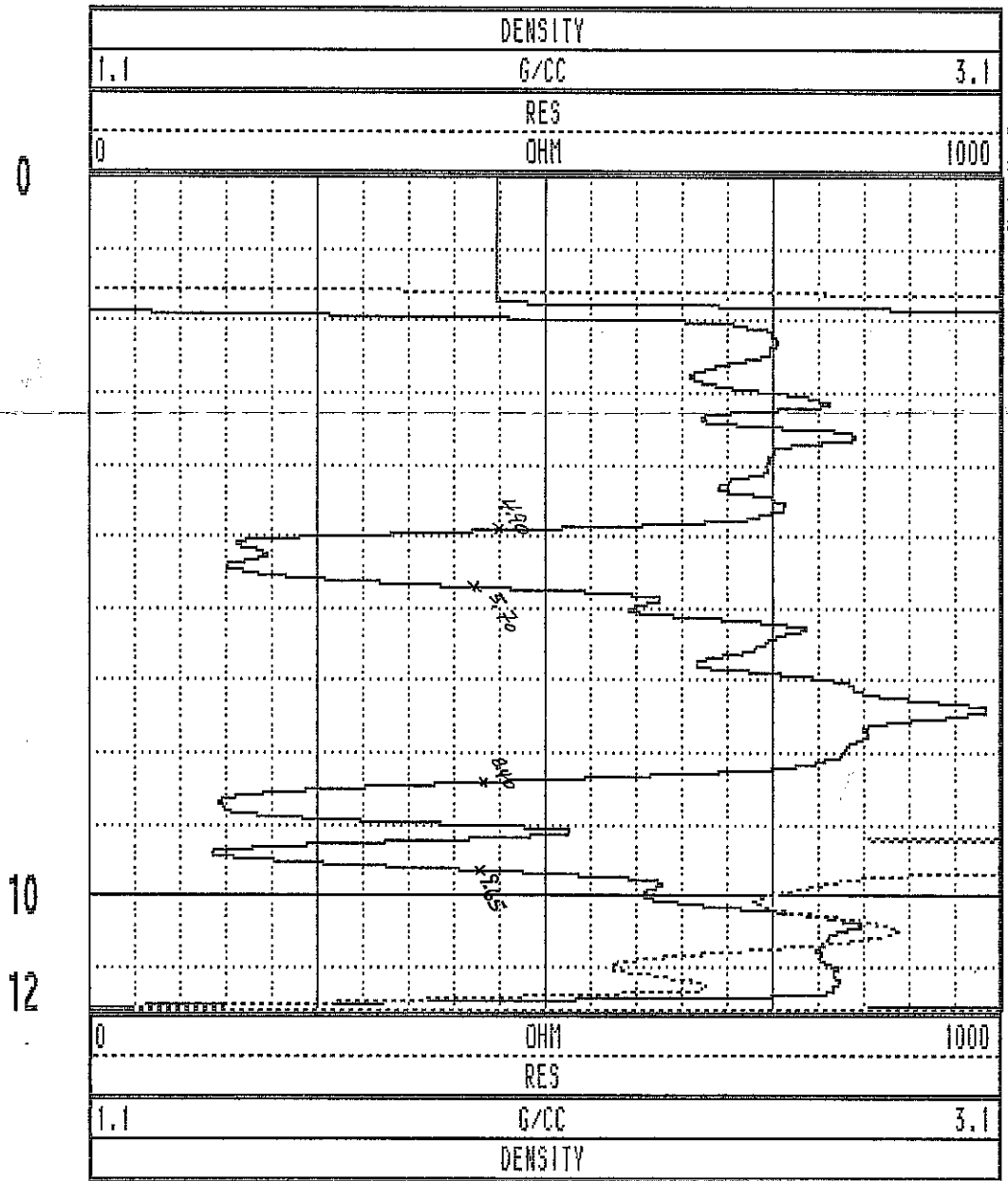
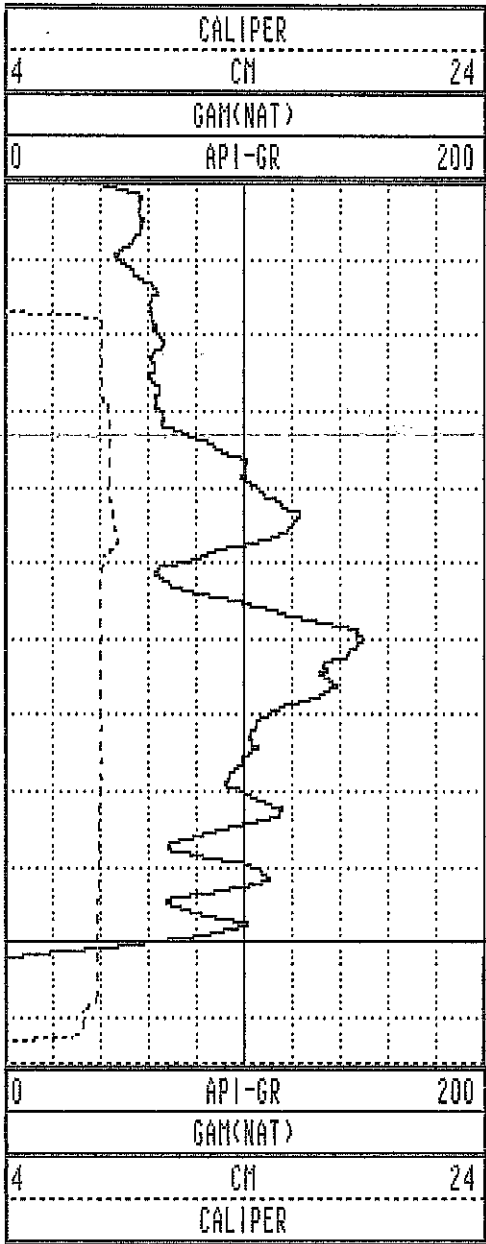
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96069 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOMNSHIP : RANGE :</p> <p>DATE : 07/25/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 12 ELEV. PERM. DATUM: KB : LOG BOTTOM : 11.64 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 4 LOGGING UNIT : 9612 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96069 07/25/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

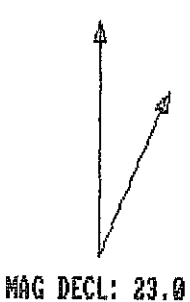
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 186.3 | 0.7 | 178.5 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 211.5 | 0.5 | 261.1 |
| 4.0 | 4.00 | -0.01 | -0.01 | 0.0 | 215.8 | 0.5 | 259.0 |
| 5.0 | 5.00 | -0.01 | -0.01 | 0.0 | 219.1 | 0.6 | 213.0 |
| 6.0 | 6.00 | -0.02 | -0.02 | 0.0 | 222.1 | 0.6 | 233.2 |
| 7.0 | 7.00 | -0.03 | -0.02 | 0.0 | 224.2 | 0.5 | 240.5 |
| 8.0 | 8.00 | -0.03 | -0.03 | 0.0 | 226.4 | 0.5 | 245.8 |
| 9.0 | 9.00 | -0.04 | -0.04 | 0.1 | 228.0 | 0.5 | 236.3 |
| 10.0 | 10.00 | -0.04 | -0.05 | 0.1 | 228.1 | 0.5 | 220.8 |
| 11.0 | 11.00 | -0.05 | -0.05 | 0.1 | 227.4 | 0.5 | 211.2 |
| 12.0 | 12.00 | -0.06 | -0.06 | 0.1 | 224.5 | 0.7 | 206.9 |
| 13.0 | 13.00 | -0.07 | -0.06 | 0.1 | 221.1 | 0.6 | 181.3 |
| 14.0 | 14.00 | -0.08 | -0.06 | 0.1 | 217.2 | 0.7 | 176.5 |
| 15.0 | 15.00 | -0.09 | -0.06 | 0.1 | 212.9 | 1.0 | 167.5 |
| 16.0 | 16.00 | -0.10 | -0.06 | 0.1 | 208.8 | 0.7 | 169.8 |
| 17.0 | 17.00 | -0.12 | -0.05 | 0.1 | 205.0 | 0.8 | 159.8 |
| 18.0 | 18.00 | -0.13 | -0.05 | 0.1 | 201.3 | 0.7 | 165.6 |
| 19.0 | 19.00 | -0.14 | -0.05 | 0.1 | 198.5 | 0.9 | 176.2 |
| 20.0 | 20.00 | -0.16 | -0.05 | 0.2 | 196.3 | 1.0 | 179.8 |
| 21.0 | 21.00 | -0.17 | -0.05 | 0.2 | 194.7 | 1.2 | 176.5 |
| 22.0 | 22.00 | -0.19 | -0.05 | 0.2 | 193.3 | 1.2 | 176.4 |
| 23.0 | 23.00 | -0.21 | -0.05 | 0.2 | 192.0 | 1.0 | 177.1 |
| 24.0 | 24.00 | -0.23 | -0.04 | 0.2 | 190.8 | 1.5 | 187.1 |
| 25.0 | 25.00 | -0.26 | -0.04 | 0.3 | 189.8 | 1.3 | 178.8 |
| 26.0 | 26.00 | -0.28 | -0.04 | 0.3 | 188.9 | 1.1 | 177.2 |
| 27.0 | 27.00 | -0.30 | -0.04 | 0.3 | 188.2 | 1.1 | 177.1 |
| 28.0 | 28.00 | -0.32 | -0.04 | 0.3 | 187.6 | 1.0 | 181.5 |
| 29.0 | 29.00 | -0.35 | -0.05 | 0.4 | 187.5 | 1.7 | 180.8 |
| 30.0 | 30.00 | -0.37 | -0.05 | 0.4 | 187.2 | 1.5 | 178.4 |
| 31.0 | 31.00 | -0.40 | -0.05 | 0.4 | 187.2 | 1.7 | 196.6 |
| 32.0 | 32.00 | -0.43 | -0.06 | 0.4 | 187.6 | 1.9 | 187.3 |
| 32.6 | 32.60 | -0.45 | -0.06 | 0.5 | 187.7 | 1.8 | 187.9 |

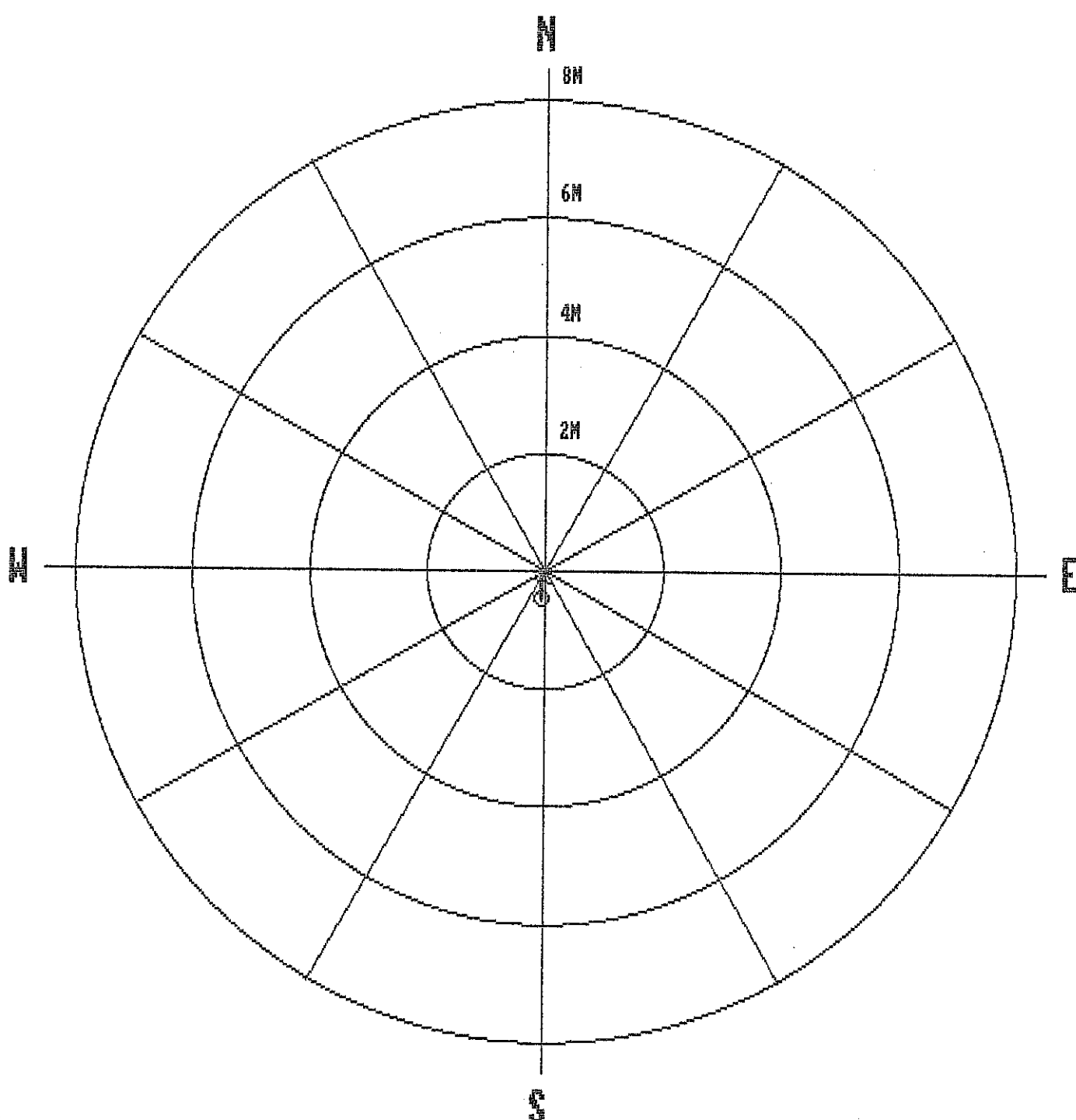
WRH 96070

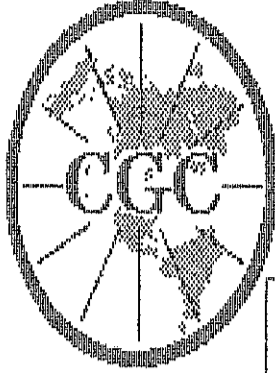
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96070C
 DATE OF LOG: 07/22/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 32.60 M
 AZIMUTH: 187.7
 DISTANCE: 0.5 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

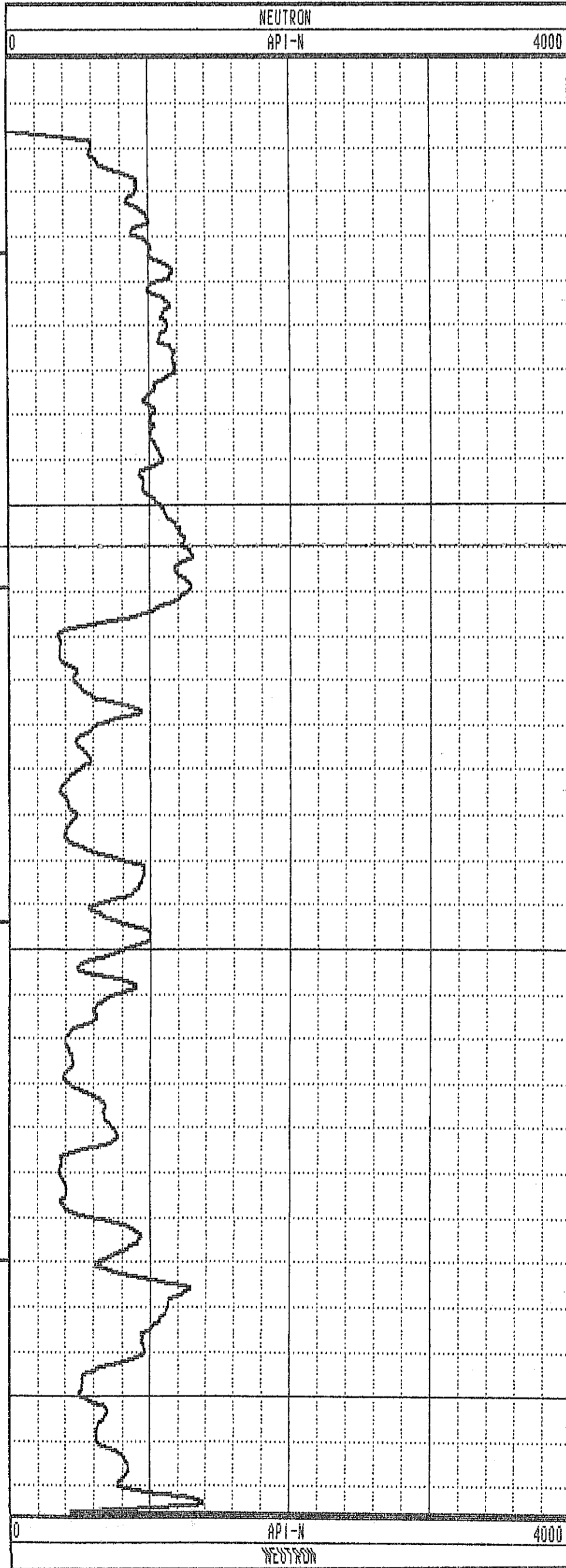
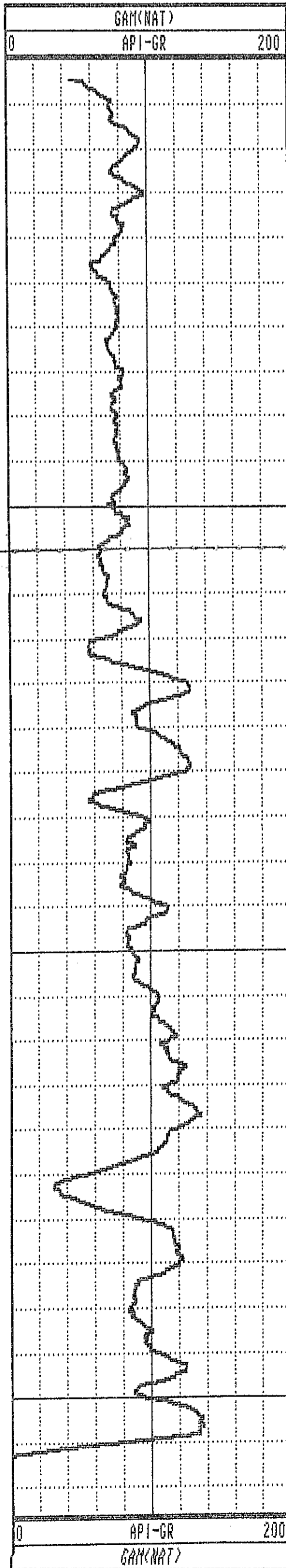
COMPANY : PINE VALLEY COAL
 WELL : WRH-96070C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOMNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/22/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.66 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.48 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96070C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

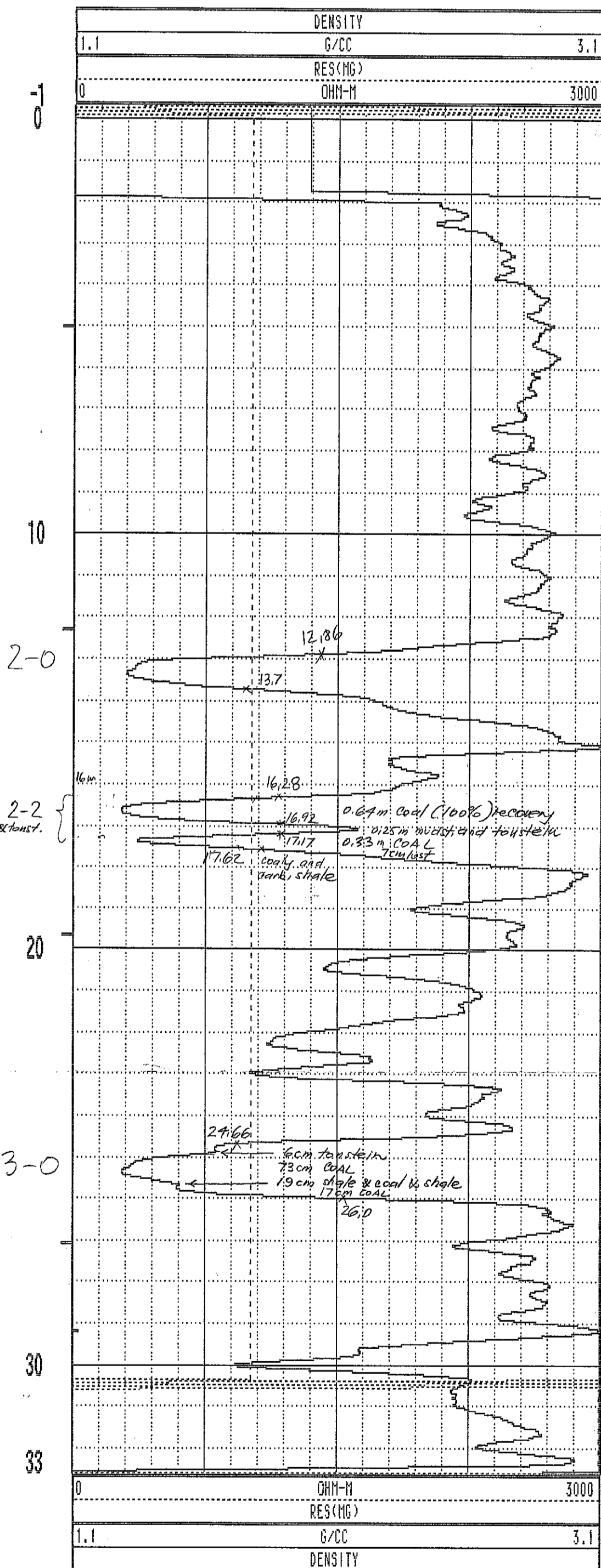
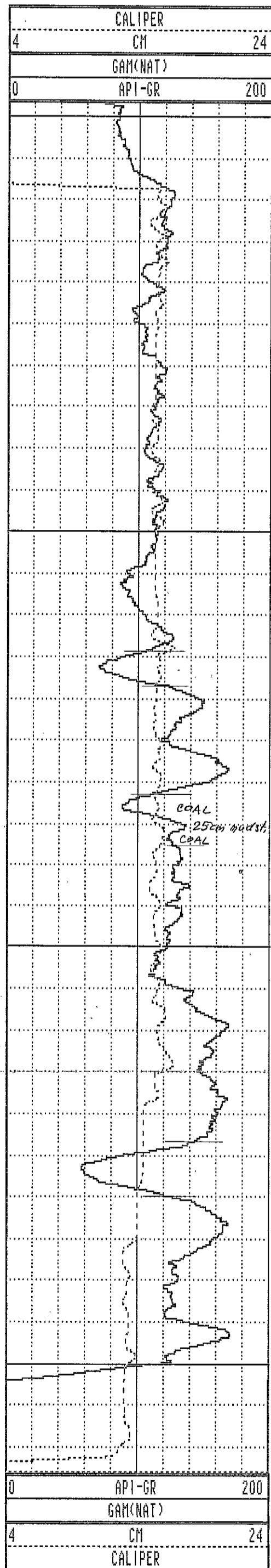
OTHER SERVICES:

DATE : 07/22/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.64 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.26 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



17000 WRH-96070C 07/22/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

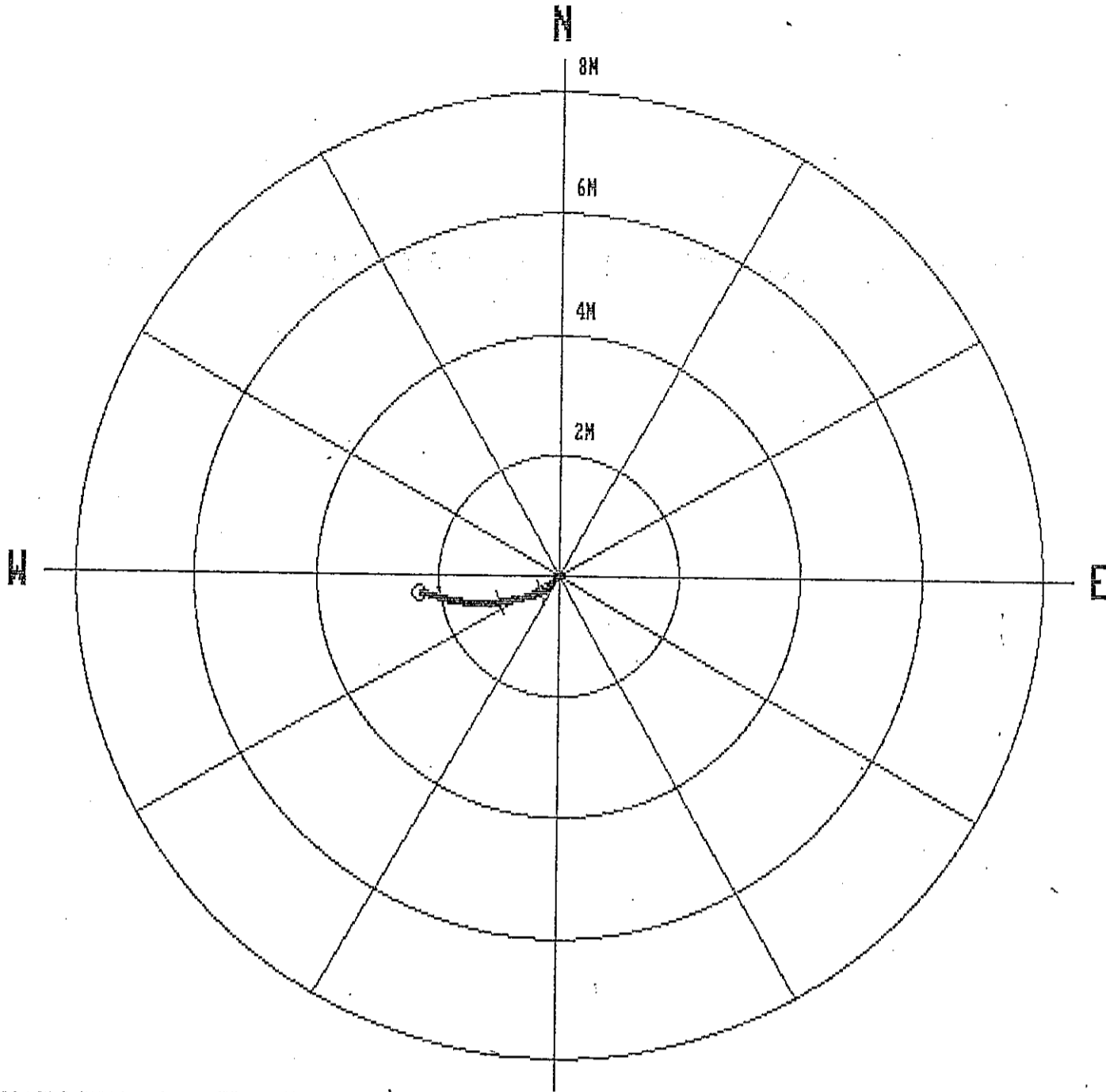
96-70C

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96072C
 DATE OF LOG: 07/23/96
 PROBE: 9055A 56



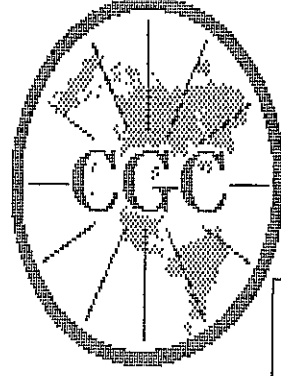
SCALE: 1 M/CM
 TRUE DEPTH: 66.33 M
 AZIMUTH: 263.0
 DISTANCE: 2.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

| | |
|-----------------------------|----------------------------|
| CLIENT : PINE VALLEY COAL | HOLE ID. : WRH-96072C |
| FIELD OFFICE : CALGARY, AB. | DATE OF LOG : 07/23/96 |
| DATA FROM : | PROBE : 9055A 56 |
| MAG. DECL. : 23.000 | DEPTH UNITS : METERS LOG 7 |

| TABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.7 | 1.74 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 246.8 | 0.9 | 273.3 |
| 4.0 | 4.00 | -0.02 | -0.00 | 0.0 | 181.5 | 1.1 | 226.5 |
| 6.0 | 6.00 | -0.04 | -0.03 | 0.1 | 218.0 | 1.3 | 244.1 |
| 8.0 | 8.00 | -0.07 | -0.05 | 0.1 | 215.2 | 1.5 | 210.1 |
| 10.0 | 10.00 | -0.11 | -0.08 | 0.1 | 215.2 | 1.5 | 216.8 |
| 12.0 | 12.00 | -0.15 | -0.11 | 0.2 | 215.3 | 1.5 | 216.2 |
| 14.0 | 14.00 | -0.19 | -0.15 | 0.2 | 217.9 | 1.8 | 234.7 |
| 16.0 | 16.00 | -0.22 | -0.19 | 0.3 | 221.0 | 2.2 | 241.0 |
| 18.0 | 18.00 | -0.26 | -0.24 | 0.4 | 223.4 | 1.7 | 243.4 |
| 20.0 | 19.99 | -0.28 | -0.30 | 0.4 | 226.3 | 2.1 | 237.2 |
| 22.0 | 21.99 | -0.31 | -0.36 | 0.5 | 229.4 | 2.1 | 244.3 |
| 24.0 | 23.99 | -0.33 | -0.43 | 0.5 | 232.4 | 1.8 | 262.7 |
| 26.0 | 25.99 | -0.34 | -0.49 | 0.6 | 235.1 | 1.8 | 261.6 |
| 28.0 | 27.99 | -0.36 | -0.57 | 0.7 | 237.8 | 2.0 | 263.2 |
| 30.0 | 29.99 | -0.36 | -0.64 | 0.7 | 240.2 | 2.1 | 262.5 |
| 32.0 | 31.99 | -0.38 | -0.70 | 0.8 | 241.7 | 2.1 | 256.1 |
| 34.0 | 33.99 | -0.40 | -0.77 | 0.9 | 242.7 | 2.0 | 254.1 |
| 36.0 | 35.98 | -0.42 | -0.84 | 0.9 | 243.6 | 2.5 | 271.9 |
| 38.0 | 37.98 | -0.43 | -0.91 | 1.0 | 244.6 | 2.2 | 256.1 |
| 40.0 | 39.98 | -0.45 | -0.99 | 1.1 | 245.6 | 2.5 | 254.0 |
| 42.0 | 41.98 | -0.46 | -1.07 | 1.2 | 246.8 | 2.4 | 266.0 |
| 44.0 | 43.98 | -0.46 | -1.15 | 1.2 | 248.1 | 2.4 | 265.2 |
| 46.0 | 45.98 | -0.46 | -1.25 | 1.3 | 249.6 | 2.8 | 264.8 |
| 48.0 | 47.97 | -0.46 | -1.35 | 1.4 | 251.3 | 3.2 | 258.8 |
| 50.0 | 49.97 | -0.45 | -1.45 | 1.5 | 252.7 | 3.0 | 272.8 |
| 52.0 | 51.97 | -0.45 | -1.55 | 1.6 | 253.9 | 2.9 | 275.3 |
| 54.0 | 53.97 | -0.44 | -1.64 | 1.7 | 255.0 | 2.9 | 273.0 |
| 56.0 | 55.96 | -0.42 | -1.75 | 1.8 | 256.4 | 3.0 | 281.0 |
| 58.0 | 57.96 | -0.40 | -1.85 | 1.9 | 257.8 | 3.3 | 282.6 |
| 60.0 | 59.96 | -0.37 | -1.96 | 2.0 | 259.3 | 3.1 | 289.2 |
| 62.0 | 61.95 | -0.35 | -2.07 | 2.1 | 260.5 | 3.4 | 284.5 |
| 64.0 | 63.95 | -0.32 | -2.18 | 2.2 | 261.8 | 3.3 | 283.4 |
| 66.0 | 65.95 | -0.29 | -2.29 | 2.3 | 262.8 | 3.3 | 278.1 |
| 66.4 | 66.33 | -0.28 | -2.32 | 2.3 | 263.0 | 3.4 | 284.7 |

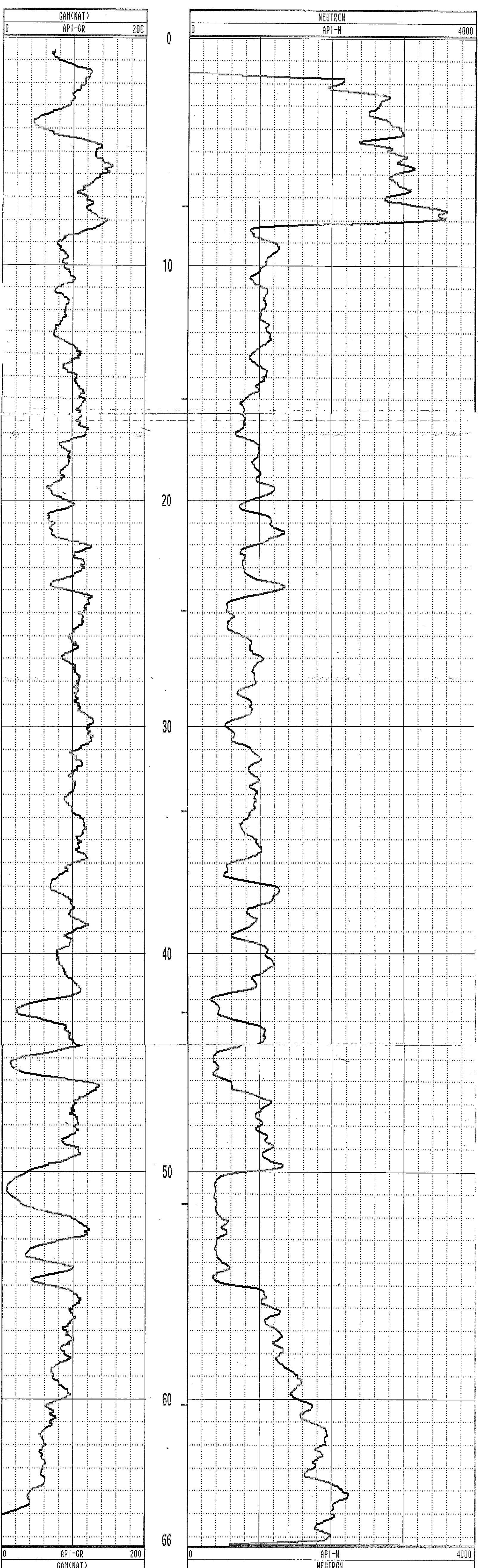


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

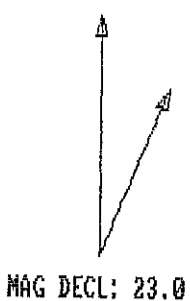
| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96072C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP : | RANGE | : |
| DATE | : 07/23/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 66 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 66.43 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.58 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 5 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

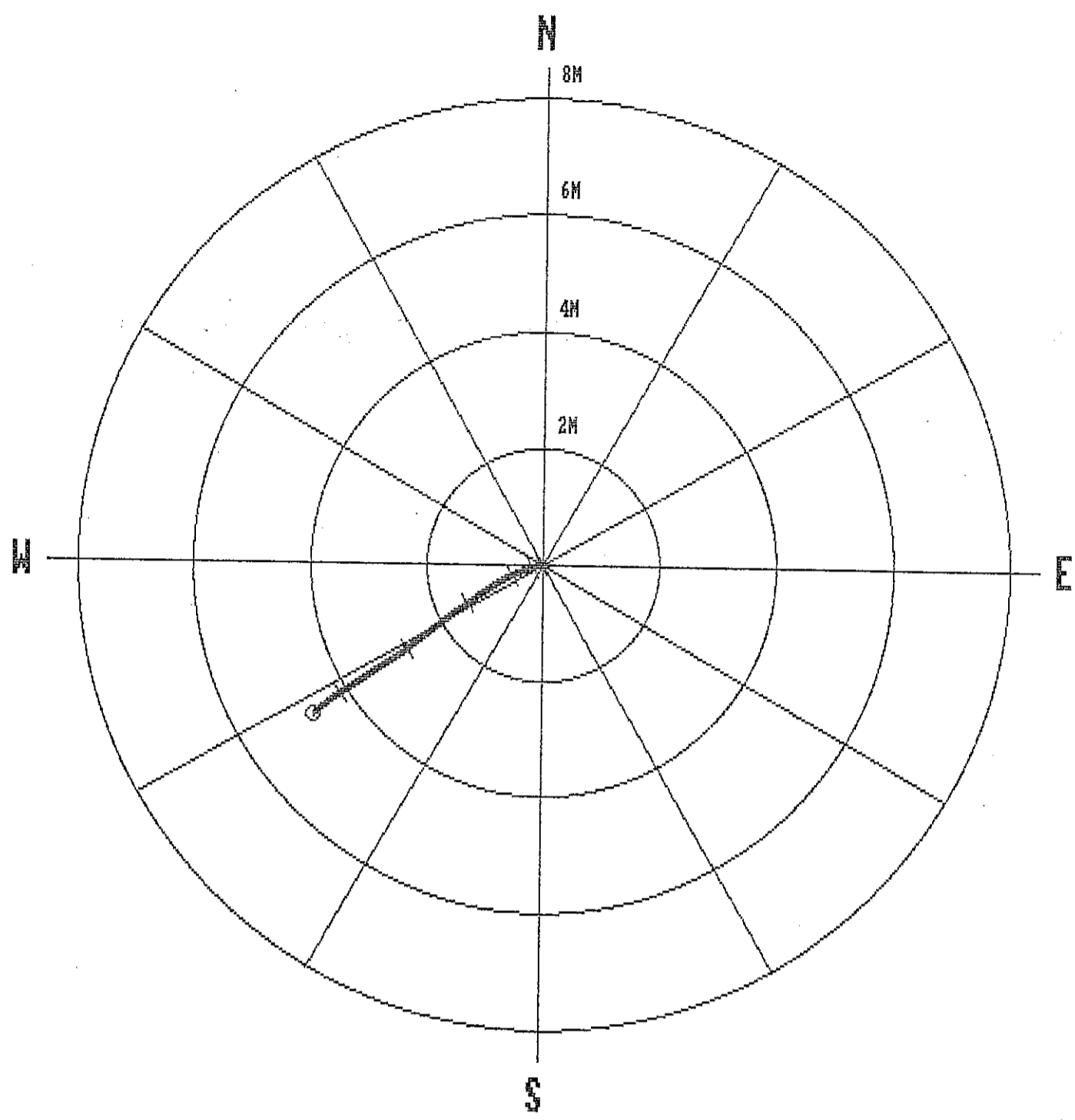


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96073C
 DATE OF LOG: 07/24/96
 PROBE: 9055A 56



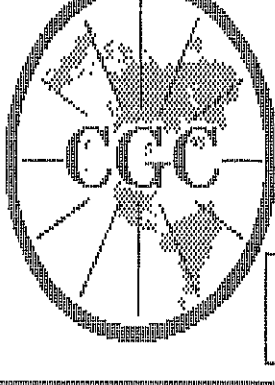
SCALE: 1 M/CM
 TRUE DEPTH: 63.82 M
 AZIMUTH: 236.7
 DISTANCE: 4.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96073C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 07/24/96
 DATA FROM : PROBE : 9055A 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 2

| TABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.6 | 1.64 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.01 | -0.00 | 0.0 | 190.0 | 0.7 | 188.9 |
| 4.0 | 4.00 | -0.01 | -0.00 | 0.0 | 198.2 | 0.1 | 239.2 |
| 6.0 | 6.00 | -0.02 | -0.00 | 0.0 | 194.3 | 0.5 | 335.1 |
| 8.0 | 8.00 | -0.01 | -0.01 | 0.0 | 234.2 | 0.1 | 30.9 |
| 10.0 | 10.00 | -0.01 | -0.02 | 0.0 | 249.1 | 0.7 | 232.5 |
| 12.0 | 12.00 | -0.01 | -0.04 | 0.0 | 255.0 | 0.7 | 245.9 |
| 14.0 | 14.00 | -0.01 | -0.06 | 0.1 | 257.2 | 0.6 | 277.6 |
| 16.0 | 16.00 | -0.02 | -0.09 | 0.1 | 258.8 | 1.0 | 259.2 |
| 18.0 | 18.00 | -0.02 | -0.12 | 0.1 | 259.7 | 1.0 | 256.6 |
| 20.0 | 20.00 | -0.03 | -0.16 | 0.2 | 259.4 | 1.5 | 254.1 |
| 22.0 | 22.00 | -0.04 | -0.21 | 0.2 | 258.2 | 1.7 | 254.7 |
| 24.0 | 24.00 | -0.06 | -0.27 | 0.3 | 256.9 | 1.9 | 257.8 |
| 26.0 | 26.00 | -0.09 | -0.34 | 0.4 | 255.1 | 2.2 | 253.9 |
| 28.0 | 27.99 | -0.12 | -0.42 | 0.4 | 253.5 | 2.9 | 245.1 |
| 30.0 | 29.99 | -0.17 | -0.52 | 0.5 | 252.0 | 3.7 | 244.5 |
| 32.0 | 31.99 | -0.23 | -0.64 | 0.7 | 250.2 | 4.7 | 246.5 |
| 34.0 | 33.98 | -0.31 | -0.77 | 0.8 | 248.2 | 4.8 | 235.1 |
| 36.0 | 35.97 | -0.41 | -0.93 | 1.0 | 246.0 | 6.2 | 230.4 |
| 38.0 | 37.96 | -0.53 | -1.11 | 1.2 | 244.5 | 6.2 | 237.7 |
| 40.0 | 39.95 | -0.66 | -1.28 | 1.4 | 242.9 | 6.6 | 235.7 |
| 42.0 | 41.93 | -0.81 | -1.48 | 1.7 | 241.4 | 7.6 | 236.8 |
| 44.0 | 43.91 | -0.96 | -1.69 | 1.9 | 240.4 | 7.9 | 233.5 |
| 46.0 | 45.90 | -1.12 | -1.90 | 2.2 | 239.6 | 7.4 | 231.6 |
| 48.0 | 47.88 | -1.28 | -2.11 | 2.5 | 238.8 | 7.8 | 225.6 |
| 50.0 | 49.86 | -1.45 | -2.32 | 2.7 | 238.0 | 8.0 | 216.6 |
| 52.0 | 51.84 | -1.61 | -2.53 | 3.0 | 237.6 | 7.7 | 234.3 |
| 54.0 | 53.82 | -1.76 | -2.76 | 3.3 | 237.4 | 7.7 | 236.4 |
| 56.0 | 55.81 | -1.91 | -2.98 | 3.5 | 237.4 | 7.3 | 236.8 |
| 58.0 | 57.79 | -2.06 | -3.21 | 3.8 | 237.4 | 7.6 | 239.8 |
| 60.0 | 59.77 | -2.21 | -3.43 | 4.1 | 237.2 | 8.2 | 235.5 |
| 62.0 | 61.75 | -2.37 | -3.66 | 4.4 | 237.1 | 8.5 | 231.1 |
| 64.0 | 63.72 | -2.56 | -3.90 | 4.7 | 236.7 | 8.9 | 231.5 |
| 64.1 | 63.82 | -2.57 | -3.91 | 4.7 | 236.7 | 9.0 | 231.4 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96073C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/24/96
 DEPTH DRILLER : 65
 LOG BOTTOM : 64.16
 LOG TOP : 0.48

PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

CASING DRILLER : 4
 CASING TYPE : STEEL
 CASING THICKNESS: .25

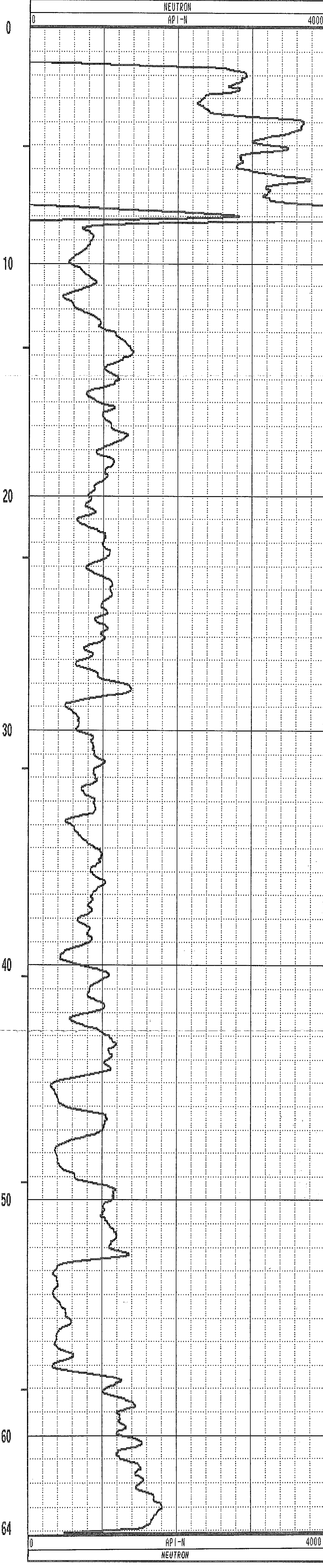
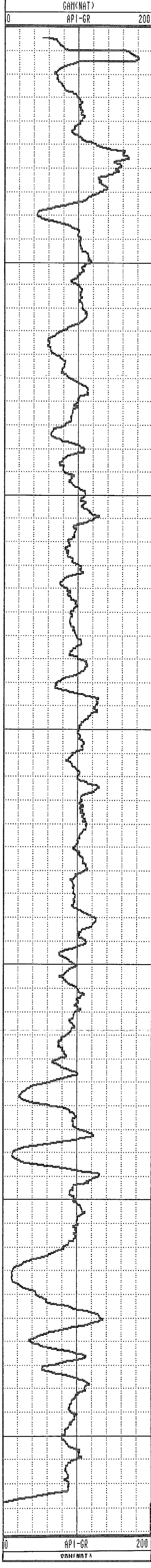
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

ELEVATIONS
 KB :
 DF :
 GL :
 FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 4
 THRESH: 10000

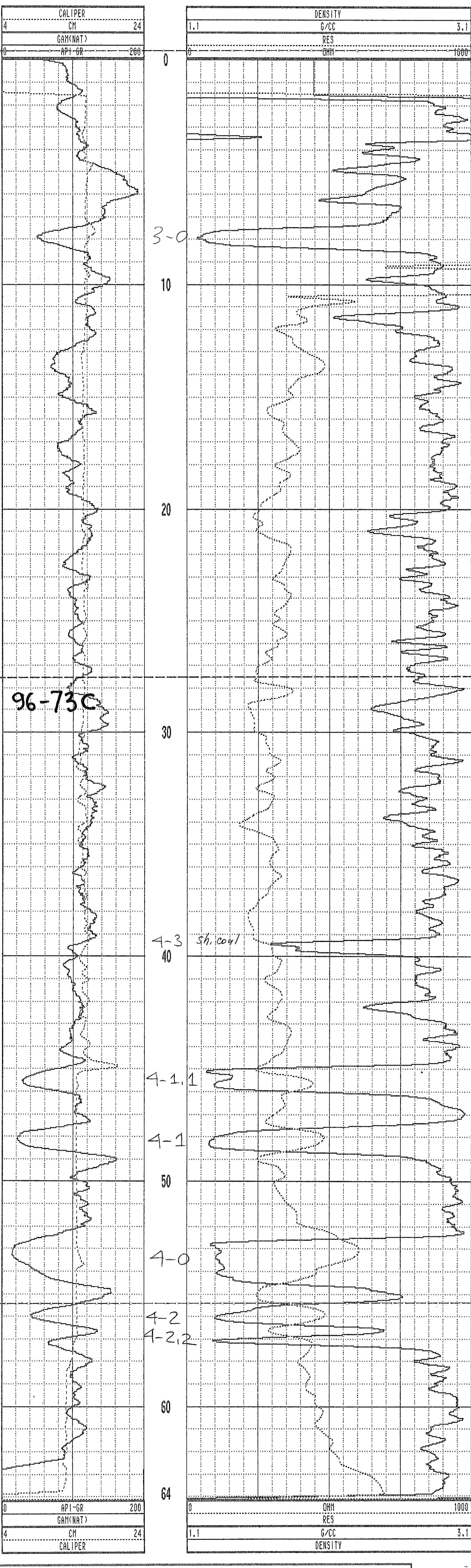
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96073C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 07/24/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 65 ELEV. PERM. DATUM: KB : LOG BOTTOM : 64.16 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL : CASING DRILLER : 4 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



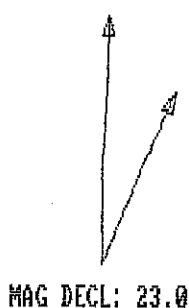
WRH-96073C 07/24/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

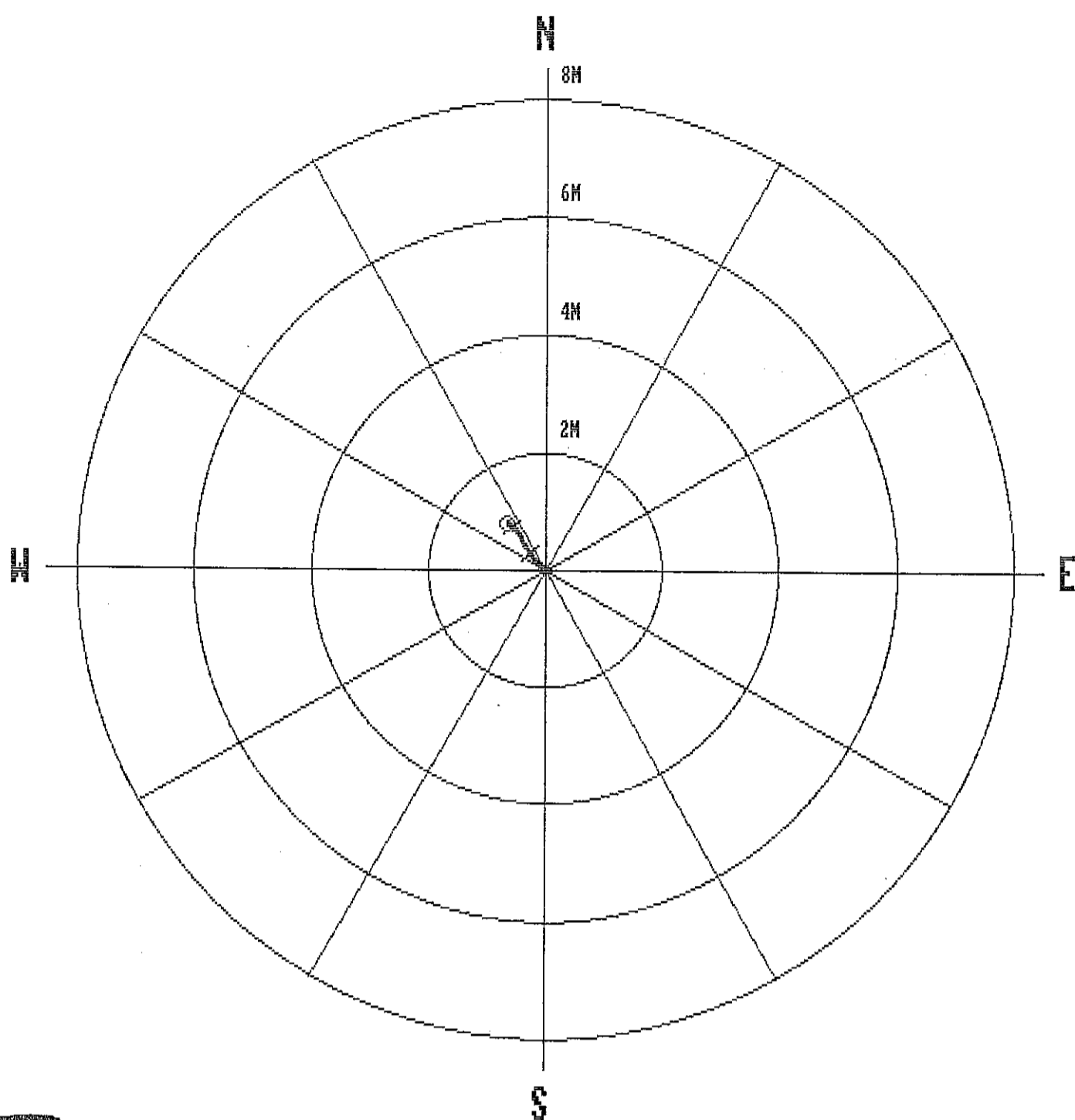
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1800.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96074C
 DATE OF LOG: 07/28/96
 PROBE: 9055A 56

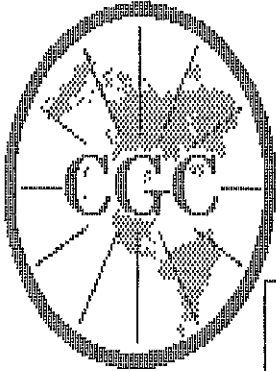


SCALE: 1 M/CM
 TRUE DEPTH: 43.32 M
 AZIMUTH: 320.8
 DISTANCE: 1.0 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.01 | 0.00 | 0.0 | 34.1 | 1.3 | 47.9 |
| 3.0 | 3.00 | 0.02 | 0.01 | 0.0 | 27.7 | 1.4 | 355.1 |
| 4.0 | 4.00 | 0.03 | 0.00 | 0.0 | 5.5 | 0.8 | 171.1 |
| 5.0 | 5.00 | 0.03 | 0.01 | 0.0 | 12.3 | 1.6 | 257.2 |
| 6.0 | 6.00 | 0.02 | -0.02 | 0.0 | 319.9 | 1.1 | 282.9 |
| 7.0 | 7.00 | 0.03 | -0.03 | 0.0 | 315.7 | 1.3 | 307.7 |
| 8.0 | 8.00 | 0.05 | -0.05 | 0.1 | 315.4 | 1.6 | 304.6 |
| 9.0 | 9.00 | 0.06 | -0.07 | 0.1 | 313.7 | 1.2 | 314.6 |
| 10.0 | 10.00 | 0.08 | -0.09 | 0.1 | 312.6 | 1.9 | 315.4 |
| 11.0 | 11.00 | 0.10 | -0.11 | 0.1 | 313.5 | 1.6 | 321.1 |
| 12.0 | 12.00 | 0.12 | -0.13 | 0.2 | 314.6 | 1.8 | 314.8 |
| 13.0 | 13.00 | 0.15 | -0.15 | 0.2 | 314.5 | 1.4 | 311.1 |
| 14.0 | 14.00 | 0.16 | -0.17 | 0.2 | 314.0 | 1.6 | 314.0 |
| 15.0 | 15.00 | 0.18 | -0.19 | 0.3 | 313.9 | 1.6 | 320.4 |
| 16.0 | 16.00 | 0.20 | -0.20 | 0.3 | 314.4 | 1.5 | 324.1 |
| 17.0 | 16.99 | 0.22 | -0.22 | 0.3 | 315.5 | 1.8 | 327.6 |
| 18.0 | 17.99 | 0.25 | -0.24 | 0.3 | 316.6 | 1.5 | 328.8 |
| 19.0 | 18.99 | 0.27 | -0.25 | 0.4 | 317.4 | 2.0 | 317.7 |
| 20.0 | 19.99 | 0.30 | -0.27 | 0.4 | 318.0 | 1.8 | 325.9 |
| 21.0 | 20.99 | 0.32 | -0.28 | 0.4 | 318.7 | 1.7 | 327.1 |
| 22.0 | 21.99 | 0.35 | -0.30 | 0.5 | 319.1 | 1.7 | 325.3 |
| 23.0 | 22.99 | 0.37 | -0.32 | 0.5 | 319.6 | 1.6 | 328.0 |
| 24.0 | 23.99 | 0.39 | -0.33 | 0.5 | 320.0 | 1.6 | 326.4 |
| 25.0 | 24.99 | 0.42 | -0.35 | 0.5 | 320.4 | 1.7 | 324.9 |
| 26.0 | 25.99 | 0.44 | -0.36 | 0.6 | 320.8 | 1.5 | 329.6 |
| 27.0 | 26.99 | 0.47 | -0.38 | 0.6 | 321.2 | 1.6 | 329.5 |
| 28.0 | 27.99 | 0.49 | -0.39 | 0.6 | 321.9 | 1.7 | 336.5 |
| 29.0 | 28.99 | 0.52 | -0.40 | 0.7 | 322.4 | 1.6 | 333.7 |
| 30.0 | 29.99 | 0.55 | -0.41 | 0.7 | 323.0 | 1.7 | 347.3 |
| 31.0 | 30.99 | 0.57 | -0.42 | 0.7 | 323.5 | 1.2 | 336.0 |
| 32.0 | 31.99 | 0.59 | -0.43 | 0.7 | 323.8 | 1.6 | 334.5 |
| 33.0 | 32.99 | 0.62 | -0.45 | 0.8 | 324.0 | 1.6 | 330.0 |
| 34.0 | 33.99 | 0.64 | -0.46 | 0.8 | 324.0 | 1.4 | 316.7 |
| 35.0 | 34.99 | 0.66 | -0.48 | 0.8 | 323.9 | 1.3 | 303.4 |
| 36.0 | 35.99 | 0.67 | -0.50 | 0.8 | 323.6 | 1.5 | 316.8 |
| 37.0 | 36.99 | 0.69 | -0.52 | 0.9 | 323.2 | 1.8 | 323.8 |
| 38.0 | 37.99 | 0.71 | -0.54 | 0.9 | 322.8 | 1.9 | 336.5 |
| 39.0 | 38.99 | 0.73 | -0.56 | 0.9 | 322.5 | 1.6 | 313.9 |
| 40.0 | 39.99 | 0.74 | -0.58 | 0.9 | 322.2 | 1.7 | 304.7 |
| 41.0 | 40.99 | 0.76 | -0.60 | 1.0 | 321.8 | 1.7 | 309.5 |
| 42.0 | 41.99 | 0.78 | -0.62 | 1.0 | 321.4 | 1.6 | 318.6 |
| 43.0 | 42.98 | 0.80 | -0.65 | 1.0 | 321.0 | 1.7 | 305.7 |
| 43.3 | 43.32 | 0.80 | -0.66 | 1.0 | 320.8 | 1.8 | 307.4 |

WRH 96-074C



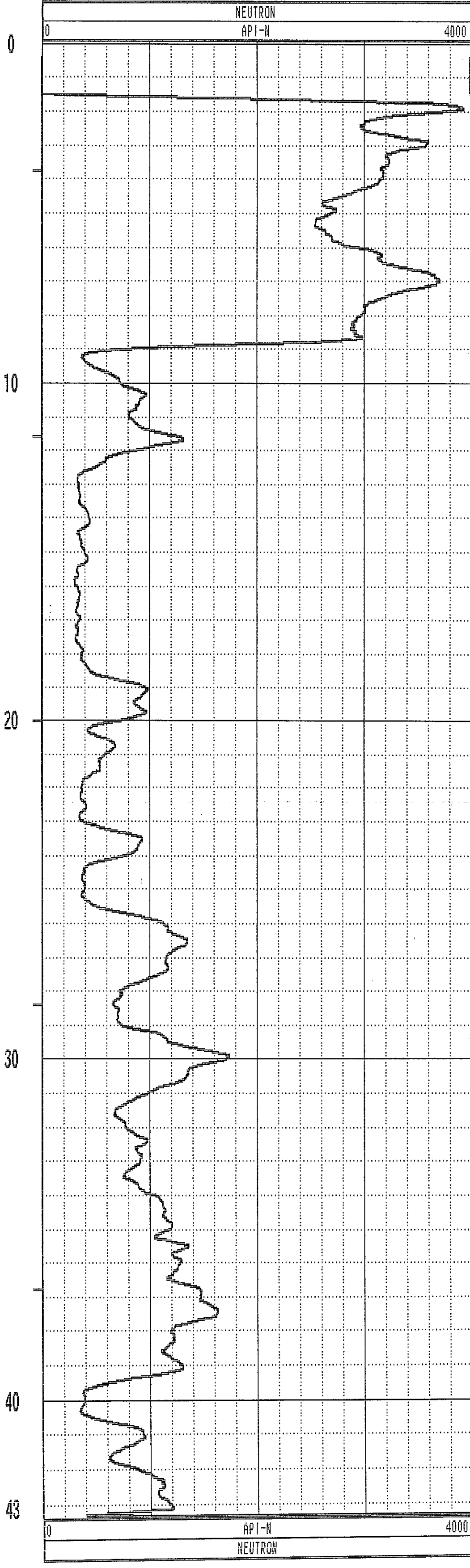
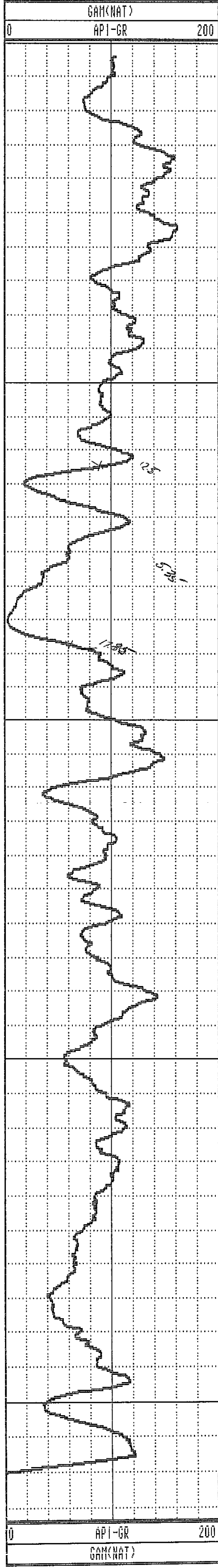
Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96074C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/28/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 47 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 43.40 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.42 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 8 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

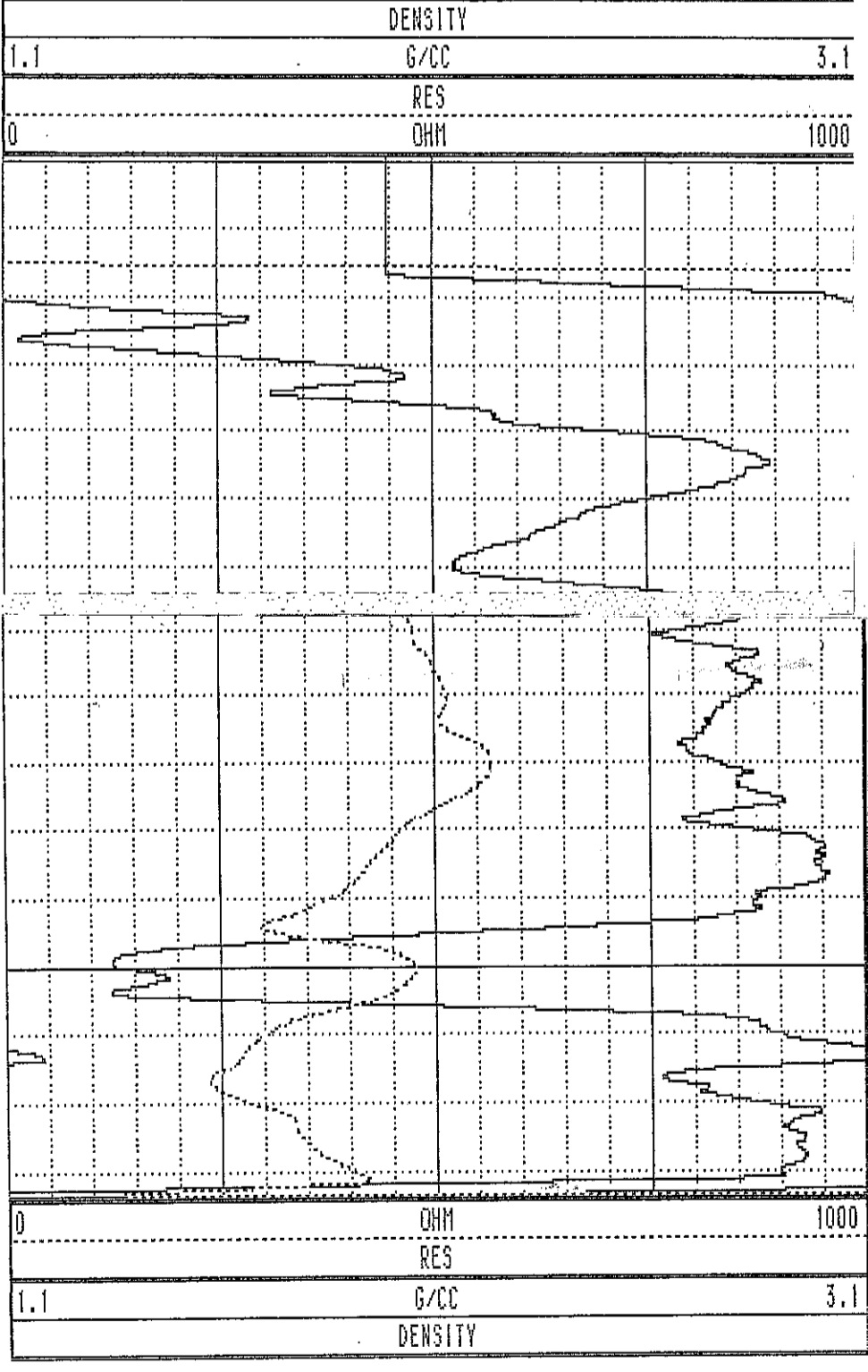
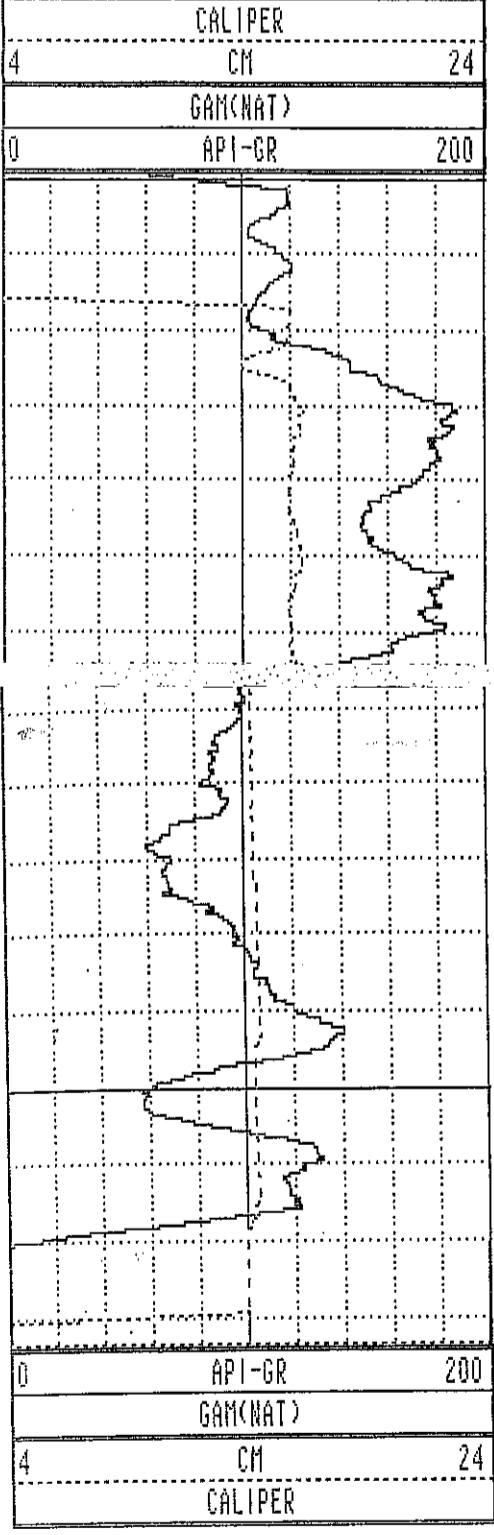


GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96074C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/28/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 43 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 43.40 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96074C



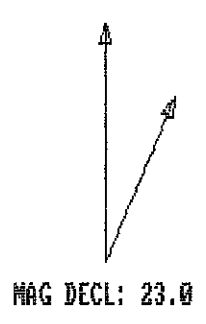
WRH-96074C 07/28/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV17.95 | 17:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

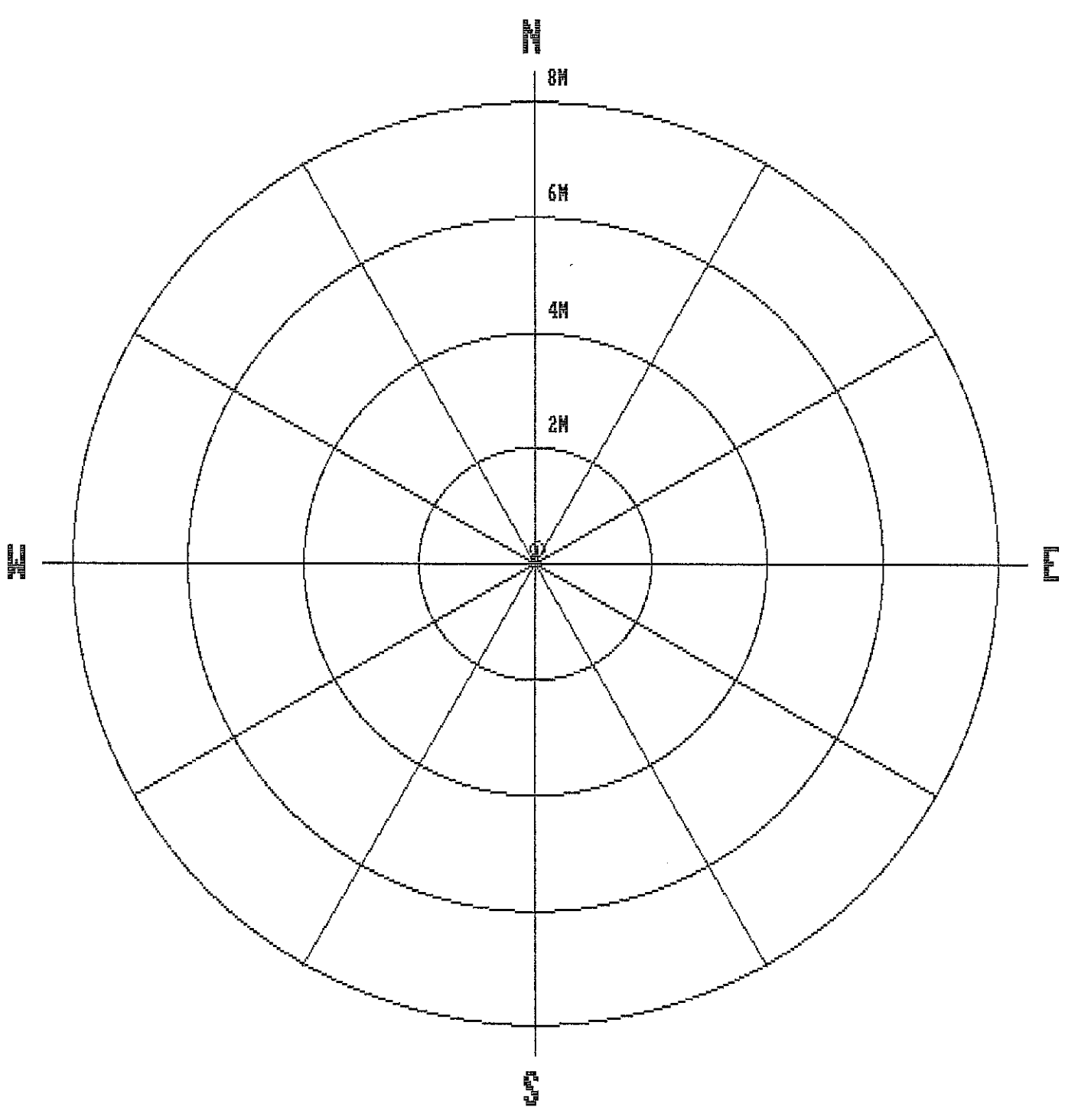
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 311.5 | 0.6 | 180.9 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 256.8 | 0.1 | 197.3 |
| 4.0 | 4.00 | -0.00 | 0.00 | 0.0 | 169.3 | 0.4 | 232.6 |
| 5.0 | 5.00 | -0.01 | 0.00 | 0.0 | 173.0 | 0.3 | 273.5 |
| 6.0 | 6.00 | -0.00 | -0.00 | 0.0 | 236.6 | 0.5 | 324.8 |
| 7.0 | 7.00 | 0.00 | -0.01 | 0.0 | 291.6 | 0.5 | 348.4 |
| 8.0 | 8.00 | 0.01 | -0.02 | 0.0 | 309.0 | 0.6 | 4.6 |
| 9.0 | 9.00 | 0.02 | -0.02 | 0.0 | 312.5 | 0.6 | 331.4 |
| 10.0 | 10.00 | 0.03 | -0.03 | 0.0 | 318.9 | 0.7 | 332.7 |
| 11.0 | 11.00 | 0.04 | -0.03 | 0.1 | 323.9 | 0.7 | 342.2 |
| 12.0 | 12.00 | 0.05 | -0.03 | 0.1 | 327.2 | 0.8 | 332.8 |
| 13.0 | 13.00 | 0.06 | -0.04 | 0.1 | 331.0 | 1.0 | 332.0 |
| 14.0 | 14.00 | 0.08 | -0.04 | 0.1 | 335.3 | 0.7 | 355.8 |
| 15.0 | 15.00 | 0.09 | -0.03 | 0.1 | 339.7 | 0.6 | 49.9 |
| 16.0 | 16.00 | 0.10 | -0.03 | 0.1 | 344.0 | 0.6 | 31.4 |
| 17.0 | 17.00 | 0.11 | -0.02 | 0.1 | 347.7 | 0.7 | 26.7 |
| 18.0 | 18.00 | 0.12 | -0.02 | 0.1 | 351.4 | 0.7 | 43.0 |
| 19.0 | 19.00 | 0.13 | -0.01 | 0.1 | 354.3 | 0.5 | 11.1 |
| 20.0 | 20.00 | 0.13 | -0.01 | 0.1 | 356.8 | 0.5 | 40.5 |
| 21.0 | 21.00 | 0.14 | -0.00 | 0.1 | 358.8 | 0.4 | 41.1 |
| 22.0 | 22.00 | 0.15 | 0.00 | 0.1 | 0.9 | 1.1 | 29.7 |
| 23.0 | 23.00 | 0.15 | 0.01 | 0.2 | 2.9 | 0.4 | 41.1 |
| 24.0 | 24.00 | 0.16 | 0.01 | 0.2 | 4.5 | 0.7 | 16.1 |
| 25.0 | 25.00 | 0.17 | 0.02 | 0.2 | 5.7 | 0.7 | 19.0 |
| 26.0 | 26.00 | 0.18 | 0.02 | 0.2 | 6.8 | 0.1 | 117.3 |
| 27.0 | 27.00 | 0.19 | 0.03 | 0.2 | 7.7 | 0.6 | 39.7 |
| 28.0 | 28.00 | 0.19 | 0.03 | 0.2 | 8.3 | 0.3 | 19.4 |
| 29.0 | 29.00 | 0.20 | 0.03 | 0.2 | 9.0 | 0.6 | 29.1 |
| 30.0 | 30.00 | 0.21 | 0.04 | 0.2 | 9.6 | 0.5 | 19.4 |
| 31.0 | 31.00 | 0.22 | 0.04 | 0.2 | 9.8 | 0.4 | 30.8 |
| 32.0 | 32.00 | 0.23 | 0.04 | 0.2 | 9.7 | 0.4 | 354.5 |
| 33.0 | 33.00 | 0.24 | 0.04 | 0.2 | 9.9 | 0.5 | 25.4 |
| 34.0 | 34.00 | 0.24 | 0.05 | 0.2 | 10.6 | 0.3 | 34.3 |
| 34.1 | 34.12 | 0.24 | 0.05 | 0.2 | 10.7 | 0.3 | 39.6 |

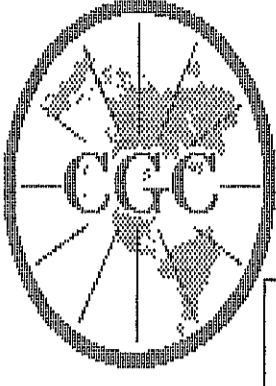
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96075C
 DATE OF LOG: 07/28/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 34.12 M
 AZIMUTH: 10.7
 DISTANCE: 0.2 M
 + = 50 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96075C
 LOCATION/FIELD : HILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 07/28/96
 DEPTH DRILLER : 34
 LOG BOTTOM : 34.19
 LOG TOP : 0.54

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 4
 CASING TYPE : STEEL
 CASING THICKNESS: .25

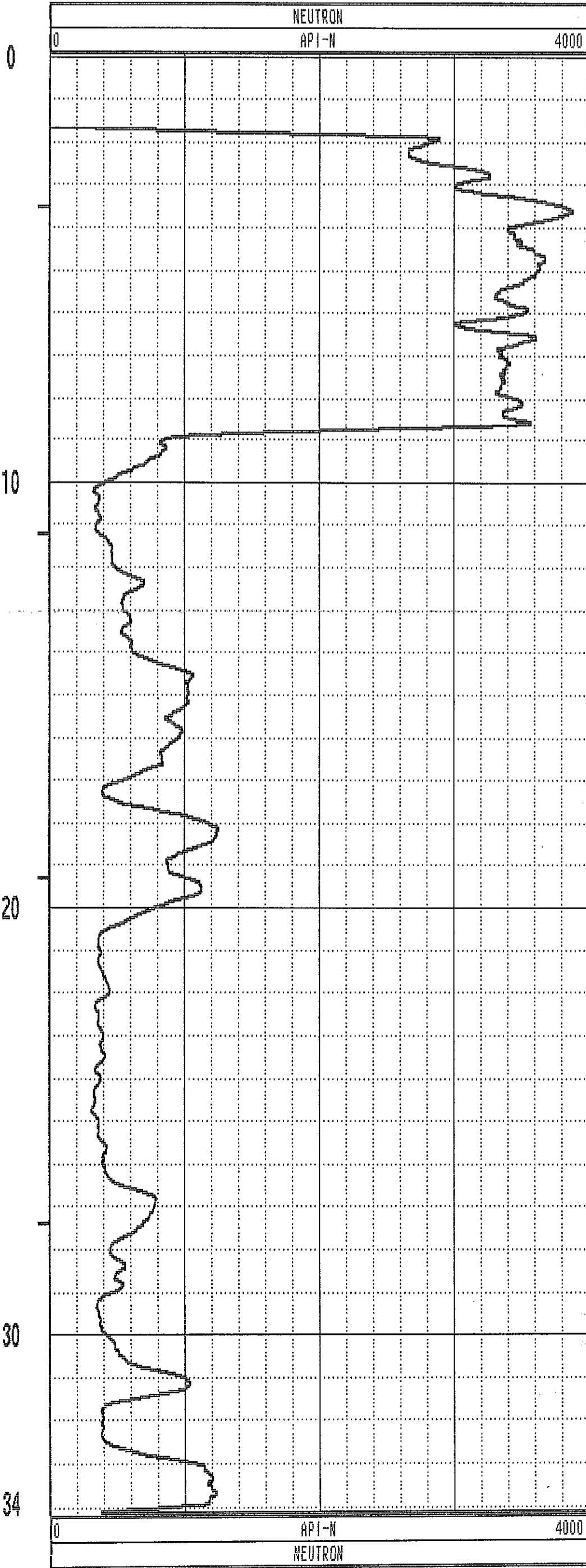
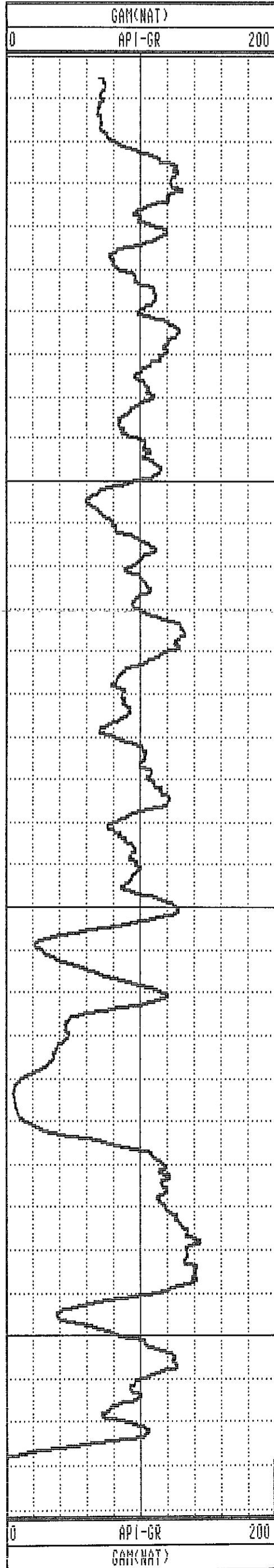
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

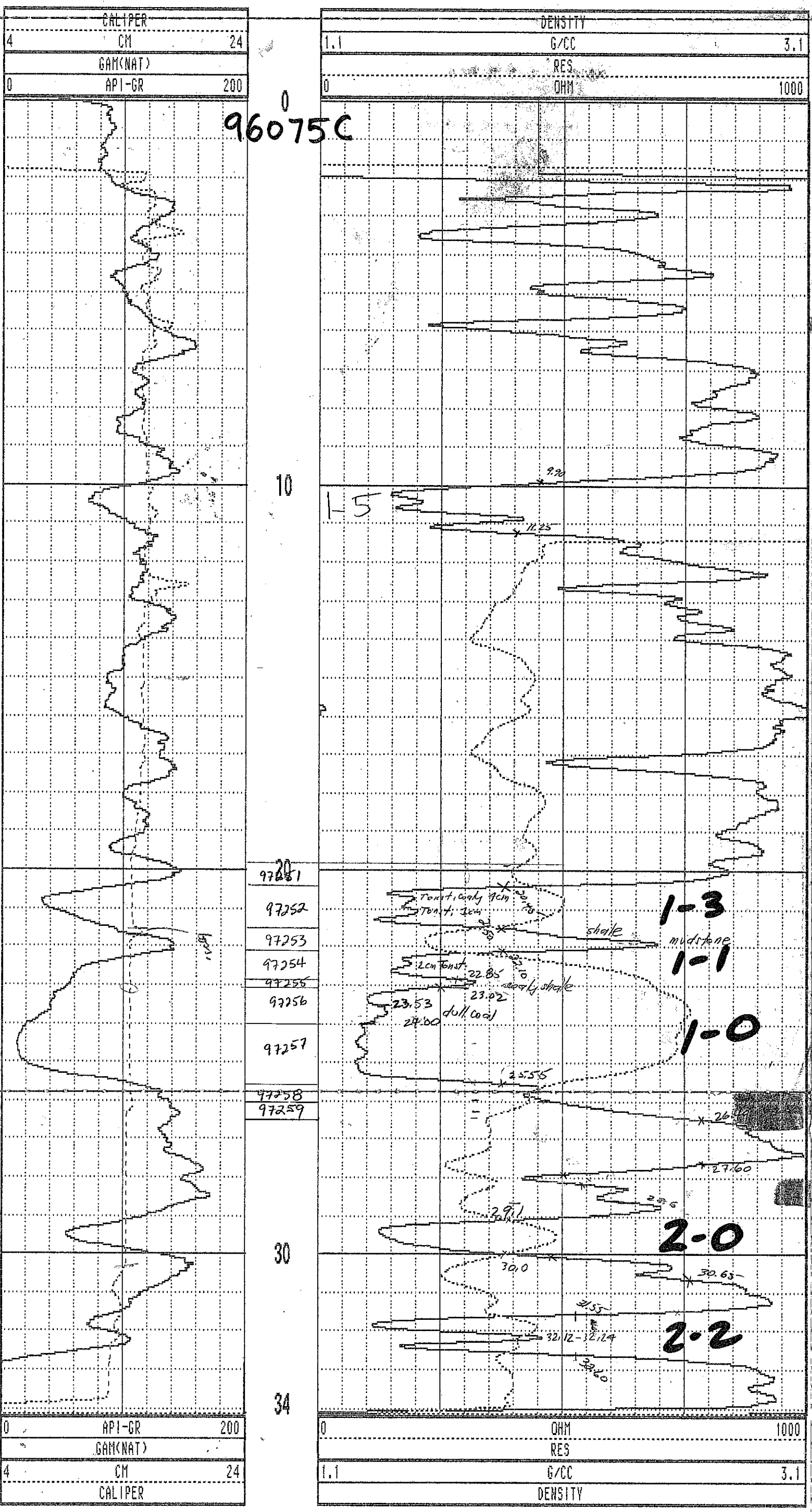
COMPANY : PINE VALLEY COAL
 WELL : WRH-96075C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/28/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 36 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 34.18 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



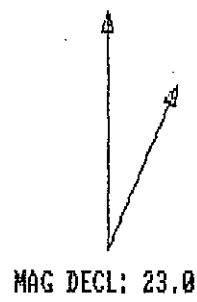
WRH-96075C 07/28/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

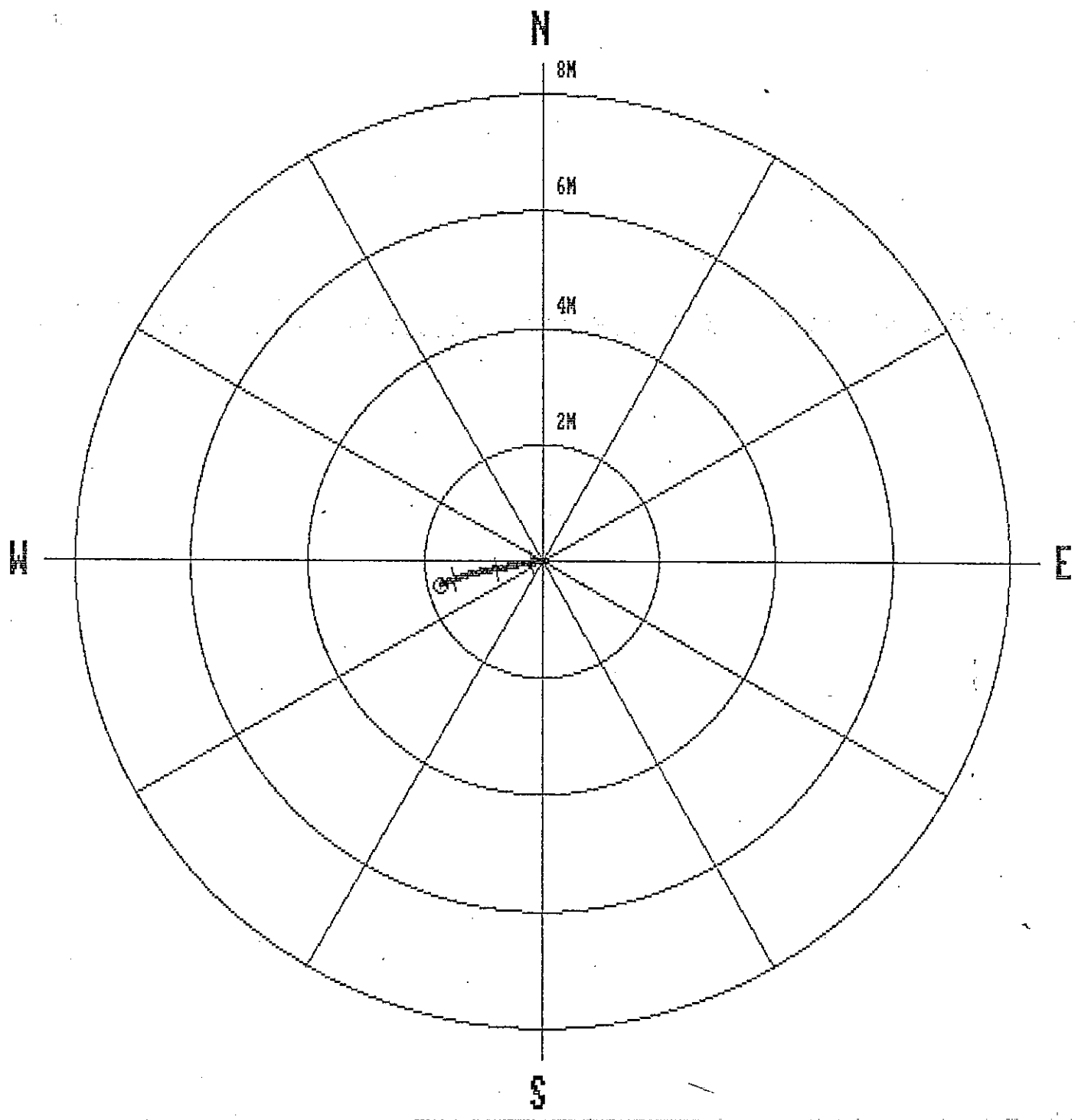
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96076C
 DATE OF LOG: 07/28/96
 ROBE: 9055A 56

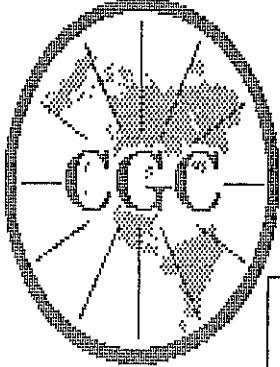


SCALE: 1 M/CM
 TRUE DEPTH: 32.96 M
 AZIMUTH: 256.8
 DISTANCE: 1.8 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



WRH 96076C

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 234.1 | 1.3 | 218.2 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 227.2 | 0.3 | 144.1 |
| 4.0 | 4.00 | -0.00 | -0.02 | 0.0 | 268.7 | 0.9 | 316.0 |
| 5.0 | 5.00 | 0.02 | -0.03 | 0.0 | 297.9 | 1.5 | 55.0 |
| 6.0 | 6.00 | 0.02 | -0.04 | 0.0 | 297.1 | 1.8 | 249.6 |
| 7.0 | 7.00 | 0.01 | -0.07 | 0.1 | 277.2 | 2.1 | 244.9 |
| 8.0 | 8.00 | -0.00 | -0.11 | 0.1 | 267.8 | 2.6 | 260.7 |
| 9.0 | 9.00 | -0.01 | -0.15 | 0.1 | 265.2 | 2.5 | 258.8 |
| 10.0 | 10.00 | -0.02 | -0.19 | 0.2 | 262.9 | 2.9 | 253.1 |
| 11.0 | 10.99 | -0.03 | -0.24 | 0.2 | 262.2 | 2.9 | 258.1 |
| 12.0 | 11.99 | -0.04 | -0.29 | 0.3 | 261.5 | 3.2 | 262.6 |
| 13.0 | 12.99 | -0.05 | -0.35 | 0.3 | 261.0 | 3.7 | 259.3 |
| 14.0 | 13.99 | -0.06 | -0.40 | 0.4 | 261.0 | 3.6 | 259.9 |
| 15.0 | 14.99 | -0.08 | -0.46 | 0.5 | 260.6 | 3.4 | 261.4 |
| 16.0 | 15.99 | -0.09 | -0.52 | 0.5 | 260.3 | 3.3 | 247.7 |
| 17.0 | 16.98 | -0.10 | -0.58 | 0.6 | 260.1 | 4.2 | 256.5 |
| 18.0 | 17.98 | -0.11 | -0.64 | 0.7 | 260.1 | 3.6 | 264.9 |
| 19.0 | 18.98 | -0.12 | -0.71 | 0.7 | 260.3 | 3.8 | 269.6 |
| 20.0 | 19.98 | -0.13 | -0.78 | 0.8 | 260.2 | 4.3 | 263.8 |
| 21.0 | 20.98 | -0.15 | -0.84 | 0.9 | 260.1 | 4.0 | 253.3 |
| 22.0 | 21.97 | -0.16 | -0.92 | 0.9 | 259.9 | 4.3 | 264.2 |
| 23.0 | 22.97 | -0.18 | -0.99 | 1.0 | 260.0 | 4.0 | 264.7 |
| 24.0 | 23.97 | -0.19 | -1.06 | 1.1 | 259.9 | 4.1 | 256.7 |
| 25.0 | 24.96 | -0.21 | -1.13 | 1.1 | 259.6 | 4.1 | 255.4 |
| 26.0 | 25.96 | -0.22 | -1.20 | 1.2 | 259.6 | 4.1 | 264.0 |
| 27.0 | 26.96 | -0.23 | -1.27 | 1.3 | 259.5 | 4.1 | 259.9 |
| 28.0 | 27.96 | -0.26 | -1.34 | 1.4 | 259.0 | 4.5 | 248.0 |
| 29.0 | 28.95 | -0.28 | -1.42 | 1.4 | 258.7 | 4.6 | 244.0 |
| 30.0 | 29.95 | -0.31 | -1.49 | 1.5 | 258.1 | 4.9 | 261.4 |
| 31.0 | 30.95 | -0.34 | -1.57 | 1.6 | 257.7 | 4.9 | 247.0 |
| 32.0 | 31.94 | -0.37 | -1.65 | 1.7 | 257.3 | 5.1 | 252.6 |
| 33.0 | 32.94 | -0.41 | -1.73 | 1.8 | 256.8 | 4.9 | 241.7 |
| 33.0 | 32.96 | -0.41 | -1.73 | 1.8 | 256.8 | 4.9 | 244.1 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96076C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/28/96
 DEPTH DRILLER : 32
 LOG BOTTOM : 33.07
 LOG TOP : 0.54

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 4
 CASING TYPE : STEEL
 CASING THICKNESS: .25

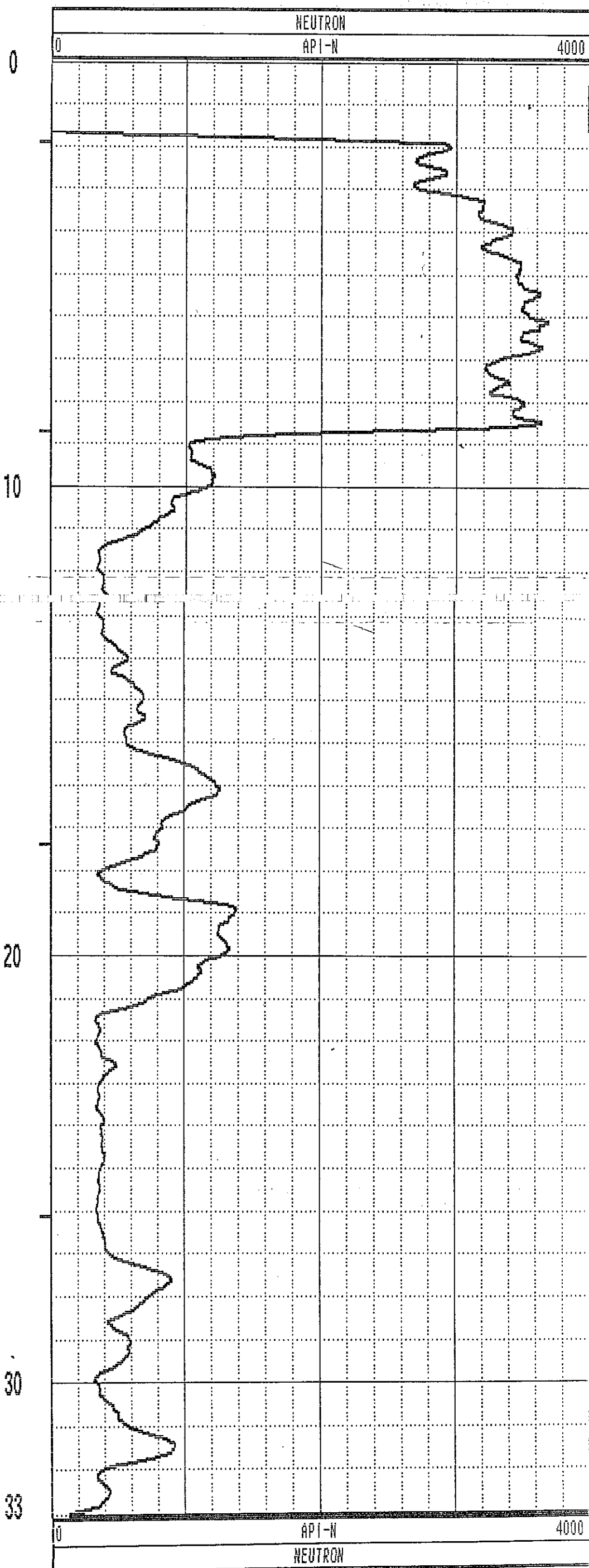
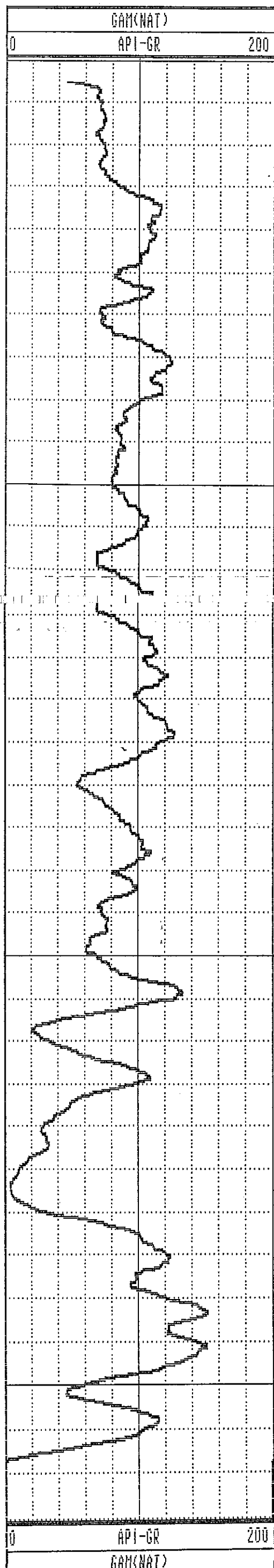
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 7
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



76C

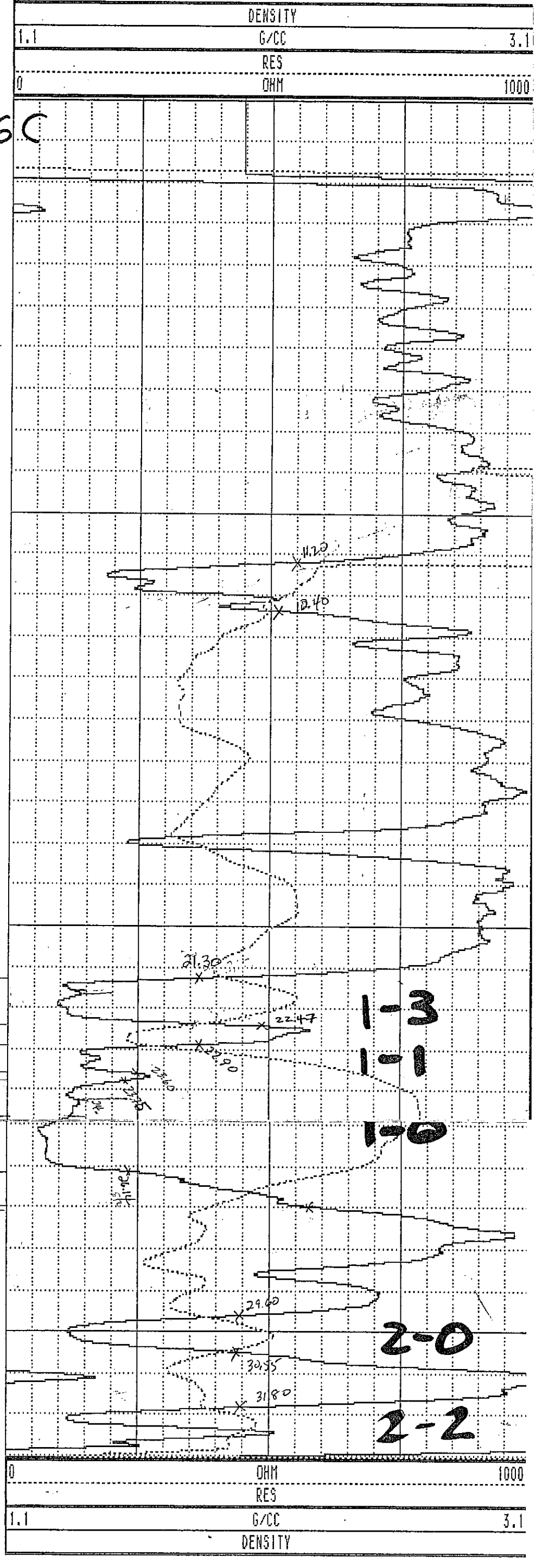
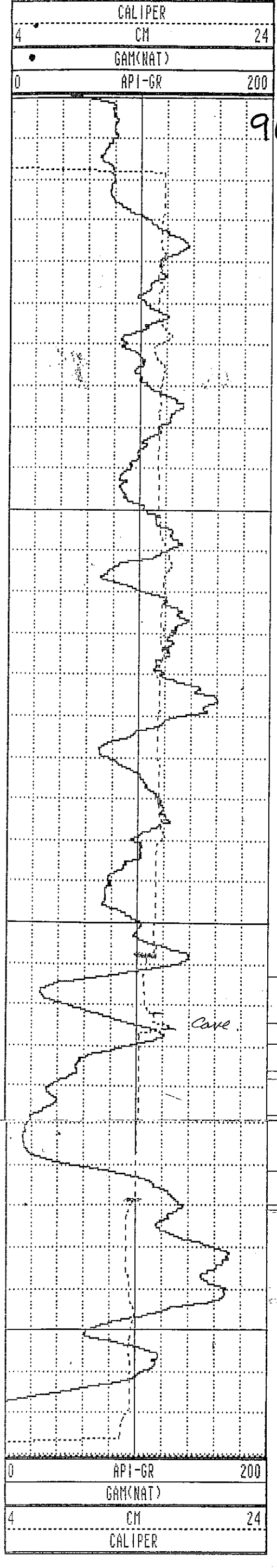
Sample Log

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96076C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 07/28/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 33 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 33.08 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

OTHER SERVICES:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



96076C

10

20

30

33

97260
 97261
 97262
 97263
 97264
 97265
 97265
 97266

1-3
 1-1
 1-0

2-0

2-2

WRH-96076C 07/28/96 958

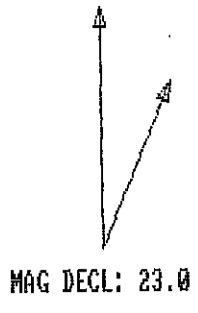
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 G/CC |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | NOV18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

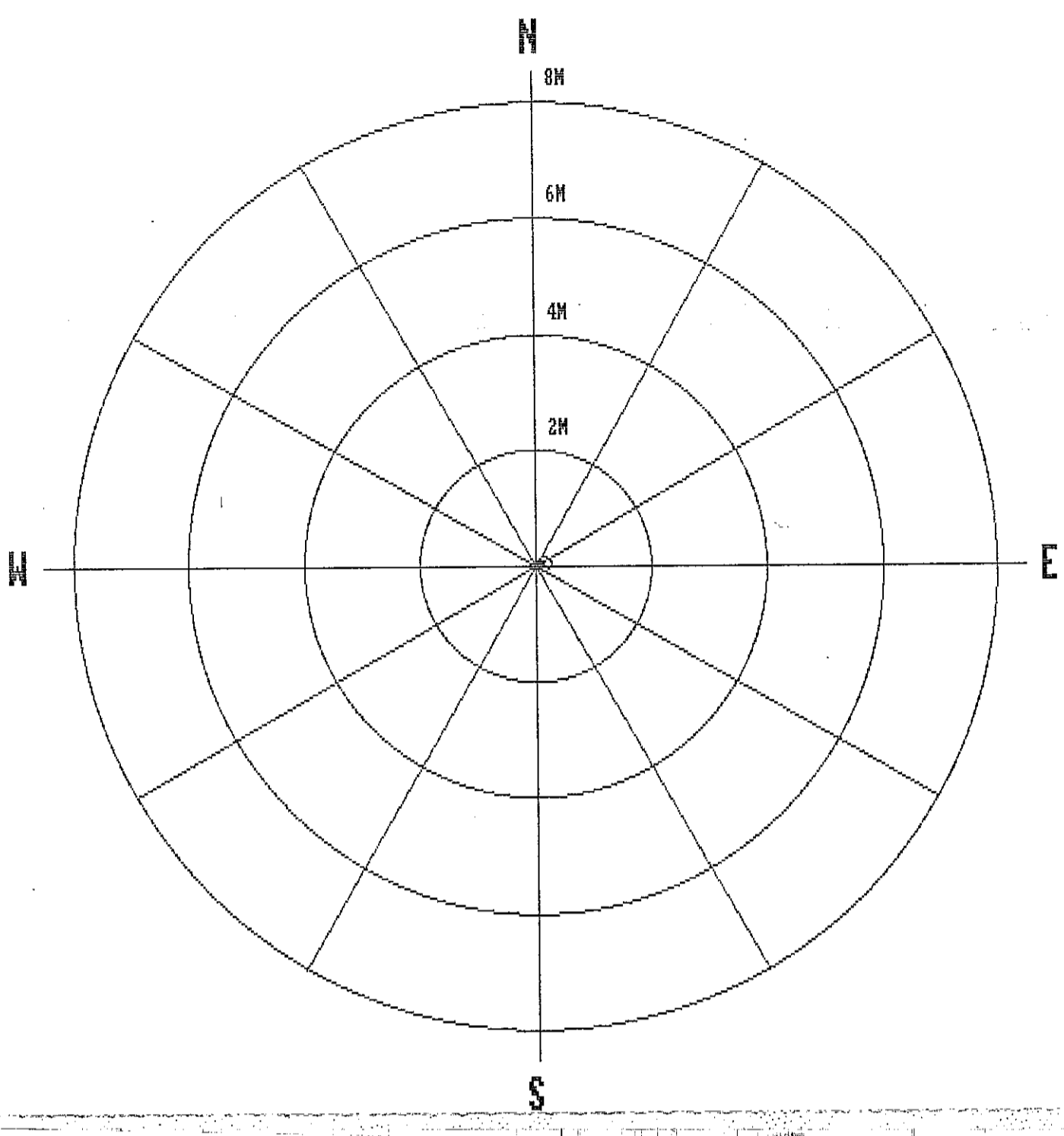
PLAN VIEW

COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96077C
 DATE OF LOG: 07/28/96
 PROBE: 9055A 56

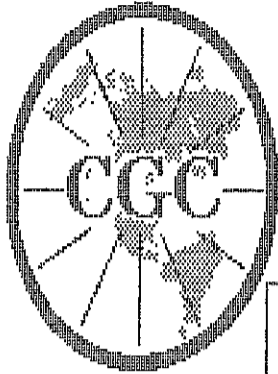


SCALE: 1 M/CM
 TRUE DEPTH: 17.98 M
 AZIMUTH: 81.4
 DISTANCE: 0.2 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 265.1 | 0.9 | 22.8 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 197.7 | 0.6 | 104.7 |
| 4.0 | 4.00 | -0.00 | 0.01 | 0.0 | 114.1 | 0.4 | 152.2 |
| 5.0 | 5.00 | 0.00 | 0.00 | 0.0 | 88.4 | 0.2 | 344.8 |
| 6.0 | 6.00 | 0.00 | 0.00 | 0.0 | 28.2 | 0.1 | 73.6 |
| 7.0 | 7.00 | 0.01 | 0.00 | 0.0 | 29.2 | 0.3 | 52.0 |
| 8.0 | 8.00 | 0.01 | 0.01 | 0.0 | 35.2 | 0.5 | 61.9 |
| 9.0 | 9.00 | 0.01 | 0.02 | 0.0 | 46.0 | 0.4 | 61.5 |
| 10.0 | 10.00 | 0.02 | 0.02 | 0.0 | 53.6 | 0.8 | 81.2 |
| 11.0 | 11.00 | 0.02 | 0.04 | 0.0 | 59.9 | 0.7 | 80.5 |
| 12.0 | 12.00 | 0.02 | 0.05 | 0.1 | 63.7 | 0.7 | 65.2 |
| 13.0 | 13.00 | 0.03 | 0.06 | 0.1 | 68.0 | 1.2 | 97.3 |
| 14.0 | 14.00 | 0.03 | 0.08 | 0.1 | 72.4 | 1.0 | 92.2 |
| 15.0 | 15.00 | 0.03 | 0.10 | 0.1 | 75.2 | 1.1 | 85.8 |
| 16.0 | 16.00 | 0.03 | 0.12 | 0.1 | 77.7 | 0.9 | 91.0 |
| 17.0 | 17.00 | 0.03 | 0.14 | 0.1 | 79.3 | 1.0 | 97.8 |
| 18.0 | 18.00 | 0.02 | 0.15 | 0.2 | 81.4 | 0.0 | 0.0 |
| 18.0 | 17.98 | 0.02 | 0.15 | 0.2 | 81.4 | 1.0 | 100.8 |

WRH 96077C



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96077C
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/28/96
DEPTH DRILLER : 17
LOG BOTTOM : 18.03
LOG TOP : 0.38

PERMANENT DATUM : ELEVATIONS
ELEV. PERM. DATUM: KB :
LOG MEASURED FROM: G.L. DF :
DRL MEASURED FROM: GL :

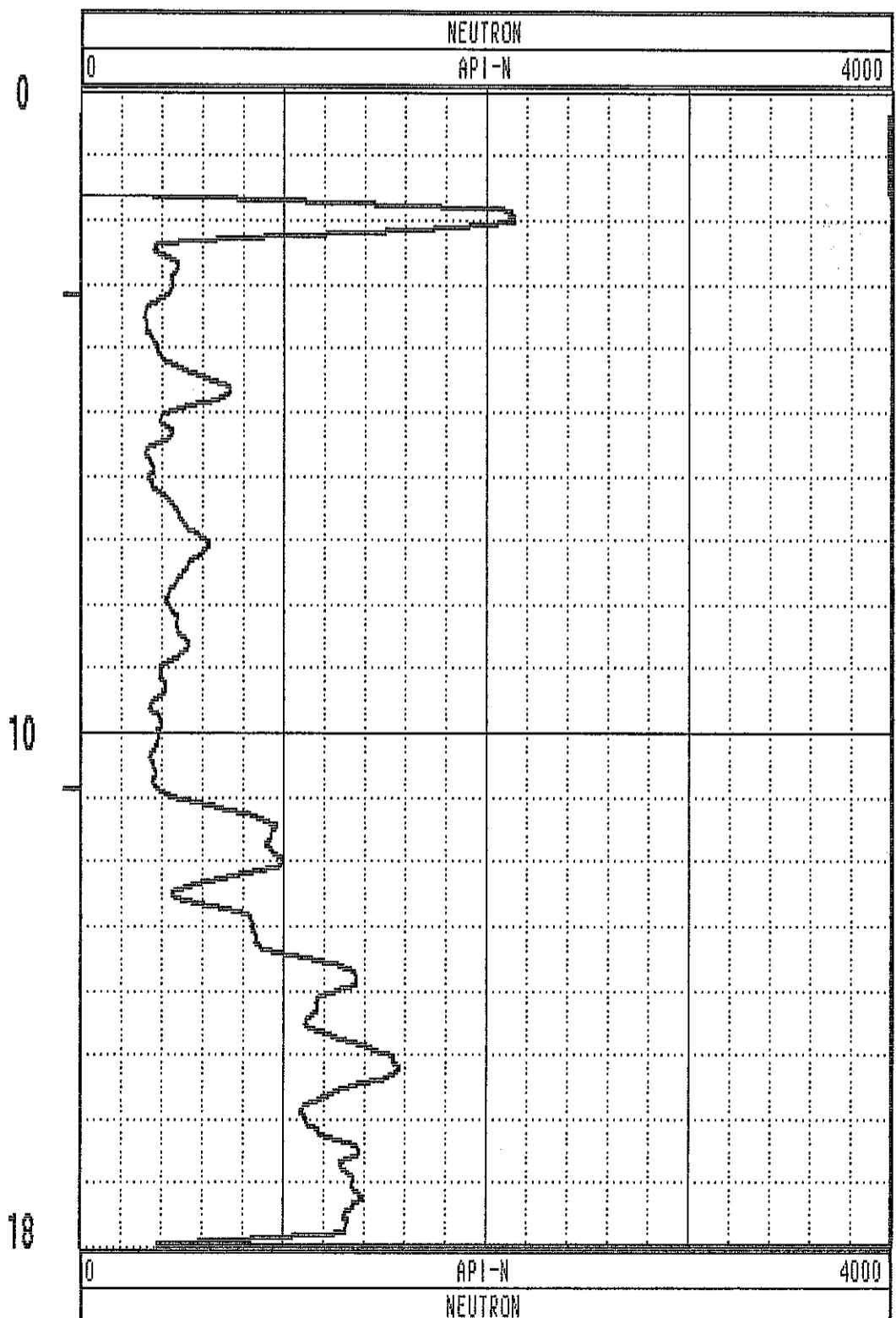
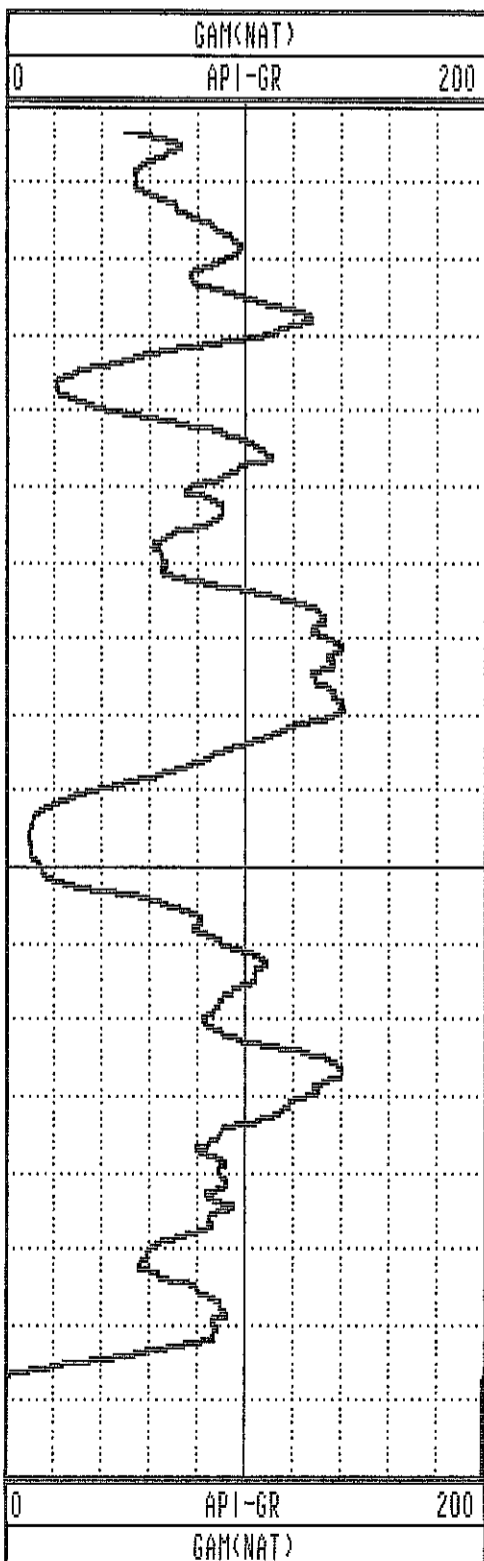
CASING DRILLER : 4
CASING TYPE : STEEL
CASING THICKNESS: .25

LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : AIR FILE : ORIGINAL
RM : TYPE : 9055A
RM TEMPERATURE : LOG : 4
MATRIX DELTA T : PLOT : PINE 4
FLUID DELTA T : THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

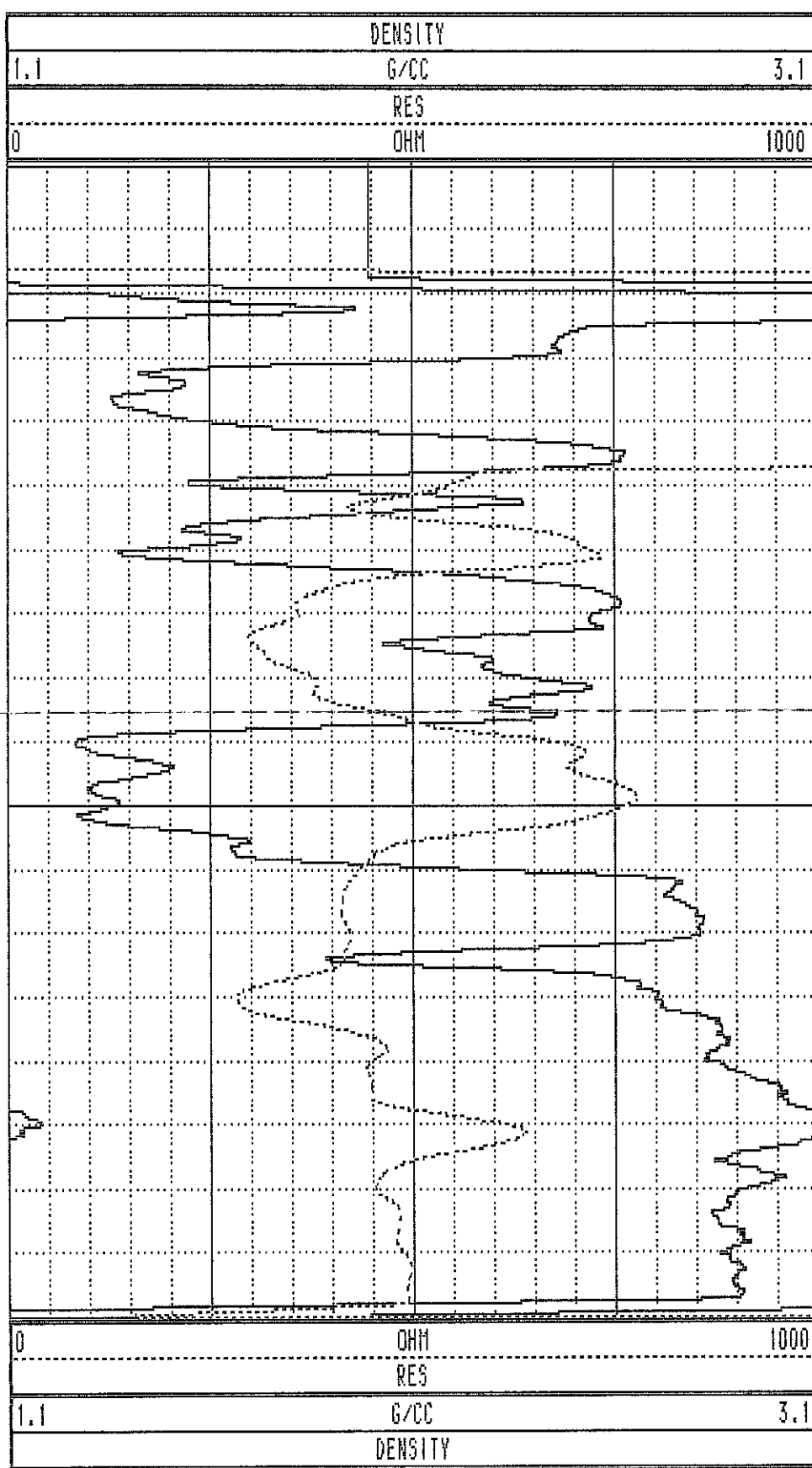
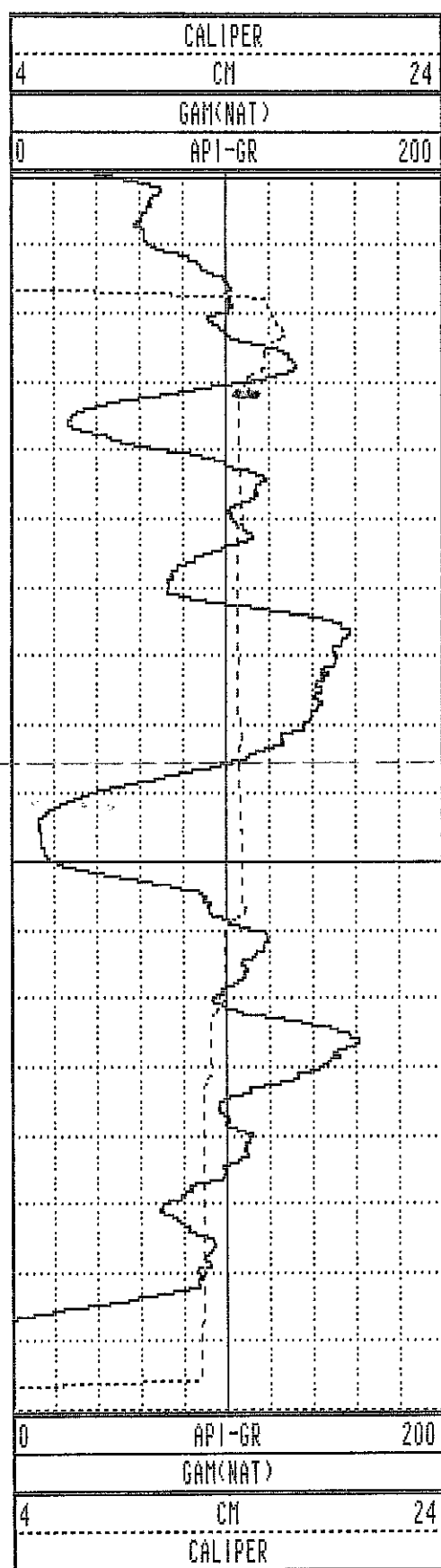


GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96077C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/28/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 18 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.04 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 5 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE ? |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

96-77C



17000

WRH-96077C 07/28/96 958

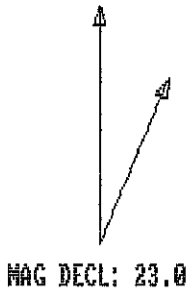
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20,96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20,96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18,96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18,96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13,95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13,95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15,95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15,95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

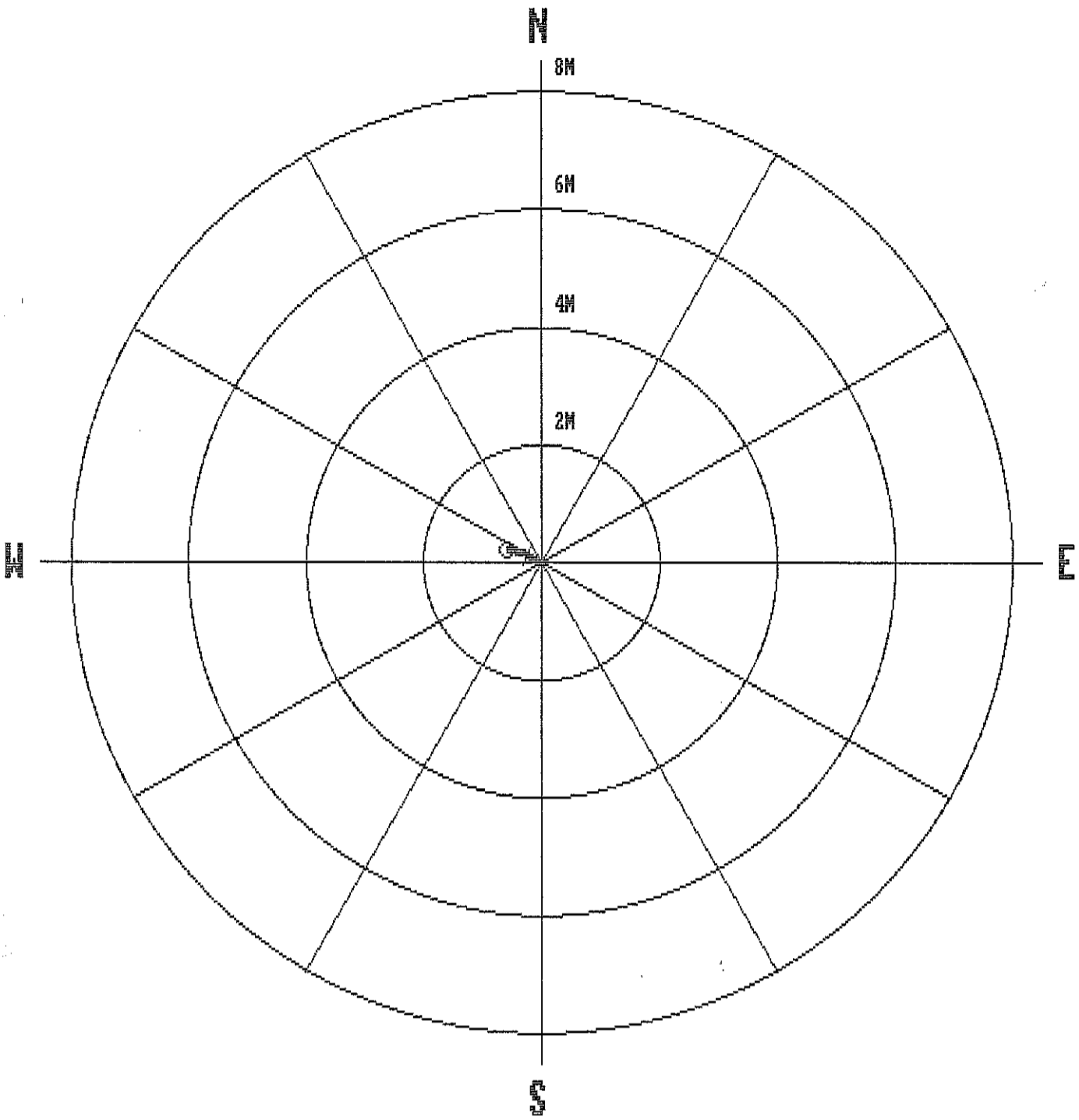
PLAN VIEW

COMPLI-LOG DEVIATION

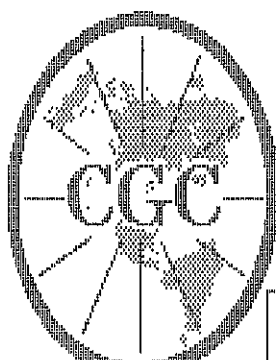
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96078C
 DATE OF LOG: 07/29/96
 PROBE: 9055A 56



SCALE: 1 W/CM
 TRUE DEPTH: 32.19 M
 AZIMUTH: 288.7
 DISTANCE: 0.6 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 218.7 | 0.4 | 80.8 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 245.0 | 0.8 | 327.4 |
| 4.0 | 4.00 | 0.00 | -0.01 | 0.0 | 284.4 | 0.7 | 261.7 |
| 5.0 | 5.00 | -0.00 | -0.02 | 0.0 | 259.7 | 0.7 | 203.4 |
| 6.0 | 6.00 | -0.01 | -0.02 | 0.0 | 256.4 | 0.5 | 254.1 |
| 7.0 | 7.00 | -0.00 | -0.03 | 0.0 | 263.1 | 0.8 | 134.7 |
| 8.0 | 8.00 | -0.00 | -0.04 | 0.0 | 266.2 | 1.0 | 265.0 |
| 9.0 | 9.00 | 0.00 | -0.06 | 0.1 | 273.2 | 0.6 | 276.8 |
| 10.0 | 10.00 | 0.01 | -0.07 | 0.1 | 278.1 | 1.3 | 260.2 |
| 11.0 | 11.00 | 0.02 | -0.08 | 0.1 | 284.9 | 1.0 | 306.9 |
| 12.0 | 12.00 | 0.03 | -0.10 | 0.1 | 288.2 | 1.1 | 283.4 |
| 13.0 | 13.00 | 0.04 | -0.11 | 0.1 | 290.8 | 1.3 | 297.6 |
| 14.0 | 14.00 | 0.06 | -0.13 | 0.1 | 293.7 | 1.3 | 304.6 |
| 15.0 | 15.00 | 0.07 | -0.15 | 0.2 | 295.3 | 1.4 | 315.1 |
| 16.0 | 16.00 | 0.08 | -0.16 | 0.2 | 296.7 | 1.2 | 306.4 |
| 17.0 | 17.00 | 0.09 | -0.18 | 0.2 | 297.7 | 0.9 | 311.2 |
| 18.0 | 18.00 | 0.11 | -0.20 | 0.2 | 298.4 | 1.2 | 309.4 |
| 19.0 | 19.00 | 0.12 | -0.21 | 0.2 | 299.1 | 1.2 | 306.9 |
| 20.0 | 20.00 | 0.13 | -0.23 | 0.3 | 299.4 | 1.0 | 301.2 |
| 21.0 | 21.00 | 0.14 | -0.25 | 0.3 | 299.3 | 1.2 | 298.7 |
| 22.0 | 22.00 | 0.15 | -0.26 | 0.3 | 299.0 | 1.2 | 289.2 |
| 23.0 | 23.00 | 0.15 | -0.29 | 0.3 | 298.3 | 1.2 | 287.8 |
| 24.0 | 24.00 | 0.16 | -0.31 | 0.3 | 297.7 | 1.6 | 287.3 |
| 25.0 | 25.00 | 0.17 | -0.33 | 0.4 | 296.8 | 1.7 | 285.9 |
| 26.0 | 26.00 | 0.18 | -0.36 | 0.4 | 296.0 | 1.9 | 285.7 |
| 27.0 | 27.00 | 0.18 | -0.39 | 0.4 | 295.1 | 1.8 | 280.1 |
| 28.0 | 27.99 | 0.19 | -0.42 | 0.5 | 294.1 | 1.4 | 270.0 |
| 29.0 | 28.99 | 0.19 | -0.45 | 0.5 | 293.1 | 1.8 | 265.7 |
| 30.0 | 29.99 | 0.19 | -0.49 | 0.5 | 291.8 | 1.9 | 269.7 |
| 31.0 | 30.99 | 0.19 | -0.52 | 0.6 | 290.4 | 2.3 | 273.6 |
| 31.0 | 31.99 | 0.19 | -0.56 | 0.6 | 289.0 | 2.3 | 262.6 |
| 32.2 | 32.19 | 0.19 | -0.57 | 0.6 | 288.7 | 2.5 | 266.5 |



Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96078C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

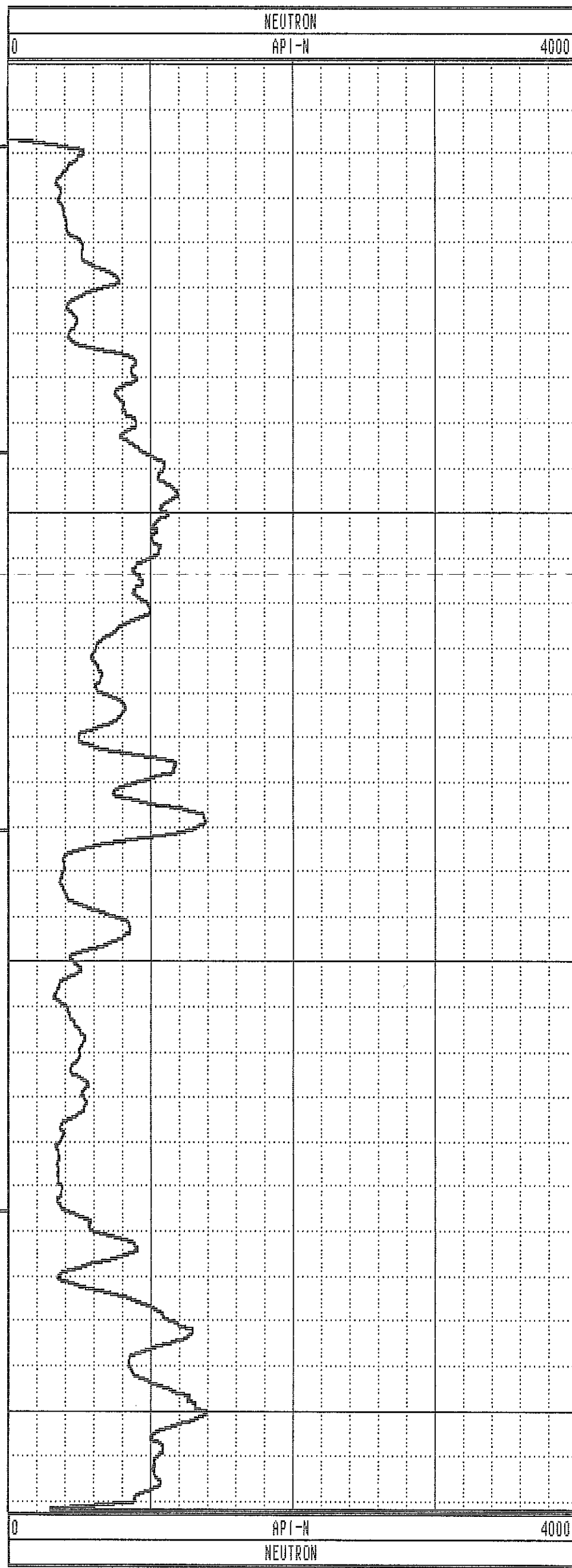
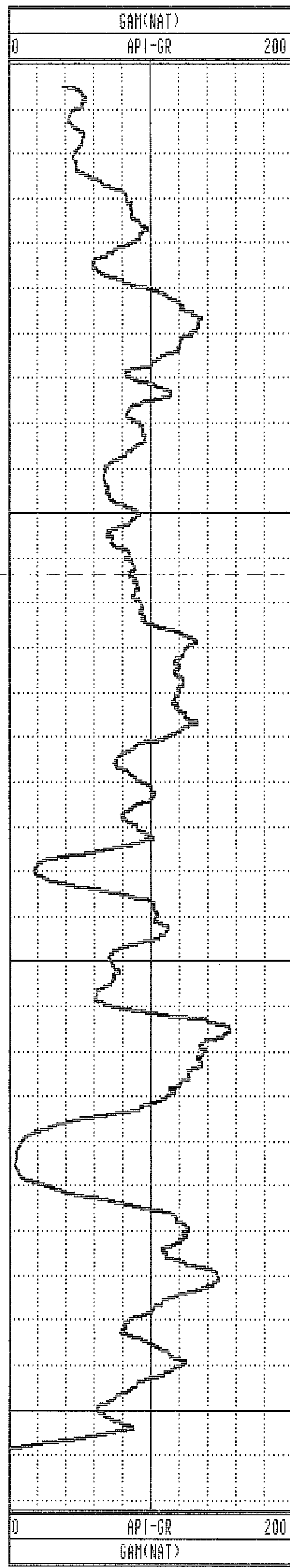
OTHER SERVICES:

DATE : 07/29/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 34 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.26 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.54 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96078C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

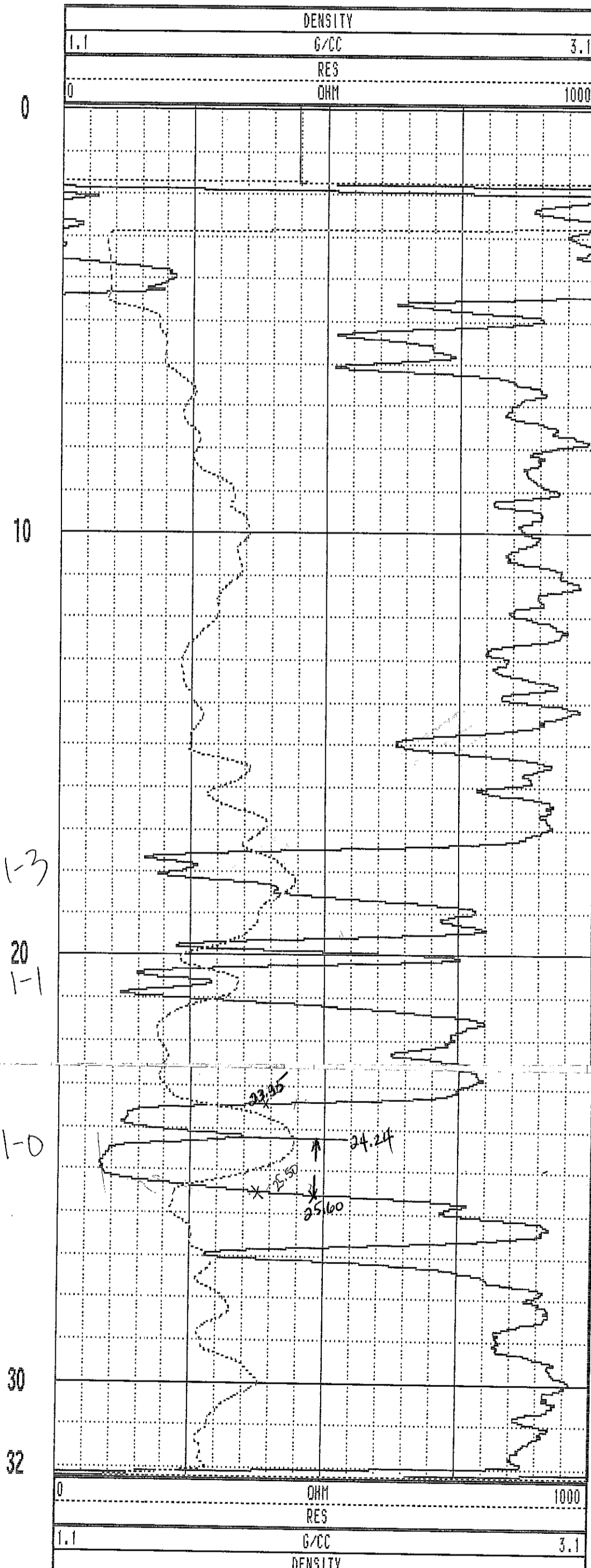
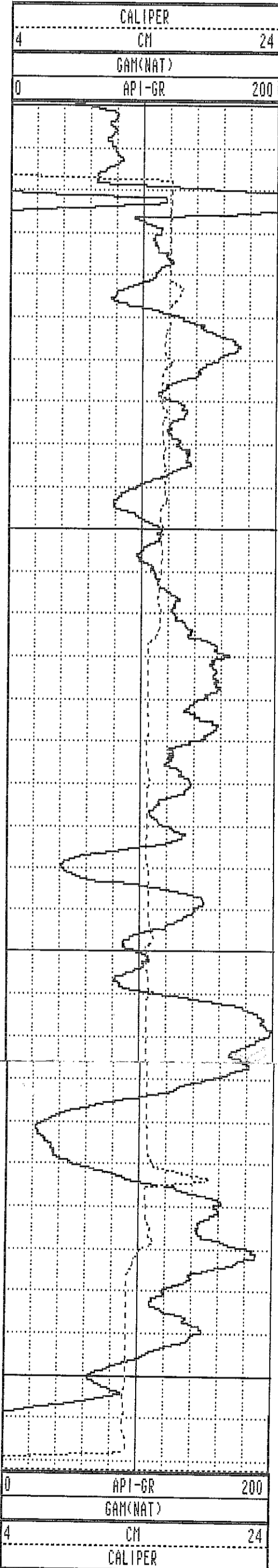
DATE : 07/29/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 34 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.26 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96078C



WRH-96078C 07/29/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

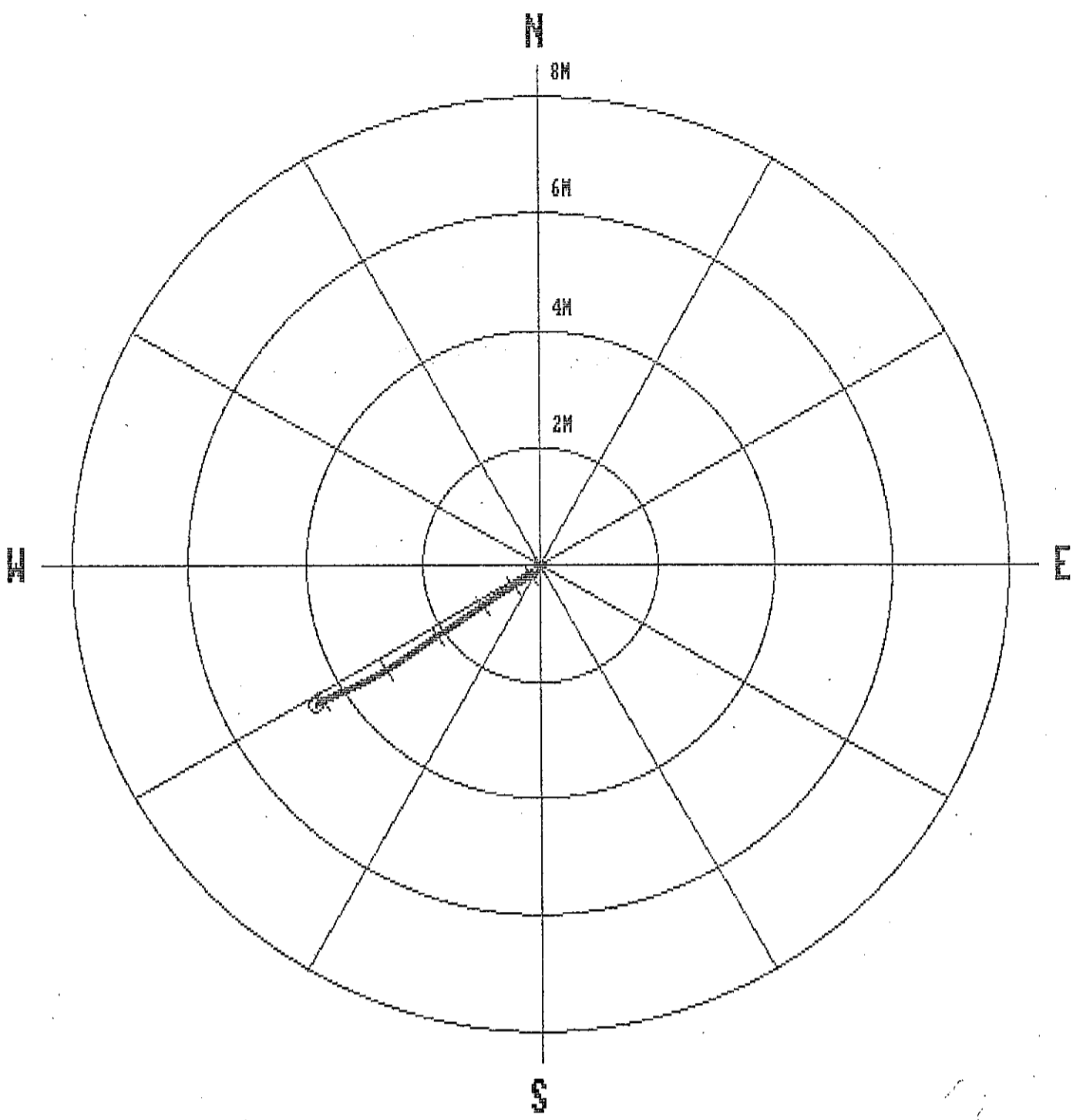
PLAN VIEW

COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96079C
 DATE OF LOG: 07/31/96
 PROBE: 9055A 56

SCALE: 1 M/CM
 TRUE DEPTH: 71.07 M
 AZIMUTH: 238.4
 DISTANCE: 4.5 M
 + = 10 M INCR
 O = BOTTOM OF HOLE

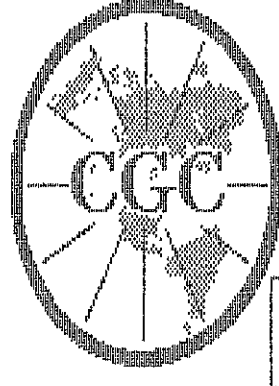
MAG DECL: 23.0



* * * * * COMPU-LOG - VERTICAL DEVIATION * * * * *

| | |
|-----------------------------|----------------------------|
| CLIENT : PINE VALLEY COAL | HOLE ID. : WRH-96079C |
| FIELD OFFICE : CALGARY, AB. | DATE OF LOG : 07/31/96 |
| DATA FROM : | PROBE : 9055A 56 |
| MAG. DECL. : 23.000 | DEPTH UNITS : METERS LOG 7 |

| TABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.8 | 1.82 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 326.6 | 0.4 | 239.1 |
| 4.0 | 4.00 | 0.02 | 0.00 | 0.0 | 13.0 | 0.4 | 23.1 |
| 6.0 | 6.00 | 0.01 | 0.00 | 0.0 | 16.9 | 0.6 | 307.6 |
| 8.0 | 8.00 | -0.01 | 0.01 | 0.0 | 138.7 | 1.2 | 195.3 |
| 10.0 | 10.00 | -0.04 | 0.01 | 0.0 | 170.2 | 1.0 | 184.2 |
| 12.0 | 12.00 | -0.07 | -0.01 | 0.1 | 186.0 | 0.9 | 204.2 |
| 14.0 | 14.00 | -0.10 | -0.02 | 0.1 | 193.1 | 1.2 | 206.2 |
| 16.0 | 16.00 | -0.14 | -0.05 | 0.1 | 199.5 | 1.5 | 226.3 |
| 18.0 | 18.00 | -0.16 | -0.08 | 0.2 | 207.6 | 1.3 | 240.6 |
| 20.0 | 20.00 | -0.18 | -0.13 | 0.2 | 215.6 | 1.4 | 241.1 |
| 22.0 | 22.00 | -0.21 | -0.18 | 0.3 | 221.2 | 1.8 | 244.1 |
| 24.0 | 24.00 | -0.23 | -0.24 | 0.3 | 225.3 | 2.0 | 241.4 |
| 26.0 | 25.99 | -0.27 | -0.30 | 0.4 | 228.3 | 2.2 | 235.1 |
| 28.0 | 27.99 | -0.31 | -0.37 | 0.5 | 230.5 | 2.4 | 240.3 |
| 30.0 | 29.99 | -0.35 | -0.45 | 0.6 | 231.8 | 2.4 | 238.3 |
| 32.0 | 31.99 | -0.40 | -0.53 | 0.7 | 232.7 | 3.8 | 243.3 |
| 34.0 | 33.98 | -0.47 | -0.63 | 0.8 | 233.5 | 3.6 | 237.8 |
| 36.0 | 35.98 | -0.54 | -0.74 | 0.9 | 233.9 | 3.4 | 234.6 |
| 38.0 | 37.98 | -0.61 | -0.85 | 1.0 | 234.2 | 4.3 | 237.3 |
| 40.0 | 39.97 | -0.70 | -0.97 | 1.2 | 234.4 | 4.8 | 235.9 |
| 42.0 | 41.96 | -0.79 | -1.11 | 1.4 | 234.6 | 5.0 | 237.0 |
| 44.0 | 43.96 | -0.89 | -1.26 | 1.5 | 234.9 | 5.2 | 237.3 |
| 46.0 | 45.95 | -0.99 | -1.42 | 1.7 | 235.1 | 5.3 | 237.9 |
| 48.0 | 47.94 | -1.09 | -1.58 | 1.9 | 235.4 | 5.7 | 236.1 |
| 50.0 | 49.93 | -1.20 | -1.74 | 2.1 | 235.5 | 5.5 | 238.0 |
| 52.0 | 51.92 | -1.30 | -1.90 | 2.3 | 235.6 | 5.7 | 236.6 |
| 54.0 | 53.91 | -1.41 | -2.07 | 2.5 | 235.7 | 5.9 | 237.9 |
| 56.0 | 55.90 | -1.53 | -2.25 | 2.7 | 235.8 | 6.3 | 235.0 |
| 58.0 | 57.88 | -1.65 | -2.43 | 2.9 | 235.8 | 6.4 | 237.4 |
| 60.0 | 59.87 | -1.77 | -2.63 | 3.2 | 236.0 | 6.7 | 243.1 |
| 62.0 | 61.86 | -1.88 | -2.83 | 3.4 | 236.3 | 6.7 | 241.3 |
| 64.0 | 63.84 | -2.00 | -3.04 | 3.6 | 236.7 | 7.0 | 246.4 |
| 66.0 | 65.83 | -2.09 | -3.26 | 3.9 | 237.3 | 7.0 | 250.3 |
| 68.0 | 67.81 | -2.19 | -3.48 | 4.1 | 237.8 | 6.8 | 245.6 |
| 70.0 | 69.80 | -2.29 | -3.70 | 4.3 | 238.2 | 7.2 | 240.8 |
| 71.3 | 71.07 | -2.36 | -3.83 | 4.5 | 238.4 | 7.0 | 244.9 |

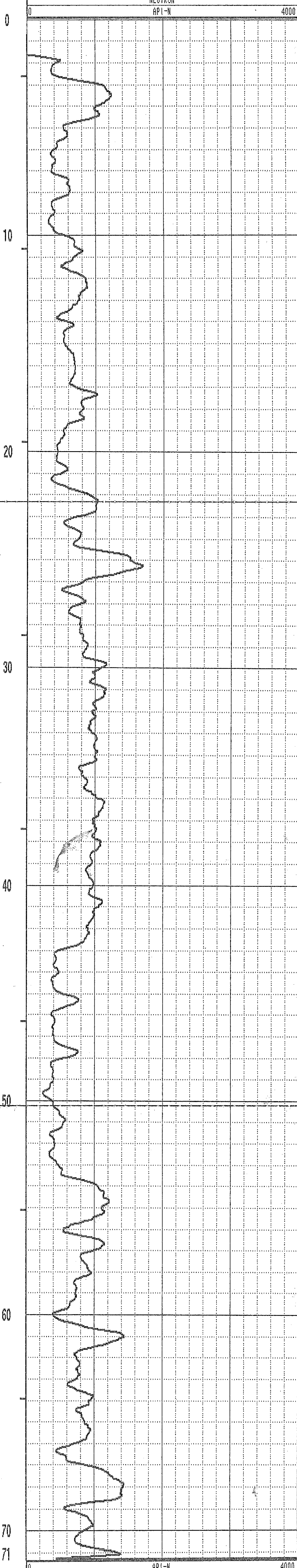
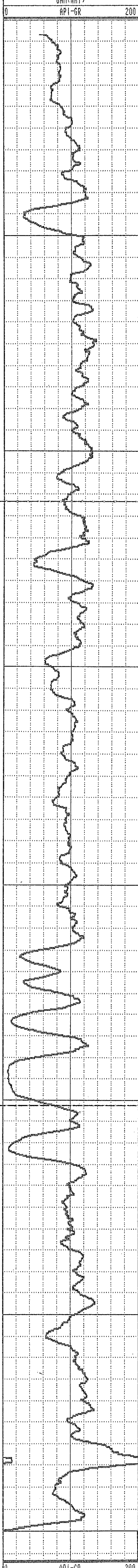


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|-------------------------------|-----------------------------|-----------------|
| COMPANY : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL : WRH-96079C | | |
| LOCATION/FIELD : WILLOW CREEK | | |
| COUNTY : | | |
| STATE : BRITISH COLUMBIA | | |
| SECTION : | TOWNSHIP : | RANGE : |
| DATE : 07/31/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER : 70 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM : 71.34 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP : 0.70 | DRL MEASURED FROM: | GL : |
| CASING DRILLER : 3 | LOGGING UNIT : 9612 | |
| CASING TYPE : STEEL | FIELD OFFICE : CALGARY, AB. | |
| CASING THICKNESS: .25 | RECORDED BY : R. THOMAS | |
| BIT SIZE : | BOREHOLE FLUID : AIR | FILE : ORIGINAL |
| MAGNETIC DECL. : 23 | RM : | TYPE : 9055A |
| MATRIX DENSITY : | RM TEMPERATURE : | LOG : 3 |
| FLUID DENSITY : 1.1 | MATRIX DELTA T : | PLOT : PINE 4 |
| NEUTRON MATRIX : 2.65 | FLUID DELTA T : | THRESH: 10000 |
| REMARKS : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96079C
 LOCATION/FIELD : MILLON CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP :

OTHER SERVICES:

DATE : 07/31/96
 DEPTH DRILLER : 70
 LOG BOTTOM : 71.38
 LOG TOP : 0.00

PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

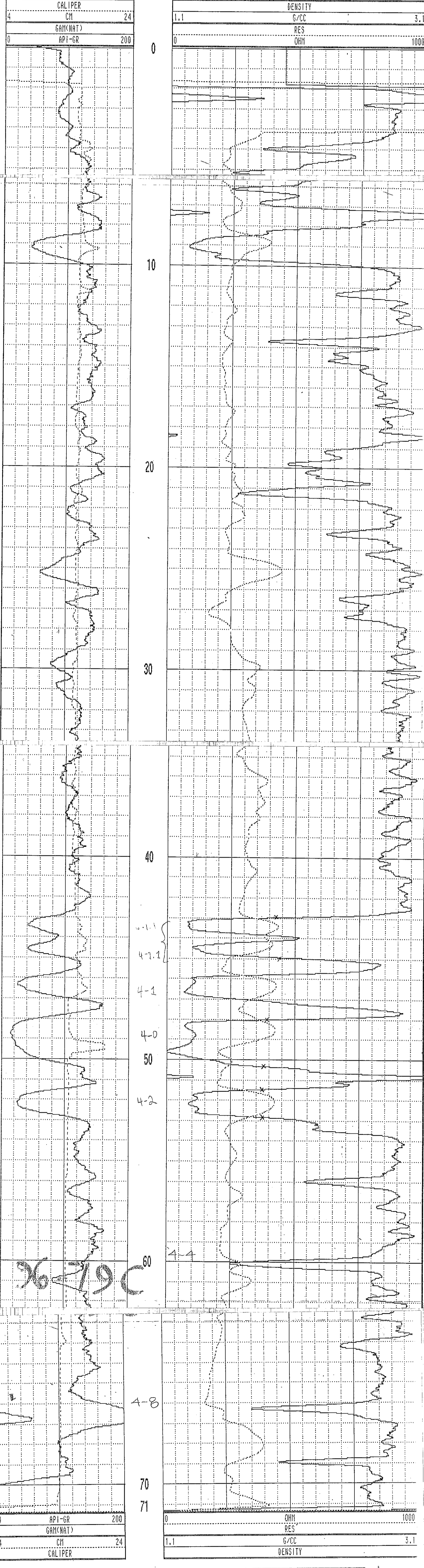
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : PROCESSED
 TYPE : 9033AA
 LOG : 6
 PLOT : PINE 7
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96079C 07/31/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

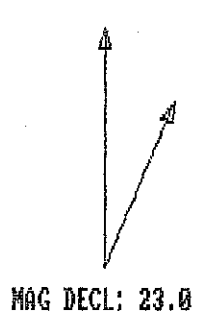
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 206.5 | 0.5 | 196.5 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 215.5 | 0.1 | 258.8 |
| 4.0 | 4.00 | -0.01 | -0.01 | 0.0 | 223.6 | 0.3 | 233.9 |
| 5.0 | 5.00 | -0.02 | -0.01 | 0.0 | 210.3 | 1.2 | 181.8 |
| 6.0 | 6.00 | -0.03 | -0.02 | 0.0 | 213.0 | 0.7 | 236.0 |
| 7.0 | 7.00 | -0.05 | -0.03 | 0.1 | 211.9 | 1.5 | 238.4 |
| 8.0 | 8.00 | -0.06 | -0.04 | 0.1 | 214.1 | 1.3 | 235.7 |
| 9.0 | 9.00 | -0.08 | -0.06 | 0.1 | 216.6 | 1.5 | 225.3 |
| 10.0 | 10.00 | -0.10 | -0.08 | 0.1 | 218.6 | 1.6 | 236.8 |
| 11.0 | 11.00 | -0.12 | -0.11 | 0.2 | 223.3 | 2.1 | 248.6 |
| 12.0 | 12.00 | -0.13 | -0.15 | 0.2 | 229.1 | 2.6 | 260.6 |
| 13.0 | 13.00 | -0.13 | -0.20 | 0.2 | 236.3 | 3.1 | 265.6 |
| 14.0 | 13.99 | -0.14 | -0.26 | 0.3 | 241.6 | 3.3 | 266.6 |
| 15.0 | 14.99 | -0.14 | -0.32 | 0.3 | 246.4 | 3.7 | 268.2 |
| 16.0 | 15.99 | -0.14 | -0.38 | 0.4 | 249.9 | 3.4 | 276.1 |
| 17.0 | 16.99 | -0.14 | -0.45 | 0.5 | 252.5 | 3.6 | 266.8 |
| 18.0 | 17.99 | -0.14 | -0.51 | 0.5 | 254.8 | 3.6 | 256.8 |
| 19.0 | 18.98 | -0.14 | -0.57 | 0.6 | 255.8 | 2.9 | 240.9 |
| 20.0 | 19.98 | -0.15 | -0.64 | 0.7 | 256.8 | 4.1 | 274.7 |
| 21.0 | 20.98 | -0.15 | -0.70 | 0.7 | 257.6 | 4.1 | 256.9 |
| 22.0 | 21.98 | -0.16 | -0.77 | 0.8 | 258.4 | 3.5 | 276.6 |
| 23.0 | 22.97 | -0.17 | -0.85 | 0.9 | 258.9 | 4.5 | 274.1 |
| 24.0 | 23.97 | -0.17 | -0.93 | 0.9 | 259.6 | 4.7 | 266.3 |
| 25.0 | 24.97 | -0.17 | -1.01 | 1.0 | 260.7 | 5.3 | 277.6 |
| 26.0 | 25.96 | -0.17 | -1.10 | 1.1 | 261.1 | 5.3 | 263.2 |
| 27.0 | 26.96 | -0.18 | -1.19 | 1.2 | 261.4 | 5.8 | 271.6 |
| 28.0 | 27.95 | -0.19 | -1.30 | 1.3 | 261.7 | 6.0 | 257.5 |
| 29.0 | 28.95 | -0.21 | -1.41 | 1.4 | 261.5 | 7.2 | 257.5 |
| 29.6 | 29.50 | -0.23 | -1.48 | 1.5 | 261.2 | 8.2 | 259.8 |

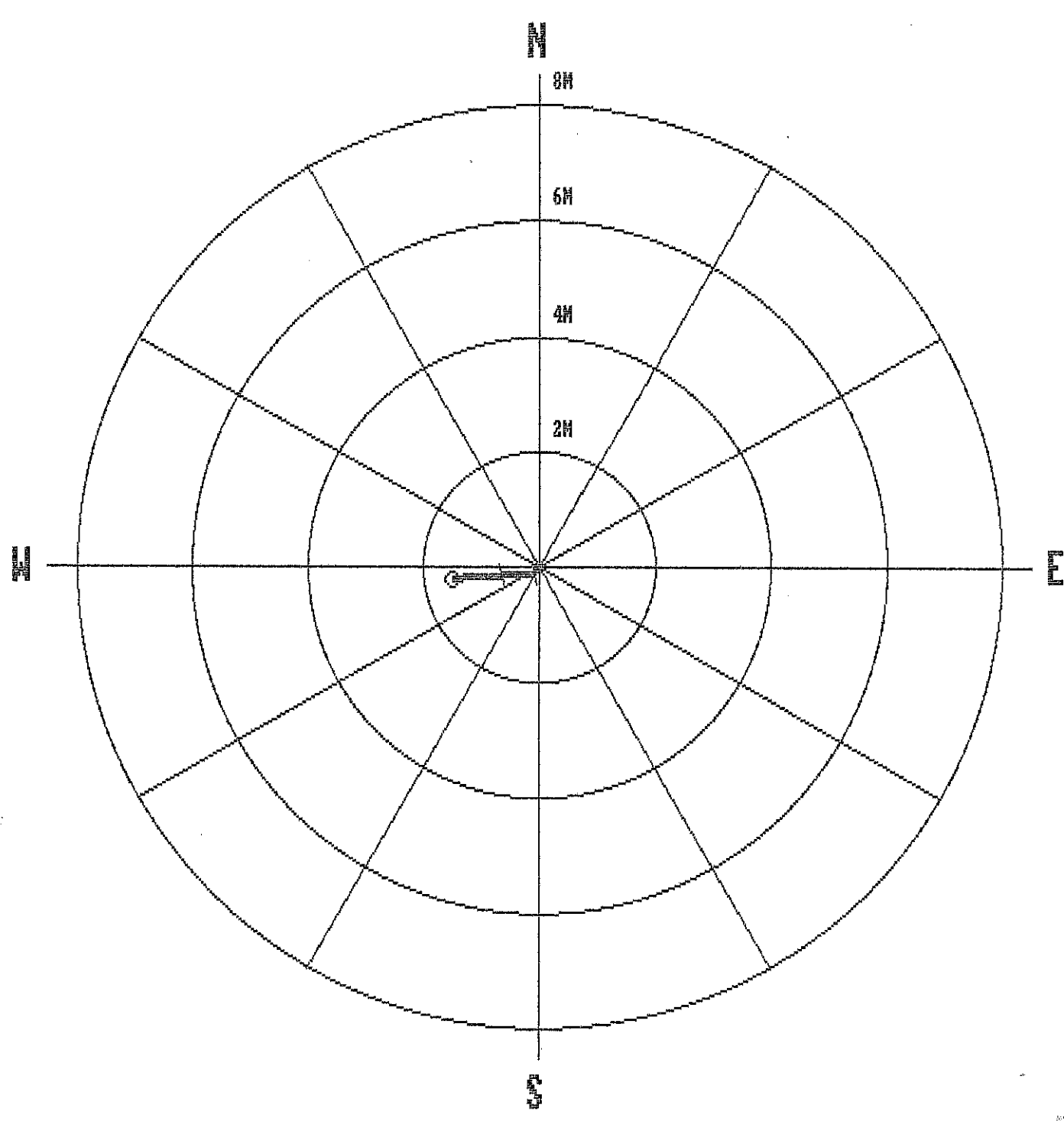
MRH 96-080

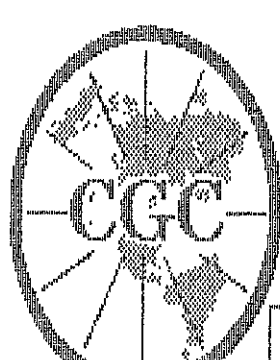
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96080
 DATE OF LOG: 07/25/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.50 M
 AZIMUTH: 261.2
 DISTANCE: 1.5 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96080
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

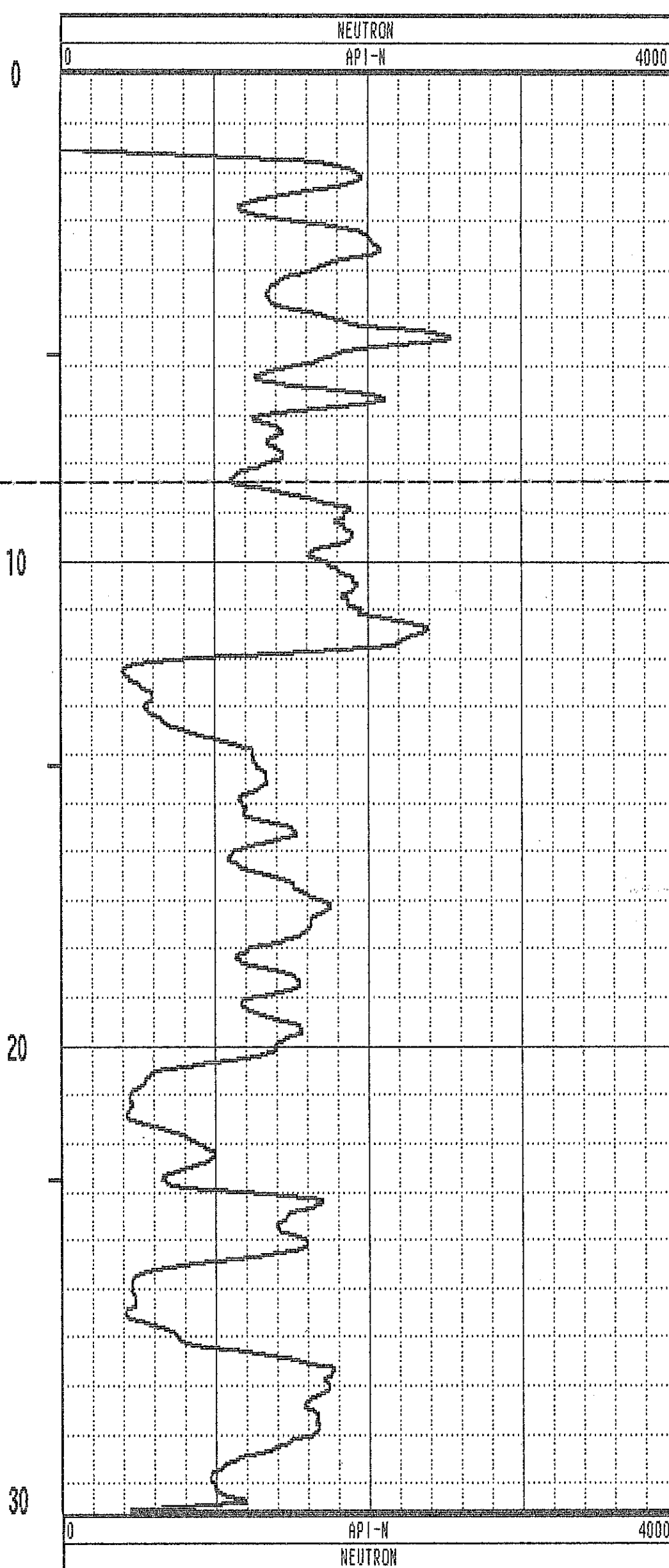
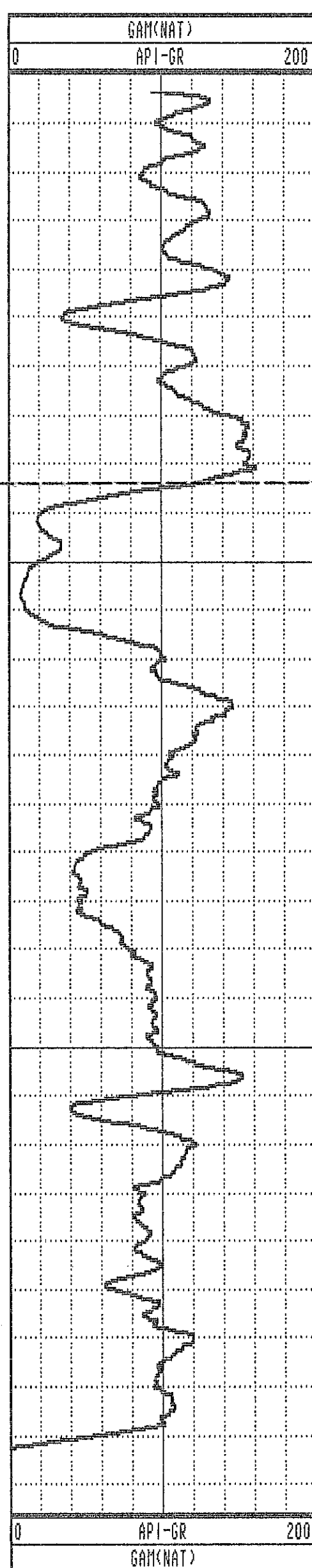
OTHER SERVICES:

DATE : 07/25/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.61 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.38 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

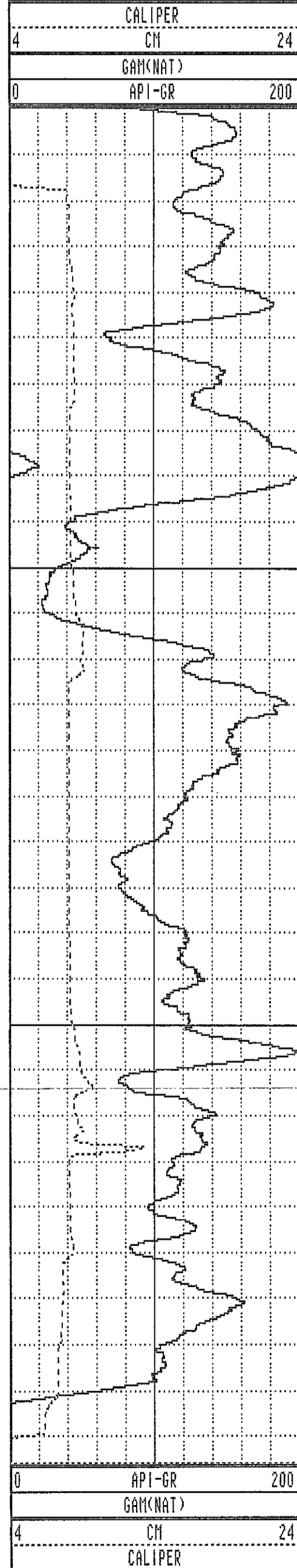
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96080 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : | RANGE : |
| DATE | : 07/25/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.62 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 6 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0

Coal

1-3

1-1

10

1-0

1-0FB

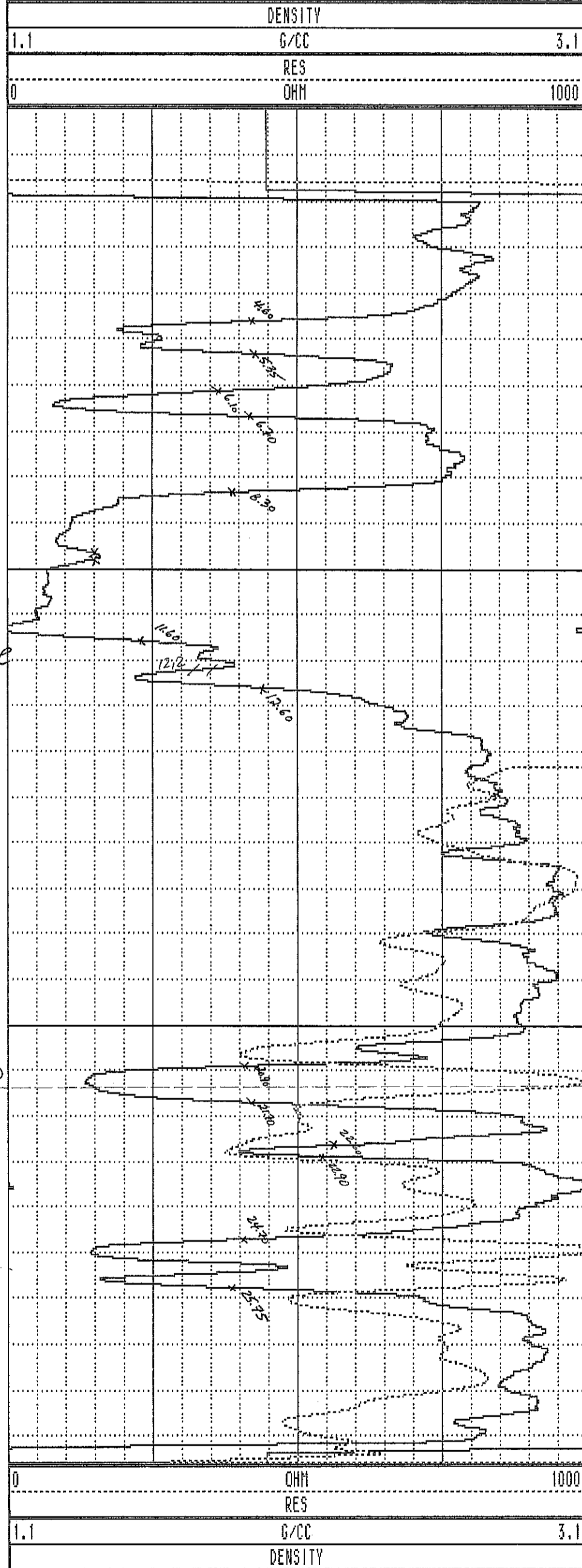
20

2-0

CS

2-2

30



WRH-96080 07/25/96 958

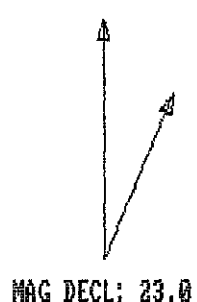
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYVH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

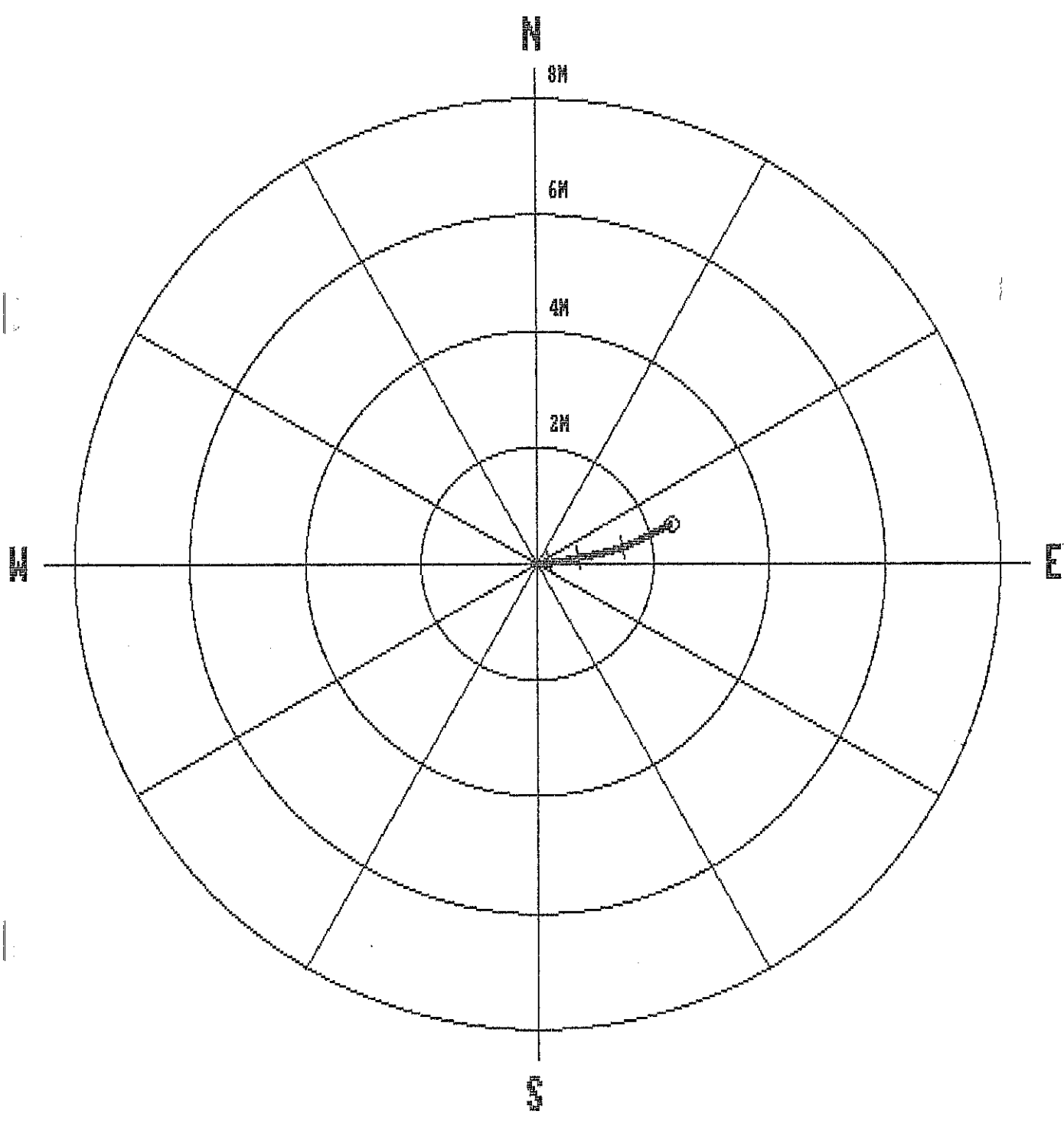
PLAN VIEW

COMPU-LOG DEVIATION

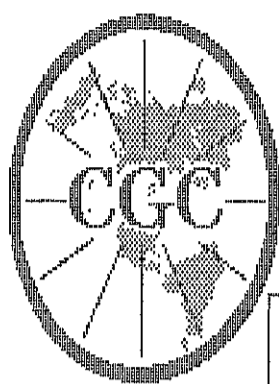
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96001
 DATE OF LOG: 07/26/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 19.50 M
 AZIMUTH: 73.7
 DISTANCE: 2.4 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.01 | 0.0 | 98.2 | 2.3 | 88.3 |
| 3.0 | 3.00 | -0.00 | 0.07 | 0.1 | 90.4 | 3.4 | 99.7 |
| 4.0 | 4.00 | 0.01 | 0.14 | 0.1 | 87.0 | 4.3 | 82.1 |
| 5.0 | 4.99 | 0.02 | 0.22 | 0.2 | 85.1 | 4.8 | 80.4 |
| 6.0 | 5.99 | 0.03 | 0.30 | 0.3 | 84.7 | 5.2 | 79.5 |
| 7.0 | 6.98 | 0.05 | 0.39 | 0.4 | 83.4 | 5.2 | 82.3 |
| 8.0 | 7.98 | 0.06 | 0.49 | 0.5 | 83.4 | 5.5 | 79.4 |
| 9.0 | 8.97 | 0.08 | 0.60 | 0.6 | 82.5 | 6.5 | 80.7 |
| 10.0 | 9.97 | 0.10 | 0.72 | 0.7 | 82.0 | 7.8 | 72.1 |
| 11.0 | 10.96 | 0.13 | 0.85 | 0.9 | 81.6 | 8.3 | 76.0 |
| 12.0 | 11.95 | 0.15 | 0.98 | 1.0 | 81.2 | 8.5 | 78.7 |
| 13.0 | 12.94 | 0.18 | 1.13 | 1.1 | 80.7 | 9.1 | 78.0 |
| 14.0 | 13.92 | 0.22 | 1.29 | 1.3 | 80.2 | 9.1 | 80.0 |
| 15.0 | 14.90 | 0.28 | 1.47 | 1.5 | 79.2 | 11.0 | 69.5 |
| 16.0 | 15.89 | 0.35 | 1.65 | 1.7 | 78.0 | 11.1 | 66.8 |
| 17.0 | 16.86 | 0.43 | 1.83 | 1.9 | 76.7 | 12.0 | 62.0 |
| 18.0 | 17.84 | 0.53 | 2.02 | 2.1 | 75.4 | 12.5 | 63.2 |
| 19.0 | 18.82 | 0.62 | 2.21 | 2.3 | 74.4 | 12.3 | 62.0 |
| 19.7 | 19.50 | 0.68 | 2.34 | 2.4 | 73.7 | 12.3 | 63.5 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : MRH-96081
LOCATION/FIELD : MILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

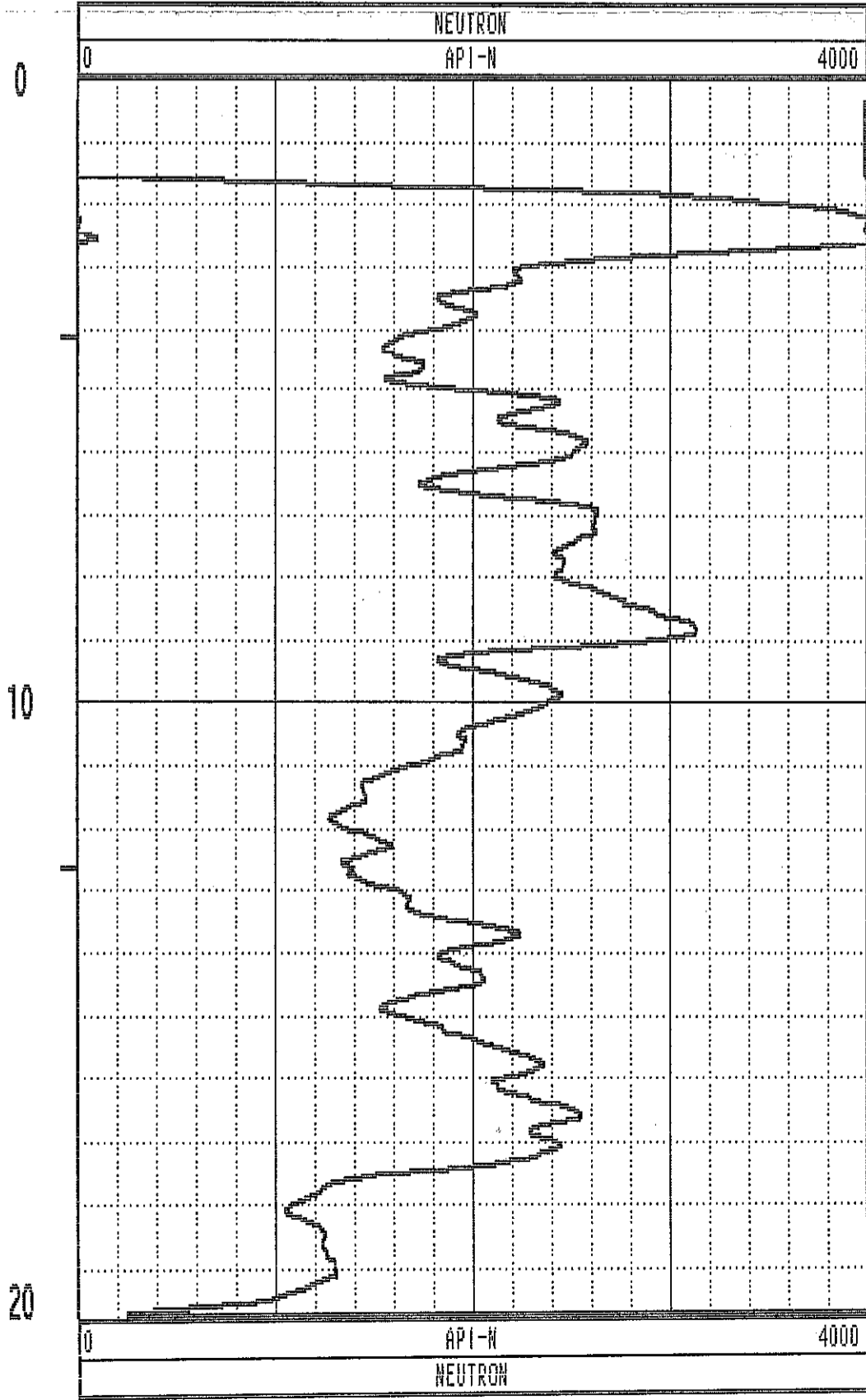
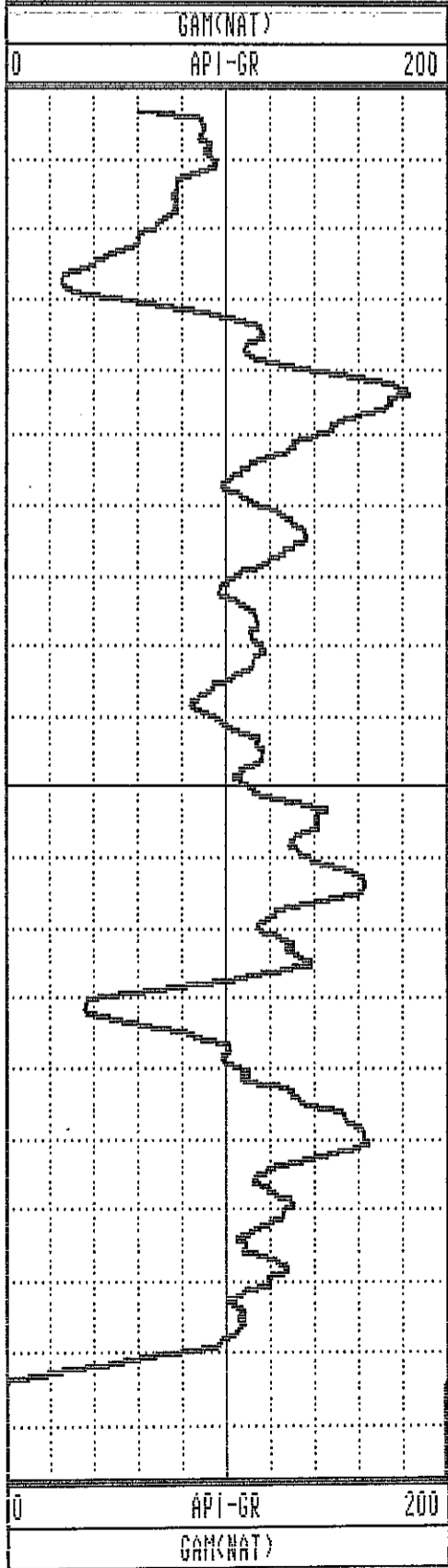
OTHER SERVICES:

DATE : 07/26/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 21 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 19.76 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.36 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 3
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

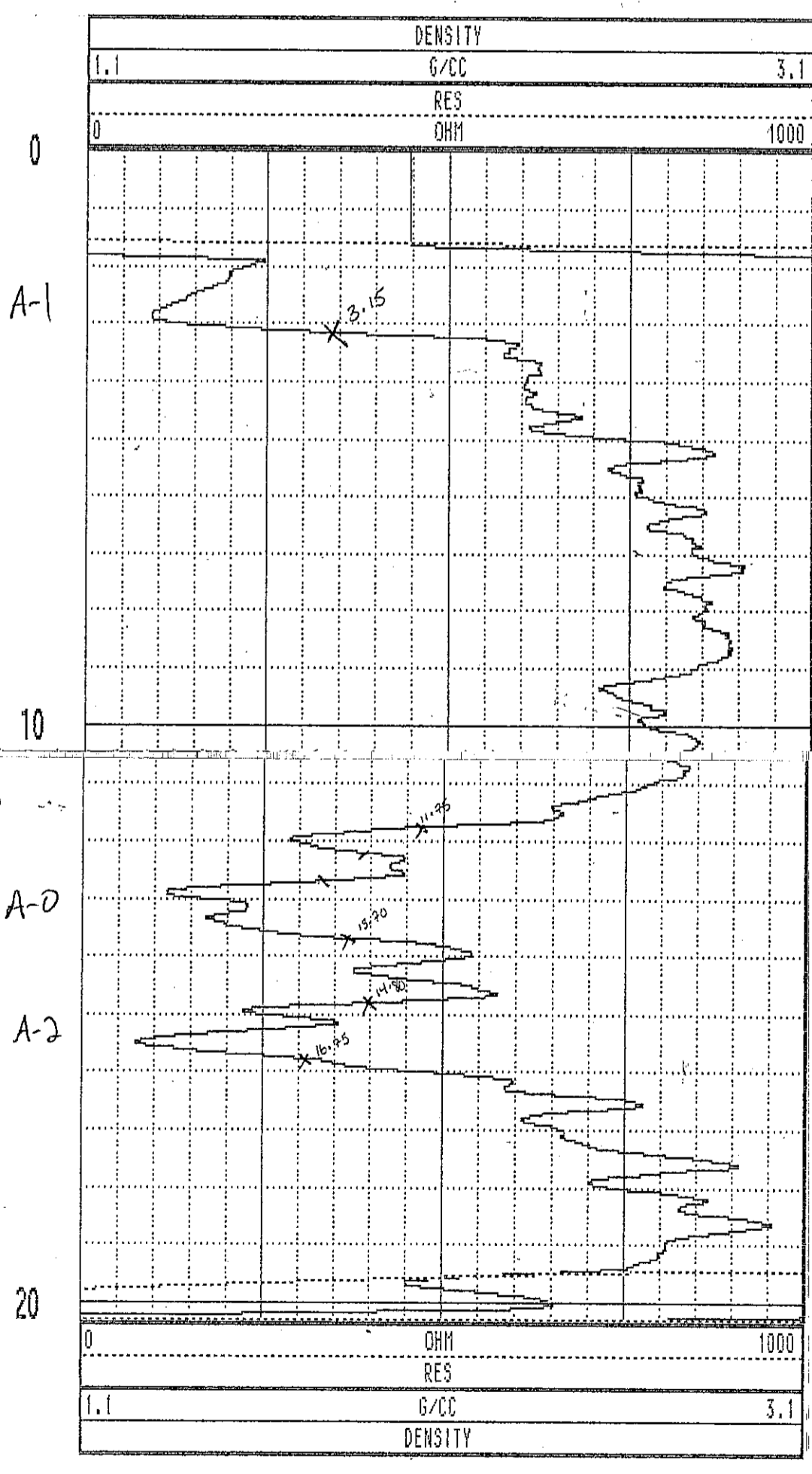
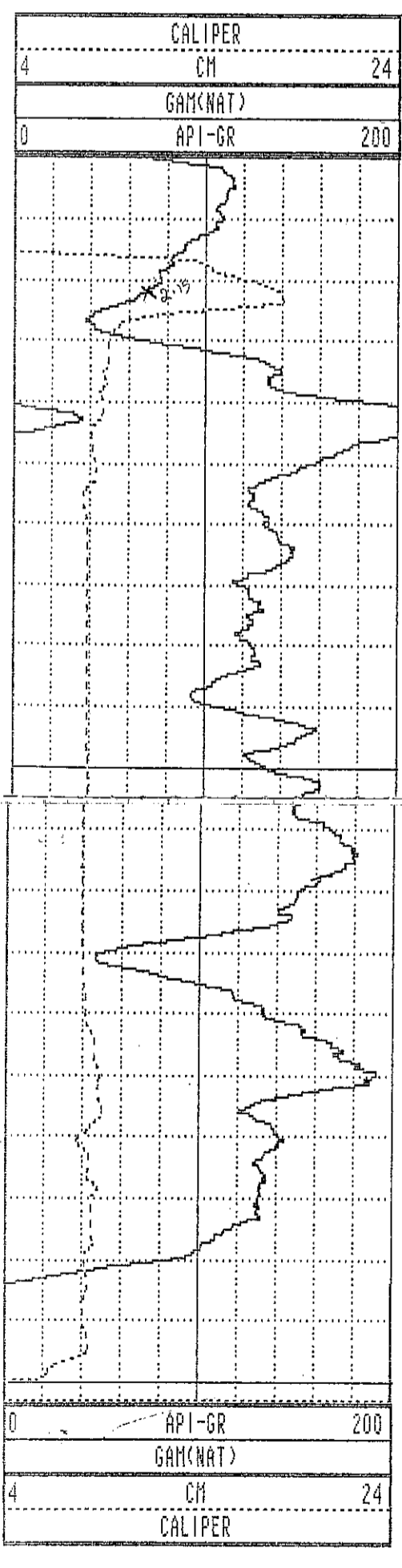
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96081 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 07/26/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 20.34 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 4 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 4 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96081 07/26/96 958

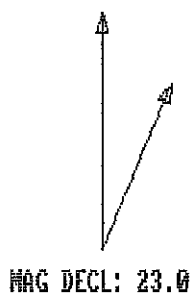
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 1.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

WRH-96082

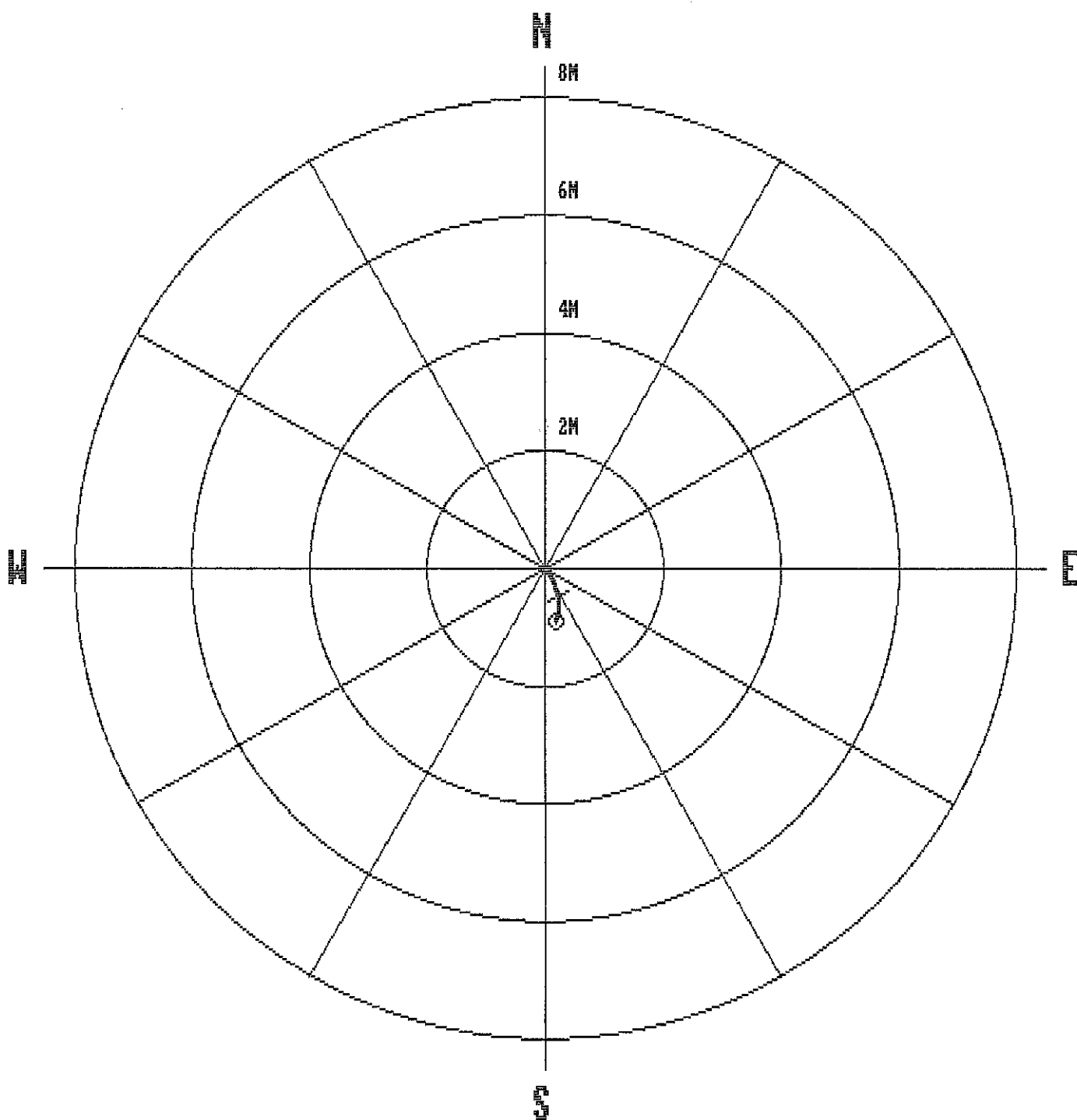
| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.01 | 0.0 | 116.7 | 2.0 | 119.7 |
| 3.0 | 3.00 | -0.03 | 0.04 | 0.1 | 124.2 | 2.5 | 139.4 |
| 4.0 | 4.00 | -0.07 | 0.07 | 0.1 | 132.4 | 4.4 | 181.4 |
| 5.0 | 5.00 | -0.11 | 0.10 | 0.1 | 140.0 | 3.4 | 158.8 |
| 6.0 | 5.99 | -0.17 | 0.12 | 0.2 | 144.9 | 4.1 | 153.3 |
| 7.0 | 6.99 | -0.23 | 0.15 | 0.3 | 147.1 | 3.8 | 168.1 |
| 8.0 | 7.99 | -0.30 | 0.18 | 0.4 | 149.2 | 4.3 | 152.7 |
| 9.0 | 8.99 | -0.38 | 0.21 | 0.4 | 151.4 | 4.9 | 167.5 |
| 10.0 | 9.98 | -0.47 | 0.23 | 0.5 | 153.9 | 5.4 | 173.8 |
| 11.0 | 10.98 | -0.56 | 0.24 | 0.6 | 156.7 | 5.2 | 177.4 |
| 12.0 | 11.97 | -0.65 | 0.25 | 0.7 | 159.4 | 4.6 | 175.3 |
| 13.0 | 12.97 | -0.74 | 0.24 | 0.8 | 161.9 | 5.0 | 189.0 |
| 14.0 | 13.96 | -0.83 | 0.22 | 0.9 | 165.2 | 5.7 | 200.1 |
| 14.7 | 14.68 | -0.90 | 0.20 | 0.9 | 167.6 | 6.1 | 193.0 |

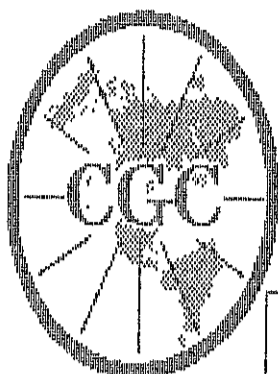
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96082
 DATE OF LOG: 07/26/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 14.68 M
 AZIMUTH: 167.6
 DISTANCE: 0.9 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

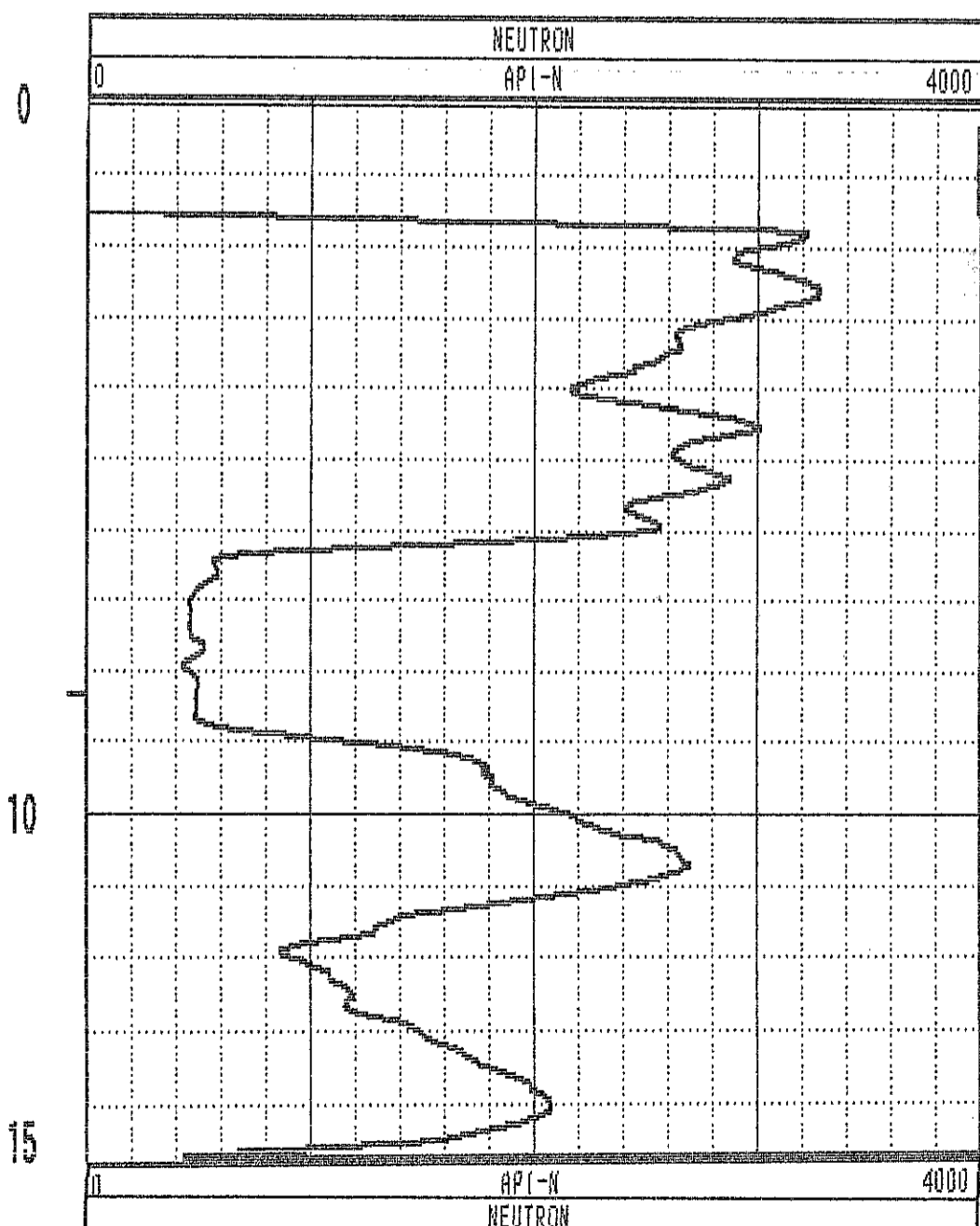
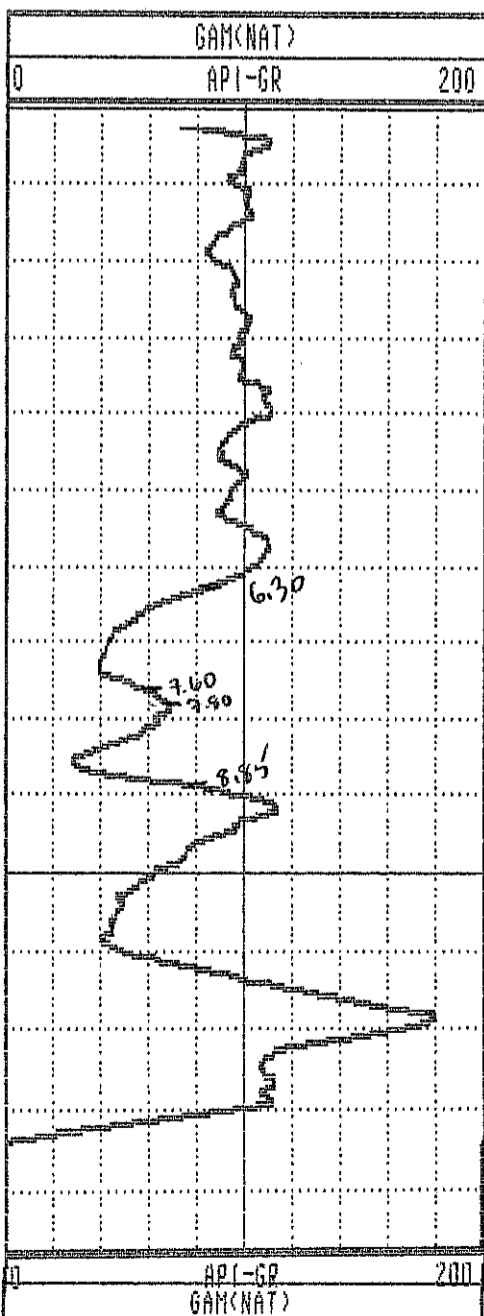
COMPANY : PINE VALLEY COAL
 WELL : WRH-96082
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/26/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 11 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 14.79 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.30 DRL MEASURED FROM: GL :
 CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

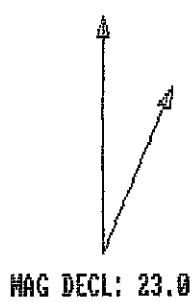
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



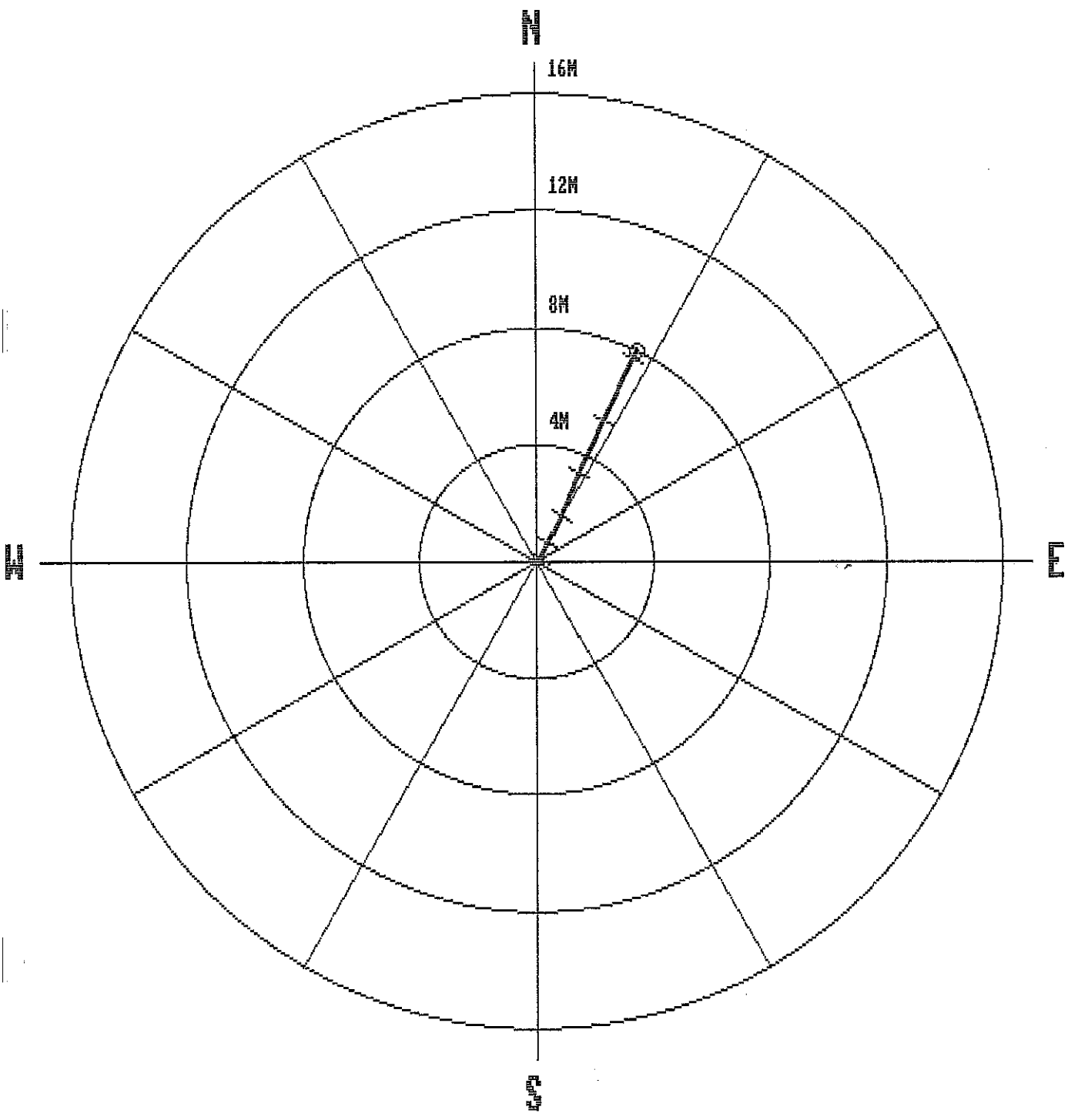
PLAN VIEW

COMPU-LOG DEVIATION

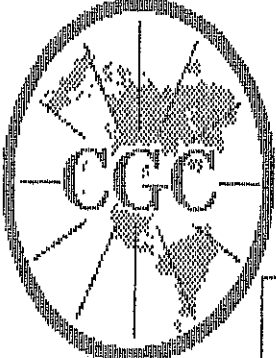
CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: WRH-96004
 DATE OF LOG: 07/27/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 40.54 M
 AZIMUTH: 25.8
 DISTANCE: 8.0 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 142.8 | 0.6 | 157.0 |
| 3.0 | 3.00 | -0.01 | 0.01 | 0.0 | 128.1 | 0.8 | 119.5 |
| 4.0 | 4.00 | -0.02 | 0.02 | 0.0 | 123.7 | 0.7 | 113.8 |
| 5.0 | 5.00 | -0.02 | 0.03 | 0.0 | 117.0 | 0.3 | 294.3 |
| 6.0 | 6.00 | -0.01 | 0.04 | 0.0 | 107.8 | 0.8 | 91.8 |
| 7.0 | 7.00 | -0.01 | 0.05 | 0.1 | 104.3 | 0.8 | 95.1 |
| 8.0 | 8.00 | -0.01 | 0.06 | 0.1 | 102.5 | 0.6 | 101.0 |
| 9.0 | 9.00 | -0.01 | 0.07 | 0.1 | 101.0 | 0.6 | 85.4 |
| 10.0 | 10.00 | -0.01 | 0.08 | 0.1 | 98.5 | 0.5 | 64.4 |
| 11.0 | 11.00 | -0.01 | 0.09 | 0.1 | 93.9 | 0.9 | 47.2 |
| 12.0 | 12.00 | 0.01 | 0.10 | 0.1 | 85.1 | 1.5 | 19.6 |
| 13.0 | 13.00 | 0.04 | 0.12 | 0.1 | 73.5 | 1.9 | 28.9 |
| 14.0 | 14.00 | 0.07 | 0.14 | 0.2 | 61.9 | 3.0 | 29.5 |
| 15.0 | 15.00 | 0.13 | 0.17 | 0.2 | 52.3 | 4.3 | 23.3 |
| 16.0 | 15.99 | 0.21 | 0.20 | 0.3 | 44.3 | 5.2 | 22.3 |
| 17.0 | 16.99 | 0.30 | 0.24 | 0.4 | 39.5 | 6.4 | 24.6 |
| 18.0 | 17.98 | 0.40 | 0.29 | 0.5 | 36.1 | 7.4 | 25.8 |
| 19.0 | 18.97 | 0.52 | 0.35 | 0.6 | 33.9 | 7.5 | 27.3 |
| 20.0 | 19.96 | 0.65 | 0.42 | 0.8 | 32.7 | 8.5 | 27.1 |
| 21.0 | 20.95 | 0.80 | 0.50 | 0.9 | 31.9 | 10.2 | 27.3 |
| 22.0 | 21.93 | 0.96 | 0.59 | 1.1 | 31.4 | 11.1 | 29.6 |
| 23.0 | 22.91 | 1.14 | 0.68 | 1.3 | 30.9 | 12.2 | 27.1 |
| 24.0 | 23.89 | 1.33 | 0.78 | 1.5 | 30.4 | 12.6 | 25.9 |
| 25.0 | 24.86 | 1.54 | 0.88 | 1.8 | 29.7 | 13.4 | 24.9 |
| 26.0 | 25.82 | 1.77 | 0.98 | 2.0 | 29.0 | 15.3 | 23.2 |
| 27.0 | 26.79 | 2.03 | 1.09 | 2.3 | 28.2 | 17.1 | 22.6 |
| 28.0 | 27.74 | 2.30 | 1.20 | 2.6 | 27.5 | 17.5 | 20.1 |
| 29.0 | 28.69 | 2.59 | 1.32 | 2.9 | 26.9 | 18.8 | 22.0 |
| 30.0 | 29.64 | 2.89 | 1.44 | 3.2 | 26.5 | 19.7 | 22.4 |
| 31.0 | 30.58 | 3.21 | 1.57 | 3.6 | 26.1 | 20.5 | 23.9 |
| 32.0 | 31.51 | 3.53 | 1.72 | 3.9 | 26.0 | 21.1 | 24.9 |
| 33.0 | 32.44 | 3.86 | 1.87 | 4.3 | 25.9 | 22.4 | 27.4 |
| 34.0 | 33.37 | 4.20 | 2.04 | 4.7 | 25.9 | 22.6 | 24.5 |
| 35.0 | 34.29 | 4.56 | 2.20 | 5.1 | 25.8 | 23.4 | 25.4 |
| 36.0 | 35.20 | 4.92 | 2.37 | 5.5 | 25.7 | 23.8 | 24.8 |
| 37.0 | 36.12 | 5.29 | 2.55 | 5.9 | 25.7 | 24.5 | 25.8 |
| 38.0 | 37.02 | 5.67 | 2.73 | 6.3 | 25.7 | 25.1 | 24.3 |
| 39.0 | 37.93 | 6.05 | 2.91 | 6.7 | 25.7 | 24.8 | 24.8 |
| 40.0 | 38.83 | 6.45 | 3.10 | 7.2 | 25.7 | 26.8 | 27.2 |
| 41.0 | 39.72 | 6.85 | 3.30 | 7.6 | 25.7 | 27.1 | 26.7 |
| 41.9 | 40.54 | 7.23 | 3.49 | 8.0 | 25.8 | 27.6 | 26.6 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96084
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

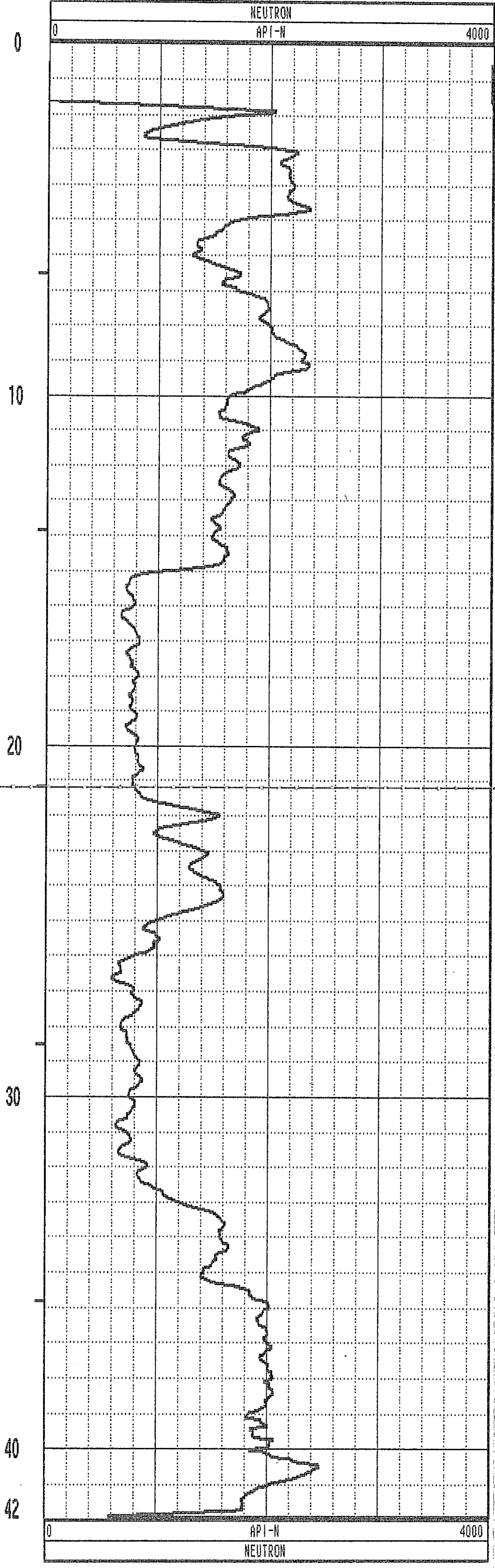
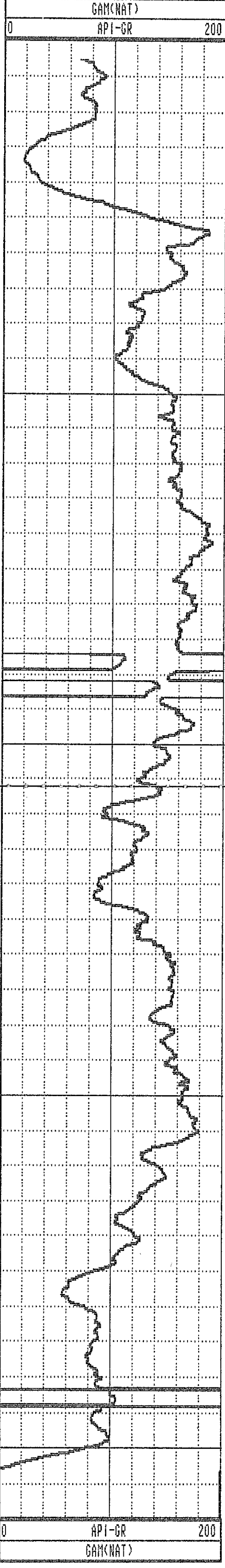
OTHER SERVICES:

DATE : 07/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 42 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 41.97 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.56 DRL MEASURED FROM: GL :

CASING DRILLER : 4 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

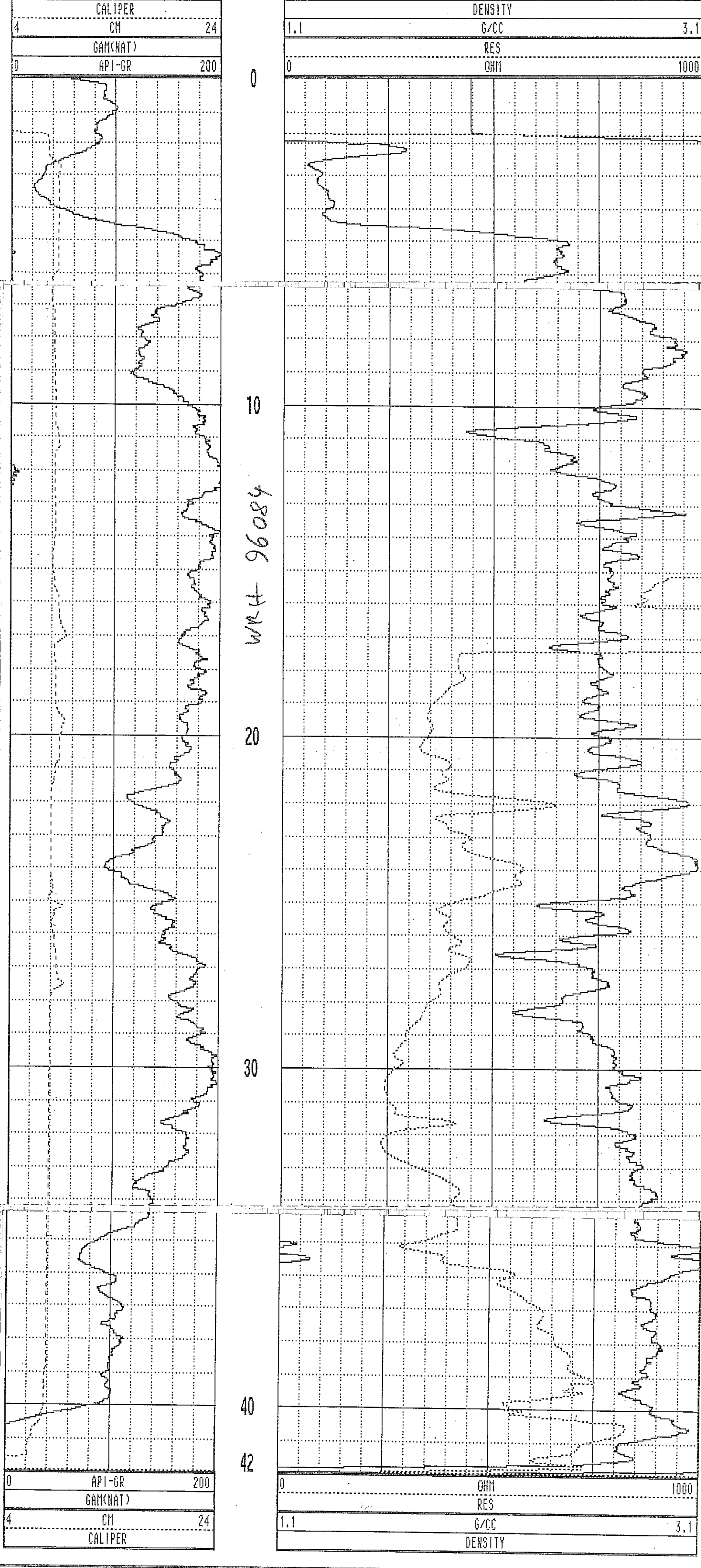


GAMMA-RES-DENSITY

| | |
|---|-----------------|
| COMPANY : PINE VALLEY COAL WELL : WRH-96084 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE : | OTHER SERVICES: |
| DATE : 07/27/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 42 ELEV. PERM. DATUM: KB : LOG BOTTOM : 41.98 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL : | |
| CASING DRILLER : 4 LOGGING UNIT : 9612 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS | |
| BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 5 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96084



WRH-96084 07/27/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2386.000 CPS | 33.000 CM |

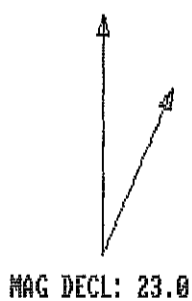
| | | | | | | | |
|------|-------|-------|-------|------|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.95 | 0.15 | 0.06 | 0.2 | 23.0 | 31.5 | 48.9 |
| 3.0 | 2.81 | 0.48 | 0.46 | 0.7 | 44.1 | 30.9 | 50.9 |
| 4.0 | 3.66 | 0.80 | 0.86 | 1.2 | 47.3 | 30.8 | 51.1 |
| 5.0 | 4.52 | 1.12 | 1.26 | 1.7 | 48.4 | 31.4 | 49.2 |
| 6.0 | 5.38 | 1.46 | 1.66 | 2.2 | 48.7 | 31.2 | 50.8 |
| 7.0 | 6.23 | 1.78 | 2.06 | 2.7 | 49.1 | 31.3 | 51.0 |
| 8.0 | 7.08 | 2.13 | 2.46 | 3.2 | 49.1 | 32.1 | 48.6 |
| 9.0 | 7.93 | 2.48 | 2.85 | 3.8 | 48.9 | 32.2 | 45.9 |
| 10.0 | 8.78 | 2.82 | 3.25 | 4.3 | 49.0 | 32.7 | 53.5 |
| 11.0 | 9.62 | 3.17 | 3.65 | 4.8 | 49.0 | 32.0 | 51.0 |
| 12.0 | 10.46 | 3.53 | 4.06 | 5.4 | 49.0 | 32.5 | 51.7 |
| 13.0 | 11.30 | 3.89 | 4.47 | 5.9 | 49.0 | 33.6 | 49.3 |
| 14.0 | 12.13 | 4.26 | 4.89 | 6.5 | 48.9 | 34.2 | 50.8 |
| 15.0 | 12.96 | 4.64 | 5.31 | 7.0 | 48.9 | 35.2 | 48.6 |
| 16.0 | 13.77 | 5.03 | 5.73 | 7.6 | 48.7 | 35.5 | 49.0 |
| 17.0 | 14.59 | 5.41 | 6.17 | 8.2 | 48.7 | 35.7 | 49.2 |
| 18.0 | 15.40 | 5.80 | 6.59 | 8.8 | 48.6 | 35.9 | 48.4 |
| 19.0 | 16.21 | 6.20 | 7.02 | 9.4 | 48.5 | 35.9 | 47.6 |
| 20.0 | 17.02 | 6.59 | 7.46 | 10.0 | 48.5 | 36.2 | 47.7 |
| 21.0 | 17.83 | 6.98 | 7.90 | 10.5 | 48.6 | 35.5 | 47.1 |
| 22.0 | 18.64 | 7.35 | 8.35 | 11.1 | 48.6 | 35.5 | 58.7 |
| 23.0 | 19.45 | 7.75 | 8.79 | 11.7 | 48.6 | 36.0 | 48.0 |
| 24.0 | 20.26 | 8.14 | 9.23 | 12.3 | 48.6 | 35.9 | 48.1 |
| 25.0 | 21.07 | 8.53 | 9.66 | 12.9 | 48.5 | 35.9 | 46.2 |
| 26.0 | 21.88 | 8.93 | 10.09 | 13.5 | 48.5 | 35.7 | 49.7 |
| 27.0 | 22.68 | 9.32 | 10.53 | 14.1 | 48.5 | 36.4 | 46.8 |
| 28.0 | 23.49 | 9.74 | 10.96 | 14.7 | 48.4 | 38.5 | 19.2 |
| 29.0 | 24.28 | 10.15 | 11.39 | 15.3 | 48.3 | 36.8 | 32.2 |
| 30.0 | 25.07 | 10.60 | 11.81 | 15.9 | 48.1 | 37.7 | 42.3 |
| 31.0 | 25.86 | 11.02 | 12.25 | 16.5 | 48.0 | 38.5 | 49.8 |
| 32.0 | 26.64 | 11.49 | 12.66 | 17.1 | 47.8 | 38.7 | 19.0 |
| 33.0 | 27.42 | 11.95 | 13.06 | 17.7 | 47.5 | 39.1 | 39.0 |
| 34.0 | 28.20 | 12.40 | 13.50 | 18.3 | 47.4 | 38.7 | 47.9 |
| 34.1 | 28.29 | 12.46 | 13.55 | 18.4 | 47.4 | 39.6 | 46.5 |

WRH 96087

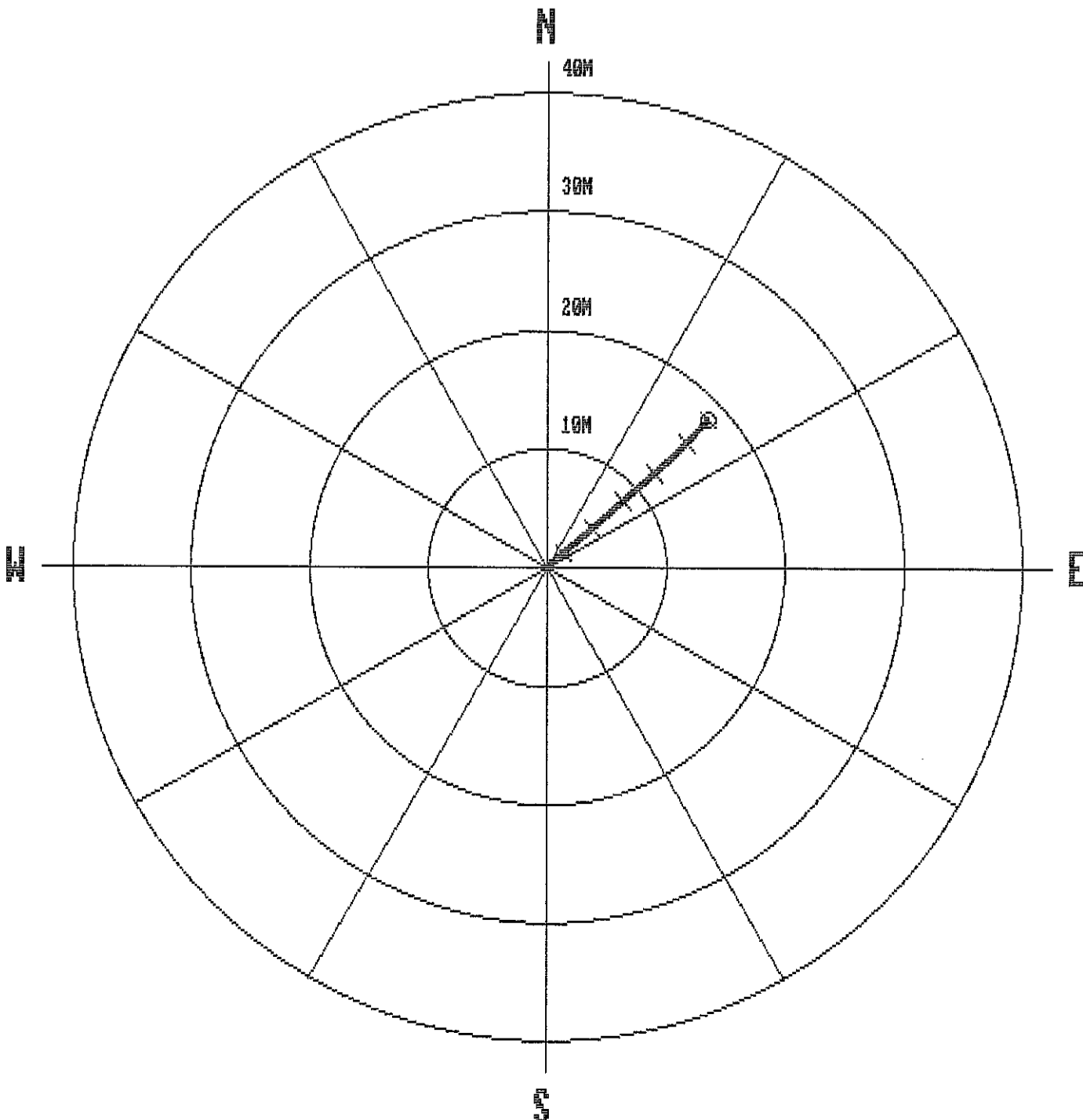
PLAN VIEW

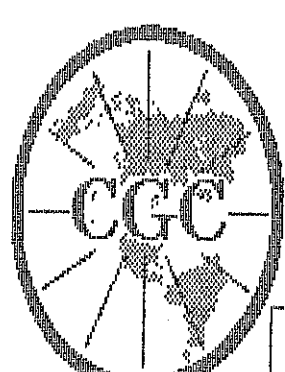
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96087
 DATE OF LOG: 07/30/96
 PROBE: 9055A 56



SCALE: 5 M/CM
 TRUE DEPTH: 28.29 M
 AZIMUTH: 47.4
 DISTANCE: 18.4 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96087
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/30/96
 DEPTH DRILLER : 43
 LOG BOTTOM : 34.19
 LOG TOP : 0.38

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : PLASTIC
 CASING THICKNESS: .25

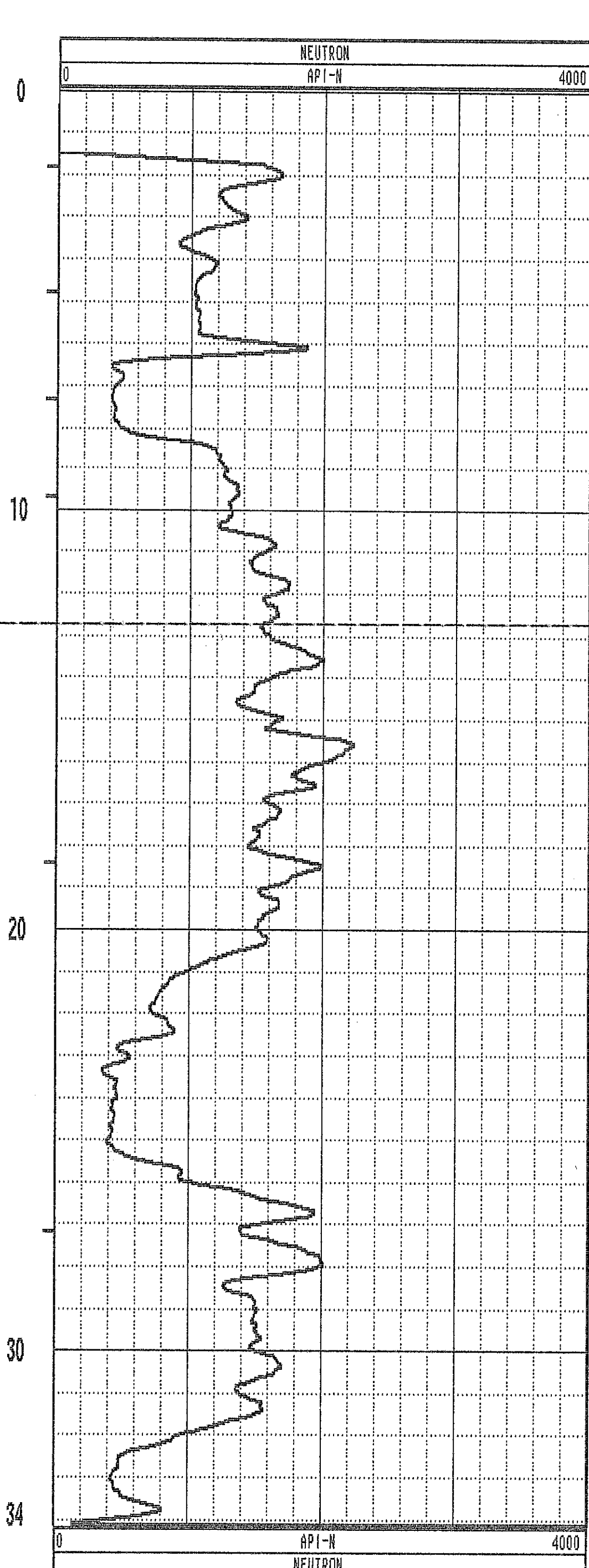
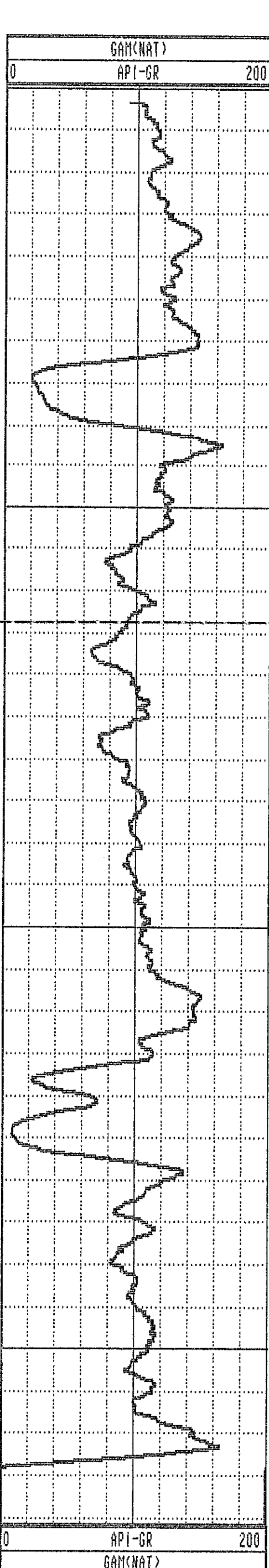
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 2
 PLOT : PINE 4
 THRESH: 10000

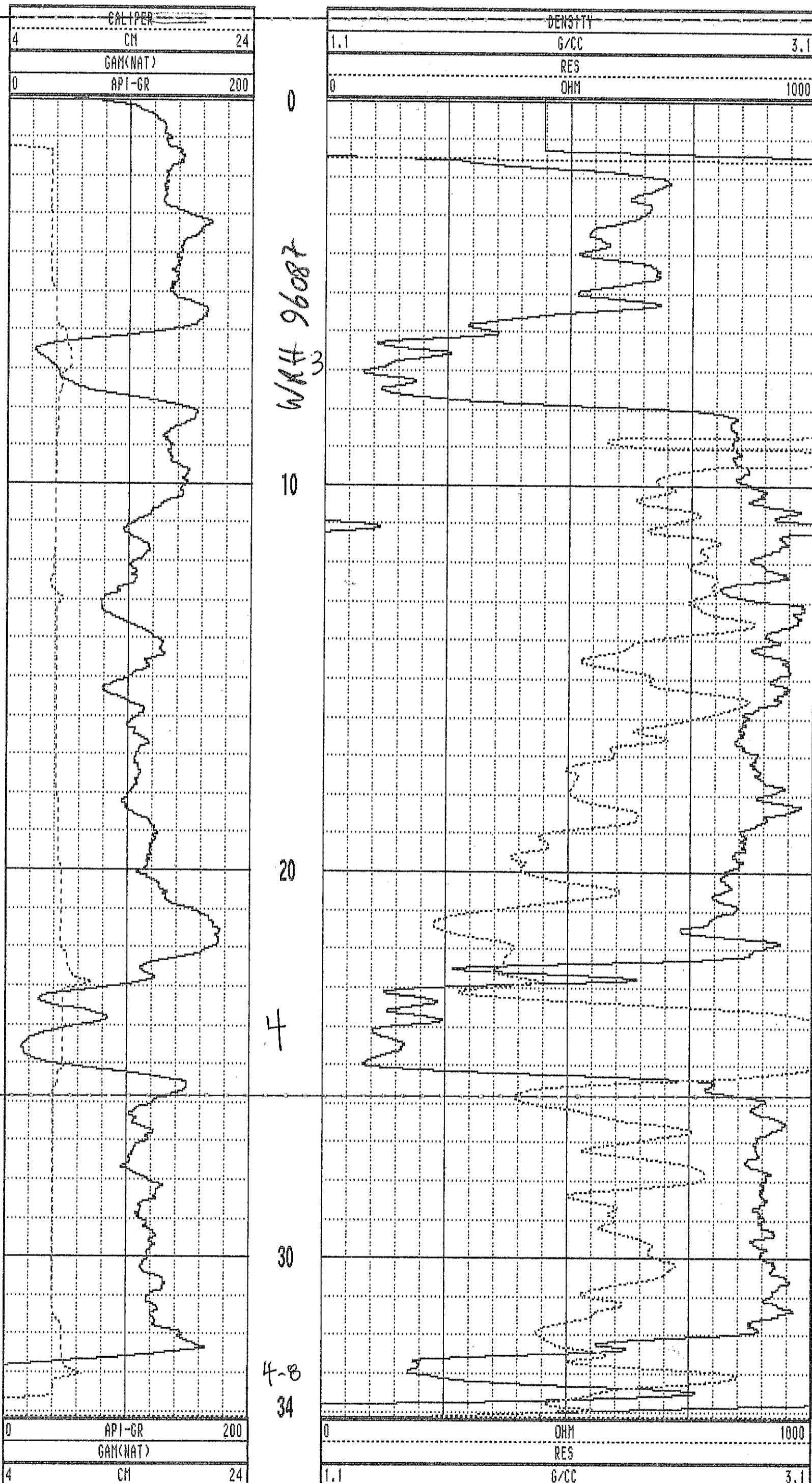
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96087 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | RANGE : |
| DATE | : 07/30/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 34 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 34.18 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : PLASTIC | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | FILE |
| | | TYPE |
| | | LOG |
| | | PLOT |
| | | THRESH |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96087 07/30/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

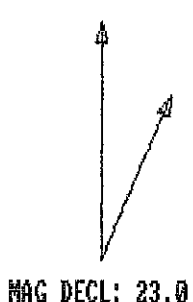
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|------|------|-----|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.93 | 0.16 | 0.16 | 0.2 | 45.6 | 37.7 | 42.2 |
| 3.0 | 2.73 | 0.58 | 0.57 | 0.8 | 44.7 | 39.3 | 38.4 |
| 4.0 | 3.54 | 0.99 | 0.99 | 1.4 | 45.1 | 36.3 | 46.3 |
| 5.0 | 4.34 | 1.42 | 1.42 | 2.0 | 44.9 | 38.4 | 38.6 |
| 6.0 | 5.13 | 1.85 | 1.84 | 2.6 | 44.9 | 37.9 | 42.6 |
| 7.0 | 5.92 | 2.30 | 2.27 | 3.2 | 44.6 | 37.9 | 44.9 |
| 8.0 | 6.70 | 2.74 | 2.69 | 3.8 | 44.5 | 39.0 | 41.3 |
| 9.0 | 7.48 | 3.21 | 3.11 | 4.5 | 44.1 | 37.1 | 45.3 |
| 10.0 | 8.26 | 3.68 | 3.52 | 5.1 | 43.7 | 39.0 | 41.1 |
| 11.0 | 9.02 | 4.17 | 3.93 | 5.7 | 43.3 | 39.7 | 37.0 |
| 12.0 | 9.79 | 4.66 | 4.35 | 6.4 | 43.0 | 40.4 | 46.8 |
| 13.0 | 10.55 | 5.13 | 4.80 | 7.0 | 43.1 | 41.6 | 39.1 |
| 14.0 | 11.31 | 5.59 | 5.22 | 7.6 | 43.0 | 40.5 | 43.9 |
| 15.0 | 12.07 | 6.08 | 5.64 | 8.3 | 42.8 | 41.3 | 38.4 |
| 16.0 | 12.83 | 6.54 | 6.10 | 8.9 | 43.0 | 37.6 | 62.4 |
| 17.0 | 13.58 | 7.01 | 6.55 | 9.6 | 43.0 | 41.0 | 44.2 |
| 17.0 | 13.58 | 7.01 | 6.55 | 9.6 | 43.0 | 41.0 | 44.2 |

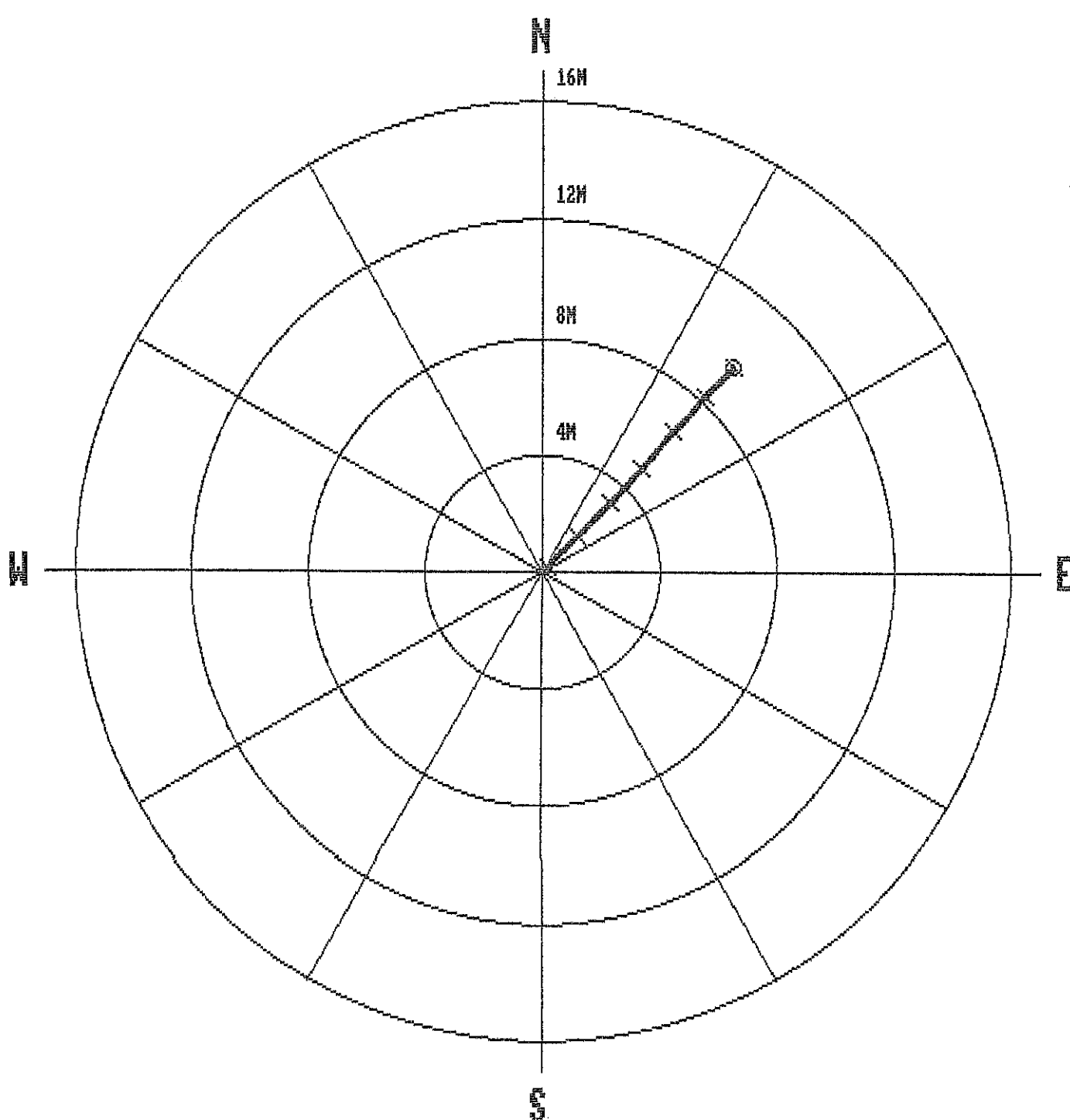
WRH 96088

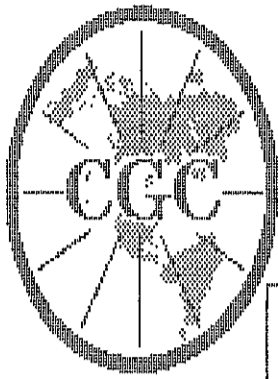
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: WRH-96088
 DATE OF LOG: 07/30/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 13.58 M
 AZIMUTH: 43.0
 DISTANCE: 9.6 M
 + = 2 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

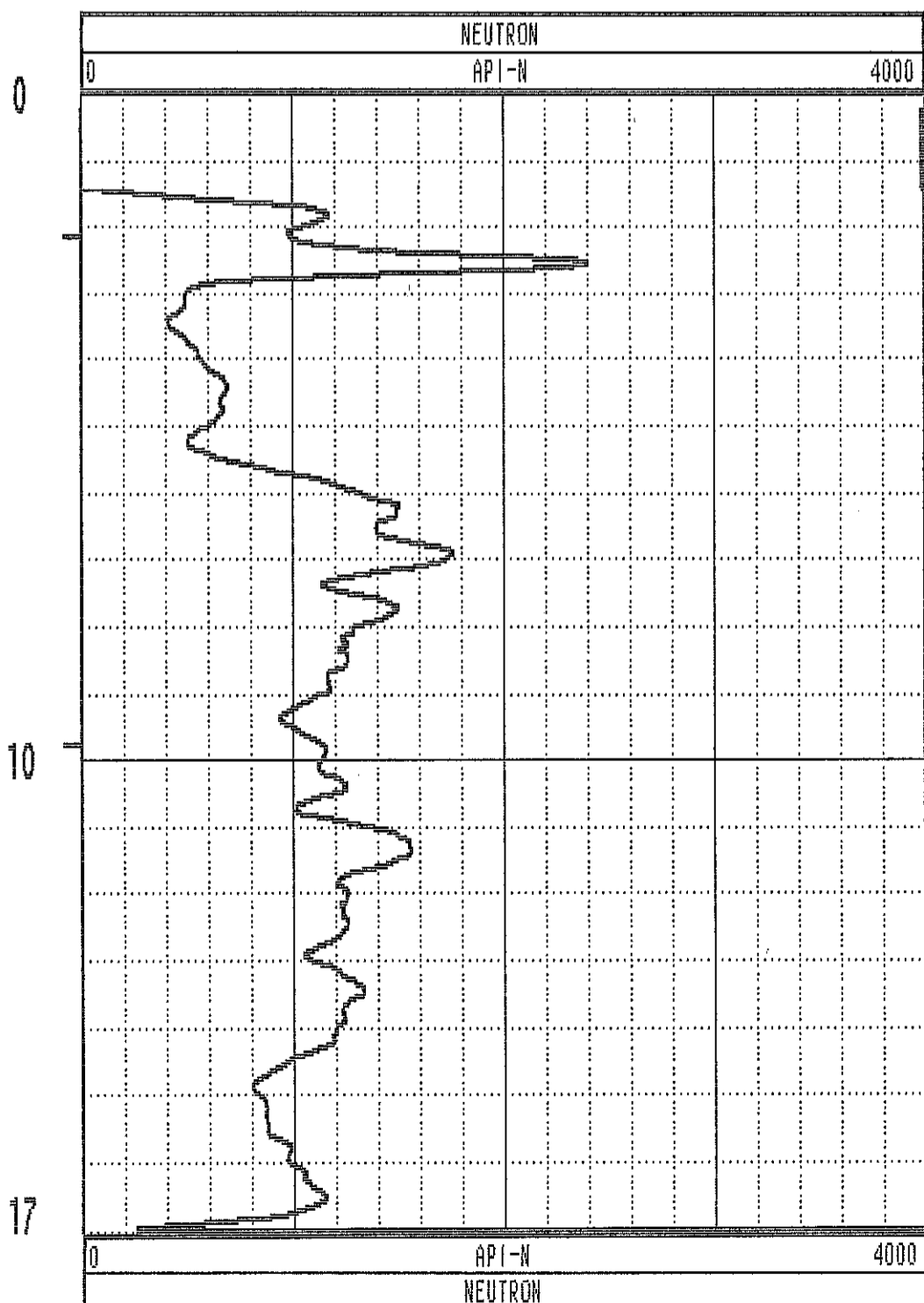
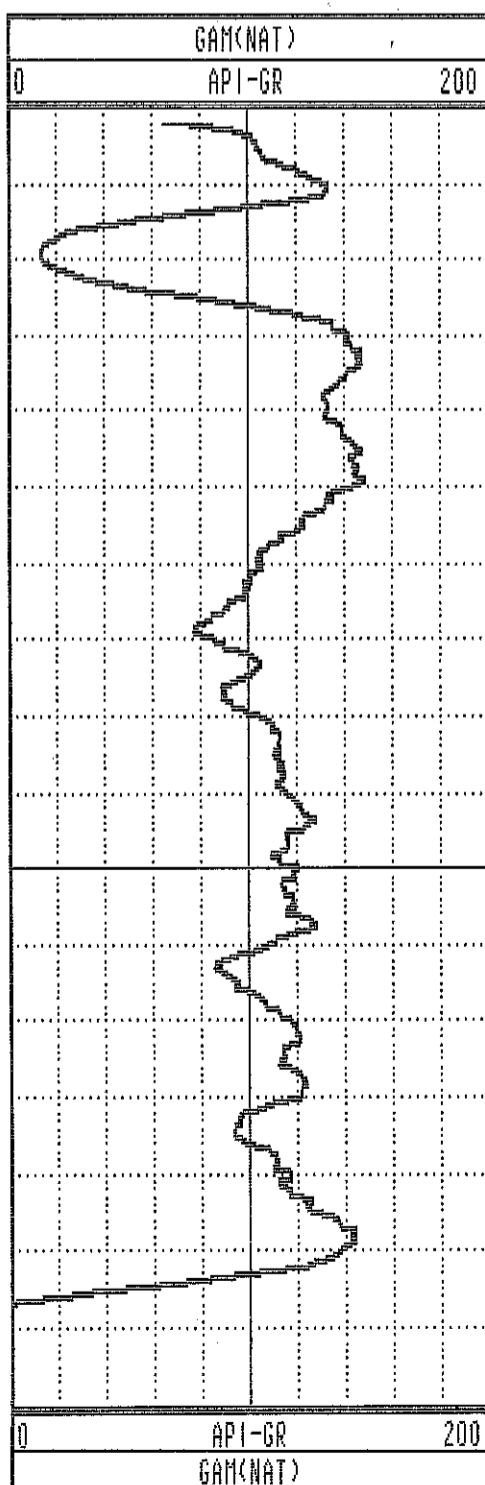
COMPANY : PINE VALLEY COAL
 WELL : WRH-96088
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/30/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 17.05 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.22 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : MRH-96088
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/30/96
 DEPTH DRILLER : 14
 LOG BOTTOM : 17.06
 LOG TOP : 0.00

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

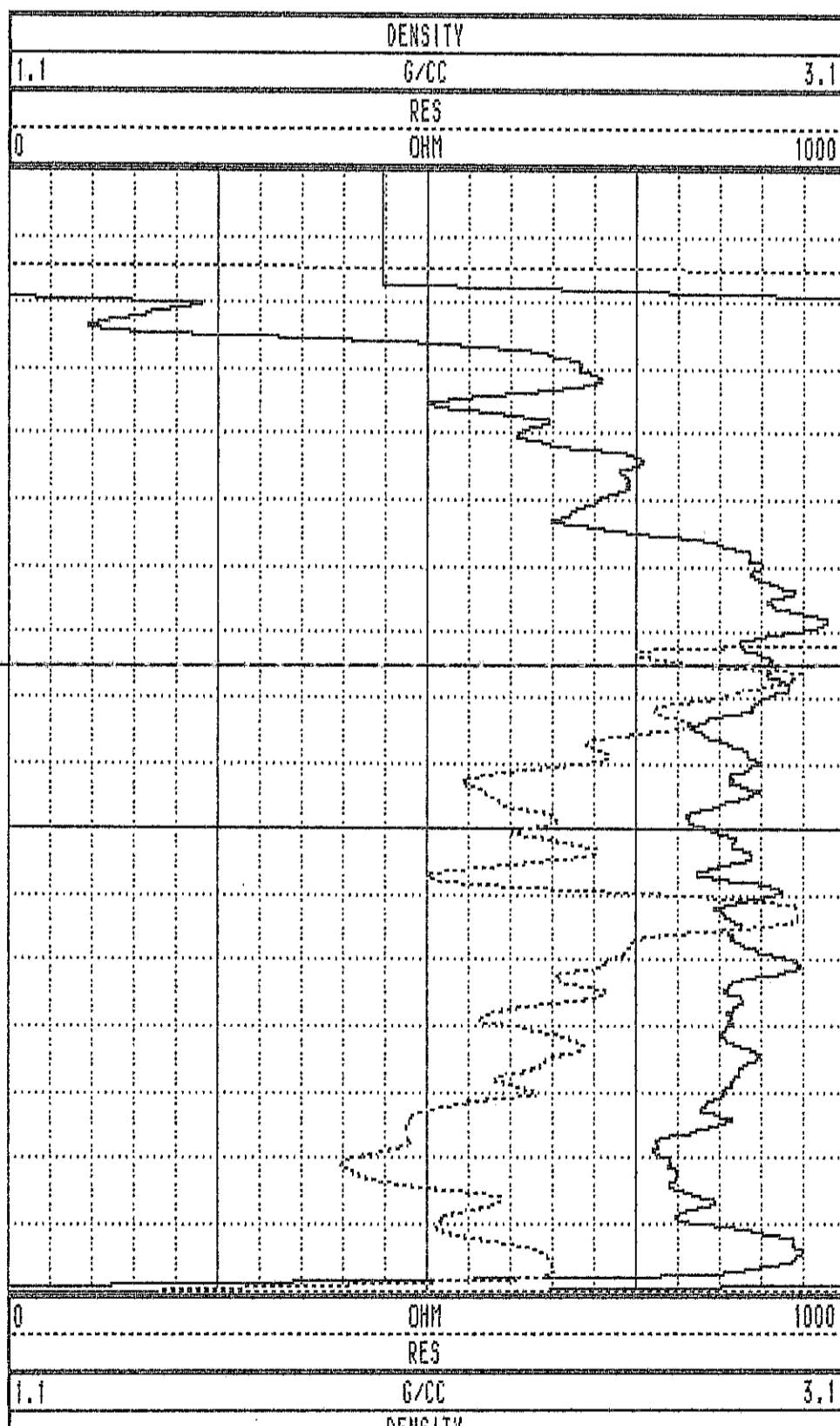
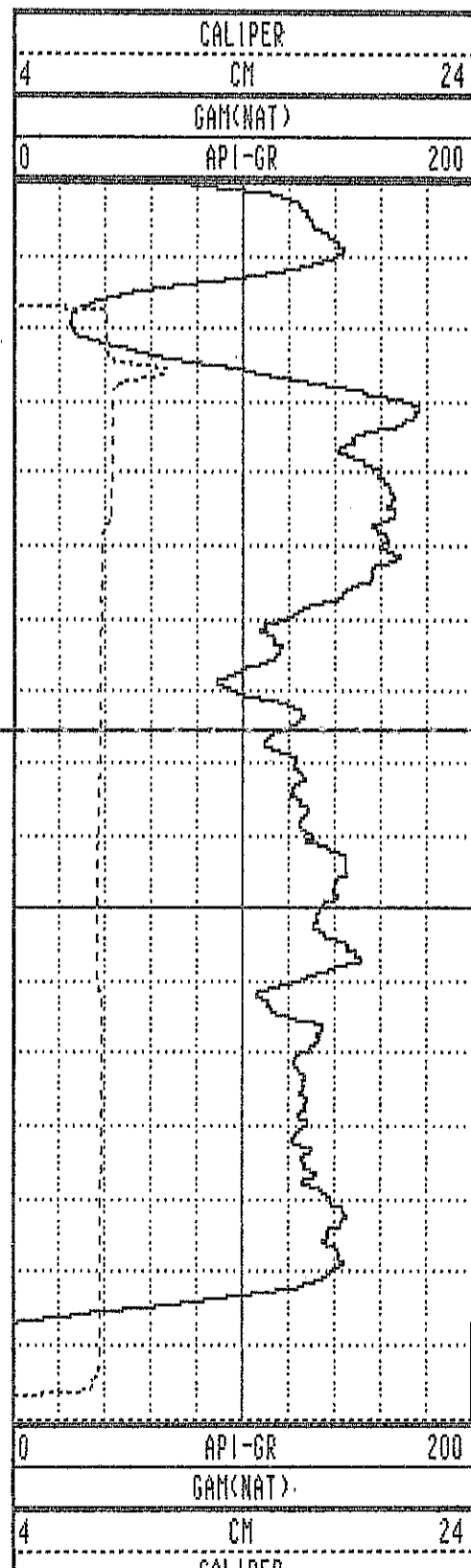
BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : AIR
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : PROCESSED
 TYPE : 9033AA
 LOG : 0
 PLOT : PINE 7
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96088



WRH-96088 07/30/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

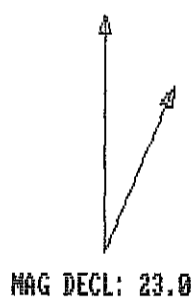
| | | | | | | | |
|------|-------|-------|-------|------|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.94 | 0.10 | 0.14 | 0.2 | 53.6 | 35.9 | 53.5 |
| 3.0 | 2.76 | 0.44 | 0.62 | 0.8 | 54.7 | 36.4 | 55.6 |
| 4.0 | 3.57 | 0.74 | 1.11 | 1.3 | 56.2 | 35.6 | 57.3 |
| 5.0 | 4.39 | 1.05 | 1.60 | 1.9 | 56.6 | 36.5 | 64.6 |
| 6.0 | 5.19 | 1.37 | 2.09 | 2.5 | 56.7 | 37.4 | 56.7 |
| 7.0 | 5.99 | 1.71 | 2.58 | 3.1 | 56.4 | 36.4 | 37.9 |
| 8.0 | 6.78 | 2.04 | 3.09 | 3.7 | 56.5 | 37.8 | 59.9 |
| 9.0 | 7.57 | 2.39 | 3.59 | 4.3 | 56.4 | 38.7 | 31.6 |
| 10.0 | 8.36 | 2.75 | 4.09 | 4.9 | 56.1 | 37.6 | 55.5 |
| 11.0 | 9.15 | 3.10 | 4.59 | 5.5 | 56.0 | 37.7 | 55.2 |
| 12.0 | 9.94 | 3.45 | 5.10 | 6.2 | 55.9 | 37.9 | 59.8 |
| 13.0 | 10.73 | 3.80 | 5.60 | 6.8 | 55.8 | 37.7 | 54.3 |
| 14.0 | 11.52 | 4.17 | 6.09 | 7.4 | 55.6 | 37.7 | 60.3 |
| 15.0 | 12.31 | 4.52 | 6.58 | 8.0 | 55.5 | 38.2 | 53.1 |
| 16.0 | 13.10 | 4.91 | 7.06 | 8.6 | 55.2 | 38.6 | 46.3 |
| 17.0 | 13.87 | 5.31 | 7.55 | 9.2 | 54.9 | 39.6 | 43.7 |
| 18.0 | 14.65 | 5.73 | 8.00 | 9.8 | 54.4 | 38.8 | 50.5 |
| 19.0 | 15.43 | 6.13 | 8.48 | 10.5 | 54.1 | 38.5 | 41.0 |
| 20.0 | 16.20 | 6.57 | 8.94 | 11.1 | 53.7 | 39.1 | 47.4 |
| 21.0 | 16.97 | 7.01 | 9.40 | 11.7 | 53.3 | 39.2 | 36.9 |
| 22.0 | 17.74 | 7.43 | 9.87 | 12.4 | 53.0 | 39.3 | 50.9 |
| 23.0 | 18.51 | 7.87 | 10.33 | 13.0 | 52.7 | 38.8 | 52.9 |
| 24.0 | 19.28 | 8.30 | 10.80 | 13.6 | 52.4 | 39.3 | 54.6 |
| 25.0 | 20.05 | 8.73 | 11.26 | 14.3 | 52.2 | 39.5 | 51.3 |
| 26.0 | 20.82 | 9.16 | 11.73 | 14.9 | 52.0 | 40.7 | 38.5 |
| 27.0 | 21.58 | 9.60 | 12.20 | 15.5 | 51.8 | 39.9 | 46.6 |
| 28.0 | 22.34 | 10.05 | 12.68 | 16.2 | 51.6 | 42.1 | 40.2 |
| 29.0 | 23.10 | 10.48 | 13.16 | 16.8 | 51.5 | 41.6 | 44.0 |
| 30.0 | 23.86 | 10.91 | 13.64 | 17.5 | 51.3 | 40.2 | 47.3 |
| 31.0 | 24.62 | 11.37 | 14.10 | 18.1 | 51.1 | 40.6 | 43.7 |
| 32.0 | 25.38 | 11.83 | 14.56 | 18.8 | 50.9 | 41.6 | 48.6 |
| 33.0 | 26.13 | 12.29 | 15.03 | 19.4 | 50.7 | 42.3 | 41.3 |
| 34.0 | 26.89 | 12.74 | 15.49 | 20.1 | 50.6 | 41.2 | 47.3 |
| 34.8 | 27.46 | 13.09 | 15.84 | 20.6 | 50.4 | 40.8 | 45.3 |

WRH 96 089

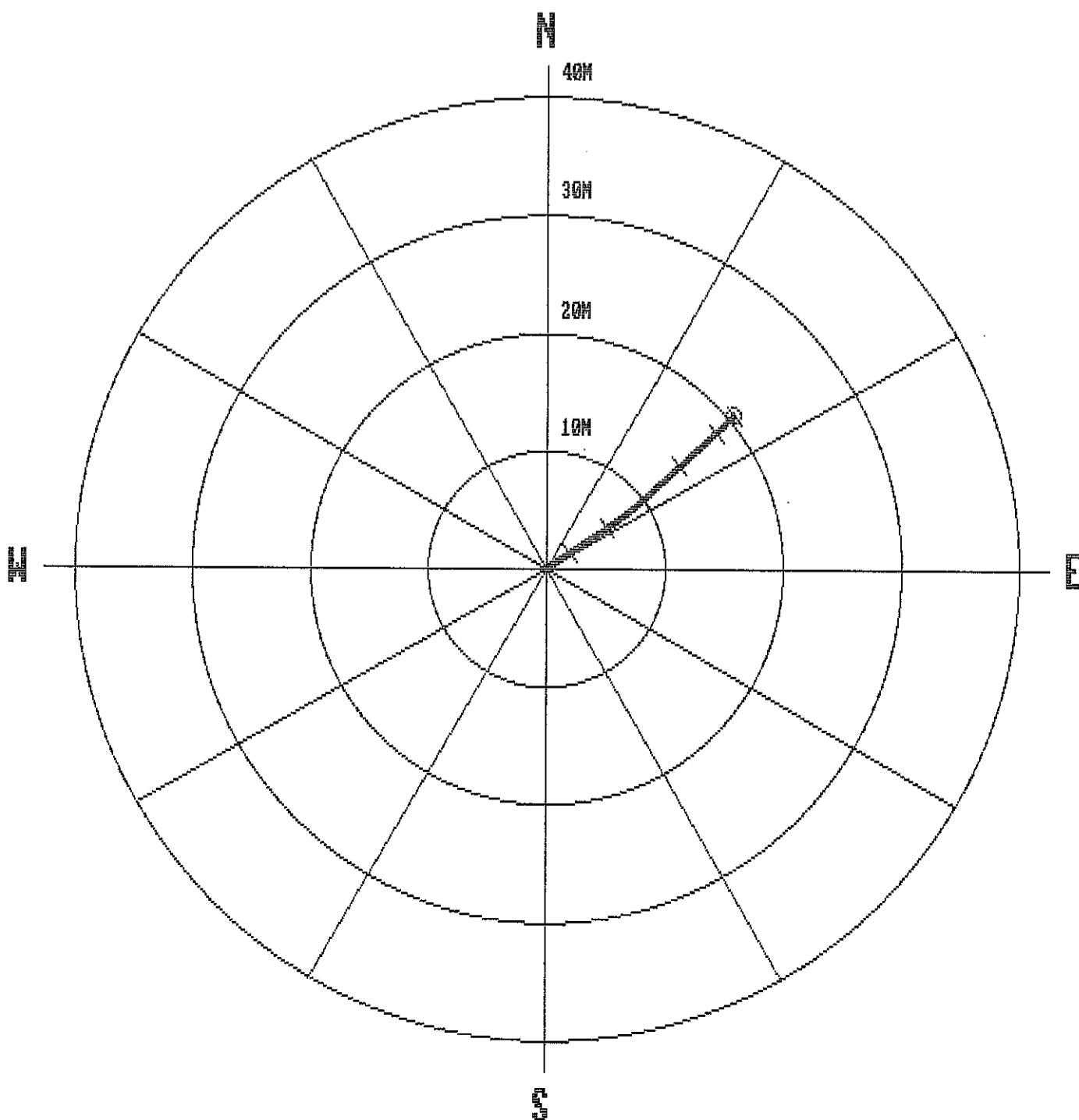
PLAN VIEW

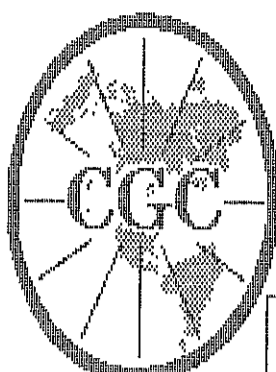
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96089
 DATE OF LOG: 07/30/96
 PROBE: 9055A 56



SCALE: 5 M/CM
 TRUE DEPTH: 27.46 M
 AZIMUTH: 50.4
 DISTANCE: 20.6 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



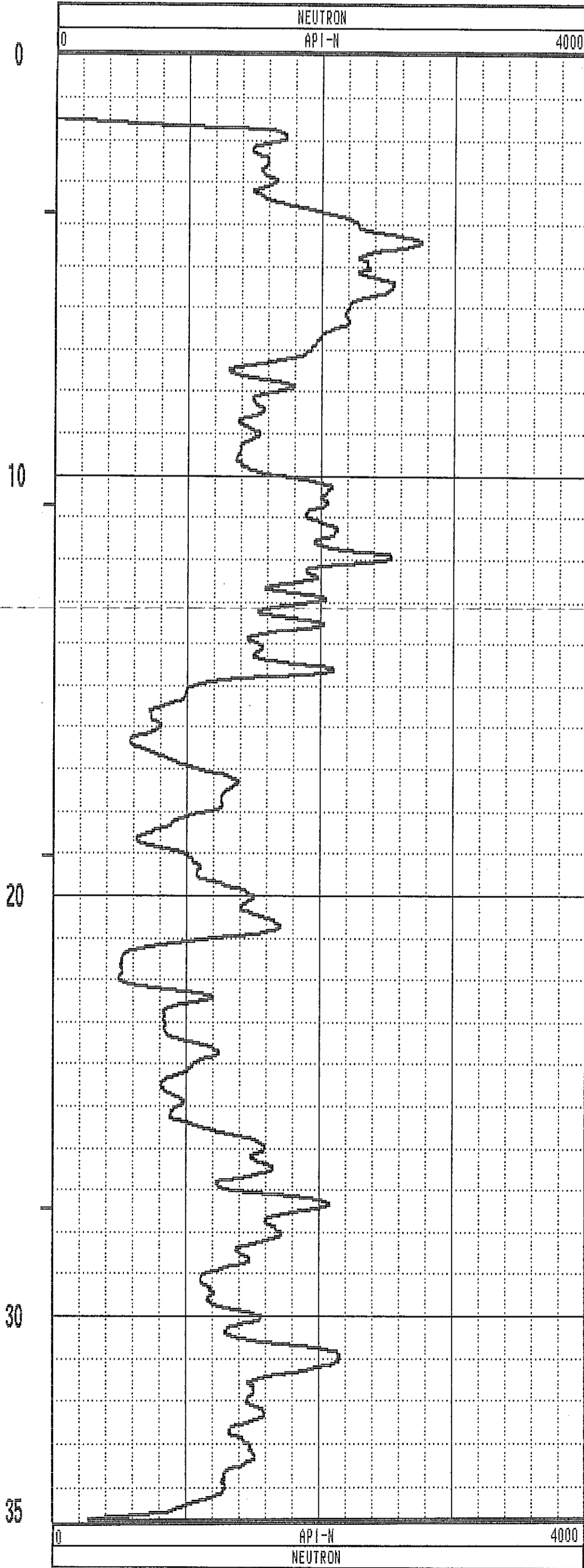
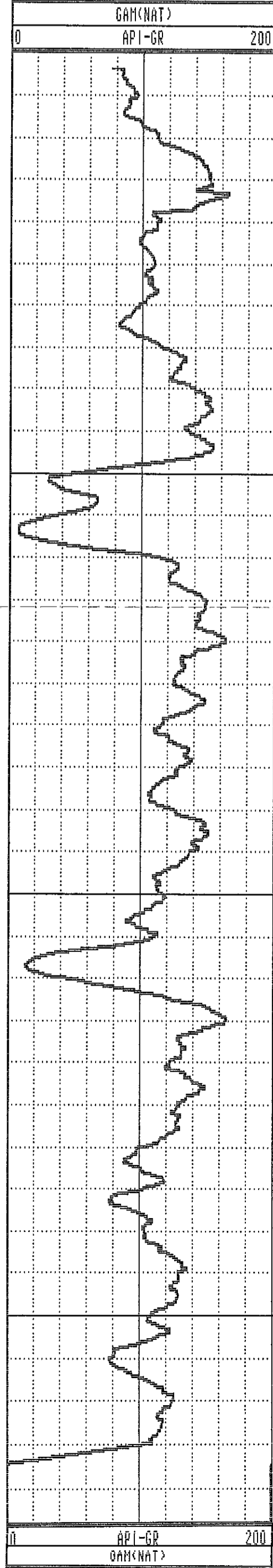


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96089 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE |
| DATE | : 07/30/96 | PERMANENT DATUM |
| DEPTH DRILLER | : 44 | ELEV. FERM. DATUM: |
| LOG BOTTOM | : 34.81 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.38 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | FILE |
| | | TYPE |
| | | LOG |
| | | PLOT |
| | | THRESH |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



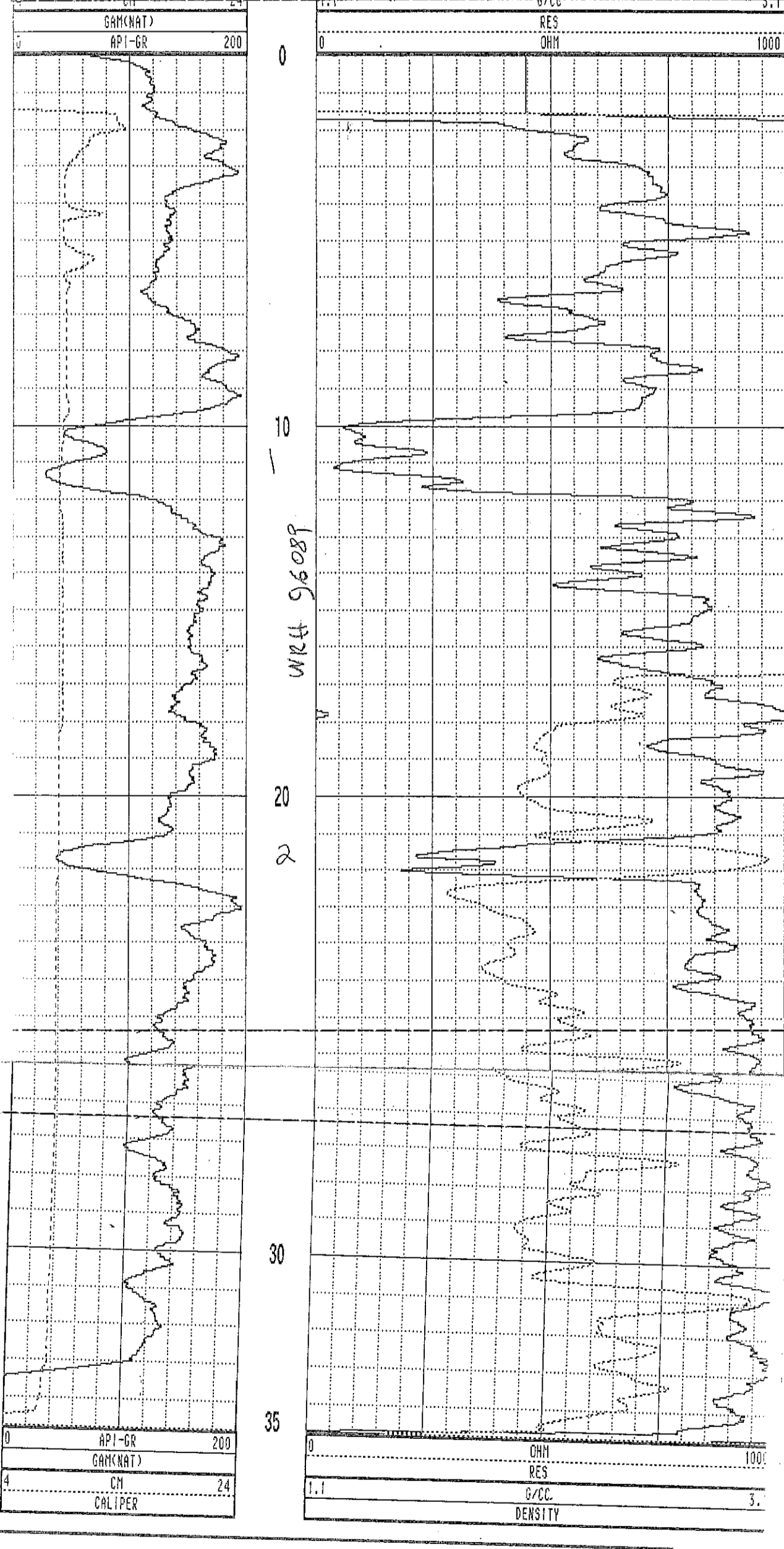
GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96089 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE |
| DATE | : 07/30/96 | PERMANENT DATUM |
| DEPTH DRILLER | : 34 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 34.82 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

CALIPER

DENSITY



WRH-96089 07/30/96 958

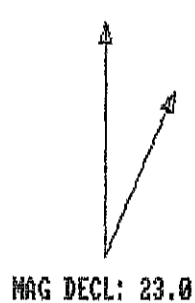
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAMKNAT | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAMKNAT | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

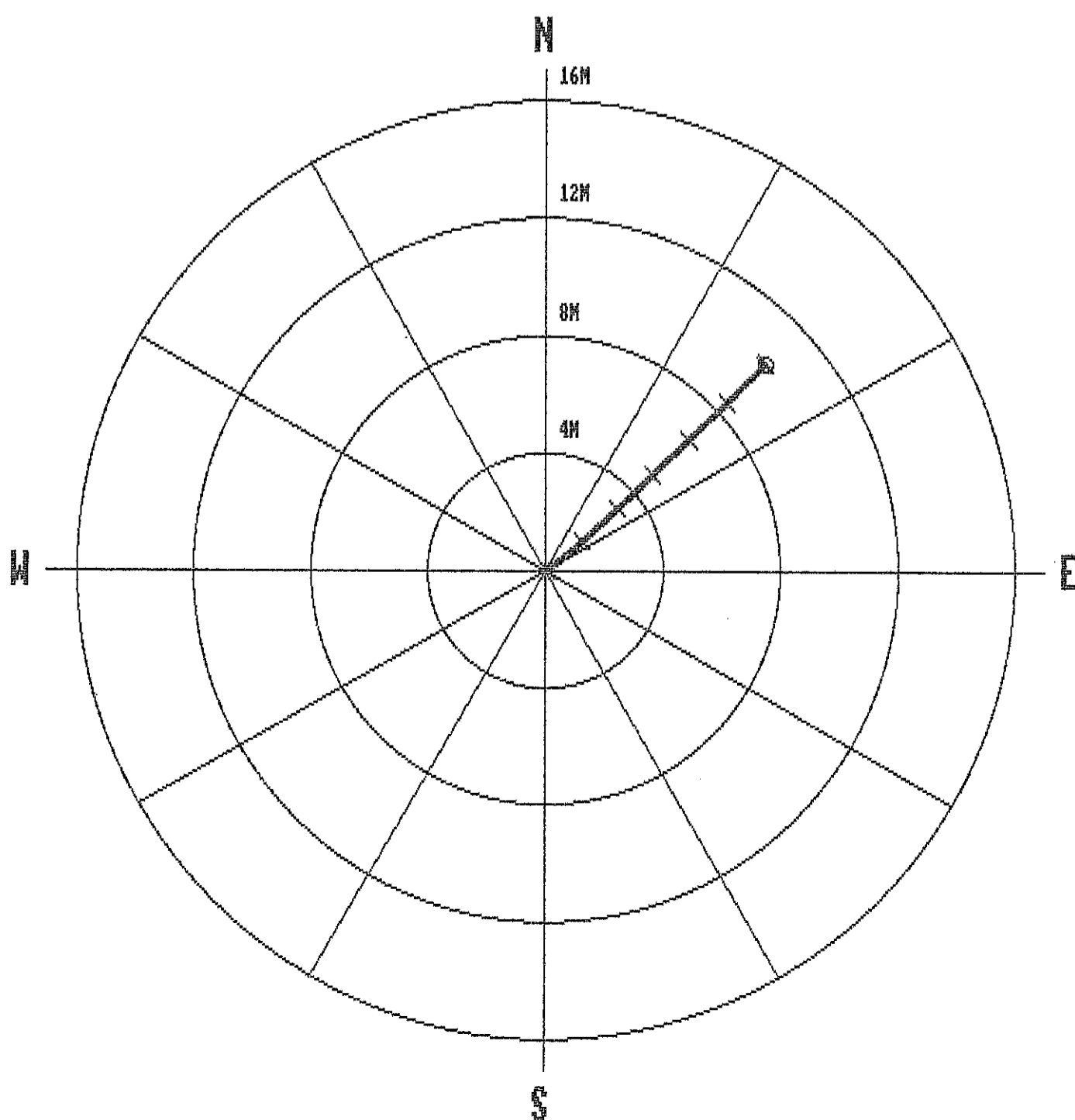
| | | | | | | | |
|------|-------|------|------|------|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.98 | 0.03 | 0.06 | 0.1 | 61.4 | 36.8 | 60.5 |
| 3.0 | 2.77 | 0.38 | 0.57 | 0.7 | 55.8 | 38.1 | 51.5 |
| 4.0 | 3.55 | 0.78 | 1.04 | 1.3 | 53.1 | 38.5 | 50.1 |
| 5.0 | 4.33 | 1.20 | 1.51 | 1.9 | 51.5 | 38.7 | 46.0 |
| 6.0 | 5.11 | 1.62 | 1.96 | 2.5 | 50.5 | 38.5 | 47.3 |
| 7.0 | 5.89 | 2.05 | 2.42 | 3.2 | 49.7 | 39.5 | 45.9 |
| 8.0 | 6.66 | 2.50 | 2.88 | 3.8 | 49.0 | 40.1 | 44.2 |
| 9.0 | 7.43 | 2.94 | 3.33 | 4.4 | 48.5 | 39.8 | 45.4 |
| 10.0 | 8.20 | 3.40 | 3.79 | 5.1 | 48.1 | 40.0 | 45.6 |
| 11.0 | 8.96 | 3.84 | 4.26 | 5.7 | 47.9 | 40.6 | 50.4 |
| 12.0 | 9.72 | 4.29 | 4.74 | 6.4 | 47.9 | 40.4 | 47.8 |
| 13.0 | 10.46 | 4.75 | 5.21 | 7.1 | 47.6 | 42.4 | 39.6 |
| 14.0 | 11.21 | 5.22 | 5.68 | 7.7 | 47.4 | 42.4 | 44.4 |
| 15.0 | 11.94 | 5.69 | 6.17 | 8.4 | 47.3 | 42.6 | 44.8 |
| 16.0 | 12.68 | 6.18 | 6.64 | 9.1 | 47.1 | 42.6 | 48.1 |
| 17.0 | 13.42 | 6.65 | 7.12 | 9.7 | 46.9 | 42.8 | 43.2 |
| 17.8 | 14.00 | 7.05 | 7.49 | 10.3 | 46.7 | 42.5 | 46.1 |

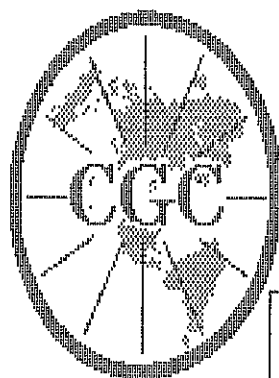
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96090
 DATE OF LOG: 07/30/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 14.00 M
 AZIMUTH: 46.7
 DISTANCE: 10.3 M
 + = 2 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

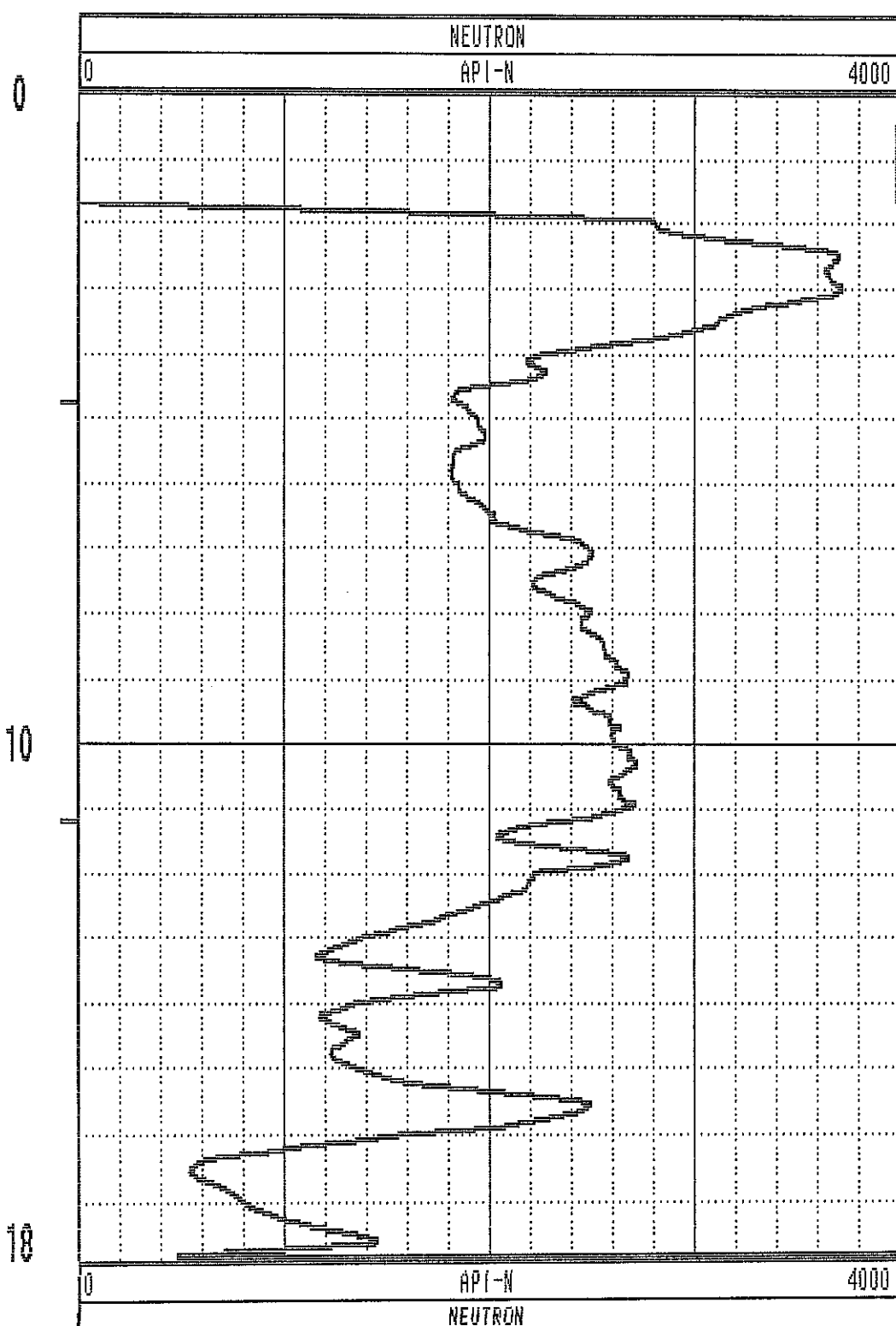
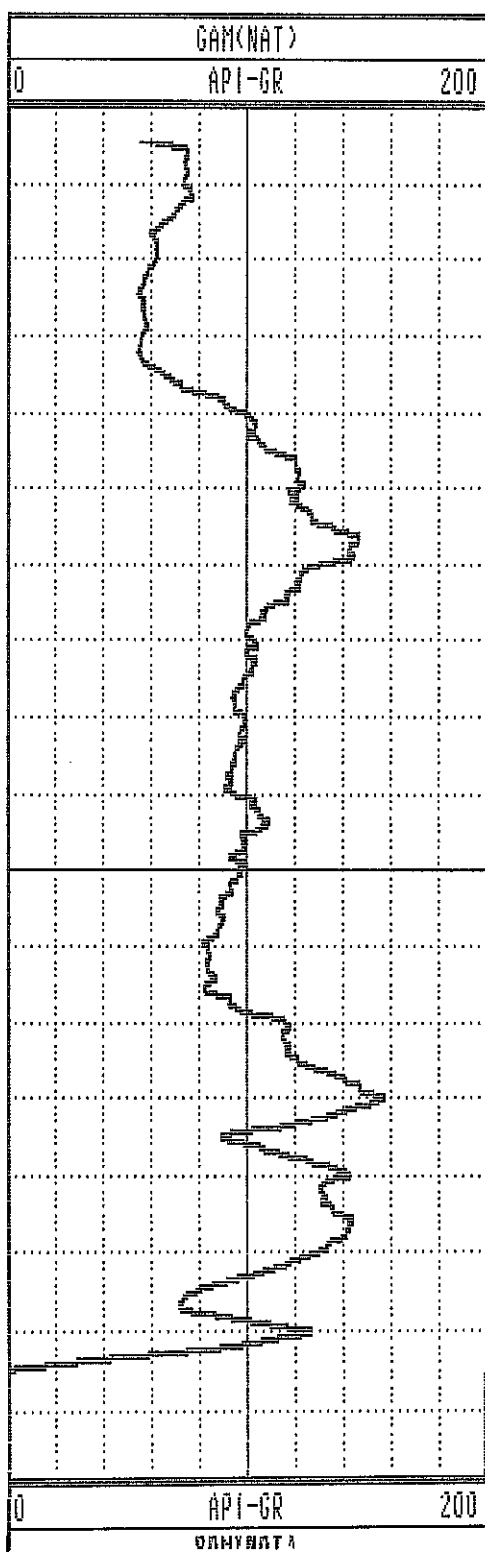
COMPANY : PINE VALLEY COAL
WELL : WRH-96090
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 07/30/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 17.85 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.48 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 0
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96090
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

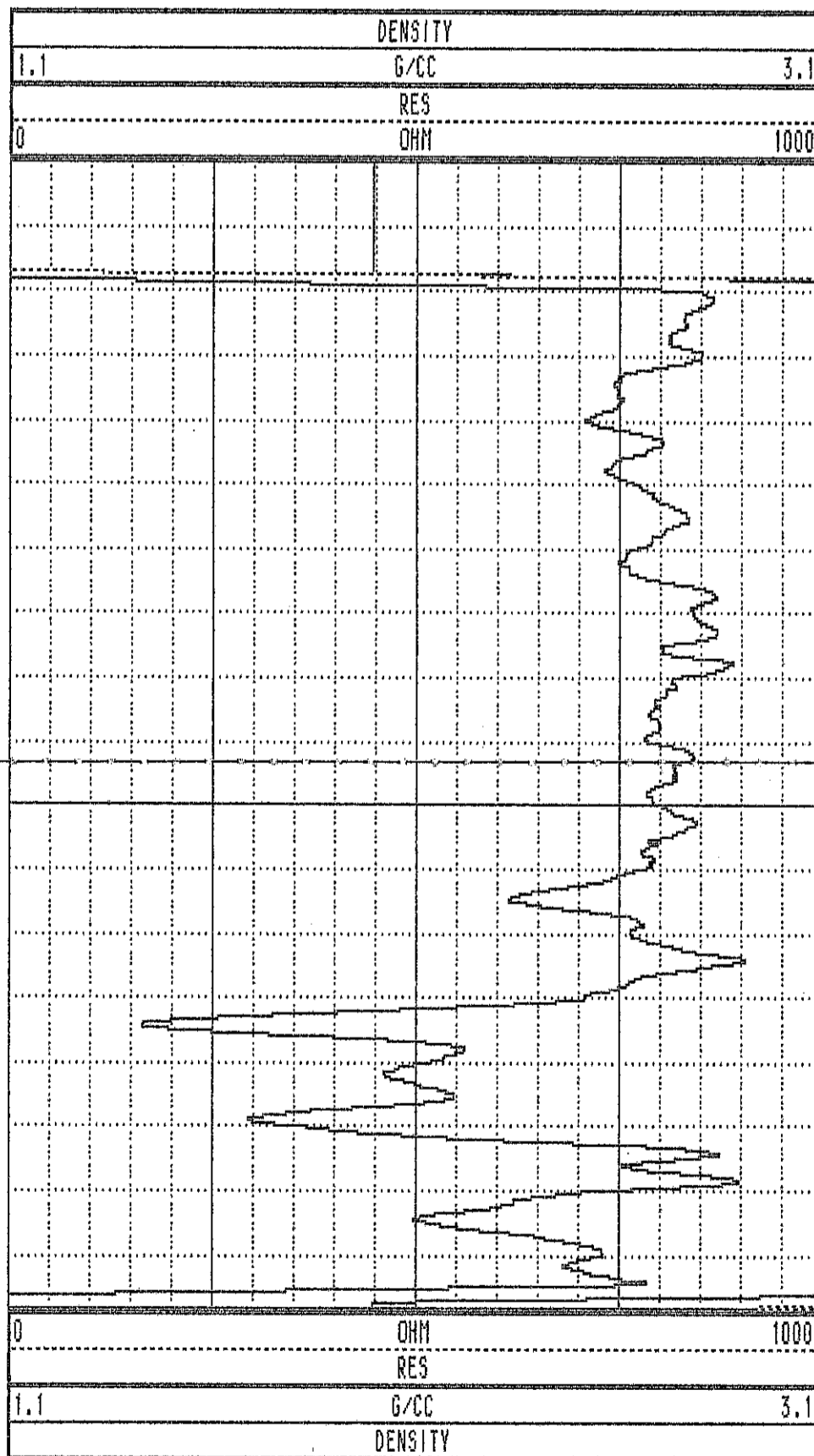
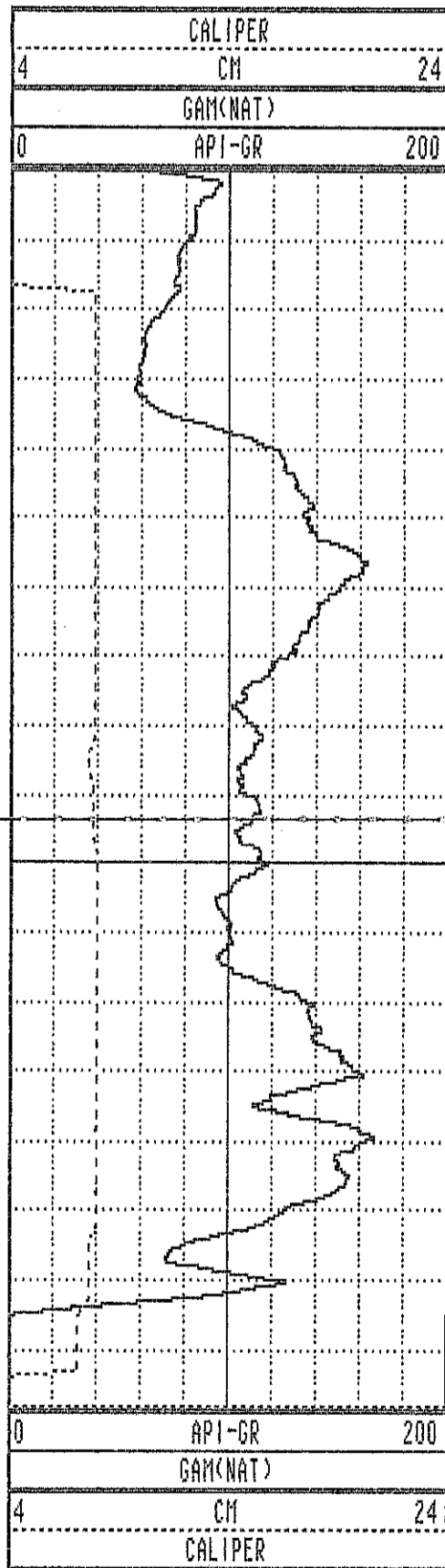
DATE : 07/30/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 17.86 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96090



WRH-96090 07/30/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

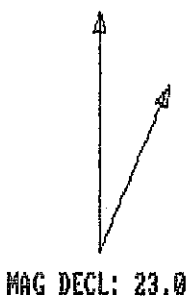
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|------|-------|------|------|------|------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.94 | 0.14 | 0.13 | 0.2 | 43.2 | 31.5 | 57.8 |
| 3.0 | 2.80 | 0.41 | 0.58 | 0.7 | 54.9 | 31.4 | 57.6 |
| 4.0 | 3.65 | 0.67 | 1.03 | 1.2 | 56.8 | 31.3 | 60.5 |
| 5.0 | 4.51 | 0.93 | 1.48 | 1.8 | 58.0 | 31.5 | 60.3 |
| 6.0 | 5.36 | 1.19 | 1.94 | 2.3 | 58.5 | 31.7 | 58.8 |
| 7.0 | 6.21 | 1.45 | 2.39 | 2.8 | 58.8 | 31.8 | 62.0 |
| 8.0 | 7.06 | 1.71 | 2.85 | 3.3 | 58.9 | 32.0 | 64.8 |
| 9.0 | 7.90 | 1.98 | 3.31 | 3.9 | 59.1 | 32.4 | 59.0 |
| 10.0 | 8.74 | 2.25 | 3.78 | 4.4 | 59.3 | 32.9 | 58.4 |
| 11.0 | 9.58 | 2.54 | 4.25 | 4.9 | 59.1 | 35.8 | 50.5 |
| 12.0 | 10.40 | 2.84 | 4.73 | 5.5 | 59.0 | 34.8 | 57.1 |
| 13.0 | 11.23 | 3.12 | 5.21 | 6.1 | 59.1 | 34.7 | 59.3 |
| 14.0 | 12.04 | 3.43 | 5.69 | 6.7 | 58.9 | 36.4 | 47.1 |
| 15.0 | 12.84 | 3.75 | 6.20 | 7.2 | 58.8 | 37.5 | 62.4 |
| 16.0 | 13.63 | 4.10 | 6.72 | 7.9 | 58.6 | 38.0 | 55.4 |
| 17.0 | 14.41 | 4.45 | 7.23 | 8.5 | 58.4 | 40.8 | 54.6 |
| 18.0 | 15.17 | 4.79 | 7.77 | 9.1 | 58.4 | 39.7 | 52.6 |
| 19.0 | 15.94 | 5.14 | 8.31 | 9.8 | 58.3 | 39.6 | 57.9 |
| 20.0 | 16.72 | 5.47 | 8.85 | 10.4 | 58.3 | 38.4 | 56.9 |
| 21.0 | 17.50 | 5.81 | 9.37 | 11.0 | 58.2 | 38.5 | 58.5 |
| 22.0 | 18.28 | 6.14 | 9.90 | 11.6 | 58.2 | 38.6 | 60.6 |
| 23.0 | 19.06 | 6.47 | 10.43 | 12.3 | 58.2 | 39.1 | 60.0 |
| 24.0 | 19.83 | 6.80 | 10.98 | 12.9 | 58.2 | 39.9 | 61.2 |
| 25.0 | 20.60 | 7.13 | 11.53 | 13.6 | 58.3 | 40.2 | 57.6 |
| 26.0 | 21.36 | 7.46 | 12.08 | 14.2 | 58.3 | 40.5 | 59.7 |
| 27.0 | 22.11 | 7.81 | 12.64 | 14.9 | 58.3 | 41.5 | 55.1 |
| 28.0 | 22.85 | 8.17 | 13.20 | 15.5 | 58.2 | 41.6 | 65.9 |
| 29.0 | 23.59 | 8.54 | 13.77 | 16.2 | 58.2 | 43.0 | 58.4 |
| 30.0 | 24.31 | 8.90 | 14.35 | 16.9 | 58.2 | 43.2 | 52.8 |
| 31.0 | 25.04 | 9.27 | 14.94 | 17.6 | 58.2 | 43.7 | 57.7 |
| 32.0 | 25.76 | 9.64 | 15.52 | 18.3 | 58.1 | 44.4 | 57.5 |
| 32.7 | 26.24 | 9.90 | 15.92 | 18.7 | 58.1 | 44.3 | 55.9 |

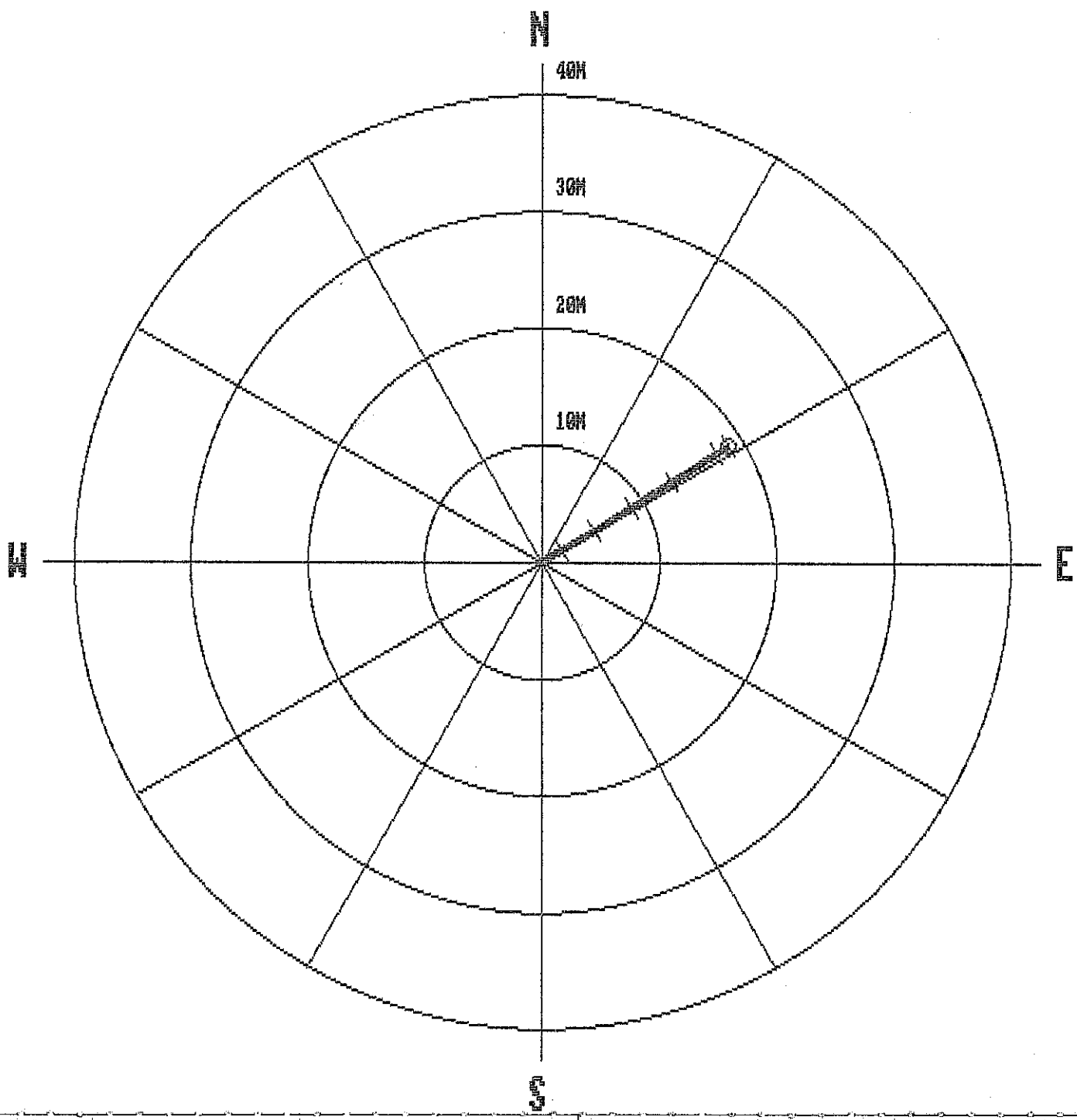
WRH 96092

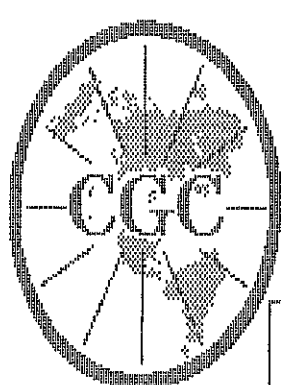
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96092
 DATE OF LOG: 07/31/96
 PROBE: 9055A 56



SCALE: 5 M/CM
 TRUE DEPTH: 26.24 M
 AZIMUTH: 58.1
 DISTANCE: 18.7 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96092
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

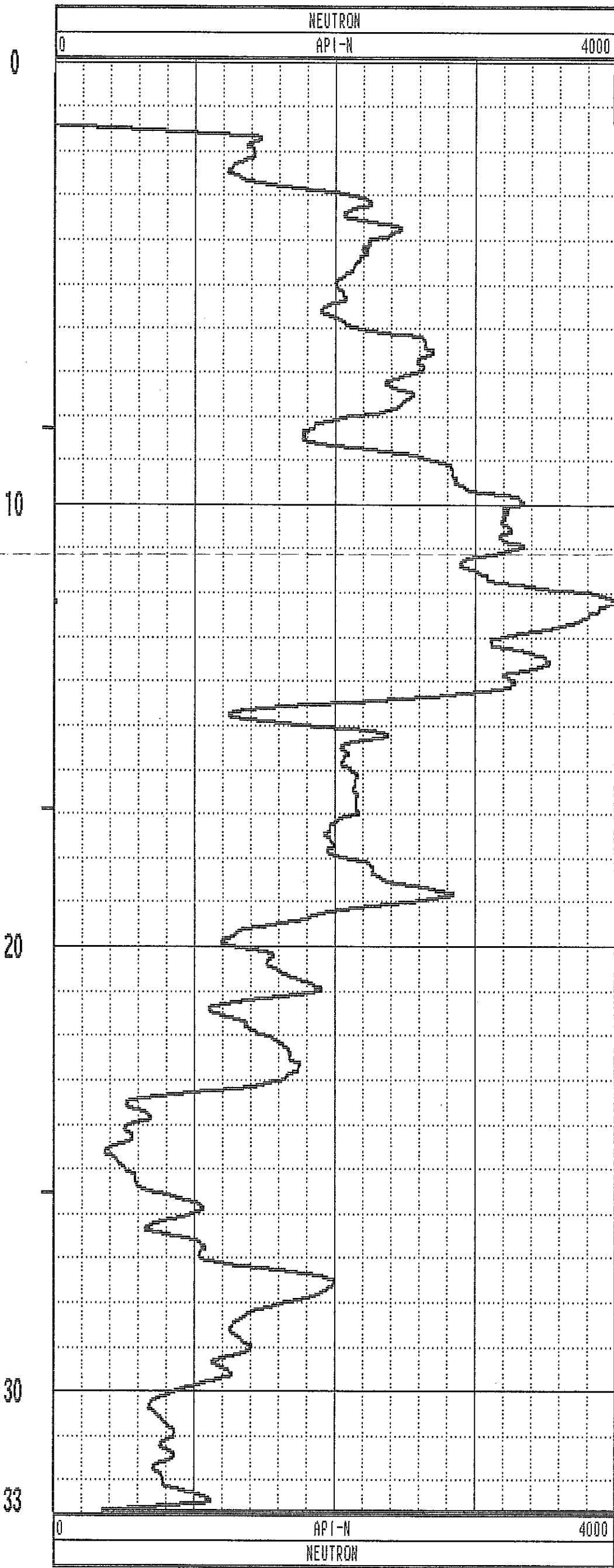
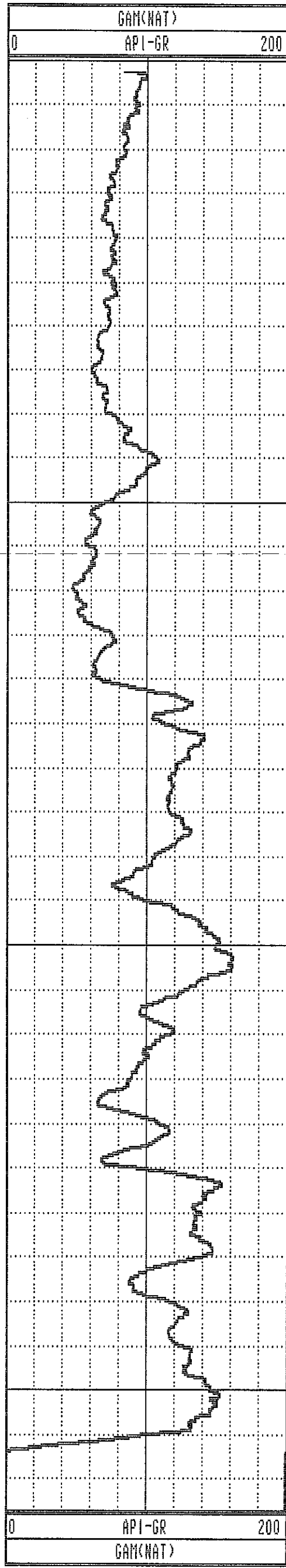
TOWNSHIP : RANGE :

DATE : 07/31/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.74 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.30 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

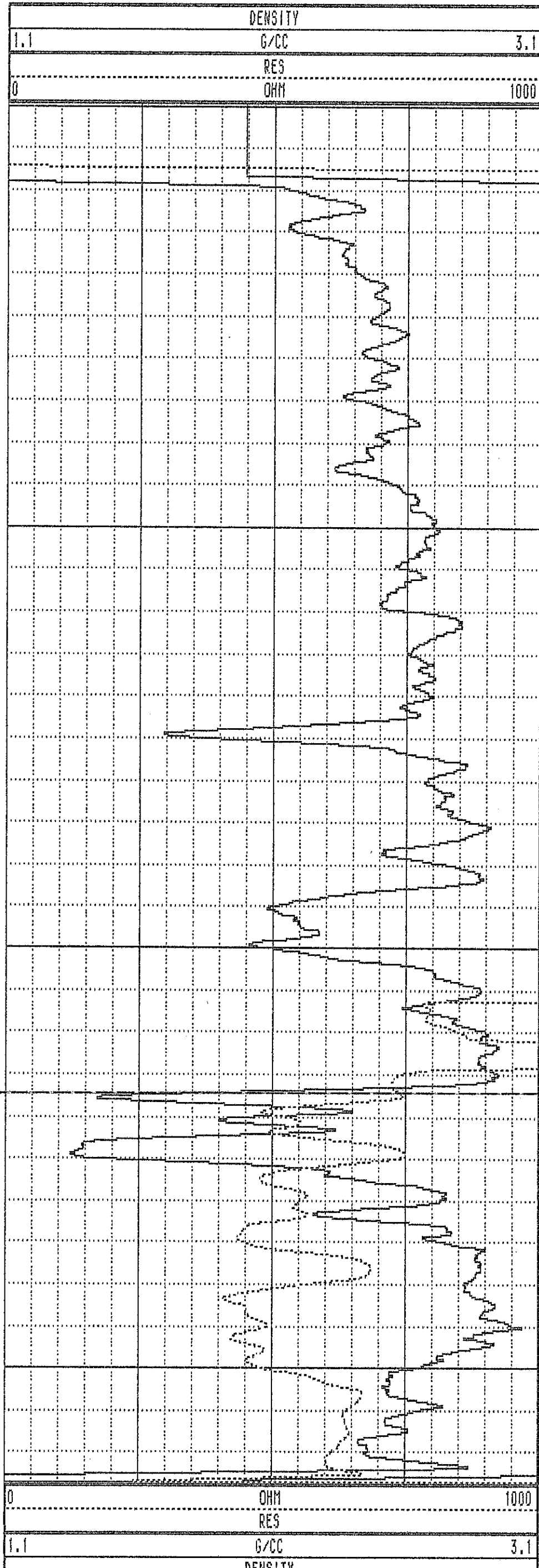
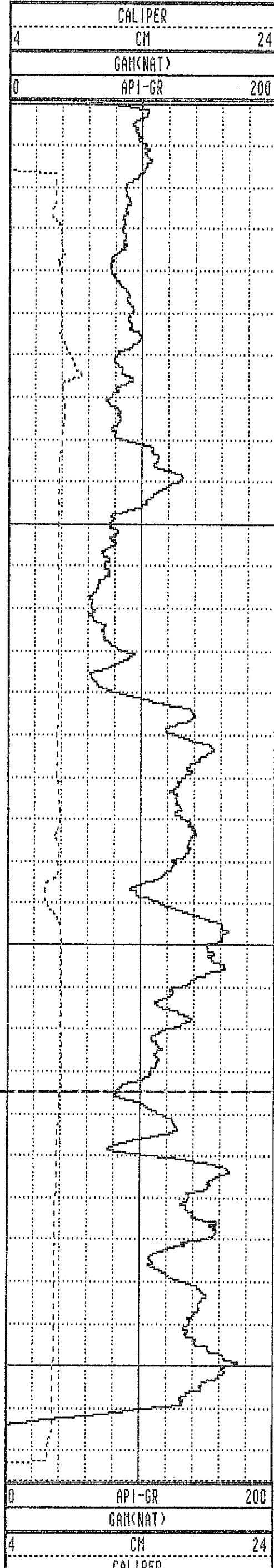
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96092 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : | RANGE : |
| DATE | : 07/31/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 35 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 32.74 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96092 07/31/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

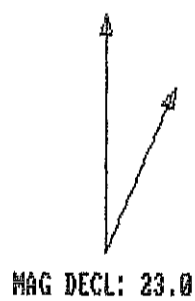
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.01 | 0.0 | 108.4 | 2.1 | 106.8 |
| 3.0 | 3.00 | -0.01 | 0.05 | 0.1 | 98.4 | 1.7 | 97.7 |
| 4.0 | 4.00 | -0.01 | 0.08 | 0.1 | 99.8 | 1.9 | 99.5 |
| 5.0 | 5.00 | -0.02 | 0.11 | 0.1 | 102.3 | 2.7 | 98.0 |
| 6.0 | 6.00 | -0.03 | 0.15 | 0.2 | 100.4 | 1.9 | 95.7 |
| 7.0 | 7.00 | -0.03 | 0.19 | 0.2 | 98.5 | 2.0 | 98.8 |
| 8.0 | 8.00 | -0.03 | 0.22 | 0.2 | 96.7 | 2.2 | 71.7 |
| 9.0 | 8.99 | -0.01 | 0.26 | 0.3 | 91.6 | 2.1 | 58.5 |
| 10.0 | 9.99 | 0.02 | 0.29 | 0.3 | 87.0 | 3.0 | 43.7 |
| 11.0 | 10.99 | 0.04 | 0.32 | 0.3 | 82.3 | 2.9 | 50.4 |
| 12.0 | 11.99 | 0.08 | 0.35 | 0.4 | 77.7 | 2.2 | 36.7 |
| 13.0 | 12.99 | 0.11 | 0.37 | 0.4 | 73.3 | 2.6 | 24.8 |
| 14.0 | 13.99 | 0.16 | 0.40 | 0.4 | 68.5 | 2.5 | 28.8 |
| 14.8 | 14.79 | 0.19 | 0.42 | 0.5 | 65.3 | 2.6 | 24.0 |

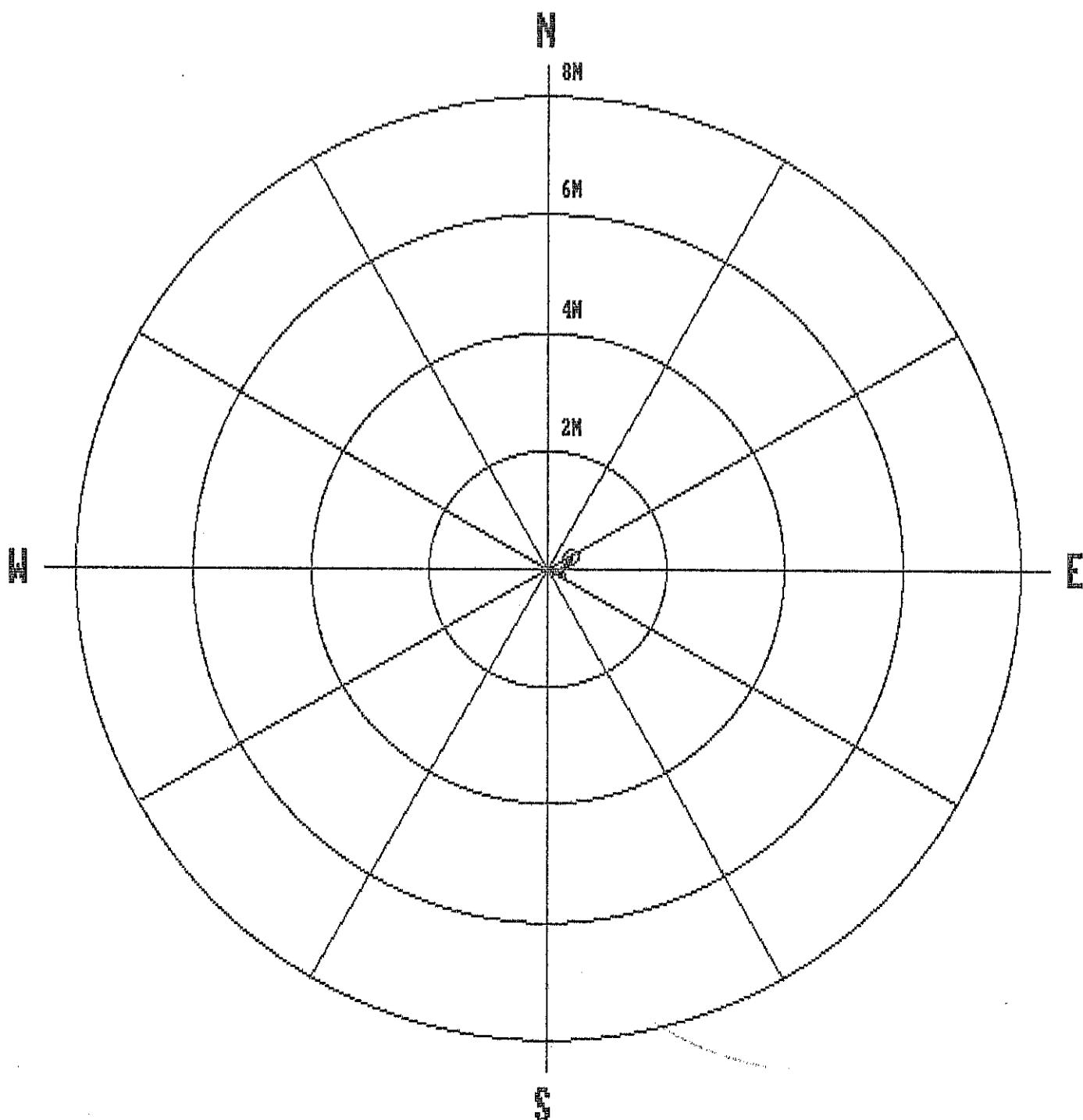
WRT 96093

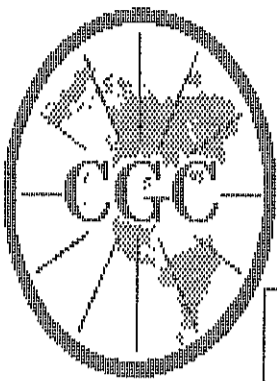
PLAN VIEW COMPLI-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96093
 DATE OF LOG: 08/01/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 14.79 M
 AZIMUTH: 65.3
 DISTANCE: 0.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96093
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION :

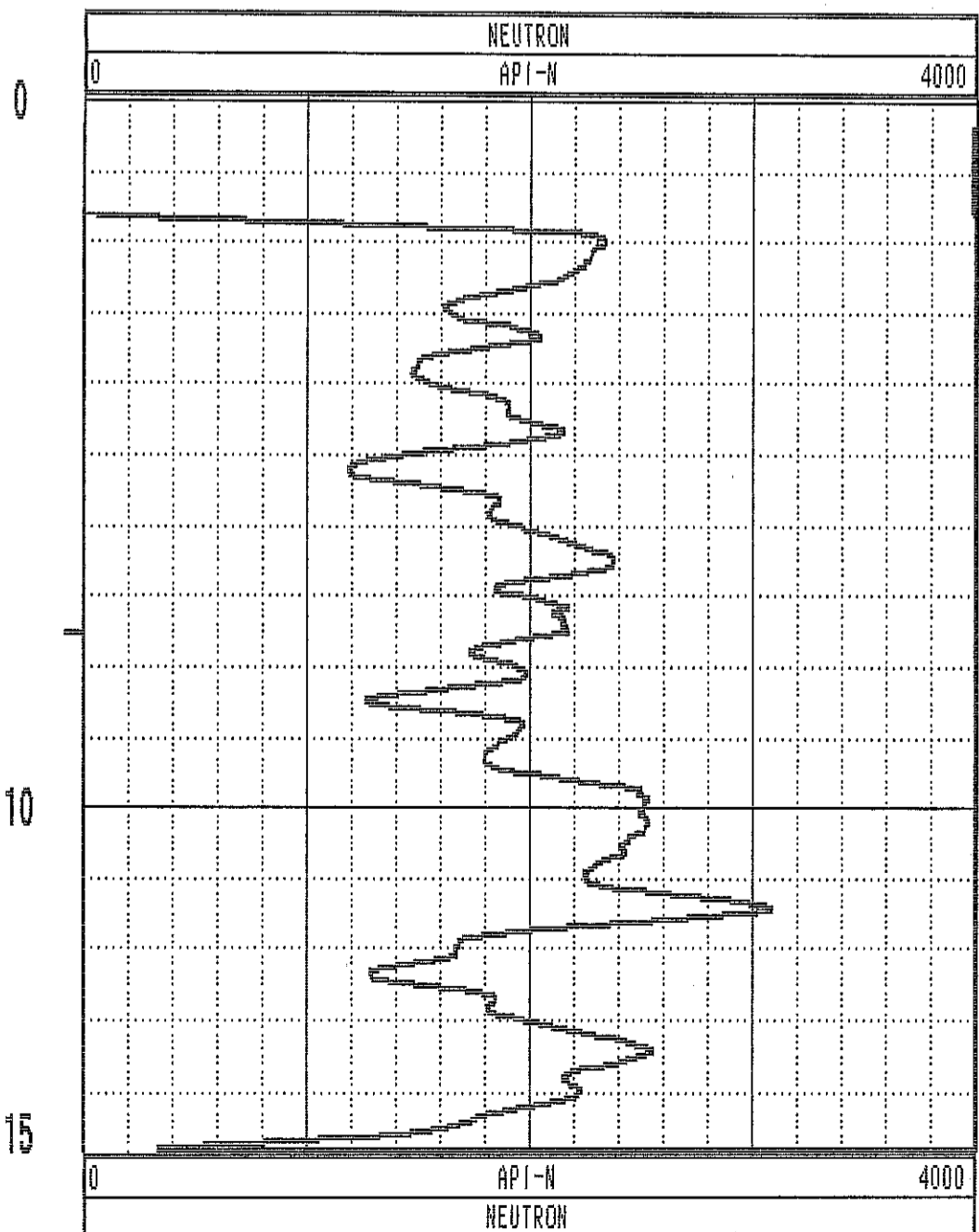
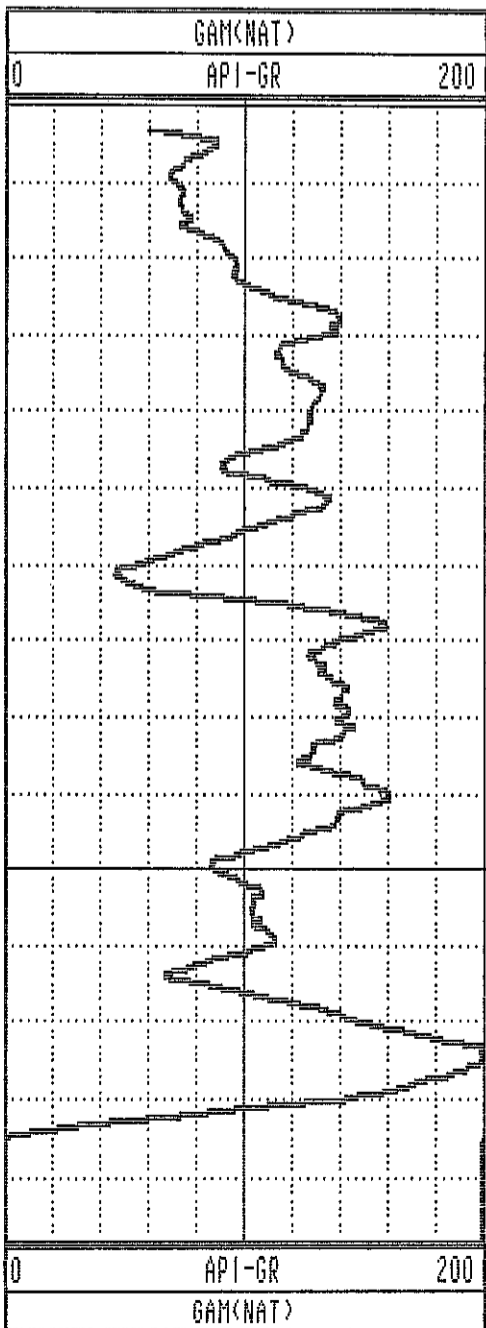
OTHER SERVICES:

TOWNSHIP : RANGE :

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 14 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 14.85 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.38 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 0
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

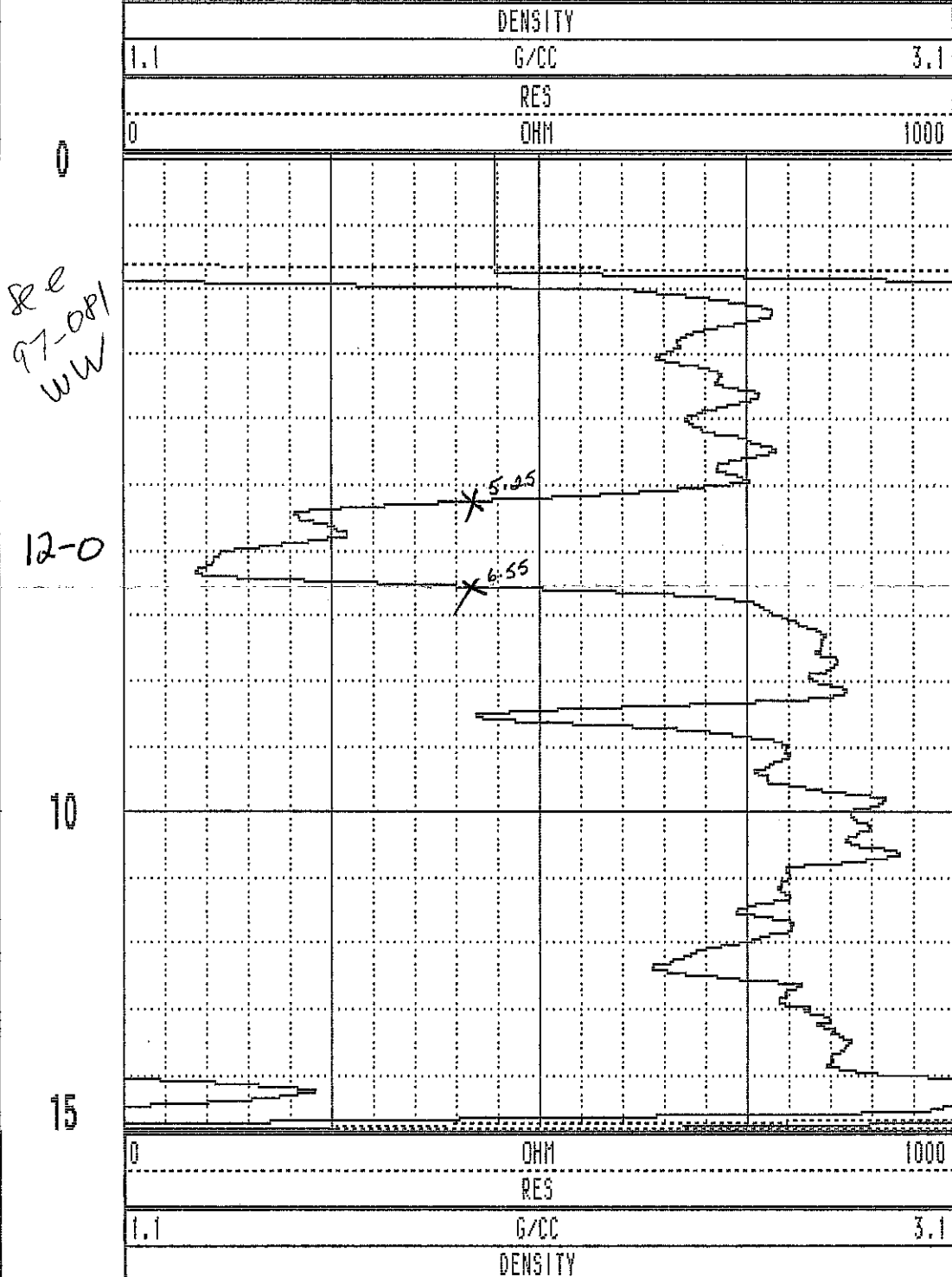
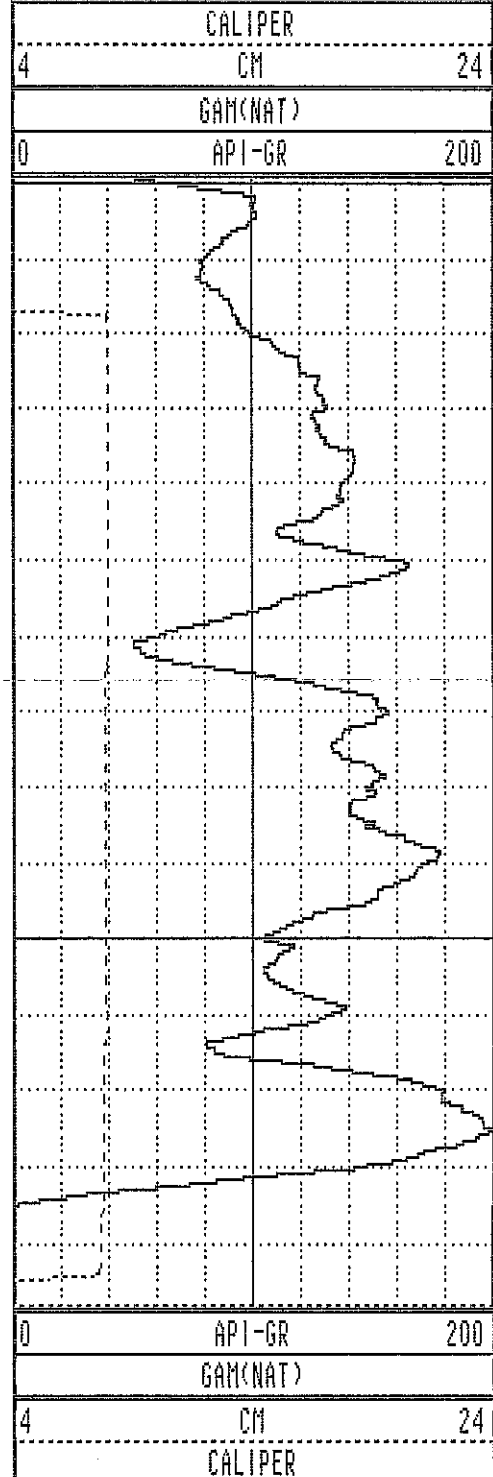


Picks

GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : MRH-96093 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB : LOG BOTTOM : 14.86 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96093 08/01/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

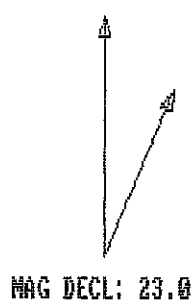
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.96 | -0.02 | -0.14 | 0.1 | 262.0 | 33.5 | 260.2 |
| 3.0 | 2.79 | -0.22 | -0.66 | 0.7 | 251.5 | 34.1 | 244.7 |
| 4.0 | 3.61 | -0.50 | -1.15 | 1.3 | 246.5 | 34.8 | 244.6 |
| 5.0 | 4.43 | -0.81 | -1.62 | 1.8 | 243.4 | 35.1 | 237.0 |
| 6.0 | 5.25 | -1.16 | -2.09 | 2.4 | 240.9 | 35.2 | 238.2 |
| 7.0 | 6.06 | -1.52 | -2.54 | 3.0 | 239.1 | 35.5 | 230.0 |
| 8.0 | 6.88 | -1.89 | -2.99 | 3.5 | 237.8 | 35.6 | 230.8 |
| 9.0 | 7.69 | -2.26 | -3.44 | 4.1 | 236.7 | 35.6 | 228.2 |
| 10.0 | 8.50 | -2.62 | -3.89 | 4.7 | 236.0 | 35.8 | 231.4 |
| 11.0 | 9.32 | -2.99 | -4.34 | 5.3 | 235.4 | 35.9 | 231.4 |
| 12.0 | 10.12 | -3.37 | -4.79 | 5.9 | 234.8 | 36.2 | 228.7 |
| 13.0 | 10.94 | -3.75 | -5.23 | 6.4 | 234.4 | 35.4 | 234.9 |
| 14.0 | 11.75 | -4.15 | -5.64 | 7.0 | 233.7 | 35.4 | 215.7 |
| 14.3 | 11.98 | -4.27 | -5.75 | 7.2 | 233.5 | 35.5 | 226.8 |

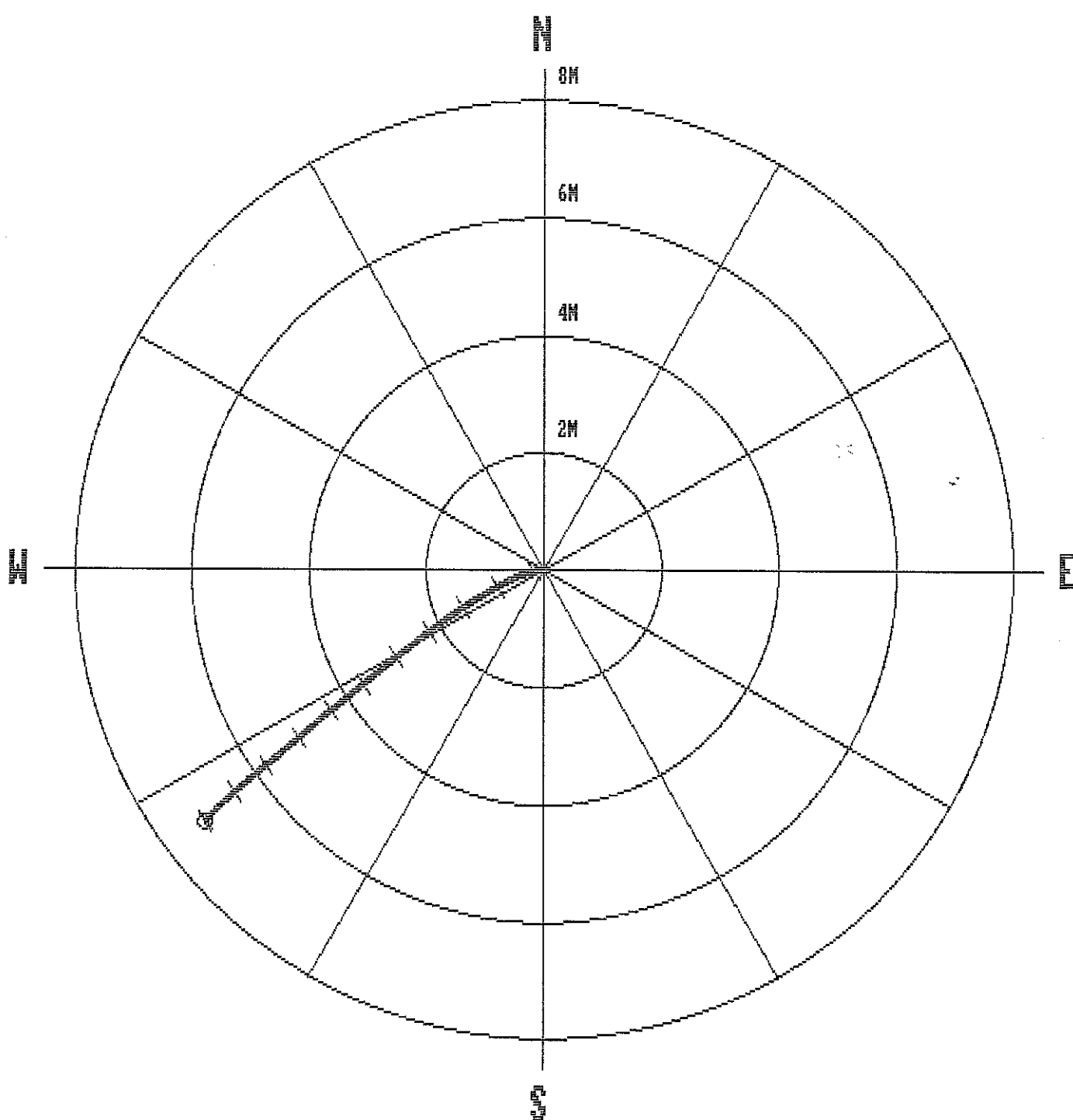
WRH-96094

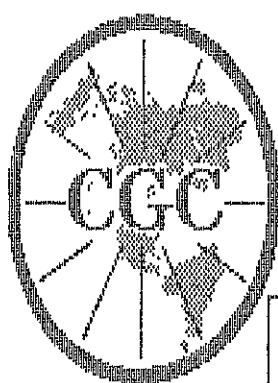
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96094
 DATE OF LOG: 08/01/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 11.98 M
 AZIMUTH: 233.5
 DISTANCE: 7.2 M
 + = 1 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

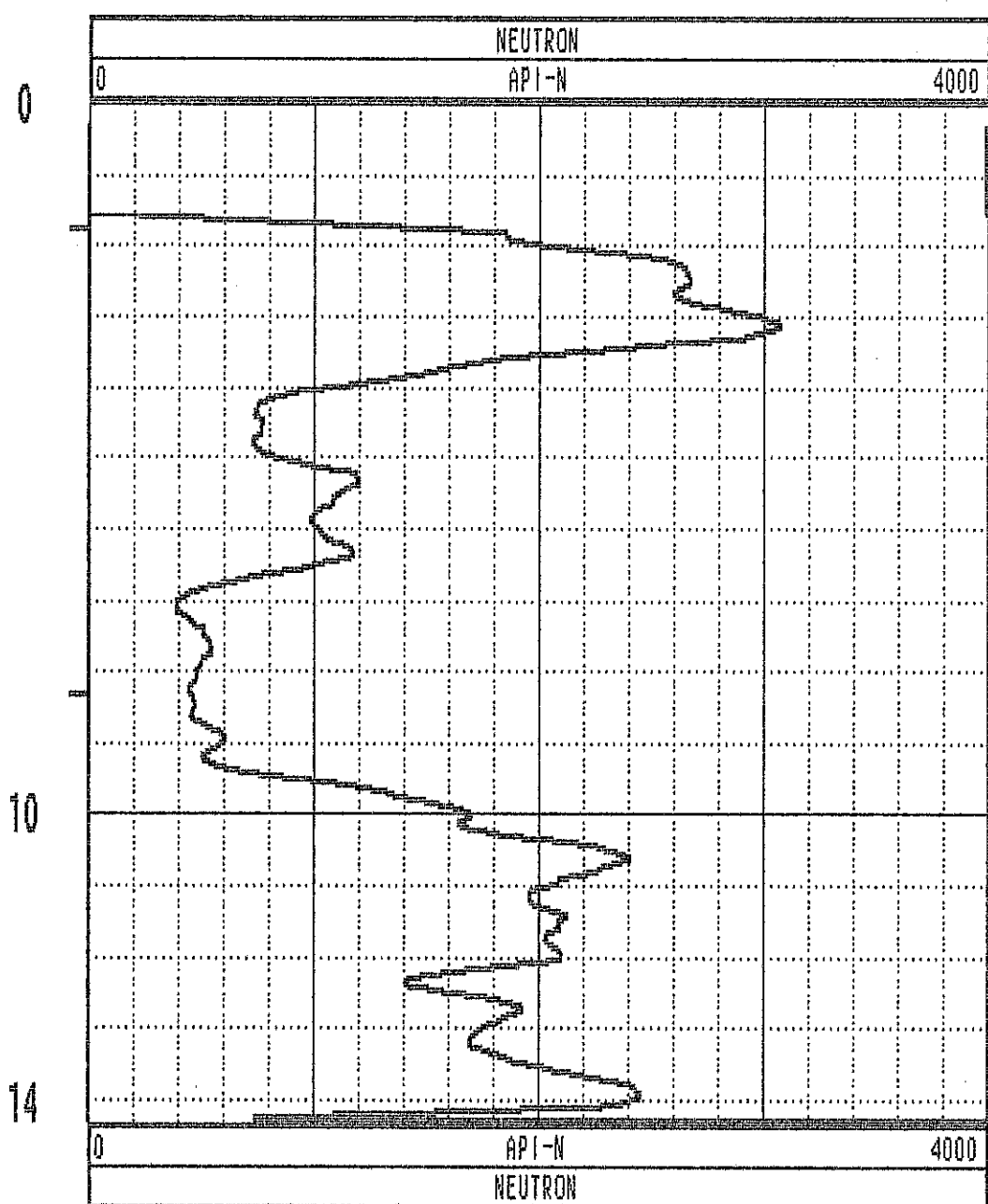
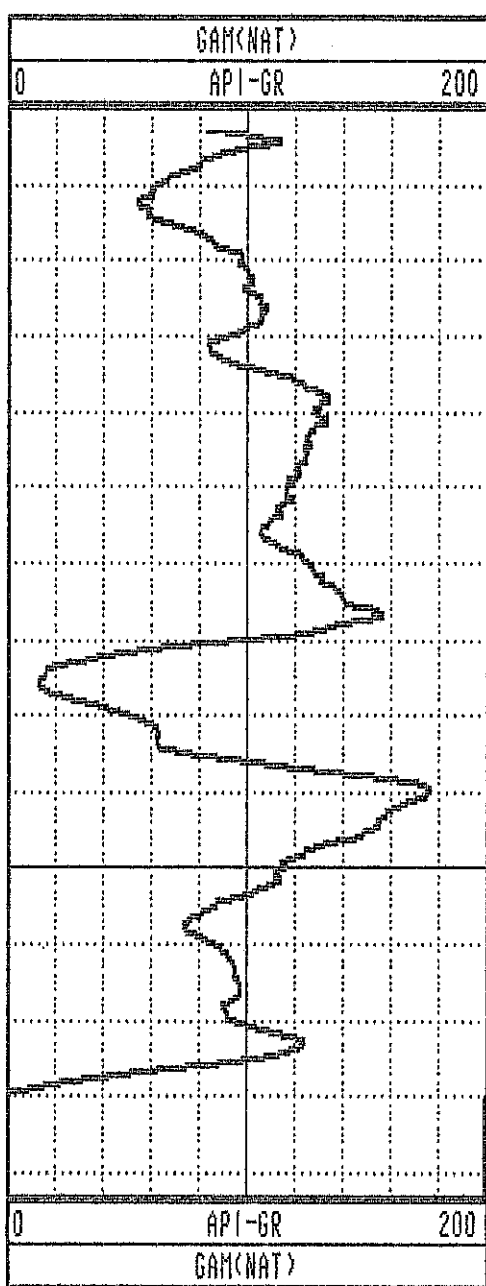
COMPANY : PINE VALLEY COAL
 WELL : WRH-96094
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 14 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 14.33 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.32 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96094
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

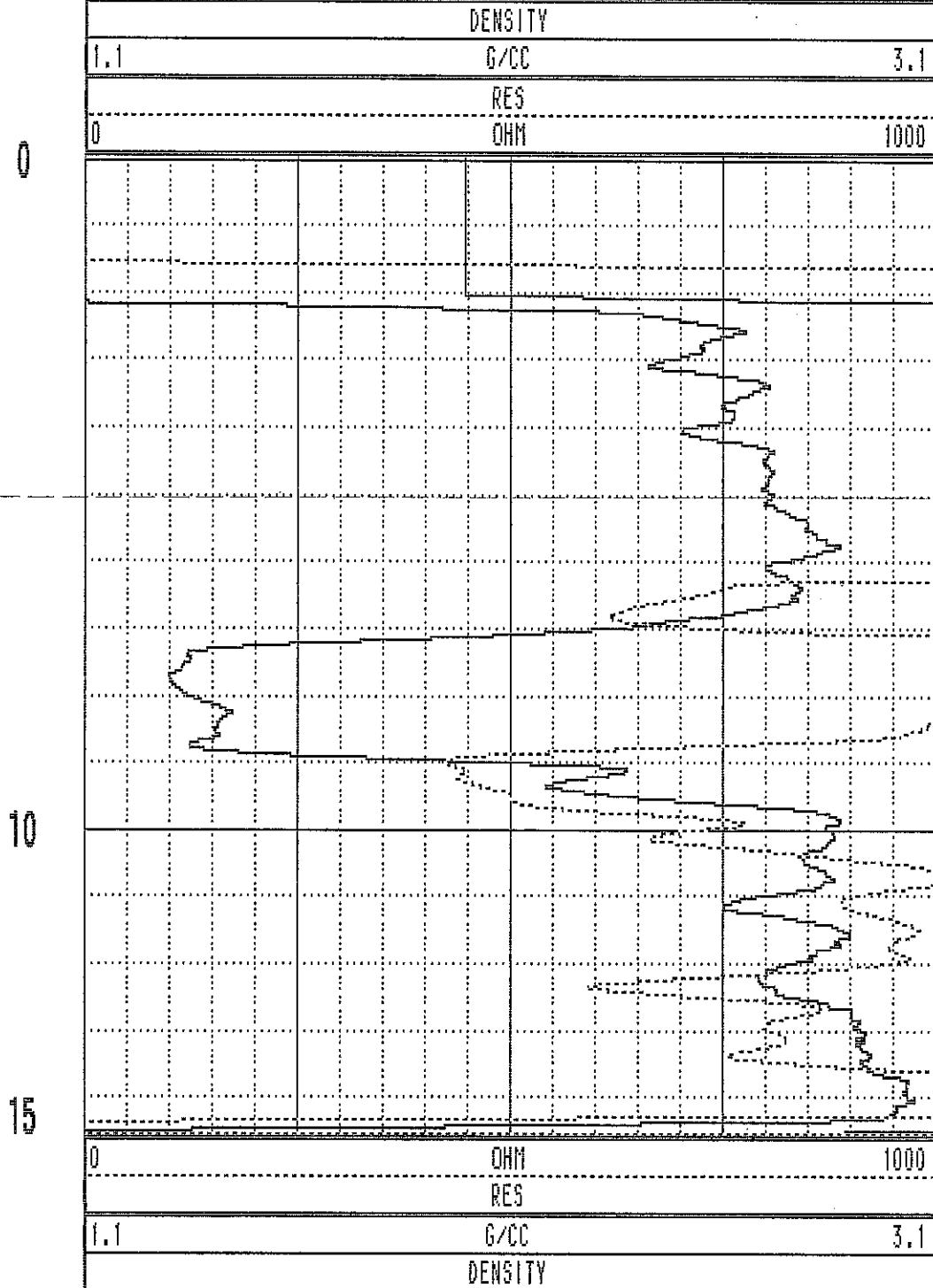
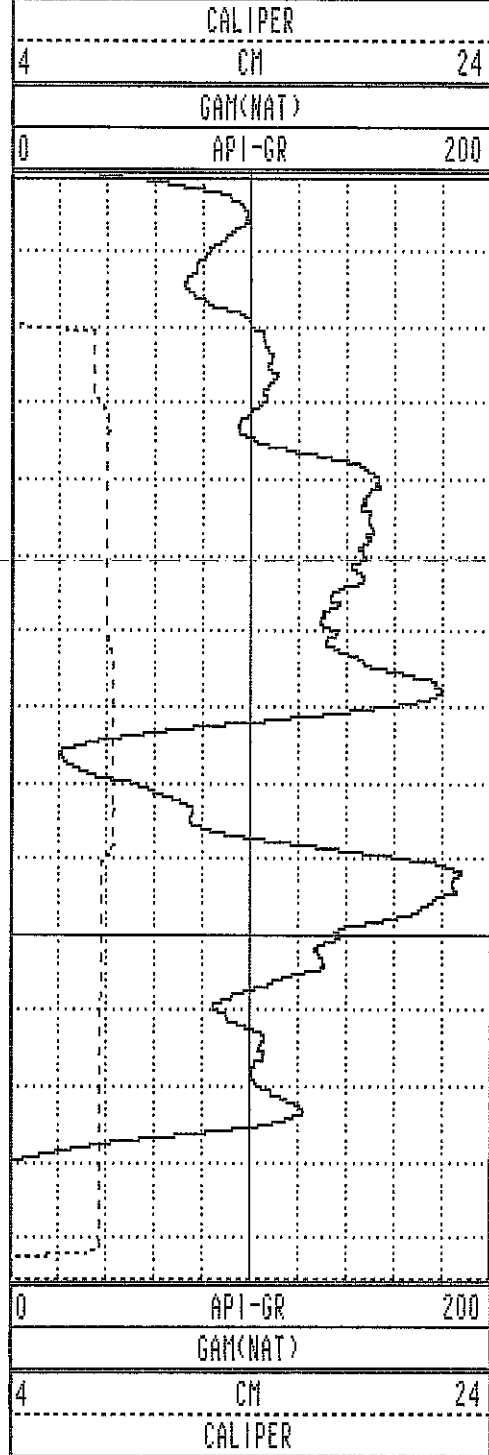
OTHER SERVICES:

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 14 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 14.58 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96094 08/01/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

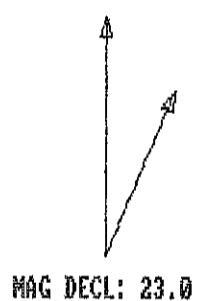
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.99 | -0.02 | -0.04 | 0.0 | 248.1 | 30.2 | 247.4 |
| 3.0 | 2.84 | -0.27 | -0.49 | 0.6 | 241.1 | 32.2 | 236.8 |
| 4.0 | 3.69 | -0.56 | -0.94 | 1.1 | 239.2 | 33.0 | 239.4 |
| 5.0 | 4.53 | -0.87 | -1.37 | 1.6 | 237.6 | 32.1 | 233.2 |
| 6.0 | 5.36 | -1.17 | -1.83 | 2.2 | 237.3 | 34.4 | 242.2 |
| 7.0 | 6.18 | -1.45 | -2.27 | 2.7 | 237.4 | 34.6 | 242.5 |
| 8.0 | 7.02 | -1.78 | -2.71 | 3.2 | 236.7 | 34.1 | 230.1 |
| 9.0 | 7.84 | -2.12 | -3.16 | 3.8 | 236.2 | 34.4 | 233.3 |
| 10.0 | 8.66 | -2.47 | -3.60 | 4.4 | 235.5 | 33.8 | 218.2 |
| 11.0 | 9.49 | -2.81 | -4.03 | 4.9 | 235.1 | 34.8 | 232.0 |
| 12.0 | 10.31 | -3.14 | -4.49 | 5.5 | 235.1 | 33.9 | 244.7 |
| 13.0 | 11.13 | -3.51 | -4.91 | 6.0 | 234.4 | 35.8 | 243.8 |
| 14.0 | 11.95 | -3.87 | -5.35 | 6.6 | 234.1 | 34.1 | 224.3 |
| 15.0 | 12.77 | -4.23 | -5.79 | 7.2 | 233.9 | 34.4 | 247.3 |
| 16.0 | 13.59 | -4.59 | -6.22 | 7.7 | 233.5 | 36.6 | 224.1 |
| 17.0 | 14.40 | -5.00 | -6.61 | 8.3 | 232.9 | 34.9 | 236.8 |
| 17.1 | 14.50 | -5.05 | -6.65 | 8.4 | 232.8 | 34.8 | 231.4 |

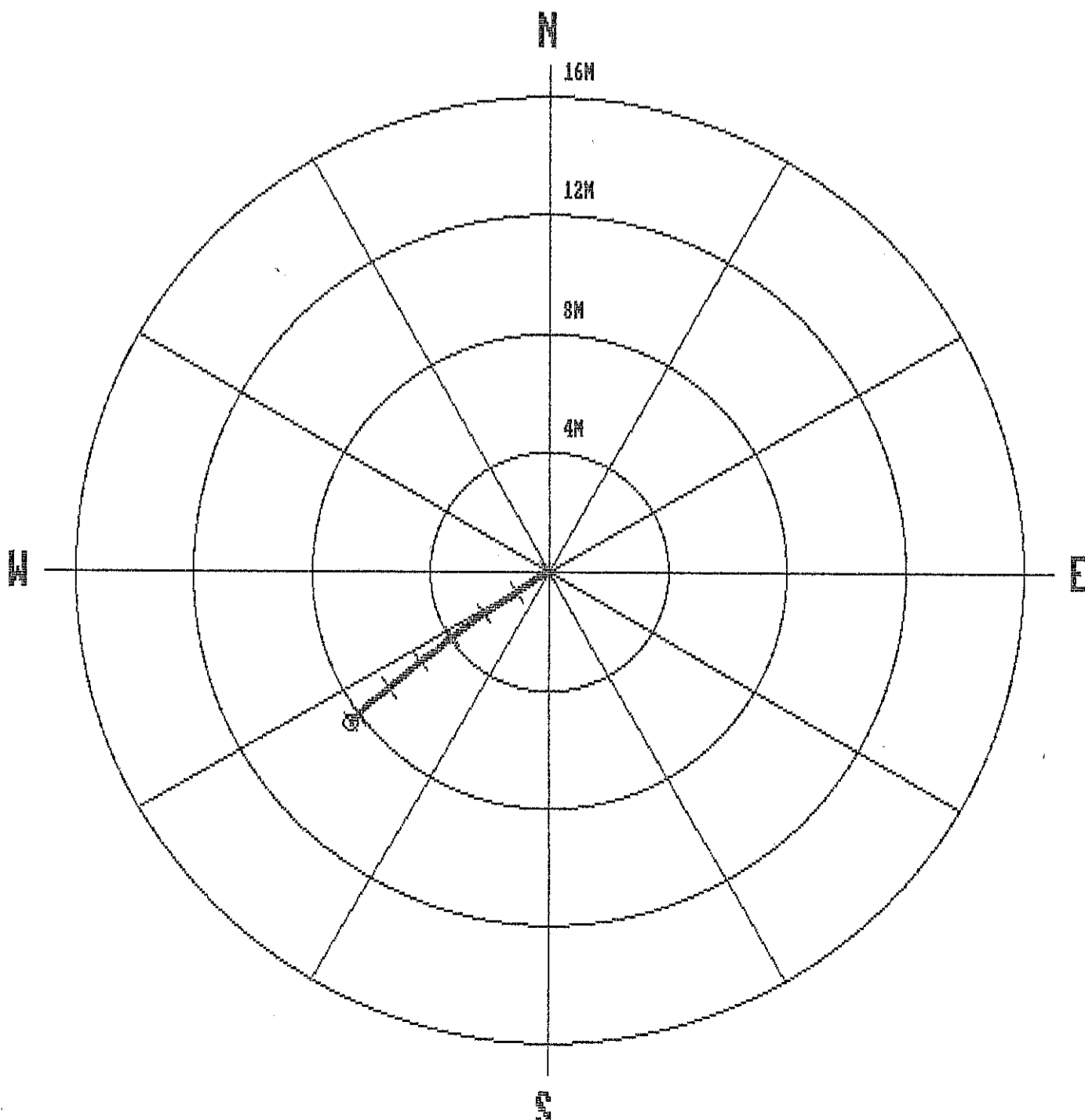
WRH 96095

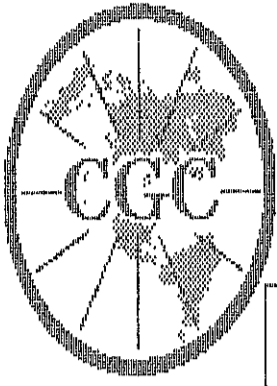
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96095
 DATE OF LOG: 08/02/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 14.50 M
 AZIMUTH: 232.8
 DISTANCE: 8.4 M
 + = 2 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96095
LOCATION/FIELD : MILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/02/96
DEPTH DRILLER : 14
LOG BOTTOM : 17.17
LOG TOP : 0.52

PERMANENT DATUM : ELEVATIONS
ELEV. PERM. DATUM: KB :
LOG MEASURED FROM: G.L. DF :
DRL MEASURED FROM: GL :

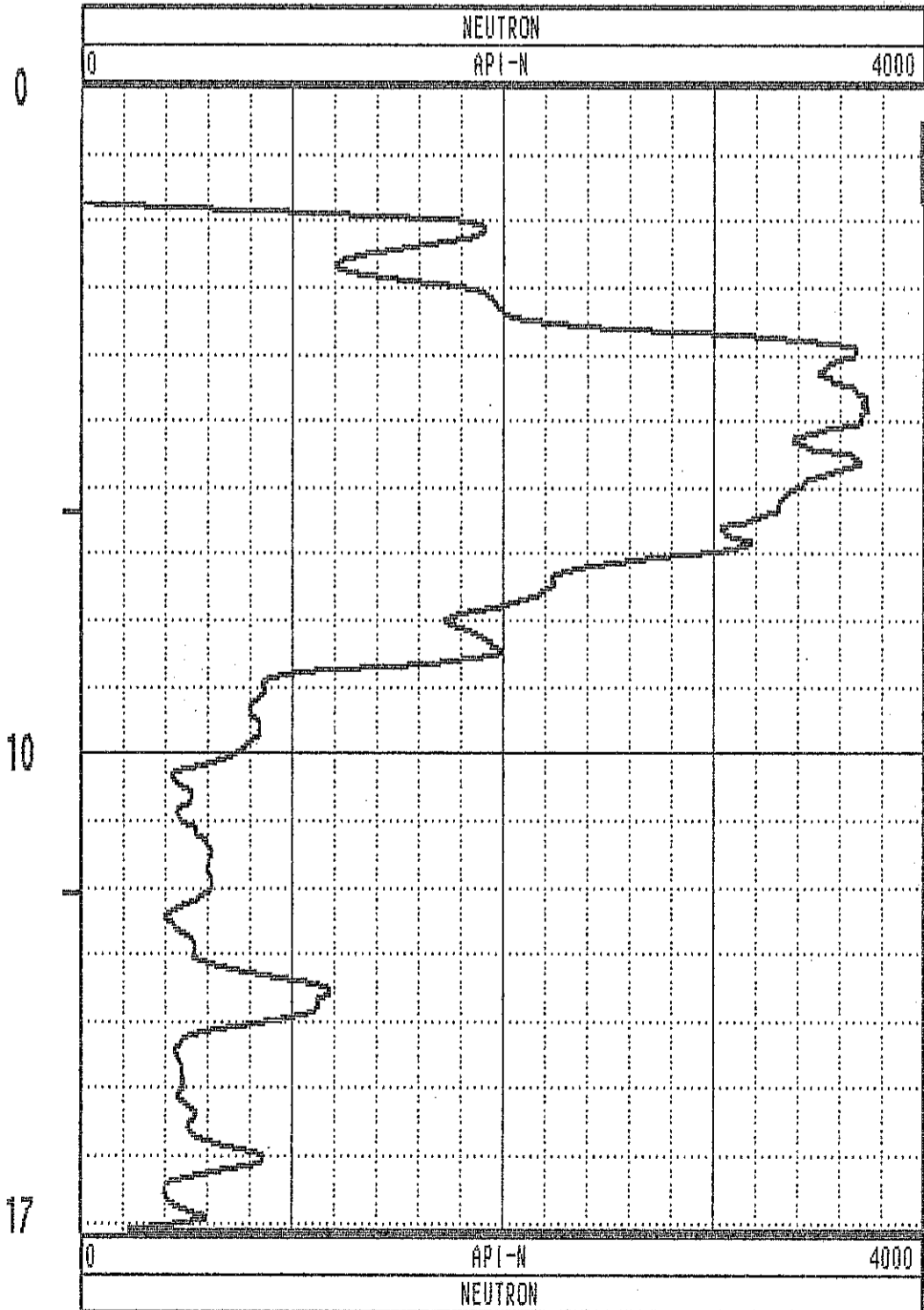
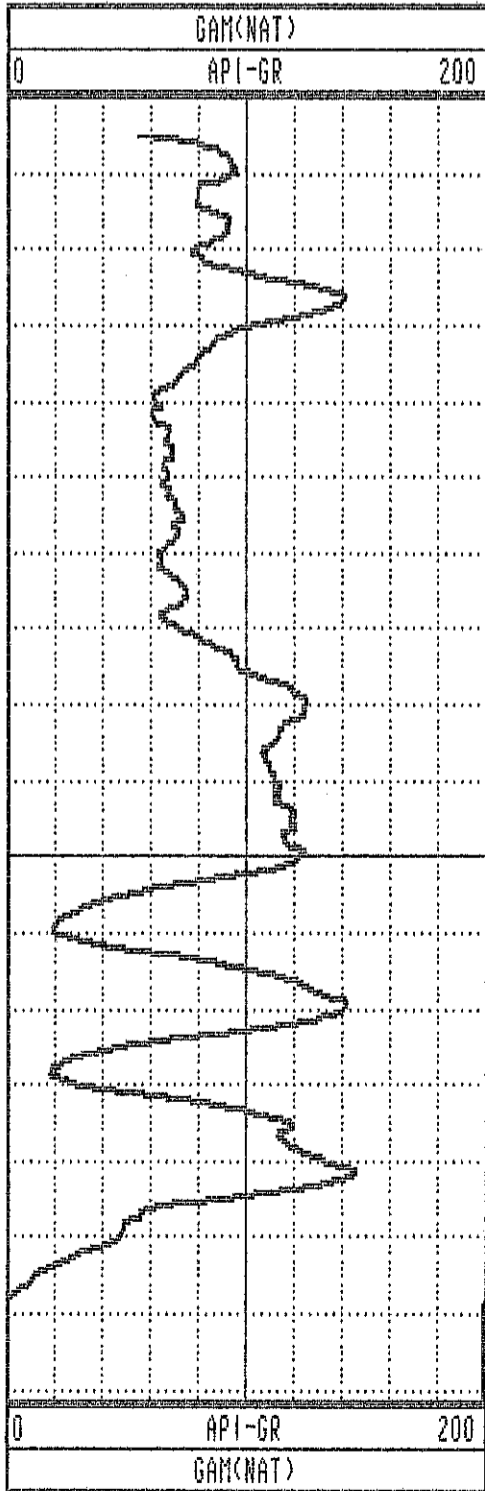
CASING DRILLER : 3
CASING TYPE : PLASTIC
CASING THICKNESS: .25

LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : AIR FILE : ORIGINAL
RM : TYPE : 9055A
RM TEMPERATURE : LOG : 8
MATRIX DELTA T : PLOT : PINE 4
FLUID DELTA T : THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

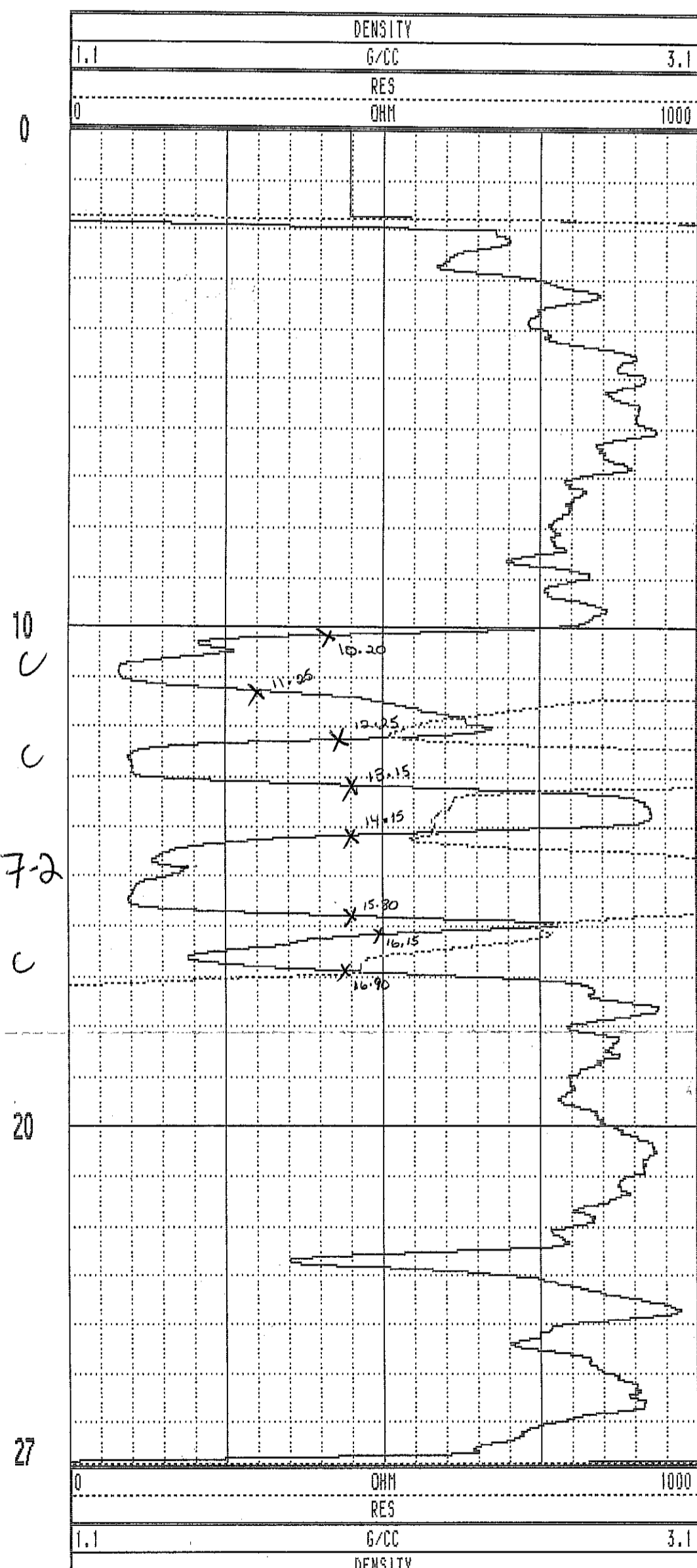
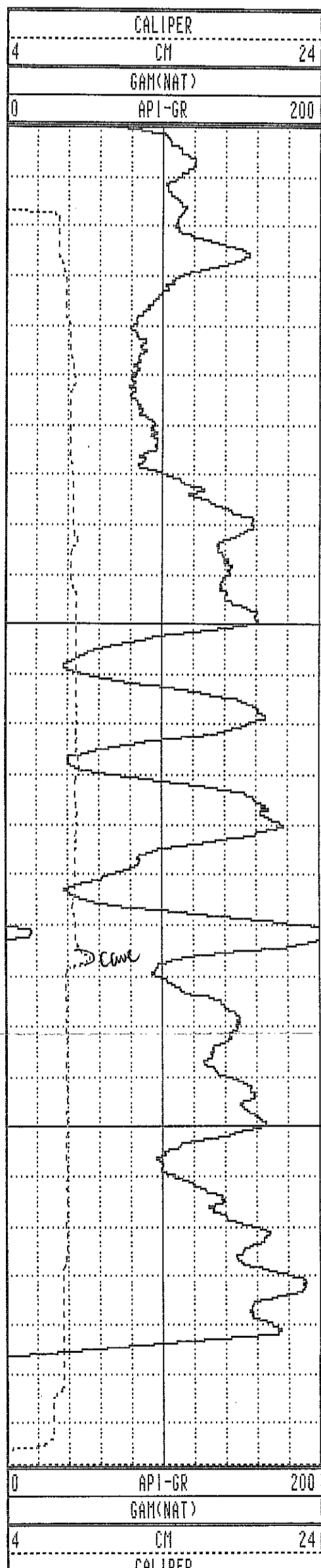


96095

GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96095 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/02/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM | : KB : |
| LOG BOTTOM | : 26.88 | LOG MEASURED FROM: G.L. | : DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | : GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96095 08/02/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

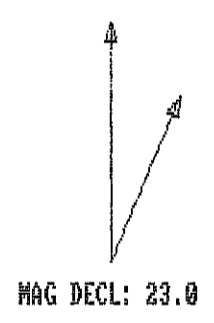
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 DHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 DHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 298.2 | 0.7 | 301.7 |
| 3.0 | 3.00 | 0.01 | -0.02 | 0.0 | 297.6 | 0.7 | 261.5 |
| 4.0 | 4.00 | 0.01 | -0.03 | 0.0 | 283.0 | 1.0 | 265.6 |
| 5.0 | 5.00 | 0.00 | -0.05 | 0.1 | 271.1 | 1.5 | 233.6 |
| 6.0 | 6.00 | -0.02 | -0.09 | 0.1 | 258.5 | 2.4 | 234.4 |
| 7.0 | 7.00 | -0.05 | -0.12 | 0.1 | 249.4 | 2.8 | 230.7 |
| 8.0 | 8.00 | -0.08 | -0.16 | 0.2 | 243.8 | 3.0 | 227.4 |
| 9.0 | 8.99 | -0.12 | -0.21 | 0.2 | 239.3 | 3.8 | 225.3 |
| 10.0 | 9.99 | -0.18 | -0.26 | 0.3 | 235.9 | 4.7 | 224.2 |
| 11.0 | 10.99 | -0.23 | -0.32 | 0.4 | 233.9 | 5.9 | 225.3 |
| 12.0 | 11.98 | -0.30 | -0.39 | 0.5 | 232.3 | 6.1 | 226.8 |
| 13.0 | 12.98 | -0.38 | -0.47 | 0.6 | 231.0 | 6.5 | 222.5 |
| 14.0 | 13.97 | -0.48 | -0.57 | 0.7 | 229.7 | 7.9 | 222.0 |
| 15.0 | 14.96 | -0.58 | -0.68 | 0.9 | 229.5 | 9.2 | 228.0 |
| 16.0 | 15.94 | -0.70 | -0.80 | 1.1 | 229.0 | 9.8 | 226.7 |
| 17.0 | 16.92 | -0.82 | -0.94 | 1.2 | 229.0 | 11.4 | 224.3 |
| 18.0 | 17.90 | -0.96 | -1.09 | 1.5 | 228.7 | 12.5 | 217.8 |
| 19.0 | 18.88 | -1.11 | -1.25 | 1.7 | 228.3 | 12.8 | 231.7 |
| 20.0 | 19.85 | -1.26 | -1.41 | 1.9 | 228.2 | 12.8 | 222.1 |
| 21.0 | 20.83 | -1.42 | -1.58 | 2.1 | 228.1 | 14.1 | 227.3 |
| 22.0 | 21.80 | -1.58 | -1.76 | 2.4 | 228.1 | 14.2 | 219.7 |
| 23.0 | 22.77 | -1.75 | -1.93 | 2.6 | 227.9 | 14.5 | 212.6 |
| 24.0 | 23.73 | -1.95 | -2.11 | 2.9 | 227.2 | 15.7 | 227.7 |
| 25.0 | 24.69 | -2.13 | -2.31 | 3.1 | 227.4 | 15.9 | 227.5 |
| 26.0 | 25.65 | -2.34 | -2.49 | 3.4 | 226.8 | 16.9 | 232.6 |
| 27.0 | 26.61 | -2.54 | -2.70 | 3.7 | 226.7 | 17.0 | 218.4 |
| 28.0 | 27.57 | -2.74 | -2.90 | 4.0 | 226.6 | 16.8 | 223.2 |
| 29.0 | 28.52 | -2.96 | -3.11 | 4.3 | 226.4 | 17.9 | 221.0 |
| 30.0 | 29.47 | -3.20 | -3.30 | 4.6 | 225.9 | 18.3 | 220.6 |
| 31.0 | 30.42 | -3.43 | -3.52 | 4.9 | 225.7 | 18.6 | 216.0 |
| 31.8 | 31.21 | -3.63 | -3.71 | 5.2 | 225.6 | 19.0 | 226.5 |

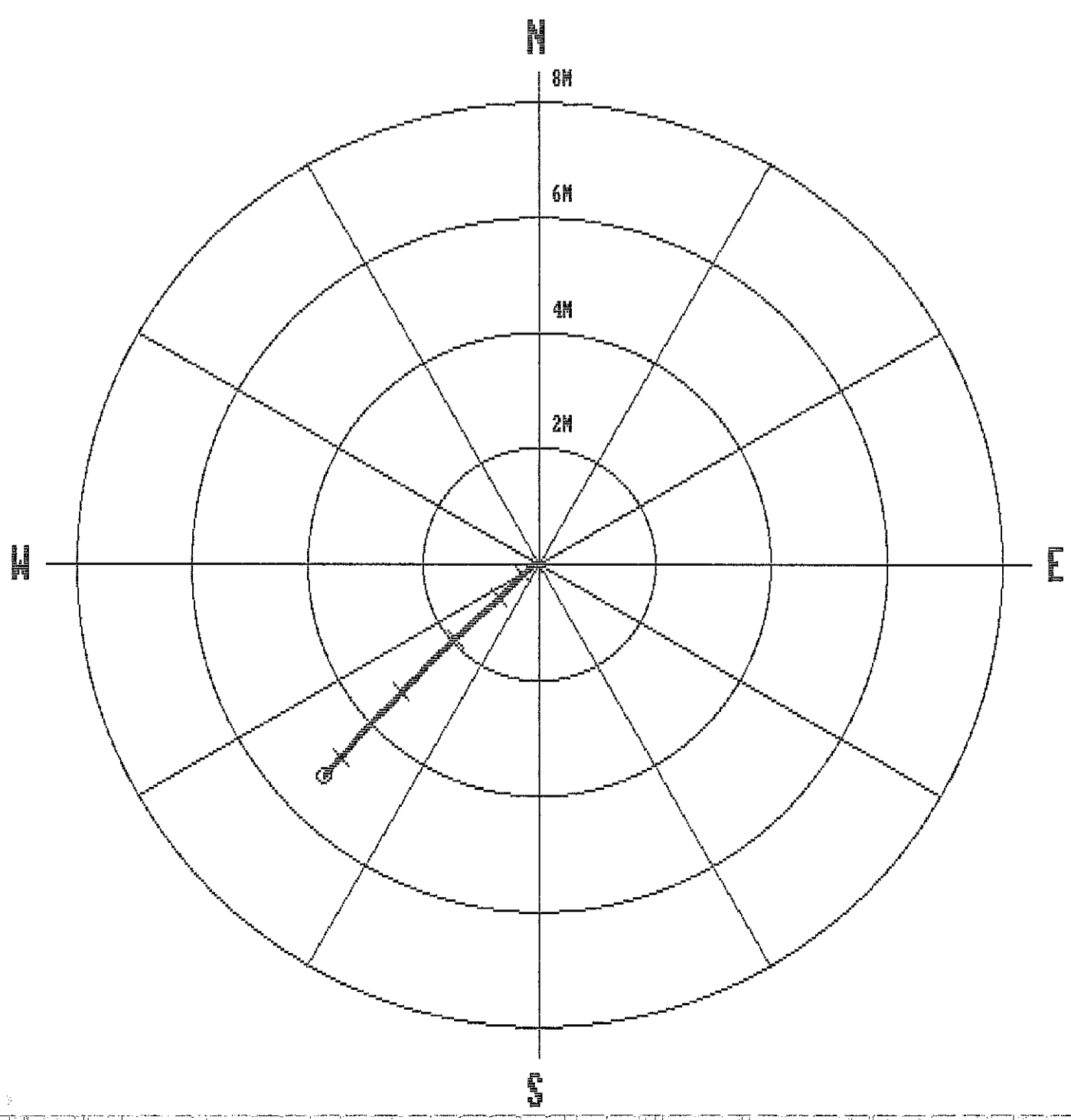
WAT 96096

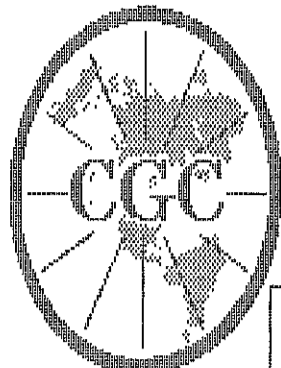
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96096
 DATE OF LOG: 08/02/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 31.21 M
 AZIMUTH: 225.6
 DISTANCE: 5.2 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96096
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

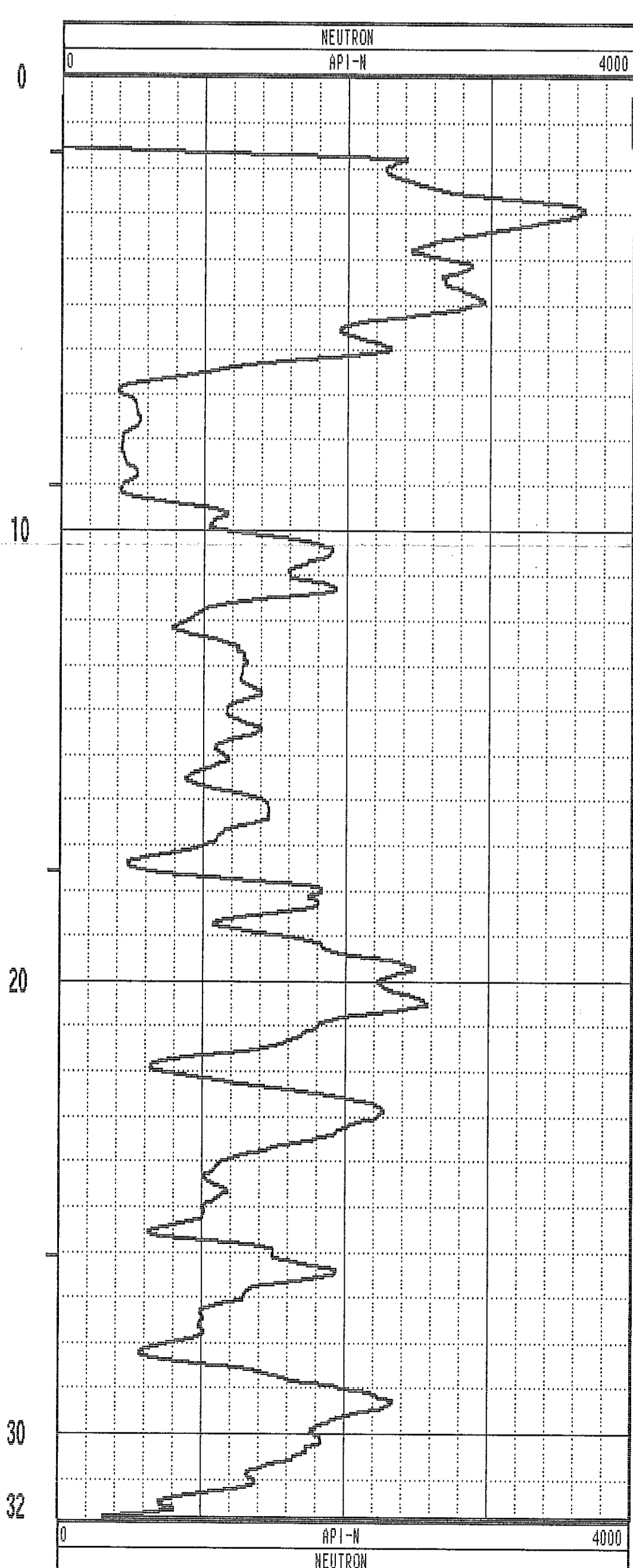
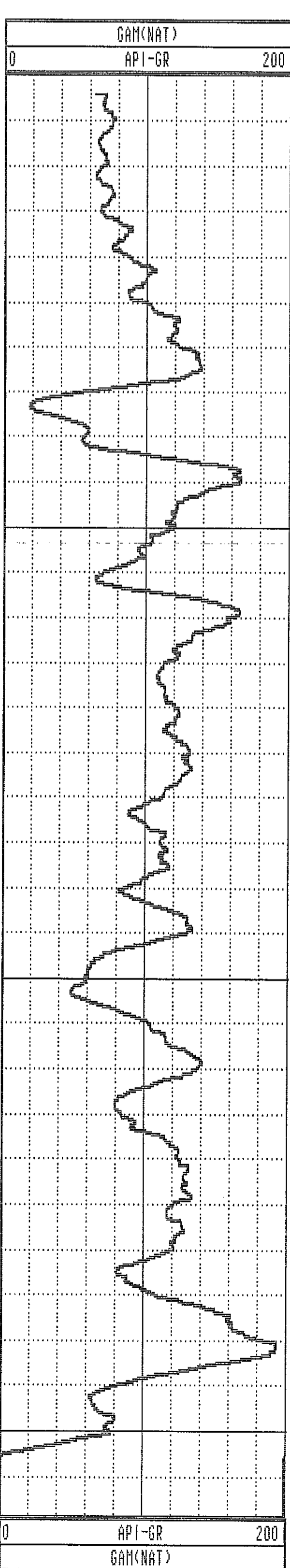
OTHER SERVICES:

DATE : 08/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 31 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 31.90 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.42 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



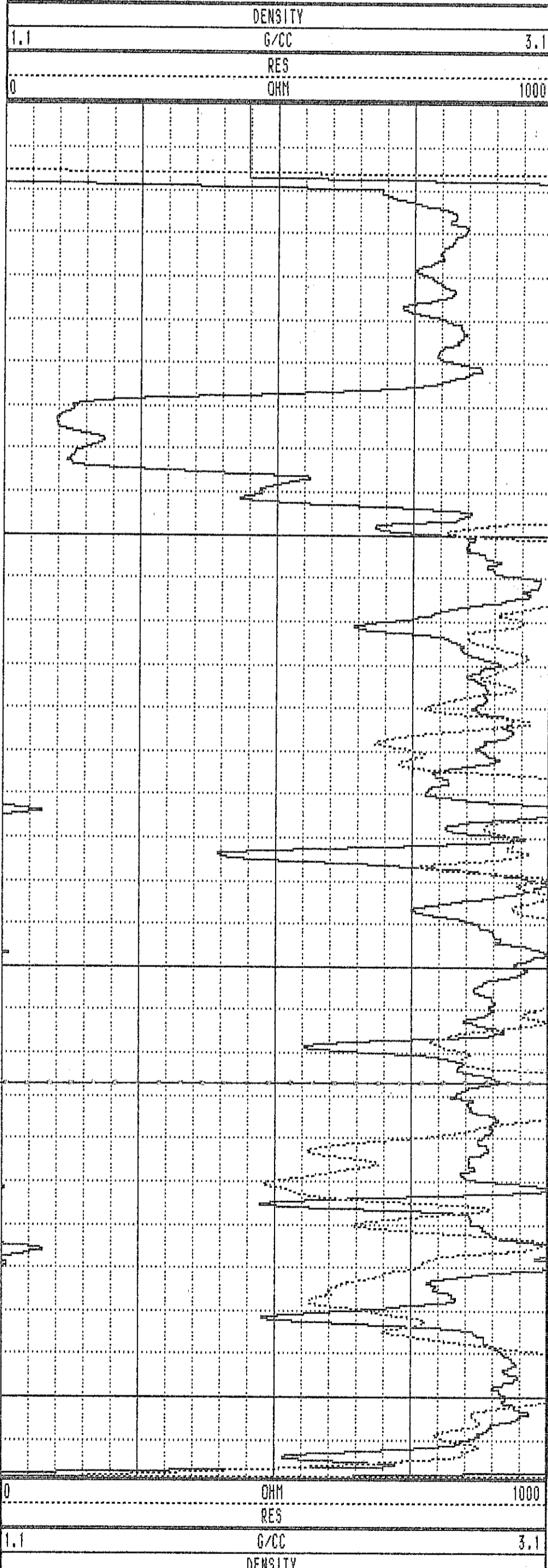
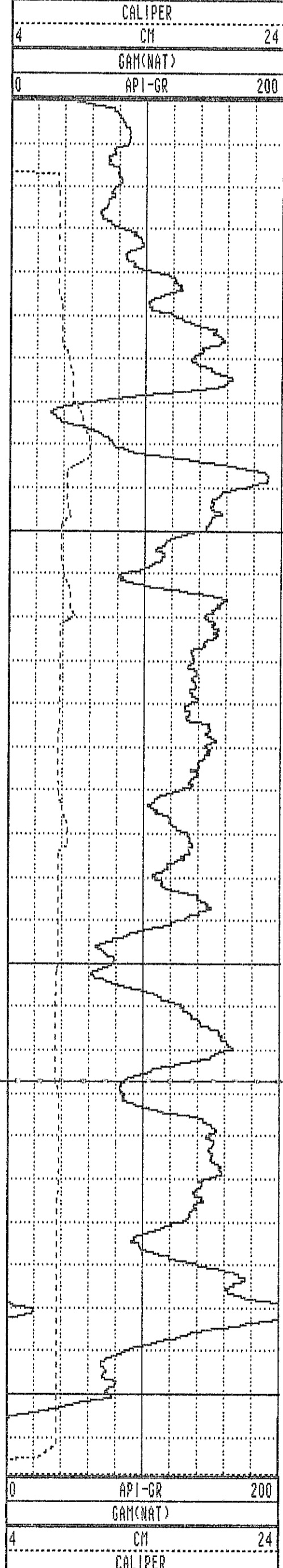
GAMMA-RES-DENSITY

| | | | |
|----------------|--------------------|-----------------|-----------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96096 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |

| | | | |
|-------------------|------------|--------------------|----------------|
| DATE | : 08/02/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 31 | ELEV. PERM. DATUM: | : KB : |
| LOG BOTTOM | : 31.90 | LOG MEASURED FROM: | : G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | : GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |

| | | | | | |
|----------------|--------|----------------|-------|--------|-------------|
| BIT SIZE | : | BOREHOLE FLUID | : AIR | FILE | : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : | TYPE | : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG | : 5 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT | : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH | : 10000 |
| REMARKS | : | | | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96096 08/02/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

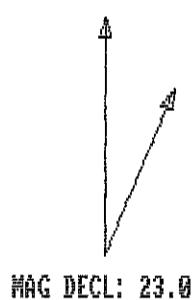
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 196.7 | 0.9 | 191.7 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 212.6 | 0.5 | 194.5 |
| 4.0 | 4.00 | -0.03 | -0.01 | 0.0 | 201.4 | 0.9 | 188.1 |
| 5.0 | 5.00 | -0.05 | -0.02 | 0.0 | 201.2 | 1.4 | 208.5 |
| 6.0 | 6.00 | -0.07 | -0.03 | 0.1 | 206.2 | 2.6 | 213.5 |
| 7.0 | 7.00 | -0.10 | -0.06 | 0.1 | 209.1 | 2.7 | 216.8 |
| 8.0 | 8.00 | -0.15 | -0.09 | 0.2 | 210.6 | 2.9 | 214.5 |
| 9.0 | 8.99 | -0.19 | -0.12 | 0.2 | 212.6 | 4.2 | 211.0 |
| 10.0 | 9.99 | -0.25 | -0.17 | 0.3 | 214.5 | 5.1 | 225.0 |
| 11.0 | 10.99 | -0.32 | -0.23 | 0.4 | 215.9 | 5.1 | 220.9 |
| 12.0 | 11.98 | -0.39 | -0.29 | 0.5 | 216.7 | 5.3 | 221.5 |
| 13.0 | 12.98 | -0.47 | -0.36 | 0.6 | 217.2 | 6.6 | 217.2 |
| 14.0 | 13.97 | -0.56 | -0.45 | 0.7 | 218.4 | 7.5 | 228.3 |
| 15.0 | 14.96 | -0.67 | -0.54 | 0.9 | 219.1 | 8.0 | 221.3 |
| 16.0 | 15.95 | -0.79 | -0.64 | 1.0 | 219.3 | 9.3 | 221.0 |
| 17.0 | 16.93 | -0.92 | -0.75 | 1.2 | 219.4 | 10.0 | 215.8 |
| 18.0 | 17.92 | -1.05 | -0.86 | 1.4 | 219.3 | 10.6 | 219.0 |
| 19.0 | 18.90 | -1.19 | -0.99 | 1.5 | 219.6 | 10.8 | 228.6 |
| 20.0 | 19.88 | -1.34 | -1.11 | 1.7 | 219.6 | 11.7 | 214.3 |
| 21.0 | 20.86 | -1.50 | -1.24 | 1.9 | 219.7 | 11.4 | 222.8 |
| 22.0 | 21.84 | -1.66 | -1.38 | 2.2 | 219.6 | 12.6 | 219.2 |
| 23.0 | 22.81 | -1.84 | -1.51 | 2.4 | 219.4 | 13.7 | 208.4 |
| 24.0 | 23.78 | -2.02 | -1.66 | 2.6 | 219.5 | 13.2 | 214.7 |
| 25.0 | 24.75 | -2.20 | -1.82 | 2.9 | 219.5 | 14.3 | 230.6 |
| 26.0 | 25.72 | -2.39 | -1.98 | 3.1 | 219.7 | 14.6 | 215.4 |
| 27.0 | 26.69 | -2.58 | -2.15 | 3.4 | 219.8 | 15.3 | 228.0 |
| 28.0 | 27.65 | -2.77 | -2.34 | 3.6 | 220.2 | 16.5 | 212.5 |
| 29.0 | 28.61 | -2.99 | -2.52 | 3.9 | 220.1 | 17.5 | 222.4 |
| 30.0 | 29.56 | -3.22 | -2.71 | 4.2 | 220.1 | 17.7 | 221.3 |
| 31.0 | 30.52 | -3.46 | -2.90 | 4.5 | 220.0 | 17.8 | 216.8 |
| 32.0 | 31.47 | -3.68 | -3.11 | 4.8 | 220.2 | 18.8 | 209.9 |
| 33.0 | 32.38 | -3.90 | -3.30 | 5.1 | 220.2 | 0.0 | 0.0 |
| 32.9 | 32.36 | -3.90 | -3.30 | 5.1 | 220.2 | 18.5 | 222.6 |

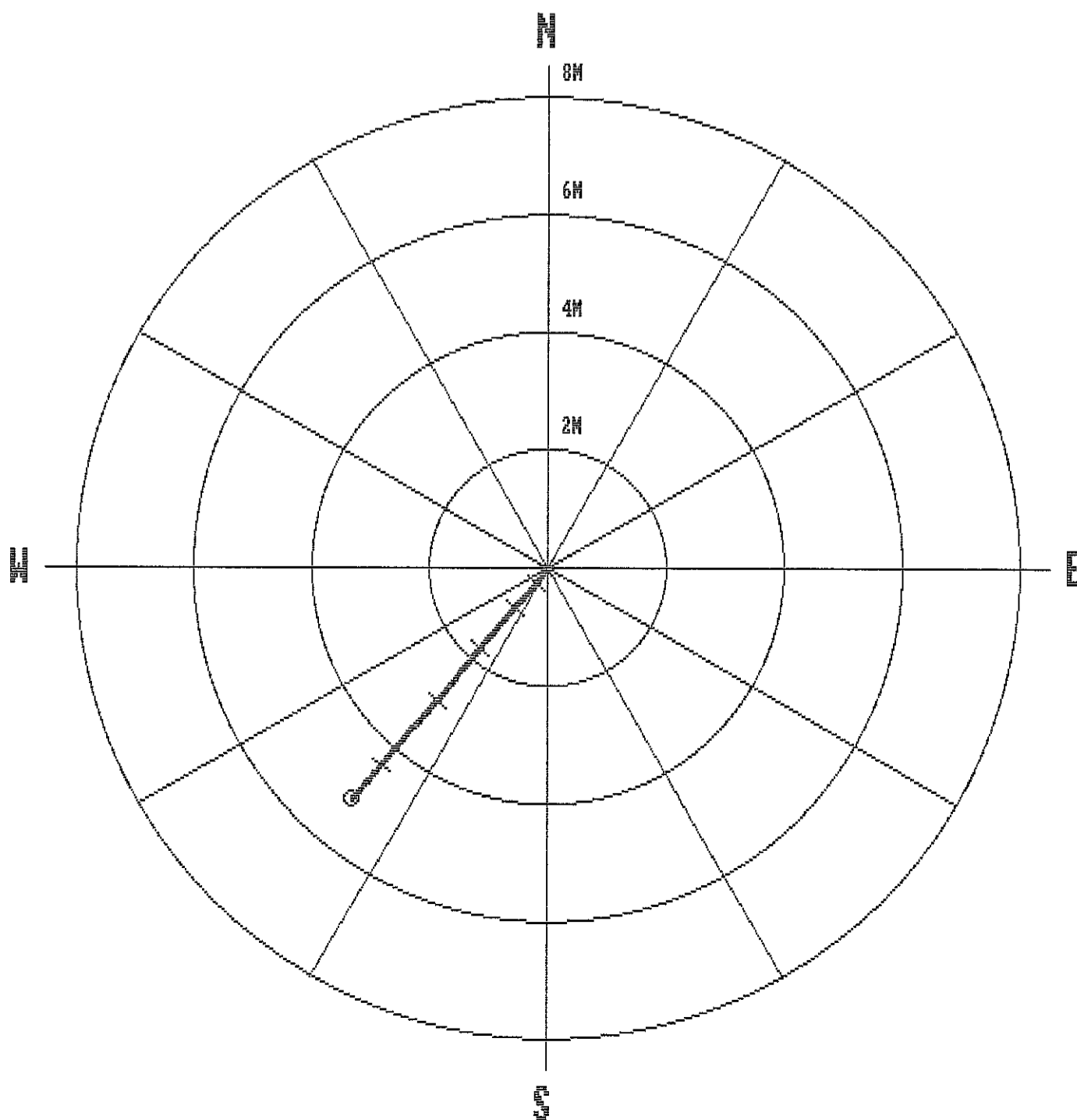
PLAN VIEW

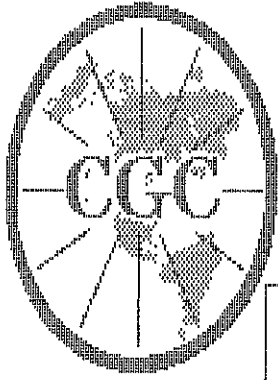
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: NRH-96097
 DATE OF LOG: 08/07/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 32.36 M
 AZIMUTH: 220.2
 DISTANCE: 5.1 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

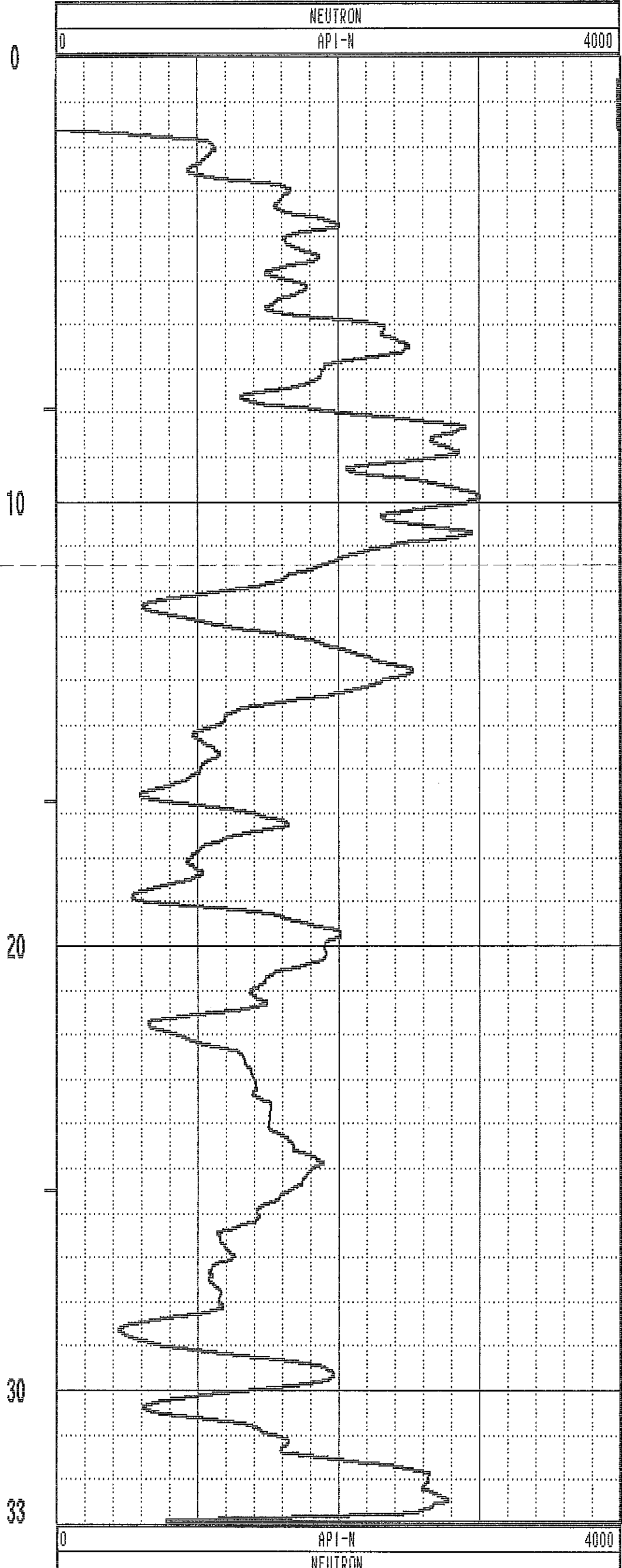
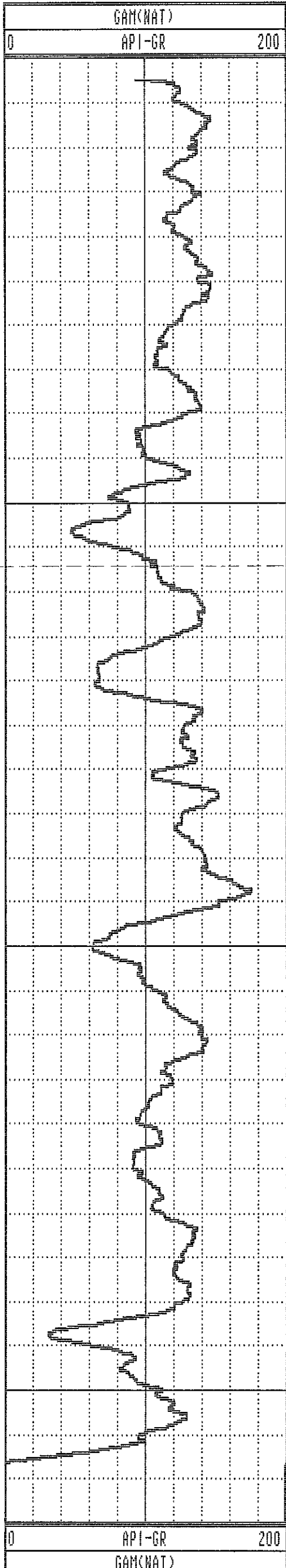
COMPANY : PINE VALLEY COAL
 WELL : WRH-96097
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 08/07/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 33.01 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.50 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

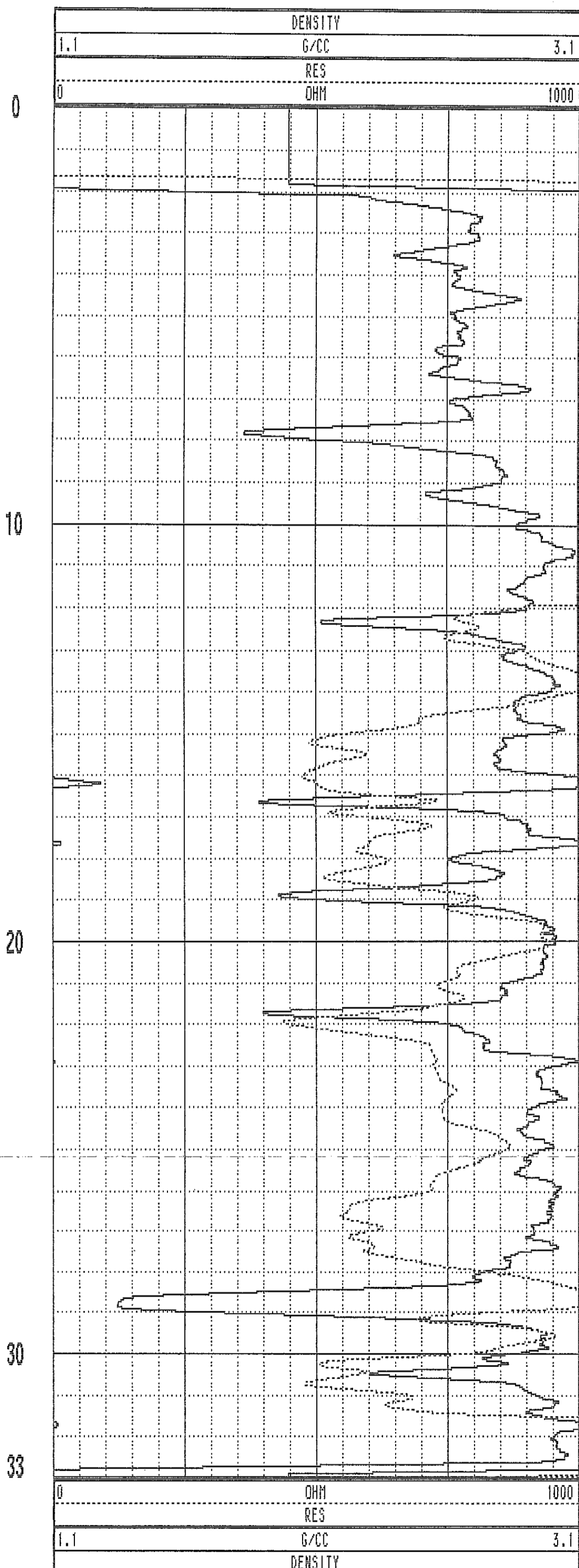
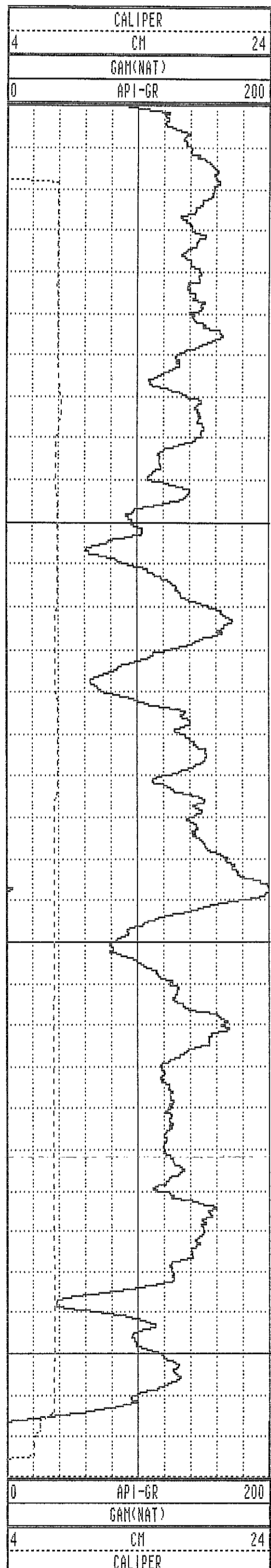
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96097 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 08/07/96 PERMANENT DATUM : DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB : LOG BOTTOM : 33.00 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 5 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96097 08/07/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

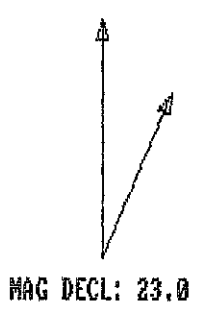
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.01 | 0.0 | 98.7 | 3.8 | 117.1 |
| 3.0 | 3.00 | -0.01 | 0.05 | 0.1 | 103.0 | 2.5 | 94.2 |
| 4.0 | 4.00 | -0.01 | 0.10 | 0.1 | 96.1 | 2.8 | 83.5 |
| 5.0 | 5.00 | -0.00 | 0.15 | 0.2 | 90.5 | 3.0 | 73.8 |
| 6.0 | 5.99 | 0.01 | 0.20 | 0.2 | 87.2 | 3.2 | 82.4 |
| 7.0 | 6.99 | 0.02 | 0.26 | 0.3 | 85.9 | 3.2 | 81.1 |
| 8.0 | 7.99 | 0.02 | 0.31 | 0.3 | 85.5 | 2.8 | 86.1 |
| 9.0 | 8.99 | 0.03 | 0.36 | 0.4 | 85.0 | 2.8 | 87.7 |
| 10.0 | 9.99 | 0.04 | 0.40 | 0.4 | 85.0 | 2.1 | 88.8 |
| 11.0 | 10.99 | 0.04 | 0.44 | 0.4 | 85.2 | 2.0 | 86.9 |
| 12.0 | 11.99 | 0.03 | 0.47 | 0.5 | 85.9 | 1.5 | 90.4 |
| 13.0 | 12.99 | 0.03 | 0.50 | 0.5 | 86.4 | 1.7 | 101.7 |
| 14.0 | 13.99 | 0.03 | 0.53 | 0.5 | 87.1 | 1.3 | 105.3 |
| 15.0 | 14.99 | 0.02 | 0.54 | 0.5 | 87.6 | 0.9 | 85.0 |
| 16.0 | 15.99 | 0.02 | 0.56 | 0.6 | 88.0 | 1.1 | 91.8 |
| 17.0 | 16.99 | 0.02 | 0.59 | 0.6 | 88.4 | 1.0 | 103.7 |
| 18.0 | 17.99 | 0.01 | 0.60 | 0.6 | 88.9 | 0.8 | 124.3 |
| 19.0 | 18.99 | 0.00 | 0.61 | 0.6 | 89.8 | 0.8 | 145.4 |
| 19.7 | 19.69 | -0.01 | 0.62 | 0.6 | 90.8 | 1.0 | 155.3 |

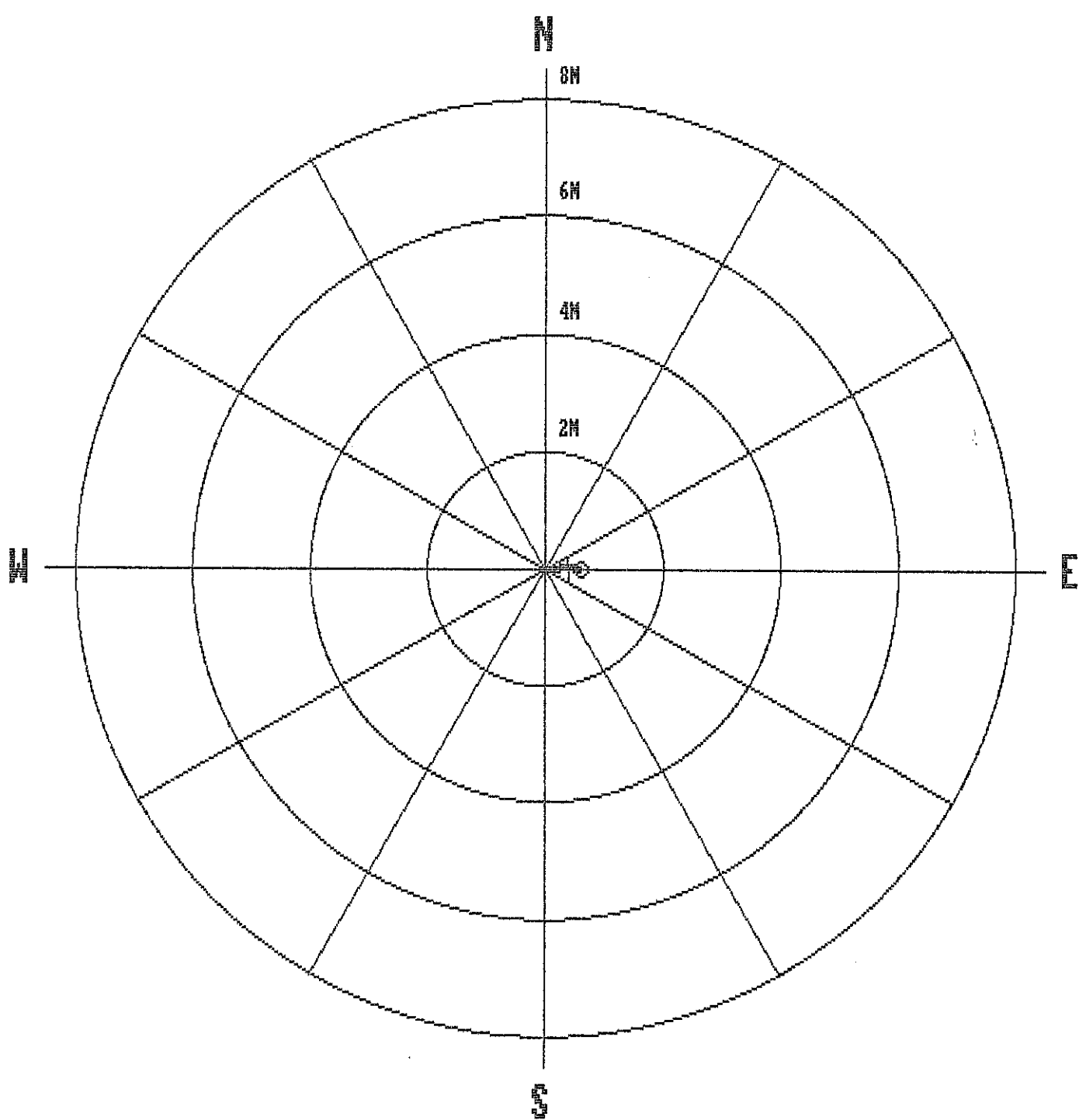
WHR 96098

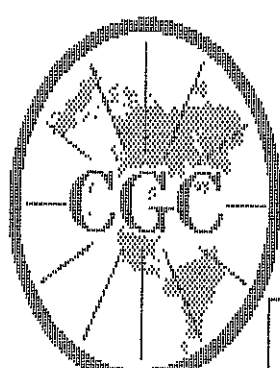
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WHR-96098
 DATE OF LOG: 08/02/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 19.69 M
 AZIMUTH: 90.8
 DISTANCE: 0.6 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



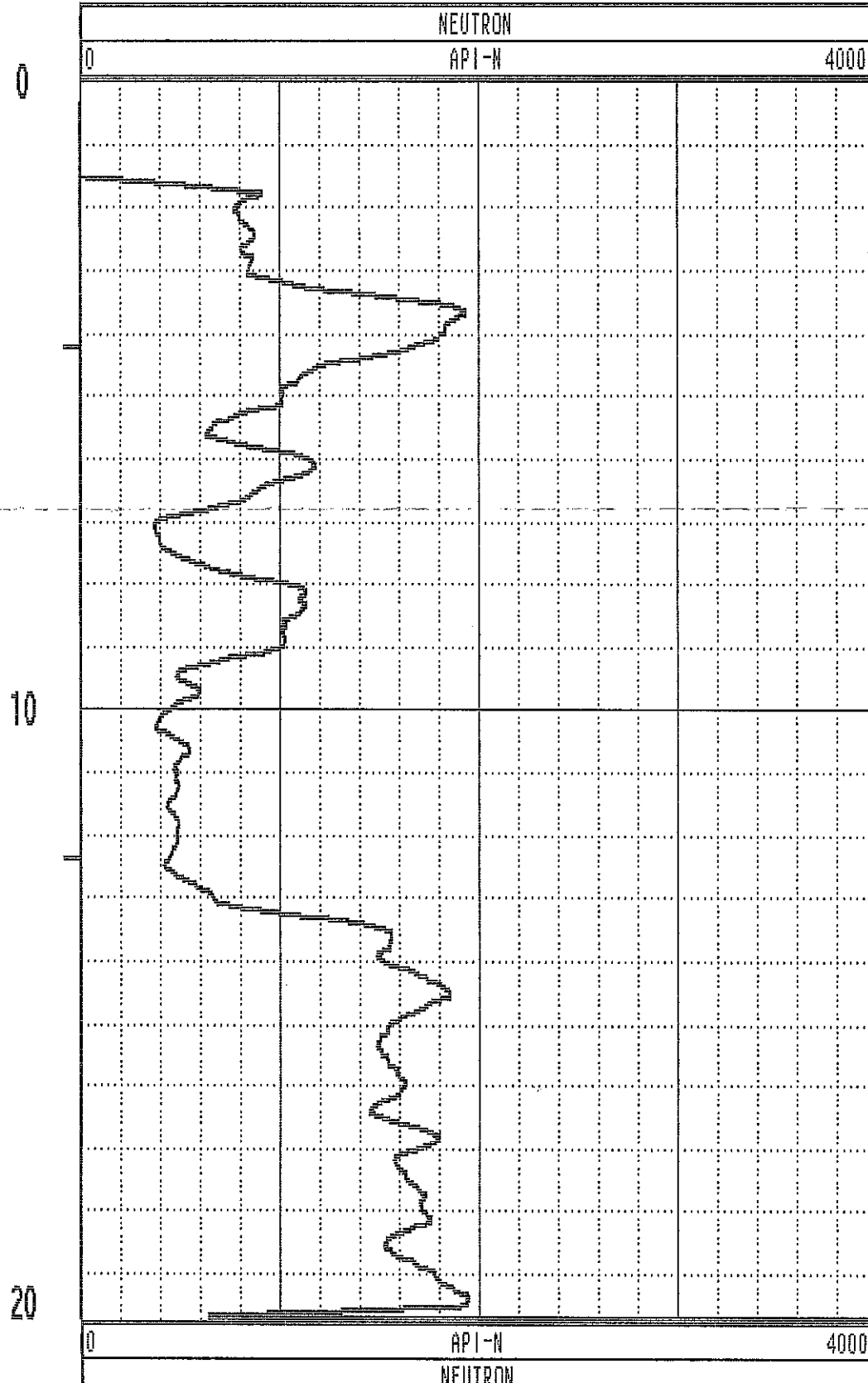
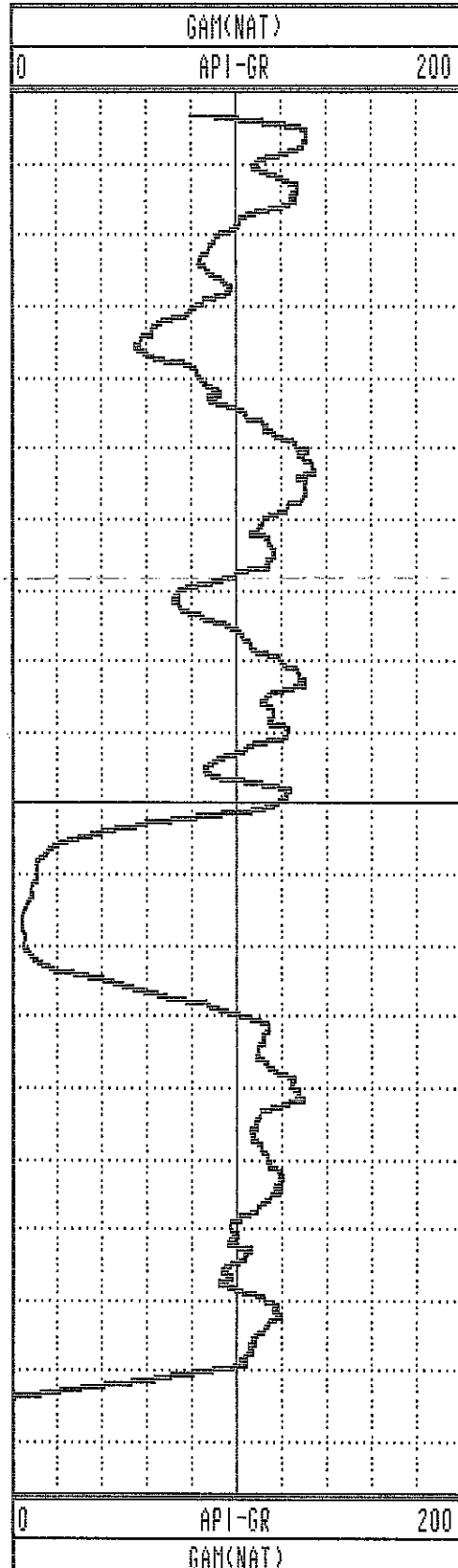


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-----------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96098 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/02/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 19 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 19.76 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.34 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 4 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

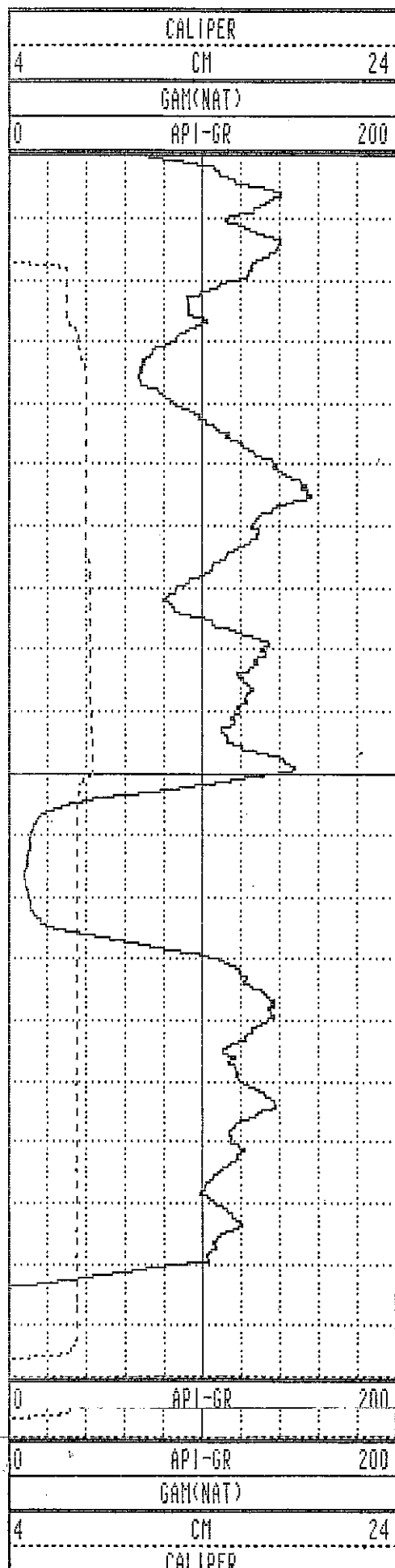
COMPANY : PINE VALLEY COAL
 WELL : WRH-96098
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

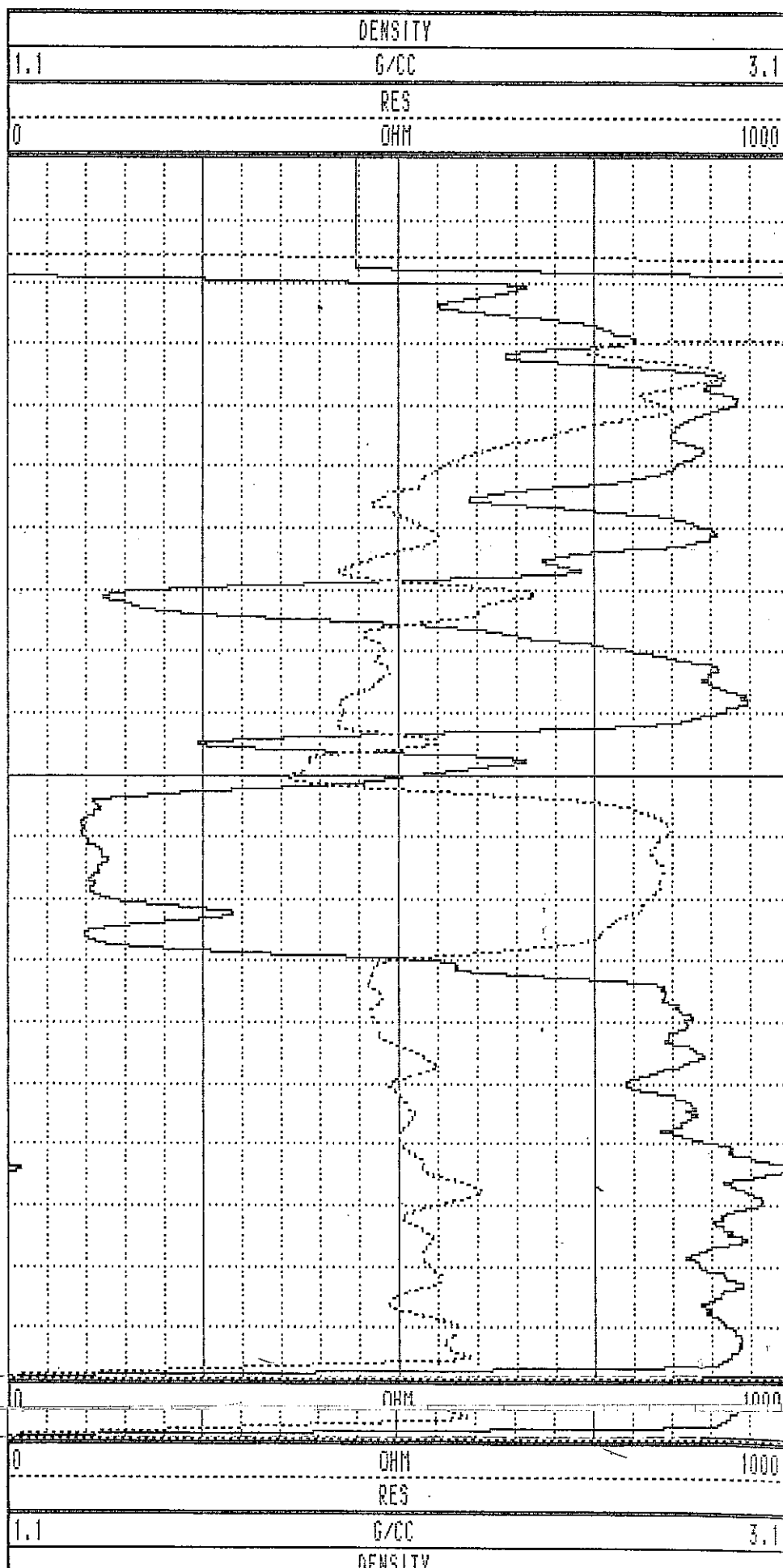
DATE : 08/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 19.88 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
20
20



WRH-96098 08/02/96 958

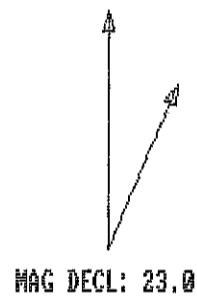
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

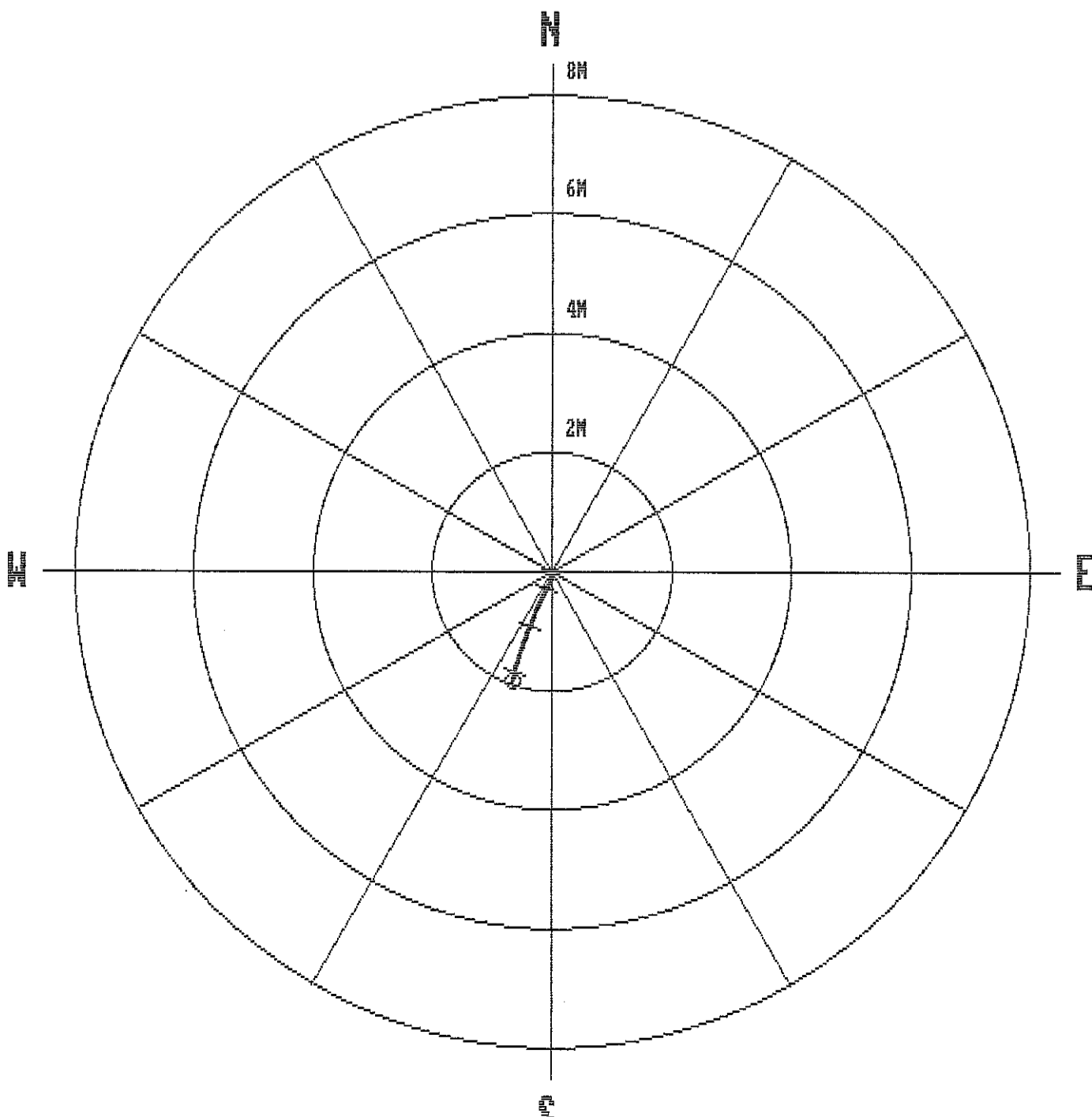
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 116.3 | 0.2 | 78.7 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 45.1 | 0.4 | 33.7 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 30.1 | 0.3 | 82.6 |
| 5.0 | 5.00 | -0.00 | 0.01 | 0.0 | 96.7 | 1.2 | 163.9 |
| 6.0 | 6.00 | -0.03 | 0.01 | 0.0 | 153.0 | 1.8 | 181.2 |
| 7.0 | 7.00 | -0.07 | 0.01 | 0.1 | 168.2 | 2.2 | 185.1 |
| 8.0 | 8.00 | -0.13 | 0.00 | 0.1 | 178.1 | 4.3 | 191.2 |
| 9.0 | 8.99 | -0.20 | -0.03 | 0.2 | 188.6 | 5.2 | 214.0 |
| 10.0 | 9.99 | -0.29 | -0.08 | 0.3 | 195.0 | 6.9 | 200.8 |
| 11.0 | 10.98 | -0.39 | -0.13 | 0.4 | 198.1 | 6.8 | 209.8 |
| 12.0 | 11.97 | -0.50 | -0.18 | 0.5 | 199.9 | 7.2 | 211.4 |
| 13.0 | 12.97 | -0.62 | -0.24 | 0.7 | 201.4 | 8.5 | 197.6 |
| 14.0 | 13.95 | -0.76 | -0.29 | 0.8 | 201.2 | 8.7 | 196.2 |
| 15.0 | 14.94 | -0.89 | -0.35 | 1.0 | 201.4 | 8.3 | 210.6 |
| 16.0 | 15.93 | -1.03 | -0.41 | 1.1 | 201.5 | 10.2 | 199.4 |
| 17.0 | 16.92 | -1.19 | -0.47 | 1.3 | 201.4 | 9.5 | 197.6 |
| 18.0 | 17.90 | -1.35 | -0.52 | 1.4 | 201.0 | 9.3 | 197.7 |
| 19.0 | 18.89 | -1.50 | -0.57 | 1.6 | 200.8 | 9.8 | 199.7 |
| 20.0 | 19.87 | -1.66 | -0.62 | 1.8 | 200.4 | 9.6 | 196.0 |
| 20.9 | 20.76 | -1.82 | -0.65 | 1.9 | 199.7 | 10.4 | 196.9 |

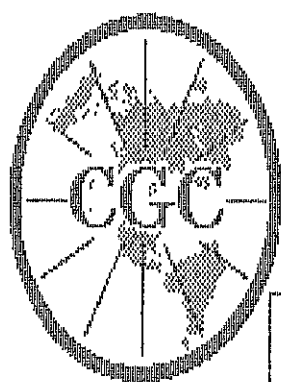
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96099
DATE OF LOG: 08/07/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 20.76 M
AZIMUTH: 199.7
DISTANCE: 1.9 M
+ = 5 M INCR
○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96099
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/07/96
DEPTH DRILLER : 20
LOG BOTTOM : 20.95
LOG TOP : 0.42

PERMANENT DATUM :
ELEV. PERM. DATUM: KB :
LOG MEASURED FROM: G.L. DF :
DRL MEASURED FROM: GL :

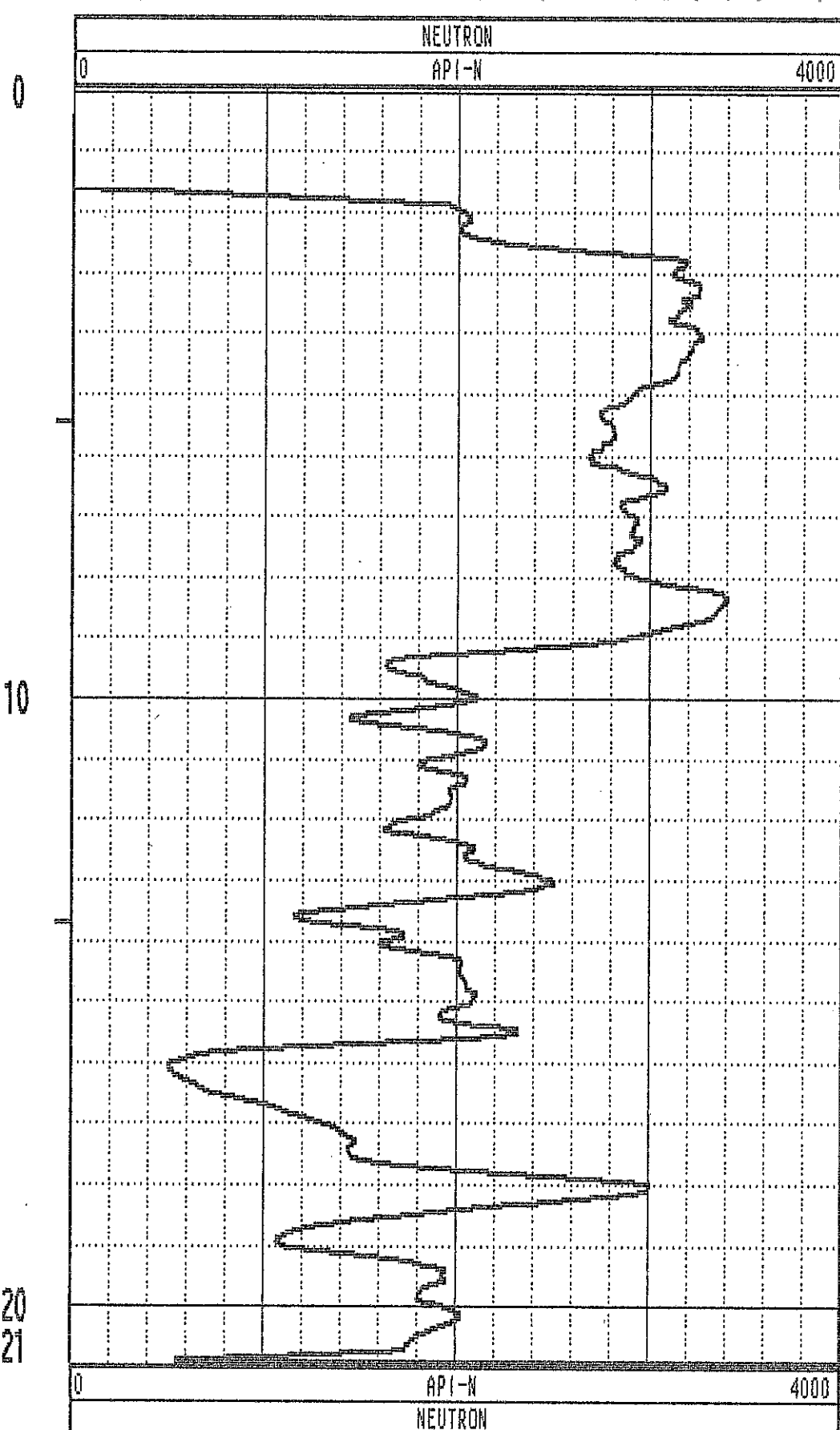
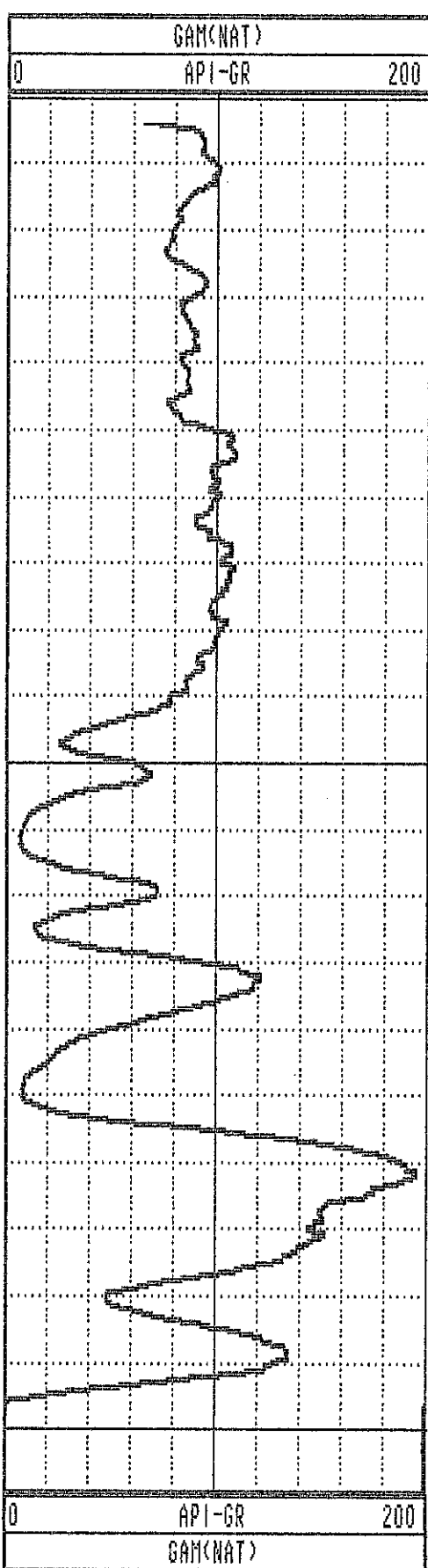
CASING DRILLER : 3
CASING TYPE : PLASTIC
CASING THICKNESS: .25

LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER FILE : ORIGINAL
RM : TYPE : 9055A
RM TEMPERATURE : LOG : 7
MATRIX DELTA T : PLOT : PINE 4
FLUID DELTA T : THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96099
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/26/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.33
 LOG TOP : 0.06

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

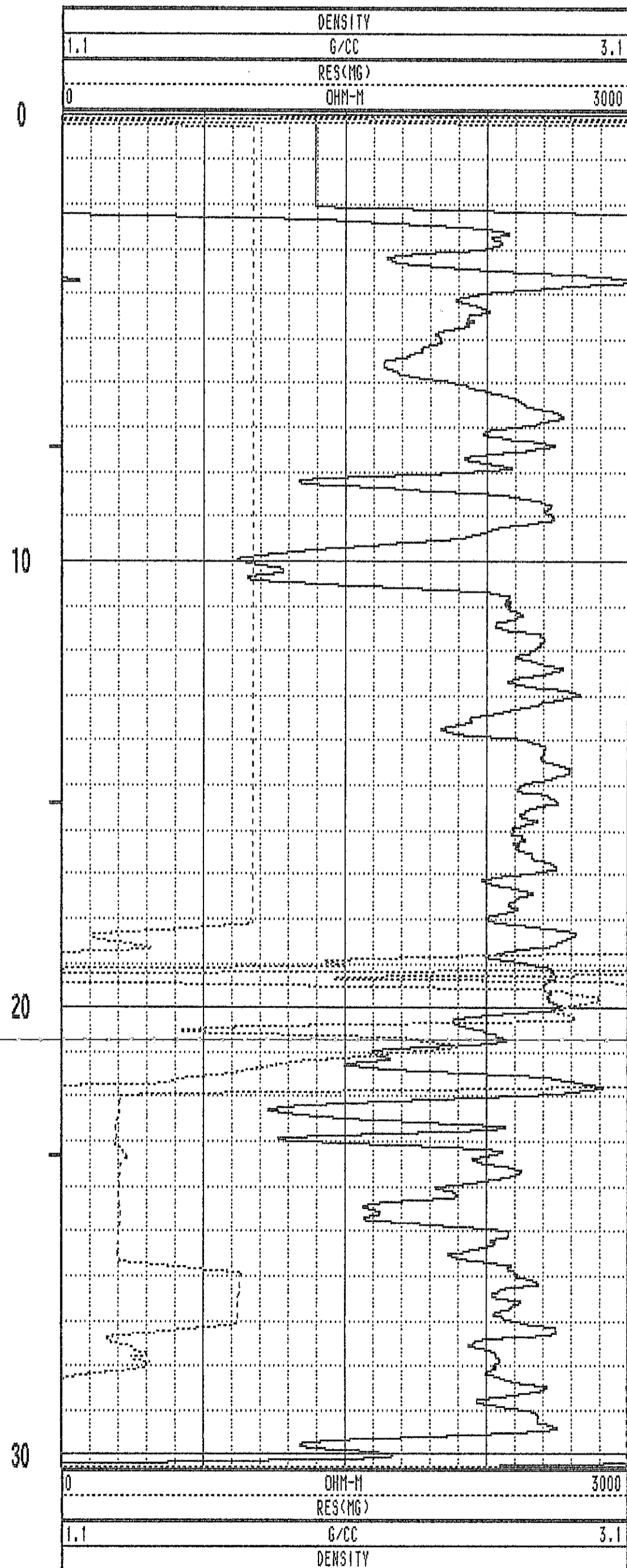
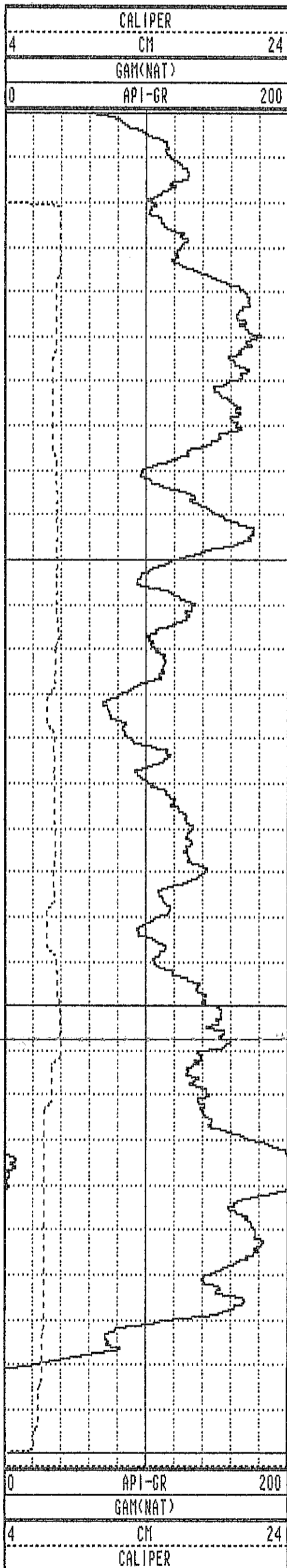
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9033AA
 LOG : 9
 PLOT : PINE 5
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96099 09/26/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

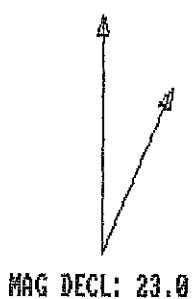
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 224.2 | 0.1 | 192.1 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 247.8 | 1.2 | 100.3 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 67.4 | 0.7 | 50.7 |
| 5.0 | 5.00 | 0.01 | 0.03 | 0.0 | 65.2 | 0.5 | 74.1 |
| 6.0 | 6.00 | 0.02 | 0.04 | 0.0 | 63.7 | 0.7 | 59.2 |
| 7.0 | 7.00 | 0.03 | 0.05 | 0.1 | 65.0 | 0.7 | 74.1 |
| 8.0 | 8.00 | 0.03 | 0.07 | 0.1 | 67.3 | 0.7 | 87.2 |
| 9.0 | 9.00 | 0.03 | 0.08 | 0.1 | 70.7 | 0.8 | 94.5 |
| 10.0 | 10.00 | 0.03 | 0.09 | 0.1 | 73.1 | 0.7 | 97.3 |
| 11.0 | 11.00 | 0.03 | 0.10 | 0.1 | 75.7 | 0.6 | 103.1 |
| 12.0 | 12.00 | 0.02 | 0.12 | 0.1 | 78.2 | 0.8 | 105.7 |
| 13.0 | 13.00 | 0.02 | 0.12 | 0.1 | 80.5 | 0.6 | 125.8 |
| 14.0 | 14.00 | 0.02 | 0.13 | 0.1 | 83.0 | 0.5 | 142.0 |
| 15.0 | 15.00 | 0.01 | 0.14 | 0.1 | 85.4 | 0.1 | 84.6 |
| 16.0 | 16.00 | 0.01 | 0.14 | 0.1 | 87.9 | 0.3 | 157.6 |
| 17.0 | 17.00 | 0.00 | 0.14 | 0.1 | 90.0 | 0.3 | 205.6 |
| 18.0 | 18.00 | -0.00 | 0.14 | 0.1 | 91.7 | 0.3 | 223.4 |
| 19.0 | 19.00 | -0.01 | 0.14 | 0.1 | 92.9 | 0.2 | 243.2 |
| 20.0 | 20.00 | -0.01 | 0.13 | 0.1 | 94.0 | 0.3 | 268.2 |
| 21.0 | 21.00 | -0.01 | 0.13 | 0.1 | 94.9 | 0.3 | 308.4 |
| 22.0 | 22.00 | -0.01 | 0.12 | 0.1 | 95.7 | 0.1 | 244.9 |
| 23.0 | 23.00 | -0.01 | 0.12 | 0.1 | 96.2 | 0.1 | 251.9 |
| 24.0 | 24.00 | -0.01 | 0.12 | 0.1 | 97.0 | 0.1 | 270.3 |
| 25.0 | 25.00 | -0.01 | 0.11 | 0.1 | 97.4 | 0.1 | 268.7 |
| 26.0 | 26.00 | -0.01 | 0.11 | 0.1 | 97.4 | 0.4 | 244.8 |
| 27.0 | 27.00 | -0.01 | 0.11 | 0.1 | 95.5 | 0.7 | 46.6 |
| 28.0 | 28.00 | -0.00 | 0.12 | 0.1 | 91.3 | 0.9 | 32.7 |
| 29.0 | 29.00 | 0.01 | 0.13 | 0.1 | 86.5 | 0.6 | 6.6 |
| 29.8 | 29.76 | 0.02 | 0.13 | 0.1 | 81.5 | 1.3 | 25.2 |

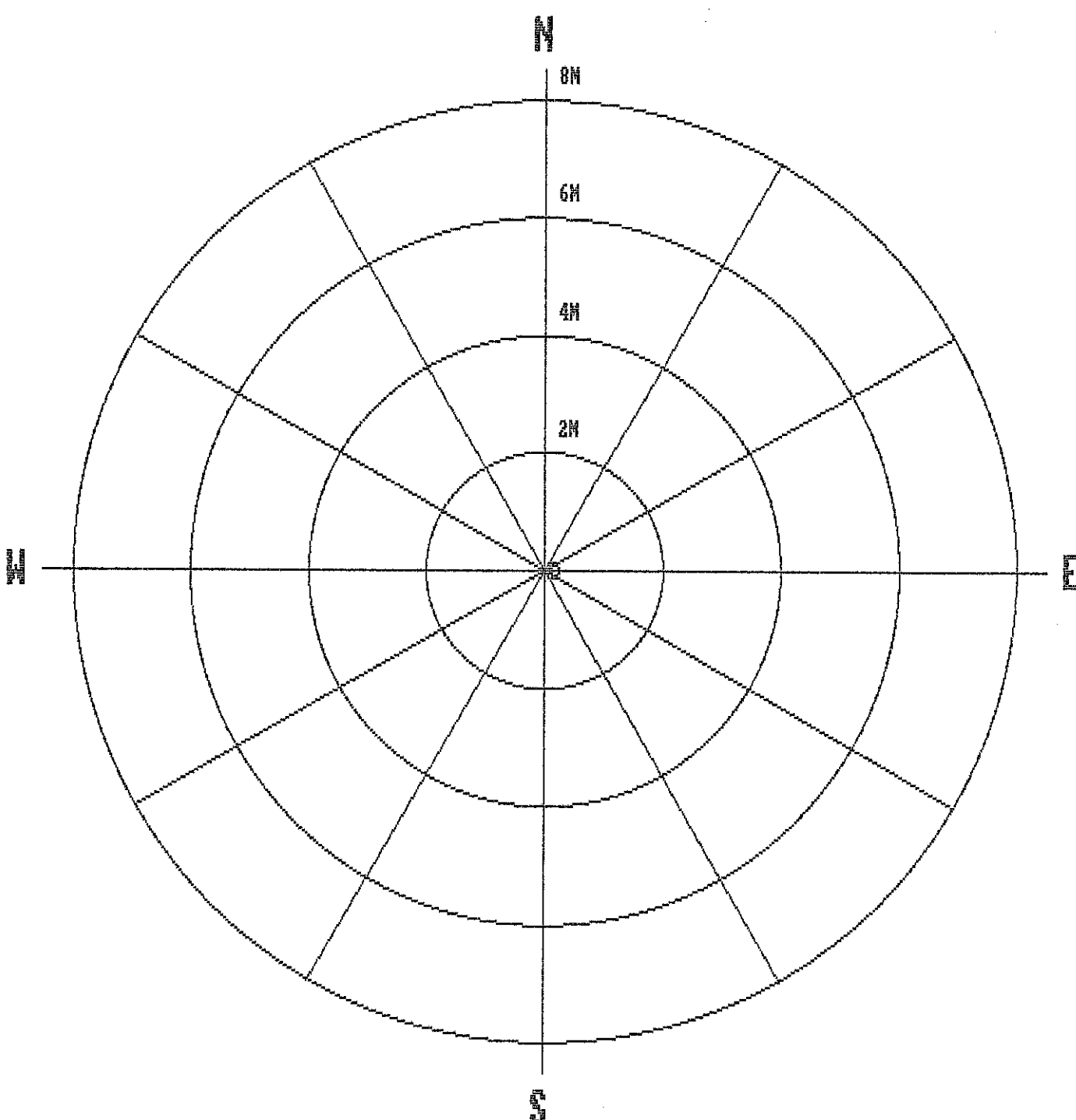
WRT 96100C

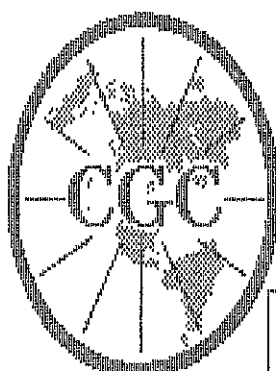
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96100C
 DATE OF LOG: 08/01/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.76 M
 AZIMUTH: 81.5
 DISTANCE: 0.1 M
 + = 50 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

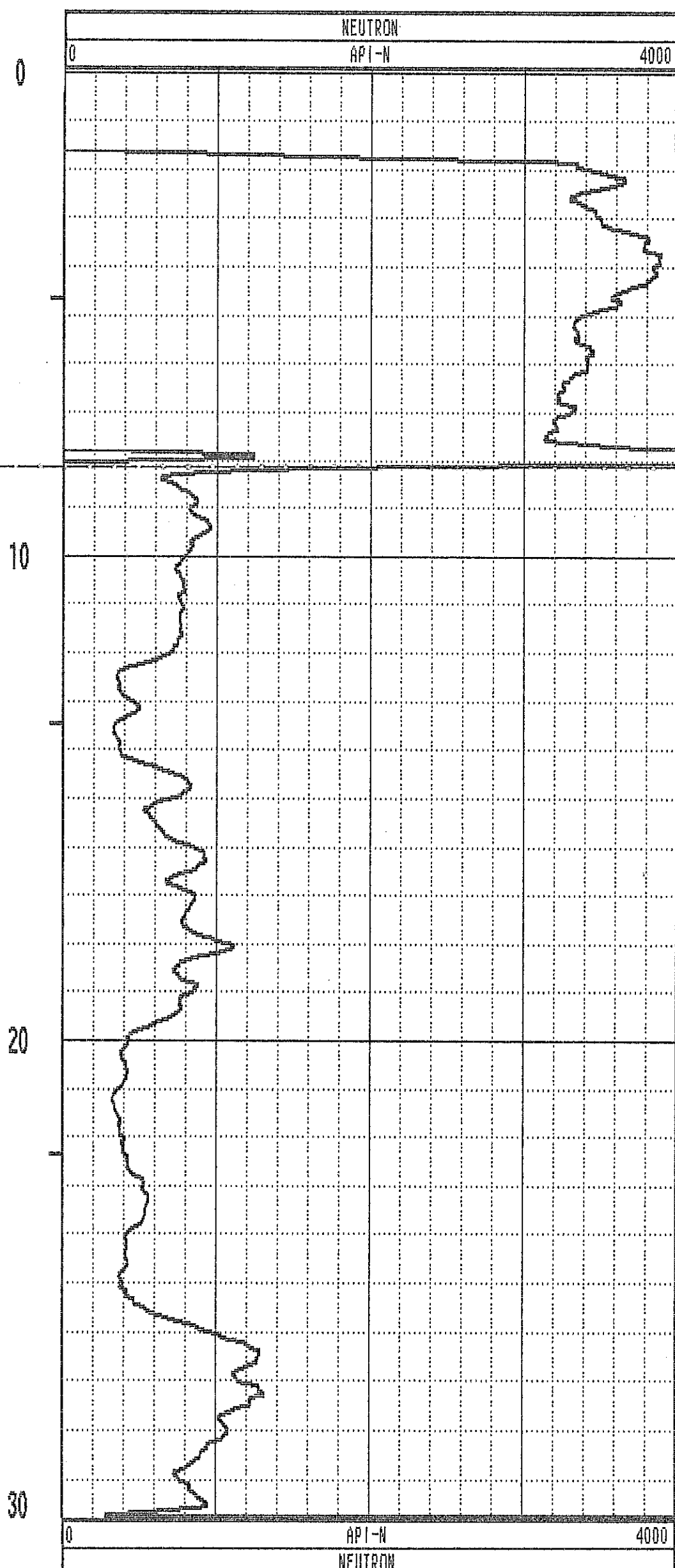
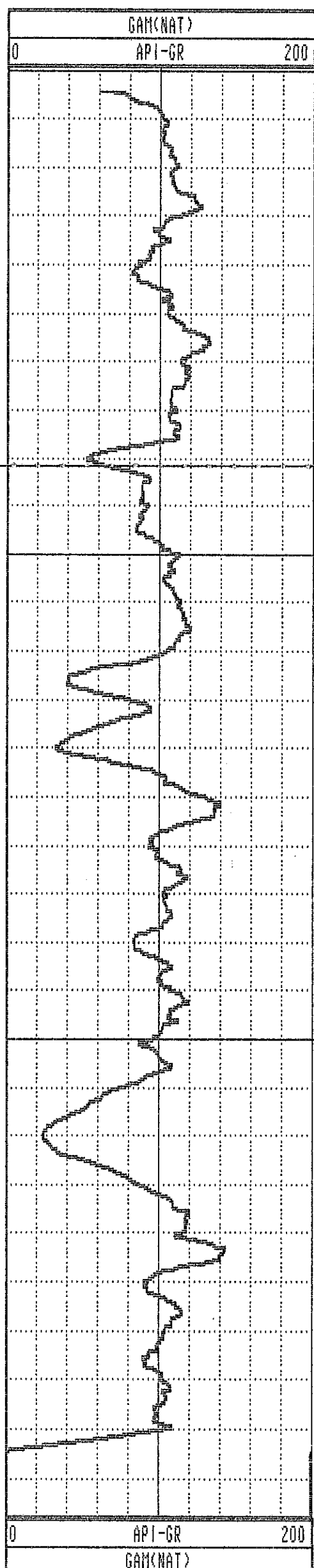
COMPANY : PINE VALLEY COAL
 WELL : WRH-96100C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.83 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.48 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

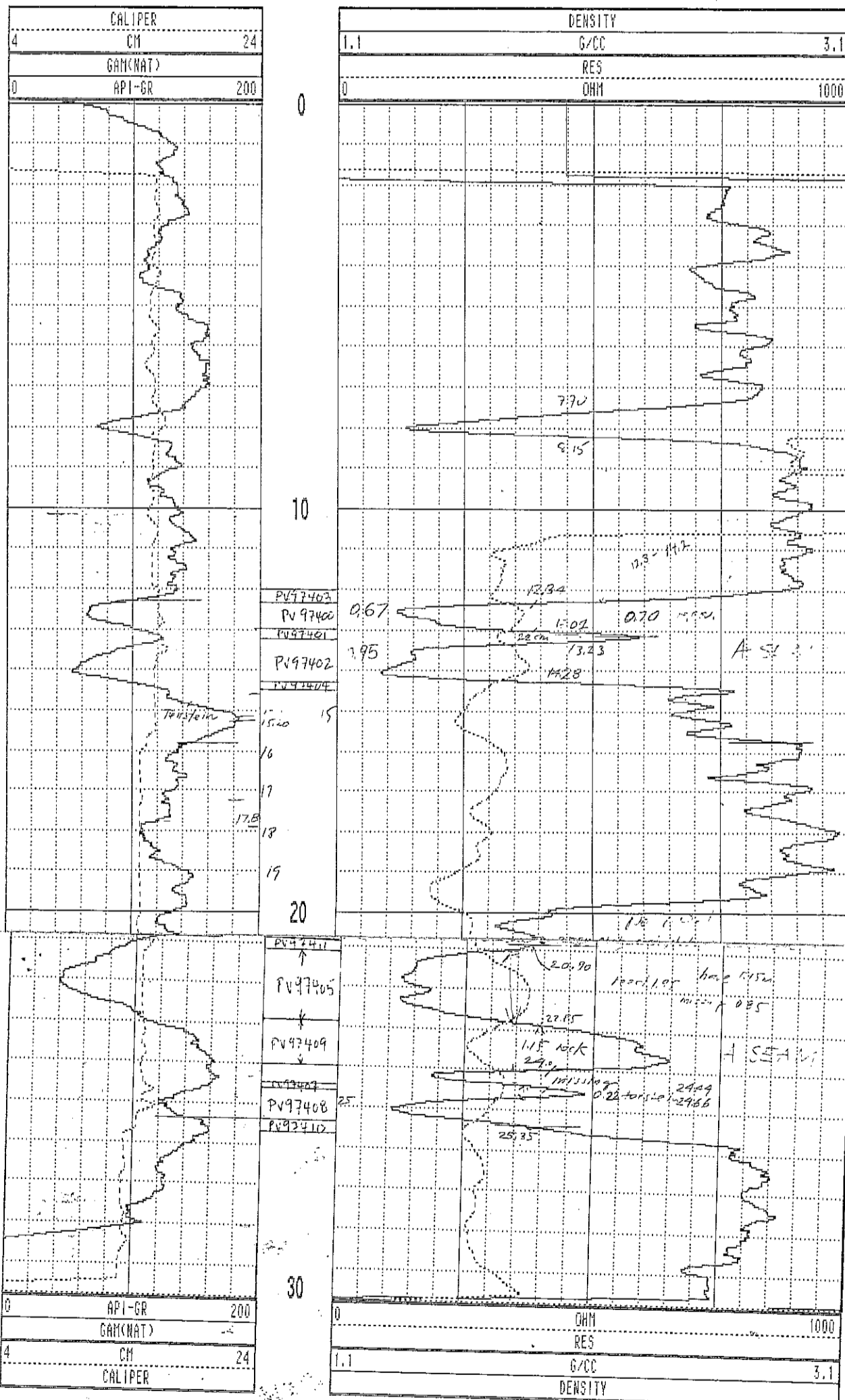


GAMMA-RES-DENSITY

| | | |
|-------------------------------|-----------------------------|------------------|
| COMPANY : PINE VALLEY COAL | | OTHER SERVICES: |
| MELL : WRH-96100C | | |
| LOCATION/FIELD : WILLOW CREEK | | |
| COUNTY : | | |
| STATE : BRITISH COLUMBIA | | |
| SECTION : | TOWNSHIP : | RANGE : |
| DATE : 08/01/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM : 29.82 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER : 3 | LOGGING UNIT : 9612 | |
| CASING TYPE : STEEL | FIELD OFFICE : CALGARY, AB. | |
| CASING THICKNESS: .25 | RECORDED BY : R. THOMAS | |
| BIT SIZE : | BOREHOLE FLUID : AIR | FILE : PROCESSED |
| MAGNETIC DECL. : 23 | RM : | TYPE : 9033AA |
| MATRIX DENSITY : | RM TEMPERATURE : | LOG : 1 |
| FLUID DENSITY : 1.1 | MATRIX DELTA T : | PLOT : PINE 7 |
| NEUTRON MATRIX : 2.65 | FLUID DELTA T : | THRESH: 10000 |
| REMARKS : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH100C



WRH-96100C 08/01/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

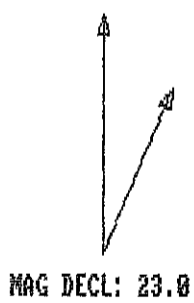
| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1000.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 73.8 | 0.9 | 85.2 |
| 3.0 | 3.00 | -0.00 | 0.00 | 0.0 | 135.7 | 0.5 | 59.1 |
| 4.0 | 4.00 | -0.00 | 0.00 | 0.0 | 126.8 | 0.4 | 243.1 |
| 5.0 | 5.00 | -0.01 | -0.00 | 0.0 | 192.8 | 1.6 | 186.6 |
| 6.0 | 6.00 | -0.03 | -0.01 | 0.0 | 192.8 | 1.0 | 198.5 |
| 7.0 | 7.00 | -0.04 | -0.01 | 0.0 | 187.1 | 1.1 | 190.9 |
| 8.0 | 8.00 | -0.06 | -0.00 | 0.1 | 184.4 | 1.1 | 188.5 |
| 9.0 | 9.00 | -0.08 | -0.01 | 0.1 | 185.6 | 0.8 | 220.0 |
| 10.0 | 10.00 | -0.10 | -0.01 | 0.1 | 185.3 | 1.6 | 181.6 |
| 11.0 | 11.00 | -0.13 | -0.01 | 0.1 | 183.6 | 1.4 | 181.1 |
| 12.0 | 12.00 | -0.16 | -0.01 | 0.2 | 181.9 | 1.9 | 177.3 |
| 13.0 | 13.00 | -0.19 | -0.00 | 0.2 | 181.2 | 1.0 | 176.3 |
| 14.0 | 14.00 | -0.22 | -0.00 | 0.2 | 181.1 | 1.9 | 188.3 |
| 15.0 | 15.00 | -0.26 | -0.00 | 0.3 | 180.8 | 2.0 | 173.8 |
| 16.0 | 16.00 | -0.29 | -0.00 | 0.3 | 180.8 | 2.1 | 189.7 |
| 17.0 | 17.00 | -0.32 | -0.00 | 0.3 | 180.8 | 1.9 | 180.2 |
| 18.0 | 17.99 | -0.36 | -0.01 | 0.4 | 180.9 | 1.9 | 178.2 |
| 19.0 | 18.99 | -0.39 | -0.01 | 0.4 | 180.9 | 1.7 | 178.0 |
| 20.0 | 19.99 | -0.43 | -0.01 | 0.4 | 181.1 | 2.9 | 178.5 |
| 21.0 | 20.99 | -0.48 | -0.01 | 0.5 | 181.0 | 2.8 | 176.2 |
| 22.0 | 21.99 | -0.52 | -0.01 | 0.5 | 181.1 | 2.8 | 182.6 |
| 23.0 | 22.99 | -0.57 | -0.01 | 0.6 | 181.1 | 2.8 | 177.2 |
| 24.0 | 23.99 | -0.62 | -0.02 | 0.6 | 181.5 | 3.0 | 186.4 |
| 25.0 | 24.99 | -0.68 | -0.02 | 0.7 | 181.8 | 3.5 | 191.5 |
| 26.0 | 25.99 | -0.74 | -0.03 | 0.7 | 182.2 | 3.6 | 186.2 |
| 27.0 | 26.98 | -0.80 | -0.04 | 0.8 | 182.6 | 3.7 | 192.8 |
| 28.0 | 27.98 | -0.86 | -0.05 | 0.9 | 183.3 | 3.5 | 189.7 |
| 29.0 | 28.98 | -0.92 | -0.07 | 0.9 | 184.1 | 3.8 | 194.0 |
| 30.0 | 29.98 | -0.98 | -0.08 | 1.0 | 184.6 | 3.7 | 184.0 |
| 31.0 | 30.97 | -1.05 | -0.09 | 1.1 | 184.9 | 3.9 | 194.5 |
| 32.0 | 31.97 | -1.12 | -0.11 | 1.1 | 185.5 | 4.1 | 189.8 |
| 33.0 | 32.97 | -1.19 | -0.12 | 1.2 | 185.9 | 4.3 | 188.8 |
| 34.0 | 33.97 | -1.27 | -0.14 | 1.3 | 186.3 | 4.7 | 192.0 |
| 35.0 | 34.96 | -1.35 | -0.16 | 1.4 | 186.8 | 4.9 | 198.9 |
| 36.0 | 35.96 | -1.43 | -0.19 | 1.4 | 187.4 | 4.9 | 198.3 |
| 37.0 | 36.96 | -1.51 | -0.21 | 1.5 | 188.1 | 5.0 | 198.2 |
| 37.1 | 37.04 | -1.51 | -0.22 | 1.5 | 188.1 | 4.8 | 199.8 |

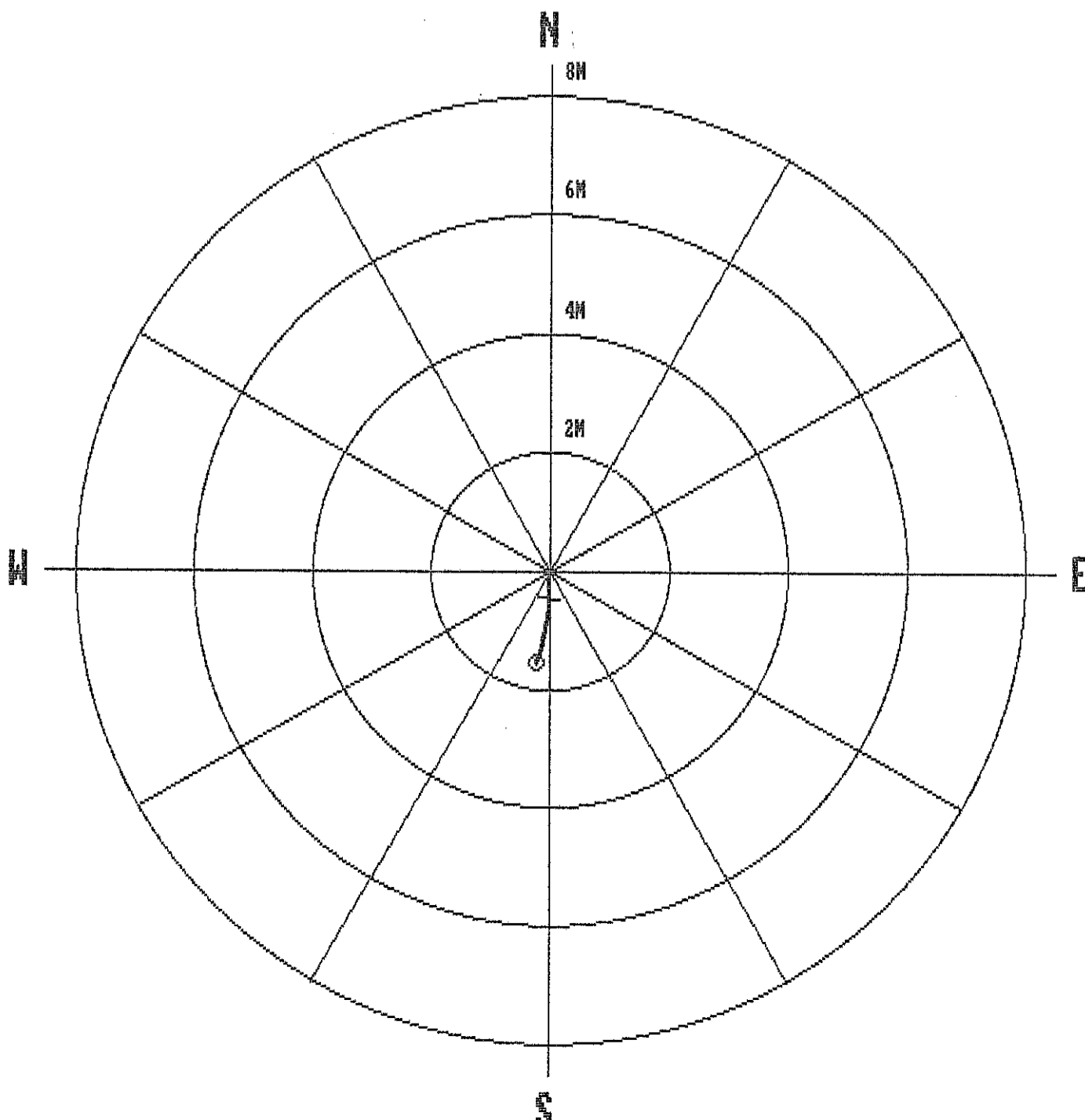
10196 WRH

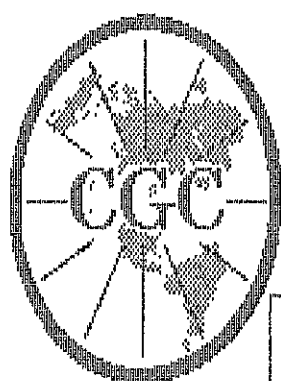
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96101
DATE OF LOG: 08/01/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 37.04 M
AZIMUTH: 188.1
DISTANCE: 1.5 M
+ = 20 M INCR
O = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : MRH-96101
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOMNSHIP : RANGE :

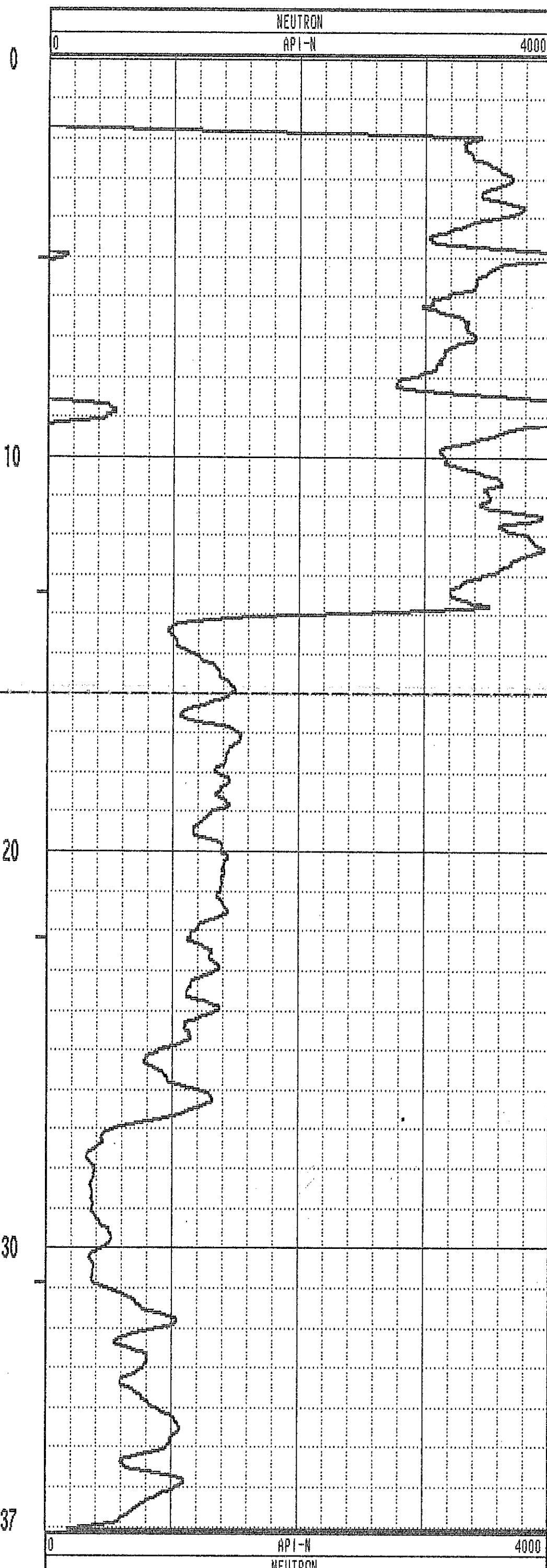
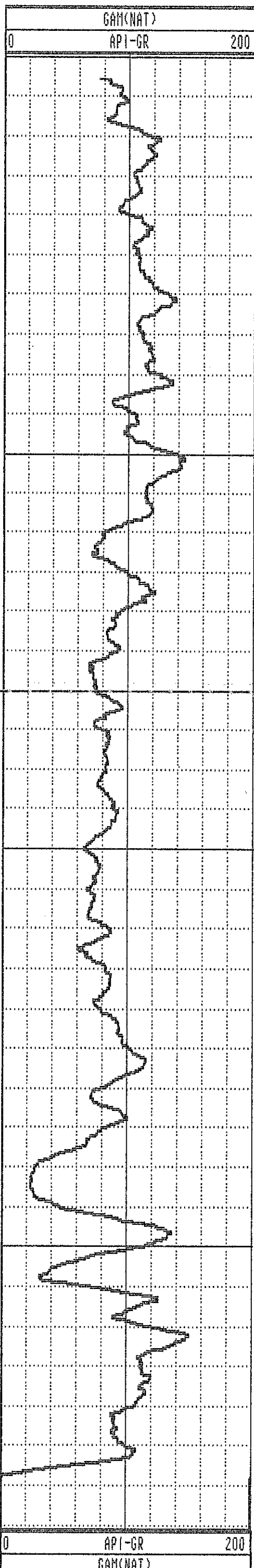
OTHER SERVICES:

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 37 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 37.13 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.60 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

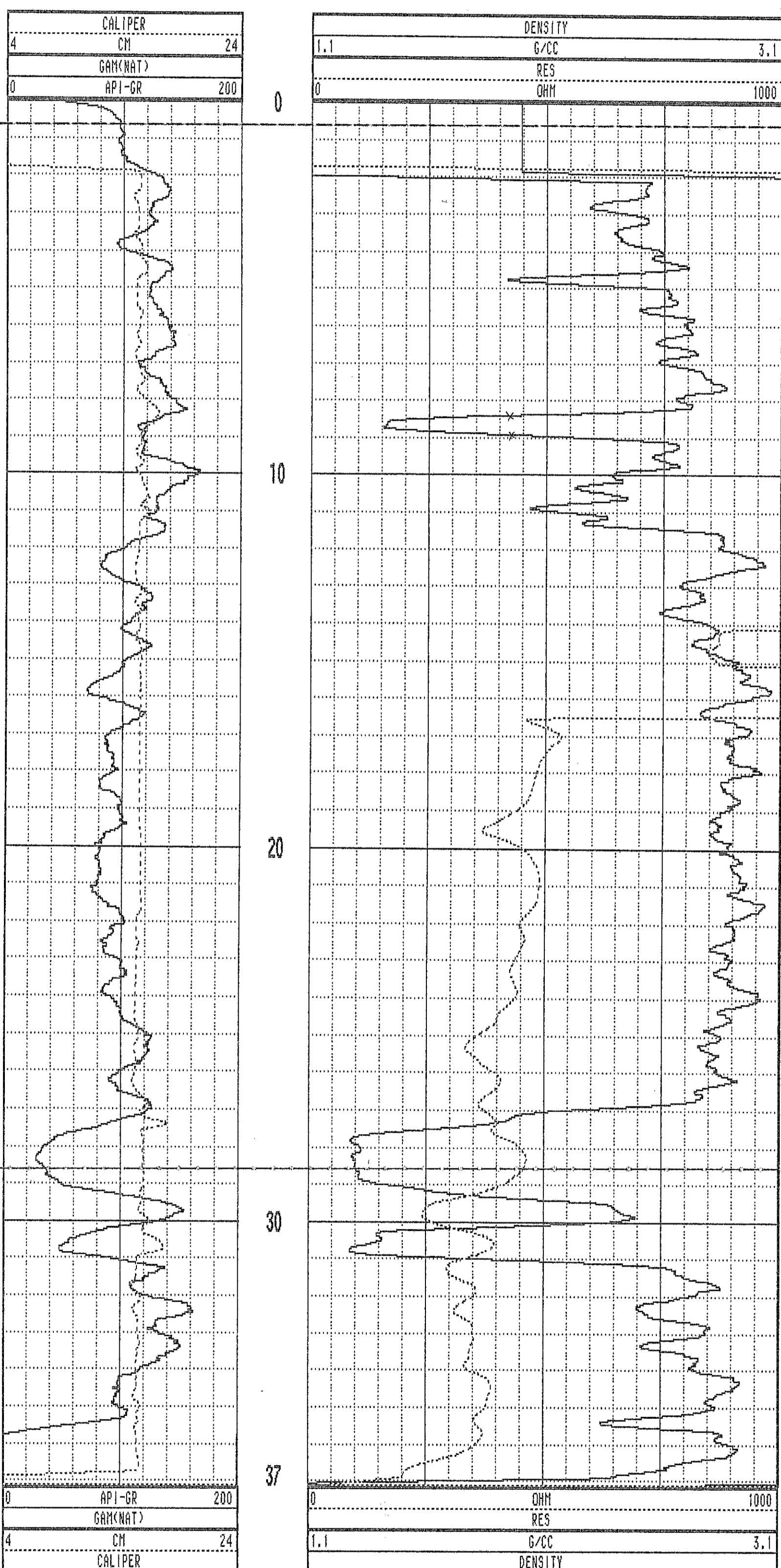
COMPANY : PINE VALLEY COAL OTHER SERVICES:
WELL : WRH-96101
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

DATE : 08/01/96 **PERMANENT DATUM** : **ELEVATIONS**
DEPTH DRILLER : 36 **ELEV. PERM. DATUM:** KB :
LOG BOTTOM : 37.16 **LOG MEASURED FROM:** G.L. DF :
LOG TOP : 0.00 **DRL MEASURED FROM:** GL :

CASING DRILLER : 3 **LOGGING UNIT** : 9612
CASING TYPE : STEEL **FIELD OFFICE** : CALGARY, AB.
CASING THICKNESS: .25 **RECORDED BY** : R. THOMAS

BIT SIZE : **BOREHOLE FLUID** : AIR **FILE** : PROCESSED
MAGNETIC DECL. : 23 **RM** : **TYPE** : 9033AA
MATRIX DENSITY : **RM TEMPERATURE** : **LOG** : 6
FLUID DENSITY : 1.1 **MATRIX DELTA T** : **PLOT** : PINE 7
NEUTRON MATRIX : 2.65 **FLUID DELTA T** : **THRESH:** 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



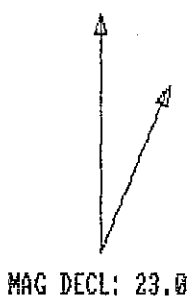
WRH-96101C 08/01/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

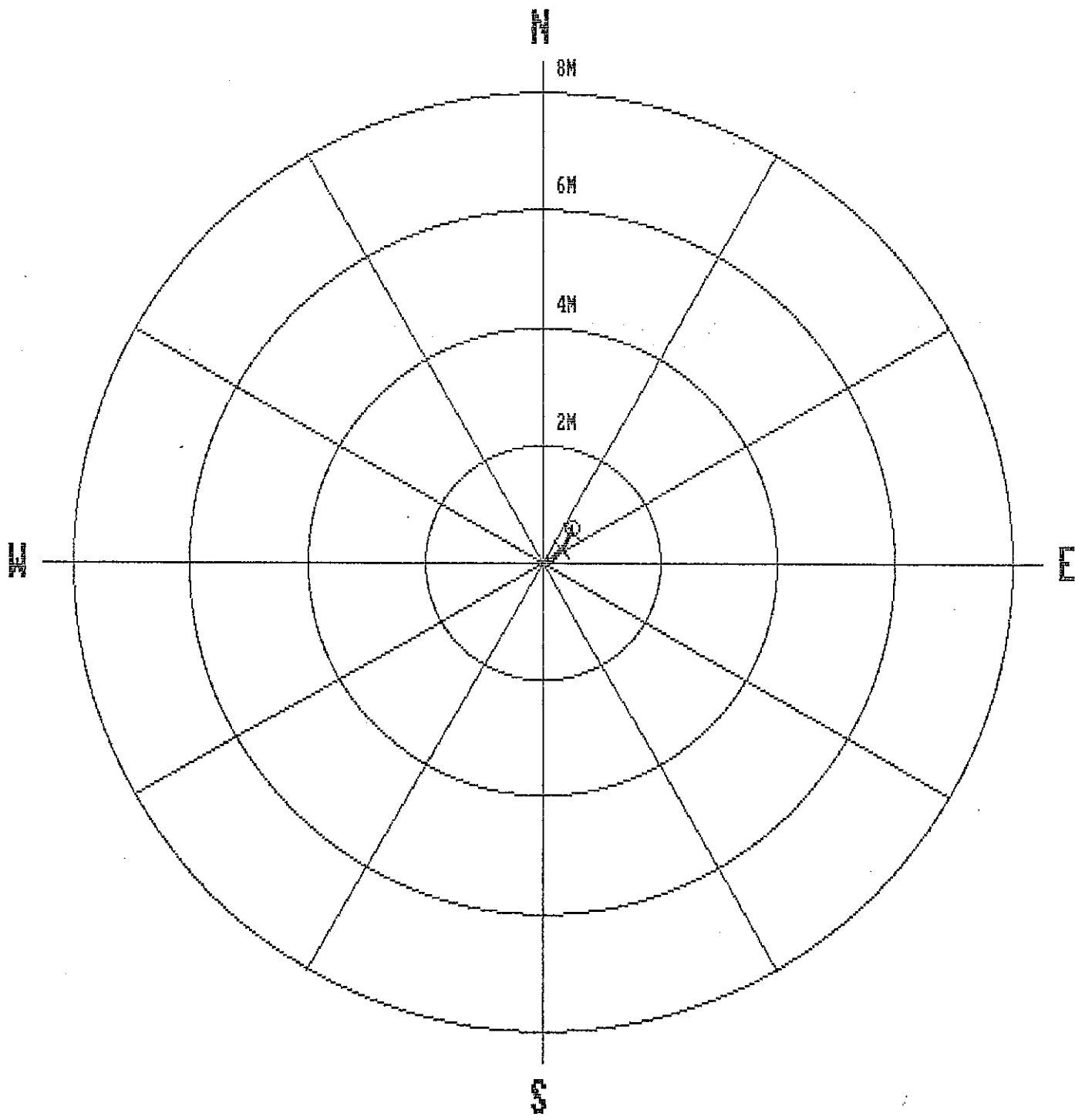
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96102C
 DATE OF LOG: 08/01/96
 PROBE: 9055A 56

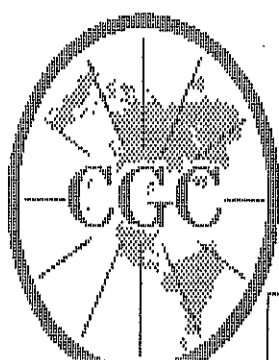


SCALE: 1 M/CM
 TRUE DEPTH: 44.75 M
 AZIMUTH: 40.1
 DISTANCE: 0.8 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 53.4 | 1.7 | 41.9 |
| 3.0 | 3.00 | 0.01 | -0.00 | 0.0 | 351.0 | 0.9 | 266.6 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 261.5 | 0.8 | 55.1 |
| 5.0 | 5.00 | -0.00 | -0.00 | 0.0 | 217.7 | 1.2 | 88.4 |
| 6.0 | 6.00 | -0.00 | 0.02 | 0.0 | 97.1 | 1.1 | 85.0 |
| 7.0 | 7.00 | 0.00 | 0.04 | 0.0 | 84.7 | 1.5 | 62.9 |
| 8.0 | 8.00 | 0.01 | 0.06 | 0.1 | 79.0 | 1.5 | 66.4 |
| 9.0 | 9.00 | 0.02 | 0.08 | 0.1 | 74.3 | 1.4 | 65.3 |
| 10.0 | 10.00 | 0.04 | 0.11 | 0.1 | 71.8 | 1.7 | 59.0 |
| 11.0 | 11.00 | 0.05 | 0.13 | 0.1 | 68.9 | 1.7 | 55.7 |
| 12.0 | 12.00 | 0.07 | 0.16 | 0.2 | 66.3 | 1.4 | 50.0 |
| 13.0 | 13.00 | 0.08 | 0.17 | 0.2 | 64.2 | 1.3 | 47.0 |
| 14.0 | 14.00 | 0.10 | 0.19 | 0.2 | 62.1 | 1.3 | 46.7 |
| 15.0 | 15.00 | 0.12 | 0.21 | 0.2 | 60.4 | 1.9 | 51.1 |
| 16.0 | 16.00 | 0.14 | 0.23 | 0.3 | 59.2 | 1.9 | 48.8 |
| 17.0 | 17.00 | 0.16 | 0.26 | 0.3 | 58.2 | 1.7 | 50.1 |
| 18.0 | 17.99 | 0.18 | 0.28 | 0.3 | 57.3 | 1.8 | 47.5 |
| 19.0 | 18.99 | 0.20 | 0.30 | 0.4 | 56.6 | 1.6 | 52.4 |
| 20.0 | 19.99 | 0.22 | 0.32 | 0.4 | 55.8 | 1.5 | 47.9 |
| 21.0 | 20.99 | 0.24 | 0.34 | 0.4 | 54.8 | 1.3 | 35.3 |
| 22.0 | 21.99 | 0.25 | 0.35 | 0.4 | 53.9 | 1.3 | 30.5 |
| 23.0 | 22.99 | 0.27 | 0.36 | 0.5 | 53.0 | 1.2 | 29.9 |
| 24.0 | 23.99 | 0.29 | 0.37 | 0.5 | 52.1 | 1.3 | 34.7 |
| 25.0 | 24.99 | 0.31 | 0.38 | 0.5 | 51.3 | 1.0 | 44.2 |
| 26.0 | 25.99 | 0.32 | 0.40 | 0.5 | 50.7 | 1.6 | 24.0 |
| 27.0 | 26.99 | 0.34 | 0.41 | 0.5 | 50.2 | 1.0 | 88.7 |
| 28.0 | 27.99 | 0.35 | 0.41 | 0.5 | 49.9 | 1.1 | 47.9 |
| 29.0 | 28.99 | 0.36 | 0.42 | 0.6 | 49.1 | 1.4 | 359.6 |
| 30.0 | 29.99 | 0.38 | 0.42 | 0.6 | 48.2 | 0.7 | 24.1 |
| 31.0 | 30.99 | 0.40 | 0.43 | 0.6 | 47.5 | 1.0 | 26.0 |
| 32.0 | 31.99 | 0.41 | 0.44 | 0.6 | 46.8 | 1.0 | 20.6 |
| 33.0 | 32.99 | 0.43 | 0.45 | 0.6 | 46.2 | 1.0 | 29.7 |
| 34.0 | 33.99 | 0.45 | 0.45 | 0.6 | 45.5 | 1.1 | 23.5 |
| 35.0 | 34.99 | 0.46 | 0.46 | 0.7 | 44.9 | 1.0 | 26.5 |
| 36.0 | 35.99 | 0.48 | 0.47 | 0.7 | 44.4 | 1.2 | 24.6 |
| 37.0 | 36.99 | 0.50 | 0.47 | 0.7 | 43.7 | 1.0 | 17.3 |
| 38.0 | 37.99 | 0.51 | 0.48 | 0.7 | 43.1 | 1.0 | 24.3 |
| 39.0 | 38.99 | 0.53 | 0.49 | 0.7 | 42.5 | 0.9 | 18.7 |
| 40.0 | 39.99 | 0.55 | 0.49 | 0.7 | 42.0 | 0.9 | 18.9 |
| 41.0 | 40.99 | 0.56 | 0.50 | 0.7 | 41.5 | 1.0 | 17.3 |
| 42.0 | 41.99 | 0.57 | 0.50 | 0.8 | 41.2 | 0.8 | 26.5 |
| 43.0 | 42.99 | 0.59 | 0.51 | 0.8 | 40.7 | 0.8 | 17.4 |
| 44.0 | 43.99 | 0.60 | 0.51 | 0.8 | 40.4 | 0.6 | 36.4 |
| 44.8 | 44.75 | 0.61 | 0.51 | 0.8 | 40.1 | 1.0 | 20.7 |

WRH 96102C



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96102C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

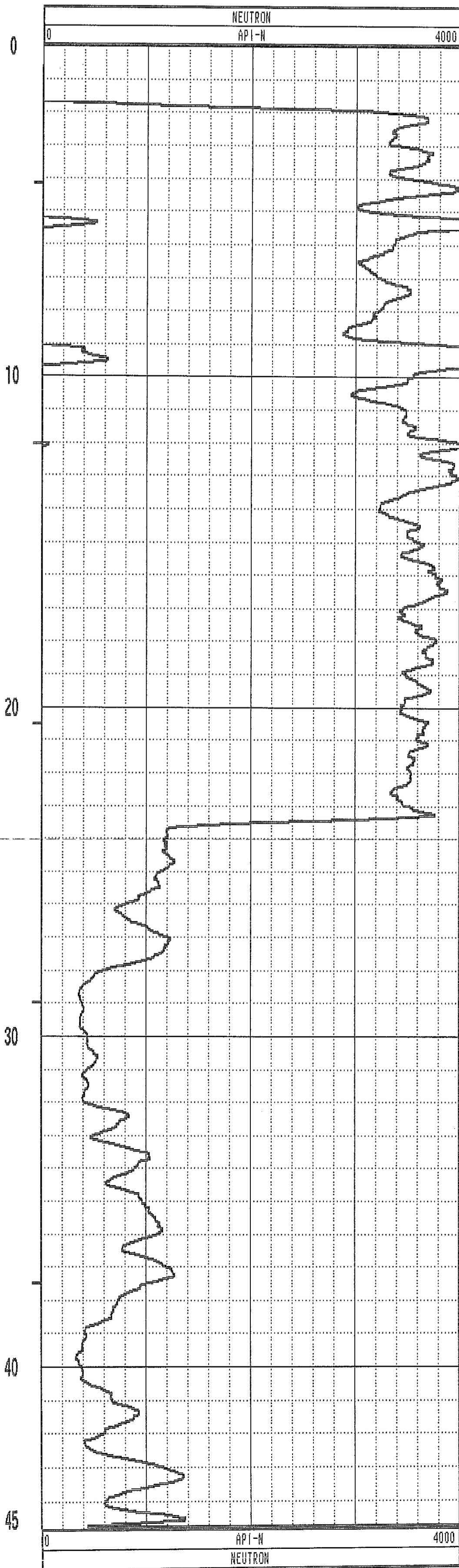
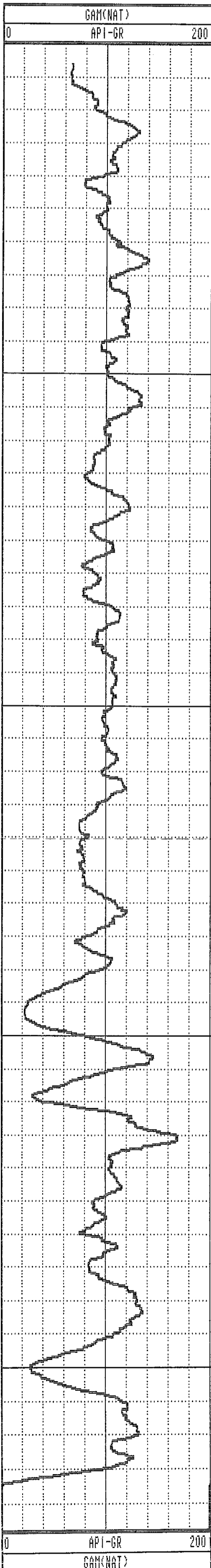
TOWNSHIP : RANGE :

DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 44 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 44.81 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.60 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

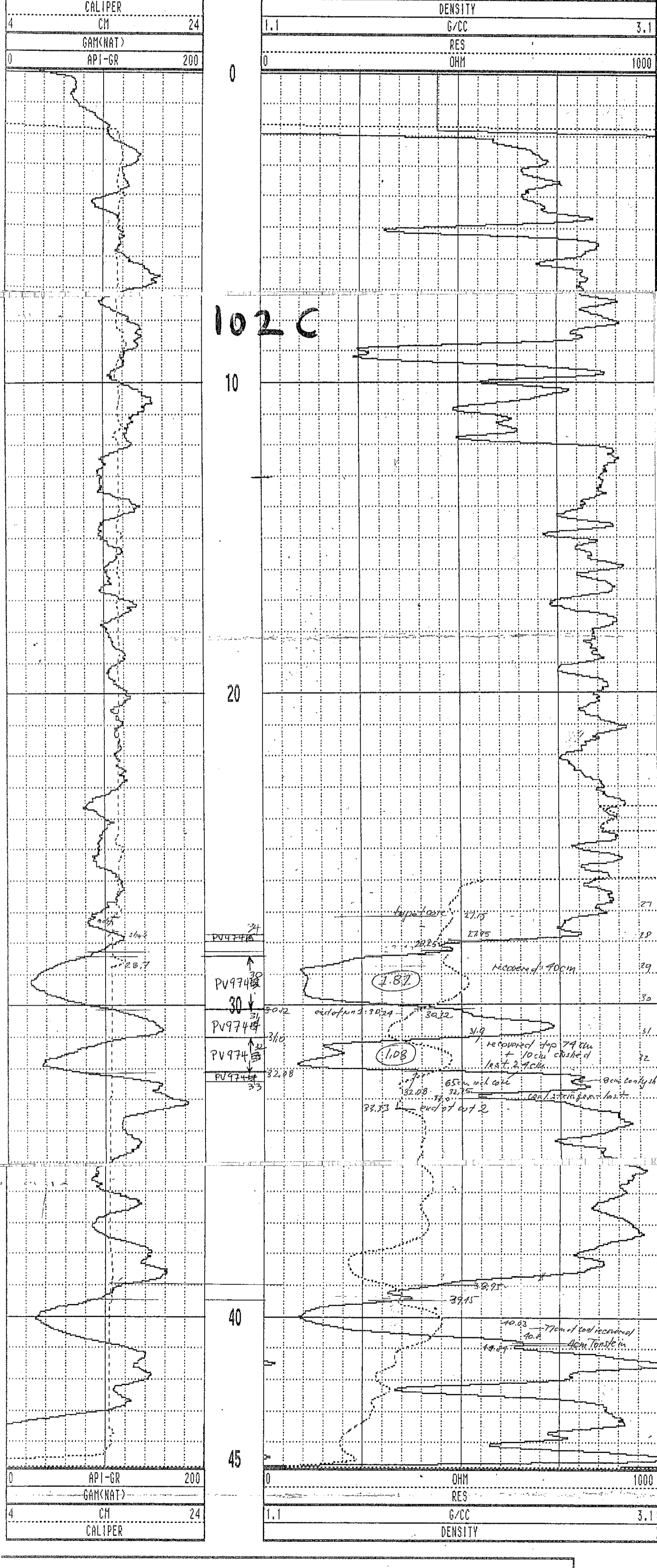


102C

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : MRH-96102C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 44 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 44.84 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 OTHER SERVICES:
 BIT SIZE : BOREHOLE FLUID : AIR FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



MRH-96102C 08/01/96 958

Forward to Dave

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

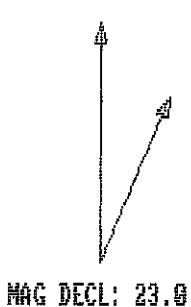
WRH 96 103c

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 182.4 | 1.0 | 159.7 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 121.5 | 0.6 | 77.2 |
| 4.0 | 4.00 | -0.01 | 0.02 | 0.0 | 118.3 | 0.8 | 117.4 |
| 5.0 | 5.00 | -0.01 | 0.02 | 0.0 | 117.8 | 0.5 | 144.6 |
| 6.0 | 6.00 | -0.02 | 0.03 | 0.0 | 121.5 | 0.5 | 208.6 |
| 7.0 | 7.00 | -0.02 | 0.03 | 0.0 | 130.4 | 0.3 | 166.4 |
| 8.0 | 8.00 | -0.03 | 0.03 | 0.0 | 137.1 | 0.4 | 203.7 |
| 9.0 | 9.00 | -0.04 | 0.02 | 0.0 | 148.3 | 0.6 | 166.1 |
| 10.0 | 10.00 | -0.05 | 0.02 | 0.1 | 154.5 | 0.4 | 163.2 |
| 11.0 | 11.00 | -0.05 | 0.02 | 0.1 | 161.6 | 0.5 | 260.3 |
| 12.0 | 12.00 | -0.05 | 0.01 | 0.0 | 168.8 | 0.3 | 0.5 |
| 13.0 | 13.00 | -0.05 | 0.00 | 0.0 | 177.5 | 0.6 | 287.8 |
| 14.0 | 14.00 | -0.05 | -0.01 | 0.0 | 186.6 | 0.6 | 251.7 |
| 15.0 | 15.00 | -0.04 | -0.01 | 0.0 | 195.5 | 0.4 | 273.7 |
| 16.0 | 16.00 | -0.04 | -0.02 | 0.0 | 205.4 | 0.3 | 311.5 |
| 17.0 | 17.00 | -0.03 | -0.02 | 0.0 | 216.7 | 0.6 | 295.3 |
| 18.0 | 18.00 | -0.02 | -0.03 | 0.0 | 231.2 | 0.6 | 13.9 |
| 19.0 | 19.00 | -0.02 | -0.03 | 0.0 | 243.3 | 0.6 | 3.7 |
| 20.0 | 20.00 | -0.01 | -0.03 | 0.0 | 259.3 | 0.4 | 300.8 |
| 21.0 | 21.00 | 0.00 | -0.03 | 0.0 | 276.8 | 0.5 | 10.2 |
| 22.0 | 22.00 | 0.01 | -0.03 | 0.0 | 293.0 | 0.7 | 22.8 |
| 23.0 | 23.00 | 0.02 | -0.03 | 0.0 | 310.4 | 0.6 | 356.9 |
| 24.0 | 24.00 | 0.03 | -0.02 | 0.0 | 325.6 | 0.5 | 14.9 |
| 25.0 | 25.00 | 0.04 | -0.02 | 0.0 | 339.9 | 0.7 | 35.7 |
| 26.0 | 26.00 | 0.05 | -0.01 | 0.1 | 350.4 | 0.6 | 24.8 |
| 27.0 | 27.00 | 0.06 | -0.00 | 0.1 | 358.4 | 0.7 | 38.9 |
| 28.0 | 28.00 | 0.07 | 0.01 | 0.1 | 4.0 | 0.9 | 37.1 |
| 29.0 | 29.00 | 0.08 | 0.01 | 0.1 | 9.5 | 0.7 | 42.6 |
| 30.0 | 30.00 | 0.09 | 0.02 | 0.1 | 14.1 | 0.7 | 40.3 |
| 31.0 | 31.00 | 0.10 | 0.03 | 0.1 | 17.6 | 0.7 | 33.7 |
| 32.0 | 32.00 | 0.11 | 0.04 | 0.1 | 20.4 | 0.8 | 60.7 |
| 33.0 | 33.00 | 0.12 | 0.05 | 0.1 | 25.3 | 1.0 | 76.0 |
| 34.0 | 34.00 | 0.12 | 0.07 | 0.1 | 30.4 | 1.0 | 74.9 |
| 35.0 | 35.00 | 0.12 | 0.08 | 0.1 | 34.4 | 0.8 | 84.9 |
| 36.0 | 36.00 | 0.12 | 0.10 | 0.2 | 38.4 | 0.8 | 100.6 |
| 37.0 | 37.00 | 0.12 | 0.11 | 0.2 | 43.4 | 0.9 | 120.1 |
| 38.0 | 38.00 | 0.11 | 0.12 | 0.2 | 48.6 | 1.1 | 175.4 |
| 39.0 | 39.00 | 0.10 | 0.13 | 0.2 | 53.7 | 1.0 | 151.8 |
| 40.0 | 40.00 | 0.08 | 0.14 | 0.2 | 59.1 | 1.1 | 151.1 |
| 41.0 | 41.00 | 0.07 | 0.15 | 0.2 | 65.7 | 1.1 | 158.0 |
| 42.0 | 42.00 | 0.05 | 0.16 | 0.2 | 73.7 | 1.6 | 152.9 |
| 43.0 | 43.00 | 0.02 | 0.17 | 0.2 | 83.2 | 1.8 | 169.4 |
| 44.0 | 44.00 | -0.01 | 0.17 | 0.2 | 93.6 | 1.8 | 171.5 |
| 45.0 | 45.00 | -0.04 | 0.18 | 0.2 | 103.6 | 2.0 | 181.4 |
| 46.0 | 45.99 | -0.08 | 0.17 | 0.2 | 113.7 | 2.0 | 183.4 |
| 47.0 | 46.99 | -0.11 | 0.17 | 0.2 | 123.1 | 2.0 | 181.3 |
| 48.0 | 47.99 | -0.15 | 0.17 | 0.2 | 131.4 | 2.1 | 183.3 |
| 49.0 | 48.99 | -0.18 | 0.16 | 0.2 | 138.5 | 2.1 | 189.2 |
| 50.0 | 49.99 | -0.22 | 0.15 | 0.3 | 144.8 | 2.2 | 190.9 |
| 51.0 | 50.99 | -0.25 | 0.14 | 0.3 | 150.3 | 2.1 | 195.9 |
| 52.0 | 51.99 | -0.29 | 0.13 | 0.3 | 155.3 | 2.4 | 189.5 |
| 53.0 | 52.99 | -0.32 | 0.12 | 0.3 | 159.7 | 2.2 | 197.2 |
| 54.0 | 53.99 | -0.36 | 0.11 | 0.4 | 163.6 | 2.2 | 205.1 |
| 55.0 | 54.99 | -0.40 | 0.09 | 0.4 | 167.0 | 2.2 | 202.3 |
| 56.0 | 55.99 | -0.43 | 0.07 | 0.4 | 170.1 | 2.2 | 207.7 |
| 56.2 | 56.17 | -0.43 | 0.07 | 0.4 | 170.6 | 2.1 | 202.1 |

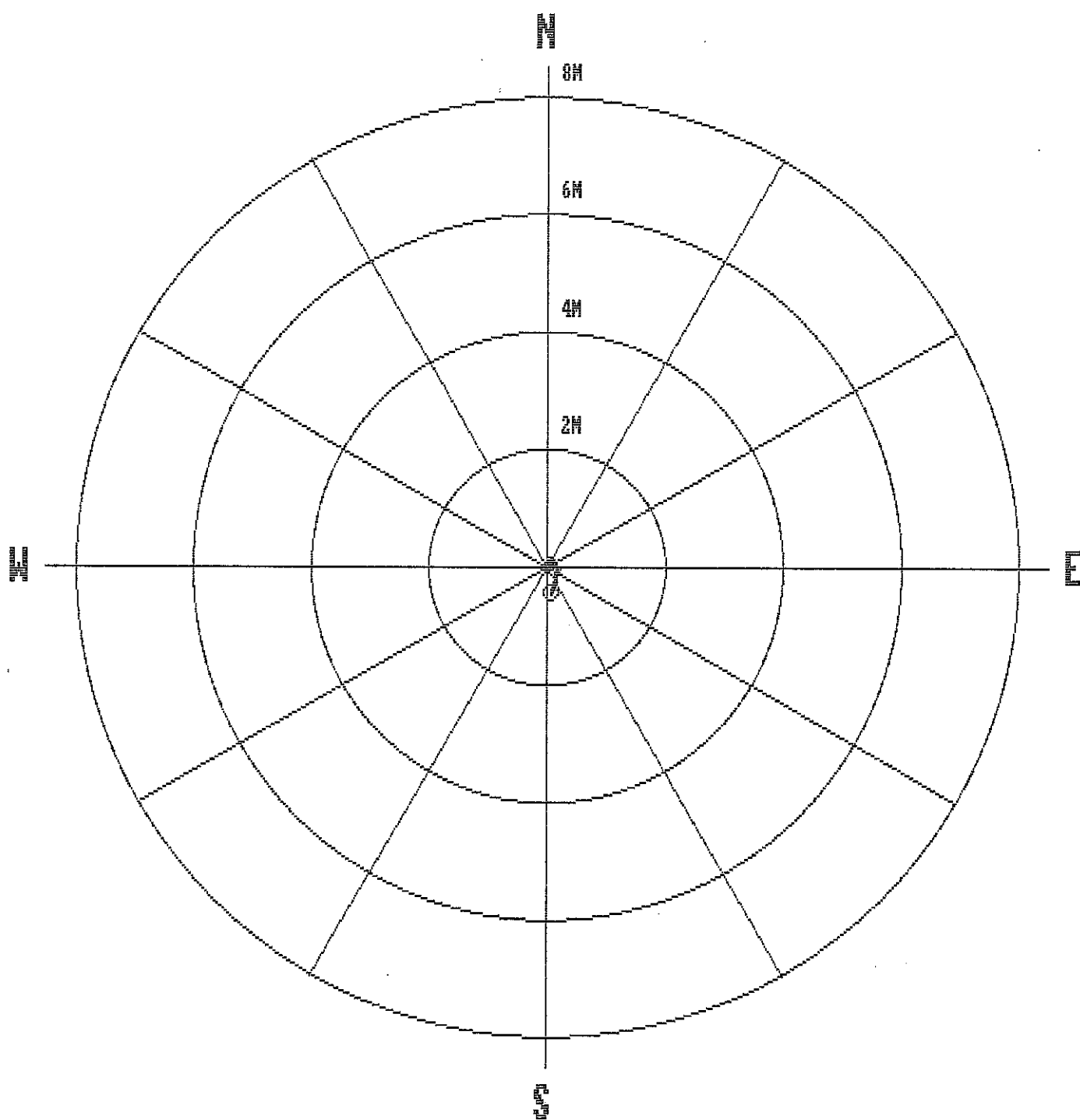
PLAN VIEW

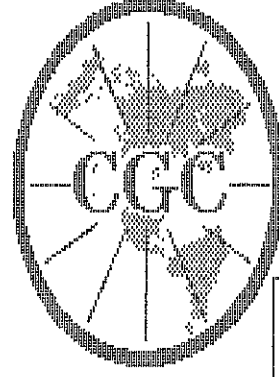
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96103C
 DATE OF LOG: 08/03/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 56.17 M
 AZIMUTH: 170.6
 DISTANCE: 0.4 M
 + = 50 M INCR
 O = BOTTOM OF HOLE



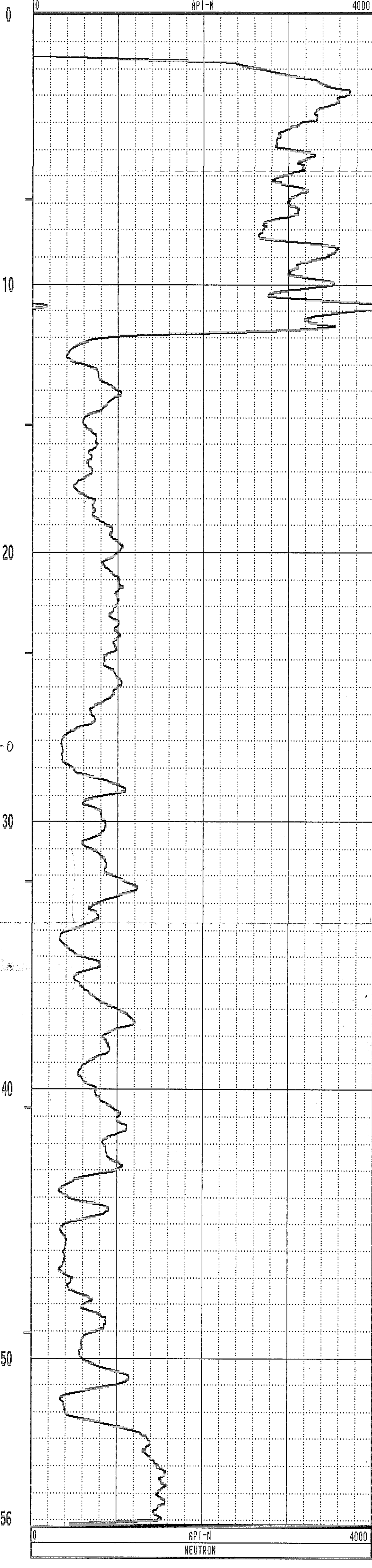
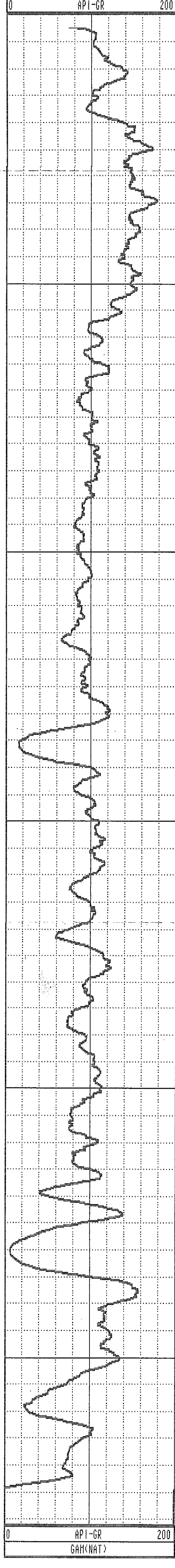


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96103C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOMNSHIP | RANGE | : |
| DATE | : 08/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 55 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 56.24 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.52 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



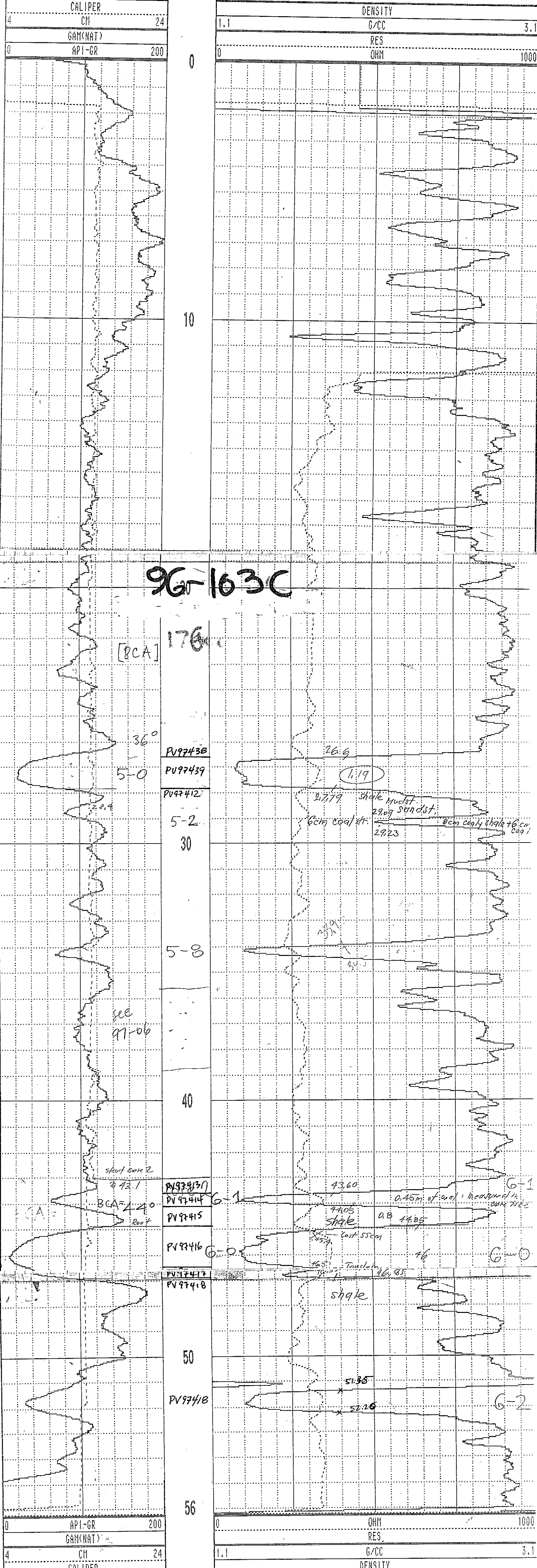
103C

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96103C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/03/96
 DEPTH DRILLER : 55
 LOG BOTTOM : 56.24
 LOG TOP : 0.00
 CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS : .25
 BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 OTHER SERVICES :
 PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:
 LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS
 ELEVATIONS
 KB :
 DF :
 GL :
 FILE : PROCESSED
 TYPE : 9033AA
 LOG : 1
 PLOT : PINE 7
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH96103C 17600



WRH-96103C 08/03/96 958

96-103C

17600 TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|--------|----------|---------------------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CH |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS CH |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS 7.600 CH |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS 17.800 CH |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 5.100 CH |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS 33.000 CH |

WHT 96104C

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 35.5 | 0.9 | 199.3 |
| 3.0 | 3.00 | 0.01 | -0.00 | 0.0 | 346.6 | 1.5 | 290.4 |
| 4.0 | 4.00 | 0.00 | 0.00 | 0.0 | 10.3 | 1.1 | 205.7 |
| 5.0 | 5.00 | -0.01 | -0.00 | 0.0 | 198.5 | 1.1 | 195.1 |
| 6.0 | 6.00 | -0.03 | -0.01 | 0.0 | 190.1 | 1.0 | 186.1 |
| 7.0 | 7.00 | -0.06 | -0.01 | 0.1 | 191.3 | 1.3 | 179.6 |
| 8.0 | 8.00 | -0.08 | -0.01 | 0.1 | 189.3 | 1.4 | 188.4 |
| 9.0 | 9.00 | -0.10 | -0.02 | 0.1 | 189.4 | 1.5 | 177.9 |
| 10.0 | 10.00 | -0.13 | -0.02 | 0.1 | 189.5 | 1.1 | 185.9 |
| 11.0 | 11.00 | -0.15 | -0.03 | 0.2 | 190.0 | 1.6 | 196.5 |
| 12.0 | 12.00 | -0.18 | -0.03 | 0.2 | 191.1 | 1.8 | 187.0 |
| 13.0 | 13.00 | -0.20 | -0.05 | 0.2 | 193.5 | 2.1 | 213.1 |
| 14.0 | 14.00 | -0.23 | -0.07 | 0.2 | 195.9 | 2.1 | 208.7 |
| 15.0 | 15.00 | -0.26 | -0.08 | 0.3 | 197.6 | 1.7 | 205.6 |
| 16.0 | 16.00 | -0.28 | -0.10 | 0.3 | 200.1 | 1.7 | 226.5 |
| 17.0 | 16.99 | -0.31 | -0.13 | 0.3 | 202.8 | 2.3 | 230.3 |
| 18.0 | 17.99 | -0.34 | -0.16 | 0.4 | 205.6 | 2.9 | 224.3 |
| 18.7 | 18.67 | -0.36 | -0.19 | 0.4 | 207.2 | 2.5 | 230.0 |

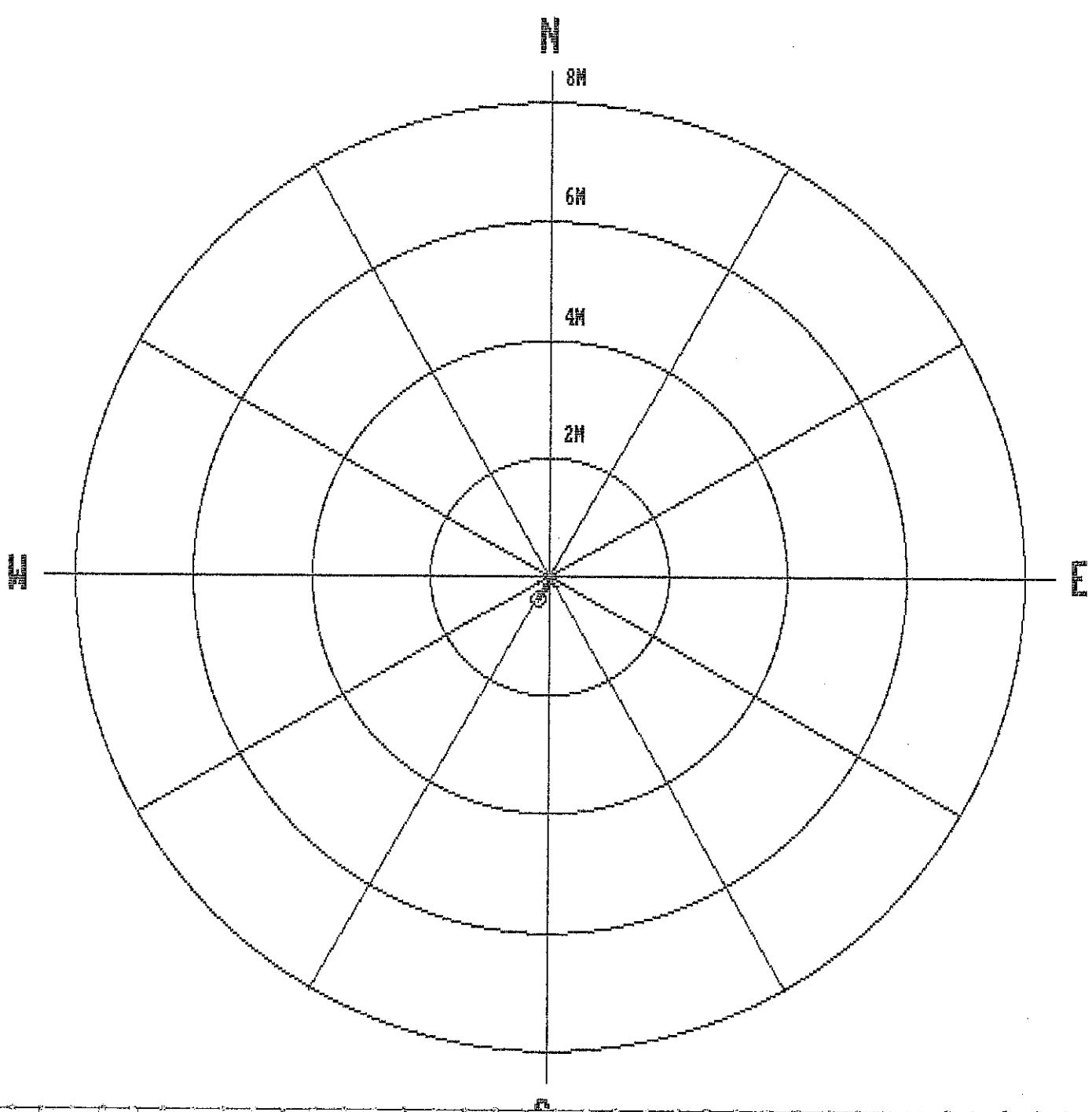
PLAN VIEW

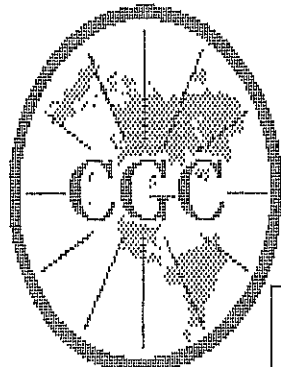
COMPI-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96104C
 DATE OF LOG: 08/03/96
 PROBE: 9055A 56



SCALE: 1 W/CM
 TRUE DEPTH: 18.67 M
 AZIMUTH: 207.2
 DISTANCE: 0.4 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



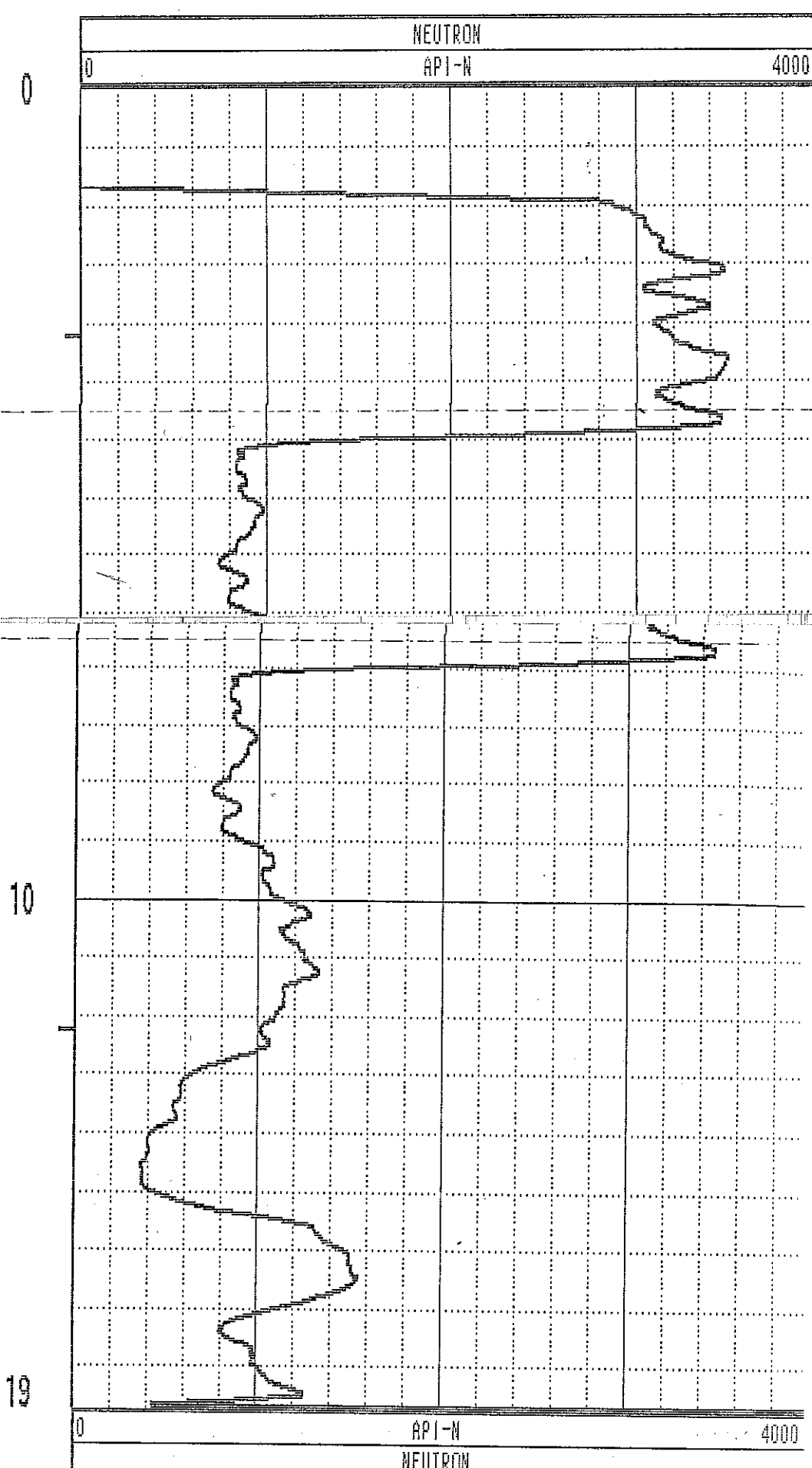
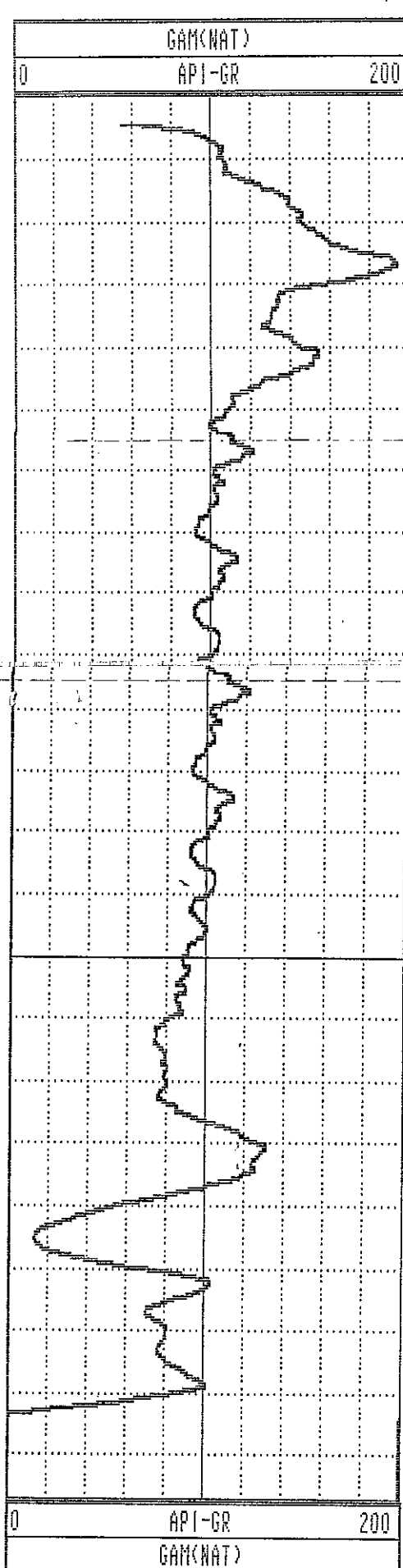


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

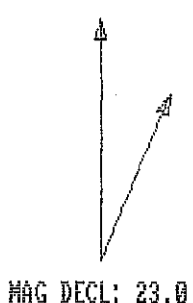
| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96104C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | : |
| DATE | : 08/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 42 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.73 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.48 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : AIR |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 7 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

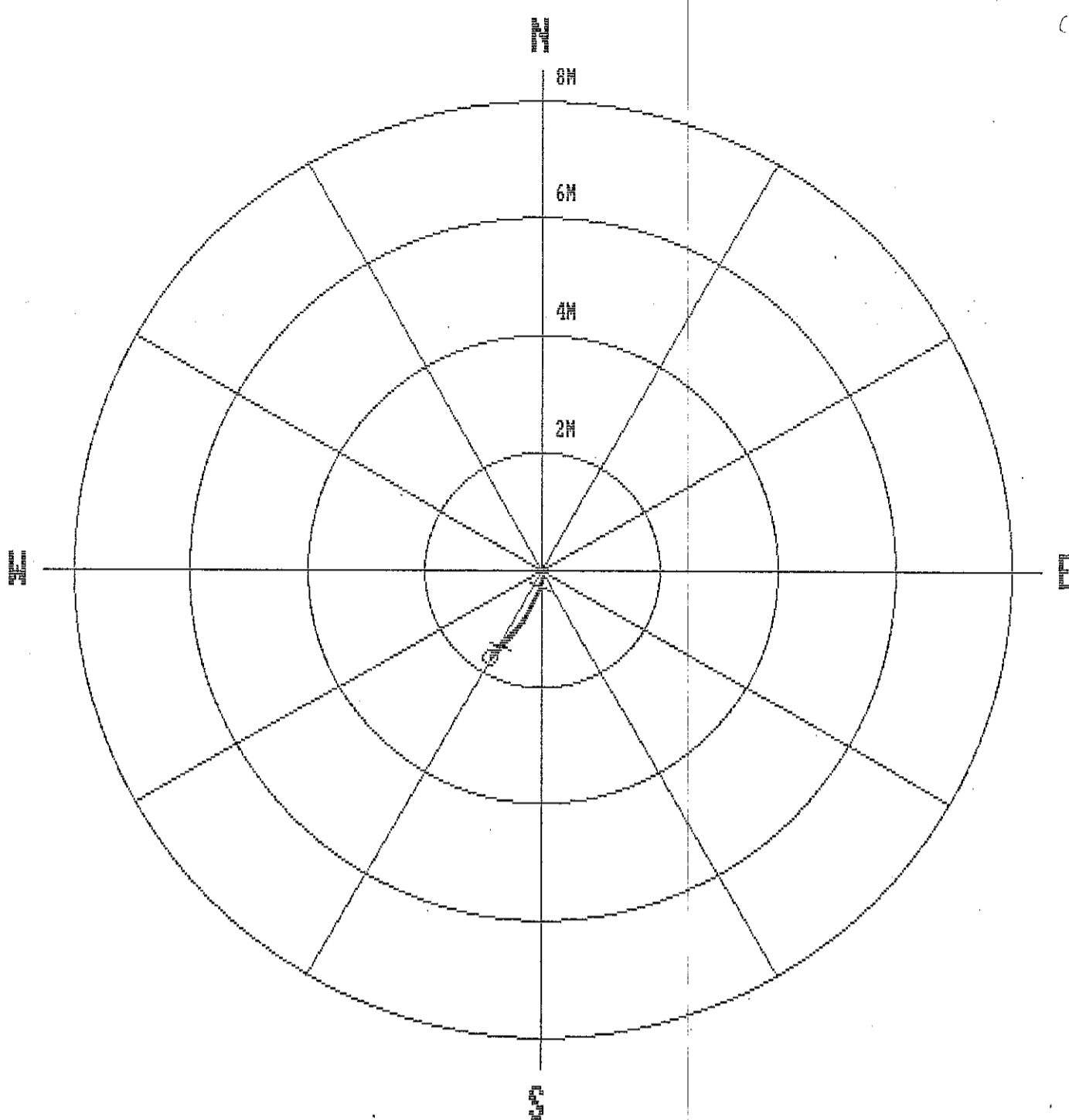


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96105C
 DATE OF LOG: 08/02/96
 PROBE: 9055A 56

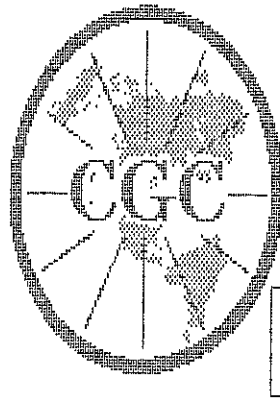


SCALE: 1 M/CM
 TRUE DEPTH: 42.80 M
 AZIMUTH: 210.6
 DISTANCE: 1.7 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 166.5 | 0.3 | 16.0 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 3.4 | 0.8 | 54.4 |
| 4.0 | 4.00 | 0.01 | -0.00 | 0.0 | 350.1 | 1.2 | 80.4 |
| 5.0 | 5.00 | 0.02 | 0.01 | 0.0 | 27.6 | 1.1 | 16.8 |
| 6.0 | 6.00 | 0.02 | 0.01 | 0.0 | 26.9 | 0.2 | 313.4 |
| 7.0 | 7.00 | 0.03 | 0.01 | 0.0 | 25.8 | 0.2 | 50.4 |
| 8.0 | 8.00 | 0.03 | 0.02 | 0.0 | 29.4 | 0.5 | 243.9 |
| 9.0 | 9.00 | 0.03 | 0.02 | 0.0 | 34.8 | 0.2 | 217.8 |
| 10.0 | 10.00 | 0.02 | 0.02 | 0.0 | 47.9 | 0.7 | 182.4 |
| 11.0 | 11.00 | 0.01 | 0.02 | 0.0 | 69.9 | 0.7 | 183.7 |
| 12.0 | 12.00 | -0.01 | 0.03 | 0.0 | 102.1 | 1.1 | 182.0 |
| 13.0 | 13.00 | -0.03 | 0.03 | 0.0 | 135.7 | 1.9 | 187.0 |
| 14.0 | 14.00 | -0.05 | 0.03 | 0.1 | 152.7 | 1.6 | 190.6 |
| 15.0 | 15.00 | -0.08 | 0.03 | 0.1 | 162.7 | 1.5 | 187.0 |
| 16.0 | 16.00 | -0.12 | 0.02 | 0.1 | 170.3 | 2.4 | 193.0 |
| 17.0 | 17.00 | -0.15 | 0.01 | 0.2 | 174.4 | 1.8 | 183.6 |
| 18.0 | 18.00 | -0.19 | 0.01 | 0.2 | 178.0 | 2.1 | 193.6 |
| 19.0 | 19.00 | -0.22 | -0.00 | 0.2 | 180.9 | 2.4 | 196.0 |
| 20.0 | 19.99 | -0.26 | -0.01 | 0.3 | 183.2 | 2.3 | 199.7 |
| 21.0 | 20.99 | -0.30 | -0.03 | 0.3 | 184.8 | 1.9 | 195.3 |
| 22.0 | 21.99 | -0.33 | -0.04 | 0.3 | 186.2 | 2.1 | 196.1 |
| 23.0 | 22.99 | -0.37 | -0.05 | 0.4 | 187.8 | 2.4 | 199.9 |
| 24.0 | 23.99 | -0.41 | -0.07 | 0.4 | 189.5 | 2.5 | 203.7 |
| 25.0 | 24.99 | -0.45 | -0.09 | 0.5 | 191.6 | 3.1 | 213.6 |
| 26.0 | 25.99 | -0.50 | -0.12 | 0.5 | 193.2 | 3.4 | 217.0 |
| 27.0 | 26.99 | -0.56 | -0.15 | 0.6 | 194.6 | 3.8 | 208.1 |
| 28.0 | 27.98 | -0.62 | -0.18 | 0.6 | 196.0 | 3.5 | 209.6 |
| 29.0 | 28.98 | -0.67 | -0.21 | 0.7 | 197.0 | 3.8 | 212.1 |
| 30.0 | 29.98 | -0.73 | -0.24 | 0.8 | 197.8 | 3.4 | 205.0 |
| 31.0 | 30.98 | -0.79 | -0.27 | 0.8 | 198.9 | 3.6 | 214.4 |
| 32.0 | 31.98 | -0.84 | -0.31 | 0.9 | 200.0 | 4.3 | 217.4 |
| 33.0 | 32.97 | -0.91 | -0.35 | 1.0 | 201.2 | 4.6 | 209.6 |
| 34.0 | 33.97 | -0.97 | -0.40 | 1.0 | 202.4 | 4.3 | 218.9 |
| 35.0 | 34.97 | -1.03 | -0.45 | 1.1 | 203.5 | 4.5 | 220.7 |
| 36.0 | 35.96 | -1.09 | -0.50 | 1.2 | 204.6 | 4.2 | 217.1 |
| 37.0 | 36.96 | -1.14 | -0.55 | 1.3 | 205.8 | 3.7 | 216.9 |
| 38.0 | 37.96 | -1.19 | -0.60 | 1.3 | 206.7 | 4.2 | 224.9 |
| 39.0 | 38.96 | -1.24 | -0.65 | 1.4 | 207.7 | 4.4 | 222.7 |
| 40.0 | 39.95 | -1.30 | -0.70 | 1.5 | 208.4 | 4.7 | 221.8 |
| 41.0 | 40.95 | -1.36 | -0.76 | 1.6 | 209.4 | 4.7 | 230.7 |
| 42.0 | 41.95 | -1.42 | -0.82 | 1.6 | 210.0 | 5.1 | 227.7 |
| 42.9 | 42.80 | -1.47 | -0.87 | 1.7 | 210.6 | 5.0 | 226.9 |

WRH 96 105C



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96105C
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION :

OTHER SERVICES:

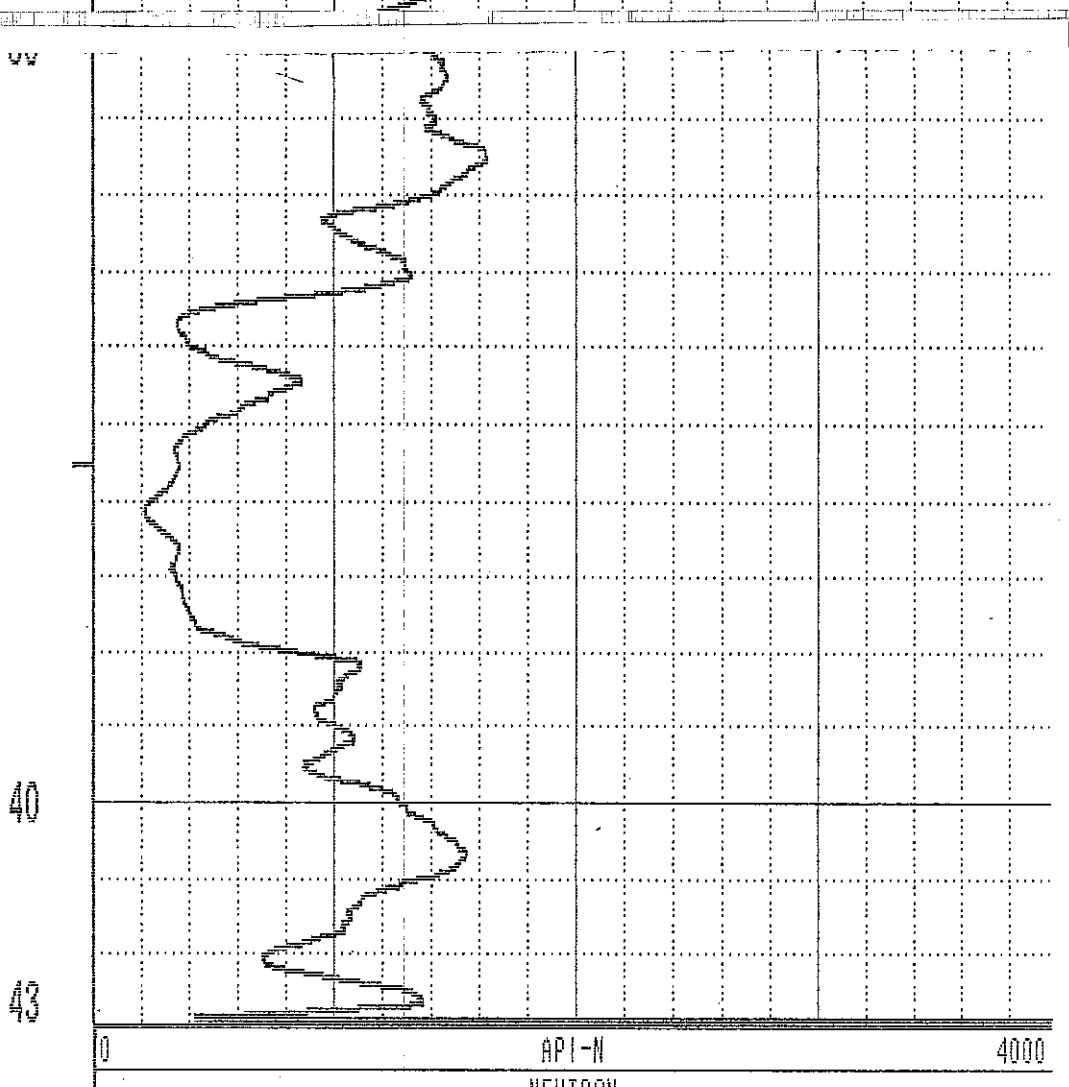
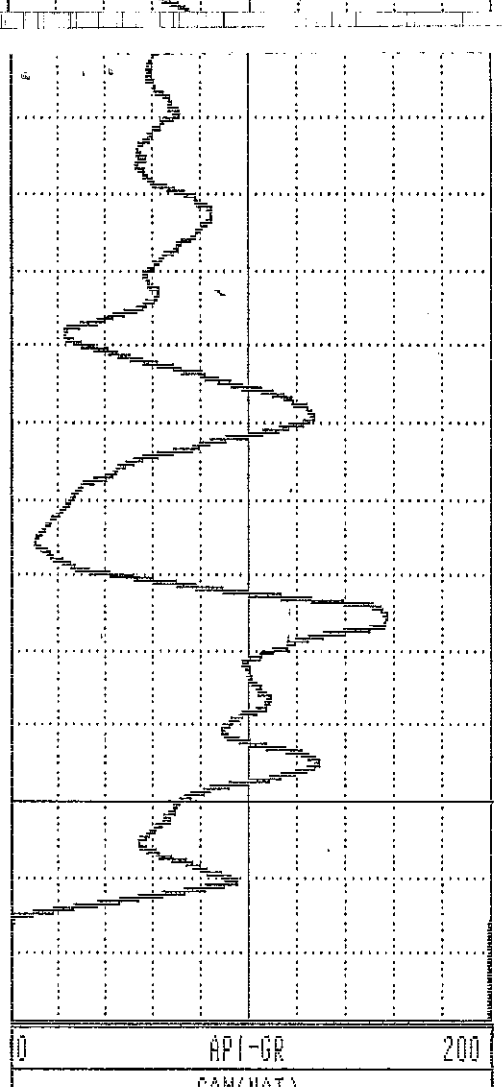
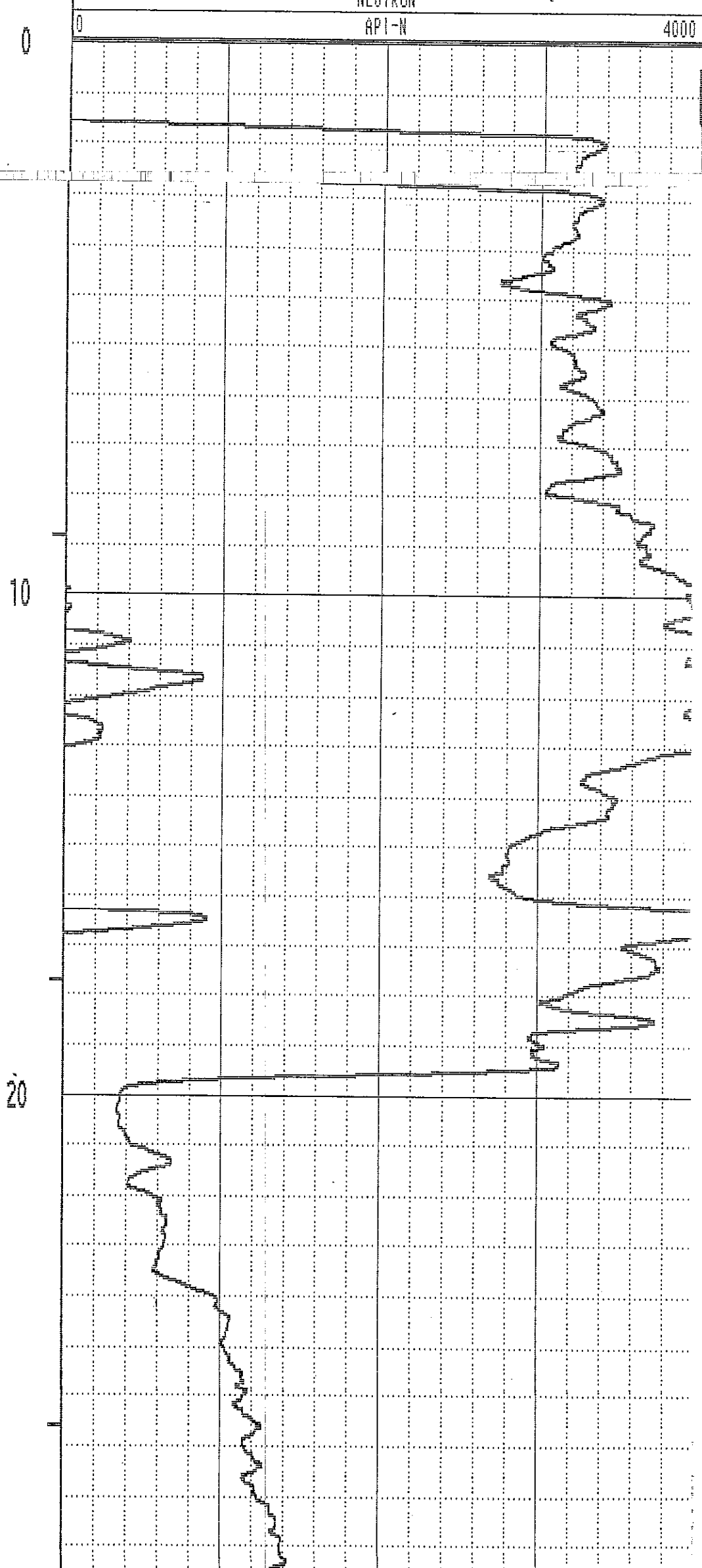
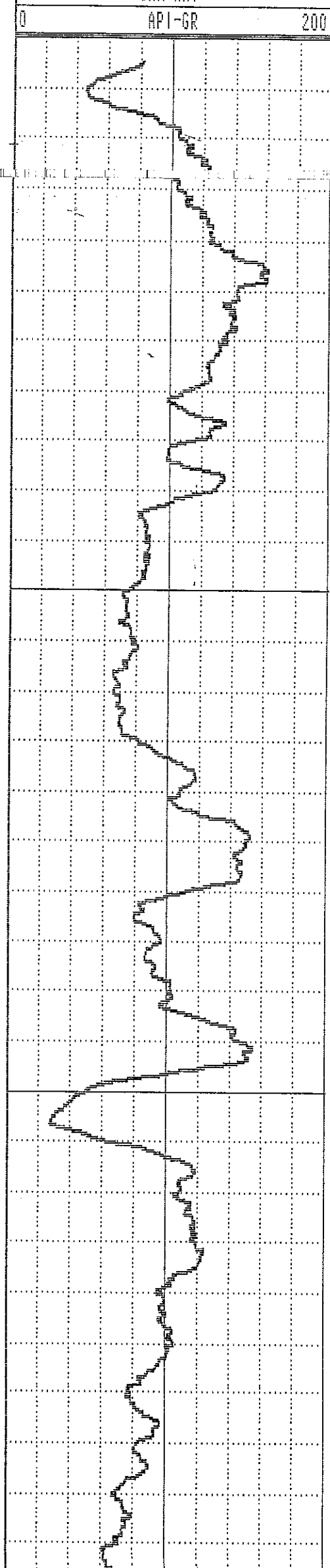
TOWNSHIP : RANGE :

DATE : 08/02/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 45 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 42.92 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.50 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : AIR FILE : ORIGINAL
MAGNETIC DECL. : 23 RM TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 8
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 134.4 | 0.6 | 91.3 |
| 3.0 | 3.00 | 0.01 | 0.00 | 0.0 | 18.7 | 1.1 | 15.2 |
| 4.0 | 4.00 | 0.02 | 0.00 | 0.0 | 2.0 | 0.6 | 327.0 |
| 5.0 | 5.00 | 0.03 | -0.00 | 0.0 | 354.9 | 1.0 | 38.0 |
| 6.0 | 6.00 | 0.05 | -0.00 | 0.1 | 357.6 | 1.2 | 1.4 |
| 7.0 | 7.00 | 0.07 | -0.00 | 0.1 | 356.4 | 0.8 | 4.2 |
| 8.0 | 8.00 | 0.09 | -0.00 | 0.1 | 357.1 | 1.1 | 342.1 |
| 9.0 | 9.00 | 0.11 | -0.00 | 0.1 | 359.2 | 1.1 | 348.0 |
| 10.0 | 10.00 | 0.12 | -0.00 | 0.1 | 359.4 | 1.1 | 17.8 |
| 11.0 | 11.00 | 0.14 | -0.00 | 0.1 | 359.3 | 1.0 | 353.0 |
| 12.0 | 12.00 | 0.16 | -0.00 | 0.2 | 359.2 | 1.3 | 349.5 |
| 13.0 | 13.00 | 0.19 | 0.01 | 0.2 | 1.5 | 1.6 | 39.3 |
| 14.0 | 14.00 | 0.21 | 0.02 | 0.2 | 4.7 | 1.5 | 92.0 |
| 15.0 | 15.00 | 0.20 | 0.02 | 0.2 | 4.9 | 1.8 | 200.9 |
| 16.0 | 16.00 | 0.17 | 0.00 | 0.2 | 1.6 | 2.1 | 208.7 |
| 17.0 | 17.00 | 0.14 | -0.01 | 0.1 | 356.2 | 2.9 | 196.3 |
| 18.0 | 17.99 | 0.10 | -0.02 | 0.1 | 346.5 | 2.3 | 203.0 |
| 19.0 | 18.99 | 0.06 | -0.04 | 0.1 | 326.8 | 2.8 | 201.9 |
| 20.0 | 19.99 | 0.03 | -0.06 | 0.1 | 292.8 | 2.8 | 209.2 |
| 21.0 | 20.99 | -0.02 | -0.08 | 0.1 | 256.1 | 2.8 | 203.4 |
| 22.0 | 21.99 | -0.07 | -0.10 | 0.1 | 236.0 | 3.7 | 203.7 |
| 23.0 | 22.99 | -0.12 | -0.12 | 0.2 | 226.0 | 3.3 | 212.1 |
| 24.0 | 23.99 | -0.18 | -0.15 | 0.2 | 219.0 | 3.8 | 195.9 |
| 25.0 | 24.98 | -0.24 | -0.17 | 0.3 | 215.5 | 5.1 | 214.6 |
| 26.0 | 25.98 | -0.32 | -0.20 | 0.4 | 212.3 | 4.9 | 198.2 |
| 27.0 | 26.98 | -0.40 | -0.23 | 0.5 | 210.2 | 5.1 | 202.0 |
| 28.0 | 27.97 | -0.48 | -0.27 | 0.5 | 209.2 | 4.6 | 201.7 |
| 29.0 | 28.97 | -0.55 | -0.30 | 0.6 | 208.6 | 5.0 | 203.2 |
| 30.0 | 29.97 | -0.63 | -0.34 | 0.7 | 208.2 | 5.5 | 203.3 |
| 31.0 | 30.96 | -0.72 | -0.38 | 0.8 | 207.7 | 5.7 | 211.1 |
| 32.0 | 31.96 | -0.81 | -0.42 | 0.9 | 207.5 | 5.6 | 204.6 |
| 33.0 | 32.95 | -0.90 | -0.46 | 1.0 | 207.1 | 5.9 | 206.3 |
| 34.0 | 33.95 | -0.99 | -0.50 | 1.1 | 207.0 | 6.0 | 203.5 |
| 35.0 | 34.94 | -1.08 | -0.55 | 1.2 | 206.8 | 6.4 | 200.9 |
| 36.0 | 35.94 | -1.18 | -0.60 | 1.3 | 206.7 | 6.5 | 203.7 |
| 37.0 | 36.93 | -1.28 | -0.65 | 1.4 | 206.8 | 6.1 | 207.1 |
| 38.0 | 37.92 | -1.37 | -0.70 | 1.5 | 206.9 | 6.1 | 208.3 |
| 39.0 | 38.92 | -1.48 | -0.75 | 1.7 | 207.0 | 6.8 | 209.6 |
| 40.0 | 39.91 | -1.59 | -0.81 | 1.8 | 206.9 | 7.2 | 209.9 |
| 41.0 | 40.90 | -1.71 | -0.87 | 1.9 | 207.0 | 7.7 | 207.5 |
| 42.0 | 41.89 | -1.83 | -0.93 | 2.1 | 207.0 | 8.6 | 210.2 |
| 43.0 | 42.88 | -1.97 | -1.00 | 2.2 | 206.8 | 8.9 | 205.0 |
| 44.0 | 43.87 | -2.10 | -1.07 | 2.4 | 207.0 | 8.6 | 211.9 |
| 45.0 | 44.86 | -2.23 | -1.14 | 2.5 | 207.1 | 8.9 | 208.9 |
| 46.0 | 45.84 | -2.36 | -1.21 | 2.7 | 207.2 | 8.5 | 207.0 |
| 47.0 | 46.83 | -2.50 | -1.29 | 2.8 | 207.3 | 8.9 | 213.0 |
| 48.0 | 47.82 | -2.63 | -1.37 | 3.0 | 207.5 | 9.3 | 212.0 |
| 49.0 | 48.81 | -2.76 | -1.45 | 3.1 | 207.7 | 9.2 | 217.5 |
| 50.0 | 49.79 | -2.90 | -1.53 | 3.3 | 207.8 | 9.5 | 221.8 |
| 51.0 | 50.78 | -3.05 | -1.62 | 3.5 | 208.0 | 10.3 | 214.6 |
| 52.0 | 51.76 | -3.20 | -1.71 | 3.6 | 208.1 | 9.4 | 199.8 |
| 53.0 | 52.75 | -3.34 | -1.80 | 3.8 | 208.3 | 10.5 | 218.7 |
| 54.0 | 53.73 | -3.50 | -1.89 | 4.0 | 208.3 | 10.8 | 188.2 |
| 55.0 | 54.71 | -3.65 | -2.00 | 4.2 | 208.6 | 11.3 | 213.8 |
| 56.0 | 55.69 | -3.82 | -2.10 | 4.4 | 208.8 | 11.3 | 213.1 |
| 57.0 | 56.67 | -3.99 | -2.20 | 4.6 | 208.9 | 11.8 | 203.6 |
| 58.0 | 57.65 | -4.16 | -2.30 | 4.8 | 209.0 | 12.2 | 214.4 |
| 59.0 | 58.63 | -4.34 | -2.41 | 5.0 | 209.1 | 12.4 | 211.7 |

WRH 96106

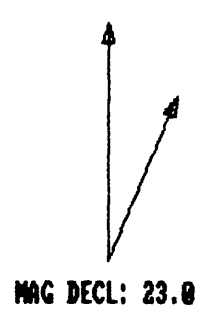
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96106C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 08/03/96
 DATA FROM : PROBE : 9055A 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 7

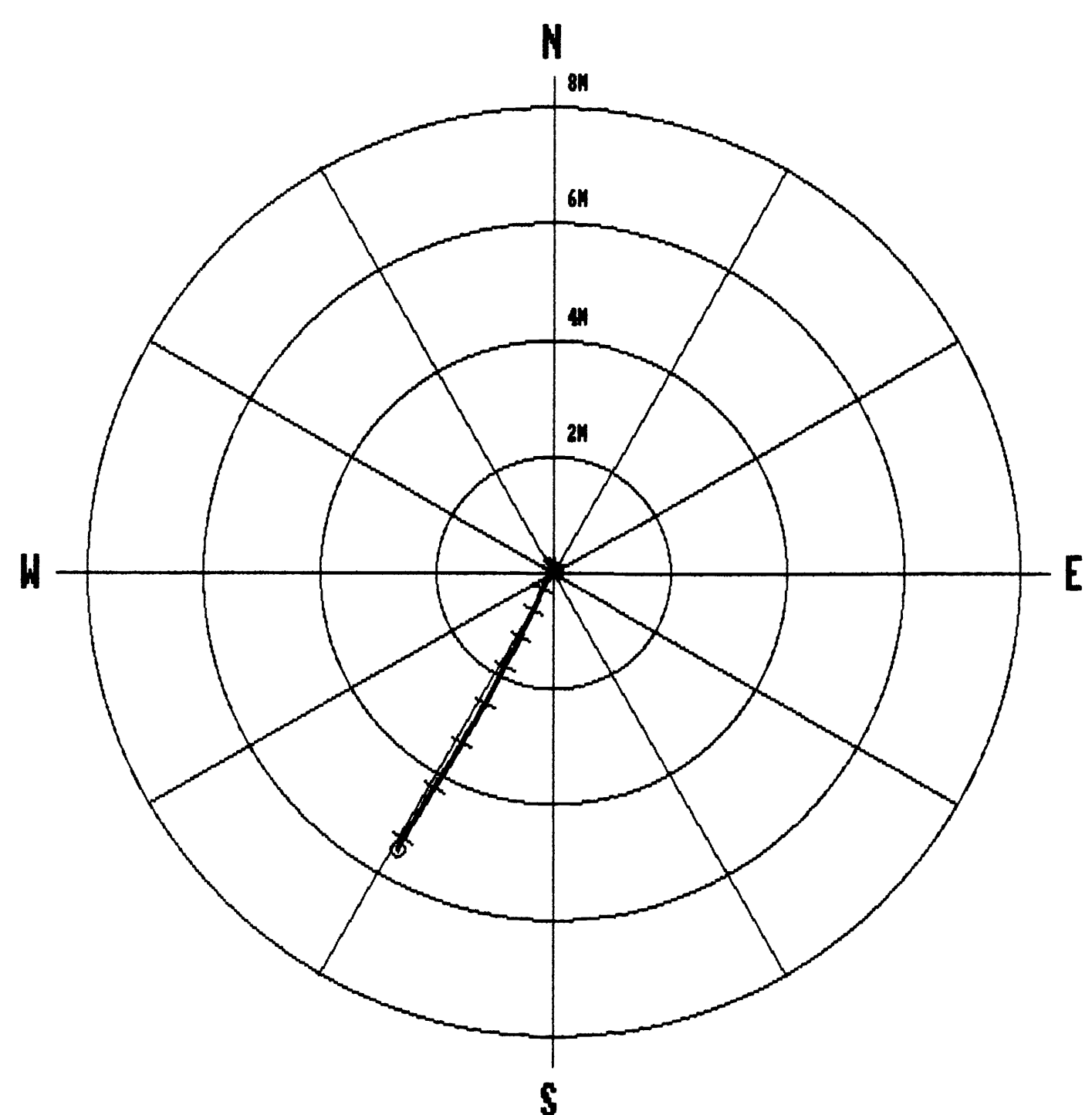
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 60.0 | 59.61 | -4.52 | -2.52 | 5.2 | 209.1 | 12.7 | 211.8 |
| 61.0 | 60.58 | -4.71 | -2.62 | 5.4 | 209.1 | 12.9 | 207.4 |
| 61.3 | 60.84 | -4.76 | -2.65 | 5.5 | 209.1 | 13.1 | 210.1 |

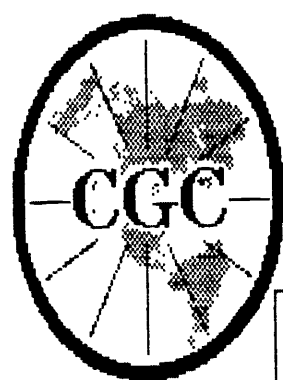
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96106C
 DATE OF LOG: 08/03/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 60.84 M
 AZIMUTH: 209.1
 DISTANCE: 5.5 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96106C
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP :

OTHER SERVICES:

DATE : 08/03/96
DEPTH DRILLER : 62
LOG BOTTOM : 61.31
LOG TOP : 0.60

PERMANENT DATUM :
ELEV. PERM. DATUM :
LOG MEASURED FROM: G.L.
DRL MEASURED FROM:

RANGE :
ELEVATIONS
KB :
DF :
GL :

CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS: .25

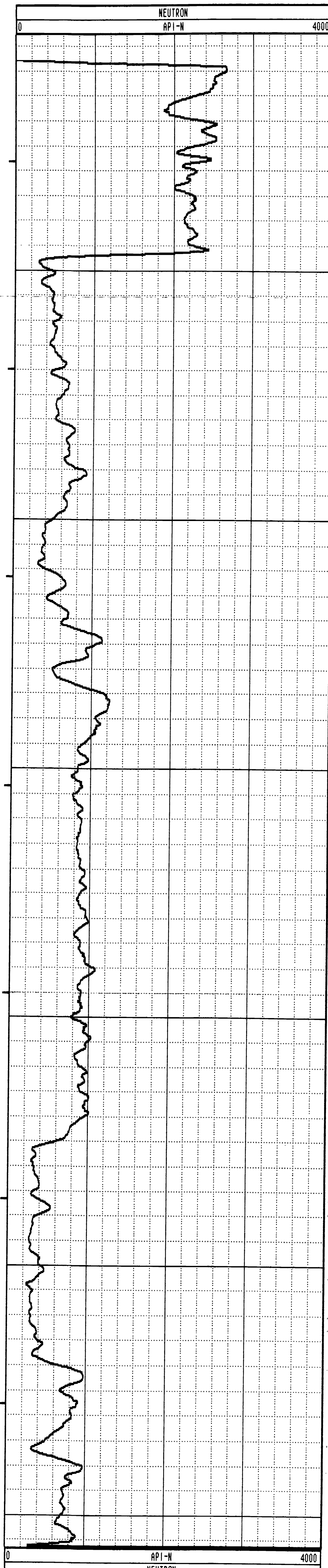
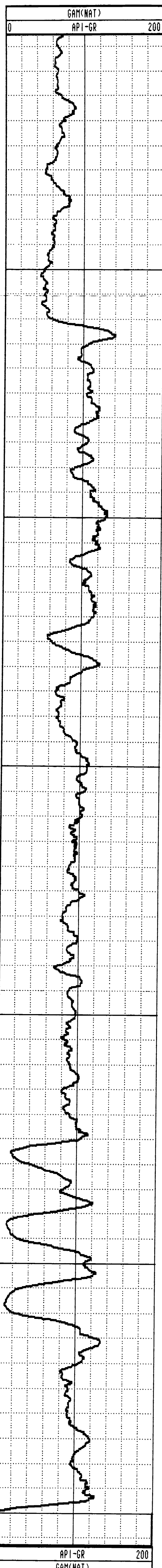
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : ORIGINAL
TYPE : 9055A
LOG : 3
PLOT : PINE 4
THRESH: 10000

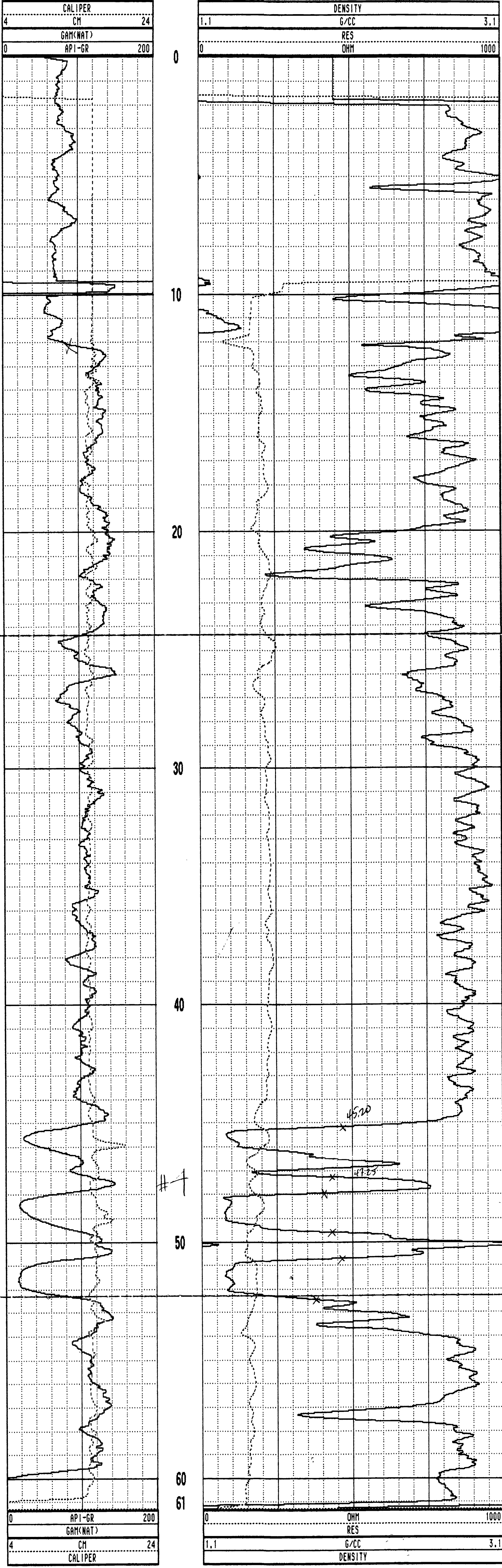
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|--------------------------------------|------------------------------------|-------------------------|
| COMPANY : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL : WRH-96106C | | |
| LOCATION/FIELD : WILLOW CREEK | | |
| COUNTY : | | |
| STATE : BRITISH COLUMBIA | | |
| SECTION : | TOWNSHIP : | RANGE : |
| DATE : 08/03/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER : 61 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM : 61.32 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER : 3 | LOGGING UNIT : 9612 | |
| CASING TYPE : STEEL | FIELD OFFICE : CALGARY, AB. | |
| CASING THICKNESS : .25 | RECORDED BY : R. THOMAS | |
| BIT SIZE : | BOREHOLE FLUID : WATER | FILE : PROCESSED |
| MAGNETIC DECL. : 23 | RM : | TYPE : 9033AA |
| MATRIX DENSITY : | RM TEMPERATURE : | LOG : 6 |
| FLUID DENSITY : 1.1 | MATRIX DELTA T : | PLOT : PINE 7 |
| NEUTRON MATRIX : 2.65 | FLUID DELTA T : | THRESH : 10000 |
| REMARKS : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96106C 08/03/96 958

open hole on the Main (North Area) Road

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 228.6 | 0.3 | 260.6 |
| 3.0 | 3.00 | -0.00 | -0.01 | 0.0 | 255.5 | 0.8 | 271.4 |
| 4.0 | 4.00 | -0.00 | -0.02 | 0.0 | 262.7 | 0.7 | 292.0 |
| 5.0 | 5.00 | -0.01 | -0.03 | 0.0 | 254.7 | 0.7 | 241.5 |
| 6.0 | 6.00 | -0.01 | -0.02 | 0.0 | 245.6 | 0.7 | 108.5 |
| 7.0 | 7.00 | -0.02 | -0.03 | 0.0 | 241.2 | 0.6 | 209.8 |
| 8.0 | 8.00 | -0.03 | -0.04 | 0.0 | 231.8 | 0.7 | 194.2 |
| 9.0 | 9.00 | -0.04 | -0.04 | 0.1 | 223.3 | 0.8 | 188.4 |
| 10.0 | 10.00 | -0.05 | -0.04 | 0.1 | 216.3 | 1.0 | 207.3 |
| 11.0 | 11.00 | -0.06 | -0.04 | 0.1 | 208.8 | 1.0 | 186.7 |
| 12.0 | 12.00 | -0.08 | -0.04 | 0.1 | 204.8 | 0.7 | 199.0 |
| 13.0 | 13.00 | -0.09 | -0.04 | 0.1 | 203.5 | 0.8 | 201.8 |
| 14.0 | 14.00 | -0.11 | -0.05 | 0.1 | 203.7 | 1.2 | 218.5 |
| 15.0 | 15.00 | -0.12 | -0.06 | 0.1 | 205.4 | 1.2 | 232.0 |
| 16.0 | 16.00 | -0.14 | -0.07 | 0.2 | 208.4 | 1.3 | 216.6 |
| 17.0 | 17.00 | -0.15 | -0.09 | 0.2 | 211.3 | 1.5 | 221.2 |
| 18.0 | 18.00 | -0.17 | -0.12 | 0.2 | 214.4 | 2.0 | 230.7 |
| 19.0 | 19.00 | -0.20 | -0.15 | 0.2 | 217.1 | 2.3 | 233.4 |
| 20.0 | 20.00 | -0.22 | -0.18 | 0.3 | 219.4 | 2.7 | 235.5 |
| 21.0 | 20.99 | -0.25 | -0.22 | 0.3 | 221.1 | 2.6 | 227.7 |
| 22.0 | 21.99 | -0.29 | -0.26 | 0.4 | 222.4 | 2.6 | 223.3 |
| 23.0 | 22.99 | -0.32 | -0.31 | 0.4 | 223.4 | 3.8 | 221.1 |
| 24.0 | 23.99 | -0.37 | -0.35 | 0.5 | 223.9 | 3.8 | 233.5 |
| 25.0 | 24.99 | -0.42 | -0.41 | 0.6 | 224.3 | 4.9 | 226.6 |
| 26.0 | 25.98 | -0.47 | -0.47 | 0.7 | 224.6 | 5.0 | 223.2 |
| 27.0 | 26.98 | -0.53 | -0.53 | 0.7 | 224.7 | 4.3 | 222.6 |
| 28.0 | 27.98 | -0.59 | -0.59 | 0.8 | 224.6 | 5.8 | 225.1 |
| 29.0 | 28.97 | -0.66 | -0.65 | 0.9 | 224.5 | 6.0 | 227.1 |
| 30.0 | 29.97 | -0.74 | -0.73 | 1.0 | 224.6 | 7.3 | 231.0 |
| 31.0 | 30.96 | -0.82 | -0.81 | 1.2 | 224.8 | 7.2 | 229.3 |
| 32.0 | 31.95 | -0.92 | -0.90 | 1.3 | 224.4 | 7.9 | 225.2 |
| 33.0 | 32.94 | -1.01 | -0.99 | 1.4 | 224.3 | 7.0 | 223.6 |
| 34.0 | 33.93 | -1.11 | -1.08 | 1.6 | 224.3 | 7.9 | 221.7 |
| 35.0 | 34.92 | -1.21 | -1.17 | 1.7 | 224.1 | 7.7 | 220.6 |
| 36.0 | 35.91 | -1.32 | -1.26 | 1.8 | 223.9 | 8.0 | 219.5 |
| 37.0 | 36.90 | -1.42 | -1.35 | 2.0 | 223.6 | 7.5 | 220.3 |
| 38.0 | 37.89 | -1.53 | -1.44 | 2.1 | 223.4 | 8.2 | 220.4 |
| 39.0 | 38.88 | -1.63 | -1.54 | 2.2 | 223.4 | 8.5 | 215.8 |
| 40.0 | 39.87 | -1.74 | -1.63 | 2.4 | 223.1 | 8.4 | 219.7 |
| 41.0 | 40.86 | -1.86 | -1.73 | 2.5 | 222.9 | 8.3 | 220.3 |
| 42.0 | 41.85 | -1.97 | -1.82 | 2.7 | 222.8 | 8.2 | 218.5 |
| 43.0 | 42.84 | -2.08 | -1.91 | 2.8 | 222.6 | 8.1 | 221.8 |
| 44.0 | 43.83 | -2.18 | -2.00 | 3.0 | 222.5 | 8.1 | 218.2 |
| 45.0 | 44.82 | -2.29 | -2.09 | 3.1 | 222.4 | 8.0 | 221.0 |
| 46.0 | 45.81 | -2.40 | -2.18 | 3.2 | 222.3 | 8.1 | 219.8 |
| 47.0 | 46.80 | -2.50 | -2.27 | 3.4 | 222.2 | 8.1 | 224.9 |
| 48.0 | 47.79 | -2.61 | -2.36 | 3.5 | 222.2 | 7.9 | 219.8 |
| 49.0 | 48.78 | -2.71 | -2.45 | 3.7 | 222.1 | 7.7 | 220.9 |
| 50.0 | 49.77 | -2.81 | -2.54 | 3.8 | 222.1 | 7.6 | 223.0 |
| 51.0 | 50.77 | -2.91 | -2.63 | 3.9 | 222.1 | 7.6 | 221.9 |
| 52.0 | 51.76 | -3.00 | -2.72 | 4.0 | 222.1 | 7.3 | 222.7 |
| 53.0 | 52.75 | -3.10 | -2.80 | 4.2 | 222.2 | 7.2 | 223.3 |
| 54.0 | 53.74 | -3.18 | -2.89 | 4.3 | 222.3 | 7.4 | 219.0 |
| 55.0 | 54.73 | -3.28 | -2.98 | 4.4 | 222.3 | 7.4 | 225.2 |
| 56.0 | 55.72 | -3.37 | -3.08 | 4.6 | 222.4 | 7.8 | 223.5 |
| 57.0 | 56.71 | -3.47 | -3.17 | 4.7 | 222.4 | 7.8 | 225.7 |
| 58.0 | 57.70 | -3.57 | -3.26 | 4.8 | 222.4 | 7.7 | 223.3 |
| 59.0 | 58.70 | -3.67 | -3.35 | 5.0 | 222.5 | 7.6 | 225.5 |

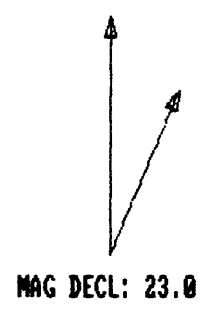
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96107C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 08/04/96
 DATA FROM : PROBE : 9055A 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 2

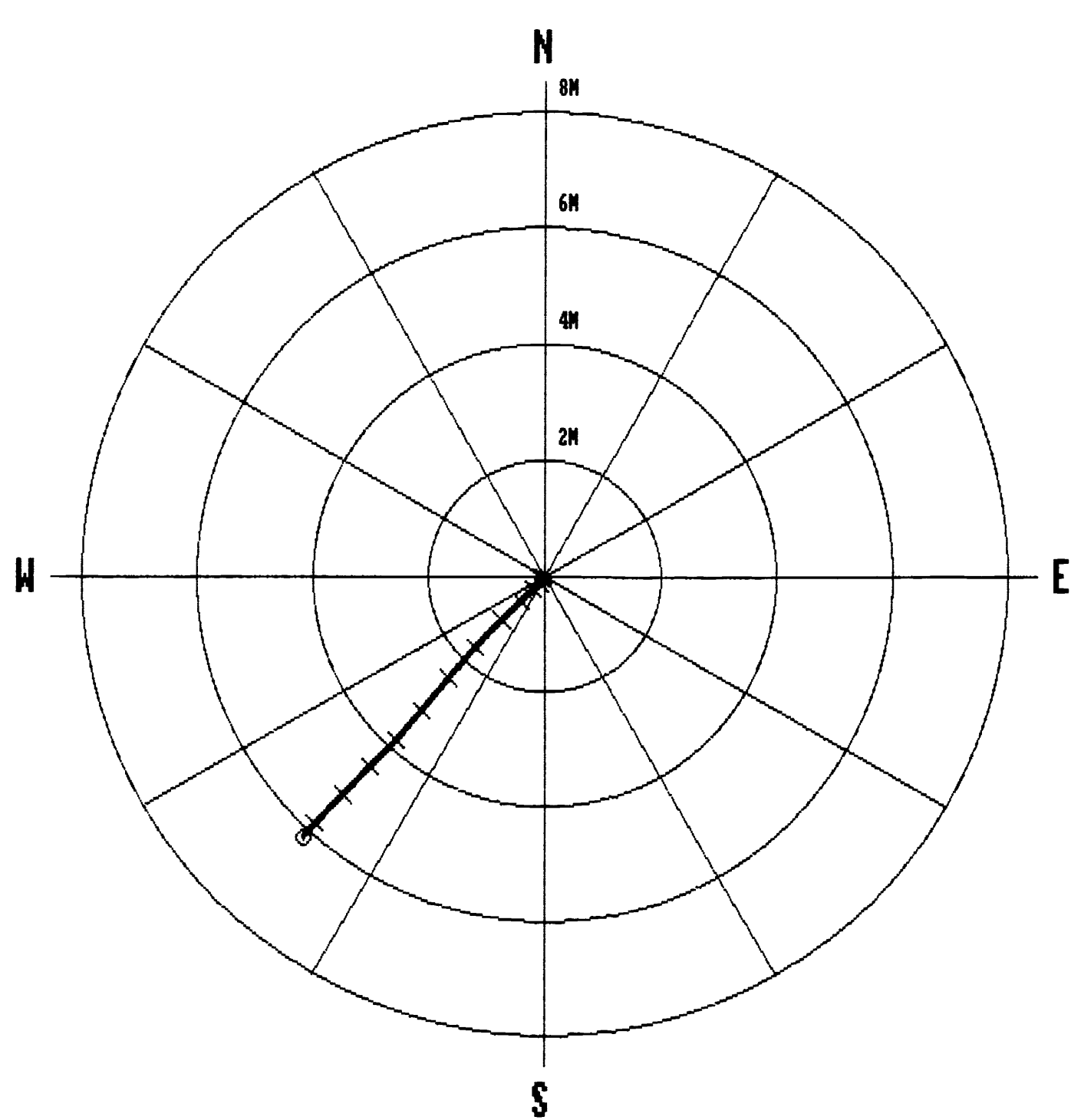
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 60.0 | 59.69 | -3.76 | -3.45 | 5.1 | 222.5 | 7.6 | 224.5 |
| 61.0 | 60.68 | -3.85 | -3.54 | 5.2 | 222.6 | 7.5 | 223.8 |
| 62.0 | 61.67 | -3.95 | -3.63 | 5.4 | 222.6 | 7.7 | 225.7 |
| 63.0 | 62.66 | -4.05 | -3.73 | 5.5 | 222.7 | 8.2 | 222.2 |
| 64.0 | 63.65 | -4.15 | -3.83 | 5.6 | 222.7 | 8.3 | 225.0 |
| 65.0 | 64.64 | -4.26 | -3.93 | 5.8 | 222.7 | 8.5 | 226.4 |
| 66.0 | 65.63 | -4.36 | -4.03 | 5.9 | 222.8 | 8.7 | 225.7 |
| 67.0 | 66.62 | -4.48 | -4.13 | 6.1 | 222.7 | 8.8 | 220.6 |
| 67.3 | 66.93 | -4.51 | -4.17 | 6.1 | 222.7 | 8.9 | 224.1 |

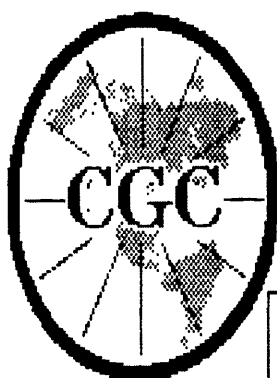
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96107C
 DATE OF LOG: 08/04/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 66.93 M
 AZIMUTH: 222.7
 DISTANCE: 6.1 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96107C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

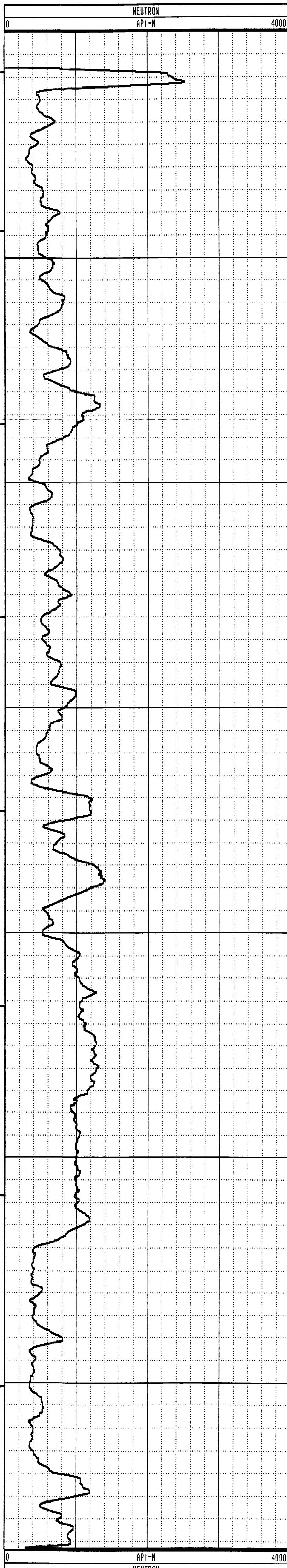
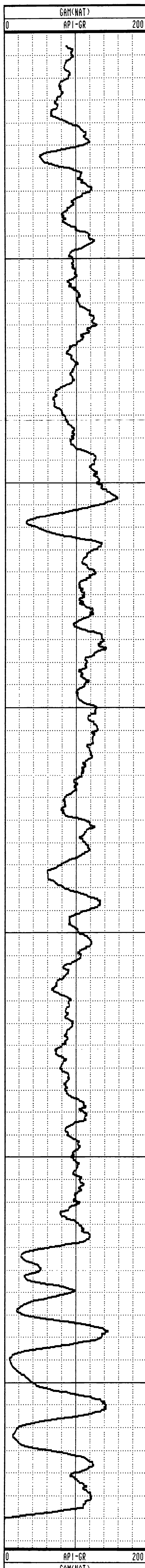
OTHER SERVICES:

TOWNSHIP : RANGE :
 DATE : 08/04/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 66 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 67.38 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.62 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

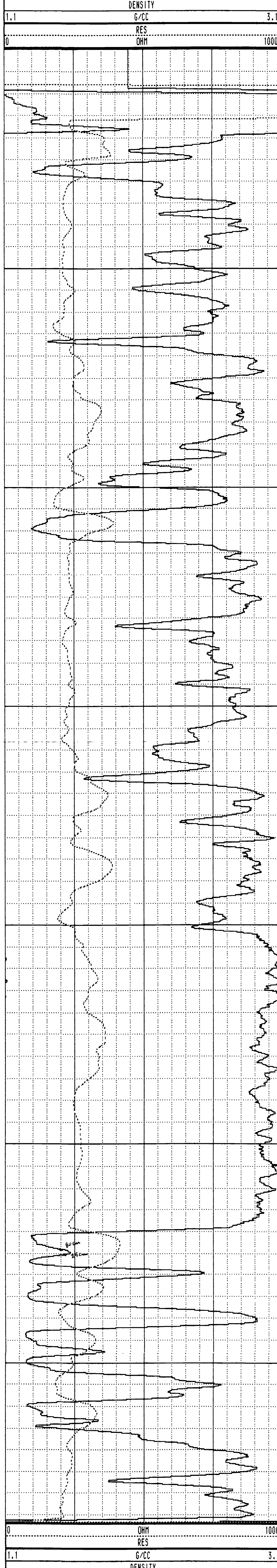
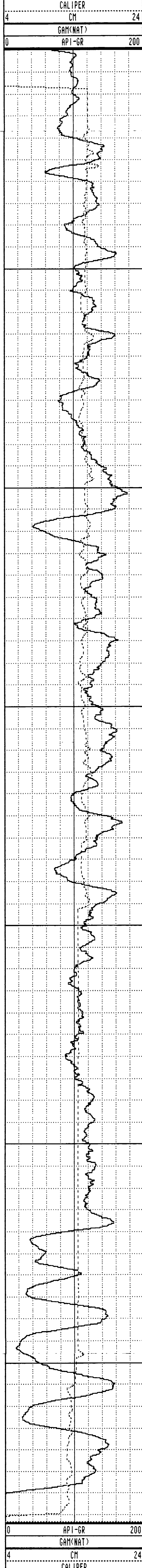
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|---|
| COMPANY : PINE VALLEY COAL WELL : WRH-96107C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE : | OTHER SERVICES: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
| DATE : 08/04/96 DEPTH DRILLER : 67 LOG BOTTOM : 67.38 LOG TOP : 0.00 CASING DRILLER : 3 CASING TYPE : STEEL CASING THICKNESS : .25 BIT SIZE : MAGNETIC DECL. : 23 MATRIX DENSITY : FLUID DENSITY : 1.1 NEUTRON MATRIX : 2.65 REMARKS : | PERMANENT DATUM : ELEV. PERM. DATUM: KB : LOG MEASURED FROM: G.L. DF : DRL MEASURED FROM: GL : LOGGING UNIT : 9612 FIELD OFFICE : CALGARY, AB. RECORDED BY : R. THOMAS BOREHOLE FLUID : WATER RM : RM TEMPERATURE : MATRIX DELTA T : FLUID DELTA T : |
| ELEVATIONS : FILE : PROCESSED TYPE : 9033AA LOG : 1 PLOT : PINE 7 THRESH: 10000 | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96107C 08/04/96 958

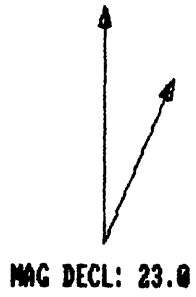
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 1.106 DHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 0.000 DHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.800 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1800.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

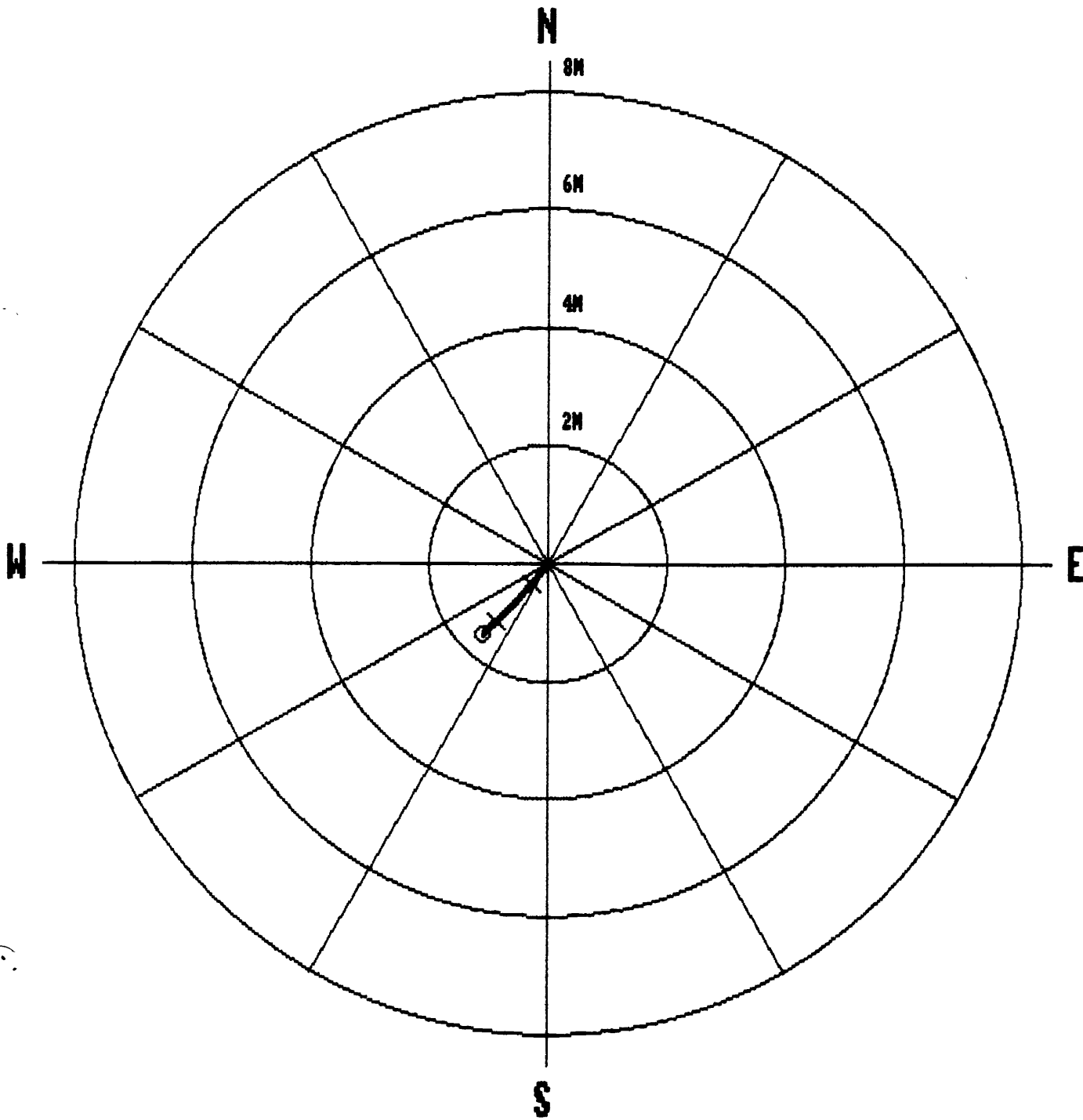
PLAN VIEW

COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96100C
 DATE OF LOG: 08/04/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 46.65 M
 AZIMUTH: 222.5
 DISTANCE: 1.6 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.5 | 1.46 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.5 | 2.46 | -0.00 | -0.00 | 0.0 | 265.4 | 0.8 | 319.7 |
| 3.5 | 3.46 | -0.01 | -0.01 | 0.0 | 325.6 | 0.5 | 227.1 |
| 4.5 | 4.46 | -0.01 | -0.01 | 0.0 | 242.8 | 0.9 | 191.5 |
| 5.5 | 5.46 | -0.02 | -0.01 | 0.0 | 215.6 | 0.9 | 195.1 |
| 6.5 | 6.46 | -0.03 | -0.02 | 0.0 | 210.2 | 0.8 | 205.4 |
| 7.5 | 7.46 | -0.05 | -0.03 | 0.1 | 209.0 | 0.9 | 210.3 |
| 8.5 | 8.46 | -0.07 | -0.04 | 0.1 | 209.1 | 1.1 | 213.7 |
| 9.5 | 9.46 | -0.08 | -0.05 | 0.1 | 210.2 | 1.0 | 226.8 |
| 10.5 | 10.46 | -0.09 | -0.06 | 0.1 | 211.4 | 1.4 | 218.1 |
| 11.5 | 11.46 | -0.11 | -0.07 | 0.1 | 212.3 | 1.7 | 225.4 |
| 12.5 | 12.46 | -0.13 | -0.09 | 0.2 | 214.0 | 1.4 | 225.0 |
| 13.5 | 13.46 | -0.15 | -0.10 | 0.2 | 215.0 | 1.5 | 203.1 |
| 14.5 | 14.46 | -0.17 | -0.12 | 0.2 | 215.6 | 2.0 | 227.0 |
| 15.5 | 15.46 | -0.20 | -0.14 | 0.2 | 216.1 | 2.2 | 216.3 |
| 16.5 | 16.46 | -0.23 | -0.17 | 0.3 | 216.5 | 2.2 | 214.4 |
| 17.5 | 17.46 | -0.26 | -0.19 | 0.3 | 217.1 | 2.1 | 226.4 |
| 18.5 | 18.45 | -0.28 | -0.22 | 0.4 | 217.7 | 1.8 | 221.8 |
| 19.5 | 19.45 | -0.31 | -0.24 | 0.4 | 218.2 | 2.3 | 213.2 |
| 20.5 | 20.45 | -0.34 | -0.27 | 0.4 | 218.6 | 2.5 | 213.9 |
| 21.5 | 21.45 | -0.37 | -0.30 | 0.5 | 218.7 | 2.4 | 225.1 |
| 22.5 | 22.45 | -0.40 | -0.33 | 0.5 | 219.1 | 2.3 | 220.5 |
| 23.5 | 23.45 | -0.43 | -0.35 | 0.6 | 219.1 | 2.4 | 217.9 |
| 24.5 | 24.45 | -0.46 | -0.38 | 0.6 | 219.2 | 2.4 | 204.9 |
| 25.5 | 25.45 | -0.50 | -0.41 | 0.6 | 219.1 | 2.4 | 218.5 |
| 26.5 | 26.45 | -0.53 | -0.44 | 0.7 | 219.2 | 2.7 | 217.9 |
| 27.5 | 27.45 | -0.57 | -0.46 | 0.7 | 219.2 | 2.6 | 218.0 |
| 28.5 | 28.45 | -0.60 | -0.49 | 0.8 | 219.2 | 2.6 | 221.9 |
| 29.5 | 29.44 | -0.64 | -0.52 | 0.8 | 219.2 | 2.6 | 221.6 |
| 30.5 | 30.44 | -0.67 | -0.55 | 0.9 | 219.4 | 2.8 | 223.1 |
| 31.5 | 31.44 | -0.71 | -0.59 | 0.9 | 219.6 | 2.6 | 226.9 |
| 32.5 | 32.44 | -0.74 | -0.62 | 1.0 | 219.9 | 2.4 | 226.3 |
| 33.5 | 33.44 | -0.77 | -0.65 | 1.0 | 220.2 | 2.4 | 226.4 |
| 34.5 | 34.44 | -0.79 | -0.68 | 1.0 | 220.5 | 2.4 | 227.7 |
| 35.5 | 35.44 | -0.82 | -0.71 | 1.1 | 220.7 | 2.4 | 225.4 |
| 36.5 | 36.44 | -0.85 | -0.74 | 1.1 | 220.9 | 2.4 | 222.3 |
| 37.5 | 37.44 | -0.89 | -0.77 | 1.2 | 221.1 | 2.9 | 229.7 |
| 38.5 | 38.44 | -0.92 | -0.81 | 1.2 | 221.3 | 2.8 | 238.1 |
| 39.5 | 39.43 | -0.95 | -0.84 | 1.3 | 221.6 | 2.7 | 217.6 |
| 40.5 | 40.43 | -0.98 | -0.87 | 1.3 | 221.7 | 2.6 | 223.1 |
| 41.5 | 41.43 | -1.01 | -0.91 | 1.4 | 221.8 | 2.6 | 227.7 |
| 42.5 | 42.43 | -1.04 | -0.94 | 1.4 | 222.0 | 2.7 | 227.5 |
| 43.5 | 43.43 | -1.08 | -0.97 | 1.4 | 222.0 | 2.5 | 229.5 |
| 44.5 | 44.43 | -1.11 | -1.00 | 1.5 | 222.2 | 2.6 | 228.1 |
| 45.5 | 45.43 | -1.14 | -1.04 | 1.5 | 222.3 | 2.6 | 225.3 |
| 46.5 | 46.43 | -1.17 | -1.07 | 1.6 | 222.5 | 2.7 | 225.7 |
| 46.7 | 46.65 | -1.18 | -1.08 | 1.6 | 222.5 | 2.8 | 226.0 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96108C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/04/96
 DEPTH DRILLER : 46
 LOG BOTTOM : 46.73
 LOG TOP : 0.46
 CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS : .25

PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:
 LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

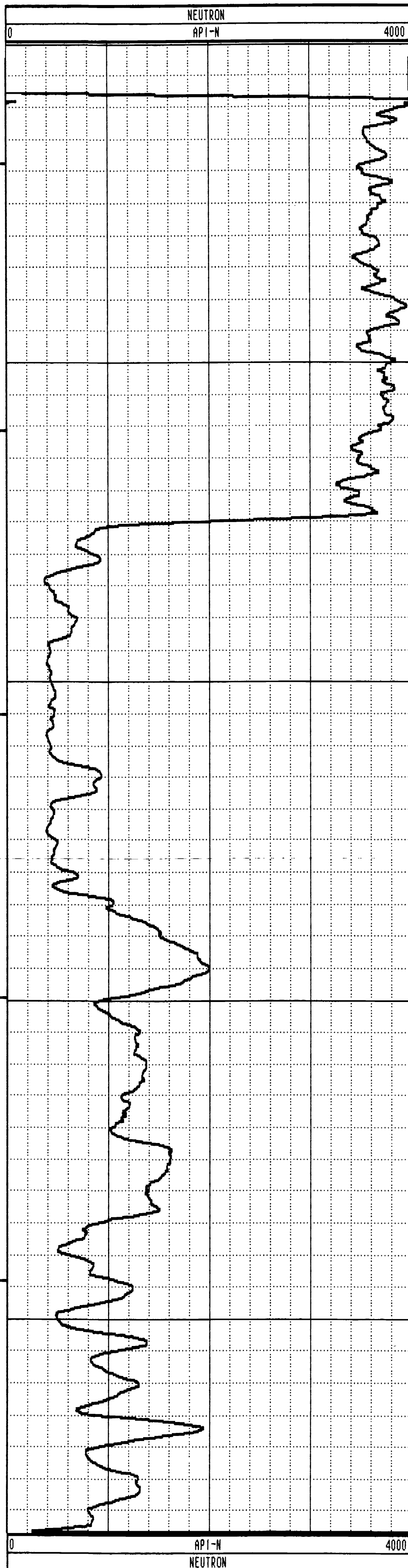
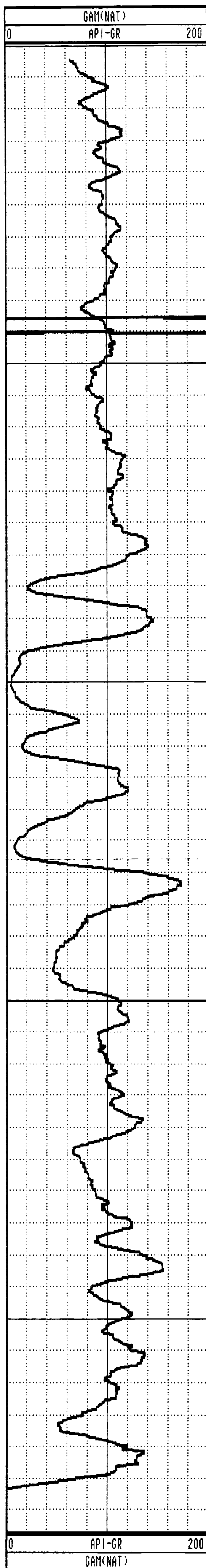
ELEVATIONS
 KB :
 DF :
 GL :

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

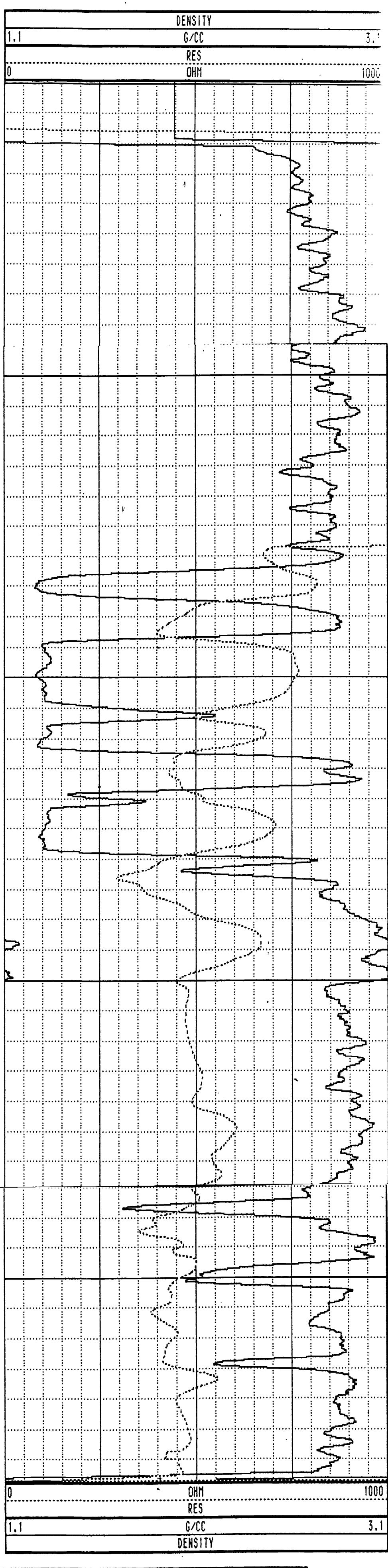
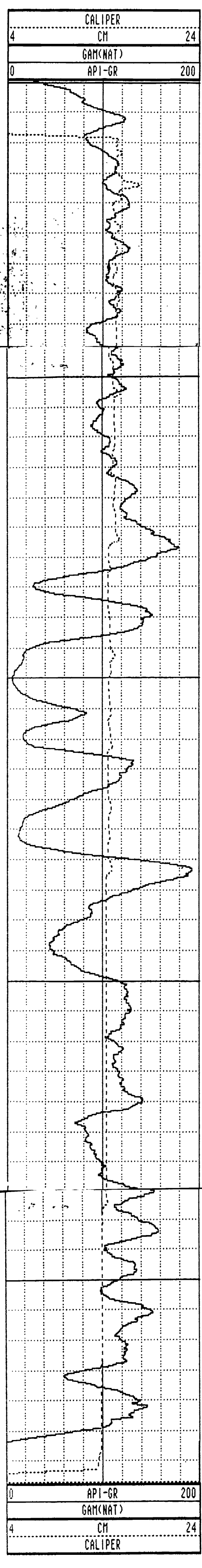


108C

GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96108C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/04/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 47 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 46.74 | LOG MEASURED FROM: | G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96108C 08/04/96 958

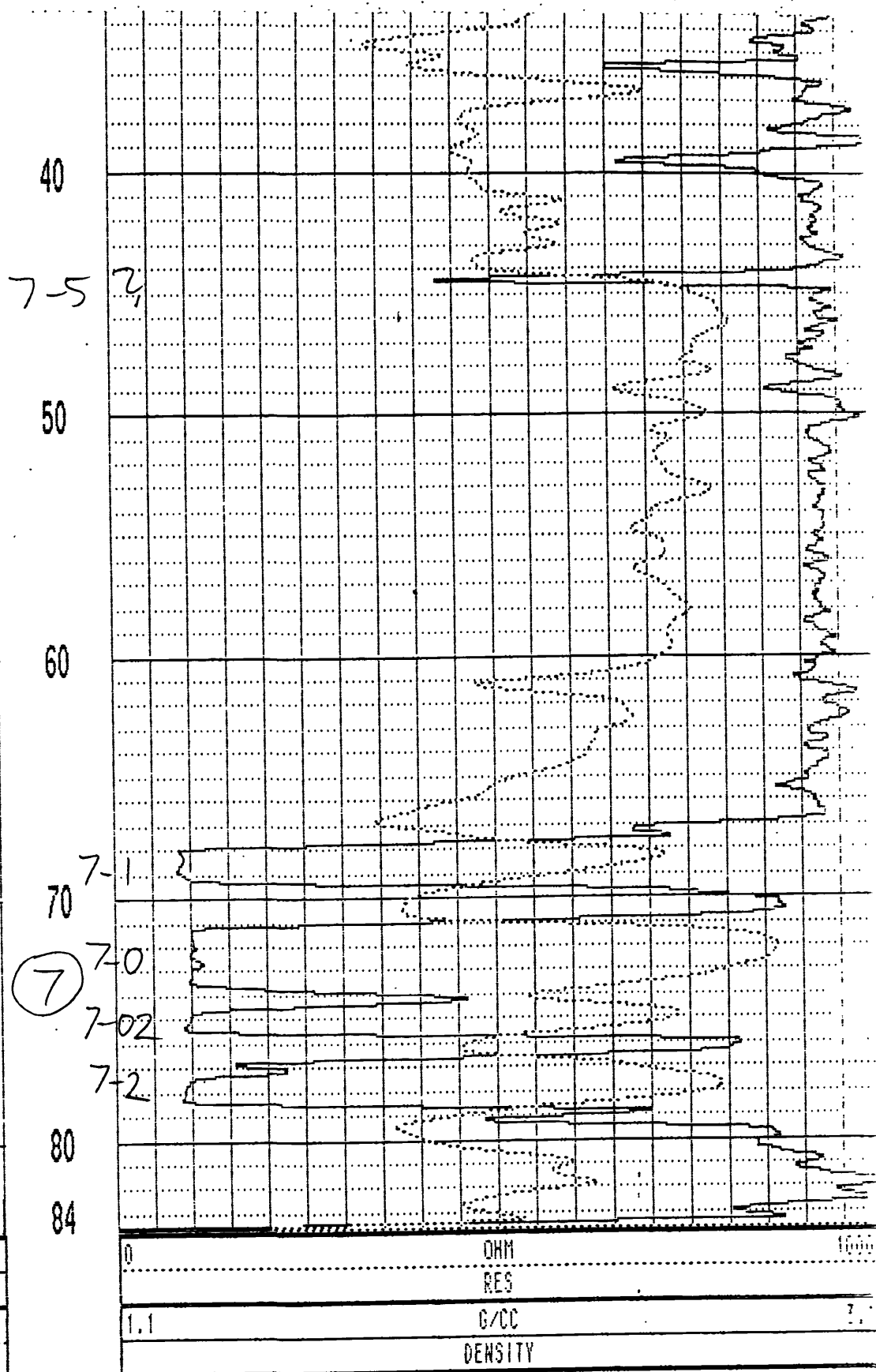
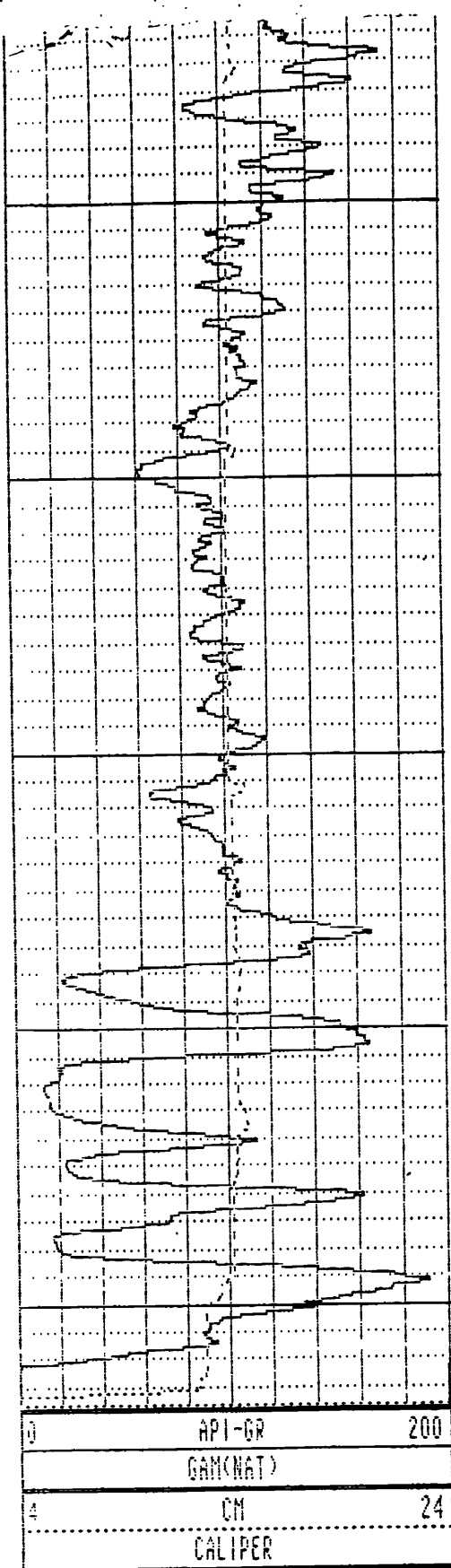
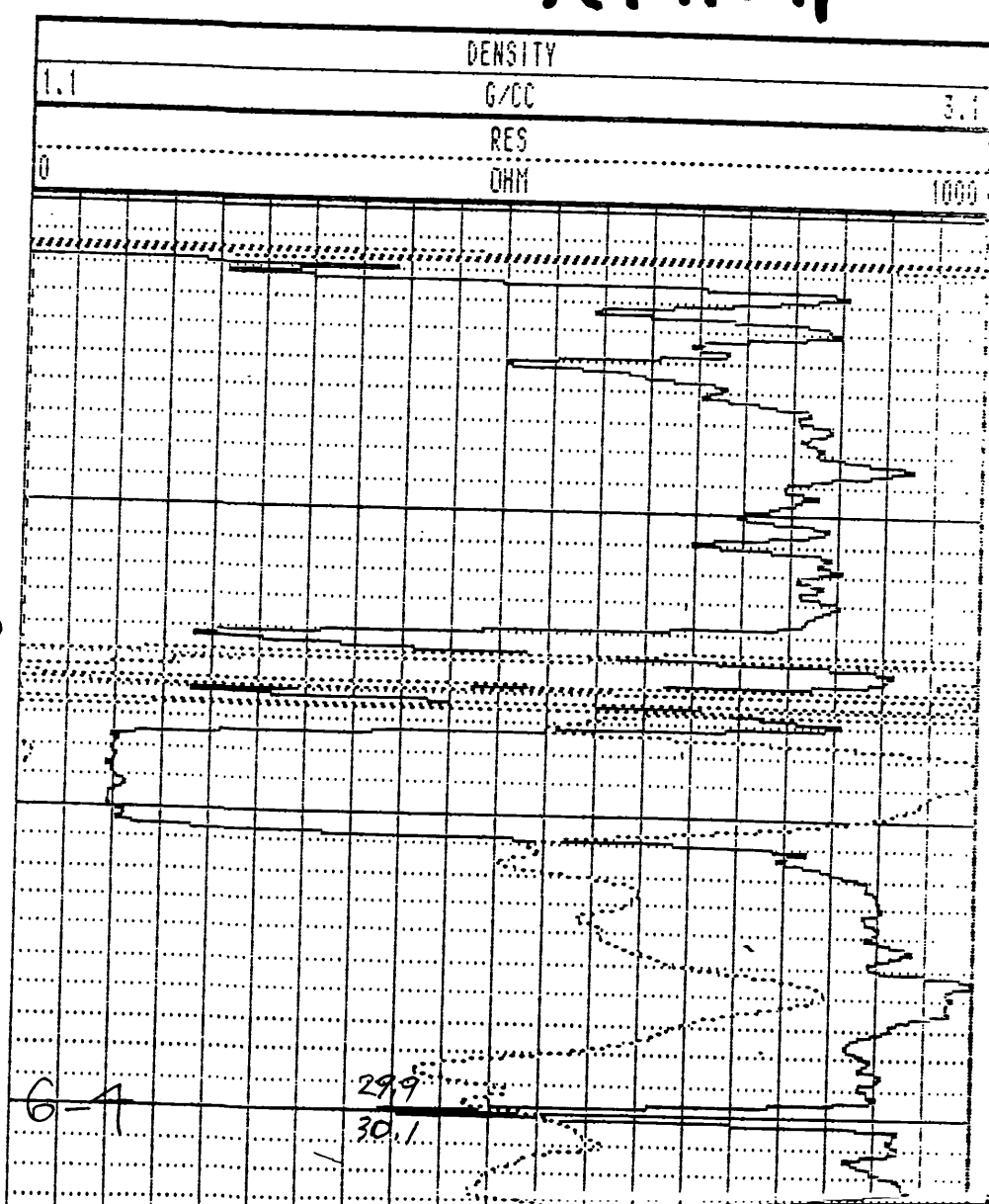
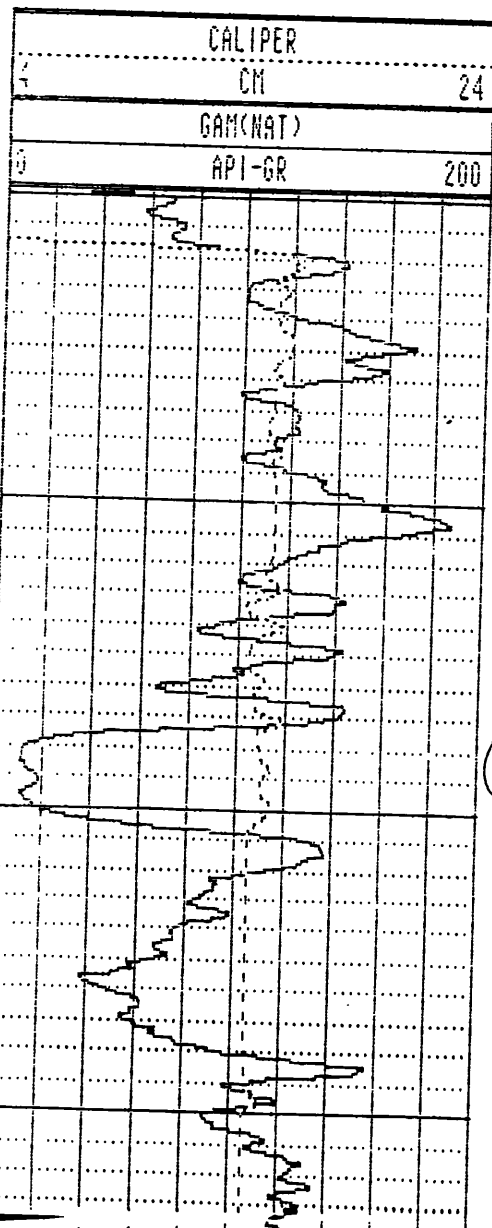
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAMNAT | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAMNAT | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

Line
15100N

109C

Vertical



WRH-96109C 08/12/96 958

Vertical

15100N

109-C

***** COMPU-LOG - VERTICAL DEVIATION *****

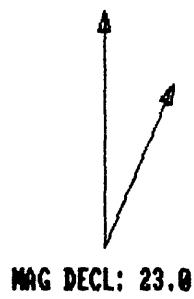
CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96109C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 08/12/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 8

| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.7 | 1.74 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 300.6 | 0.7 | 358.9 |
| 4.0 | 4.00 | -0.02 | 0.00 | 0.0 | 164.4 | 0.6 | 24.5 |
| 6.0 | 6.00 | -0.02 | -0.01 | 0.0 | 203.8 | 0.6 | 231.8 |
| 8.0 | 8.00 | -0.04 | -0.02 | 0.0 | 208.1 | 0.4 | 192.5 |
| 10.0 | 10.00 | -0.05 | -0.02 | 0.1 | 201.8 | 0.6 | 207.2 |
| 12.0 | 12.00 | -0.07 | -0.02 | 0.1 | 197.3 | 0.7 | 203.7 |
| 14.0 | 14.00 | -0.09 | -0.03 | 0.1 | 199.6 | 1.5 | 228.6 |
| 16.0 | 16.00 | -0.12 | -0.05 | 0.1 | 202.7 | 1.2 | 224.6 |
| 18.0 | 18.00 | -0.15 | -0.07 | 0.2 | 205.7 | 1.1 | 223.5 |
| 20.0 | 20.00 | -0.18 | -0.10 | 0.2 | 209.1 | 1.4 | 227.7 |
| 22.0 | 22.00 | -0.21 | -0.13 | 0.2 | 211.3 | 1.2 | 216.4 |
| 24.0 | 24.00 | -0.25 | -0.16 | 0.3 | 212.4 | 1.2 | 214.6 |
| 26.0 | 26.00 | -0.28 | -0.18 | 0.3 | 213.0 | 1.3 | 217.6 |
| 28.0 | 28.00 | -0.31 | -0.21 | 0.4 | 213.8 | 1.2 | 215.5 |
| 30.0 | 30.00 | -0.35 | -0.24 | 0.4 | 214.8 | 1.4 | 219.9 |
| 32.0 | 31.99 | -0.39 | -0.28 | 0.5 | 216.0 | 1.5 | 228.9 |
| 34.0 | 33.99 | -0.42 | -0.32 | 0.5 | 217.0 | 1.4 | 222.4 |
| 36.0 | 35.99 | -0.45 | -0.36 | 0.6 | 218.0 | 1.4 | 243.7 |
| 38.0 | 37.99 | -0.48 | -0.40 | 0.6 | 219.9 | 1.5 | 253.9 |
| 40.0 | 39.99 | -0.51 | -0.44 | 0.7 | 220.5 | 1.4 | 232.3 |
| 42.0 | 41.99 | -0.55 | -0.47 | 0.7 | 221.0 | 1.3 | 225.0 |
| 44.0 | 43.99 | -0.58 | -0.51 | 0.8 | 221.5 | 1.6 | 224.2 |
| 46.0 | 45.99 | -0.61 | -0.54 | 0.8 | 221.6 | 1.3 | 226.6 |
| 48.0 | 47.99 | -0.64 | -0.58 | 0.9 | 221.9 | 1.4 | 220.9 |
| 50.0 | 49.99 | -0.67 | -0.61 | 0.9 | 222.2 | 1.1 | 236.4 |
| 52.0 | 51.99 | -0.70 | -0.65 | 1.0 | 222.7 | 1.2 | 244.0 |
| 54.0 | 53.99 | -0.73 | -0.69 | 1.0 | 223.3 | 1.7 | 236.6 |
| 56.0 | 55.99 | -0.76 | -0.74 | 1.1 | 224.1 | 1.7 | 239.6 |
| 58.0 | 57.99 | -0.79 | -0.79 | 1.1 | 225.0 | 1.7 | 240.5 |
| 60.0 | 59.99 | -0.82 | -0.84 | 1.2 | 225.8 | 1.6 | 241.1 |
| 62.0 | 61.98 | -0.84 | -0.89 | 1.2 | 226.7 | 1.2 | 233.0 |
| 64.0 | 63.98 | -0.87 | -0.94 | 1.3 | 227.4 | 1.6 | 244.4 |
| 66.0 | 65.98 | -0.89 | -1.00 | 1.3 | 228.3 | 1.8 | 250.6 |
| 68.0 | 67.98 | -0.91 | -1.06 | 1.4 | 229.2 | 1.8 | 255.8 |
| 70.0 | 69.98 | -0.94 | -1.12 | 1.5 | 229.9 | 2.0 | 240.6 |
| 72.0 | 71.98 | -0.97 | -1.19 | 1.5 | 230.7 | 2.1 | 248.5 |
| 74.0 | 73.98 | -1.00 | -1.26 | 1.6 | 231.5 | 2.2 | 255.2 |
| 76.0 | 75.98 | -1.03 | -1.32 | 1.7 | 232.2 | 2.1 | 250.5 |
| 78.0 | 77.98 | -1.05 | -1.39 | 1.7 | 232.8 | 2.1 | 246.9 |
| 80.0 | 79.97 | -1.08 | -1.46 | 1.8 | 233.5 | 2.1 | 246.9 |
| 82.0 | 81.97 | -1.11 | -1.54 | 1.9 | 234.2 | 2.7 | 252.9 |
| 83.7 | 83.63 | -1.14 | -1.61 | 2.0 | 234.8 | 2.5 | 244.9 |

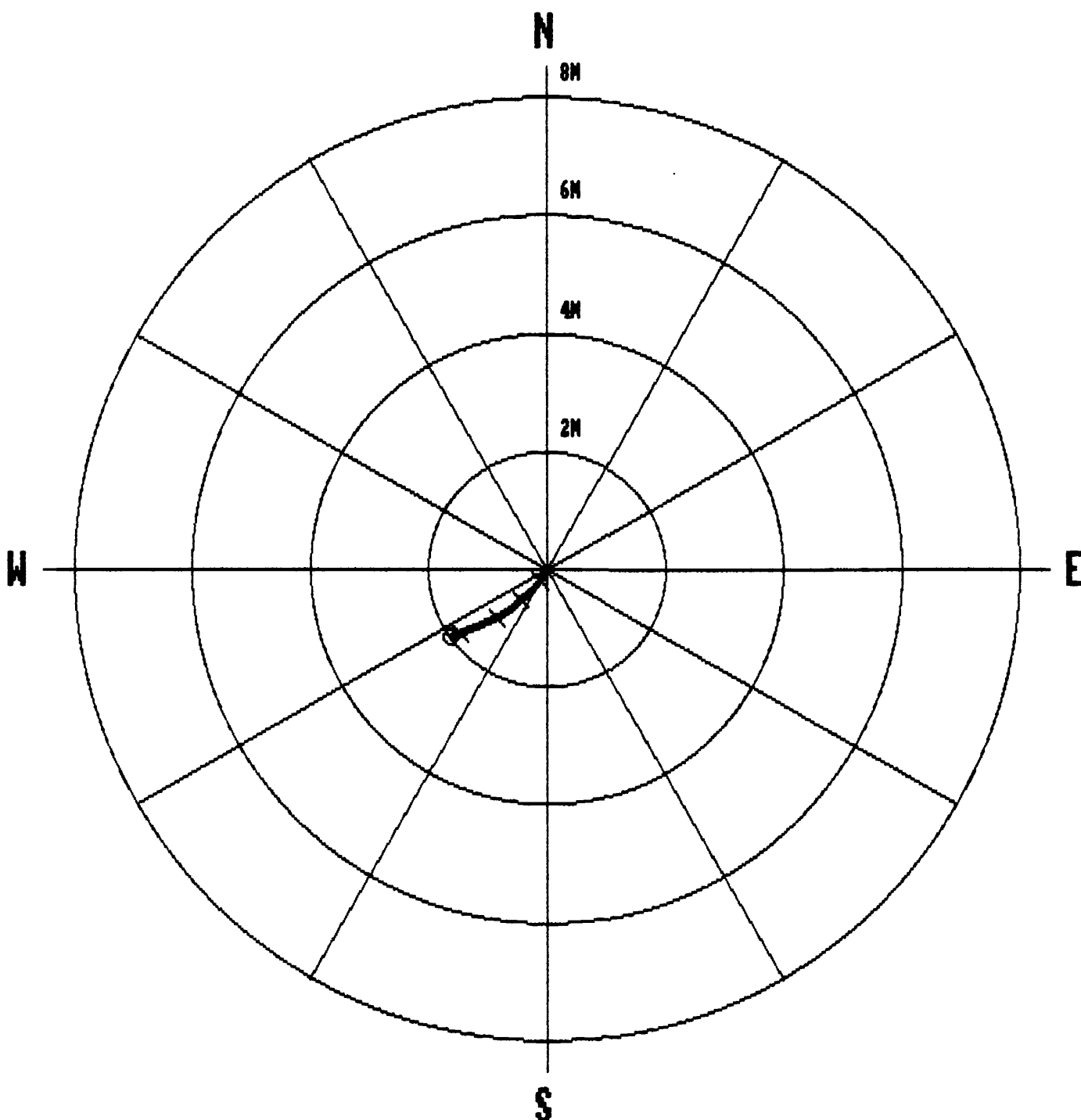
WRH 96109C

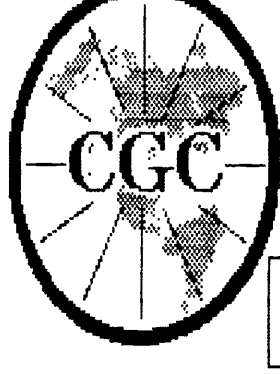
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96109C
 DATE OF LOG: 08/12/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 83.63 M
 AZIMUTH: 234.8
 DISTANCE: 2.0 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



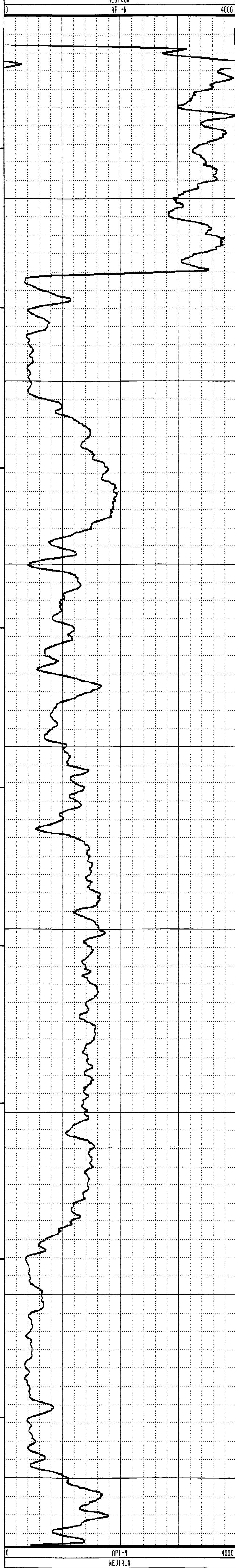
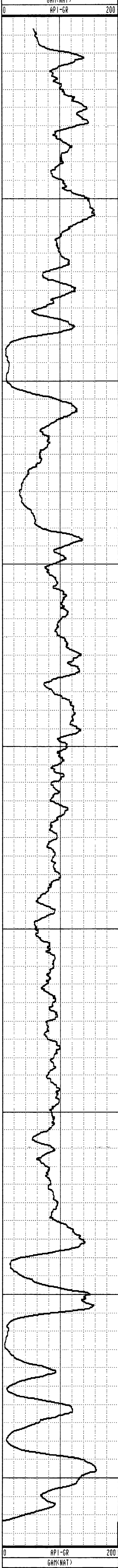


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96109C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/12/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 83 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 83.72 | LOG MEASURED FROM: | G.L. DF |
| LOG TOP | : 0.68 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 6 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

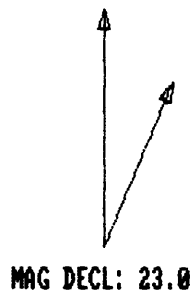


| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 174.6 | 0.9 | 295.7 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 102.2 | 1.0 | 138.7 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 128.3 | 0.9 | 33.8 |
| 5.0 | 5.00 | -0.00 | 0.02 | 0.0 | 94.8 | 0.8 | 47.1 |
| 6.0 | 6.00 | 0.00 | 0.04 | 0.0 | 83.2 | 0.8 | 60.7 |
| 7.0 | 7.00 | 0.01 | 0.05 | 0.1 | 77.4 | 0.9 | 66.0 |
| 8.0 | 8.00 | 0.02 | 0.06 | 0.1 | 73.4 | 0.7 | 61.1 |
| 9.0 | 9.00 | 0.02 | 0.08 | 0.1 | 73.8 | 0.9 | 70.7 |
| 10.0 | 10.00 | 0.03 | 0.09 | 0.1 | 74.4 | 1.0 | 80.4 |
| 11.0 | 11.00 | 0.03 | 0.11 | 0.1 | 75.0 | 0.9 | 76.2 |
| 12.0 | 12.00 | 0.03 | 0.13 | 0.1 | 75.6 | 1.2 | 89.2 |
| 13.0 | 13.00 | 0.03 | 0.14 | 0.1 | 76.6 | 1.0 | 82.2 |
| 14.0 | 14.00 | 0.03 | 0.16 | 0.2 | 77.6 | 0.8 | 88.5 |
| 15.0 | 15.00 | 0.04 | 0.17 | 0.2 | 77.9 | 0.8 | 87.3 |
| 16.0 | 16.00 | 0.04 | 0.19 | 0.2 | 77.8 | 0.8 | 78.8 |
| 17.0 | 17.00 | 0.04 | 0.21 | 0.2 | 78.2 | 1.0 | 86.0 |
| 18.0 | 18.00 | 0.05 | 0.22 | 0.2 | 78.5 | 0.9 | 75.8 |
| 19.0 | 19.00 | 0.05 | 0.24 | 0.2 | 78.6 | 0.9 | 80.6 |
| 20.0 | 20.00 | 0.05 | 0.26 | 0.3 | 79.0 | 1.0 | 79.7 |
| 21.0 | 21.00 | 0.05 | 0.27 | 0.3 | 78.8 | 1.1 | 64.7 |
| 22.0 | 22.00 | 0.06 | 0.29 | 0.3 | 78.1 | 0.9 | 64.1 |
| 23.0 | 23.00 | 0.07 | 0.30 | 0.3 | 77.6 | 1.0 | 69.6 |
| 23.2 | 23.20 | 0.07 | 0.31 | 0.3 | 77.4 | 1.1 | 59.1 |

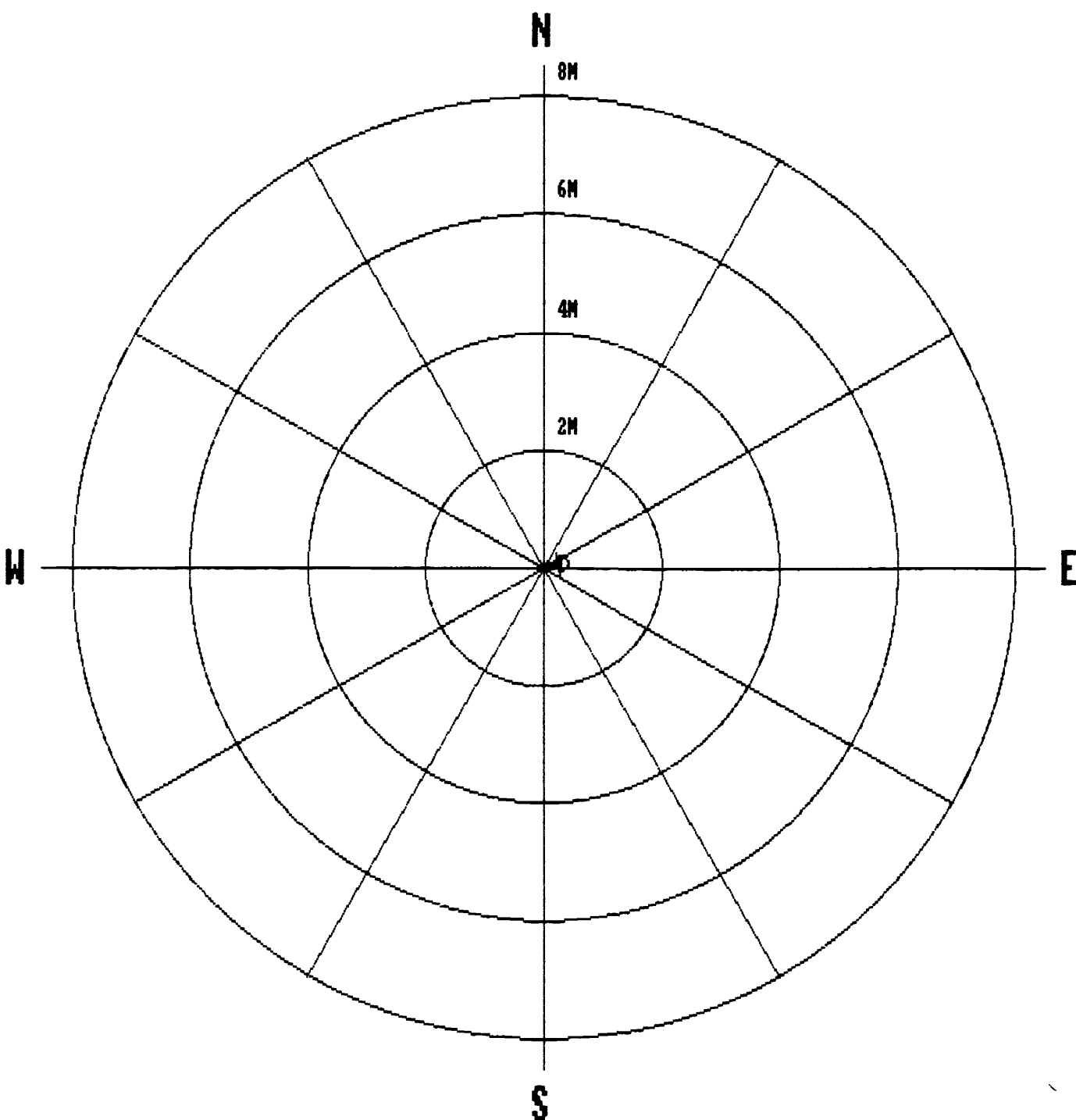
WRH 96110C

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96110C
 DATE OF LOG: 08/12/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 23.20 M
 AZIMUTH: 77.4
 DISTANCE: 0.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96110C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

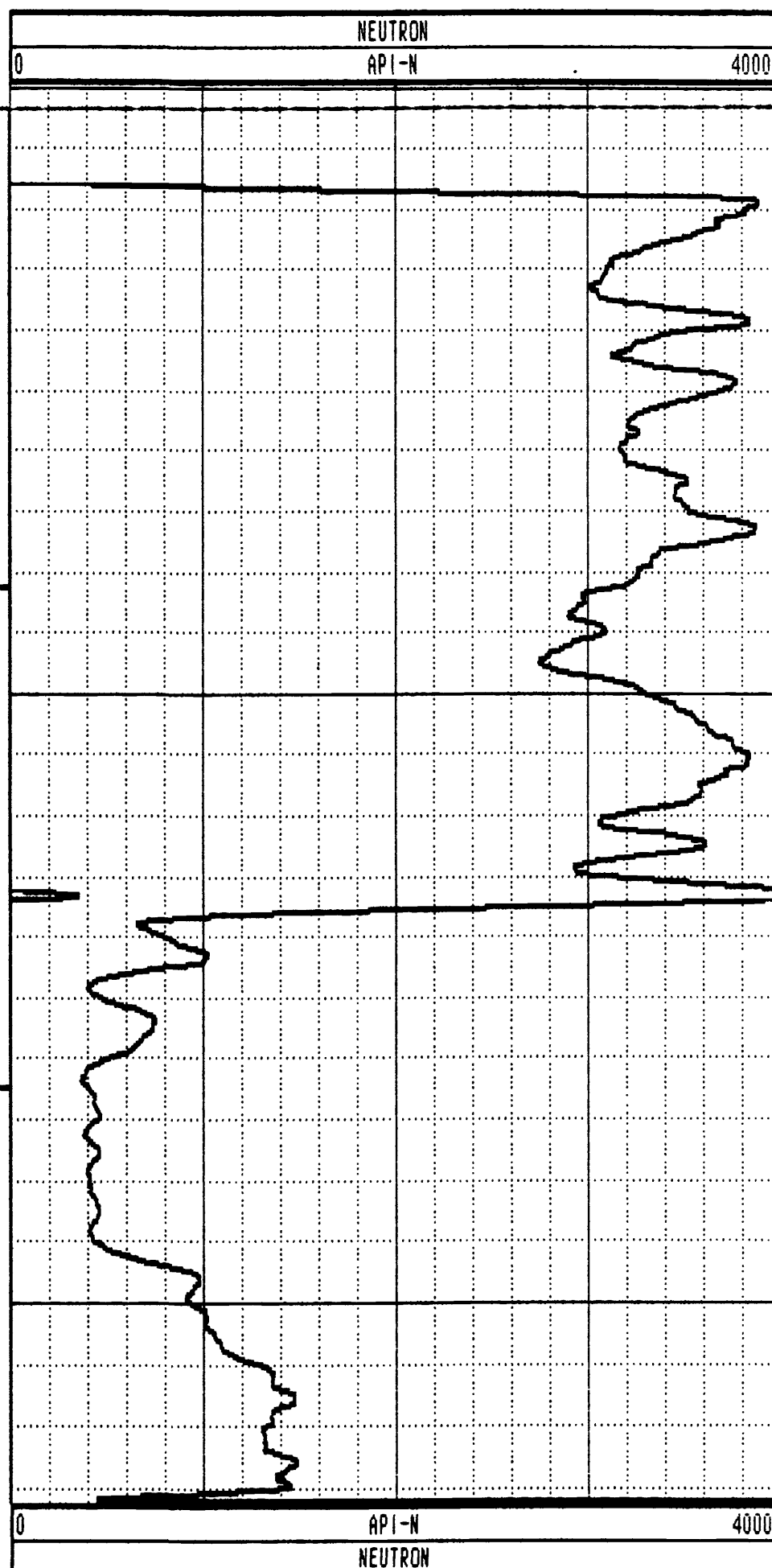
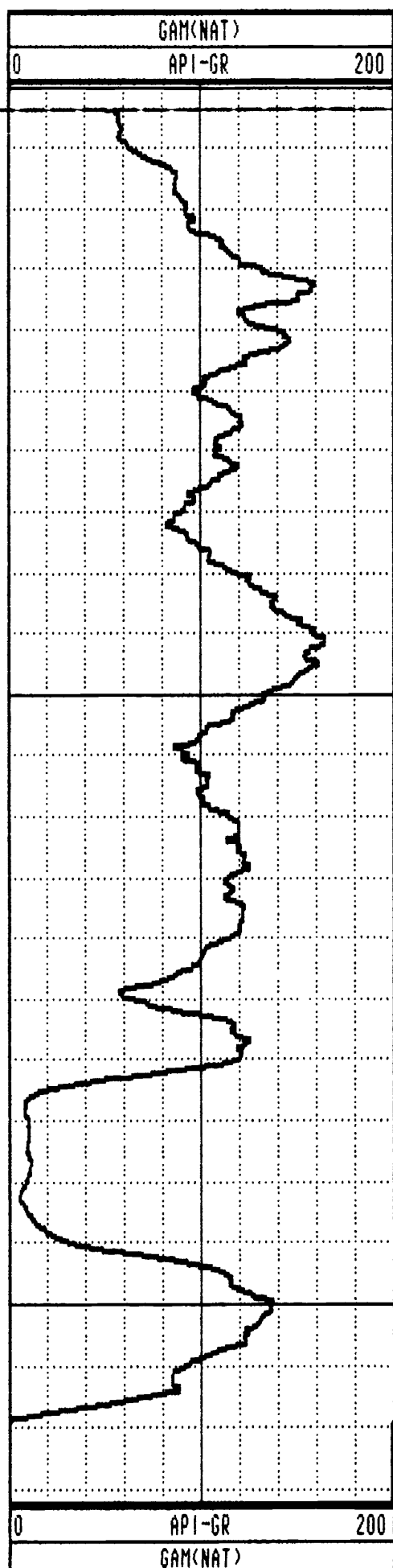
TOWNSHIP : RANGE :

DATE : 08/12/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 45 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 23.26 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.40 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



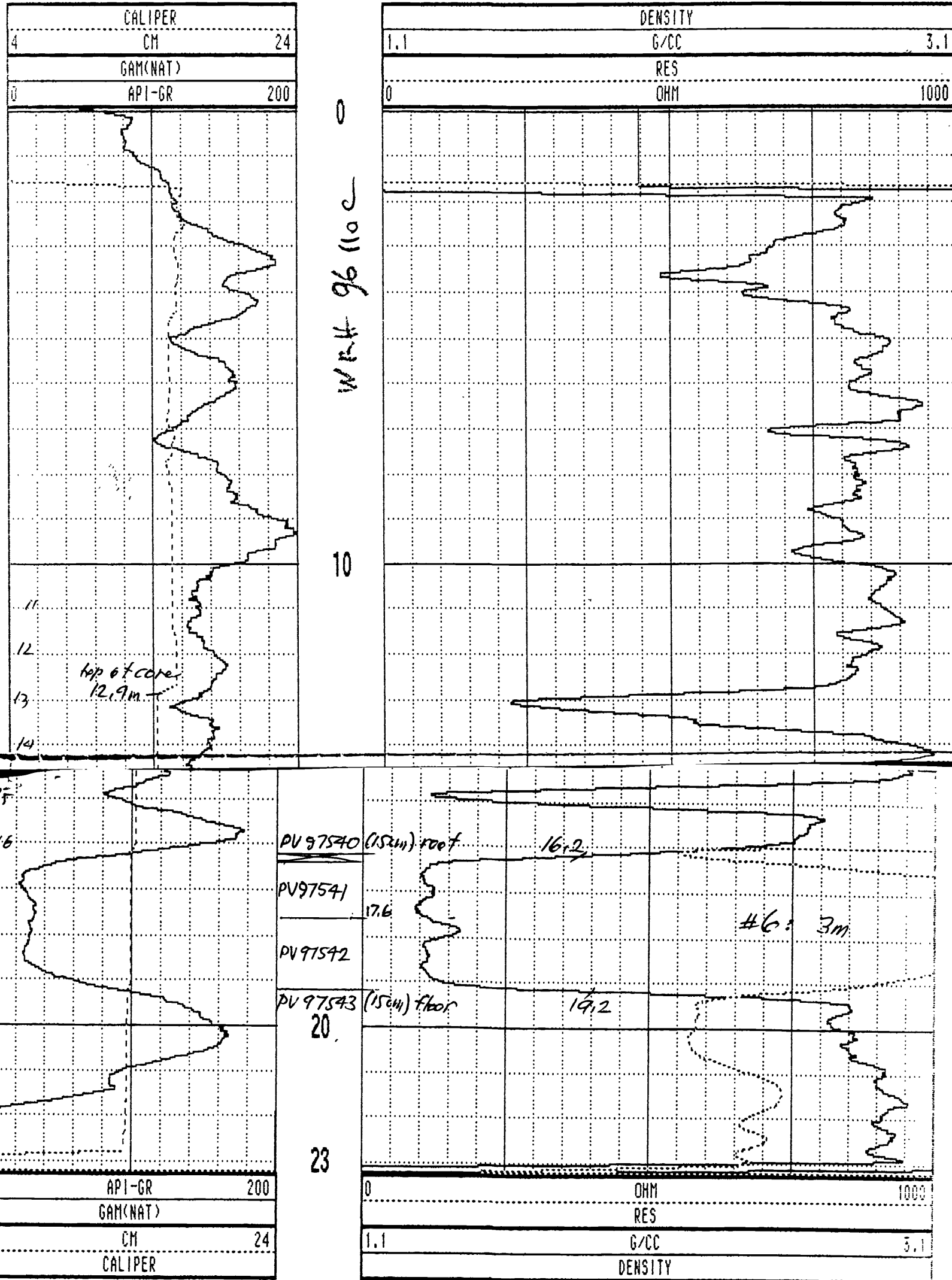
96 110 C
Picks

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96110C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/12/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 22 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 23.26 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

OTHER SERVICES:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96110C 08/12/96 958

96110C

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

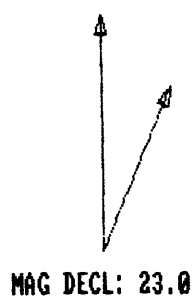
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 207.5 | 1.6 | 229.2 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 214.5 | 0.2 | 217.3 |
| 4.0 | 4.00 | -0.01 | -0.01 | 0.0 | 212.3 | 0.7 | 215.1 |
| 5.0 | 5.00 | -0.02 | -0.01 | 0.0 | 210.1 | 0.8 | 239.6 |
| 6.0 | 6.00 | -0.03 | -0.02 | 0.0 | 208.9 | 0.3 | 190.8 |
| 7.0 | 7.00 | -0.04 | -0.02 | 0.0 | 204.1 | 0.5 | 179.1 |
| 8.0 | 8.00 | -0.04 | -0.02 | 0.0 | 199.4 | 0.8 | 163.2 |
| 9.0 | 9.00 | -0.05 | -0.01 | 0.1 | 194.2 | 0.3 | 160.5 |
| 10.0 | 10.00 | -0.06 | -0.01 | 0.1 | 192.3 | 0.5 | 57.1 |
| 11.0 | 11.00 | -0.06 | -0.01 | 0.1 | 189.4 | 0.4 | 192.6 |
| 12.0 | 12.00 | -0.08 | -0.01 | 0.1 | 189.7 | 0.7 | 182.4 |
| 13.0 | 13.00 | -0.08 | -0.01 | 0.1 | 188.7 | 0.6 | 199.9 |
| 14.0 | 14.00 | -0.09 | -0.02 | 0.1 | 189.1 | 0.5 | 200.3 |
| 15.0 | 15.00 | -0.10 | -0.02 | 0.1 | 188.7 | 0.4 | 157.5 |
| 16.0 | 16.00 | -0.11 | -0.01 | 0.1 | 187.0 | 0.6 | 171.7 |
| 17.0 | 17.00 | -0.12 | -0.01 | 0.1 | 184.6 | 0.4 | 118.6 |
| 18.0 | 18.00 | -0.12 | -0.00 | 0.1 | 181.0 | 0.5 | 135.4 |
| 19.0 | 19.00 | -0.13 | 0.00 | 0.1 | 178.9 | 0.3 | 72.1 |
| 20.0 | 20.00 | -0.13 | 0.00 | 0.1 | 178.1 | 0.7 | 182.7 |
| 21.0 | 21.00 | -0.14 | 0.01 | 0.1 | 177.2 | 0.5 | 138.5 |
| 22.0 | 22.00 | -0.15 | 0.01 | 0.2 | 175.5 | 0.7 | 140.2 |
| 23.0 | 23.00 | -0.16 | 0.02 | 0.2 | 174.3 | 0.5 | 151.3 |
| 24.0 | 24.00 | -0.17 | 0.02 | 0.2 | 173.4 | 0.6 | 153.6 |
| 25.0 | 25.00 | -0.18 | 0.02 | 0.2 | 172.3 | 0.6 | 153.9 |
| 26.0 | 26.00 | -0.19 | 0.03 | 0.2 | 172.0 | 0.6 | 176.4 |
| 26.4 | 26.38 | -0.19 | 0.03 | 0.2 | 172.0 | 0.5 | 167.0 |

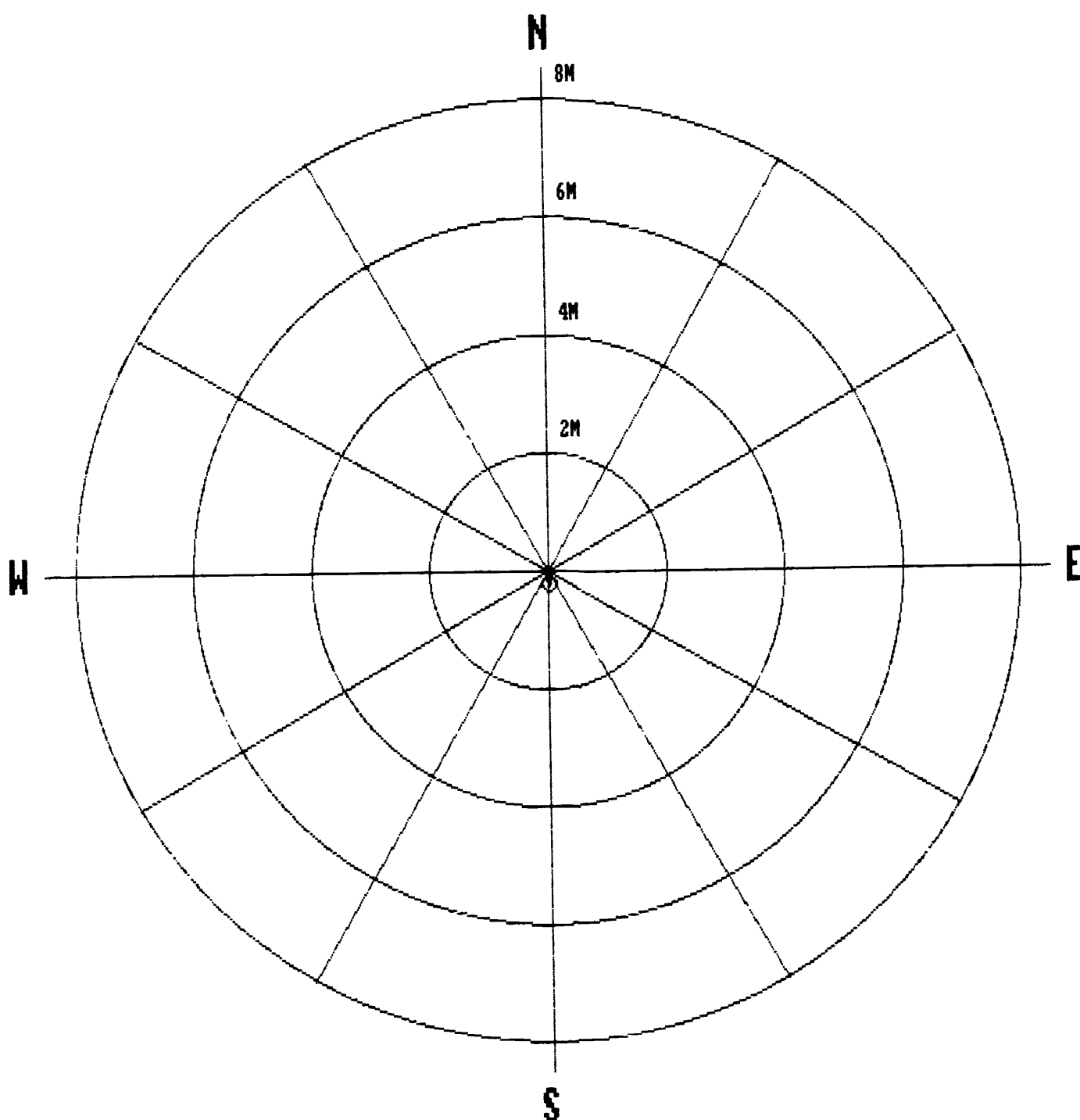
WAL 96 111C

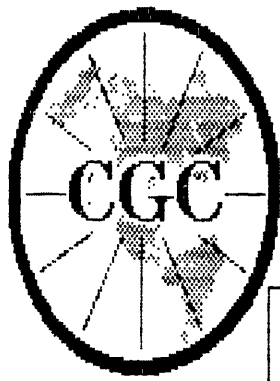
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96111C
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 26.38 M
 AZIMUTH: 172.0
 DISTANCE: 0.2 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE

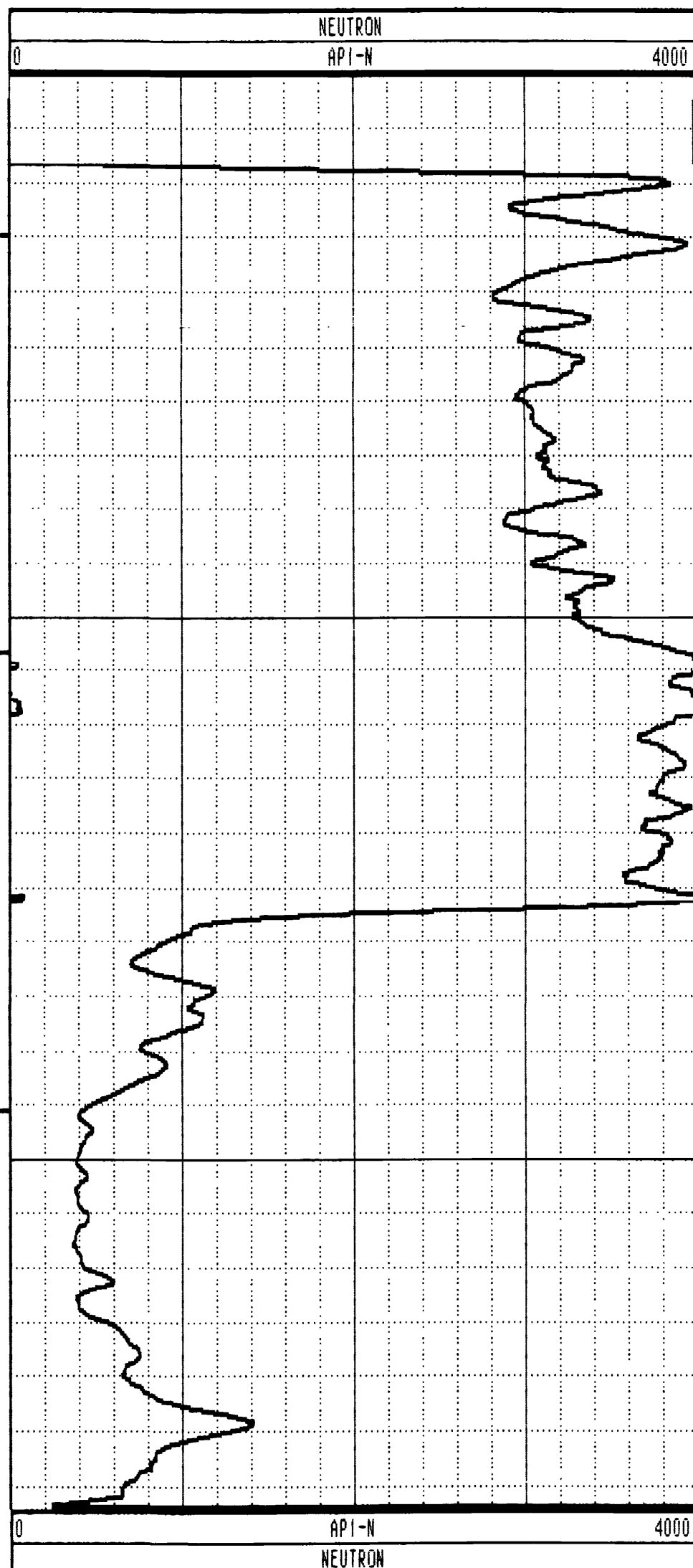
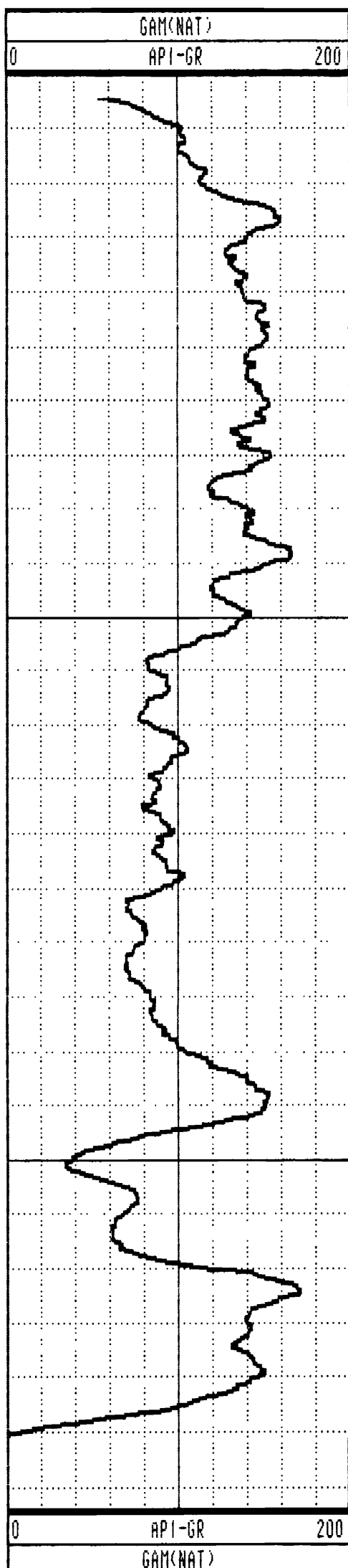




Century
GEOPHYSICAL CORP.
GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96111C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : | RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 26.43 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.48 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

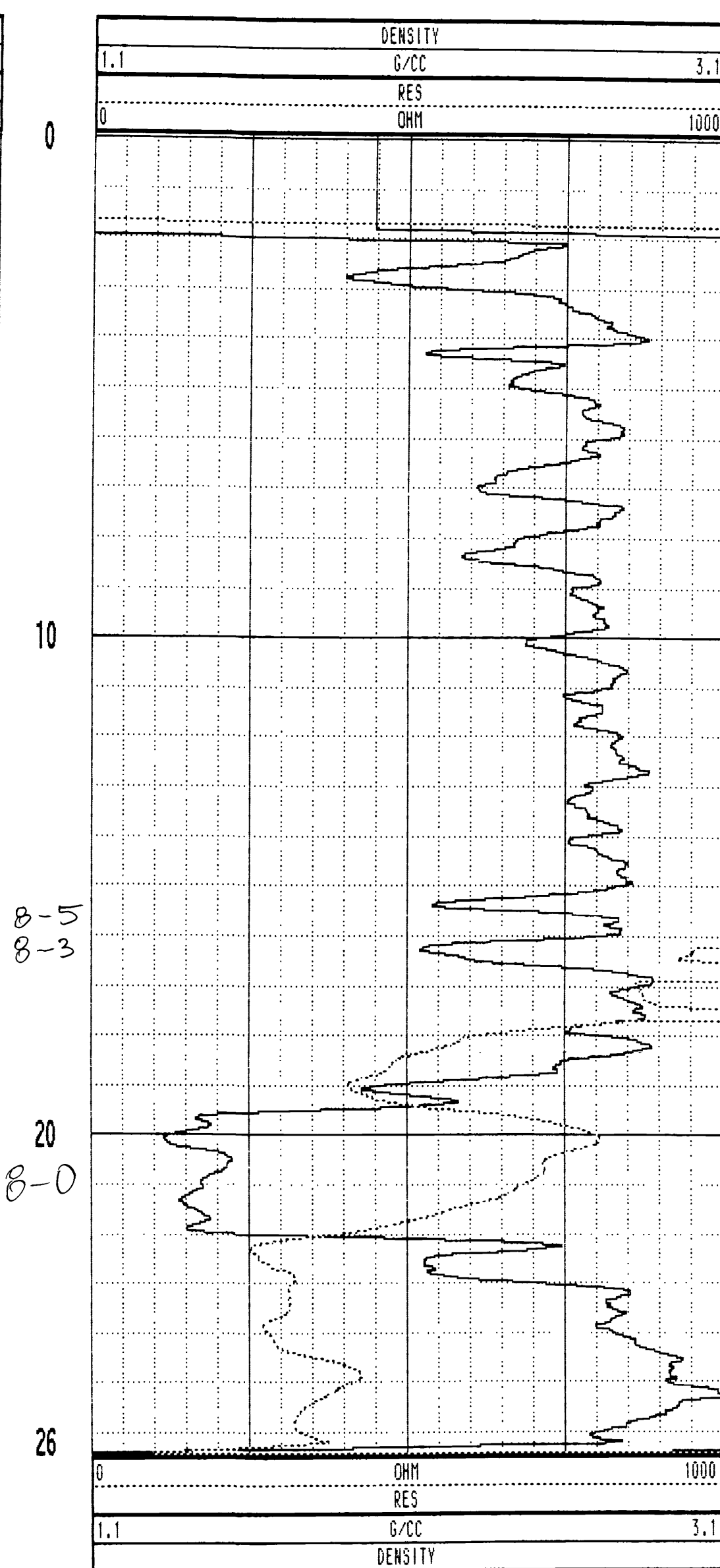
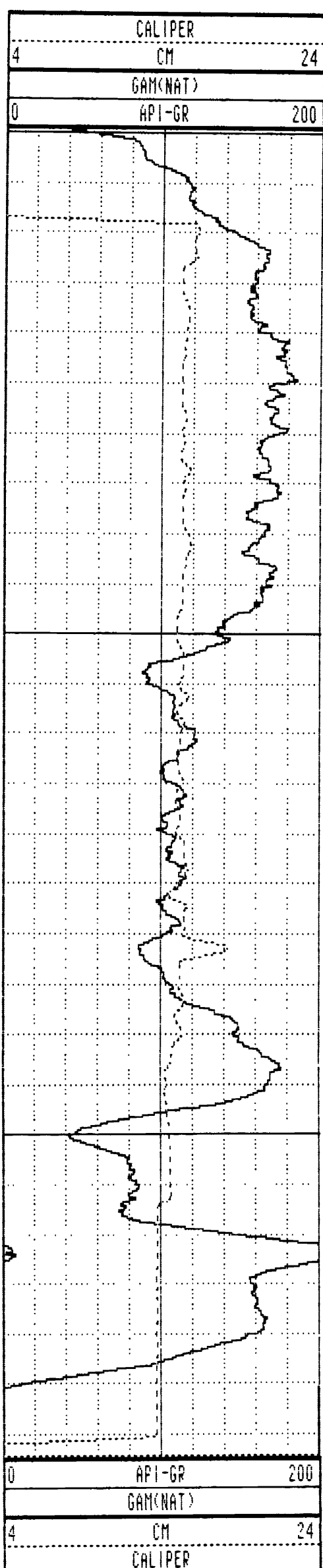
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96111C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 26.46 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96111C 08/14/96 958

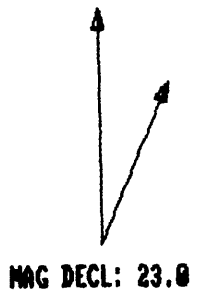
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

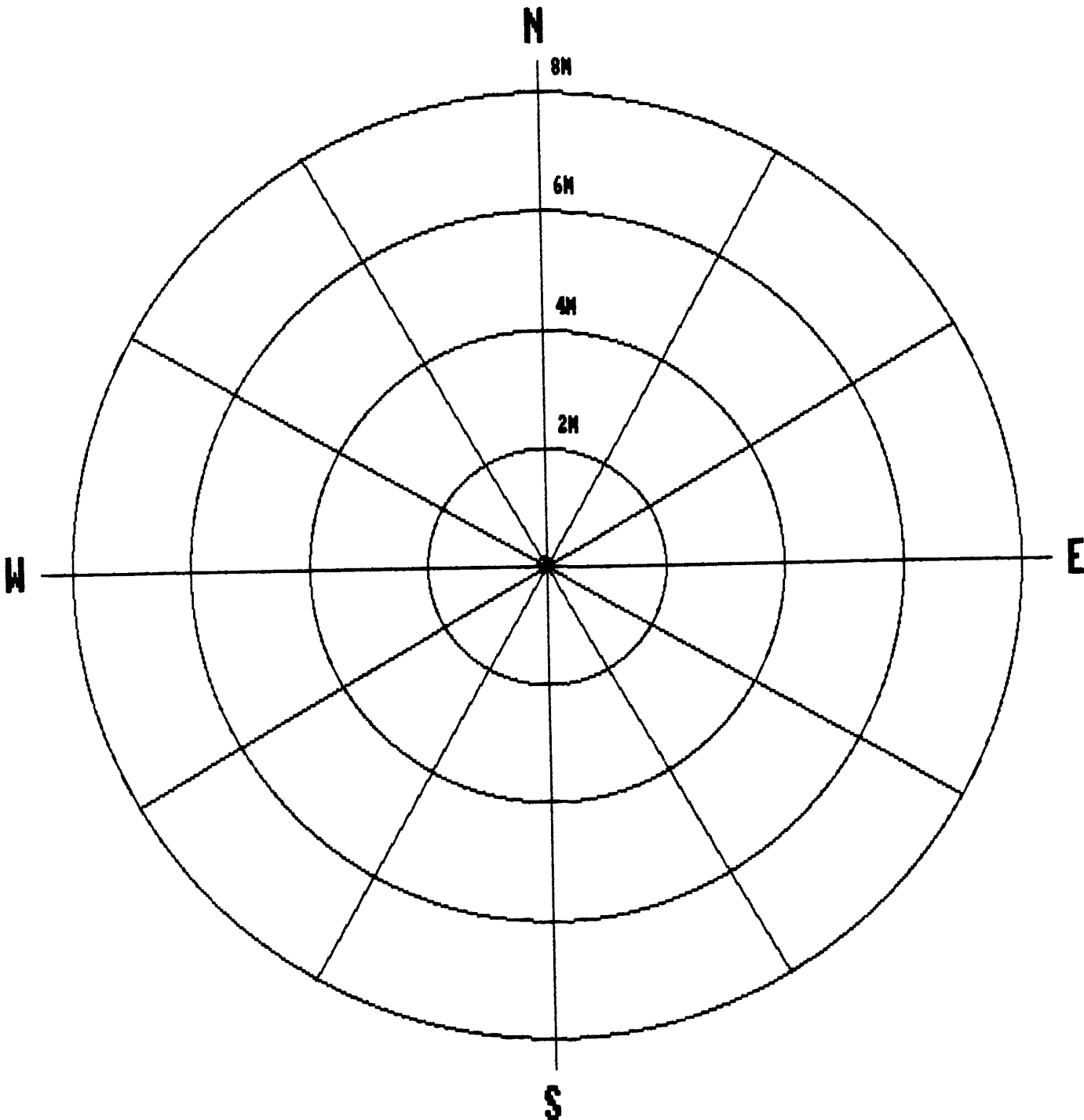
| | | | | | | | |
|-----|------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 25.3 | 1.0 | 37.0 |
| 3.0 | 3.00 | 0.02 | 0.01 | 0.0 | 24.1 | 0.3 | 21.4 |
| 4.0 | 4.00 | 0.03 | 0.01 | 0.0 | 15.0 | 0.6 | 306.7 |
| 5.0 | 5.00 | 0.04 | -0.00 | 0.0 | 354.7 | 1.2 | 334.7 |
| 6.0 | 6.00 | 0.04 | -0.01 | 0.0 | 352.0 | 0.5 | 303.1 |
| 7.0 | 7.00 | 0.05 | -0.01 | 0.0 | 348.2 | 0.4 | 333.7 |
| 8.0 | 8.00 | 0.05 | -0.02 | 0.1 | 341.4 | 0.4 | 288.5 |
| 9.0 | 9.00 | 0.05 | -0.02 | 0.1 | 336.7 | 0.6 | 266.2 |
| 9.9 | 9.88 | 0.06 | -0.03 | 0.1 | 333.5 | 0.5 | 330.1 |

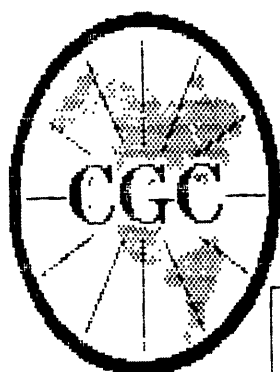
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96112C
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 9.88 M
 AZIMUTH: 333.5
 DISTANCE: 0.1 M
 + = 50 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96112C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP :

OTHER SERVICES:

RANGE :

DATE : 08/14/96
 DEPTH DRILLER : 9
 LOG BOTTOM : 9.93
 LOG TOP : 0.32

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

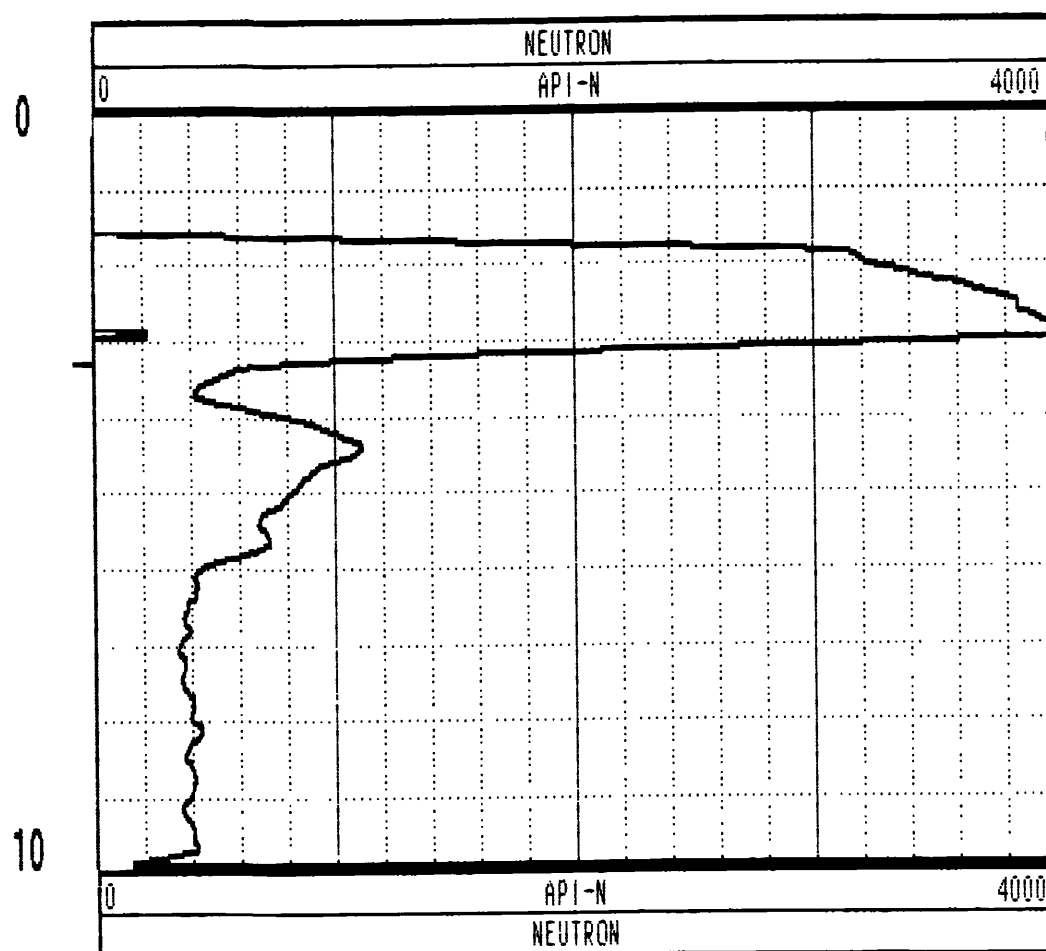
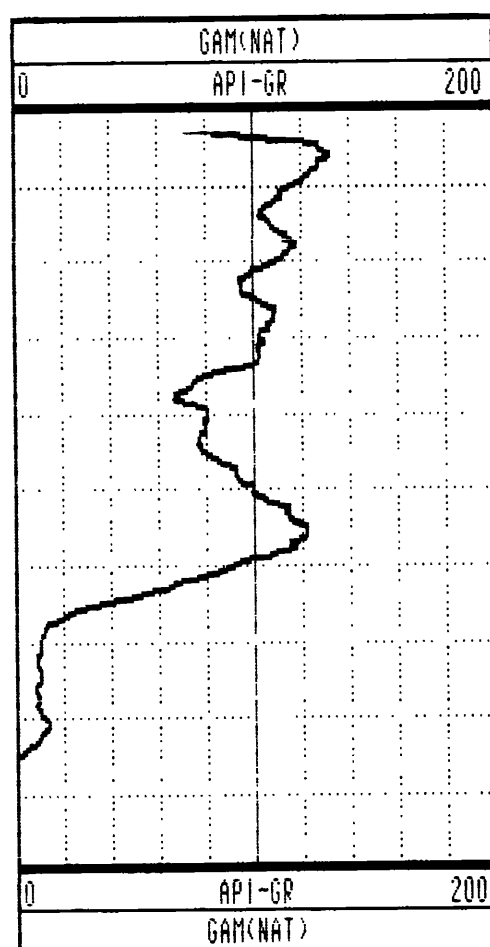
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 3
 PLOT : PINE 4
 THRESH: 10000

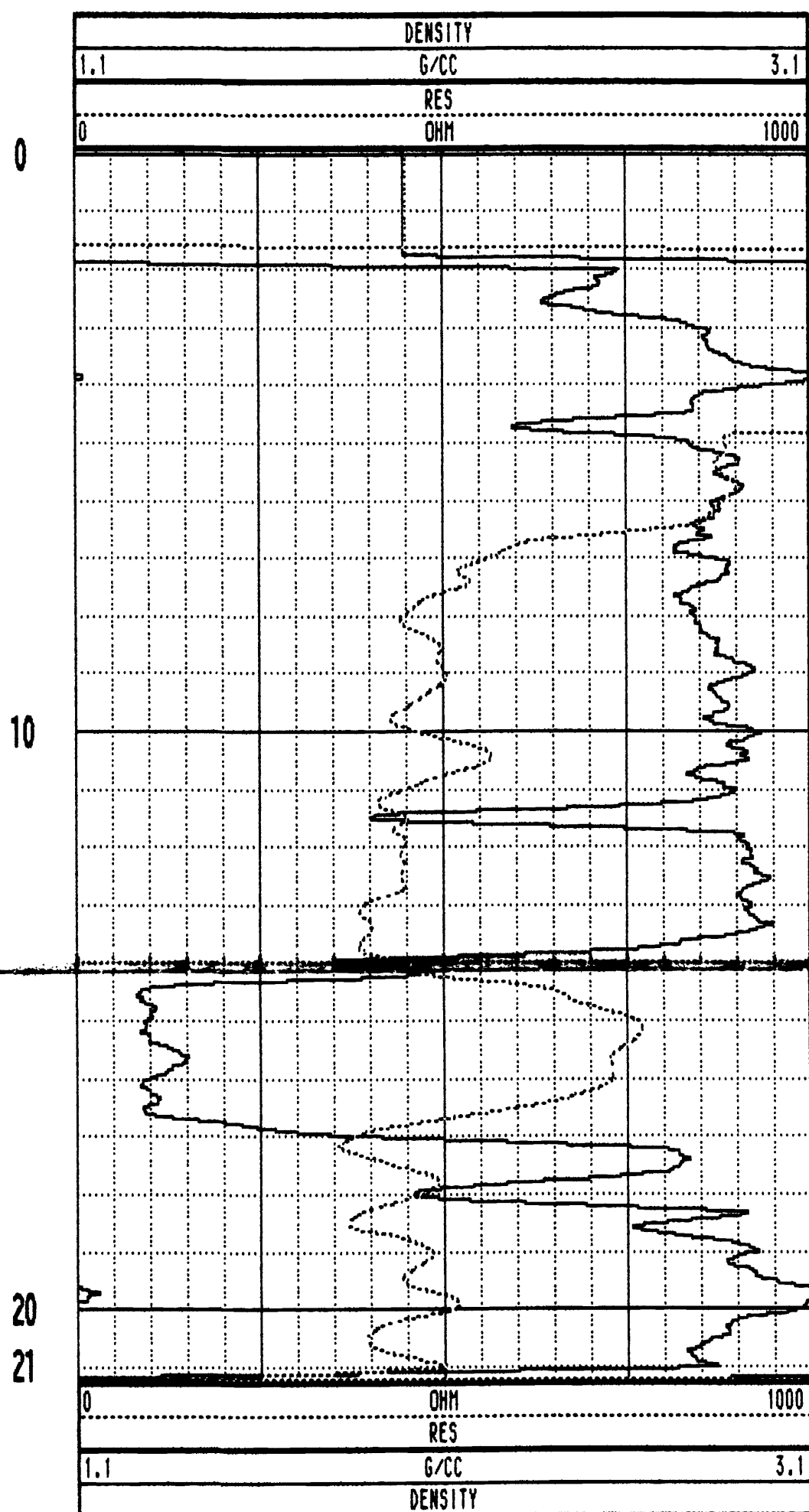
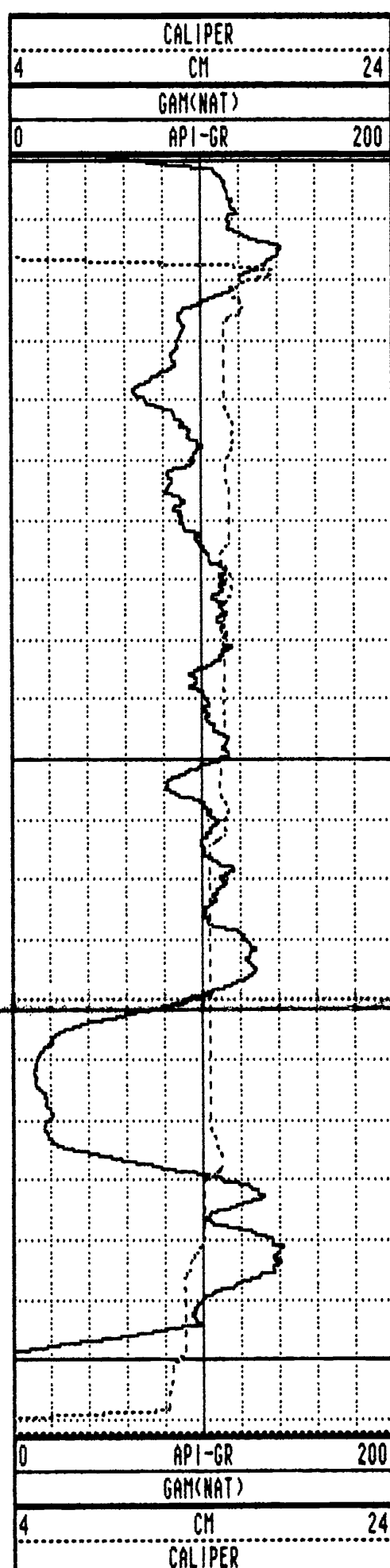
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96112C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 21.26 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 6 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96112C 08/14/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

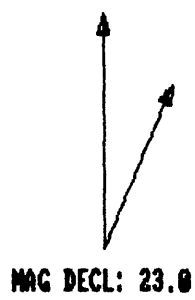
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | 0 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 18:21:21 | 0 CALIPERL | 2306.000 CPS | 35.100 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 328.7 | 0.7 | 347.1 |
| 3.0 | 3.00 | -0.00 | -0.01 | 0.0 | 259.7 | 0.7 | 273.7 |
| 4.0 | 4.00 | -0.00 | -0.02 | 0.0 | 269.1 | 1.3 | 259.2 |
| 5.0 | 5.00 | -0.01 | -0.04 | 0.0 | 260.5 | 1.3 | 288.1 |
| 6.0 | 6.00 | -0.02 | -0.06 | 0.1 | 247.6 | 1.4 | 238.5 |
| 7.0 | 7.00 | -0.04 | -0.08 | 0.1 | 244.2 | 1.7 | 228.1 |
| 8.0 | 8.00 | -0.06 | -0.10 | 0.1 | 241.5 | 1.6 | 229.4 |
| 9.0 | 9.00 | -0.08 | -0.13 | 0.1 | 238.6 | 1.9 | 227.3 |
| 10.0 | 10.00 | -0.10 | -0.15 | 0.2 | 237.0 | 1.7 | 226.5 |
| 11.0 | 11.00 | -0.12 | -0.17 | 0.2 | 235.7 | 1.9 | 235.3 |
| 12.0 | 12.00 | -0.14 | -0.20 | 0.2 | 234.5 | 2.1 | 229.6 |
| 13.0 | 13.00 | -0.17 | -0.23 | 0.3 | 233.7 | 2.1 | 228.3 |
| 14.0 | 13.99 | -0.19 | -0.25 | 0.3 | 232.8 | 2.1 | 225.6 |
| 15.0 | 14.99 | -0.22 | -0.28 | 0.4 | 231.7 | 2.1 | 221.0 |
| 15.4 | 15.39 | -0.23 | -0.29 | 0.4 | 231.1 | 2.2 | 219.1 |

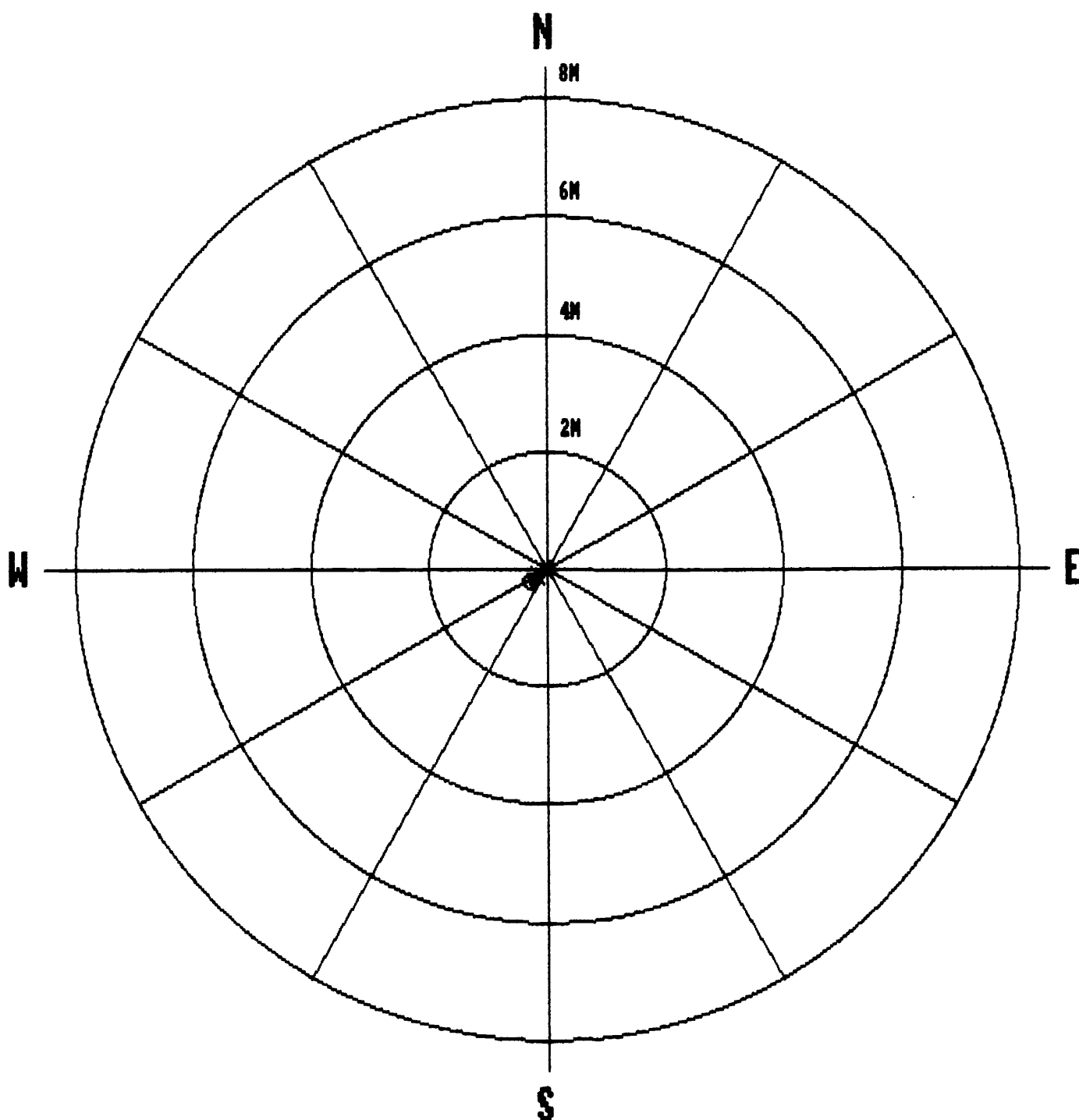
WRH 96113C

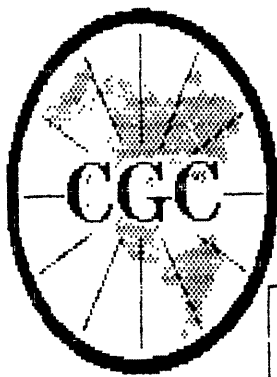
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96113C
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 15.39 M
 AZIMUTH: 231.1
 DISTANCE: 0.4 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



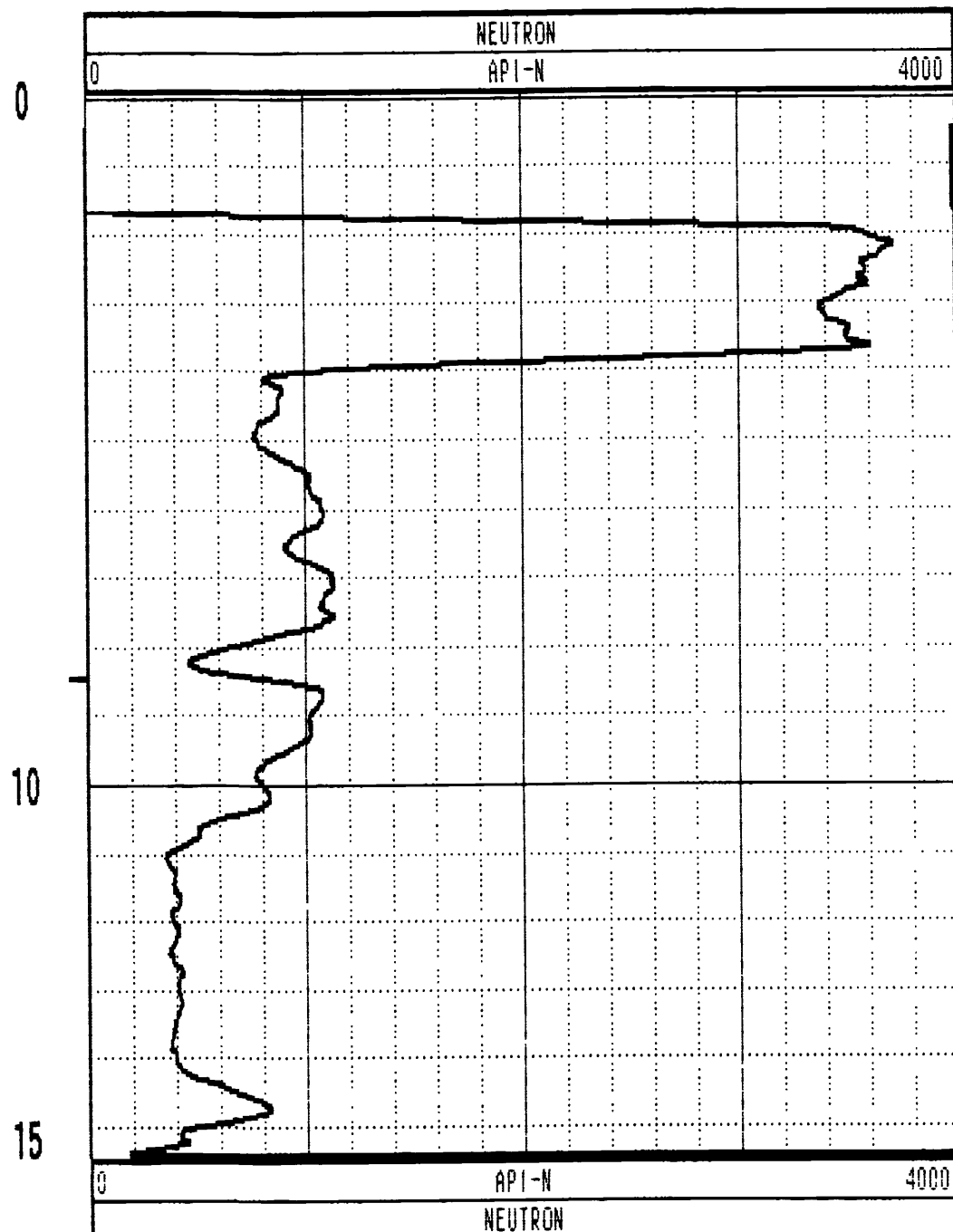
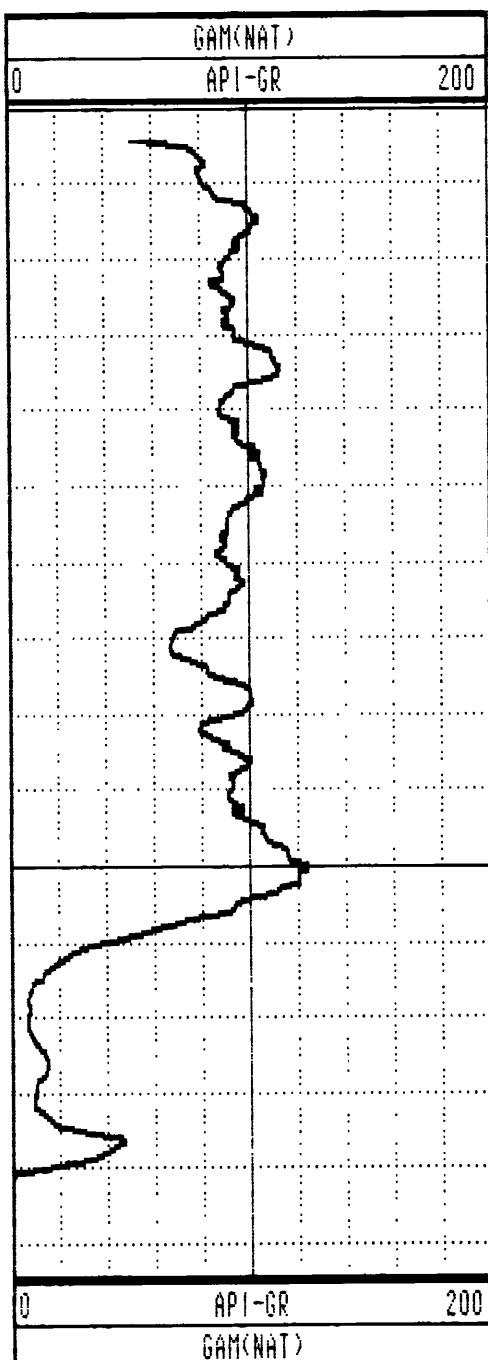


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96113C | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.46 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.46 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

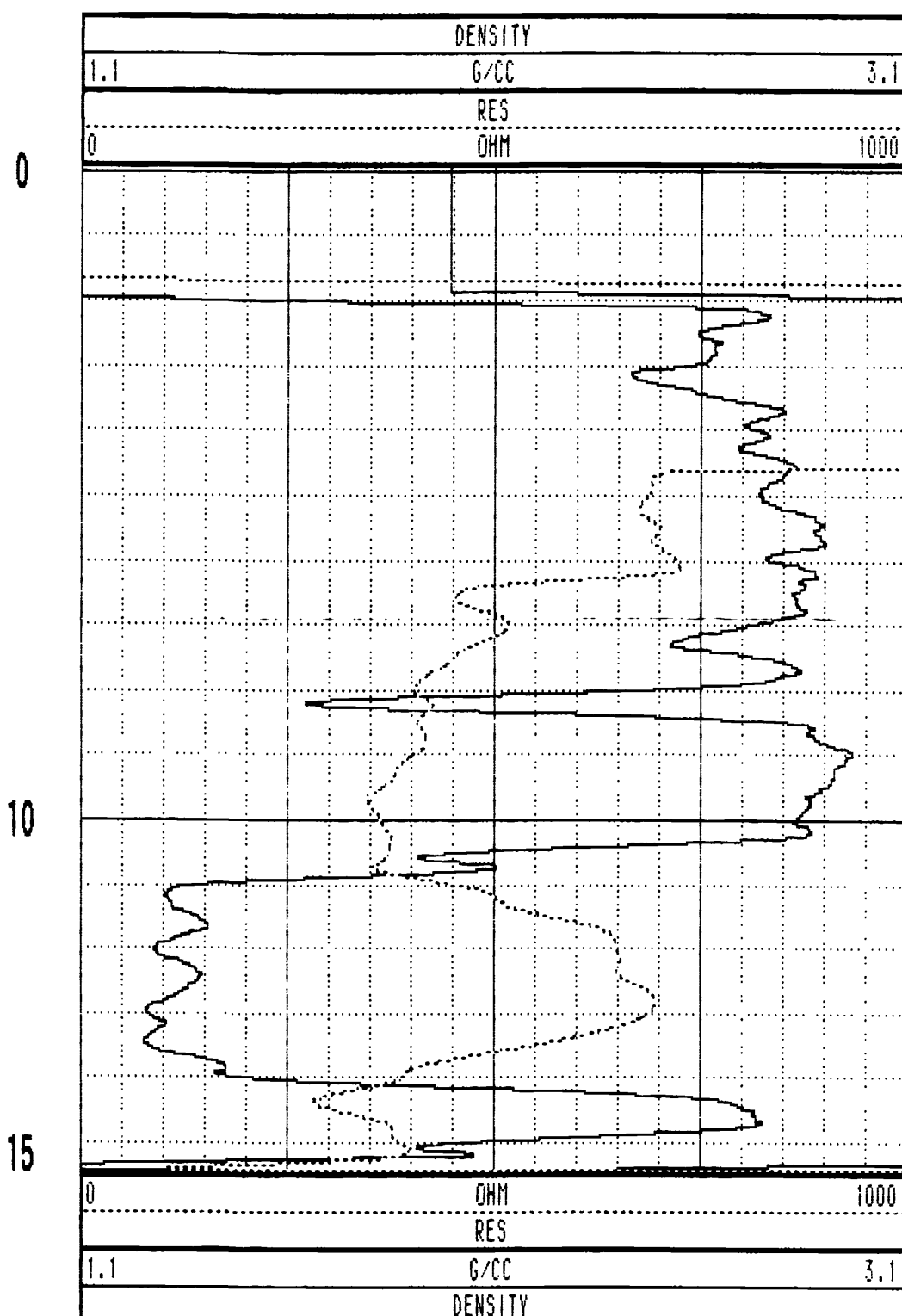
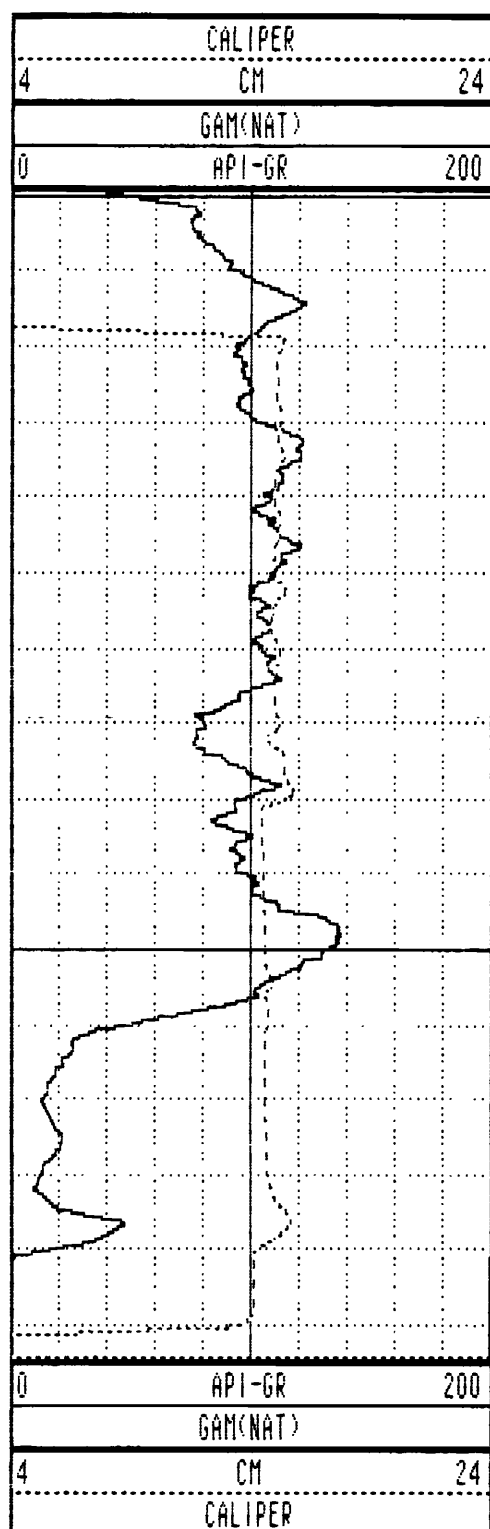
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96113C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.46 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96113C 08/14/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

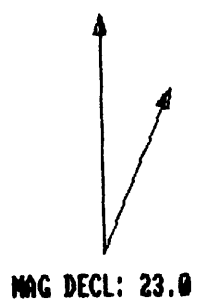
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|-----|------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 25.3 | 1.0 | 37.0 |
| 3.0 | 3.00 | 0.02 | 0.01 | 0.0 | 24.1 | 0.3 | 21.4 |
| 4.0 | 4.00 | 0.03 | 0.01 | 0.0 | 15.0 | 0.6 | 306.7 |
| 5.0 | 5.00 | 0.04 | -0.00 | 0.0 | 354.7 | 1.2 | 334.7 |
| 6.0 | 6.00 | 0.04 | -0.01 | 0.0 | 352.0 | 0.5 | 303.1 |
| 7.0 | 7.00 | 0.05 | -0.01 | 0.0 | 348.2 | 0.4 | 333.7 |
| 8.0 | 8.00 | 0.05 | -0.02 | 0.1 | 341.4 | 0.4 | 288.5 |
| 9.0 | 9.00 | 0.05 | -0.02 | 0.1 | 336.7 | 0.6 | 266.2 |
| 9.9 | 9.88 | 0.06 | -0.03 | 0.1 | 333.5 | 0.5 | 330.1 |

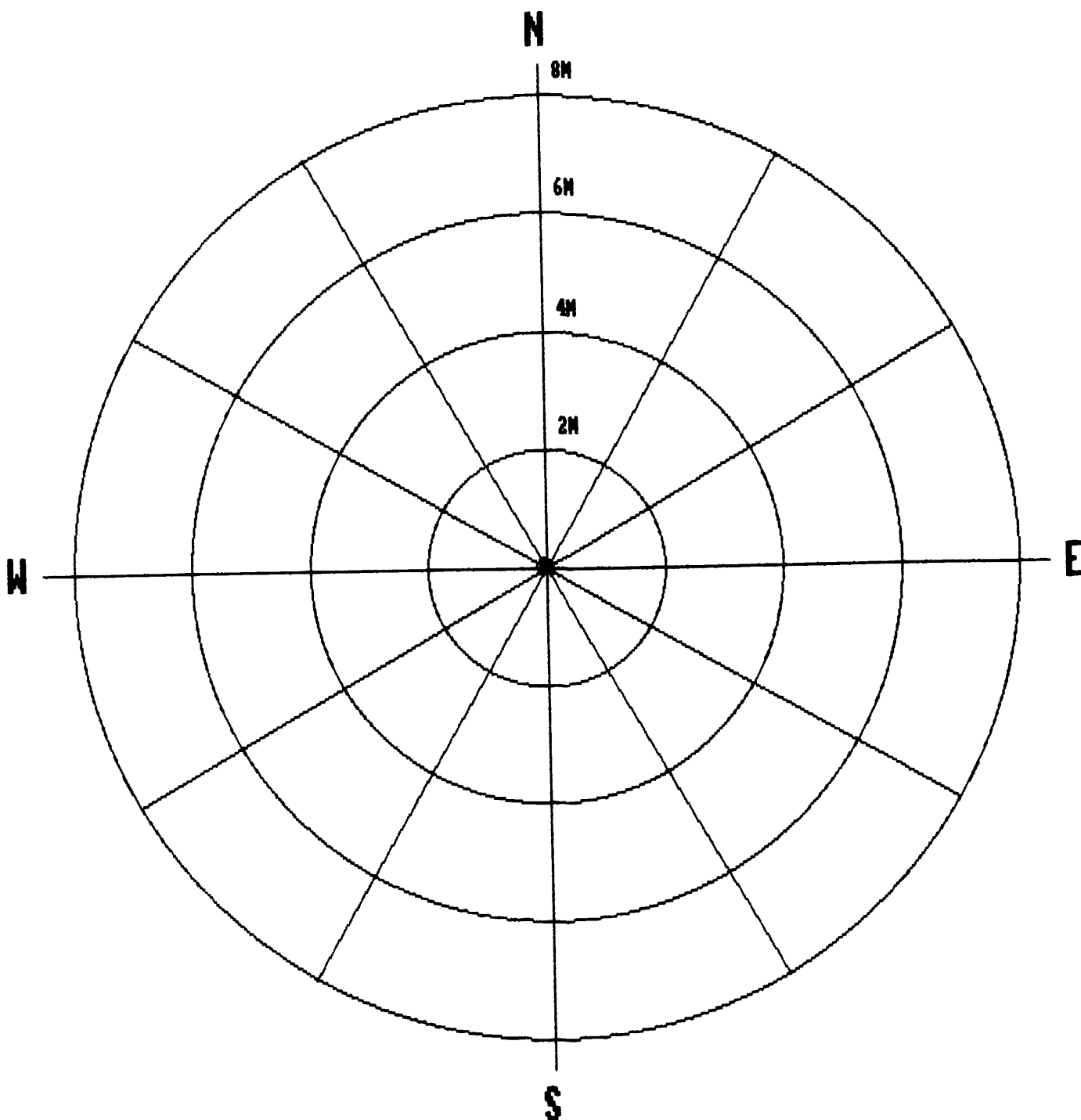
96

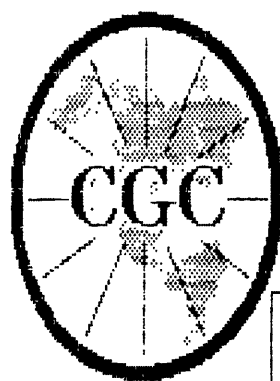
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96114C
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 9.88 M
 AZIMUTH: 333.5
 DISTANCE: 0.1 M
 + = 50 M INCR
 O = BOTTOM OF HOLE



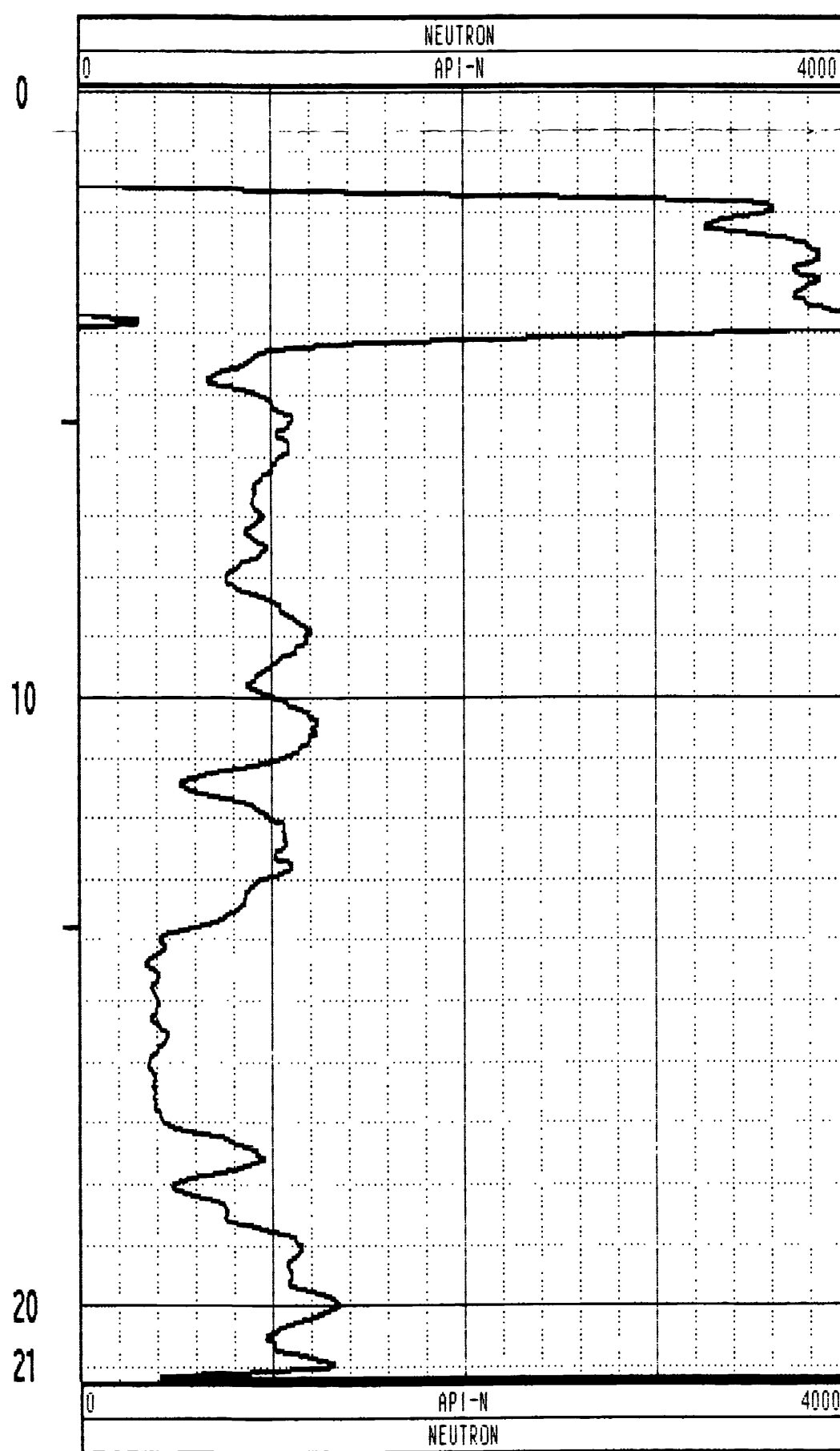
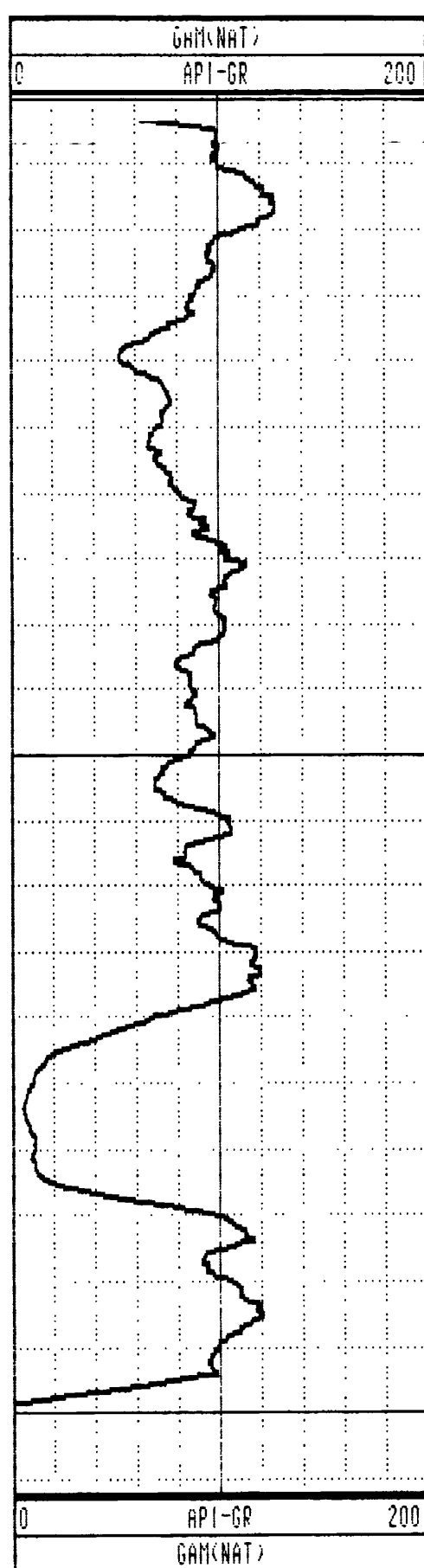


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | | | |
|-------------------|--------------------|--------------------|----------------|------------|------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | | | |
| WELL | : WRH-96114C | | | | |
| LOCATION/FIELD | : WILLOW CREEK | | | | |
| COUNTY | : | | | | |
| STATE | : BRITISH COLUMBIA | | | | |
| SECTION | : | TOWNSHIP | : | RANGE | : |
| DATE | : 08/14/96 | PERMANENT DATUM | : | ELEVATIONS | |
| DEPTH DRILLER | : 20 | ELEV. PERM. DATUM: | | KB | : |
| LOG BOTTOM | : 21.25 | LOG MEASURED FROM: | G.L. | DF | : |
| LOG TOP | : 0.38 | DRL MEASURED FROM: | | GL | : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 | | |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. | | |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS | | |
| BIT SIZE | : | BOREHOLE FLUID | : WATER | FILE | : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : | TYPE | : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG | : 3 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT | : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH | : 10000 |
| REMARKS | : | | | | |

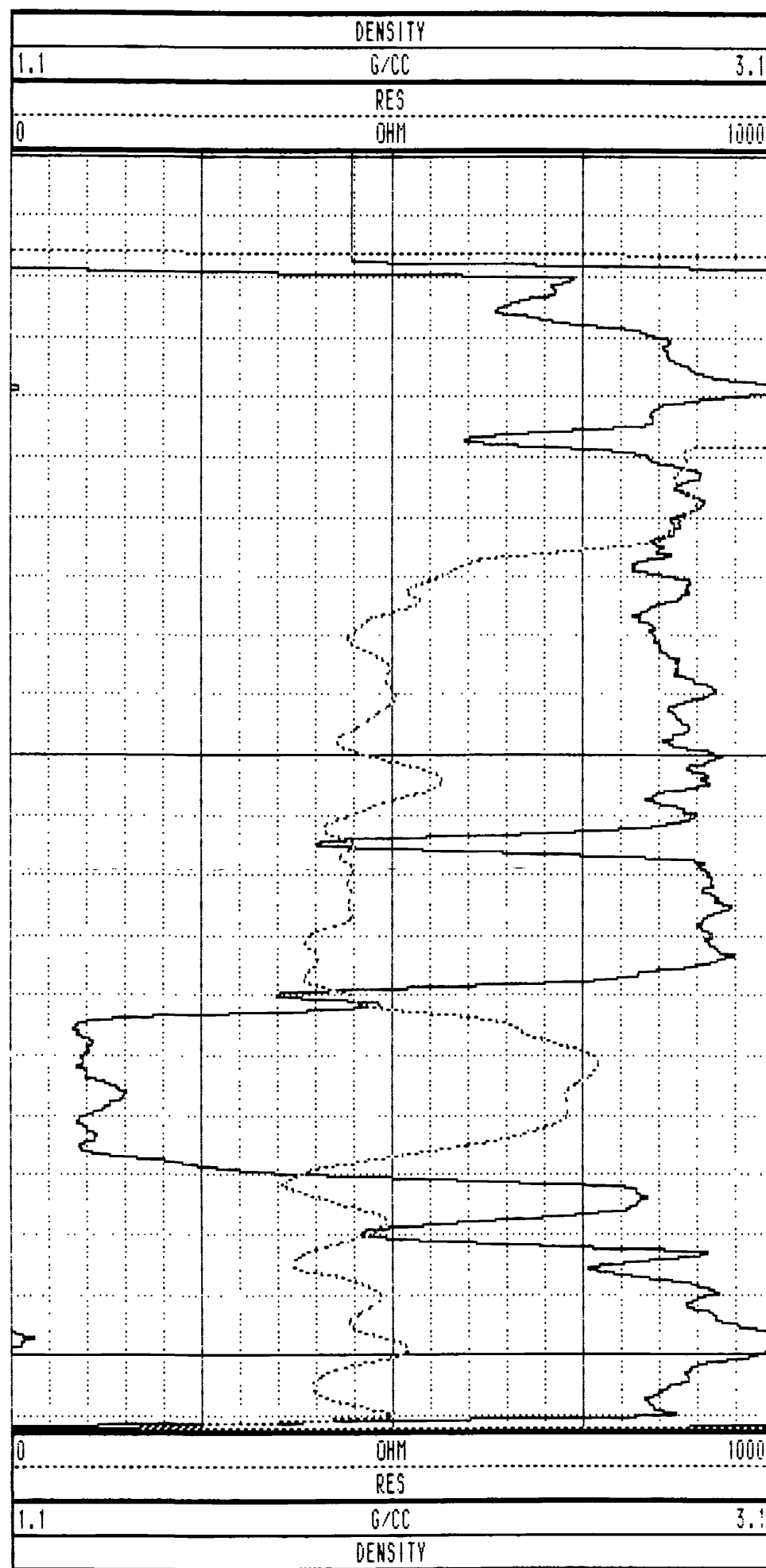
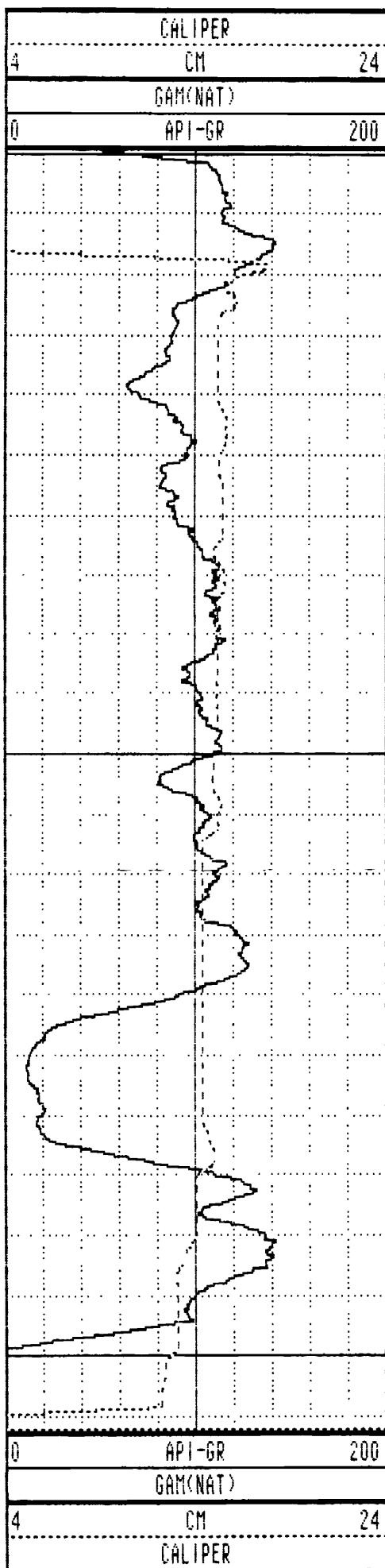
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96114C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 21.26 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 5 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96114C 08/14/96 958

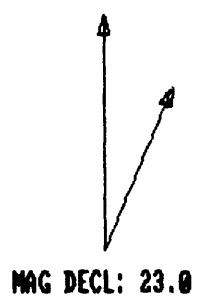
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

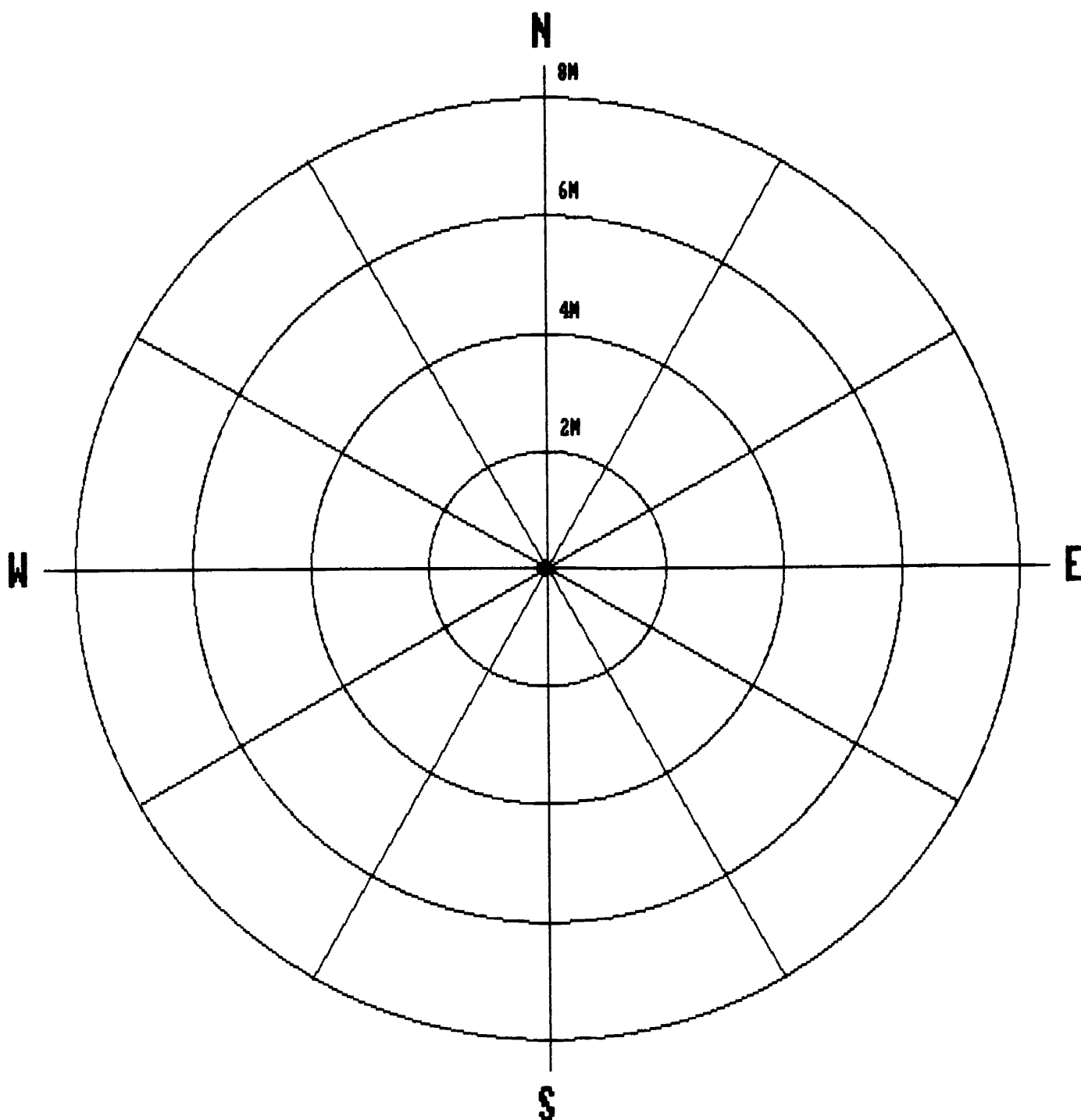
| | | | | | | | |
|-----|------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 310.4 | 1.6 | 310.4 |
| 3.0 | 3.00 | 0.02 | -0.03 | 0.0 | 304.5 | 1.2 | 312.5 |
| 4.0 | 4.00 | 0.03 | -0.03 | 0.0 | 311.9 | 0.6 | 34.7 |
| 5.0 | 5.00 | 0.03 | -0.03 | 0.0 | 315.0 | 0.2 | 341.5 |
| 6.0 | 6.00 | 0.02 | -0.03 | 0.0 | 309.9 | 0.5 | 260.7 |
| 7.0 | 7.00 | 0.02 | -0.03 | 0.0 | 303.7 | 0.2 | 274.1 |
| 8.0 | 8.00 | 0.02 | -0.03 | 0.0 | 298.5 | 0.4 | 300.5 |
| 8.7 | 8.74 | 0.01 | -0.04 | 0.0 | 291.7 | 0.5 | 209.0 |

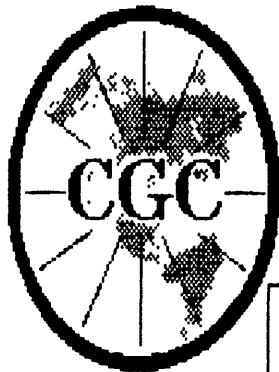
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96115
 DATE OF LOG: 10/03/96
 PROBE: 9855A 71



SCALE: 1 M/CM
 TRUE DEPTH: 8.74 M
 AZIMUTH: 291.7
 DISTANCE: 0.0 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE





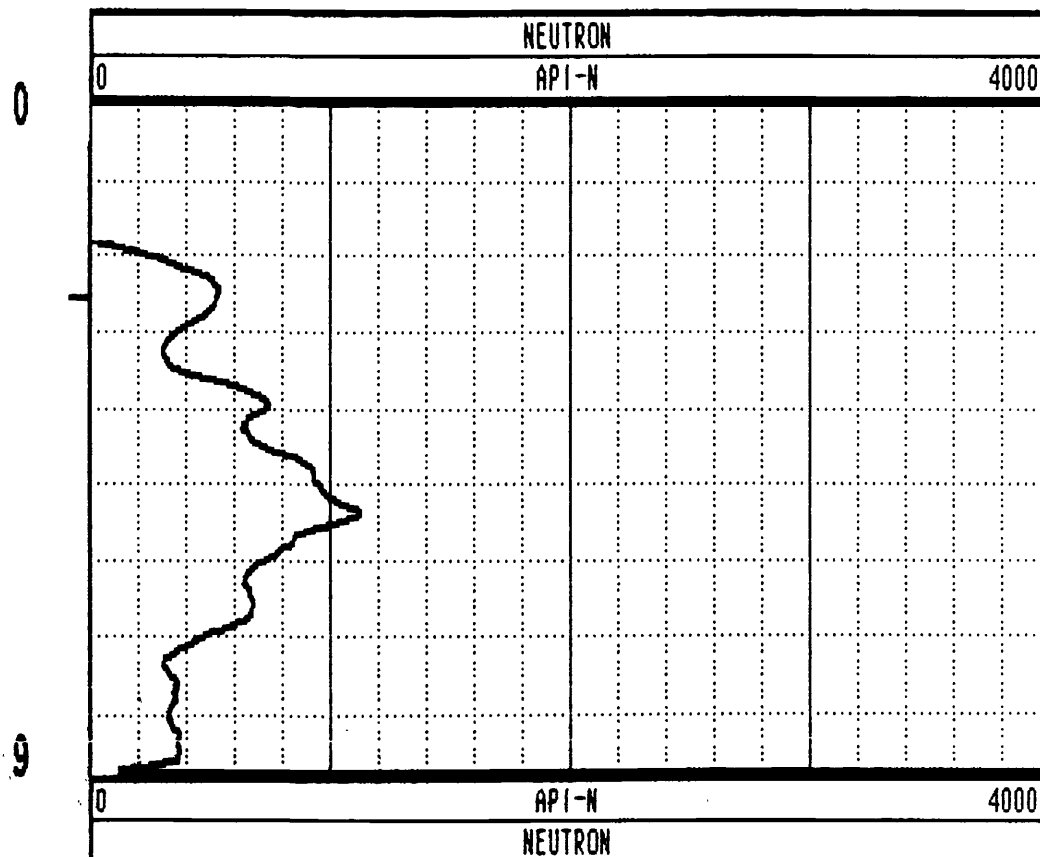
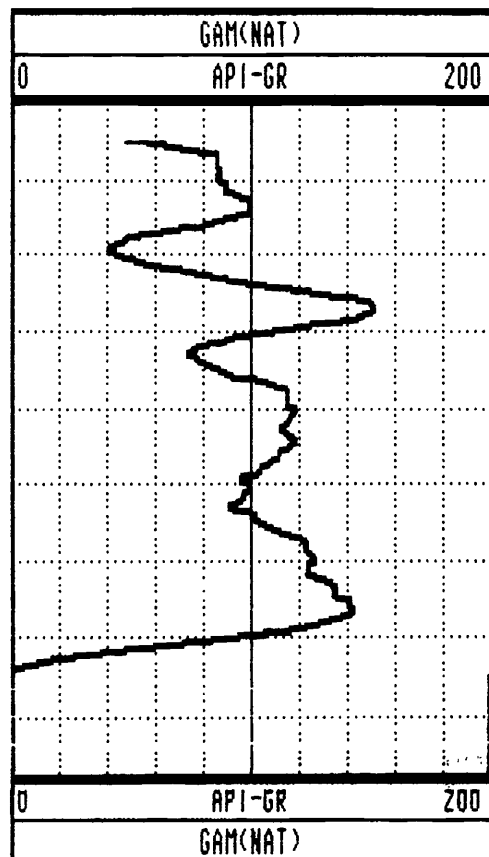
Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

OTHER SERVICES:

COMPANY : PINE VALLEY COAL
 WELL : WRH-96115
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 10/03/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 10 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 8.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.54 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96115C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

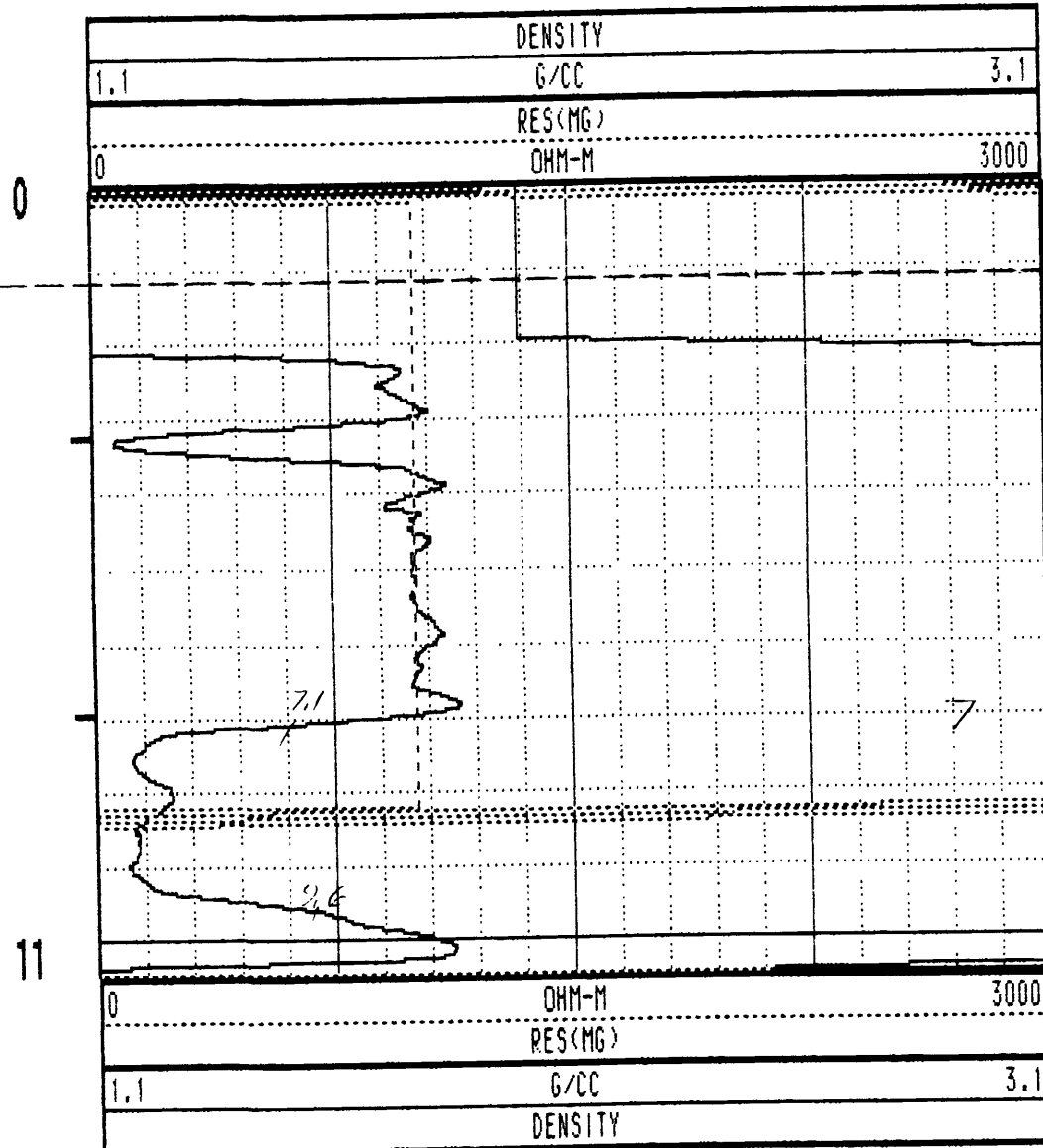
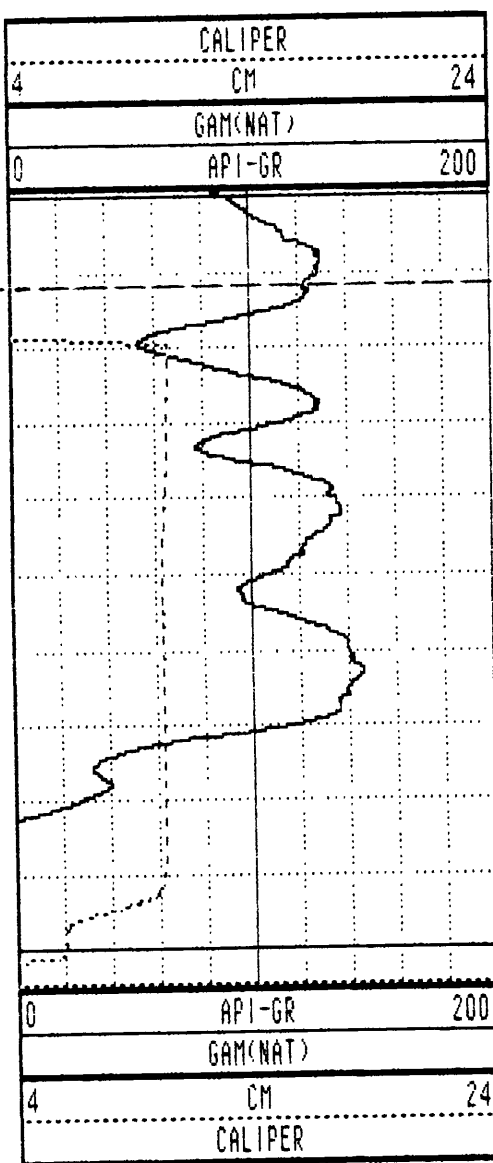
OTHER SERVICES:

DATE : 09/19/96 PERMANENT DATUM :
 DEPTH DRILLER : 37 ELEV. PERM. DATUM:
 LOG BOTTOM : 10.49 LOG MEASURED FROM: G.L.
 LOG TOP : -0.18 DRL MEASURED FROM:
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

RANGE :
 ELEVATIONS
 KB :
 DF :
 GL :

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96115C 09/19/96 958

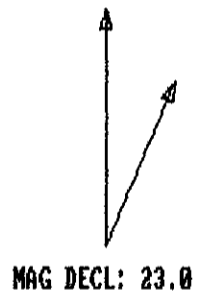
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV12.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

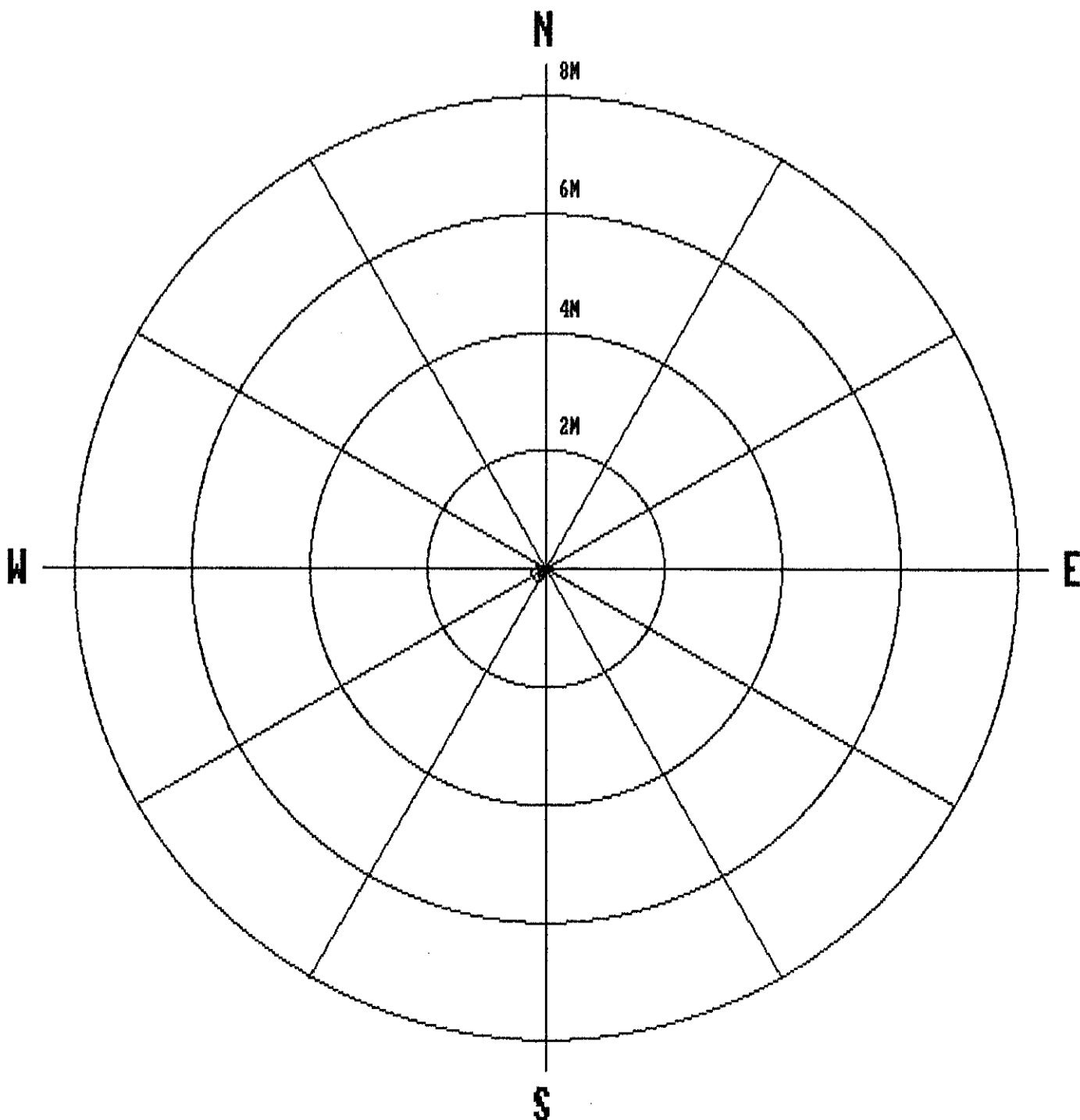
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 174.9 | 1.0 | 165.3 |
| 3.0 | 3.00 | -0.01 | 0.00 | 0.0 | 154.4 | 0.9 | 107.8 |
| 4.0 | 4.00 | -0.02 | 0.01 | 0.0 | 160.9 | 0.9 | 213.7 |
| 5.0 | 5.00 | -0.03 | -0.00 | 0.0 | 182.2 | 0.5 | 179.0 |
| 6.0 | 6.00 | -0.04 | -0.00 | 0.0 | 186.8 | 0.6 | 206.0 |
| 7.0 | 7.00 | -0.05 | -0.01 | 0.0 | 197.2 | 0.8 | 227.0 |
| 8.0 | 8.00 | -0.05 | -0.02 | 0.1 | 202.8 | 0.7 | 234.7 |
| 9.0 | 9.00 | -0.06 | -0.03 | 0.1 | 208.3 | 0.6 | 240.4 |
| 10.0 | 10.00 | -0.07 | -0.04 | 0.1 | 212.7 | 0.5 | 237.9 |
| 11.0 | 11.00 | -0.07 | -0.05 | 0.1 | 217.3 | 0.6 | 254.3 |
| 12.0 | 12.00 | -0.07 | -0.07 | 0.1 | 221.5 | 0.7 | 256.5 |
| 13.0 | 13.00 | -0.08 | -0.08 | 0.1 | 225.0 | 0.7 | 254.2 |
| 14.0 | 14.00 | -0.08 | -0.09 | 0.1 | 228.3 | 0.8 | 250.0 |
| 15.0 | 15.00 | -0.08 | -0.10 | 0.1 | 231.0 | 0.8 | 253.5 |
| 15.6 | 15.64 | -0.08 | -0.11 | 0.1 | 232.1 | 0.8 | 246.8 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96116C
 DATE OF LOG: 08/16/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 15.64 M
 AZIMUTH: 232.1
 DISTANCE: 0.1 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



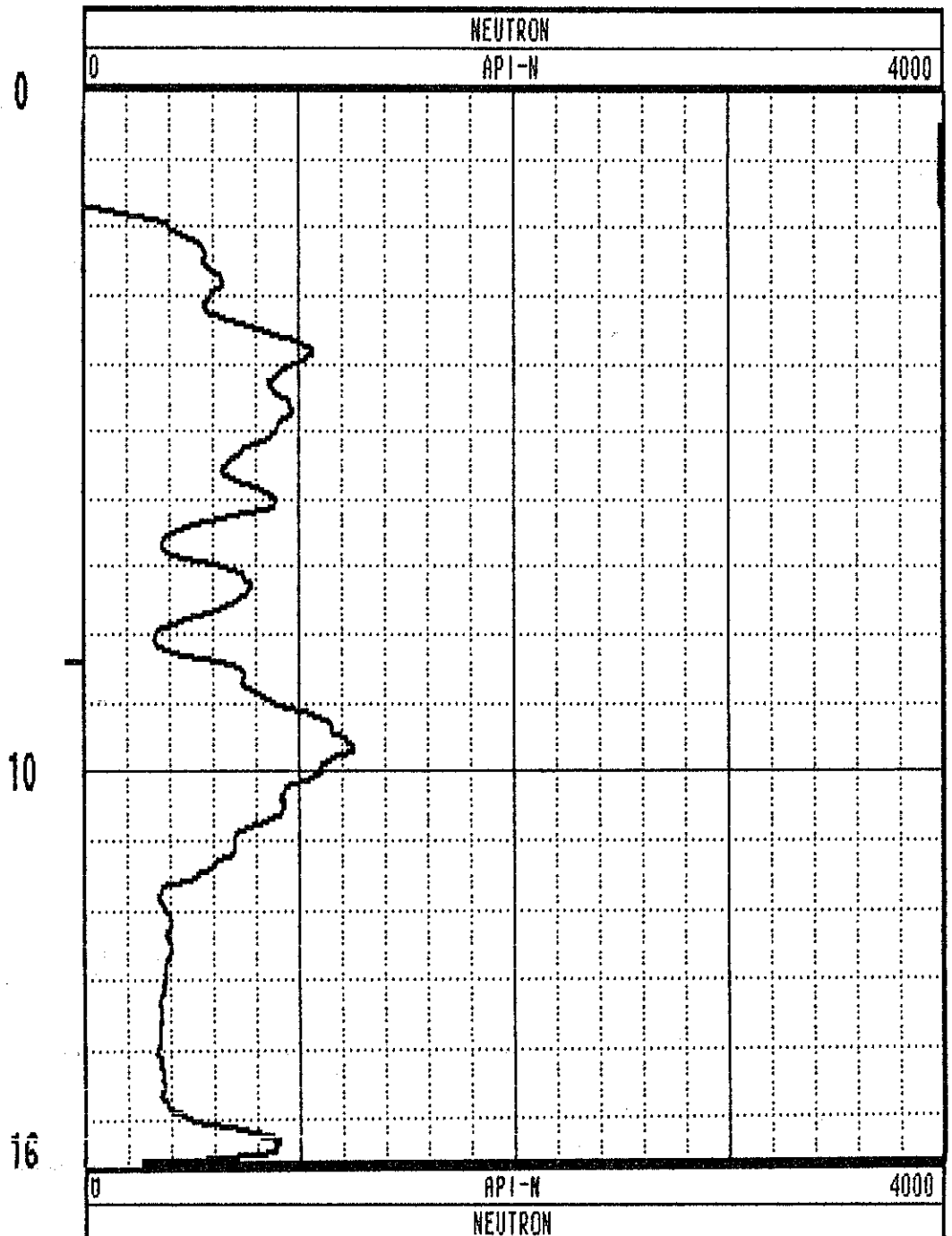
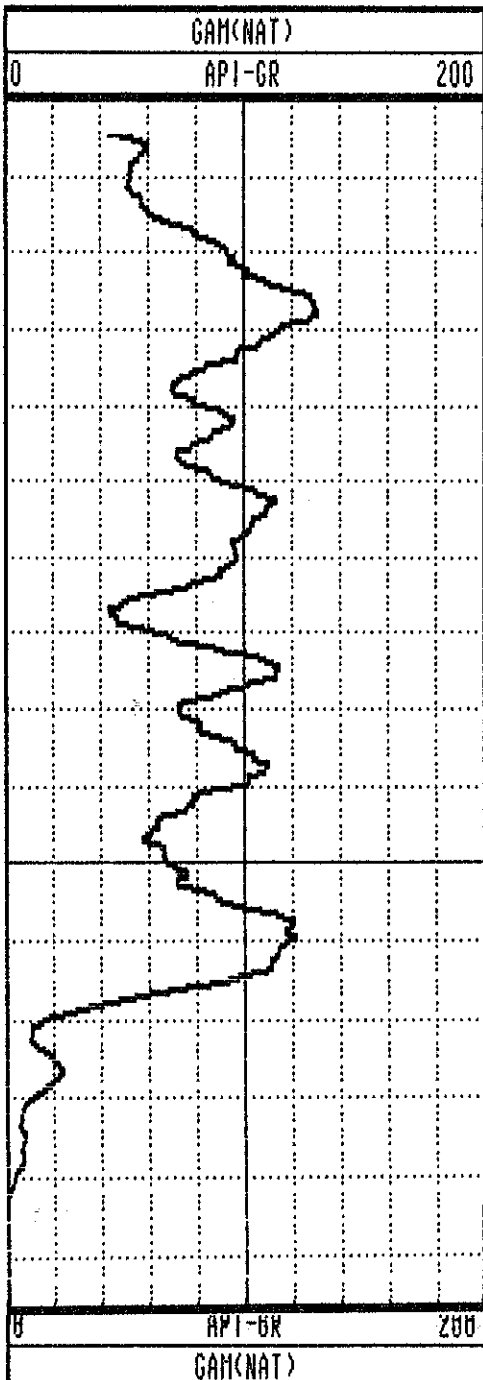


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96116C | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/16/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.70 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.48 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 2 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

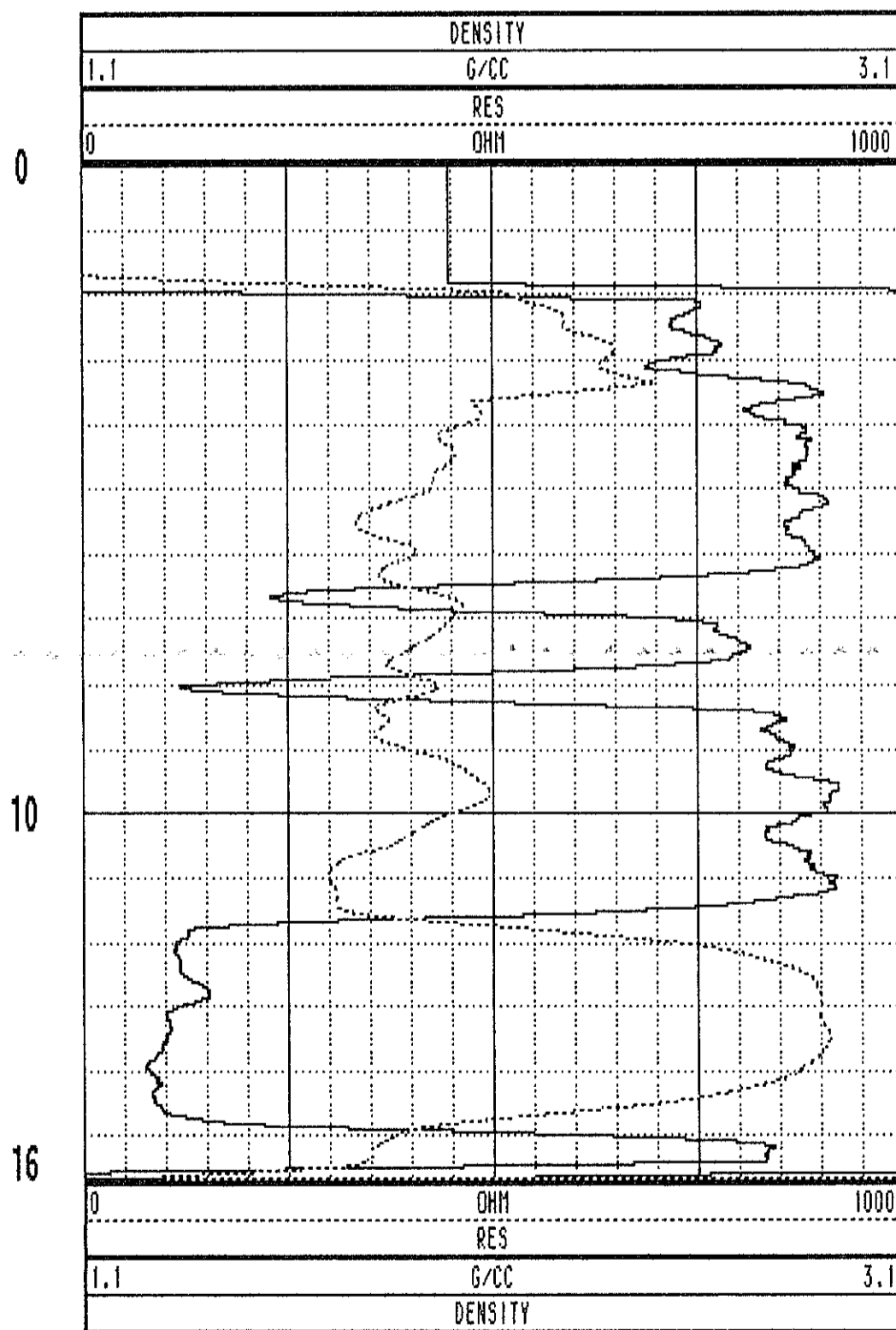
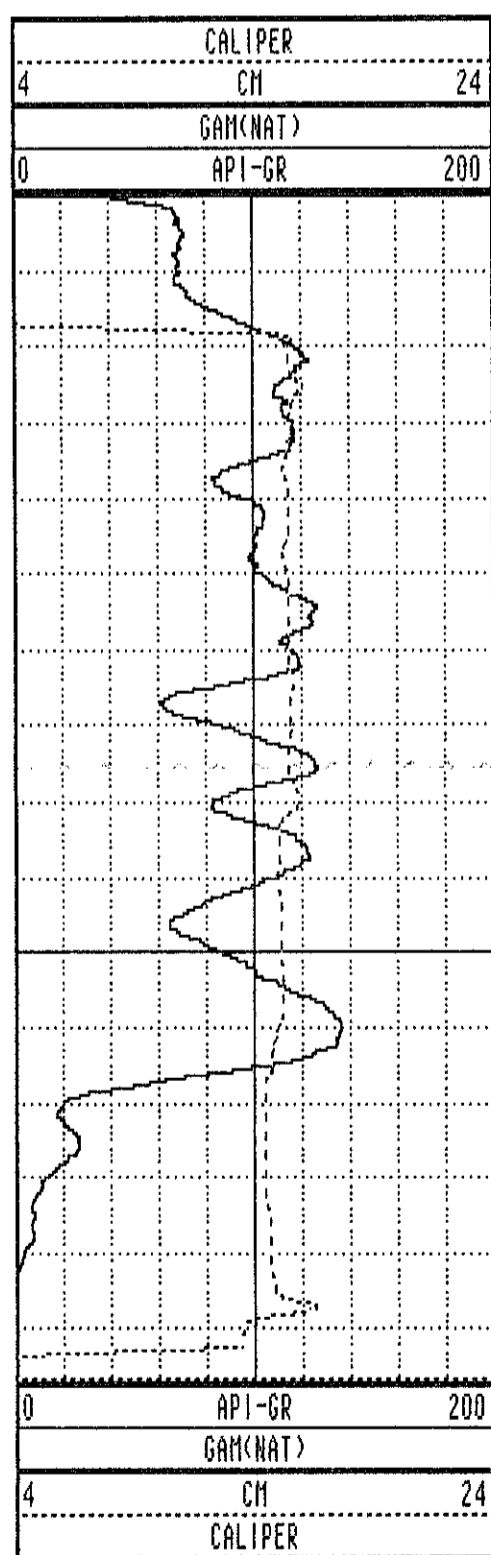
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|----------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96117C 96116 C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/16/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.70 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 4 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

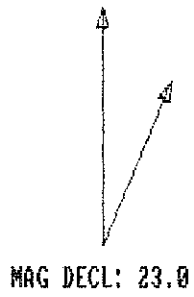


WRH-96117C 08/16/96 958

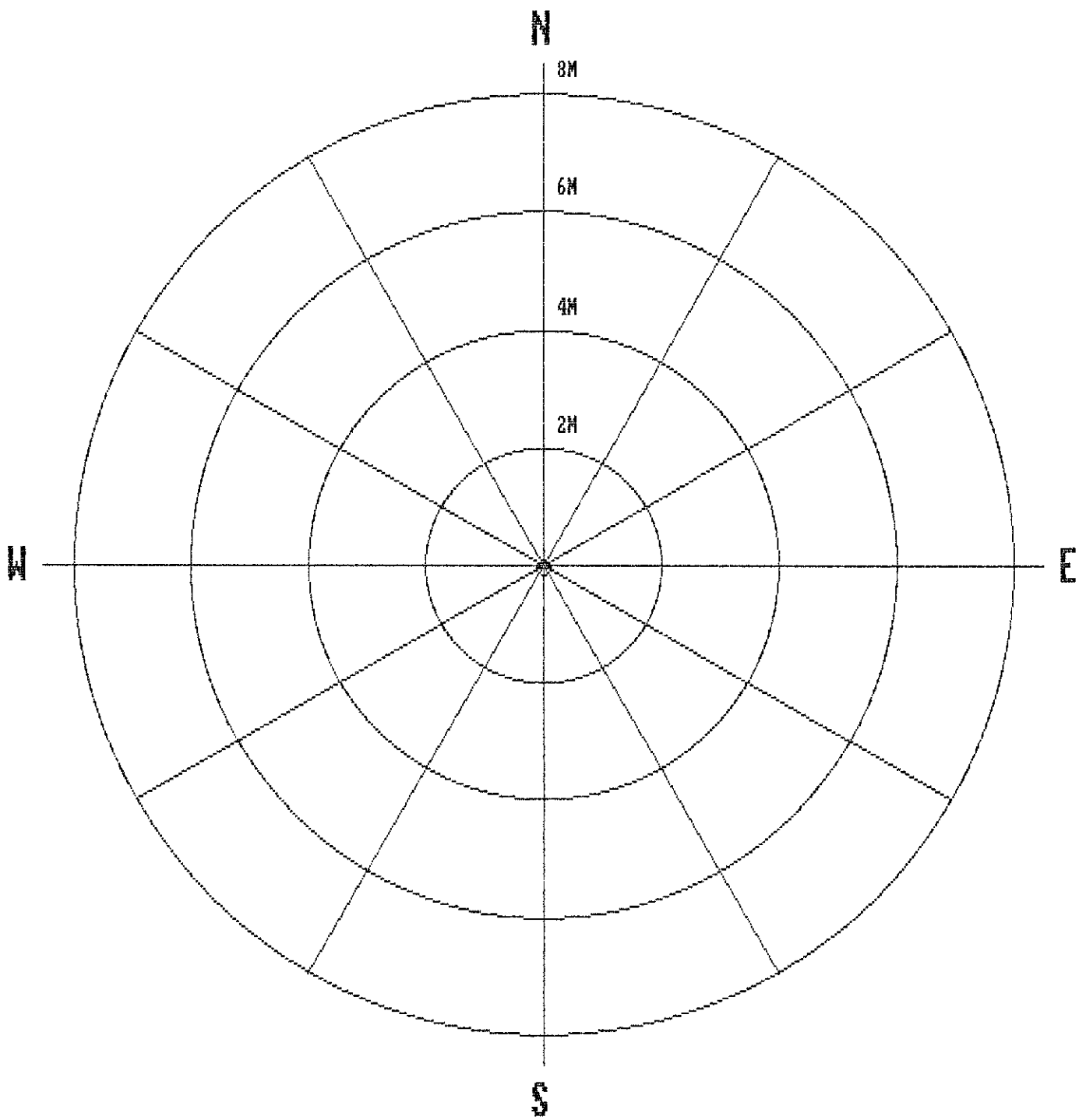
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

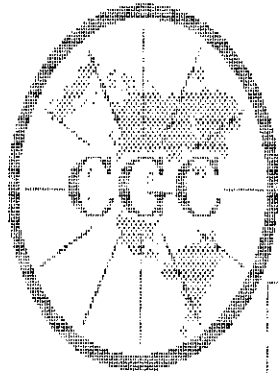
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96117C
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 7.84 M
 AZIMUTH: 164.0
 DISTANCE: 0.0 M
 + = 50 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|-----|------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 58.0 | 0.1 | 160.3 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 118.7 | 0.8 | 147.8 |
| 4.0 | 4.00 | -0.01 | 0.00 | 0.0 | 157.9 | 0.8 | 185.2 |
| 5.0 | 5.00 | -0.02 | 0.01 | 0.0 | 147.4 | 0.4 | 124.5 |
| 6.0 | 6.00 | -0.03 | 0.01 | 0.0 | 155.8 | 0.8 | 130.3 |
| 7.0 | 7.00 | -0.04 | 0.01 | 0.0 | 159.8 | 0.3 | 143.4 |
| 7.8 | 7.84 | -0.04 | 0.01 | 0.0 | 164.0 | 0.8 | 174.2 |

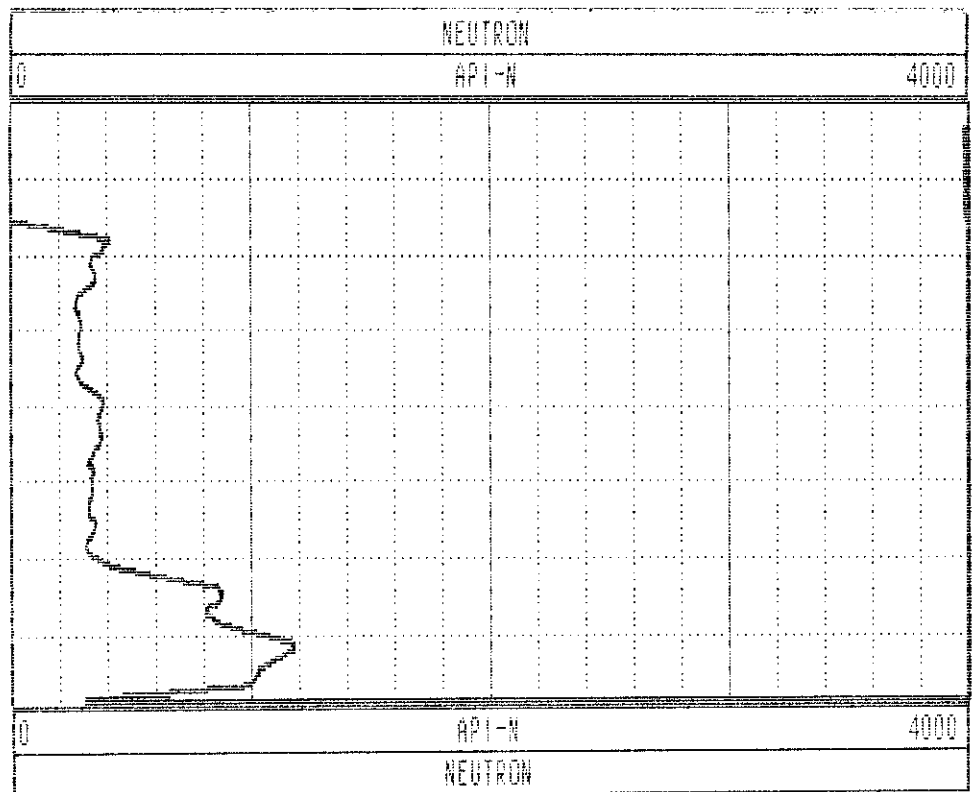
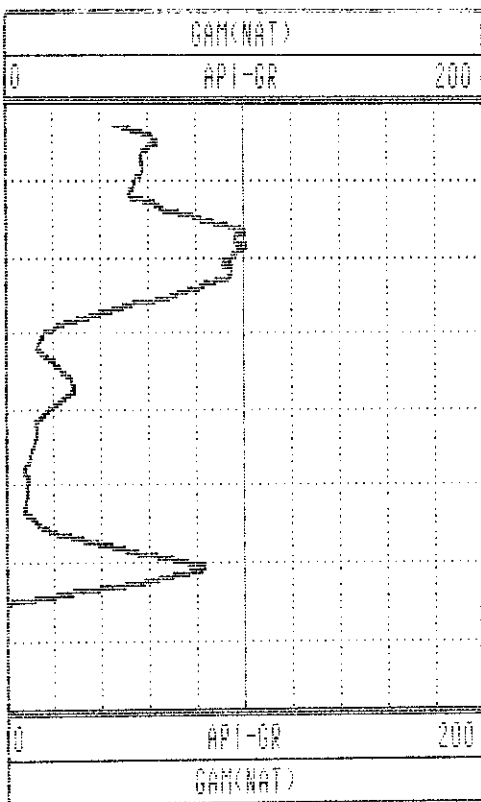


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|------------------|--------------------|--|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96117C | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM : ELEVATIONS |
| DEPTH DRILLER | : 8 | ELEV. PERM. DATUM: KB : |
| LOG BOTTOM | : 7.98 | LOG MEASURED FROM: G.L. DF : |
| LOG TOP | : 0.38 | DRL MEASURED FROM: GL : |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE : LOG : 9 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : THRESH: 10000 |
| REMARKS | : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

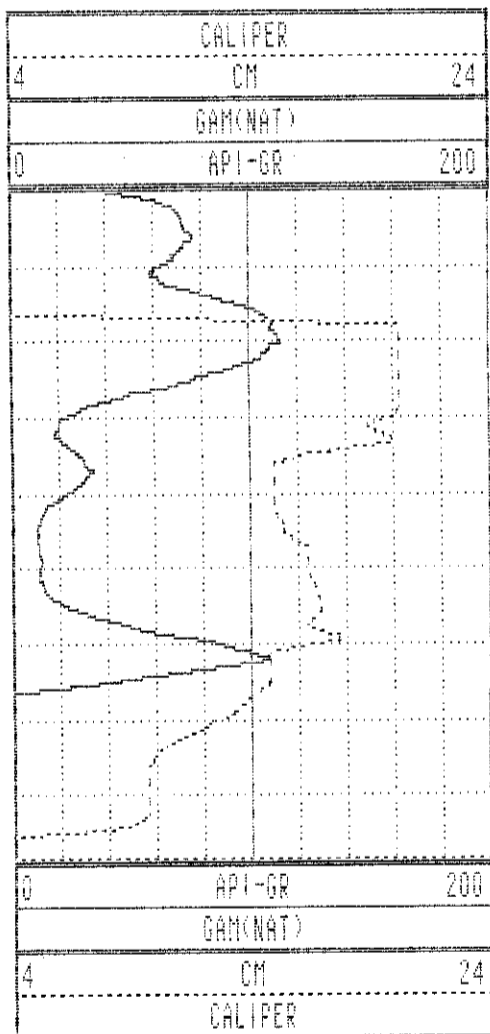


WRH-96117C 08/14/96 56

GAMMA-RES-DENSITY

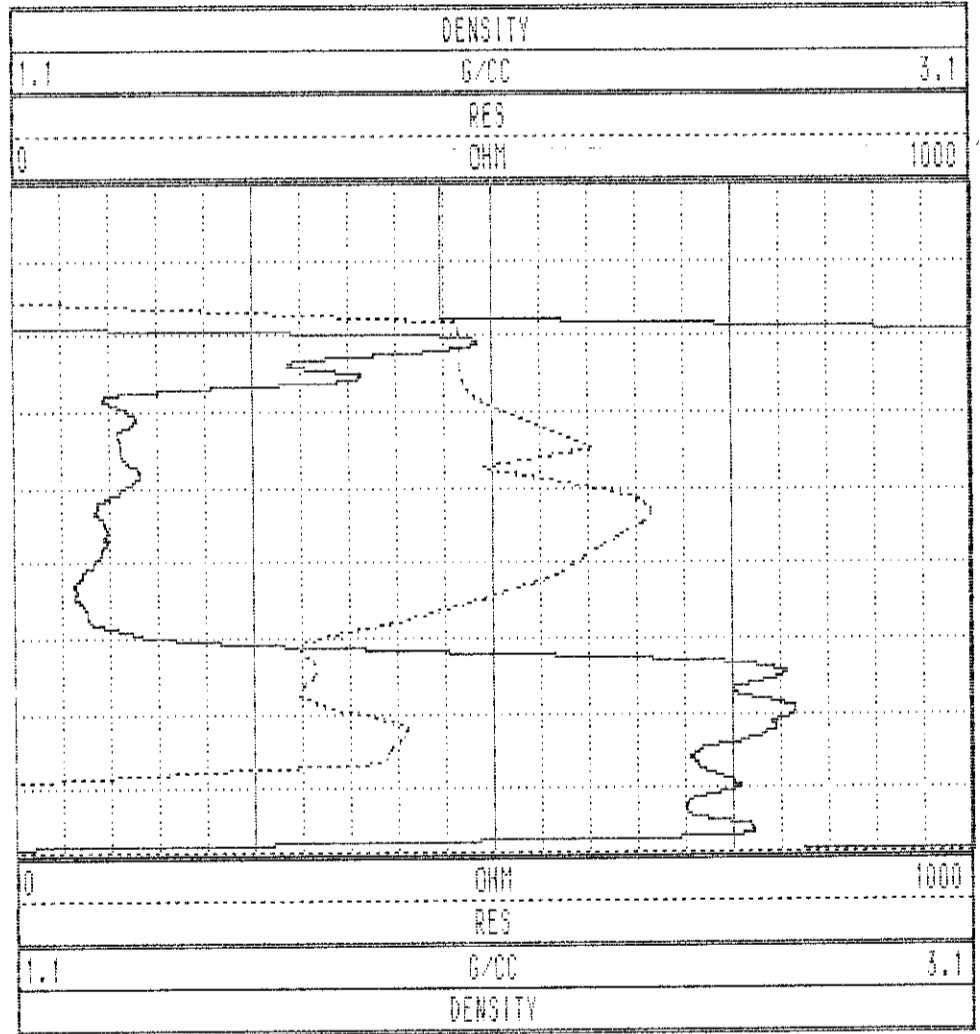
| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : MRH-96117C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 0 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 8.88 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |
| | | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0

9



MRH-96117C 08/14/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

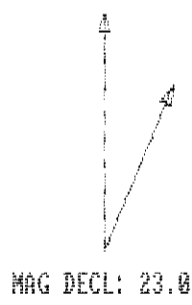
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 39.0 | 0.6 | 33.7 |
| 3.0 | 3.00 | -0.01 | 0.01 | 0.0 | 141.1 | 1.2 | 194.1 |
| 4.0 | 4.00 | -0.02 | 0.01 | 0.0 | 161.0 | 0.8 | 106.4 |
| 5.0 | 5.00 | -0.03 | 0.02 | 0.0 | 146.9 | 0.8 | 151.6 |
| 6.0 | 6.00 | -0.02 | 0.02 | 0.0 | 133.7 | 3.8 | 1.5 |
| 7.0 | 7.00 | -0.01 | 0.04 | 0.0 | 107.9 | 0.8 | 94.5 |
| 8.0 | 8.00 | -0.01 | 0.05 | 0.1 | 103.6 | 1.1 | 84.9 |
| 9.0 | 9.00 | -0.01 | 0.07 | 0.1 | 99.8 | 0.9 | 89.8 |
| 10.0 | 10.00 | -0.01 | 0.09 | 0.1 | 96.3 | 1.0 | 87.3 |
| 11.0 | 11.00 | -0.01 | 0.10 | 0.1 | 94.8 | 1.2 | 81.9 |
| 12.0 | 12.00 | -0.01 | 0.13 | 0.1 | 94.2 | 1.0 | 104.4 |
| 13.0 | 13.00 | -0.01 | 0.15 | 0.1 | 94.3 | 1.3 | 105.8 |
| 14.0 | 14.00 | -0.02 | 0.17 | 0.2 | 96.4 | 1.3 | 111.0 |
| 15.0 | 15.00 | -0.03 | 0.19 | 0.2 | 99.2 | 1.6 | 121.0 |
| 16.0 | 16.00 | -0.05 | 0.22 | 0.2 | 102.1 | 1.6 | 117.2 |
| 17.0 | 17.00 | -0.06 | 0.24 | 0.2 | 104.5 | 1.7 | 118.4 |
| 18.0 | 18.00 | -0.08 | 0.27 | 0.3 | 106.3 | 1.6 | 118.3 |
| 19.0 | 19.00 | -0.09 | 0.29 | 0.3 | 107.9 | 1.6 | 121.5 |
| 20.0 | 19.99 | -0.11 | 0.31 | 0.3 | 109.8 | 1.8 | 132.3 |
| 21.0 | 20.99 | -0.14 | 0.33 | 0.4 | 112.4 | 2.0 | 144.2 |
| 22.0 | 21.99 | -0.17 | 0.36 | 0.4 | 115.0 | 2.0 | 134.4 |
| 23.0 | 22.99 | -0.19 | 0.38 | 0.4 | 116.8 | 2.0 | 141.3 |
| 24.0 | 23.99 | -0.22 | 0.40 | 0.5 | 118.8 | 2.1 | 142.2 |
| 25.0 | 24.99 | -0.25 | 0.42 | 0.5 | 121.0 | 2.4 | 156.5 |
| 26.0 | 25.99 | -0.29 | 0.44 | 0.5 | 123.5 | 2.7 | 151.7 |
| 27.0 | 26.99 | -0.33 | 0.46 | 0.6 | 125.4 | 2.6 | 148.4 |
| 28.0 | 27.99 | -0.37 | 0.49 | 0.6 | 126.9 | 2.3 | 152.1 |
| 29.0 | 28.99 | -0.40 | 0.51 | 0.6 | 128.3 | 2.3 | 146.4 |
| 30.0 | 29.99 | -0.43 | 0.53 | 0.7 | 129.6 | 2.3 | 149.4 |
| 31.0 | 30.99 | -0.47 | 0.55 | 0.7 | 130.7 | 2.3 | 151.8 |
| 32.0 | 31.99 | -0.50 | 0.56 | 0.8 | 131.9 | 2.4 | 154.1 |
| 33.0 | 32.98 | -0.54 | 0.58 | 0.8 | 132.9 | 2.4 | 150.1 |
| 34.0 | 33.98 | -0.58 | 0.60 | 0.8 | 133.9 | 2.2 | 152.8 |
| 35.0 | 34.98 | -0.61 | 0.61 | 0.9 | 134.9 | 2.3 | 160.3 |
| 36.0 | 35.98 | -0.65 | 0.63 | 0.9 | 135.8 | 2.2 | 155.8 |
| 37.0 | 36.98 | -0.68 | 0.64 | 0.9 | 136.7 | 2.1 | 163.4 |
| 38.0 | 37.98 | -0.72 | 0.65 | 1.0 | 137.6 | 2.4 | 153.9 |
| 39.0 | 38.98 | -0.75 | 0.67 | 1.0 | 138.3 | 2.3 | 154.5 |
| 40.0 | 39.98 | -0.79 | 0.68 | 1.0 | 139.0 | 2.3 | 164.5 |
| 41.0 | 40.98 | -0.83 | 0.70 | 1.1 | 139.8 | 2.4 | 161.0 |
| 42.0 | 41.98 | -0.86 | 0.71 | 1.1 | 140.5 | 2.0 | 165.4 |
| 43.0 | 42.98 | -0.89 | 0.72 | 1.1 | 141.2 | 2.0 | 169.9 |
| 44.0 | 43.98 | -0.93 | 0.73 | 1.2 | 141.8 | 2.2 | 164.6 |
| 45.0 | 44.98 | -0.97 | 0.75 | 1.2 | 142.4 | 2.1 | 161.0 |
| 46.0 | 45.98 | -1.01 | 0.76 | 1.3 | 143.0 | 2.2 | 165.8 |
| 47.0 | 46.97 | -1.05 | 0.77 | 1.3 | 143.6 | 2.3 | 157.3 |
| 48.0 | 47.97 | -1.08 | 0.78 | 1.3 | 144.2 | 2.4 | 161.2 |
| 49.0 | 48.97 | -1.12 | 0.79 | 1.4 | 144.8 | 2.1 | 169.8 |
| 49.1 | 49.09 | -1.12 | 0.79 | 1.4 | 144.9 | 2.1 | 167.2 |

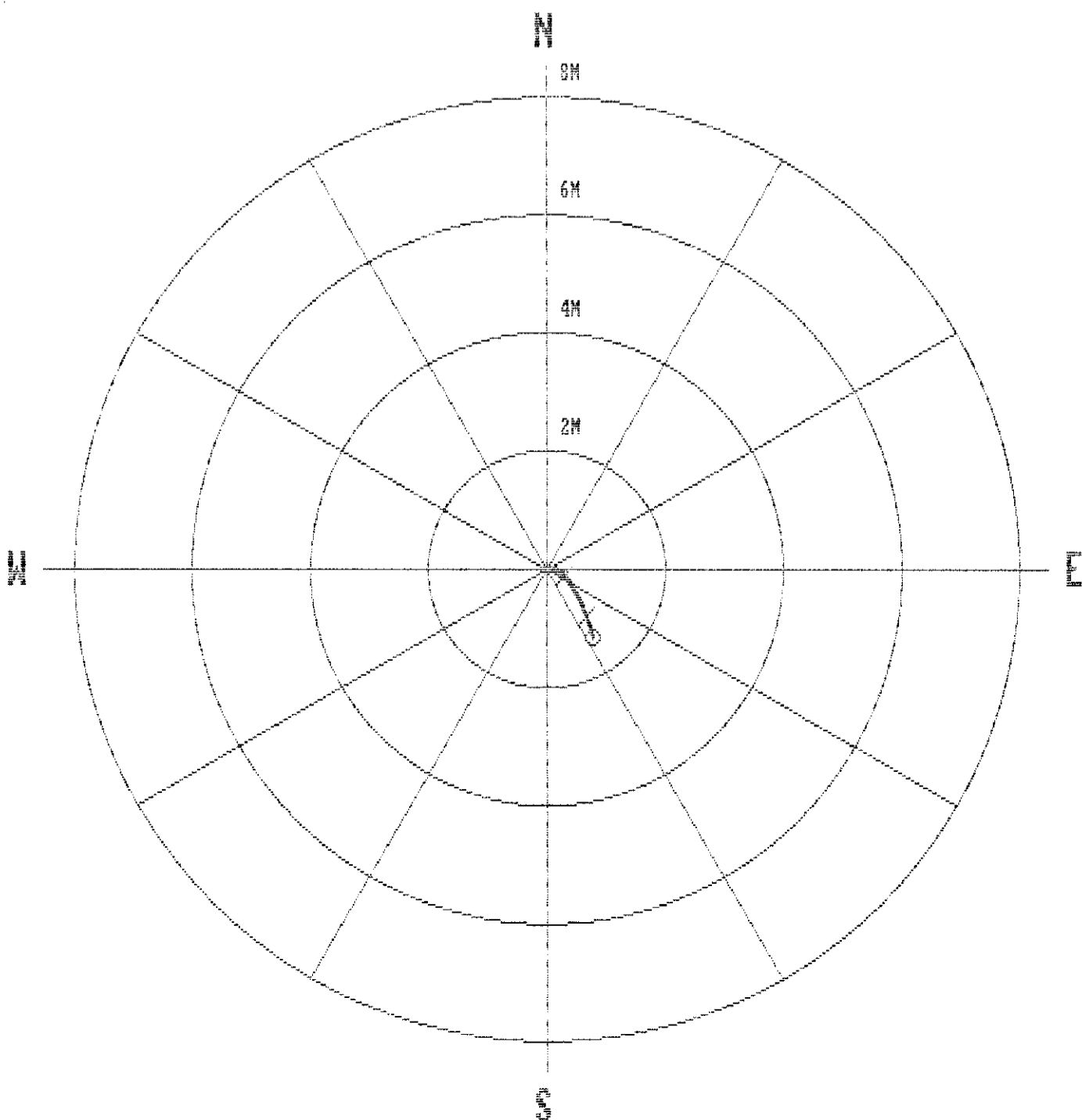
PLAN VIEW

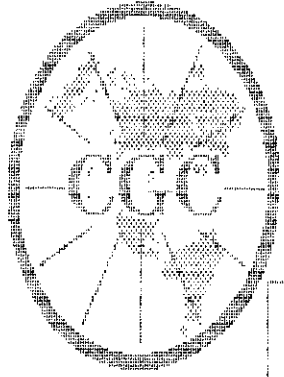
COMPI-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRN-96118C
 DATE OF LOG: 08/15/96
 PROBE: 9855A 56



SCALE: 1 M/CM
 TRUE DEPTH: 49.09 M
 AZIMUTH: 144.9
 DISTANCE: 1.4 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



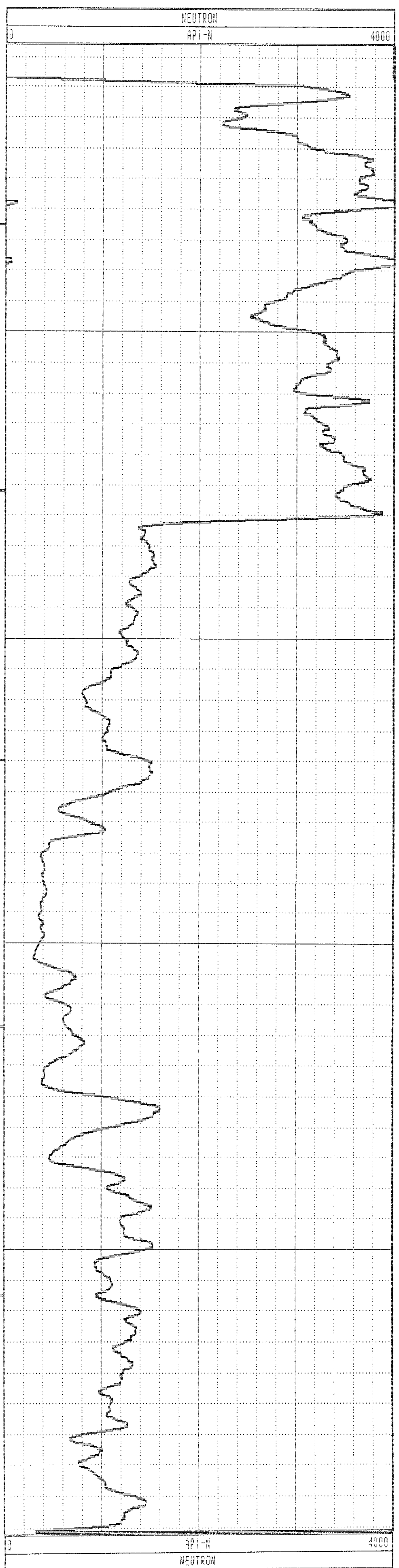
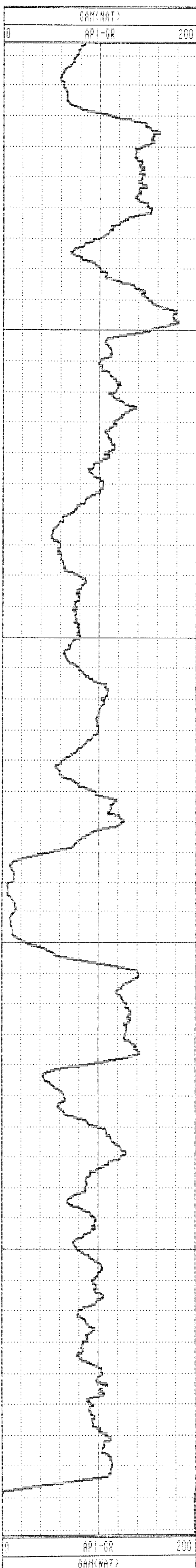


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : FINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96118C | | |
| LOCATION/FIELD | : HILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 08/15/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 49 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 49.17 | LOG MEASURED FROM: G.L. | DF |
| LOG TOP | : 0.64 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 8 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

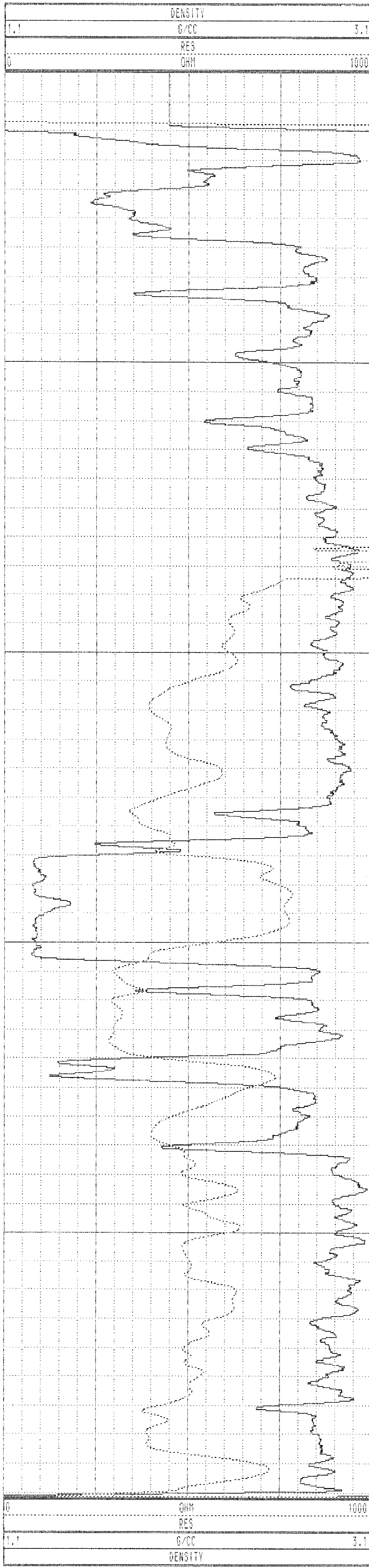
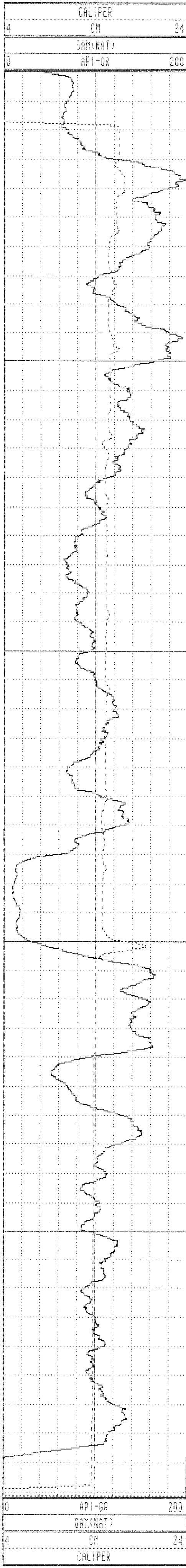
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96118C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOMNSHIP | RANGE : | |
| DATE | : 08/15/96 | PERMANENT DATUM : | |
| DEPTH DRILLER | : 37 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 49.18 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 7 |
| | | THRESH: | 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

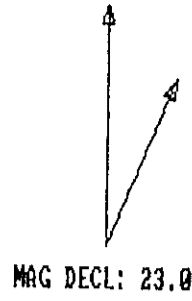


WRH-96118C 08/15/96 958

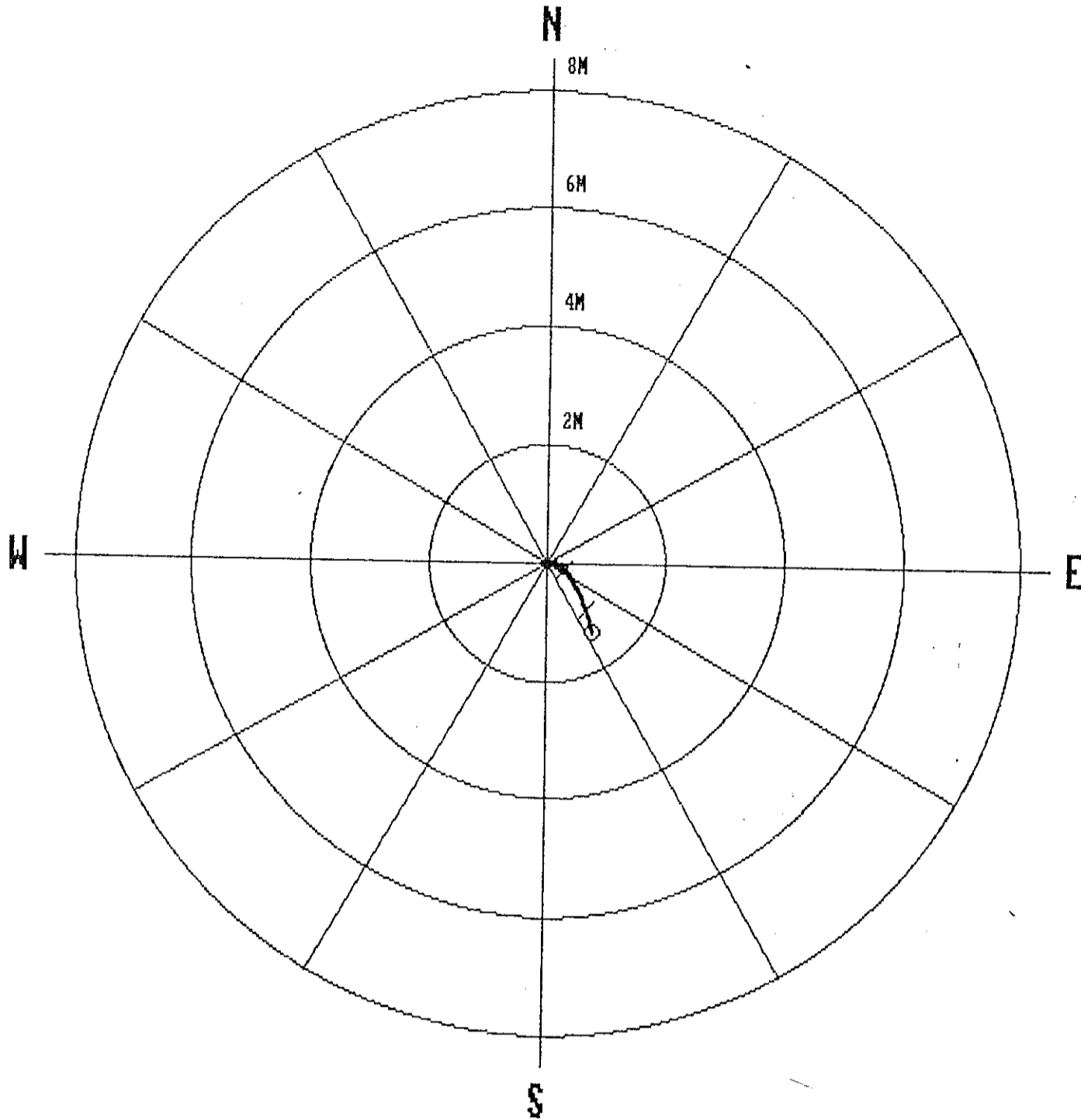
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(M) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(M) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV12.95 | 12:41:21 | 0 CALIPERL | 271.000 CPS | 7.800 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPERL | 1880.000 CPS | 12.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV10.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

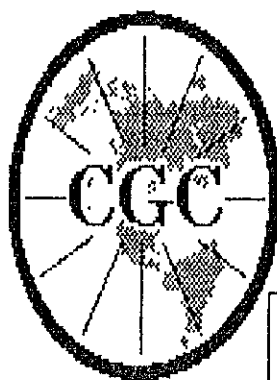
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96119C
 DATE OF LOG: 08/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 49.09 M
 AZIMUTH: 144.9
 DISTANCE: 1.4 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 39.0 | 0.6 | 33.7 |
| 3.0 | 3.00 | -0.01 | 0.01 | 0.0 | 141.1 | 1.2 | 194.1 |
| 4.0 | 4.00 | -0.02 | 0.01 | 0.0 | 161.0 | 0.8 | 106.4 |
| 5.0 | 5.00 | -0.03 | 0.02 | 0.0 | 146.9 | 0.8 | 151.6 |
| 6.0 | 6.00 | -0.02 | 0.02 | 0.0 | 133.7 | 3.8 | 1.5 |
| 7.0 | 7.00 | -0.01 | 0.04 | 0.0 | 107.9 | 0.8 | 94.5 |
| 8.0 | 8.00 | -0.01 | 0.05 | 0.1 | 103.6 | 1.1 | 84.9 |
| 9.0 | 9.00 | -0.01 | 0.07 | 0.1 | 99.8 | 0.9 | 89.8 |
| 10.0 | 10.00 | -0.01 | 0.09 | 0.1 | 96.3 | 1.0 | 87.3 |
| 11.0 | 11.00 | -0.01 | 0.10 | 0.1 | 94.8 | 1.2 | 81.9 |
| 12.0 | 12.00 | -0.01 | 0.13 | 0.1 | 94.2 | 1.0 | 104.4 |
| 13.0 | 13.00 | -0.01 | 0.15 | 0.1 | 94.3 | 1.3 | 105.8 |
| 14.0 | 14.00 | -0.02 | 0.17 | 0.2 | 96.4 | 1.3 | 111.0 |
| 15.0 | 15.00 | -0.03 | 0.19 | 0.2 | 99.2 | 1.6 | 121.0 |
| 16.0 | 16.00 | -0.05 | 0.22 | 0.2 | 102.1 | 1.6 | 117.2 |
| 17.0 | 17.00 | -0.06 | 0.24 | 0.2 | 104.5 | 1.7 | 118.4 |
| 18.0 | 18.00 | -0.08 | 0.27 | 0.3 | 106.3 | 1.6 | 118.3 |
| 19.0 | 19.00 | -0.09 | 0.29 | 0.3 | 107.9 | 1.6 | 121.5 |
| 20.0 | 19.99 | -0.11 | 0.31 | 0.3 | 109.8 | 1.8 | 132.3 |
| 21.0 | 20.99 | -0.14 | 0.33 | 0.4 | 112.4 | 2.0 | 144.2 |
| 22.0 | 21.99 | -0.17 | 0.36 | 0.4 | 115.0 | 2.0 | 134.4 |
| 23.0 | 22.99 | -0.19 | 0.38 | 0.4 | 116.8 | 2.0 | 141.3 |
| 24.0 | 23.99 | -0.22 | 0.40 | 0.5 | 118.8 | 2.1 | 142.2 |
| 25.0 | 24.99 | -0.25 | 0.42 | 0.5 | 121.0 | 2.4 | 156.5 |
| 26.0 | 25.99 | -0.29 | 0.44 | 0.5 | 123.5 | 2.7 | 151.7 |
| 27.0 | 26.99 | -0.33 | 0.46 | 0.6 | 125.4 | 2.6 | 148.4 |
| 28.0 | 27.99 | -0.37 | 0.49 | 0.6 | 126.9 | 2.3 | 152.1 |
| 29.0 | 28.99 | -0.40 | 0.51 | 0.6 | 128.3 | 2.3 | 146.4 |
| 30.0 | 29.99 | -0.43 | 0.53 | 0.7 | 129.6 | 2.3 | 149.4 |
| 31.0 | 30.99 | -0.47 | 0.55 | 0.7 | 130.7 | 2.3 | 151.8 |
| 32.0 | 31.99 | -0.50 | 0.56 | 0.8 | 131.9 | 2.4 | 154.1 |
| 33.0 | 32.98 | -0.54 | 0.58 | 0.8 | 132.9 | 2.4 | 150.1 |
| 34.0 | 33.98 | -0.58 | 0.60 | 0.8 | 133.9 | 2.2 | 152.8 |
| 35.0 | 34.98 | -0.61 | 0.61 | 0.9 | 134.9 | 2.3 | 160.3 |
| 36.0 | 35.98 | -0.65 | 0.63 | 0.9 | 135.8 | 2.2 | 155.8 |
| 37.0 | 36.98 | -0.68 | 0.64 | 0.9 | 136.7 | 2.1 | 163.4 |
| 38.0 | 37.98 | -0.72 | 0.65 | 1.0 | 137.6 | 2.4 | 153.9 |
| 39.0 | 38.98 | -0.75 | 0.67 | 1.0 | 138.3 | 2.3 | 154.5 |
| 40.0 | 39.98 | -0.79 | 0.68 | 1.0 | 139.0 | 2.3 | 164.5 |
| 41.0 | 40.98 | -0.83 | 0.70 | 1.1 | 139.8 | 2.4 | 161.0 |
| 42.0 | 41.98 | -0.86 | 0.71 | 1.1 | 140.5 | 2.0 | 165.4 |
| 43.0 | 42.98 | -0.89 | 0.72 | 1.1 | 141.2 | 2.0 | 169.9 |
| 44.0 | 43.98 | -0.93 | 0.73 | 1.2 | 141.8 | 2.2 | 164.6 |
| 45.0 | 44.98 | -0.97 | 0.75 | 1.2 | 142.4 | 2.1 | 161.0 |
| 46.0 | 45.98 | -1.01 | 0.76 | 1.3 | 143.0 | 2.2 | 165.8 |
| 47.0 | 46.97 | -1.05 | 0.77 | 1.3 | 143.6 | 2.3 | 157.3 |
| 48.0 | 47.97 | -1.08 | 0.78 | 1.3 | 144.2 | 2.4 | 161.2 |
| 49.0 | 48.97 | -1.12 | 0.79 | 1.4 | 144.8 | 2.1 | 169.8 |
| 49.1 | 49.09 | -1.12 | 0.79 | 1.4 | 144.9 | 2.1 | 167.2 |

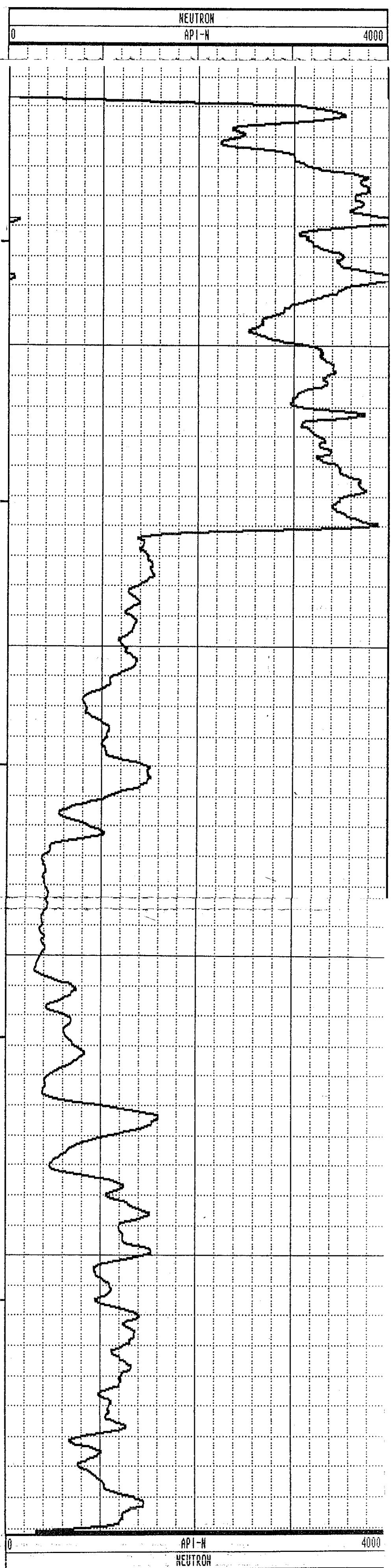
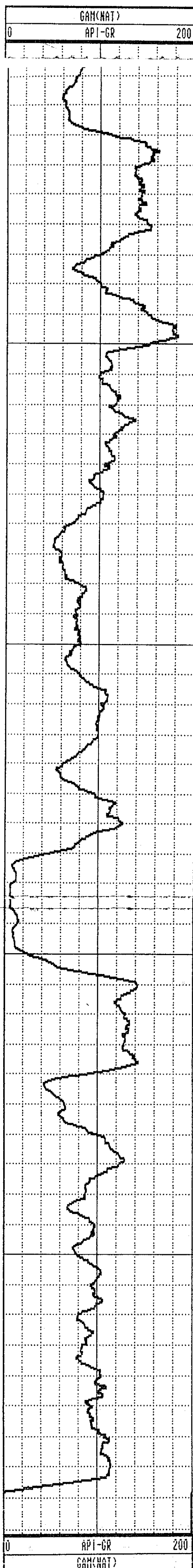


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96119C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/15/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 49 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 49.17 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.64 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 3 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

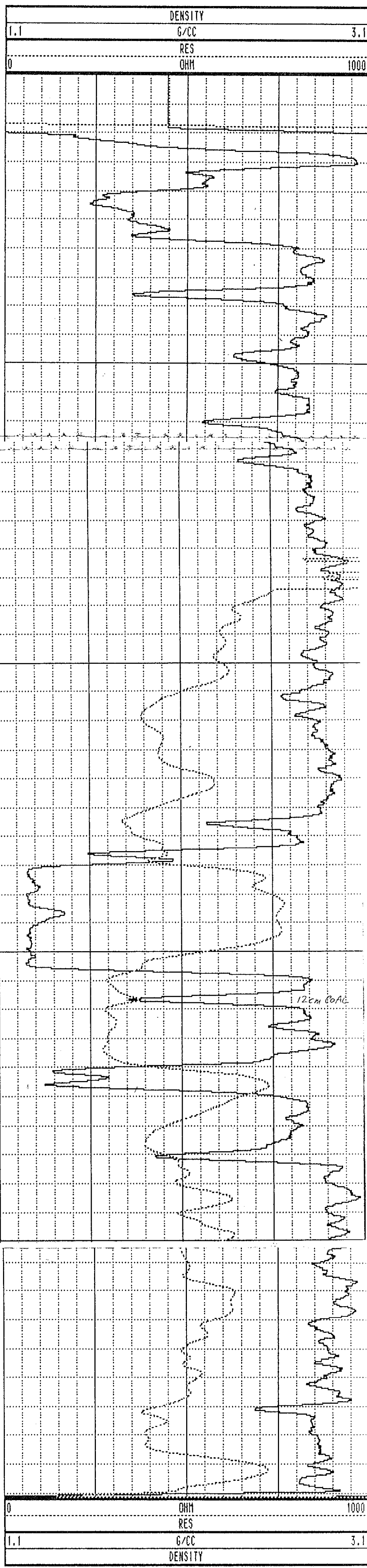
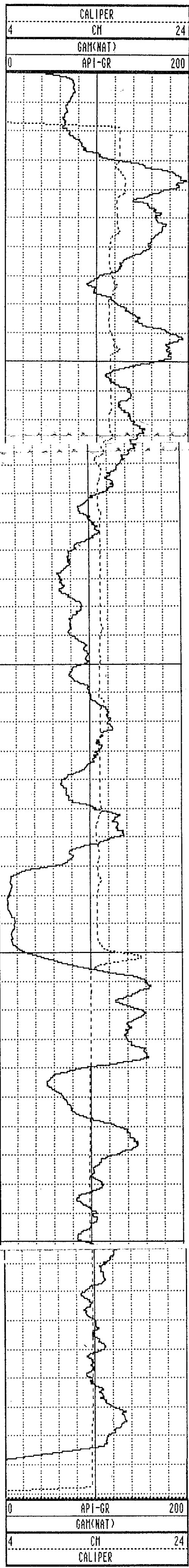
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96119C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/15/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 37 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 49.18 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96119C 08/15/96 958

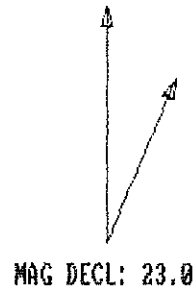
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CH |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CH |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CH |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CH |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV10.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CH |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CH |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.01 | 0.0 | 277.5 | 1.6 | 279.1 |
| 3.0 | 3.00 | 0.00 | -0.03 | 0.0 | 273.1 | 1.4 | 245.7 |
| 4.0 | 4.00 | -0.01 | -0.06 | 0.1 | 261.4 | 3.2 | 238.6 |
| 5.0 | 5.00 | -0.03 | -0.10 | 0.1 | 253.6 | 2.8 | 244.1 |
| 6.0 | 6.00 | -0.06 | -0.15 | 0.2 | 249.0 | 3.7 | 236.7 |
| 7.0 | 6.99 | -0.10 | -0.21 | 0.2 | 244.9 | 5.0 | 236.8 |
| 8.0 | 7.99 | -0.16 | -0.29 | 0.3 | 240.7 | 5.5 | 227.8 |
| 9.0 | 8.98 | -0.23 | -0.37 | 0.4 | 237.5 | 7.4 | 225.6 |
| 10.0 | 9.97 | -0.32 | -0.46 | 0.6 | 234.9 | 8.3 | 223.5 |
| 11.0 | 10.96 | -0.43 | -0.57 | 0.7 | 233.0 | 9.1 | 228.6 |
| 12.0 | 11.95 | -0.54 | -0.69 | 0.9 | 231.6 | 9.3 | 225.8 |
| 13.0 | 12.93 | -0.67 | -0.80 | 1.0 | 230.1 | 10.5 | 221.1 |
| 14.0 | 13.92 | -0.81 | -0.93 | 1.2 | 228.9 | 11.0 | 225.5 |
| 15.0 | 14.90 | -0.96 | -1.06 | 1.4 | 227.8 | 12.6 | 225.5 |
| 16.0 | 15.87 | -1.12 | -1.19 | 1.6 | 226.9 | 12.3 | 218.0 |
| 17.0 | 16.85 | -1.29 | -1.32 | 1.8 | 225.8 | 12.0 | 227.4 |
| 18.0 | 17.83 | -1.45 | -1.47 | 2.1 | 225.3 | 13.2 | 228.9 |
| 19.0 | 18.80 | -1.62 | -1.63 | 2.3 | 225.2 | 12.9 | 224.7 |
| 20.0 | 19.77 | -1.79 | -1.80 | 2.5 | 225.1 | 14.4 | 216.6 |
| 20.9 | 20.62 | -1.96 | -1.94 | 2.8 | 224.8 | 14.9 | 221.9 |

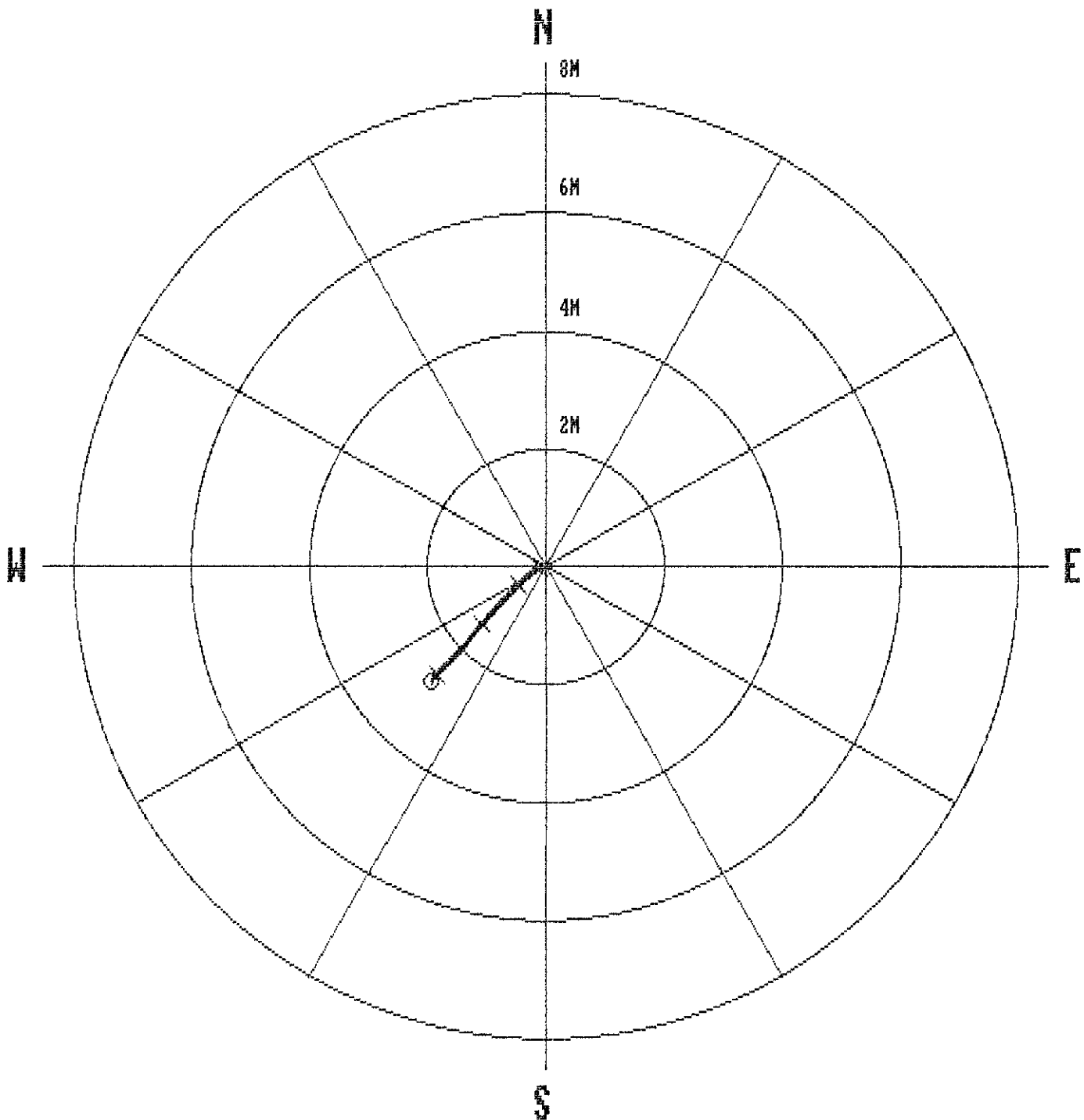
WRH 96121

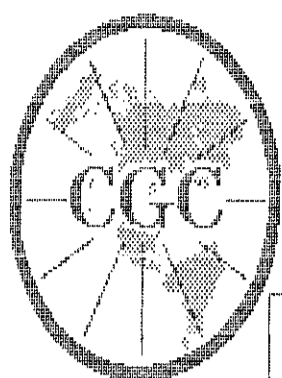
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96121
DATE OF LOG: 08/09/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 20.62 M
AZIMUTH: 224.8
DISTANCE: 2.8 M
+ = 5 M INCR
○ = BOTTOM OF HOLE



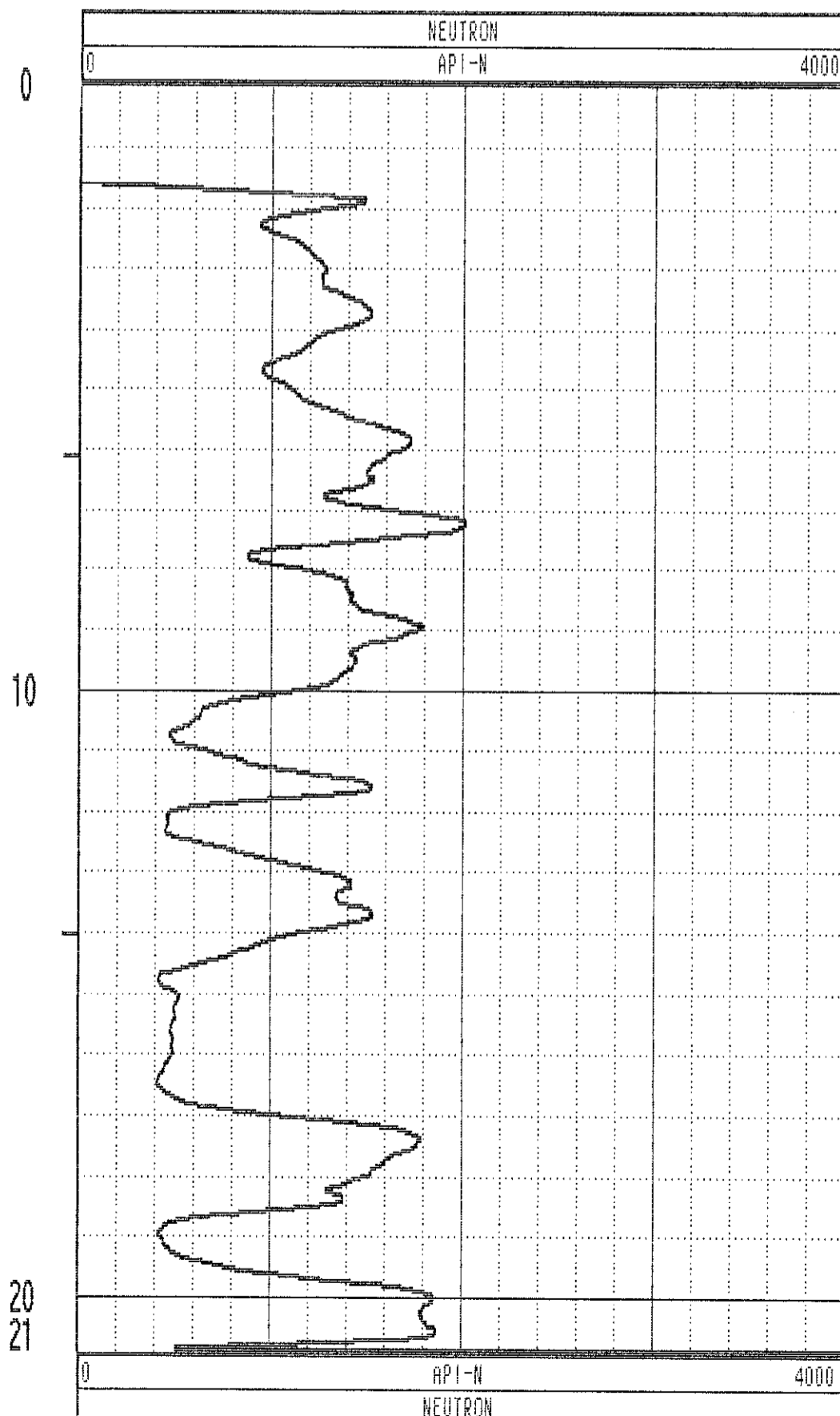
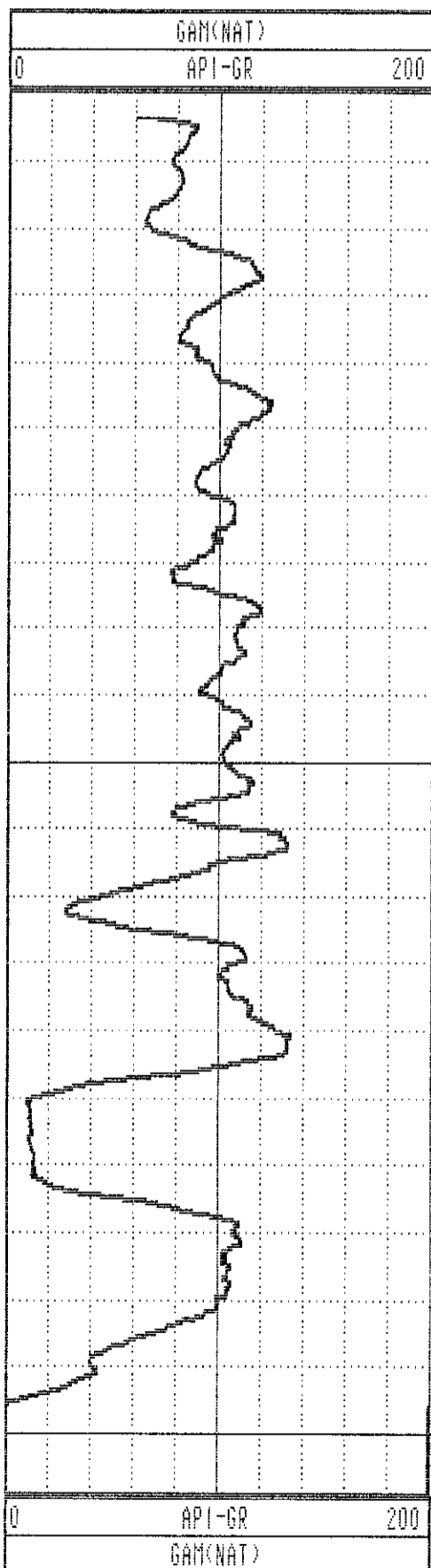


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96121 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/09/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 20 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 20.93 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.40 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 9 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



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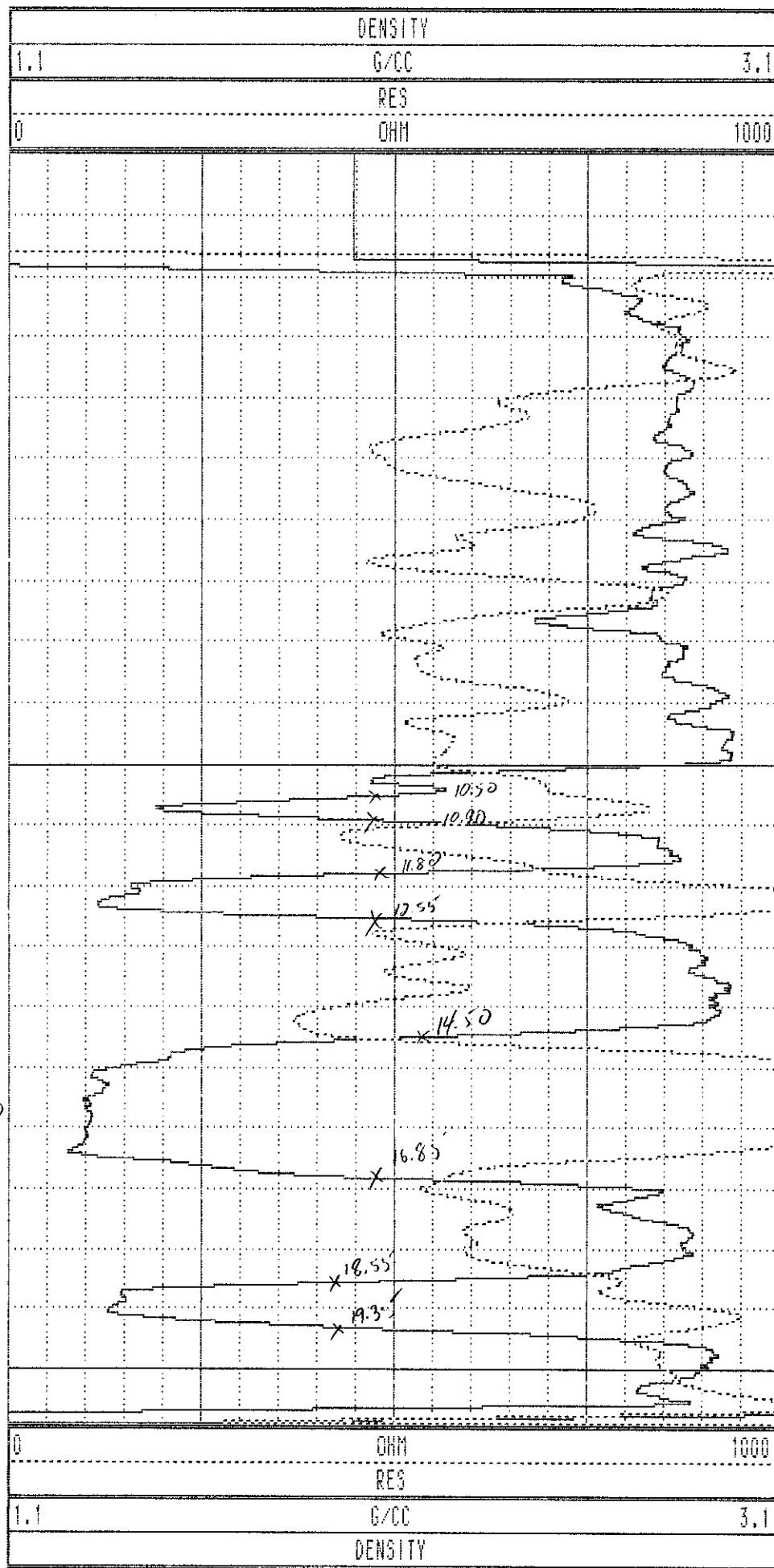
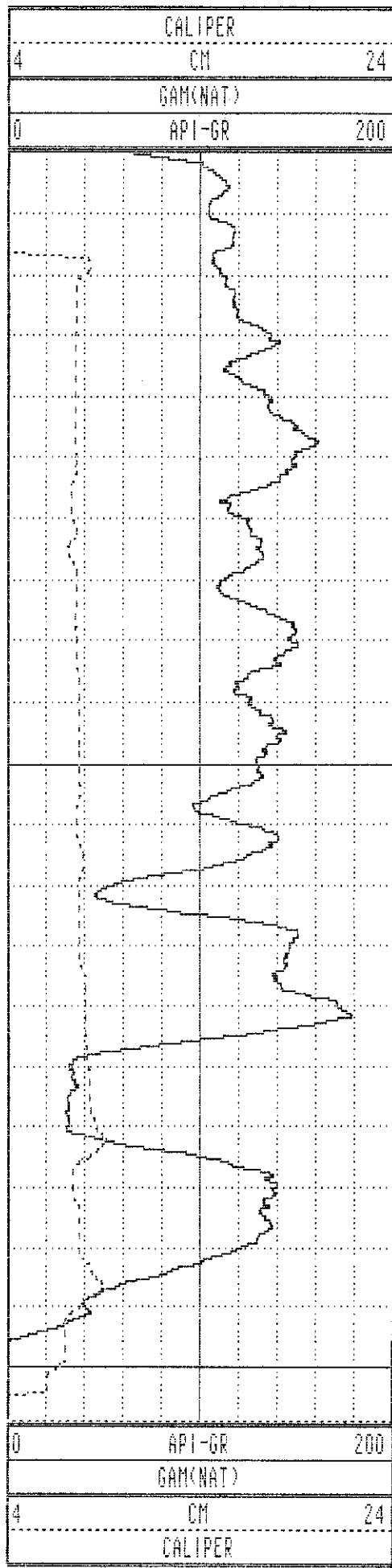
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96121
 LOCATION/FIELD : MILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/09/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 29 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 20.94 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

OTHER SERVICES:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH-96121



WRH-96121 08/09/96 958

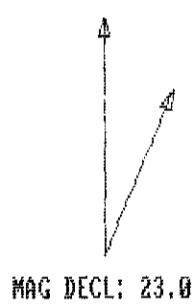
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 283.8 | 0.9 | 282.0 |
| 3.0 | 3.00 | -0.01 | 0.00 | 0.0 | 162.7 | 0.4 | 159.9 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 137.7 | 0.7 | 147.4 |
| 5.0 | 5.00 | -0.02 | 0.02 | 0.0 | 139.6 | 1.0 | 128.5 |
| 6.0 | 6.00 | -0.04 | 0.03 | 0.0 | 146.3 | 1.1 | 130.8 |
| 7.0 | 7.00 | -0.04 | 0.02 | 0.0 | 158.4 | 1.0 | 288.0 |
| 8.0 | 8.00 | -0.03 | 0.00 | 0.0 | 179.9 | 1.1 | 288.8 |
| 9.0 | 9.00 | -0.03 | -0.02 | 0.0 | 208.9 | 0.8 | 262.7 |
| 10.0 | 10.00 | -0.03 | -0.03 | 0.0 | 226.4 | 0.8 | 263.6 |
| 11.0 | 11.00 | -0.04 | -0.05 | 0.1 | 233.7 | 1.5 | 240.7 |
| 12.0 | 12.00 | -0.06 | -0.07 | 0.1 | 231.0 | 1.8 | 218.2 |
| 13.0 | 13.00 | -0.09 | -0.09 | 0.1 | 226.7 | 2.1 | 211.8 |
| 14.0 | 14.00 | -0.12 | -0.12 | 0.2 | 223.5 | 2.8 | 214.1 |
| 15.0 | 15.00 | -0.17 | -0.14 | 0.2 | 220.5 | 2.9 | 210.5 |
| 15.1 | 15.06 | -0.17 | -0.14 | 0.2 | 220.3 | 3.2 | 208.4 |

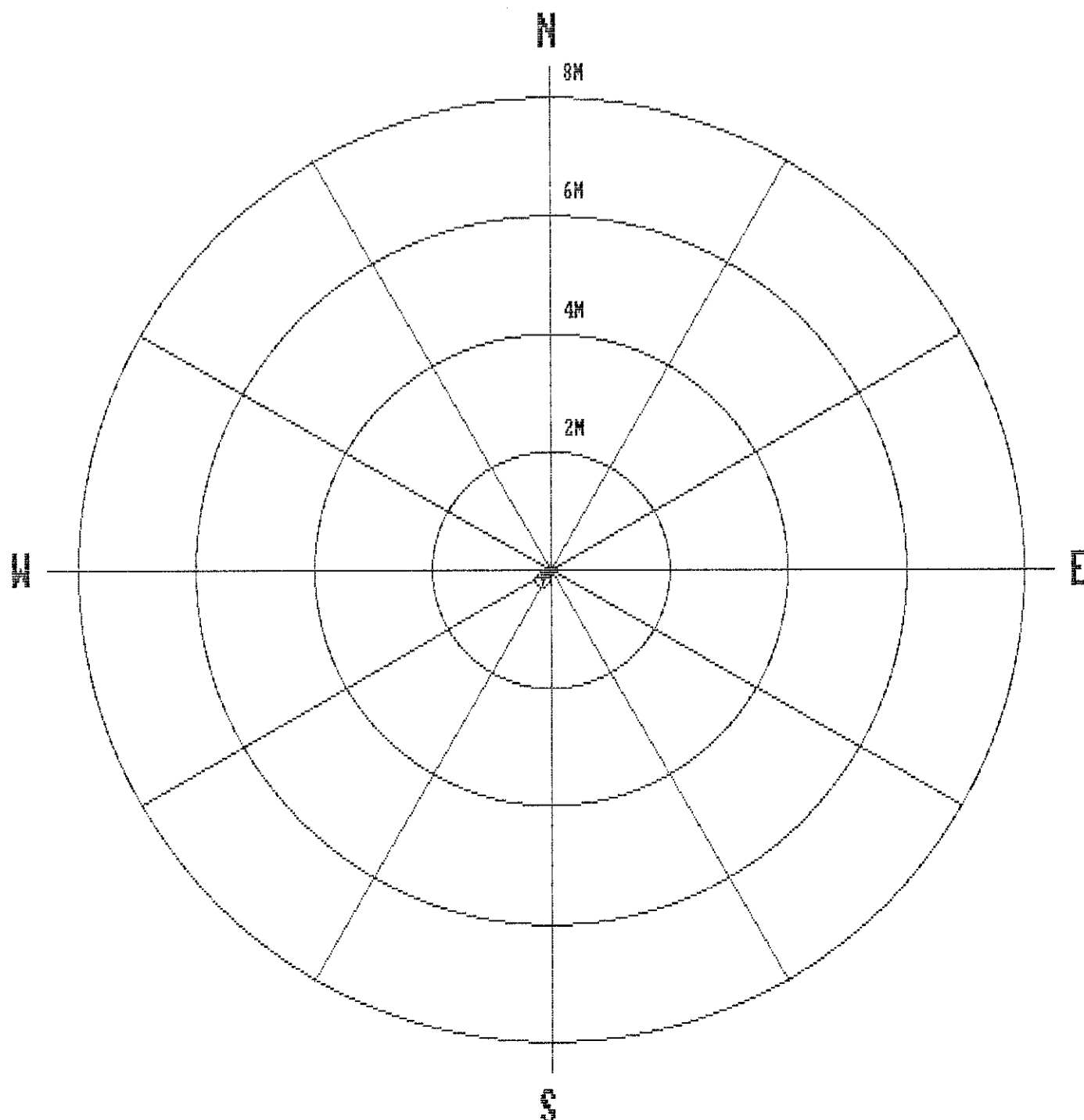
WRH 96122

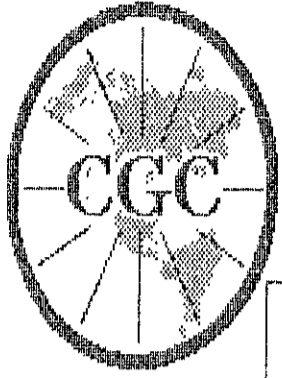
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96122
 DATE OF LOG: 08/09/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 15.06 M
 AZIMUTH: 220.3
 DISTANCE: 0.2 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



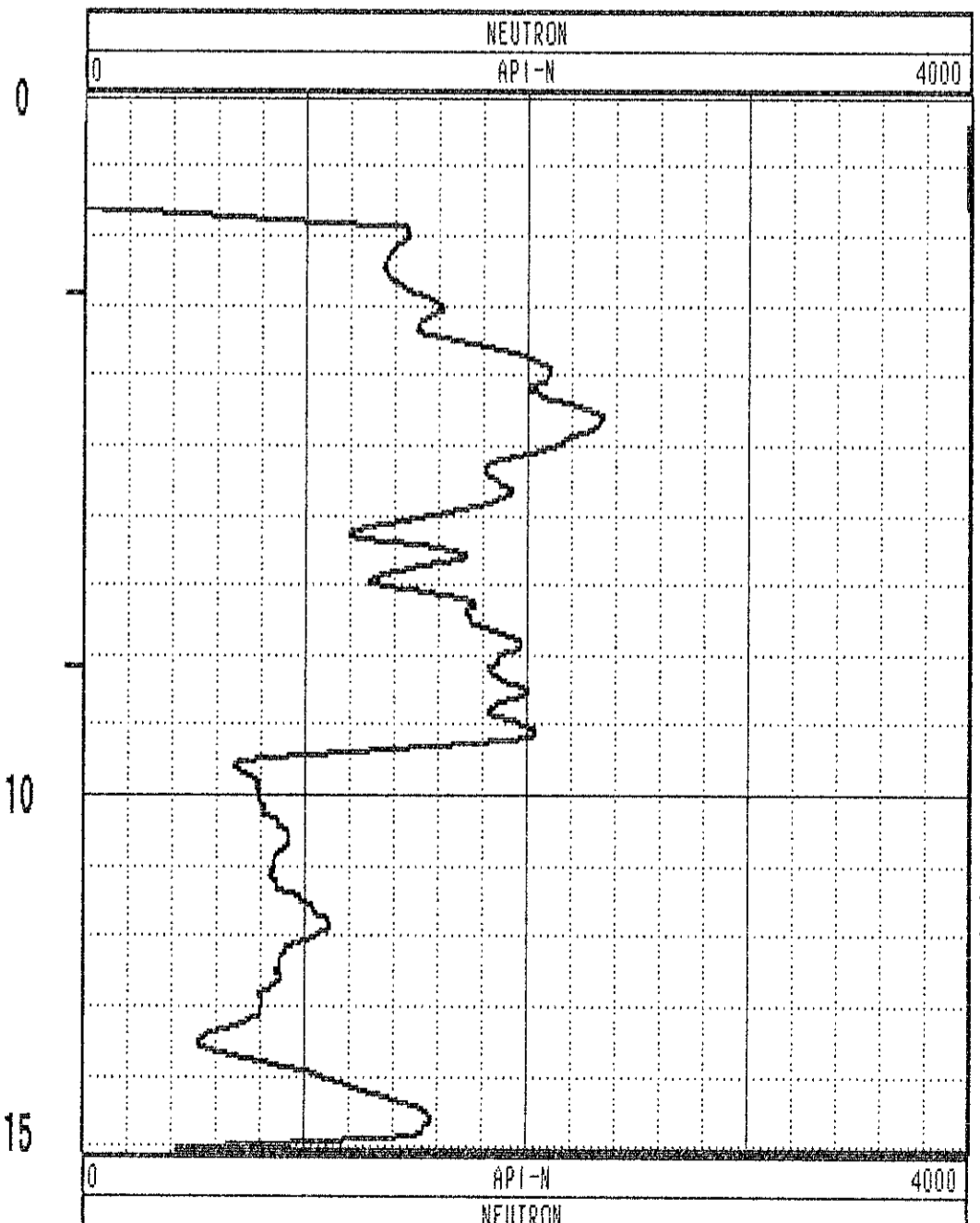
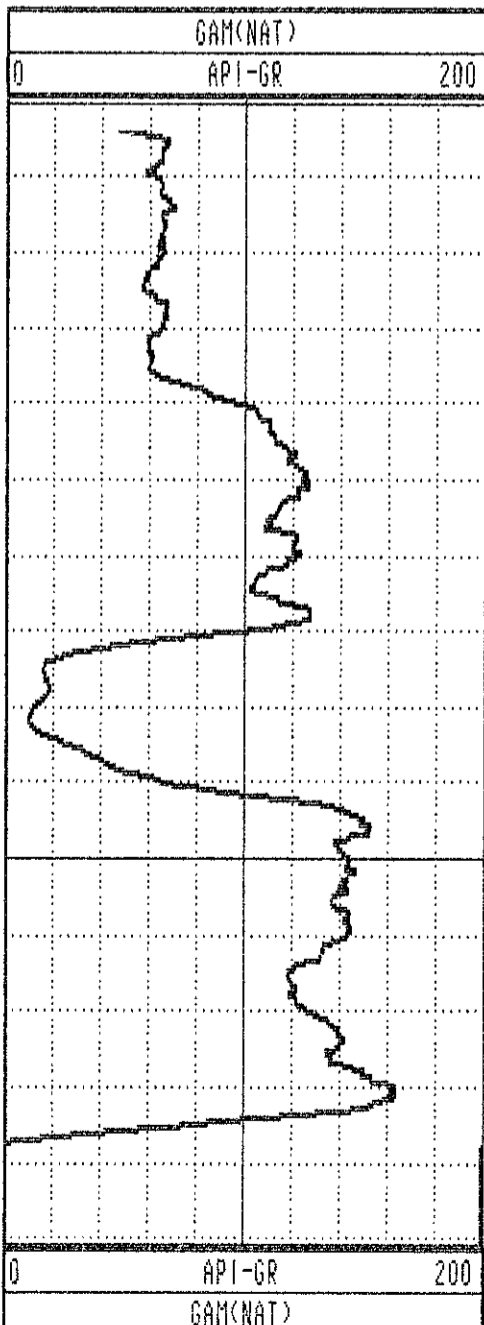


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|------------------|--------------------|--|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96122 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 08/09/96 | PERMANENT DATUM : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: KB : |
| LOG BOTTOM | : 15.12 | LOG MEASURED FROM: G.L. DF : |
| LOG TOP | : 0.42 | DRL MEASURED FROM: GL : |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : THRESH: 10000 |
| REMARKS | : | |

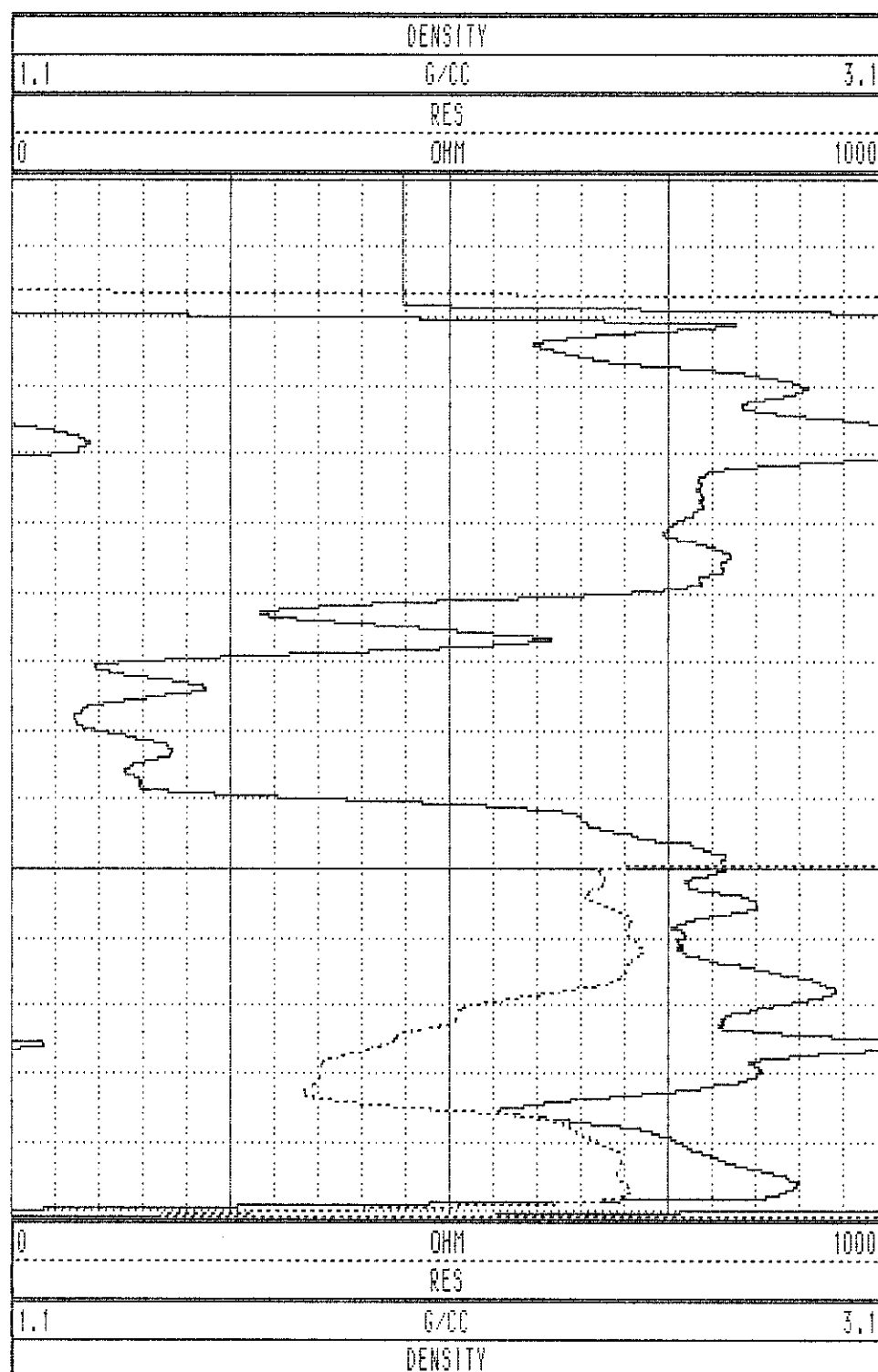
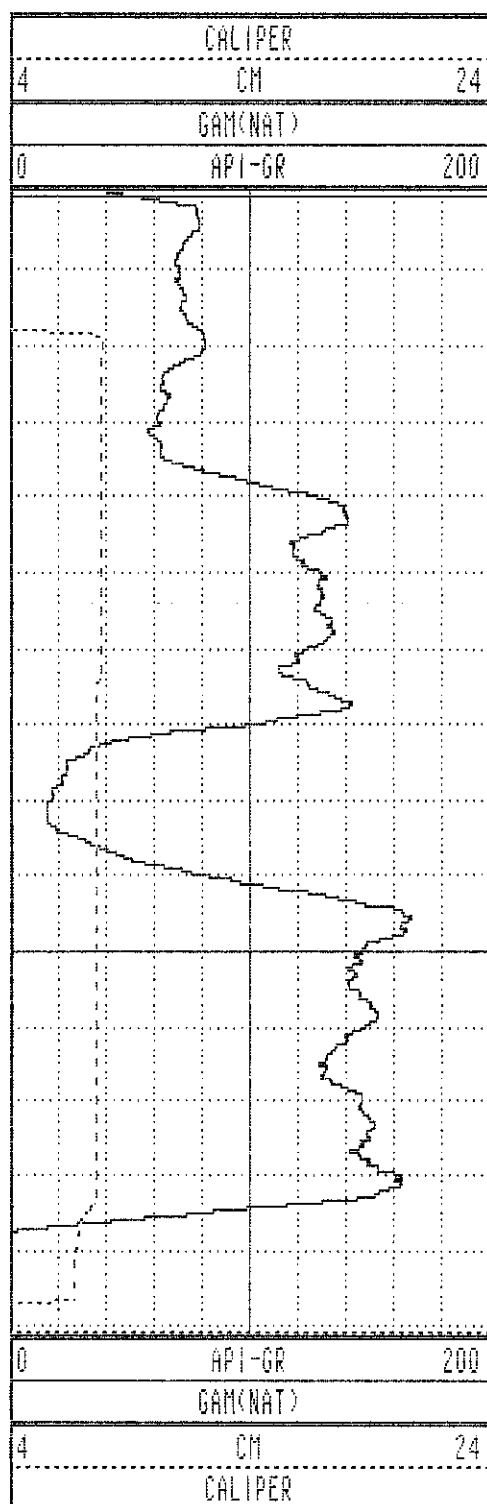
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96122 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/09/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 13 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.12 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96122 08/09/96 958

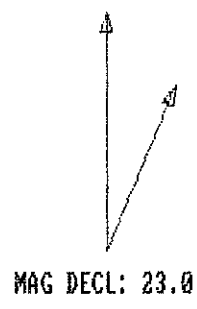
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.01 | 0.0 | 238.2 | 2.2 | 263.7 |
| 3.0 | 3.00 | -0.01 | -0.05 | 0.0 | 260.1 | 2.5 | 262.7 |
| 4.0 | 4.00 | -0.02 | -0.09 | 0.1 | 260.5 | 2.6 | 261.2 |
| 5.0 | 5.00 | -0.02 | -0.14 | 0.1 | 261.2 | 2.5 | 263.2 |
| 6.0 | 6.00 | -0.03 | -0.18 | 0.2 | 261.6 | 2.6 | 255.9 |
| 7.0 | 6.99 | -0.03 | -0.24 | 0.2 | 262.0 | 3.0 | 264.2 |
| 8.0 | 7.99 | -0.04 | -0.29 | 0.3 | 261.8 | 3.4 | 260.3 |
| 9.0 | 8.99 | -0.05 | -0.35 | 0.4 | 261.5 | 3.7 | 256.0 |
| 10.0 | 9.99 | -0.07 | -0.42 | 0.4 | 261.1 | 4.3 | 259.7 |
| 11.0 | 10.99 | -0.09 | -0.50 | 0.5 | 259.6 | 5.2 | 245.1 |
| 12.0 | 11.98 | -0.12 | -0.58 | 0.6 | 258.0 | 5.0 | 237.3 |
| 13.0 | 12.97 | -0.17 | -0.69 | 0.7 | 256.1 | 7.7 | 246.5 |
| 14.0 | 13.96 | -0.23 | -0.81 | 0.8 | 253.8 | 8.0 | 240.5 |
| 14.5 | 14.44 | -0.27 | -0.87 | 0.9 | 252.8 | 8.7 | 238.0 |

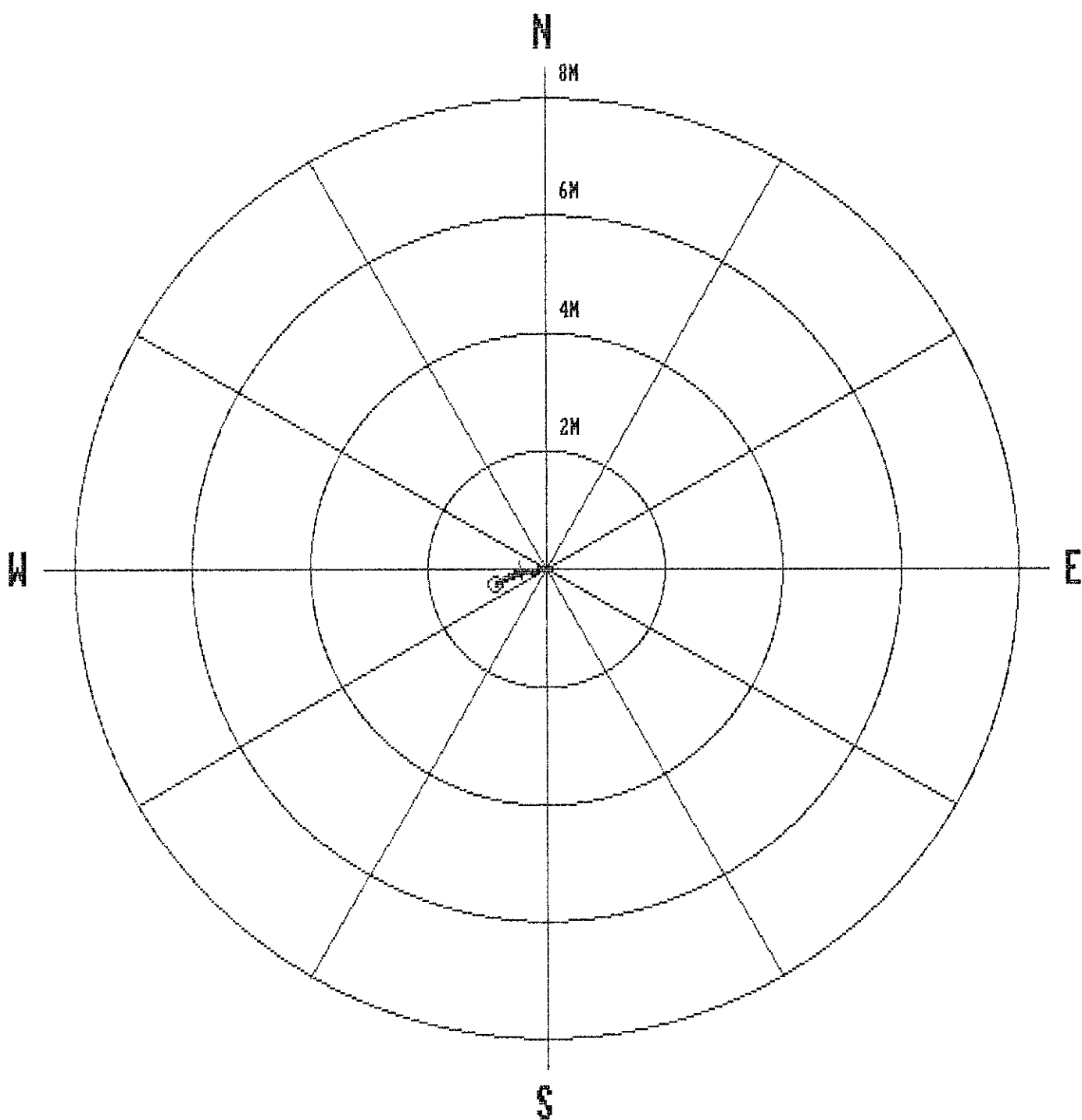
WRH-96123

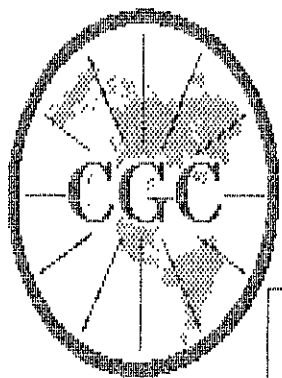
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96123
 DATE OF LOG: 08/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 14.44 M
 AZIMUTH: 252.8
 DISTANCE: 0.9 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



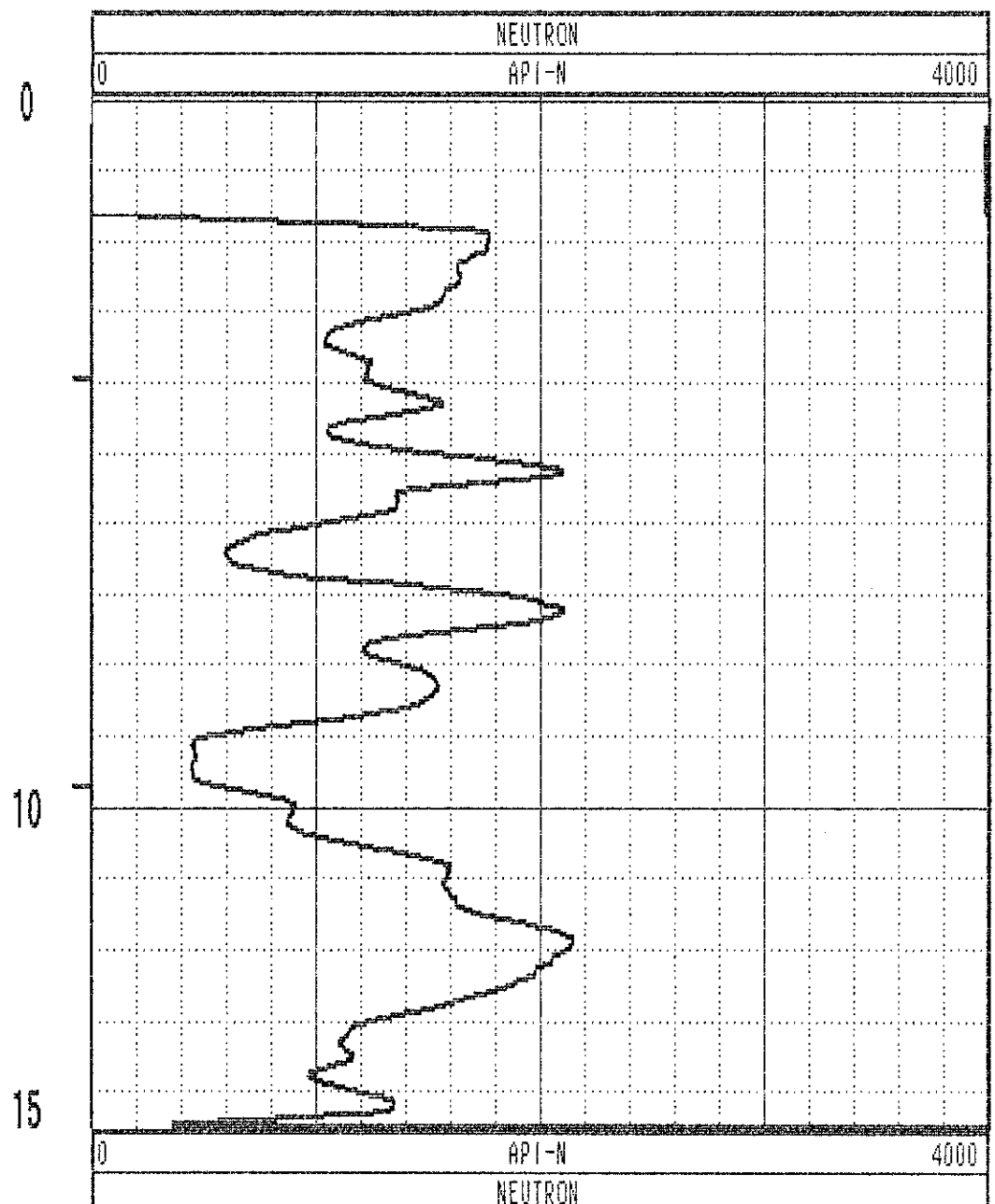
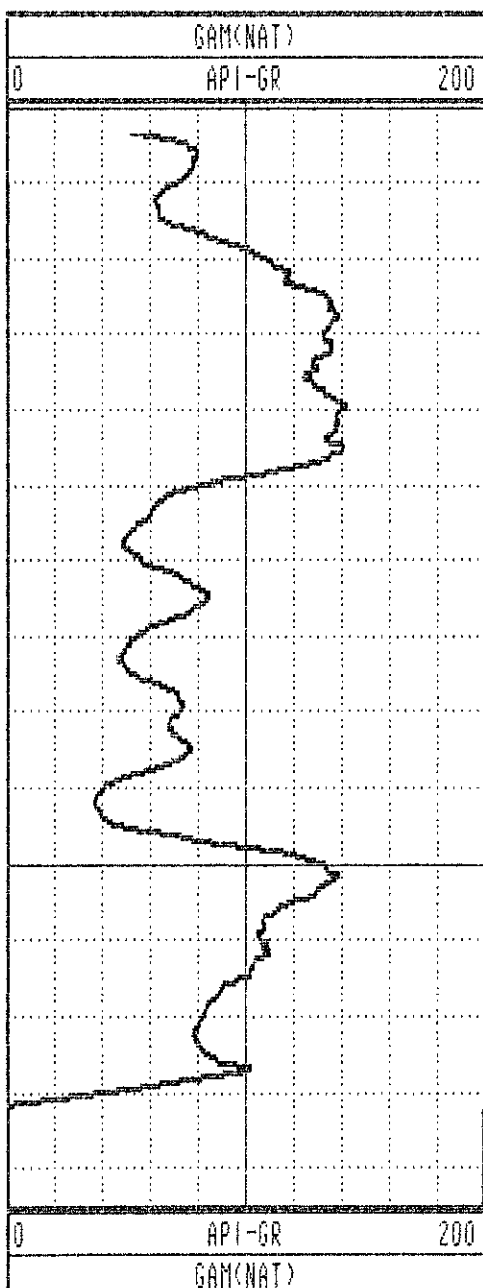


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | |
|-------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96123 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 12 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 14.53 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.38 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : PLASTIC | FIELD OFFICE |
| CASING THICKNESS: | .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | |
| | | ELEVATIONS |
| | | KB : |
| | | DF : |
| | | GL : |
| | | FILE : ORIGINAL |
| | | TYPE : 9055A |
| | | LOG : 8 |
| | | PLOT : PINE 4 |
| | | THRESH: 10000 |

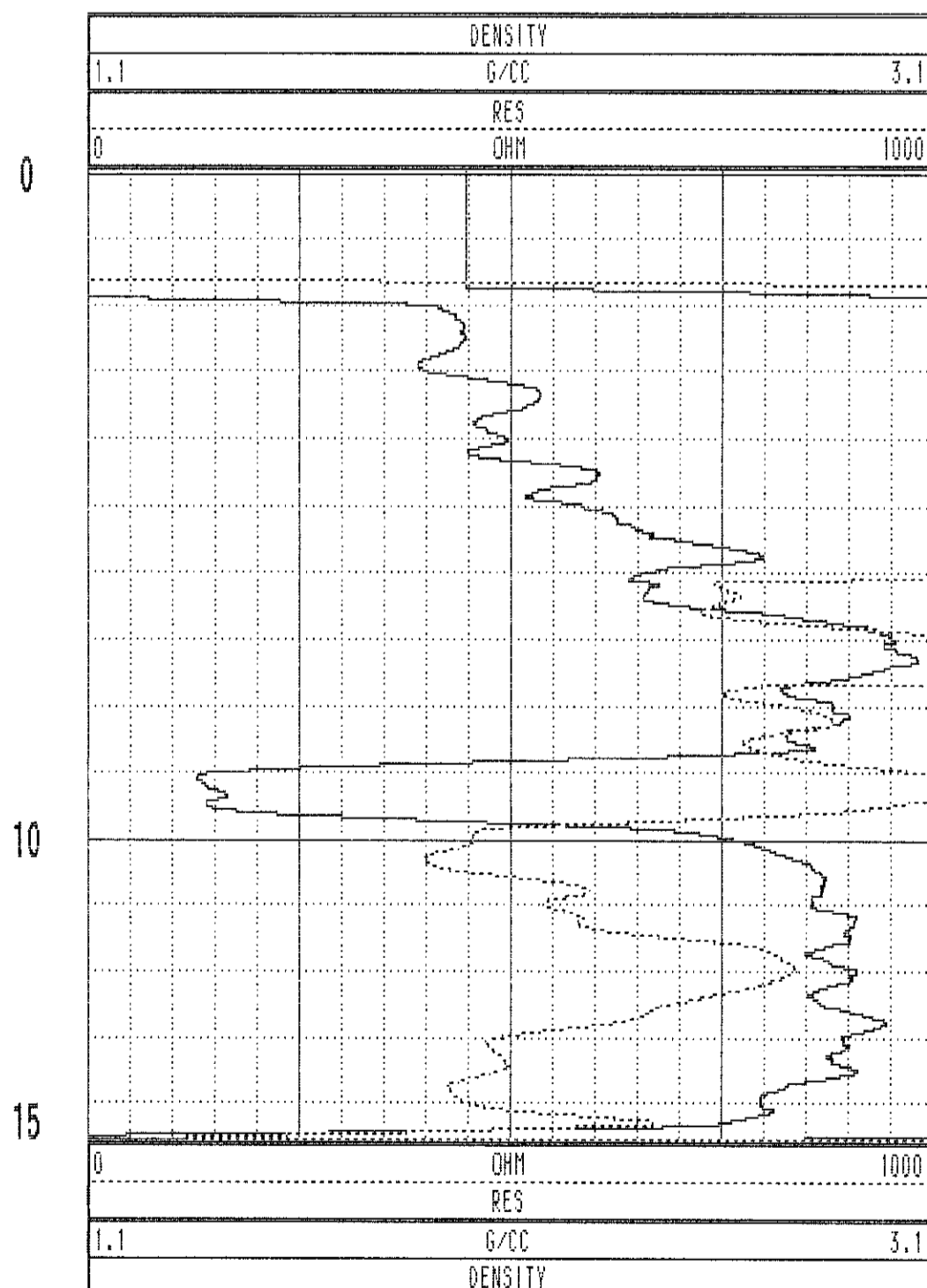
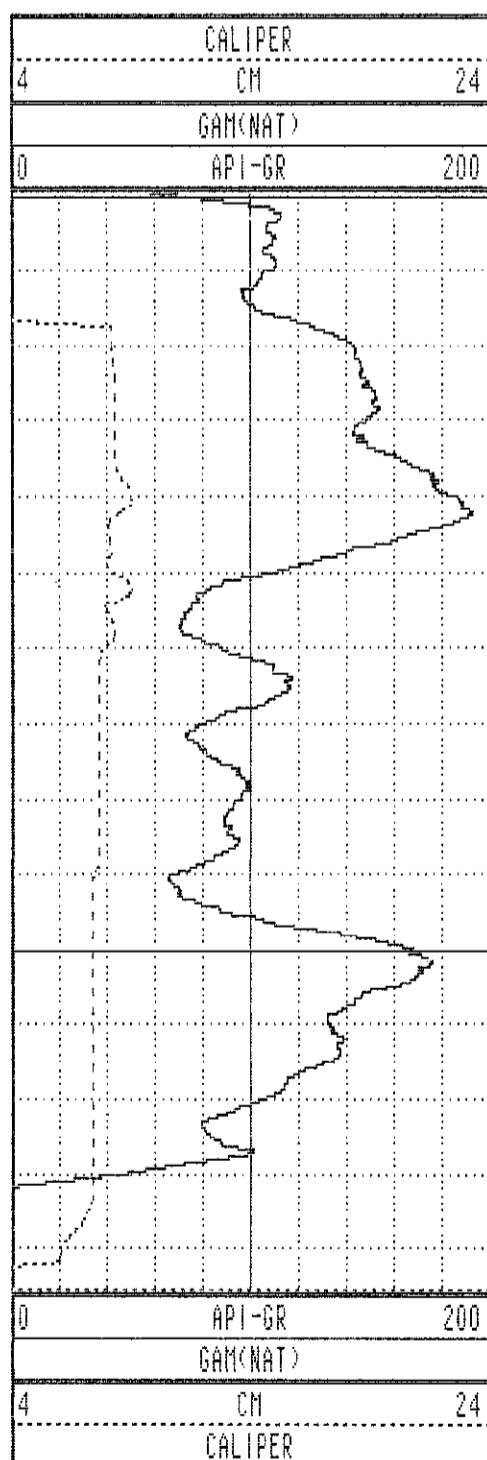
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96123 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 14 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 14.58 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96123 08/08/96 958

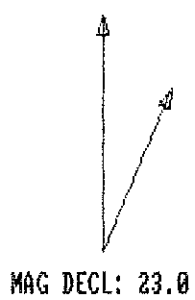
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 239.0 | 0.7 | 237.9 |
| 3.0 | 3.00 | -0.00 | -0.01 | 0.0 | 249.5 | 0.5 | 268.3 |
| 4.0 | 4.00 | -0.01 | -0.02 | 0.0 | 249.0 | 0.9 | 221.7 |
| 5.0 | 5.00 | -0.02 | -0.04 | 0.0 | 244.7 | 1.3 | 250.3 |
| 6.0 | 6.00 | -0.03 | -0.06 | 0.1 | 244.7 | 1.4 | 254.9 |
| 7.0 | 7.00 | -0.04 | -0.08 | 0.1 | 245.0 | 1.6 | 254.6 |
| 8.0 | 8.00 | -0.05 | -0.11 | 0.1 | 245.5 | 1.8 | 239.1 |
| 9.0 | 9.00 | -0.06 | -0.15 | 0.2 | 246.7 | 1.8 | 246.2 |
| 10.0 | 10.00 | -0.08 | -0.19 | 0.2 | 247.4 | 2.6 | 250.2 |
| 11.0 | 11.00 | -0.10 | -0.24 | 0.3 | 247.8 | 3.3 | 252.5 |
| 11.8 | 11.81 | -0.11 | -0.28 | 0.3 | 248.1 | 3.2 | 251.0 |

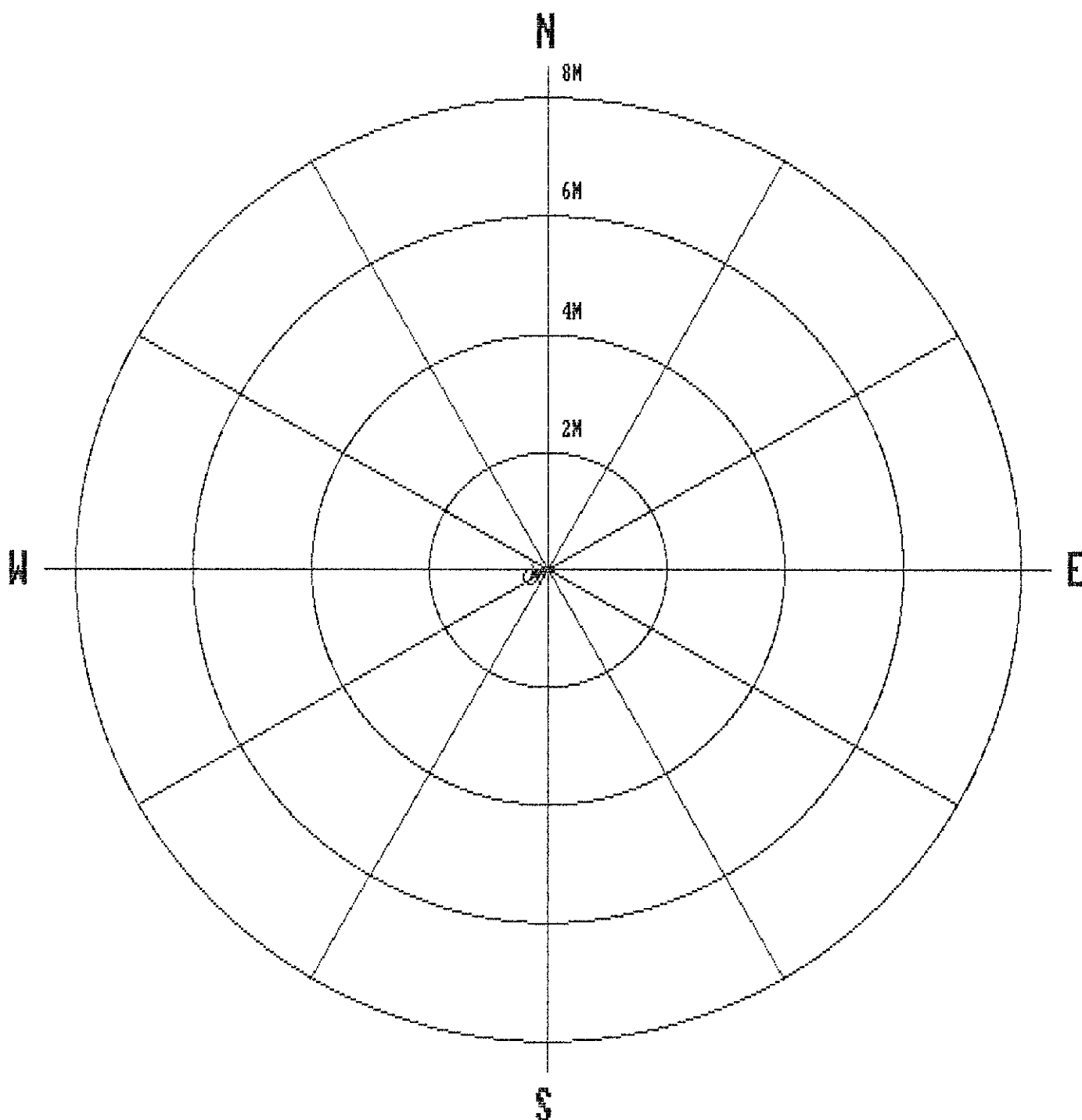
WRH 96124

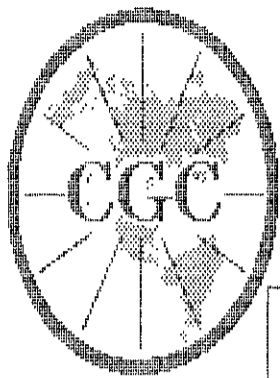
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96124
 DATE OF LOG: 08/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 11.81 M
 AZIMUTH: 248.1
 DISTANCE: 0.3 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96124
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

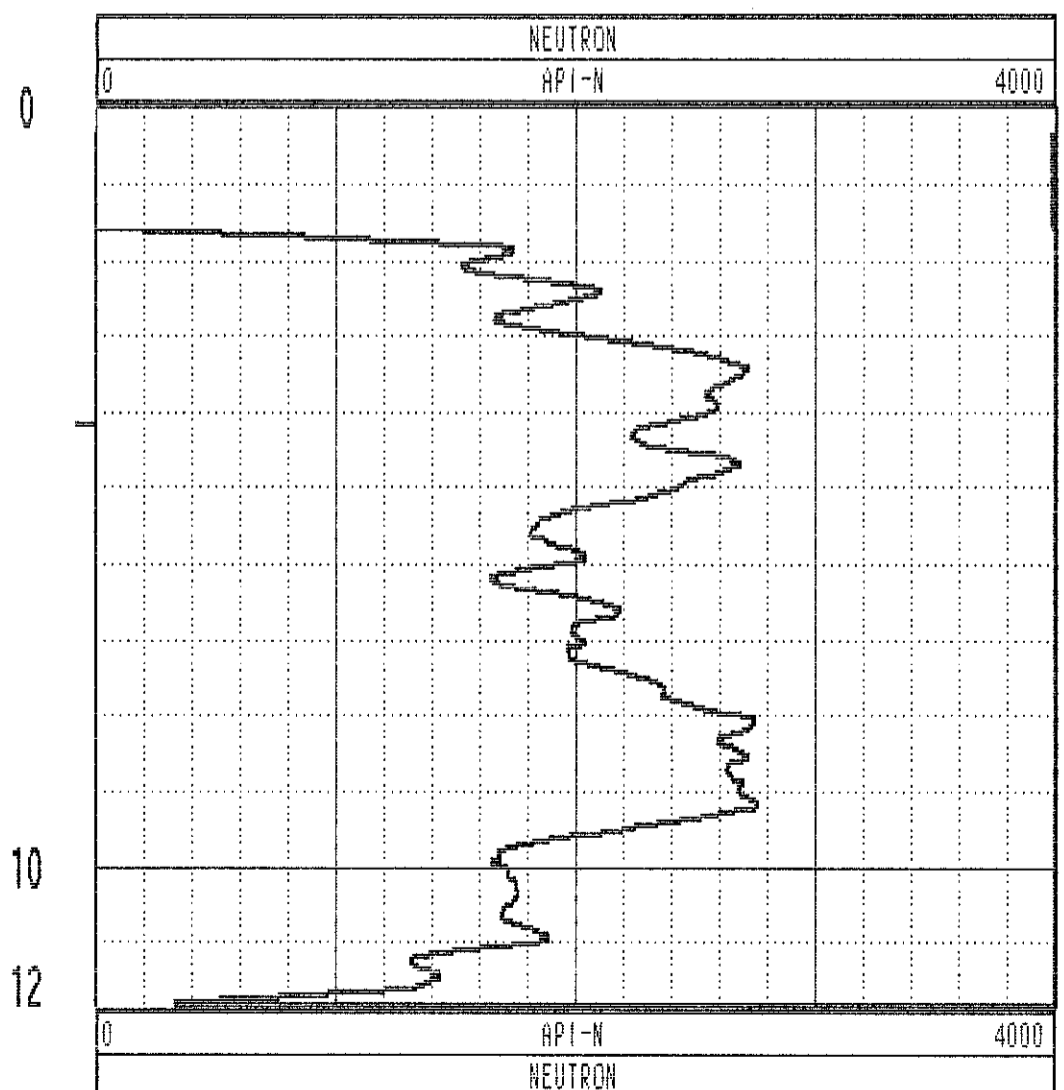
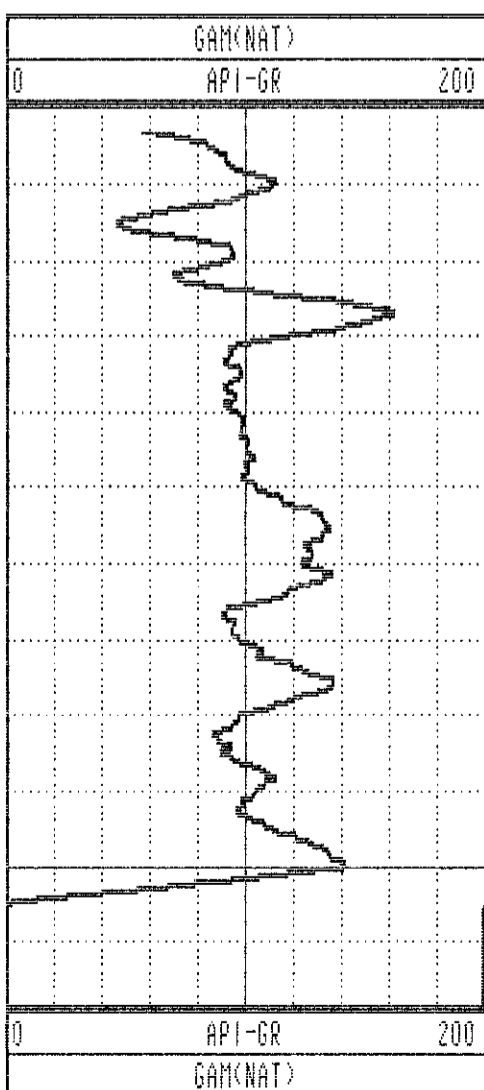
OTHER SERVICES:

DATE : 08/08/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 11 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 11.88 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.34 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

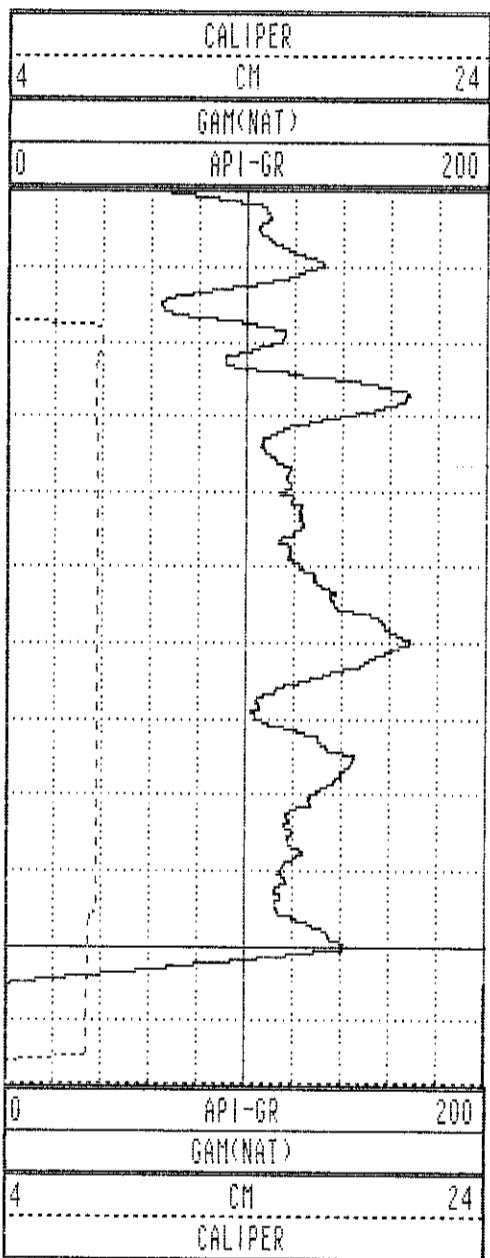
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



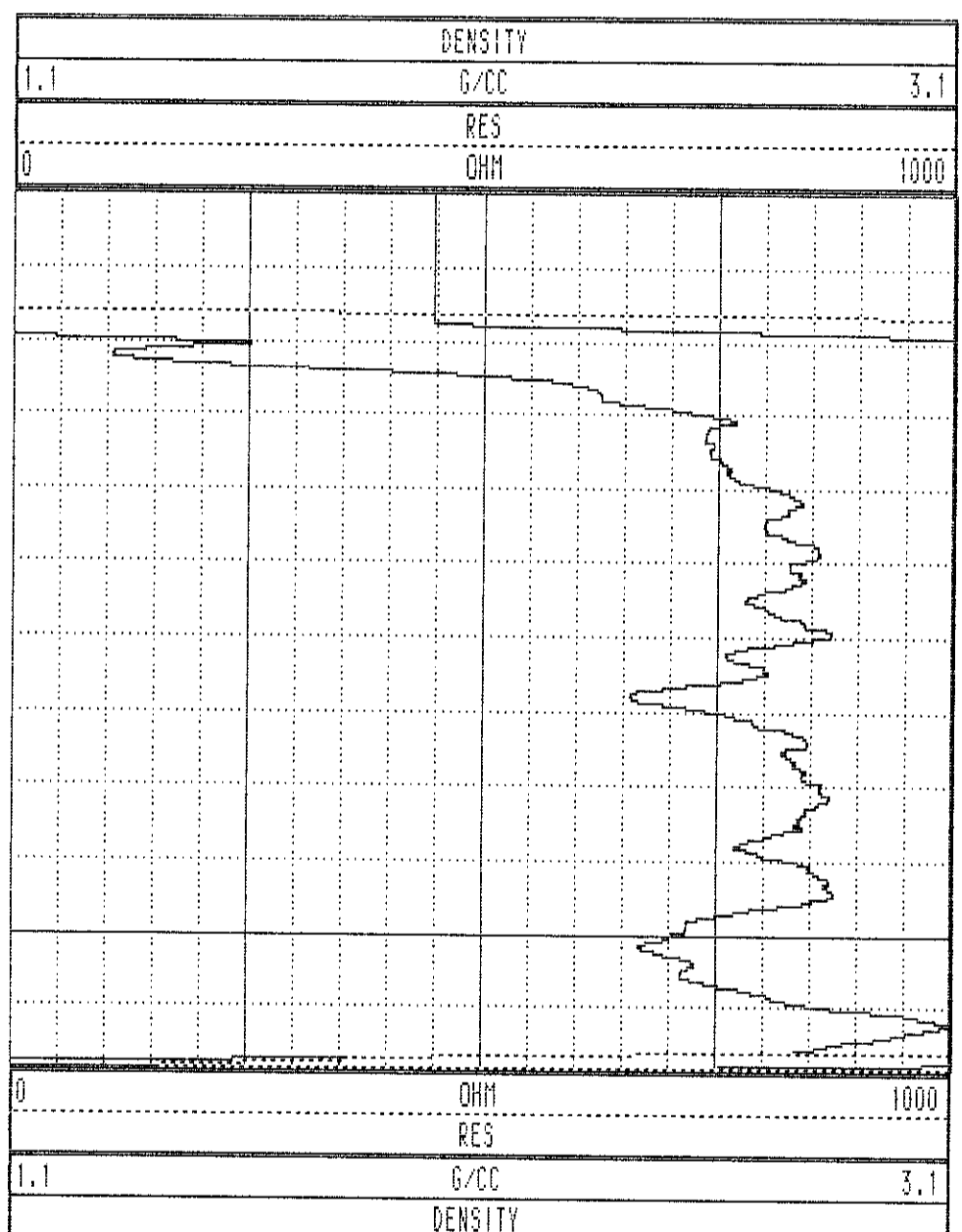
GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96124 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 11 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 11.88 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
12



WRH-96124 08/08/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

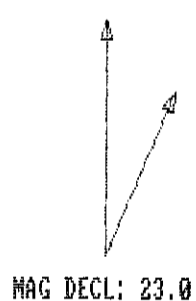
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|-------------------|------|----------|--------------|--------------|
| 0 | NOV10.95 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 136.6 | 1.5 | 118.4 |
| 3.0 | 3.00 | -0.01 | 0.01 | 0.0 | 129.0 | 0.7 | 177.2 |
| 4.0 | 4.00 | -0.00 | 0.01 | 0.0 | 105.5 | 0.4 | 23.6 |
| 5.0 | 5.00 | 0.00 | 0.02 | 0.0 | 83.4 | 0.6 | 40.4 |
| 6.0 | 6.00 | 0.01 | 0.02 | 0.0 | 65.4 | 0.4 | 15.0 |
| 7.0 | 7.00 | 0.02 | 0.03 | 0.0 | 57.9 | 0.8 | 20.5 |
| 8.0 | 8.00 | 0.03 | 0.03 | 0.0 | 48.9 | 0.7 | 49.9 |
| 9.0 | 9.00 | 0.04 | 0.04 | 0.1 | 43.4 | 0.8 | 11.7 |
| 10.0 | 10.00 | 0.05 | 0.04 | 0.1 | 38.3 | 1.2 | 23.6 |
| 11.0 | 11.00 | 0.07 | 0.05 | 0.1 | 34.8 | 1.3 | 10.6 |
| 12.0 | 12.00 | 0.09 | 0.05 | 0.1 | 30.9 | 1.2 | 9.3 |
| 13.0 | 13.00 | 0.12 | 0.06 | 0.1 | 27.2 | 1.7 | 8.8 |
| 14.0 | 14.00 | 0.15 | 0.07 | 0.2 | 24.3 | 2.2 | 15.8 |
| 15.0 | 15.00 | 0.20 | 0.08 | 0.2 | 21.6 | 3.0 | 9.2 |
| 16.0 | 16.00 | 0.24 | 0.09 | 0.3 | 20.1 | 3.1 | 15.0 |
| 17.0 | 16.99 | 0.29 | 0.11 | 0.3 | 19.7 | 2.8 | 22.3 |
| 17.7 | 17.71 | 0.33 | 0.12 | 0.3 | 20.0 | 2.7 | 25.1 |

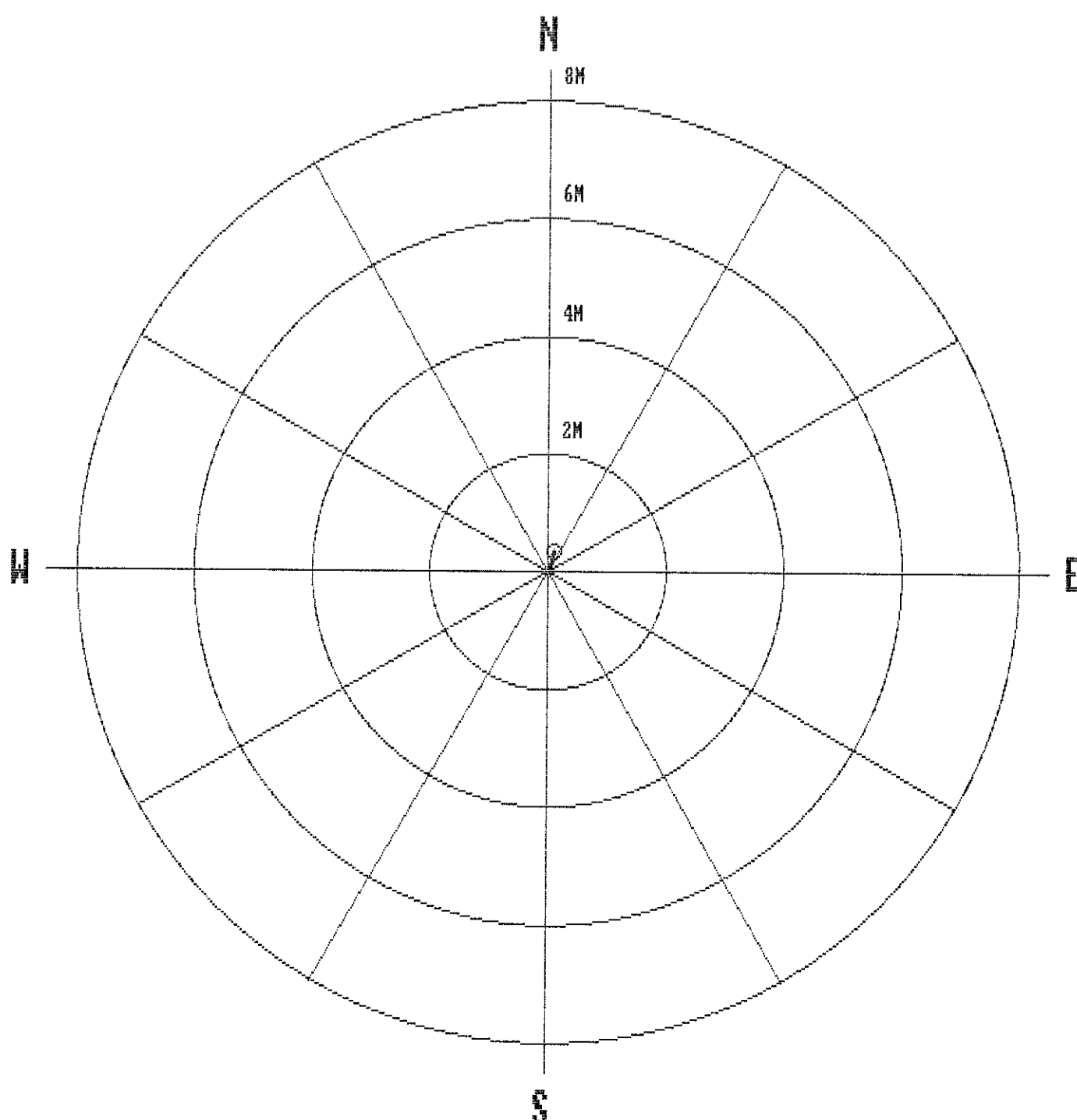
WILL CREEK 56125

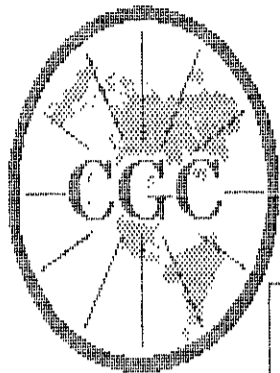
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96125
 DATE OF LOG: 08/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 17.71 M
 AZIMUTH: 20.0
 DISTANCE: 0.3 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96125
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 08/08/96
 DEPTH DRILLER : 17
 LOG BOTTOM : 17.77
 LOG TOP : 0.52

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : PLASTIC
 CASING THICKNESS: .25

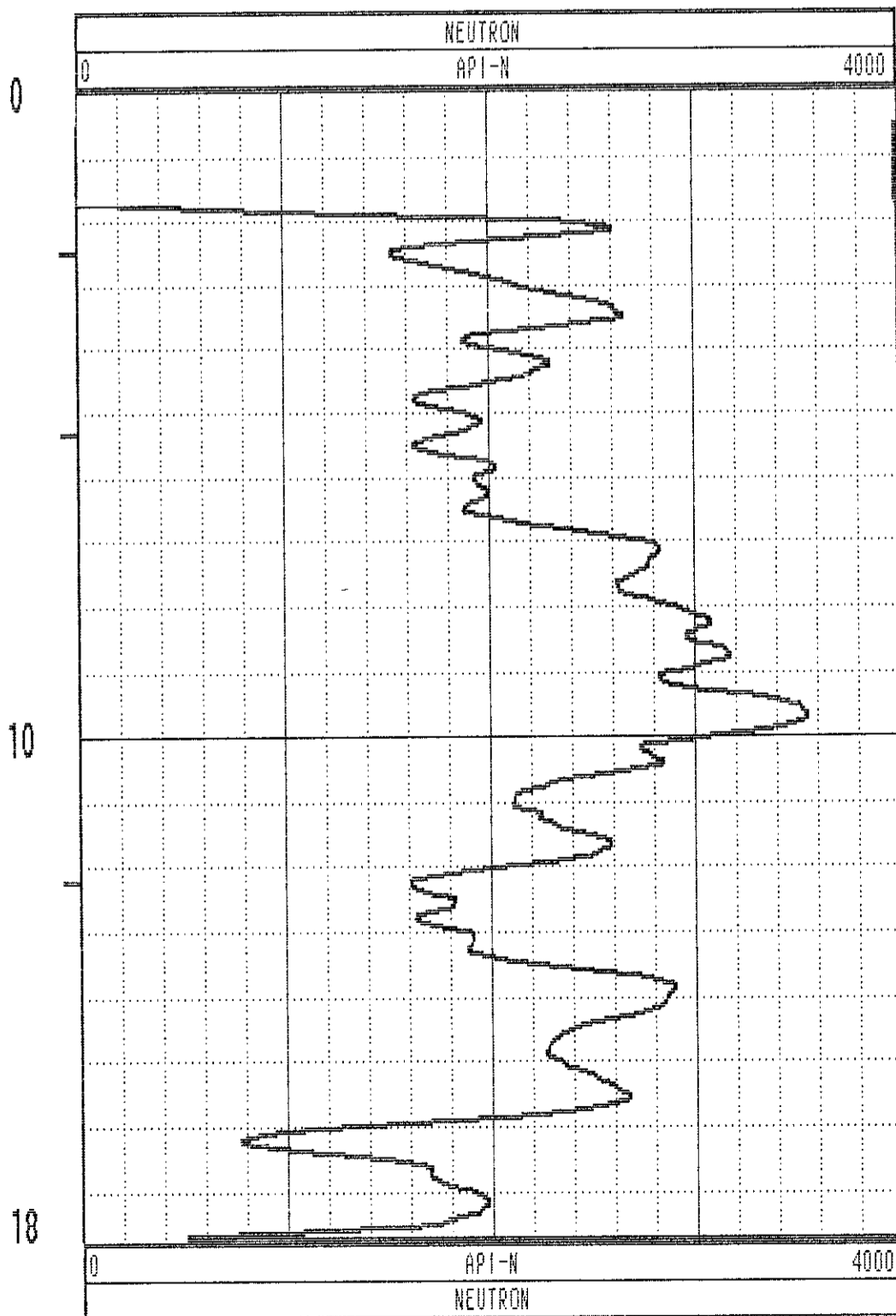
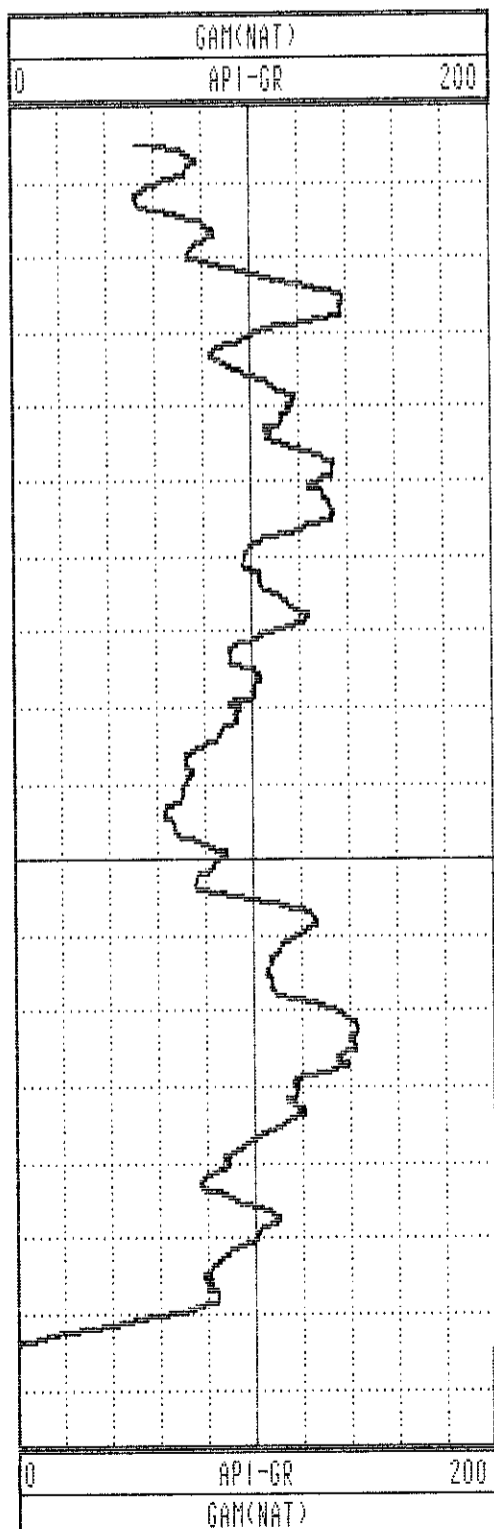
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 7
 PLOT : PINE 4
 THRESH: 10000

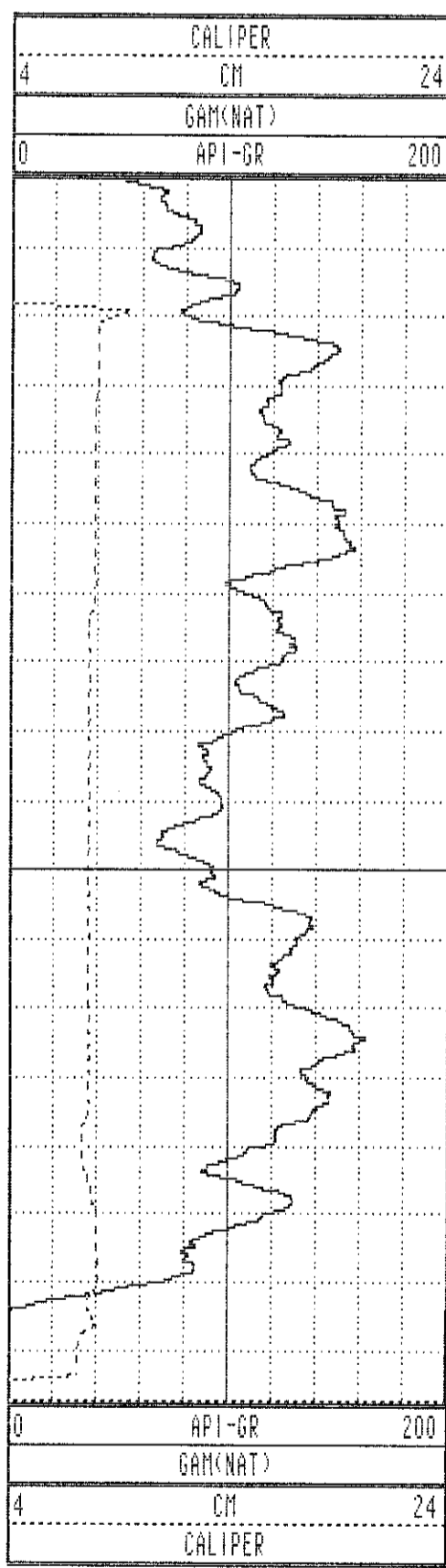
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



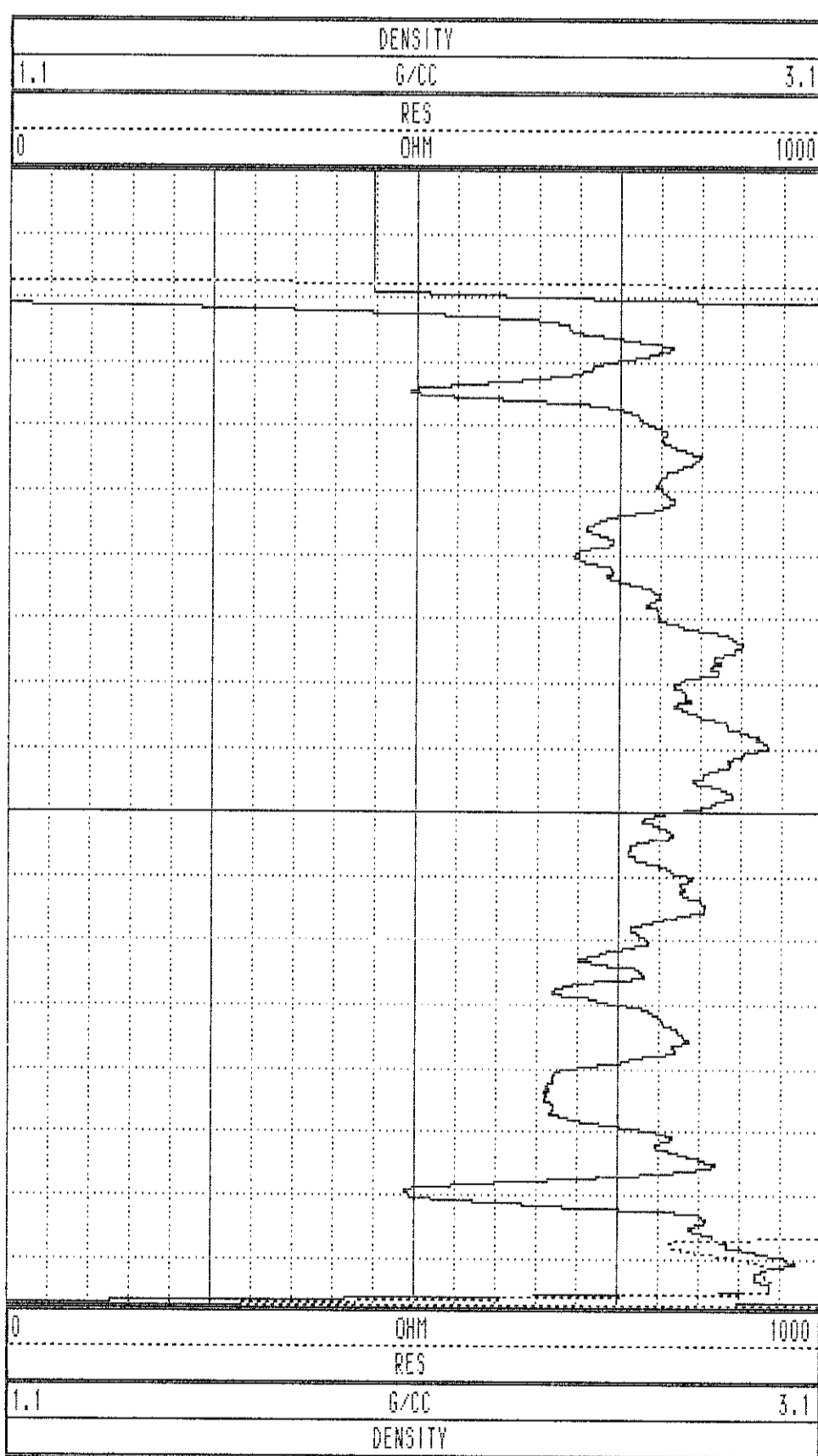
GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96125 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.78 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
18



WRH-96125 08/08/96 958

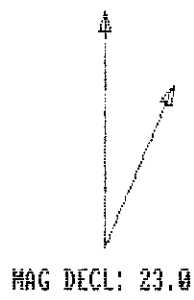
| TOOL CALIBRATION | | | TOOL = 9033AA | SERIAL NUMBER = 958 | |
|------------------|----------|----------|---------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.01 | 0.0 | 65.5 | 1.9 | 73.2 |
| 3.0 | 3.00 | 0.01 | 0.03 | 0.0 | 64.8 | 1.3 | 65.8 |
| 4.0 | 4.00 | 0.02 | 0.05 | 0.1 | 65.8 | 1.6 | 63.7 |
| 5.0 | 5.00 | 0.04 | 0.09 | 0.1 | 66.2 | 2.3 | 66.2 |
| 6.0 | 6.00 | 0.06 | 0.14 | 0.1 | 66.1 | 3.1 | 61.5 |
| 7.0 | 7.00 | 0.09 | 0.19 | 0.2 | 65.0 | 3.9 | 61.9 |
| 8.0 | 7.99 | 0.12 | 0.25 | 0.3 | 64.9 | 3.7 | 62.6 |
| 9.0 | 8.99 | 0.14 | 0.31 | 0.3 | 64.7 | 3.7 | 61.9 |
| 10.0 | 9.99 | 0.17 | 0.37 | 0.4 | 65.3 | 4.2 | 66.1 |
| 11.0 | 10.99 | 0.19 | 0.44 | 0.5 | 66.4 | 4.0 | 72.9 |
| 12.0 | 11.98 | 0.21 | 0.51 | 0.5 | 67.7 | 4.0 | 79.4 |
| 13.0 | 12.98 | 0.22 | 0.58 | 0.6 | 68.9 | 4.0 | 80.1 |
| 14.0 | 13.98 | 0.23 | 0.64 | 0.7 | 70.4 | 3.3 | 88.2 |
| 15.0 | 14.98 | 0.22 | 0.69 | 0.7 | 72.4 | 3.3 | 98.4 |
| 16.0 | 15.98 | 0.21 | 0.76 | 0.8 | 74.6 | 4.0 | 102.9 |
| 17.0 | 16.97 | 0.19 | 0.82 | 0.8 | 76.9 | 4.1 | 103.0 |
| 18.0 | 17.97 | 0.17 | 0.90 | 0.9 | 79.0 | 4.5 | 101.2 |
| 19.0 | 18.97 | 0.16 | 0.98 | 1.0 | 80.9 | 4.6 | 101.8 |
| 20.0 | 19.96 | 0.14 | 1.05 | 1.1 | 82.7 | 4.6 | 106.6 |
| 21.0 | 20.96 | 0.11 | 1.13 | 1.1 | 84.6 | 4.9 | 113.5 |
| 22.0 | 21.96 | 0.07 | 1.21 | 1.2 | 86.6 | 5.0 | 117.7 |
| 23.0 | 22.95 | 0.02 | 1.28 | 1.3 | 88.9 | 5.1 | 126.0 |
| 24.0 | 23.95 | -0.03 | 1.35 | 1.4 | 91.4 | 5.4 | 135.3 |
| 25.0 | 24.94 | -0.11 | 1.41 | 1.4 | 94.4 | 5.7 | 149.6 |
| 26.0 | 25.94 | -0.19 | 1.45 | 1.5 | 97.4 | 5.3 | 155.9 |
| 27.0 | 26.94 | -0.28 | 1.49 | 1.5 | 100.6 | 6.3 | 158.0 |
| 28.0 | 27.93 | -0.38 | 1.52 | 1.6 | 104.0 | 6.6 | 159.7 |
| 29.0 | 28.92 | -0.49 | 1.57 | 1.6 | 107.3 | 6.8 | 162.4 |
| 29.7 | 29.62 | -0.57 | 1.60 | 1.7 | 109.6 | 7.1 | 162.3 |

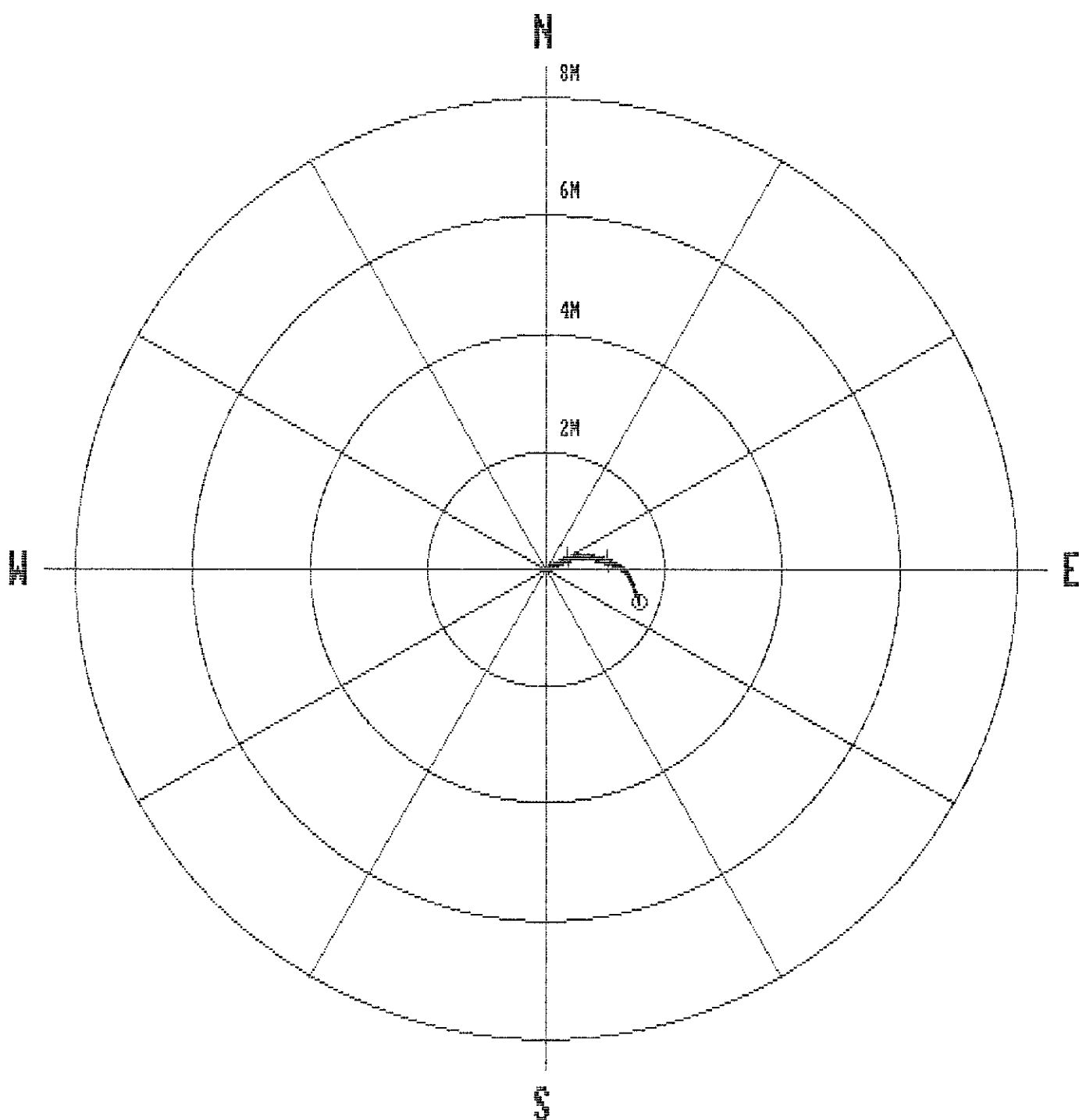
WHR 96126

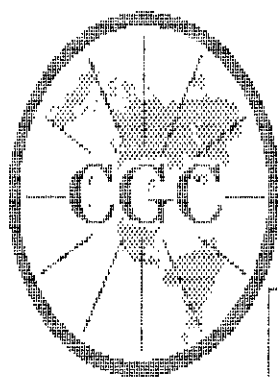
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WHR-96126
 DATE OF LOG: 08/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.62 M
 AZIMUTH: 109.6
 DISTANCE: 1.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



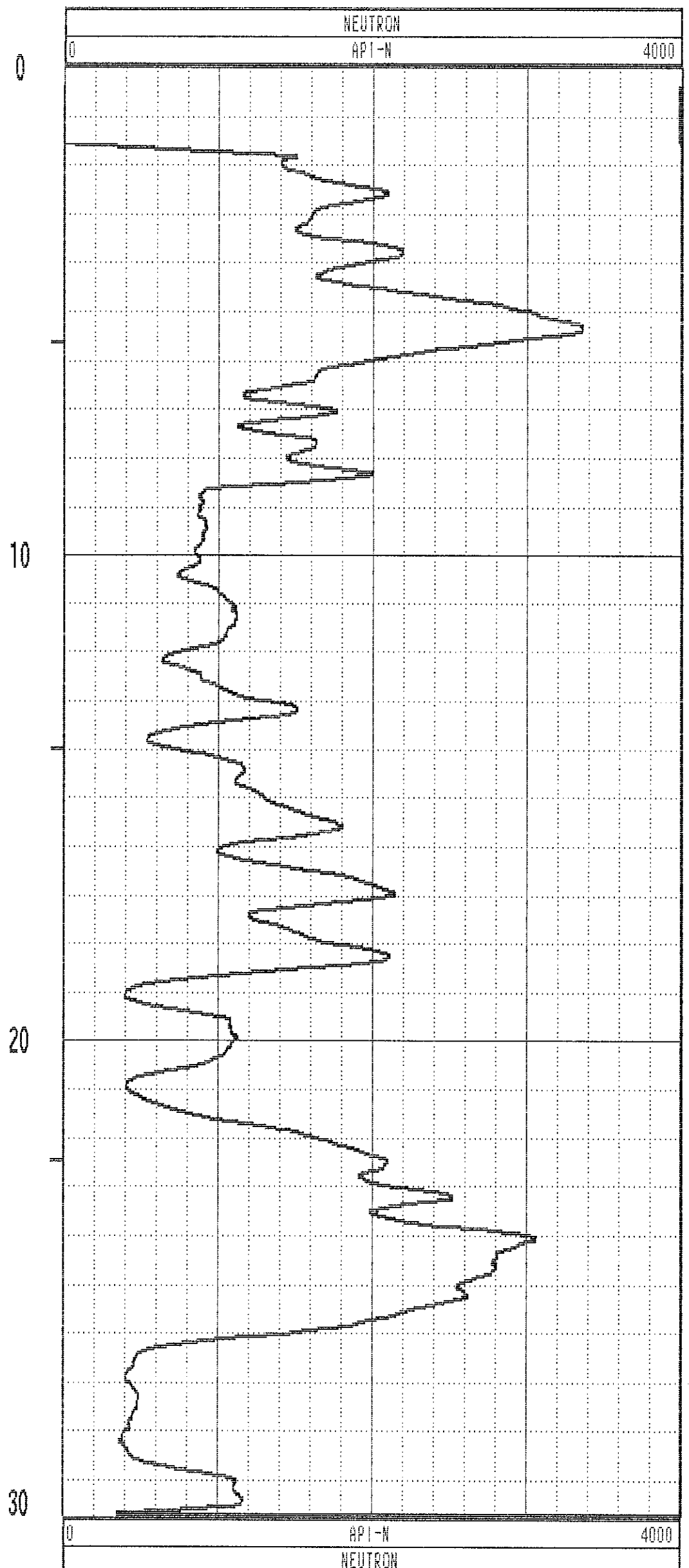
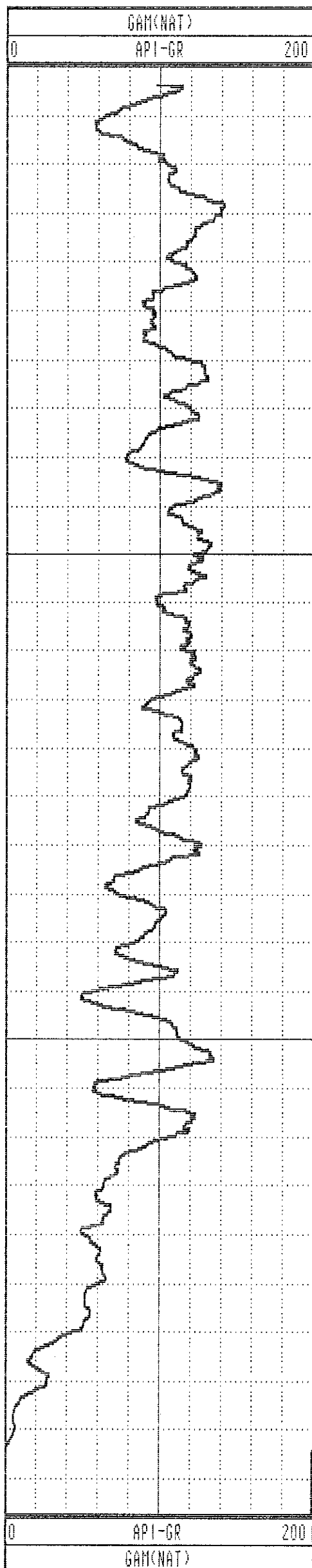


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96126 | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.75 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.42 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

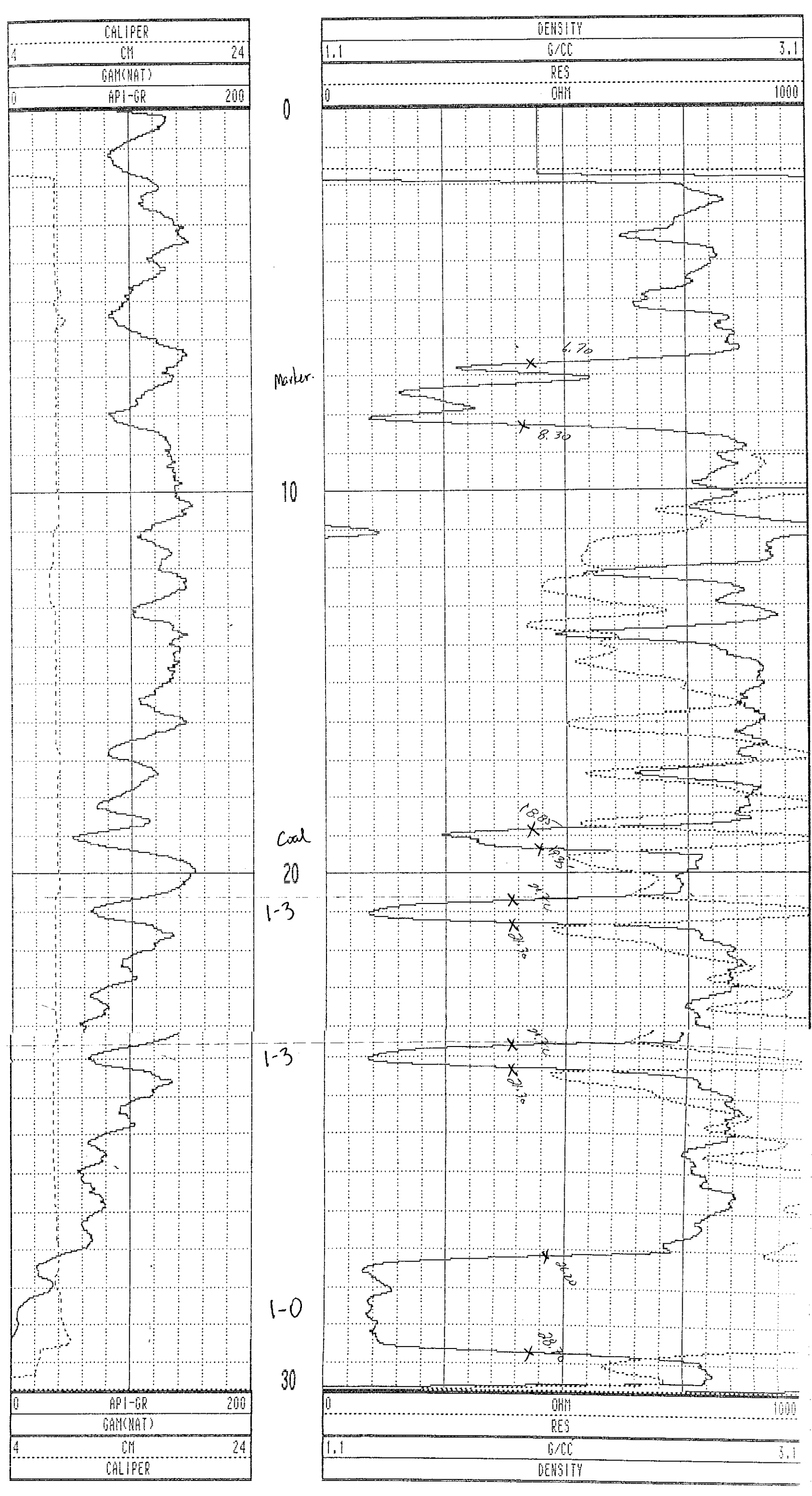


Picks

GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96126 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.76 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 2 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



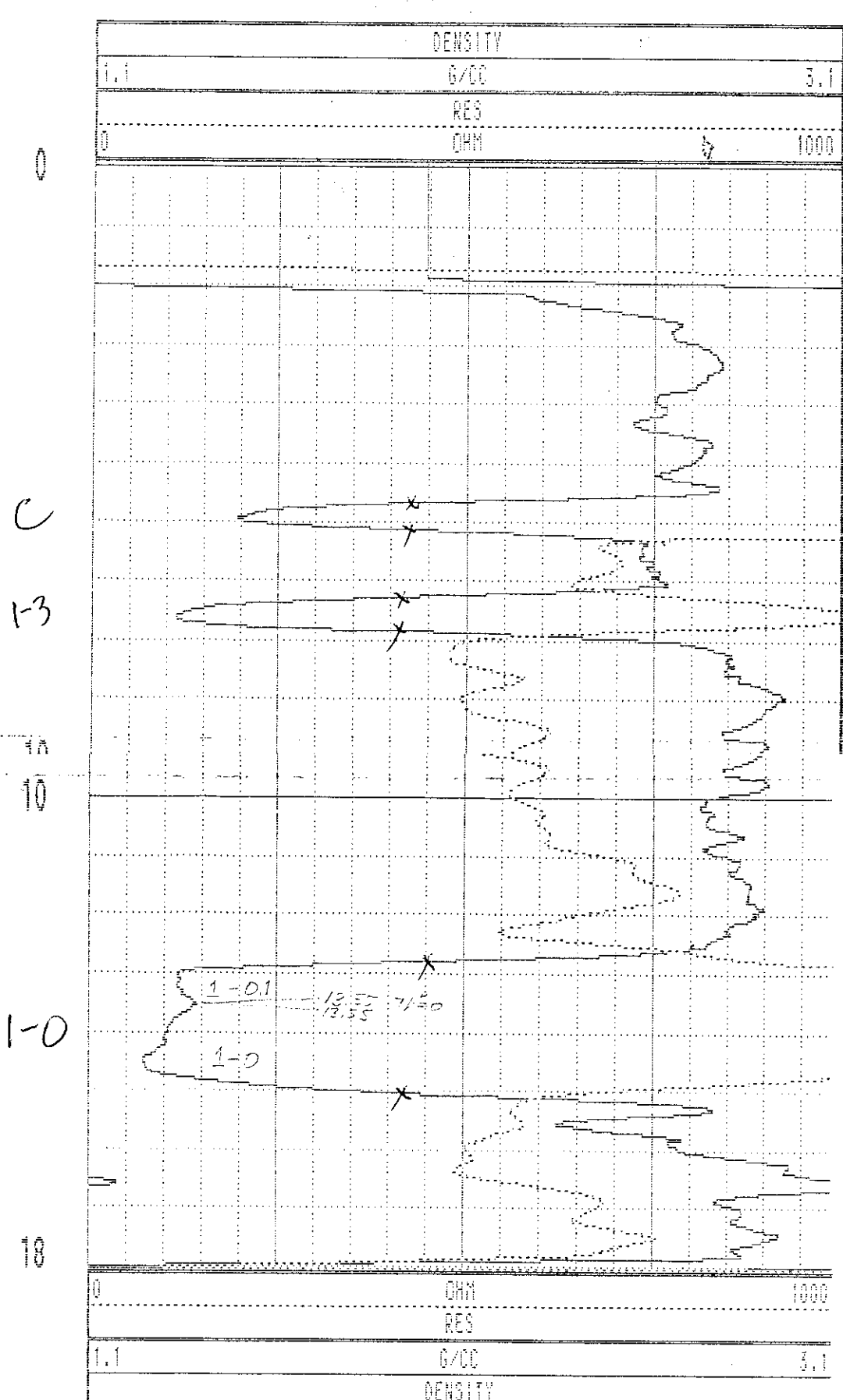
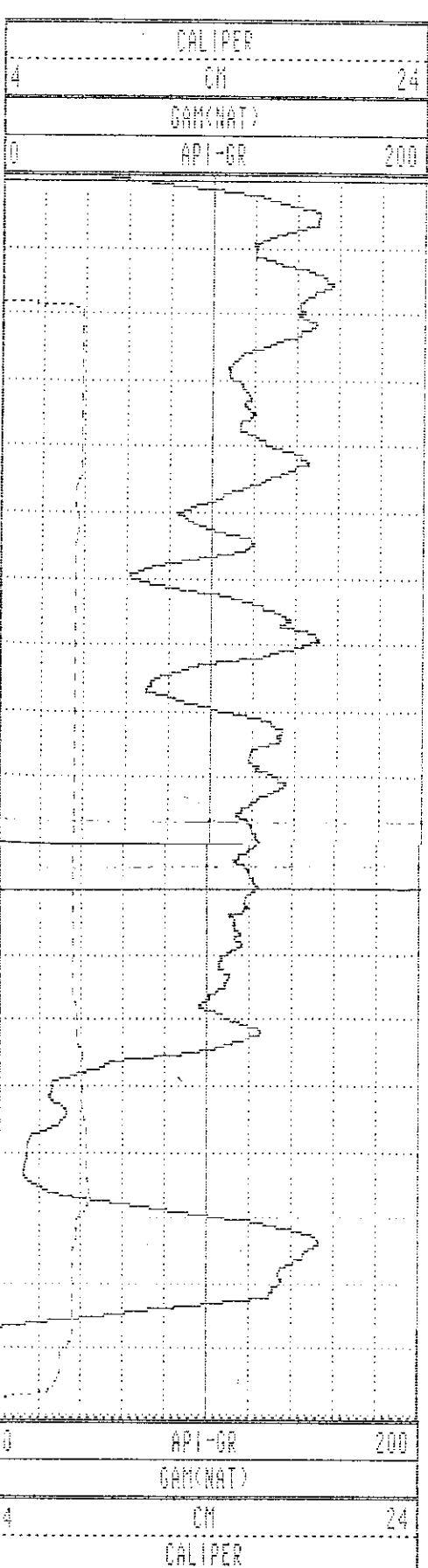
WRH-96126 08/08/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WFLI : WRH-96127
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOMNSHIP : RANGE :
 DATE : 08/08/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 18.08 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96127 08/08/96 958

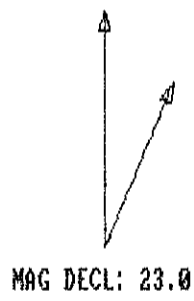
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYVH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYVH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|------|------|-----|------|------|------|
| 1.4 | 1.44 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.4 | 2.33 | 0.27 | 0.23 | 0.3 | 40.4 | 35.9 | 38.2 |
| 3.4 | 3.15 | 0.71 | 0.59 | 0.9 | 39.7 | 34.7 | 39.5 |
| 4.4 | 3.97 | 1.15 | 0.94 | 1.5 | 39.2 | 34.5 | 37.2 |
| 5.4 | 4.80 | 1.60 | 1.28 | 2.1 | 38.7 | 34.6 | 40.4 |
| 6.4 | 5.62 | 2.06 | 1.62 | 2.6 | 38.2 | 34.5 | 36.1 |
| 7.4 | 6.44 | 2.52 | 1.95 | 3.2 | 37.8 | 34.2 | 36.7 |
| 8.4 | 7.27 | 2.98 | 2.28 | 3.8 | 37.4 | 34.1 | 36.0 |
| 9.4 | 8.10 | 3.43 | 2.60 | 4.3 | 37.2 | 33.5 | 38.6 |
| 10.4 | 8.93 | 3.88 | 2.92 | 4.9 | 37.0 | 33.8 | 36.3 |
| 11.4 | 9.76 | 4.33 | 3.25 | 5.4 | 36.9 | 34.5 | 34.6 |
| 12.4 | 10.59 | 4.78 | 3.58 | 6.0 | 36.8 | 33.5 | 36.0 |
| 13.4 | 11.43 | 5.23 | 3.90 | 6.5 | 36.7 | 33.4 | 36.2 |
| 14.4 | 12.27 | 5.66 | 4.23 | 7.1 | 36.8 | 33.0 | 37.1 |
| 15.4 | 13.10 | 6.09 | 4.56 | 7.6 | 36.8 | 33.2 | 37.2 |
| 16.4 | 13.95 | 6.53 | 4.88 | 8.1 | 36.8 | 31.6 | 35.2 |
| 17.4 | 14.81 | 6.93 | 5.18 | 8.7 | 36.8 | 0.0 | 0.0 |
| 17.4 | 14.77 | 6.93 | 5.18 | 8.7 | 36.8 | 31.8 | 36.5 |

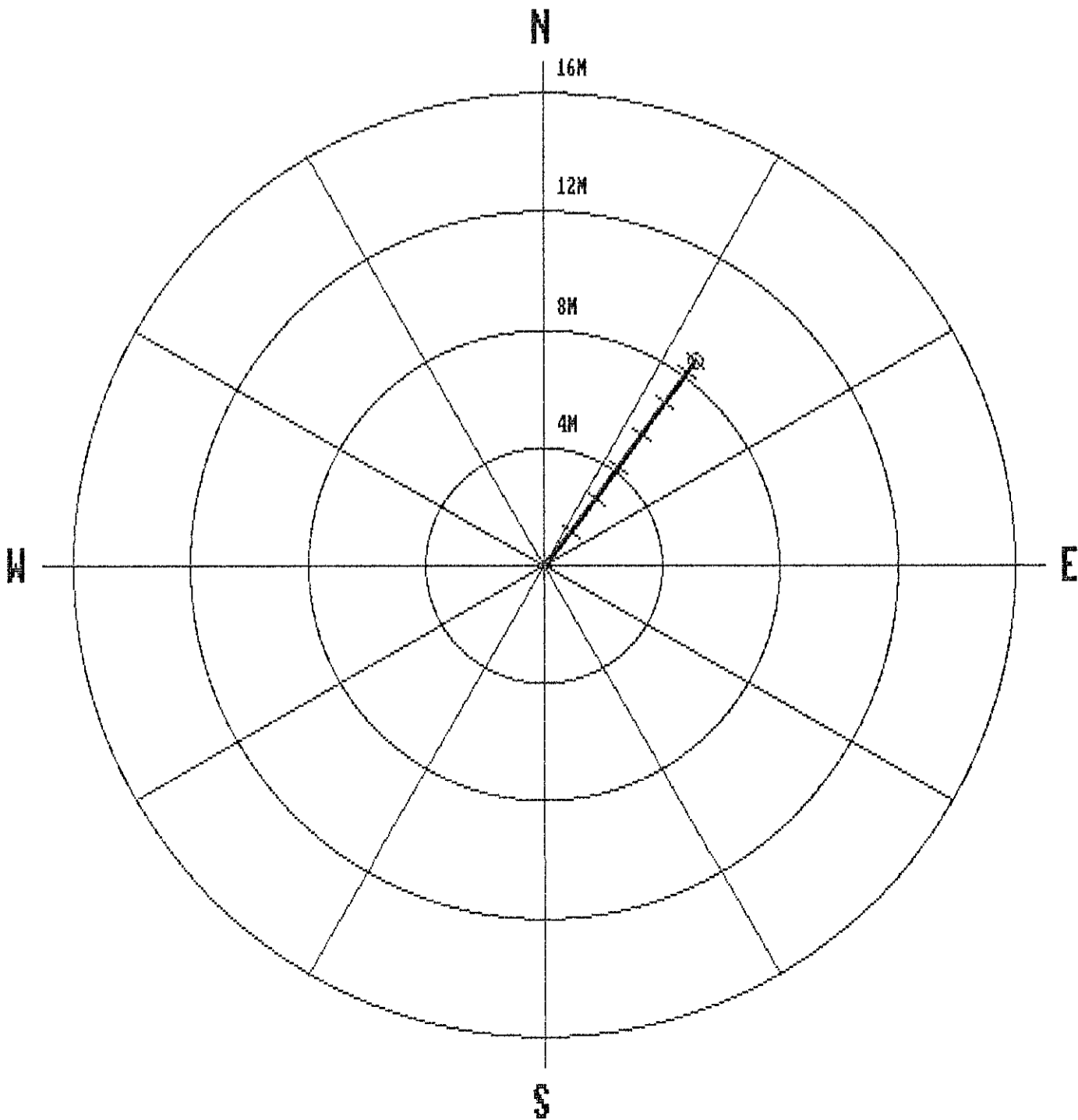
WRH-96128

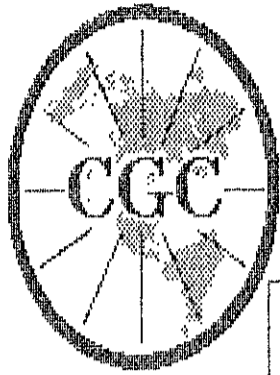
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96128
 DATE OF LOG: 08/08/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 14.77 M
 AZIMUTH: 36.8
 DISTANCE: 8.7 M
 + = 2 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

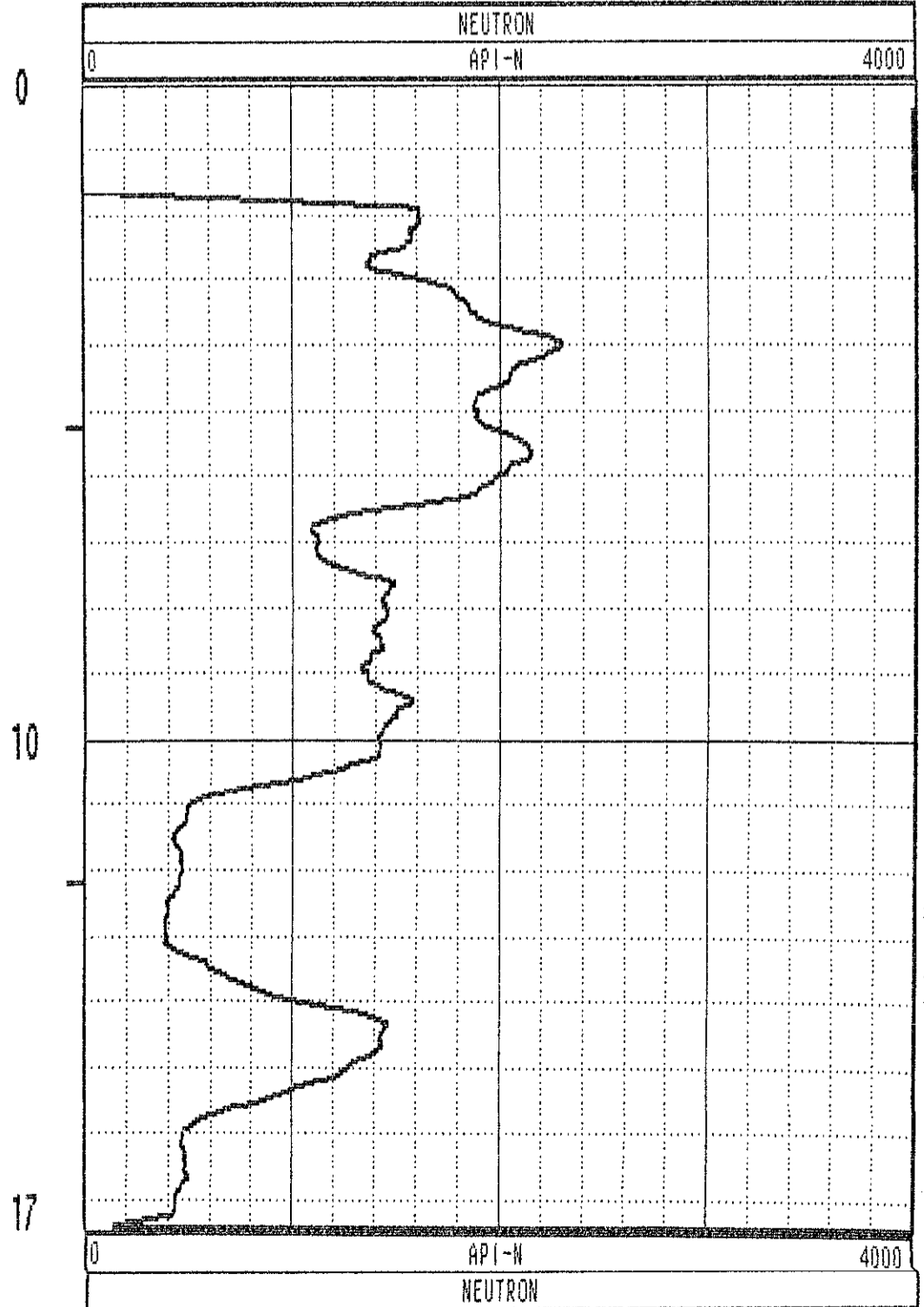
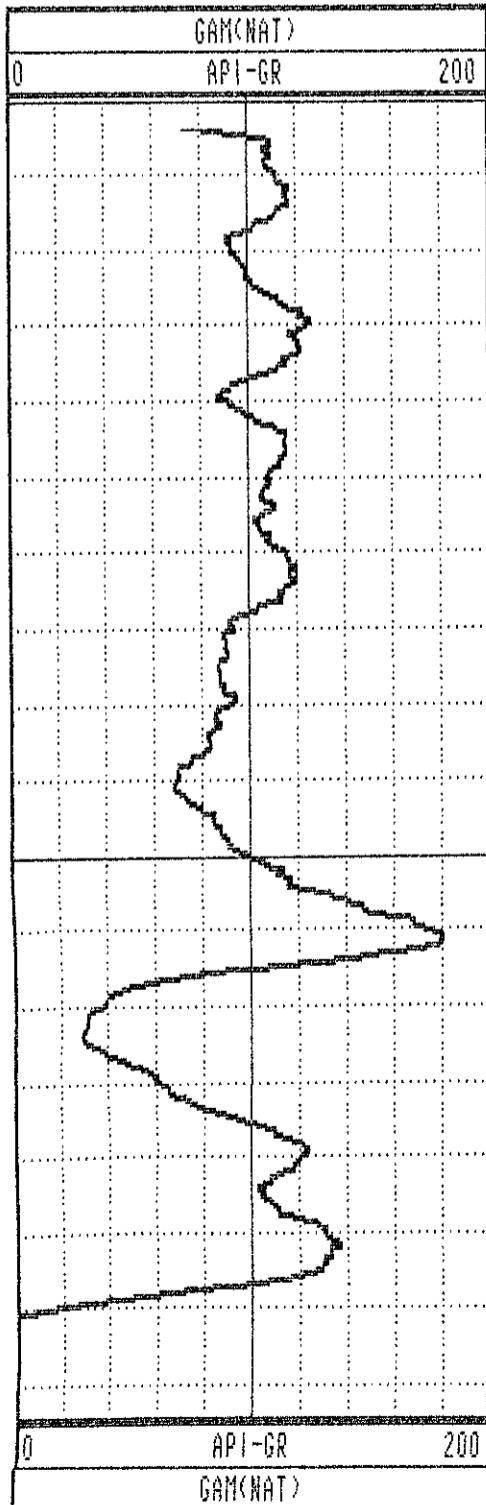
COMPANY : PINE VALLEY COAL
WELL : WRH-96128
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/08/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 17.45 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.44 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : PLASTIC FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
MAGNETIC DECL. : 23 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 9
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

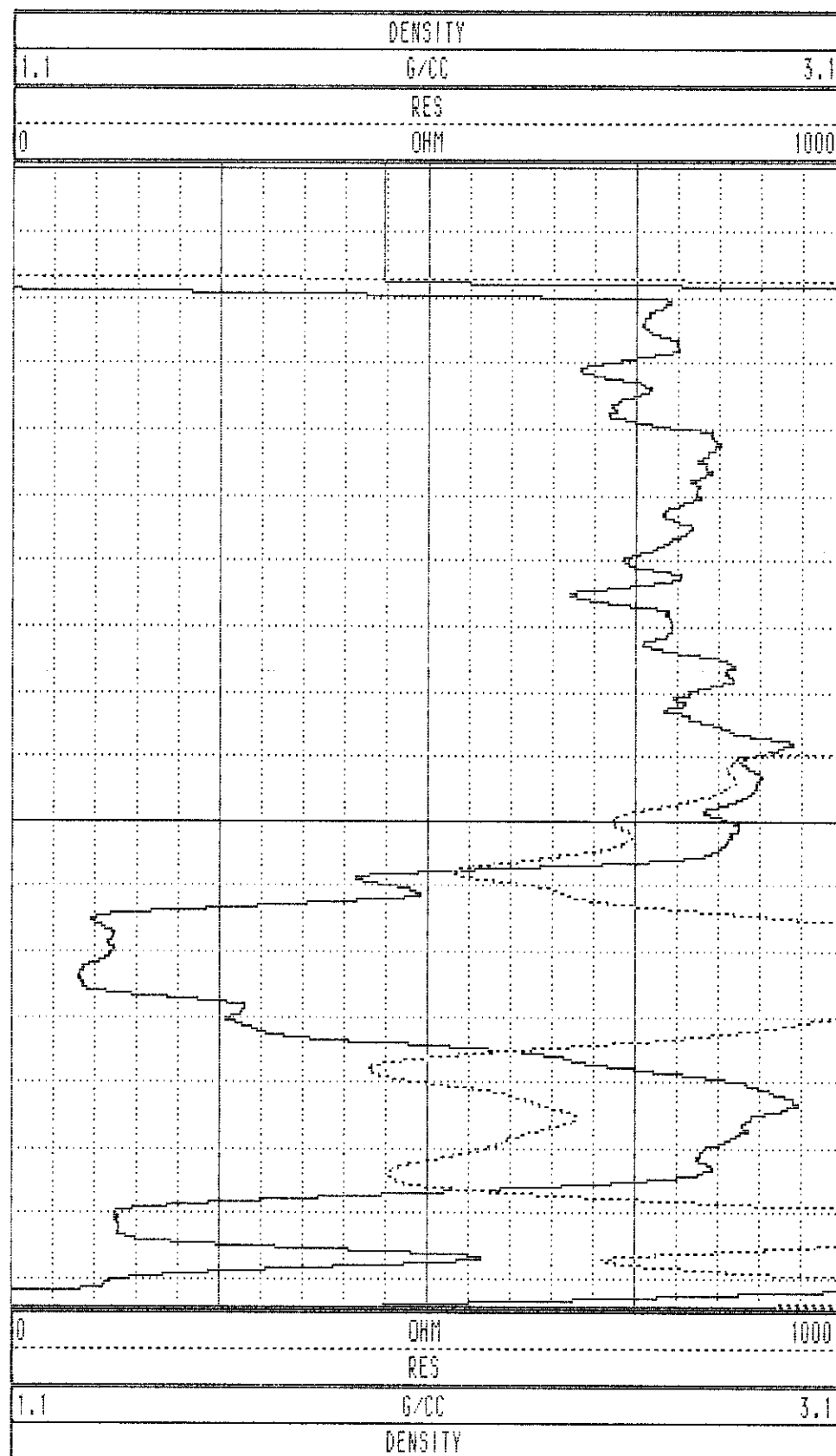
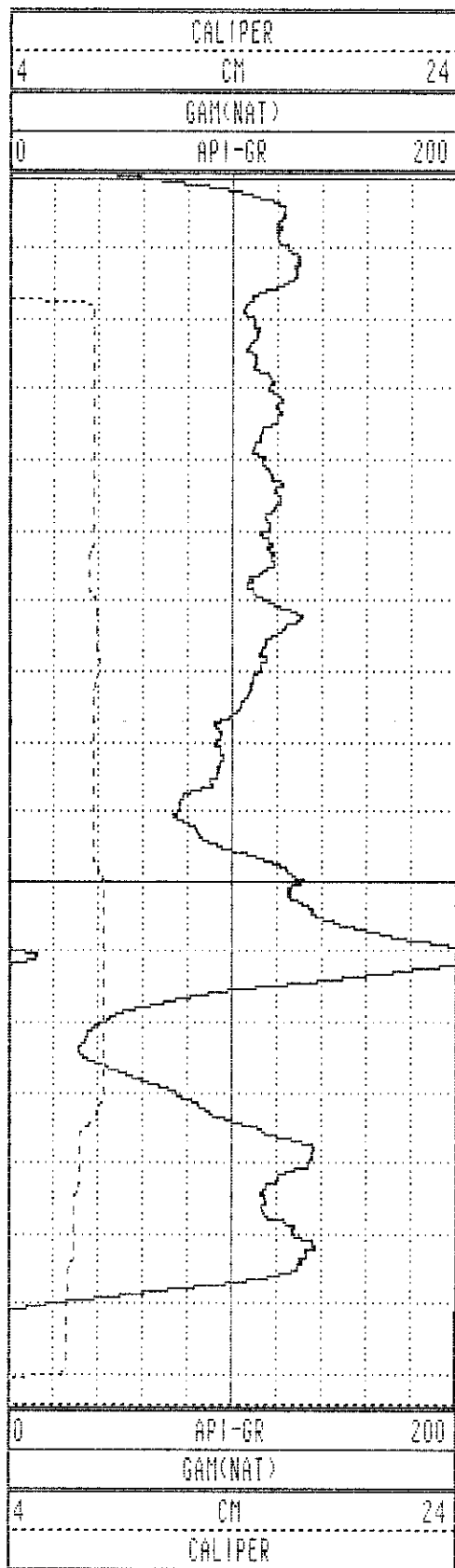
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96128 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.46 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96128 08/08/96 958

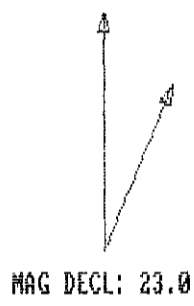
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 99.0 | 1.4 | 28.5 |
| 3.0 | 3.00 | -0.02 | 0.01 | 0.0 | 157.0 | 1.8 | 131.7 |
| 4.0 | 4.00 | -0.05 | 0.04 | 0.1 | 140.9 | 2.2 | 138.6 |
| 5.0 | 5.00 | -0.08 | 0.04 | 0.1 | 153.0 | 2.6 | 189.2 |
| 6.0 | 6.00 | -0.12 | 0.06 | 0.1 | 154.3 | 2.8 | 152.8 |
| 7.0 | 7.00 | -0.17 | 0.08 | 0.2 | 154.6 | 2.6 | 160.1 |
| 8.0 | 7.99 | -0.21 | 0.10 | 0.2 | 154.6 | 2.9 | 150.5 |
| 9.0 | 8.99 | -0.26 | 0.12 | 0.3 | 154.8 | 3.5 | 156.3 |
| 10.0 | 9.99 | -0.31 | 0.15 | 0.3 | 154.8 | 3.6 | 157.2 |
| 11.0 | 10.99 | -0.38 | 0.17 | 0.4 | 155.5 | 3.7 | 154.5 |
| 12.0 | 11.99 | -0.46 | 0.21 | 0.5 | 155.5 | 5.2 | 159.8 |
| 13.0 | 12.98 | -0.55 | 0.24 | 0.6 | 156.4 | 6.0 | 164.4 |
| 14.0 | 13.98 | -0.64 | 0.27 | 0.7 | 156.9 | 5.9 | 153.2 |
| 15.0 | 14.97 | -0.74 | 0.31 | 0.8 | 157.4 | 6.4 | 155.6 |
| 16.0 | 15.96 | -0.84 | 0.35 | 0.9 | 157.4 | 6.5 | 155.3 |
| 17.0 | 16.96 | -0.95 | 0.39 | 1.0 | 157.8 | 6.3 | 166.5 |
| 18.0 | 17.95 | -1.06 | 0.41 | 1.1 | 158.7 | 7.0 | 160.9 |
| 19.0 | 18.94 | -1.18 | 0.44 | 1.3 | 159.7 | 7.3 | 173.6 |
| 20.0 | 19.93 | -1.32 | 0.44 | 1.4 | 161.3 | 8.0 | 179.8 |
| 21.0 | 20.92 | -1.46 | 0.43 | 1.5 | 163.6 | 9.0 | 188.6 |
| 22.0 | 21.91 | -1.62 | 0.40 | 1.7 | 166.3 | 10.2 | 194.0 |
| 23.0 | 22.89 | -1.80 | 0.36 | 1.8 | 168.7 | 10.4 | 194.3 |
| 24.0 | 23.87 | -1.98 | 0.30 | 2.0 | 171.3 | 10.9 | 199.3 |
| 25.0 | 24.85 | -2.18 | 0.24 | 2.2 | 173.8 | 12.0 | 200.3 |
| 26.0 | 25.83 | -2.39 | 0.16 | 2.4 | 176.1 | 13.5 | 208.7 |
| 27.0 | 26.80 | -2.63 | 0.10 | 2.6 | 177.8 | 15.0 | 192.6 |
| 28.0 | 27.76 | -2.88 | 0.03 | 2.9 | 179.4 | 15.1 | 195.6 |
| 29.0 | 28.73 | -3.12 | -0.05 | 3.1 | 180.9 | 15.4 | 198.3 |
| 30.0 | 29.69 | -3.38 | -0.12 | 3.4 | 182.1 | 15.9 | 196.5 |
| 31.0 | 30.65 | -3.63 | -0.22 | 3.6 | 183.4 | 16.3 | 200.3 |
| 32.0 | 31.61 | -3.89 | -0.32 | 3.9 | 184.7 | 16.6 | 214.5 |
| 33.0 | 32.57 | -4.16 | -0.43 | 4.2 | 185.9 | 18.1 | 202.6 |
| 34.0 | 33.52 | -4.46 | -0.53 | 4.5 | 186.8 | 18.3 | 197.2 |
| 34.8 | 34.26 | -4.69 | -0.62 | 4.7 | 187.5 | 18.9 | 197.2 |

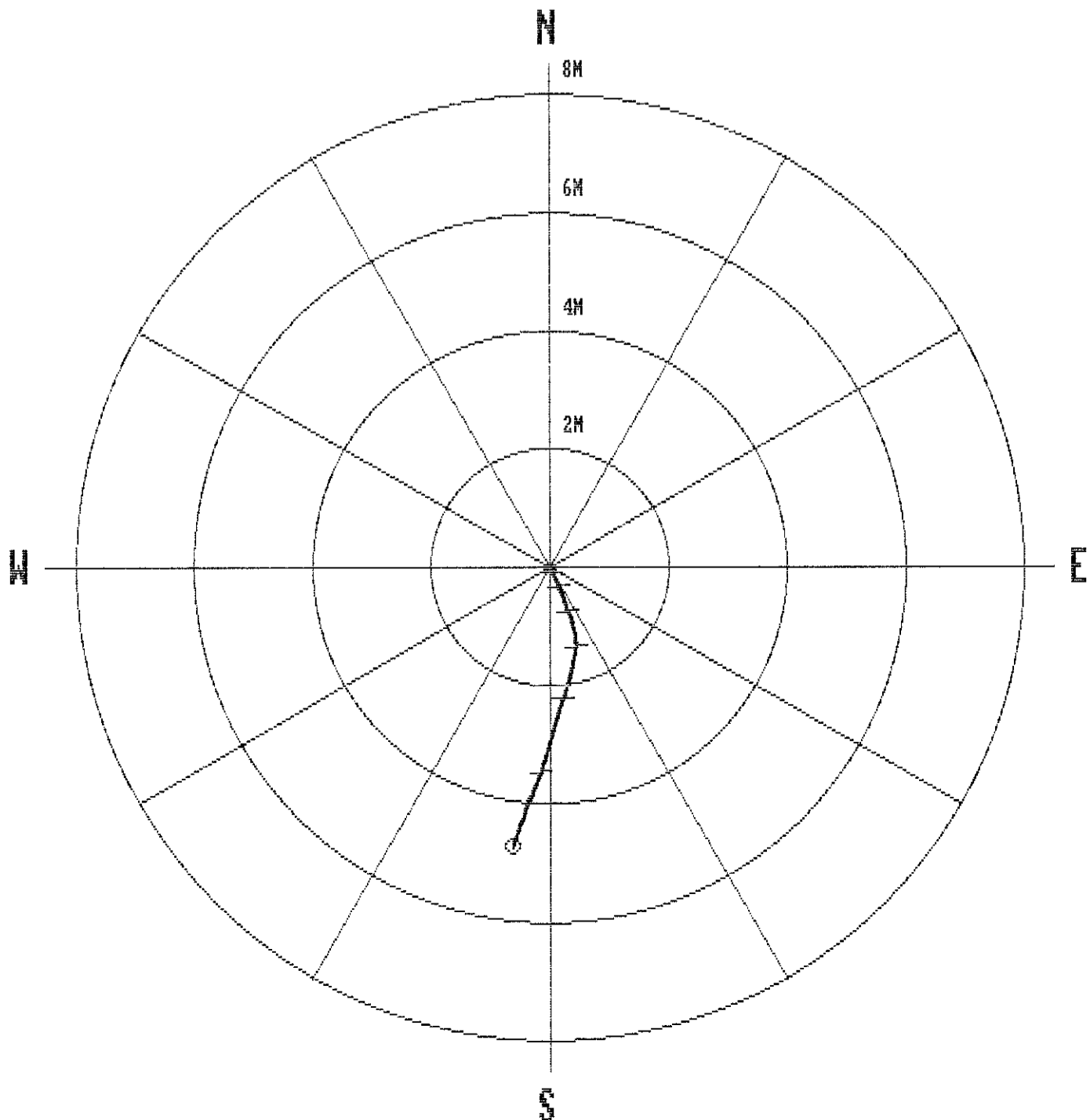
WHR 96129

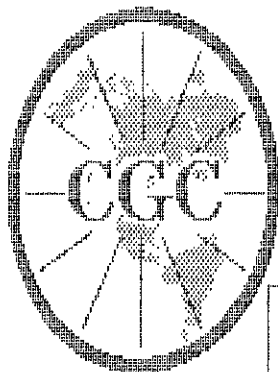
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96129
 DATE OF LOG: 08/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 34.26 M
 AZIMUTH: 187.5
 DISTANCE: 4.7 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



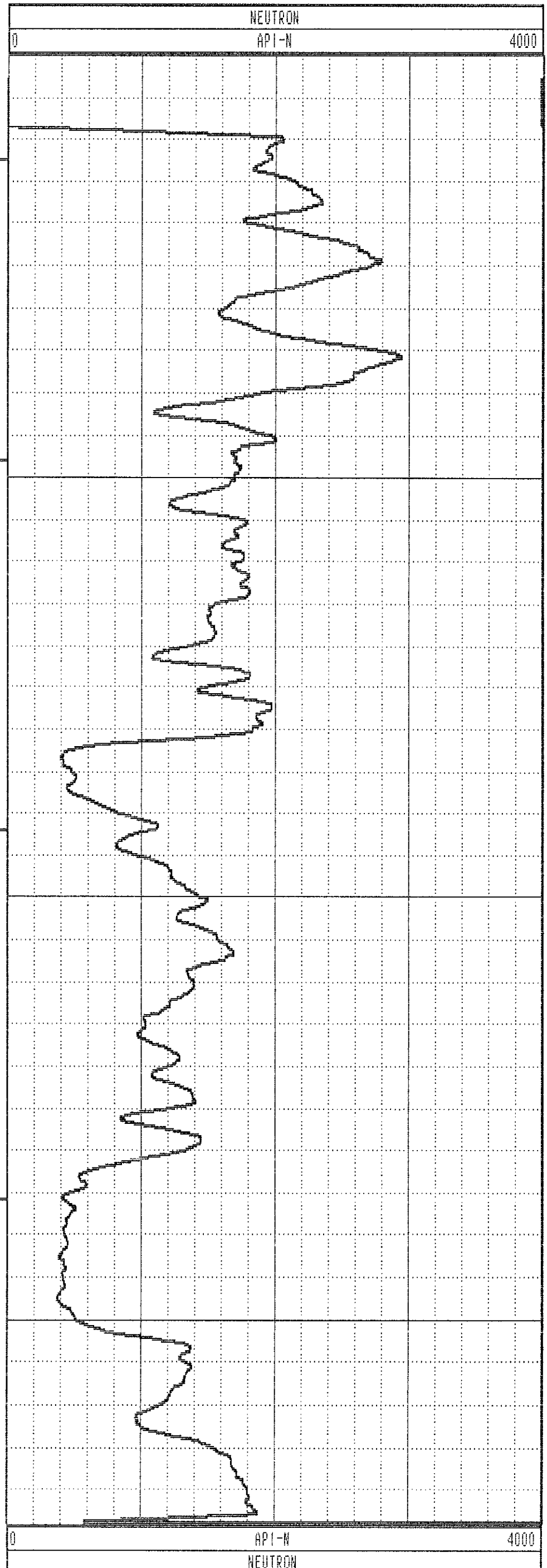
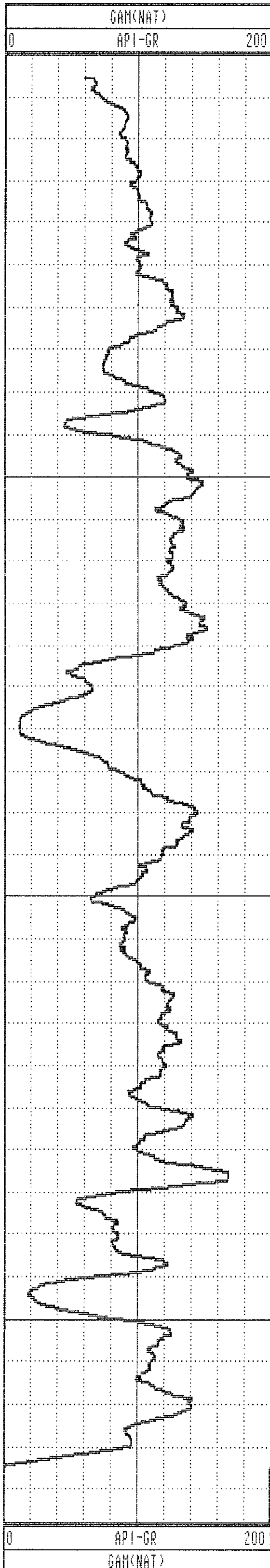


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96129 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/10/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 34 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 34.84 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.58 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

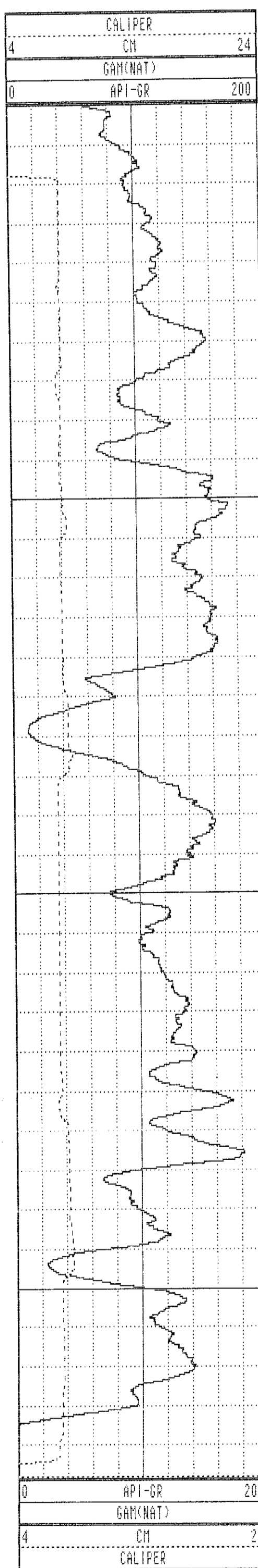
COMPANY : PINE VALLEY COAL
 WELL : WRH-96129
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

DATE : 08/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 34 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 34.84 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

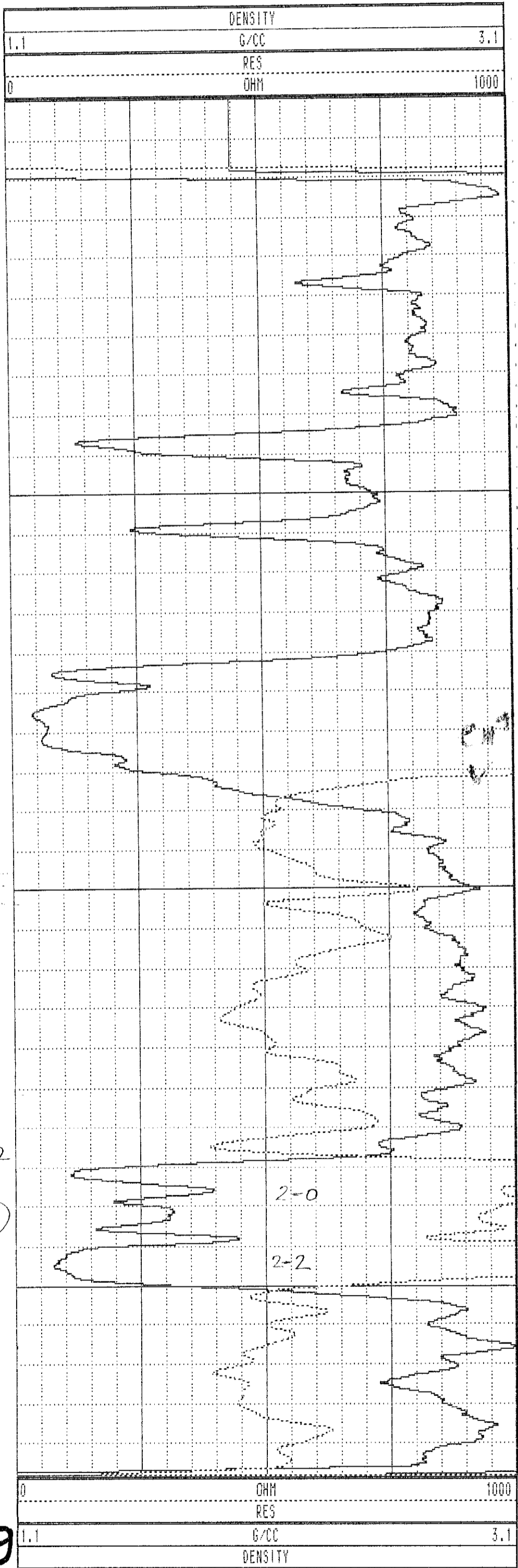
BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

OTHER SERVICES:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH 96129



1
HG22
2-0
2-2

129

WRH-96129 08/10/96 958

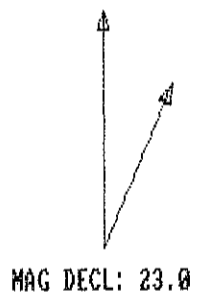
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 135.0 | 2.3 | 140.5 |
| 3.0 | 3.00 | -0.03 | -0.00 | 0.0 | 184.1 | 2.3 | 213.3 |
| 4.0 | 4.00 | -0.00 | 0.00 | 0.0 | 148.3 | 2.8 | 297.1 |
| 5.0 | 5.00 | -0.00 | -0.00 | 0.0 | 236.3 | 3.1 | 150.6 |
| 6.0 | 6.00 | -0.05 | 0.02 | 0.1 | 158.6 | 3.3 | 164.3 |
| 7.0 | 6.99 | -0.11 | 0.04 | 0.1 | 159.9 | 3.7 | 167.3 |
| 8.0 | 7.99 | -0.18 | 0.06 | 0.2 | 161.4 | 4.2 | 169.9 |
| 9.0 | 8.99 | -0.26 | 0.07 | 0.3 | 165.2 | 5.1 | 182.2 |
| 10.0 | 9.98 | -0.36 | 0.07 | 0.4 | 169.5 | 7.3 | 184.6 |
| 11.0 | 10.97 | -0.49 | 0.05 | 0.5 | 174.0 | 7.4 | 192.5 |
| 12.0 | 11.96 | -0.62 | 0.03 | 0.6 | 177.3 | 8.5 | 186.6 |
| 13.0 | 12.95 | -0.77 | -0.01 | 0.8 | 180.7 | 8.9 | 202.0 |
| 14.0 | 13.94 | -0.94 | -0.05 | 0.9 | 182.9 | 10.6 | 196.9 |
| 15.0 | 14.92 | -1.13 | -0.10 | 1.1 | 185.1 | 11.6 | 200.7 |
| 16.0 | 15.90 | -1.33 | -0.17 | 1.3 | 187.4 | 12.8 | 200.8 |
| 17.0 | 16.87 | -1.53 | -0.27 | 1.6 | 189.8 | 13.5 | 193.5 |
| 18.0 | 17.84 | -1.75 | -0.35 | 1.8 | 191.3 | 13.7 | 203.5 |
| 19.0 | 18.81 | -1.98 | -0.44 | 2.0 | 192.6 | 14.8 | 206.8 |
| 20.0 | 19.78 | -2.21 | -0.55 | 2.3 | 194.0 | 15.3 | 206.8 |
| 21.0 | 20.74 | -2.47 | -0.67 | 2.6 | 195.2 | 16.7 | 208.9 |
| 22.0 | 21.69 | -2.74 | -0.79 | 2.8 | 196.0 | 17.5 | 205.4 |
| 23.0 | 22.64 | -3.02 | -0.93 | 3.2 | 197.1 | 19.0 | 211.1 |
| 24.0 | 23.58 | -3.31 | -1.09 | 3.5 | 198.2 | 20.0 | 199.3 |
| 25.0 | 24.52 | -3.61 | -1.25 | 3.8 | 199.1 | 21.3 | 210.0 |
| 26.0 | 25.45 | -3.93 | -1.43 | 4.2 | 200.0 | 21.7 | 203.8 |
| 27.0 | 26.38 | -4.27 | -1.61 | 4.6 | 200.7 | 23.2 | 209.9 |
| 28.0 | 27.29 | -4.62 | -1.79 | 5.0 | 201.2 | 24.7 | 227.0 |
| 29.0 | 28.20 | -5.00 | -1.96 | 5.4 | 201.4 | 25.1 | 221.0 |
| 29.9 | 28.99 | -5.32 | -2.15 | 5.7 | 202.0 | 25.8 | 209.9 |

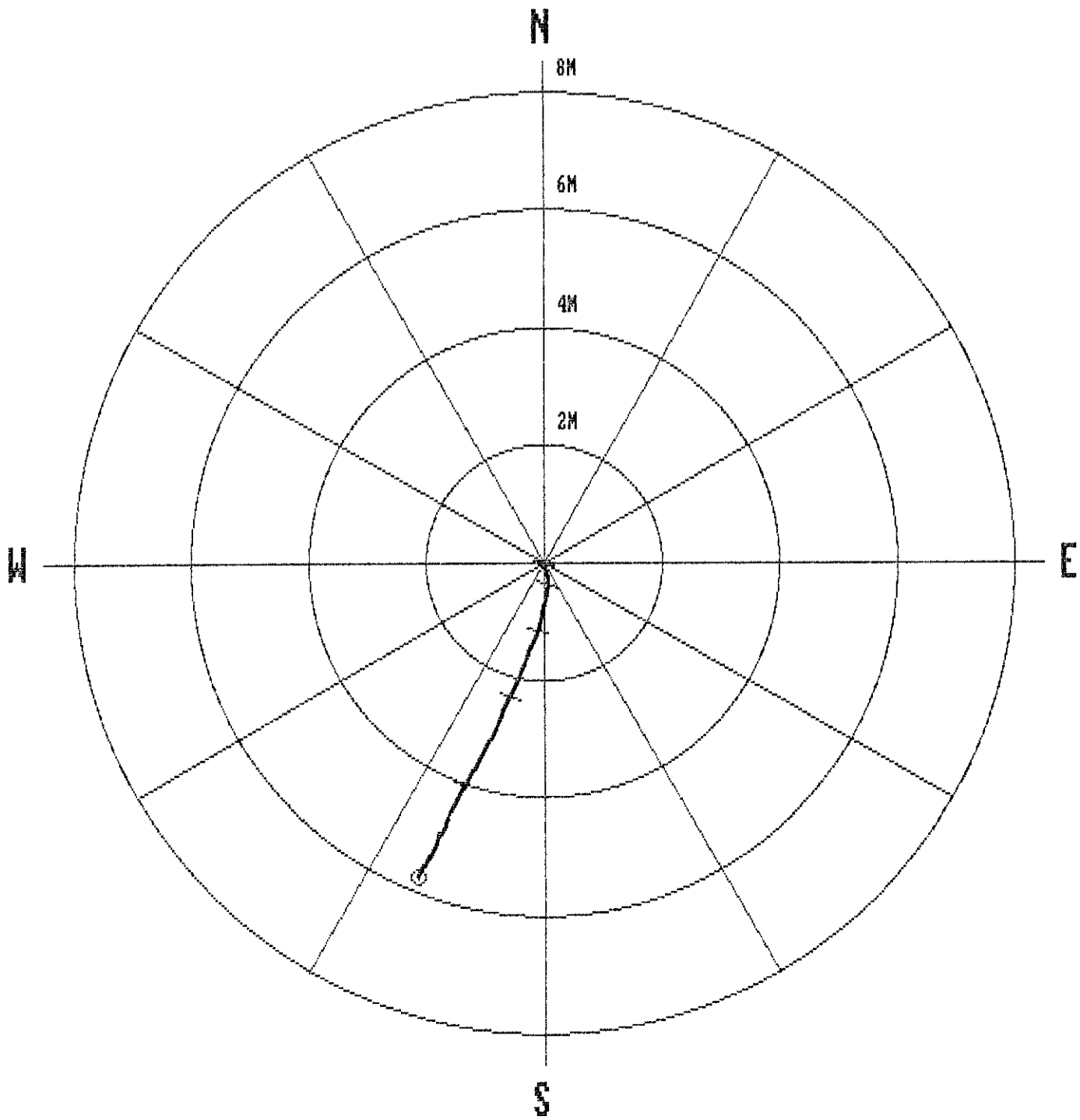
WRH 96130

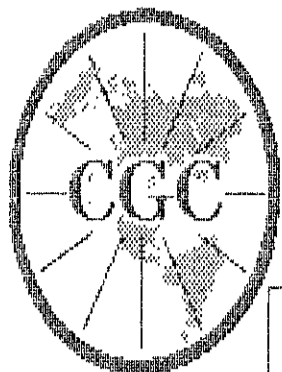
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96130
DATE OF LOG: 08/11/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 28.99 M
AZIMUTH: 202.0
DISTANCE: 5.7 M
+ = 5 M INCR
○ = BOTTOM OF HOLE



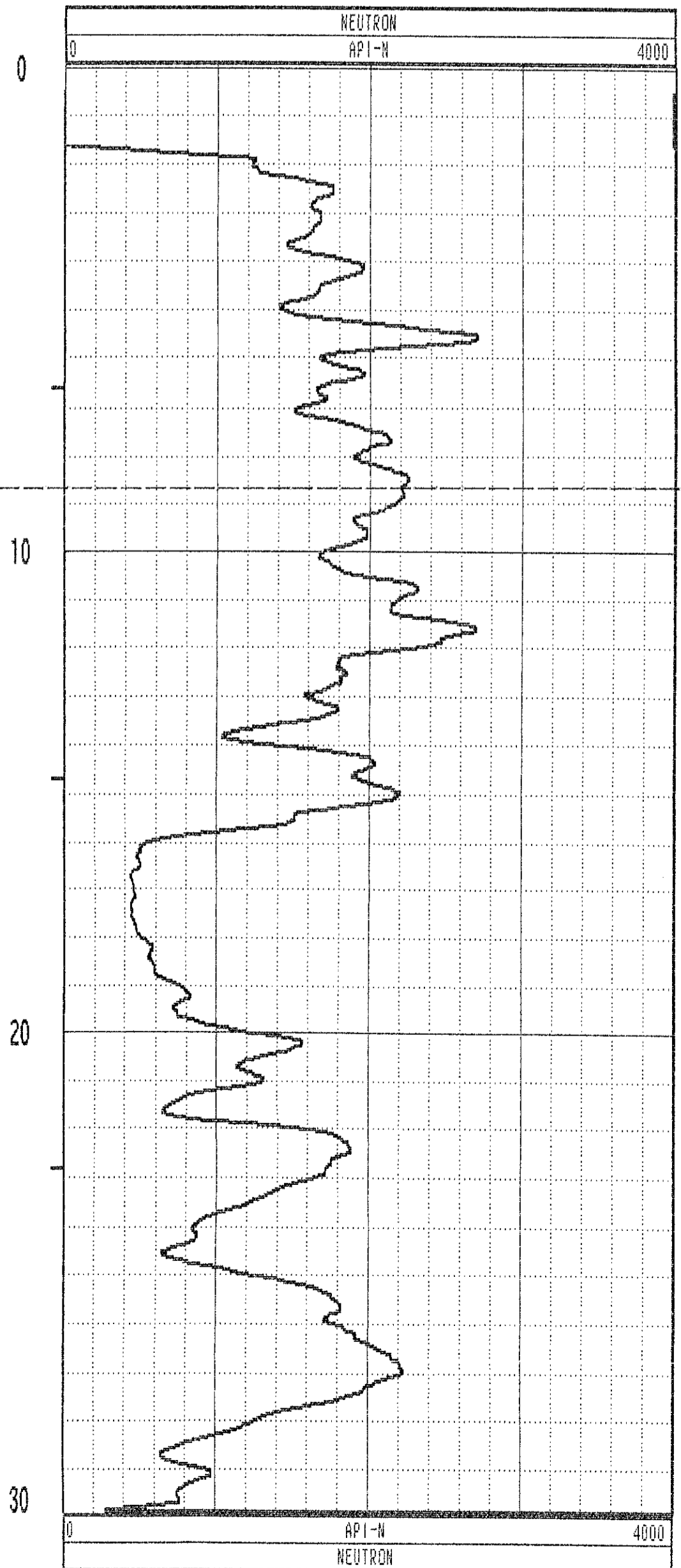
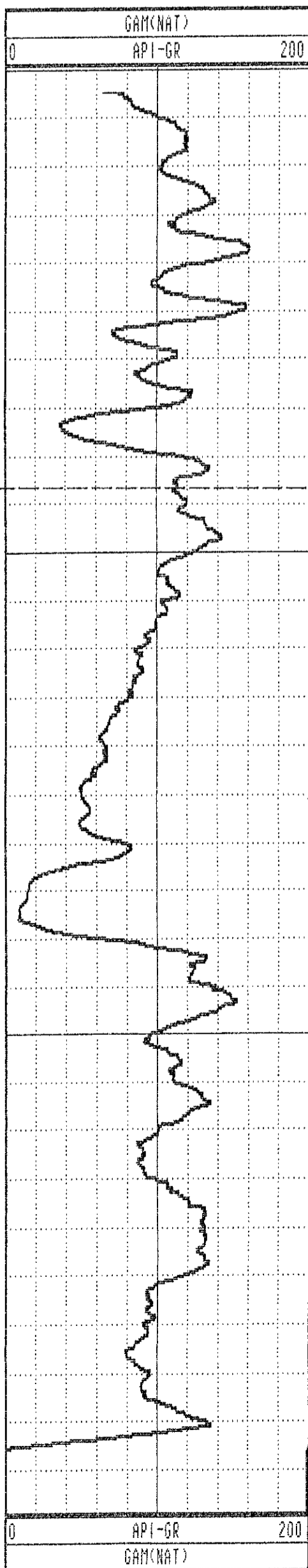


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96130 | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/11/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.93 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.48 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 4 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

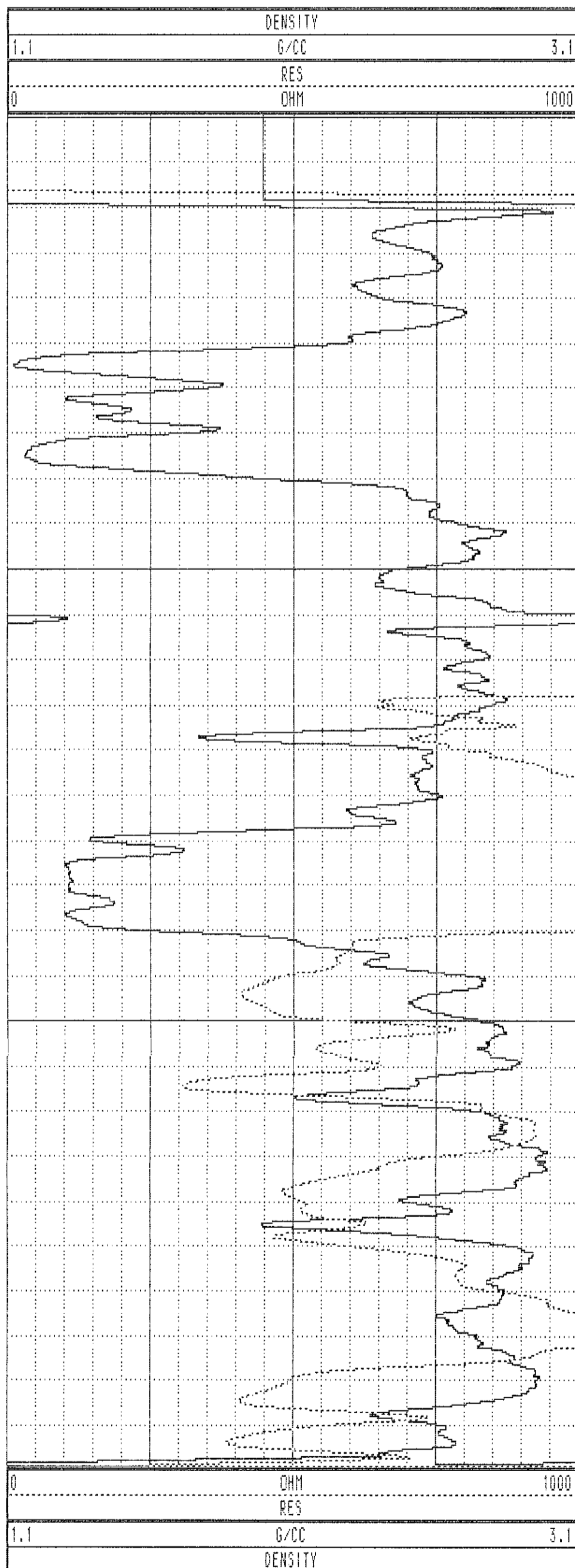
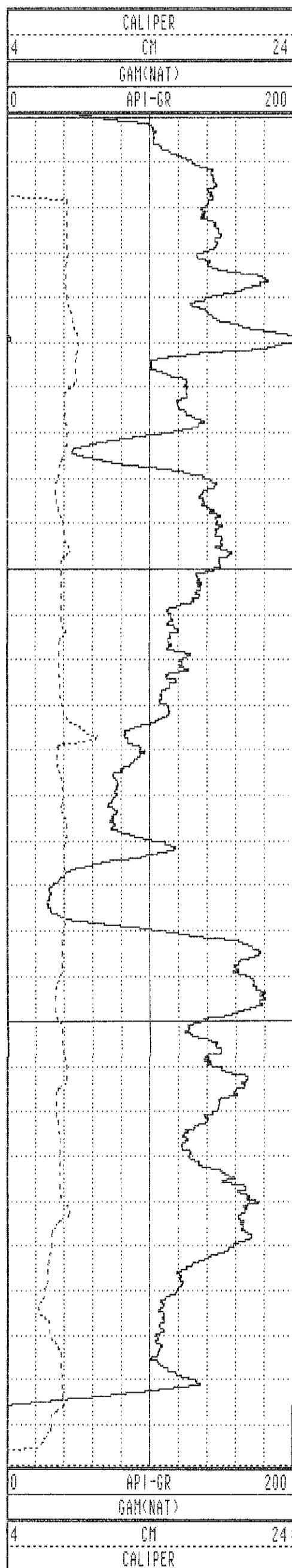
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96130 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/11/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.94 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96130 08/11/96 958

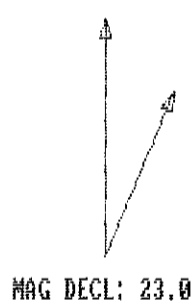
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 125.8 | 2.5 | 110.9 |
| 3.0 | 3.00 | -0.04 | 0.03 | 0.0 | 146.0 | 2.9 | 152.0 |
| 4.0 | 4.00 | -0.09 | 0.03 | 0.1 | 159.4 | 3.1 | 157.3 |
| 5.0 | 5.00 | -0.14 | 0.05 | 0.1 | 158.7 | 3.4 | 154.1 |
| 6.0 | 5.99 | -0.20 | 0.07 | 0.2 | 160.7 | 4.0 | 157.4 |
| 7.0 | 6.99 | -0.26 | 0.09 | 0.3 | 161.0 | 4.4 | 97.2 |
| 8.0 | 7.99 | -0.35 | 0.10 | 0.4 | 163.9 | 5.8 | 177.3 |
| 9.0 | 8.98 | -0.46 | 0.11 | 0.5 | 166.7 | 7.4 | 171.8 |
| 10.0 | 9.97 | -0.59 | 0.11 | 0.6 | 169.6 | 7.9 | 177.4 |
| 11.0 | 10.96 | -0.73 | 0.10 | 0.7 | 172.0 | 9.6 | 180.8 |
| 12.0 | 11.95 | -0.89 | 0.09 | 0.9 | 174.5 | 9.6 | 189.8 |
| 13.0 | 12.93 | -1.07 | 0.07 | 1.1 | 176.4 | 10.5 | 178.3 |
| 14.0 | 13.92 | -1.25 | 0.04 | 1.3 | 178.1 | 11.0 | 189.1 |
| 15.0 | 14.90 | -1.44 | 0.00 | 1.4 | 179.8 | 11.4 | 191.2 |
| 16.0 | 15.88 | -1.63 | -0.04 | 1.6 | 181.5 | 12.2 | 187.8 |
| 17.0 | 16.85 | -1.84 | -0.09 | 1.8 | 182.8 | 12.3 | 193.0 |
| 18.0 | 17.83 | -2.05 | -0.14 | 2.0 | 183.9 | 12.7 | 188.1 |
| 19.0 | 18.80 | -2.27 | -0.18 | 2.3 | 184.6 | 13.5 | 191.7 |
| 20.0 | 19.78 | -2.50 | -0.23 | 2.5 | 185.2 | 13.9 | 194.8 |
| 21.0 | 20.74 | -2.74 | -0.28 | 2.8 | 185.9 | 14.9 | 191.2 |
| 22.0 | 21.71 | -2.99 | -0.35 | 3.0 | 186.7 | 16.3 | 184.3 |
| 23.0 | 22.67 | -3.26 | -0.41 | 3.3 | 187.2 | 16.4 | 198.4 |
| 24.0 | 23.62 | -3.55 | -0.49 | 3.6 | 187.8 | 17.6 | 184.8 |
| 25.0 | 24.57 | -3.84 | -0.57 | 3.9 | 188.5 | 18.2 | 194.4 |
| 26.0 | 25.52 | -4.15 | -0.66 | 4.2 | 189.1 | 18.4 | 197.7 |
| 27.0 | 26.47 | -4.46 | -0.74 | 4.5 | 189.5 | 18.7 | 200.2 |
| 28.0 | 27.42 | -4.77 | -0.82 | 4.8 | 189.8 | 19.1 | 191.3 |
| 29.0 | 28.36 | -5.09 | -0.92 | 5.2 | 190.3 | 20.6 | 203.4 |
| 30.0 | 29.29 | -5.41 | -1.03 | 5.5 | 190.8 | 0.0 | 0.0 |
| 30.0 | 29.25 | -5.41 | -1.03 | 5.5 | 190.8 | 21.1 | 200.3 |

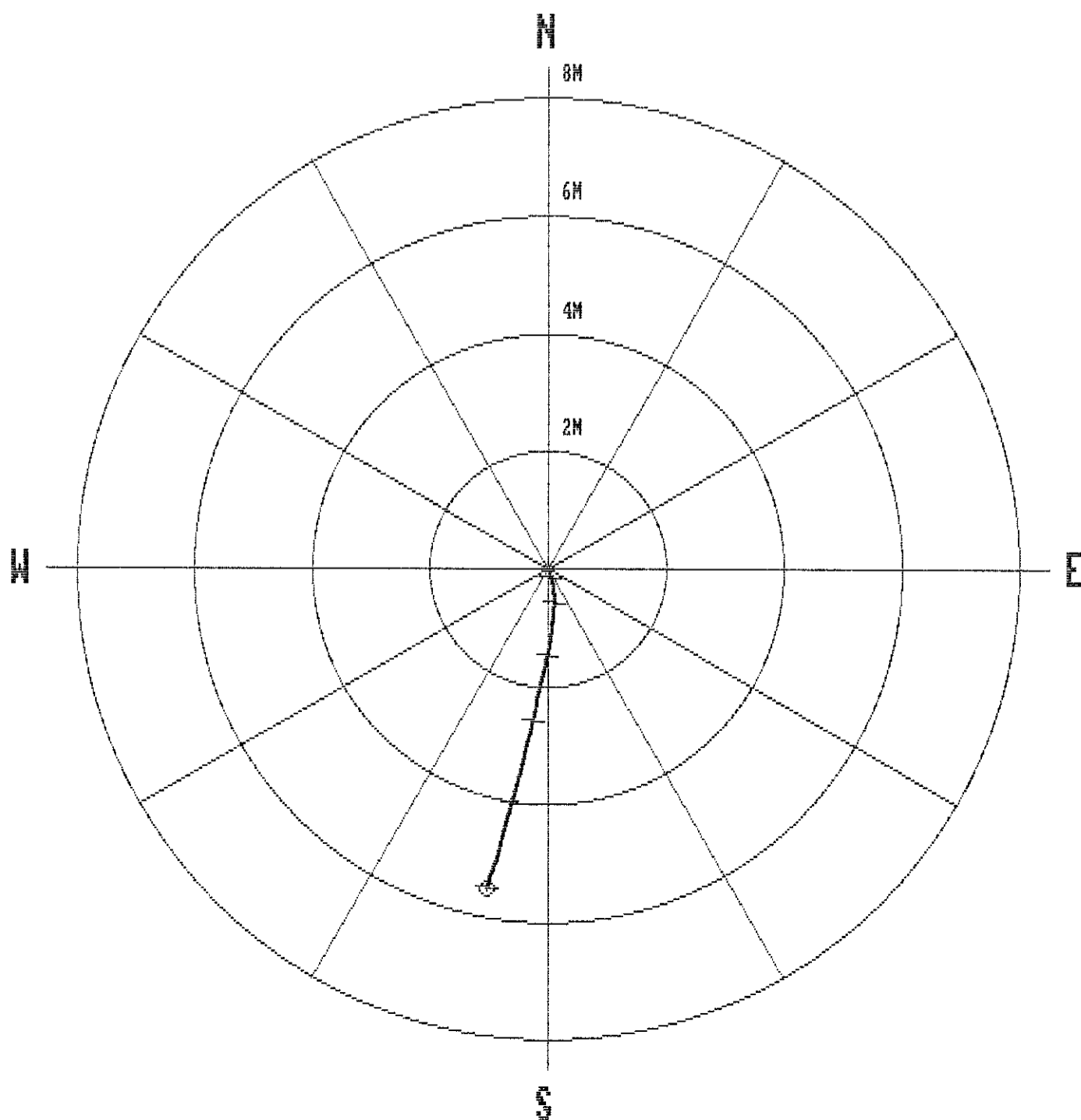
WMA
26/13

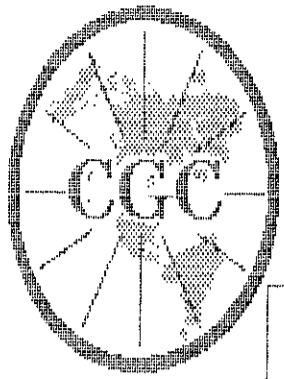
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96131
DATE OF LOG: 08/11/96
PROBE: 9055A 56



SCALE: 1 M/CM
TRUE DEPTH: 29.25 M
AZIMUTH: 190.8
DISTANCE: 5.5 M
+ = 5 M INCR
○ = BOTTOM OF HOLE



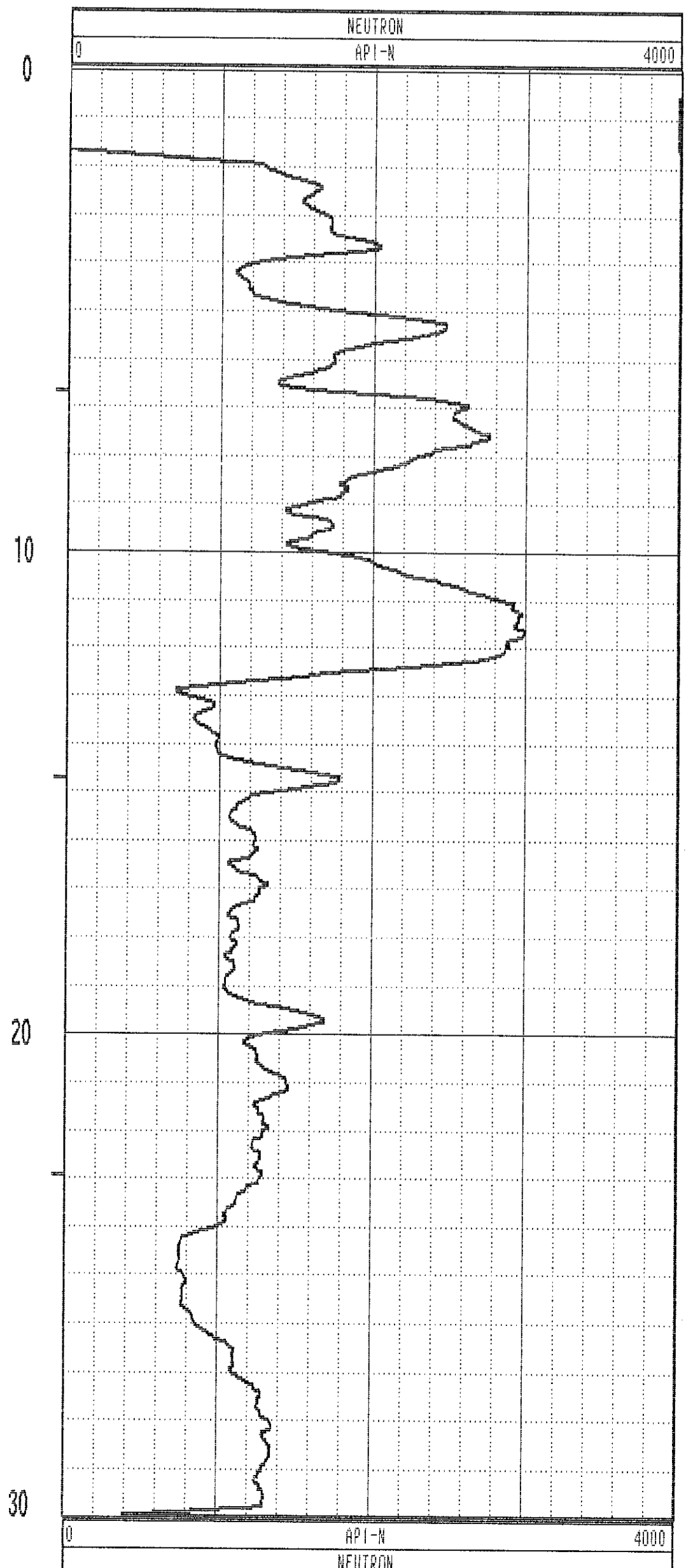
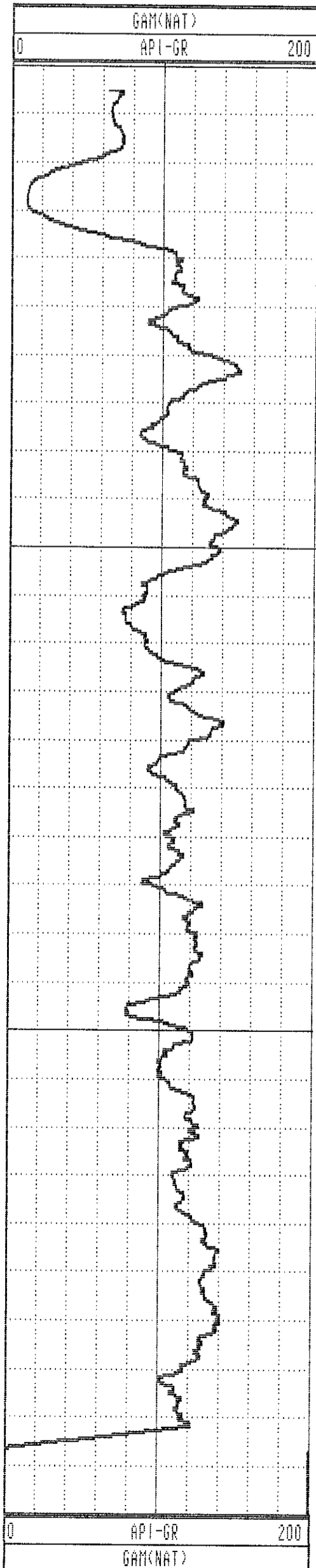


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96131 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/11/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 30.01 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.52 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 6 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

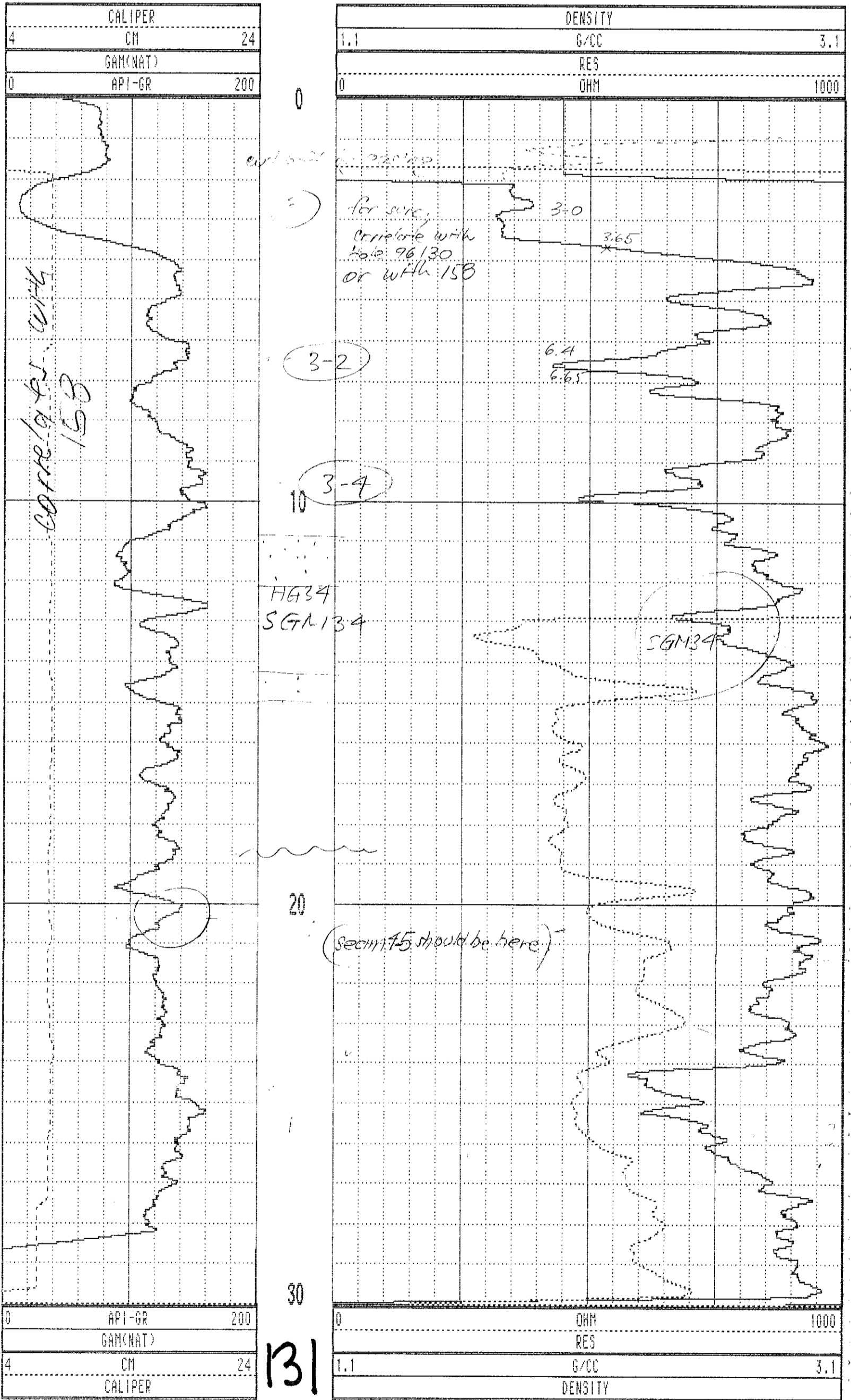


GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96131
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/11/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 29 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.04 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

Correlate with 158



WRH-96131 08/11/96 958

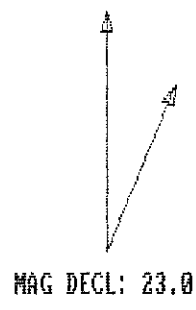
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | | |
|------------------|----------|---------------|---------------------|----------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 95.4 | 1.0 | 89.8 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 79.3 | 0.8 | 102.6 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 126.1 | 0.6 | 263.8 |
| 5.0 | 5.00 | -0.01 | 0.01 | 0.0 | 146.3 | 0.7 | 88.3 |
| 6.0 | 6.00 | -0.01 | 0.01 | 0.0 | 149.0 | 0.4 | 96.8 |
| 7.0 | 7.00 | -0.01 | 0.02 | 0.0 | 129.2 | 0.9 | 101.6 |
| 8.0 | 8.00 | -0.02 | 0.03 | 0.0 | 128.7 | 0.5 | 146.8 |
| 9.0 | 9.00 | -0.03 | 0.03 | 0.0 | 137.4 | 0.9 | 196.2 |
| 10.0 | 10.00 | -0.05 | 0.03 | 0.1 | 152.3 | 1.7 | 189.0 |
| 11.0 | 11.00 | -0.09 | 0.02 | 0.1 | 166.1 | 3.0 | 185.4 |
| 12.0 | 12.00 | -0.15 | 0.02 | 0.2 | 173.8 | 4.2 | 183.6 |
| 13.0 | 12.99 | -0.23 | 0.01 | 0.2 | 178.7 | 5.5 | 186.0 |
| 14.0 | 13.99 | -0.35 | -0.01 | 0.3 | 182.3 | 6.9 | 198.9 |
| 15.0 | 14.98 | -0.48 | -0.04 | 0.5 | 185.1 | 8.8 | 184.9 |
| 16.0 | 15.96 | -0.64 | -0.07 | 0.6 | 186.5 | 9.8 | 190.9 |
| 17.0 | 16.95 | -0.82 | -0.11 | 0.8 | 187.5 | 10.6 | 191.7 |
| 18.0 | 17.93 | -1.00 | -0.16 | 1.0 | 189.3 | 11.7 | 195.5 |
| 19.0 | 18.91 | -1.20 | -0.23 | 1.2 | 191.1 | 12.5 | 197.0 |
| 20.0 | 19.88 | -1.40 | -0.31 | 1.4 | 192.6 | 12.8 | 204.5 |
| 21.0 | 20.85 | -1.62 | -0.39 | 1.7 | 193.6 | 14.2 | 195.9 |
| 22.0 | 21.82 | -1.85 | -0.49 | 1.9 | 194.9 | 14.9 | 204.8 |
| 23.0 | 22.79 | -2.09 | -0.61 | 2.2 | 196.3 | 16.0 | 206.7 |
| 24.0 | 23.74 | -2.36 | -0.72 | 2.5 | 196.9 | 17.6 | 199.7 |
| 25.0 | 24.69 | -2.66 | -0.83 | 2.8 | 197.3 | 19.0 | 206.5 |
| 25.9 | 25.52 | -2.91 | -0.96 | 3.1 | 198.3 | 20.0 | 205.2 |

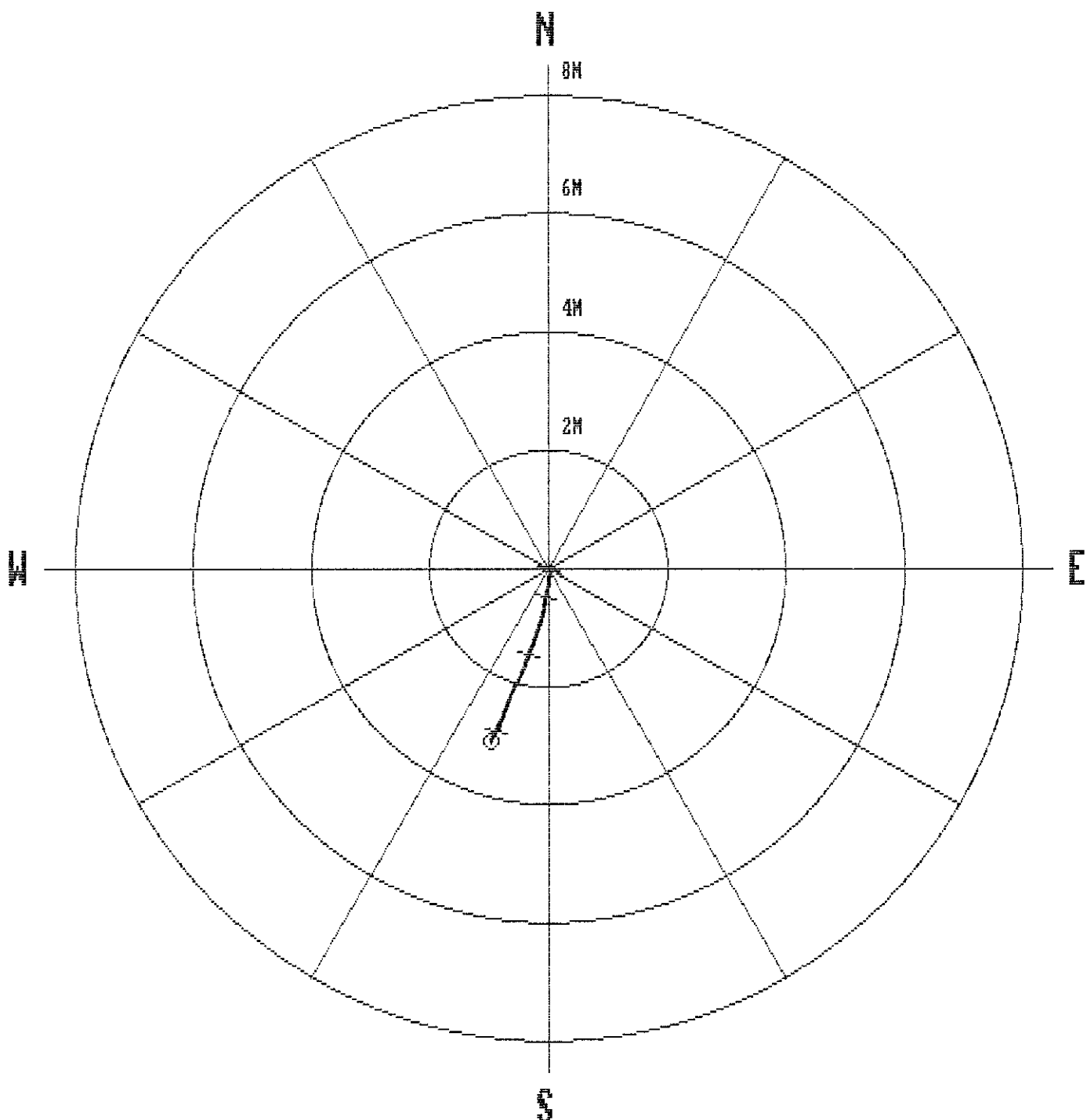
PLAN VIEW

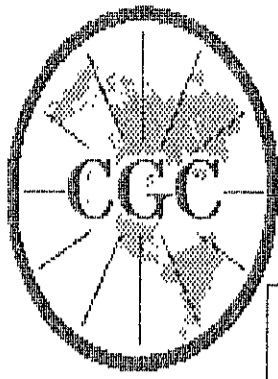
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96132
 DATE OF LOG: 08/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 25.52 M
 AZIMUTH: 198.3
 DISTANCE: 3.1 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96132
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

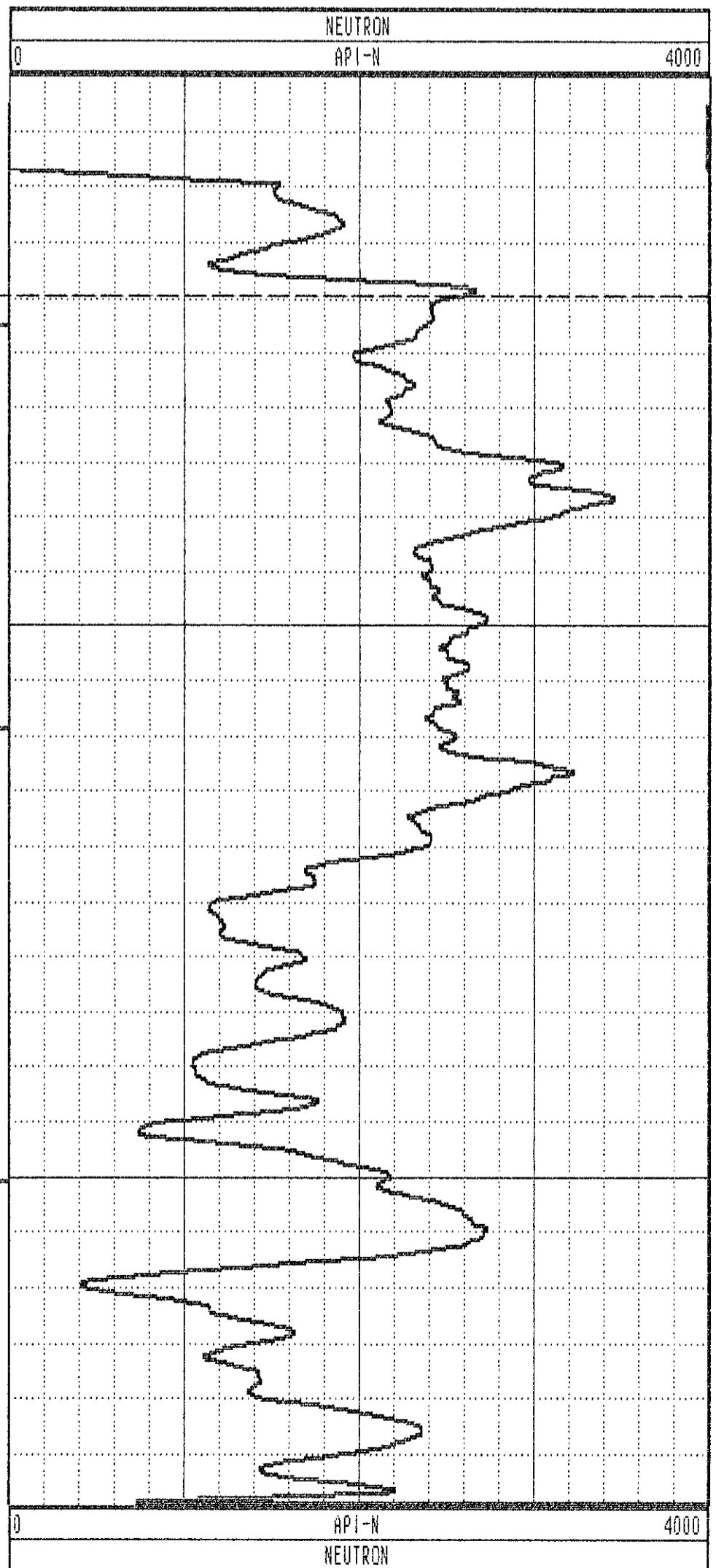
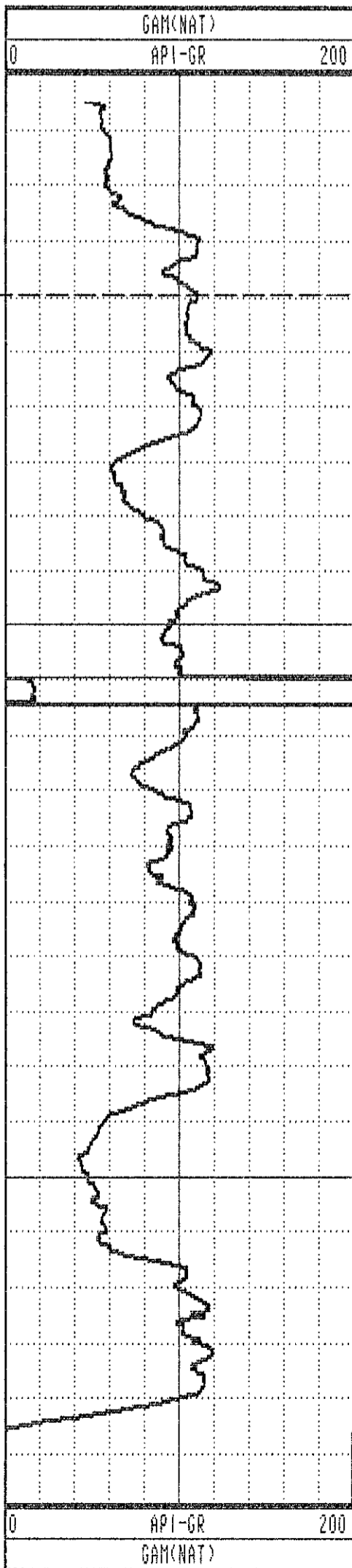
OTHER SERVICES:

DATE : 08/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEU. PERM. DATUM: KB :
 LOG BOTTOM : 25.93 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.52 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

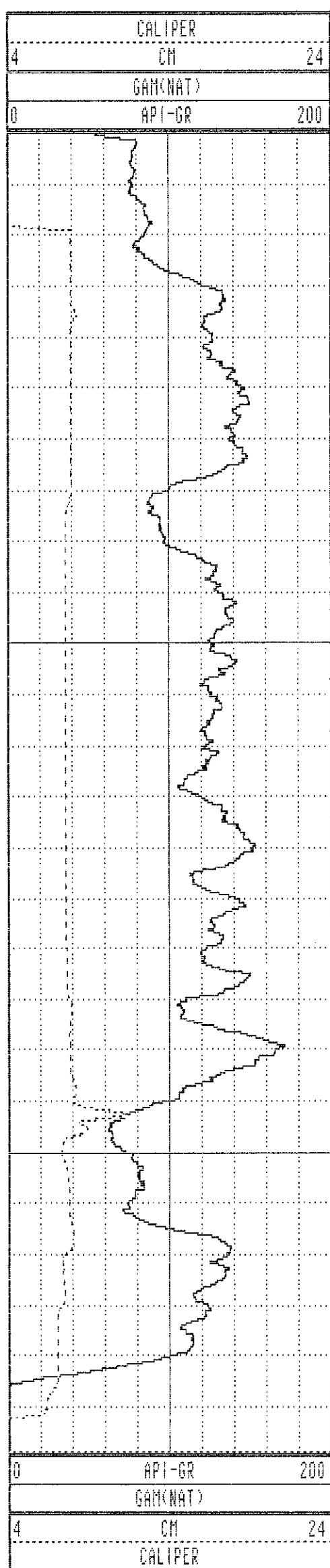
COMPANY : PINE VALLEY COAL
 WELL : WRH-96132
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 25.94 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

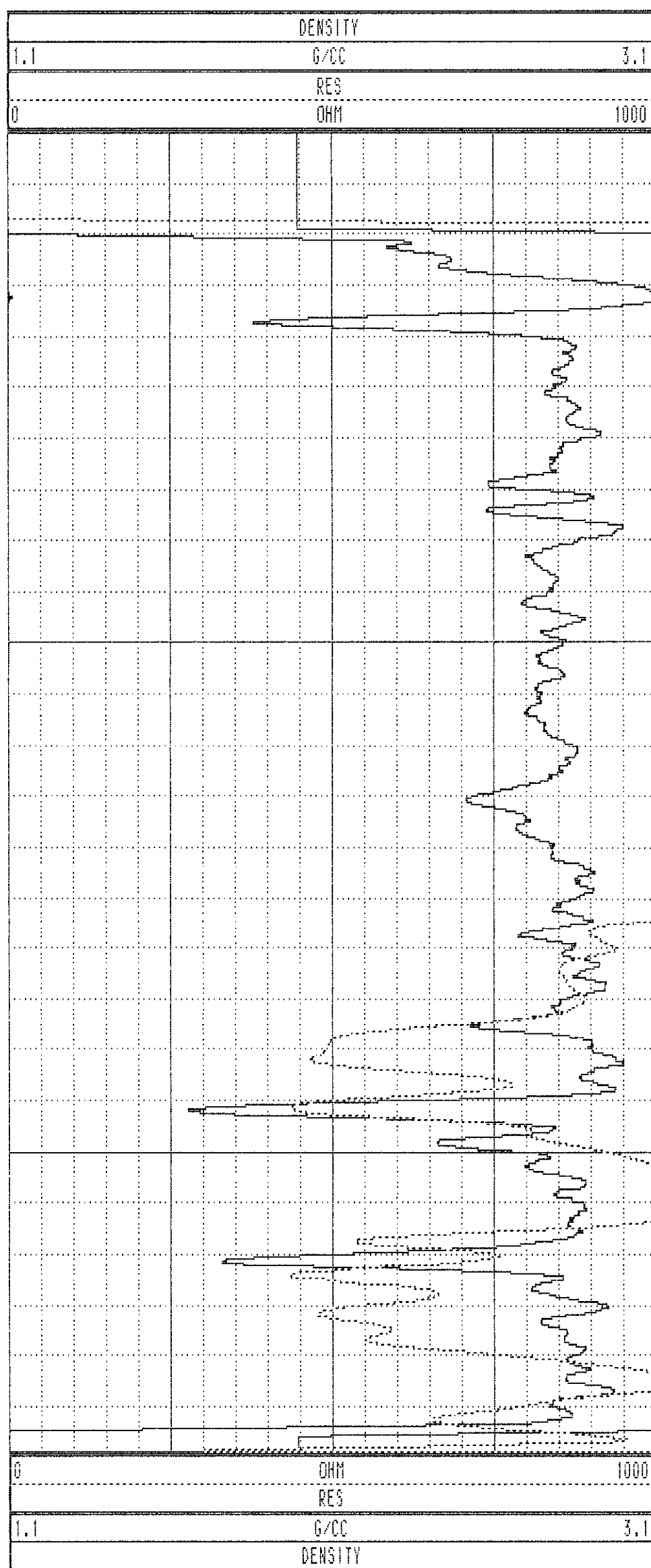


0

10

20

26



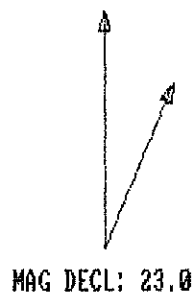
WRH-96132 08/10/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

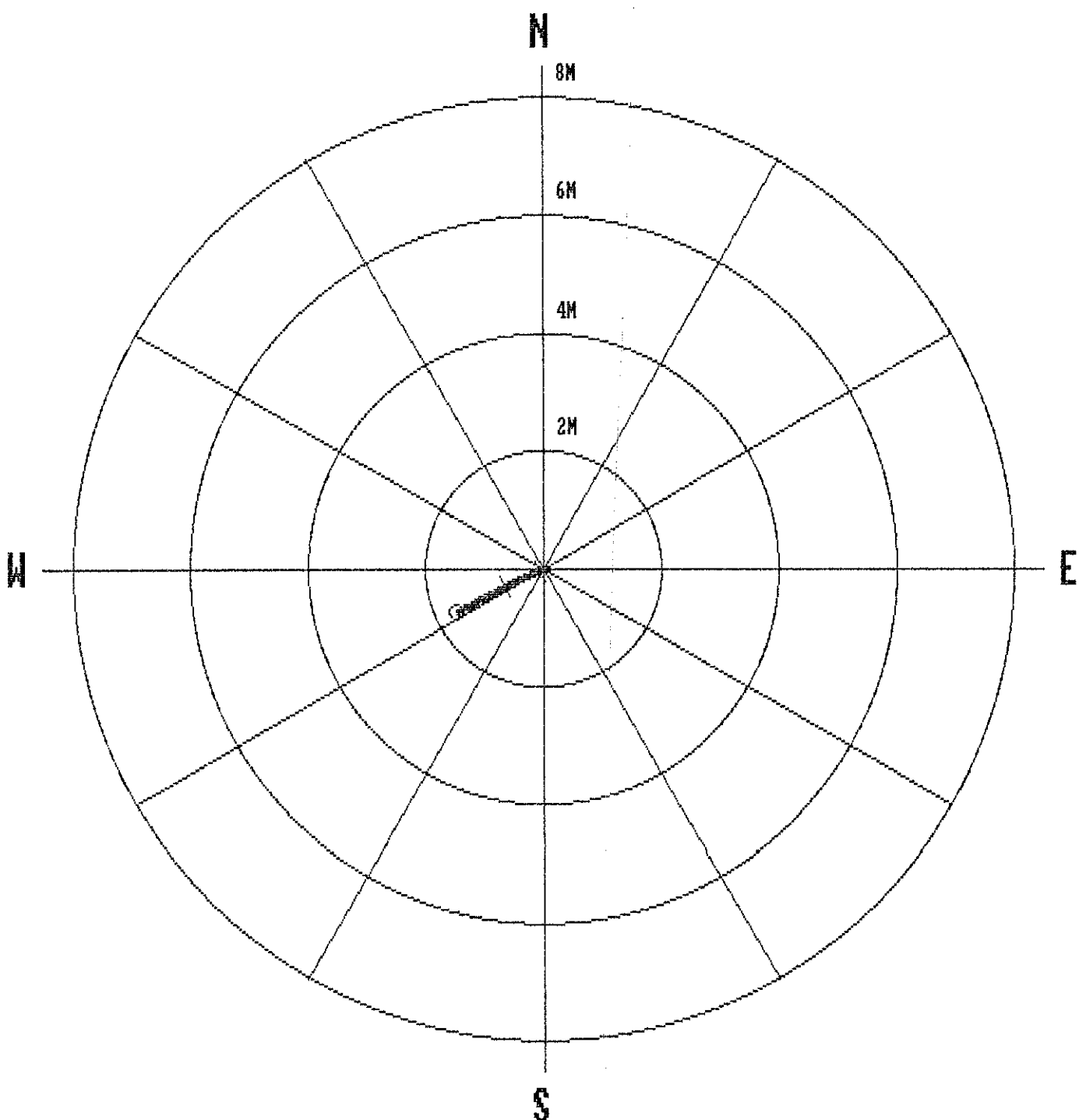
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 200.1 | 0.7 | 277.4 |
| 4.0 | 4.00 | -0.01 | -0.01 | 0.0 | 206.2 | 0.6 | 129.2 |
| 5.0 | 5.00 | -0.01 | -0.00 | 0.0 | 182.3 | 0.5 | 197.1 |
| 6.0 | 6.00 | -0.01 | -0.00 | 0.0 | 193.7 | 0.3 | 217.3 |
| 7.0 | 7.00 | -0.01 | -0.00 | 0.0 | 208.0 | 0.7 | 358.9 |
| 8.0 | 8.00 | -0.01 | -0.01 | 0.0 | 231.8 | 0.6 | 261.3 |
| 9.0 | 9.00 | -0.02 | -0.03 | 0.0 | 239.6 | 1.5 | 246.6 |
| 10.0 | 10.00 | -0.03 | -0.06 | 0.1 | 243.9 | 1.7 | 239.9 |
| 11.0 | 11.00 | -0.04 | -0.09 | 0.1 | 243.6 | 2.5 | 254.4 |
| 12.0 | 12.00 | -0.06 | -0.12 | 0.1 | 244.2 | 1.8 | 247.2 |
| 13.0 | 13.00 | -0.08 | -0.17 | 0.2 | 244.1 | 3.5 | 243.8 |
| 14.0 | 13.99 | -0.10 | -0.22 | 0.2 | 245.2 | 2.9 | 239.6 |
| 15.0 | 14.99 | -0.12 | -0.27 | 0.3 | 245.7 | 3.9 | 254.7 |
| 16.0 | 15.99 | -0.15 | -0.34 | 0.4 | 245.8 | 4.2 | 241.3 |
| 17.0 | 16.99 | -0.18 | -0.41 | 0.4 | 246.1 | 4.7 | 238.0 |
| 18.0 | 17.98 | -0.22 | -0.49 | 0.5 | 245.6 | 4.9 | 239.6 |
| 19.0 | 18.98 | -0.26 | -0.57 | 0.6 | 245.3 | 5.6 | 239.8 |
| 20.0 | 19.98 | -0.31 | -0.65 | 0.7 | 244.8 | 5.4 | 245.5 |
| 21.0 | 20.97 | -0.34 | -0.74 | 0.8 | 244.9 | 5.0 | 234.3 |
| 22.0 | 21.97 | -0.39 | -0.82 | 0.9 | 244.5 | 5.8 | 242.8 |
| 23.0 | 22.96 | -0.44 | -0.92 | 1.0 | 244.3 | 6.3 | 232.4 |
| 24.0 | 23.95 | -0.49 | -1.01 | 1.1 | 244.1 | 6.7 | 243.4 |
| 25.0 | 24.95 | -0.55 | -1.12 | 1.2 | 244.0 | 6.7 | 243.7 |
| 26.0 | 25.94 | -0.61 | -1.22 | 1.4 | 243.4 | 6.4 | 232.8 |
| 27.0 | 26.93 | -0.66 | -1.34 | 1.5 | 243.8 | 8.4 | 245.1 |
| 28.0 | 27.92 | -0.72 | -1.46 | 1.6 | 243.7 | 8.4 | 247.7 |
| 28.0 | 27.94 | -0.73 | -1.46 | 1.6 | 243.7 | 8.4 | 246.2 |

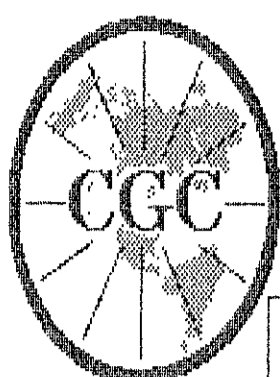
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96133
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 27.94 M
 AZIMUTH: 243.7
 DISTANCE: 1.6 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



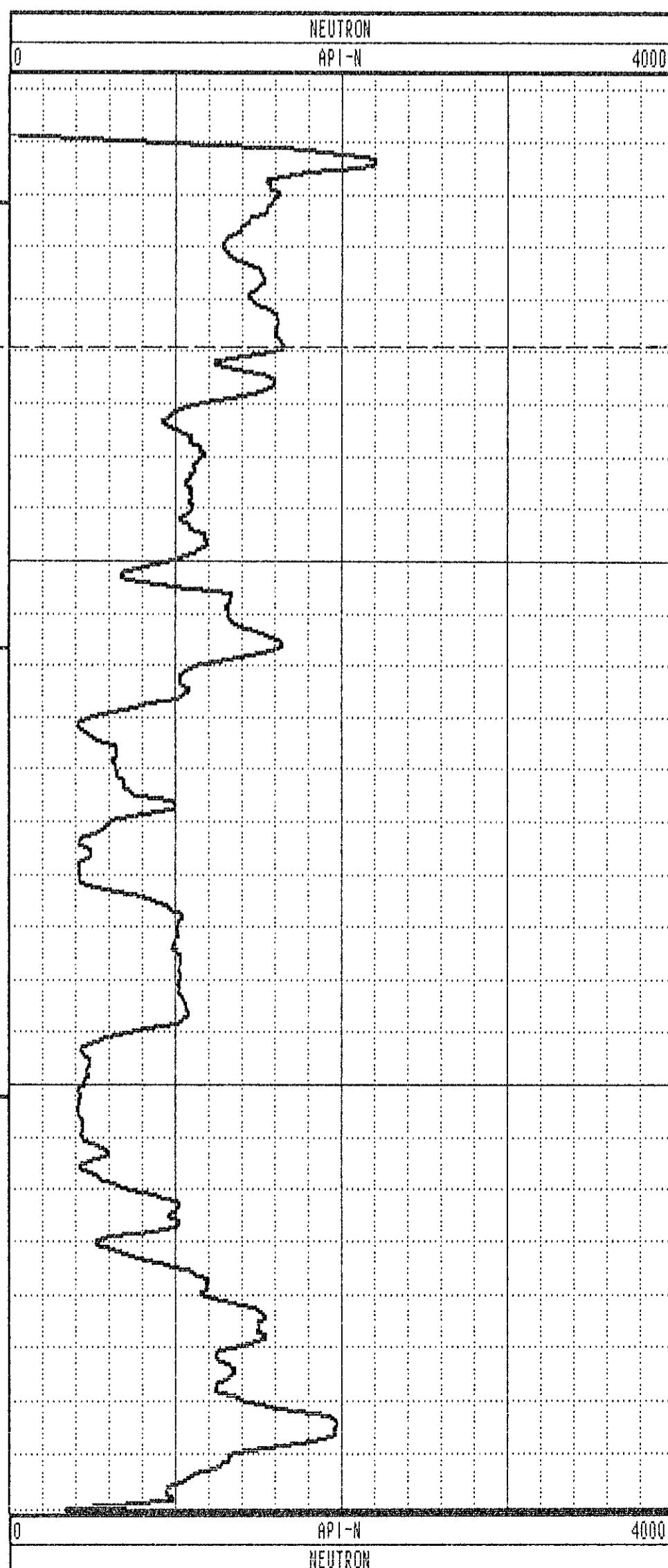
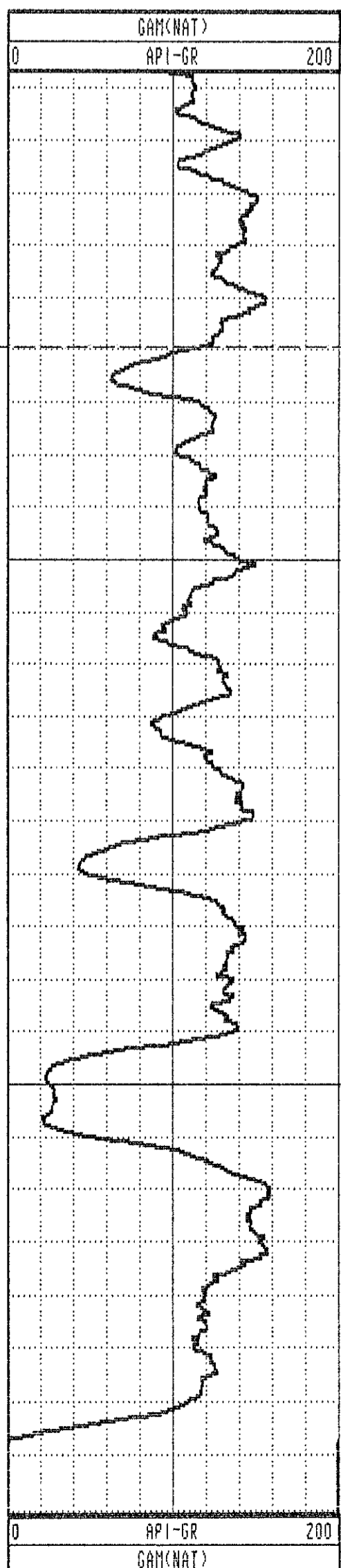


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96133 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 28.08 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.74 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 6 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

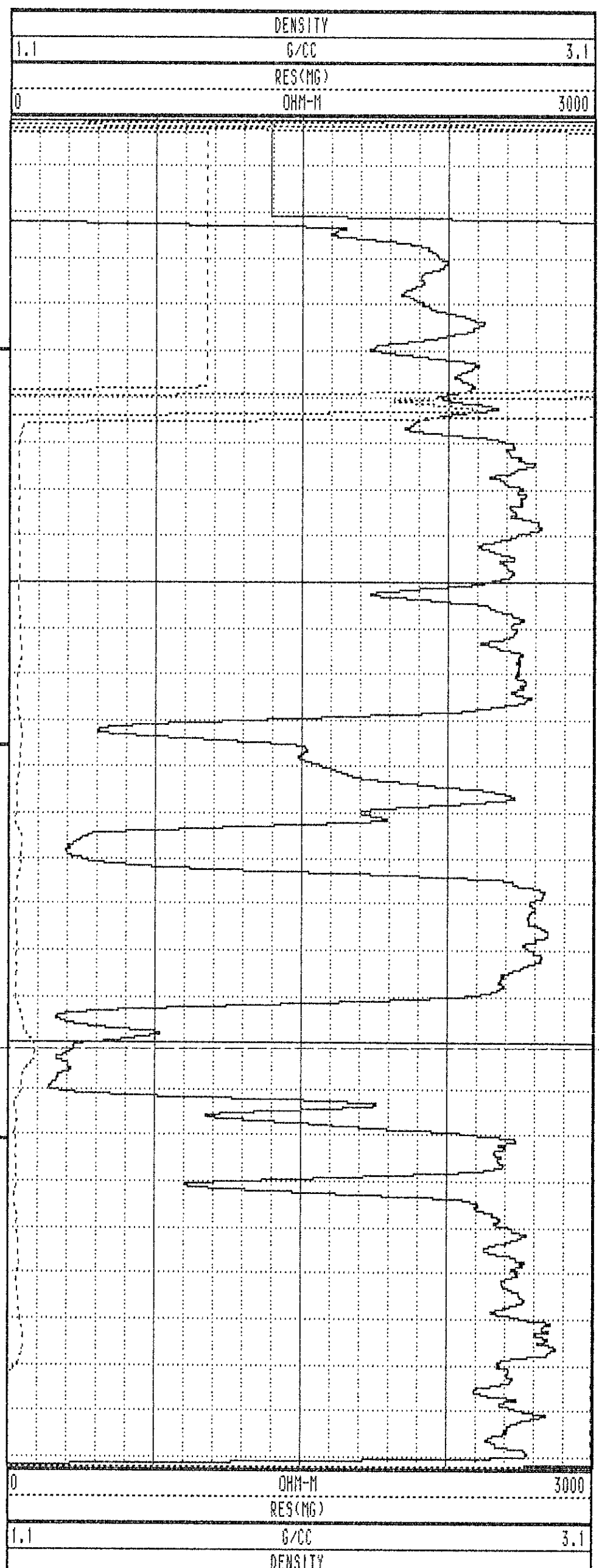
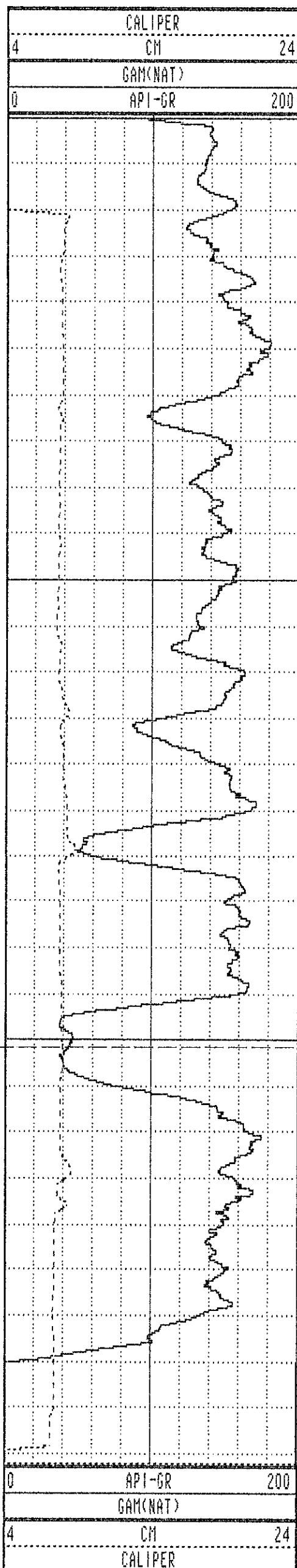
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|--|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96133 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 09/22/96 | PERMANENT DATUM : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: KB : |
| LOG BOTTOM | : 29.25 | LOG MEASURED FROM: G.L. DF : |
| LOG TOP | : 0.06 | DRL MEASURED FROM: GL : |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.00 | RM : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE : LOG : 4 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : THRESH: 10000 |
| REMARKS | : | |
| NONE | : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

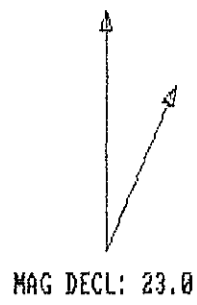


WRH-96133 09/22/96 958

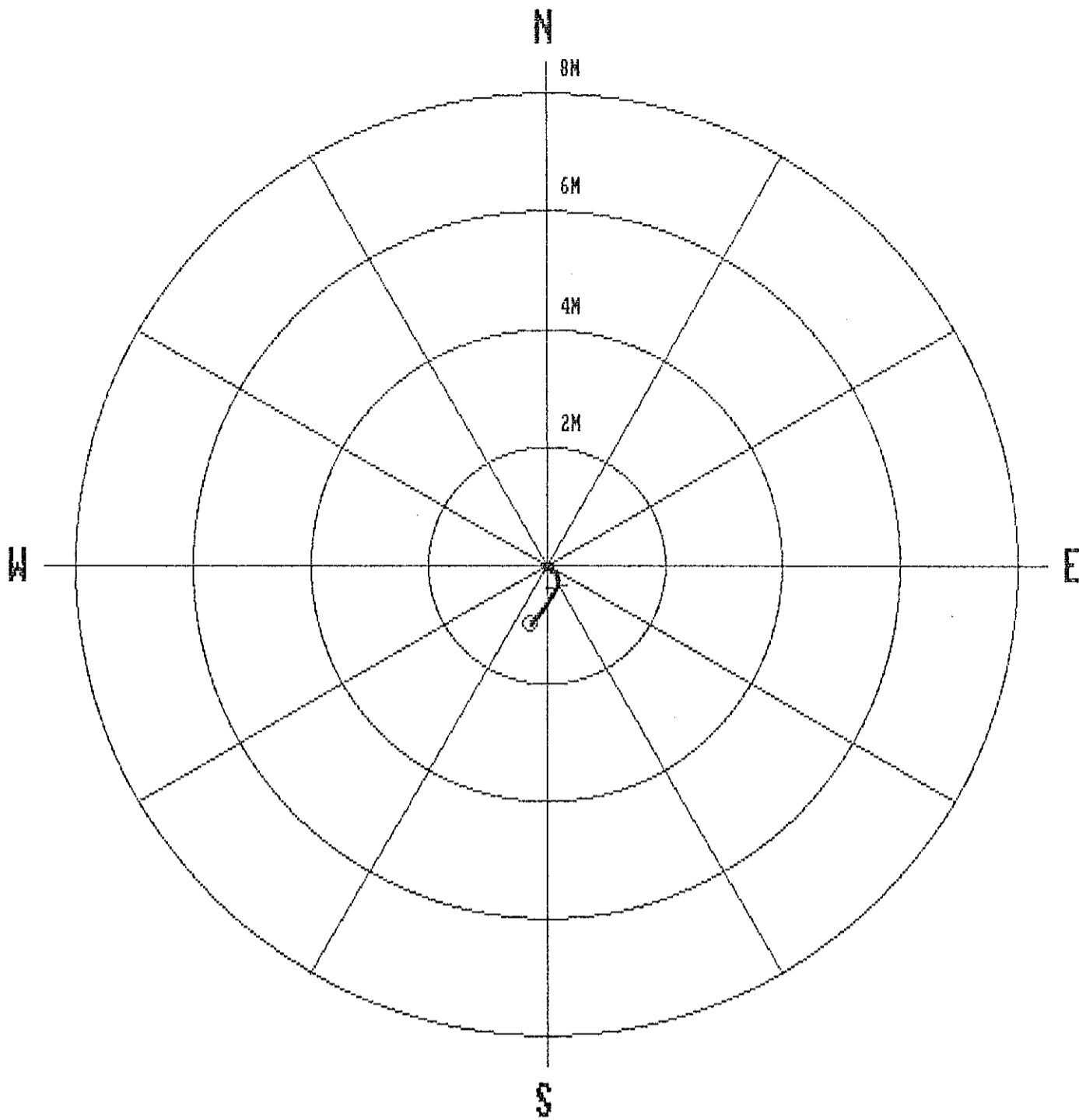
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.800 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96134
 DATE OF LOG: 08/12/96
 ROBE: 9055A 56

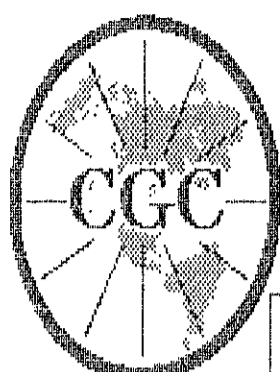


SCALE: 1 M/CM
 TRUE DEPTH: 29.59 M
 AZIMUTH: 196.0
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.01 | -0.00 | 0.0 | 199.4 | 3.1 | 178.0 |
| 3.0 | 3.00 | -0.03 | -0.04 | 0.0 | 237.7 | 3.0 | 295.8 |
| 4.0 | 4.00 | 0.01 | -0.07 | 0.1 | 275.0 | 2.9 | 346.1 |
| 5.0 | 5.00 | -0.01 | -0.05 | 0.0 | 260.4 | 3.1 | 111.9 |
| 6.0 | 5.99 | -0.02 | -0.01 | 0.0 | 198.7 | 2.1 | 117.7 |
| 7.0 | 6.99 | -0.04 | 0.02 | 0.0 | 150.8 | 2.3 | 117.4 |
| 8.0 | 7.99 | -0.06 | 0.06 | 0.1 | 137.7 | 2.1 | 126.6 |
| 9.0 | 8.99 | -0.08 | 0.08 | 0.1 | 133.9 | 2.1 | 127.6 |
| 10.0 | 9.99 | -0.10 | 0.11 | 0.1 | 132.2 | 1.8 | 125.9 |
| 11.0 | 10.99 | -0.12 | 0.13 | 0.2 | 131.8 | 1.4 | 117.4 |
| 12.0 | 11.99 | -0.14 | 0.15 | 0.2 | 132.7 | 2.2 | 156.4 |
| 13.0 | 12.99 | -0.16 | 0.16 | 0.2 | 134.8 | 1.7 | 151.4 |
| 14.0 | 13.99 | -0.19 | 0.18 | 0.3 | 136.4 | 1.6 | 155.4 |
| 15.0 | 14.99 | -0.21 | 0.19 | 0.3 | 138.5 | 1.5 | 162.3 |
| 16.0 | 15.99 | -0.24 | 0.19 | 0.3 | 141.1 | 1.8 | 176.6 |
| 17.0 | 16.99 | -0.27 | 0.19 | 0.3 | 144.2 | 1.3 | 172.9 |
| 18.0 | 17.99 | -0.30 | 0.19 | 0.4 | 147.1 | 1.6 | 181.3 |
| 19.0 | 18.99 | -0.33 | 0.18 | 0.4 | 150.7 | 1.9 | 197.5 |
| 20.0 | 19.99 | -0.36 | 0.17 | 0.4 | 155.3 | 2.5 | 202.8 |
| 21.0 | 20.99 | -0.41 | 0.15 | 0.4 | 159.8 | 2.6 | 204.4 |
| 22.0 | 21.99 | -0.46 | 0.12 | 0.5 | 164.7 | 3.1 | 198.4 |
| 23.0 | 22.98 | -0.51 | 0.09 | 0.5 | 169.7 | 3.5 | 208.5 |
| 24.0 | 23.98 | -0.57 | 0.06 | 0.6 | 174.1 | 4.7 | 206.3 |
| 25.0 | 24.98 | -0.64 | 0.02 | 0.6 | 178.5 | 4.8 | 216.1 |
| 26.0 | 25.97 | -0.71 | -0.03 | 0.7 | 182.6 | 5.2 | 218.7 |
| 27.0 | 26.97 | -0.79 | -0.09 | 0.8 | 186.4 | 5.3 | 217.0 |
| 28.0 | 27.96 | -0.87 | -0.15 | 0.9 | 189.9 | 6.0 | 222.9 |
| 29.0 | 28.96 | -0.93 | -0.23 | 1.0 | 193.6 | 6.2 | 229.7 |
| 29.6 | 29.59 | -0.98 | -0.28 | 1.0 | 196.0 | 6.4 | 233.1 |

WRH 96 134

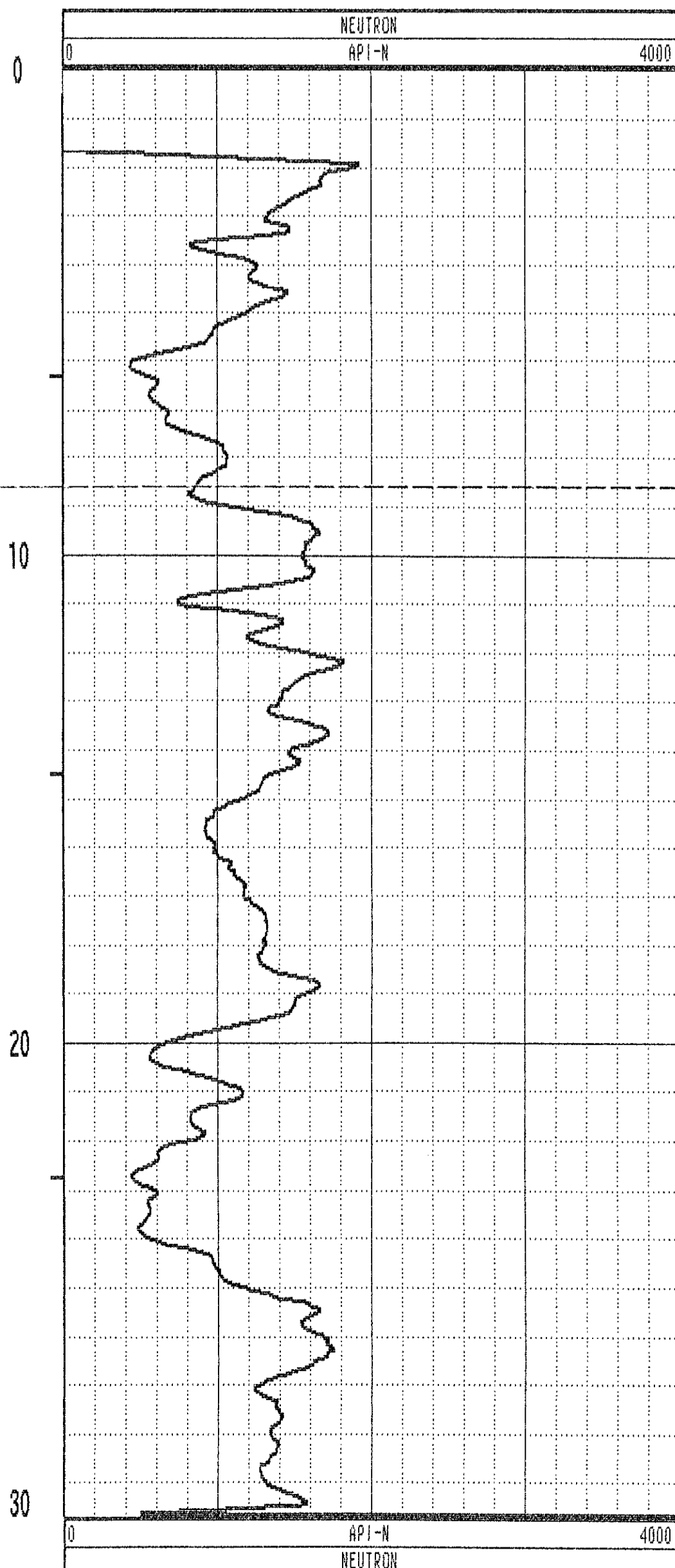
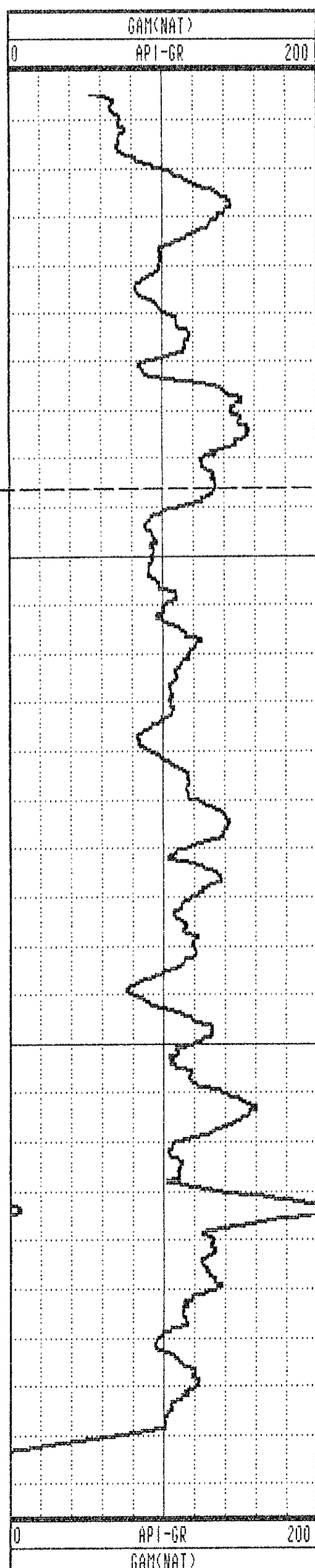


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : MRH-96134 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.69 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.52 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 9 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

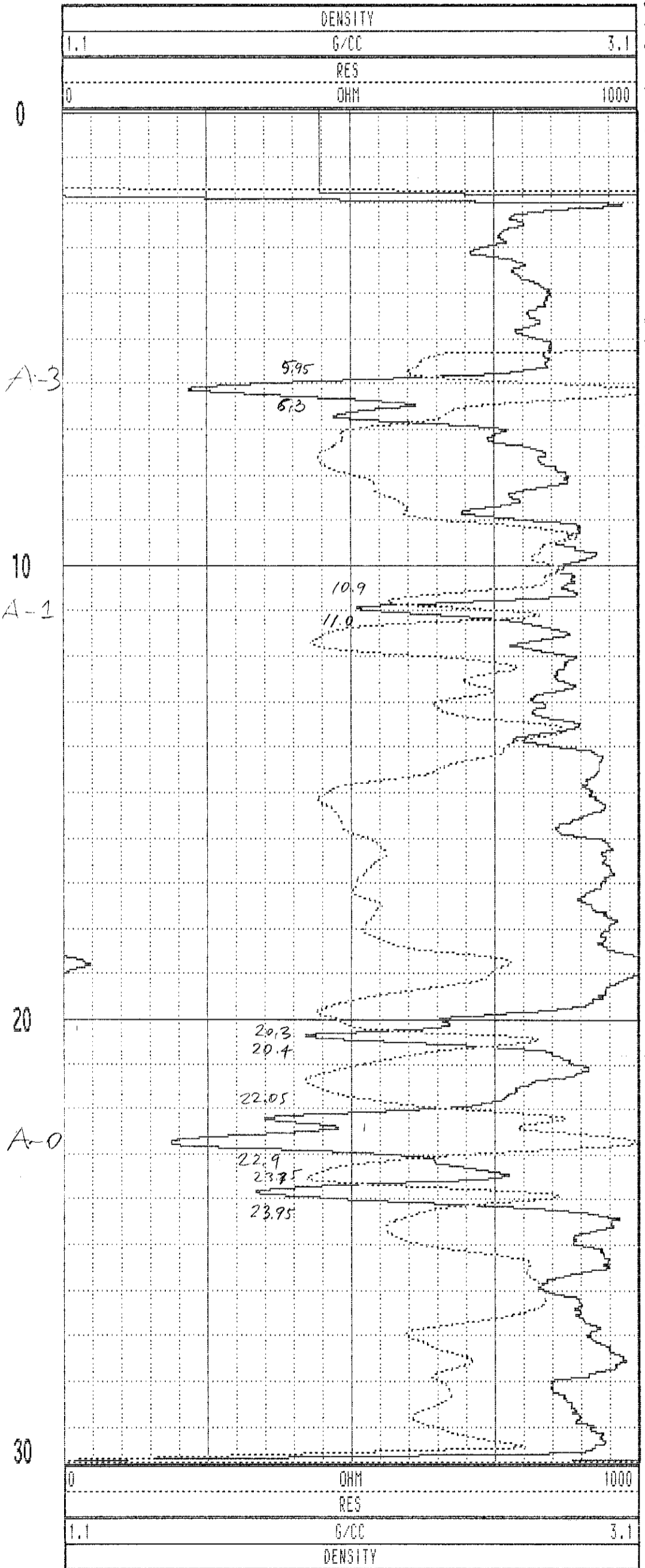
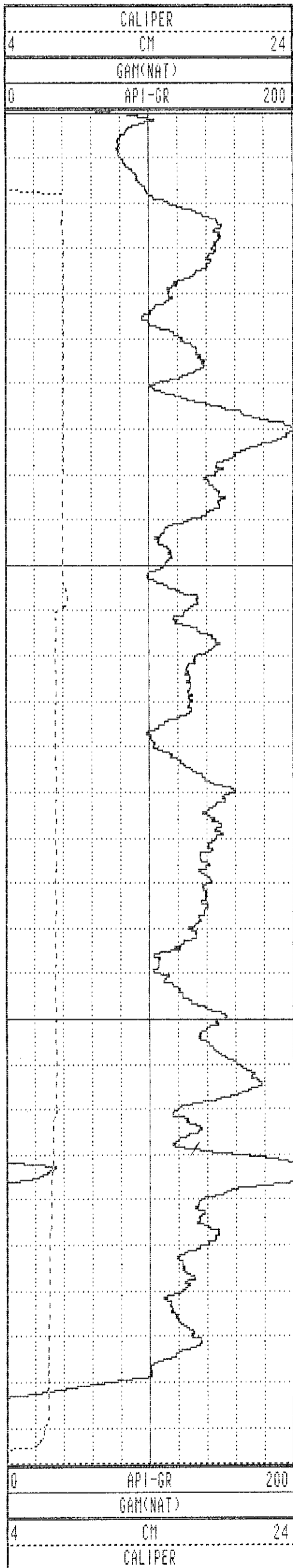
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96134 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | |
| DATE | : 08/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 29.82 | LOG MEASURED FROM: | G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96134 08/12/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV12.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

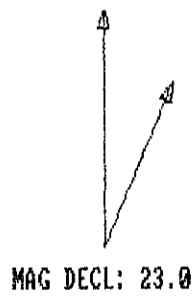
130
279

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.92 | -0.25 | -0.08 | 0.3 | 197.1 | 34.9 | 181.2 |
| 4.0 | 3.74 | -0.71 | 0.19 | 0.7 | 165.2 | 35.7 | 127.5 |
| 5.0 | 4.55 | -0.89 | -0.05 | 0.9 | 183.5 | 35.5 | 274.6 |
| 6.0 | 5.37 | -1.09 | -0.59 | 1.2 | 208.5 | 35.4 | 237.1 |
| 7.0 | 6.18 | -1.38 | -1.08 | 1.8 | 218.1 | 34.2 | 234.9 |
| 8.0 | 7.00 | -1.68 | -1.57 | 2.3 | 223.1 | 35.1 | 236.3 |
| 9.0 | 7.81 | -2.00 | -2.05 | 2.9 | 225.7 | 35.2 | 235.2 |
| 10.0 | 8.63 | -2.31 | -2.53 | 3.4 | 227.5 | 34.2 | 244.1 |
| 11.0 | 9.45 | -2.61 | -3.02 | 4.0 | 229.2 | 35.0 | 238.9 |
| 12.0 | 10.27 | -2.92 | -3.49 | 4.5 | 230.1 | 34.7 | 242.0 |
| 13.0 | 11.09 | -3.23 | -3.96 | 5.1 | 230.8 | 32.2 | 212.2 |
| 14.0 | 11.92 | -3.55 | -4.41 | 5.7 | 231.1 | 33.8 | 228.3 |
| 15.0 | 12.75 | -3.83 | -4.90 | 6.2 | 232.0 | 34.4 | 238.4 |
| 16.0 | 13.57 | -4.10 | -5.39 | 6.8 | 232.7 | 36.2 | 261.6 |
| 17.0 | 14.38 | -4.39 | -5.88 | 7.3 | 233.3 | 37.8 | 248.9 |
| 17.4 | 14.69 | -4.49 | -6.08 | 7.6 | 233.5 | 36.6 | 233.8 |

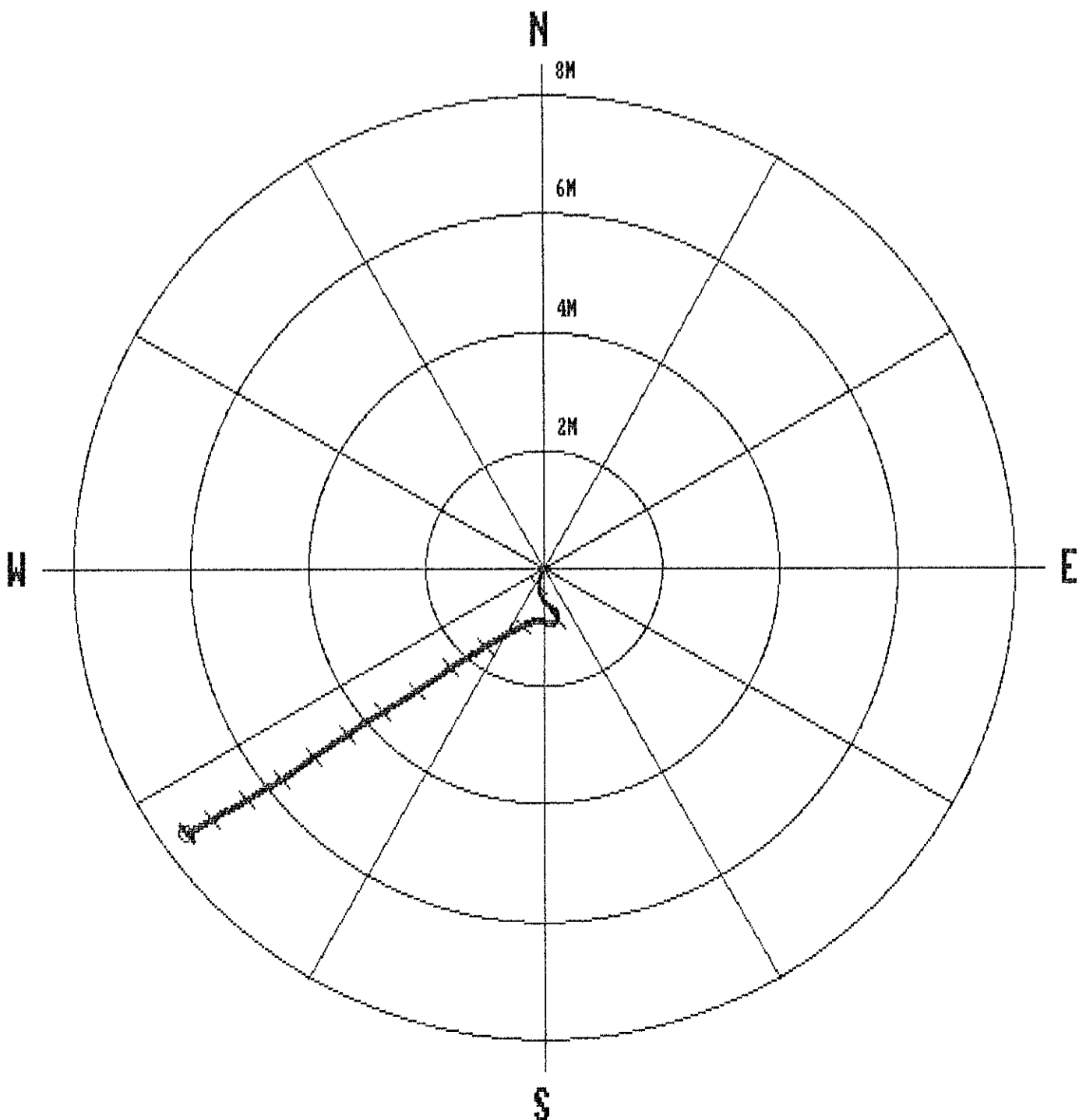
WLR 26/35

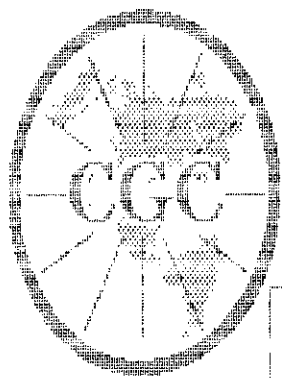
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: NRH-96135
 DATE OF LOG: 08/13/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 14.69 M
 AZIMUTH: 233.5
 DISTANCE: 7.6 M
 + = 1 M INCR
 O = BOTTOM OF HOLE



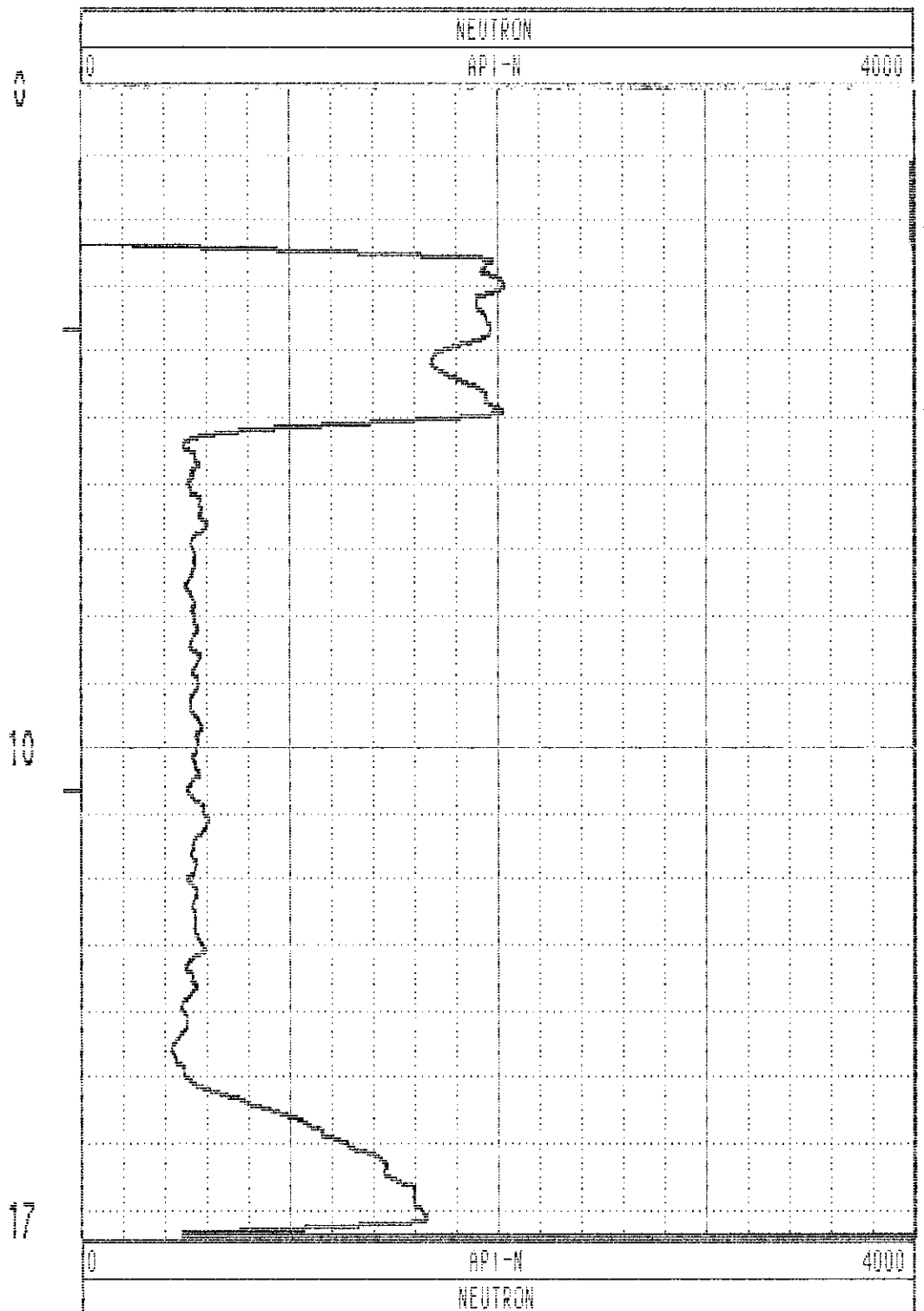
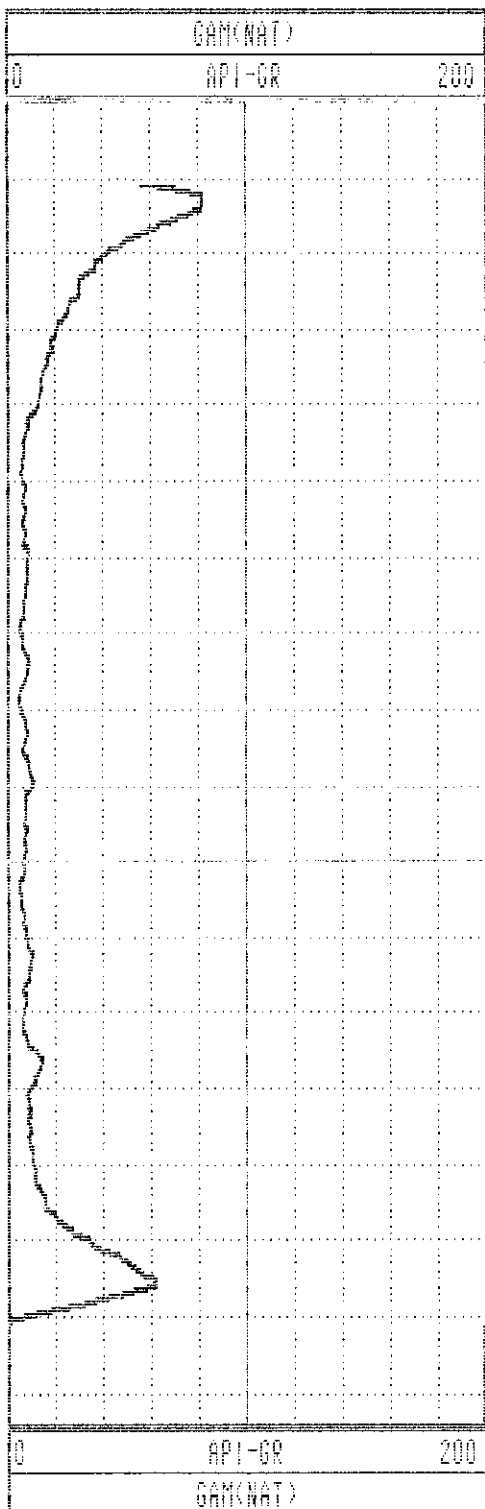


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96135 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | |
| DATE | : 08/13/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 22 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 17.43 | LOG MEASURED FROM: | G.L. |
| LOG TOP | : 1.13 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 6 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

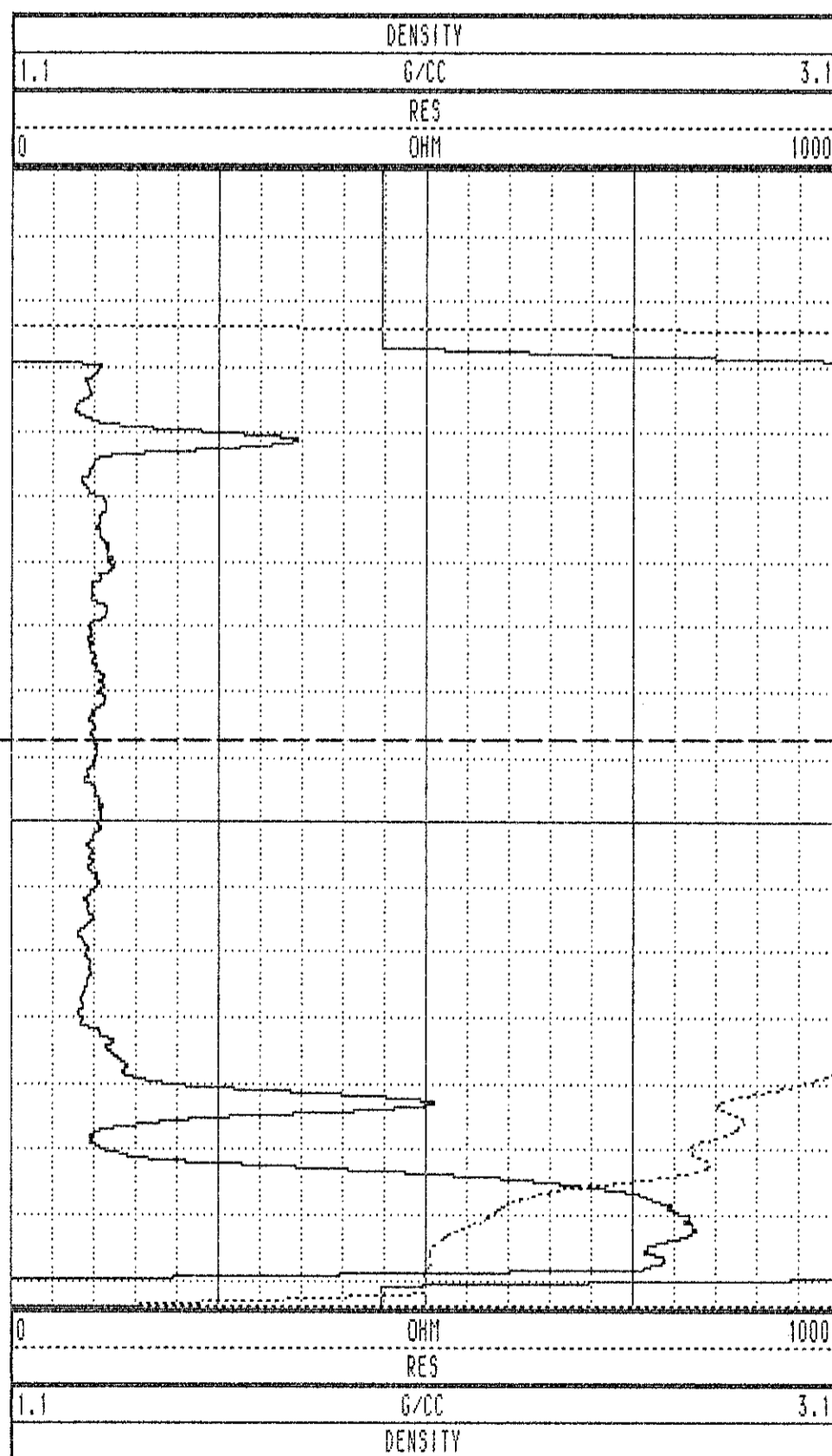
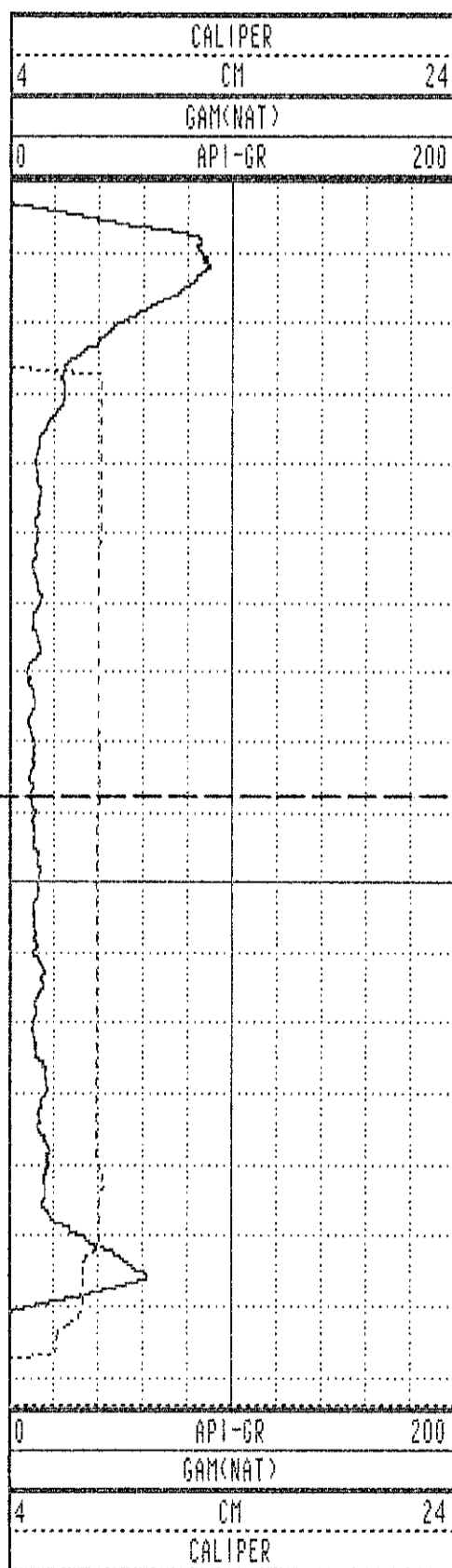
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96135 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/13/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.44 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 9 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96135 08/13/96 958

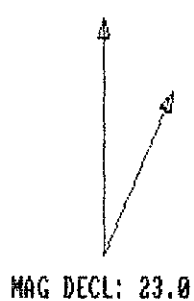
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1000.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|------|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.91 | -0.23 | -0.19 | 0.3 | 219.6 | 34.2 | 223.2 |
| 4.0 | 3.73 | -0.67 | -0.49 | 0.8 | 216.0 | 34.2 | 271.7 |
| 5.0 | 4.56 | -0.72 | -0.92 | 1.2 | 231.9 | 34.5 | 238.7 |
| 6.0 | 5.38 | -1.06 | -1.37 | 1.7 | 232.1 | 35.0 | 236.1 |
| 7.0 | 6.20 | -1.43 | -1.81 | 2.3 | 231.7 | 36.0 | 235.2 |
| 8.0 | 7.00 | -1.80 | -2.25 | 2.9 | 231.4 | 38.0 | 269.4 |
| 9.0 | 7.82 | -2.16 | -2.68 | 3.4 | 231.1 | 35.2 | 226.1 |
| 10.0 | 8.62 | -2.49 | -3.14 | 4.0 | 231.6 | 36.1 | 232.4 |
| 11.0 | 9.43 | -2.81 | -3.63 | 4.6 | 232.2 | 37.7 | 238.6 |
| 12.0 | 10.25 | -3.18 | -4.07 | 5.2 | 232.0 | 35.0 | 218.8 |
| 13.0 | 11.06 | -3.54 | -4.53 | 5.7 | 231.9 | 35.5 | 234.6 |
| 14.0 | 11.86 | -3.89 | -5.00 | 6.3 | 232.2 | 38.0 | 198.4 |
| 15.0 | 12.66 | -4.18 | -5.50 | 6.9 | 232.8 | 38.6 | 245.3 |
| 16.0 | 13.46 | -4.55 | -5.95 | 7.5 | 232.6 | 38.3 | 244.7 |
| 17.0 | 14.26 | -4.91 | -6.43 | 8.1 | 232.7 | 36.9 | 235.7 |
| 18.0 | 15.05 | -5.25 | -6.92 | 8.7 | 232.8 | 37.2 | 234.2 |
| 19.0 | 15.84 | -5.54 | -7.43 | 9.3 | 233.3 | 37.8 | 246.6 |
| 20.0 | 16.63 | -5.92 | -7.91 | 9.9 | 233.2 | 38.1 | 228.4 |
| 21.0 | 17.41 | -6.31 | -8.38 | 10.5 | 233.0 | 38.4 | 238.8 |
| 22.0 | 18.18 | -6.74 | -8.85 | 11.1 | 232.7 | 39.7 | 224.8 |
| 22.3 | 18.42 | -6.88 | -9.00 | 11.3 | 232.6 | 39.9 | 226.0 |

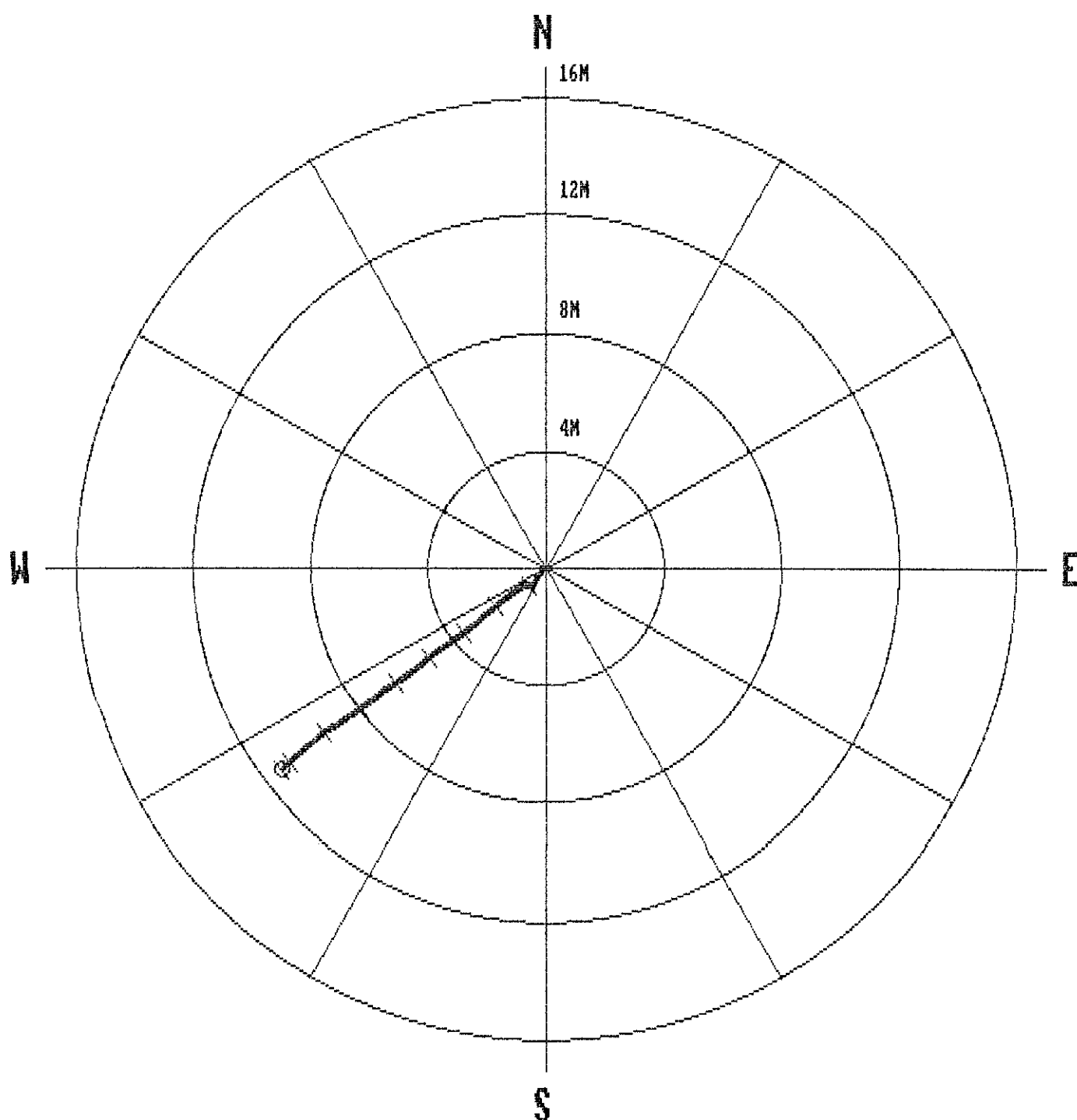
WRH 96136

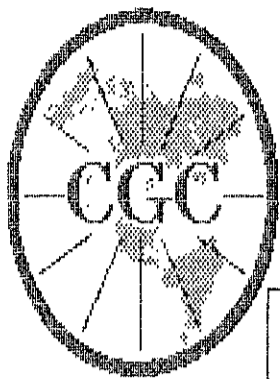
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96136
 DATE OF LOG: 08/13/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 18.42 M
 AZIMUTH: 232.6
 DISTANCE: 11.3 M
 + = 2 M INCR
 O = BOTTOM OF HOLE



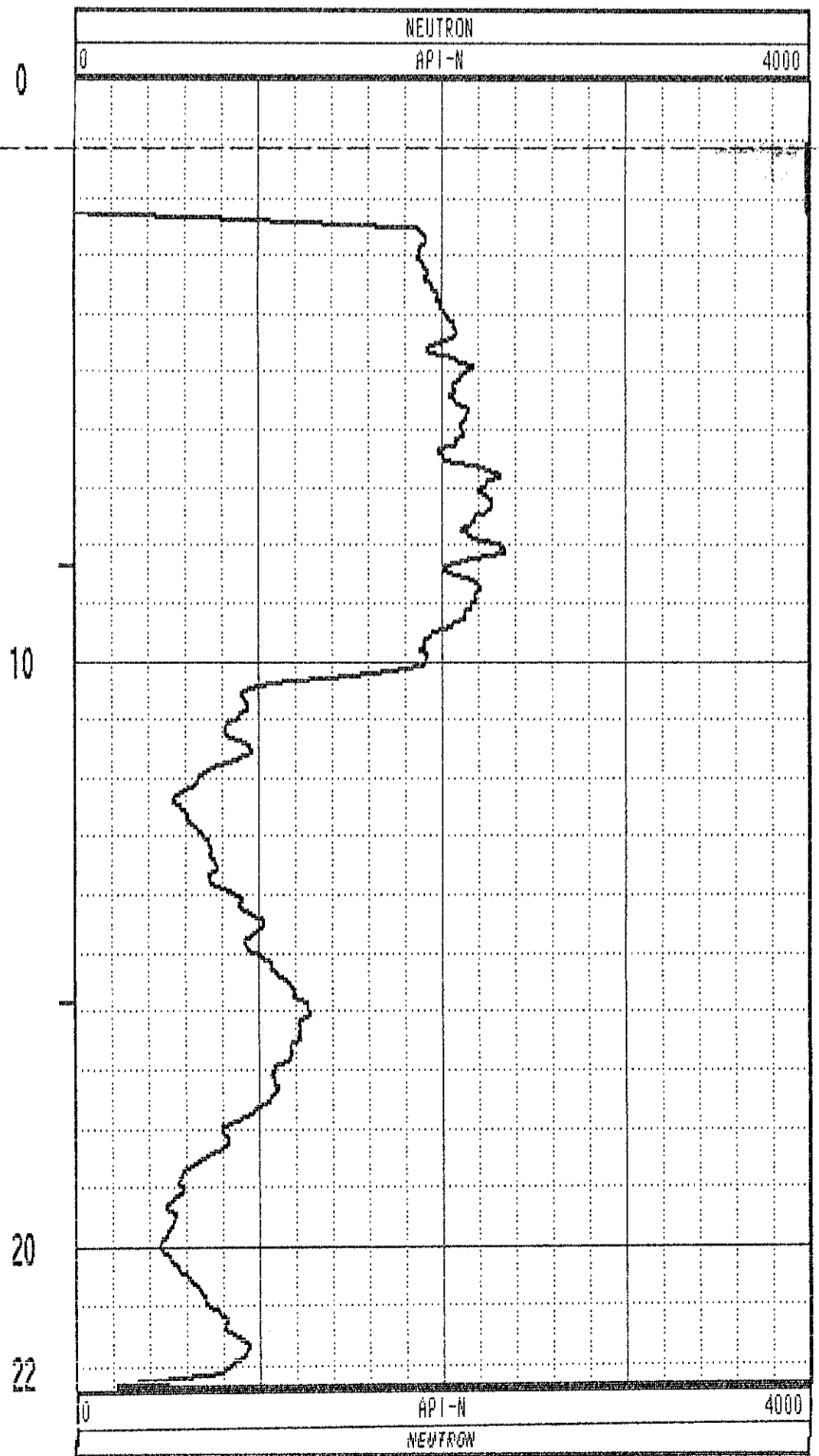
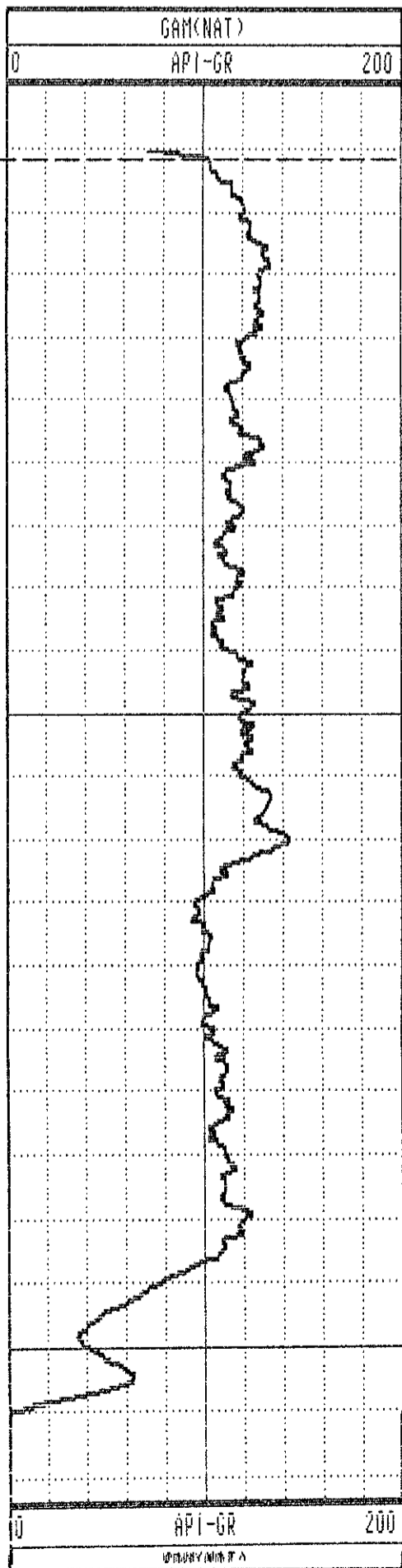


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96136 | | |
| LOCATION/FIELD | : MILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/13/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 22 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 22.37 | LOG MEASURED FROM: | G.L. DF |
| LOG TOP | : 1.87 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 5 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

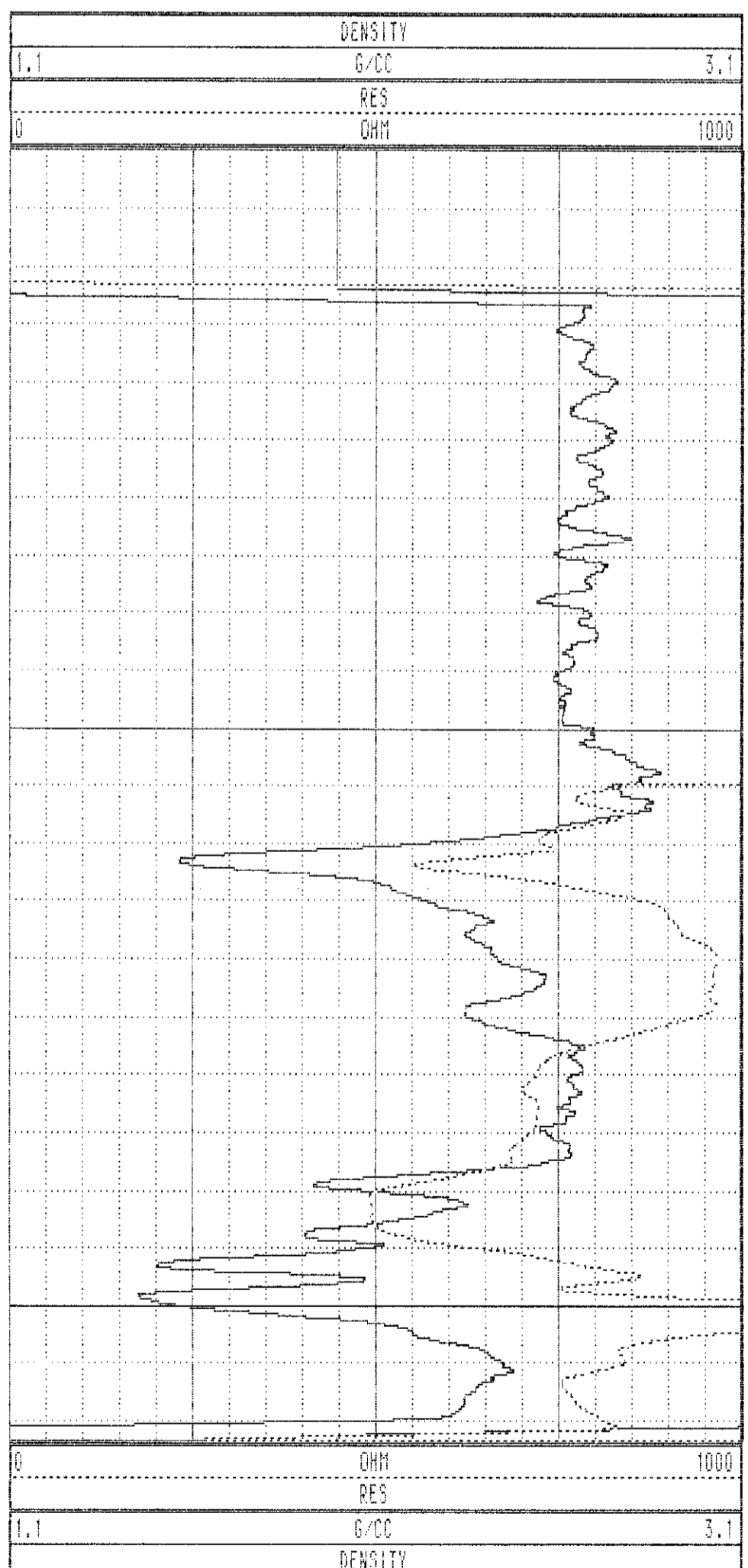
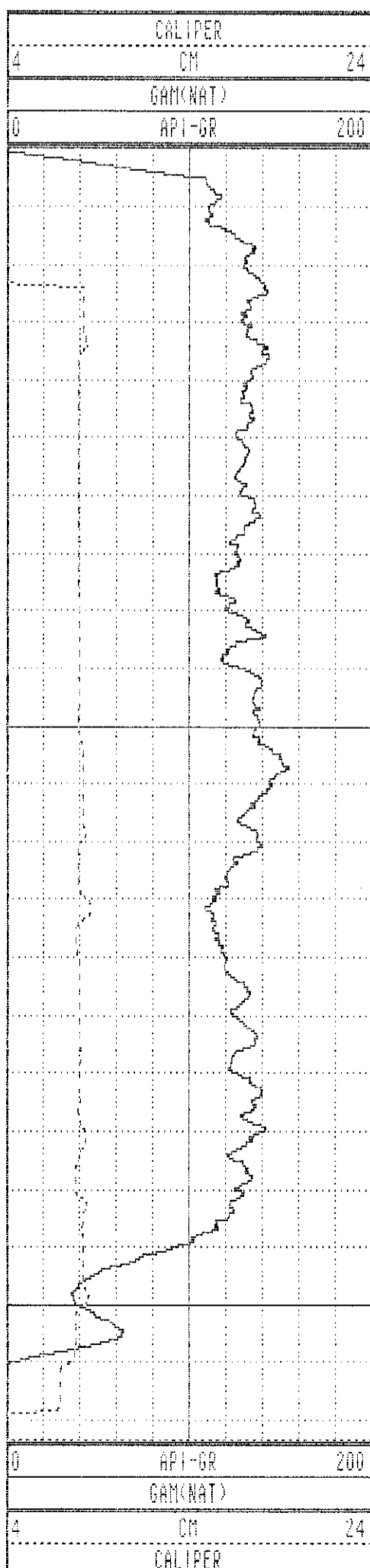
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96136 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/13/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 22.38 | LOG MEASURED FROM: | G. L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 8 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



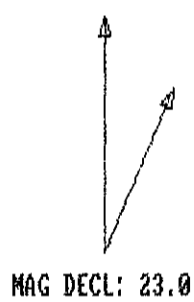
WRH-96136 08/13/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

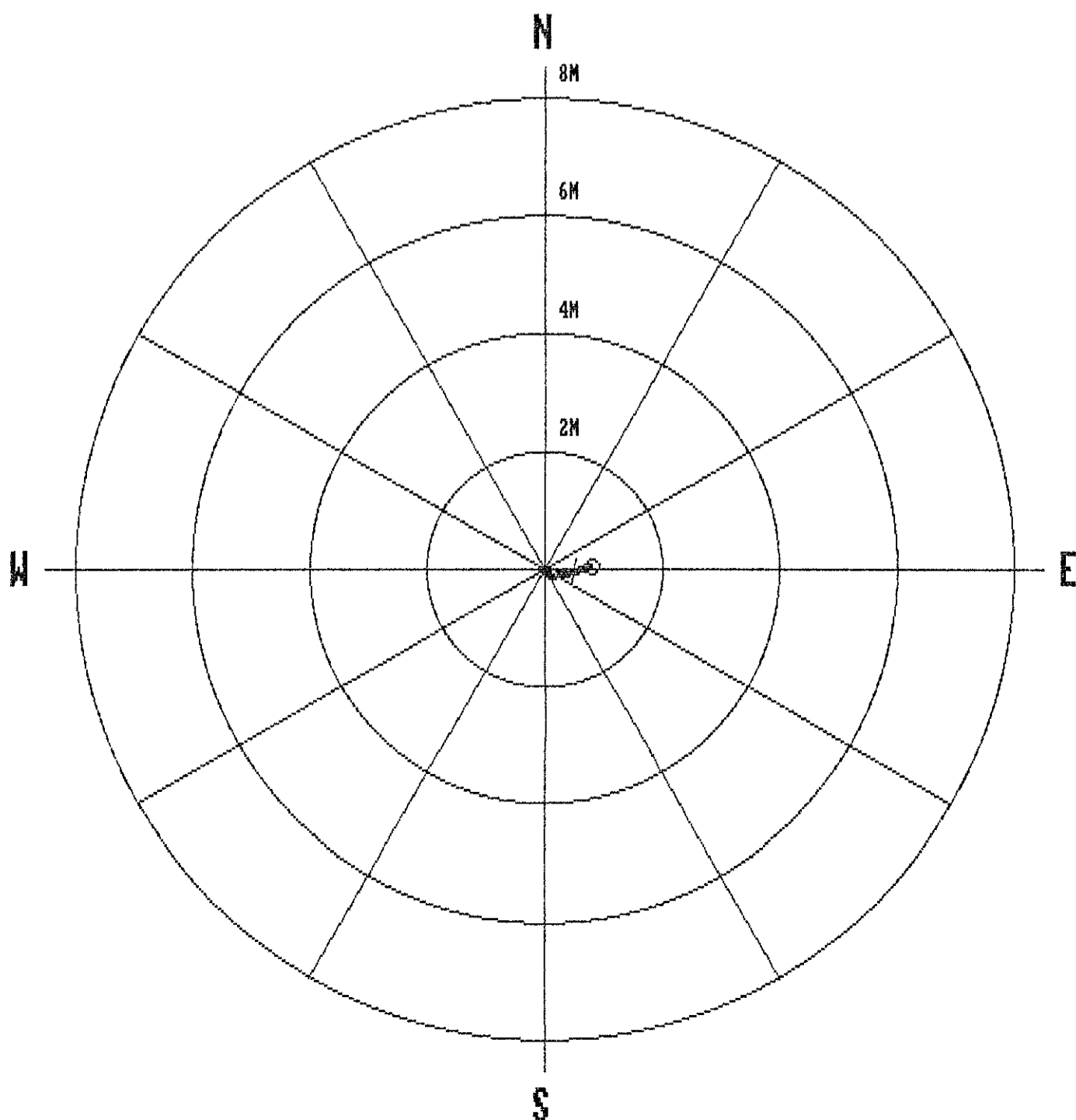
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 156.7 | 1.4 | 156.7 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 190.5 | 1.3 | 273.4 |
| 4.0 | 4.00 | -0.03 | -0.00 | 0.0 | 181.7 | 1.3 | 215.0 |
| 5.0 | 5.00 | -0.05 | 0.00 | 0.0 | 175.6 | 0.9 | 156.4 |
| 6.0 | 6.00 | -0.07 | 0.01 | 0.1 | 171.5 | 1.5 | 142.0 |
| 7.0 | 7.00 | -0.09 | 0.02 | 0.1 | 164.0 | 1.3 | 144.1 |
| 8.0 | 8.00 | -0.10 | 0.04 | 0.1 | 156.2 | 1.0 | 113.8 |
| 9.0 | 9.00 | -0.10 | 0.07 | 0.1 | 145.9 | 1.7 | 104.5 |
| 10.0 | 10.00 | -0.11 | 0.10 | 0.1 | 137.4 | 1.8 | 95.0 |
| 11.0 | 11.00 | -0.11 | 0.13 | 0.2 | 128.9 | 2.5 | 78.6 |
| 12.0 | 12.00 | -0.11 | 0.17 | 0.2 | 121.9 | 2.0 | 87.5 |
| 13.0 | 13.00 | -0.10 | 0.21 | 0.2 | 116.5 | 2.0 | 85.3 |
| 14.0 | 13.99 | -0.10 | 0.25 | 0.3 | 111.8 | 2.5 | 73.4 |
| 15.0 | 14.99 | -0.09 | 0.29 | 0.3 | 107.0 | 2.9 | 79.5 |
| 16.0 | 15.99 | -0.08 | 0.34 | 0.3 | 103.4 | 2.8 | 79.6 |
| 17.0 | 16.99 | -0.07 | 0.38 | 0.4 | 101.0 | 2.3 | 87.2 |
| 18.0 | 17.99 | -0.06 | 0.42 | 0.4 | 98.7 | 2.5 | 77.2 |
| 19.0 | 18.99 | -0.06 | 0.46 | 0.5 | 96.8 | 2.4 | 59.1 |
| 20.0 | 19.99 | -0.04 | 0.51 | 0.5 | 94.4 | 2.7 | 74.0 |
| 21.0 | 20.99 | -0.03 | 0.56 | 0.6 | 93.1 | 2.4 | 72.0 |
| 22.0 | 21.99 | -0.02 | 0.61 | 0.6 | 91.5 | 2.7 | 86.3 |
| 23.0 | 22.98 | -0.00 | 0.65 | 0.6 | 90.3 | 2.6 | 76.3 |
| 24.0 | 23.98 | 0.01 | 0.69 | 0.7 | 89.3 | 2.1 | 70.8 |
| 25.0 | 24.98 | 0.02 | 0.72 | 0.7 | 88.6 | 2.0 | 72.1 |
| 26.0 | 25.98 | 0.03 | 0.76 | 0.8 | 87.8 | 2.3 | 66.3 |
| 27.0 | 26.98 | 0.04 | 0.80 | 0.8 | 86.8 | 1.9 | 61.4 |
| 27.5 | 27.46 | 0.05 | 0.81 | 0.8 | 86.2 | 1.7 | 44.2 |

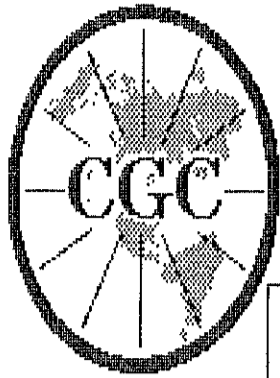
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96137A
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 27.46 M
 AZIMUTH: 86.2
 DISTANCE: 0.8 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.
GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96137A
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/02/96
 DEPTH DRILLER : 27
 LOG BOTTOM : 27.54
 LOG TOP : 0.64

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

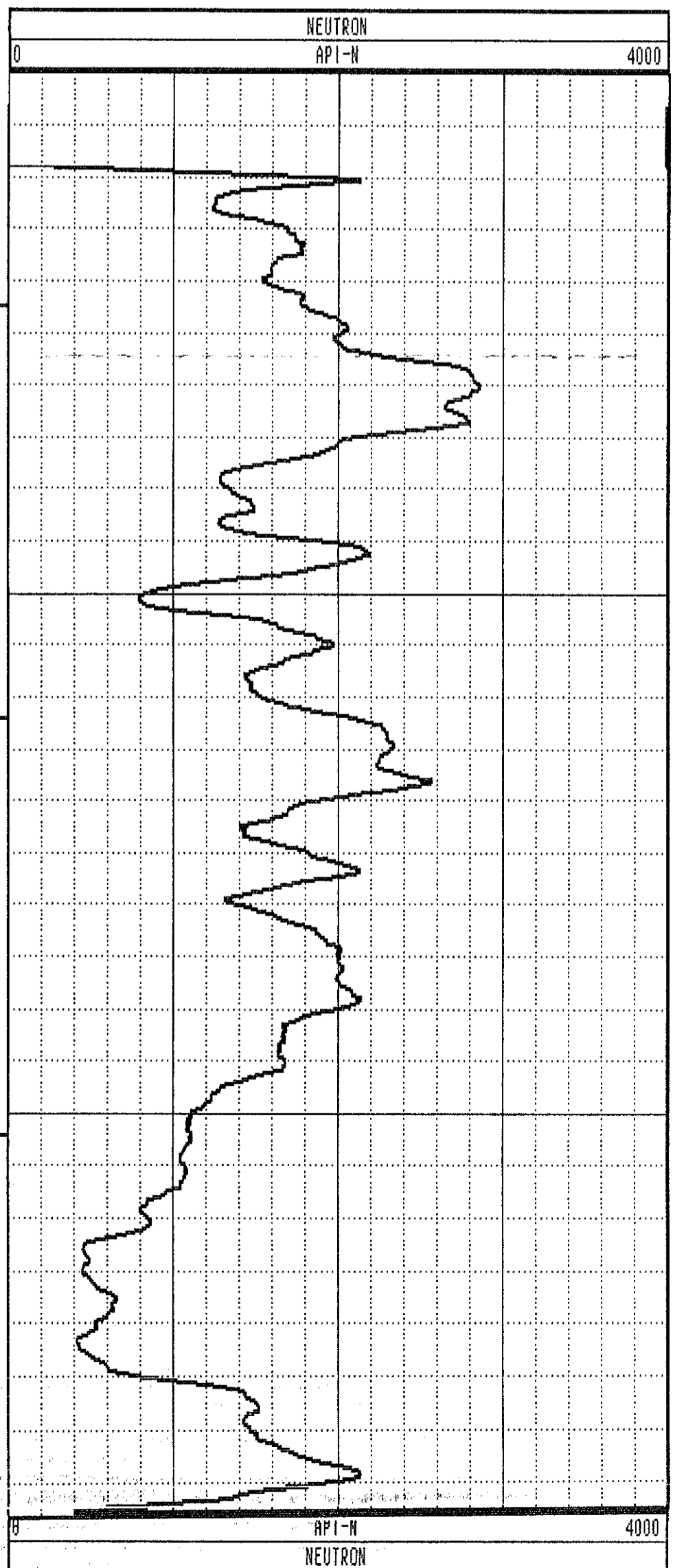
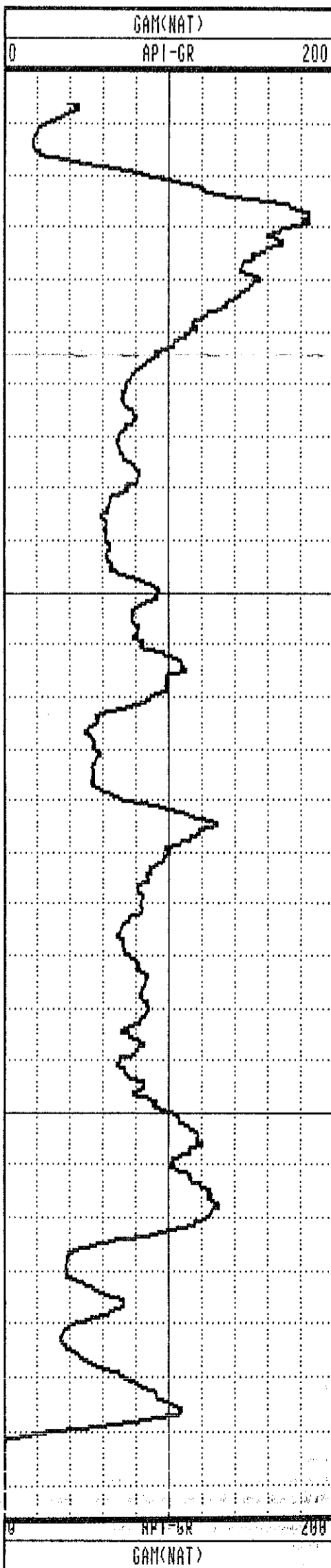
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 4
 THRESH: 10000

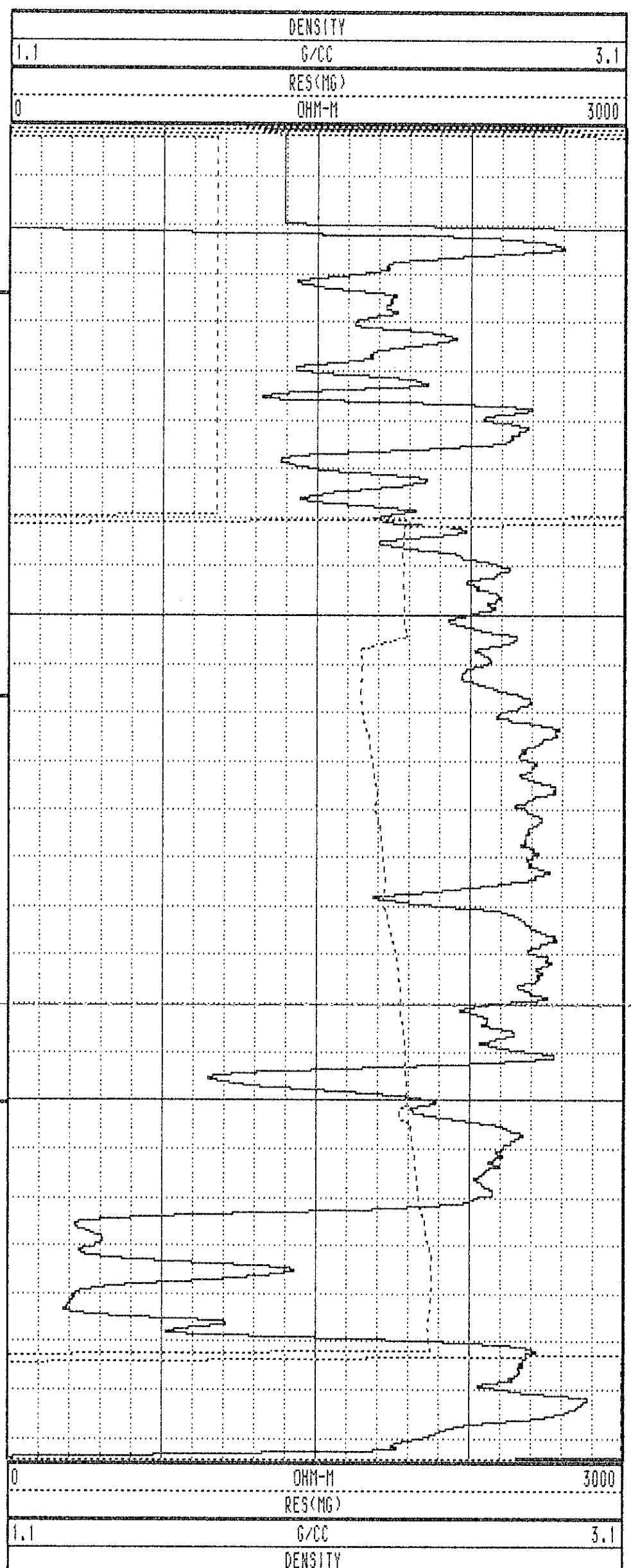
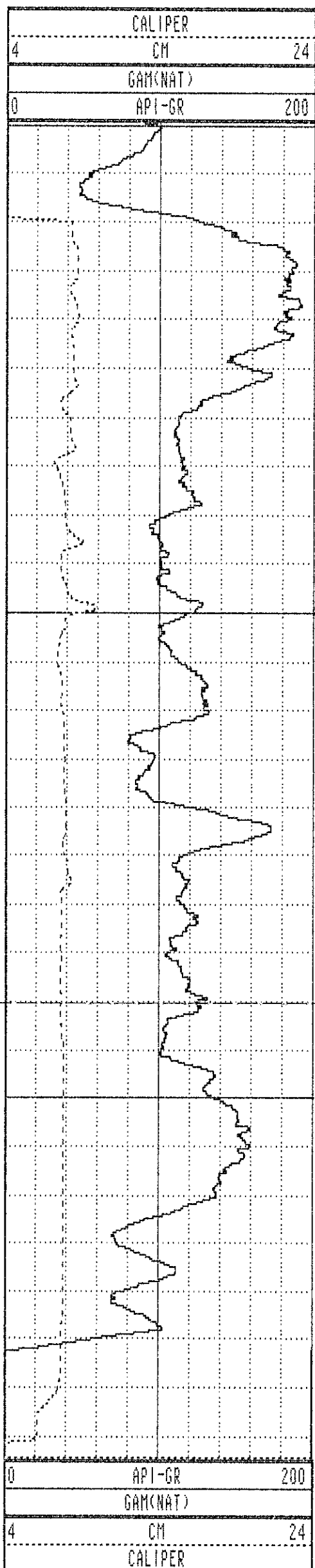
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96137A | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/18/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.48 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.00 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96137A 09/18/96 958

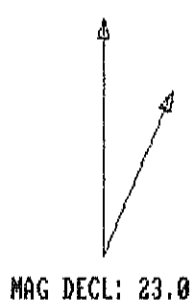
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|--------|---------------------|----------|-----|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 | CPS |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 | CPS |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 | CPS |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 | CPS |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 | CPS |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 | CPS |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 | CPS |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 | CPS |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 | CPS |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 | CPS |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 | CPS |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 | CPS |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 | CPS |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 | CPS |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.01 | 0.0 | 240.2 | 1.6 | 245.5 |
| 3.0 | 3.00 | -0.01 | -0.03 | 0.0 | 245.2 | 1.2 | 248.4 |
| 4.0 | 4.00 | -0.02 | -0.05 | 0.1 | 244.1 | 1.5 | 251.2 |
| 5.0 | 5.00 | -0.03 | -0.08 | 0.1 | 245.9 | 1.7 | 247.0 |
| 6.0 | 6.00 | -0.05 | -0.11 | 0.1 | 245.8 | 2.0 | 247.8 |
| 7.0 | 7.00 | -0.07 | -0.14 | 0.2 | 244.1 | 2.8 | 247.3 |
| 8.0 | 8.00 | -0.09 | -0.18 | 0.2 | 245.0 | 2.6 | 247.8 |
| 9.0 | 8.99 | -0.11 | -0.23 | 0.3 | 244.2 | 3.0 | 238.2 |
| 10.0 | 9.99 | -0.14 | -0.28 | 0.3 | 242.9 | 3.5 | 224.7 |
| 11.0 | 10.99 | -0.19 | -0.32 | 0.4 | 239.3 | 4.1 | 220.3 |
| 12.0 | 11.99 | -0.25 | -0.37 | 0.4 | 235.6 | 4.6 | 217.1 |
| 13.0 | 12.98 | -0.32 | -0.42 | 0.5 | 232.8 | 5.0 | 220.8 |
| 14.0 | 13.98 | -0.39 | -0.47 | 0.6 | 230.3 | 5.2 | 215.0 |
| 15.0 | 14.98 | -0.47 | -0.52 | 0.7 | 227.8 | 5.1 | 220.2 |
| 16.0 | 15.97 | -0.54 | -0.57 | 0.8 | 226.5 | 5.6 | 219.0 |
| 17.0 | 16.97 | -0.62 | -0.63 | 0.9 | 225.3 | 5.8 | 215.2 |
| 18.0 | 17.96 | -0.70 | -0.69 | 1.0 | 224.5 | 5.6 | 219.6 |
| 19.0 | 18.96 | -0.77 | -0.75 | 1.1 | 224.1 | 6.0 | 227.8 |
| 20.0 | 19.95 | -0.85 | -0.81 | 1.2 | 223.8 | 6.4 | 230.0 |
| 21.0 | 20.95 | -0.93 | -0.89 | 1.3 | 223.9 | 7.0 | 228.9 |
| 22.0 | 21.94 | -1.01 | -0.99 | 1.4 | 224.2 | 7.3 | 225.6 |
| 23.0 | 22.93 | -1.12 | -1.08 | 1.6 | 224.0 | 8.2 | 216.0 |
| 24.0 | 23.92 | -1.23 | -1.19 | 1.7 | 224.0 | 11.2 | 222.7 |
| 25.0 | 24.90 | -1.36 | -1.33 | 1.9 | 224.3 | 10.9 | 230.7 |
| 25.2 | 25.09 | -1.39 | -1.35 | 1.9 | 224.4 | 11.1 | 228.1 |

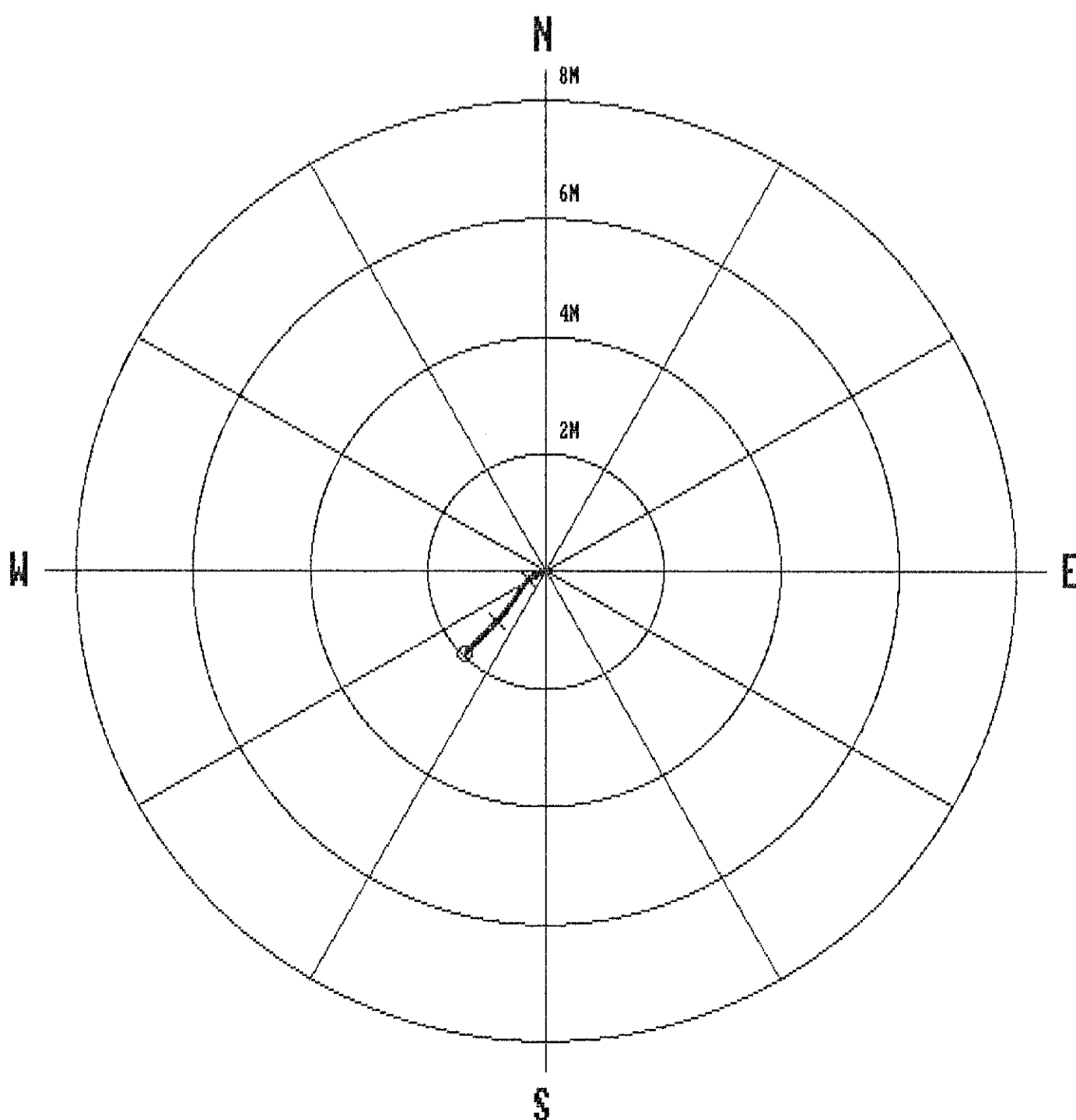
WRH 96/38

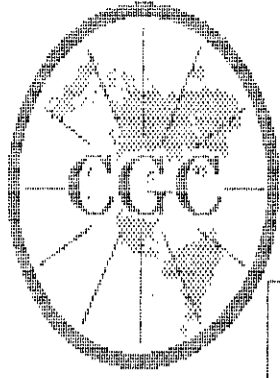
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96138
 DATE OF LOG: 08/13/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 25.09 M
 AZIMUTH: 224.4
 DISTANCE: 1.9 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



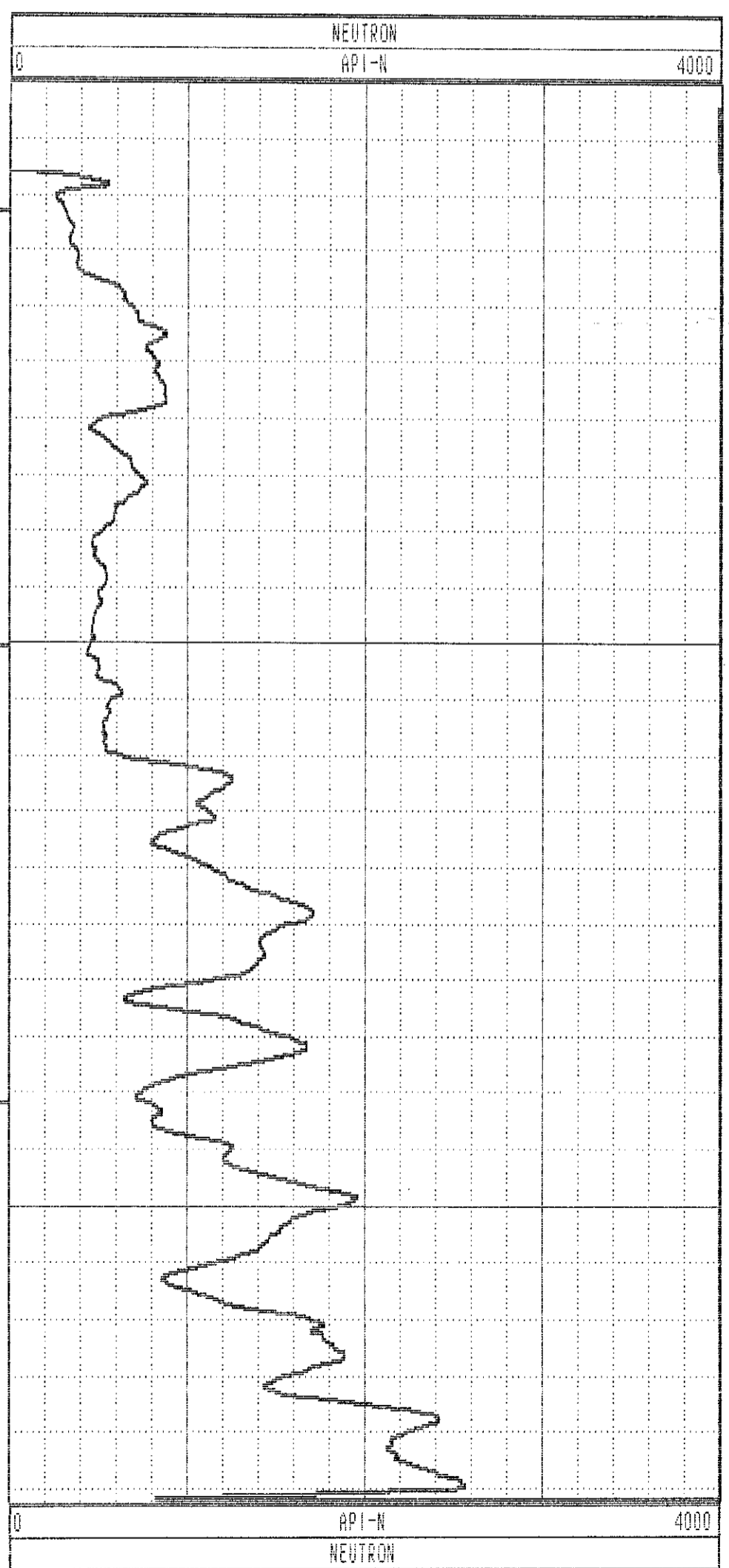
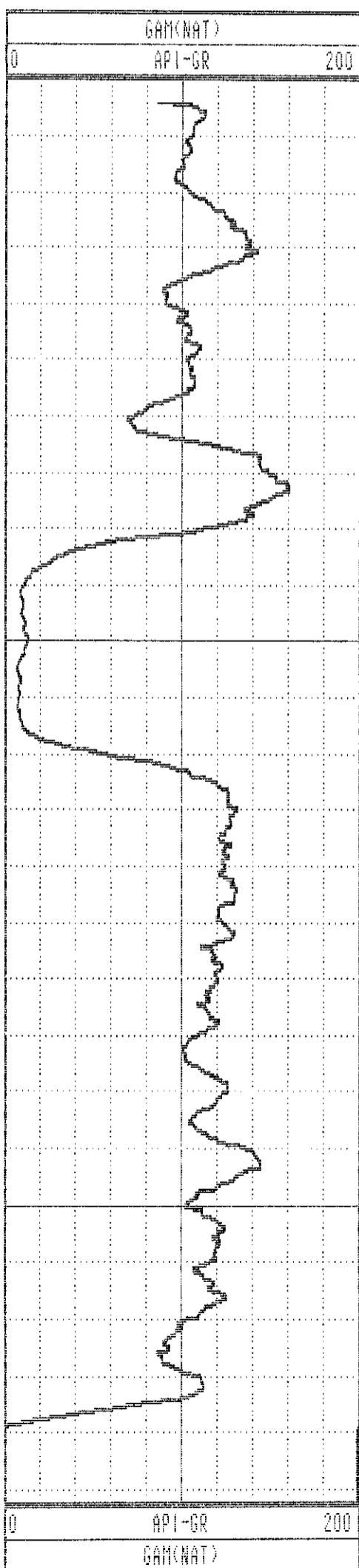


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | | | |
|-------------------|--------------------|--------------------|----------------|------------|------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | | | |
| WELL | : MRH-9613B | | | | |
| LOCATION/FIELD | : WILLOW CREEK | | | | |
| COUNTY | : | | | | |
| STATE | : BRITISH COLUMBIA | | | | |
| SECTION | : | TOWNSHIP | : | RANGE | : |
| DATE | : 08/13/96 | PERMANENT DATUM | : | ELEVATIONS | |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | | KB | : |
| LOG BOTTOM | : 25.25 | LOG MEASURED FROM: | G.L. | DF | : |
| LOG TOP | : 0.42 | DRL MEASURED FROM: | | GL | : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 | | |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. | | |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS | | |
| BIT SIZE | : | BOREHOLE FLUID | : WATER | FILE | : ORIGINAL |
| MAGNETIC DECL. | : 23 | RM | : | TYPE | : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG | : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT | : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH: | 10000 |
| REMARKS | : | | | | |

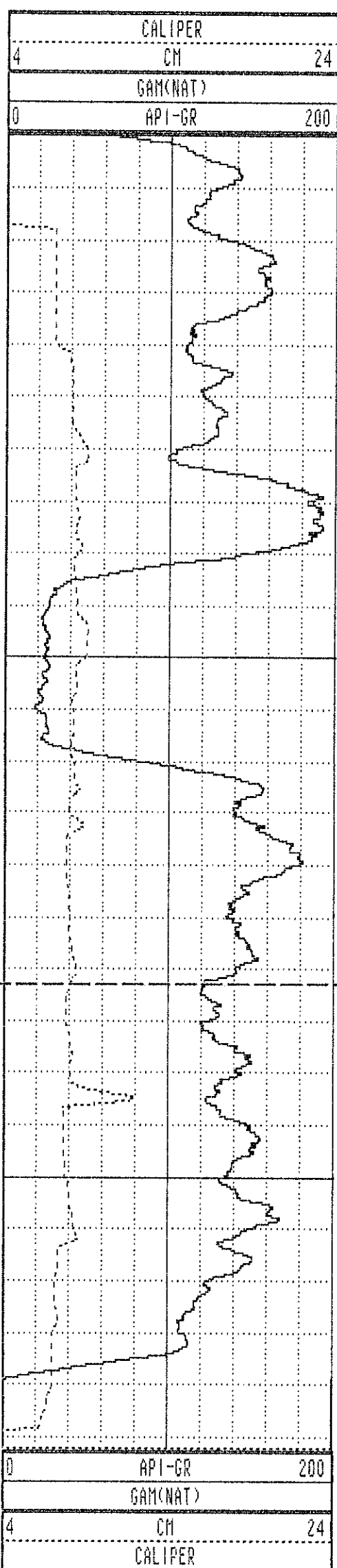
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



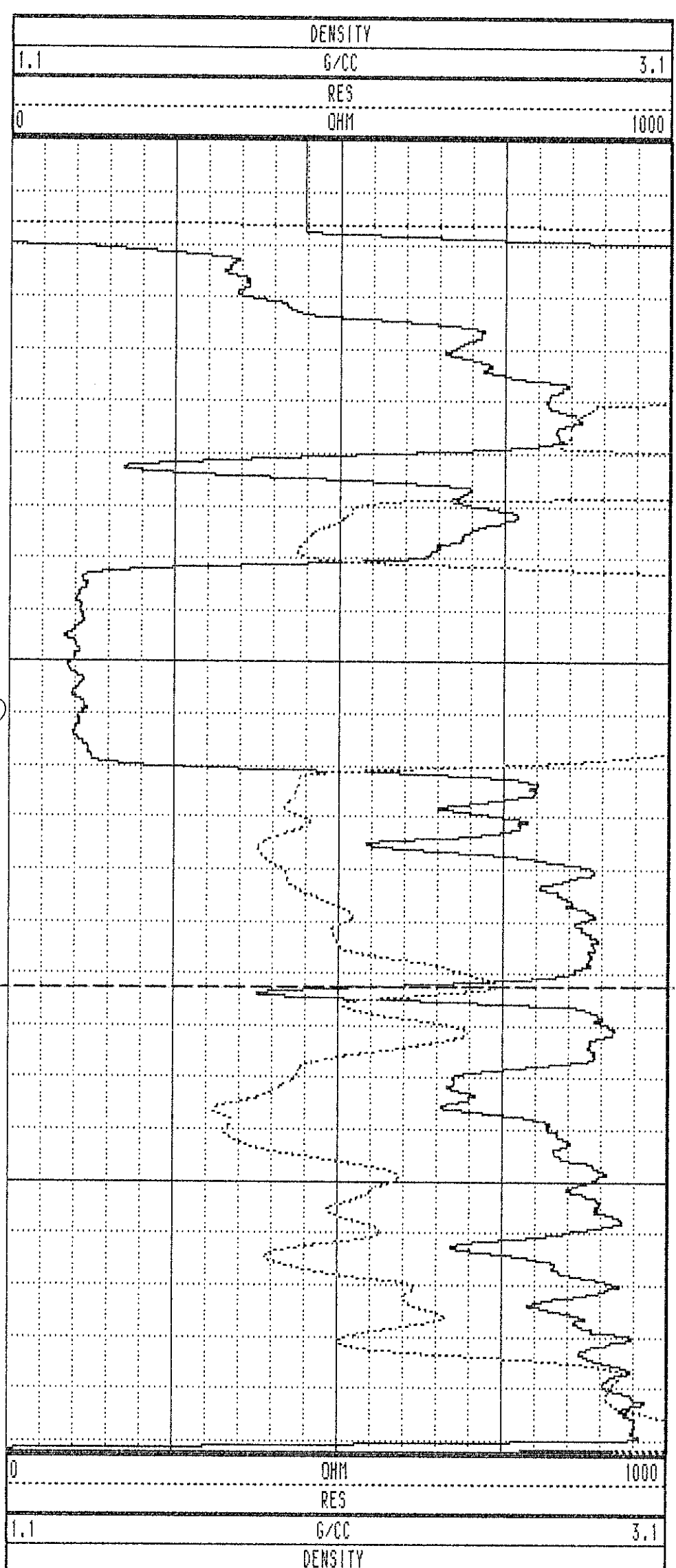
GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96138 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/13/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 25.26 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : PLASTIC | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 2 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



60

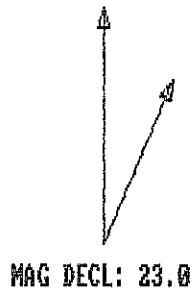


WRH-96138 08/13/96 958

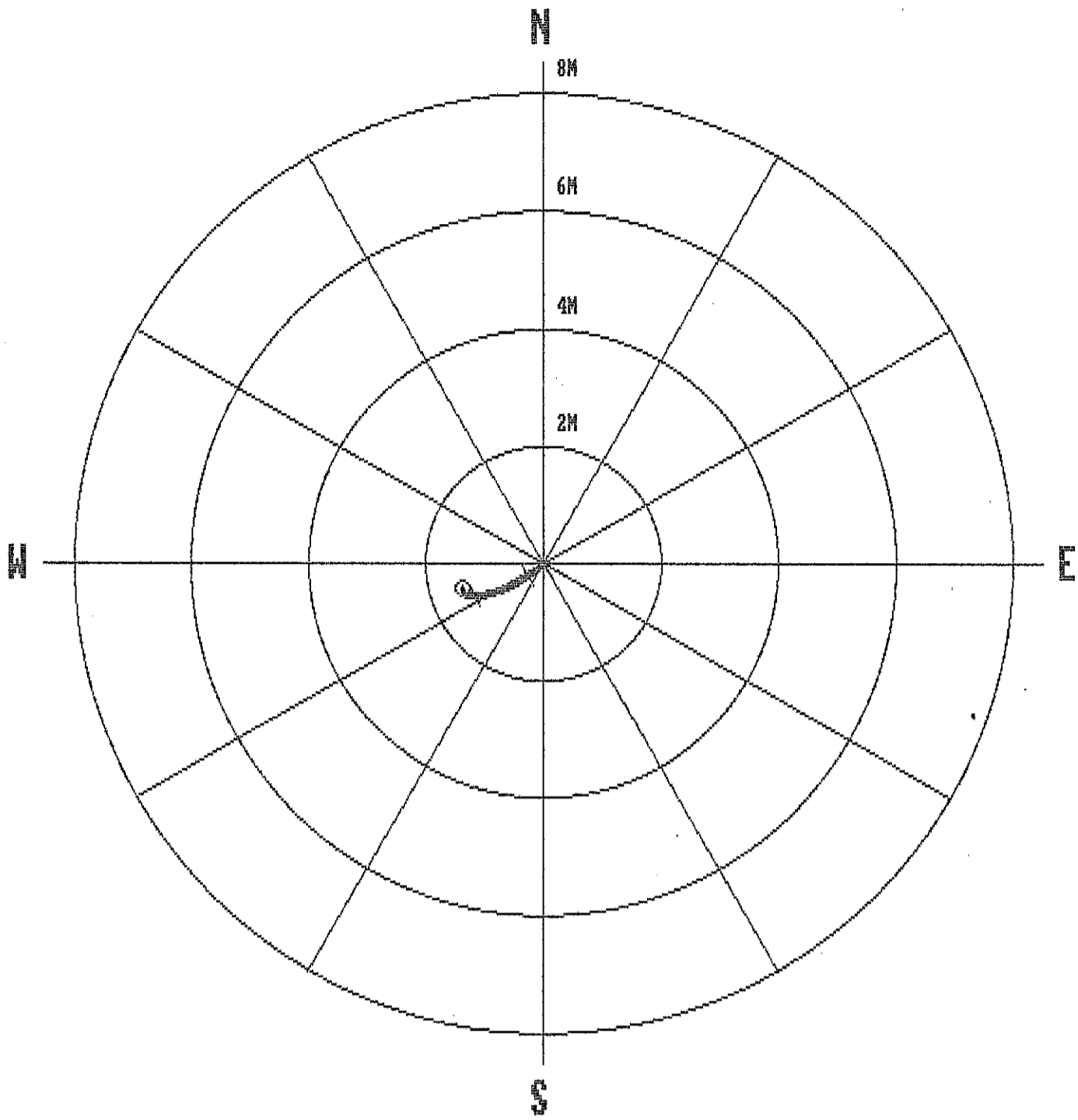
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1800.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

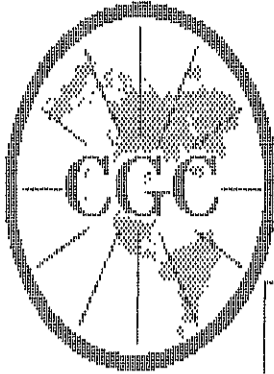
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96139
 DATE OF LOG: 08/14/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 25.11 M
 AZIMUTH: 252.1
 DISTANCE: 1.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 131.0 | 2.4 | 182.6 |
| 3.0 | 3.00 | -0.03 | -0.02 | 0.0 | 206.6 | 2.5 | 190.9 |
| 4.0 | 4.00 | -0.03 | -0.01 | 0.0 | 206.1 | 3.0 | 10.6 |
| 5.0 | 5.00 | 0.01 | 0.02 | 0.0 | 65.2 | 3.9 | 16.6 |
| 6.0 | 5.99 | -0.02 | -0.01 | 0.0 | 200.5 | 4.2 | 224.8 |
| 7.0 | 6.99 | -0.08 | -0.07 | 0.1 | 220.4 | 4.3 | 230.0 |
| 8.0 | 7.99 | -0.13 | -0.13 | 0.2 | 224.4 | 4.6 | 232.0 |
| 9.0 | 8.98 | -0.18 | -0.19 | 0.3 | 227.8 | 4.6 | 235.5 |
| 10.0 | 9.98 | -0.22 | -0.26 | 0.3 | 229.2 | 4.0 | 233.0 |
| 11.0 | 10.98 | -0.27 | -0.34 | 0.4 | 231.2 | 5.7 | 237.3 |
| 12.0 | 11.97 | -0.32 | -0.42 | 0.5 | 232.6 | 5.2 | 240.6 |
| 13.0 | 12.97 | -0.36 | -0.50 | 0.6 | 234.1 | 5.2 | 242.1 |
| 14.0 | 13.96 | -0.41 | -0.59 | 0.7 | 235.5 | 6.1 | 239.6 |
| 15.0 | 14.96 | -0.45 | -0.69 | 0.8 | 236.9 | 6.0 | 254.1 |
| 16.0 | 15.95 | -0.48 | -0.79 | 0.9 | 238.4 | 6.2 | 261.2 |
| 17.0 | 16.95 | -0.51 | -0.88 | 1.0 | 240.1 | 5.8 | 253.7 |
| 18.0 | 17.94 | -0.53 | -0.97 | 1.1 | 241.4 | 5.3 | 259.8 |
| 19.0 | 18.94 | -0.55 | -1.06 | 1.2 | 242.7 | 5.4 | 263.7 |
| 20.0 | 19.93 | -0.56 | -1.15 | 1.3 | 244.0 | 4.4 | 264.7 |
| 21.0 | 20.93 | -0.56 | -1.22 | 1.3 | 245.1 | 3.8 | 265.7 |
| 22.0 | 21.93 | -0.56 | -1.27 | 1.4 | 246.2 | 2.6 | 280.8 |
| 23.0 | 22.93 | -0.54 | -1.32 | 1.4 | 247.9 | 3.2 | 316.5 |
| 24.0 | 23.93 | -0.50 | -1.35 | 1.4 | 249.7 | 2.9 | 323.4 |
| 25.0 | 24.93 | -0.45 | -1.37 | 1.4 | 251.7 | 3.2 | 351.5 |
| 25.2 | 25.11 | -0.44 | -1.37 | 1.4 | 252.1 | 3.1 | 350.1 |

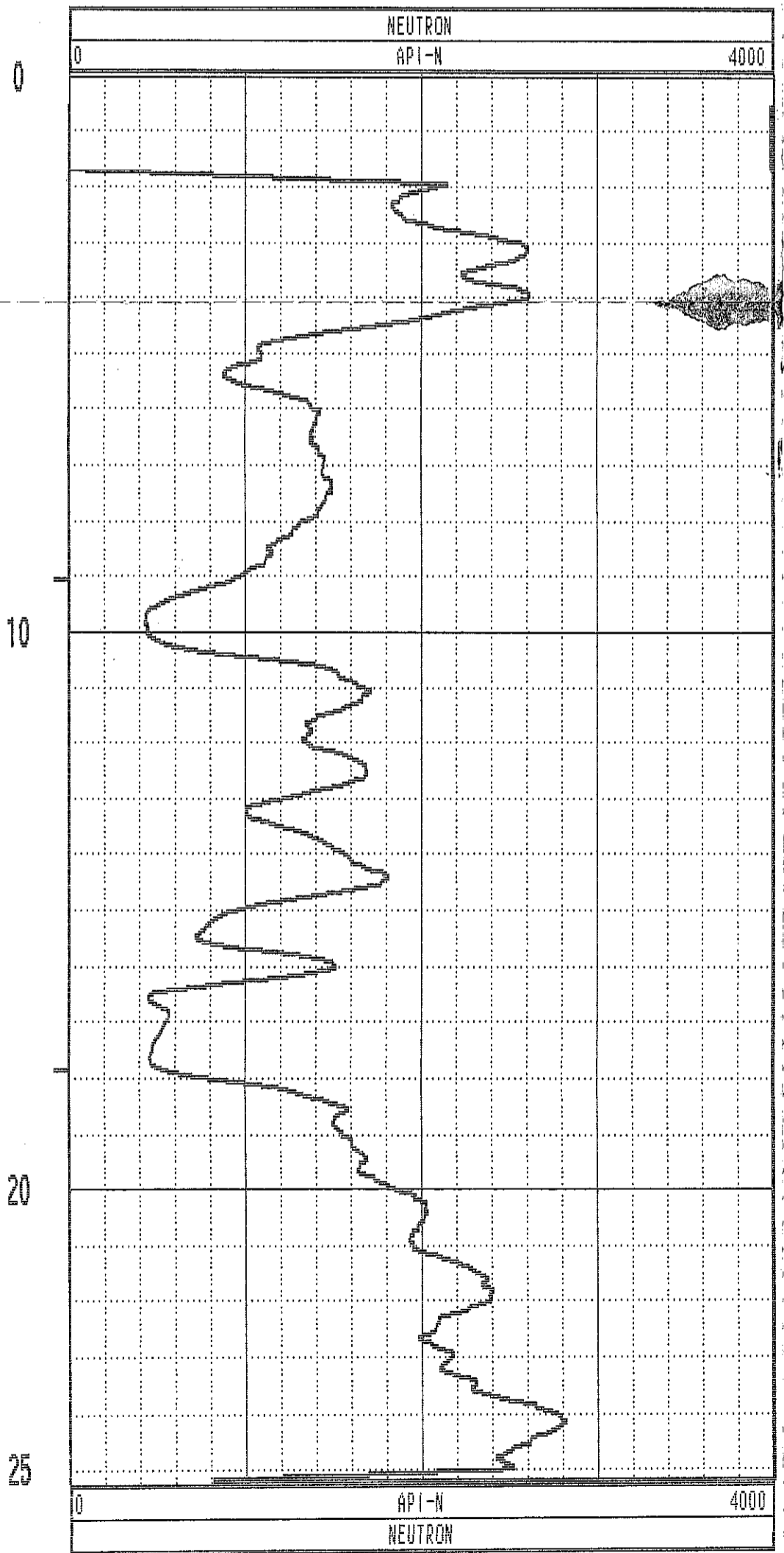
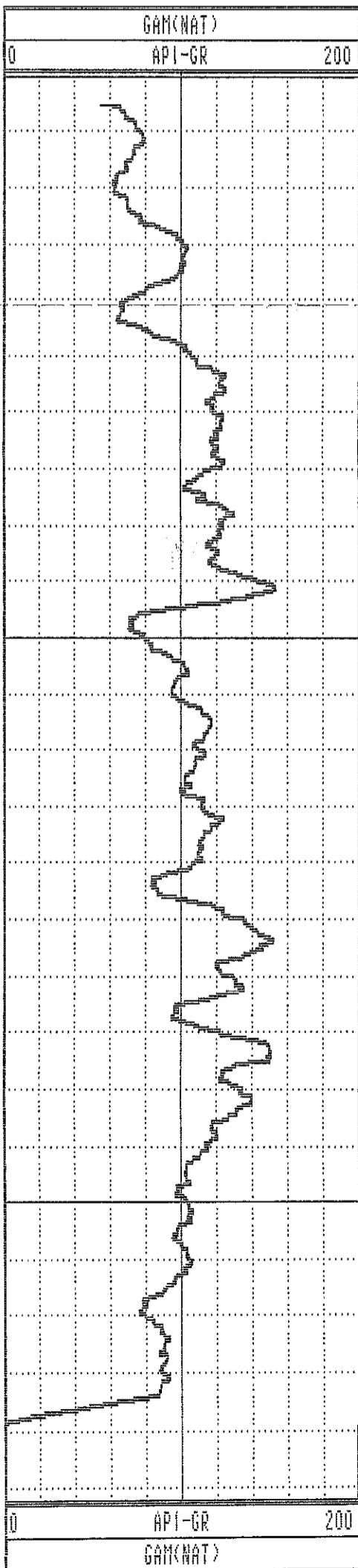


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96139 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 24 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 25.23 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.54 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 2 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

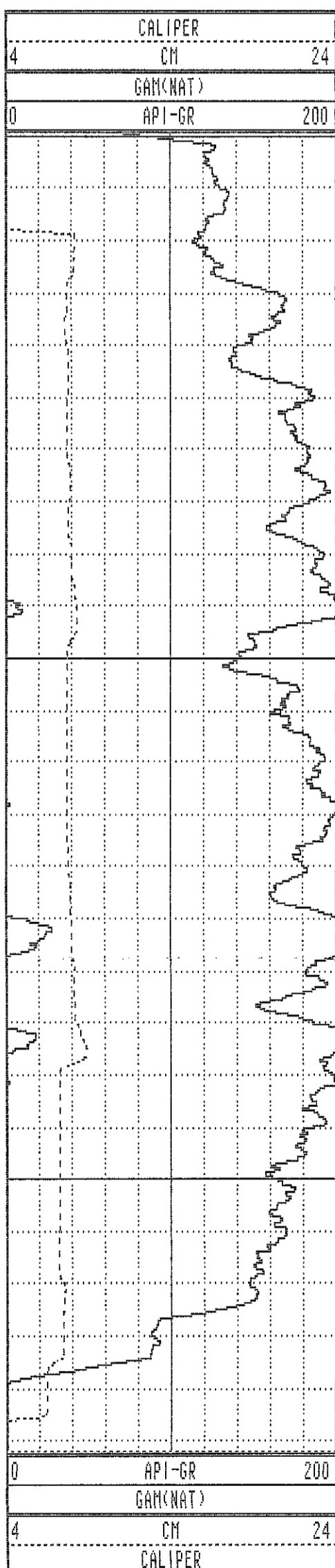


GAMMA-RES-DENSITY

Line 14600N

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96139 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 08/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 25.24 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



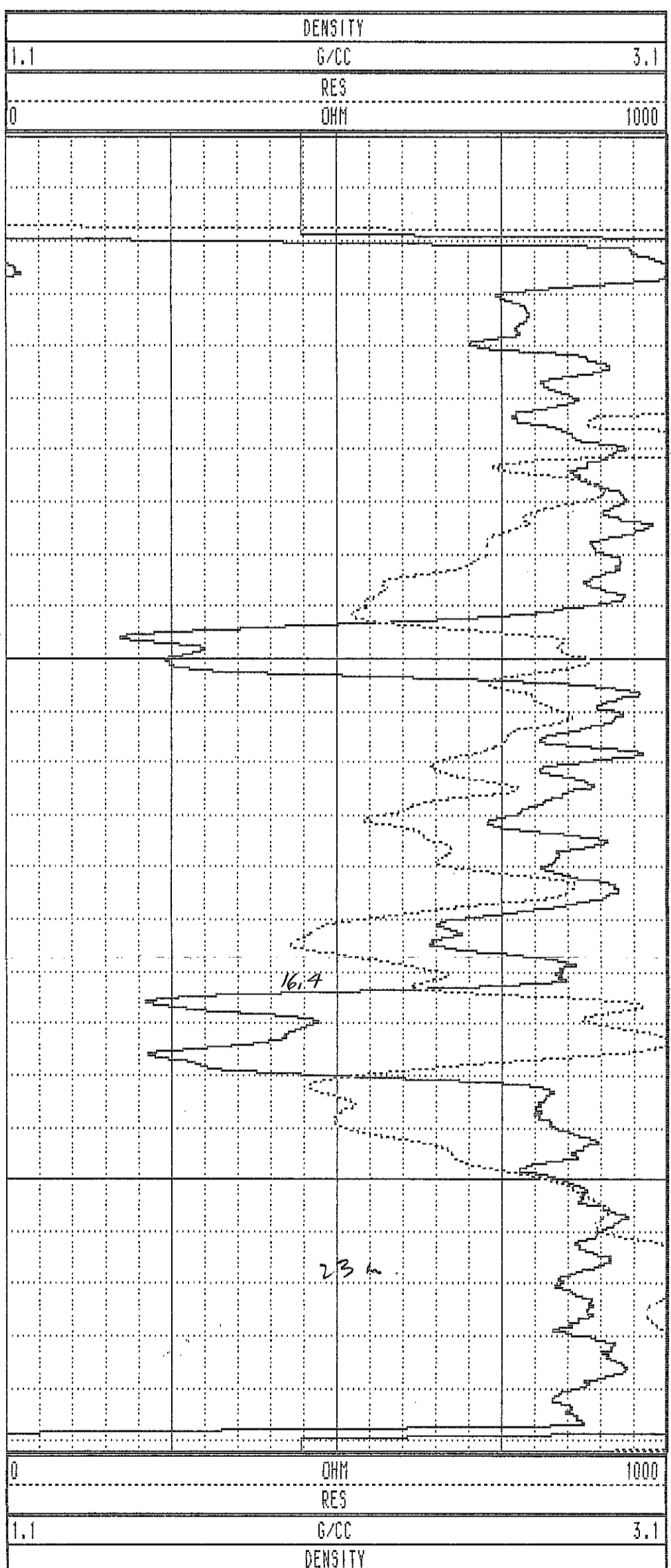
0

A-1
10

A-0

20

25



16.4

23.4

WRH-96139 08/14/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

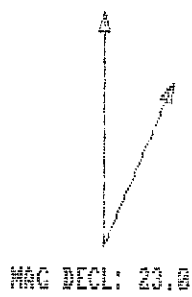
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 43.7 | 1.5 | 45.2 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 46.7 | 1.2 | 226.8 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 53.2 | 0.8 | 54.1 |
| 5.0 | 5.00 | 0.03 | 0.03 | 0.0 | 48.4 | 0.8 | 24.9 |
| 6.0 | 6.00 | 0.04 | 0.04 | 0.1 | 49.6 | 1.0 | 65.5 |
| 7.0 | 7.00 | 0.04 | 0.06 | 0.1 | 54.7 | 1.3 | 58.2 |
| 8.0 | 8.00 | 0.05 | 0.08 | 0.1 | 58.3 | 1.2 | 84.2 |
| 9.0 | 9.00 | 0.05 | 0.10 | 0.1 | 63.2 | 1.3 | 84.9 |
| 10.0 | 10.00 | 0.05 | 0.12 | 0.1 | 66.4 | 1.0 | 101.4 |
| 11.0 | 11.00 | 0.05 | 0.14 | 0.1 | 70.6 | 1.1 | 111.2 |
| 12.0 | 12.00 | 0.04 | 0.15 | 0.2 | 74.6 | 0.9 | 125.2 |
| 13.0 | 13.00 | 0.03 | 0.17 | 0.2 | 78.9 | 0.9 | 123.0 |
| 14.0 | 14.00 | 0.02 | 0.18 | 0.2 | 83.1 | 0.5 | 137.7 |
| 15.0 | 15.00 | 0.01 | 0.18 | 0.2 | 87.0 | 0.8 | 169.0 |
| 16.0 | 16.00 | -0.00 | 0.19 | 0.2 | 91.2 | 0.6 | 161.0 |
| 17.0 | 17.00 | -0.02 | 0.20 | 0.2 | 95.0 | 1.1 | 162.2 |
| 18.0 | 18.00 | -0.03 | 0.20 | 0.2 | 99.0 | 0.8 | 184.8 |
| 19.0 | 19.00 | -0.05 | 0.20 | 0.2 | 102.9 | 0.6 | 180.7 |
| 20.0 | 20.00 | -0.06 | 0.20 | 0.2 | 107.0 | 1.0 | 173.9 |
| 21.0 | 21.00 | -0.08 | 0.20 | 0.2 | 111.4 | 0.9 | 165.2 |
| 22.0 | 22.00 | -0.10 | 0.20 | 0.2 | 115.8 | 1.0 | 184.6 |
| 23.0 | 23.00 | -0.11 | 0.19 | 0.2 | 120.3 | 1.1 | 191.3 |
| 24.0 | 24.00 | -0.13 | 0.19 | 0.2 | 124.9 | 1.2 | 189.7 |
| 25.0 | 25.00 | -0.15 | 0.19 | 0.2 | 129.3 | 1.2 | 190.7 |
| 26.0 | 26.00 | -0.17 | 0.18 | 0.2 | 133.7 | 1.1 | 205.8 |
| 27.0 | 27.00 | -0.19 | 0.17 | 0.3 | 138.0 | 1.2 | 206.0 |
| 28.0 | 28.00 | -0.21 | 0.16 | 0.3 | 142.1 | 1.3 | 199.8 |
| 29.0 | 29.00 | -0.23 | 0.15 | 0.3 | 146.3 | 1.3 | 204.3 |
| 30.0 | 30.00 | -0.25 | 0.14 | 0.3 | 150.2 | 1.3 | 210.2 |
| 31.0 | 30.99 | -0.27 | 0.13 | 0.3 | 154.0 | 1.3 | 217.6 |
| 32.0 | 31.99 | -0.28 | 0.12 | 0.3 | 157.6 | 1.2 | 223.2 |
| 33.0 | 32.99 | -0.30 | 0.10 | 0.3 | 161.1 | 1.2 | 228.4 |
| 34.0 | 33.99 | -0.31 | 0.09 | 0.3 | 164.5 | 1.2 | 227.9 |
| 35.0 | 34.99 | -0.33 | 0.07 | 0.3 | 167.8 | 1.2 | 233.1 |
| 36.0 | 35.99 | -0.34 | 0.05 | 0.3 | 171.1 | 1.4 | 228.2 |
| 37.0 | 36.99 | -0.35 | 0.03 | 0.4 | 174.4 | 1.5 | 230.4 |
| 38.0 | 37.99 | -0.37 | 0.02 | 0.4 | 177.6 | 1.4 | 232.6 |
| 39.0 | 38.99 | -0.39 | -0.00 | 0.4 | 180.5 | 1.5 | 226.9 |
| 40.0 | 39.99 | -0.40 | -0.02 | 0.4 | 183.1 | 1.3 | 233.2 |
| 41.0 | 40.99 | -0.42 | -0.04 | 0.4 | 185.6 | 1.4 | 229.5 |
| 42.0 | 41.99 | -0.43 | -0.06 | 0.4 | 188.1 | 1.5 | 233.6 |
| 43.0 | 42.95 | -0.45 | -0.08 | 0.5 | 190.2 | 0.0 | 0.0 |
| 42.9 | 42.93 | -0.45 | -0.08 | 0.5 | 190.2 | 1.5 | 233.3 |

WRH 96/400

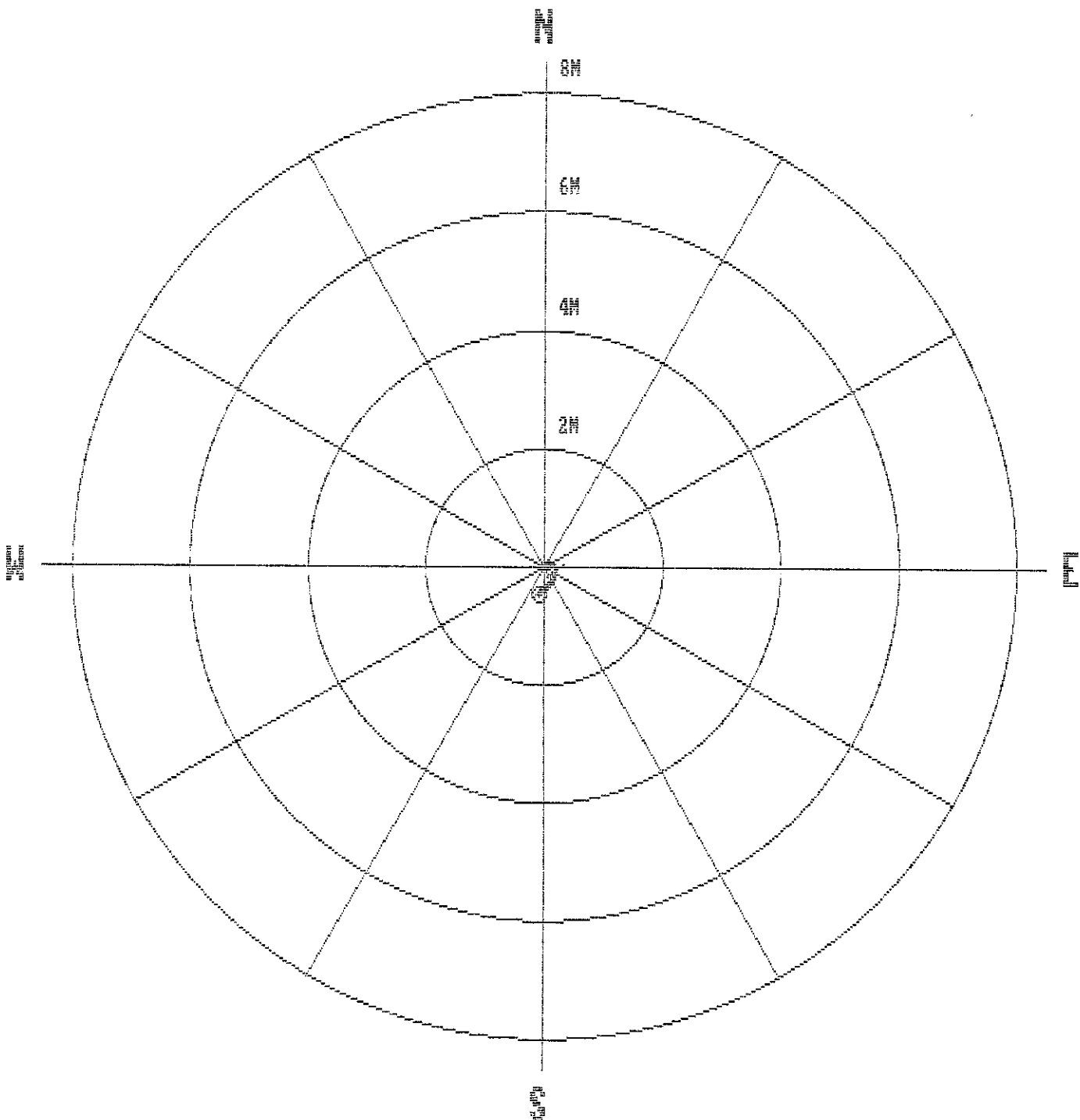
PLAN VIEW

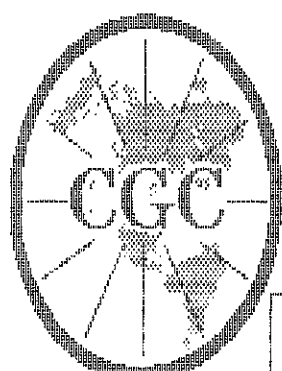
COMPLI-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-961400
 DATE OF LOG: 09/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 42.93 M
 AZIMUTH: 190.2
 DISTANCE: 0.5 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



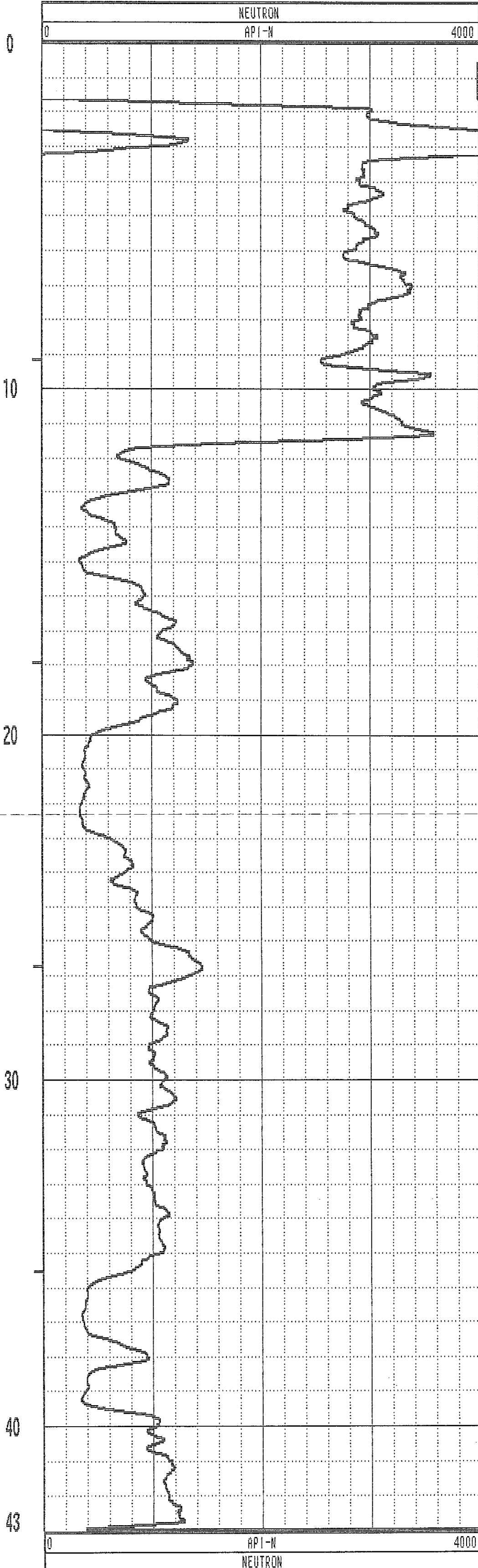
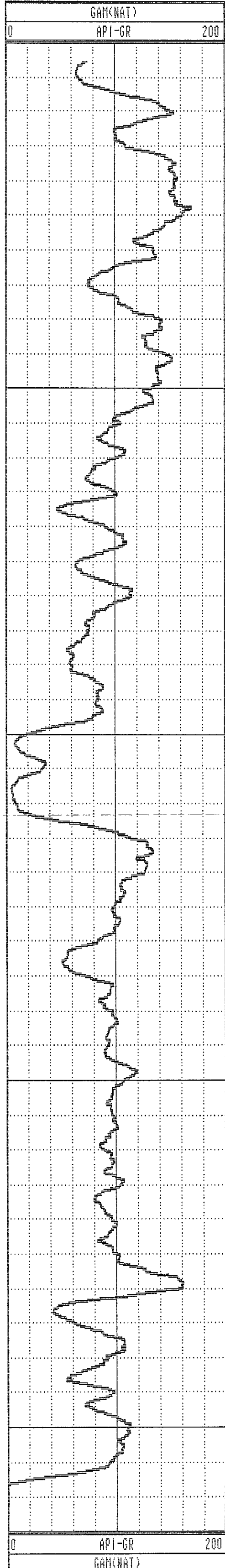


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96140C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : | RANGE : |
| DATE | : 08/15/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 42 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 43.00 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.56 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 5 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

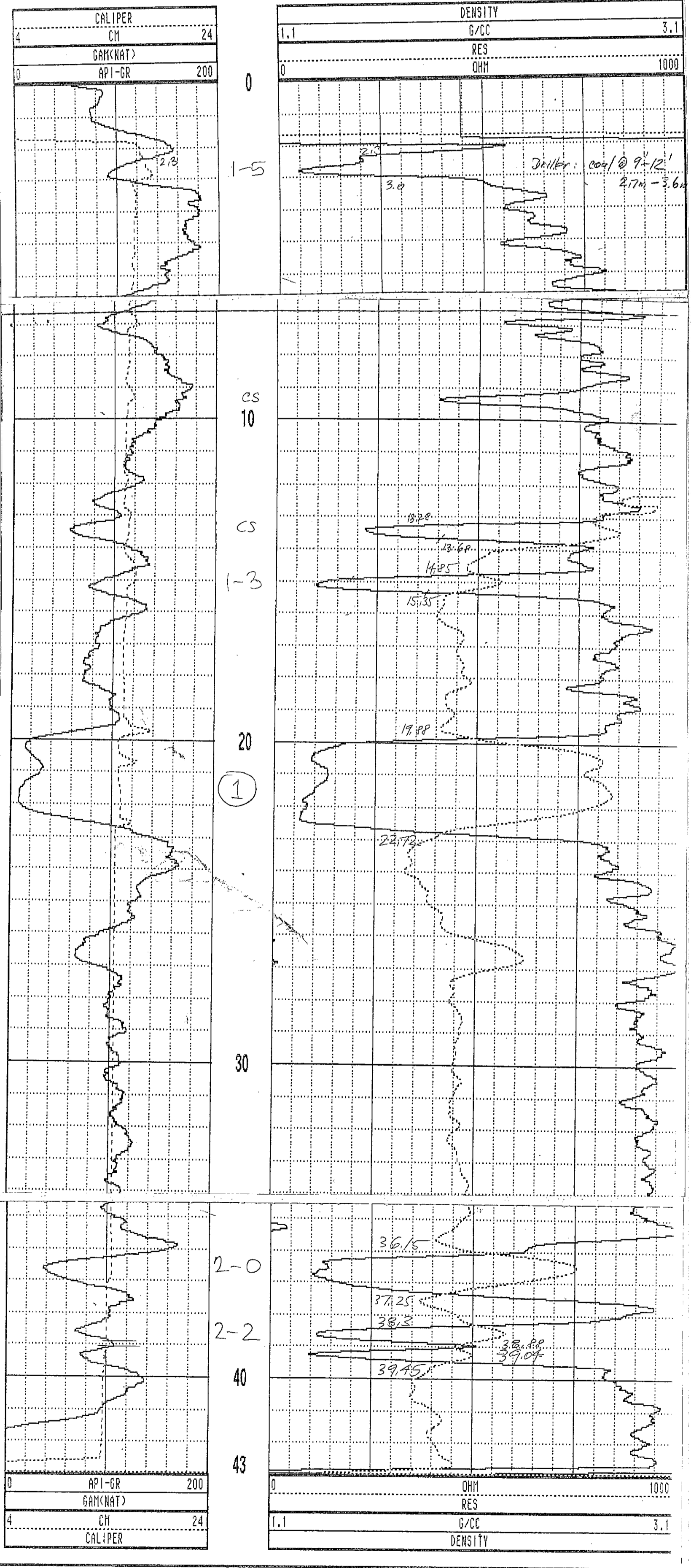
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96140C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 08/15/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 42 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 43.00 | LOG MEASURED FROM: | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 2 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



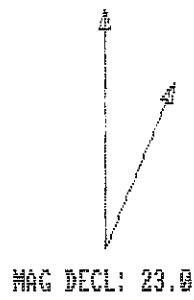
WRH-96140C 08/15/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1000.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

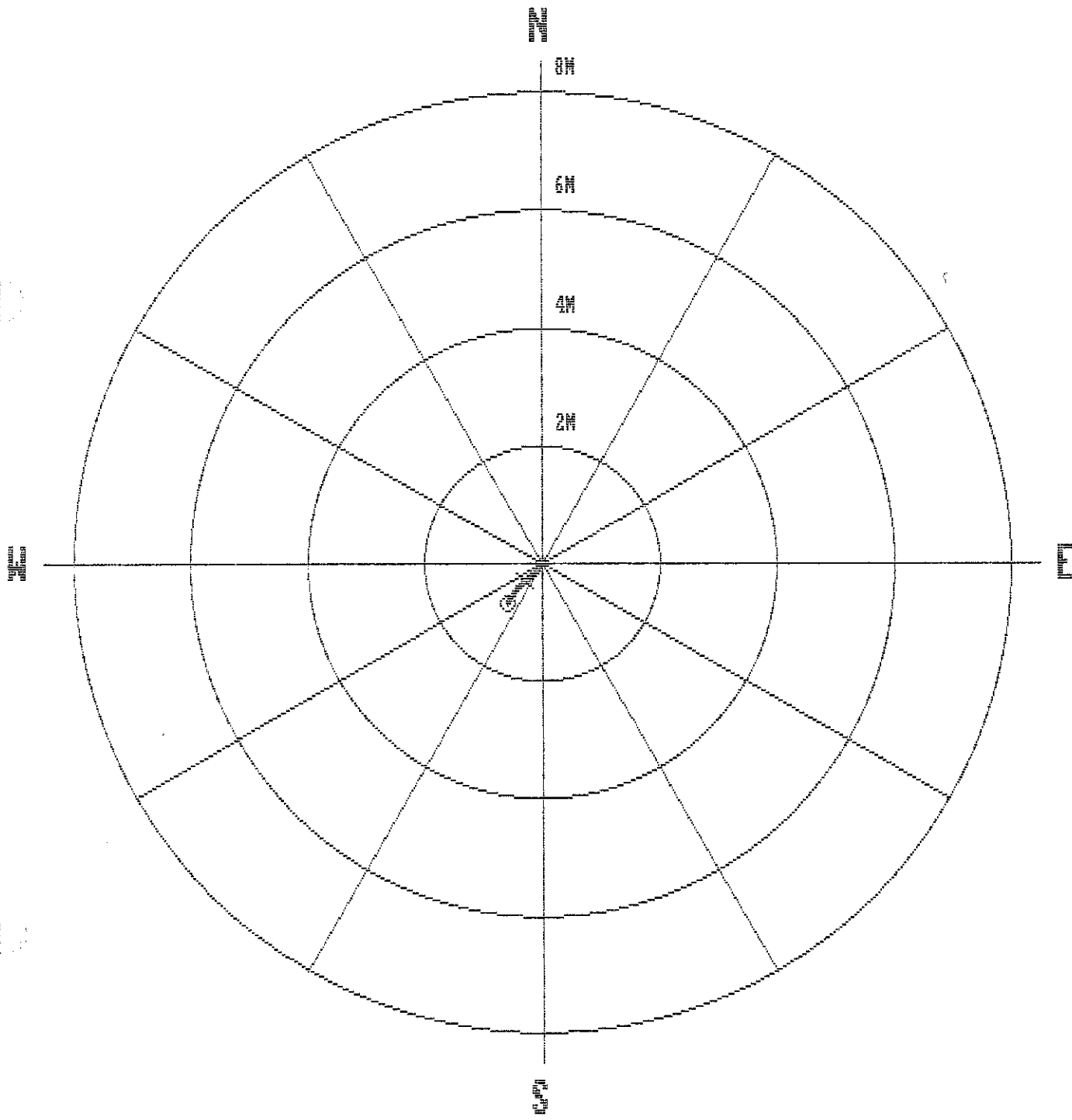
PLAN VIEW

COMPL-LOG DEVIATION

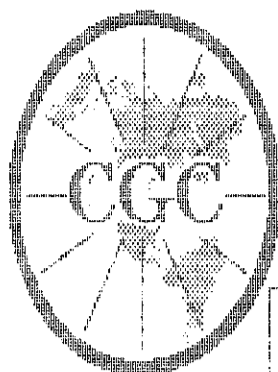
CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: WRH-96141C
 DATE OF LOG: 08/15/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 27.70 M
 AZIMUTH: 220.9
 DISTANCE: 0.9 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 180.4 | 0.4 | 228.6 |
| 3.0 | 3.00 | -0.00 | -0.01 | 0.0 | 250.1 | 0.8 | 139.7 |
| 4.0 | 4.00 | -0.01 | -0.00 | 0.0 | 192.0 | 0.8 | 147.7 |
| 5.0 | 5.00 | -0.03 | -0.00 | 0.0 | 186.3 | 0.8 | 210.7 |
| 6.0 | 6.00 | -0.04 | -0.01 | 0.0 | 191.0 | 0.9 | 153.2 |
| 7.0 | 7.00 | -0.05 | -0.01 | 0.1 | 190.5 | 0.7 | 313.3 |
| 8.0 | 8.00 | -0.06 | -0.02 | 0.1 | 194.9 | 1.6 | 226.3 |
| 9.0 | 9.00 | -0.08 | -0.03 | 0.1 | 198.7 | 1.3 | 210.6 |
| 10.0 | 10.00 | -0.09 | -0.04 | 0.1 | 202.8 | 1.1 | 221.3 |
| 11.0 | 11.00 | -0.11 | -0.05 | 0.1 | 205.5 | 1.2 | 220.6 |
| 12.0 | 12.00 | -0.13 | -0.07 | 0.1 | 207.8 | 1.7 | 213.3 |
| 13.0 | 13.00 | -0.15 | -0.09 | 0.2 | 211.0 | 1.8 | 233.6 |
| 14.0 | 14.00 | -0.17 | -0.11 | 0.2 | 213.8 | 1.8 | 237.9 |
| 15.0 | 15.00 | -0.19 | -0.13 | 0.2 | 215.9 | 2.0 | 232.2 |
| 16.0 | 16.00 | -0.20 | -0.16 | 0.3 | 218.1 | 1.9 | 225.0 |
| 17.0 | 17.00 | -0.23 | -0.19 | 0.3 | 219.4 | 2.3 | 233.3 |
| 18.0 | 17.99 | -0.25 | -0.22 | 0.3 | 220.6 | 1.8 | 225.5 |
| 19.0 | 18.99 | -0.28 | -0.25 | 0.4 | 221.9 | 3.2 | 234.3 |
| 20.0 | 19.99 | -0.31 | -0.29 | 0.4 | 223.1 | 3.1 | 232.5 |
| 21.0 | 20.99 | -0.34 | -0.32 | 0.5 | 223.6 | 3.3 | 223.8 |
| 22.0 | 21.99 | -0.37 | -0.36 | 0.5 | 224.0 | 2.9 | 225.2 |
| 23.0 | 22.99 | -0.41 | -0.40 | 0.6 | 224.1 | 2.8 | 214.7 |
| 24.0 | 23.99 | -0.45 | -0.43 | 0.6 | 223.9 | 3.3 | 225.6 |
| 25.0 | 24.99 | -0.51 | -0.47 | 0.7 | 223.1 | 3.9 | 209.8 |
| 26.0 | 25.98 | -0.56 | -0.51 | 0.8 | 222.3 | 4.2 | 214.4 |
| 27.0 | 26.98 | -0.63 | -0.55 | 0.8 | 221.5 | 4.5 | 212.0 |
| 27.7 | 27.70 | -0.67 | -0.58 | 0.9 | 220.9 | 4.7 | 209.8 |

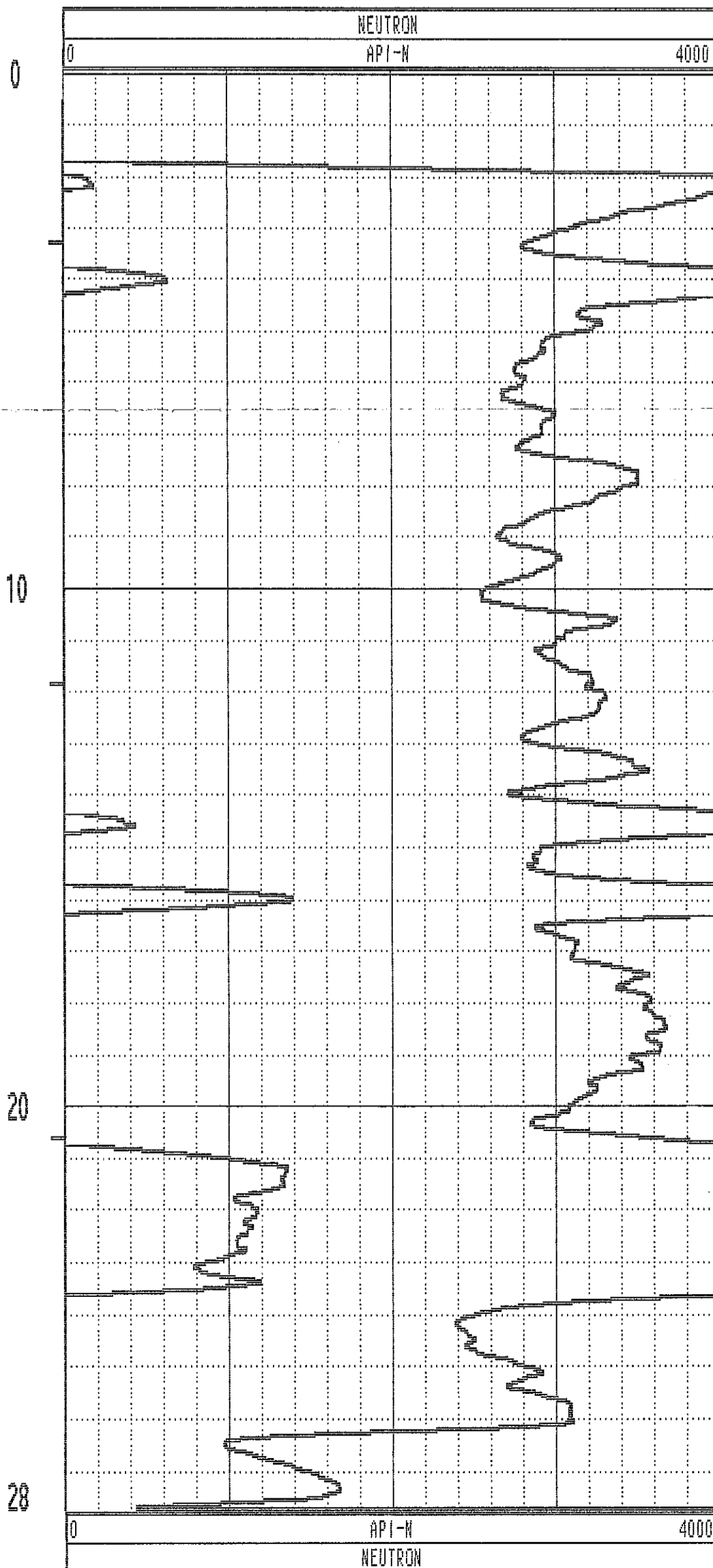
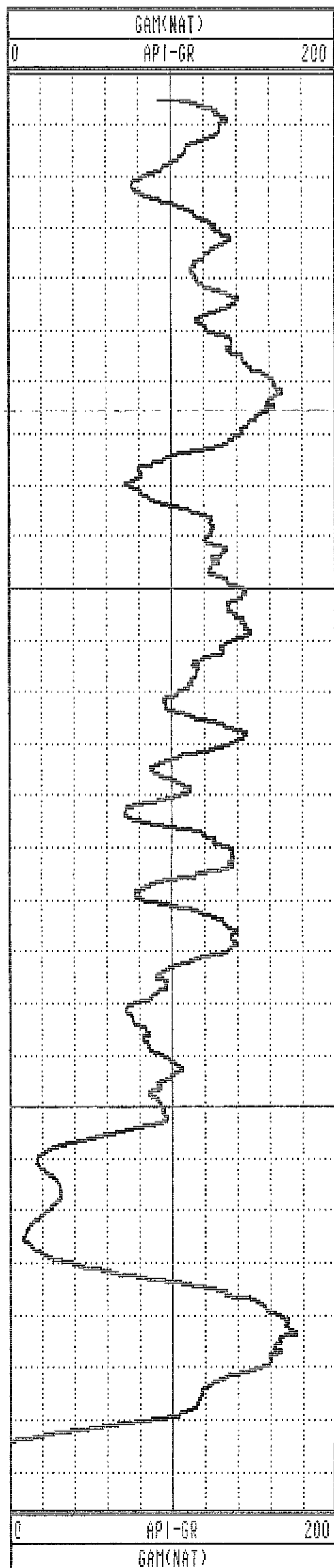


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96141C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 08/15/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.78 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.54 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 2 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

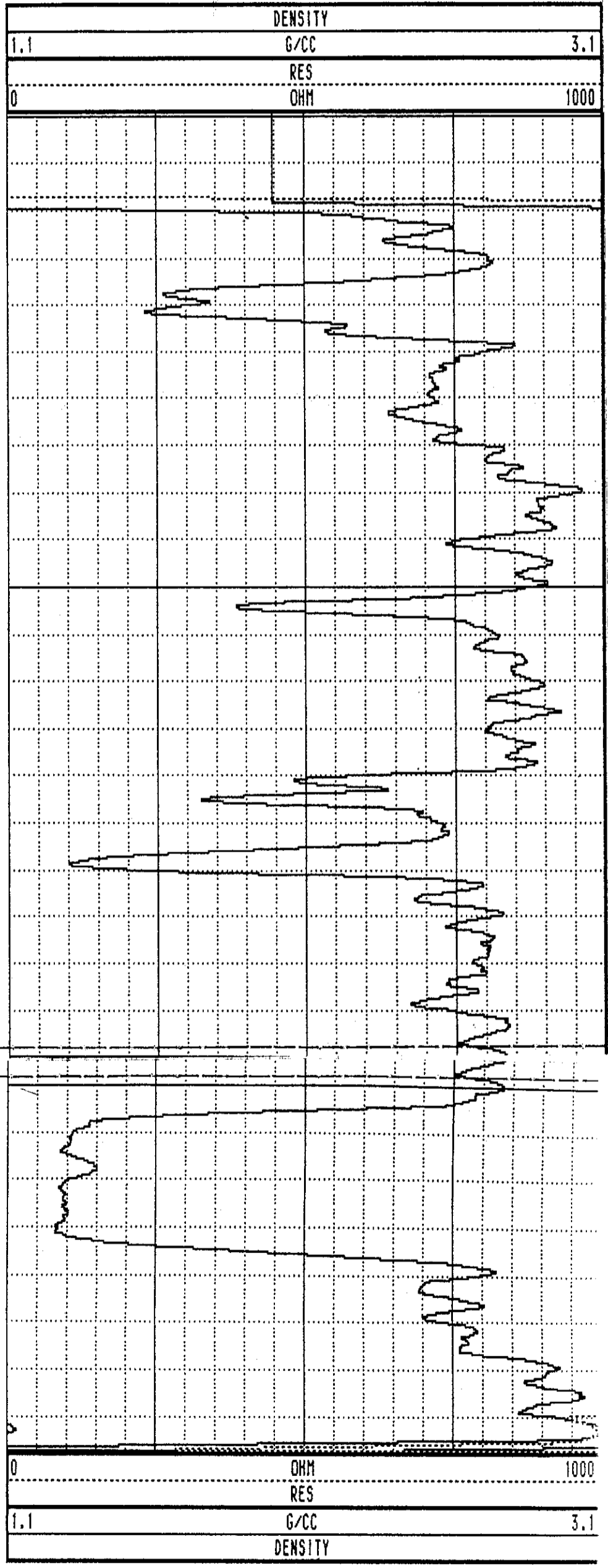
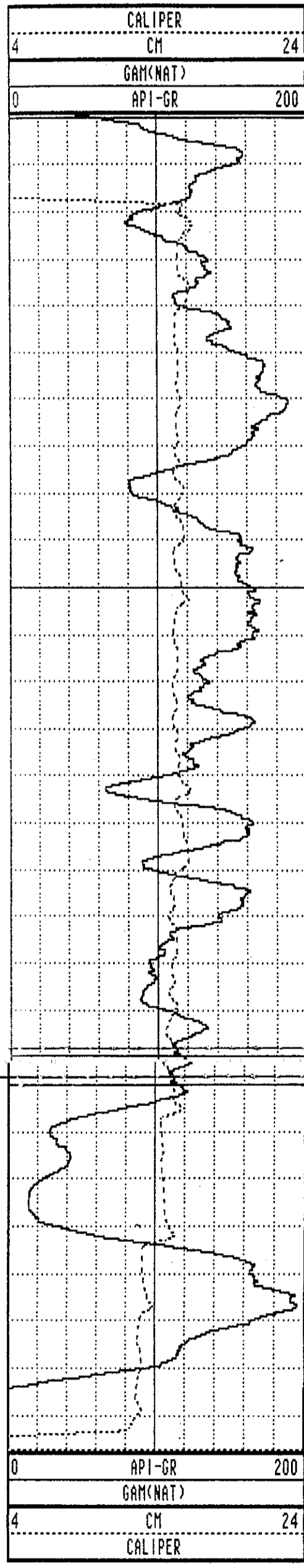
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96141C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/15/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.78 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 7 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96141C 08/15/96 958

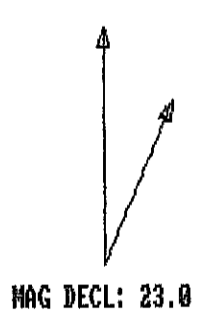
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | | |
|------------------|-----------|---------------|---------------------|----------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV 10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV 10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL 19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL 19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL 20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL 20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL 18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL 18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV 13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV 13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV 10.95 | 15:11:22 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV 10.95 | 15:11:22 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV 15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV 15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 269.2 | 0.6 | 264.4 |
| 3.0 | 3.00 | -0.00 | -0.02 | 0.0 | 256.1 | 0.9 | 272.9 |
| 4.0 | 4.00 | -0.01 | -0.03 | 0.0 | 255.3 | 0.5 | 244.7 |
| 5.0 | 5.00 | -0.01 | -0.04 | 0.0 | 255.1 | 1.1 | 254.7 |
| 6.0 | 6.00 | -0.01 | -0.06 | 0.1 | 256.9 | 0.7 | 274.2 |
| 7.0 | 7.00 | -0.01 | -0.07 | 0.1 | 260.3 | 1.0 | 309.6 |
| 8.0 | 8.00 | -0.01 | -0.08 | 0.1 | 261.3 | 0.5 | 252.4 |
| 9.0 | 9.00 | -0.01 | -0.09 | 0.1 | 262.8 | 0.2 | 318.8 |
| 10.0 | 10.00 | -0.01 | -0.09 | 0.1 | 264.1 | 0.5 | 353.5 |
| 11.0 | 11.00 | -0.01 | -0.09 | 0.1 | 263.7 | 0.1 | 93.2 |
| 12.0 | 12.00 | -0.02 | -0.09 | 0.1 | 259.8 | 0.4 | 162.2 |
| 13.0 | 13.00 | -0.03 | -0.09 | 0.1 | 250.4 | 0.4 | 144.0 |
| 14.0 | 14.00 | -0.05 | -0.08 | 0.1 | 238.1 | 1.9 | 170.5 |
| 15.0 | 15.00 | -0.07 | -0.07 | 0.1 | 225.4 | 1.5 | 175.0 |
| 16.0 | 16.00 | -0.10 | -0.07 | 0.1 | 215.1 | 1.6 | 177.0 |
| 17.0 | 17.00 | -0.12 | -0.06 | 0.1 | 207.3 | 1.0 | 155.0 |
| 18.0 | 18.00 | -0.15 | -0.06 | 0.2 | 201.8 | 1.7 | 171.2 |
| 19.0 | 19.00 | -0.18 | -0.05 | 0.2 | 197.2 | 1.7 | 171.6 |
| 20.0 | 20.00 | -0.20 | -0.05 | 0.2 | 194.0 | 1.7 | 168.5 |
| 21.0 | 21.00 | -0.24 | -0.05 | 0.2 | 192.0 | 2.0 | 187.3 |
| 22.0 | 22.00 | -0.28 | -0.05 | 0.3 | 190.9 | 2.6 | 187.2 |
| 23.0 | 22.99 | -0.32 | -0.06 | 0.3 | 190.7 | 2.7 | 194.7 |
| 24.0 | 23.99 | -0.37 | -0.07 | 0.4 | 190.4 | 2.7 | 186.5 |
| 25.0 | 24.99 | -0.42 | -0.08 | 0.4 | 190.7 | 3.0 | 191.4 |
| 26.0 | 25.99 | -0.47 | -0.09 | 0.5 | 190.8 | 2.9 | 189.2 |
| 27.0 | 26.99 | -0.52 | -0.10 | 0.5 | 191.0 | 3.1 | 193.7 |
| 28.0 | 27.99 | -0.57 | -0.11 | 0.6 | 190.9 | 3.0 | 188.7 |
| 29.0 | 28.99 | -0.62 | -0.12 | 0.6 | 190.9 | 3.3 | 191.7 |
| 29.1 | 29.05 | -0.63 | -0.12 | 0.6 | 190.9 | 3.2 | 191.1 |

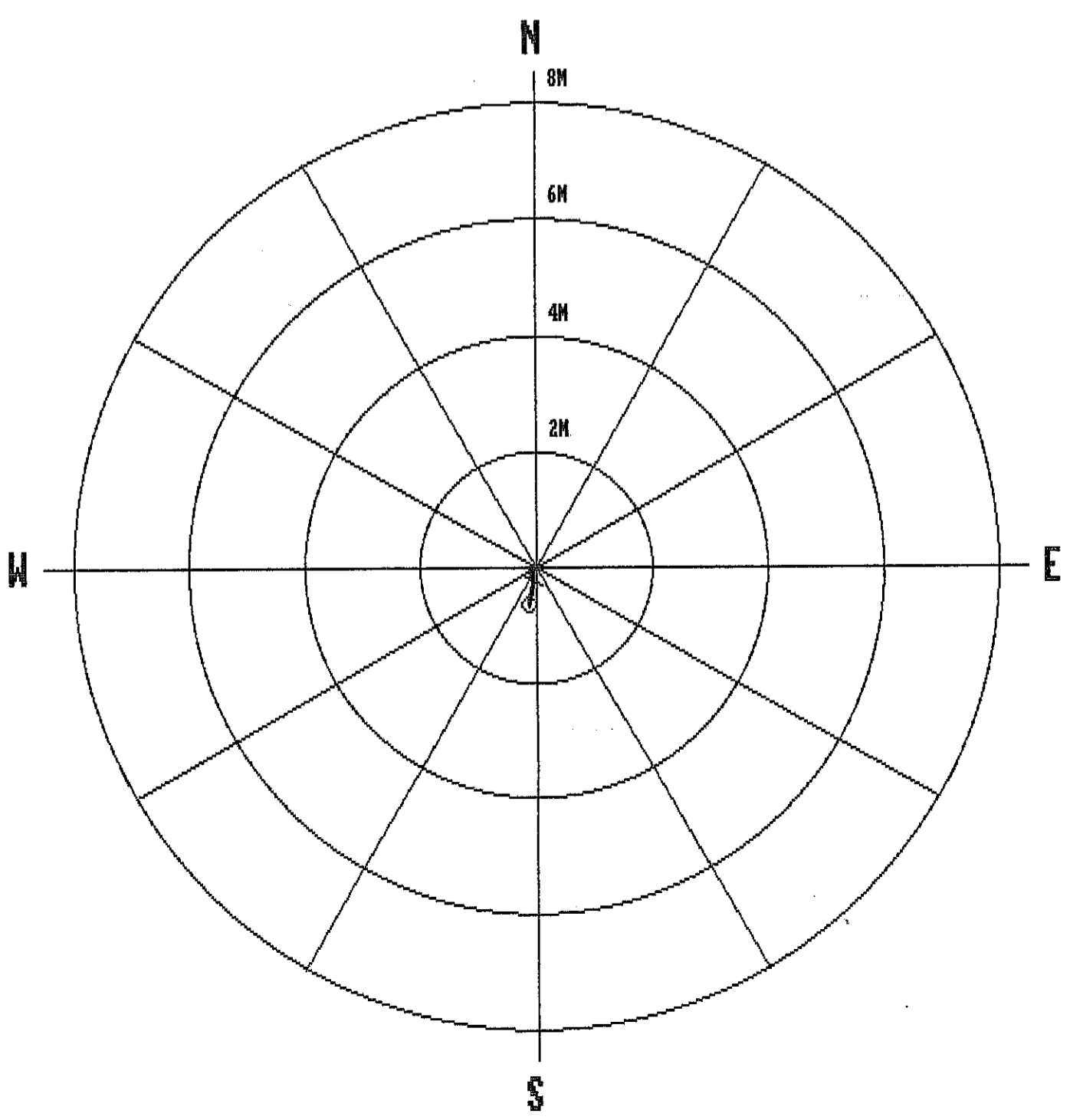
WLF 96142C

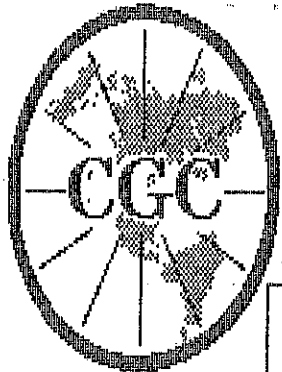
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96142C
 DATE OF LOG: 08/17/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.05 M
 AZIMUTH: 190.9
 DISTANCE: 0.6 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



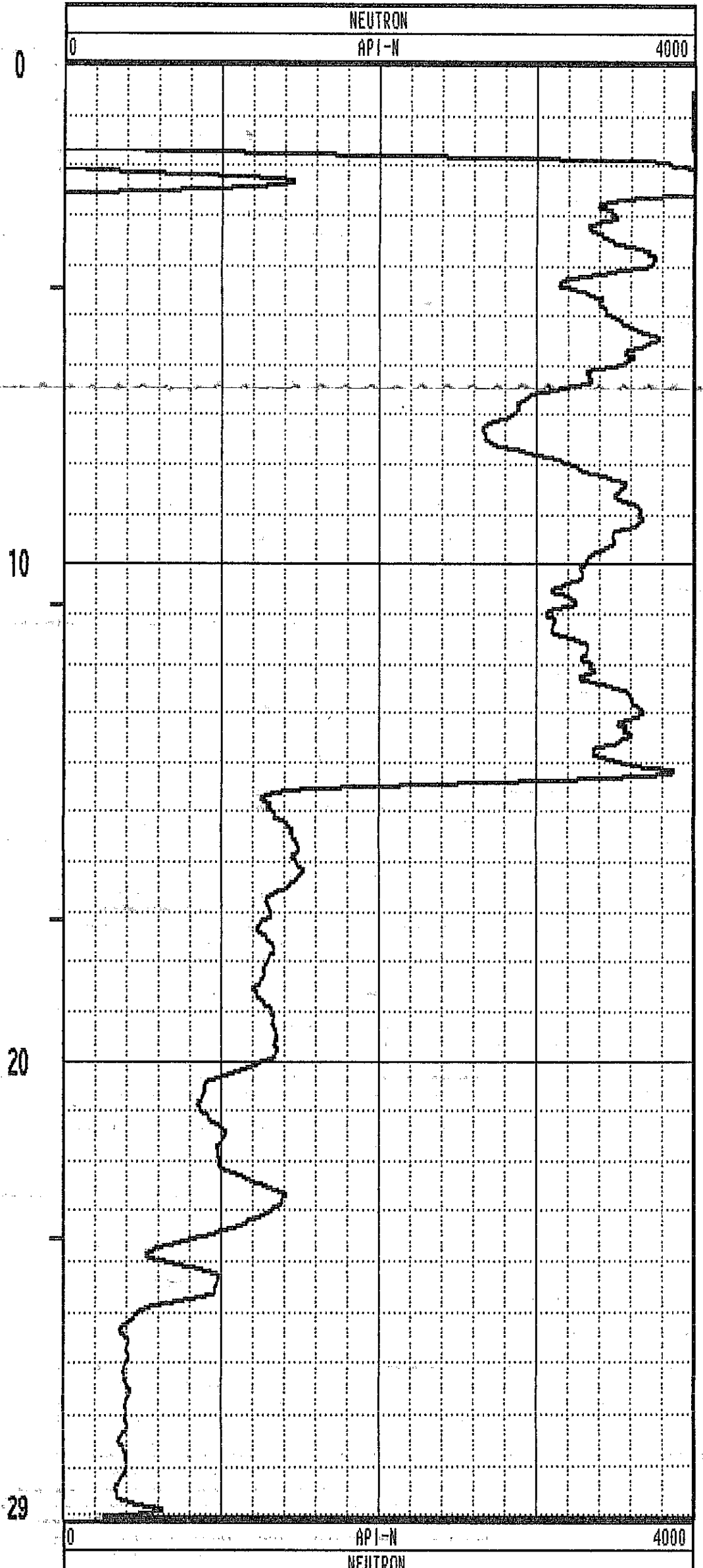
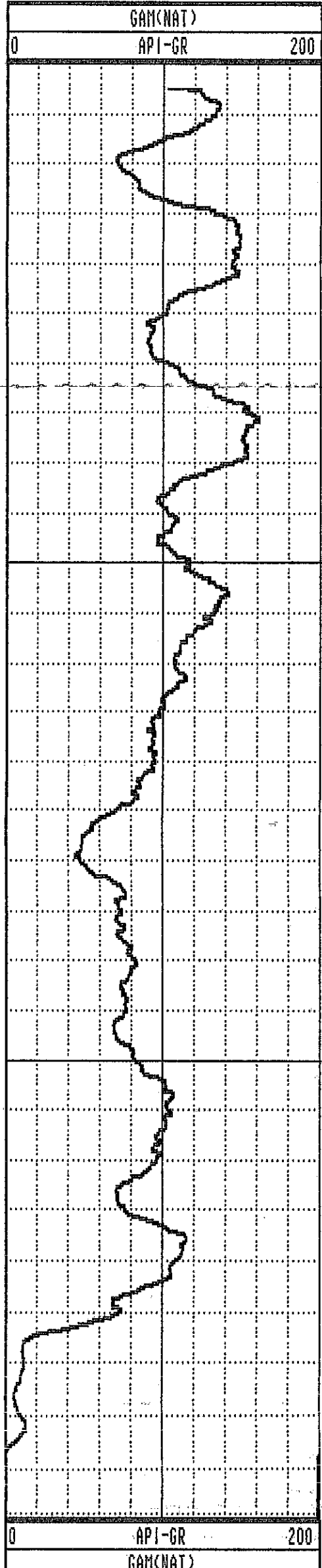


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96142C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP : | RANGE : |
| DATE | : 08/17/96 | PERMANENT DATUM : | ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.11 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.52 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 6 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

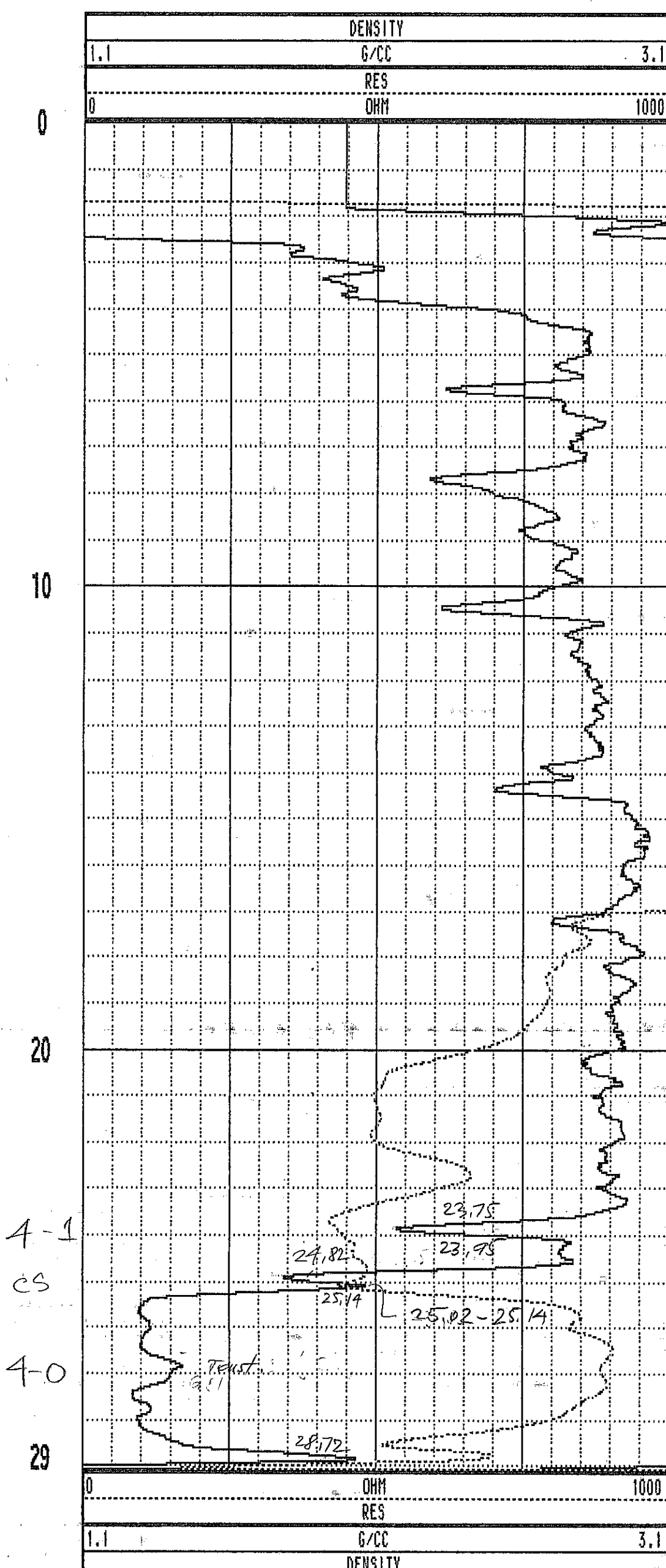
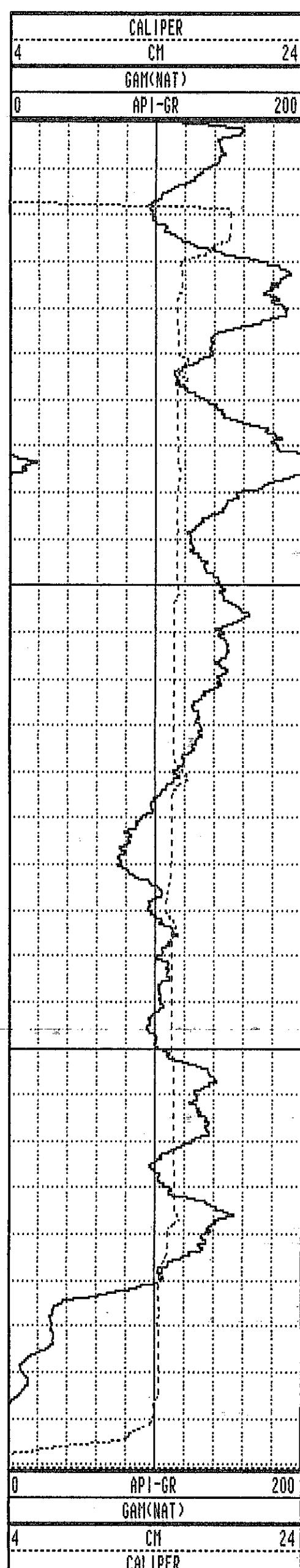
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96142C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/17/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 29 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.12 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 8 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96142C 08/17/96 958

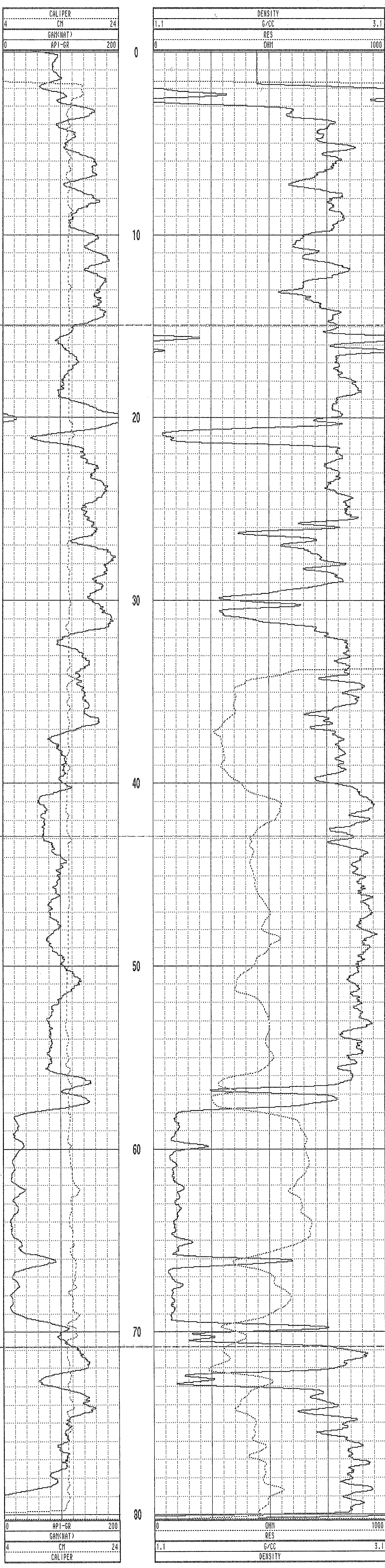
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

| | |
|---|--|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96143 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 08/17/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 79 ELEV. PERM. DATUM: KB : LOG BOTTOM : 80.28 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL : CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R.THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23 RM TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 3 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p style="text-align: center;">OTHER SERVICES:</p> |
|---|--|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96143 08/17/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAN(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAN(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

***** COMPU-LOG - VERTICAL DEVIATION *****

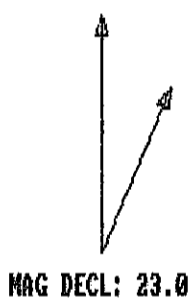
CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96143C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 08/17/96
 DATA FROM : PROBE : 9055A 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 2

| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.8 | 1.80 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 152.0 | 1.1 | 88.3 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 19.6 | 0.8 | 319.7 |
| 6.0 | 6.00 | 0.03 | -0.01 | 0.0 | 332.8 | 0.7 | 328.3 |
| 8.0 | 8.00 | 0.04 | -0.03 | 0.1 | 330.1 | 0.5 | 7.6 |
| 10.0 | 10.00 | 0.06 | -0.04 | 0.1 | 325.7 | 0.6 | 292.5 |
| 12.0 | 12.00 | 0.06 | -0.06 | 0.1 | 315.8 | 0.7 | 265.6 |
| 14.0 | 14.00 | 0.05 | -0.09 | 0.1 | 301.8 | 0.8 | 230.7 |
| 16.0 | 16.00 | 0.04 | -0.10 | 0.1 | 288.8 | 1.2 | 225.0 |
| 18.0 | 18.00 | 0.01 | -0.12 | 0.1 | 276.0 | 0.8 | 233.8 |
| 20.0 | 20.00 | -0.01 | -0.14 | 0.1 | 267.3 | 1.0 | 221.0 |
| 22.0 | 22.00 | -0.03 | -0.16 | 0.2 | 260.6 | 1.0 | 204.7 |
| 24.0 | 24.00 | -0.05 | -0.18 | 0.2 | 253.6 | 0.9 | 222.0 |
| 26.0 | 26.00 | -0.08 | -0.21 | 0.2 | 248.4 | 1.1 | 218.7 |
| 28.0 | 28.00 | -0.12 | -0.23 | 0.3 | 242.6 | 1.0 | 184.2 |
| 30.0 | 30.00 | -0.16 | -0.25 | 0.3 | 237.8 | 1.5 | 215.3 |
| 32.0 | 32.00 | -0.20 | -0.28 | 0.3 | 234.5 | 1.1 | 209.6 |
| 34.0 | 33.99 | -0.24 | -0.32 | 0.4 | 232.3 | 1.9 | 227.3 |
| 36.0 | 35.99 | -0.29 | -0.37 | 0.5 | 231.4 | 2.3 | 222.0 |
| 38.0 | 37.99 | -0.34 | -0.42 | 0.5 | 231.2 | 2.0 | 227.4 |
| 40.0 | 39.99 | -0.40 | -0.47 | 0.6 | 229.6 | 2.5 | 213.4 |
| 42.0 | 41.99 | -0.47 | -0.51 | 0.7 | 227.5 | 2.3 | 214.0 |
| 44.0 | 43.99 | -0.54 | -0.56 | 0.8 | 225.8 | 2.2 | 204.3 |
| 46.0 | 45.98 | -0.62 | -0.60 | 0.9 | 224.0 | 2.7 | 207.9 |
| 48.0 | 47.98 | -0.70 | -0.64 | 1.0 | 222.3 | 2.6 | 204.4 |
| 50.0 | 49.98 | -0.79 | -0.68 | 1.0 | 220.6 | 2.7 | 205.3 |
| 52.0 | 51.98 | -0.88 | -0.72 | 1.1 | 219.2 | 3.2 | 199.1 |
| 54.0 | 53.97 | -0.99 | -0.77 | 1.2 | 217.8 | 3.5 | 204.5 |
| 56.0 | 55.97 | -1.10 | -0.82 | 1.4 | 216.8 | 3.6 | 203.2 |
| 58.0 | 57.97 | -1.22 | -0.89 | 1.5 | 215.9 | 4.0 | 208.5 |
| 60.0 | 59.96 | -1.36 | -0.95 | 1.7 | 215.0 | 4.5 | 206.5 |
| 62.0 | 61.95 | -1.50 | -1.02 | 1.8 | 214.2 | 4.8 | 206.2 |
| 64.0 | 63.95 | -1.66 | -1.09 | 2.0 | 213.2 | 4.8 | 201.3 |
| 66.0 | 65.94 | -1.82 | -1.15 | 2.2 | 212.4 | 5.2 | 199.3 |
| 68.0 | 67.93 | -1.99 | -1.22 | 2.3 | 211.4 | 4.9 | 198.7 |
| 70.0 | 69.92 | -2.18 | -1.27 | 2.5 | 210.3 | 5.4 | 200.0 |
| 72.0 | 71.91 | -2.37 | -1.32 | 2.7 | 209.1 | 5.8 | 191.6 |
| 74.0 | 73.90 | -2.58 | -1.37 | 2.9 | 207.9 | 6.5 | 196.0 |
| 76.0 | 75.88 | -2.82 | -1.42 | 3.2 | 206.8 | 7.1 | 193.1 |
| 78.0 | 77.87 | -3.07 | -1.48 | 3.4 | 205.7 | 7.7 | 196.1 |
| 80.0 | 79.85 | -3.33 | -1.56 | 3.7 | 205.1 | 8.6 | 190.8 |
| 80.2 | 80.07 | -3.36 | -1.57 | 3.7 | 205.0 | 8.4 | 195.4 |

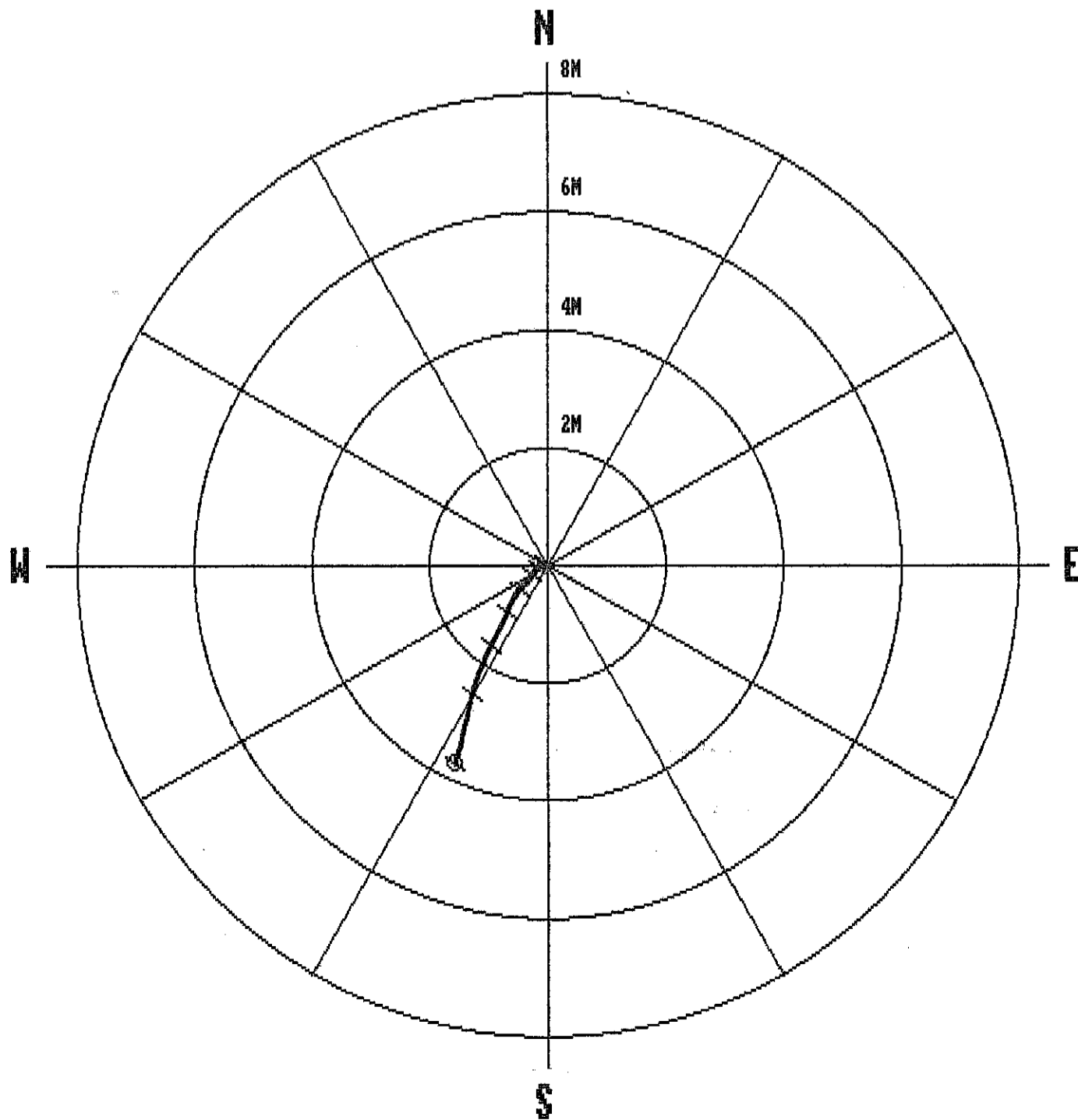
96143
WRH-96143

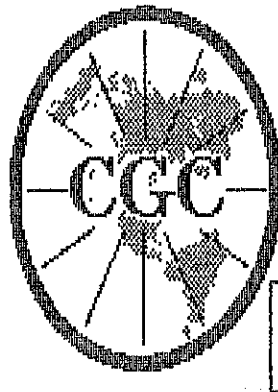
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96143C
 DATE OF LOG: 08/17/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 80.07 M
 AZIMUTH: 205.0
 DISTANCE: 3.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96143C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA

OTHER SERVICES:

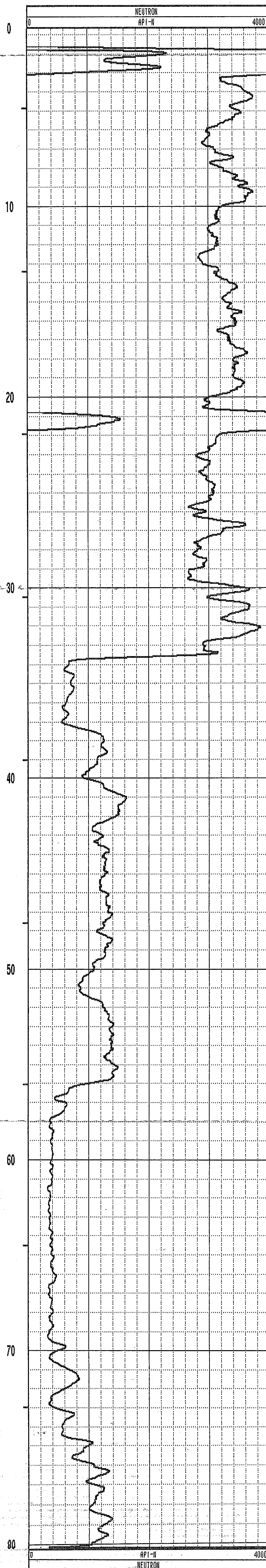
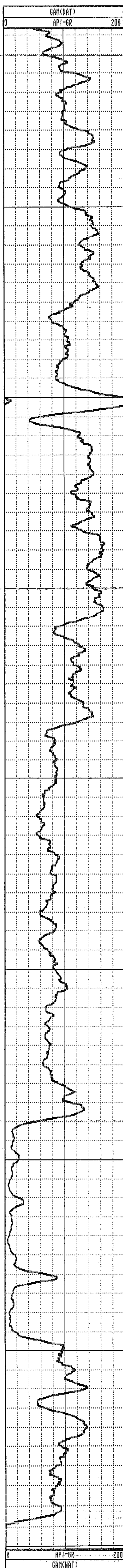
SECTION : TOWNSHIP : RANGE :

DATE : 08/17/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 80 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 80.28 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.72 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

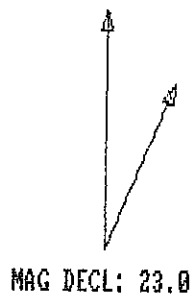
BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

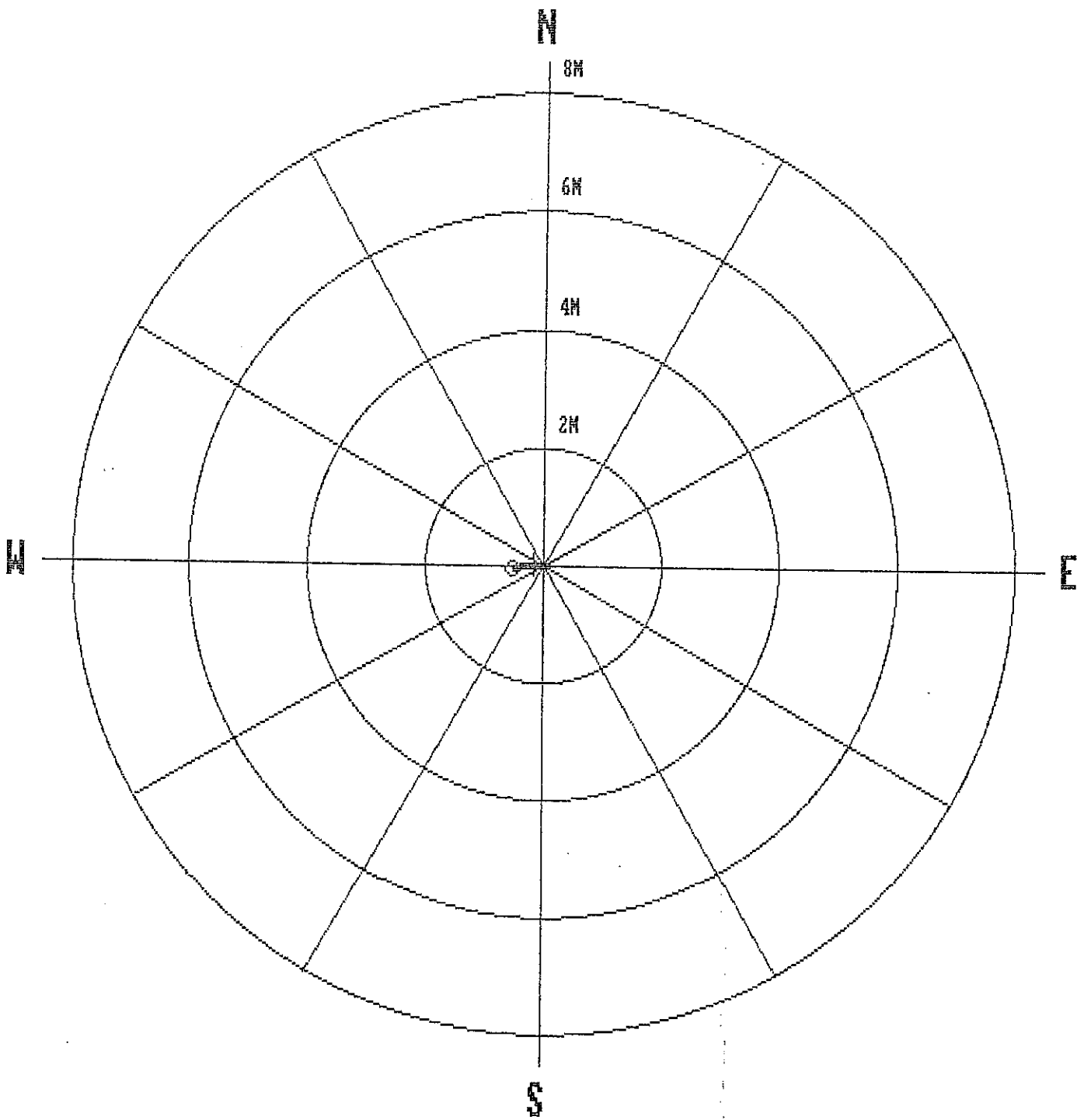


PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96144
 DATE OF LOG: 08/17/96
 PROBE: 9055A 56

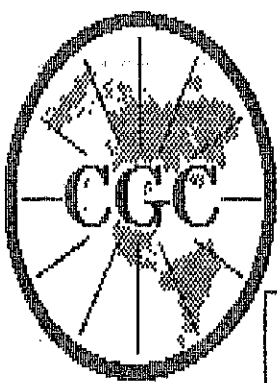


SCALE: 1 M/CM
 TRUE DEPTH: 19.57 M
 AZIMUTH: 265.1
 DISTANCE: 0.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 336.7 | 0.1 | 271.9 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 236.3 | 0.7 | 272.7 |
| 4.0 | 4.00 | 0.00 | -0.01 | 0.0 | 277.9 | 0.8 | 286.9 |
| 5.0 | 5.00 | 0.01 | -0.03 | 0.0 | 282.4 | 0.6 | 329.5 |
| 6.0 | 6.00 | 0.01 | -0.04 | 0.0 | 289.3 | 1.4 | 292.1 |
| 7.0 | 7.00 | 0.02 | -0.06 | 0.1 | 286.5 | 1.2 | 270.3 |
| 8.0 | 8.00 | 0.02 | -0.09 | 0.1 | 282.2 | 1.6 | 269.8 |
| 9.0 | 9.00 | 0.02 | -0.12 | 0.1 | 279.6 | 1.6 | 277.6 |
| 10.0 | 10.00 | 0.02 | -0.15 | 0.2 | 277.2 | 1.9 | 258.1 |
| 11.0 | 11.00 | 0.01 | -0.18 | 0.2 | 274.5 | 2.0 | 266.9 |
| 12.0 | 12.00 | 0.01 | -0.22 | 0.2 | 271.7 | 2.1 | 255.6 |
| 13.0 | 13.00 | -0.00 | -0.25 | 0.3 | 269.8 | 2.2 | 253.9 |
| 14.0 | 14.00 | -0.01 | -0.29 | 0.3 | 268.5 | 2.1 | 262.8 |
| 15.0 | 14.99 | -0.01 | -0.33 | 0.3 | 267.7 | 2.3 | 260.3 |
| 16.0 | 15.99 | -0.02 | -0.37 | 0.4 | 267.0 | 2.2 | 259.9 |
| 17.0 | 16.99 | -0.02 | -0.41 | 0.4 | 266.6 | 2.1 | 264.5 |
| 18.0 | 17.99 | -0.03 | -0.45 | 0.5 | 266.1 | 2.5 | 255.4 |
| 19.0 | 18.99 | -0.04 | -0.49 | 0.5 | 265.6 | 2.6 | 257.2 |
| 19.6 | 19.57 | -0.04 | -0.52 | 0.5 | 265.1 | 3.0 | 256.7 |

WRH 96/44



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96144C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

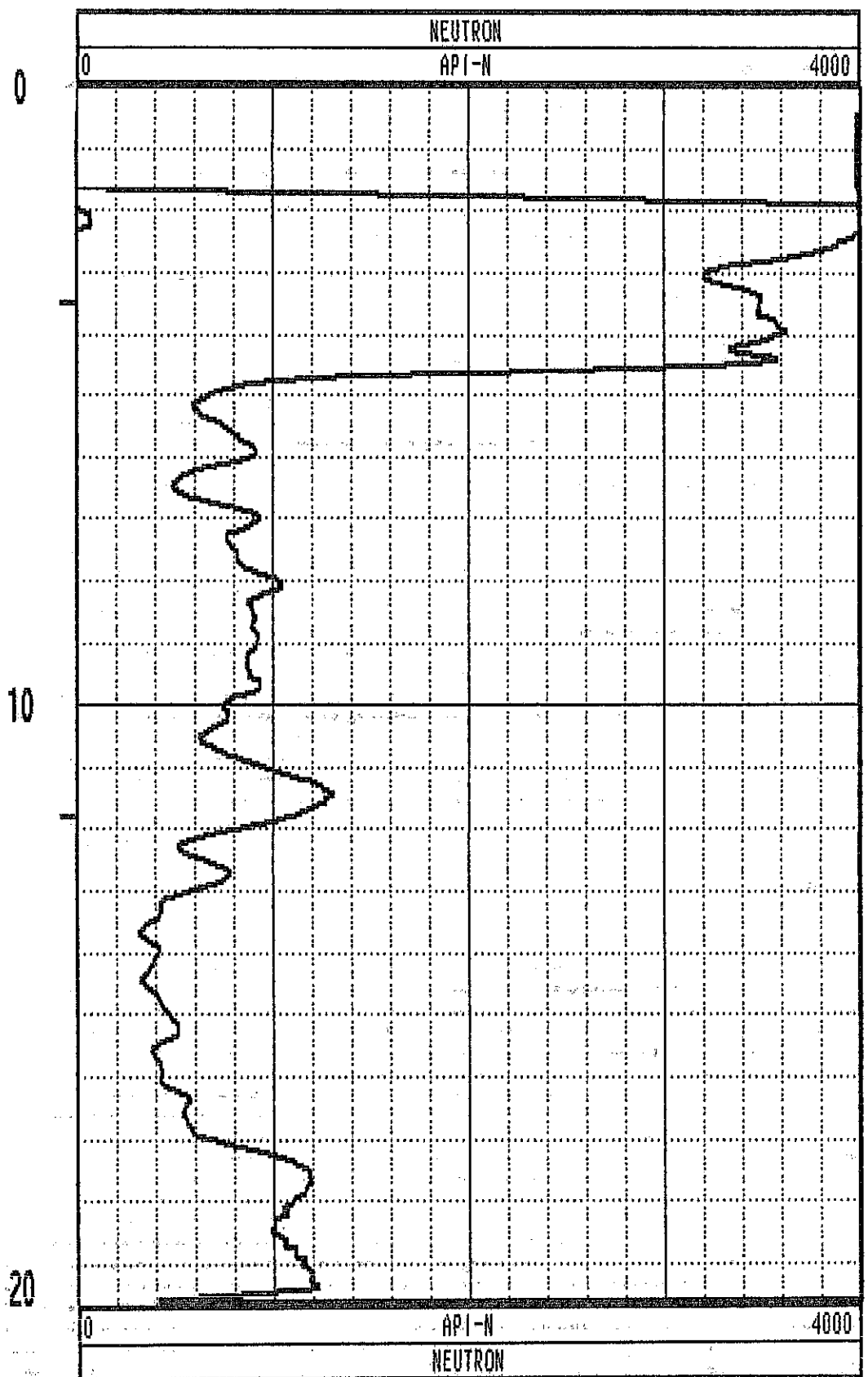
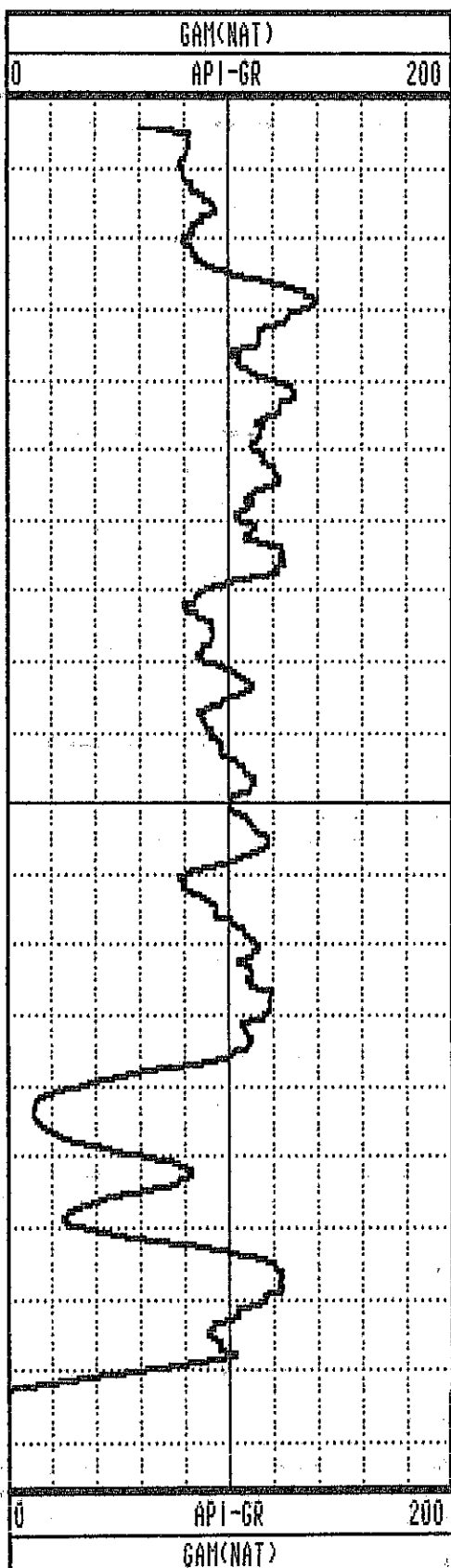
OTHER SERVICES:

DATE : 08/17/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 19 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 19.64 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.46 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

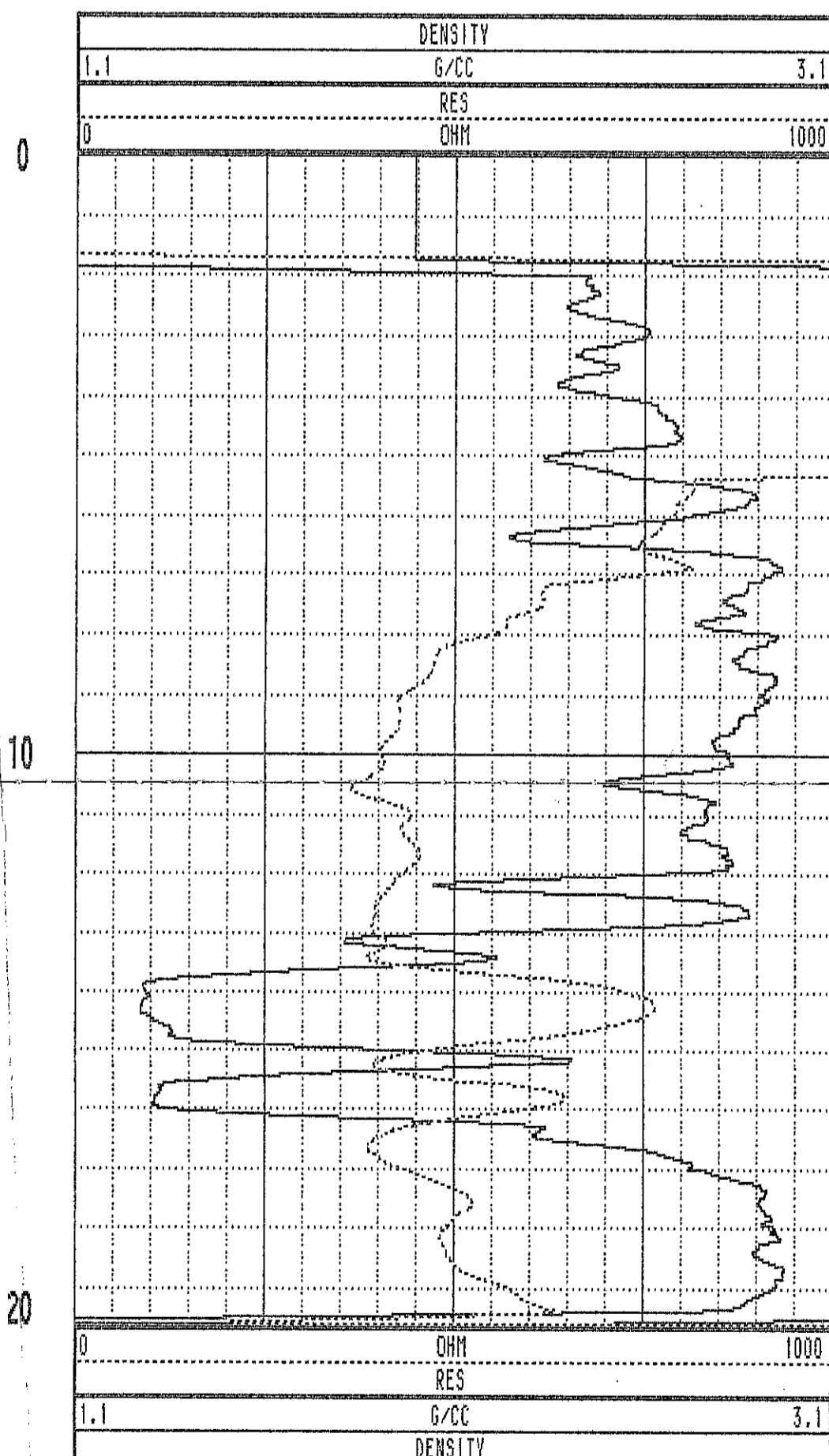
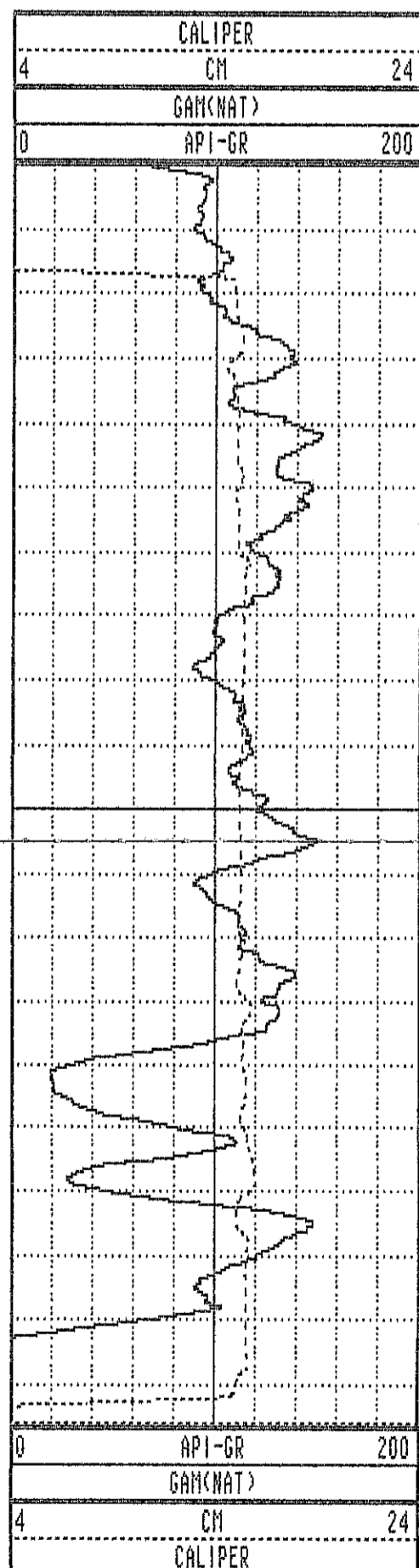
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96144 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | : |
| DATE | : 08/17/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 19 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 19.64 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 6 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



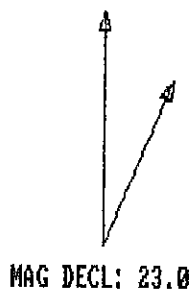
WRH-96144 08/17/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

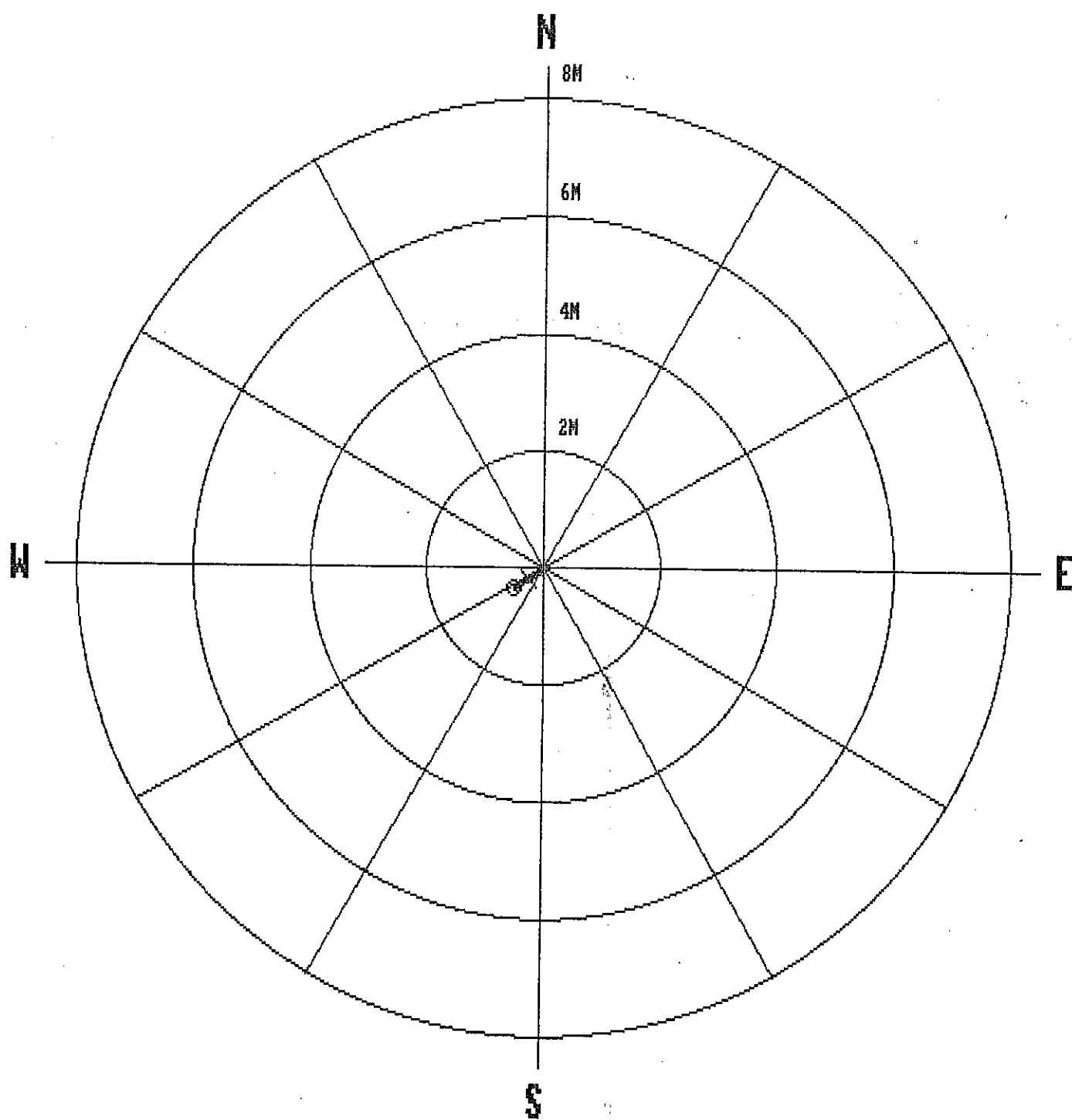
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96145C
 DATE OF LOG: 08/18/96
 PROBE: 9055A 56



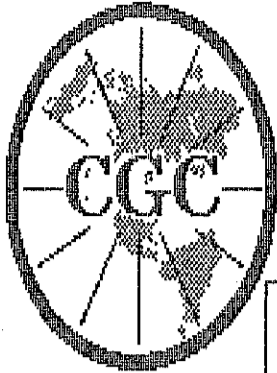
SCALE: 1 M/CM
 TRUE DEPTH: 25.32 M
 AZIMUTH: 235.3
 DISTANCE: 0.6 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 47.2 | 1.5 | 59.5 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 47.5 | 0.7 | 55.5 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 47.0 | 0.7 | 24.5 |
| 5.0 | 5.00 | 0.01 | 0.02 | 0.0 | 65.7 | 0.5 | 158.2 |
| 6.0 | 6.00 | 0.01 | 0.03 | 0.0 | 65.1 | 0.6 | 14.1 |
| 7.0 | 7.00 | 0.02 | 0.04 | 0.0 | 66.3 | 0.1 | 65.9 |
| 8.0 | 8.00 | 0.01 | 0.04 | 0.0 | 71.5 | 0.1 | 153.2 |
| 9.0 | 9.00 | 0.01 | 0.04 | 0.0 | 81.0 | 0.7 | 197.2 |
| 10.0 | 10.00 | -0.01 | 0.03 | 0.0 | 102.8 | 0.9 | 214.3 |
| 11.0 | 11.00 | -0.02 | 0.02 | 0.0 | 132.6 | 1.0 | 223.9 |
| 12.0 | 12.00 | -0.03 | 0.00 | 0.0 | 171.9 | 1.3 | 233.9 |
| 13.0 | 13.00 | -0.05 | -0.02 | 0.1 | 197.9 | 1.5 | 231.6 |
| 14.0 | 14.00 | -0.07 | -0.04 | 0.1 | 212.5 | 1.7 | 241.6 |
| 15.0 | 15.00 | -0.09 | -0.07 | 0.1 | 219.5 | 2.0 | 231.4 |
| 16.0 | 16.00 | -0.11 | -0.10 | 0.1 | 223.4 | 2.1 | 237.6 |
| 17.0 | 17.00 | -0.12 | -0.13 | 0.2 | 226.6 | 2.2 | 239.8 |
| 18.0 | 18.00 | -0.14 | -0.17 | 0.2 | 229.4 | 2.5 | 240.8 |
| 19.0 | 18.99 | -0.16 | -0.21 | 0.3 | 231.5 | 2.5 | 241.0 |
| 20.0 | 19.99 | -0.19 | -0.24 | 0.3 | 232.8 | 2.6 | 241.4 |
| 21.0 | 20.99 | -0.21 | -0.28 | 0.4 | 233.8 | 3.0 | 242.5 |
| 22.0 | 21.99 | -0.23 | -0.33 | 0.4 | 234.4 | 3.3 | 239.5 |
| 23.0 | 22.99 | -0.26 | -0.37 | 0.5 | 234.7 | 3.5 | 232.2 |
| 24.0 | 23.99 | -0.30 | -0.42 | 0.5 | 234.9 | 3.4 | 239.4 |
| 25.0 | 24.99 | -0.33 | -0.48 | 0.6 | 235.2 | 3.8 | 236.2 |
| 25.3 | 25.32 | -0.35 | -0.50 | 0.6 | 235.3 | 3.9 | 235.4 |

WRH 96145C

WRH 96145C



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96145C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

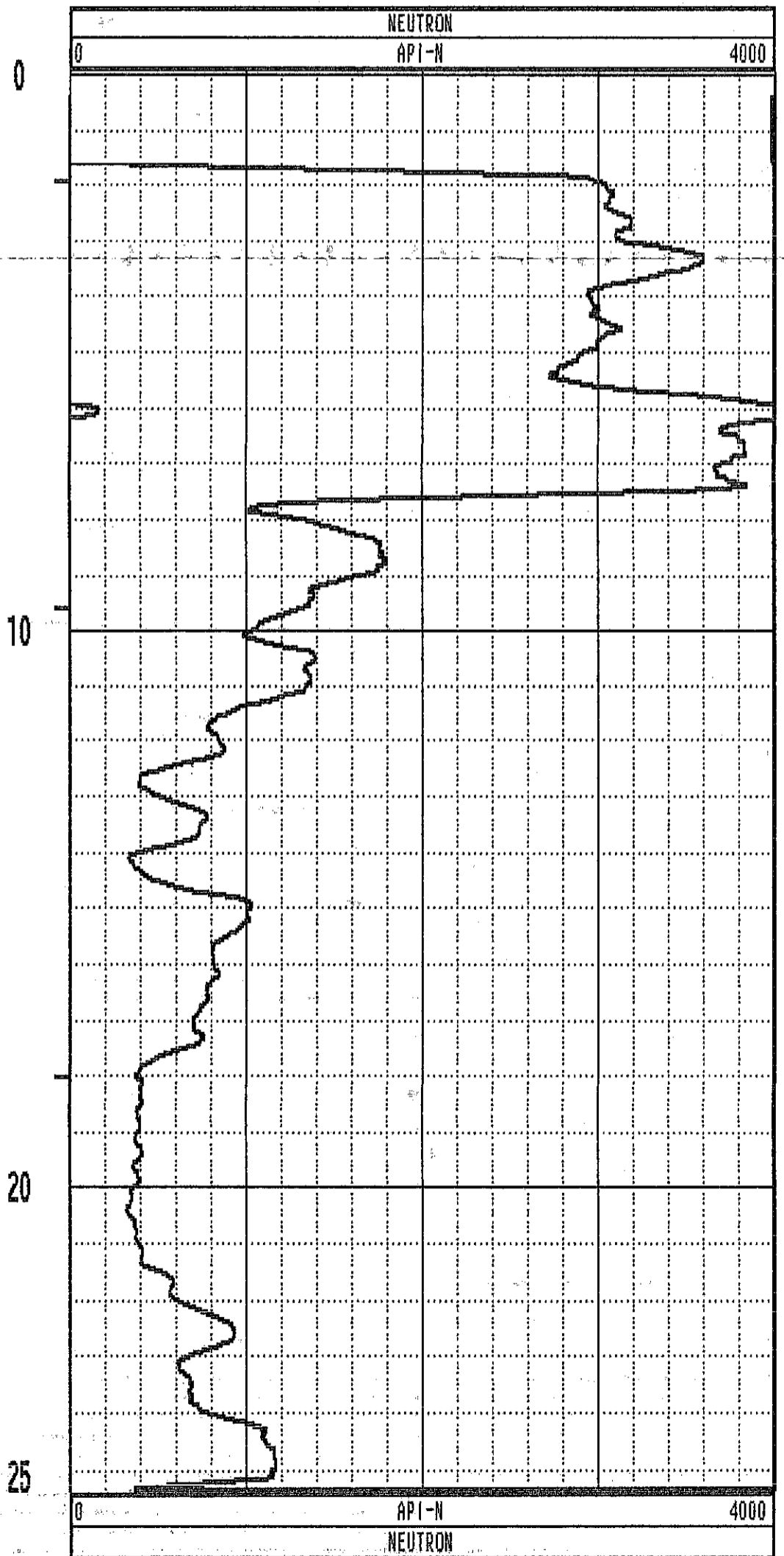
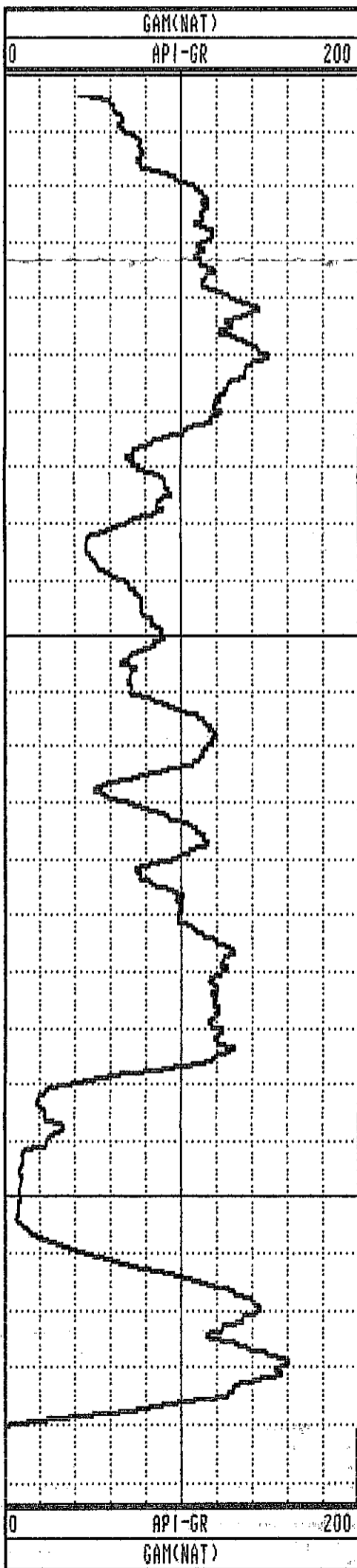
OTHER SERVICES:

DATE : 08/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 24 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 25.39 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.42 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

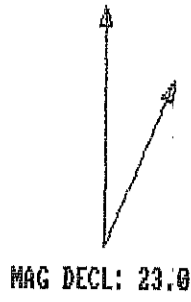
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



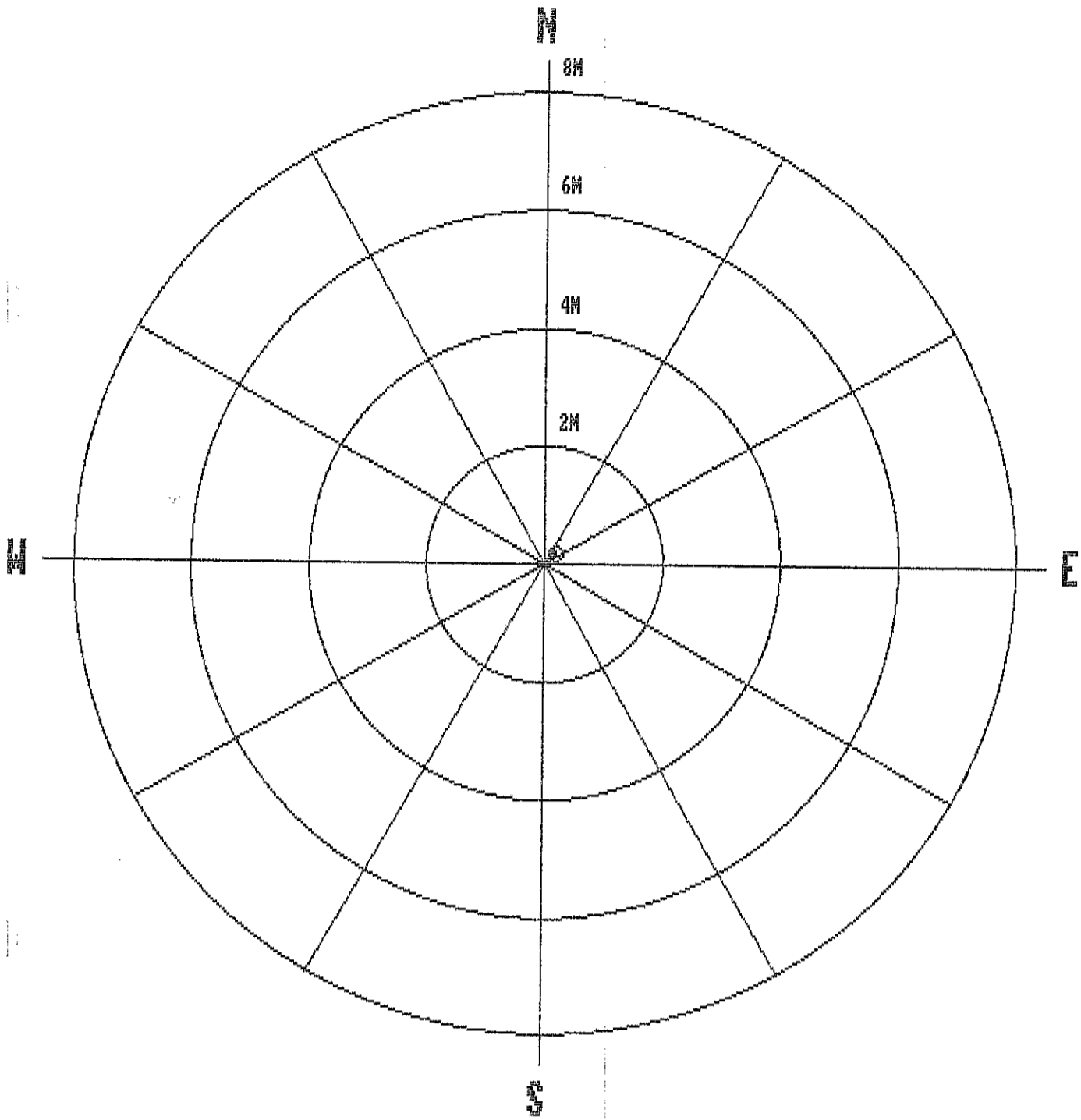
PLAN VIEW

COMPU-LOG DEVIATION

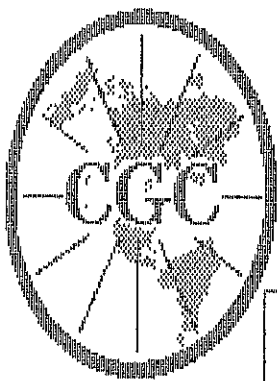
CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: WRH-96146C
 DATE OF LOG: 08/19/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 19.36 M
 AZIMUTH: 50.9
 DISTANCE: 0.3 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 339.7 | 0.9 | 324.2 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 87.0 | 1.1 | 95.4 |
| 4.0 | 4.00 | -0.01 | 0.03 | 0.0 | 101.5 | 1.4 | 160.6 |
| 5.0 | 5.00 | 0.00 | 0.03 | 0.0 | 88.5 | 1.3 | 46.6 |
| 6.0 | 6.00 | 0.02 | 0.04 | 0.0 | 64.2 | 1.3 | 27.9 |
| 7.0 | 7.00 | 0.04 | 0.05 | 0.1 | 54.6 | 1.0 | 37.8 |
| 8.0 | 8.00 | 0.05 | 0.06 | 0.1 | 49.0 | 1.0 | 26.5 |
| 9.0 | 9.00 | 0.07 | 0.07 | 0.1 | 46.7 | 0.9 | 16.0 |
| 10.0 | 10.00 | 0.08 | 0.08 | 0.1 | 44.2 | 1.4 | 57.1 |
| 11.0 | 11.00 | 0.10 | 0.09 | 0.1 | 43.9 | 1.0 | 52.2 |
| 12.0 | 12.00 | 0.11 | 0.11 | 0.2 | 43.9 | 1.0 | 33.0 |
| 13.0 | 13.00 | 0.12 | 0.12 | 0.2 | 44.2 | 1.2 | 47.8 |
| 14.0 | 14.00 | 0.13 | 0.13 | 0.2 | 45.3 | 0.9 | 59.8 |
| 15.0 | 15.00 | 0.14 | 0.15 | 0.2 | 46.5 | 1.2 | 52.9 |
| 16.0 | 16.00 | 0.15 | 0.16 | 0.2 | 47.7 | 0.8 | 51.7 |
| 17.0 | 17.00 | 0.15 | 0.17 | 0.2 | 48.5 | 0.8 | 55.5 |
| 18.0 | 18.00 | 0.16 | 0.19 | 0.2 | 49.3 | 0.6 | 86.2 |
| 19.0 | 19.00 | 0.16 | 0.19 | 0.3 | 50.5 | 0.5 | 75.4 |
| 19.4 | 19.36 | 0.16 | 0.20 | 0.3 | 50.9 | 0.4 | 95.5 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

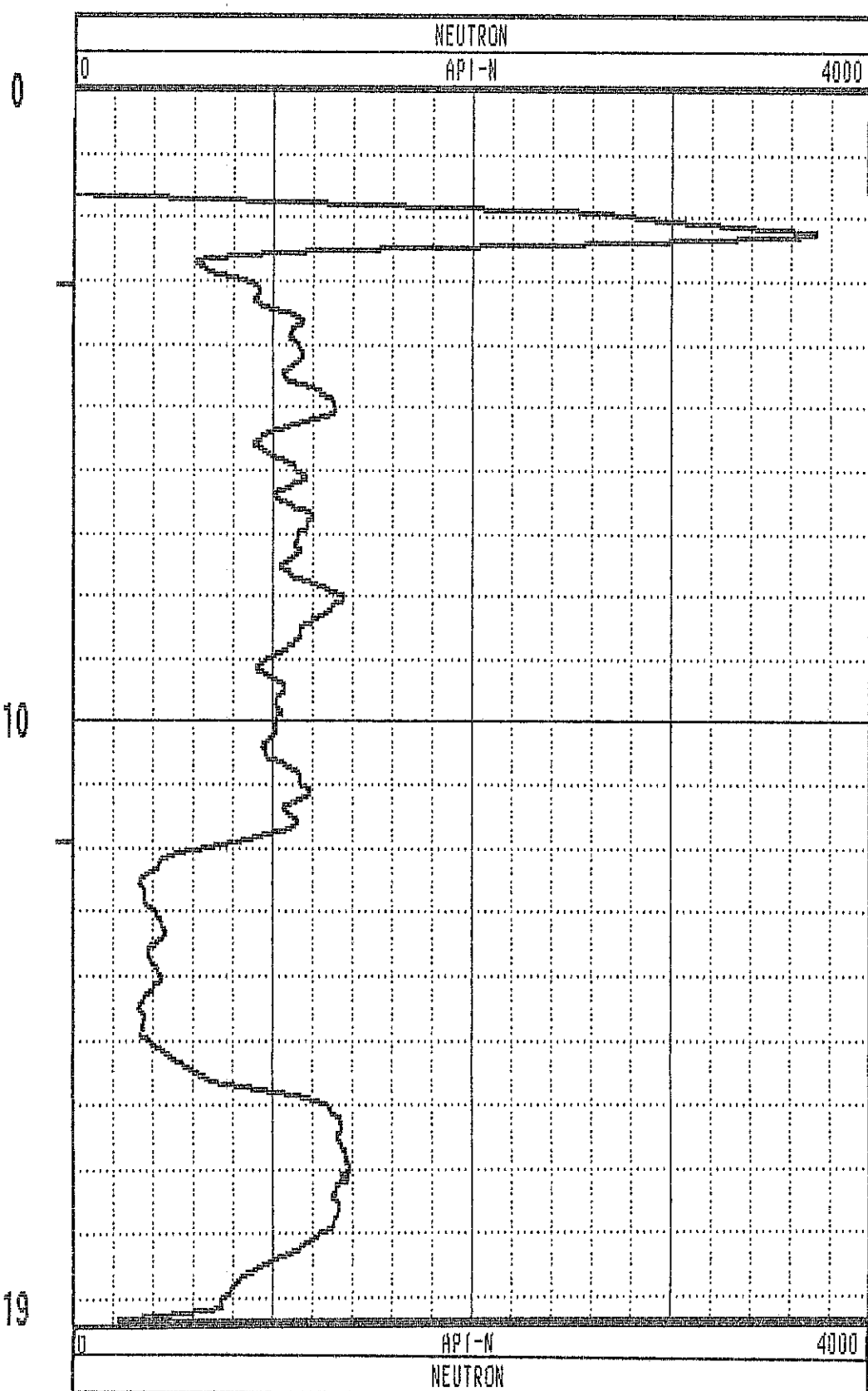
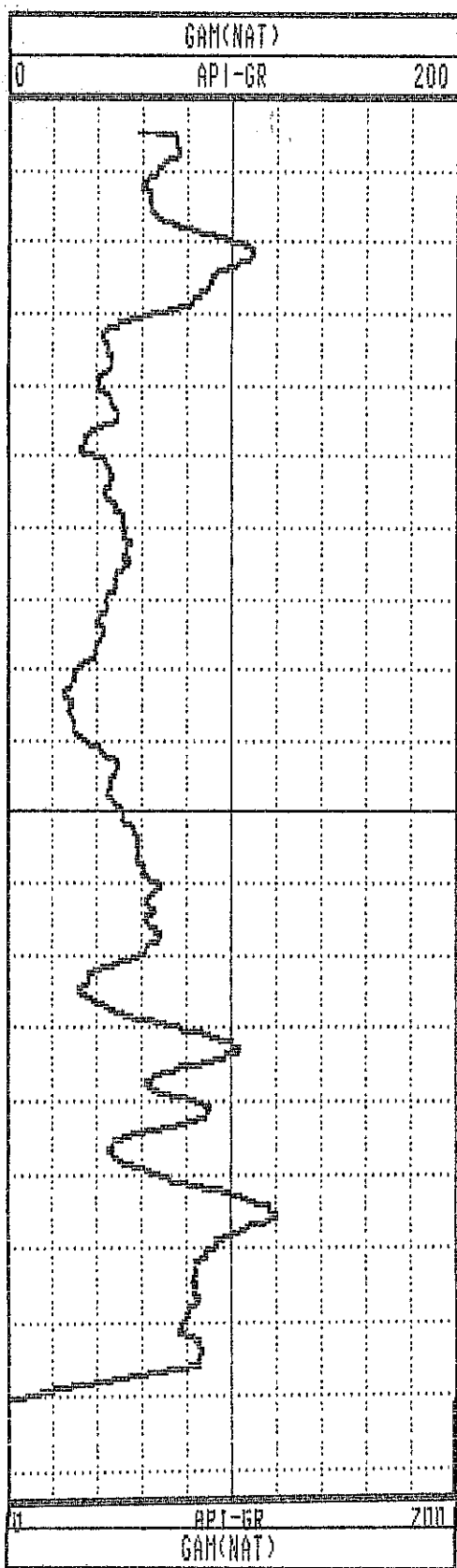
COMPANY : PINE VALLEY COAL
 WELL : WRH-96146C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/19/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 19 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 19.42 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.46 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

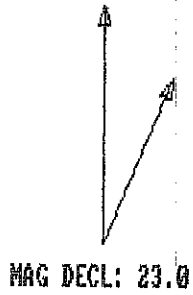
BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

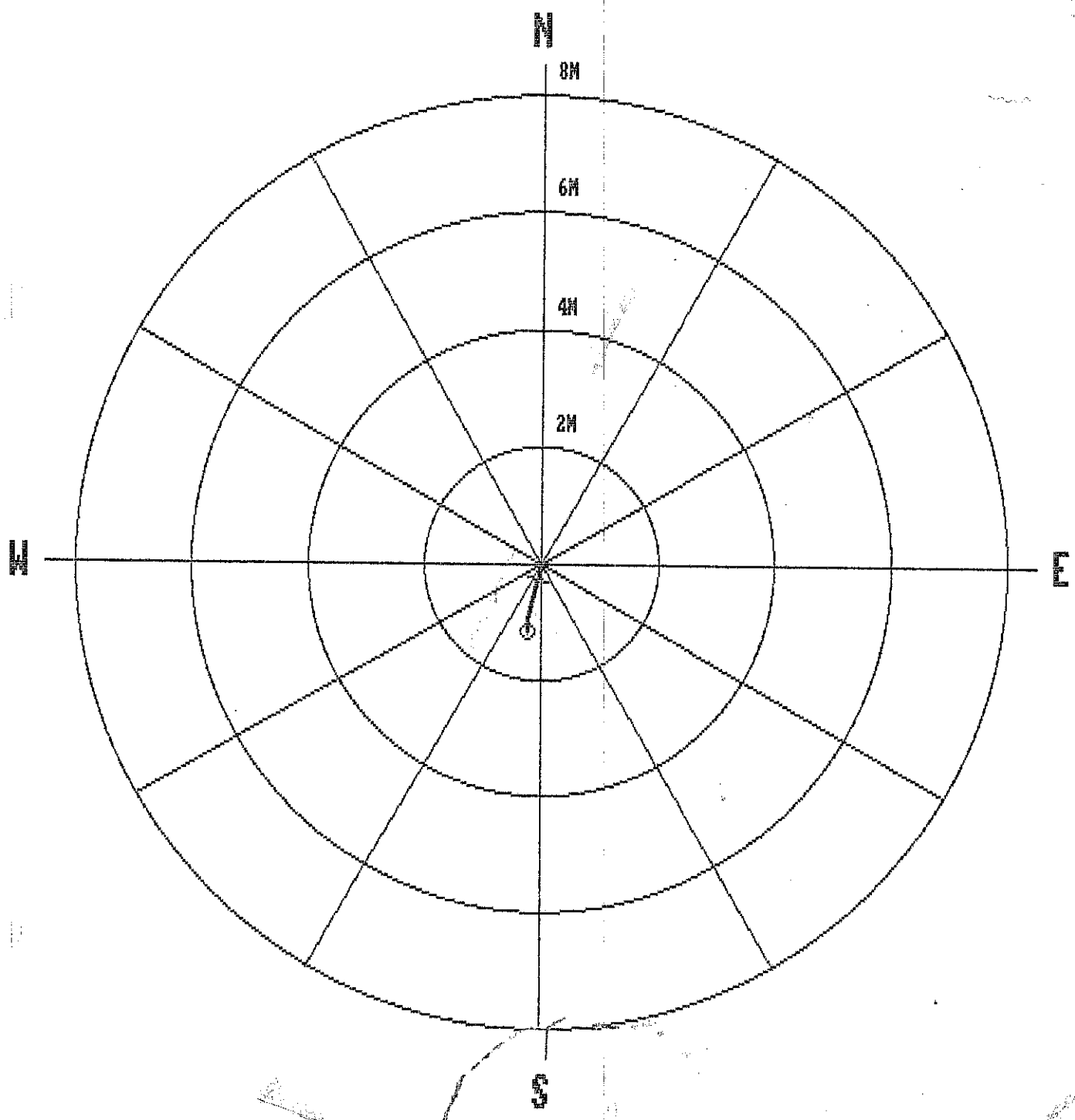


PLAN VIEW COMPI-LOG DEVIATION

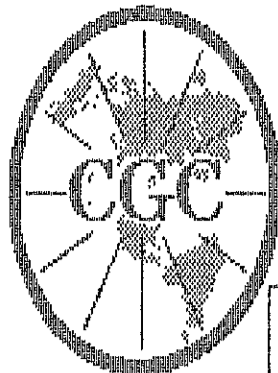
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96147C
 DATE OF LOG: 00/18/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 39.21 M
 AZIMUTH: 191.3
 DISTANCE: 1.2 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 0.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.0 | 2.00 | -0.00 | 0.00 | 0.0 | 110.8 | 0.9 | 75.5 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 210.2 | 0.8 | 192.6 |
| 4.0 | 4.00 | -0.02 | -0.00 | 0.0 | 187.7 | 0.8 | 172.8 |
| 5.0 | 5.00 | -0.03 | -0.00 | 0.0 | 181.2 | 1.1 | 213.8 |
| 6.0 | 6.00 | -0.04 | 0.01 | 0.0 | 160.0 | 1.2 | 109.4 |
| 7.0 | 7.00 | -0.04 | 0.03 | 0.1 | 147.8 | 1.3 | 148.6 |
| 8.0 | 8.00 | -0.05 | 0.03 | 0.1 | 152.6 | 0.8 | 297.1 |
| 9.0 | 9.00 | -0.05 | 0.01 | 0.1 | 163.6 | 1.0 | 262.2 |
| 10.0 | 10.00 | -0.05 | -0.00 | 0.0 | 181.5 | 0.8 | 305.0 |
| 11.0 | 11.00 | -0.04 | -0.01 | 0.0 | 193.9 | 0.5 | 275.5 |
| 12.0 | 12.00 | -0.04 | -0.02 | 0.0 | 201.4 | 0.4 | 262.2 |
| 13.0 | 13.00 | -0.05 | -0.02 | 0.1 | 201.0 | 0.6 | 220.5 |
| 14.0 | 14.00 | -0.06 | -0.02 | 0.1 | 196.6 | 1.2 | 164.0 |
| 15.0 | 15.00 | -0.08 | -0.02 | 0.1 | 193.0 | 1.1 | 196.6 |
| 16.0 | 16.00 | -0.11 | -0.02 | 0.1 | 190.6 | 2.0 | 182.1 |
| 17.0 | 17.00 | -0.14 | -0.02 | 0.1 | 189.5 | 1.5 | 182.4 |
| 18.0 | 18.00 | -0.17 | -0.03 | 0.2 | 189.1 | 1.8 | 188.4 |
| 19.0 | 19.00 | -0.20 | -0.03 | 0.2 | 189.7 | 2.4 | 194.5 |
| 20.0 | 20.00 | -0.24 | -0.05 | 0.2 | 190.6 | 2.5 | 197.3 |
| 21.0 | 20.99 | -0.29 | -0.06 | 0.3 | 191.2 | 2.3 | 186.5 |
| 22.0 | 21.99 | -0.33 | -0.07 | 0.3 | 191.9 | 2.9 | 199.8 |
| 23.0 | 22.99 | -0.38 | -0.08 | 0.4 | 192.2 | 2.6 | 192.5 |
| 24.0 | 23.99 | -0.42 | -0.09 | 0.4 | 192.2 | 2.4 | 195.4 |
| 25.0 | 24.99 | -0.46 | -0.10 | 0.5 | 192.4 | 2.6 | 194.2 |
| 26.0 | 25.99 | -0.50 | -0.11 | 0.5 | 192.3 | 2.6 | 194.1 |
| 27.0 | 26.99 | -0.55 | -0.12 | 0.6 | 192.5 | 2.7 | 195.4 |
| 28.0 | 27.99 | -0.59 | -0.13 | 0.6 | 192.7 | 2.6 | 199.2 |
| 29.0 | 28.99 | -0.64 | -0.15 | 0.7 | 193.2 | 2.9 | 198.4 |
| 30.0 | 29.99 | -0.68 | -0.16 | 0.7 | 193.4 | 2.5 | 191.9 |
| 31.0 | 30.98 | -0.73 | -0.17 | 0.8 | 193.4 | 3.3 | 192.7 |
| 32.0 | 31.98 | -0.78 | -0.19 | 0.8 | 193.4 | 3.1 | 193.9 |
| 33.0 | 32.98 | -0.83 | -0.20 | 0.9 | 193.4 | 2.8 | 189.5 |
| 34.0 | 33.98 | -0.88 | -0.21 | 0.9 | 193.4 | 2.7 | 200.0 |
| 35.0 | 34.98 | -0.93 | -0.21 | 1.0 | 193.0 | 2.9 | 187.4 |
| 36.0 | 35.98 | -0.97 | -0.22 | 1.0 | 192.7 | 2.6 | 183.9 |
| 37.0 | 36.98 | -1.02 | -0.22 | 1.0 | 192.4 | 2.6 | 176.9 |
| 38.0 | 37.98 | -1.07 | -0.23 | 1.1 | 191.9 | 3.0 | 179.2 |
| 39.0 | 38.97 | -1.12 | -0.23 | 1.1 | 191.5 | 3.3 | 181.5 |
| 39.2 | 39.21 | -1.13 | -0.23 | 1.2 | 191.3 | 3.2 | 180.6 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

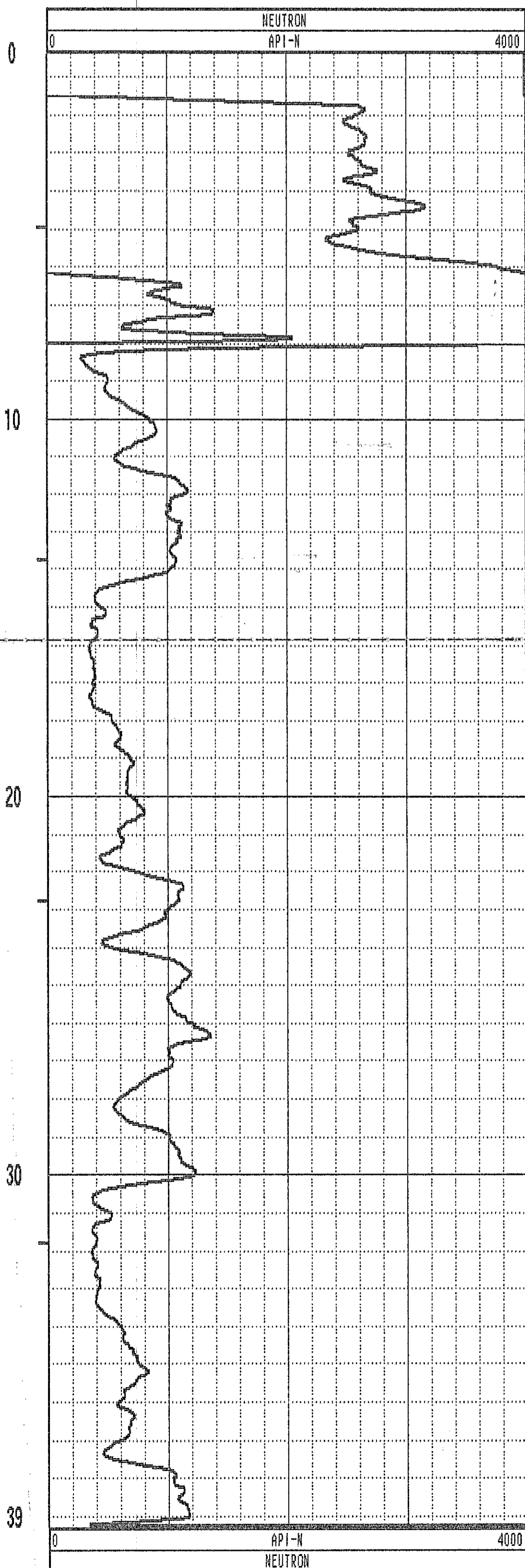
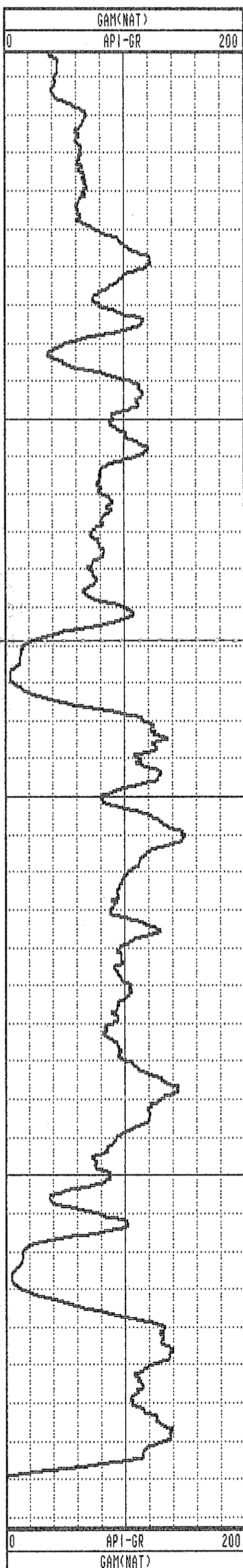
COMPANY : PINE VALLEY COAL
 WELL : WRH-96147C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 39 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 39.30 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.40 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

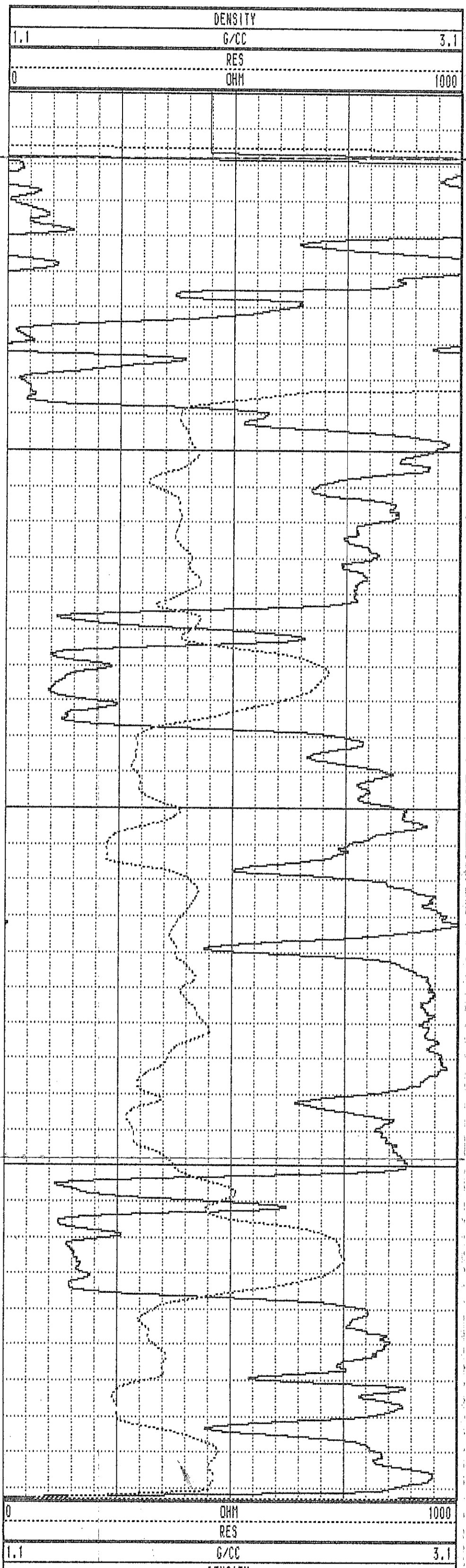
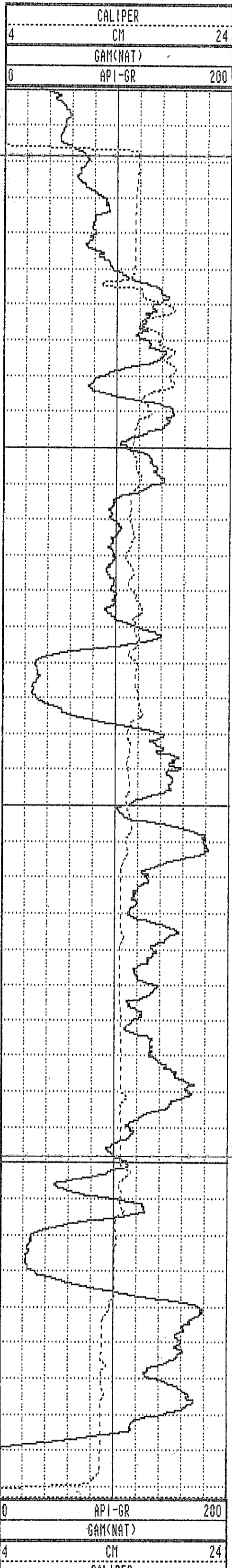
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96147C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 08/18/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 38 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 39.34 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96147C 08/18/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

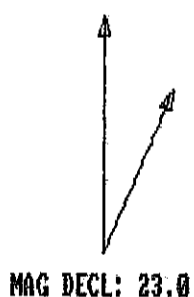
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 9.7 | 0.7 | 1.6 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 311.1 | 0.3 | 202.2 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 265.3 | 0.9 | 266.6 |
| 5.0 | 5.00 | 0.00 | -0.02 | 0.0 | 279.6 | 1.6 | 309.0 |
| 6.0 | 6.00 | 0.01 | -0.04 | 0.0 | 289.4 | 1.0 | 324.2 |
| 7.0 | 7.00 | 0.02 | -0.05 | 0.1 | 294.7 | 1.1 | 309.4 |
| 8.0 | 8.00 | 0.03 | -0.06 | 0.1 | 296.1 | 1.1 | 294.8 |
| 9.0 | 9.00 | 0.04 | -0.08 | 0.1 | 296.9 | 1.1 | 302.9 |
| 10.0 | 10.00 | 0.05 | -0.10 | 0.1 | 297.3 | 0.9 | 298.4 |
| 11.0 | 11.00 | 0.06 | -0.11 | 0.1 | 298.5 | 1.1 | 302.3 |
| 12.0 | 12.00 | 0.07 | -0.13 | 0.1 | 299.4 | 1.1 | 313.1 |
| 13.0 | 13.00 | 0.08 | -0.14 | 0.2 | 301.1 | 1.2 | 318.6 |
| 14.0 | 14.00 | 0.10 | -0.15 | 0.2 | 303.1 | 1.1 | 321.8 |
| 15.0 | 15.00 | 0.11 | -0.16 | 0.2 | 305.0 | 1.0 | 329.9 |
| 16.0 | 16.00 | 0.13 | -0.18 | 0.2 | 306.4 | 1.1 | 314.2 |
| 17.0 | 17.00 | 0.14 | -0.19 | 0.2 | 307.3 | 1.3 | 317.4 |
| 18.0 | 18.00 | 0.16 | -0.20 | 0.3 | 307.7 | 1.3 | 302.2 |
| 19.0 | 19.00 | 0.17 | -0.22 | 0.3 | 307.7 | 1.0 | 297.4 |
| 20.0 | 20.00 | 0.17 | -0.24 | 0.3 | 305.5 | 1.6 | 273.9 |
| 21.0 | 21.00 | 0.18 | -0.27 | 0.3 | 302.7 | 1.4 | 292.5 |
| 22.0 | 22.00 | 0.18 | -0.31 | 0.4 | 300.1 | 1.0 | 277.4 |
| 23.0 | 23.00 | 0.17 | -0.34 | 0.4 | 297.4 | 2.0 | 270.6 |
| 24.0 | 23.99 | 0.17 | -0.37 | 0.4 | 294.8 | 2.0 | 251.1 |
| 25.0 | 24.99 | 0.16 | -0.41 | 0.4 | 291.9 | 2.3 | 247.4 |
| 26.0 | 25.99 | 0.16 | -0.45 | 0.5 | 289.4 | 2.6 | 258.6 |
| 27.0 | 26.99 | 0.15 | -0.49 | 0.5 | 287.0 | 2.4 | 253.1 |
| 27.1 | 27.13 | 0.15 | -0.49 | 0.5 | 286.5 | 2.5 | 245.6 |

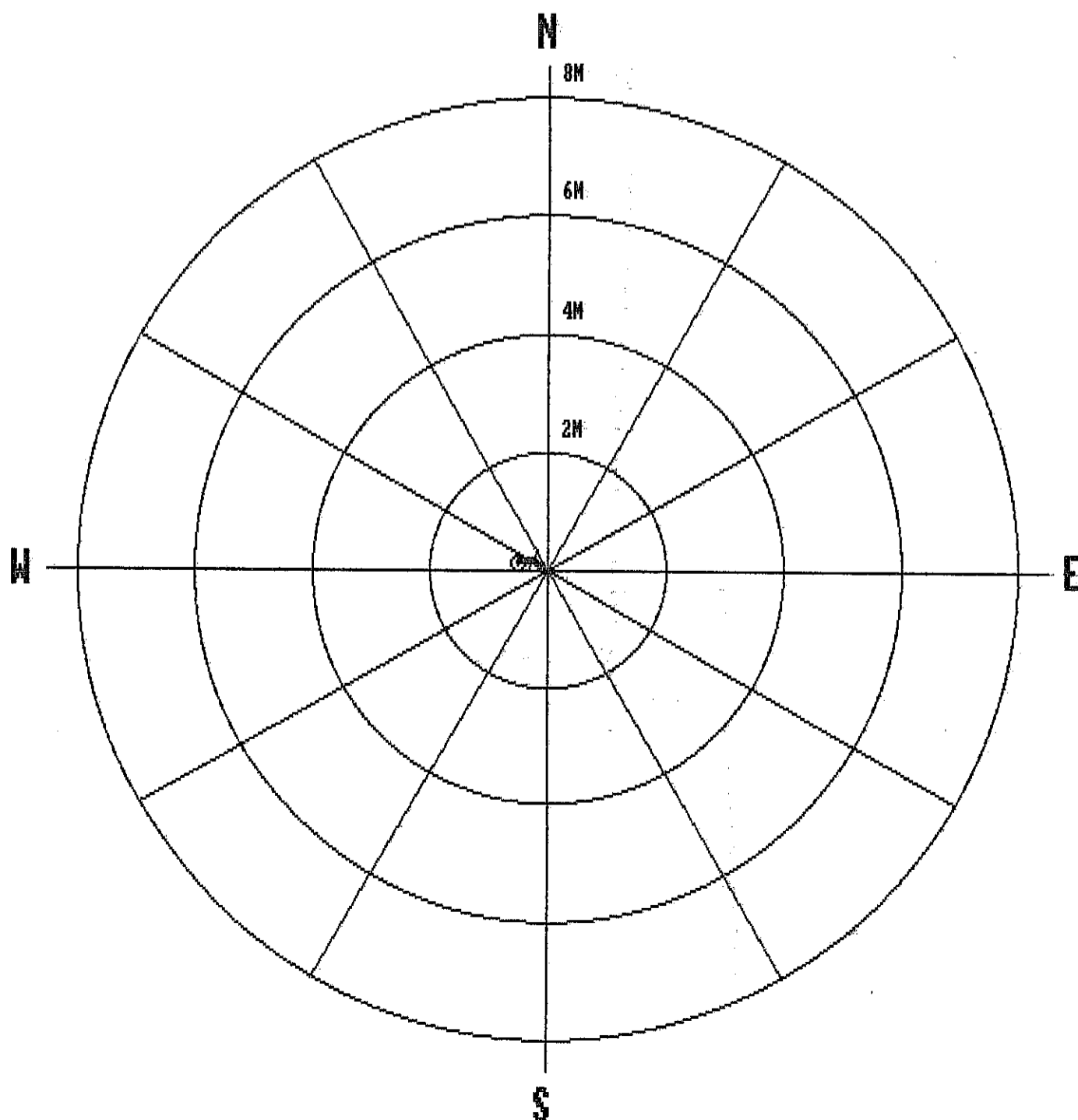
WRH-96/48C

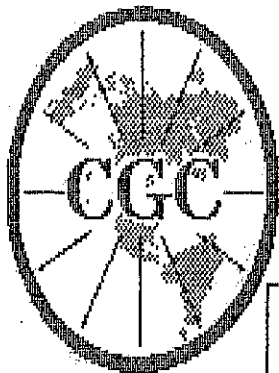
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96148C
 DATE OF LOG: 08/19/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 27.13 M
 AZIMUTH: 286.5
 DISTANCE: 0.5 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

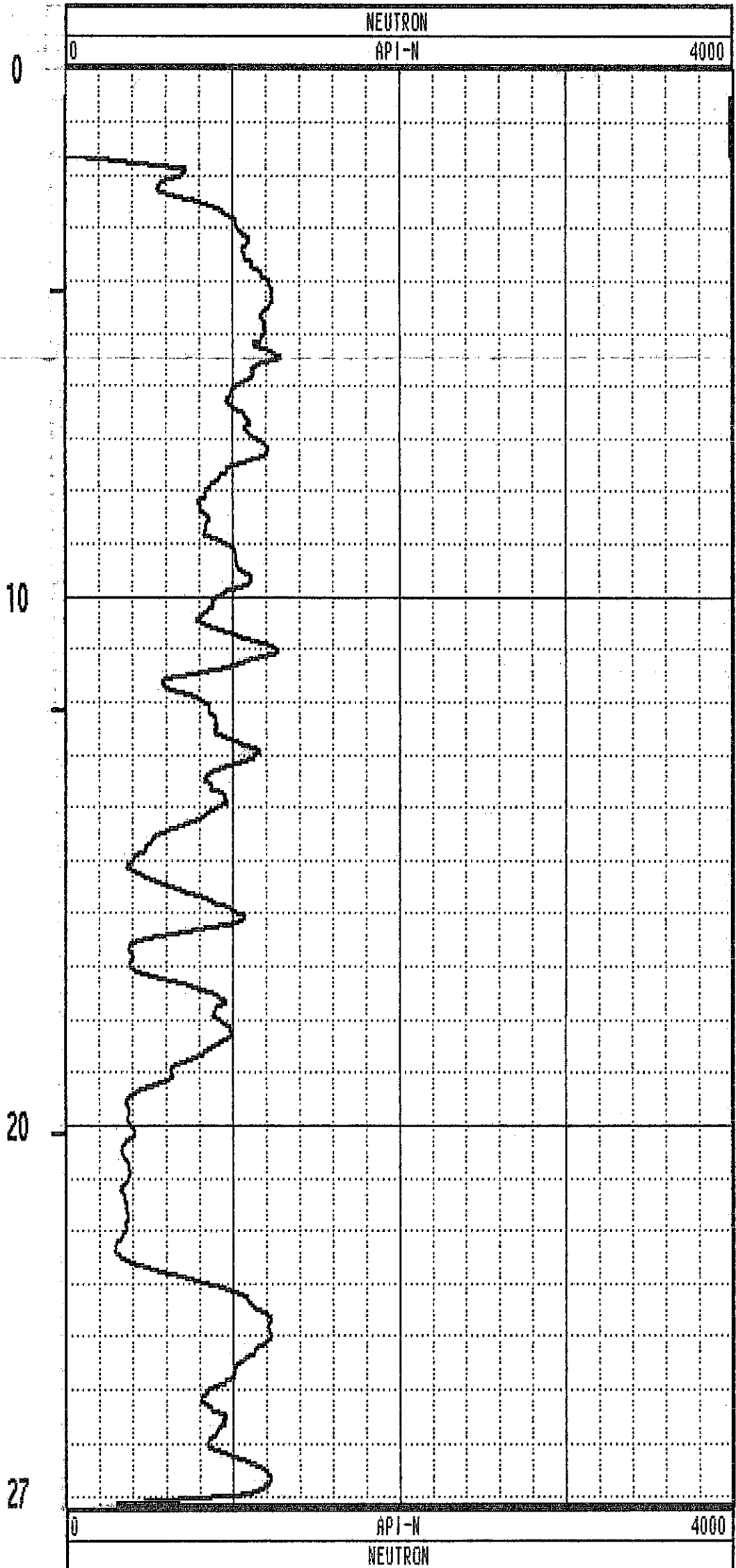
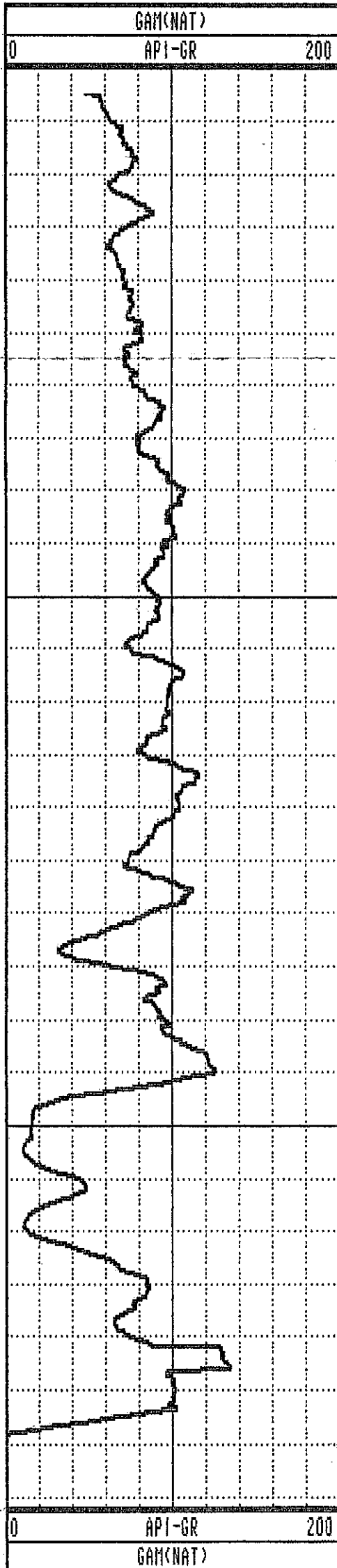
COMPANY : PINE VALLEY COAL
 WELL : WRH-96148C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/19/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 27.20 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.50 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

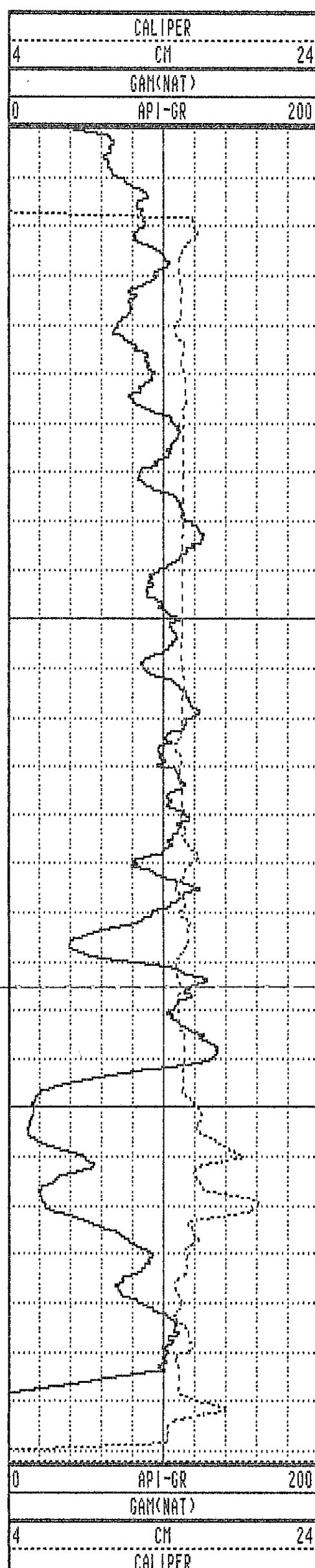
COMPANY : PINE VALLEY COAL
 WELL : WRH-96148C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

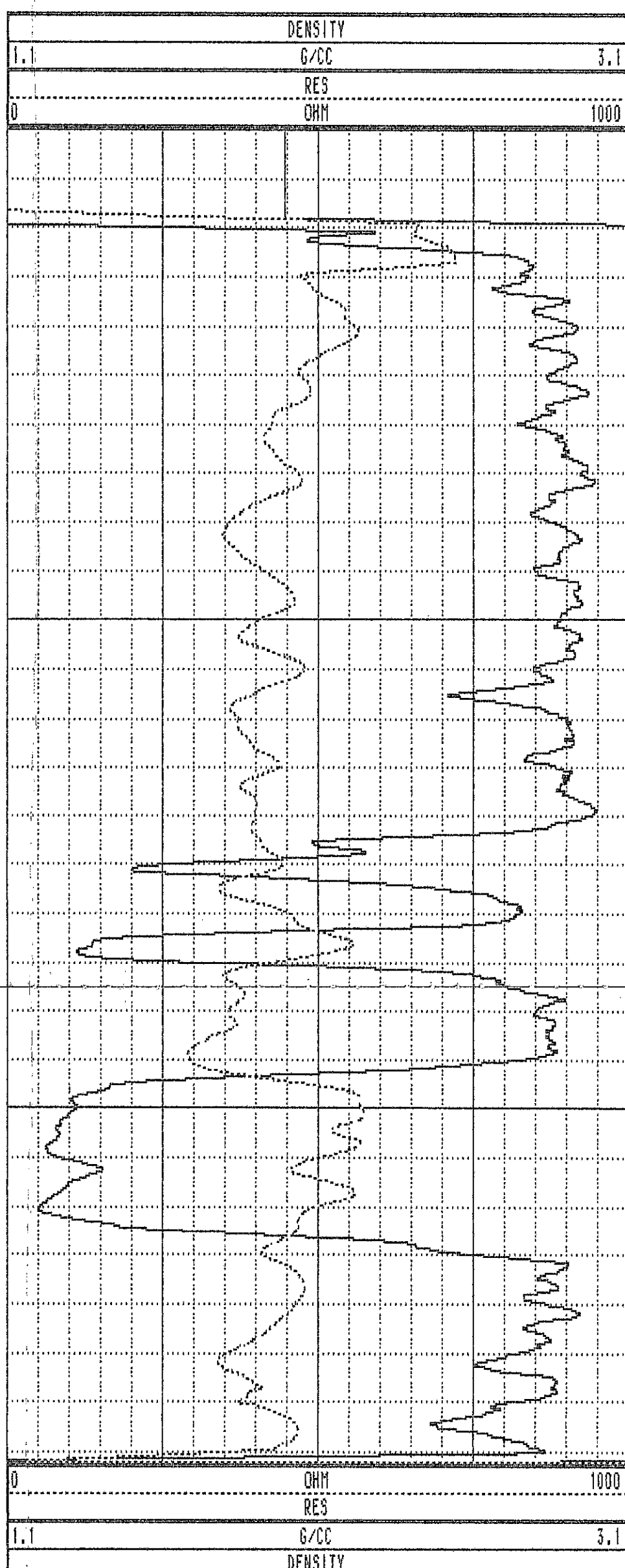
DATE : 08/19/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 26 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 27.26 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
20
27



WRH-96148C 08/19/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

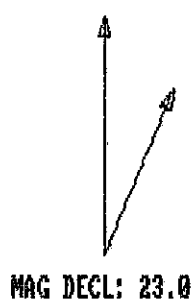
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 221.2 | 0.8 | 274.1 |
| 3.0 | 3.00 | 0.01 | 0.00 | 0.0 | 31.3 | 0.7 | 21.8 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 5.5 | 1.1 | 358.6 |
| 5.0 | 5.00 | 0.03 | -0.00 | 0.0 | 354.1 | 0.7 | 341.4 |
| 6.0 | 6.00 | 0.04 | -0.01 | 0.0 | 349.3 | 1.0 | 343.9 |
| 7.0 | 7.00 | 0.05 | -0.01 | 0.1 | 347.0 | 1.1 | 14.5 |
| 8.0 | 8.00 | 0.07 | -0.00 | 0.1 | 356.2 | 1.0 | 350.0 |
| 9.0 | 9.00 | 0.09 | -0.00 | 0.1 | 359.0 | 1.0 | 4.4 |
| 10.0 | 10.00 | 0.11 | 0.00 | 0.1 | 0.5 | 1.0 | 5.4 |
| 11.0 | 11.00 | 0.12 | 0.00 | 0.1 | 0.7 | 0.8 | 350.1 |
| 12.0 | 12.00 | 0.14 | 0.00 | 0.1 | 1.1 | 1.0 | 1.2 |
| 13.0 | 13.00 | 0.15 | 0.01 | 0.2 | 2.7 | 1.1 | 27.4 |
| 14.0 | 14.00 | 0.17 | 0.01 | 0.2 | 4.5 | 1.0 | 6.7 |
| 15.0 | 15.00 | 0.19 | 0.02 | 0.2 | 6.0 | 1.1 | 22.9 |
| 16.0 | 16.00 | 0.20 | 0.03 | 0.2 | 7.7 | 1.2 | 20.5 |
| 17.0 | 17.00 | 0.22 | 0.03 | 0.2 | 8.8 | 0.6 | 28.1 |
| 18.0 | 18.00 | 0.24 | 0.04 | 0.2 | 10.1 | 0.8 | 17.0 |
| 19.0 | 19.00 | 0.25 | 0.05 | 0.3 | 12.1 | 1.0 | 45.2 |
| 20.0 | 20.00 | 0.26 | 0.07 | 0.3 | 14.0 | 1.1 | 33.4 |
| 21.0 | 21.00 | 0.28 | 0.08 | 0.3 | 15.2 | 0.9 | 27.0 |
| 22.0 | 22.00 | 0.30 | 0.09 | 0.3 | 16.1 | 1.0 | 24.8 |
| 23.0 | 23.00 | 0.31 | 0.09 | 0.3 | 16.6 | 0.8 | 36.2 |
| 24.0 | 24.00 | 0.33 | 0.10 | 0.3 | 16.8 | 1.1 | 28.8 |
| 25.0 | 25.00 | 0.34 | 0.10 | 0.4 | 16.7 | 1.0 | 12.7 |
| 25.3 | 25.34 | 0.35 | 0.10 | 0.4 | 16.7 | 1.0 | 9.2 |

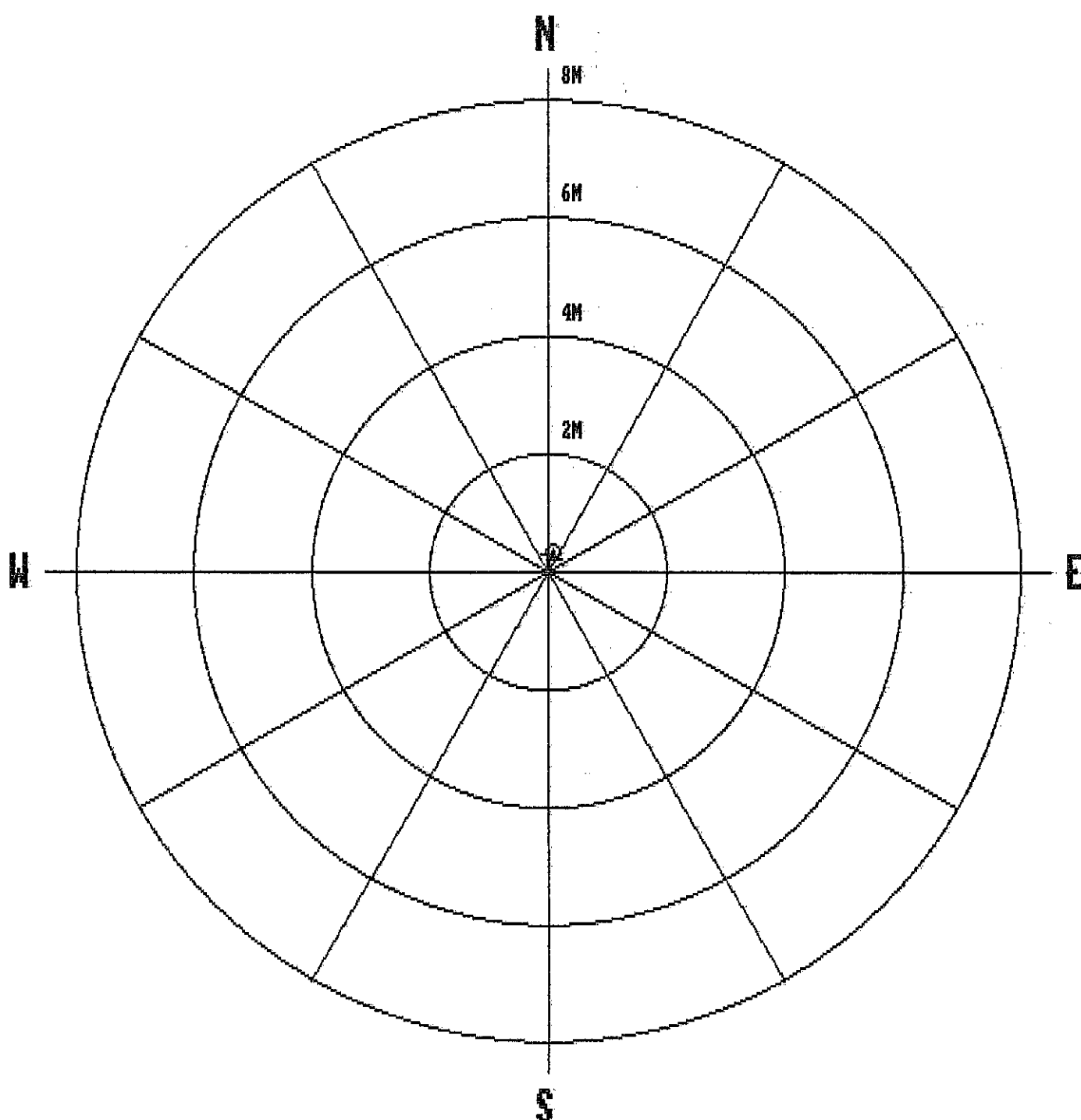
WRH-96149C

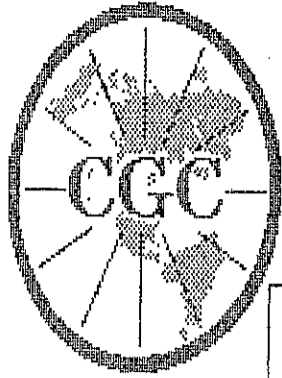
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96149C
 DATE OF LOG: 08/20/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 25.34 M
 AZIMUTH: 16.7
 DISTANCE: 0.4 M
 + = 20 N INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96149C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/20/96
 DEPTH DRILLER : 25
 LOG BOTTOM : 25.39
 LOG TOP : 0.46

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

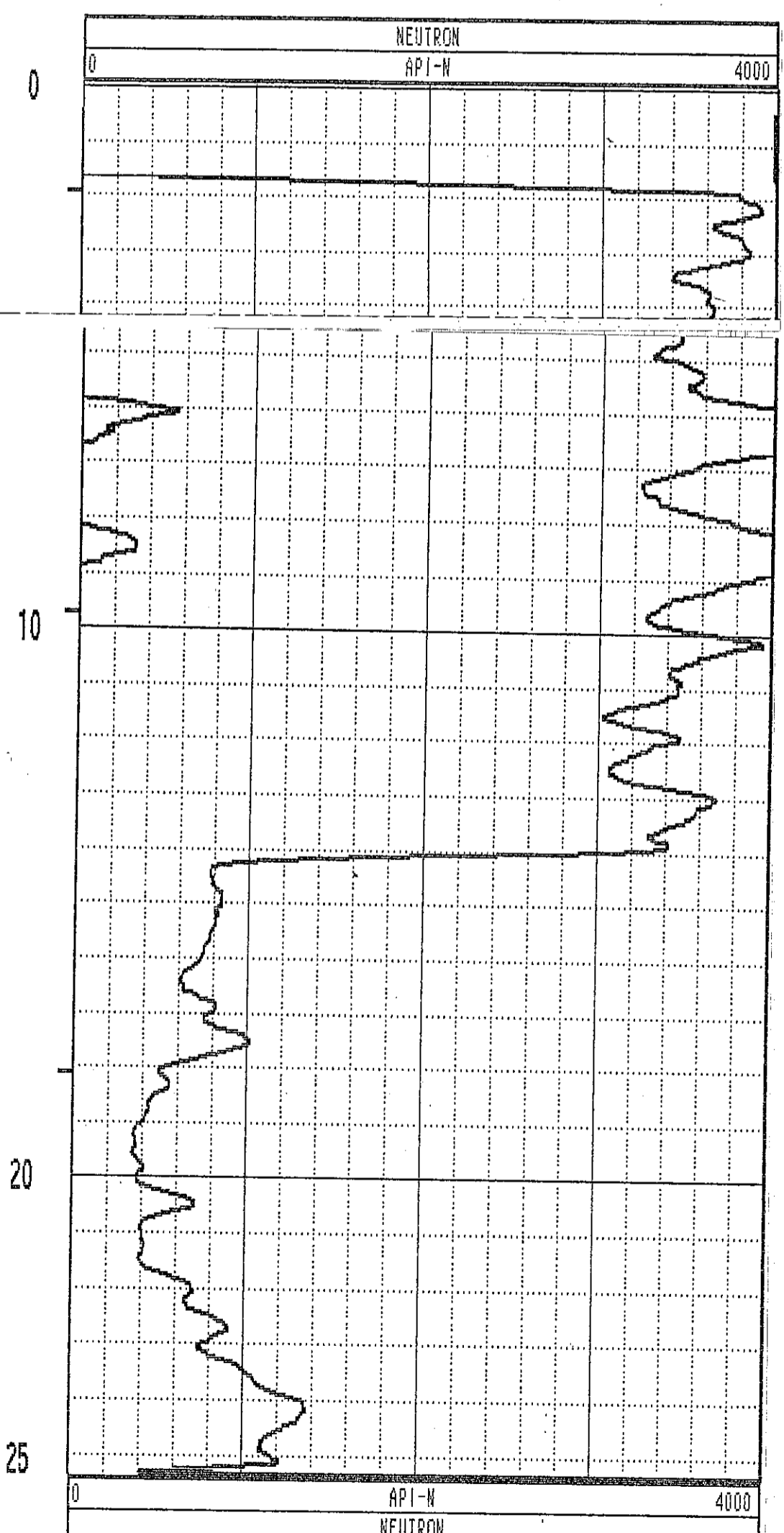
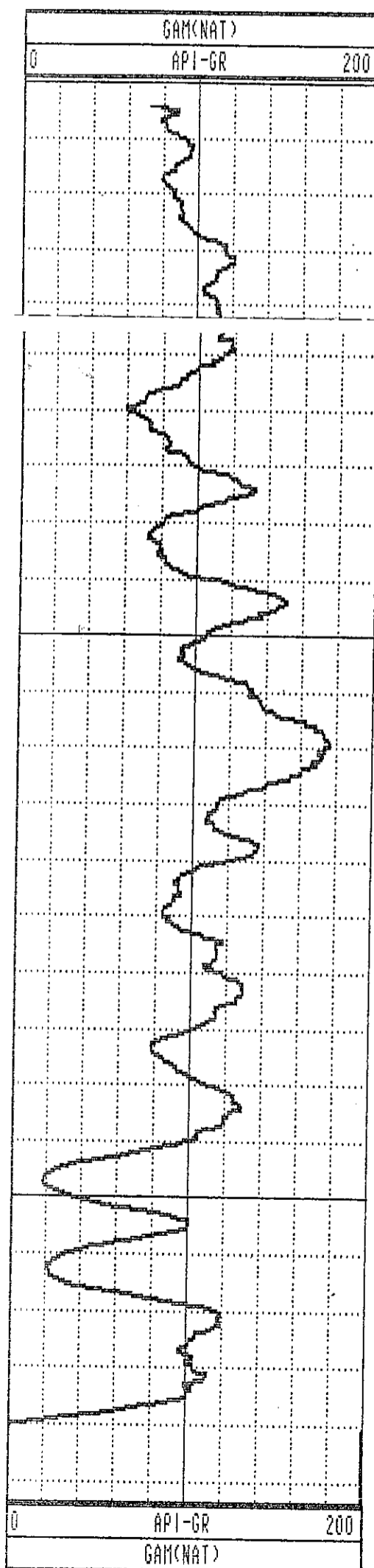
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 3
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



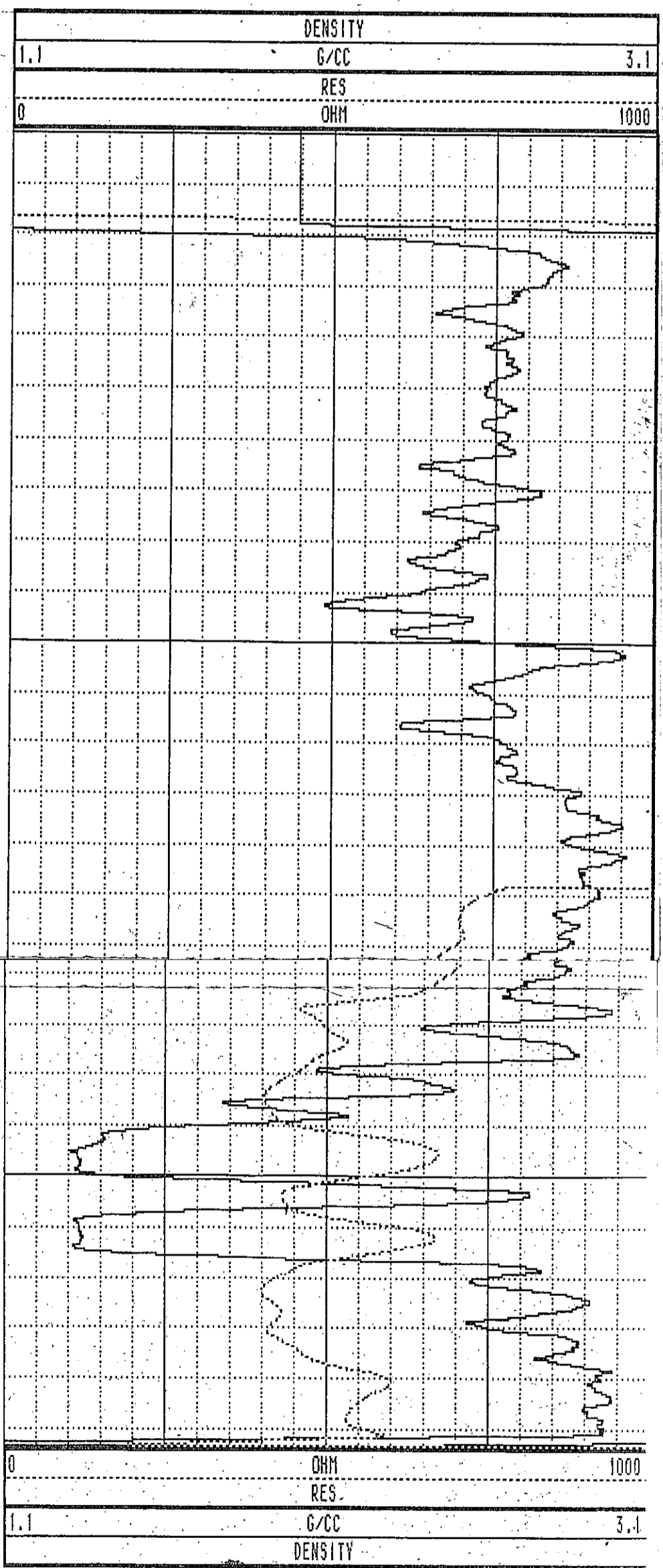
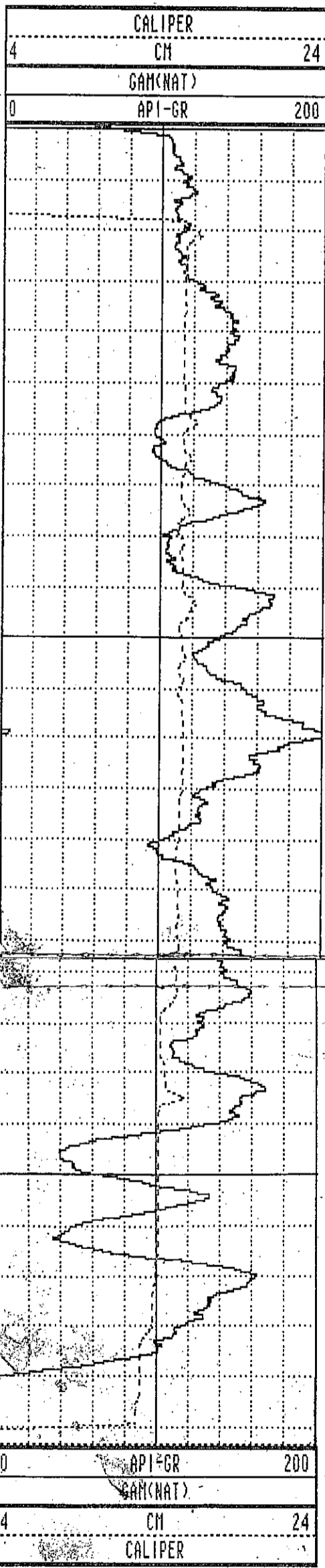
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96149C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/20/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 25.40 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : PLOT : PINE 7
 REMARKS : THRESH: 10000

OTHER SERVICES:

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

149C



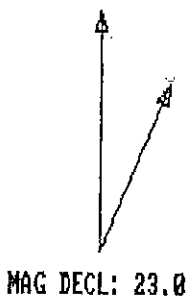
WRH-96149C 08/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

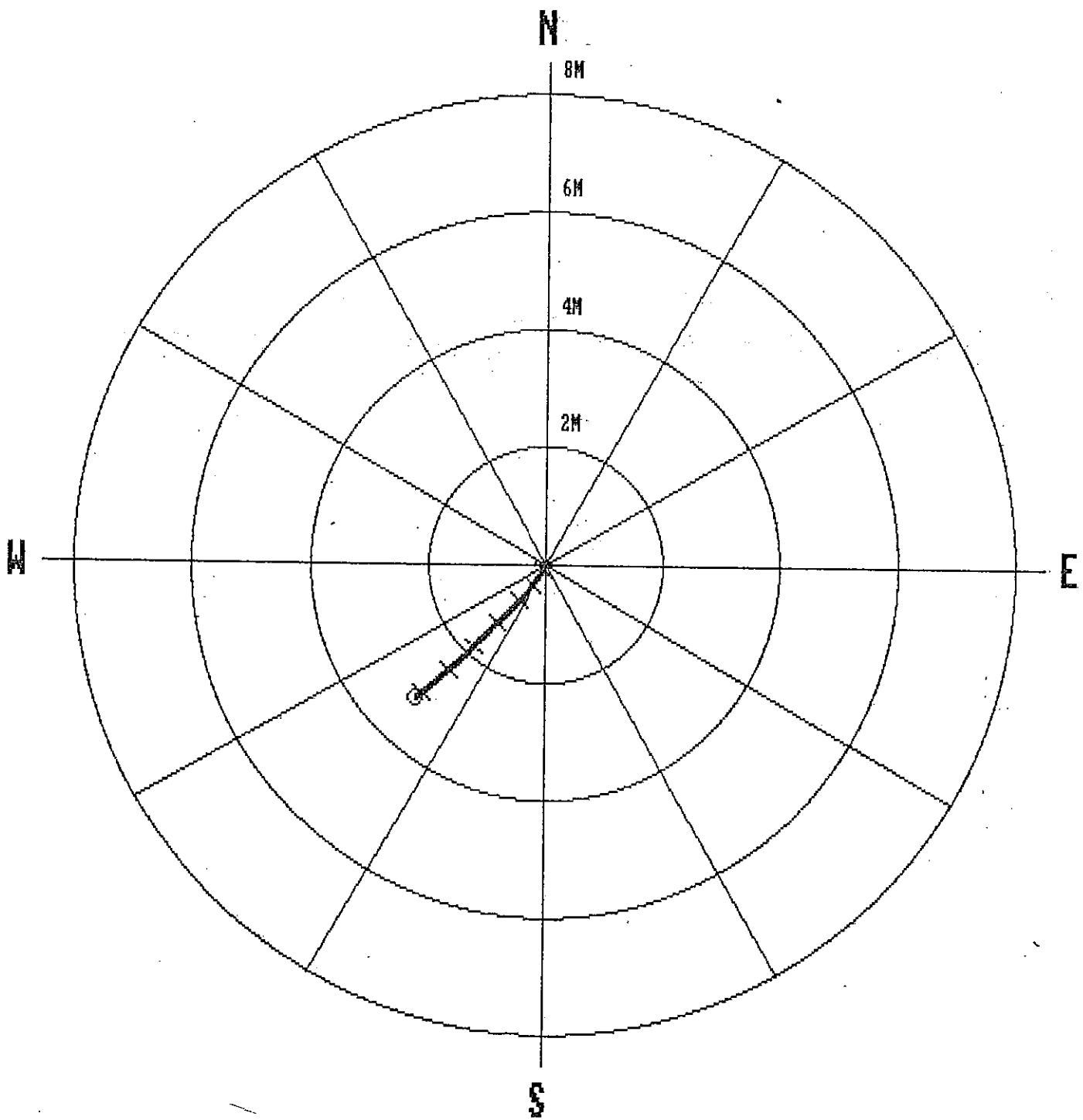
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

MINE: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96150C
 DATE OF LOG: 08/21/96
 HOLE NO: 9055A 56

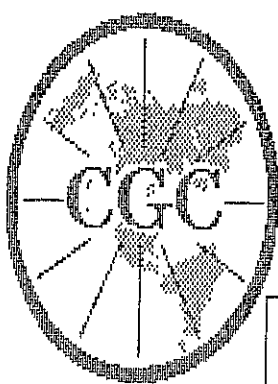


SCALE: 1 M/CM
 TRUE DEPTH: 36.04 M
 AZIMUTH: 224.4
 DISTANCE: 3.2 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 171.7 | 1.3 | 184.7 |
| 3.0 | 3.00 | -0.03 | 0.01 | 0.0 | 165.6 | 2.3 | 218.7 |
| 4.0 | 4.00 | -0.05 | 0.00 | 0.1 | 177.6 | 2.5 | 208.6 |
| 5.0 | 5.00 | -0.09 | -0.03 | 0.1 | 195.9 | 2.8 | 214.3 |
| 6.0 | 6.00 | -0.13 | -0.06 | 0.1 | 203.8 | 3.2 | 215.2 |
| 7.0 | 6.99 | -0.18 | -0.10 | 0.2 | 207.8 | 3.3 | 218.1 |
| 8.0 | 7.99 | -0.23 | -0.13 | 0.3 | 210.1 | 3.2 | 213.3 |
| 9.0 | 8.99 | -0.27 | -0.17 | 0.3 | 211.7 | 3.7 | 218.4 |
| 10.0 | 9.99 | -0.32 | -0.21 | 0.4 | 212.8 | 4.0 | 217.0 |
| 11.0 | 10.99 | -0.38 | -0.25 | 0.5 | 213.4 | 3.9 | 218.3 |
| 12.0 | 11.98 | -0.43 | -0.29 | 0.5 | 214.0 | 4.1 | 219.4 |
| 13.0 | 12.98 | -0.49 | -0.34 | 0.6 | 214.8 | 4.2 | 222.4 |
| 14.0 | 13.98 | -0.54 | -0.39 | 0.7 | 215.9 | 4.9 | 227.9 |
| 15.0 | 14.97 | -0.61 | -0.46 | 0.8 | 216.8 | 5.4 | 222.0 |
| 16.0 | 15.97 | -0.68 | -0.52 | 0.9 | 217.7 | 5.7 | 222.1 |
| 17.0 | 16.96 | -0.74 | -0.59 | 0.9 | 218.5 | 5.4 | 239.5 |
| 18.0 | 17.96 | -0.81 | -0.66 | 1.0 | 219.1 | 6.0 | 225.0 |
| 19.0 | 18.95 | -0.89 | -0.74 | 1.2 | 219.6 | 6.4 | 227.1 |
| 20.0 | 19.95 | -0.97 | -0.82 | 1.3 | 220.2 | 6.1 | 220.9 |
| 21.0 | 20.94 | -1.04 | -0.89 | 1.4 | 220.6 | 6.3 | 227.8 |
| 22.0 | 21.94 | -1.13 | -0.97 | 1.5 | 220.7 | 6.7 | 224.4 |
| 23.0 | 22.93 | -1.21 | -1.05 | 1.6 | 221.1 | 6.7 | 229.6 |
| 24.0 | 23.92 | -1.28 | -1.14 | 1.7 | 221.5 | 6.4 | 220.5 |
| 25.0 | 24.92 | -1.37 | -1.21 | 1.8 | 221.4 | 6.6 | 198.3 |
| 26.0 | 25.91 | -1.45 | -1.28 | 1.9 | 221.4 | 6.7 | 209.9 |
| 27.0 | 26.90 | -1.53 | -1.36 | 2.1 | 221.6 | 6.6 | 223.5 |
| 28.0 | 27.90 | -1.61 | -1.45 | 2.2 | 222.0 | 6.7 | 228.4 |
| 29.0 | 28.89 | -1.69 | -1.54 | 2.3 | 222.4 | 6.9 | 238.4 |
| 30.0 | 29.88 | -1.76 | -1.63 | 2.4 | 222.7 | 6.9 | 232.3 |
| 31.0 | 30.87 | -1.84 | -1.72 | 2.5 | 222.9 | 7.0 | 229.0 |
| 32.0 | 31.87 | -1.93 | -1.81 | 2.6 | 223.1 | 7.2 | 233.0 |
| 33.0 | 32.86 | -2.01 | -1.90 | 2.8 | 223.4 | 6.9 | 230.2 |
| 34.0 | 33.85 | -2.09 | -1.99 | 2.9 | 223.7 | 7.0 | 224.7 |
| 35.0 | 34.84 | -2.16 | -2.09 | 3.0 | 224.0 | 6.8 | 234.5 |
| 36.0 | 35.84 | -2.24 | -2.19 | 3.1 | 224.4 | 7.0 | 230.8 |
| 36.2 | 36.04 | -2.25 | -2.21 | 3.2 | 224.4 | 7.0 | 232.0 |

WRH 96150C



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96150C
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP :

OTHER SERVICES:

DATE : 08/21/96
DEPTH DRILLER : 35
LOG BOTTOM : 36.26
LOG TOP : 0.50

PERMANENT DATUM :
ELEV. PERM. DATUM:
LOG MEASURED FROM: G.L.
DRL MEASURED FROM:

RANGE :
ELEVATIONS
KB :
DF :
GL :

CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS: .25

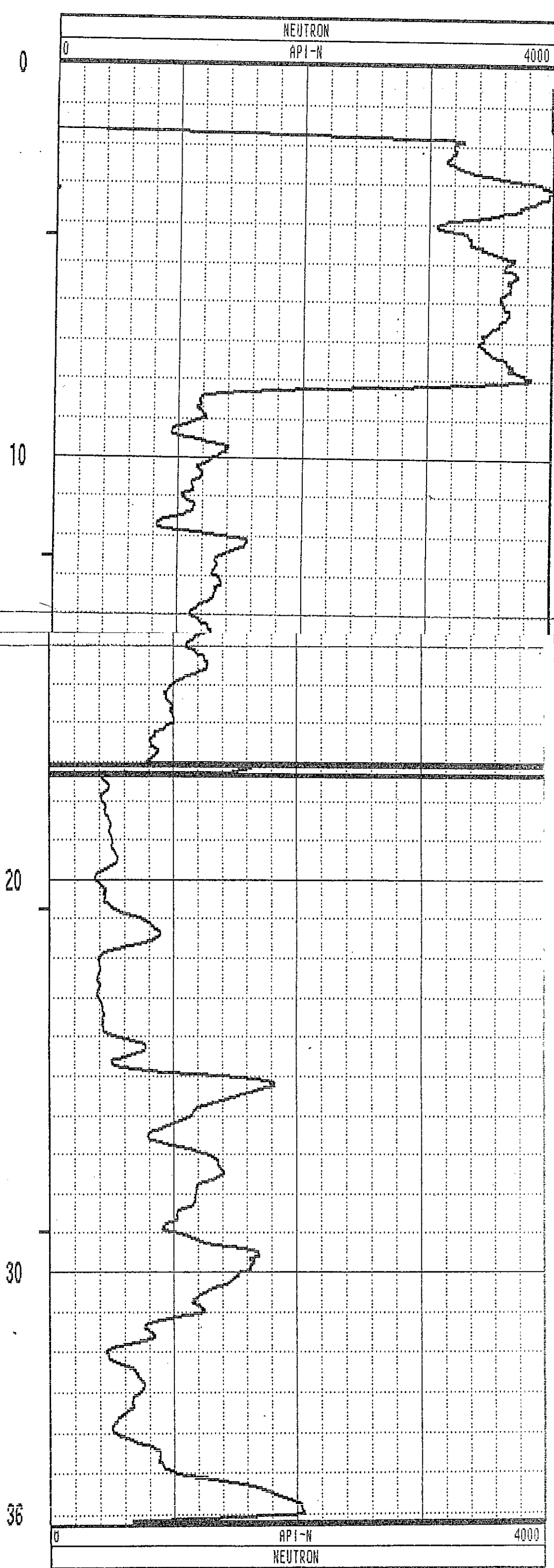
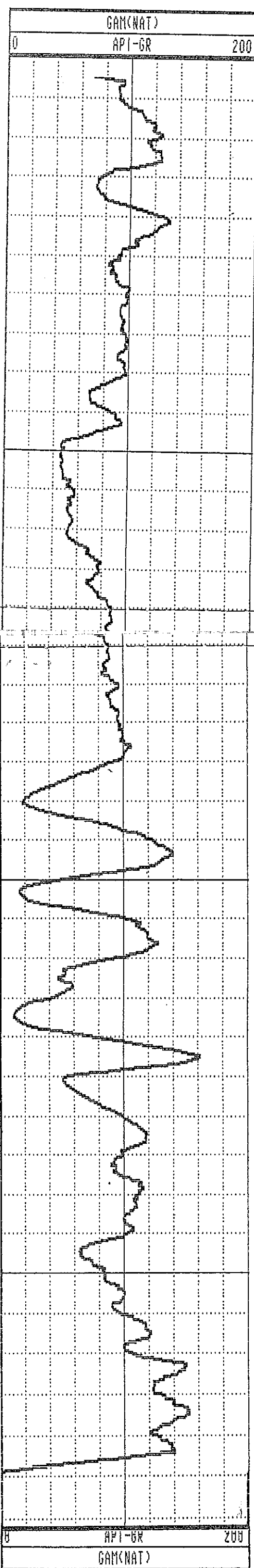
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23.000
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : ORIGINAL
TYPE : 9055A
LOG : 7
PLOT : PINE 4
THRESH: 10000

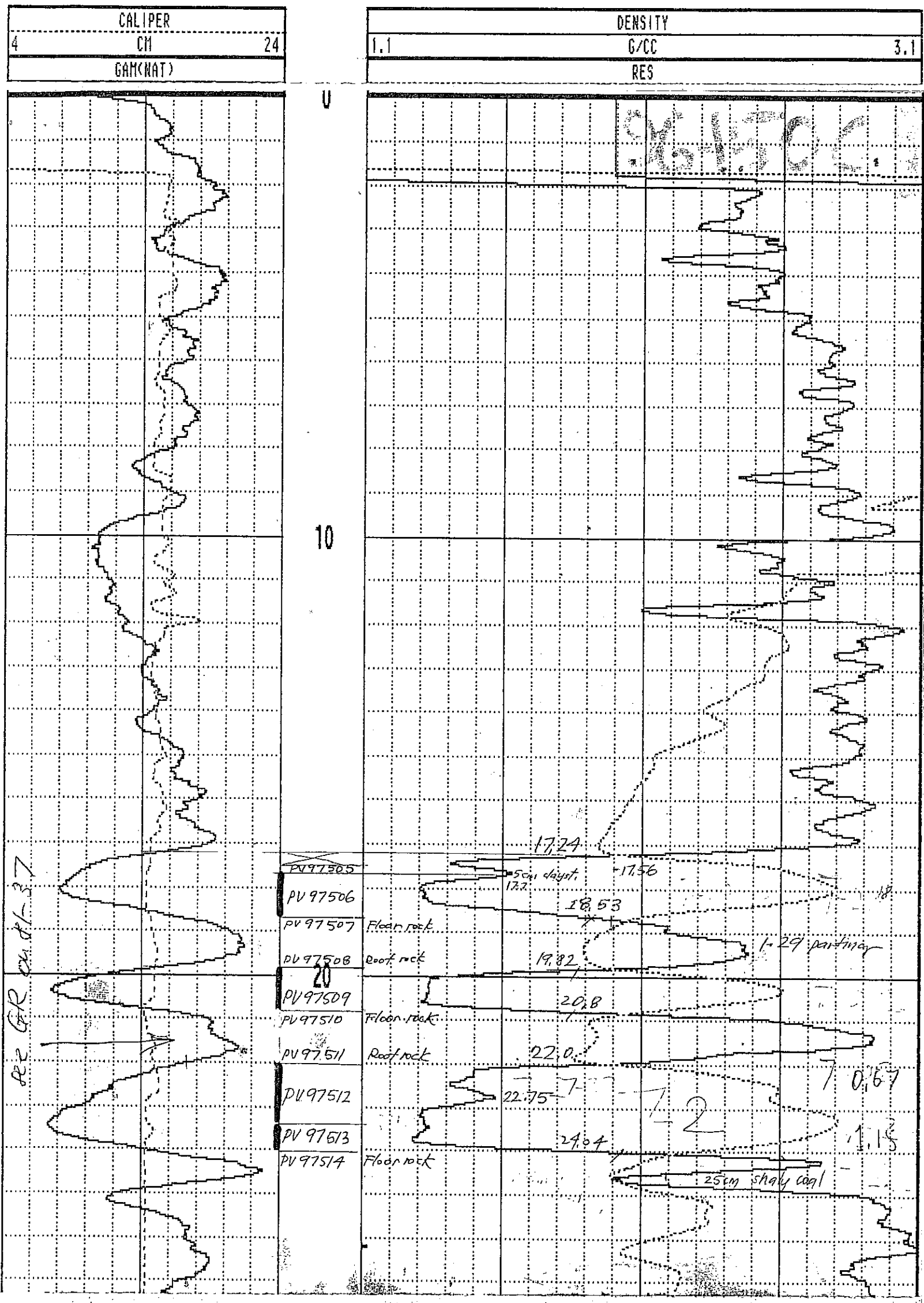
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|--|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96150C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 08/21/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 36 ELEV. PERM. DATUM: KB : LOG BOTTOM : 36.26 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23.000 RM TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p style="text-align: center;">OTHER SERVICES:</p> |
|---|--|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



15800

WRH-96150C 08/21/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

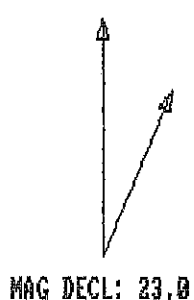
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 17.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

96-15

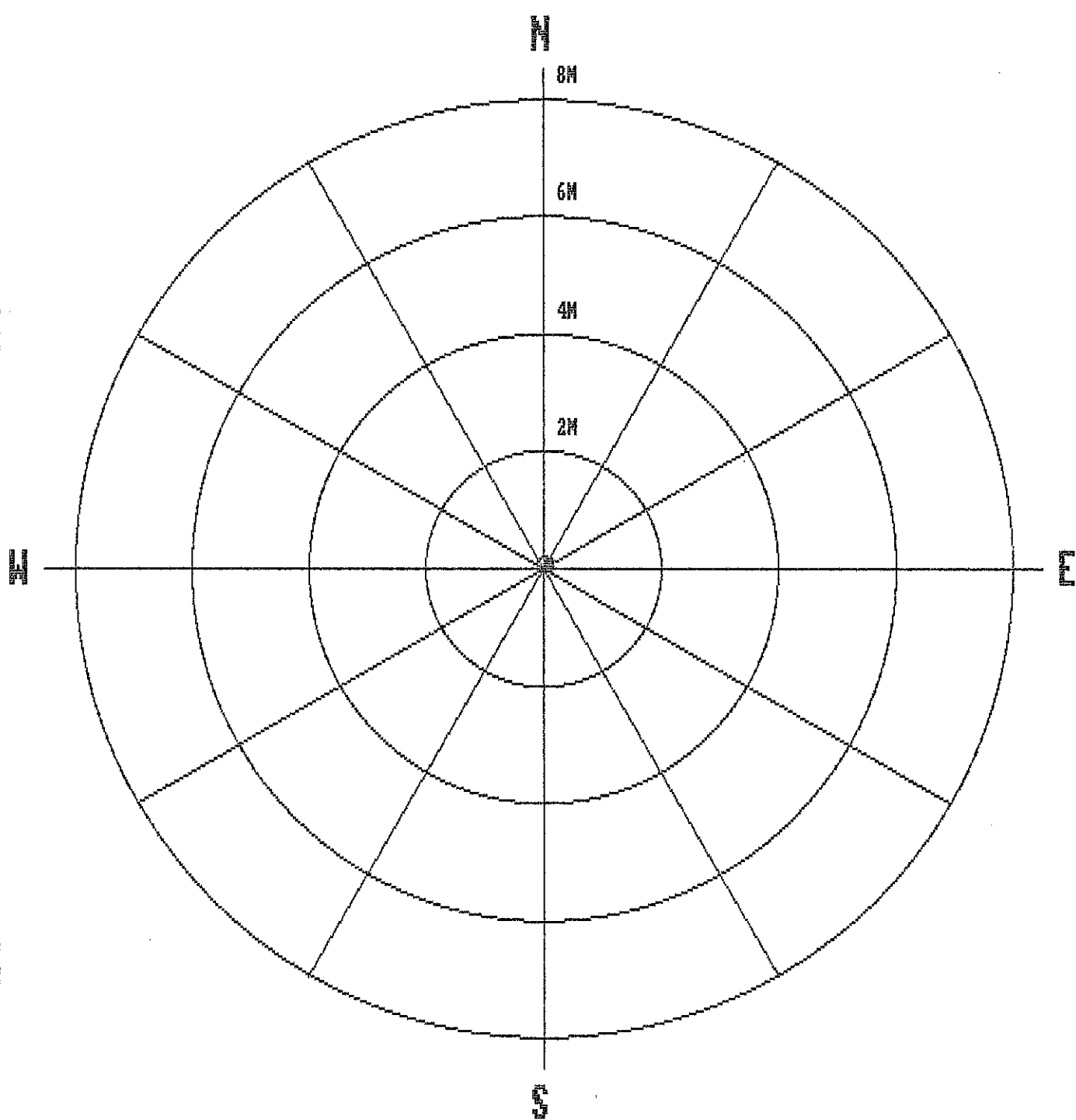
PLAN VIEW

COMPU-LOG DEVIATION

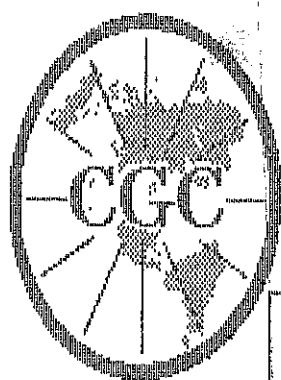
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96151C
 DATE OF LOG: 08/22/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 26.34 M
 AZIMUTH: 18.0
 DISTANCE: 0.1 M
 + = 50 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| .0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 1.0 | 2.00 | 0.00 | 0.00 | 0.0 | 54.9 | 1.1 | 95.4 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 118.8 | 0.7 | 53.6 |
| 4.0 | 4.00 | -0.00 | 0.02 | 0.0 | 93.6 | 1.2 | 95.1 |
| 5.0 | 5.00 | -0.00 | 0.03 | 0.0 | 94.4 | 0.6 | 100.0 |
| 6.0 | 6.00 | -0.00 | 0.04 | 0.0 | 91.3 | 0.7 | 125.0 |
| 7.0 | 7.00 | 0.00 | 0.05 | 0.1 | 88.3 | 0.6 | 226.9 |
| 8.0 | 8.00 | 0.00 | 0.06 | 0.1 | 87.4 | 0.6 | 92.3 |
| 9.0 | 9.00 | -0.00 | 0.08 | 0.1 | 90.9 | 1.4 | 85.3 |
| 10.0 | 10.00 | 0.00 | 0.09 | 0.1 | 89.4 | 0.8 | 86.8 |
| 11.0 | 11.00 | 0.01 | 0.11 | 0.1 | 86.7 | 0.6 | 52.5 |
| 12.0 | 12.00 | 0.01 | 0.12 | 0.1 | 83.9 | 0.9 | 46.9 |
| 13.0 | 13.00 | 0.02 | 0.13 | 0.1 | 79.5 | 0.8 | 82.3 |
| 14.0 | 14.00 | 0.03 | 0.14 | 0.1 | 76.2 | 0.7 | 30.3 |
| 15.0 | 15.00 | 0.05 | 0.15 | 0.2 | 72.5 | 0.9 | 33.7 |
| 16.0 | 16.00 | 0.06 | 0.16 | 0.2 | 68.2 | 0.9 | 24.2 |
| 17.0 | 17.00 | 0.08 | 0.16 | 0.2 | 63.8 | 0.2 | 2.2 |
| 18.0 | 18.00 | 0.09 | 0.16 | 0.2 | 59.8 | 1.0 | 8.0 |
| 19.0 | 19.00 | 0.11 | 0.15 | 0.2 | 55.6 | 0.7 | 344.8 |
| 20.0 | 20.00 | 0.12 | 0.15 | 0.2 | 51.5 | 0.9 | 345.8 |
| 21.0 | 21.00 | 0.13 | 0.14 | 0.2 | 47.5 | 1.0 | 323.1 |
| 22.0 | 22.00 | 0.14 | 0.13 | 0.2 | 43.0 | 0.9 | 297.7 |
| 23.0 | 23.00 | 0.14 | 0.11 | 0.2 | 38.4 | 1.0 | 251.8 |
| 24.0 | 24.00 | 0.13 | 0.09 | 0.2 | 34.5 | 1.3 | 256.6 |
| 25.0 | 25.00 | 0.12 | 0.07 | 0.1 | 28.9 | 1.8 | 236.0 |
| 26.0 | 26.00 | 0.10 | 0.04 | 0.1 | 21.2 | 1.8 | 223.0 |
| .3 | 26.34 | 0.10 | 0.03 | 0.1 | 18.0 | 2.2 | 228.3 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96151C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 08/22/96
 DEPTH DRILLER : 26
 LOG BOTTOM : 26.39
 LOG TOP : 0.48

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS

KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

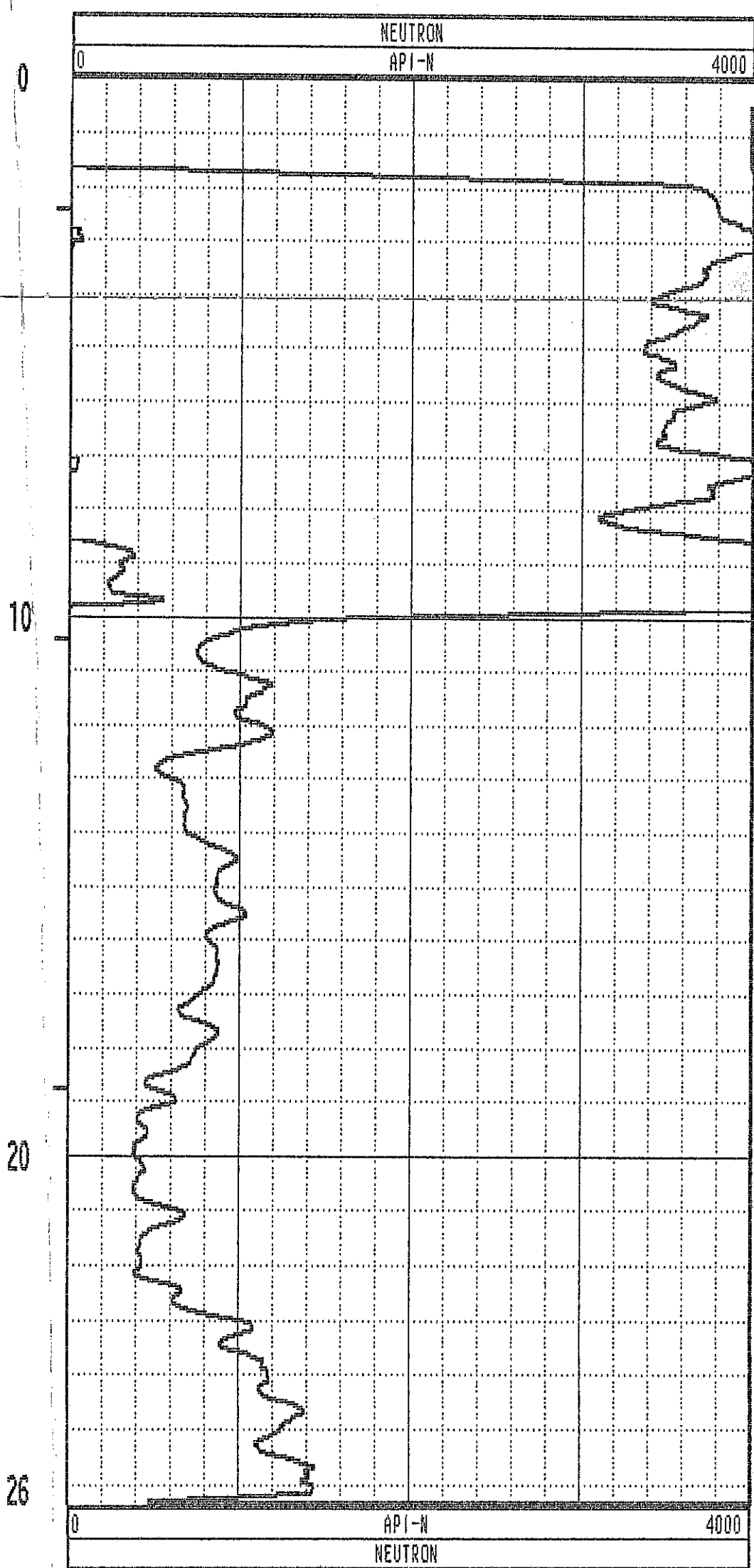
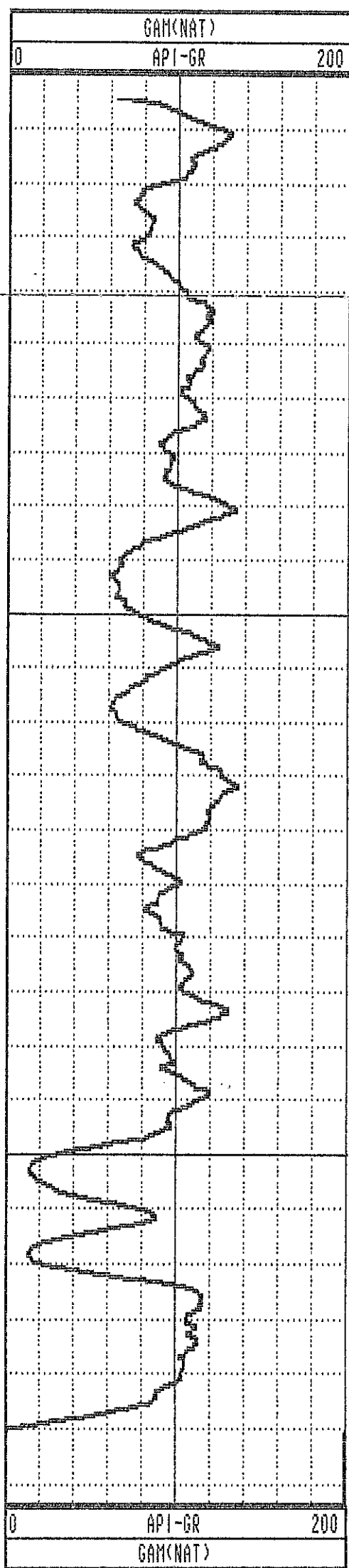
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 3
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



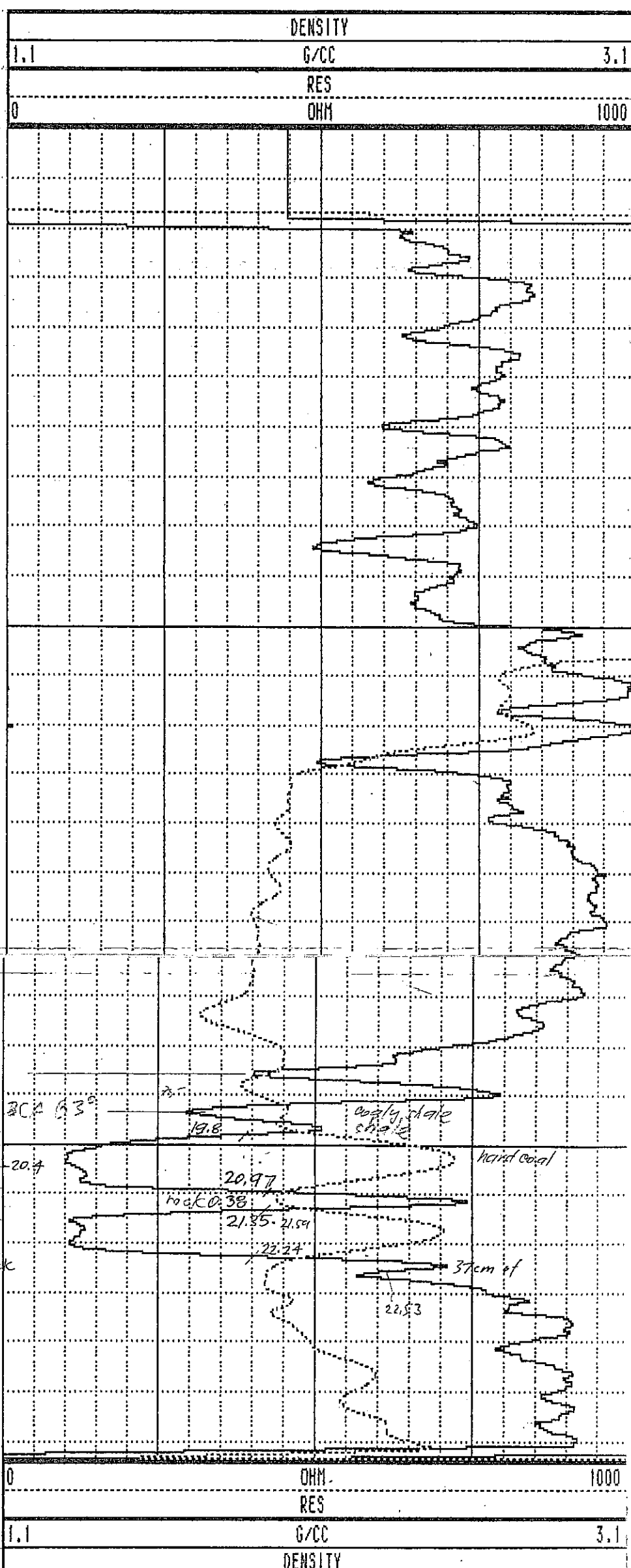
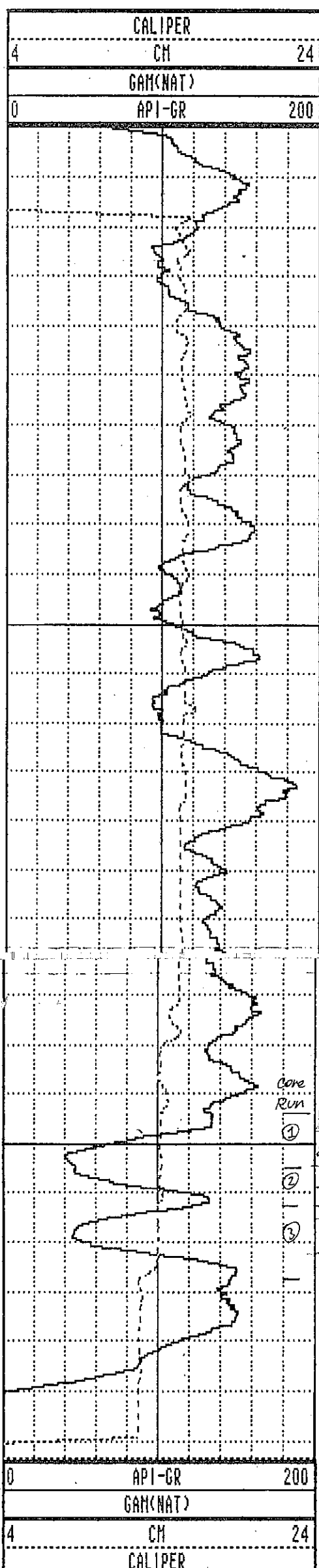
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96151C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 08/22/96 PERMANENT DATUM :
 DEPTH DRILLER : 26 ELEV. PERM. DATUM:
 LOG BOTTOM : 26.40 LOG MEASURED FROM: G.L.
 LOG TOP : 0.00 DRL MEASURED FROM:
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

OTHER SERVICES:

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96151C 08/22/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

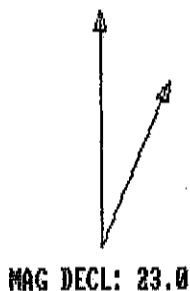
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|----------|-----|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 | CPS |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 | CPS |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 | CPS |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 | CPS |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 | CPS |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 | CPS |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 | CPS |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 | CPS |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 | CPS |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 | CPS |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 | CPS |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 | CPS |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 | CPS |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 | CPS |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 245.1 | 0.2 | 311.7 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 229.1 | 0.3 | 295.4 |
| 4.0 | 4.00 | -0.00 | -0.00 | 0.0 | 218.6 | 1.2 | 60.5 |
| 5.0 | 5.00 | -0.01 | -0.00 | 0.0 | 205.2 | 0.6 | 189.6 |
| 6.0 | 6.00 | -0.01 | -0.01 | 0.0 | 213.2 | 0.3 | 259.2 |
| 7.0 | 7.00 | -0.02 | -0.01 | 0.0 | 214.8 | 0.2 | 1.0 |
| 8.0 | 8.00 | -0.03 | -0.03 | 0.0 | 224.7 | 0.4 | 213.1 |
| 9.0 | 9.00 | -0.04 | -0.04 | 0.1 | 224.5 | 0.8 | 238.4 |
| 10.0 | 10.00 | -0.05 | -0.05 | 0.1 | 225.4 | 0.7 | 227.6 |
| 11.0 | 11.00 | -0.05 | -0.05 | 0.1 | 224.4 | 0.5 | 208.4 |
| 12.0 | 12.00 | -0.06 | -0.06 | 0.1 | 225.3 | 1.1 | 212.9 |
| 13.0 | 13.00 | -0.08 | -0.08 | 0.1 | 227.0 | 0.8 | 232.2 |
| 14.0 | 14.00 | -0.09 | -0.09 | 0.1 | 227.4 | 0.9 | 228.4 |
| 15.0 | 15.00 | -0.10 | -0.11 | 0.1 | 227.0 | 1.1 | 228.0 |
| 16.0 | 16.00 | -0.11 | -0.12 | 0.2 | 227.1 | 1.7 | 235.1 |
| 17.0 | 17.00 | -0.13 | -0.14 | 0.2 | 227.2 | 1.3 | 227.1 |
| 18.0 | 18.00 | -0.14 | -0.15 | 0.2 | 227.1 | 1.1 | 216.1 |
| 18.2 | 18.20 | -0.15 | -0.16 | 0.2 | 226.8 | 1.2 | 217.0 |

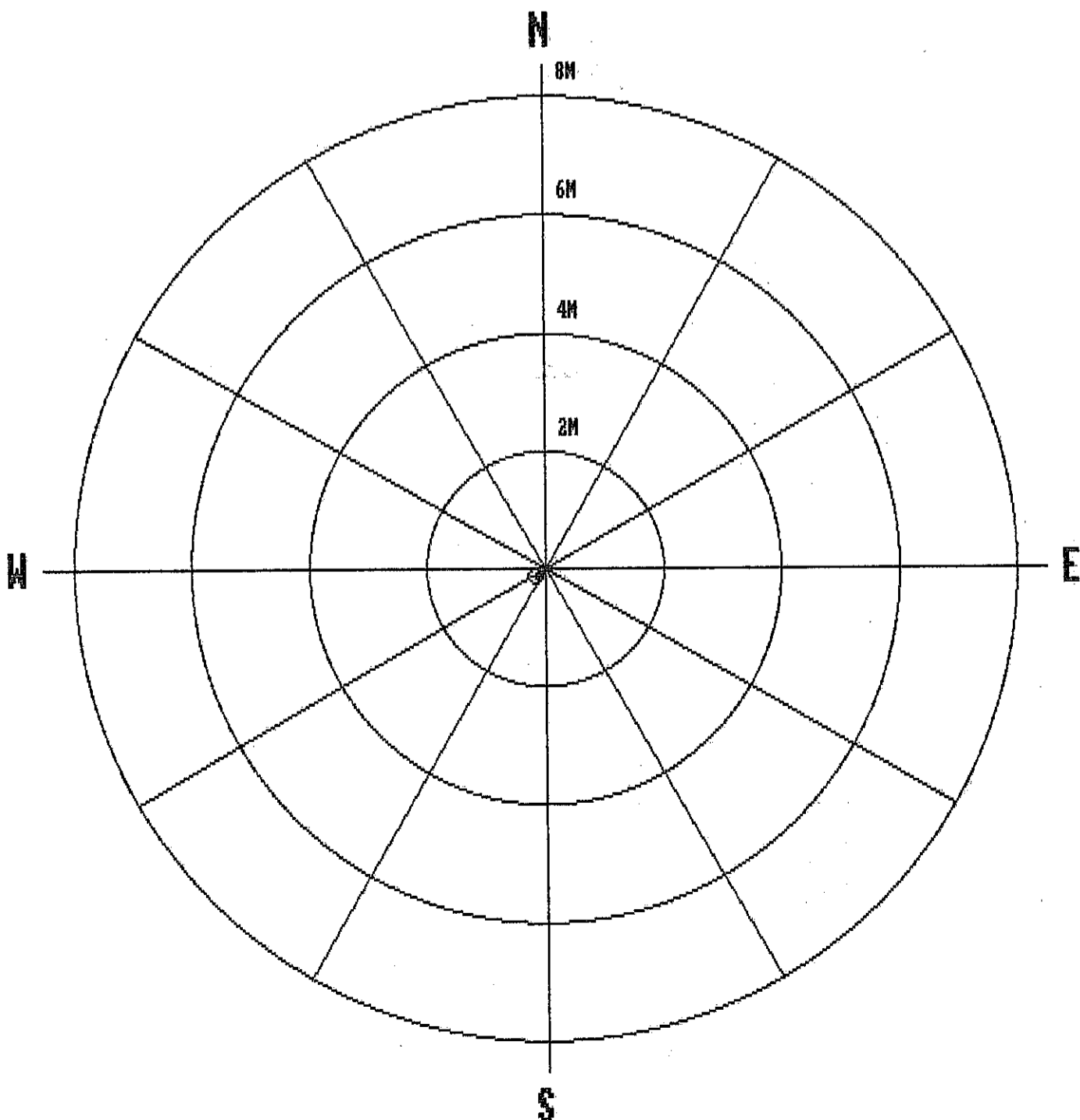
WRH-96152C

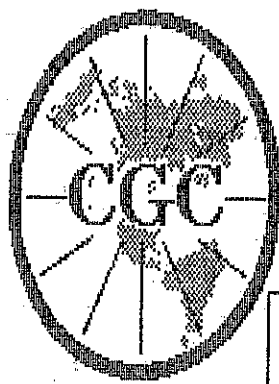
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96152C
 DATE OF LOG: 08/22/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 18.20 M
 AZIMUTH: 226.8
 DISTANCE: 0.2 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96152C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/22/96
 DEPTH DRILLER : 18
 LOG BOTTOM : 18.25
 LOG TOP : 0.42

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

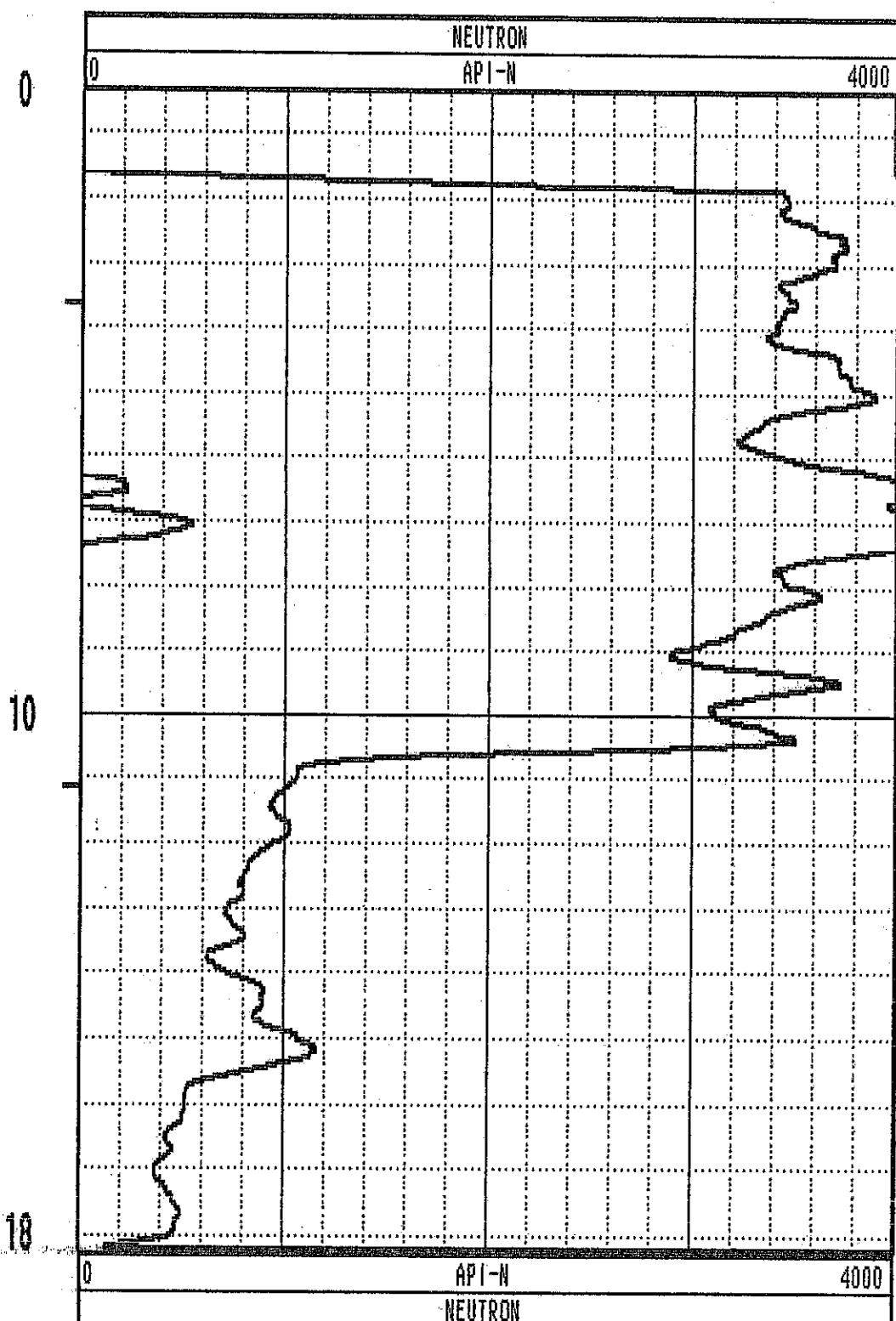
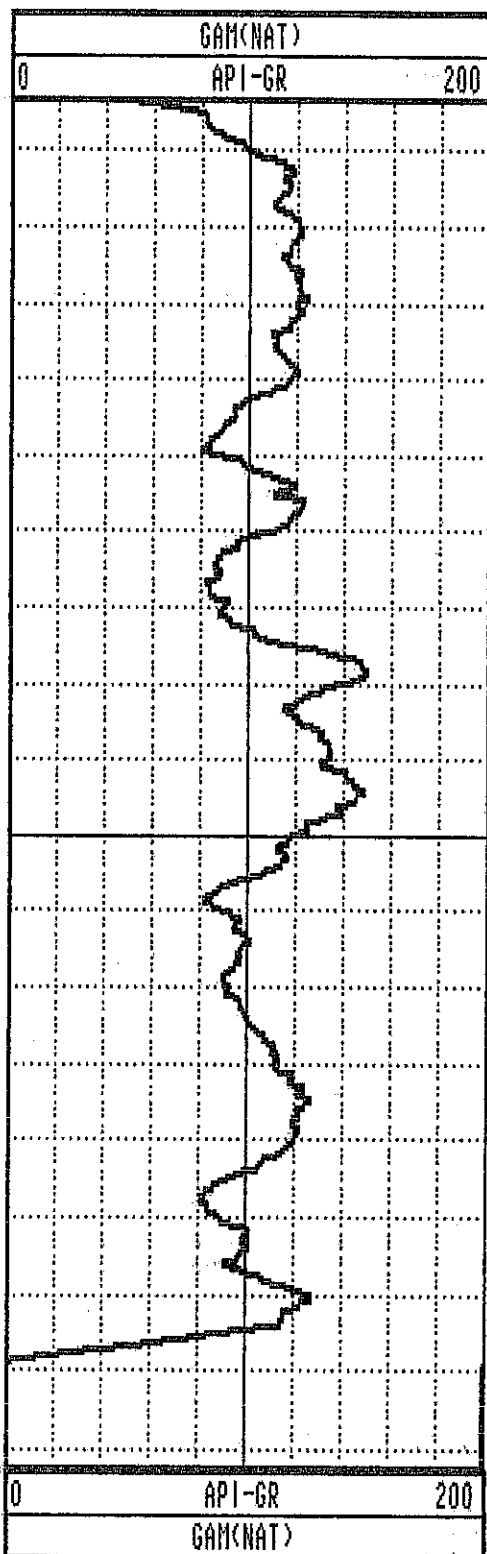
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 4
 THRESH: 10000

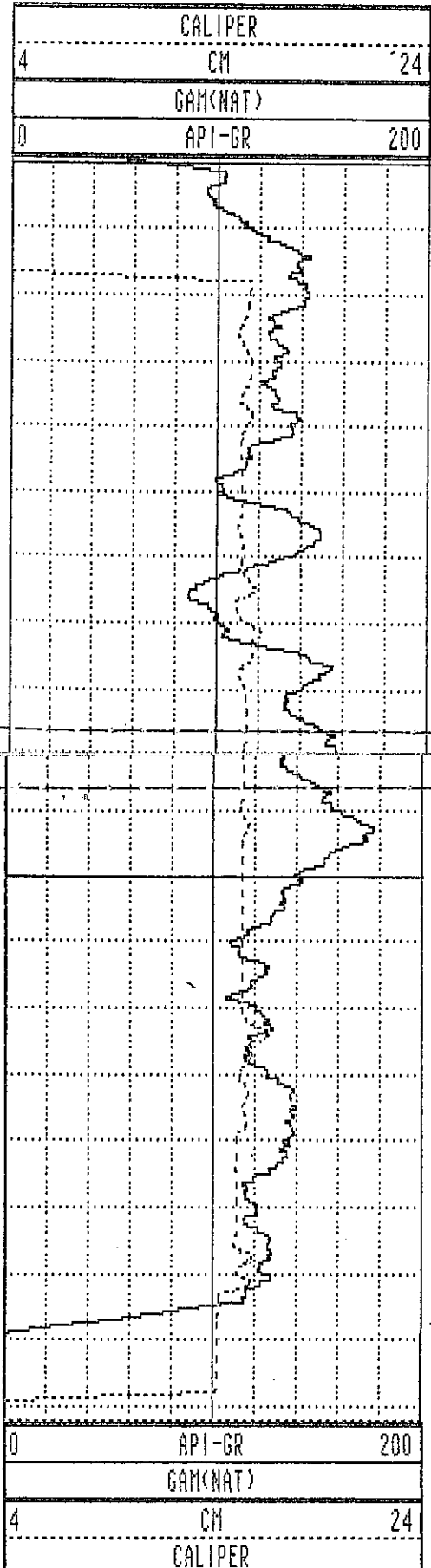
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



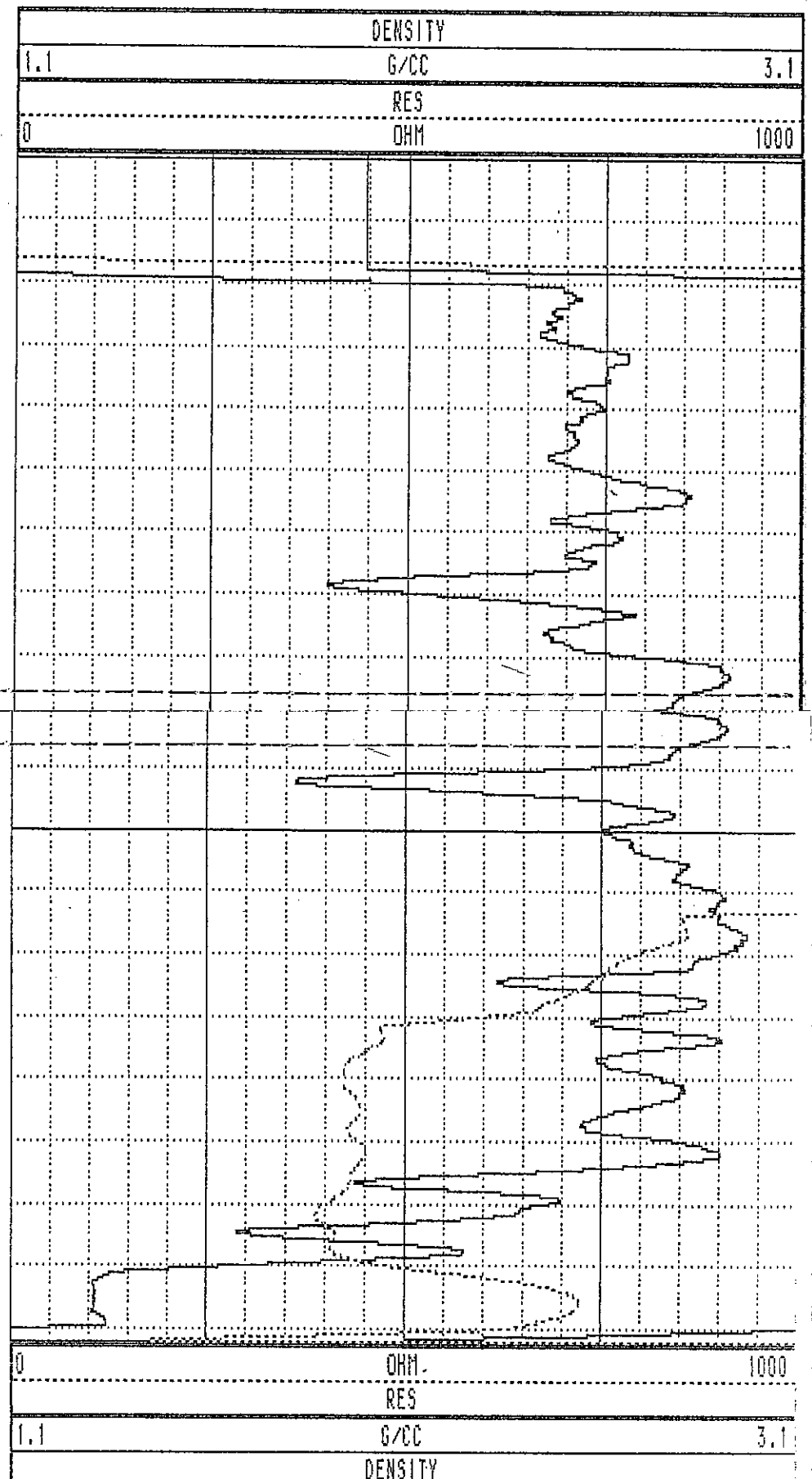
GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96152C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 08/22/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 26 ELEV. PERM. DATUM: KB : LOG BOTTOM : 18.26 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : FINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
18



WRH-96152C 08/22/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

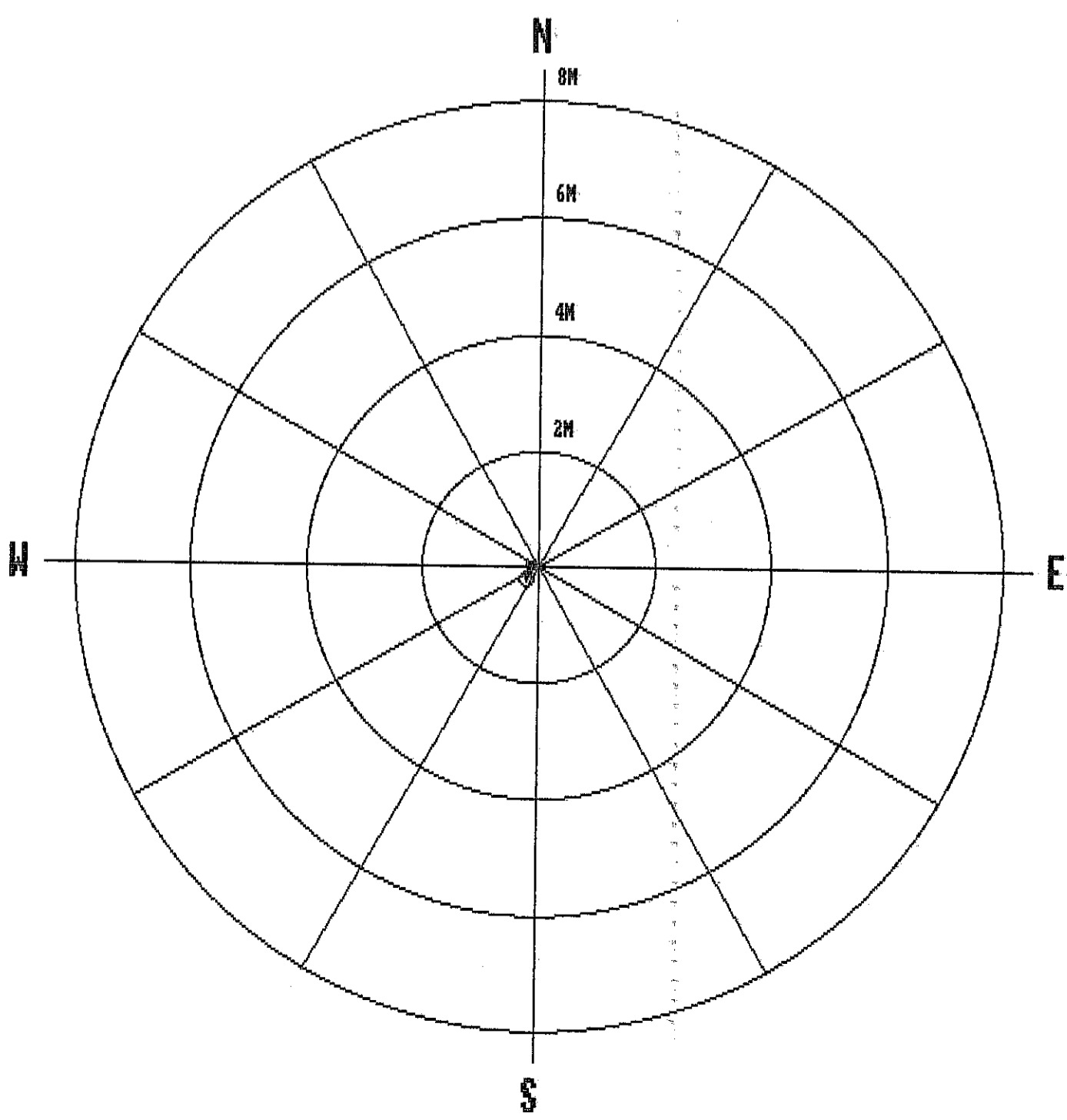
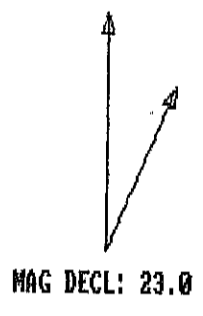
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 229.5 | 1.5 | 227.1 |
| 3.0 | 3.00 | -0.00 | 0.00 | 0.0 | 170.4 | 1.1 | 72.2 |
| 4.0 | 4.00 | 0.00 | -0.00 | 0.0 | 283.2 | 0.7 | 294.4 |
| 5.0 | 5.00 | 0.00 | -0.01 | 0.0 | 279.6 | 0.5 | 277.2 |
| 6.0 | 6.00 | 0.00 | -0.03 | 0.0 | 279.9 | 1.1 | 286.0 |
| 7.0 | 7.00 | 0.01 | -0.05 | 0.0 | 286.8 | 0.9 | 305.6 |
| 8.0 | 8.00 | 0.02 | -0.06 | 0.1 | 289.7 | 0.5 | 325.0 |
| 9.0 | 9.00 | 0.03 | -0.07 | 0.1 | 290.6 | 0.6 | 298.7 |
| 10.0 | 10.00 | 0.03 | -0.08 | 0.1 | 290.5 | 1.0 | 277.7 |
| 11.0 | 11.00 | 0.03 | -0.10 | 0.1 | 288.5 | 0.9 | 283.3 |
| 12.0 | 12.00 | 0.03 | -0.11 | 0.1 | 286.6 | 0.9 | 254.6 |
| 13.0 | 13.00 | 0.03 | -0.13 | 0.1 | 281.9 | 1.0 | 239.3 |
| 14.0 | 14.00 | 0.02 | -0.14 | 0.1 | 276.9 | 0.8 | 217.3 |
| 15.0 | 15.00 | 0.00 | -0.15 | 0.1 | 271.7 | 0.9 | 208.5 |
| 16.0 | 16.00 | -0.01 | -0.15 | 0.2 | 266.5 | 0.9 | 196.3 |
| 17.0 | 17.00 | -0.02 | -0.16 | 0.2 | 261.4 | 0.8 | 188.5 |
| 18.0 | 18.00 | -0.04 | -0.16 | 0.2 | 256.4 | 0.6 | 181.7 |
| 19.0 | 19.00 | -0.05 | -0.16 | 0.2 | 251.6 | 0.9 | 199.0 |
| 20.0 | 20.00 | -0.07 | -0.17 | 0.2 | 247.4 | 0.8 | 193.1 |
| 21.0 | 21.00 | -0.08 | -0.17 | 0.2 | 243.6 | 0.9 | 209.4 |
| 22.0 | 22.00 | -0.10 | -0.18 | 0.2 | 240.4 | 1.0 | 216.3 |
| 23.0 | 23.00 | -0.11 | -0.18 | 0.2 | 237.6 | 1.4 | 101.0 |
| 24.0 | 24.00 | -0.13 | -0.18 | 0.2 | 235.2 | 0.8 | 189.4 |
| 25.0 | 25.00 | -0.14 | -0.19 | 0.2 | 232.5 | 1.1 | 195.0 |
| 26.0 | 26.00 | -0.16 | -0.19 | 0.3 | 229.8 | 1.1 | 206.8 |
| 27.0 | 27.00 | -0.18 | -0.20 | 0.3 | 227.3 | 1.3 | 177.7 |
| 28.0 | 28.00 | -0.20 | -0.20 | 0.3 | 225.2 | 1.3 | 198.8 |
| 28.7 | 28.74 | -0.22 | -0.21 | 0.3 | 223.8 | 1.4 | 203.1 |

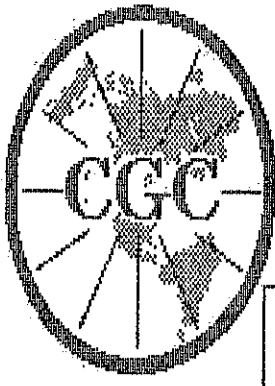
WRH 96153C

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: wrh-96153C
 DATE OF LOG: 08/22/96
 PROBE: 9055A 56

SCALE: 1 M/CM
 TRUE DEPTH: 28.74 M
 AZIMUTH: 223.8
 DISTANCE: 0.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : wrh-96153C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

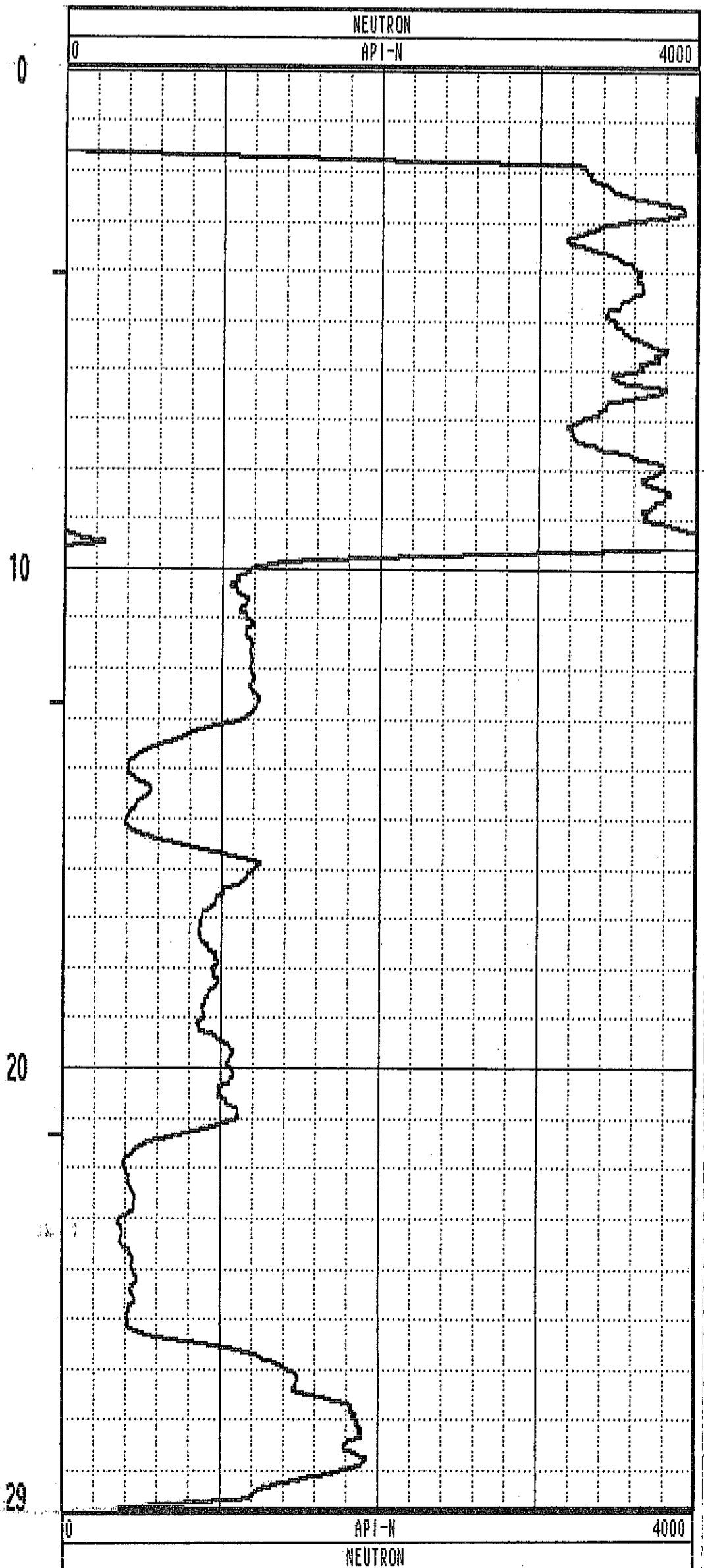
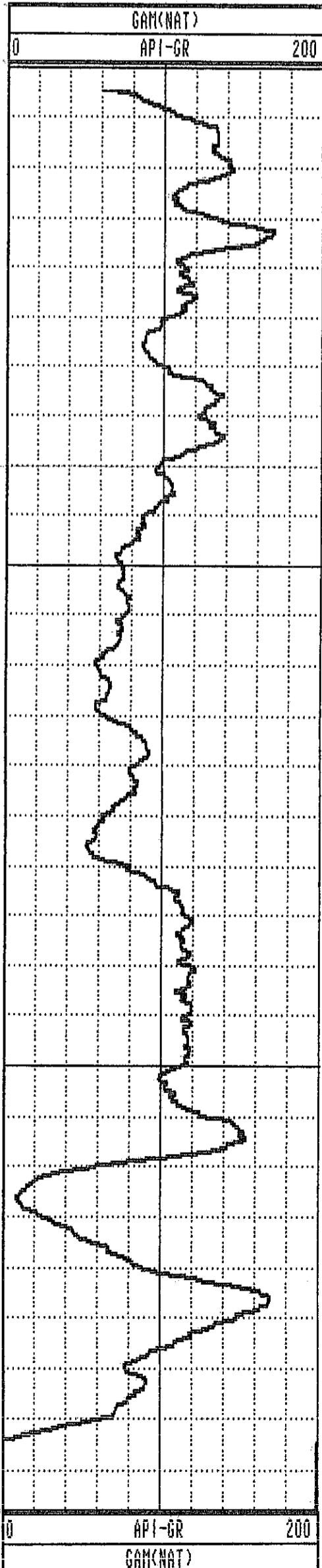
TOWNSHIP : RANGE :

DATE : 08/22/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 28.80 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.48 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
WELL : WRH-96153C
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 08/22/96
DEPTH DRILLER : 28
LOG BOTTOM : 28.80
LOG TOP : 0.00
CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS : .25

PERMANENT DATUM :
ELEV. PERM. DATUM :
LOG MEASURED FROM : G.L.
DRL MEASURED FROM :
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

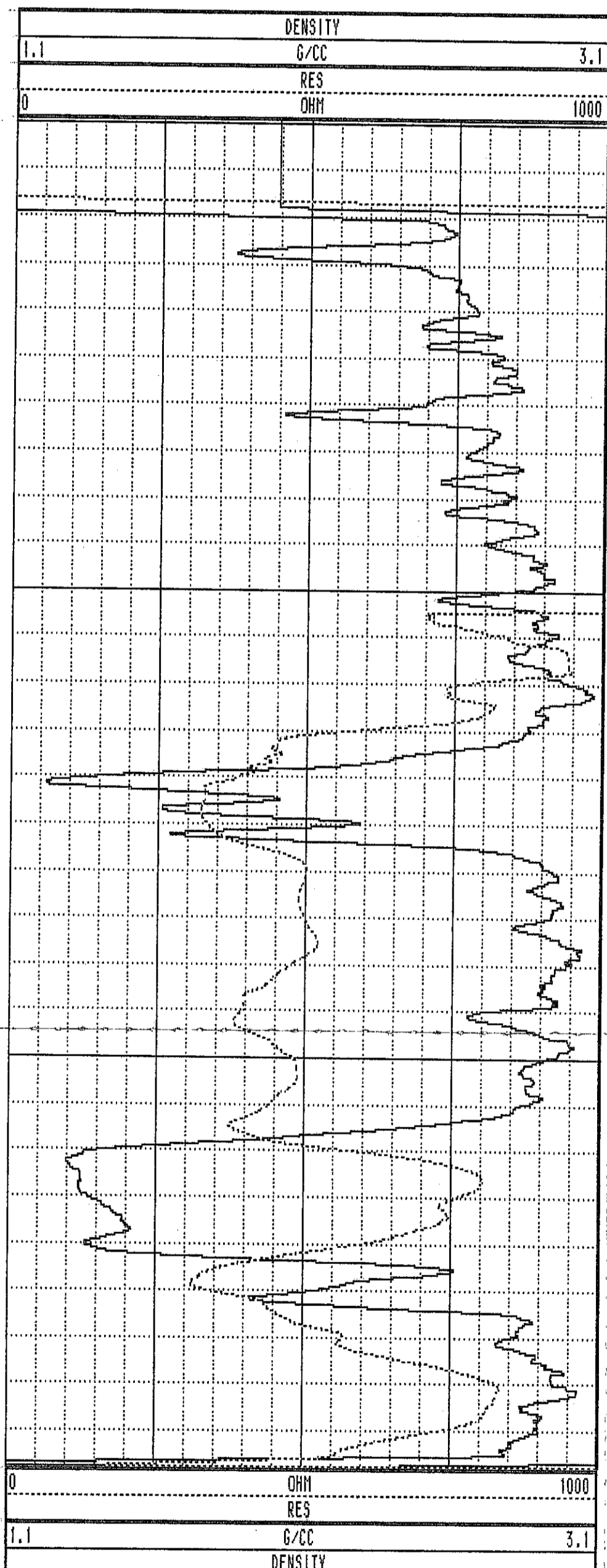
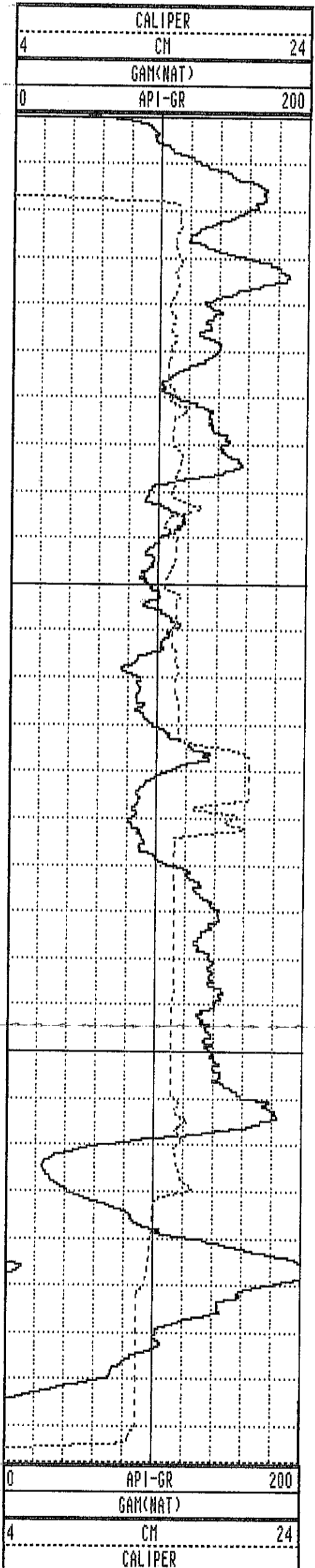
ELEVATIONS
KB :
DF :
GL :

BIT SIZE :
MAGNETIC DECL. : 23.000
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : PROCESSED
TYPE : 9033AA
LOG : 3
PLOT : PINE 7
THRESH : 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96153C 08/22/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

***** COMPU-LOG - VERTICAL DEVIATION *****

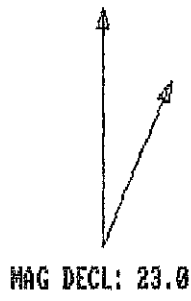
CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96154
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/08/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 1

| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.9 | 1.90 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 295.2 | 0.4 | 14.8 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 23.8 | 0.1 | 324.2 |
| 6.0 | 6.00 | -0.00 | 0.00 | 0.0 | 168.4 | 0.3 | 304.7 |
| 8.0 | 8.00 | -0.01 | -0.03 | 0.0 | 253.3 | 0.8 | 246.2 |
| 10.0 | 10.00 | -0.02 | -0.06 | 0.1 | 251.1 | 1.3 | 273.0 |
| 12.0 | 12.00 | -0.04 | -0.10 | 0.1 | 248.4 | 1.8 | 246.3 |
| 14.0 | 14.00 | -0.07 | -0.15 | 0.2 | 244.4 | 2.0 | 243.1 |
| 16.0 | 16.00 | -0.11 | -0.20 | 0.2 | 241.7 | 2.2 | 229.5 |
| 18.0 | 18.00 | -0.15 | -0.26 | 0.3 | 240.9 | 2.5 | 248.1 |
| 20.0 | 19.99 | -0.20 | -0.34 | 0.4 | 240.4 | 2.3 | 233.1 |
| 22.0 | 21.99 | -0.25 | -0.44 | 0.5 | 239.7 | 3.5 | 245.4 |
| 24.0 | 23.99 | -0.32 | -0.54 | 0.6 | 239.2 | 3.7 | 237.6 |
| 26.0 | 25.98 | -0.39 | -0.65 | 0.8 | 239.4 | 4.0 | 237.0 |
| 28.0 | 27.98 | -0.46 | -0.78 | 0.9 | 239.2 | 4.5 | 241.0 |
| 30.0 | 29.97 | -0.55 | -0.92 | 1.1 | 239.2 | 4.9 | 230.6 |
| 32.0 | 31.96 | -0.65 | -1.07 | 1.3 | 238.8 | 5.3 | 241.0 |
| 34.0 | 33.95 | -0.75 | -1.23 | 1.4 | 238.6 | 5.1 | 239.5 |
| 36.0 | 35.94 | -0.89 | -1.41 | 1.7 | 237.9 | 7.0 | 228.8 |
| 38.0 | 37.92 | -1.05 | -1.60 | 1.9 | 236.8 | 7.6 | 243.9 |
| 40.0 | 39.91 | -1.21 | -1.79 | 2.2 | 236.0 | 7.4 | 226.7 |
| 42.0 | 41.89 | -1.40 | -1.99 | 2.4 | 234.9 | 8.0 | 215.1 |
| 44.0 | 43.87 | -1.60 | -2.20 | 2.7 | 234.0 | 8.3 | 229.1 |
| 46.0 | 45.85 | -1.80 | -2.42 | 3.0 | 233.3 | 8.6 | 228.3 |
| 48.0 | 47.82 | -2.01 | -2.62 | 3.3 | 232.6 | 8.7 | 226.1 |
| 50.0 | 49.80 | -2.23 | -2.83 | 3.6 | 231.7 | 8.9 | 220.6 |
| 52.0 | 51.77 | -2.47 | -3.04 | 3.9 | 231.0 | 9.0 | 222.7 |
| 54.0 | 53.75 | -2.70 | -3.25 | 4.2 | 230.4 | 9.2 | 219.8 |
| 56.0 | 55.72 | -2.93 | -3.47 | 4.5 | 229.8 | 9.8 | 219.4 |
| 58.0 | 57.70 | -3.17 | -3.70 | 4.9 | 229.4 | 9.9 | 217.7 |
| 60.0 | 59.66 | -3.43 | -3.95 | 5.2 | 229.0 | 9.9 | 224.1 |
| 62.0 | 61.63 | -3.69 | -4.18 | 5.6 | 228.6 | 10.2 | 220.1 |
| 64.0 | 63.60 | -3.96 | -4.41 | 5.9 | 228.1 | 10.1 | 223.2 |
| 66.0 | 65.57 | -4.23 | -4.64 | 6.3 | 227.6 | 10.3 | 222.1 |
| 68.0 | 67.54 | -4.51 | -4.87 | 6.6 | 227.2 | 10.1 | 218.7 |
| 70.0 | 69.51 | -4.78 | -5.09 | 7.0 | 226.8 | 10.6 | 219.3 |
| 72.0 | 71.47 | -5.08 | -5.32 | 7.4 | 226.4 | 10.9 | 222.0 |
| 74.0 | 73.43 | -5.38 | -5.56 | 7.7 | 225.9 | 11.5 | 219.0 |
| 76.0 | 75.39 | -5.71 | -5.81 | 8.1 | 225.5 | 12.1 | 218.6 |
| 78.0 | 77.34 | -6.06 | -6.07 | 8.6 | 225.0 | 12.6 | 221.0 |
| 80.0 | 79.29 | -6.41 | -6.33 | 9.0 | 224.6 | 13.2 | 216.4 |
| 82.0 | 81.24 | -6.78 | -6.62 | 9.5 | 224.3 | 13.8 | 219.7 |
| 82.4 | 81.64 | -6.86 | -6.68 | 9.6 | 224.2 | 13.8 | 214.9 |

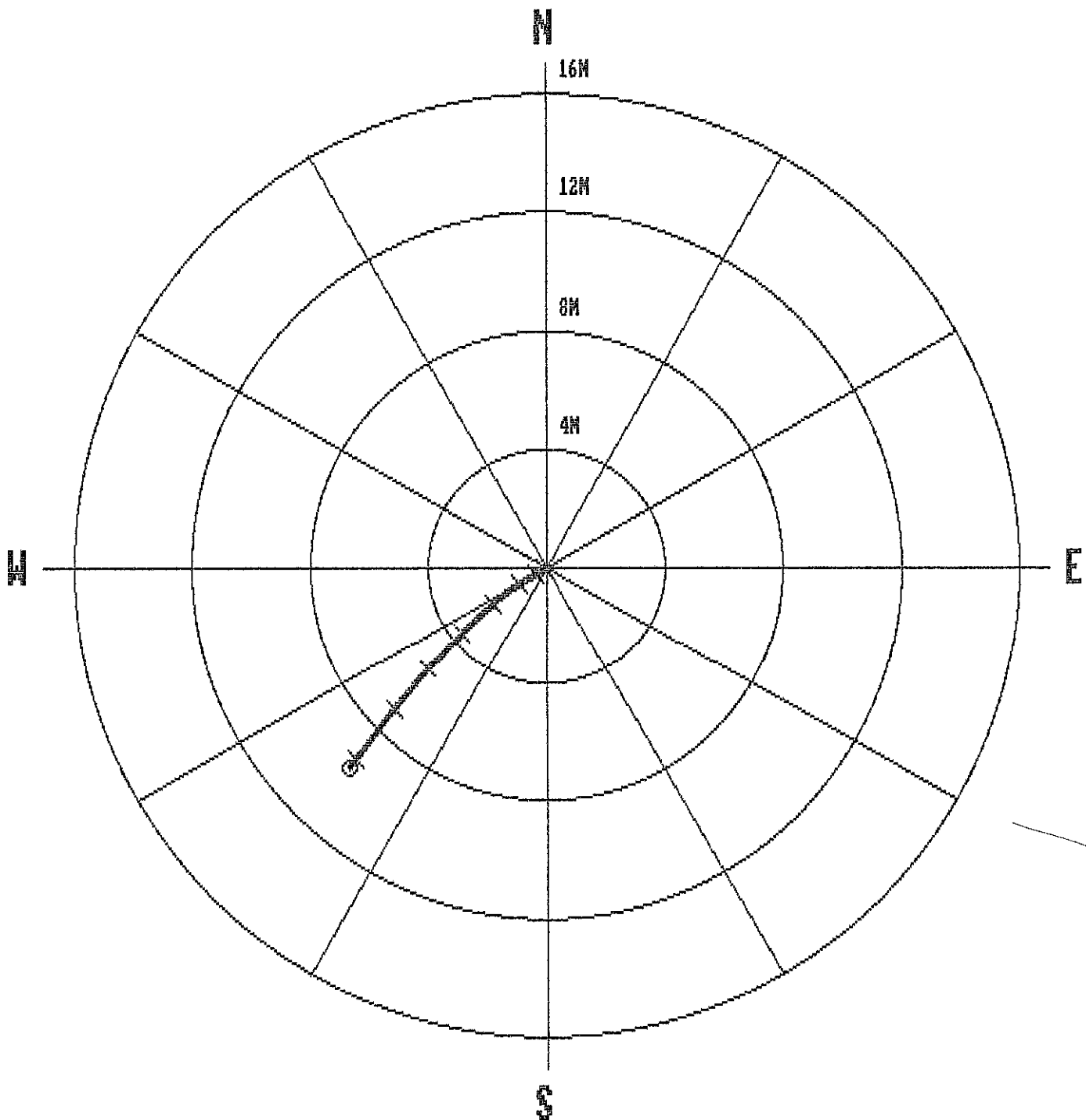
PLAN VIEW

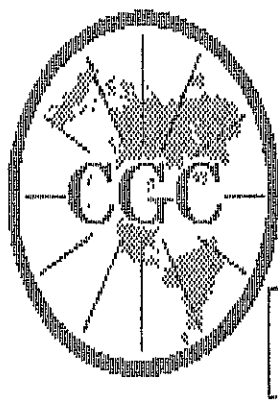
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96154
 DATE OF LOG: 09/08/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 81.64 M
 AZIMUTH: 224.2
 DISTANCE: 9.6 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96154
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA

OTHER SERVICES:

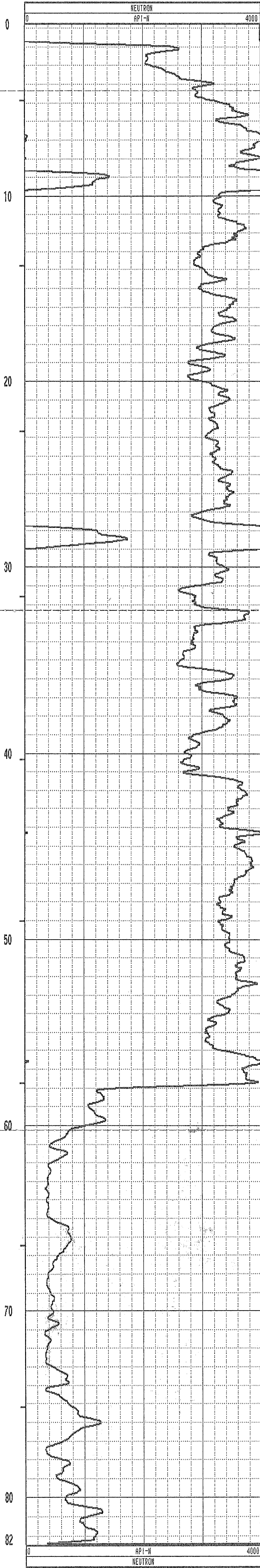
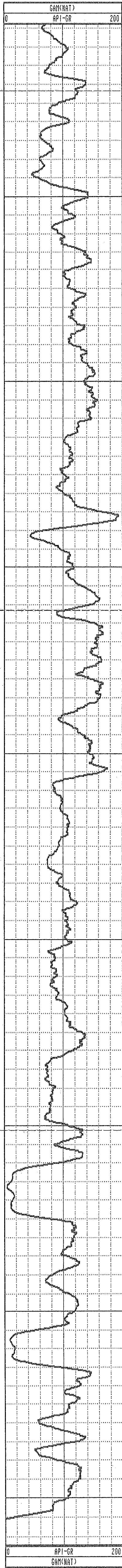
SECTION : TOWNSHIP : RANGE :

DATE : 09/08/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 82 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 82.47 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.82 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

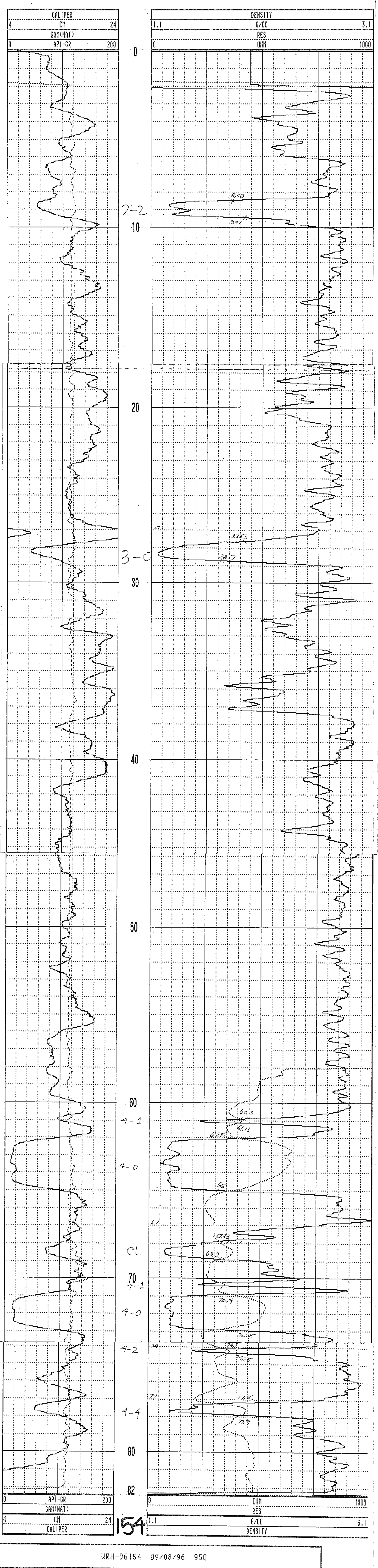
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96154
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 09/08/96
 DEPTH DRILLER : 82
 LOG BOTTOM : 82.48
 LOG TOP : 0.00
 CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS : .25
 BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM : G.L.
 DRL MEASURED FROM :
 LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS
 ELEVATIONS :
 KB :
 DF :
 GL :
 BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :
 FILE : PROCESSED
 TYPE : 9033AA
 LOG : 8
 PLOT : PINE 7
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96154 09/08/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|-------------|---------------------|----------|--------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 | CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 | CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 | API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 | API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 | G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 | G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(HG) | 0.000 CPS | 1.106 | OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(HG) | 0.000 CPS | 0.000 | OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 | CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 | CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 | G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 | G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 | CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 | CM |

***** COMPU-LOG - VERTICAL DEVIATION *****

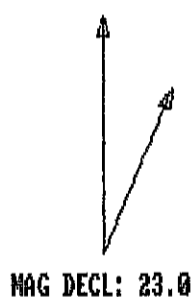
CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96155
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/08/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 6

| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.9 | 1.94 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 6.1 | 0.5 | 37.3 |
| 4.0 | 4.00 | 0.01 | -0.00 | 0.0 | 358.7 | 1.7 | 14.9 |
| 6.0 | 6.00 | 0.02 | 0.01 | 0.0 | 32.9 | 0.9 | 19.9 |
| 8.0 | 8.00 | 0.04 | 0.03 | 0.1 | 32.2 | 0.6 | 61.6 |
| 10.0 | 10.00 | 0.07 | 0.04 | 0.1 | 29.8 | 0.9 | 34.8 |
| 12.0 | 12.00 | 0.10 | 0.05 | 0.1 | 27.9 | 1.4 | 27.2 |
| 14.0 | 14.00 | 0.14 | 0.07 | 0.2 | 26.4 | 1.1 | 19.1 |
| 16.0 | 16.00 | 0.19 | 0.09 | 0.2 | 24.9 | 1.6 | 8.8 |
| 18.0 | 18.00 | 0.24 | 0.10 | 0.3 | 23.4 | 1.4 | 11.0 |
| 20.0 | 20.00 | 0.29 | 0.11 | 0.3 | 20.7 | 2.0 | 28.4 |
| 22.0 | 22.00 | 0.34 | 0.11 | 0.4 | 18.4 | 1.9 | 7.2 |
| 24.0 | 23.99 | 0.41 | 0.12 | 0.4 | 16.5 | 1.9 | 28.4 |
| 26.0 | 25.99 | 0.47 | 0.13 | 0.5 | 15.7 | 2.0 | 4.9 |
| 28.0 | 27.99 | 0.53 | 0.15 | 0.6 | 16.1 | 2.1 | 13.0 |
| 30.0 | 29.99 | 0.60 | 0.19 | 0.6 | 17.1 | 2.1 | 24.0 |
| 32.0 | 31.99 | 0.68 | 0.23 | 0.7 | 18.9 | 2.6 | 37.1 |
| 34.0 | 33.99 | 0.77 | 0.30 | 0.8 | 21.6 | 3.0 | 40.0 |
| 36.0 | 35.98 | 0.85 | 0.37 | 0.9 | 23.7 | 2.9 | 39.8 |
| 38.0 | 37.98 | 0.94 | 0.45 | 1.0 | 25.7 | 3.9 | 36.5 |
| 40.0 | 39.97 | 1.03 | 0.54 | 1.2 | 27.6 | 4.1 | 50.4 |
| 42.0 | 41.97 | 1.14 | 0.65 | 1.3 | 29.9 | 4.8 | 42.5 |
| 44.0 | 43.96 | 1.24 | 0.77 | 1.5 | 31.7 | 4.5 | 47.3 |
| 46.0 | 45.96 | 1.35 | 0.89 | 1.6 | 33.3 | 5.6 | 41.8 |
| 48.0 | 47.95 | 1.47 | 1.03 | 1.8 | 35.0 | 5.2 | 49.6 |
| 50.0 | 49.94 | 1.59 | 1.18 | 2.0 | 36.6 | 5.6 | 51.7 |
| 52.0 | 51.93 | 1.71 | 1.35 | 2.2 | 38.2 | 5.8 | 53.0 |
| 54.0 | 53.92 | 1.83 | 1.52 | 2.4 | 39.6 | 6.1 | 56.9 |
| 56.0 | 55.90 | 1.96 | 1.70 | 2.6 | 41.0 | 6.7 | 54.9 |
| 58.0 | 57.89 | 2.08 | 1.88 | 2.8 | 42.1 | 5.6 | 51.0 |
| 60.0 | 59.88 | 2.20 | 2.06 | 3.0 | 43.1 | 6.3 | 54.3 |
| 62.0 | 61.87 | 2.32 | 2.23 | 3.2 | 43.9 | 6.0 | 54.2 |
| 64.0 | 63.86 | 2.44 | 2.41 | 3.4 | 44.7 | 5.7 | 56.4 |
| 66.0 | 65.85 | 2.54 | 2.57 | 3.6 | 45.3 | 5.3 | 64.5 |
| 68.0 | 67.84 | 2.65 | 2.71 | 3.8 | 45.7 | 4.4 | 57.9 |
| 70.0 | 69.83 | 2.74 | 2.86 | 4.0 | 46.3 | 5.2 | 56.0 |
| 72.0 | 71.82 | 2.83 | 3.00 | 4.1 | 46.6 | 5.2 | 55.4 |
| 74.0 | 73.82 | 2.91 | 3.15 | 4.3 | 47.2 | 4.6 | 60.4 |
| 74.2 | 74.00 | 2.92 | 3.16 | 4.3 | 47.3 | 4.6 | 64.0 |

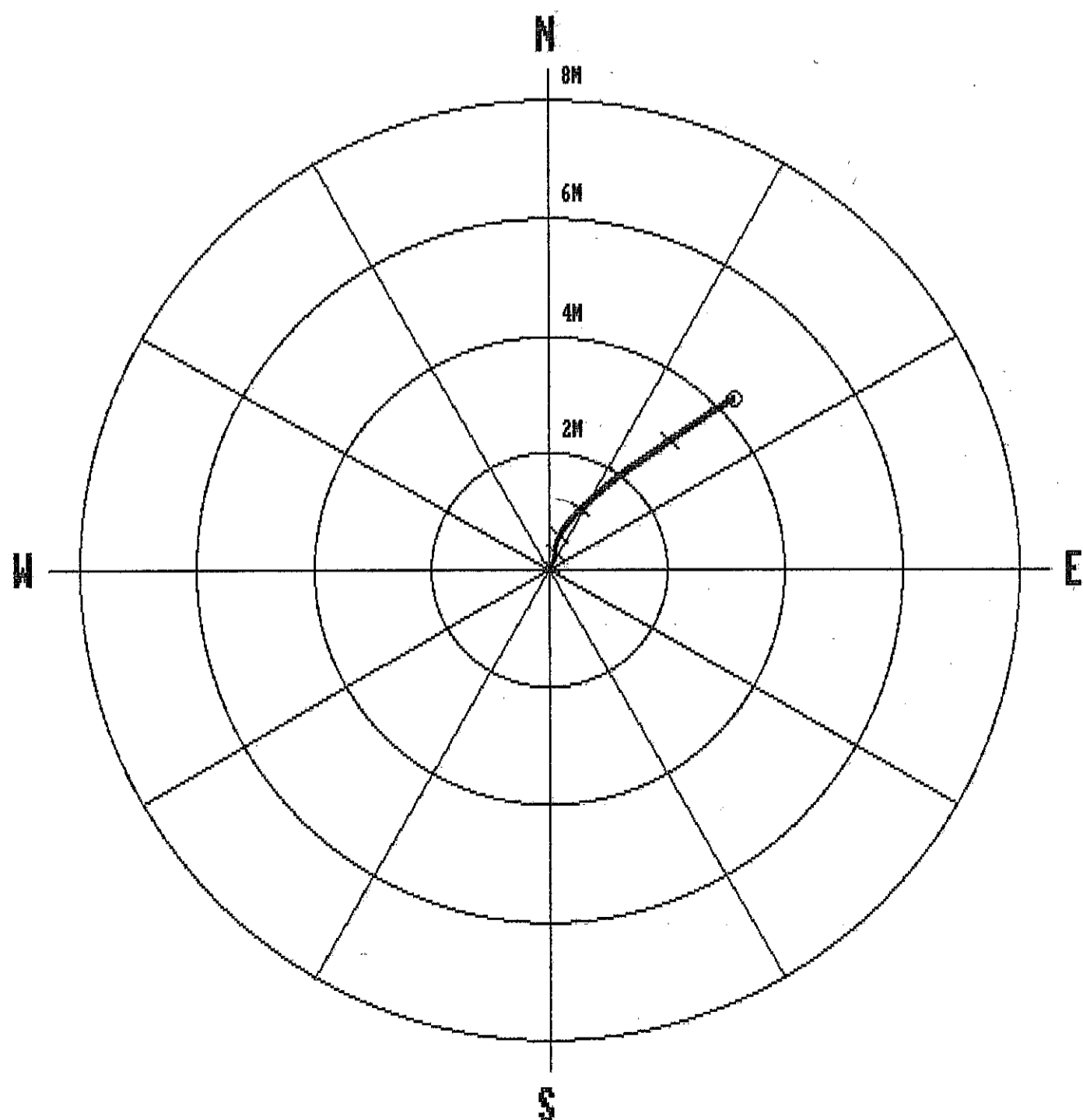
PLAN VIEW

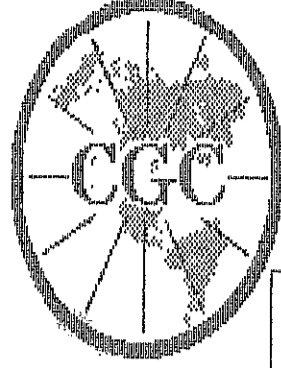
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96155
 DATE OF LOG: 09/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 74.00 M
 AZIMUTH: 47.3
 DISTANCE: 4.3 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

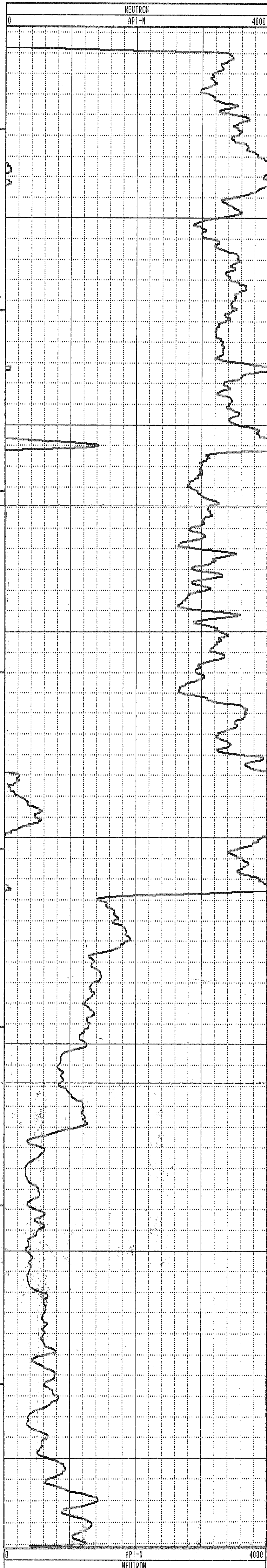
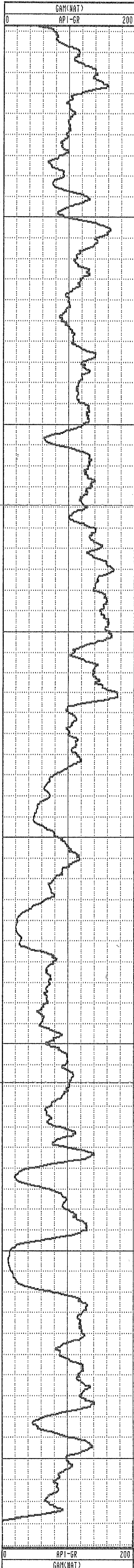
COMPANY : PINE VALLEY COAL
 WELL : WRH-96155
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/08/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 74 ELEU. PERM. DATUM: KB :
 LOG BOTTOM : 74.23 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.82 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



***** COMPU-LOG - VERTICAL DEVIATION *****

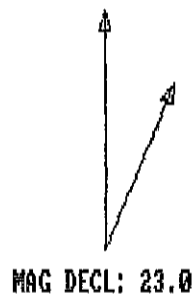
CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96156
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/08/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 3

| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.8 | 1.84 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 54.0 | 1.3 | 24.2 |
| 4.0 | 4.00 | 0.02 | -0.00 | 0.0 | 359.6 | 0.1 | 57.7 |
| 6.0 | 6.00 | 0.02 | -0.01 | 0.0 | 341.9 | 0.4 | 30.0 |
| 8.0 | 8.00 | 0.03 | 0.00 | 0.0 | 5.3 | 0.3 | 22.0 |
| 10.0 | 10.00 | 0.03 | 0.00 | 0.0 | 1.5 | 0.3 | 267.5 |
| 12.0 | 12.00 | 0.03 | -0.01 | 0.0 | 348.7 | 0.6 | 222.2 |
| 14.0 | 14.00 | 0.03 | -0.01 | 0.0 | 337.5 | 0.6 | 94.7 |
| 16.0 | 16.00 | 0.03 | -0.01 | 0.0 | 334.5 | 0.6 | 99.2 |
| 18.0 | 18.00 | 0.01 | -0.02 | 0.0 | 305.7 | 0.6 | 172.3 |
| 20.0 | 20.00 | 0.01 | -0.02 | 0.0 | 285.9 | 0.5 | 215.3 |
| 22.0 | 22.00 | -0.01 | -0.02 | 0.0 | 254.9 | 0.3 | 175.4 |
| 24.0 | 24.00 | -0.02 | -0.02 | 0.0 | 223.4 | 0.4 | 92.5 |
| 26.0 | 26.00 | -0.03 | -0.01 | 0.0 | 191.3 | 0.8 | 157.2 |
| 28.0 | 28.00 | -0.05 | 0.01 | 0.0 | 173.6 | 0.6 | 129.1 |
| 30.0 | 30.00 | -0.07 | 0.02 | 0.1 | 163.8 | 0.8 | 150.9 |
| 32.0 | 32.00 | -0.09 | 0.04 | 0.1 | 157.7 | 0.8 | 126.5 |
| 34.0 | 34.00 | -0.11 | 0.06 | 0.1 | 154.2 | 1.6 | 139.7 |
| 36.0 | 36.00 | -0.15 | 0.08 | 0.2 | 151.8 | 1.1 | 144.4 |
| 38.0 | 38.00 | -0.18 | 0.11 | 0.2 | 149.8 | 1.3 | 122.1 |
| 40.0 | 40.00 | -0.22 | 0.14 | 0.3 | 148.3 | 1.5 | 141.6 |
| 42.0 | 41.99 | -0.27 | 0.17 | 0.3 | 147.6 | 1.6 | 131.1 |
| 44.0 | 43.99 | -0.32 | 0.21 | 0.4 | 146.5 | 2.2 | 142.2 |
| 46.0 | 45.99 | -0.38 | 0.26 | 0.5 | 145.2 | 2.7 | 143.8 |
| 48.0 | 47.99 | -0.45 | 0.32 | 0.6 | 143.9 | 2.8 | 134.6 |
| 50.0 | 49.99 | -0.52 | 0.40 | 0.7 | 142.6 | 3.1 | 136.0 |
| 52.0 | 51.98 | -0.60 | 0.48 | 0.8 | 141.7 | 3.5 | 131.6 |
| 54.0 | 53.98 | -0.70 | 0.56 | 0.9 | 141.4 | 3.6 | 140.6 |
| 56.0 | 55.98 | -0.80 | 0.64 | 1.0 | 141.3 | 4.2 | 141.0 |
| 58.0 | 57.97 | -0.92 | 0.73 | 1.2 | 141.8 | 4.1 | 145.2 |
| 60.0 | 59.96 | -1.06 | 0.82 | 1.3 | 142.3 | 4.6 | 141.4 |
| 62.0 | 61.96 | -1.21 | 0.90 | 1.5 | 143.4 | 4.7 | 154.8 |
| 64.0 | 63.95 | -1.37 | 0.97 | 1.7 | 144.7 | 5.3 | 156.0 |
| 66.0 | 65.94 | -1.56 | 1.05 | 1.9 | 146.3 | 6.2 | 160.9 |
| 68.0 | 67.92 | -1.80 | 1.10 | 2.1 | 148.5 | 7.4 | 169.1 |
| 70.0 | 69.91 | -2.04 | 1.16 | 2.3 | 150.5 | 7.5 | 176.4 |
| 72.0 | 71.89 | -2.32 | 1.18 | 2.6 | 153.1 | 8.5 | 179.9 |
| 74.0 | 73.86 | -2.64 | 1.21 | 2.9 | 155.4 | 9.4 | 174.0 |
| 74.3 | 74.20 | -2.70 | 1.21 | 3.0 | 155.7 | 9.7 | 175.8 |

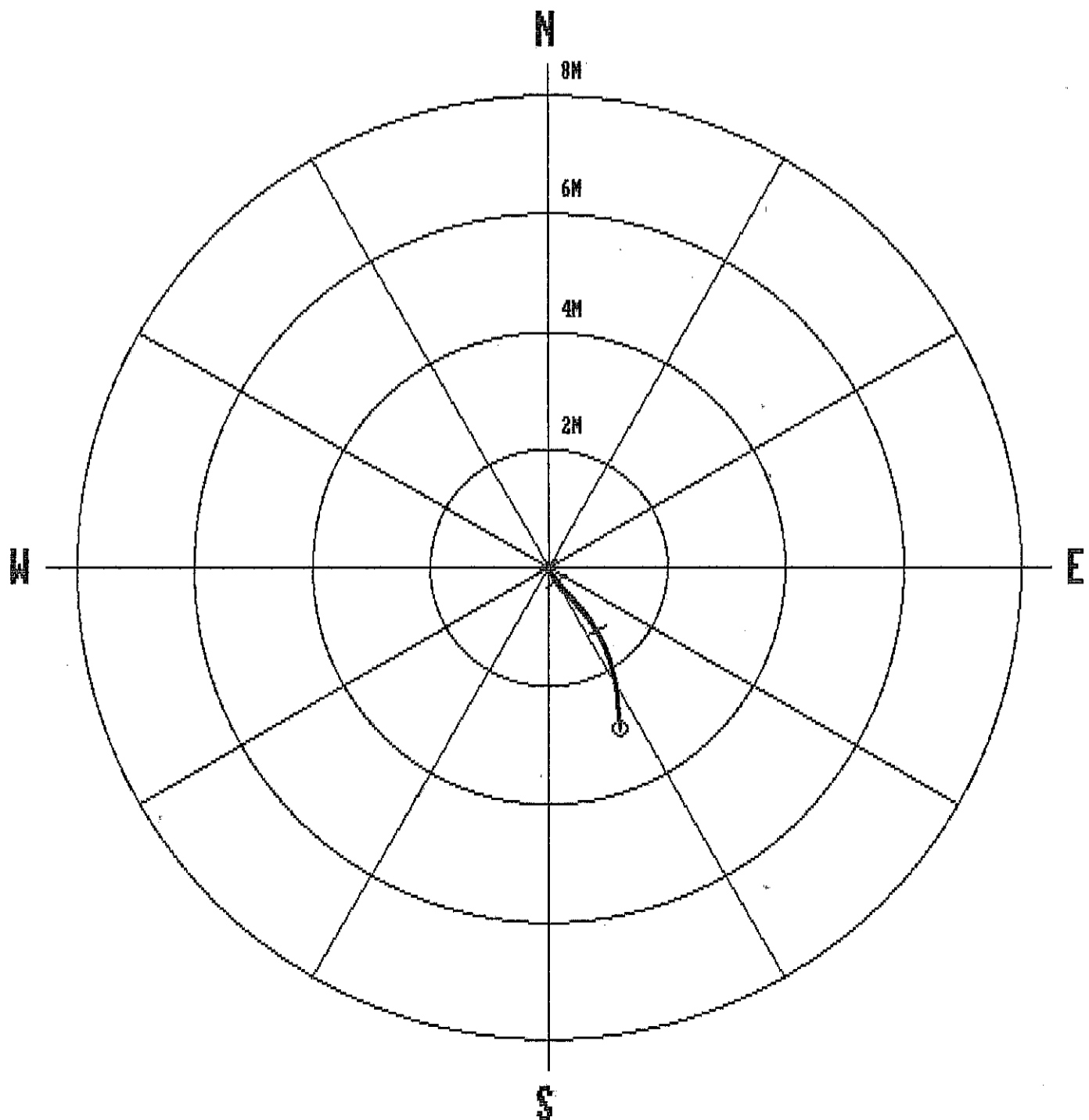
WRH-96156

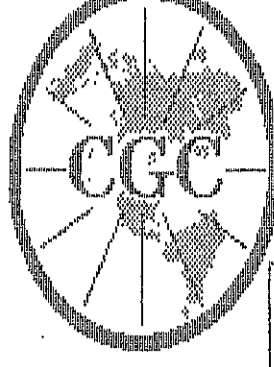
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96156
 DATE OF LOG: 09/08/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 74.20 M
 AZIMUTH: 155.7
 DISTANCE: 3.0 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



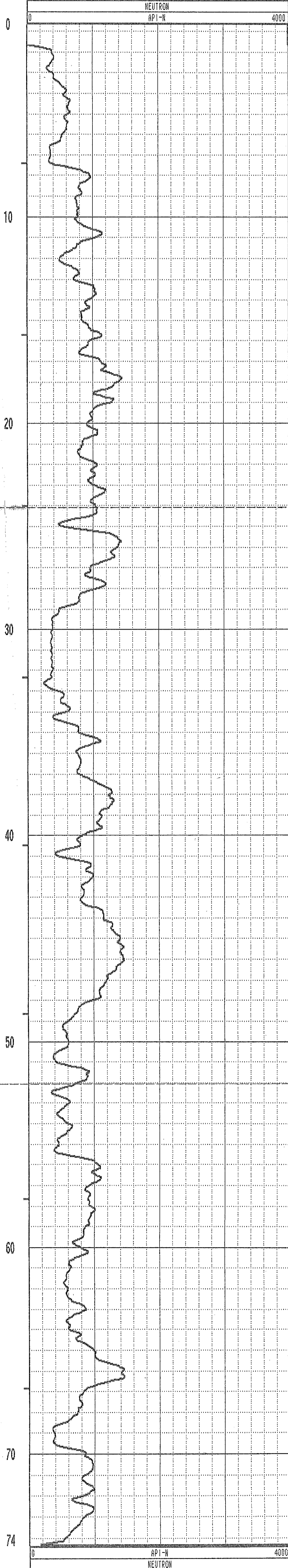
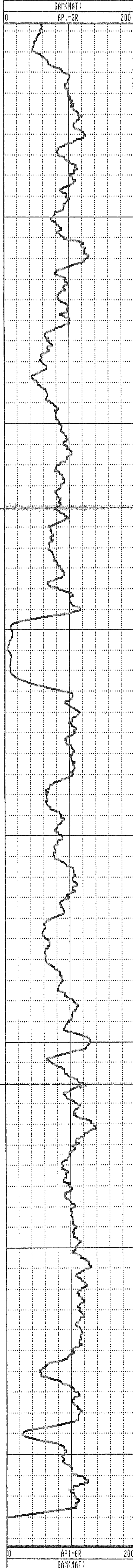


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96156 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 09/08/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 74 | ELEV. PERM. DATUM | : KB |
| LOG BOTTOM | : 74.41 | LOG MEASURED FROM: | G.L. DF |
| LOG TOP | : 0.74 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 2 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

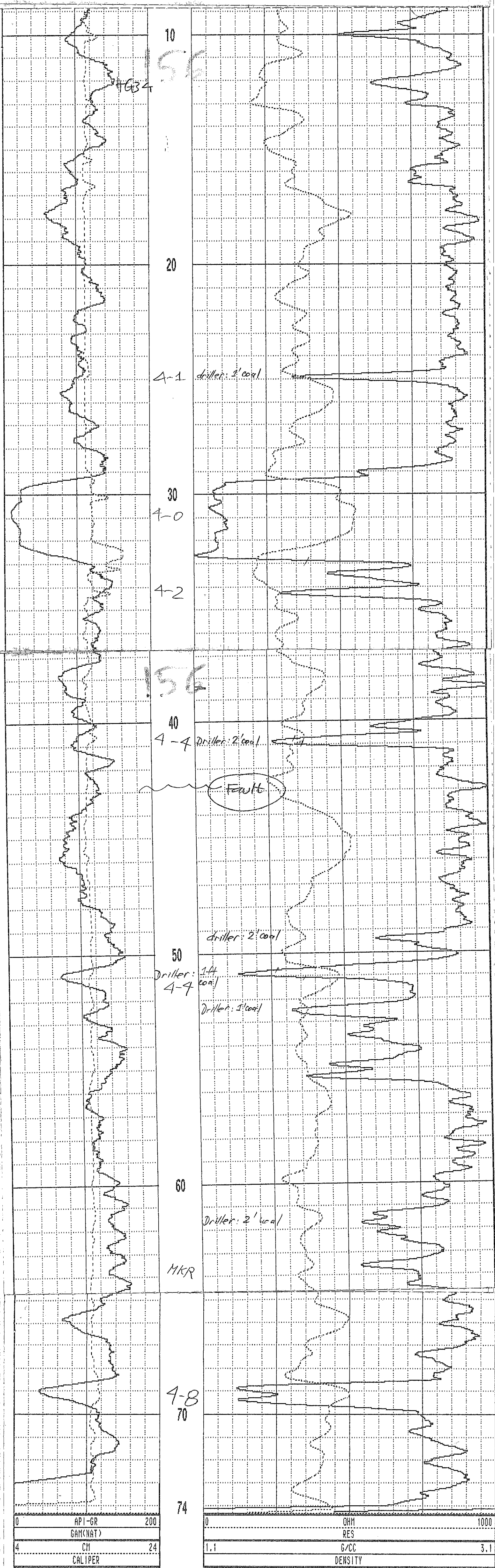
COMPANY : PINE VALLEY COAL
 WELL : WRH-96156
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

DATE : 09/08/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 74 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 74.40 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96156 09/08/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-BR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-BR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MR) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MR) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

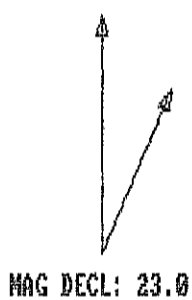
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96157
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/11/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 2

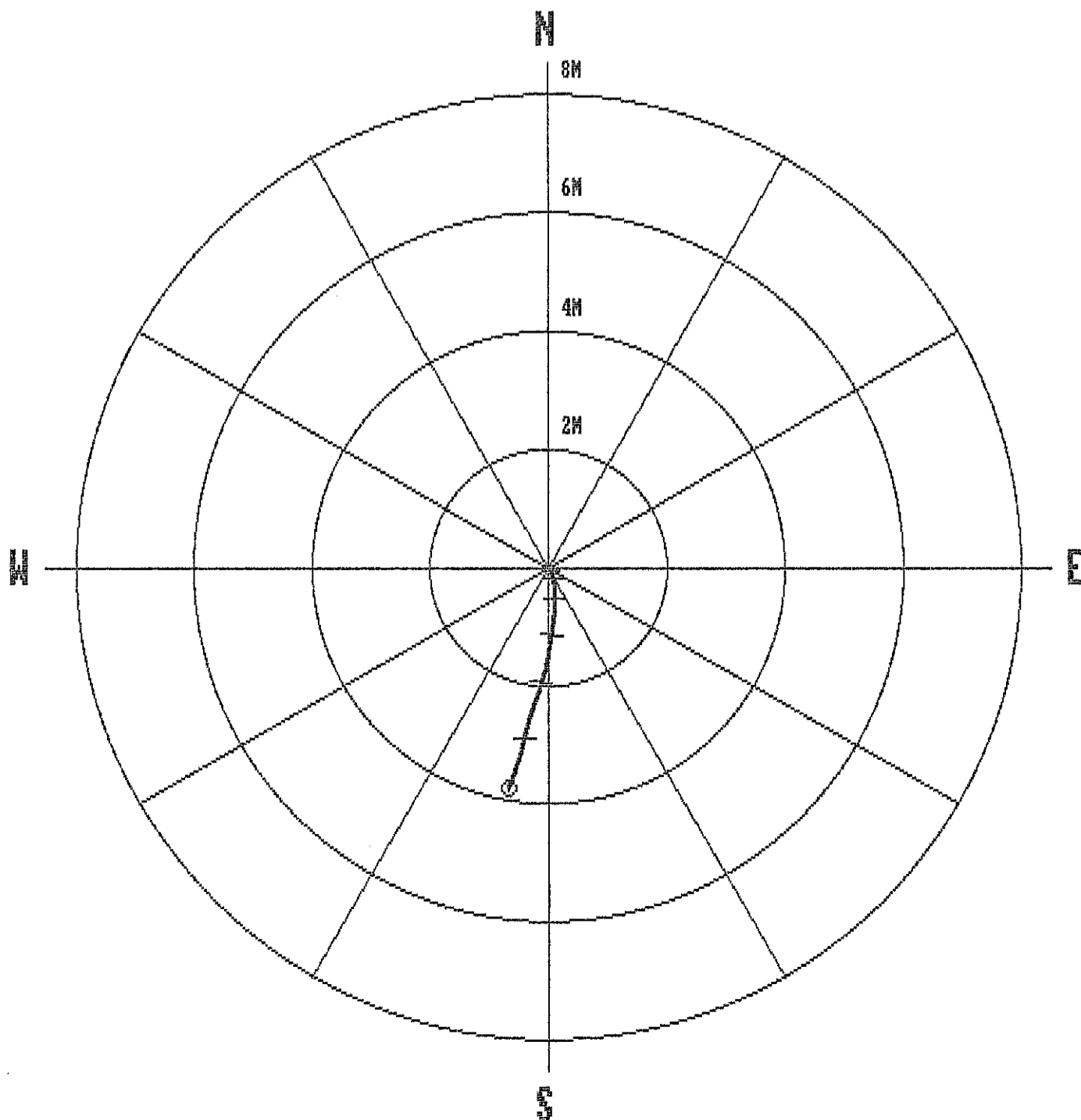
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.9 | 1.92 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 98.1 | 1.4 | 98.0 |
| 4.0 | 4.00 | 0.00 | -0.00 | 0.0 | 354.6 | 0.3 | 319.0 |
| 6.0 | 6.00 | 0.00 | -0.02 | 0.0 | 284.9 | 0.7 | 240.5 |
| 8.0 | 8.00 | -0.01 | -0.00 | 0.0 | 204.4 | 0.8 | 170.7 |
| 10.0 | 10.00 | -0.02 | 0.01 | 0.0 | 141.0 | 1.0 | 28.4 |
| 12.0 | 12.00 | -0.04 | 0.04 | 0.1 | 140.0 | 1.5 | 159.8 |
| 14.0 | 14.00 | -0.08 | 0.05 | 0.1 | 145.7 | 0.9 | 140.9 |
| 16.0 | 16.00 | -0.11 | 0.06 | 0.1 | 149.3 | 1.3 | 159.1 |
| 18.0 | 18.00 | -0.14 | 0.08 | 0.2 | 150.0 | 0.7 | 181.1 |
| 20.0 | 20.00 | -0.18 | 0.10 | 0.2 | 152.1 | 1.2 | 175.8 |
| 22.0 | 22.00 | -0.23 | 0.11 | 0.3 | 155.7 | 1.6 | 181.5 |
| 24.0 | 23.99 | -0.29 | 0.11 | 0.3 | 158.5 | 2.0 | 162.1 |
| 26.0 | 25.99 | -0.35 | 0.12 | 0.4 | 161.0 | 2.0 | 190.9 |
| 28.0 | 27.99 | -0.43 | 0.12 | 0.4 | 163.9 | 2.5 | 177.0 |
| 30.0 | 29.99 | -0.52 | 0.12 | 0.5 | 166.6 | 2.4 | 189.2 |
| 32.0 | 31.99 | -0.61 | 0.12 | 0.6 | 169.0 | 3.2 | 184.7 |
| 34.0 | 33.98 | -0.72 | 0.11 | 0.7 | 171.0 | 3.0 | 183.4 |
| 36.0 | 35.98 | -0.84 | 0.10 | 0.8 | 173.0 | 4.0 | 177.7 |
| 38.0 | 37.98 | -0.97 | 0.09 | 1.0 | 175.0 | 4.7 | 177.9 |
| 40.0 | 39.97 | -1.11 | 0.07 | 1.1 | 176.6 | 3.9 | 186.1 |
| 42.0 | 41.96 | -1.27 | 0.04 | 1.3 | 178.2 | 4.9 | 191.8 |
| 44.0 | 43.96 | -1.43 | 0.01 | 1.4 | 179.6 | 4.6 | 186.9 |
| 46.0 | 45.95 | -1.58 | -0.01 | 1.6 | 180.5 | 5.1 | 199.7 |
| 48.0 | 47.94 | -1.75 | -0.06 | 1.8 | 181.8 | 5.0 | 205.4 |
| 50.0 | 49.93 | -1.92 | -0.10 | 1.9 | 183.1 | 5.5 | 198.6 |
| 52.0 | 51.93 | -2.10 | -0.16 | 2.1 | 184.4 | 5.6 | 201.3 |
| 54.0 | 53.92 | -2.28 | -0.23 | 2.3 | 185.7 | 5.3 | 179.7 |
| 56.0 | 55.91 | -2.47 | -0.29 | 2.5 | 186.6 | 6.4 | 185.6 |
| 58.0 | 57.90 | -2.66 | -0.35 | 2.7 | 187.4 | 5.8 | 200.5 |
| 60.0 | 59.88 | -2.87 | -0.40 | 2.9 | 187.8 | 6.0 | 195.9 |
| 62.0 | 61.87 | -3.08 | -0.46 | 3.1 | 188.4 | 6.3 | 214.3 |
| 64.0 | 63.86 | -3.31 | -0.52 | 3.4 | 189.0 | 7.0 | 198.5 |
| 66.0 | 65.84 | -3.54 | -0.60 | 3.6 | 189.6 | 7.2 | 194.1 |
| 67.5 | 67.33 | -3.72 | -0.66 | 3.8 | 190.1 | 7.2 | 197.6 |

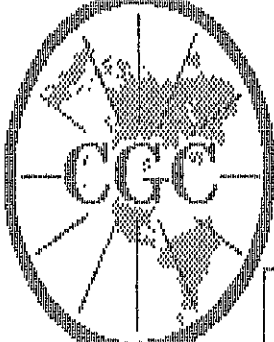
PLAN VIEW
 COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96157
 DATE OF LOG: 09/11/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 67.33 M
 AZIMUTH: 190.1
 DISTANCE: 3.8 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96157
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA

OTHER SERVICES:

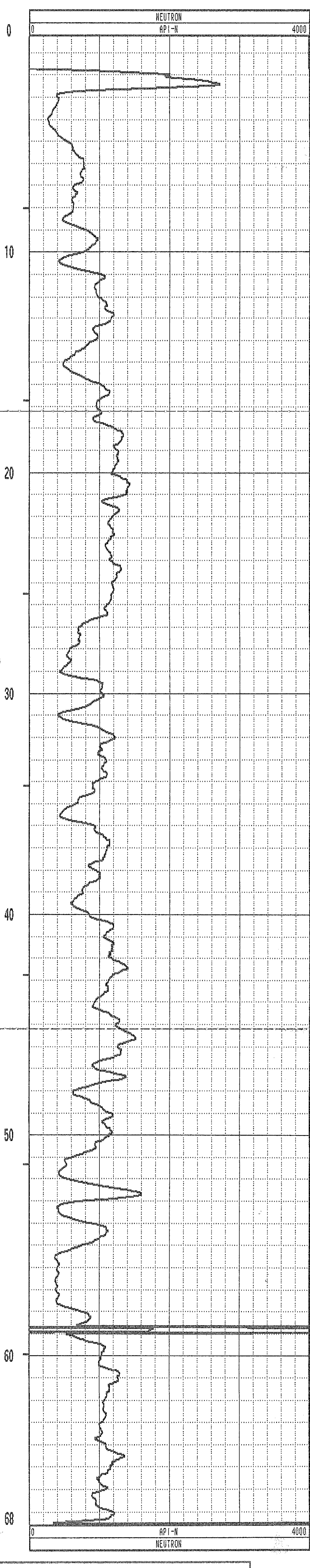
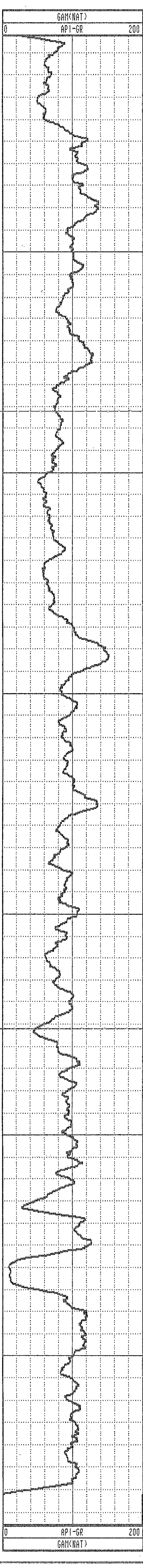
SECTION : TOWNSHIP : RANGE :

DATE : 09/11/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 67 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 67.56 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.78 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

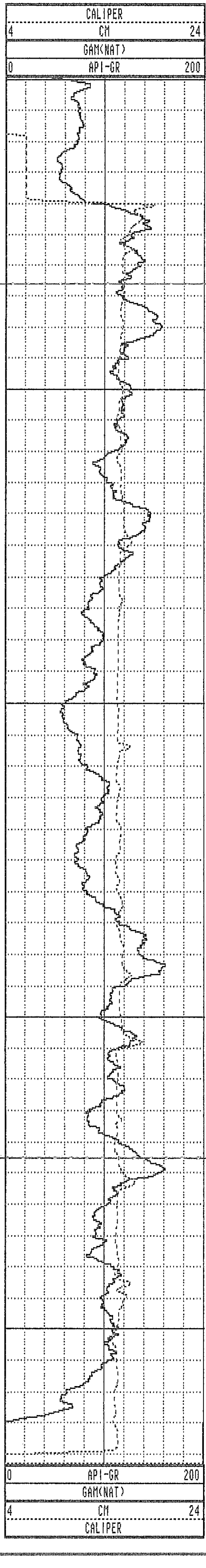


GAMMA-RES-DENSITY

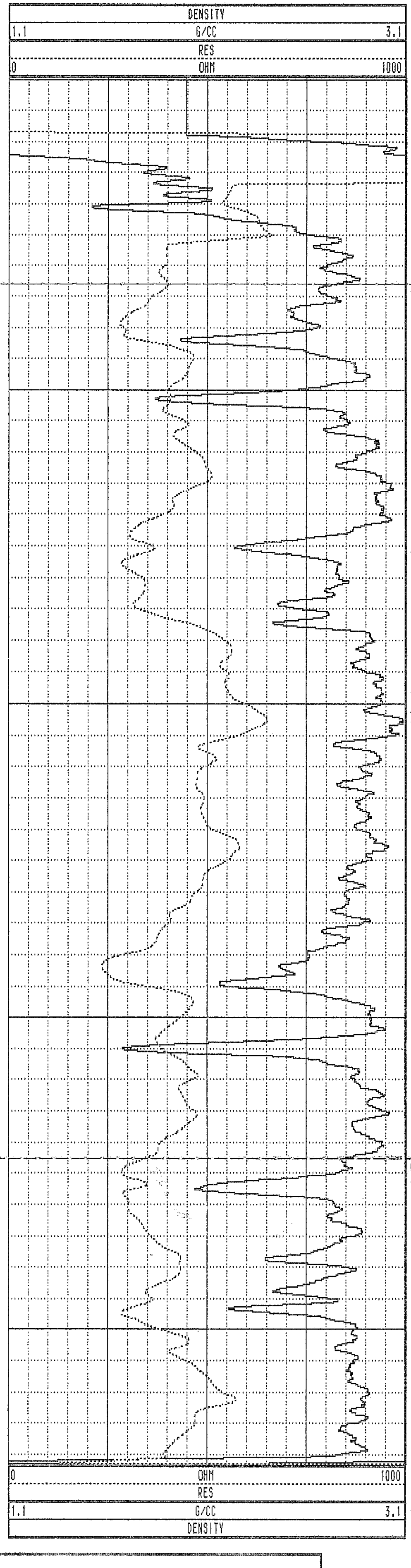
| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96157 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/08/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 44 ELEV. PERM. DATUM: KB : LOG BOTTOM : 44.34 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 1 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WRH 96157



WRH 96157



WRH-96157 09/08/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

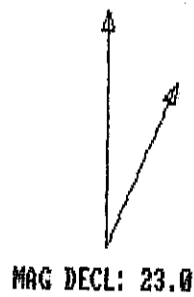
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96158
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/11/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 2

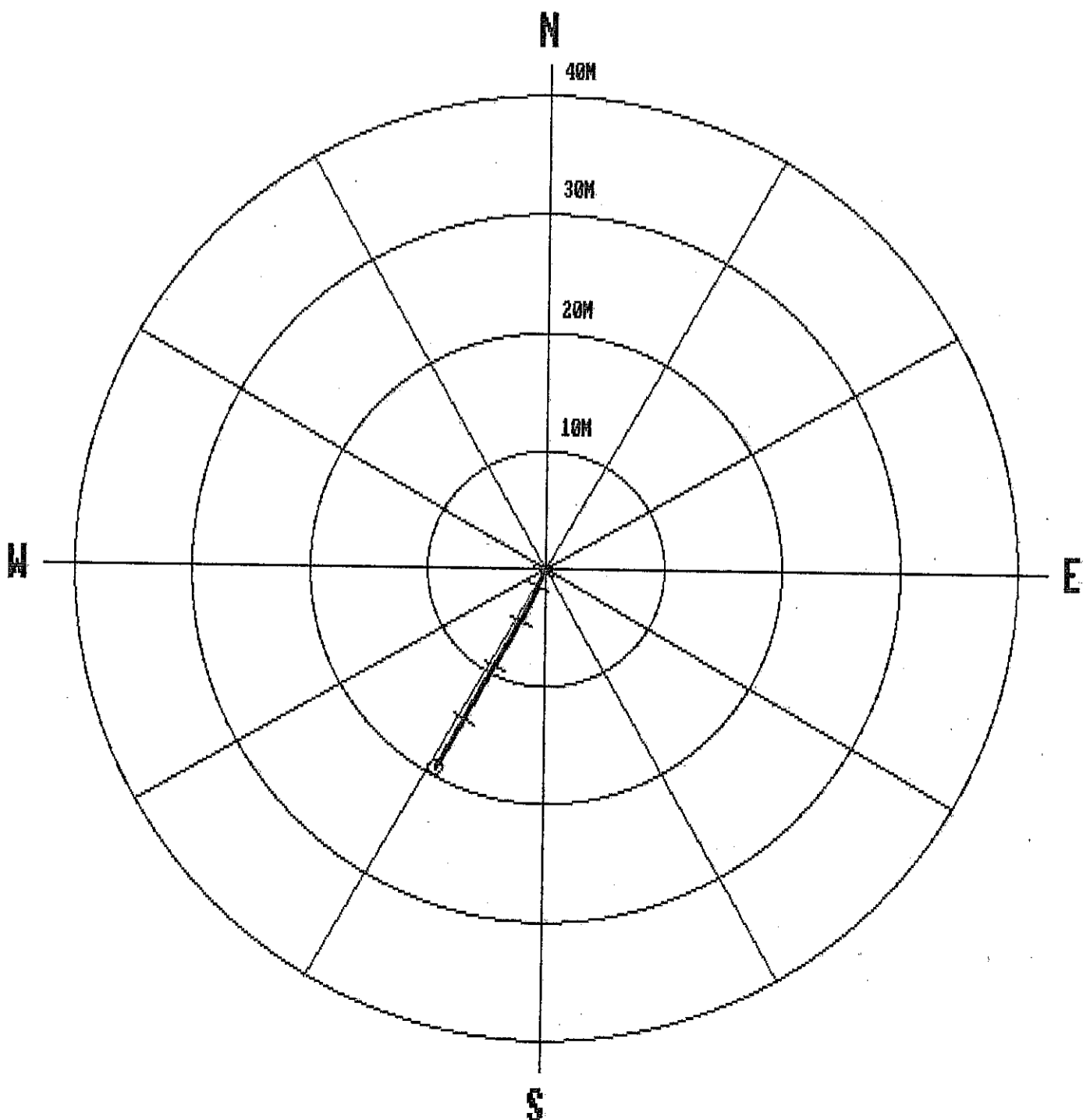
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 2.0 | 1.98 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 271.3 | 0.4 | 5.9 |
| 6.0 | 6.00 | -0.00 | -0.01 | 0.0 | 232.3 | 0.6 | 199.2 |
| 9.0 | 9.00 | -0.03 | -0.02 | 0.0 | 212.6 | 2.0 | 179.2 |
| 12.0 | 12.00 | -0.07 | -0.03 | 0.1 | 207.2 | 0.8 | 195.4 |
| 15.0 | 15.00 | -0.11 | -0.06 | 0.1 | 209.1 | 1.3 | 203.3 |
| 18.0 | 18.00 | -0.18 | -0.09 | 0.2 | 208.3 | 1.1 | 205.7 |
| 21.0 | 21.00 | -0.27 | -0.14 | 0.3 | 207.1 | 2.9 | 208.7 |
| 24.0 | 23.99 | -0.39 | -0.19 | 0.4 | 205.7 | 2.3 | 200.9 |
| 27.0 | 26.99 | -0.54 | -0.23 | 0.6 | 203.7 | 3.0 | 197.3 |
| 30.0 | 29.98 | -0.72 | -0.29 | 0.8 | 202.1 | 4.1 | 198.1 |
| 33.0 | 32.97 | -0.94 | -0.37 | 1.0 | 201.5 | 4.8 | 199.2 |
| 36.0 | 35.96 | -1.20 | -0.47 | 1.3 | 201.4 | 5.2 | 199.9 |
| 39.0 | 38.95 | -1.47 | -0.58 | 1.6 | 201.6 | 6.3 | 197.4 |
| 42.0 | 41.93 | -1.77 | -0.72 | 1.9 | 202.1 | 7.1 | 209.4 |
| 45.0 | 44.90 | -2.11 | -0.87 | 2.3 | 202.5 | 7.7 | 202.6 |
| 48.0 | 47.87 | -2.49 | -1.03 | 2.7 | 202.5 | 7.9 | 191.9 |
| 51.0 | 50.84 | -2.90 | -1.22 | 3.1 | 202.8 | 9.2 | 201.4 |
| 54.0 | 53.80 | -3.35 | -1.46 | 3.7 | 203.5 | 9.9 | 207.7 |
| 57.0 | 56.75 | -3.82 | -1.70 | 4.2 | 204.0 | 10.5 | 207.7 |
| 60.0 | 59.70 | -4.31 | -1.98 | 4.7 | 204.7 | 10.6 | 211.5 |
| 63.0 | 62.64 | -4.82 | -2.26 | 5.3 | 205.1 | 11.6 | 209.1 |
| 66.0 | 65.58 | -5.35 | -2.55 | 5.9 | 205.5 | 11.3 | 209.0 |
| 69.0 | 68.51 | -5.90 | -2.85 | 6.6 | 205.8 | 12.2 | 210.0 |
| 72.0 | 71.44 | -6.46 | -3.17 | 7.2 | 206.1 | 12.4 | 210.2 |
| 75.0 | 74.37 | -7.04 | -3.49 | 7.9 | 206.4 | 13.5 | 207.3 |
| 78.0 | 77.29 | -7.62 | -3.85 | 8.5 | 206.8 | 13.8 | 209.4 |
| 81.0 | 80.20 | -8.24 | -4.19 | 9.2 | 207.0 | 14.2 | 205.9 |
| 84.0 | 83.11 | -8.89 | -4.56 | 10.0 | 207.1 | 14.3 | 208.5 |
| 87.0 | 86.02 | -9.53 | -4.92 | 10.7 | 207.3 | 14.2 | 209.2 |
| 90.0 | 88.92 | -10.18 | -5.28 | 11.5 | 207.4 | 14.4 | 209.0 |
| 93.0 | 91.83 | -10.84 | -5.64 | 12.2 | 207.5 | 14.6 | 208.0 |
| 96.0 | 94.73 | -11.50 | -6.01 | 13.0 | 207.6 | 15.5 | 203.3 |
| 99.0 | 97.62 | -12.20 | -6.40 | 13.8 | 207.7 | 15.6 | 209.2 |
| 102.0 | 100.50 | -12.94 | -6.81 | 14.6 | 207.7 | 16.5 | 208.0 |
| 105.0 | 103.37 | -13.70 | -7.22 | 15.5 | 207.8 | 17.4 | 204.2 |
| 108.0 | 106.23 | -14.50 | -7.66 | 16.4 | 207.9 | 18.3 | 208.3 |
| 111.0 | 109.07 | -15.32 | -8.14 | 17.3 | 208.0 | 18.6 | 209.9 |
| 114.0 | 111.91 | -16.15 | -8.62 | 18.3 | 208.1 | 18.8 | 211.7 |
| 117.0 | 114.74 | -17.01 | -9.12 | 19.3 | 208.2 | 19.8 | 211.9 |
| 117.0 | 114.74 | -17.01 | -9.12 | 19.3 | 208.2 | 19.8 | 211.9 |

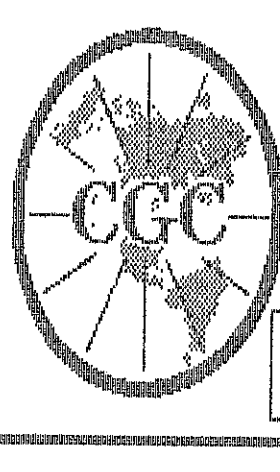
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96158
 DATE OF LOG: 09/11/96
 PROBE: 9055A 56



SCALE: 5 M/CM
 TRUE DEPTH: 114.74 M
 AZIMUTH: 208.2
 DISTANCE: 19.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : MRH-96158
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP :

OTHER SERVICES:

RANGE :

DATE : 09/11/96
 DEPTH DRILLER : 407
 LOG BOTTOM : 117.07
 LOG TOP : 1.09

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

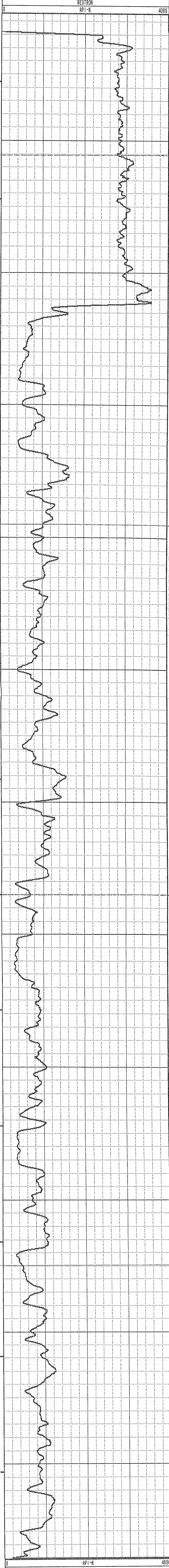
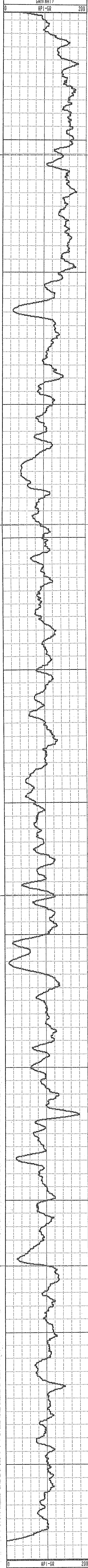
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 7
 PLOT : PINE 4
 THRESH: 10000

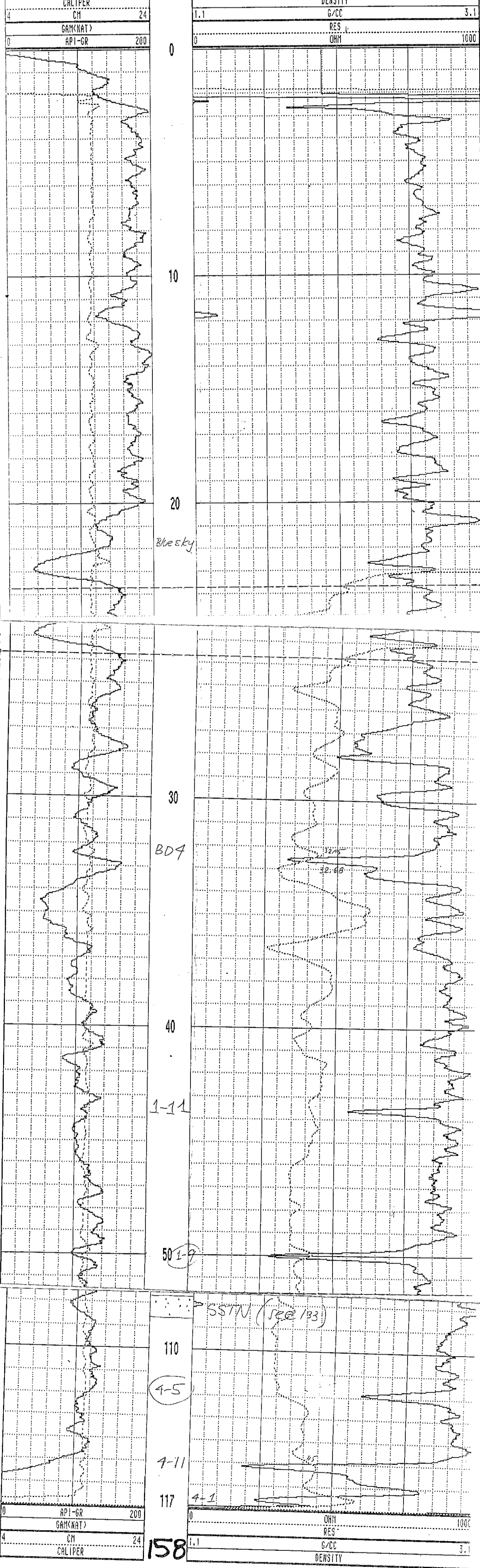
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96158
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 09/11/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 117 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 117.06 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 1
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96158 09/11/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAMKNAT | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAMKNAT | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1800.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

96-158

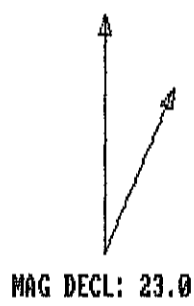
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96159
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/12/96
 DATA FROM : PROBE : 9055A , 56
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 6

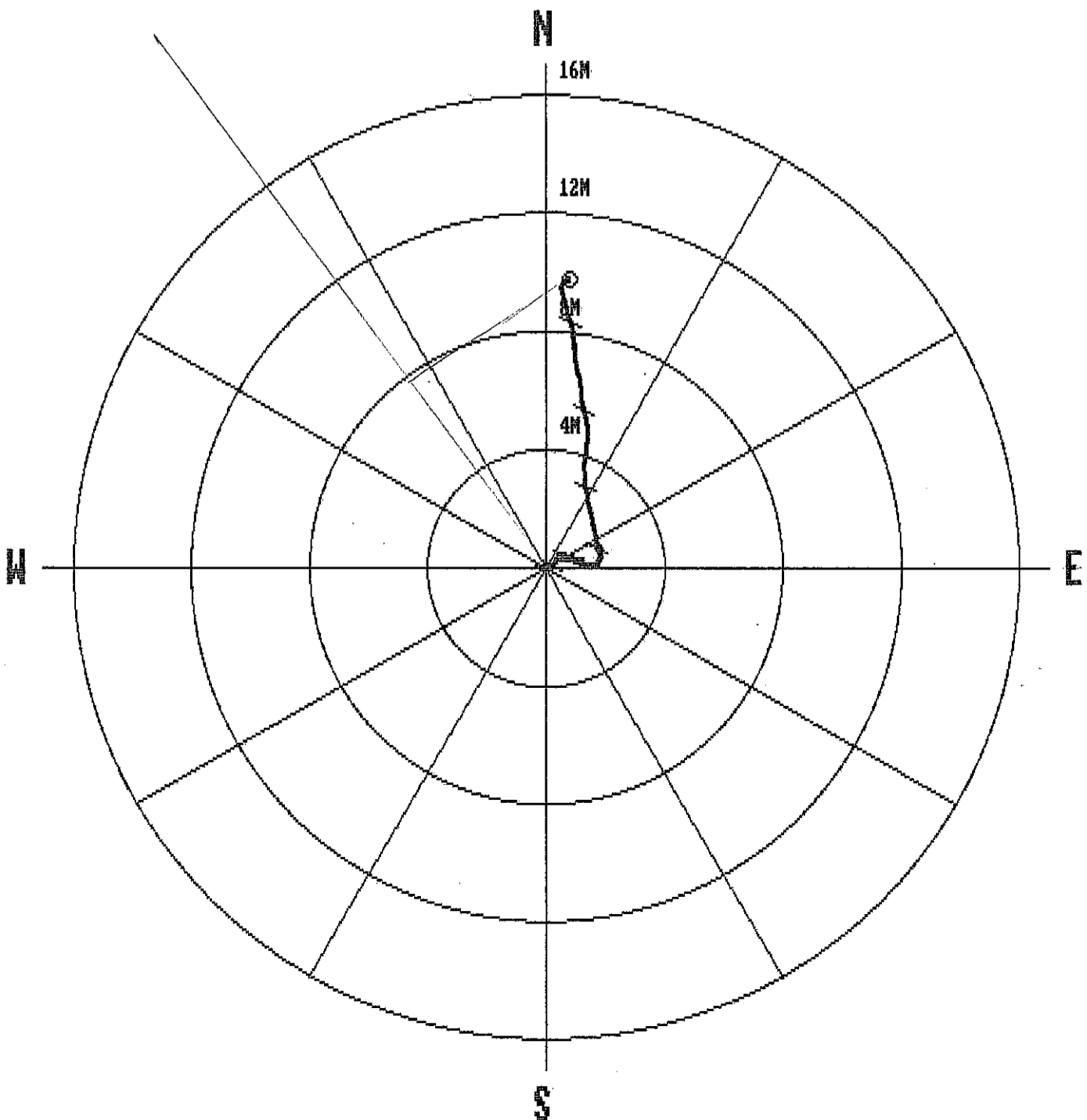
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.9 | 1.90 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 12.2 | 0.4 | 58.7 |
| 4.0 | 4.00 | -0.00 | -0.00 | 0.0 | 216.8 | 0.3 | 101.3 |
| 6.0 | 6.00 | -0.00 | -0.00 | 0.0 | 255.3 | 0.1 | 139.7 |
| 8.0 | 8.00 | -0.00 | -0.01 | 0.0 | 236.8 | 0.1 | 46.2 |
| 10.0 | 10.00 | -0.02 | -0.02 | 0.0 | 220.4 | 0.4 | 27.7 |
| 12.0 | 12.00 | -0.00 | -0.01 | 0.0 | 265.5 | 1.1 | 44.0 |
| 14.0 | 14.00 | 0.02 | 0.03 | 0.0 | 48.8 | 1.0 | 59.4 |
| 16.0 | 16.00 | 0.05 | 0.08 | 0.1 | 60.5 | 2.0 | 81.3 |
| 18.0 | 18.00 | 0.05 | 0.14 | 0.2 | 71.4 | 2.7 | 84.3 |
| 20.0 | 19.99 | 0.08 | 0.23 | 0.2 | 71.8 | 2.4 | 54.6 |
| 22.0 | 21.99 | 0.12 | 0.29 | 0.3 | 66.7 | 3.0 | 31.1 |
| 24.0 | 23.99 | 0.21 | 0.32 | 0.4 | 56.2 | 3.4 | 7.8 |
| 26.0 | 25.98 | 0.27 | 0.34 | 0.4 | 52.1 | 5.2 | 75.5 |
| 28.0 | 27.97 | 0.33 | 0.47 | 0.6 | 54.9 | 4.8 | 72.0 |
| 30.0 | 29.96 | 0.41 | 0.63 | 0.8 | 56.6 | 5.6 | 60.6 |
| 32.0 | 31.95 | 0.35 | 0.63 | 0.7 | 61.0 | 5.9 | 157.0 |
| 34.0 | 33.94 | 0.33 | 0.80 | 0.9 | 67.8 | 5.8 | 201.8 |
| 36.0 | 35.93 | 0.30 | 0.94 | 1.0 | 72.5 | 7.0 | 98.2 |
| 38.0 | 37.92 | 0.25 | 1.17 | 1.2 | 78.1 | 7.6 | 87.0 |
| 40.0 | 39.90 | 0.12 | 1.21 | 1.2 | 84.3 | 7.1 | 107.5 |
| 42.0 | 41.88 | 0.07 | 1.44 | 1.4 | 87.2 | 8.5 | 98.1 |
| 44.0 | 43.86 | 0.10 | 1.69 | 1.7 | 86.5 | 9.0 | 46.9 |
| 46.0 | 45.83 | 0.30 | 1.81 | 1.8 | 80.6 | 9.4 | 17.1 |
| 48.0 | 47.80 | 0.62 | 1.87 | 2.0 | 71.8 | 10.1 | 354.6 |
| 50.0 | 49.77 | 0.64 | 1.74 | 1.9 | 69.9 | 10.9 | 354.5 |
| 52.0 | 51.73 | 1.03 | 1.70 | 2.0 | 58.8 | 11.6 | 351.0 |
| 54.0 | 53.69 | 1.42 | 1.62 | 2.2 | 48.7 | 11.5 | 344.5 |
| 56.0 | 55.65 | 1.82 | 1.53 | 2.4 | 40.1 | 11.9 | 343.4 |
| 58.0 | 57.60 | 2.23 | 1.44 | 2.7 | 32.9 | 12.5 | 347.2 |
| 60.0 | 59.55 | 2.66 | 1.37 | 3.0 | 27.2 | 12.7 | 347.3 |
| 62.0 | 61.50 | 3.10 | 1.33 | 3.4 | 23.1 | 12.4 | 356.9 |
| 64.0 | 63.45 | 3.57 | 1.32 | 3.8 | 20.3 | 14.2 | 12.6 |
| 66.0 | 65.38 | 4.06 | 1.37 | 4.3 | 18.7 | 15.0 | 9.8 |
| 68.0 | 67.31 | 4.59 | 1.42 | 4.8 | 17.2 | 15.8 | 351.1 |
| 70.0 | 69.23 | 5.12 | 1.33 | 5.3 | 14.6 | 15.7 | 343.2 |
| 72.0 | 71.16 | 5.65 | 1.22 | 5.8 | 12.2 | 15.7 | 346.4 |
| 74.0 | 73.08 | 6.19 | 1.17 | 6.3 | 10.7 | 16.8 | 354.4 |
| 76.0 | 75.00 | 6.75 | 1.04 | 6.8 | 8.7 | 16.6 | 345.3 |
| 78.0 | 76.91 | 7.32 | 0.98 | 7.4 | 7.6 | 17.5 | 350.0 |
| 80.0 | 78.81 | 7.93 | 0.90 | 8.0 | 6.5 | 18.2 | 350.1 |
| 82.0 | 80.71 | 8.53 | 0.77 | 8.6 | 5.1 | 18.4 | 347.4 |
| 84.0 | 82.61 | 9.15 | 0.62 | 9.2 | 3.9 | 18.9 | 344.5 |
| 86.0 | 84.50 | 9.71 | 0.74 | 9.7 | 4.4 | 19.3 | 77.2 |
| 86.2 | 84.69 | 9.71 | 0.81 | 9.7 | 4.8 | 19.3 | 92.9 |

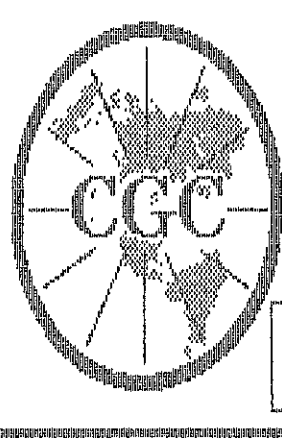
PLAN VIEW
 COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96159
 DATE OF LOG: 09/12/96
 PROBE: 9055A 56



SCALE: 2 M/CM
 TRUE DEPTH: 84.69 M
 AZIMUTH: 4.8
 DISTANCE: 9.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : MRH-96159
 LOCATION/FIELD : HOLLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/12/96
 DEPTH DRILLER : 85
 LOG BOTTOM : 86.25
 LOG TOP : 0.84
 CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS : .25

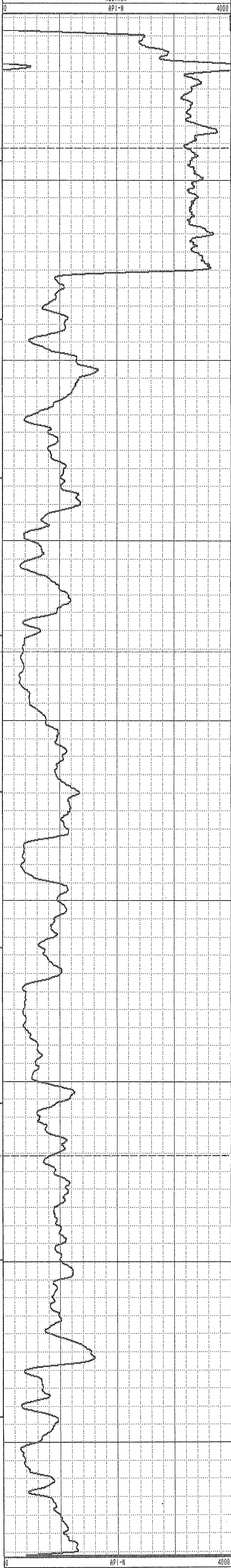
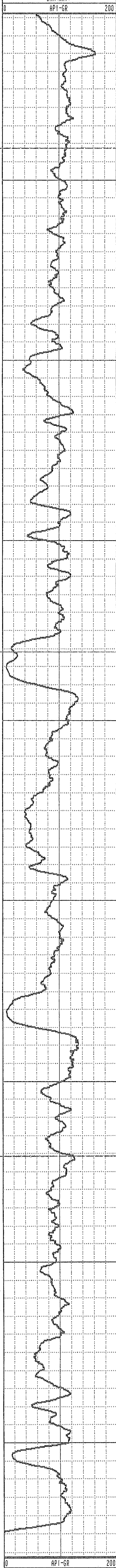
PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :
 LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 3
 PLOT : PINE 4
 THRESH : 10000

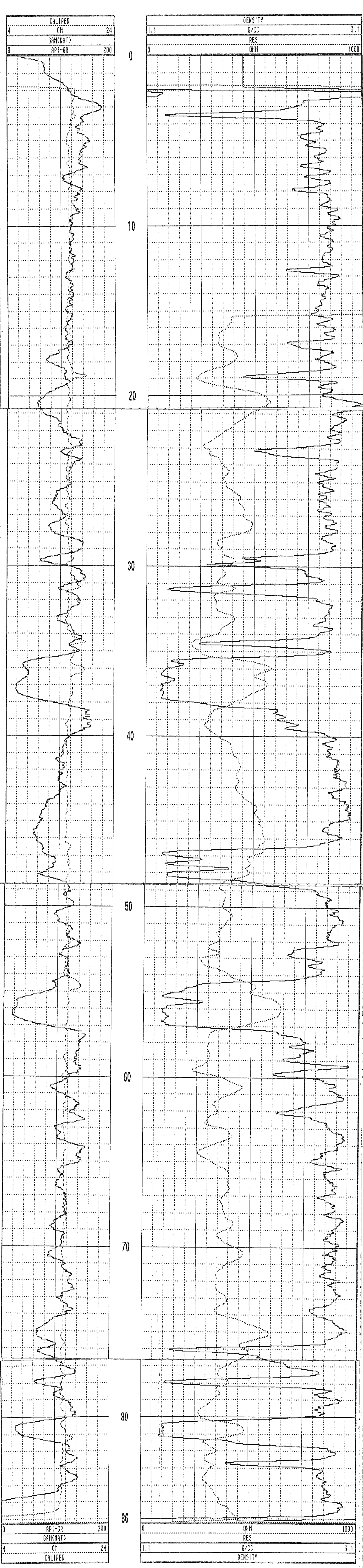
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96159 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 09/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 86 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 86.26 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96159 09/12/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

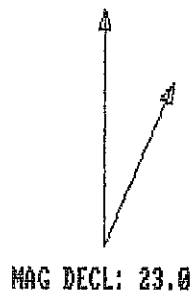
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(CHG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.92 | -0.22 | -0.15 | 0.3 | 213.7 | 30.6 | 226.0 |
| 4.0 | 3.77 | -0.26 | -0.54 | 0.6 | 244.1 | 32.5 | 305.8 |
| 5.0 | 4.61 | -0.02 | -0.80 | 0.8 | 268.6 | 32.9 | 45.6 |
| 6.0 | 5.45 | 0.31 | -0.52 | 0.6 | 300.6 | 31.7 | 14.1 |
| 7.0 | 6.29 | 0.83 | -0.45 | 0.9 | 331.5 | 32.7 | 23.4 |
| 8.0 | 7.13 | 0.78 | -0.37 | 0.9 | 334.8 | 34.1 | 225.4 |
| 9.0 | 7.96 | 0.33 | -0.53 | 0.6 | 302.0 | 34.7 | 132.5 |
| 10.0 | 8.79 | -0.15 | -0.57 | 0.6 | 254.9 | 34.3 | 170.2 |
| 11.0 | 9.61 | -0.70 | -0.67 | 1.0 | 223.4 | 34.6 | 196.4 |
| 12.0 | 10.43 | -1.26 | -0.72 | 1.5 | 209.5 | 35.3 | 196.0 |
| 13.0 | 11.24 | -1.83 | -0.79 | 2.0 | 203.4 | 36.9 | 181.4 |
| 14.0 | 12.04 | -2.40 | -0.87 | 2.6 | 200.0 | 36.1 | 179.9 |
| 15.0 | 12.83 | -2.99 | -0.99 | 3.1 | 198.3 | 37.4 | 170.9 |
| 16.0 | 13.62 | -3.56 | -1.15 | 3.7 | 197.9 | 37.0 | 187.8 |
| 17.0 | 14.41 | -4.16 | -1.25 | 4.3 | 196.8 | 38.5 | 178.4 |
| 18.0 | 15.18 | -4.77 | -1.33 | 5.0 | 195.6 | 40.4 | 180.0 |
| 18.3 | 15.44 | -4.98 | -1.35 | 5.2 | 195.1 | 40.3 | 186.6 |

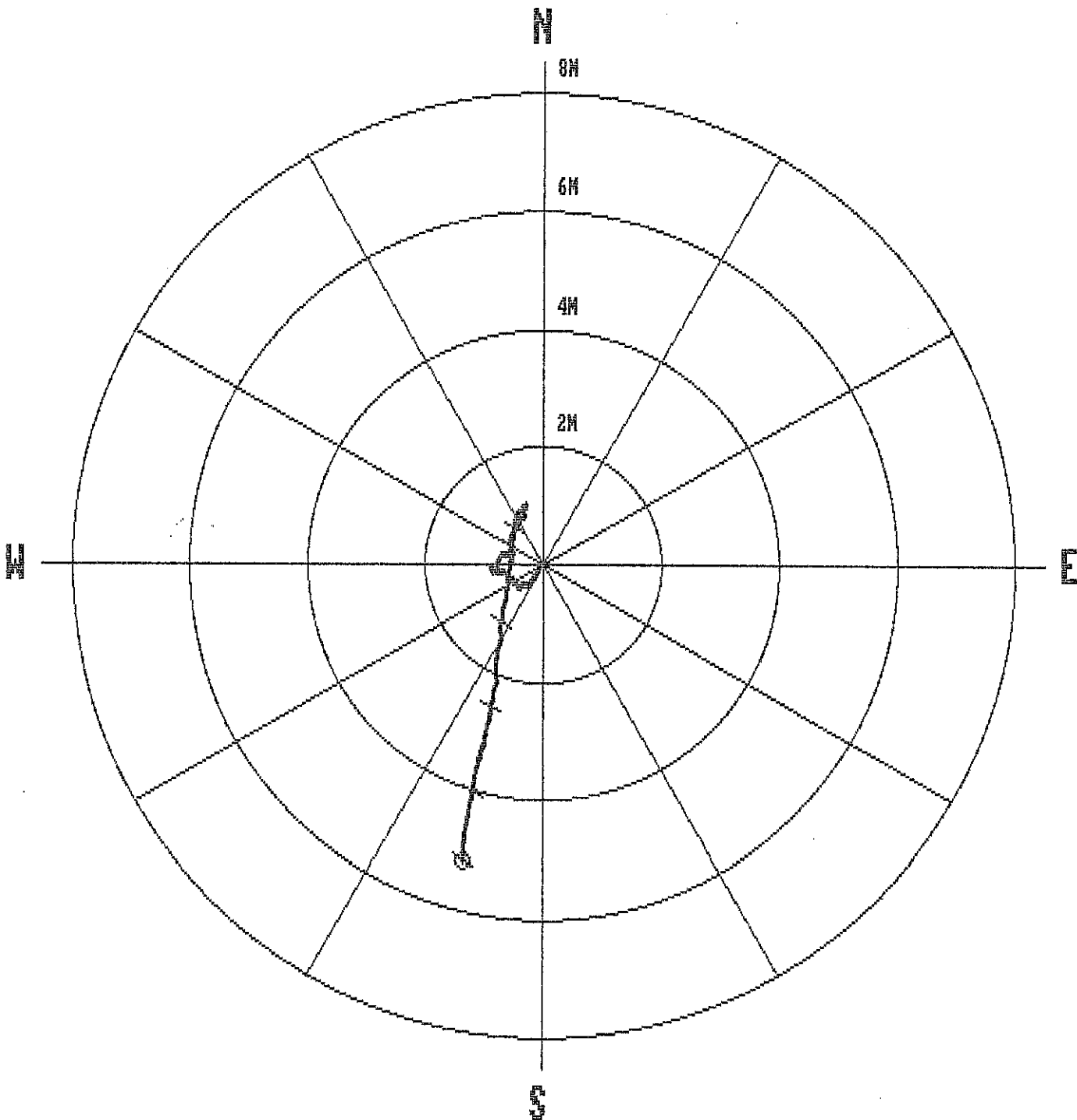
PLAN VIEW

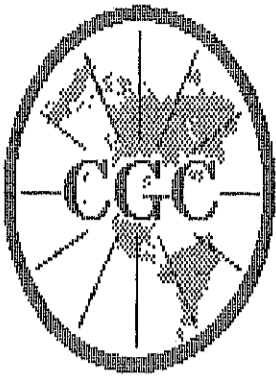
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96160
 DATE OF LOG: 09/07/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 15.44 M
 AZIMUTH: 195.1
 DISTANCE: 5.2 M
 + = 2 M INCR
 O = BOTTOM OF HOLE



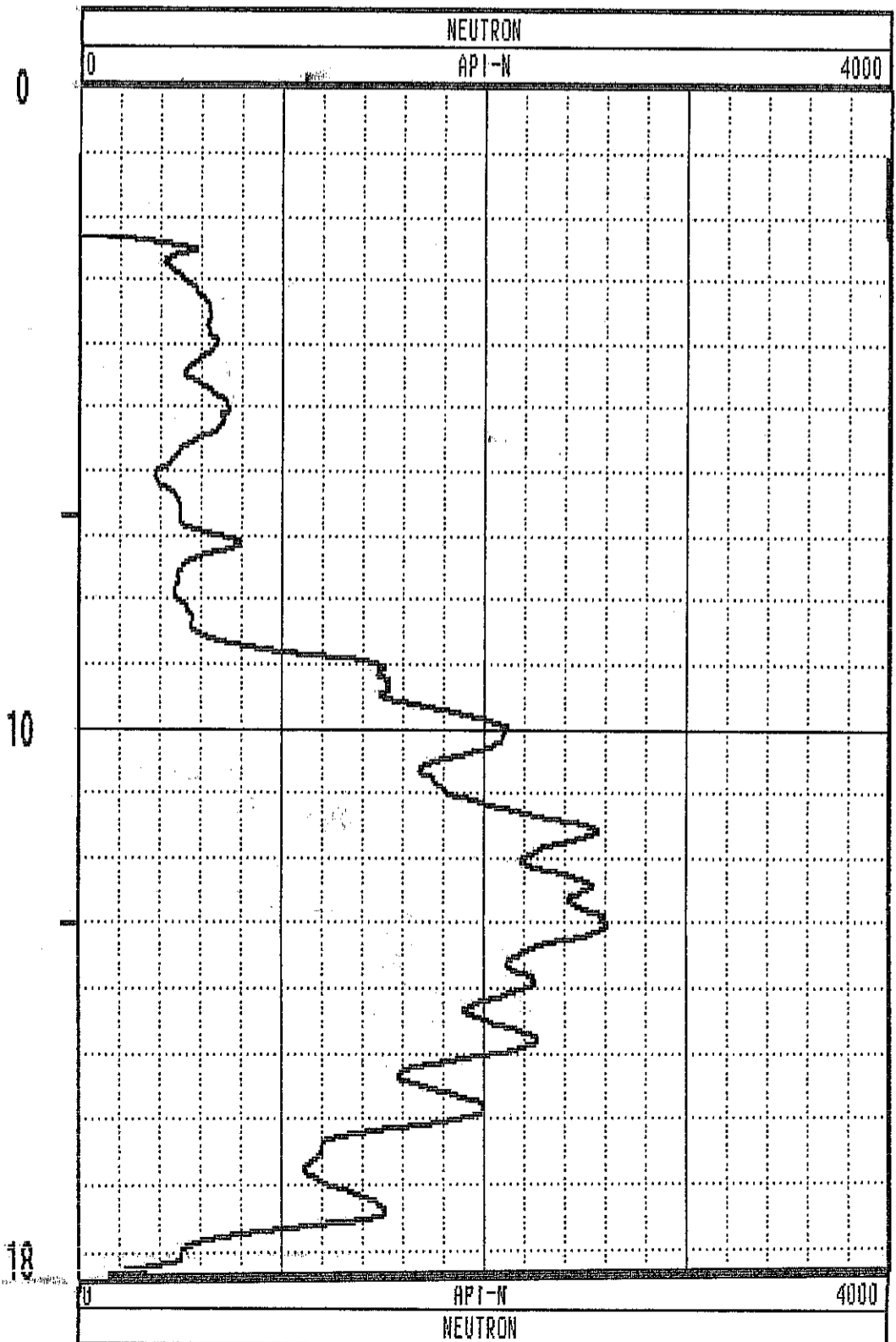
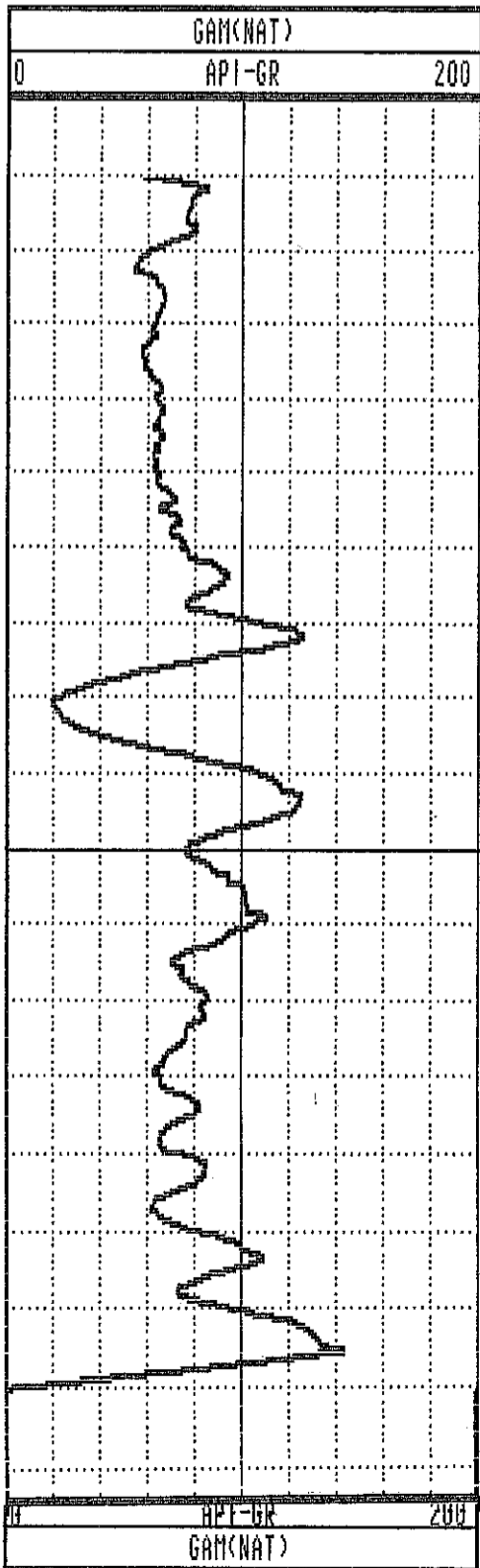


Century GEOPHYSICAL CORP.

WRH-96160

| | | | | | |
|-------------------|--------------------|--------------------|----------------|------------|------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | | | |
| WELL | : WRH-96160 | | | | |
| LOCATION/FIELD | : WILLOW CREEK | | | | |
| COUNTY | : | | | | |
| STATE | : BRITISH COLUMBIA | | | | |
| SECTION | : | TOWNSHIP | : | RANGE | : |
| DATE | : 09/07/96 | PERMANENT DATUM | : | ELEVATIONS | |
| DEPTH DRILLER | : 18 | ELEV. PERM. DATUM: | | KB | : |
| LOG BOTTOM | : 18.39 | LOG MEASURED FROM: | G. L. | DF | : |
| LOG TOP | : 1.07 | DRL MEASURED FROM: | | GL | : |
| CASING DRILLER | : 3 | LOGGING UNIT. | : 9612 | | |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. | | |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS | | |
| BIT SIZE | : | BOREHOLE FLUID | : WATER | FILE | : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : | TYPE | : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG | : 5 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT | : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH: | 10000 |
| REMARKS | : | | | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96160

COMPANY : PINE VALLEY COAL
 WELL : WRH-96160
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

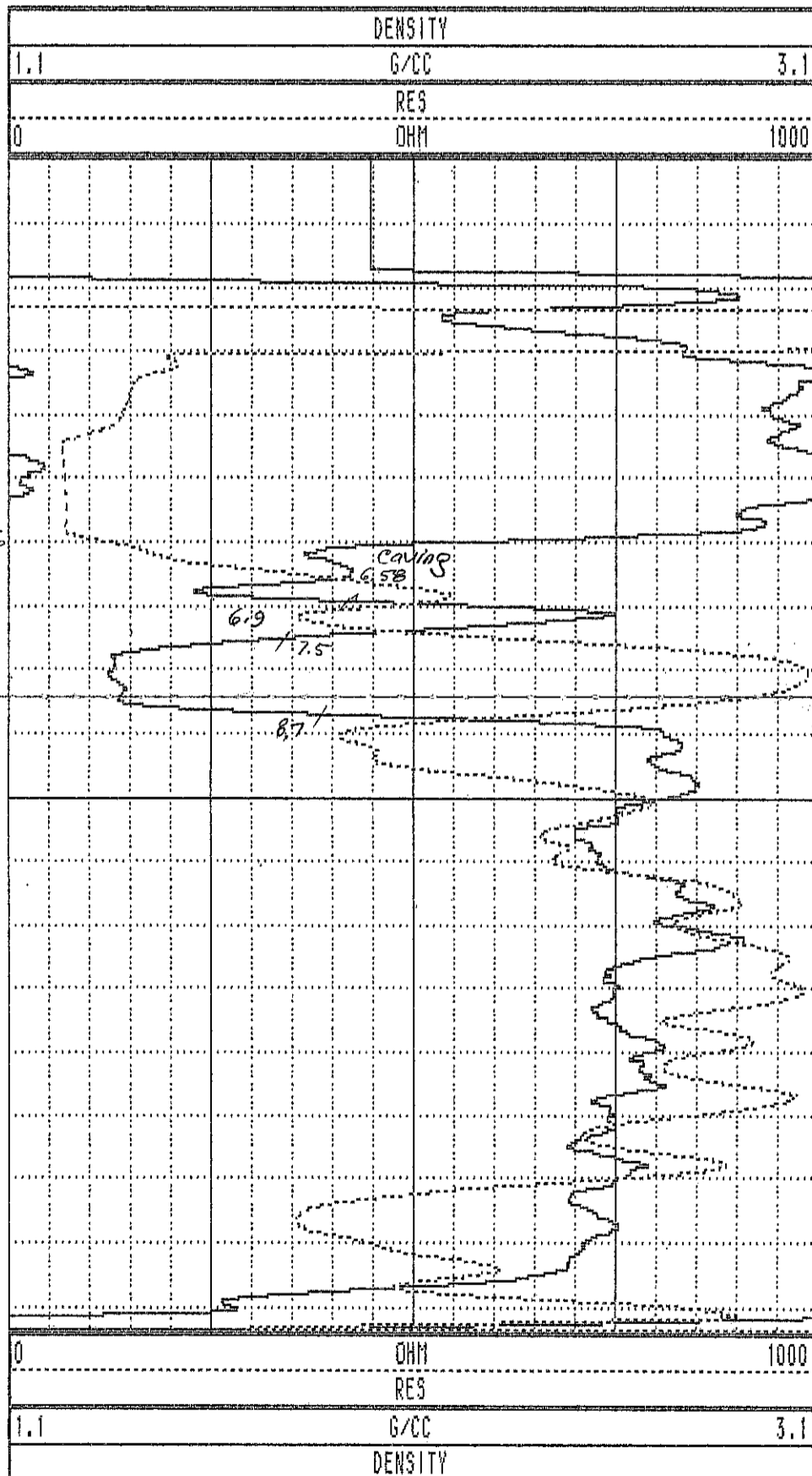
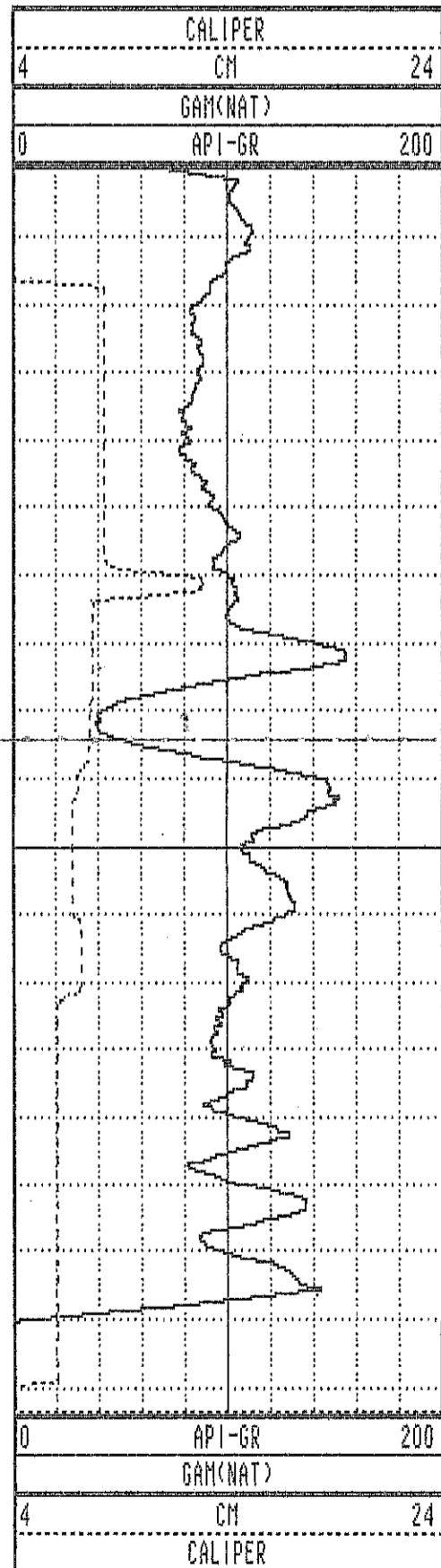
OTHER SERVICES:

DATE : 09/07/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 18 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 18.40 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96160 09/07/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

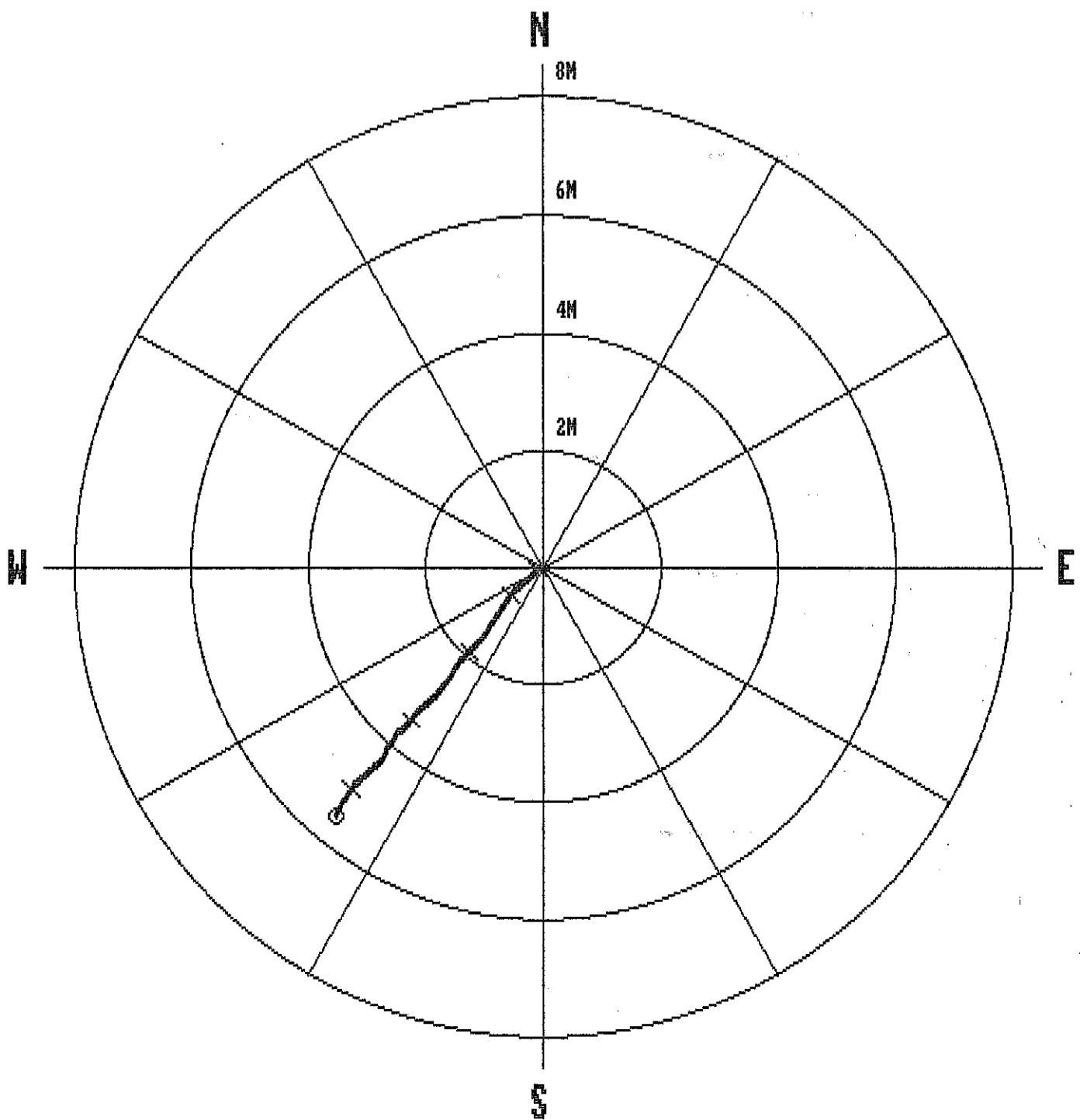
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.00 | 0.0 | 11.7 | 1.0 | 333.6 |
| 4.0 | 4.00 | 0.00 | -0.03 | 0.0 | 274.9 | 2.2 | 255.7 |
| 5.0 | 5.00 | -0.02 | -0.07 | 0.1 | 254.1 | 3.2 | 251.2 |
| 6.0 | 6.00 | -0.07 | -0.12 | 0.1 | 239.1 | 5.0 | 197.9 |
| 7.0 | 6.99 | -0.14 | -0.20 | 0.2 | 235.5 | 6.3 | 221.2 |
| 8.0 | 7.98 | -0.23 | -0.29 | 0.4 | 231.8 | 8.8 | 230.2 |
| 9.0 | 8.97 | -0.34 | -0.41 | 0.5 | 230.8 | 9.6 | 238.4 |
| 10.0 | 9.95 | -0.45 | -0.53 | 0.7 | 229.7 | 10.5 | 217.0 |
| 11.0 | 10.94 | -0.60 | -0.64 | 0.9 | 226.6 | 11.6 | 212.8 |
| 12.0 | 11.91 | -0.78 | -0.75 | 1.1 | 224.0 | 12.8 | 214.2 |
| 13.0 | 12.88 | -0.98 | -0.89 | 1.3 | 222.2 | 13.3 | 204.7 |
| 14.0 | 13.85 | -1.20 | -1.03 | 1.6 | 220.6 | 15.3 | 221.8 |
| 15.0 | 14.81 | -1.40 | -1.22 | 1.9 | 221.1 | 17.5 | 234.0 |
| 16.0 | 15.76 | -1.61 | -1.40 | 2.1 | 221.1 | 17.4 | 191.4 |
| 17.0 | 16.72 | -1.85 | -1.56 | 2.4 | 220.2 | 17.4 | 193.3 |
| 18.0 | 17.67 | -2.09 | -1.73 | 2.7 | 219.7 | 17.8 | 234.5 |
| 19.0 | 18.62 | -2.30 | -1.94 | 3.0 | 220.2 | 17.9 | 235.2 |
| 20.0 | 19.57 | -2.50 | -2.16 | 3.3 | 220.8 | 17.8 | 228.7 |
| 21.0 | 20.53 | -2.73 | -2.35 | 3.6 | 220.8 | 17.9 | 214.3 |
| 22.0 | 21.48 | -2.93 | -2.55 | 3.9 | 221.0 | 18.0 | 205.8 |
| 23.0 | 22.43 | -3.18 | -2.70 | 4.2 | 220.4 | 18.7 | 167.0 |
| 24.0 | 23.37 | -3.40 | -2.88 | 4.5 | 220.2 | 19.6 | 219.4 |
| 25.0 | 24.32 | -3.62 | -3.12 | 4.8 | 220.7 | 18.2 | 218.9 |
| 26.0 | 25.27 | -3.84 | -3.32 | 5.1 | 220.8 | 18.5 | 232.7 |
| 27.0 | 26.21 | -4.12 | -3.47 | 5.4 | 220.1 | 19.7 | 186.4 |
| 27.3 | 26.54 | -4.22 | -3.53 | 5.5 | 219.9 | 19.7 | 209.2 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96163
 DATE OF LOG: 10/01/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 26.54 M
 AZIMUTH: 219.9
 DISTANCE: 5.5 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : MRH-96163
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

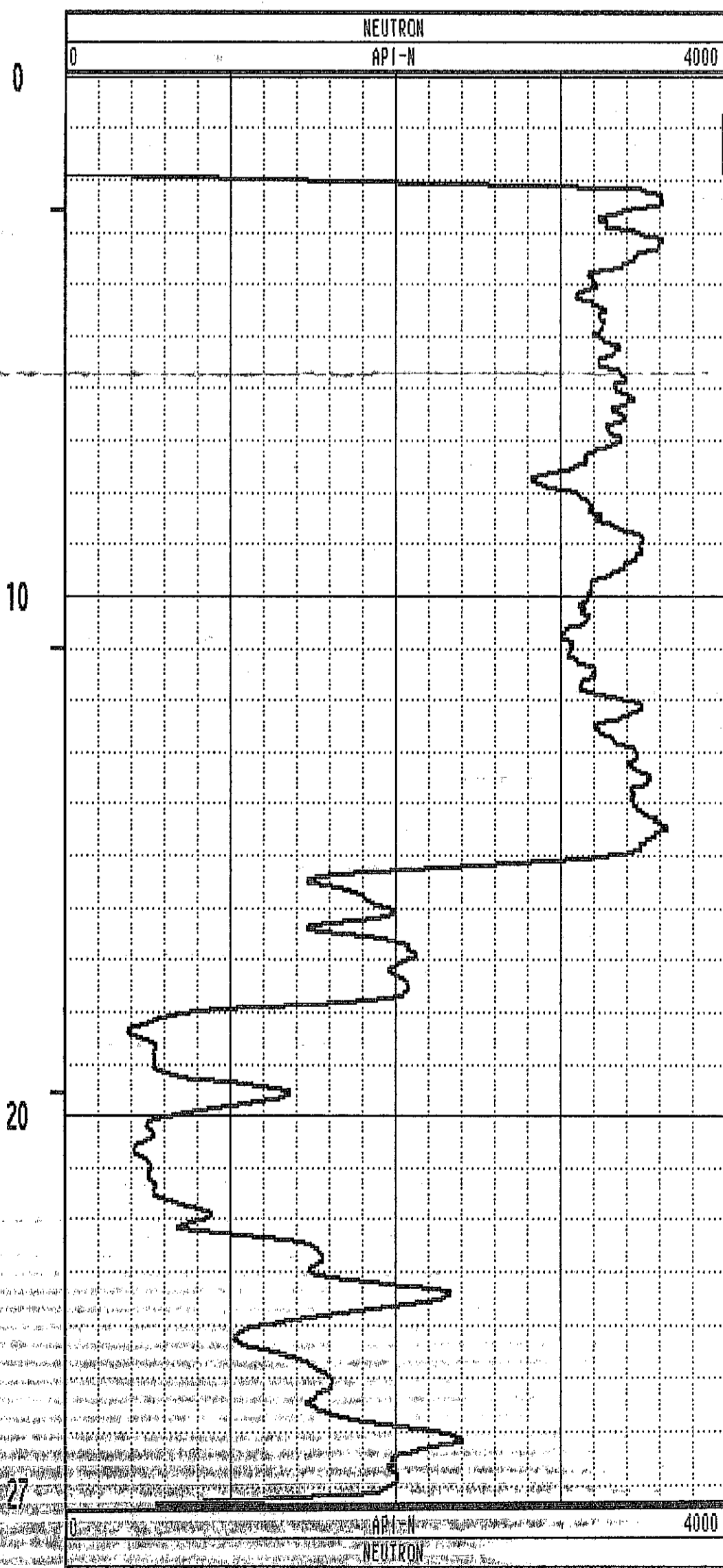
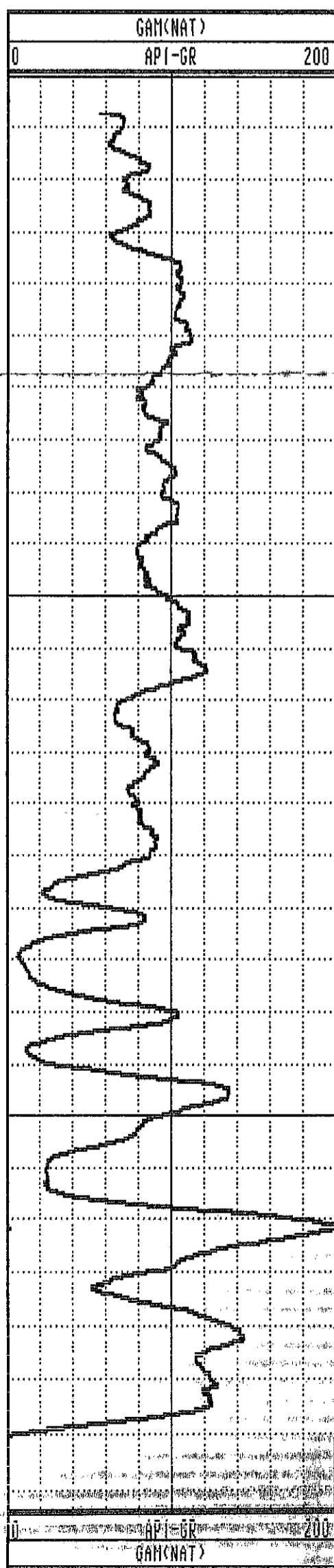
OTHER SERVICES:

DATE : 10/01/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 27.40 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.76 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 4
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

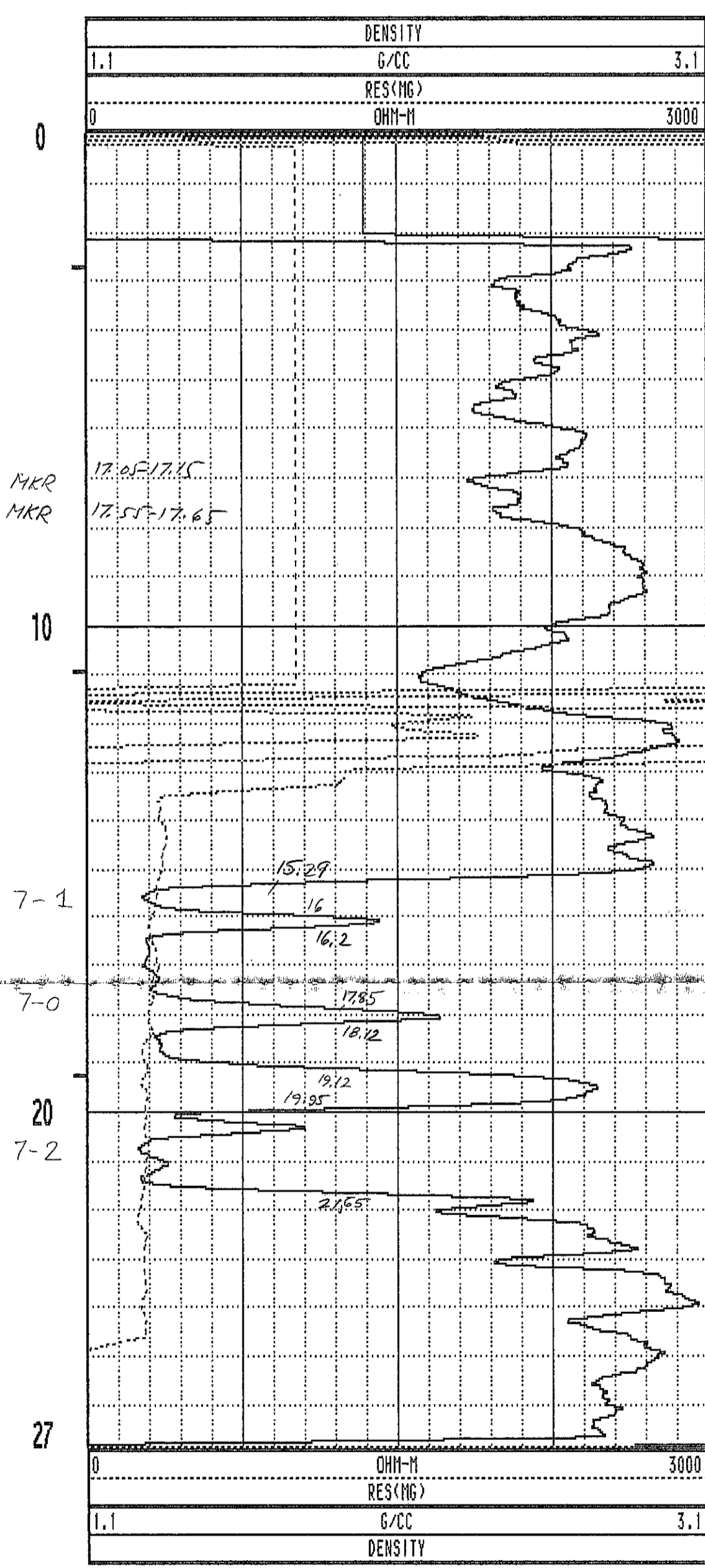
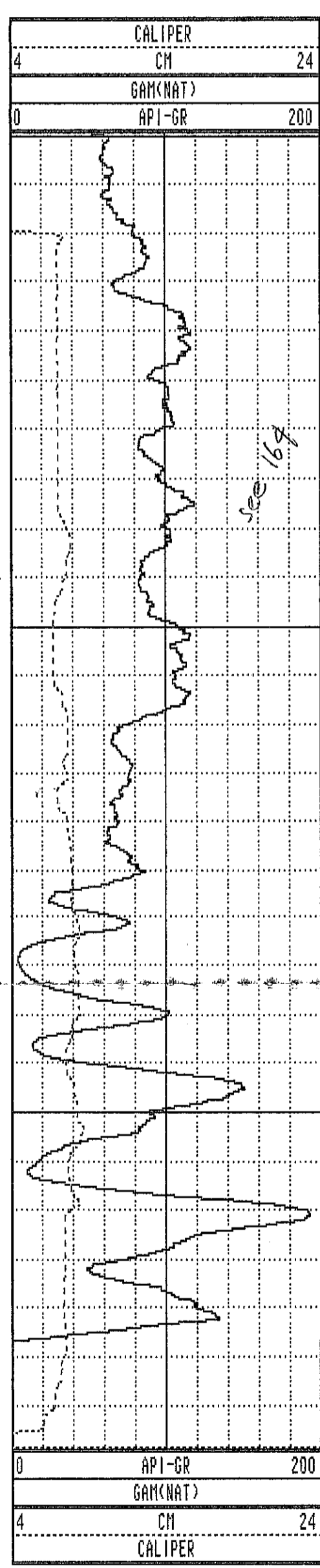
COMPANY : PINE VALLEY COAL
 WELL : WRH-96163
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 26.90 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96163 10/01/96 958

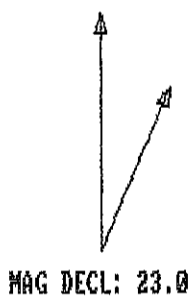
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|-----------|----------|-------------|--------------|--------------|
| 0 | NOV 10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV 10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL 19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL 19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL 20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL 20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL 18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.106 OHM-M |
| 7 | JUL 18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV 13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 17.800 CM |
| 9 | NOV 13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV 10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV 10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV 15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV 15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

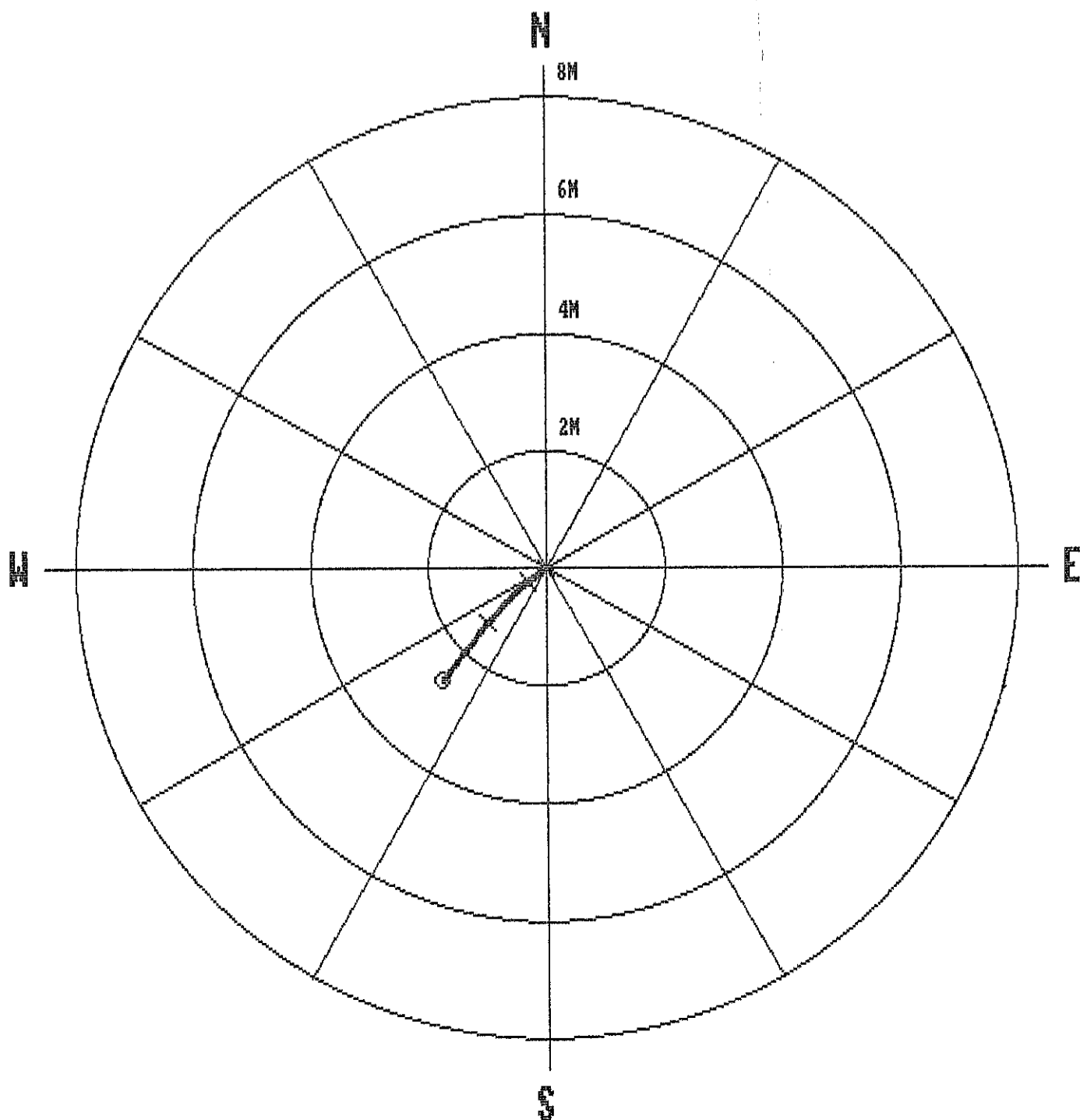
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 9.4 | 0.7 | 81.0 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 252.4 | 0.1 | 351.0 |
| 4.0 | 4.00 | -0.00 | -0.00 | 0.0 | 221.8 | 0.2 | 156.4 |
| 5.0 | 5.00 | -0.00 | -0.00 | 0.0 | 225.8 | 0.3 | 216.2 |
| 6.0 | 6.00 | -0.02 | -0.02 | 0.0 | 230.2 | 1.8 | 233.8 |
| 7.0 | 7.00 | -0.05 | -0.05 | 0.1 | 229.5 | 3.0 | 223.4 |
| 8.0 | 8.00 | -0.09 | -0.11 | 0.1 | 230.8 | 5.2 | 230.5 |
| 9.0 | 8.99 | -0.16 | -0.19 | 0.3 | 231.0 | 6.8 | 233.8 |
| 10.0 | 9.98 | -0.24 | -0.30 | 0.4 | 231.8 | 8.4 | 238.8 |
| 11.0 | 10.97 | -0.34 | -0.42 | 0.5 | 231.3 | 9.5 | 230.9 |
| 12.0 | 11.95 | -0.45 | -0.55 | 0.7 | 230.7 | 10.3 | 230.9 |
| 13.0 | 12.93 | -0.59 | -0.68 | 0.9 | 229.0 | 12.0 | 231.9 |
| 14.0 | 13.91 | -0.75 | -0.82 | 1.1 | 227.7 | 12.5 | 200.3 |
| 15.0 | 14.88 | -0.92 | -0.98 | 1.3 | 226.8 | 13.7 | 221.3 |
| 16.0 | 15.85 | -1.11 | -1.13 | 1.6 | 225.7 | 15.0 | 226.5 |
| 17.0 | 16.82 | -1.32 | -1.28 | 1.8 | 224.0 | 15.9 | 219.5 |
| 18.0 | 17.78 | -1.53 | -1.45 | 2.1 | 223.5 | 16.4 | 221.5 |
| 19.0 | 18.73 | -1.74 | -1.62 | 2.4 | 223.0 | 16.9 | 178.8 |
| 19.8 | 19.48 | -1.93 | -1.76 | 2.6 | 222.4 | 17.8 | 220.6 |

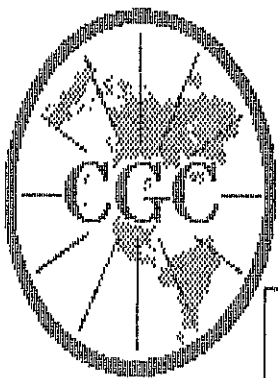
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96164
 DATE OF LOG: 10/01/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 19.48 M
 AZIMUTH: 222.4
 DISTANCE: 2.6 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

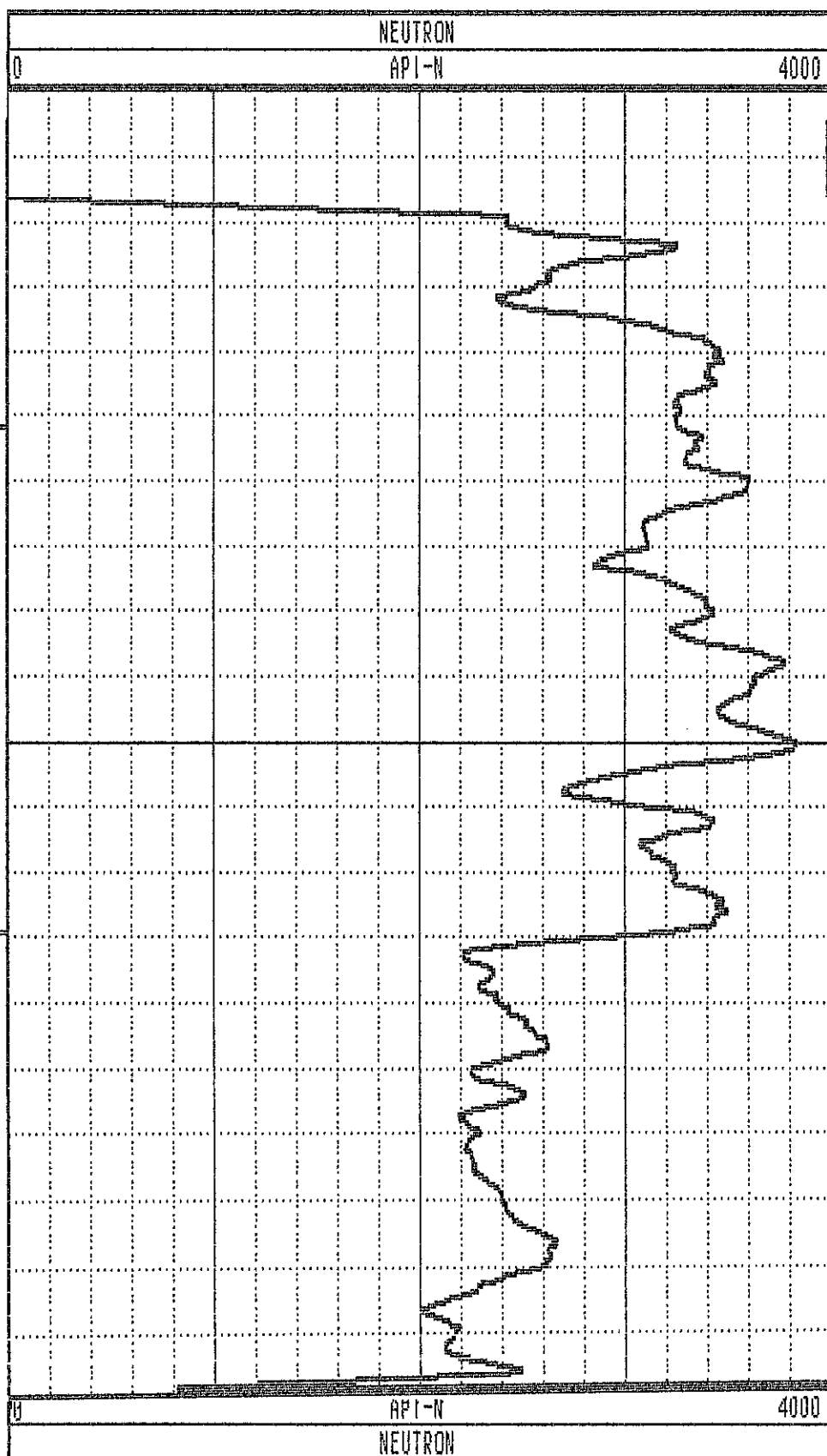
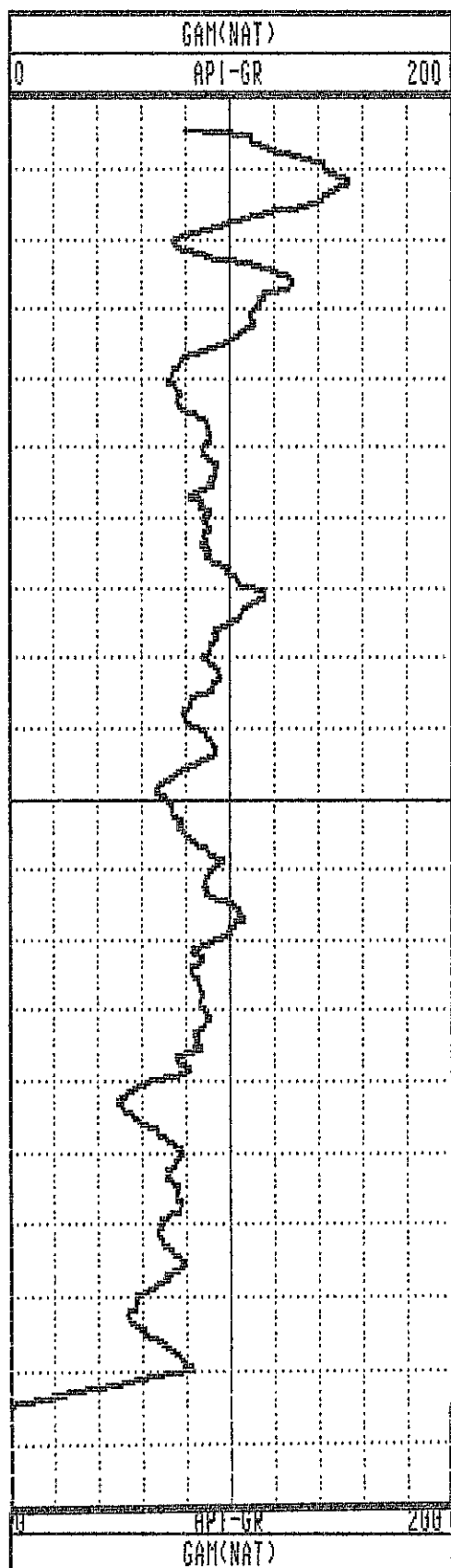
COMPANY : PINE VALLEY COAL
 WELL : WRH-96164
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/01/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 19.84 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.46 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 7
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

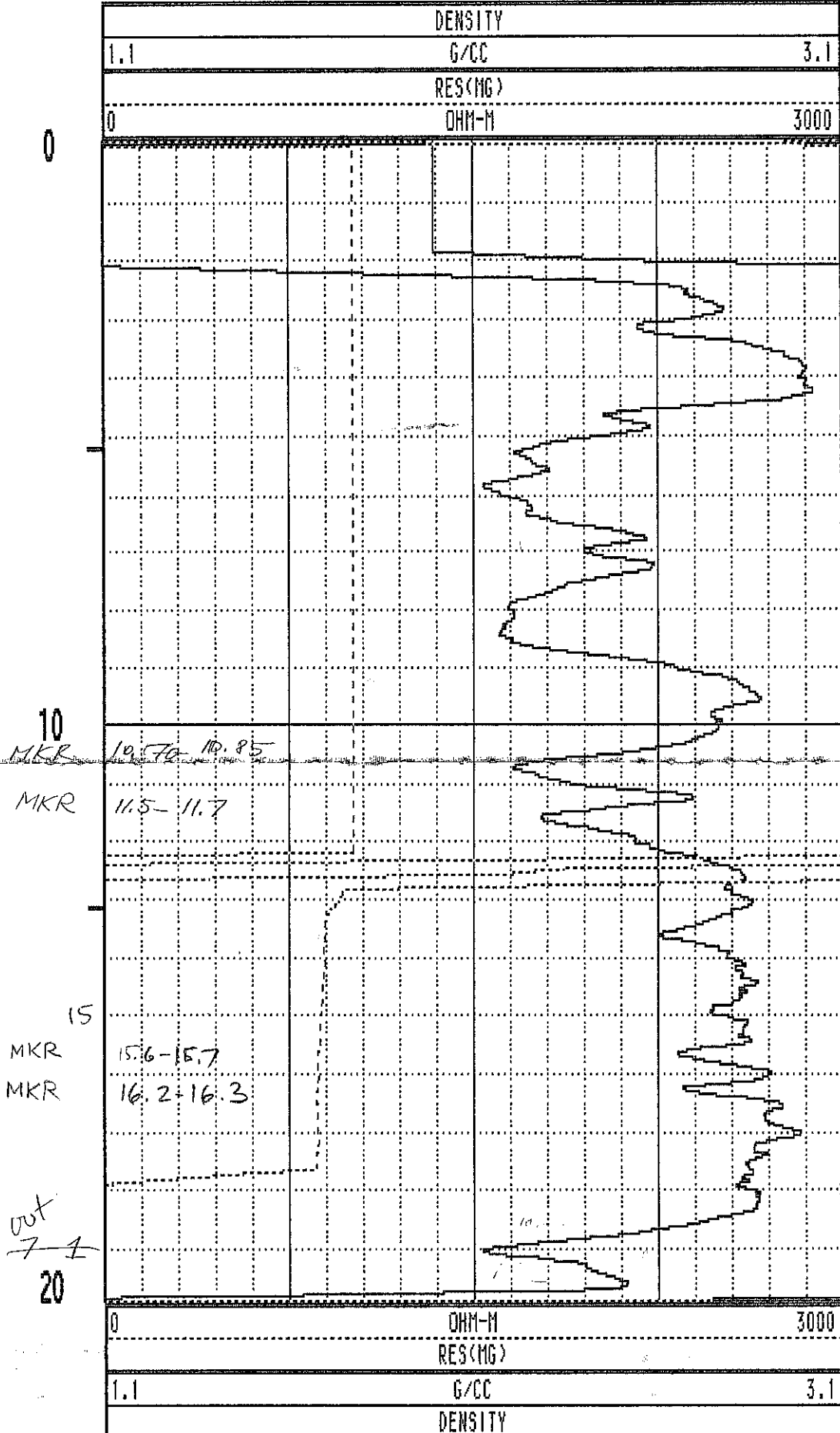
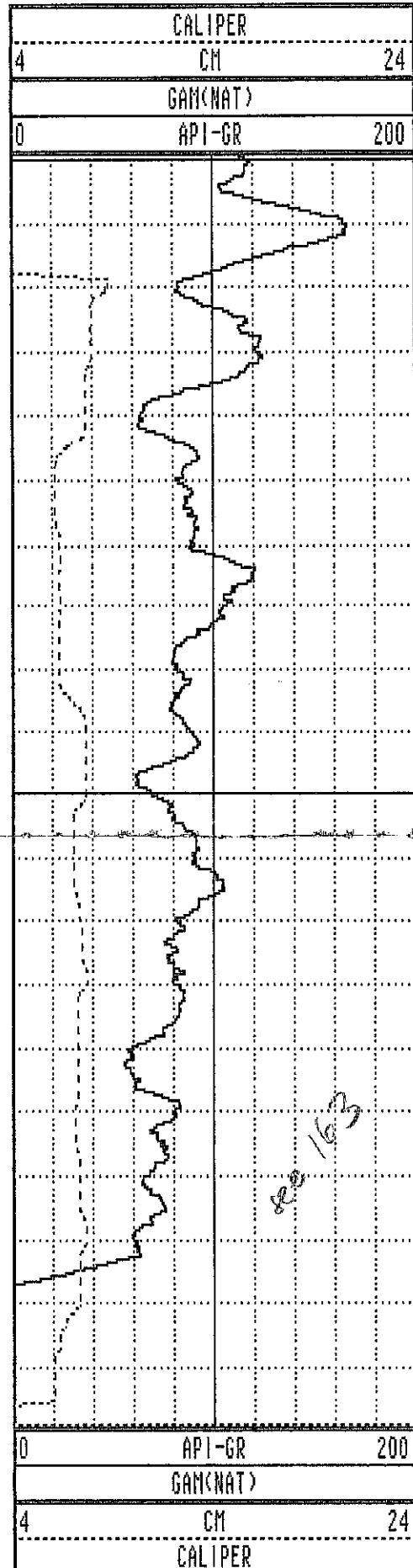
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96164 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/01/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 19.94 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.20 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 6 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96164 10/01/96 958

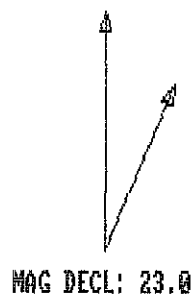
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|-------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 2106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 DHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 DHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 5.100 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

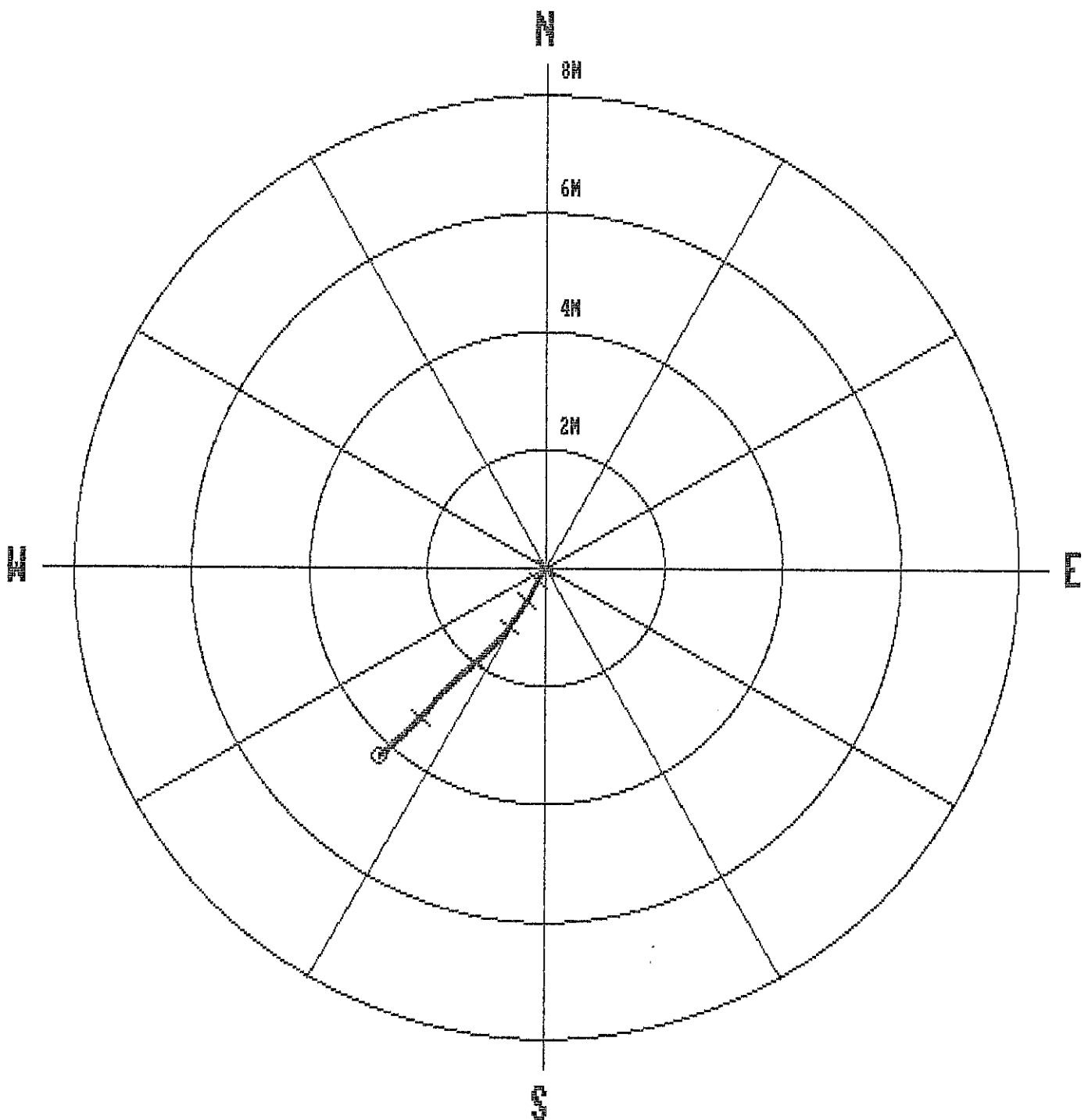
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.02 | -0.01 | 0.0 | 341.5 | 1.8 | 311.1 |
| 4.0 | 4.00 | 0.00 | 0.01 | 0.0 | 73.6 | 1.6 | 174.4 |
| 5.0 | 5.00 | 0.00 | 0.01 | 0.0 | 60.8 | 2.4 | 166.3 |
| 6.0 | 6.00 | -0.03 | -0.00 | 0.0 | 188.4 | 2.6 | 195.7 |
| 7.0 | 7.00 | -0.07 | -0.03 | 0.1 | 204.1 | 2.9 | 200.5 |
| 8.0 | 7.99 | -0.12 | -0.06 | 0.1 | 206.6 | 3.0 | 225.4 |
| 9.0 | 8.99 | -0.16 | -0.09 | 0.2 | 209.9 | 3.4 | 200.2 |
| 10.0 | 9.99 | -0.22 | -0.12 | 0.2 | 208.6 | 3.3 | 204.6 |
| 11.0 | 10.99 | -0.27 | -0.16 | 0.3 | 210.1 | 3.7 | 216.1 |
| 12.0 | 11.99 | -0.33 | -0.19 | 0.4 | 209.2 | 4.3 | 207.7 |
| 13.0 | 12.98 | -0.40 | -0.23 | 0.5 | 209.4 | 4.6 | 209.0 |
| 14.0 | 13.98 | -0.48 | -0.26 | 0.5 | 208.4 | 4.7 | 203.2 |
| 15.0 | 14.98 | -0.56 | -0.30 | 0.6 | 208.5 | 5.2 | 208.7 |
| 16.0 | 15.97 | -0.63 | -0.35 | 0.7 | 209.0 | 5.1 | 219.8 |
| 17.0 | 16.97 | -0.71 | -0.40 | 0.8 | 209.7 | 5.8 | 214.2 |
| 18.0 | 17.96 | -0.80 | -0.46 | 0.9 | 210.3 | 5.7 | 208.1 |
| 19.0 | 18.95 | -0.88 | -0.53 | 1.0 | 211.2 | 7.2 | 224.9 |
| 20.0 | 19.95 | -0.99 | -0.60 | 1.2 | 211.5 | 8.4 | 205.2 |
| 21.0 | 20.94 | -1.10 | -0.69 | 1.3 | 211.9 | 8.4 | 220.1 |
| 22.0 | 21.93 | -1.22 | -0.78 | 1.4 | 212.6 | 9.3 | 226.8 |
| 23.0 | 22.91 | -1.33 | -0.89 | 1.6 | 213.9 | 9.5 | 220.1 |
| 24.0 | 23.90 | -1.45 | -1.01 | 1.8 | 214.9 | 10.5 | 222.4 |
| 25.0 | 24.88 | -1.58 | -1.15 | 2.0 | 216.1 | 11.5 | 230.0 |
| 26.0 | 25.86 | -1.72 | -1.30 | 2.2 | 217.2 | 12.8 | 222.0 |
| 27.0 | 26.83 | -1.88 | -1.48 | 2.4 | 218.3 | 13.9 | 221.6 |
| 28.0 | 27.79 | -2.05 | -1.66 | 2.6 | 219.0 | 15.6 | 232.2 |
| 29.0 | 28.76 | -2.25 | -1.85 | 2.9 | 219.5 | 16.3 | 222.9 |
| 30.0 | 29.71 | -2.47 | -2.05 | 3.2 | 219.7 | 17.5 | 221.5 |
| 31.0 | 30.66 | -2.69 | -2.25 | 3.5 | 220.0 | 18.5 | 232.6 |
| 32.0 | 31.61 | -2.90 | -2.48 | 3.8 | 220.5 | 18.7 | 219.7 |
| 33.0 | 32.56 | -3.12 | -2.72 | 4.1 | 221.1 | 19.2 | 236.5 |
| 33.3 | 32.84 | -3.18 | -2.79 | 4.2 | 221.3 | 19.6 | 231.6 |

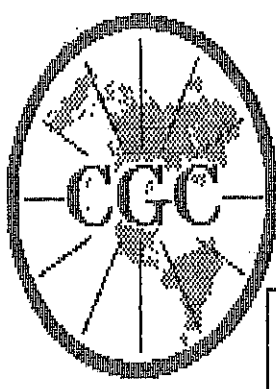
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96165
 DATE OF LOG: 09/09/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 32.84 M
 AZIMUTH: 221.3
 DISTANCE: 4.2 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96165
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/09/96
DEPTH DRILLER : 32
LOG BOTTOM : 33.35
LOG TOP : 0.80

PERMANENT DATUM :
ELEV. PERM. DATUM:
LOG MEASURED FROM: G.L.
DRL MEASURED FROM:

ELEVATIONS
KB :
DF :
GL :

CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS: .25

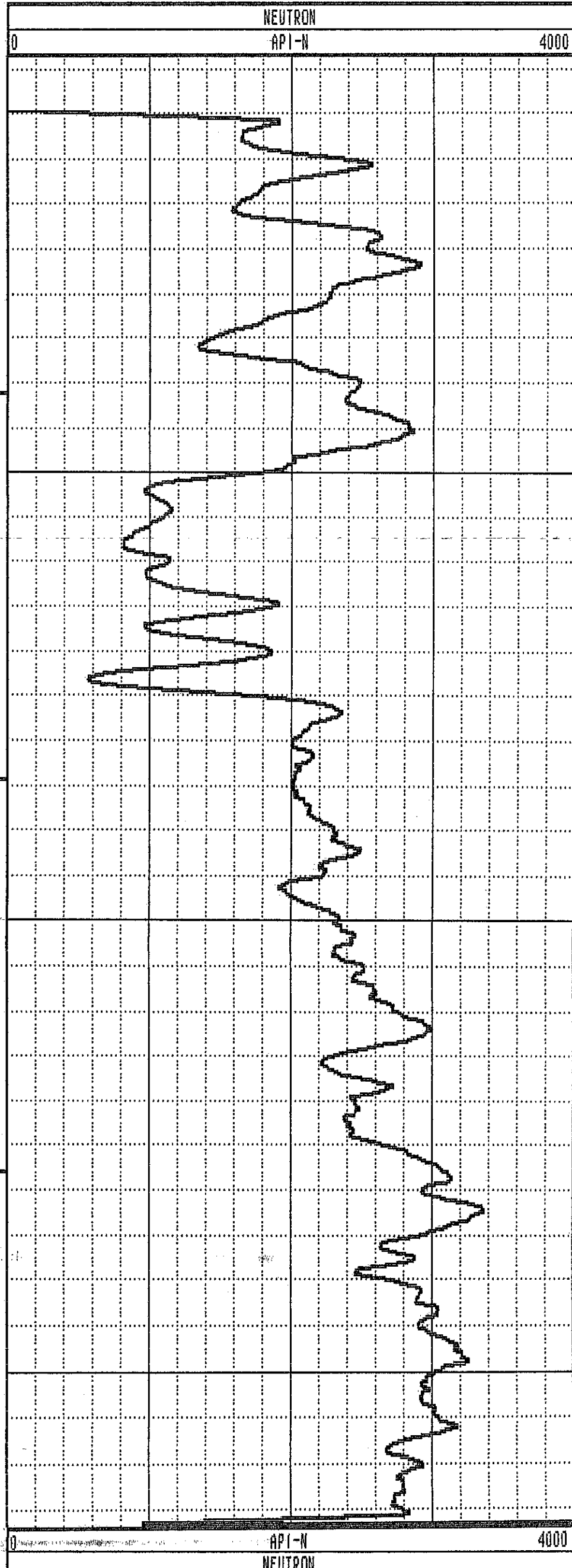
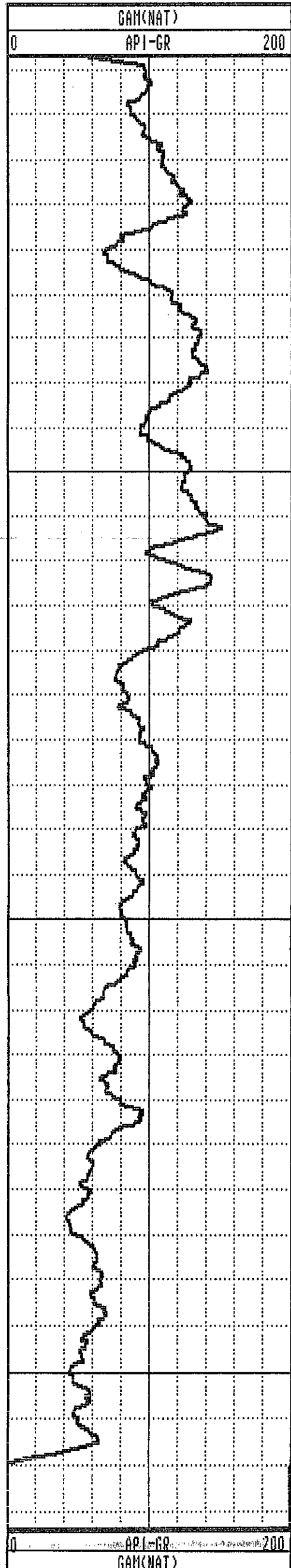
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23.000
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : ORIGINAL
TYPE : 9055A
LOG : 2
PLOT : PINE 4
THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

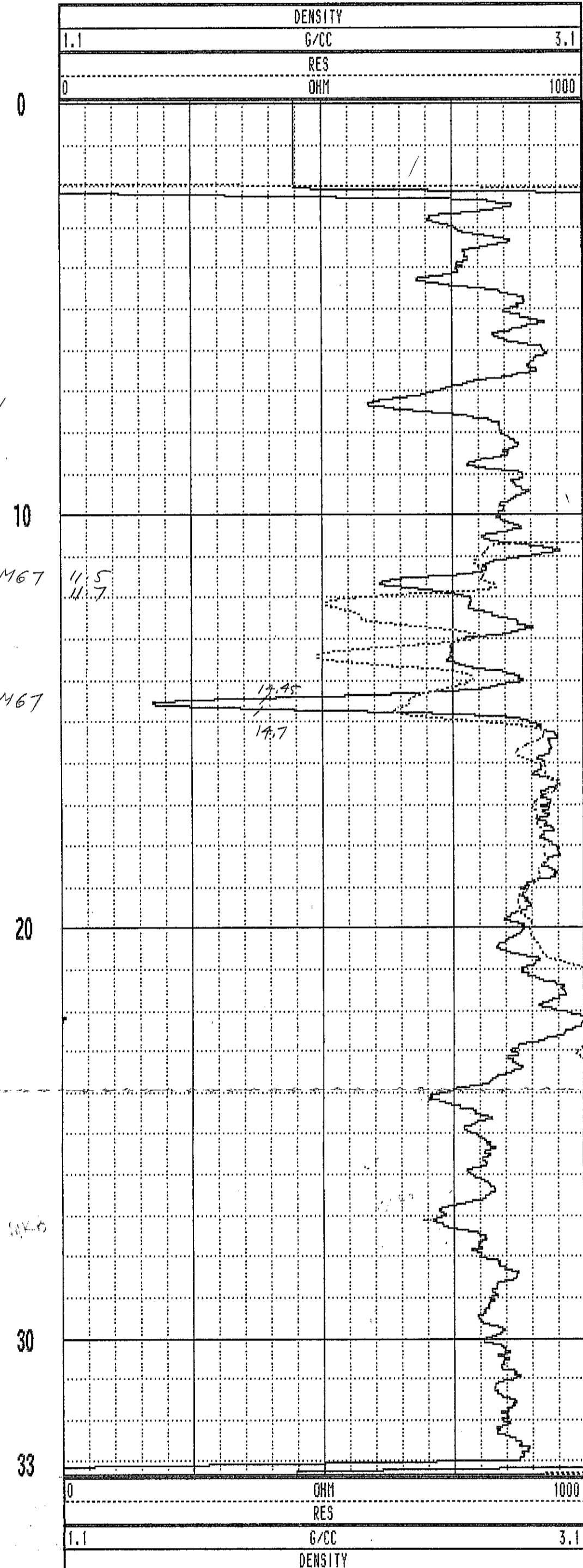
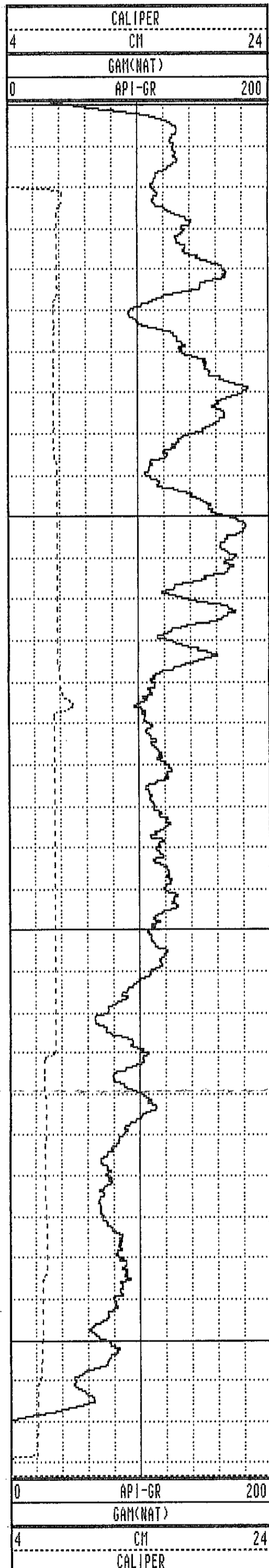
COMPANY : PINE VALLEY COAL
 WELL : MRH-96165
 LOCATION/FIELD : MILLON CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/09/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 33 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 33.36 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



MRH-96165 09/09/96 958

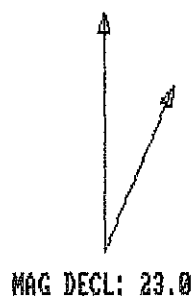
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

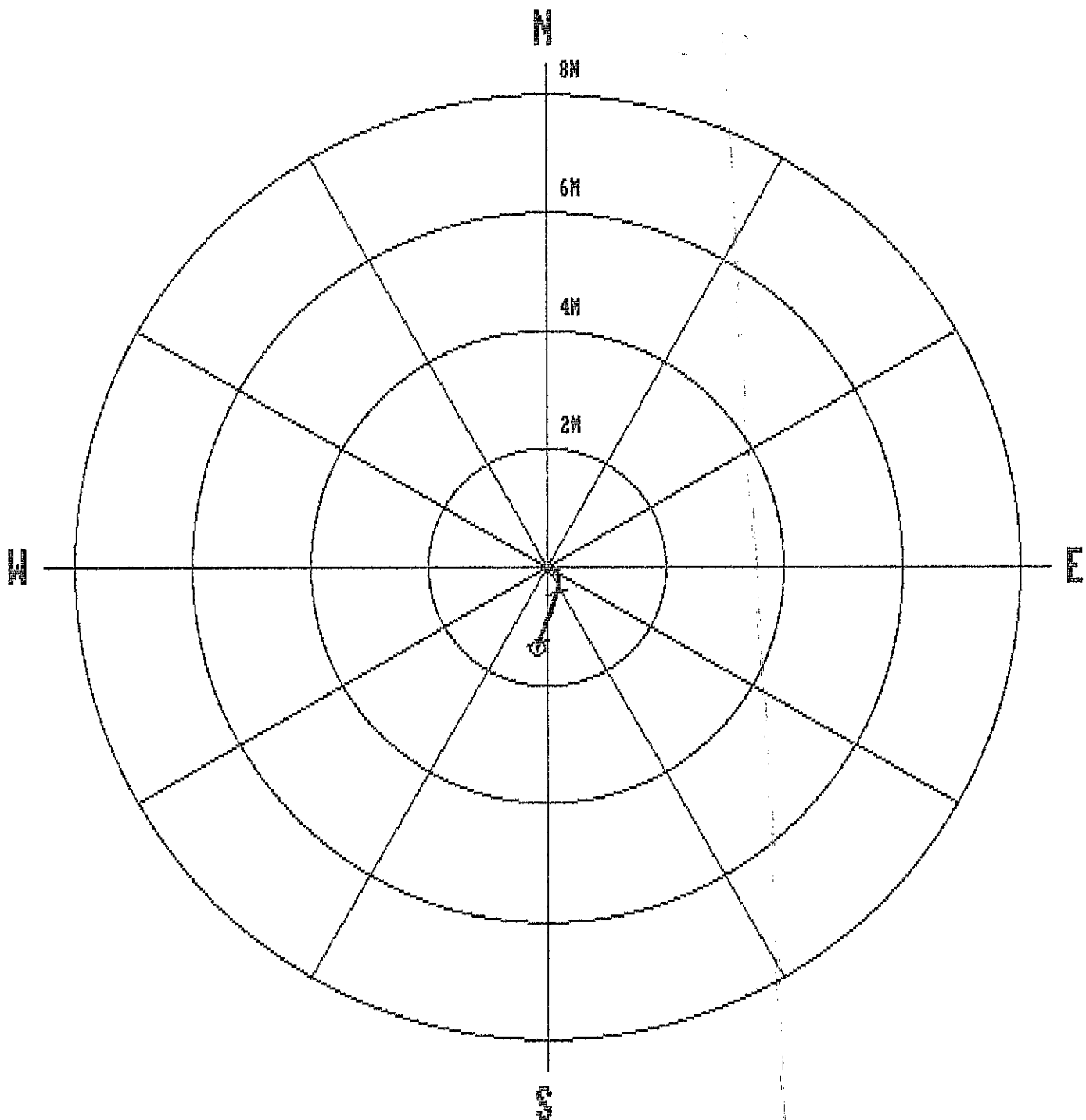
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | 0.01 | 0.0 | 107.0 | 1.1 | 88.6 |
| 4.0 | 4.00 | 0.01 | 0.03 | 0.0 | 65.2 | 1.8 | 10.6 |
| 5.0 | 5.00 | 0.03 | 0.05 | 0.1 | 62.6 | 1.3 | 84.4 |
| 6.0 | 6.00 | 0.02 | 0.07 | 0.1 | 72.7 | 1.2 | 127.5 |
| 7.0 | 7.00 | 0.00 | 0.08 | 0.1 | 88.9 | 1.4 | 133.2 |
| 8.0 | 8.00 | -0.02 | 0.10 | 0.1 | 100.0 | 1.6 | 125.8 |
| 9.0 | 9.00 | -0.04 | 0.12 | 0.1 | 107.7 | 1.6 | 125.6 |
| 10.0 | 10.00 | -0.06 | 0.15 | 0.2 | 111.7 | 0.7 | 146.0 |
| 11.0 | 11.00 | -0.07 | 0.16 | 0.2 | 113.9 | 1.2 | 141.6 |
| 12.0 | 12.00 | -0.08 | 0.17 | 0.2 | 115.7 | 1.4 | 138.1 |
| 13.0 | 13.00 | -0.10 | 0.19 | 0.2 | 118.8 | 1.4 | 169.6 |
| 14.0 | 14.00 | -0.13 | 0.19 | 0.2 | 123.4 | 2.2 | 165.3 |
| 15.0 | 15.00 | -0.17 | 0.20 | 0.3 | 129.6 | 2.5 | 168.6 |
| 16.0 | 15.99 | -0.21 | 0.20 | 0.3 | 136.4 | 2.6 | 177.9 |
| 17.0 | 16.99 | -0.26 | 0.20 | 0.3 | 142.7 | 3.0 | 174.1 |
| 18.0 | 17.99 | -0.32 | 0.19 | 0.4 | 148.8 | 3.3 | 187.0 |
| 19.0 | 18.99 | -0.38 | 0.18 | 0.4 | 154.4 | 3.5 | 208.3 |
| 20.0 | 19.99 | -0.44 | 0.17 | 0.5 | 159.2 | 4.3 | 191.6 |
| 21.0 | 20.99 | -0.50 | 0.15 | 0.5 | 163.9 | 4.1 | 205.0 |
| 22.0 | 21.98 | -0.58 | 0.12 | 0.6 | 168.3 | 5.3 | 198.2 |
| 23.0 | 22.98 | -0.66 | 0.09 | 0.7 | 172.2 | 5.0 | 202.2 |
| 24.0 | 23.97 | -0.74 | 0.06 | 0.7 | 175.1 | 4.9 | 203.9 |
| 25.0 | 24.97 | -0.82 | 0.04 | 0.8 | 177.5 | 5.1 | 188.4 |
| 26.0 | 25.97 | -0.89 | 0.00 | 0.9 | 179.7 | 4.6 | 207.7 |
| 27.0 | 26.96 | -0.97 | -0.03 | 1.0 | 181.7 | 5.0 | 172.3 |
| 28.0 | 27.96 | -1.07 | -0.07 | 1.1 | 183.6 | 6.4 | 198.1 |
| 29.0 | 28.95 | -1.16 | -0.10 | 1.2 | 185.1 | 5.5 | 200.6 |
| 30.0 | 29.95 | -1.25 | -0.13 | 1.3 | 186.1 | 5.3 | 193.4 |
| 30.8 | 30.76 | -1.33 | -0.16 | 1.3 | 186.8 | 6.0 | 196.2 |

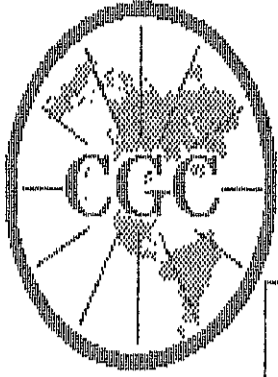
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96166
 DATE OF LOG: 09/09/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 30.76 M
 AZIMUTH: 186.8
 DISTANCE: 1.3 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



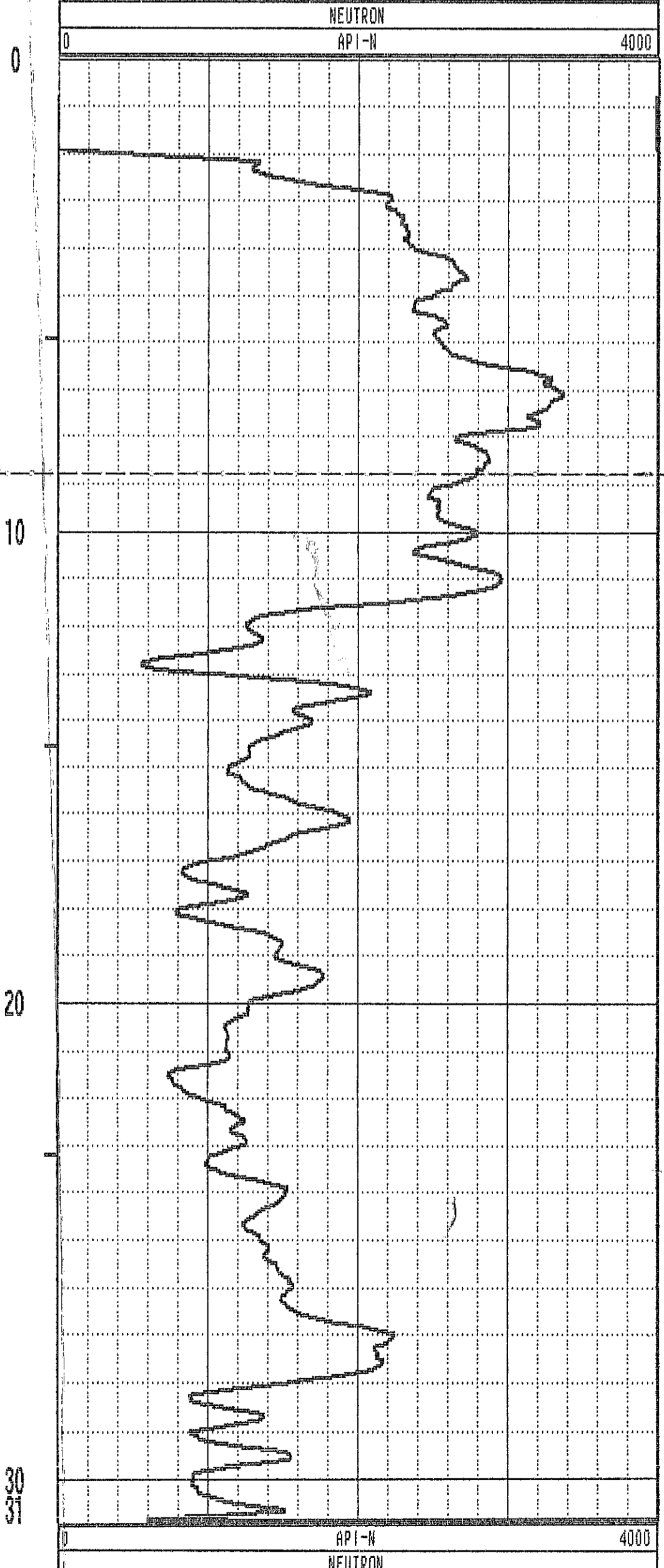
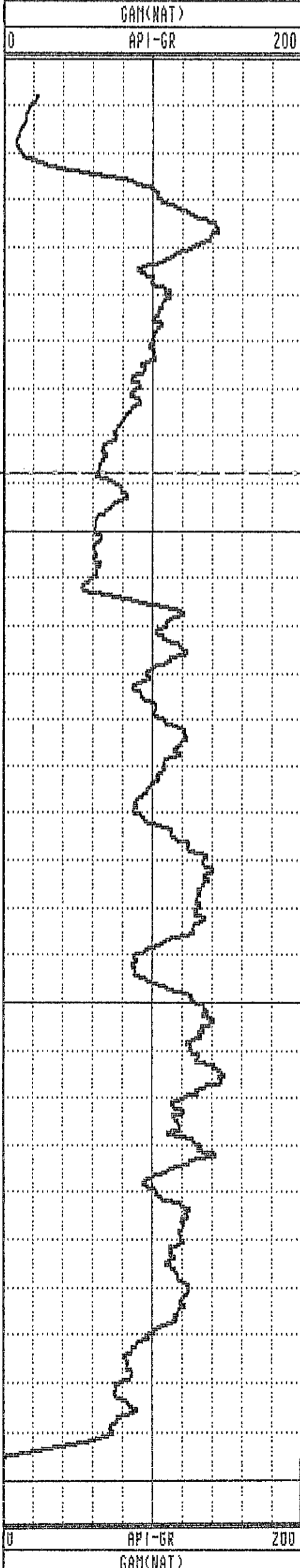


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|------------------|--------------------|-------------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96166 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/09/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 30.88 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.80 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 8 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

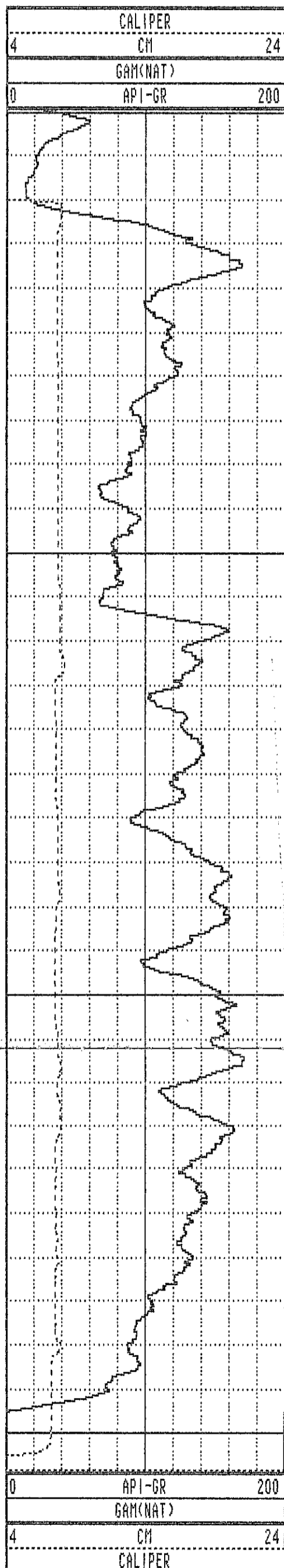
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



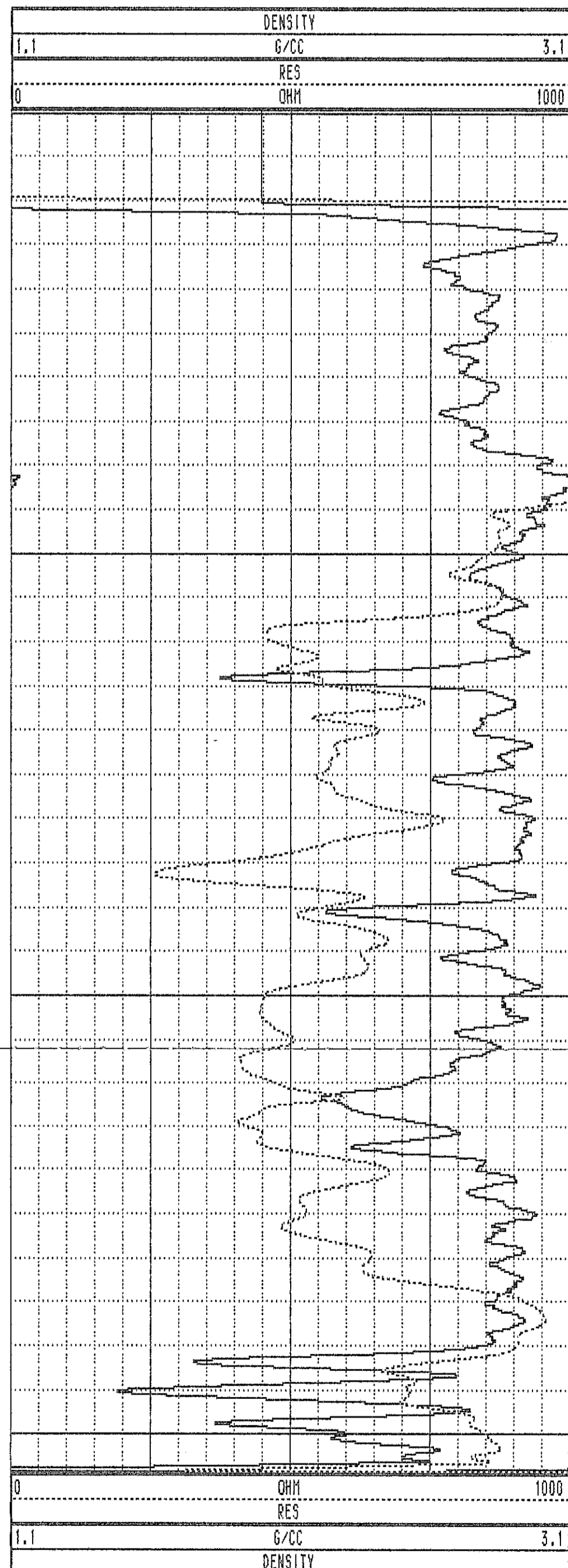
GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96166 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/09/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB : LOG BOTTOM : 30.88 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
20
30
31



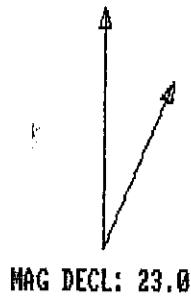
WRH-96166 09/09/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

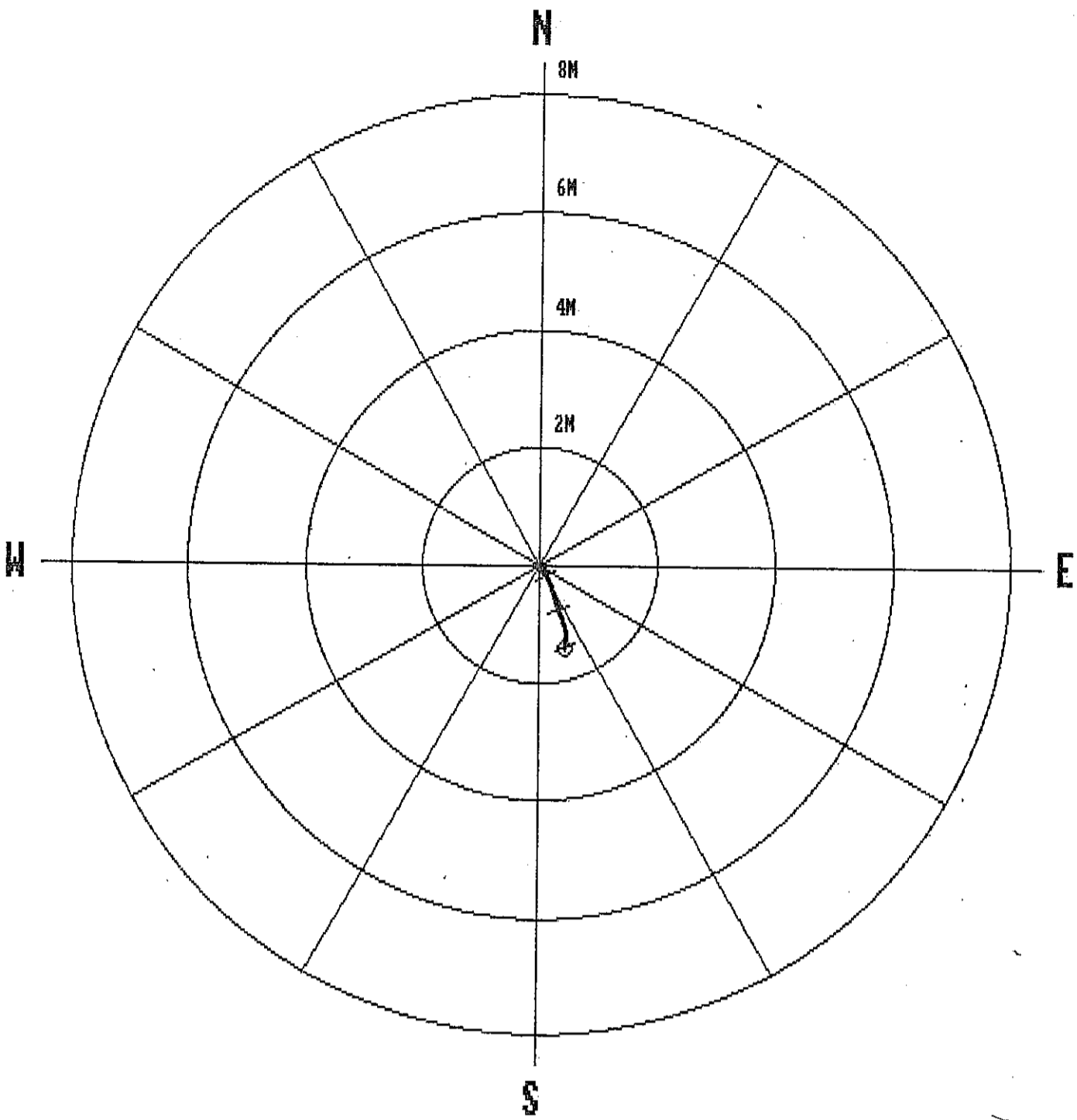
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES<NG> | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES<NG> | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

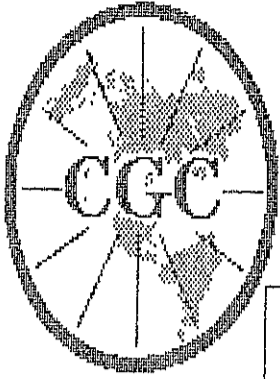
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96167
 DATE OF LOG: 09/09/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 30.33 M
 AZIMUTH: 162.2
 DISTANCE: 1.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 188.2 | 1.3 | 150.7 |
| 4.0 | 4.00 | -0.03 | -0.01 | 0.0 | 201.5 | 1.7 | 3.8 |
| 5.0 | 5.00 | -0.03 | 0.01 | 0.0 | 155.8 | 1.8 | 90.2 |
| 6.0 | 6.00 | -0.05 | 0.03 | 0.1 | 149.2 | 1.7 | 135.7 |
| 7.0 | 7.00 | -0.08 | 0.06 | 0.1 | 145.1 | 1.5 | 135.1 |
| 8.0 | 8.00 | -0.10 | 0.08 | 0.1 | 143.7 | 1.9 | 137.1 |
| 9.0 | 9.00 | -0.13 | 0.10 | 0.2 | 143.4 | 1.9 | 138.8 |
| 10.0 | 10.00 | -0.16 | 0.12 | 0.2 | 142.8 | 2.3 | 132.9 |
| 11.0 | 11.00 | -0.19 | 0.14 | 0.2 | 143.9 | 2.4 | 148.7 |
| 12.0 | 11.99 | -0.23 | 0.16 | 0.3 | 144.9 | 2.8 | 153.0 |
| 13.0 | 12.99 | -0.27 | 0.19 | 0.3 | 145.8 | 2.8 | 151.2 |
| 14.0 | 13.99 | -0.32 | 0.21 | 0.4 | 147.6 | 3.6 | 184.9 |
| 15.0 | 14.99 | -0.38 | 0.22 | 0.4 | 150.0 | 4.0 | 161.5 |
| 16.0 | 15.99 | -0.44 | 0.24 | 0.5 | 150.9 | 3.8 | 153.8 |
| 17.0 | 16.99 | -0.50 | 0.26 | 0.6 | 152.3 | 4.0 | 171.4 |
| 18.0 | 17.98 | -0.58 | 0.28 | 0.6 | 153.7 | 4.9 | 167.3 |
| 19.0 | 18.98 | -0.65 | 0.31 | 0.7 | 154.7 | 5.0 | 160.2 |
| 20.0 | 19.98 | -0.73 | 0.33 | 0.8 | 155.4 | 5.1 | 155.7 |
| 21.0 | 20.97 | -0.81 | 0.37 | 0.9 | 155.7 | 4.7 | 158.6 |
| 22.0 | 21.97 | -0.89 | 0.40 | 1.0 | 156.0 | 4.8 | 161.4 |
| 23.0 | 22.97 | -0.96 | 0.42 | 1.1 | 156.3 | 4.4 | 157.9 |
| 24.0 | 23.96 | -1.03 | 0.45 | 1.1 | 156.3 | 4.3 | 161.6 |
| 25.0 | 24.96 | -1.10 | 0.47 | 1.2 | 157.1 | 3.9 | 177.4 |
| 26.0 | 25.96 | -1.16 | 0.47 | 1.3 | 158.2 | 3.5 | 179.0 |
| 27.0 | 26.96 | -1.22 | 0.46 | 1.3 | 159.2 | 3.6 | 196.9 |
| 28.0 | 27.95 | -1.27 | 0.46 | 1.4 | 160.1 | 2.6 | 167.2 |
| 29.0 | 28.95 | -1.32 | 0.46 | 1.4 | 160.9 | 3.1 | 179.6 |
| 30.0 | 29.95 | -1.38 | 0.45 | 1.5 | 161.8 | 3.5 | 191.2 |
| 30.4 | 30.33 | -1.40 | 0.45 | 1.5 | 162.2 | 3.2 | 191.0 |



Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96167
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/09/96
DEPTH DRILLER : 30
LOG BOTTOM : 30.43
LOG TOP : 0.82

PERMANENT DATUM :
ELEV. PERM. DATUM:
LOG MEASURED FROM: G.L.
DRL MEASURED FROM:

ELEVATIONS
KB :
DF :
GL :

CASING DRILLER : 3
CASING TYPE : STEEL
CASING THICKNESS: .25

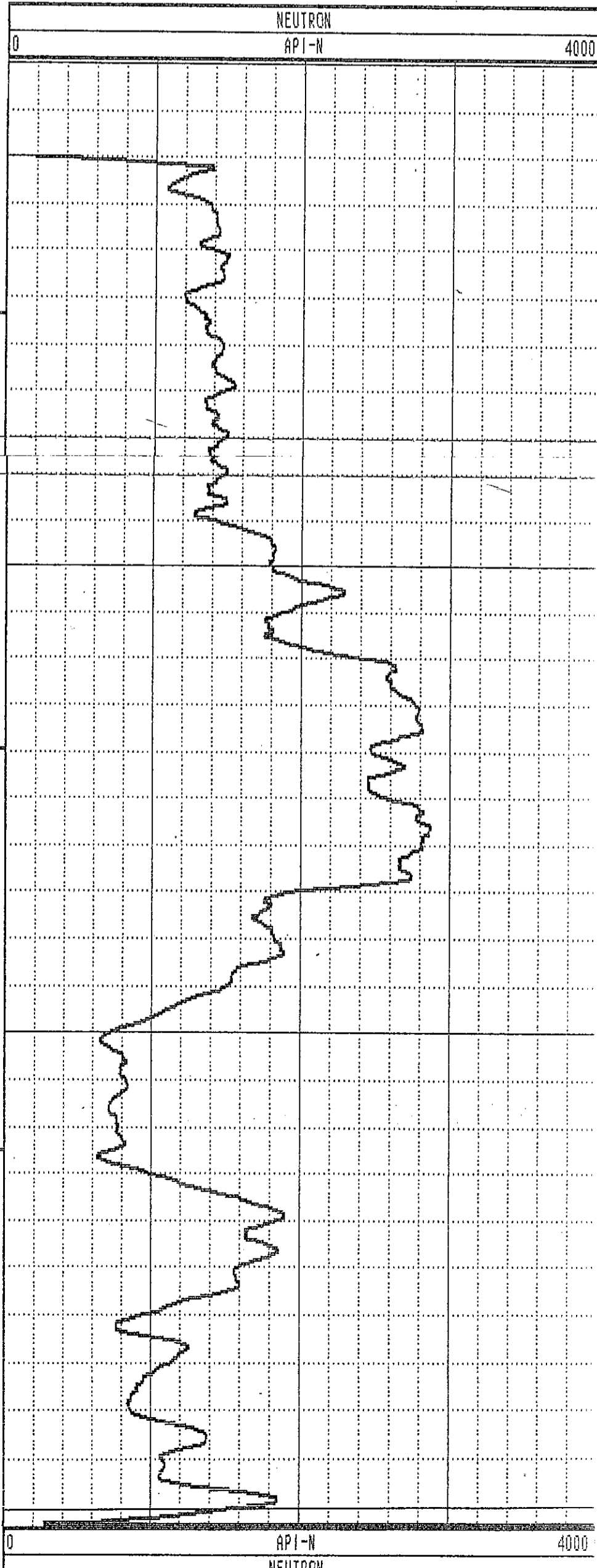
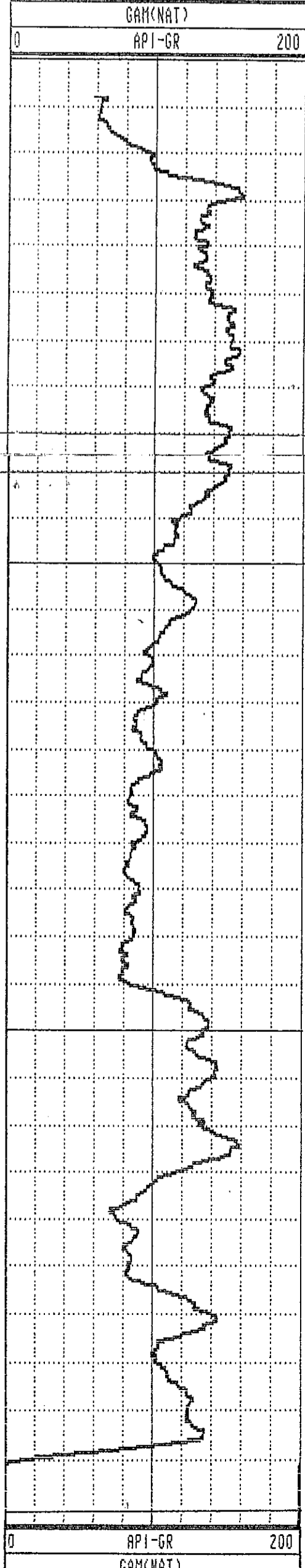
LOGGING UNIT : 9612
FIELD OFFICE : CALGARY, AB.
RECORDED BY : R. THOMAS

BIT SIZE :
MAGNETIC DECL. : 23.000
MATRIX DENSITY :
FLUID DENSITY : 1.1
NEUTRON MATRIX : 2.65
REMARKS :

BOREHOLE FLUID : WATER
RM :
RM TEMPERATURE :
MATRIX DELTA T :
FLUID DELTA T :

FILE : ORIGINAL
TYPE : 9055A
LOG : 2
PLOT : PINE 4
THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

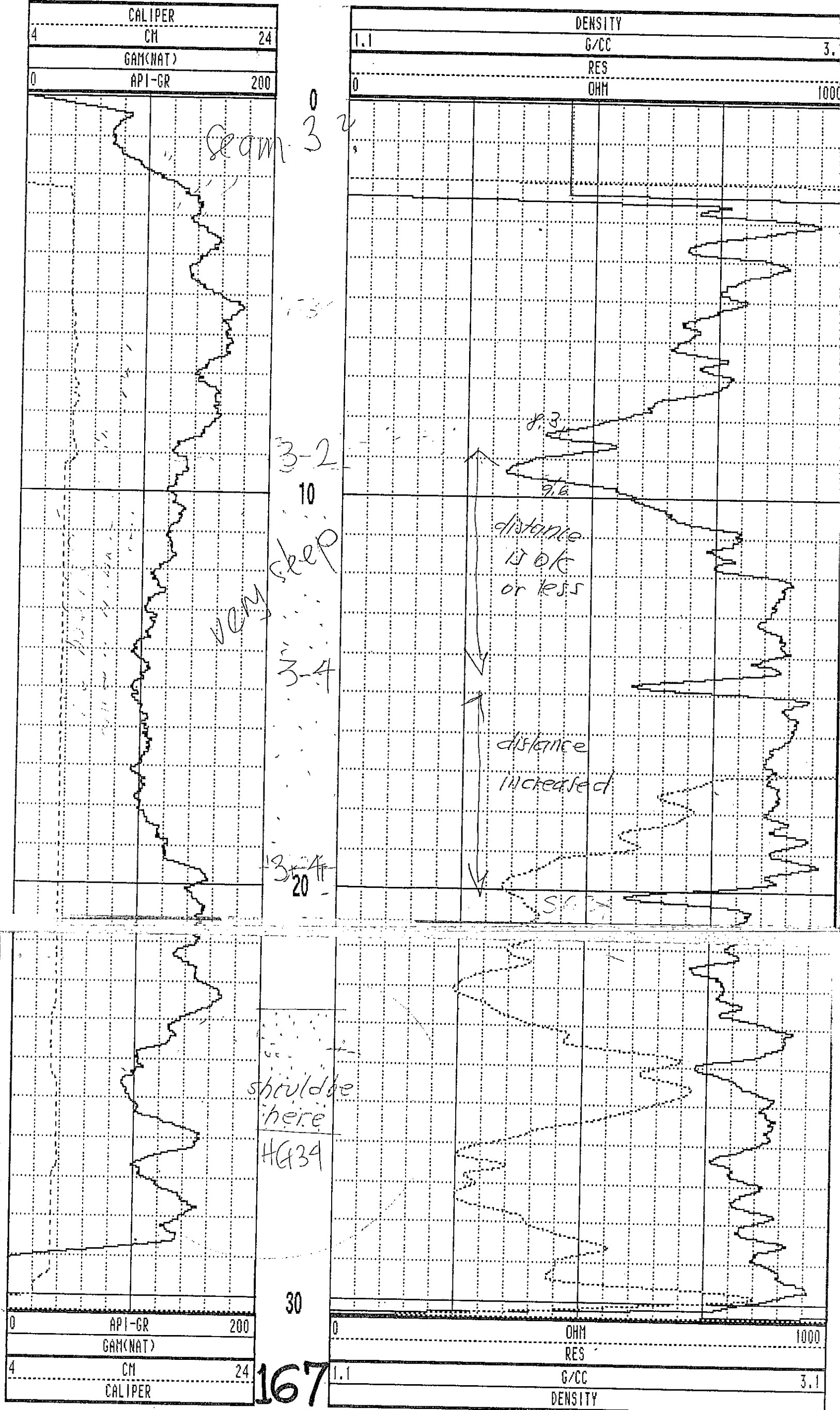


GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96167
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 09/09/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.44 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

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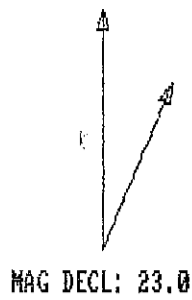
WRH-96167 09/09/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

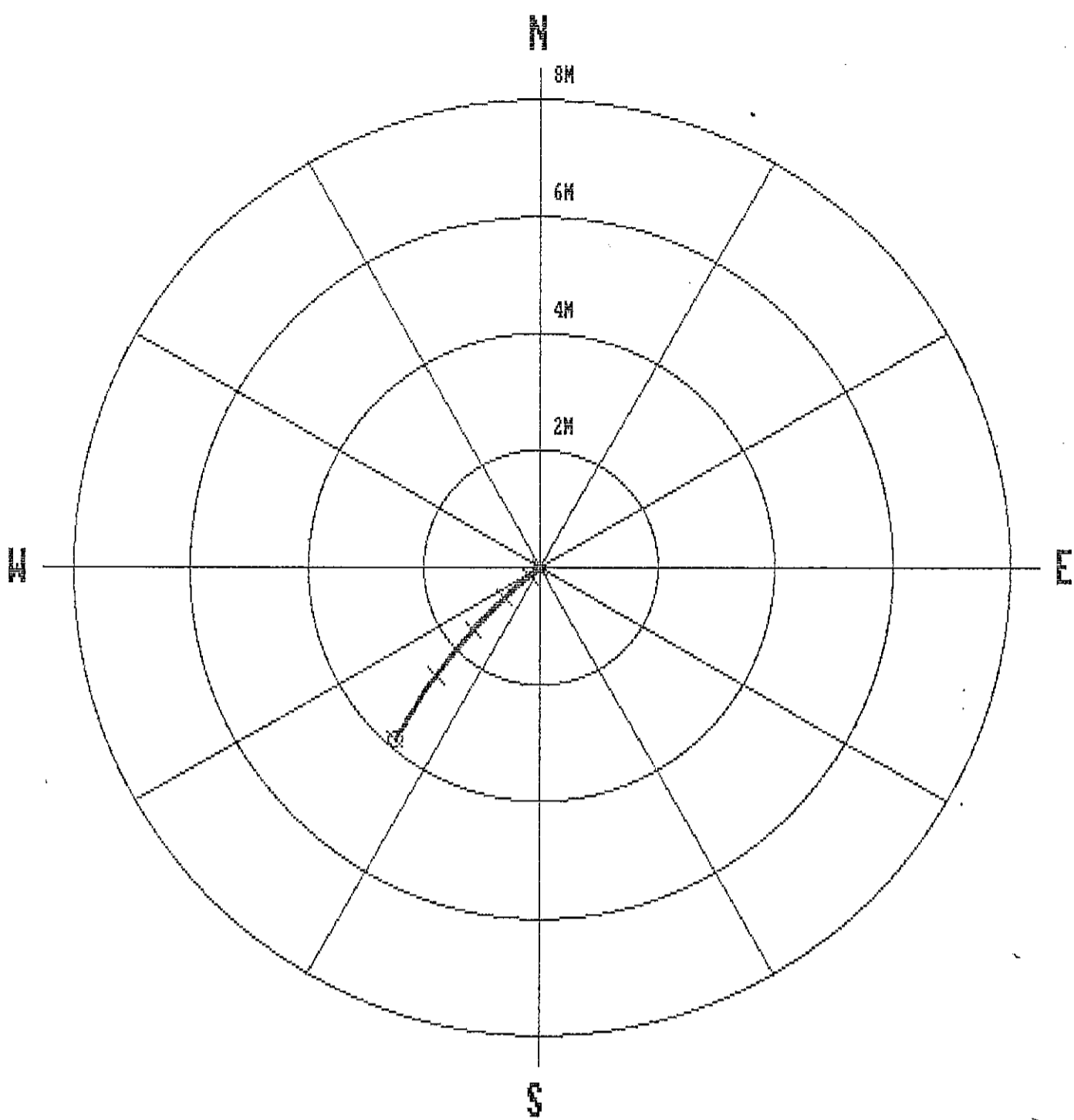
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MC) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MC) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

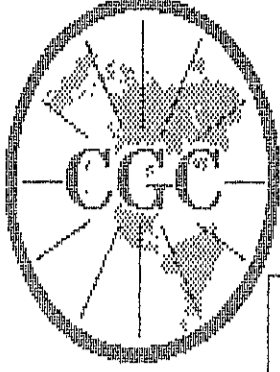
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96168
 DATE OF LOG: 09/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.96 M
 AZIMUTH: 220.4
 DISTANCE: 3.8 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.01 | 0.0 | 271.4 | 2.0 | 222.1 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 115.4 | 2.0 | 7.3 |
| 5.0 | 5.00 | 0.00 | 0.01 | 0.0 | 76.9 | 2.8 | 176.6 |
| 6.0 | 6.00 | -0.02 | 0.02 | 0.0 | 131.7 | 3.8 | 51.0 |
| 7.0 | 6.99 | -0.02 | 0.02 | 0.0 | 143.9 | 3.5 | 225.8 |
| 8.0 | 7.99 | -0.06 | -0.04 | 0.1 | 214.1 | 4.0 | 243.8 |
| 9.0 | 8.99 | -0.10 | -0.10 | 0.1 | 226.6 | 4.4 | 242.4 |
| 10.0 | 9.99 | -0.14 | -0.17 | 0.2 | 229.6 | 5.6 | 242.0 |
| 11.0 | 10.98 | -0.20 | -0.25 | 0.3 | 231.5 | 6.0 | 236.6 |
| 12.0 | 11.98 | -0.27 | -0.33 | 0.4 | 231.2 | 6.2 | 231.8 |
| 13.0 | 12.97 | -0.34 | -0.42 | 0.5 | 230.8 | 6.6 | 229.8 |
| 14.0 | 13.96 | -0.42 | -0.51 | 0.7 | 230.2 | 7.4 | 230.1 |
| 15.0 | 14.95 | -0.52 | -0.60 | 0.8 | 229.2 | 7.9 | 228.5 |
| 16.0 | 15.94 | -0.62 | -0.70 | 0.9 | 228.7 | 7.9 | 223.5 |
| 17.0 | 16.93 | -0.71 | -0.80 | 1.1 | 228.2 | 8.1 | 220.3 |
| 18.0 | 17.92 | -0.81 | -0.90 | 1.2 | 228.2 | 8.3 | 223.0 |
| 19.0 | 18.91 | -0.92 | -1.01 | 1.4 | 227.6 | 9.1 | 219.9 |
| 20.0 | 19.90 | -1.03 | -1.12 | 1.5 | 227.3 | 9.9 | 221.1 |
| 21.0 | 20.88 | -1.17 | -1.23 | 1.7 | 226.4 | 10.7 | 212.6 |
| 22.0 | 21.86 | -1.31 | -1.35 | 1.9 | 225.9 | 11.2 | 221.3 |
| 23.0 | 22.85 | -1.46 | -1.48 | 2.1 | 225.2 | 11.6 | 212.0 |
| 24.0 | 23.82 | -1.62 | -1.61 | 2.3 | 224.7 | 12.4 | 214.7 |
| 25.0 | 24.80 | -1.80 | -1.75 | 2.5 | 224.1 | 12.9 | 202.0 |
| 26.0 | 25.77 | -1.98 | -1.88 | 2.7 | 223.5 | 14.1 | 223.1 |
| 27.0 | 26.74 | -2.18 | -2.02 | 3.0 | 222.9 | 14.3 | 203.0 |
| 28.0 | 27.71 | -2.39 | -2.15 | 3.2 | 221.9 | 15.5 | 211.5 |
| 29.0 | 28.67 | -2.62 | -2.29 | 3.5 | 221.2 | 16.2 | 200.3 |
| 30.0 | 29.63 | -2.85 | -2.44 | 3.8 | 220.6 | 16.3 | 219.2 |
| 30.3 | 29.96 | -2.93 | -2.49 | 3.8 | 220.4 | 16.8 | 210.7 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96168
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/10/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.39
 LOG TOP : 0.70

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

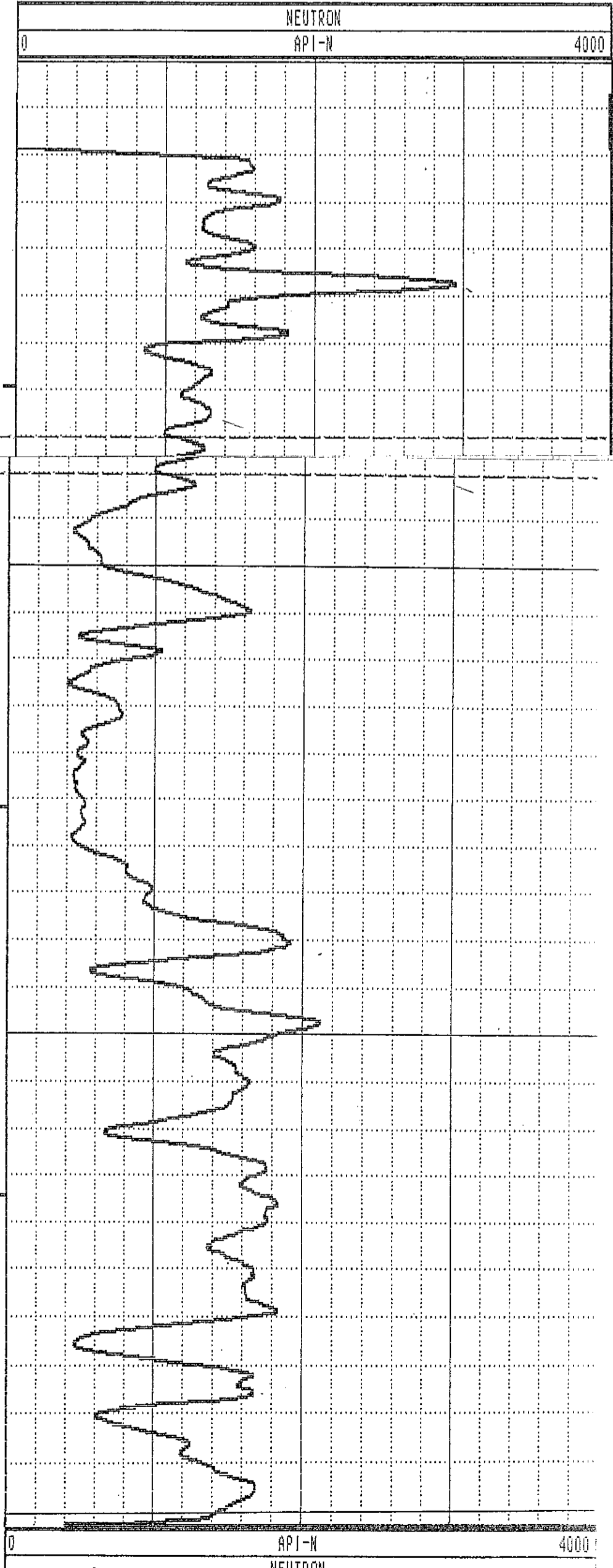
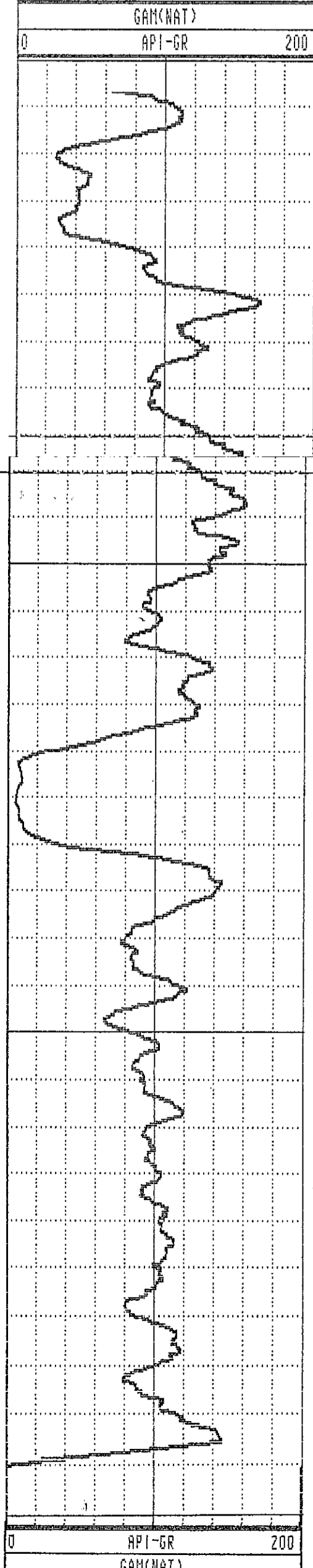
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 7
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



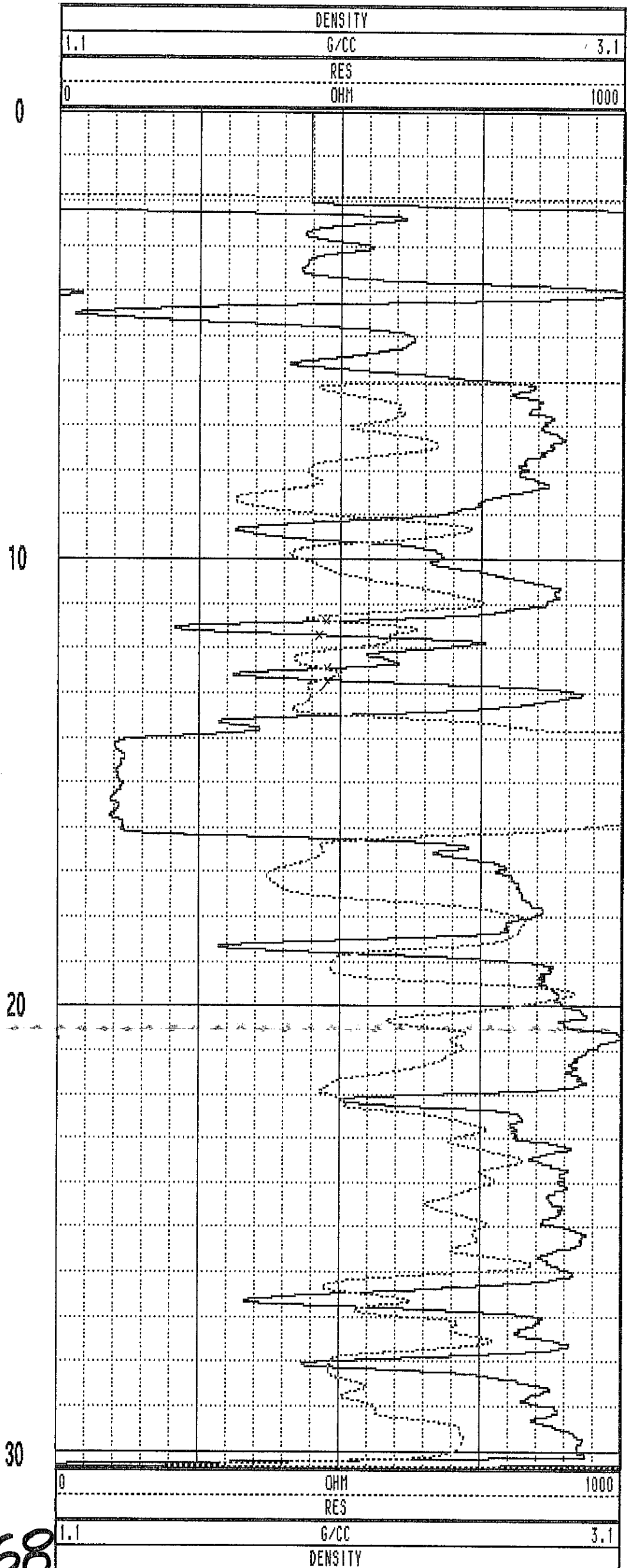
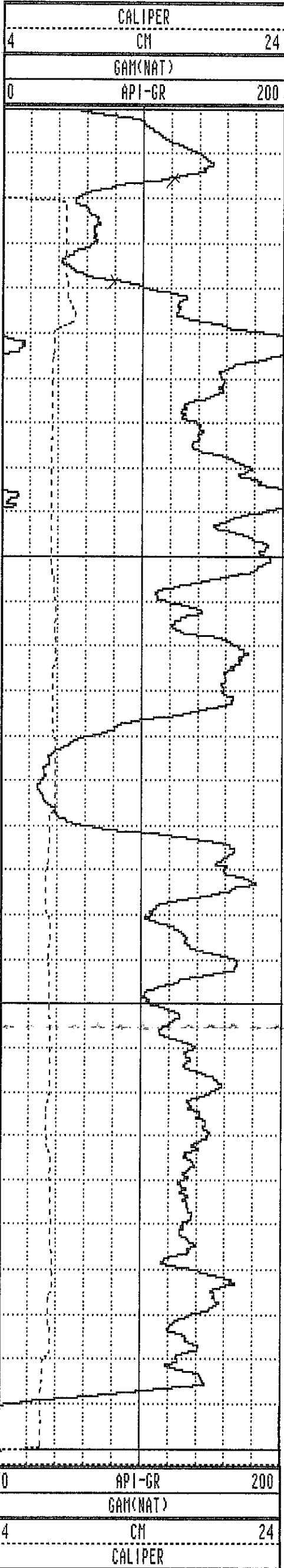
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL OTHER SERVICES:
WELL : MRH-96168
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

DATE : 09/10/96 **PERMANENT DATUM** : **ELEVATIONS**
DEPTH DRILLER : 30 **ELEV. PERM. DATUM:** KB :
LOG BOTTOM : 30.40 **LOG MEASURED FROM:** G.L. DF :
LOG TOP : 0.04 **DRL MEASURED FROM:** GL :
CASING DRILLER : 3 **LOGGING UNIT** : 9612
CASING TYPE : STEEL **FIELD OFFICE** : CALGARY, AB.
CASING THICKNESS: .25 **RECORDED BY** : R. THOMAS

BIT SIZE : **BOREHOLE FLUID** : WATER **FILE** : PROCESSED
MAGNETIC DECL. : 23.000 **RM** : **TYPE** : 9033AA
MATRIX DENSITY : **RM TEMPERATURE** : **LOG** : 1
FLUID DENSITY : 1.1 **MATRIX DELTA T** : **PLOT** : PINE 7
NEUTRON MATRIX : 2.65 **FLUID DELTA T** : **THRESH:** 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



168

MRH-96168 09/10/96 958

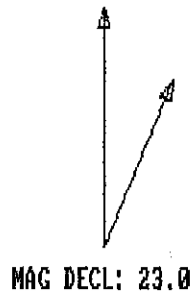
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

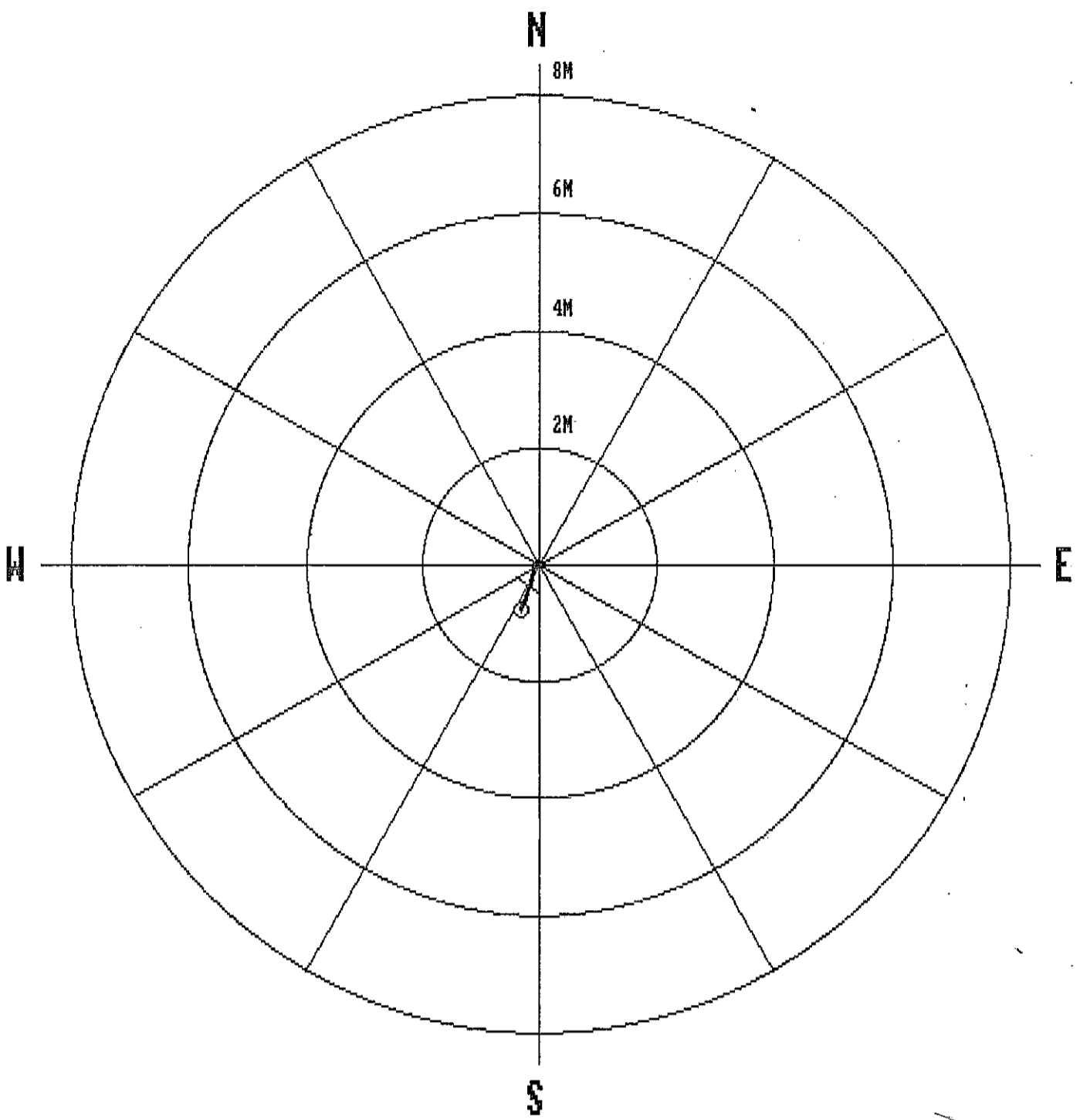
PLAN VIEW

COMPU-LOG DEVIATION

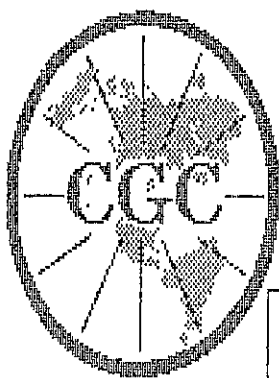
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96169
 DATE OF LOG: 09/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 22.85 M
 AZIMUTH: 202.3
 DISTANCE: 0.8 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | 0.00 | 0.0 | 174.2 | 0.7 | 97.3 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 150.0 | 0.4 | 253.8 |
| 5.0 | 5.00 | -0.00 | 0.01 | 0.0 | 118.5 | 0.2 | 344.6 |
| 6.0 | 6.00 | 0.00 | 0.01 | 0.0 | 74.0 | 0.9 | 353.4 |
| 7.0 | 7.00 | 0.02 | 0.00 | 0.0 | 13.3 | 0.6 | 328.9 |
| 8.0 | 8.00 | 0.03 | 0.00 | 0.0 | 3.4 | 1.0 | 81.5 |
| 9.0 | 9.00 | 0.03 | -0.00 | 0.0 | 358.9 | 0.4 | 321.8 |
| 10.0 | 10.00 | 0.04 | -0.01 | 0.0 | 347.3 | 0.1 | 160.0 |
| 11.0 | 11.00 | 0.04 | -0.02 | 0.0 | 334.2 | 1.3 | 285.8 |
| 12.0 | 12.00 | 0.04 | -0.03 | 0.1 | 320.4 | 0.3 | 213.6 |
| 13.0 | 13.00 | 0.03 | -0.04 | 0.1 | 309.0 | 0.3 | 228.2 |
| 14.0 | 14.00 | 0.03 | -0.05 | 0.1 | 297.9 | 0.4 | 266.2 |
| 15.0 | 15.00 | 0.00 | -0.07 | 0.1 | 272.6 | 1.8 | 195.0 |
| 16.0 | 16.00 | -0.03 | -0.08 | 0.1 | 247.8 | 2.7 | 201.8 |
| 17.0 | 17.00 | -0.08 | -0.09 | 0.1 | 228.0 | 4.0 | 190.0 |
| 18.0 | 17.99 | -0.16 | -0.11 | 0.2 | 214.0 | 5.7 | 197.6 |
| 19.0 | 18.99 | -0.26 | -0.13 | 0.3 | 206.9 | 5.9 | 194.7 |
| 20.0 | 19.98 | -0.36 | -0.16 | 0.4 | 203.8 | 6.7 | 199.2 |
| 21.0 | 20.97 | -0.48 | -0.21 | 0.5 | 203.0 | 8.0 | 197.7 |
| 22.0 | 21.96 | -0.62 | -0.25 | 0.7 | 202.0 | 9.3 | 202.4 |
| 22.9 | 22.85 | -0.76 | -0.31 | 0.8 | 202.3 | 10.2 | 205.2 |



Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

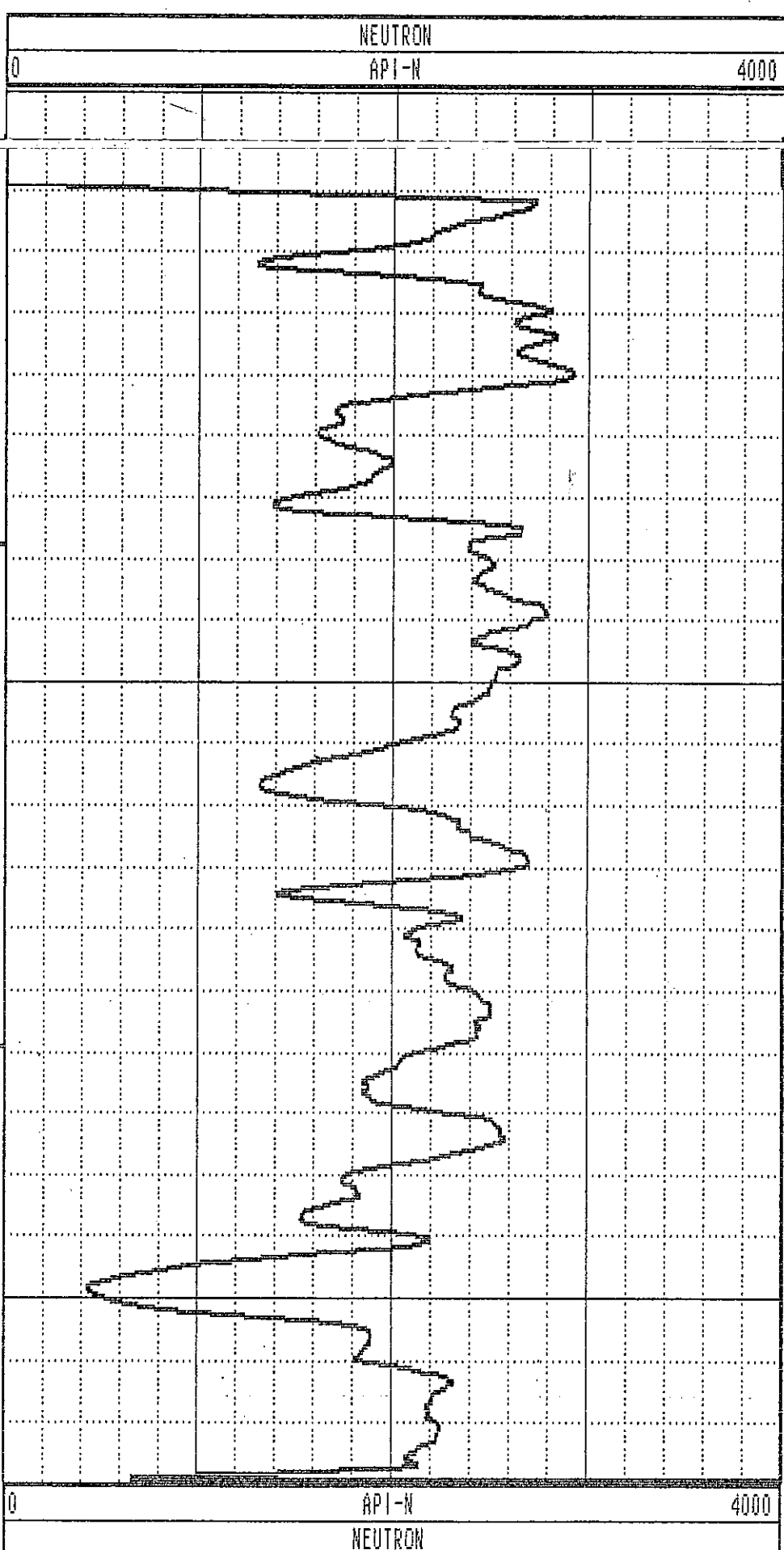
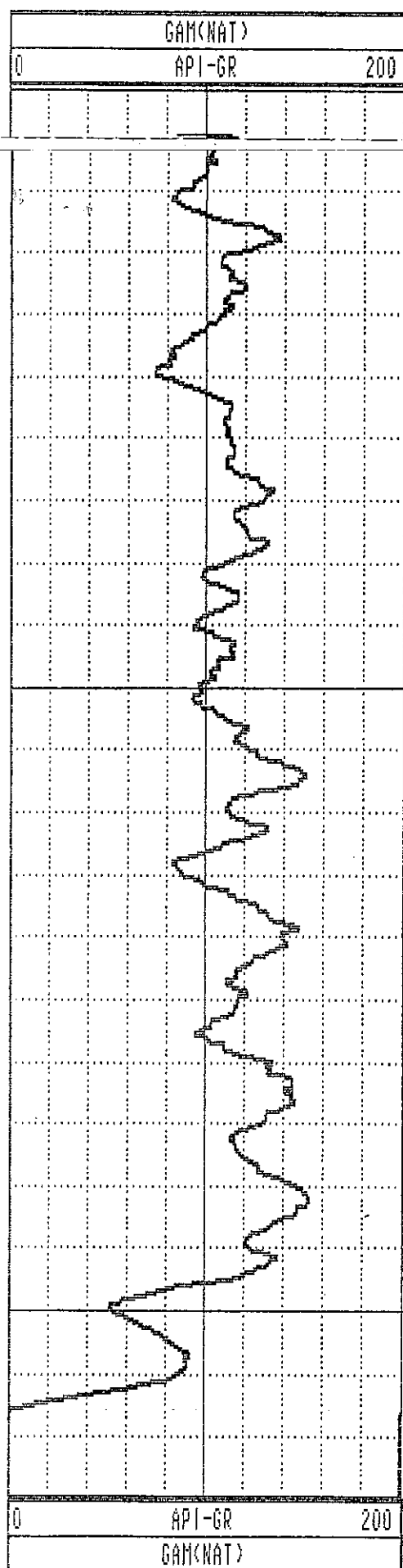
COMPANY : PINE VALLEY COAL
 WELL : WRH-96169
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 22.96 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.74 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

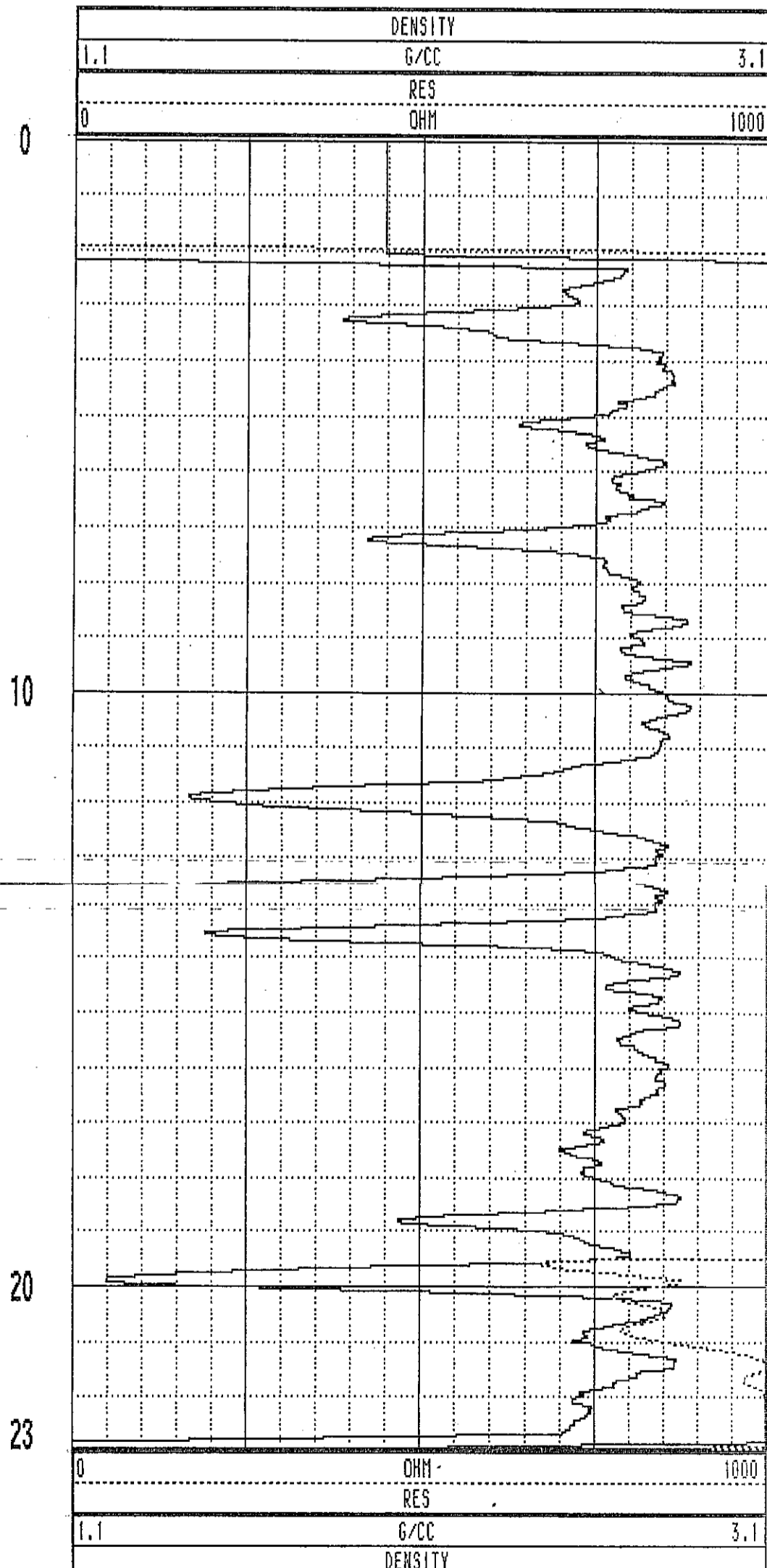
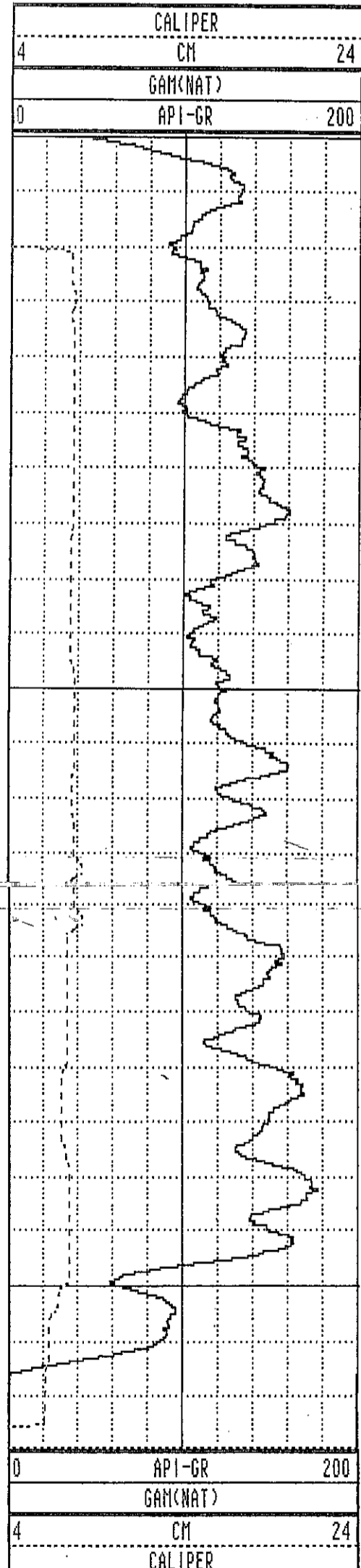
COMPANY : PINE VALLEY COAL
 WELL : WRH-96169
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 22.96 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.02 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96169 09/10/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

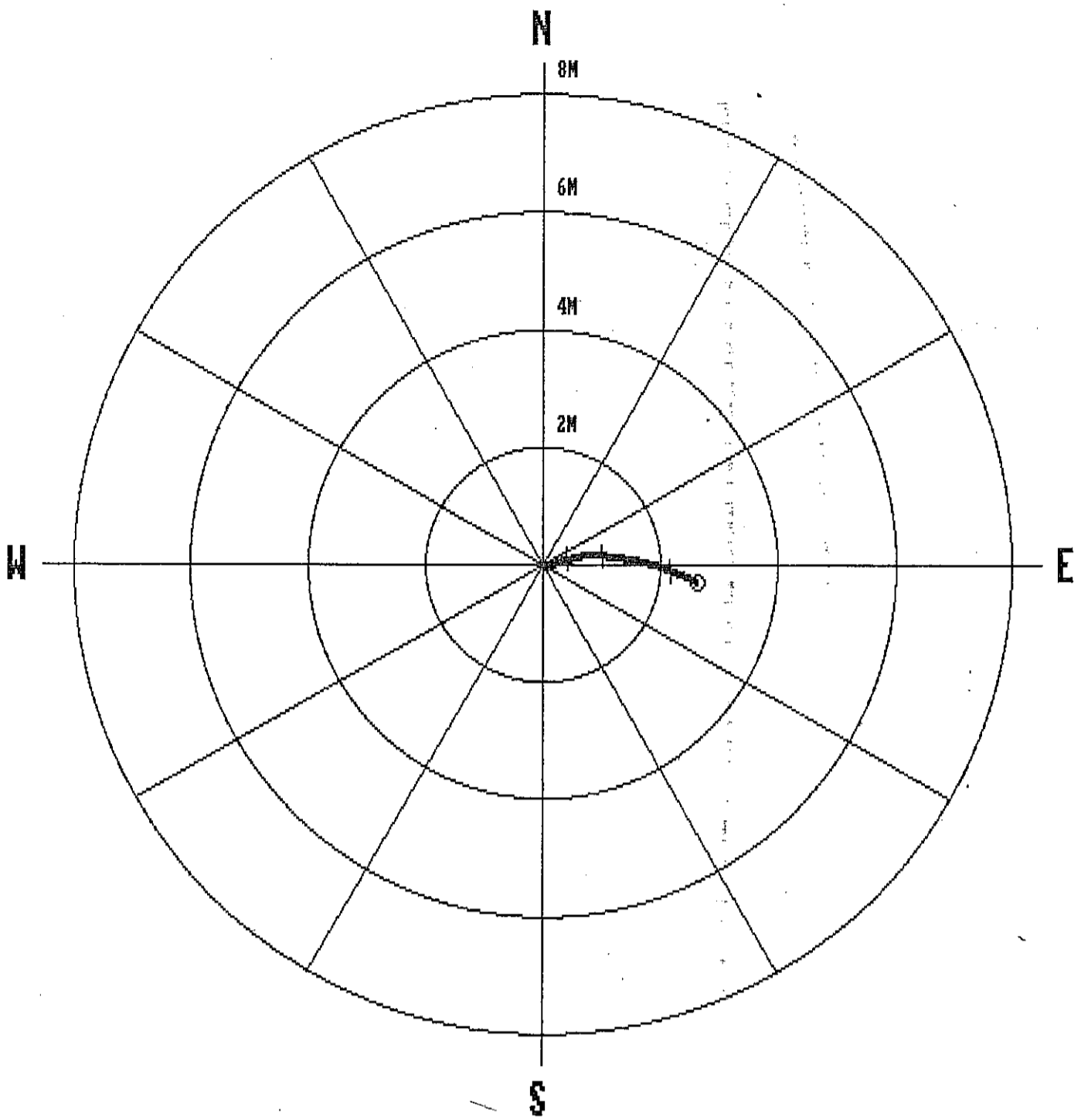
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

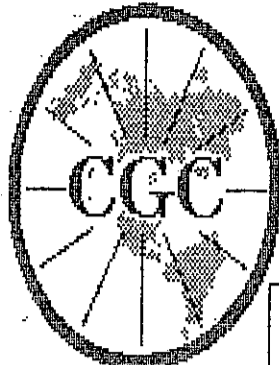
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96169B
 DATE OF LOG: 09/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 33.11 M
 AZIMUTH: 96.4
 DISTANCE: 2.7 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.04 | 0.02 | 0.0 | 157.6 | 3.0 | 217.0 |
| 4.0 | 4.00 | -0.04 | 0.05 | 0.1 | 126.5 | 3.3 | 74.0 |
| 5.0 | 4.99 | -0.02 | 0.11 | 0.1 | 97.8 | 3.9 | 58.9 |
| 6.0 | 5.99 | 0.01 | 0.17 | 0.2 | 88.3 | 3.8 | 71.1 |
| 7.0 | 6.99 | 0.03 | 0.24 | 0.2 | 82.5 | 3.8 | 76.7 |
| 8.0 | 7.99 | 0.06 | 0.30 | 0.3 | 79.6 | 3.5 | 72.5 |
| 9.0 | 8.99 | 0.08 | 0.36 | 0.4 | 78.2 | 3.5 | 72.8 |
| 10.0 | 9.98 | 0.09 | 0.42 | 0.4 | 77.7 | 3.8 | 79.0 |
| 11.0 | 10.98 | 0.10 | 0.48 | 0.5 | 77.9 | 4.0 | 74.0 |
| 12.0 | 11.98 | 0.12 | 0.54 | 0.5 | 77.8 | 3.2 | 75.9 |
| 13.0 | 12.98 | 0.13 | 0.59 | 0.6 | 77.5 | 3.1 | 77.9 |
| 14.0 | 13.98 | 0.14 | 0.64 | 0.7 | 77.4 | 3.4 | 81.0 |
| 15.0 | 14.98 | 0.15 | 0.70 | 0.7 | 77.6 | 3.1 | 79.1 |
| 16.0 | 15.97 | 0.16 | 0.75 | 0.8 | 78.2 | 3.2 | 89.9 |
| 17.0 | 16.97 | 0.16 | 0.81 | 0.8 | 78.8 | 3.5 | 84.8 |
| 18.0 | 17.97 | 0.16 | 0.87 | 0.9 | 79.5 | 3.9 | 88.3 |
| 19.0 | 18.97 | 0.16 | 0.94 | 1.0 | 80.3 | 4.1 | 94.8 |
| 20.0 | 19.96 | 0.16 | 1.02 | 1.0 | 81.3 | 5.1 | 96.6 |
| 21.0 | 20.96 | 0.15 | 1.11 | 1.1 | 82.4 | 4.7 | 90.7 |
| 22.0 | 21.96 | 0.14 | 1.19 | 1.2 | 83.4 | 5.2 | 99.2 |
| 23.0 | 22.95 | 0.13 | 1.30 | 1.3 | 84.5 | 5.9 | 102.5 |
| 24.0 | 23.95 | 0.10 | 1.40 | 1.4 | 85.7 | 6.4 | 97.5 |
| 25.0 | 24.94 | 0.09 | 1.52 | 1.5 | 86.7 | 6.8 | 100.8 |
| 26.0 | 25.93 | 0.06 | 1.64 | 1.6 | 87.8 | 7.2 | 108.0 |
| 27.0 | 26.92 | 0.03 | 1.77 | 1.8 | 89.0 | 8.0 | 103.7 |
| 28.0 | 27.91 | -0.00 | 1.91 | 1.9 | 90.0 | 7.9 | 107.8 |
| 29.0 | 28.90 | -0.04 | 2.04 | 2.0 | 91.2 | 8.2 | 109.7 |
| 30.0 | 29.89 | -0.10 | 2.17 | 2.2 | 92.6 | 8.4 | 115.2 |
| 31.0 | 30.88 | -0.15 | 2.32 | 2.3 | 93.8 | 9.1 | 103.1 |
| 32.0 | 31.87 | -0.21 | 2.47 | 2.5 | 94.9 | 9.5 | 105.6 |
| 33.0 | 32.85 | -0.28 | 2.62 | 2.6 | 96.0 | 9.7 | 112.9 |
| 33.3 | 33.11 | -0.30 | 2.65 | 2.7 | 96.4 | 9.4 | 119.1 |



Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96169B
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/10/96
 DEPTH DRILLER : 33
 LOG BOTTOM : 33.31
 LOG TOP : 0.70

PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

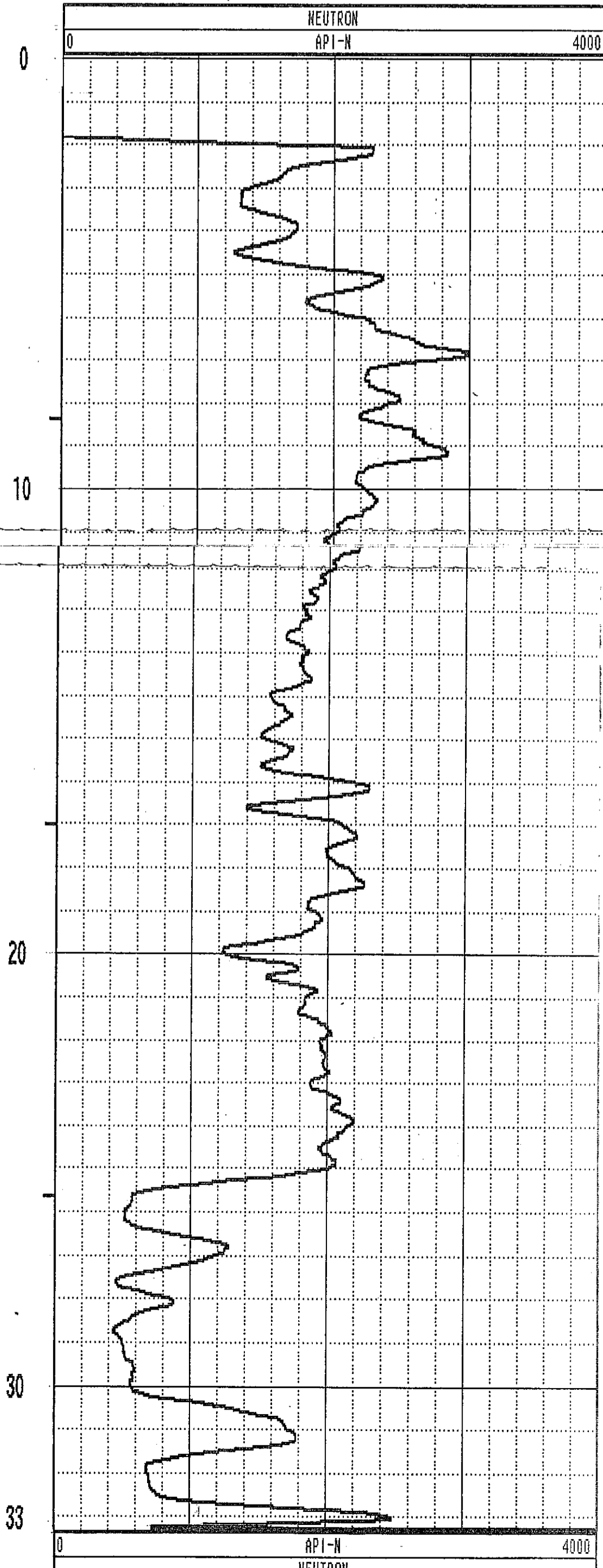
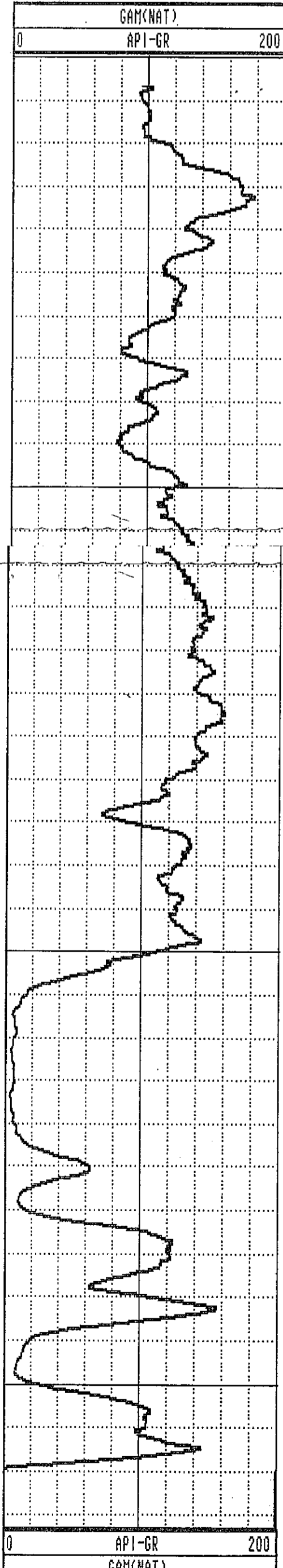
CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER FILE : ORIGINAL
 RM : TYPE : 9055A
 RM TEMPERATURE : LOG : 0
 MATRIX DELTA T : PLOT : PINE 4
 FLUID DELTA T : THRESH: 10000

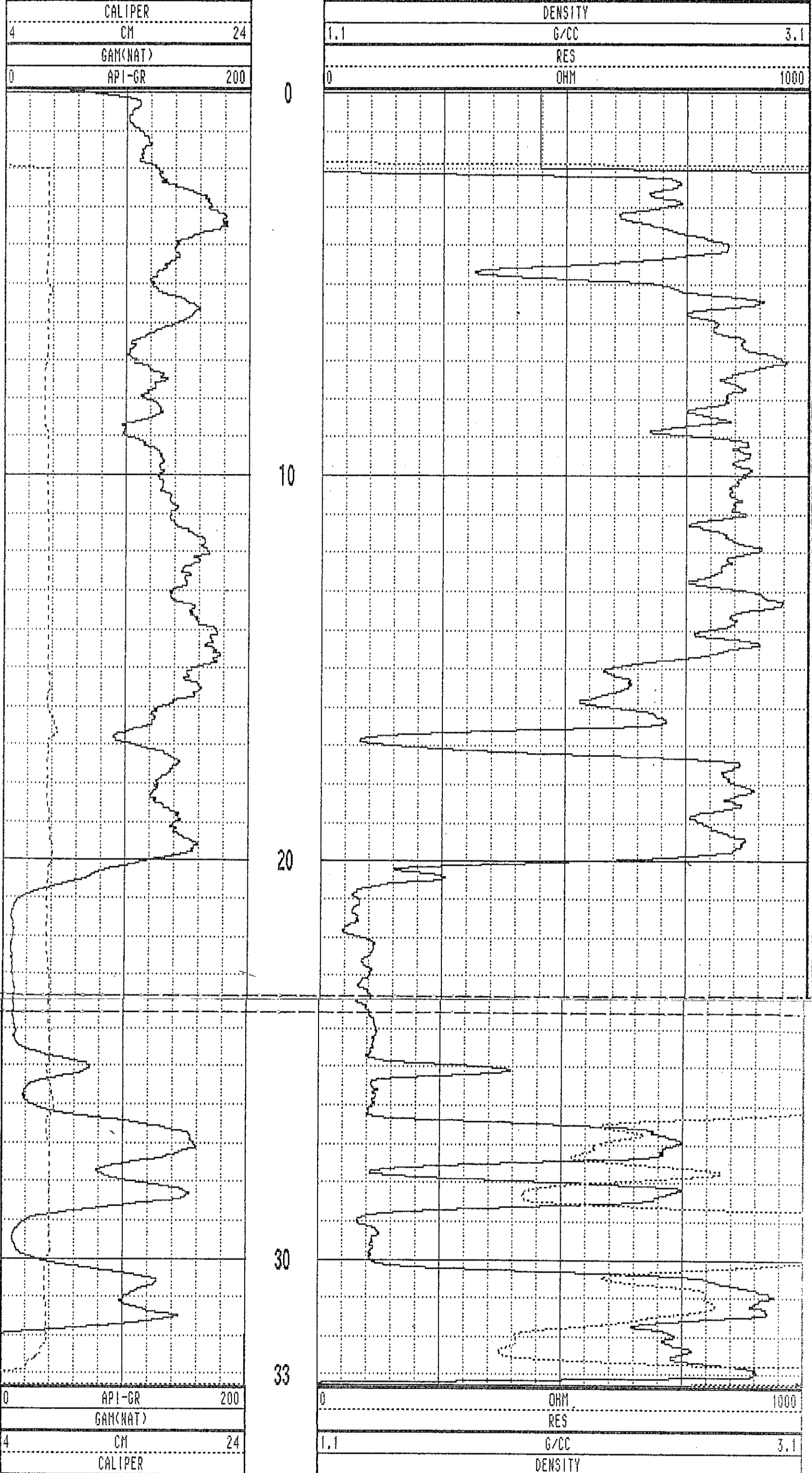
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96169B | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/10/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 33 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 33.32 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.02 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 2 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



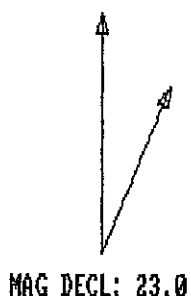
WRH-96169B 09/10/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

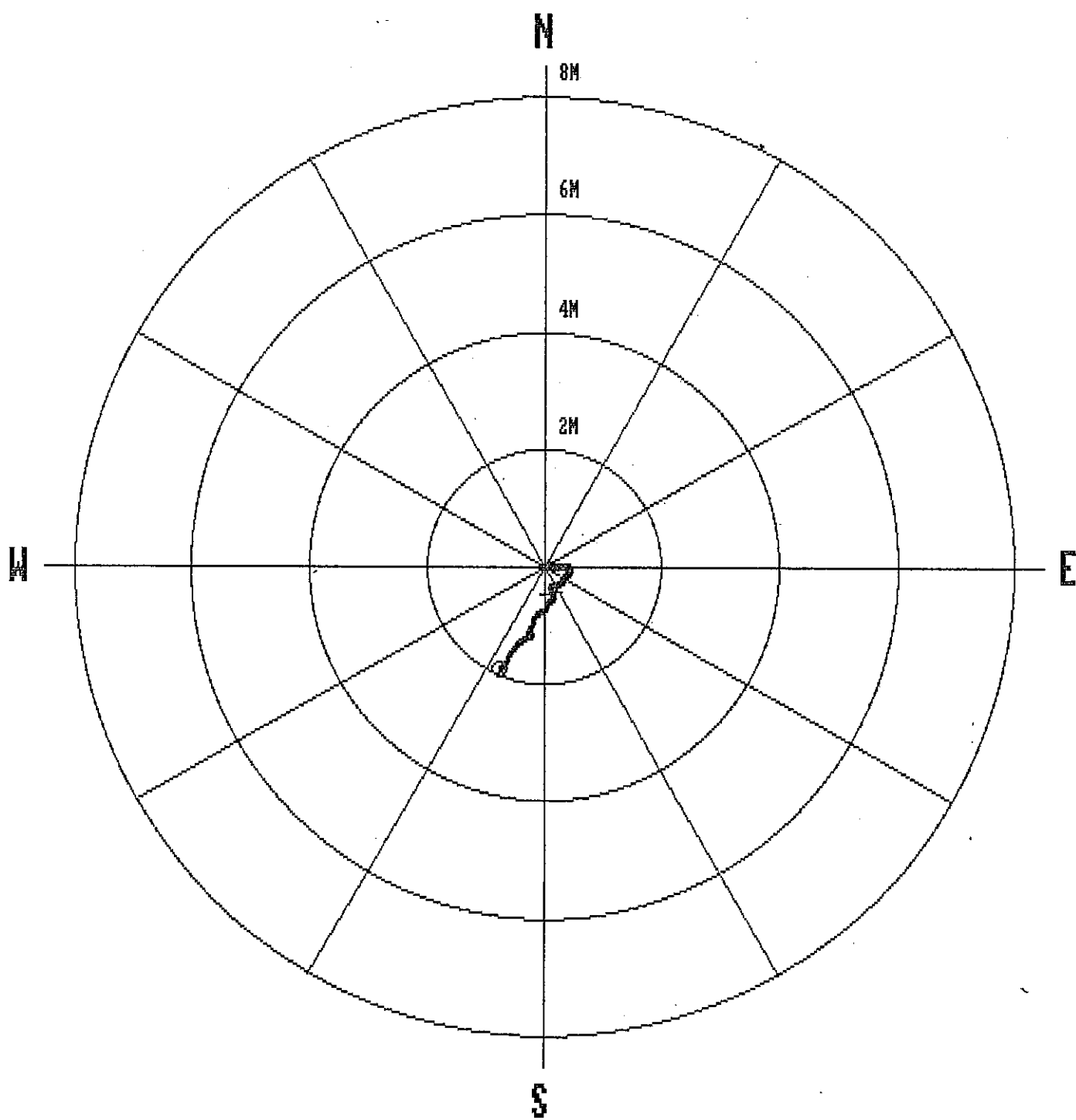
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

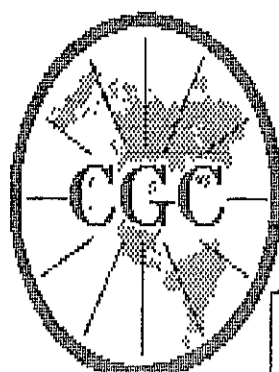
CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: WRH-96170
 DATE OF LOG: 09/10/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 29.17 M
 AZIMUTH: 203.8
 DISTANCE: 1.9 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 77.8 | 0.6 | 76.5 |
| 3.0 | 3.00 | 0.01 | 0.02 | 0.0 | 67.1 | 1.3 | 57.6 |
| 4.0 | 4.00 | 0.03 | 0.05 | 0.1 | 56.6 | 1.6 | 77.2 |
| 5.0 | 4.99 | 0.04 | 0.08 | 0.1 | 63.3 | 1.6 | 93.3 |
| 6.0 | 5.99 | 0.04 | 0.11 | 0.1 | 69.4 | 2.0 | 88.7 |
| 7.0 | 6.99 | 0.04 | 0.15 | 0.2 | 75.4 | 1.9 | 110.3 |
| 8.0 | 7.99 | 0.02 | 0.18 | 0.2 | 82.8 | 2.3 | 102.6 |
| 9.0 | 8.99 | 0.01 | 0.22 | 0.2 | 88.3 | 2.7 | 110.3 |
| 10.0 | 9.99 | 0.00 | 0.26 | 0.3 | 90.0 | 3.1 | 108.5 |
| 11.0 | 10.99 | -0.01 | 0.32 | 0.3 | 92.1 | 3.2 | 113.4 |
| 12.0 | 11.99 | -0.02 | 0.38 | 0.4 | 93.6 | 3.9 | 118.5 |
| 13.0 | 12.98 | -0.06 | 0.44 | 0.4 | 97.3 | 4.2 | 120.2 |
| 14.0 | 13.97 | -0.07 | 0.47 | 0.5 | 98.9 | 4.7 | 271.8 |
| 15.0 | 14.96 | -0.11 | 0.45 | 0.5 | 104.2 | 5.3 | 243.0 |
| 16.0 | 15.96 | -0.15 | 0.36 | 0.4 | 113.3 | 6.3 | 241.2 |
| 17.0 | 16.95 | -0.21 | 0.36 | 0.4 | 120.0 | 7.2 | 123.2 |
| 18.0 | 17.94 | -0.27 | 0.28 | 0.4 | 133.8 | 7.6 | 247.6 |
| 19.0 | 18.93 | -0.34 | 0.13 | 0.4 | 158.2 | 10.1 | 228.1 |
| 20.0 | 19.91 | -0.44 | 0.12 | 0.5 | 165.2 | 9.9 | 248.2 |
| 21.0 | 20.90 | -0.54 | 0.17 | 0.6 | 162.9 | 10.0 | 229.6 |
| 22.0 | 21.88 | -0.65 | 0.06 | 0.7 | 175.0 | 11.2 | 115.5 |
| 23.0 | 22.86 | -0.74 | 0.02 | 0.7 | 178.1 | 11.6 | 240.8 |
| 24.0 | 23.84 | -0.84 | -0.15 | 0.9 | 190.1 | 12.3 | 214.2 |
| 25.0 | 24.79 | -1.01 | -0.21 | 1.0 | 191.8 | 14.4 | 213.1 |
| 26.0 | 25.76 | -1.15 | -0.25 | 1.2 | 192.5 | 13.2 | 111.7 |
| 27.0 | 26.74 | -1.24 | -0.37 | 1.3 | 196.6 | 14.7 | 227.3 |
| 28.0 | 27.71 | -1.42 | -0.54 | 1.5 | 200.8 | 14.2 | 212.9 |
| 29.0 | 28.67 | -1.64 | -0.66 | 1.8 | 201.9 | 16.9 | 212.4 |
| 29.5 | 29.17 | -1.73 | -0.76 | 1.9 | 203.8 | 15.6 | 246.5 |

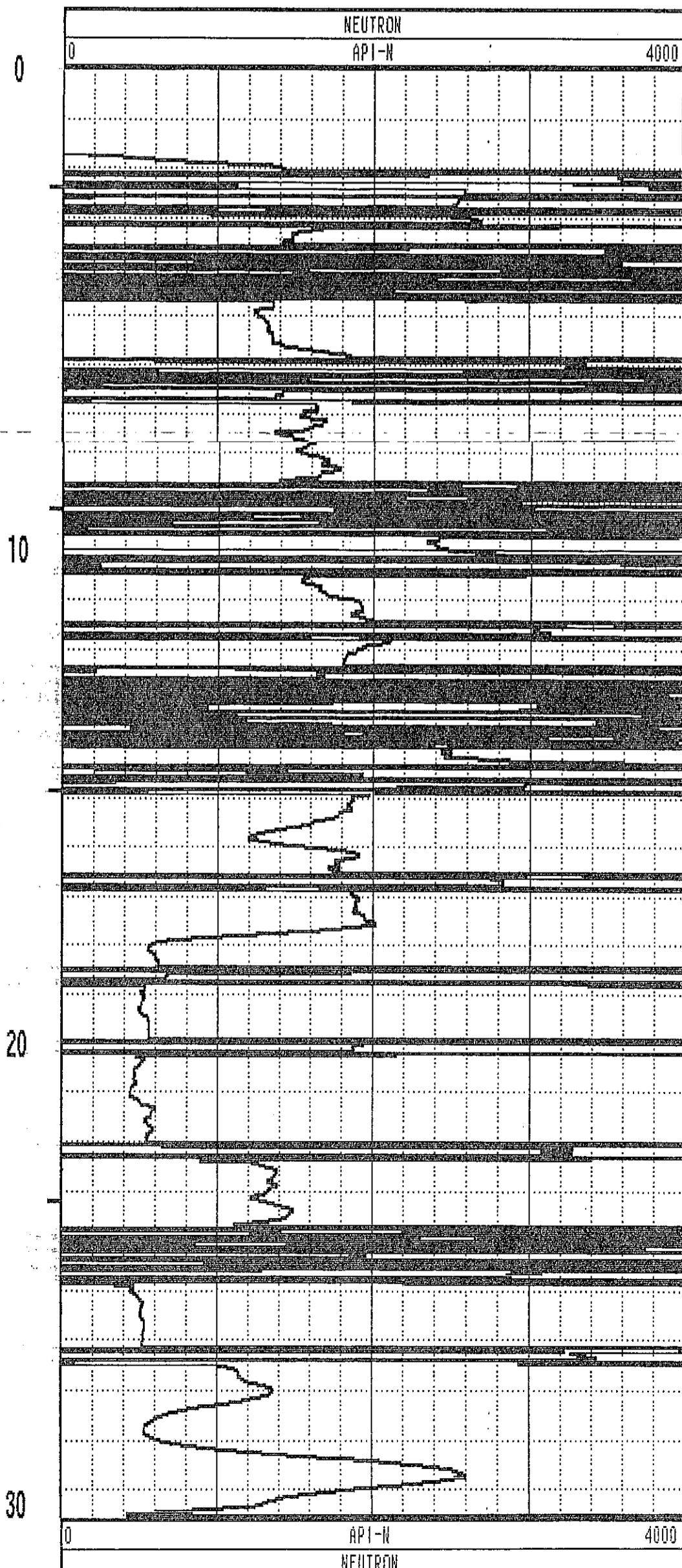
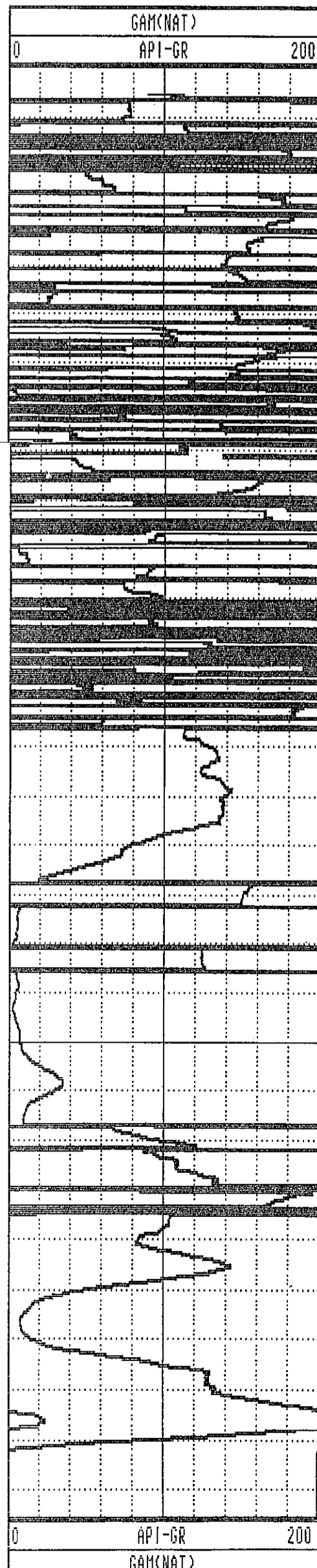


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96170 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/10/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.57 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.56 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 0 | LOGGING UNIT | : 9612 |
| CASING TYPE | : NONE | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 4 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

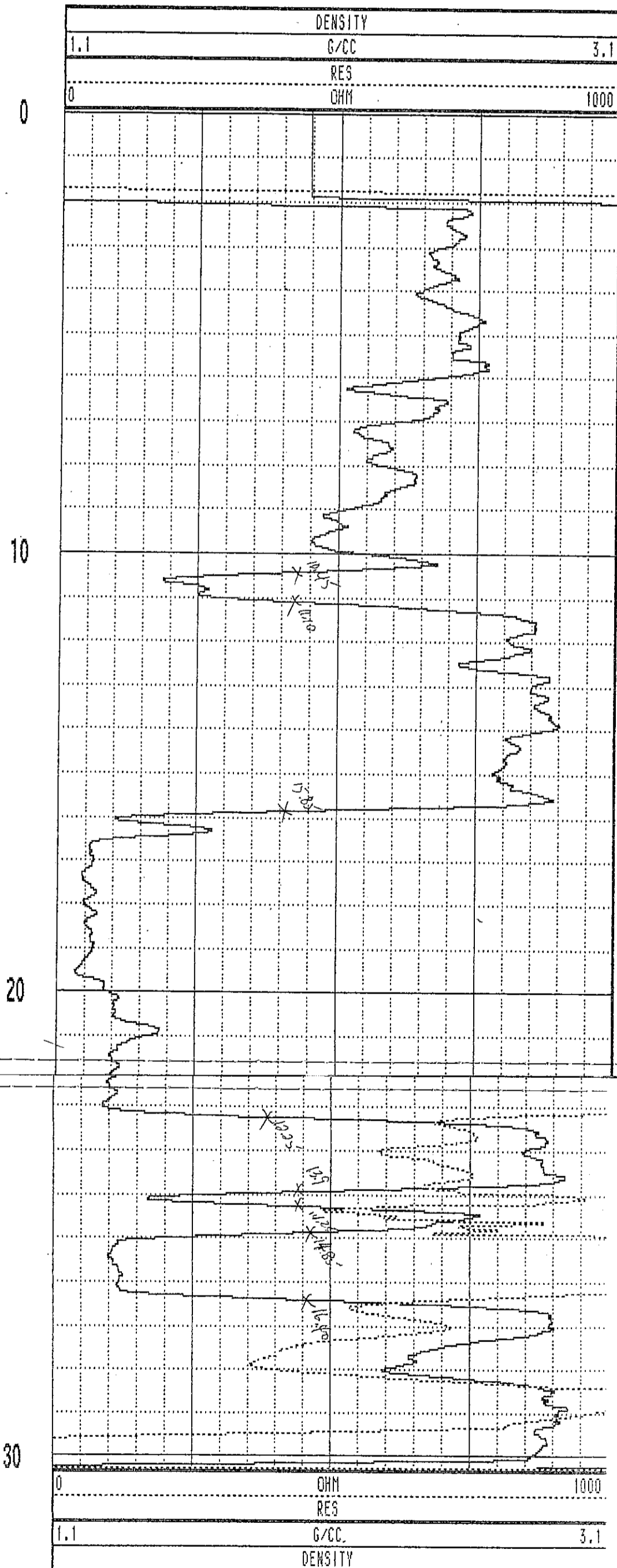
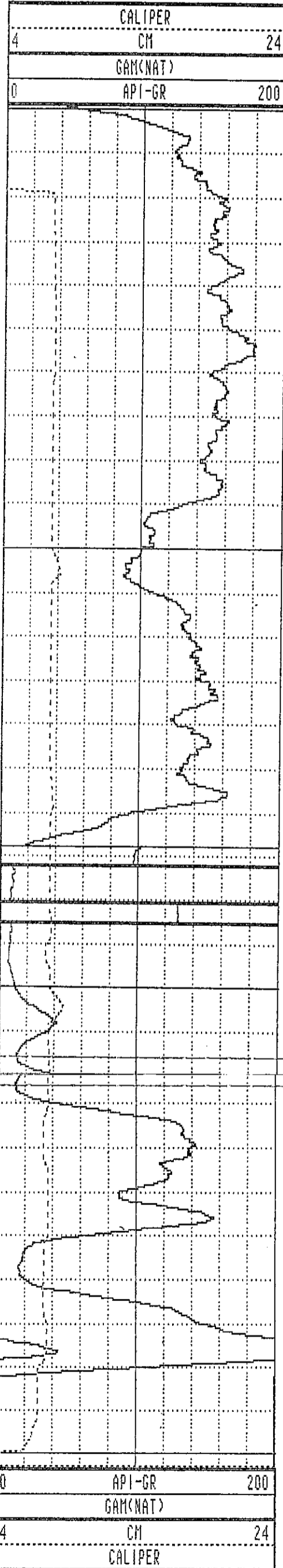
COMPANY : PINE VALLEY COAL
 WELL : WRH-96170
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/10/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 33 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.32 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 0 LOGGING UNIT : 9612
 CASING TYPE : NONE FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96170 09/10/96 958

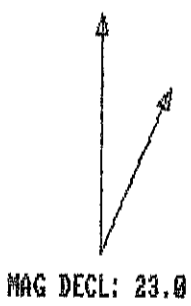
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(HG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(HG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

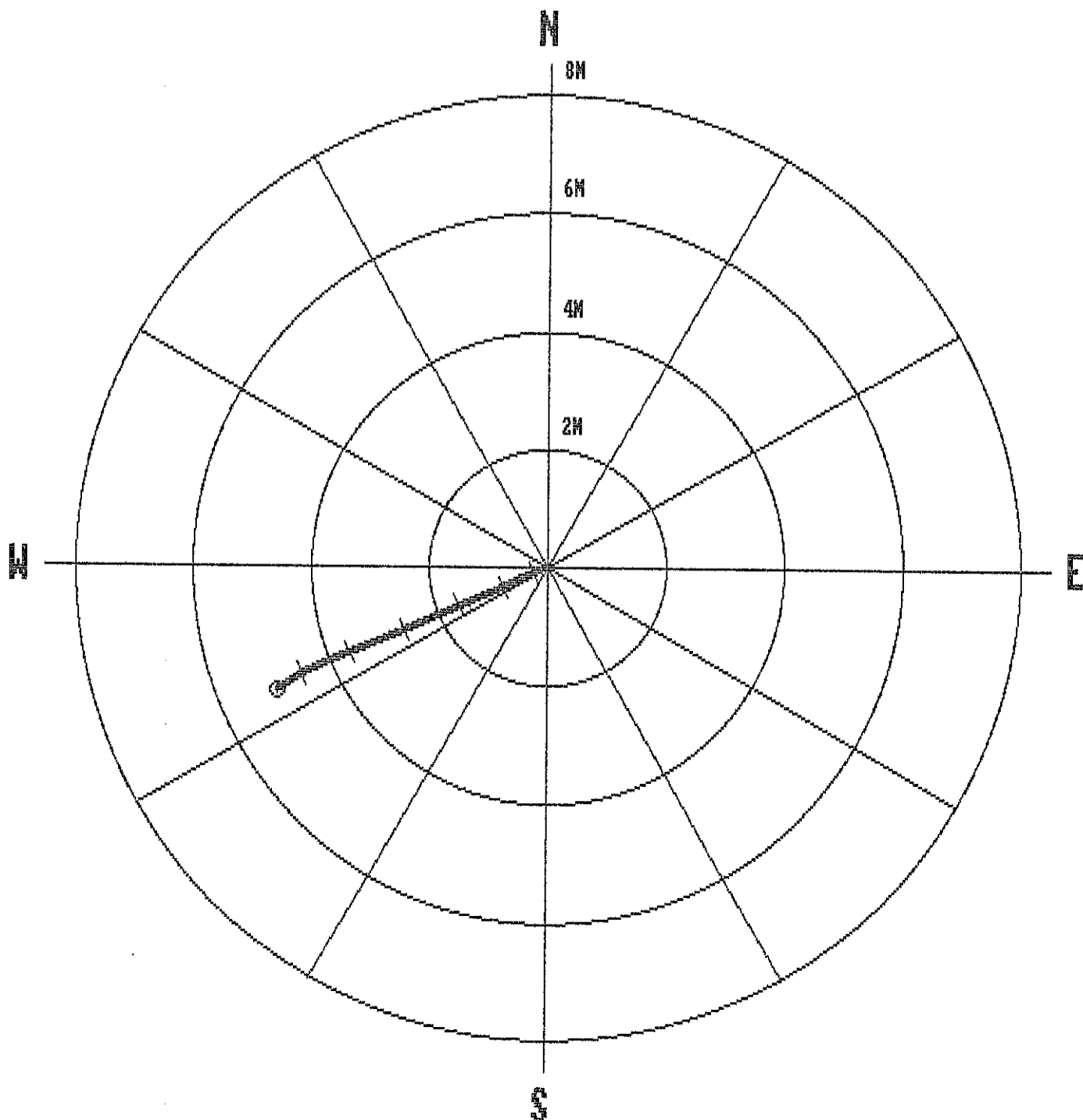
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.07 | 0.1 | 264.7 | 4.6 | 273.6 |
| 4.0 | 3.99 | -0.05 | -0.14 | 0.2 | 250.2 | 5.0 | 250.4 |
| 5.0 | 4.99 | -0.09 | -0.23 | 0.2 | 248.6 | 6.0 | 244.8 |
| 6.0 | 5.98 | -0.13 | -0.32 | 0.3 | 248.4 | 5.1 | 248.2 |
| 7.0 | 6.98 | -0.17 | -0.42 | 0.5 | 248.2 | 6.5 | 248.7 |
| 8.0 | 7.97 | -0.22 | -0.52 | 0.6 | 247.5 | 6.7 | 246.1 |
| 9.0 | 8.96 | -0.27 | -0.63 | 0.7 | 247.0 | 7.1 | 245.5 |
| 10.0 | 9.96 | -0.33 | -0.74 | 0.8 | 246.1 | 7.6 | 245.1 |
| 11.0 | 10.95 | -0.38 | -0.87 | 0.9 | 246.2 | 8.2 | 251.7 |
| 12.0 | 11.93 | -0.44 | -1.01 | 1.1 | 246.3 | 8.9 | 247.9 |
| 13.0 | 12.92 | -0.50 | -1.15 | 1.3 | 246.4 | 9.5 | 244.9 |
| 14.0 | 13.91 | -0.57 | -1.31 | 1.4 | 246.4 | 10.2 | 249.0 |
| 15.0 | 14.89 | -0.64 | -1.47 | 1.6 | 246.4 | 10.8 | 246.0 |
| 16.0 | 15.87 | -0.72 | -1.65 | 1.8 | 246.4 | 11.4 | 245.2 |
| 17.0 | 16.85 | -0.80 | -1.83 | 2.0 | 246.4 | 11.6 | 246.3 |
| 18.0 | 17.83 | -0.88 | -2.02 | 2.2 | 246.4 | 11.5 | 247.0 |
| 19.0 | 18.81 | -0.96 | -2.20 | 2.4 | 246.4 | 11.4 | 246.4 |
| 20.0 | 19.79 | -1.04 | -2.38 | 2.6 | 246.4 | 11.7 | 245.9 |
| 21.0 | 20.77 | -1.12 | -2.57 | 2.8 | 246.4 | 12.1 | 251.2 |
| 22.0 | 21.75 | -1.20 | -2.75 | 3.0 | 246.5 | 11.1 | 244.9 |
| 23.0 | 22.73 | -1.27 | -2.92 | 3.2 | 246.6 | 11.2 | 248.9 |
| 24.0 | 23.71 | -1.34 | -3.10 | 3.4 | 246.6 | 10.8 | 247.9 |
| 25.0 | 24.70 | -1.41 | -3.28 | 3.6 | 246.7 | 10.9 | 251.0 |
| 26.0 | 25.68 | -1.48 | -3.45 | 3.8 | 246.8 | 10.9 | 247.8 |
| 27.0 | 26.66 | -1.55 | -3.62 | 3.9 | 246.8 | 10.8 | 249.0 |
| 28.0 | 27.65 | -1.62 | -3.78 | 4.1 | 246.8 | 10.1 | 244.6 |
| 29.0 | 28.63 | -1.70 | -3.94 | 4.3 | 246.7 | 10.2 | 254.2 |
| 30.0 | 29.62 | -1.77 | -4.10 | 4.5 | 246.6 | 9.4 | 243.6 |
| 31.0 | 30.60 | -1.85 | -4.23 | 4.6 | 246.4 | 9.0 | 238.0 |
| 32.0 | 31.59 | -1.94 | -4.37 | 4.8 | 246.1 | 9.1 | 235.7 |
| 33.0 | 32.58 | -2.02 | -4.50 | 4.9 | 245.8 | 8.9 | 239.5 |
| 33.5 | 33.05 | -2.06 | -4.56 | 5.0 | 245.7 | 8.9 | 239.2 |

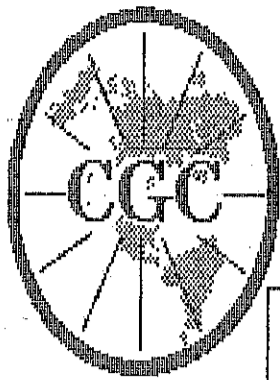
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96171
 DATE OF LOG: 09/11/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 33.05 M
 AZIMUTH: 245.7
 DISTANCE: 5.0 M
 + = 5 M INCR
 O = BOTTOM OF HOLE



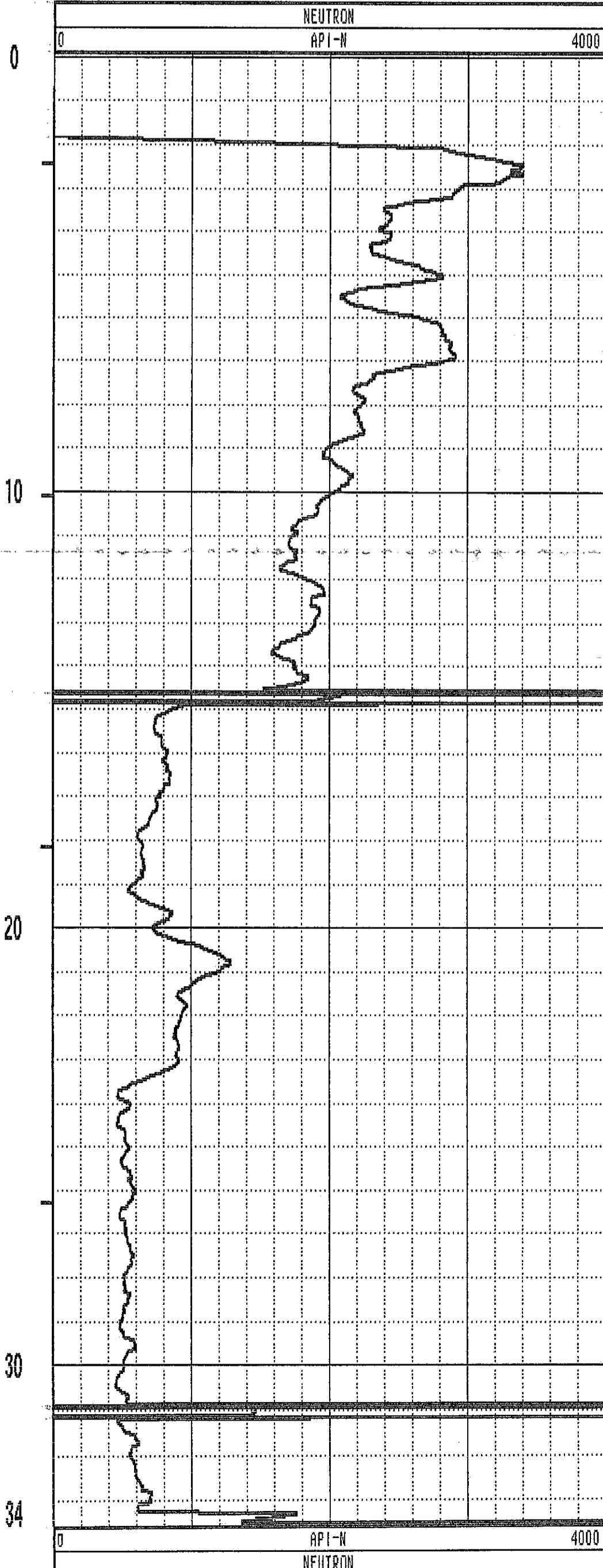
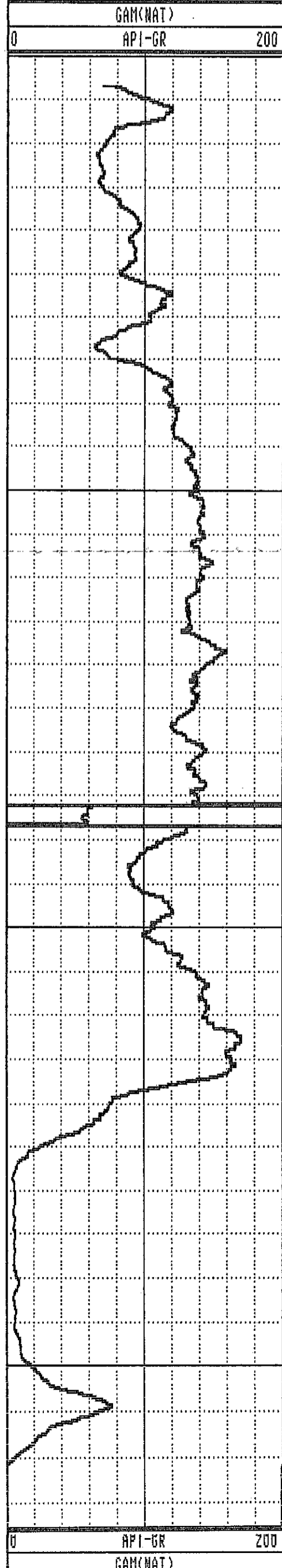


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : MRH-96171 | | |
| LOCATION/FIELD | : MILLOM CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 09/11/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 33 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 33.55 | LOG MEASURED FROM: | G.L. |
| LOG TOP | : 0.72 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 4 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

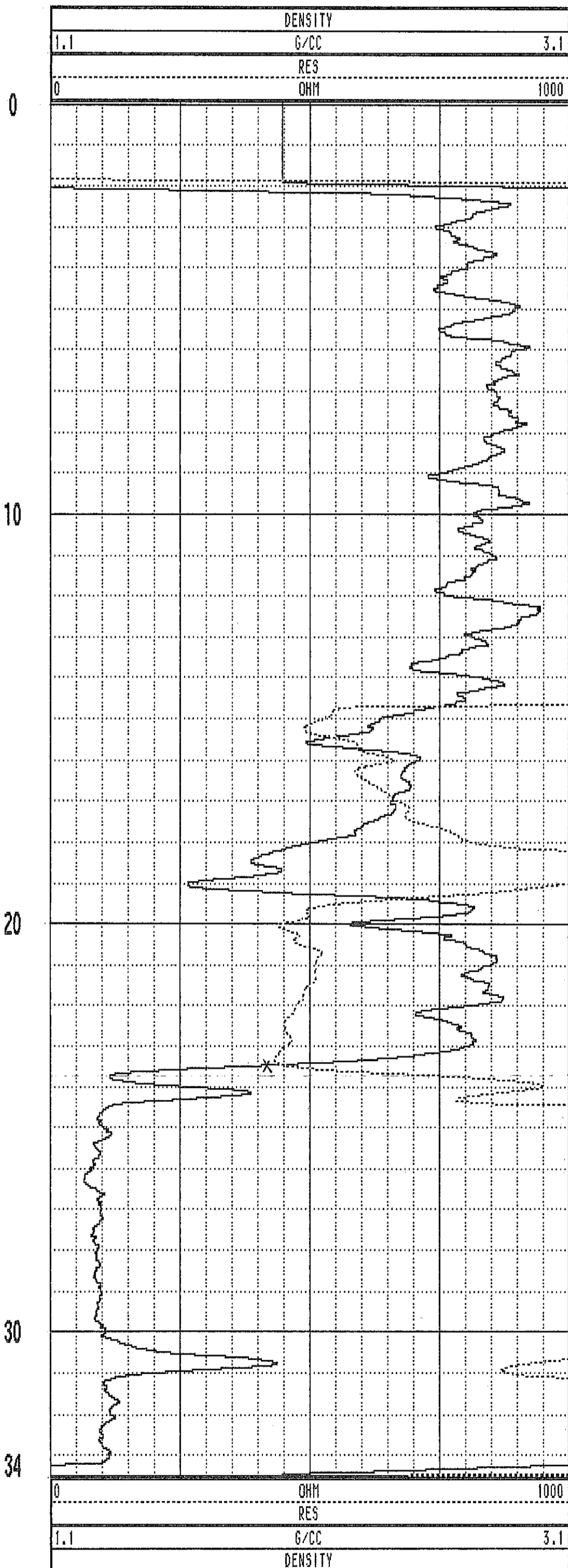
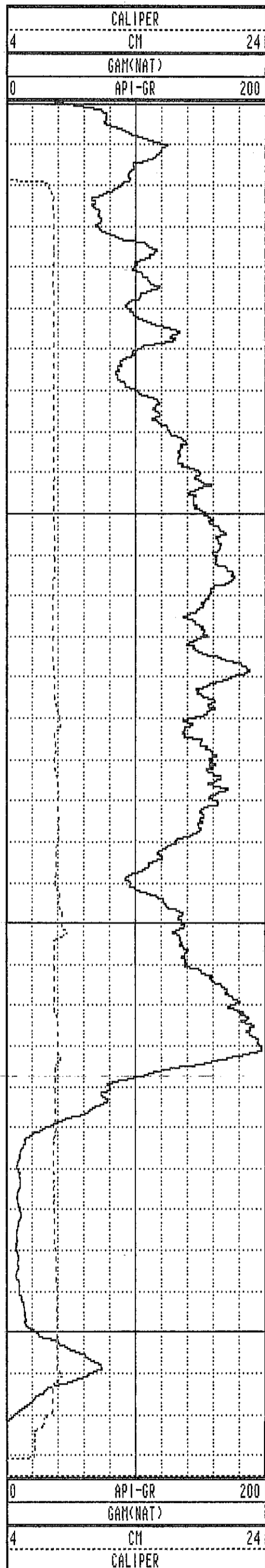
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96171 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/11/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB : LOG BOTTOM : 33.54 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R.THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 5 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96171 09/11/96 958

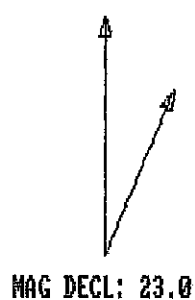
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

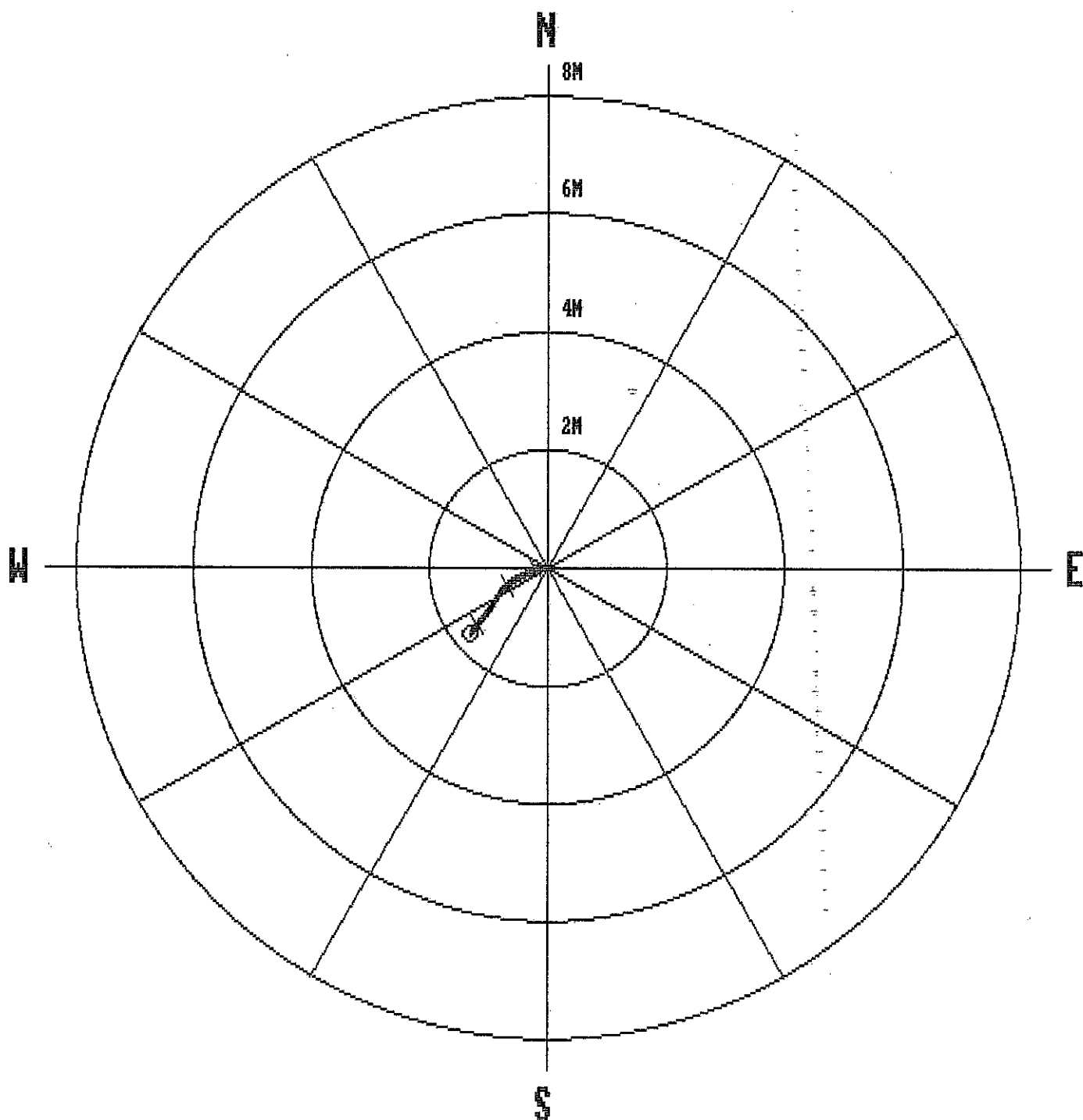
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.02 | -0.04 | 0.0 | 289.3 | 4.1 | 271.5 |
| 4.0 | 4.00 | 0.00 | -0.12 | 0.1 | 271.4 | 4.6 | 265.4 |
| 5.0 | 4.99 | -0.02 | -0.20 | 0.2 | 264.4 | 5.9 | 247.0 |
| 6.0 | 5.99 | -0.07 | -0.28 | 0.3 | 256.1 | 5.8 | 245.4 |
| 7.0 | 6.98 | -0.11 | -0.37 | 0.4 | 253.5 | 6.8 | 243.1 |
| 8.0 | 7.98 | -0.16 | -0.47 | 0.5 | 251.4 | 6.3 | 242.7 |
| 9.0 | 8.97 | -0.21 | -0.58 | 0.6 | 249.8 | 7.0 | 234.9 |
| 10.0 | 9.96 | -0.29 | -0.68 | 0.7 | 246.5 | 7.5 | 226.7 |
| 11.0 | 10.95 | -0.39 | -0.78 | 0.9 | 243.1 | 8.8 | 226.3 |
| 12.0 | 11.94 | -0.52 | -0.86 | 1.0 | 238.9 | 8.9 | 211.0 |
| 13.0 | 12.93 | -0.66 | -0.94 | 1.1 | 235.2 | 9.2 | 211.2 |
| 14.0 | 13.91 | -0.79 | -1.05 | 1.3 | 233.0 | 10.5 | 212.5 |
| 15.0 | 14.89 | -0.94 | -1.17 | 1.5 | 231.1 | 11.9 | 216.7 |
| 16.0 | 15.87 | -1.11 | -1.30 | 1.7 | 229.6 | 0.0 | 0.0 |
| 16.0 | 15.85 | -1.11 | -1.30 | 1.7 | 229.6 | 13.8 | 218.2 |

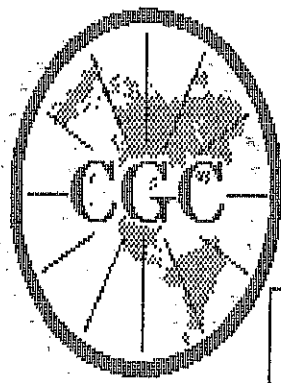
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96172
 DATE OF LOG: 09/12/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 15.85 M
 AZIMUTH: 229.6
 DISTANCE: 1.7 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

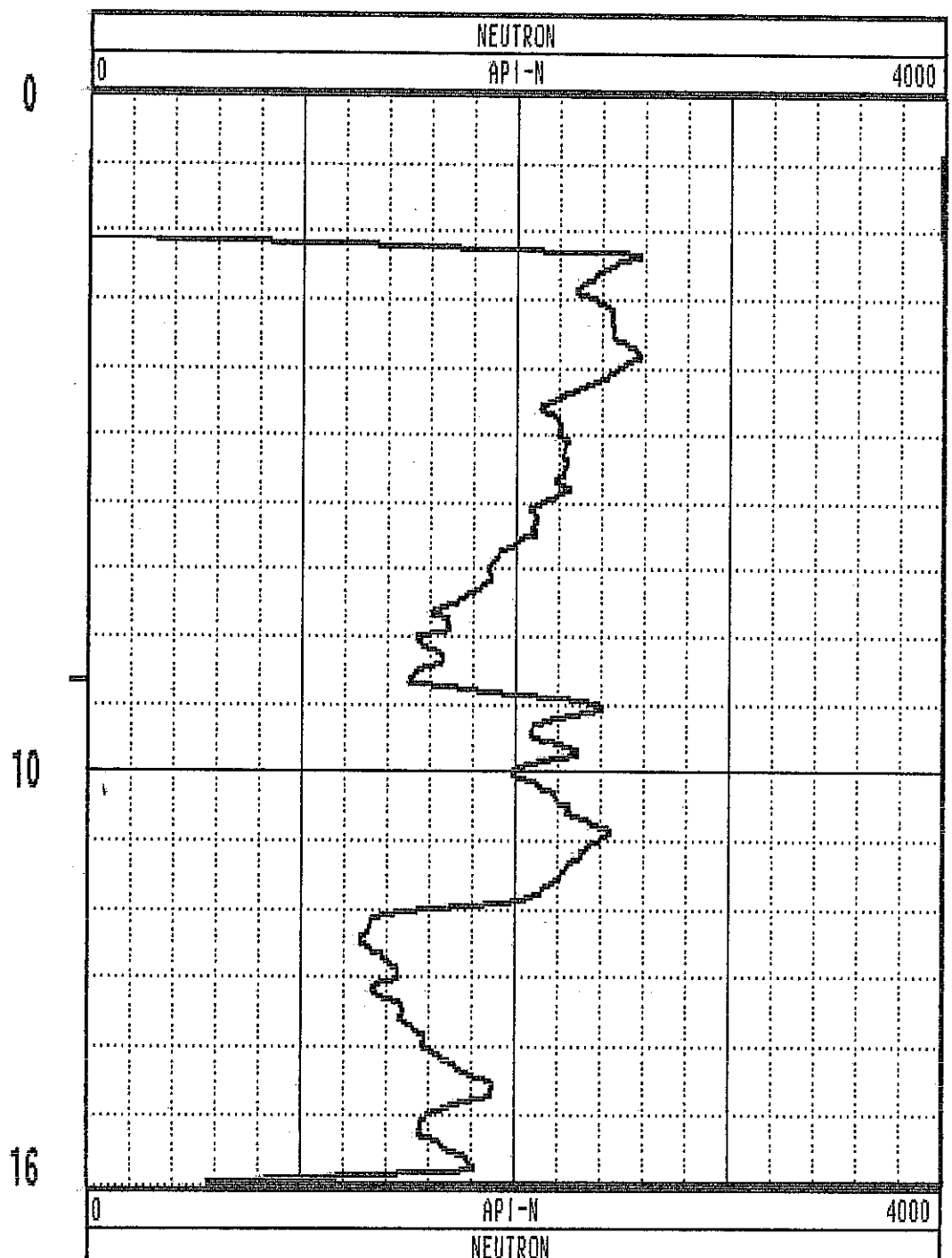
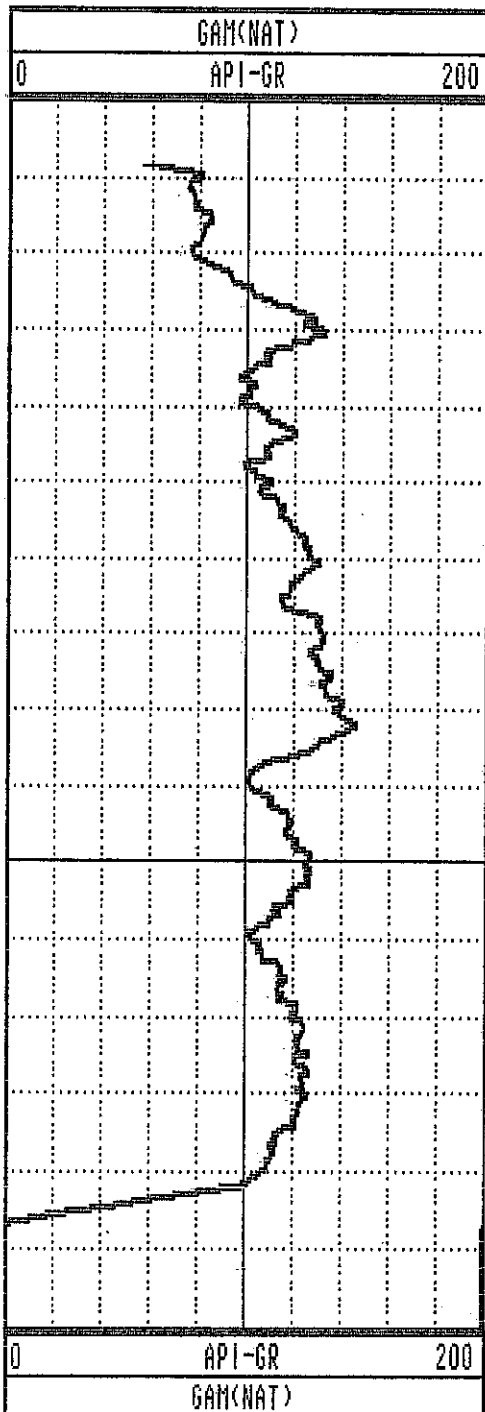
COMPANY : PINE VALLEY COAL
WELL : WRH-96172
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/12/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 16.04 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.88 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 1
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96172 09/12/96 56

GAMMA-RES-DENSITY

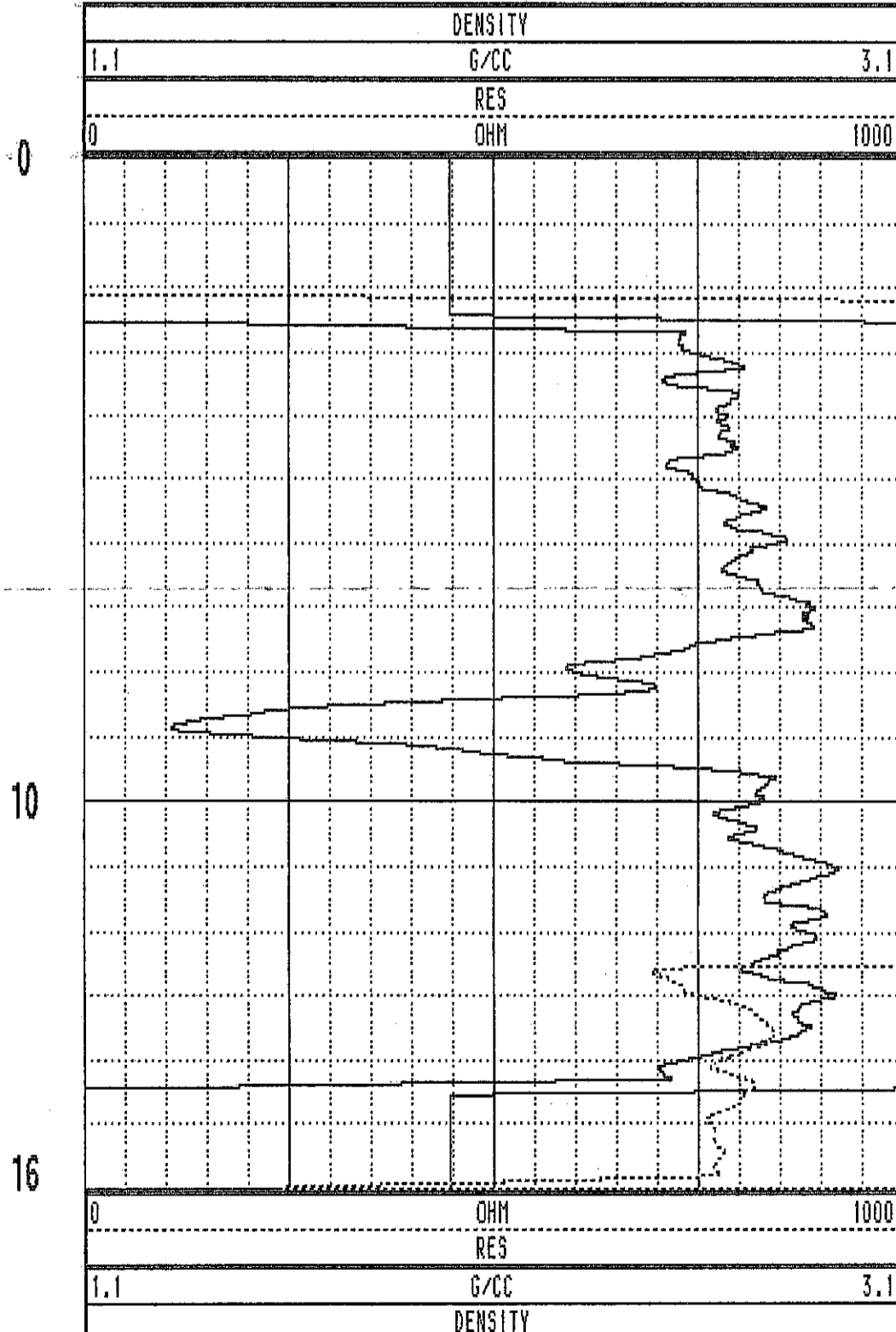
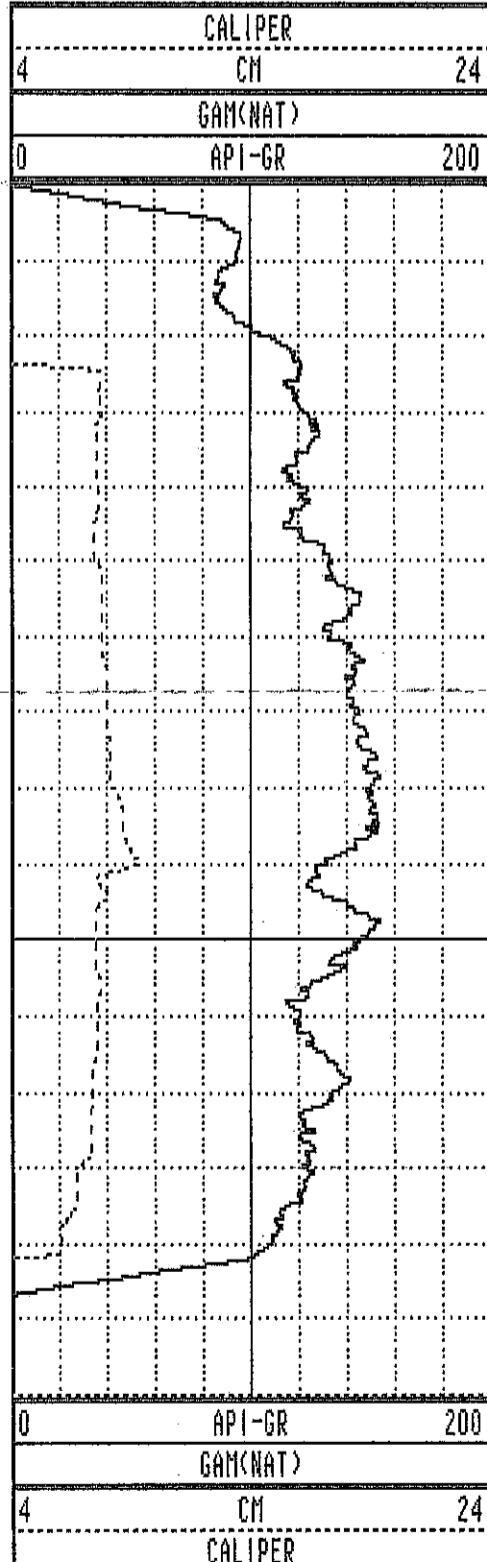
COMPANY : PINE VALLEY COAL
 WELL : WRH-96172
 LOCATION/FIELD : MILLOM CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 09/12/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 16.04 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 7
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96172 09/12/96 958

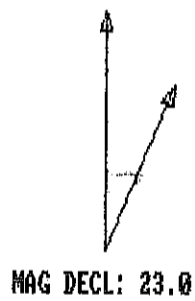
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

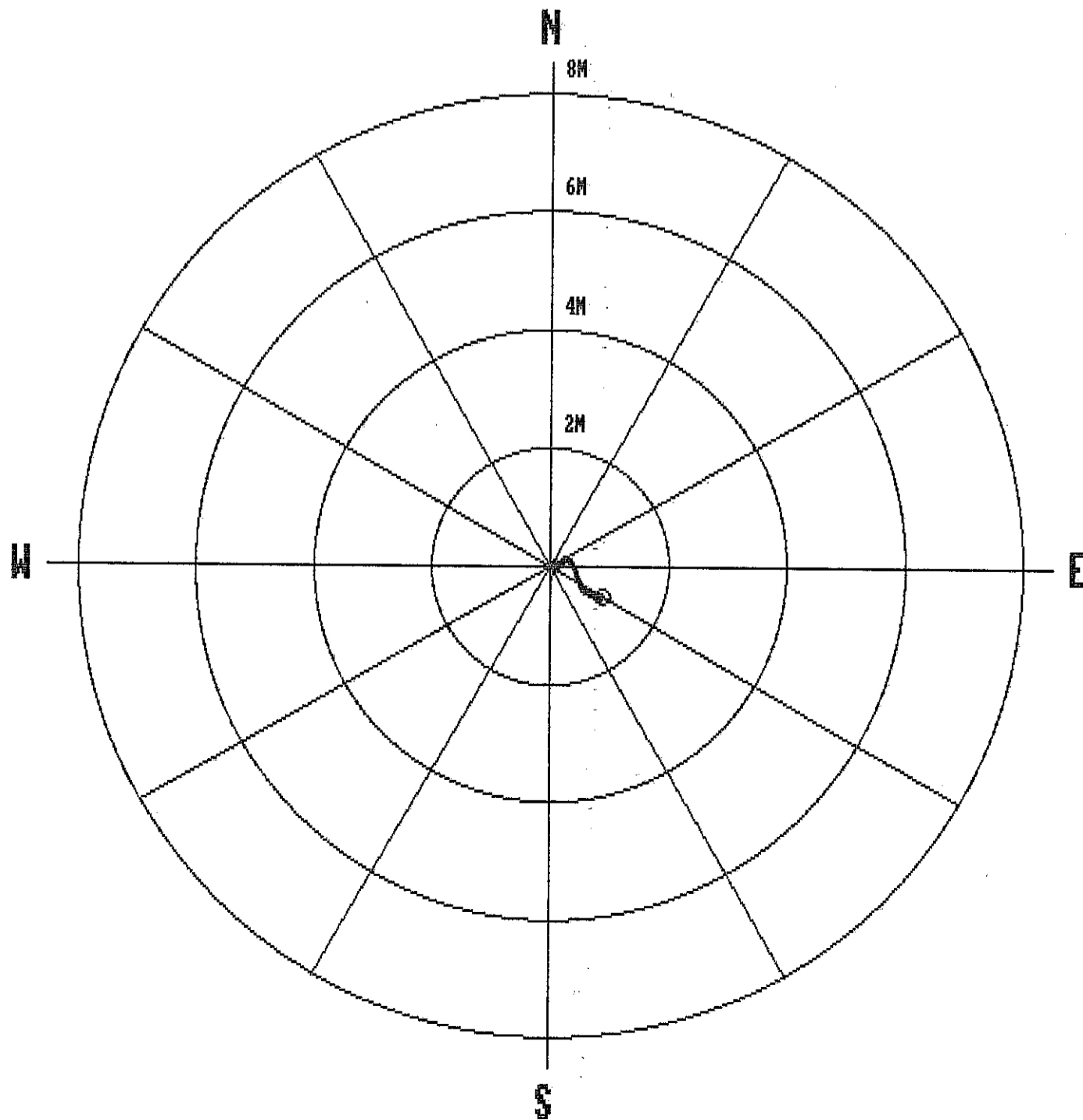
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 219.7 | 0.9 | 244.5 |
| 4.0 | 4.00 | -0.02 | -0.01 | 0.0 | 196.5 | 0.6 | 52.3 |
| 5.0 | 5.00 | -0.01 | 0.01 | 0.0 | 144.2 | 0.9 | 65.6 |
| 6.0 | 6.00 | -0.00 | 0.02 | 0.0 | 99.4 | 0.7 | 68.5 |
| 7.0 | 7.00 | 0.00 | 0.03 | 0.0 | 84.5 | 0.8 | 52.2 |
| 8.0 | 8.00 | 0.01 | 0.04 | 0.0 | 73.4 | 1.3 | 44.5 |
| 9.0 | 9.00 | 0.02 | 0.06 | 0.1 | 68.3 | 0.8 | 75.4 |
| 10.0 | 10.00 | 0.03 | 0.08 | 0.1 | 68.0 | 1.2 | 70.3 |
| 11.0 | 11.00 | 0.04 | 0.09 | 0.1 | 69.0 | 1.1 | 243.0 |
| 12.0 | 12.00 | 0.03 | 0.07 | 0.1 | 69.6 | 1.4 | 246.4 |
| 13.0 | 13.00 | 0.02 | 0.05 | 0.1 | 65.0 | 1.2 | 269.7 |
| 14.0 | 14.00 | 0.02 | 0.03 | 0.0 | 51.3 | 1.3 | 268.1 |
| 15.0 | 15.00 | 0.03 | 0.02 | 0.0 | 28.0 | 0.7 | 319.0 |
| 16.0 | 16.00 | 0.03 | 0.01 | 0.0 | 14.0 | 0.4 | 45.3 |
| 17.0 | 17.00 | 0.04 | 0.01 | 0.0 | 19.2 | 0.5 | 118.1 |
| 18.0 | 18.00 | 0.03 | 0.03 | 0.0 | 40.8 | 1.3 | 115.8 |
| 19.0 | 19.00 | 0.01 | 0.04 | 0.0 | 83.0 | 2.2 | 150.1 |
| 20.0 | 20.00 | -0.03 | 0.07 | 0.1 | 109.3 | 3.0 | 106.7 |
| 21.0 | 20.99 | -0.01 | 0.12 | 0.1 | 96.6 | 2.9 | 52.7 |
| 22.0 | 21.99 | 0.02 | 0.16 | 0.2 | 82.1 | 3.3 | 53.9 |
| 23.0 | 22.99 | 0.06 | 0.21 | 0.2 | 74.6 | 3.5 | 65.3 |
| 24.0 | 23.99 | 0.10 | 0.25 | 0.3 | 67.6 | 3.3 | 33.4 |
| 25.0 | 24.99 | 0.12 | 0.30 | 0.3 | 68.9 | 4.2 | 102.3 |
| 26.0 | 25.98 | 0.08 | 0.36 | 0.4 | 77.6 | 4.5 | 136.8 |
| 27.0 | 26.98 | 0.01 | 0.40 | 0.4 | 88.9 | 5.0 | 156.3 |
| 28.0 | 27.98 | -0.08 | 0.43 | 0.4 | 100.4 | 5.6 | 159.5 |
| 29.0 | 28.97 | -0.17 | 0.47 | 0.5 | 110.0 | 6.2 | 163.4 |
| 30.0 | 29.97 | -0.28 | 0.51 | 0.6 | 118.8 | 6.4 | 165.6 |
| 31.0 | 30.96 | -0.39 | 0.56 | 0.7 | 124.7 | 7.0 | 147.4 |
| 32.0 | 31.95 | -0.44 | 0.66 | 0.8 | 123.7 | 7.4 | 110.7 |
| 33.0 | 32.94 | -0.51 | 0.77 | 0.9 | 123.6 | 7.3 | 134.8 |
| 34.0 | 33.94 | -0.53 | 0.88 | 1.0 | 121.2 | 7.5 | 69.0 |
| 34.2 | 34.17 | -0.53 | 0.91 | 1.0 | 120.2 | 7.1 | 91.1 |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96173
 DATE OF LOG: 09/12/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 34.17 M
 AZIMUTH: 120.2
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



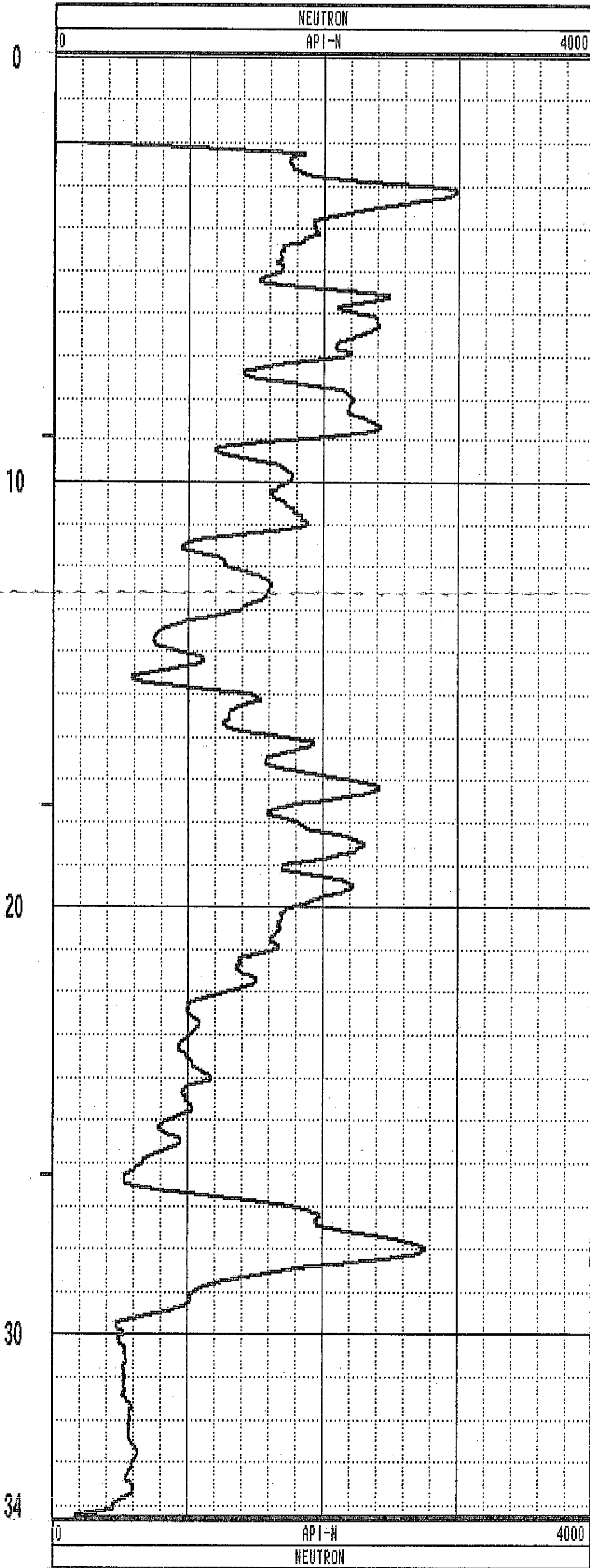
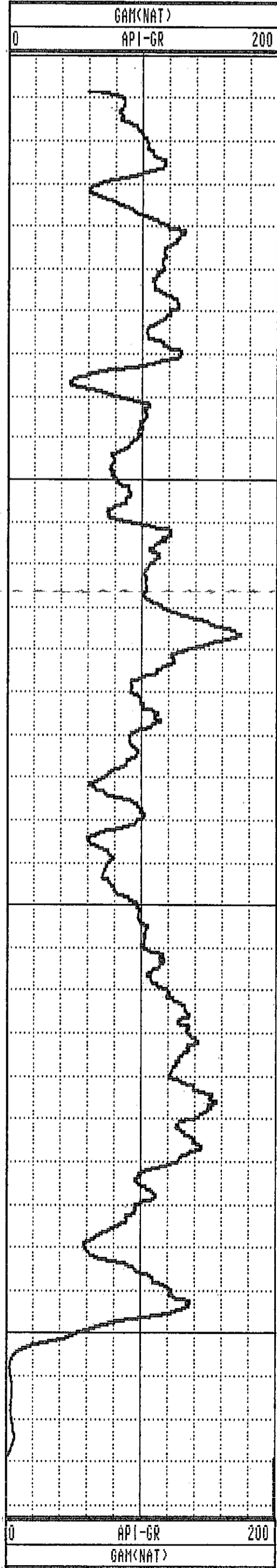


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96173 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 09/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 34 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 34.29 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.86 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9055A |
| | | LOG | : 8 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96173
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :

DATE : 09/12/96
 DEPTH DRILLER : 34
 LOG BOTTOM : 34.30
 LOG TOP : 0.04

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

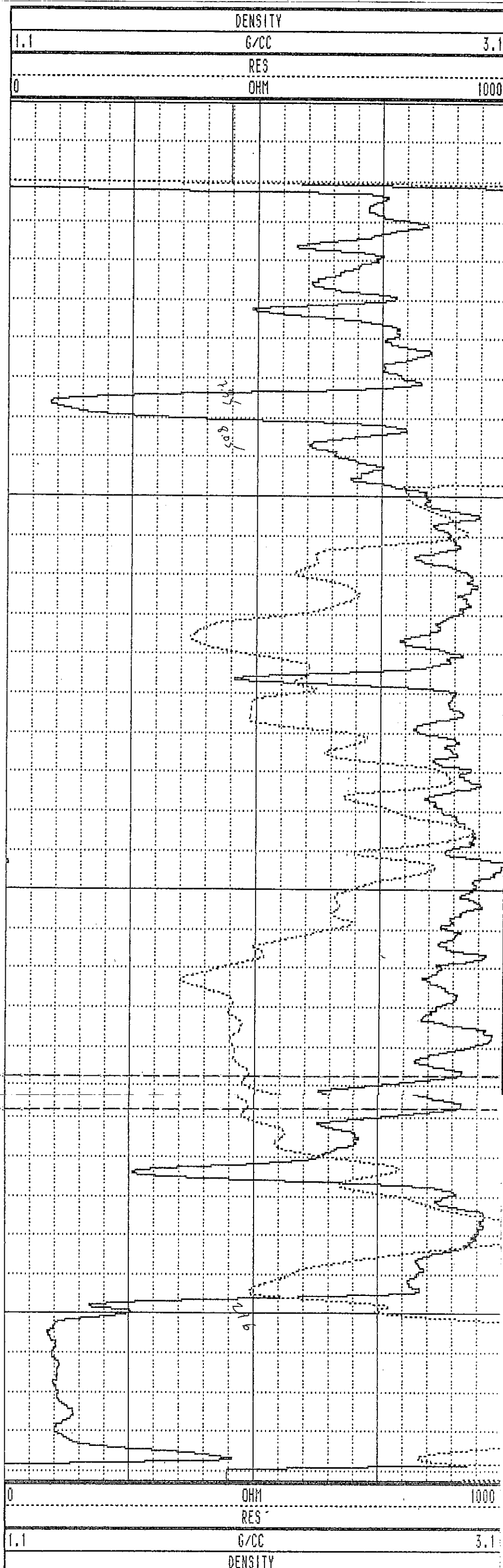
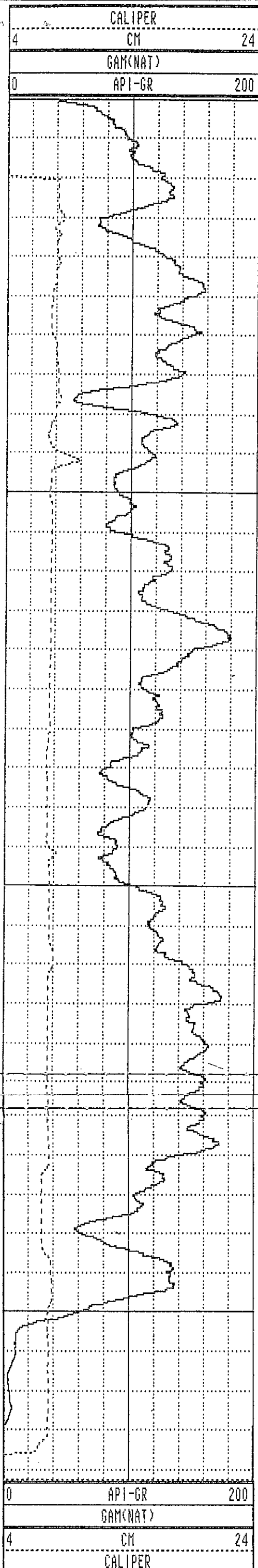
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : PROCESSED
 TYPE : 9033AA
 LOG : 1
 PLOT : PINE 7
 THRESH: 10000

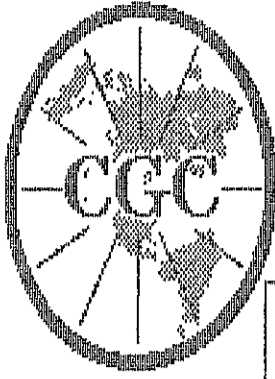
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96173 09/12/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|--------|----------|-----------------|
| 0 | NOV10,95 | 15:11:22 | 0 | CALIPERL | 0.000 CM |
| 1 | NOV10,95 | 15:11:22 | 0 | CALIPERL | 0.000 CM |
| 2 | JUL19,96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 API-GR |
| 3 | JUL19,96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 API-GR |
| 4 | JUL20,96 | 14:31:55 | 0 | DENSITY | 0.000 G/CC |
| 5 | JUL20,96 | 14:31:55 | 0 | DENSITY | 0.000 G/CC |
| 6 | JUL18,96 | 17:53:34 | 0 | RES(MG) | 0.000 OHM-M |
| 7 | JUL18,96 | 17:53:34 | 0 | RES(MG) | 0.000 OHM-M |
| 8 | NOV13,95 | 13:41:31 | 0 | CALIPER | 271.000 CM |
| 9 | NOV13,95 | 13:41:31 | 0 | CALIPER | 1880.000 CM |
| 10 | NOV10,95 | 15:11:22 | 0 | DENSITYH | 0.000 G/CC |
| 11 | NOV10,95 | 15:11:22 | 0 | DENSITYH | 0.000 G/CC |
| 12 | NOV15,95 | 10:21:21 | 0 | CALIPERL | 0.000 CM |
| 13 | NOV15,95 | 10:21:21 | 0 | CALIPERL | 2366.000 CM |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

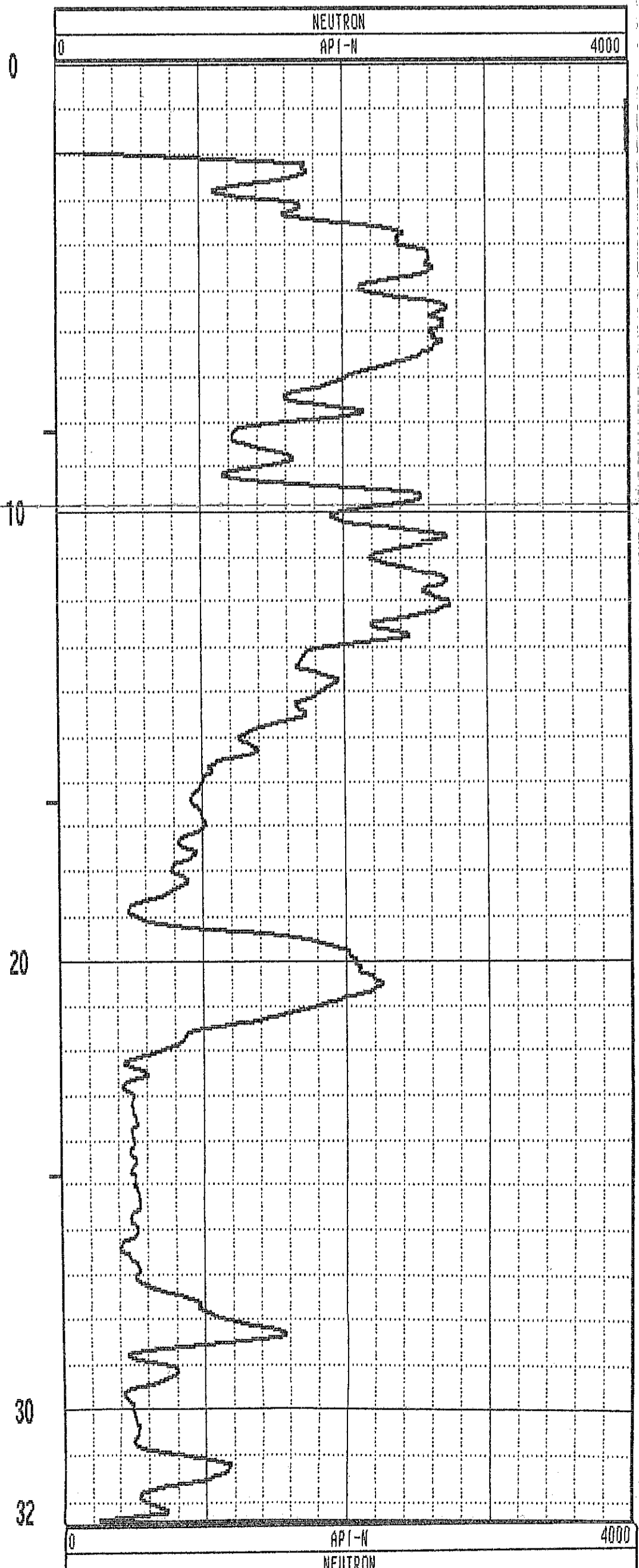
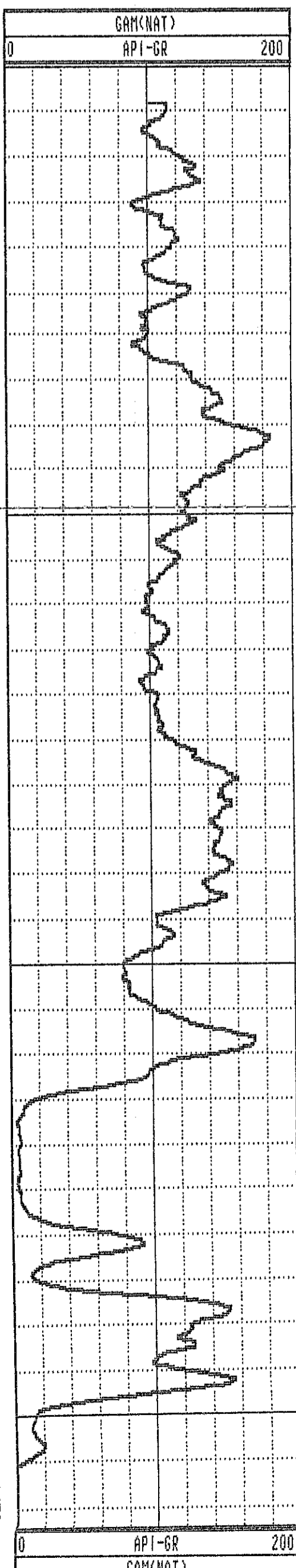
COMPANY : PINE VALLEY COAL
 WELL : WRH-96174
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 09/29/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 32 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 32.48 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.82 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

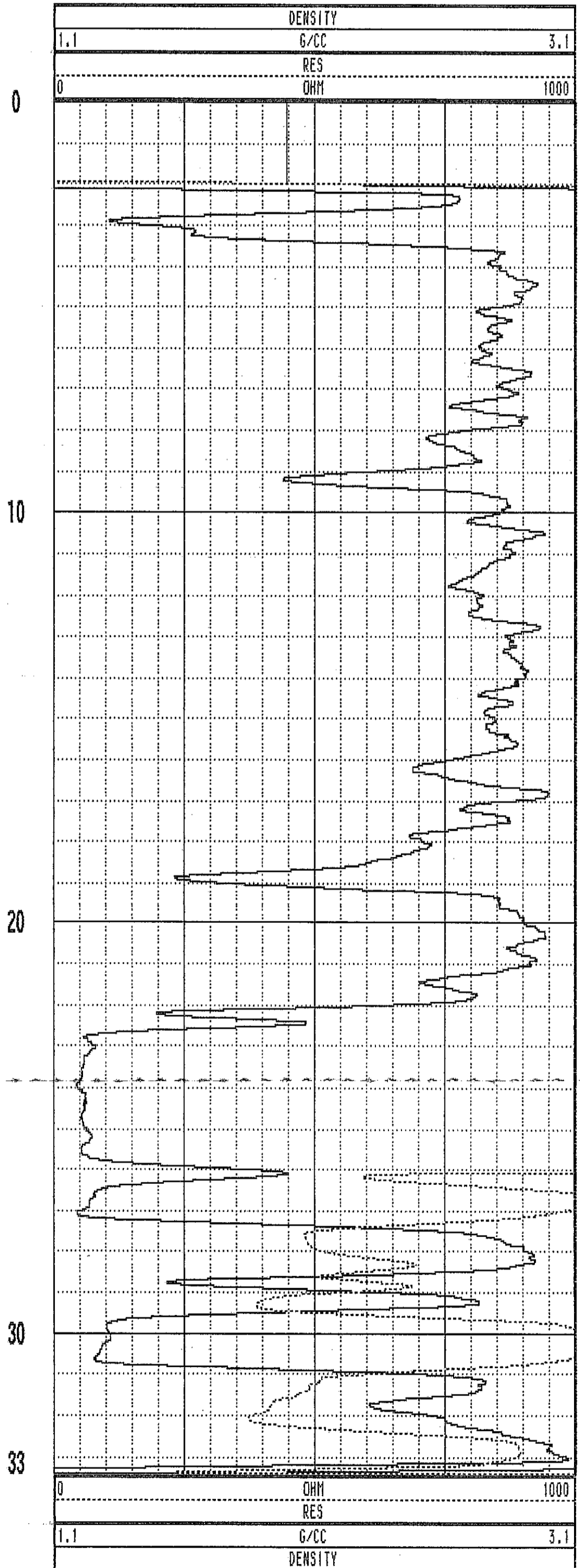
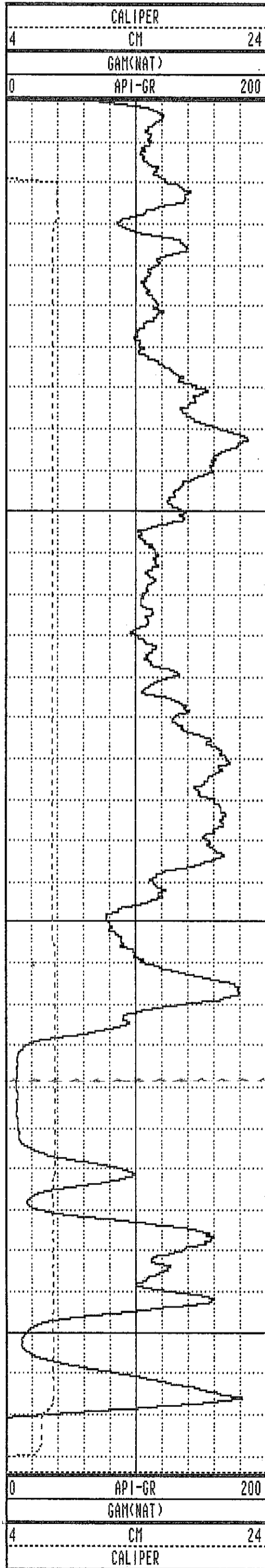
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|--------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96174 | | |
| LOCATION/FIELD | : MILLON CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 33 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 33.44 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : PROCESSED |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 5 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 7 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96174 09/12/96 958

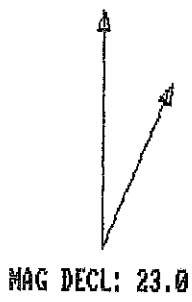
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

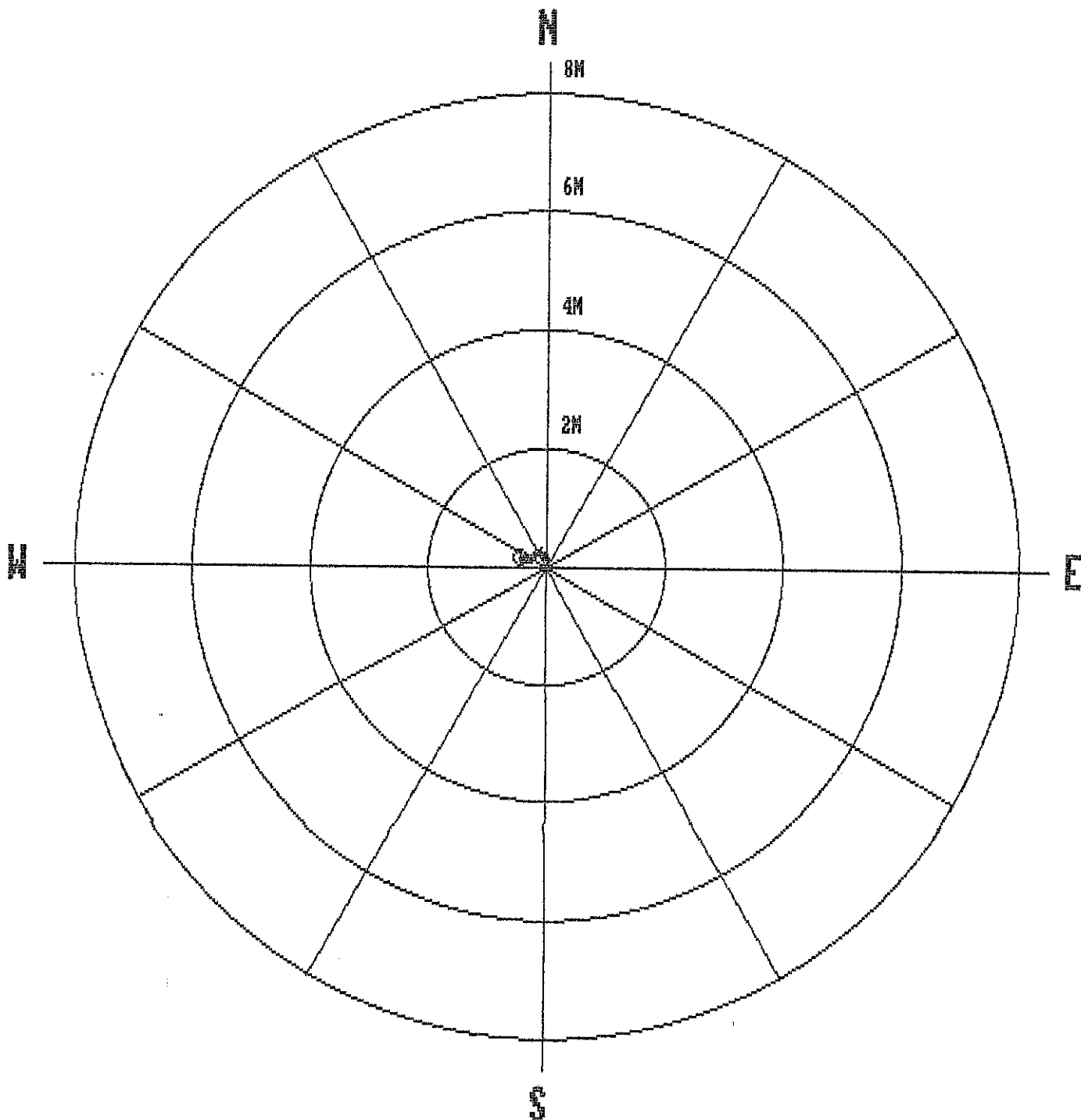
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 80.8 | 0.8 | 216.9 |
| 4.0 | 4.00 | -0.01 | 0.01 | 0.0 | 142.4 | 0.8 | 25.5 |
| 5.0 | 5.00 | 0.00 | 0.02 | 0.0 | 84.9 | 0.9 | 64.1 |
| 6.0 | 6.00 | 0.02 | 0.02 | 0.0 | 41.5 | 1.5 | 12.1 |
| 7.0 | 7.00 | 0.05 | 0.03 | 0.1 | 30.5 | 2.0 | 18.1 |
| 8.0 | 8.00 | 0.09 | 0.04 | 0.1 | 24.0 | 2.1 | 14.8 |
| 9.0 | 9.00 | 0.12 | 0.05 | 0.1 | 20.4 | 2.1 | 344.7 |
| 10.0 | 10.00 | 0.15 | 0.03 | 0.2 | 10.8 | 1.5 | 301.8 |
| 11.0 | 11.00 | 0.18 | -0.00 | 0.2 | 358.7 | 2.6 | 316.9 |
| 12.0 | 11.99 | 0.20 | -0.04 | 0.2 | 349.9 | 2.3 | 296.2 |
| 13.0 | 12.99 | 0.22 | -0.07 | 0.2 | 342.4 | 2.2 | 303.5 |
| 14.0 | 13.99 | 0.24 | -0.10 | 0.3 | 337.4 | 2.0 | 290.1 |
| 15.0 | 14.99 | 0.25 | -0.13 | 0.3 | 333.0 | 1.4 | 264.8 |
| 16.0 | 15.99 | 0.25 | -0.15 | 0.3 | 329.4 | 1.1 | 274.0 |
| 17.0 | 16.99 | 0.25 | -0.16 | 0.3 | 326.4 | 0.9 | 231.0 |
| 18.0 | 17.99 | 0.23 | -0.17 | 0.3 | 323.7 | 0.5 | 216.8 |
| 19.0 | 18.99 | 0.22 | -0.18 | 0.3 | 321.0 | 1.5 | 250.7 |
| 20.0 | 19.99 | 0.21 | -0.20 | 0.3 | 316.3 | 1.4 | 237.5 |
| 21.0 | 20.99 | 0.20 | -0.22 | 0.3 | 312.7 | 1.1 | 222.1 |
| 22.0 | 21.99 | 0.19 | -0.23 | 0.3 | 309.3 | 1.0 | 214.2 |
| 23.0 | 22.99 | 0.17 | -0.24 | 0.3 | 305.3 | 1.4 | 243.6 |
| 24.0 | 23.99 | 0.15 | -0.25 | 0.3 | 301.0 | 1.1 | 198.1 |
| 25.0 | 24.99 | 0.13 | -0.25 | 0.3 | 297.5 | 1.4 | 179.9 |
| 26.0 | 25.99 | 0.11 | -0.26 | 0.3 | 293.7 | 0.9 | 228.2 |
| 27.0 | 26.99 | 0.11 | -0.28 | 0.3 | 291.0 | 1.3 | 259.5 |
| 28.0 | 27.99 | 0.11 | -0.31 | 0.3 | 289.6 | 1.4 | 284.4 |
| 29.0 | 28.99 | 0.12 | -0.33 | 0.4 | 289.4 | 1.7 | 291.5 |
| 30.0 | 29.99 | 0.12 | -0.36 | 0.4 | 289.2 | 1.5 | 286.5 |
| 31.0 | 30.99 | 0.13 | -0.38 | 0.4 | 289.1 | 1.6 | 278.1 |
| 32.0 | 31.99 | 0.14 | -0.41 | 0.4 | 289.0 | 1.6 | 291.2 |
| 33.0 | 32.99 | 0.16 | -0.44 | 0.5 | 289.9 | 1.9 | 319.3 |
| 33.4 | 33.37 | 0.17 | -0.44 | 0.5 | 290.8 | 2.3 | 332.6 |

**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96174
 DATE OF LOG: 09/12/96
 PROBE: 9055A 56



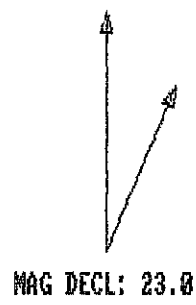
SCALE: 1 M/CM
 TRUE DEPTH: 33.37 M
 AZIMUTH: 290.8
 DISTANCE: 0.5 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



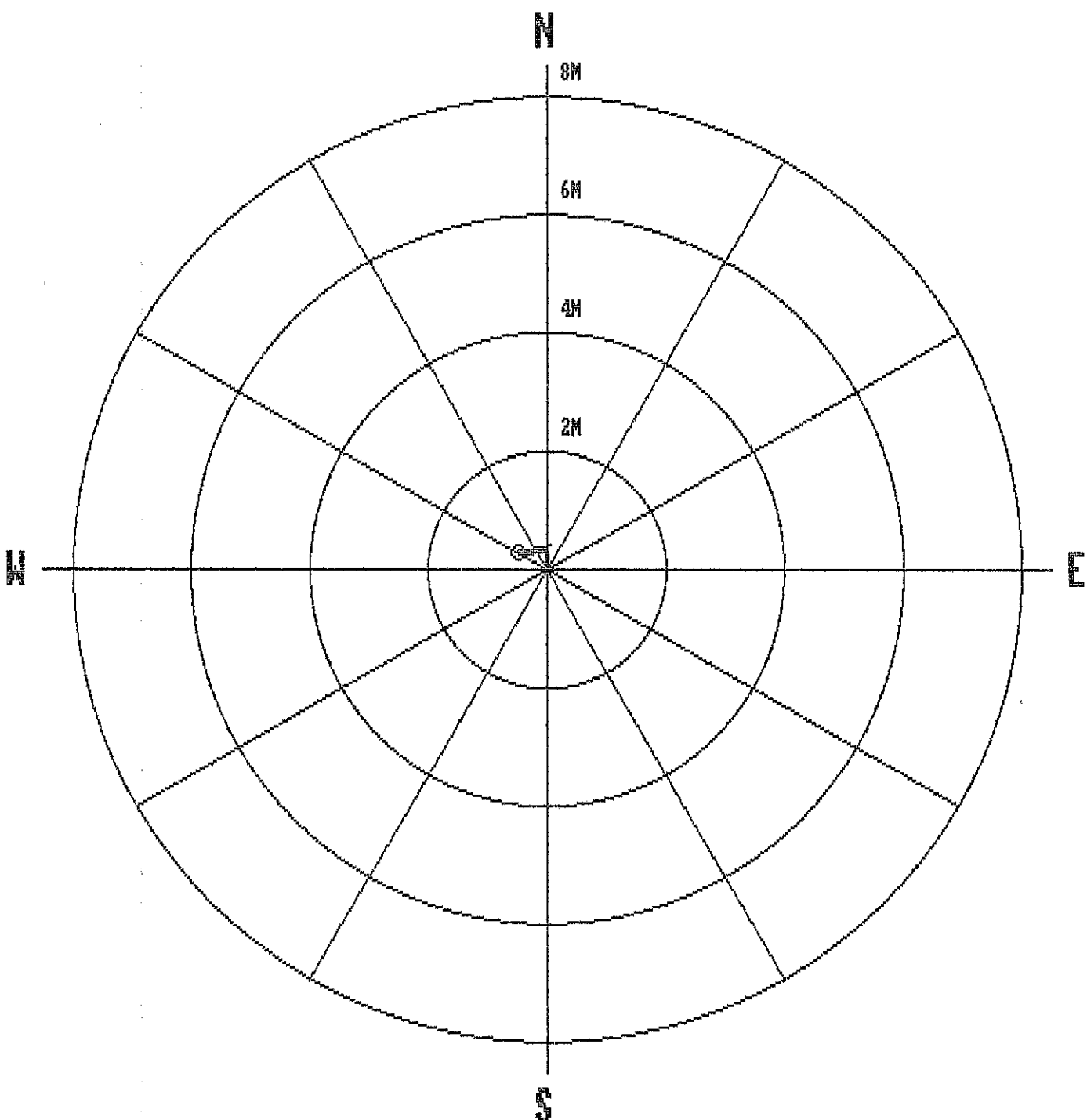
| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | -0.00 | 0.0 | 332.8 | 1.0 | 303.5 |
| 4.0 | 4.00 | 0.01 | -0.00 | 0.0 | 336.3 | 0.9 | 2.0 |
| 5.0 | 5.00 | 0.02 | 0.00 | 0.0 | 7.0 | 1.3 | 26.3 |
| 6.0 | 6.00 | 0.04 | 0.01 | 0.0 | 10.5 | 1.1 | 15.3 |
| 7.0 | 7.00 | 0.07 | 0.01 | 0.1 | 5.7 | 1.5 | 324.2 |
| 8.0 | 8.00 | 0.10 | 0.00 | 0.1 | 2.6 | 2.1 | 17.0 |
| 9.0 | 9.00 | 0.13 | 0.01 | 0.1 | 3.4 | 1.7 | 358.4 |
| 10.0 | 10.00 | 0.17 | 0.01 | 0.2 | 3.0 | 2.3 | 353.8 |
| 11.0 | 11.00 | 0.20 | 0.01 | 0.2 | 4.0 | 2.3 | 3.1 |
| 12.0 | 12.00 | 0.24 | 0.01 | 0.2 | 3.4 | 1.8 | 354.2 |
| 13.0 | 13.00 | 0.27 | 0.01 | 0.3 | 1.9 | 1.6 | 354.1 |
| 14.0 | 13.99 | 0.30 | 0.00 | 0.3 | 0.9 | 1.7 | 350.3 |
| 15.0 | 14.99 | 0.32 | -0.00 | 0.3 | 359.8 | 1.1 | 341.5 |
| 16.0 | 15.99 | 0.34 | -0.01 | 0.3 | 358.4 | 0.8 | 299.1 |
| 17.0 | 16.99 | 0.34 | -0.03 | 0.3 | 355.6 | 1.4 | 279.3 |
| 18.0 | 17.99 | 0.34 | -0.05 | 0.3 | 352.4 | 1.3 | 248.3 |
| 19.0 | 18.99 | 0.34 | -0.07 | 0.3 | 348.8 | 1.2 | 267.5 |
| 20.0 | 19.99 | 0.33 | -0.09 | 0.3 | 344.1 | 1.9 | 267.4 |
| 21.0 | 20.99 | 0.33 | -0.12 | 0.4 | 339.4 | 1.5 | 260.0 |
| 22.0 | 21.99 | 0.33 | -0.15 | 0.4 | 335.4 | 1.4 | 260.7 |
| 23.0 | 22.99 | 0.32 | -0.18 | 0.4 | 331.5 | 1.7 | 260.1 |
| 24.0 | 23.99 | 0.32 | -0.20 | 0.4 | 327.3 | 1.8 | 262.3 |
| 25.0 | 24.99 | 0.31 | -0.23 | 0.4 | 323.4 | 1.9 | 265.0 |
| 26.0 | 25.99 | 0.31 | -0.26 | 0.4 | 319.8 | 1.9 | 252.3 |
| 27.0 | 26.99 | 0.30 | -0.29 | 0.4 | 316.1 | 1.7 | 251.0 |
| 28.0 | 27.99 | 0.30 | -0.32 | 0.4 | 312.8 | 1.5 | 269.2 |
| 29.0 | 28.99 | 0.29 | -0.35 | 0.5 | 309.6 | 2.1 | 255.0 |
| 30.0 | 29.99 | 0.29 | -0.38 | 0.5 | 306.7 | 2.3 | 266.5 |
| 31.0 | 30.99 | 0.28 | -0.42 | 0.5 | 303.7 | 2.3 | 269.7 |
| 32.0 | 31.99 | 0.28 | -0.46 | 0.5 | 301.0 | 2.4 | 275.5 |
| 32.4 | 32.41 | 0.28 | -0.48 | 0.6 | 300.1 | 1.9 | 264.0 |

PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96174
DATE OF LOG: 09/29/96
PROBE: 9055A 71



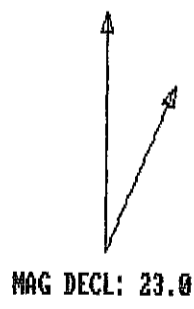
SCALE: 1 M/CM
TRUE DEPTH: 32.41 M
AZIMUTH: 300.1
DISTANCE: 0.6 M
+ = 20 M INCR
O = BOTTOM OF HOLE



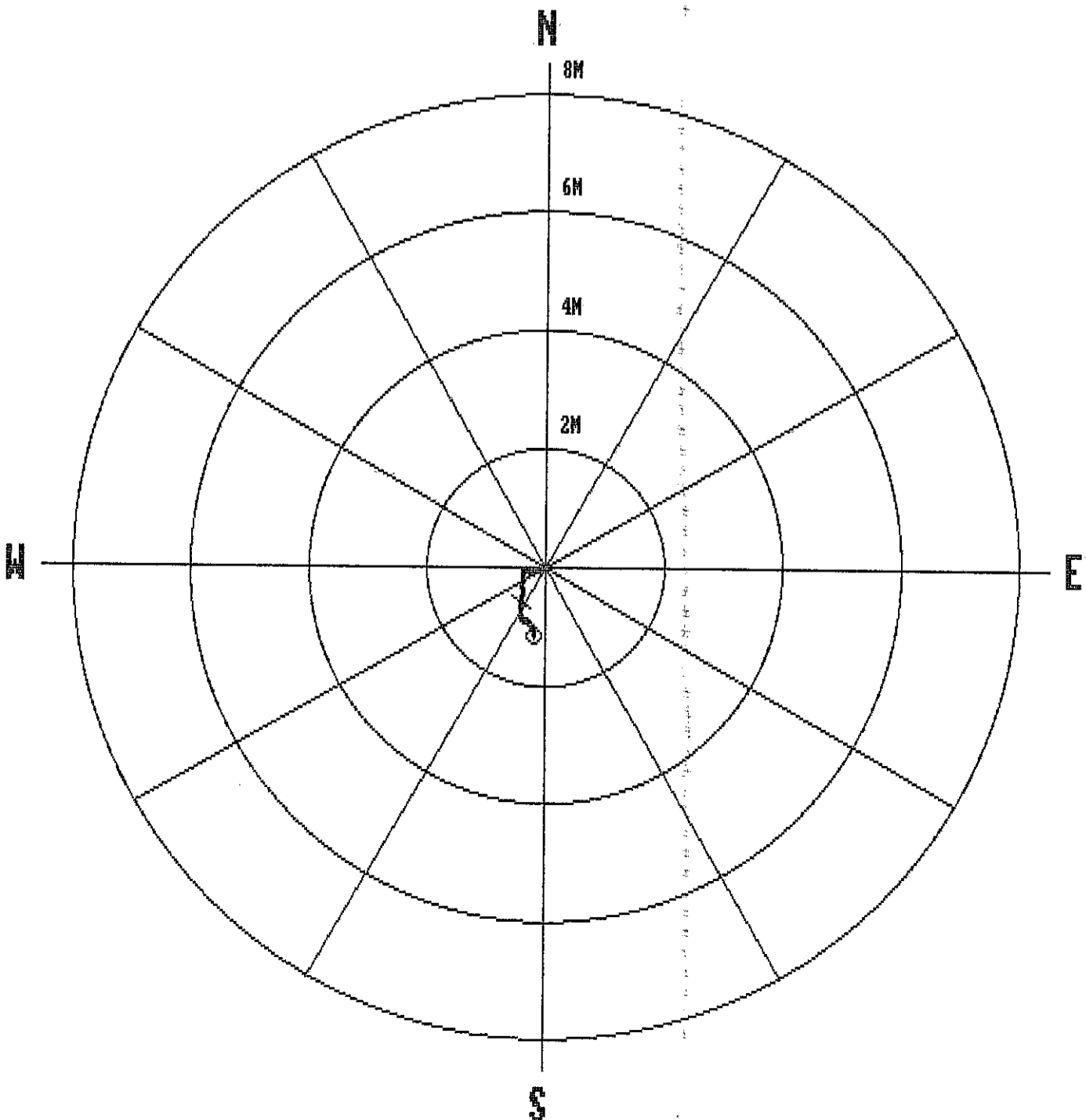
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 294.7 | 1.5 | 4.3 |
| 3.0 | 3.00 | -0.01 | -0.02 | 0.0 | 248.7 | 1.8 | 220.8 |
| 4.0 | 4.00 | -0.01 | -0.03 | 0.0 | 258.9 | 2.1 | 80.6 |
| 5.0 | 5.00 | -0.01 | -0.03 | 0.0 | 243.8 | 2.0 | 246.7 |
| 6.0 | 6.00 | -0.02 | -0.07 | 0.1 | 252.0 | 2.3 | 256.8 |
| 7.0 | 7.00 | -0.03 | -0.10 | 0.1 | 254.1 | 2.1 | 246.3 |
| 8.0 | 8.00 | -0.04 | -0.14 | 0.1 | 252.6 | 2.2 | 251.7 |
| 9.0 | 8.99 | -0.06 | -0.18 | 0.2 | 251.8 | 2.6 | 251.1 |
| 10.0 | 9.99 | -0.06 | -0.23 | 0.2 | 254.6 | 2.8 | 270.7 |
| | 10.99 | -0.06 | -0.28 | 0.3 | 257.4 | 3.1 | 288.8 |
| 12.0 | 11.99 | -0.06 | -0.34 | 0.3 | 259.6 | 3.4 | 270.2 |
| 13.0 | 12.99 | -0.08 | -0.37 | 0.4 | 257.4 | 3.9 | 167.0 |
| 14.0 | 13.99 | -0.15 | -0.36 | 0.4 | 248.3 | 3.4 | 180.2 |
| 15.0 | 14.98 | -0.21 | -0.37 | 0.4 | 240.5 | 3.9 | 183.7 |
| 16.0 | 15.98 | -0.28 | -0.38 | 0.5 | 234.0 | 4.1 | 190.4 |
| 17.0 | 16.98 | -0.34 | -0.37 | 0.5 | 227.4 | 3.7 | 160.4 |
| 18.0 | 17.98 | -0.41 | -0.37 | 0.5 | 222.2 | 3.8 | 187.5 |
| 19.0 | 18.98 | -0.48 | -0.38 | 0.6 | 218.7 | 4.4 | 195.0 |
| 20.0 | 19.97 | -0.56 | -0.40 | 0.7 | 215.7 | 4.7 | 187.2 |
| 21.0 | 20.97 | -0.64 | -0.41 | 0.8 | 212.9 | 4.8 | 185.1 |
| 22.0 | 21.97 | -0.72 | -0.42 | 0.8 | 210.6 | 4.5 | 182.3 |
| 23.0 | 22.96 | -0.80 | -0.42 | 0.9 | 207.6 | 4.7 | 170.9 |
| 24.0 | 23.96 | -0.86 | -0.37 | 0.9 | 203.5 | 4.1 | 123.5 |
| 25.0 | 24.96 | -0.90 | -0.31 | 1.0 | 199.3 | 3.7 | 118.1 |
| 26.0 | 25.95 | -0.94 | -0.26 | 1.0 | 195.5 | 3.5 | 131.5 |
| 27.0 | 26.95 | -0.98 | -0.22 | 1.0 | 192.8 | 3.2 | 135.6 |
| 28.0 | 27.95 | -1.03 | -0.19 | 1.0 | 190.6 | 3.2 | 168.3 |
| 29.0 | 28.95 | -1.08 | -0.17 | 1.1 | 189.2 | 3.4 | 170.1 |
| 30.0 | 29.95 | -1.14 | -0.17 | 1.2 | 188.7 | 3.6 | 180.4 |
| 30.4 | 30.31 | -1.16 | -0.18 | 1.2 | 188.6 | 3.7 | 190.3 |

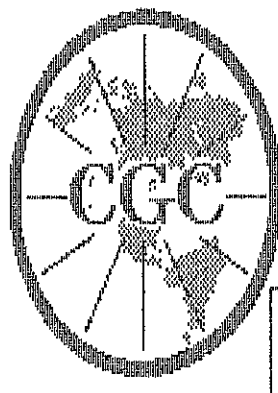
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96175
 DATE OF LOG: 09/12/96
 PROBE: 9055A 56



SCALE: 1 M/CM
 TRUE DEPTH: 30.31 M
 AZIMUTH: 188.6
 DISTANCE: 1.2 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96175
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

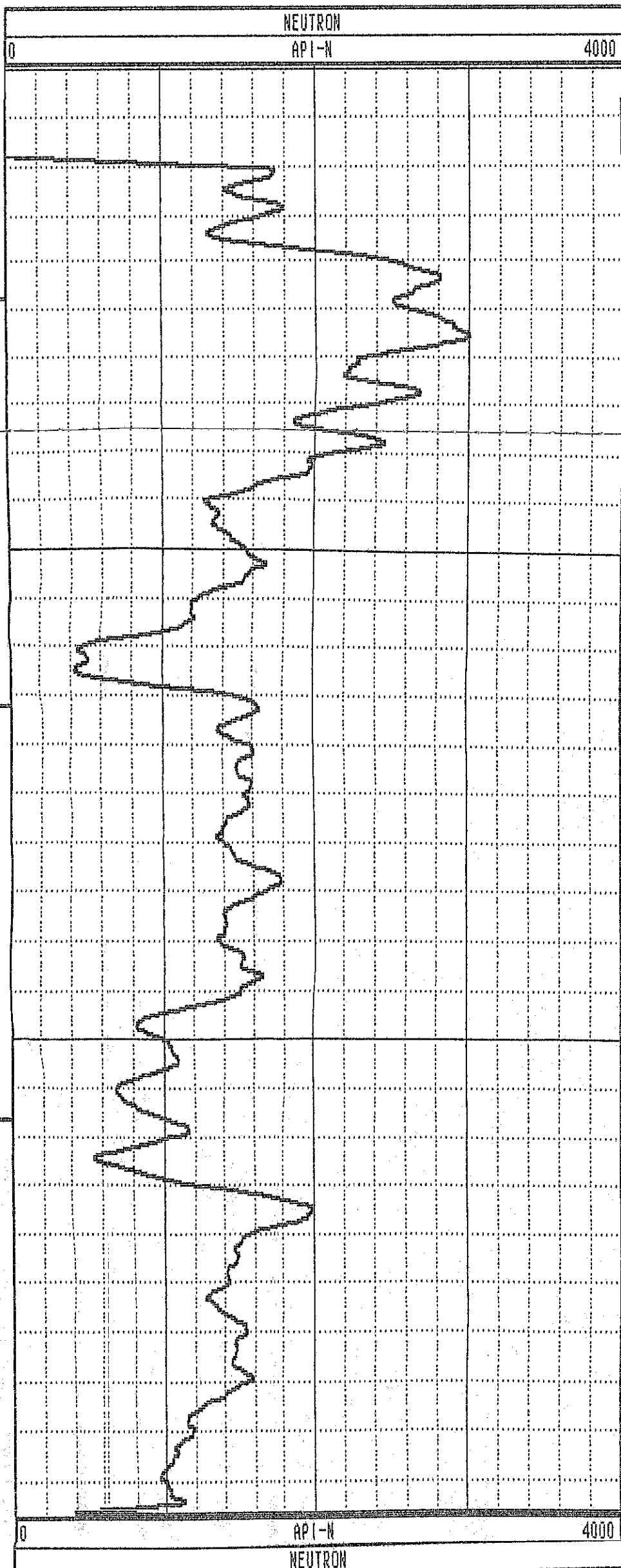
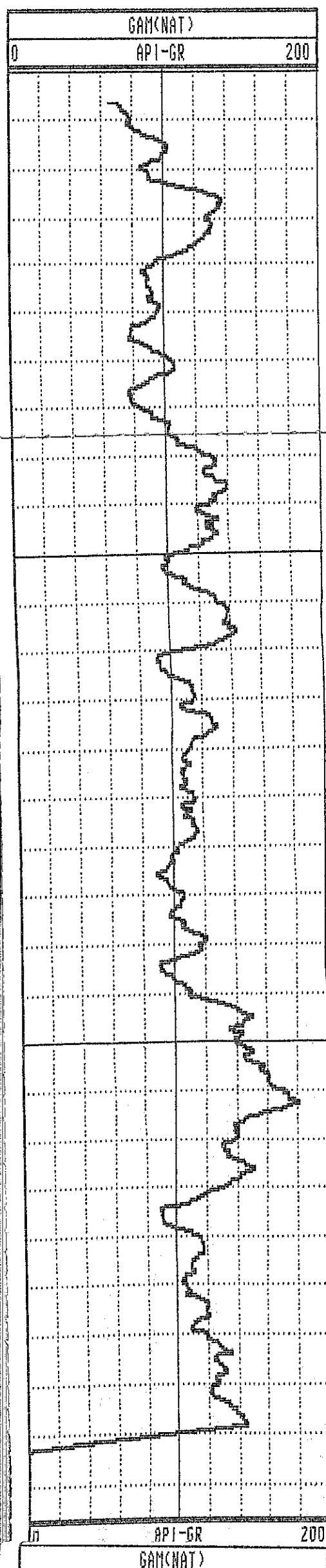
TOWNSHIP : RANGE :

DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 29 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.67 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.64 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

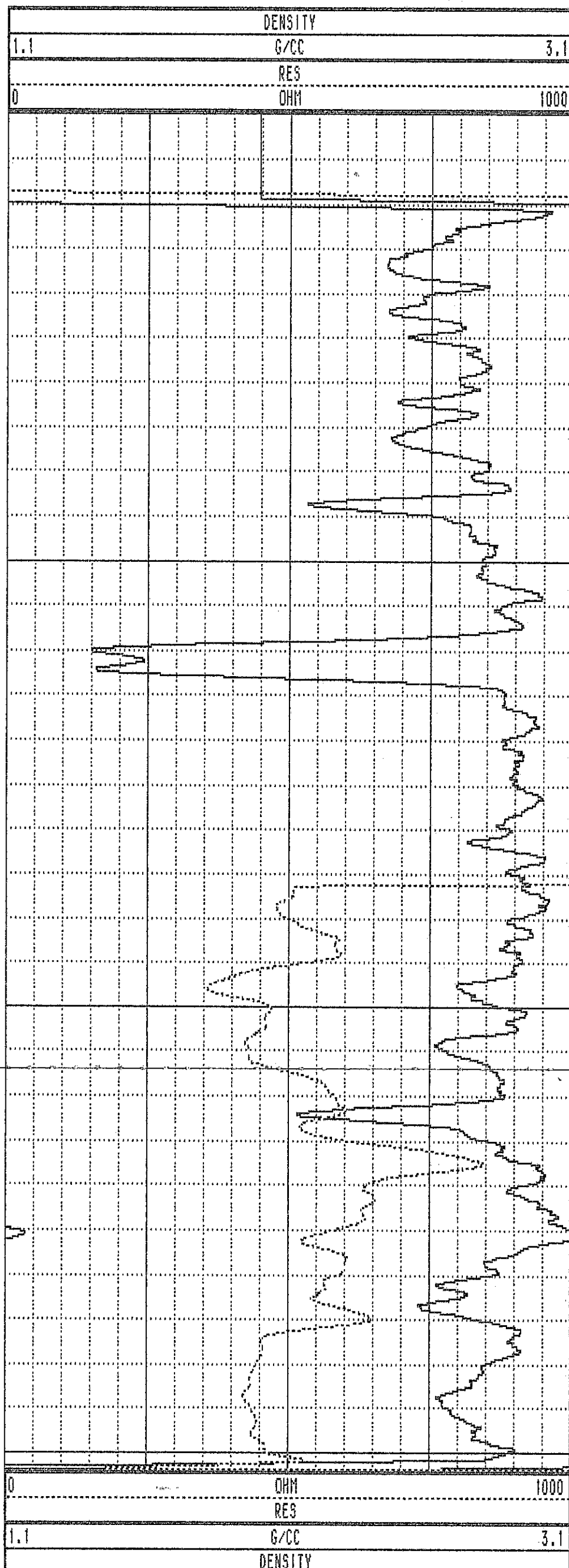
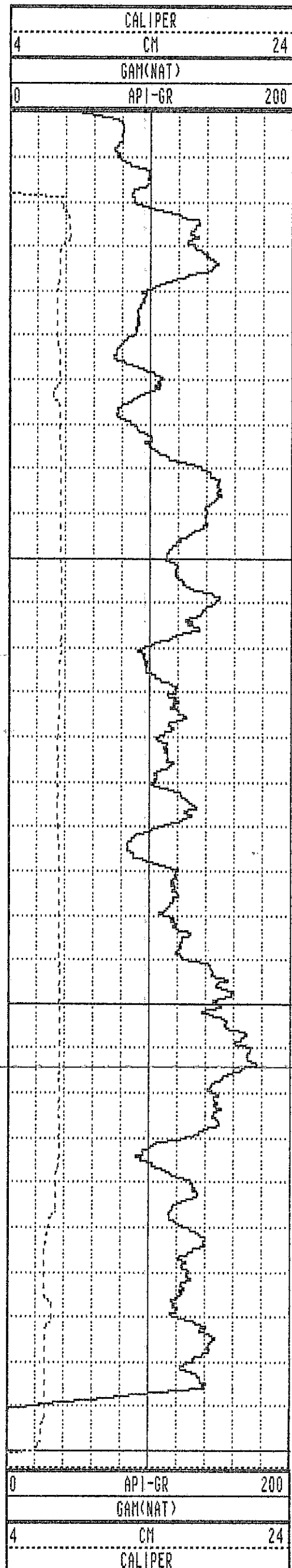
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96175 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | : RANGE | : |
| DATE | : 09/12/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 30.42 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : PROCESSED |
| | | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 7 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96175 09/12/96 958

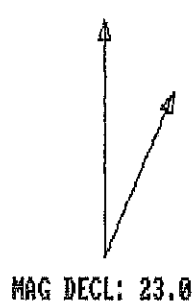
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|--------|----------|---------------------------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS 33.000 CM |

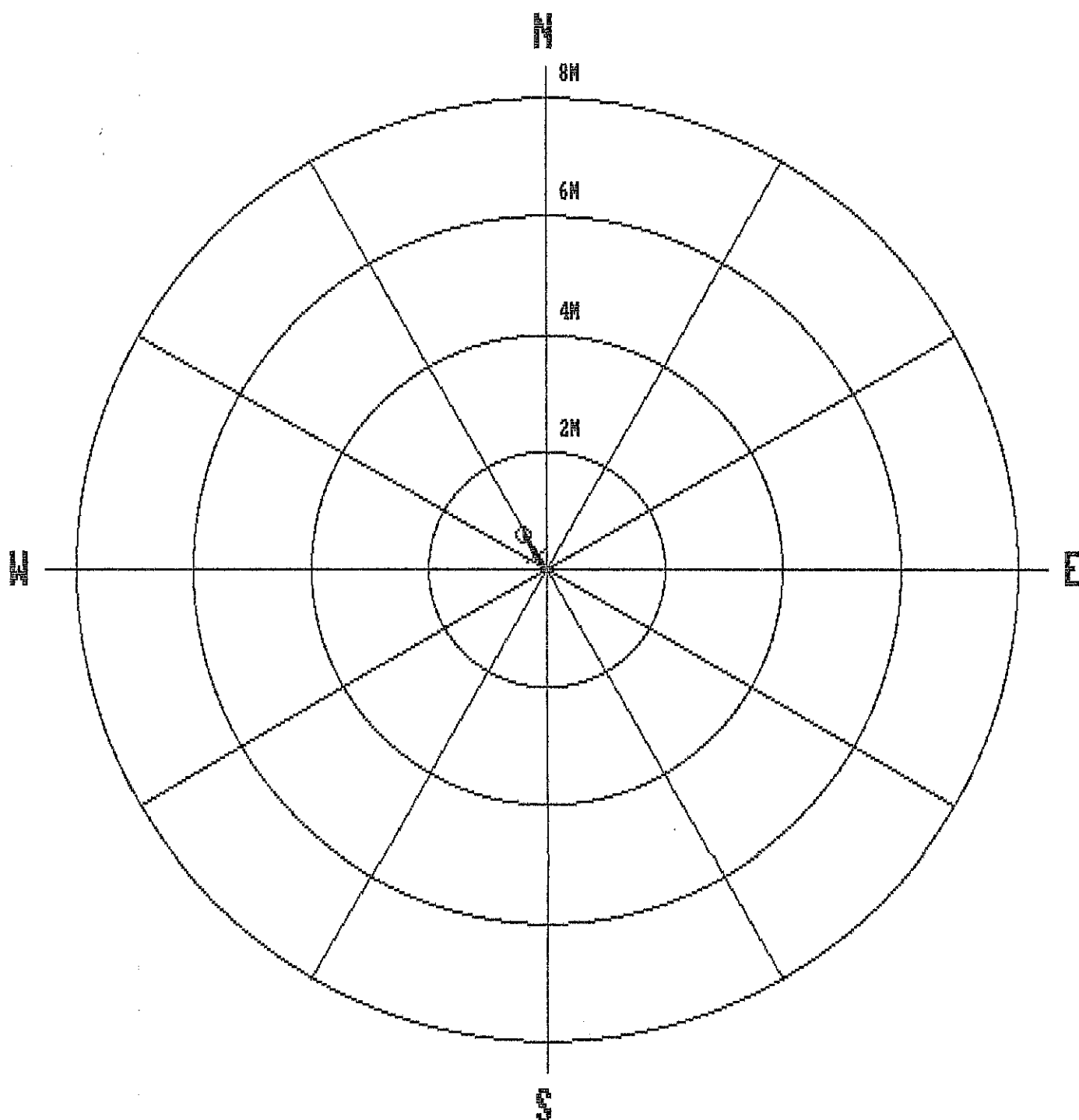
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 189.4 | 0.8 | 96.2 |
| 4.0 | 4.00 | 0.00 | 0.00 | 0.0 | 25.5 | 1.1 | 325.1 |
| 5.0 | 5.00 | 0.03 | -0.02 | 0.0 | 325.8 | 1.7 | 322.4 |
| 6.0 | 6.00 | 0.06 | -0.05 | 0.1 | 321.5 | 2.3 | 319.6 |
| 7.0 | 7.00 | 0.09 | -0.07 | 0.1 | 322.7 | 2.8 | 324.9 |
| 8.0 | 8.00 | 0.14 | -0.10 | 0.2 | 322.8 | 3.9 | 335.5 |
| 9.0 | 8.99 | 0.18 | -0.14 | 0.2 | 322.9 | 3.2 | 314.2 |
| 10.0 | 9.99 | 0.22 | -0.17 | 0.3 | 322.8 | 2.9 | 325.6 |
| 11.0 | 10.99 | 0.26 | -0.20 | 0.3 | 323.5 | 3.5 | 326.1 |
| 12.0 | 11.99 | 0.31 | -0.22 | 0.4 | 324.6 | 3.2 | 330.0 |
| 13.0 | 12.99 | 0.36 | -0.25 | 0.4 | 325.4 | 3.0 | 327.2 |
| 14.0 | 13.99 | 0.41 | -0.27 | 0.5 | 326.1 | 2.6 | 336.6 |
| 15.0 | 14.99 | 0.46 | -0.30 | 0.5 | 326.9 | 3.1 | 340.1 |
| 16.0 | 15.98 | 0.50 | -0.32 | 0.6 | 327.5 | 2.9 | 332.2 |
| 17.0 | 16.98 | 0.55 | -0.35 | 0.7 | 327.7 | 3.1 | 323.9 |
| 18.0 | 17.98 | 0.59 | -0.38 | 0.7 | 327.1 | 3.3 | 317.4 |
| 18.1 | 18.06 | 0.59 | -0.38 | 0.7 | 327.1 | 3.3 | 317.8 |

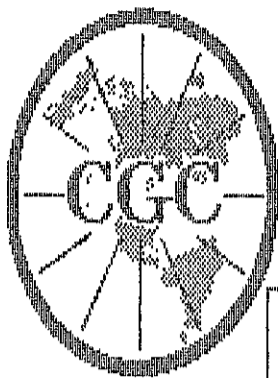
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96177
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 18.06 M
 AZIMUTH: 327.1
 DISTANCE: 0.7 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : MRH-96177
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

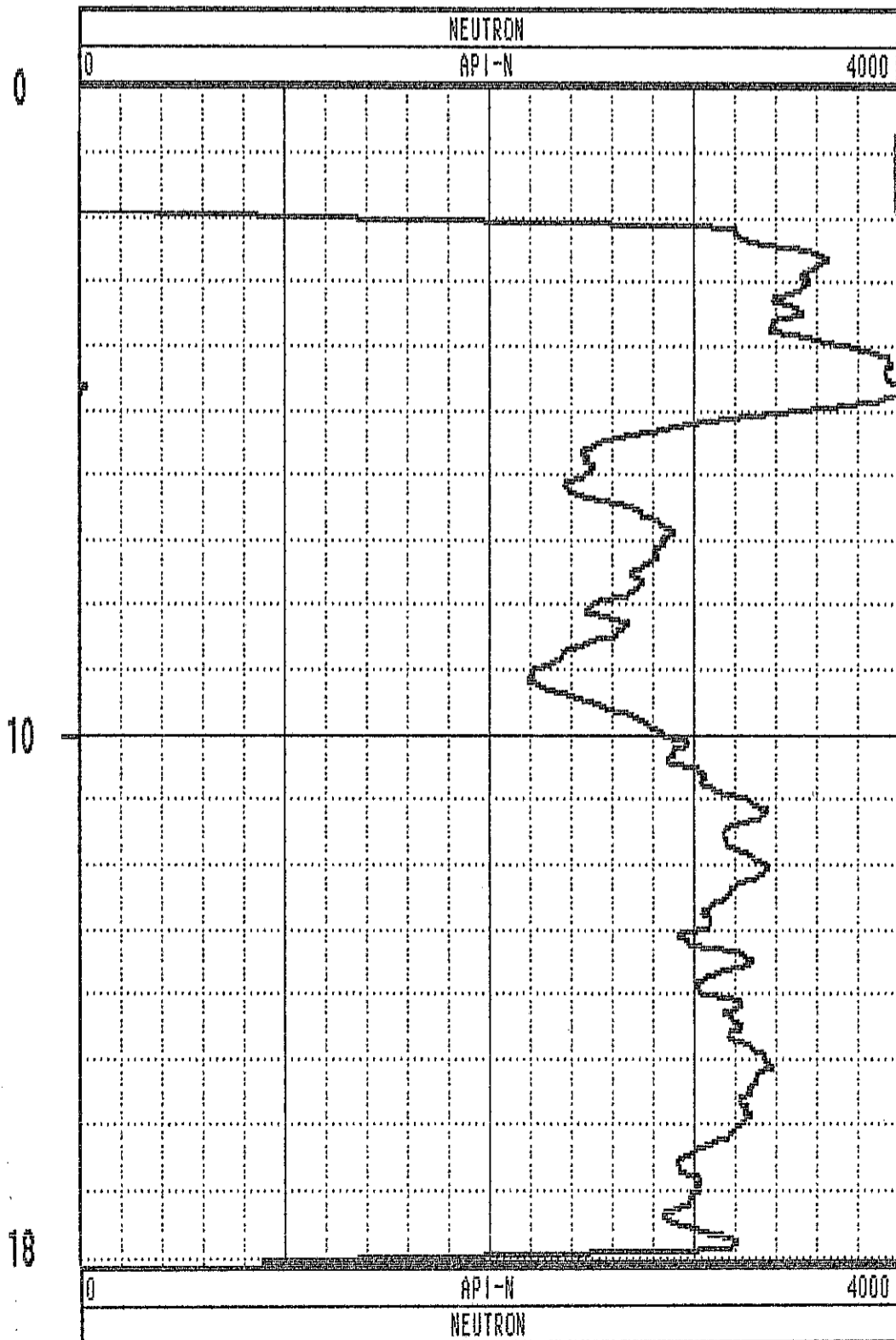
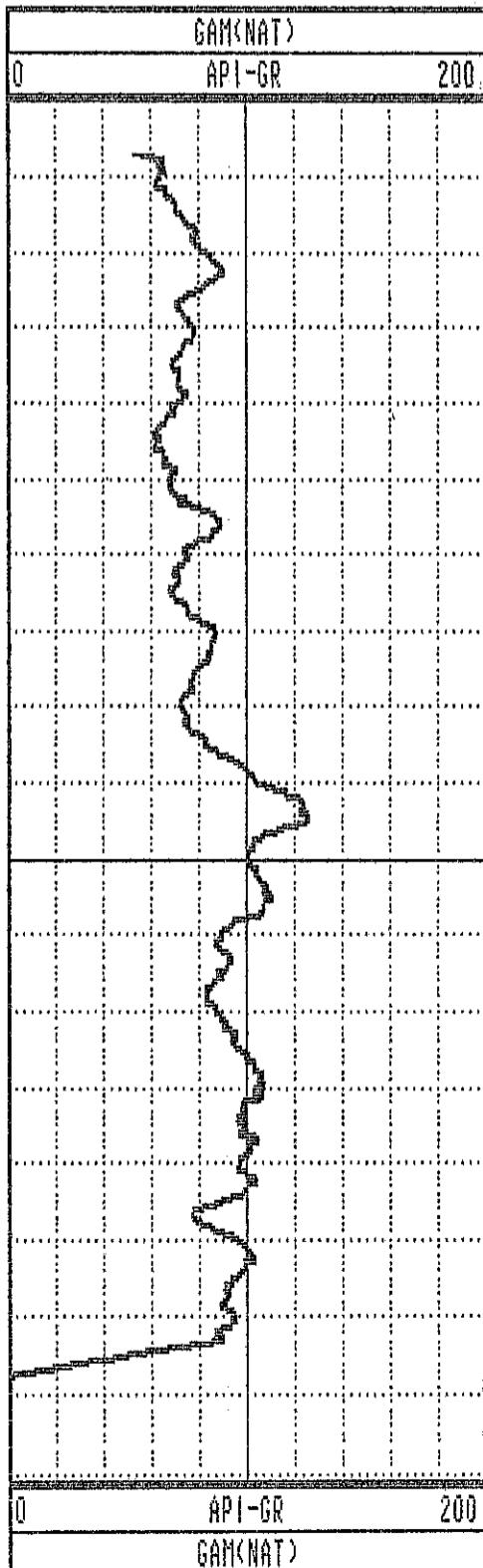
DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 23 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 18.15 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.72 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000

REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

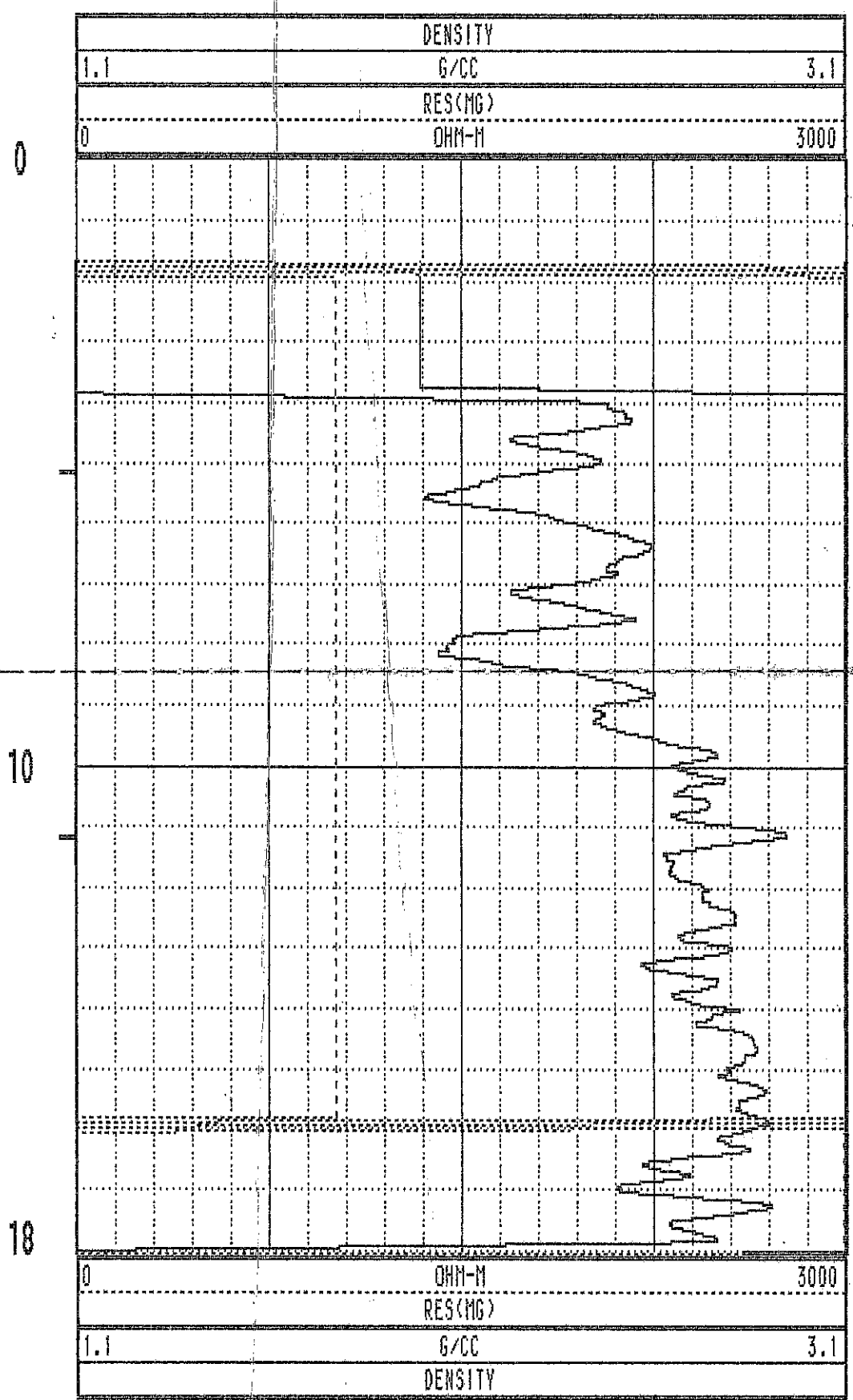
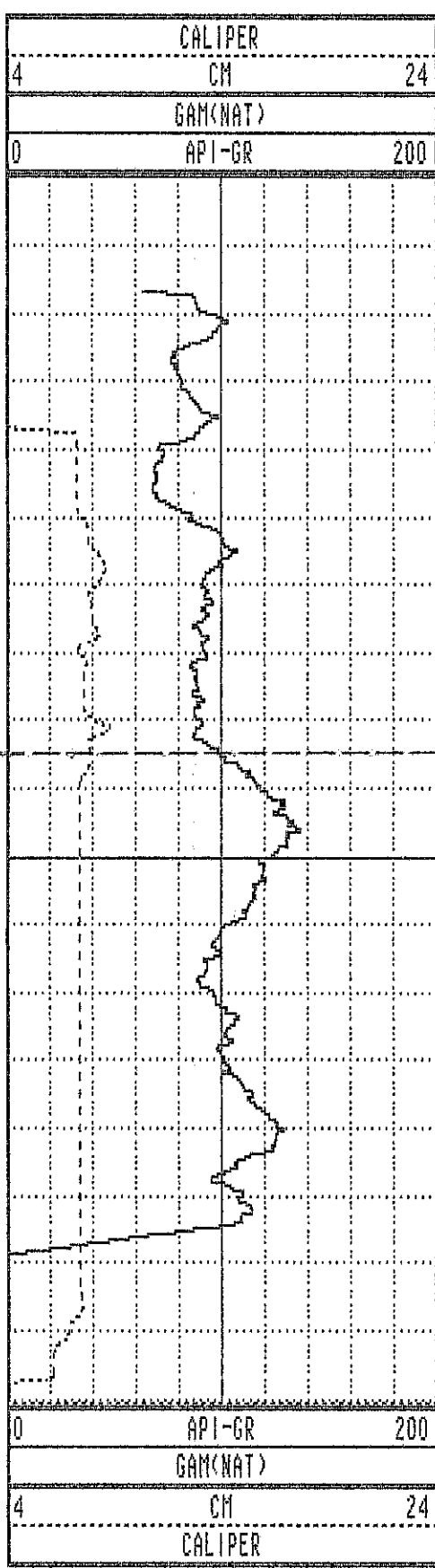
COMPANY : PINE VALLEY COAL
 WELL : MRH-96177
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :
 DATE : 09/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 18.09 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 1.67 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



MRH-96177 09/18/96 958

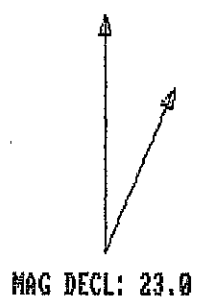
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

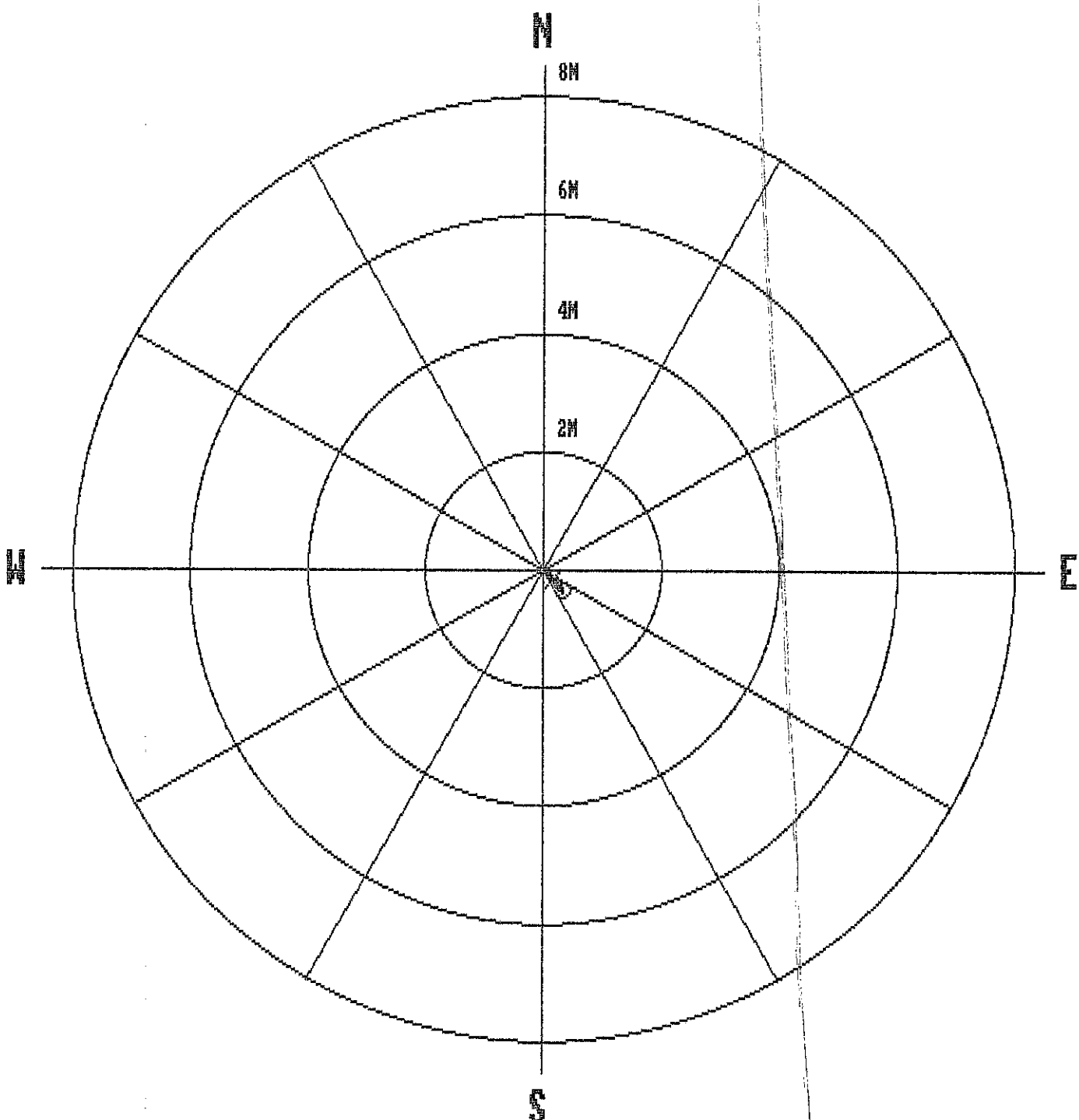
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.01 | 0.0 | 222.3 | 1.5 | 147.8 |
| 4.0 | 4.00 | -0.02 | 0.01 | 0.0 | 139.6 | 0.8 | 40.7 |
| 5.0 | 5.00 | -0.01 | 0.04 | 0.0 | 106.2 | 1.7 | 81.4 |
| 6.0 | 6.00 | -0.02 | 0.07 | 0.1 | 108.8 | 1.8 | 130.0 |
| 7.0 | 7.00 | -0.05 | 0.09 | 0.1 | 118.7 | 2.7 | 137.8 |
| 8.0 | 8.00 | -0.08 | 0.12 | 0.1 | 125.6 | 2.3 | 149.0 |
| 9.0 | 9.00 | -0.11 | 0.15 | 0.2 | 128.3 | 2.6 | 137.1 |
| 10.0 | 9.99 | -0.15 | 0.17 | 0.2 | 131.0 | 2.4 | 143.2 |
| 11.0 | 10.99 | -0.18 | 0.20 | 0.3 | 132.6 | 2.6 | 125.9 |
| 12.0 | 11.99 | -0.22 | 0.22 | 0.3 | 134.4 | 2.4 | 142.4 |
| 13.0 | 12.99 | -0.26 | 0.25 | 0.4 | 135.5 | 2.6 | 139.2 |
| 14.0 | 13.99 | -0.29 | 0.29 | 0.4 | 135.1 | 3.2 | 127.8 |
| 15.0 | 14.99 | -0.33 | 0.34 | 0.5 | 133.7 | 3.6 | 122.2 |
| 15.1 | 15.13 | -0.34 | 0.35 | 0.5 | 133.6 | 3.7 | 126.1 |

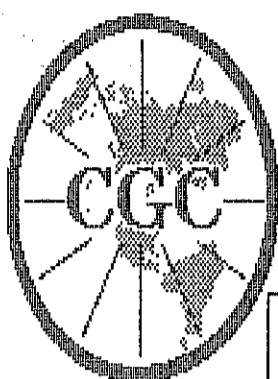
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: MILLON CREEK
 HOLE ID: MRH-96178
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 15.13 M
 AZIMUTH: 133.6
 DISTANCE: 0.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

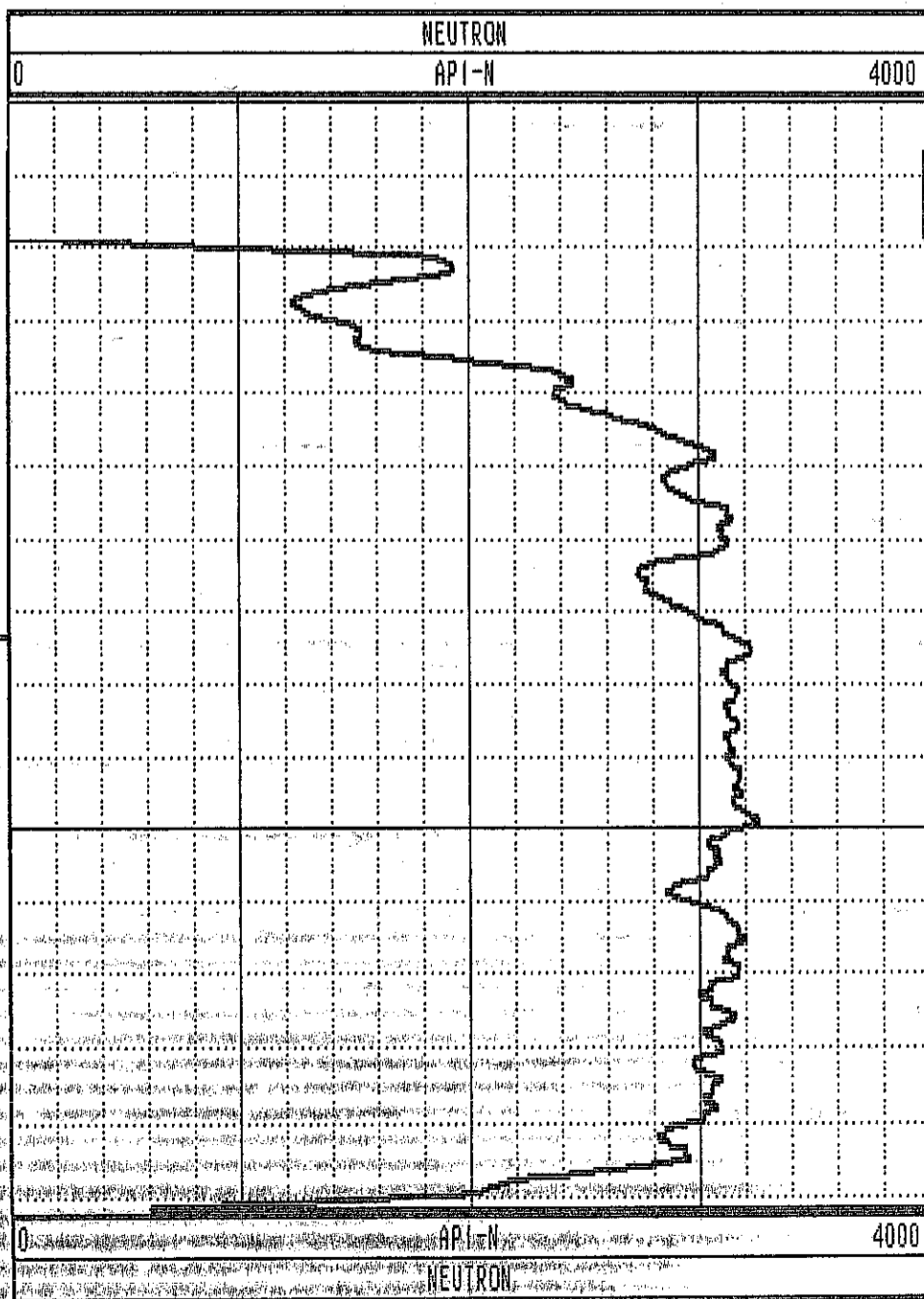
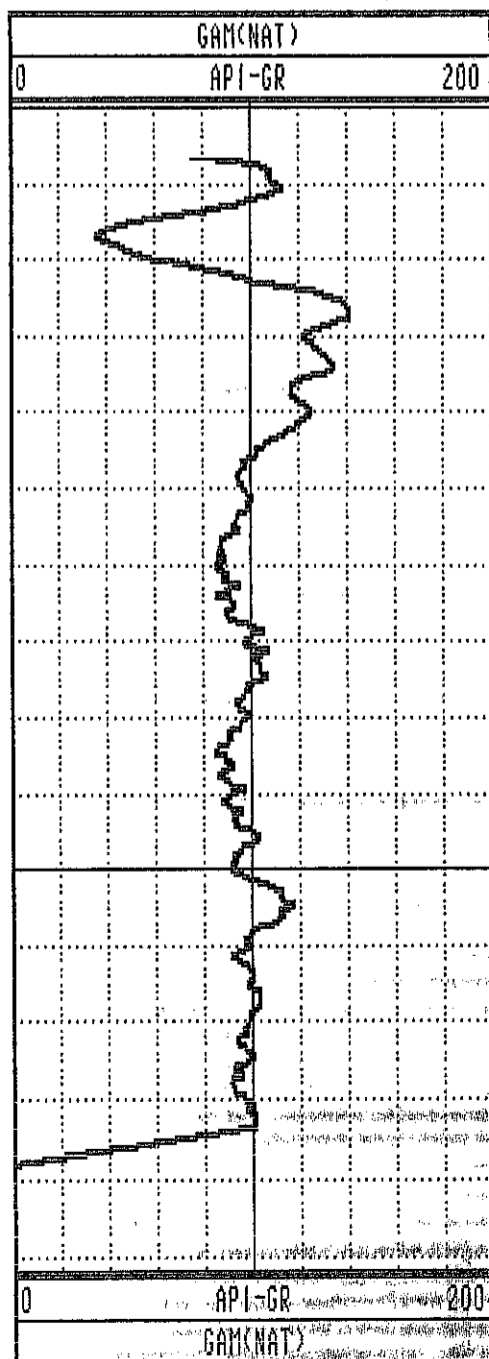
COMPANY : PINE VALLEY COAL
 WELL : MRH-96178
 LOCATION/FIELD : MILLON CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 15.20 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.68 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96178
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

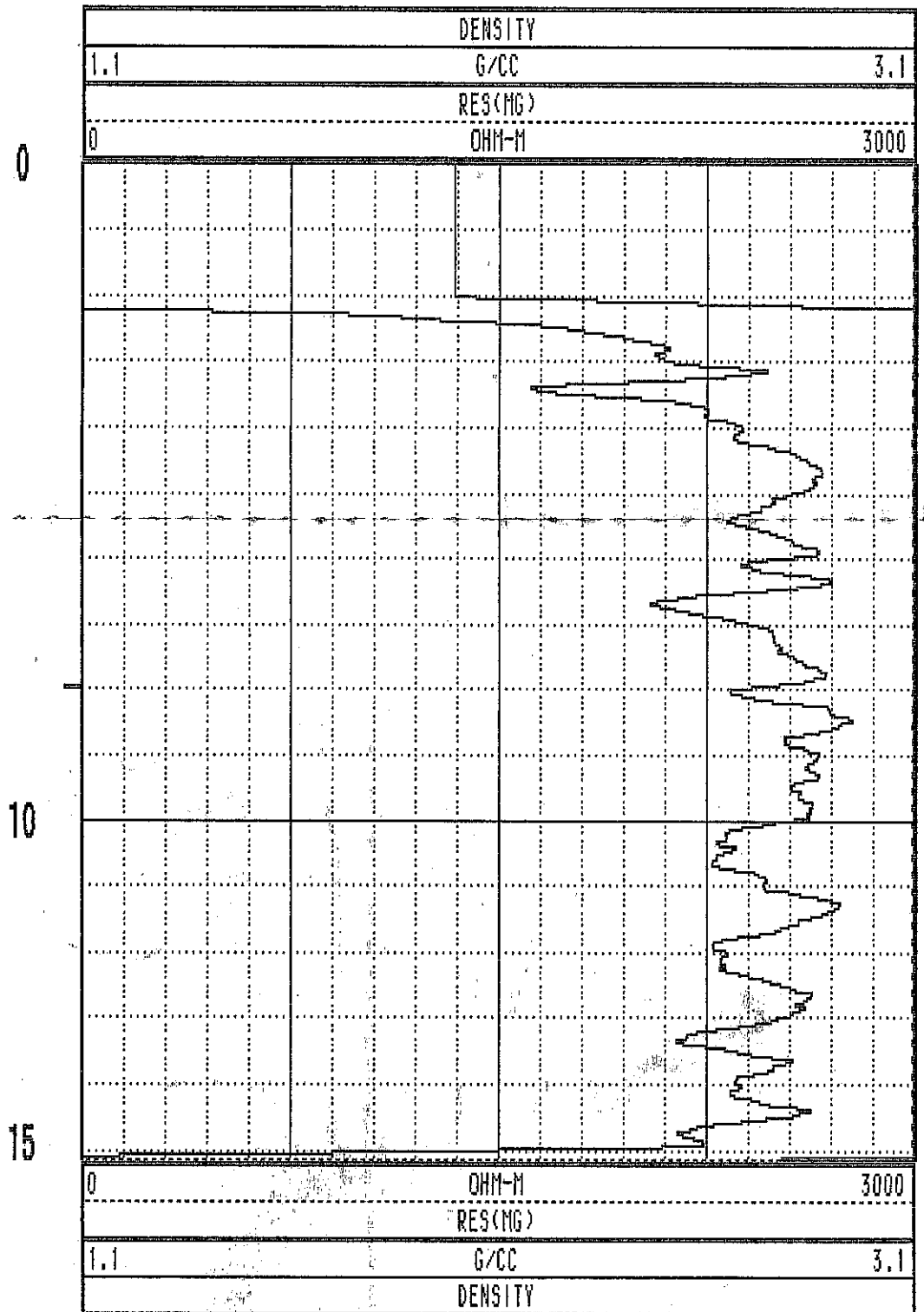
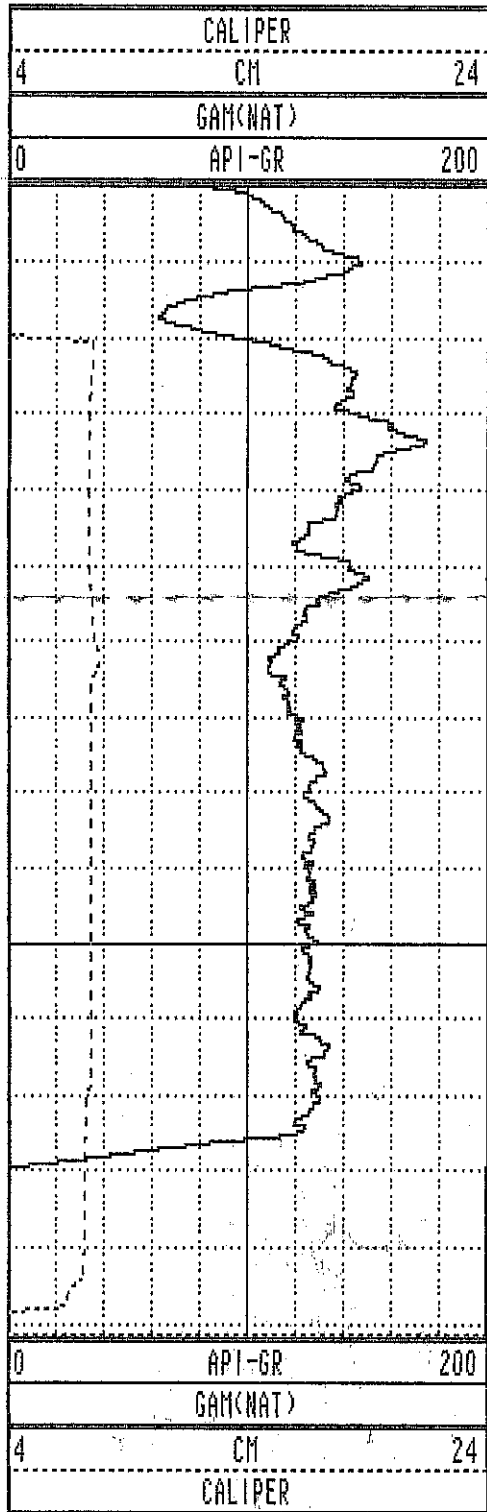
OTHER SERVICES:

DATE : 09/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 14 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 15.18 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.04 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : PROCESSED
 MAGNETIC DECL. : 23.00 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96178 09/18/96 958

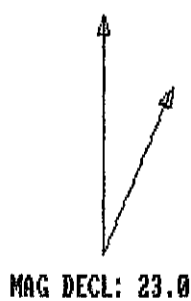
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10,95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19,96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20,96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20,96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18,96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18,96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13,95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13,95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10,95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15,95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15,95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

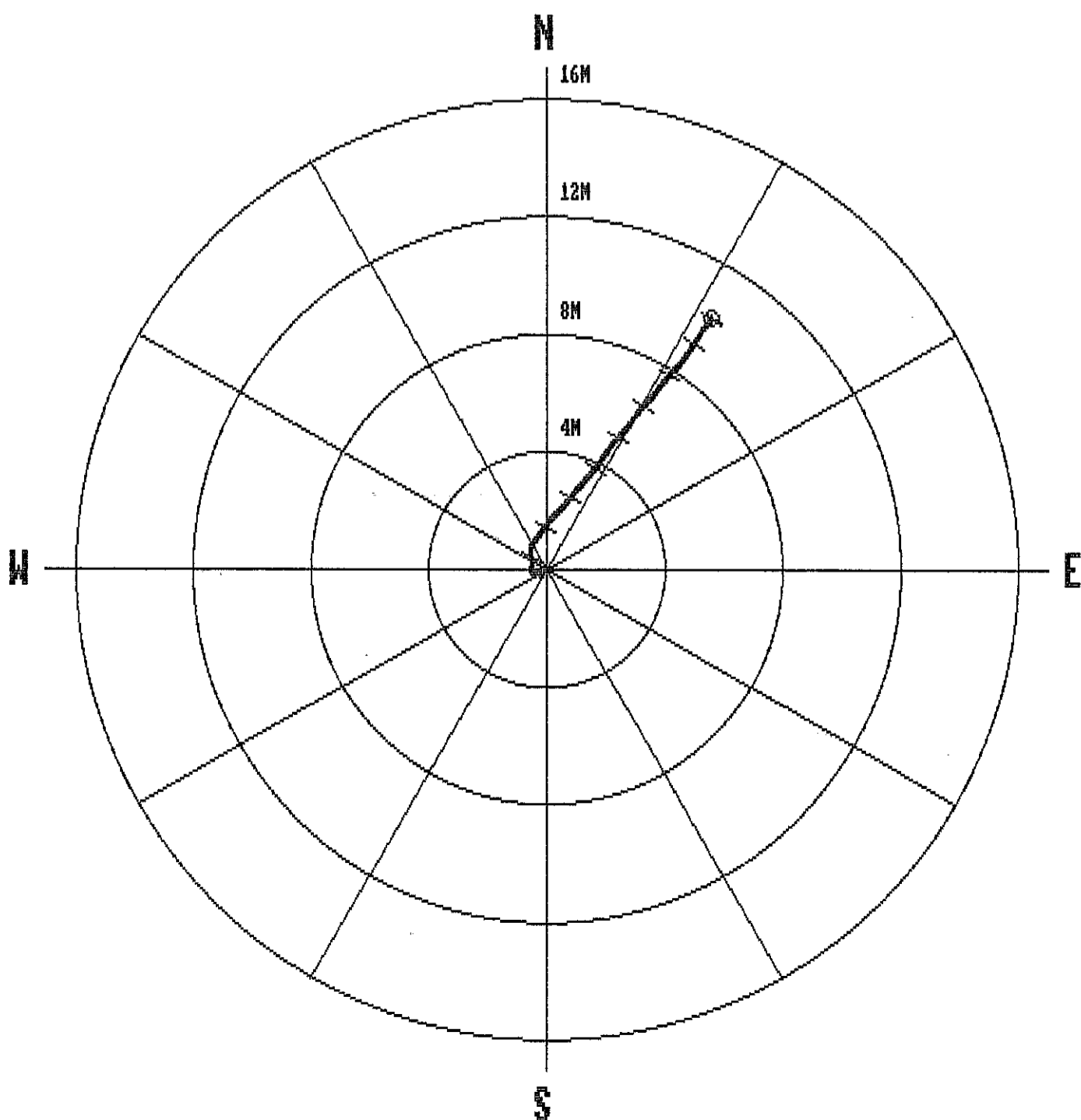
| | | | | | | | |
|------|-------|-------|-------|------|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 1.99 | 0.04 | -0.03 | 0.0 | 322.1 | 30.9 | 329.6 |
| 3.0 | 2.84 | -0.09 | -0.37 | 0.4 | 256.7 | 31.3 | 279.2 |
| 4.0 | 3.70 | 0.28 | -0.47 | 0.5 | 300.8 | 27.9 | 354.3 |
| 5.0 | 4.55 | 0.76 | -0.55 | 0.9 | 324.3 | 31.6 | 323.2 |
| 6.0 | 5.40 | 1.16 | -0.25 | 1.2 | 347.9 | 32.5 | 39.8 |
| 7.0 | 6.25 | 1.58 | 0.07 | 1.6 | 2.7 | 31.9 | 53.2 |
| 8.0 | 7.09 | 1.99 | 0.43 | 2.0 | 12.2 | 32.8 | 46.3 |
| 9.0 | 7.93 | 2.39 | 0.79 | 2.5 | 18.2 | 33.1 | 43.4 |
| 10.0 | 8.76 | 2.81 | 1.14 | 3.0 | 22.1 | 33.2 | 48.3 |
| 11.0 | 9.59 | 3.23 | 1.50 | 3.6 | 24.9 | 32.4 | 32.0 |
| 12.0 | 10.43 | 3.66 | 1.83 | 4.1 | 26.6 | 34.4 | 35.2 |
| 13.0 | 11.25 | 4.12 | 2.14 | 4.6 | 27.4 | 32.7 | 19.2 |
| 14.0 | 12.09 | 4.54 | 2.49 | 5.2 | 28.8 | 33.6 | 49.4 |
| 15.0 | 12.91 | 4.96 | 2.85 | 5.7 | 29.9 | 35.3 | 32.0 |
| 16.0 | 13.74 | 5.41 | 3.17 | 6.3 | 30.4 | 34.5 | 42.0 |
| 17.0 | 14.56 | 5.82 | 3.55 | 6.8 | 31.4 | 34.2 | 26.7 |
| 18.0 | 15.39 | 6.26 | 3.89 | 7.4 | 31.8 | 34.6 | 30.6 |
| 19.0 | 16.21 | 6.69 | 4.25 | 7.9 | 32.4 | 35.8 | 27.0 |
| 20.0 | 17.03 | 7.10 | 4.63 | 8.5 | 33.1 | 35.4 | 47.5 |
| 21.0 | 17.84 | 7.58 | 4.95 | 9.1 | 33.2 | 35.0 | 41.3 |
| 22.0 | 18.66 | 8.06 | 5.26 | 9.6 | 33.1 | 35.3 | 29.1 |
| 23.0 | 19.47 | 8.51 | 5.61 | 10.2 | 33.4 | 35.6 | 48.8 |
| 23.0 | 19.49 | 8.52 | 5.62 | 10.2 | 33.4 | 34.9 | 48.4 |

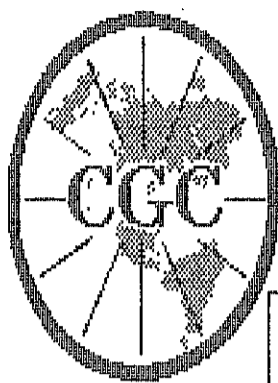
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96179
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 2 M/CM
 TRUE DEPTH: 19.49 M
 AZIMUTH: 33.4
 DISTANCE: 10.2 M
 + = 2 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

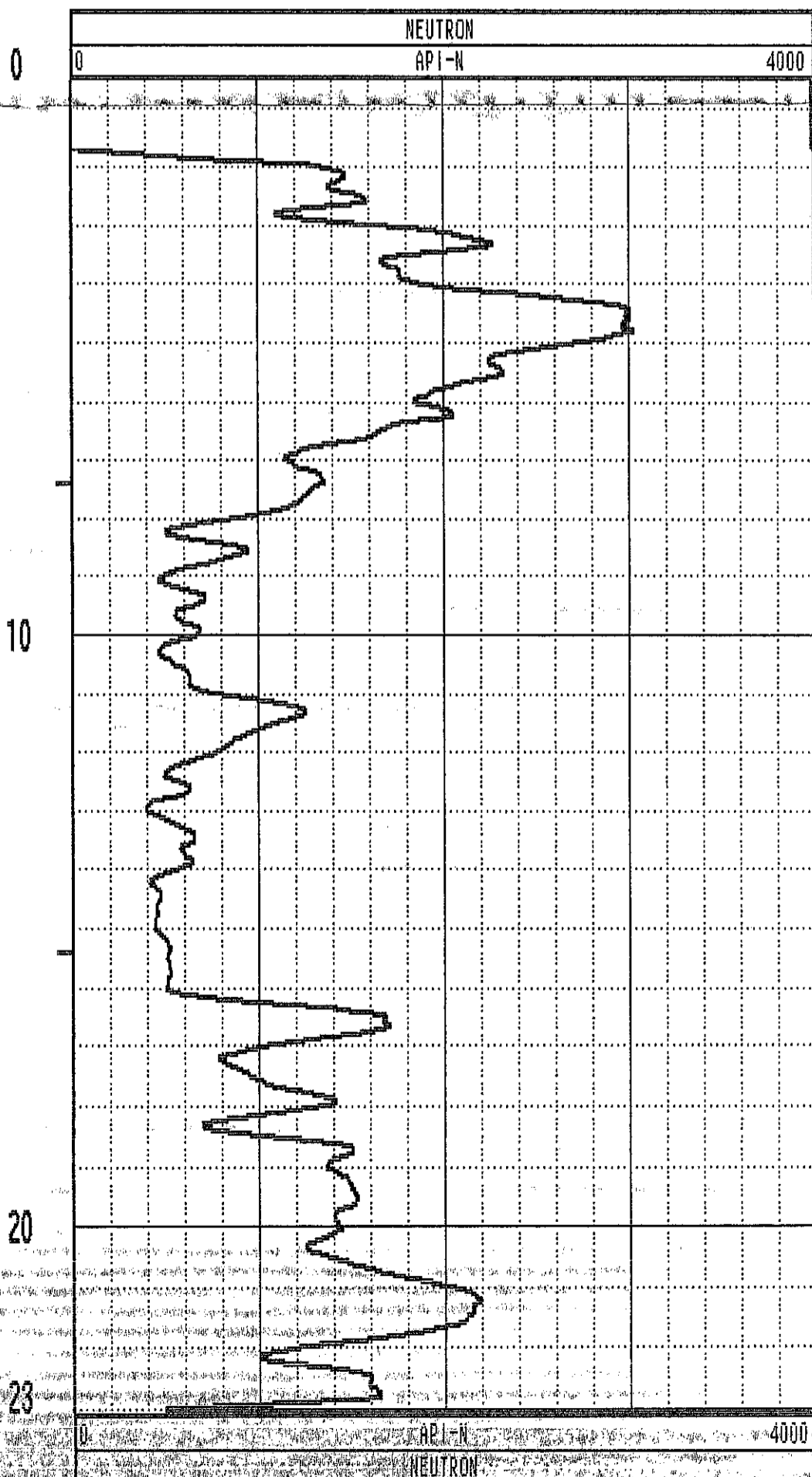
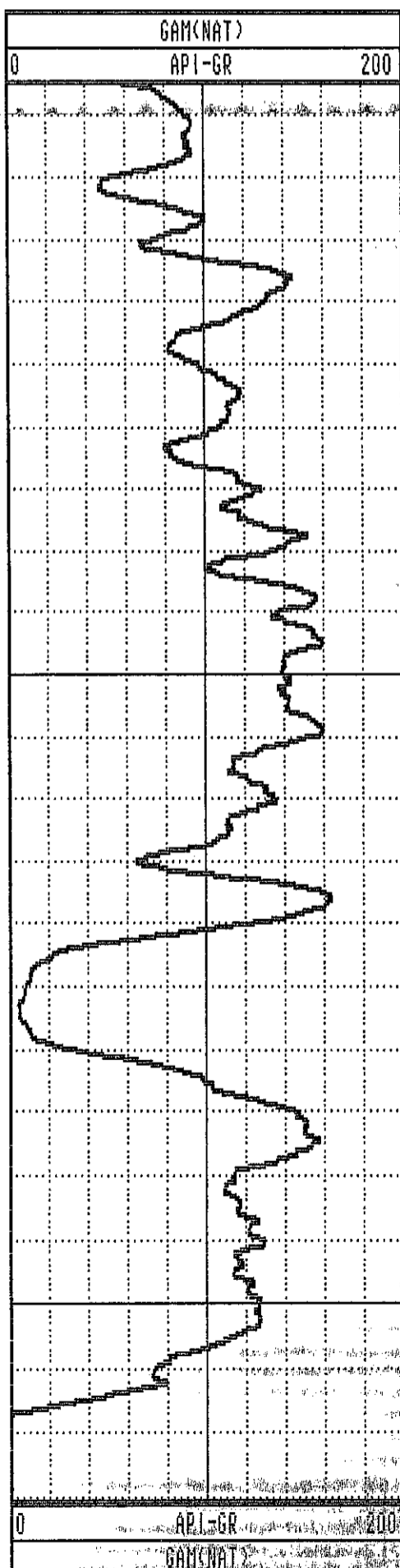
COMPANY : PINE VALLEY COAL
 WELL : WRH-96179
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 23 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 23.08 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.54 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

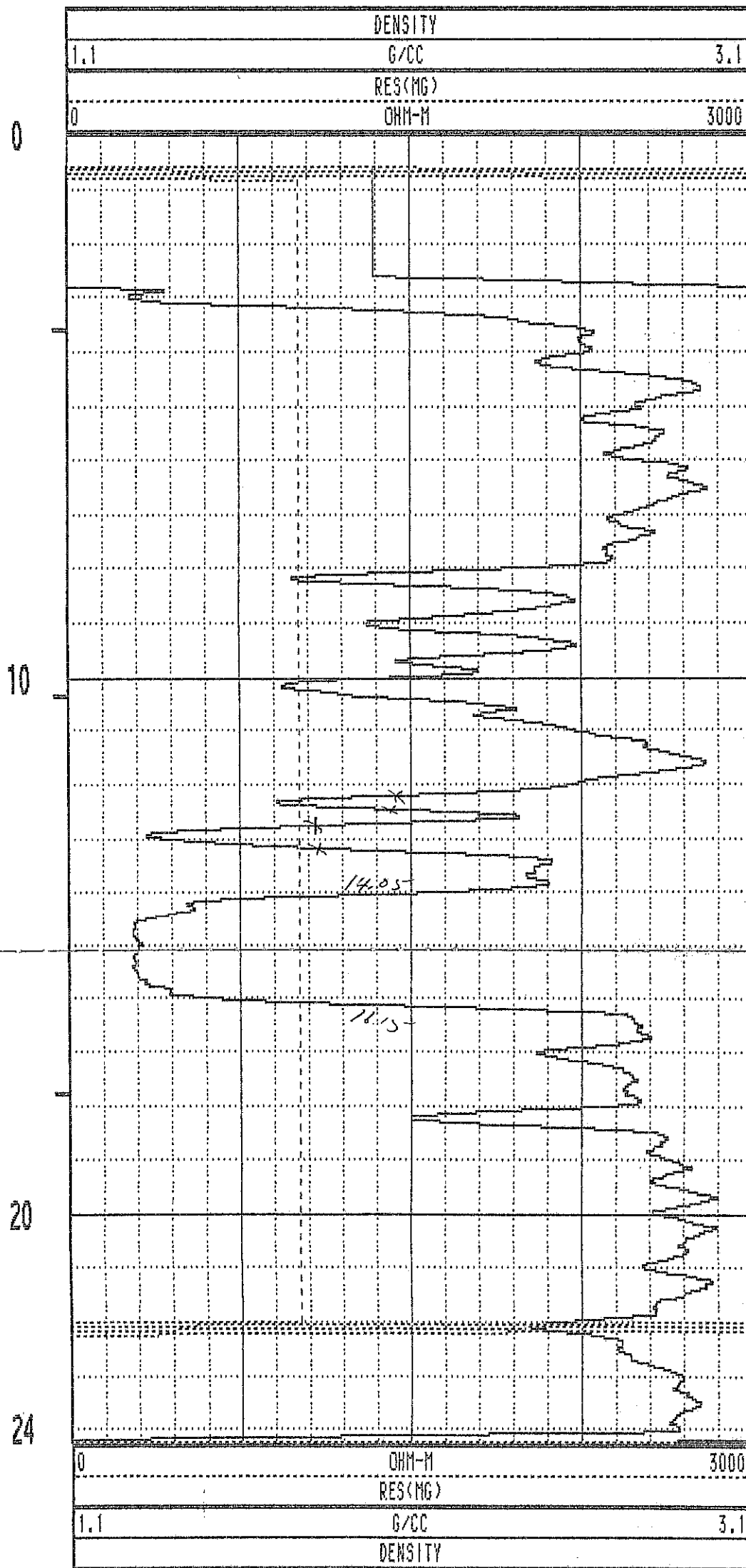
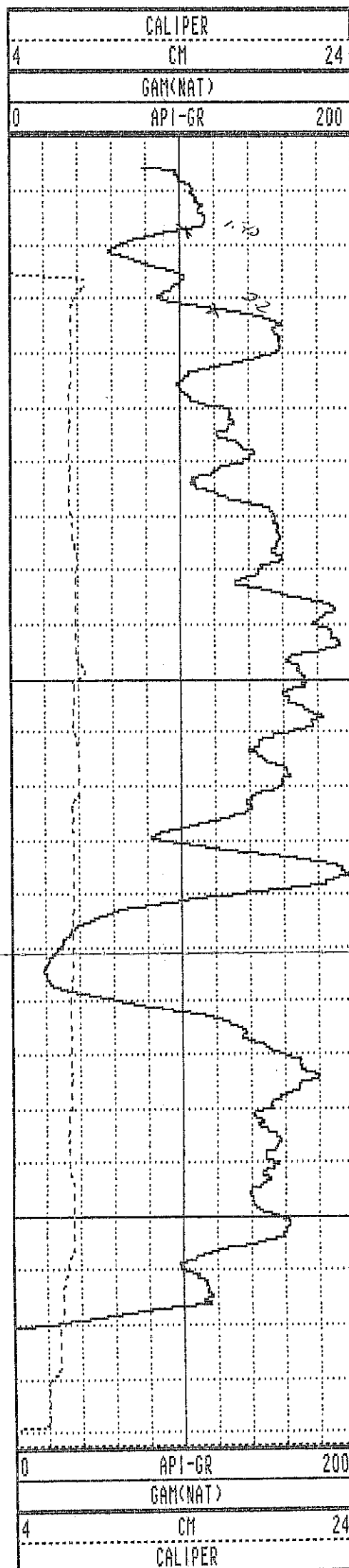
COMPANY : PINE VALLEY COAL
 WELL : WRH-96179
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

TOWNSHIP : RANGE :
 DATE : 09/18/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 24.28 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.58 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96179 09/18/96 958

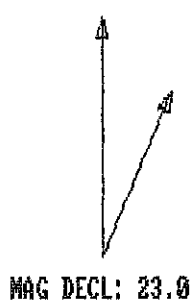
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

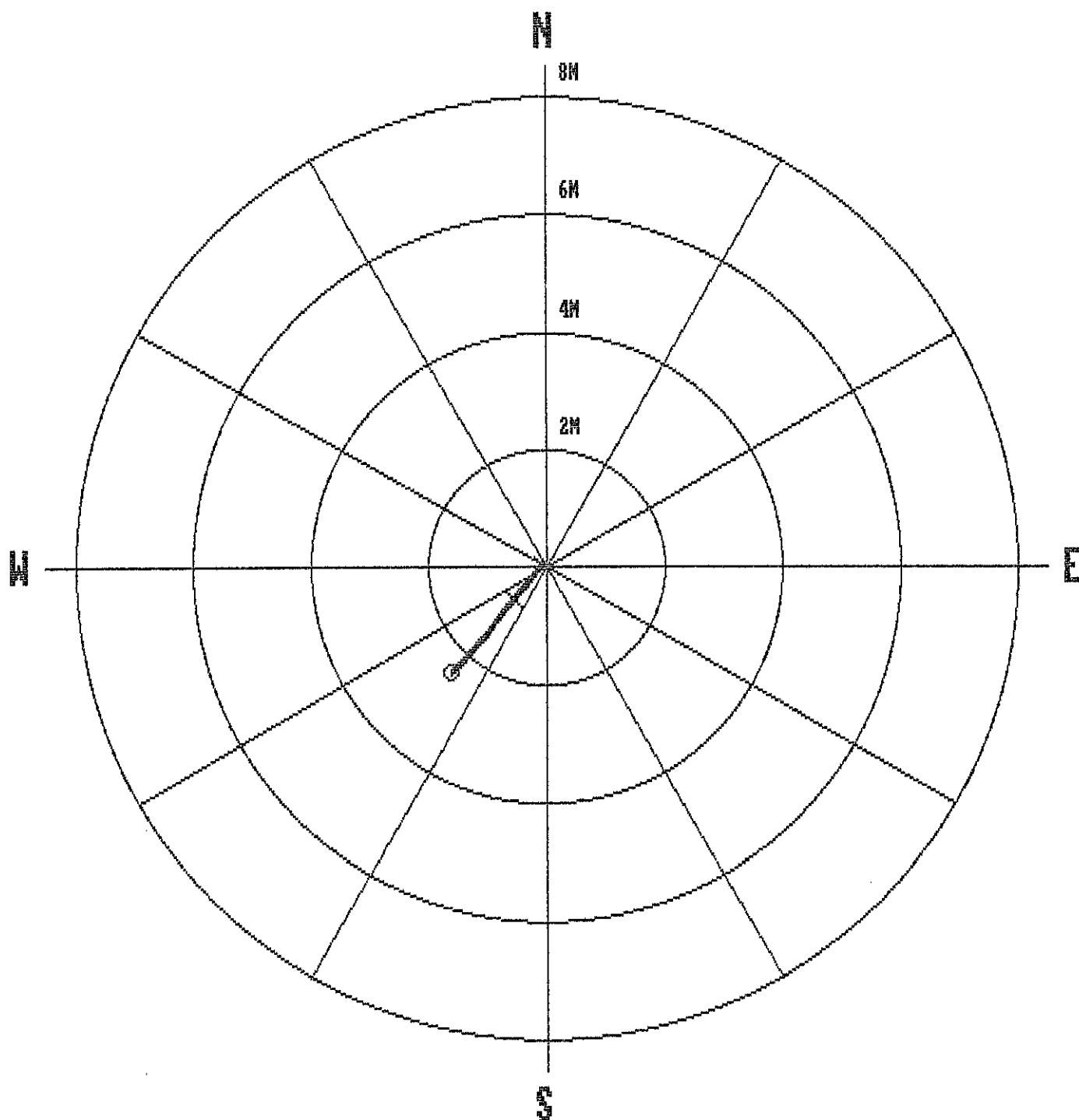
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 31.7 | 2.5 | 208.0 |
| 4.0 | 4.00 | 0.01 | -0.03 | 0.0 | 291.0 | 2.2 | 249.0 |
| 5.0 | 5.00 | -0.01 | -0.06 | 0.1 | 264.0 | 2.1 | 297.5 |
| 6.0 | 6.00 | 0.01 | -0.04 | 0.0 | 290.0 | 2.1 | 19.8 |
| 7.0 | 7.00 | 0.04 | -0.03 | 0.1 | 319.7 | 1.2 | 12.6 |
| 8.0 | 8.00 | 0.05 | -0.03 | 0.1 | 325.0 | 0.4 | 249.9 |
| 9.0 | 9.00 | 0.04 | -0.05 | 0.1 | 313.2 | 1.2 | 245.6 |
| 10.0 | 10.00 | 0.03 | -0.07 | 0.1 | 292.1 | 2.3 | 244.5 |
| 11.0 | 11.00 | 0.00 | -0.10 | 0.1 | 271.4 | 2.5 | 232.5 |
| 12.0 | 11.99 | -0.04 | -0.13 | 0.1 | 253.6 | 3.1 | 215.4 |
| 13.0 | 12.99 | -0.09 | -0.18 | 0.2 | 243.7 | 3.5 | 216.3 |
| 14.0 | 13.99 | -0.14 | -0.21 | 0.3 | 236.3 | 3.6 | 212.1 |
| 15.0 | 14.99 | -0.20 | -0.25 | 0.3 | 231.5 | 3.9 | 221.0 |
| 16.0 | 15.98 | -0.26 | -0.30 | 0.4 | 229.5 | 4.7 | 218.3 |
| 17.0 | 16.98 | -0.32 | -0.35 | 0.5 | 227.7 | 5.4 | 225.5 |
| 18.0 | 17.98 | -0.39 | -0.42 | 0.6 | 227.2 | 5.7 | 219.9 |
| 19.0 | 18.97 | -0.47 | -0.49 | 0.7 | 226.3 | 6.6 | 227.0 |
| 20.0 | 19.96 | -0.56 | -0.55 | 0.8 | 224.7 | 6.4 | 210.9 |
| 21.0 | 20.96 | -0.65 | -0.63 | 0.9 | 224.4 | 7.2 | 220.9 |
| 22.0 | 21.95 | -0.75 | -0.72 | 1.0 | 223.8 | 7.5 | 204.3 |
| 23.0 | 22.94 | -0.85 | -0.80 | 1.2 | 223.2 | 8.1 | 218.6 |
| 24.0 | 23.93 | -0.96 | -0.88 | 1.3 | 222.5 | 8.6 | 217.5 |
| 25.0 | 24.92 | -1.09 | -0.97 | 1.5 | 221.5 | 8.9 | 201.7 |
| 26.0 | 25.90 | -1.22 | -1.08 | 1.6 | 221.7 | 10.7 | 233.7 |
| 27.0 | 26.88 | -1.36 | -1.21 | 1.8 | 221.8 | 11.6 | 213.1 |
| 28.0 | 27.86 | -1.51 | -1.34 | 2.0 | 221.6 | 12.1 | 229.6 |
| 29.0 | 28.84 | -1.66 | -1.49 | 2.2 | 221.8 | 13.2 | 212.4 |
| 29.7 | 29.54 | -1.78 | -1.61 | 2.4 | 222.2 | 13.7 | 227.5 |

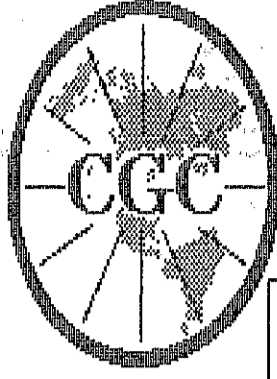
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96180
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.54 M
 AZIMUTH: 222.2
 DISTANCE: 2.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

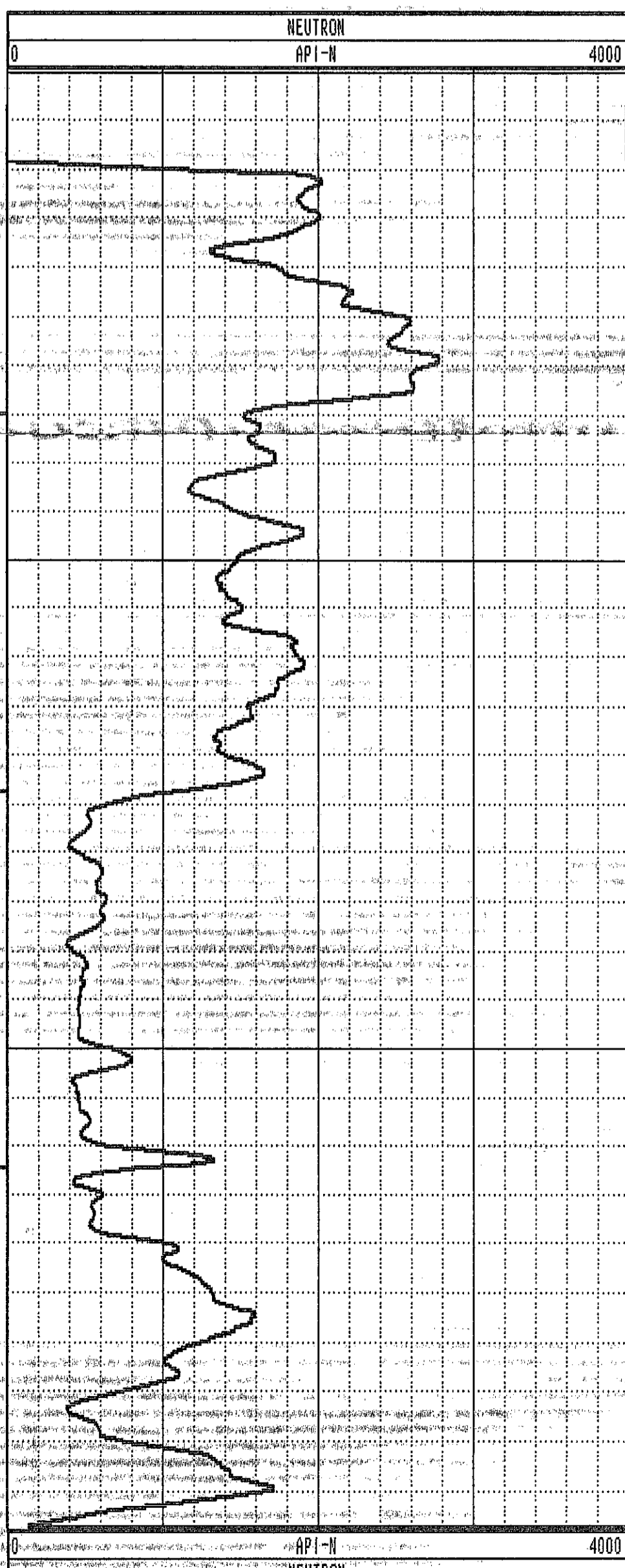
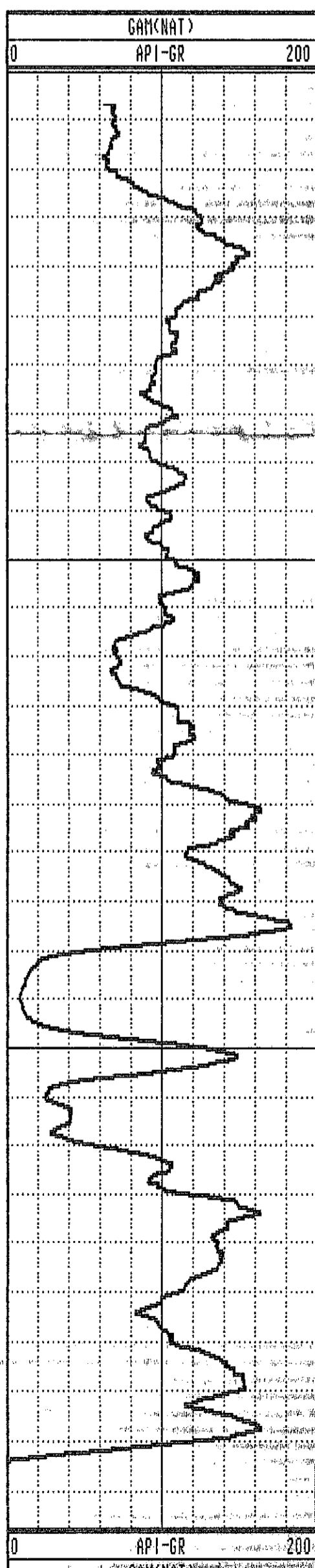
COMPANY : PINE VALLEY COAL
WELL : WRH-96180
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION :

OTHER SERVICES:

DATE : 09/29/96 **PERMANENT DATUM** : **ELEVATIONS**
DEPTH DRILLER : 30 **ELEV. PERM. DATUM:** **KB** :
LOG BOTTOM : 29.77 **LOG MEASURED FROM:** **G.L.** **DF** :
LOG TOP : 0.70 **DRL MEASURED FROM:** **GL** :
CASING DRILLER : 3 **LOGGING UNIT** : 9612
CASING TYPE : STEEL **FIELD OFFICE** : CALGARY, AB.
CASING THICKNESS: .25 **RECORDED BY** : R. THOMAS

BIT SIZE : **BOREHOLE FLUID** : WATER **FILE** : ORIGINAL
MAGNETIC DECL. : 23.00 **RM** : **TYPE** : 9055A
MATRIX DENSITY : **RM TEMPERATURE** : **LOG** : 9
FLUID DENSITY : 1.1 **MATRIX DELTA-T** : **PLOT** : PINE 4
NEUTRON MATRIX : 2.65 **FLUID DELTA-T** : **THRESH:** 10000
REMARKS :
NONE

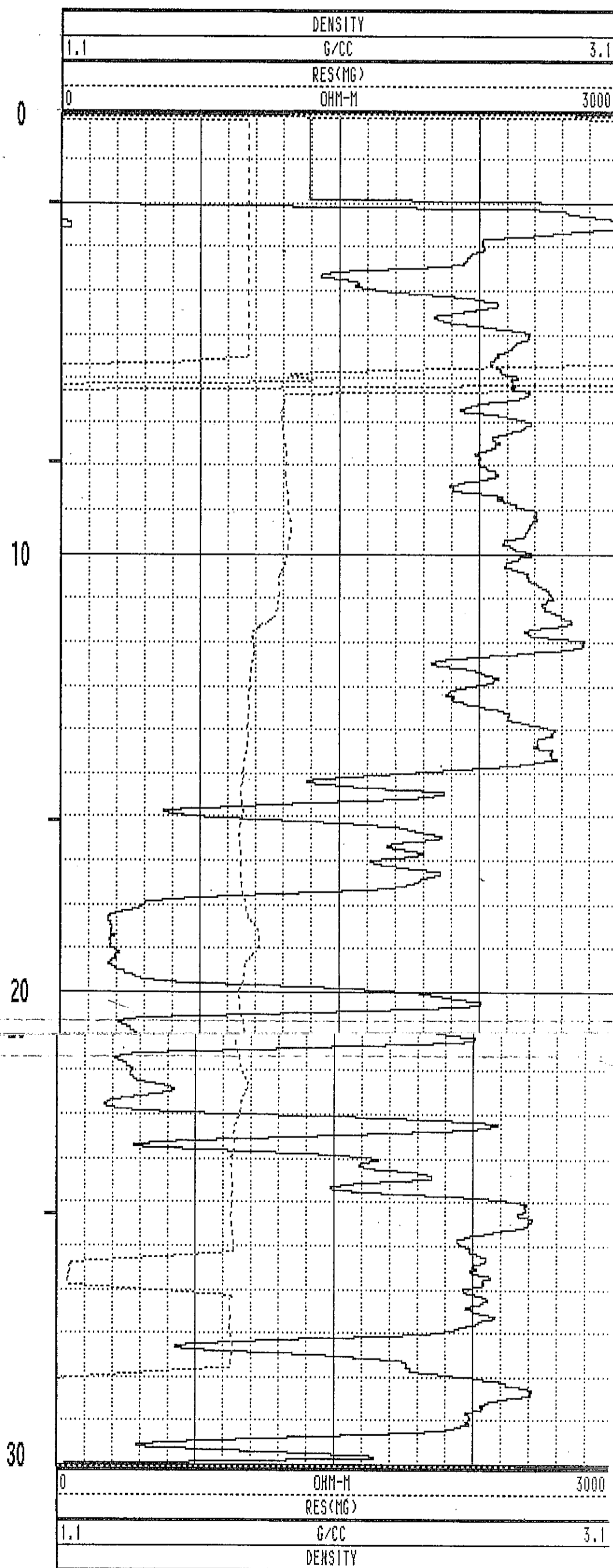
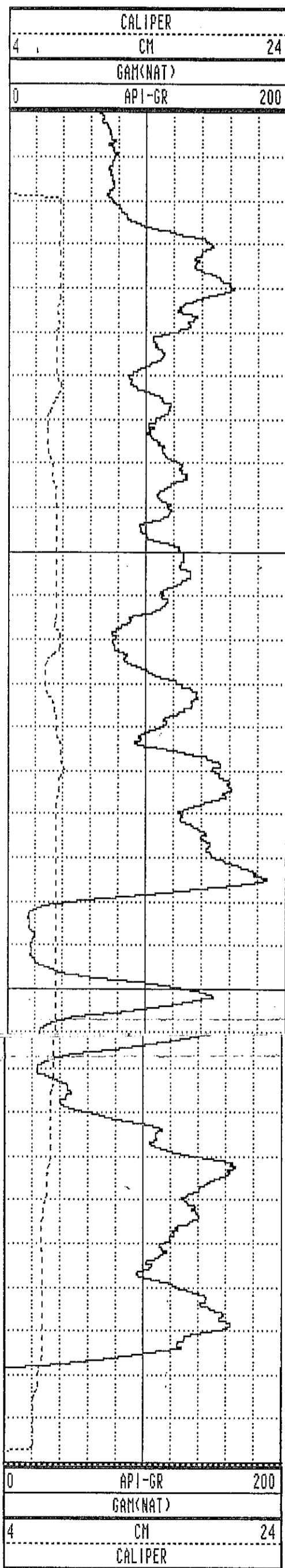
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|--|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96180 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 09/20/96 | PERMANENT DATUM : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: KB : |
| LOG BOTTOM | : 30.07 | LOG MEASURED FROM: G.L. DF : |
| LOG TOP | : -0.10 | DRL MEASURED FROM: GL : |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.00 | RM : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE : LOG : 2 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : THRESH: 10000 |
| REMARKS | : | |
| NONE | : | |

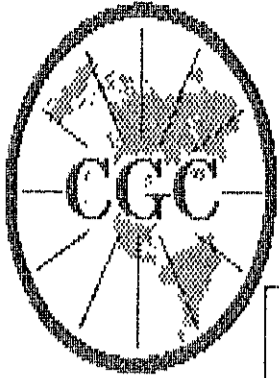
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96180 09/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96181
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/29/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 26.77
 LOG TOP : 0.82

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

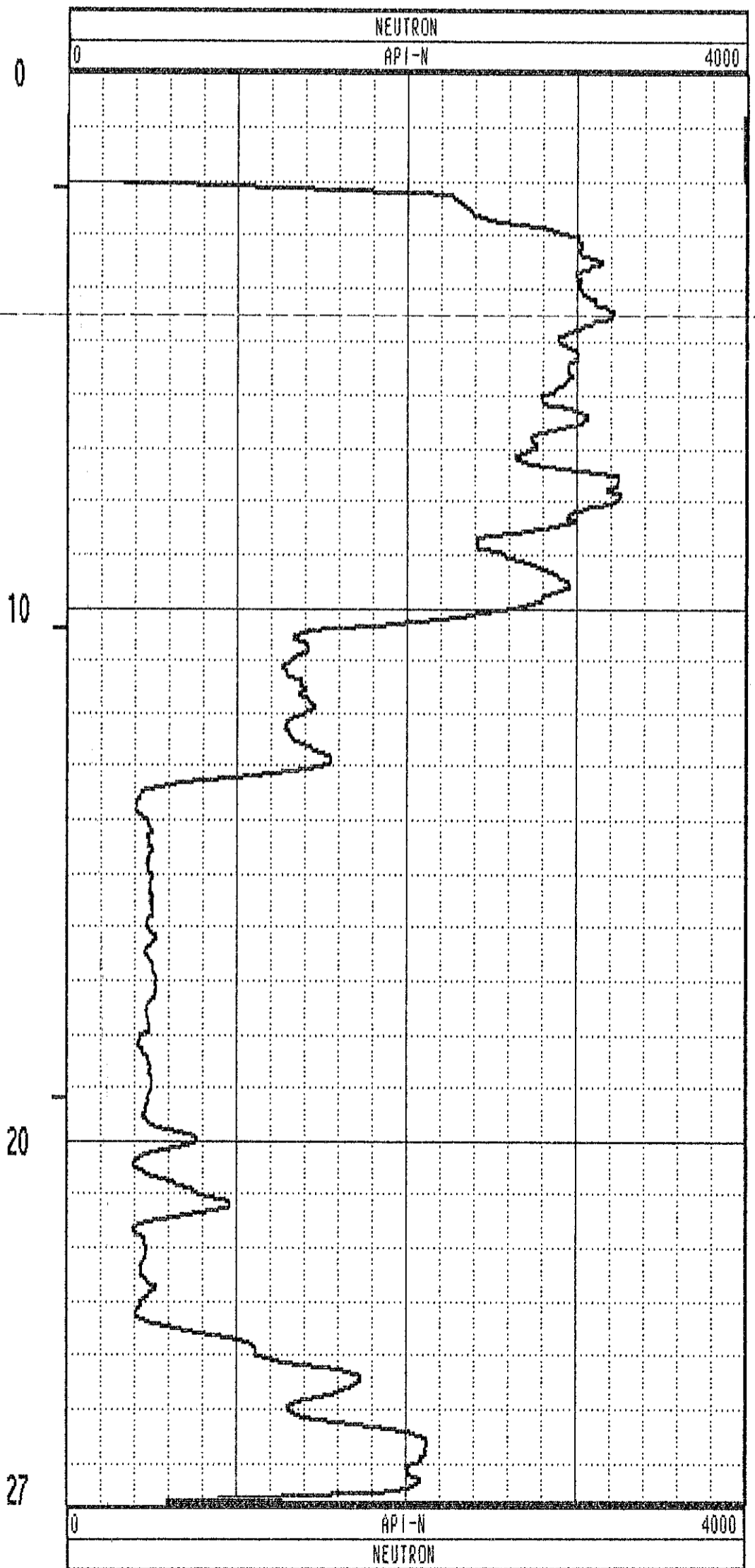
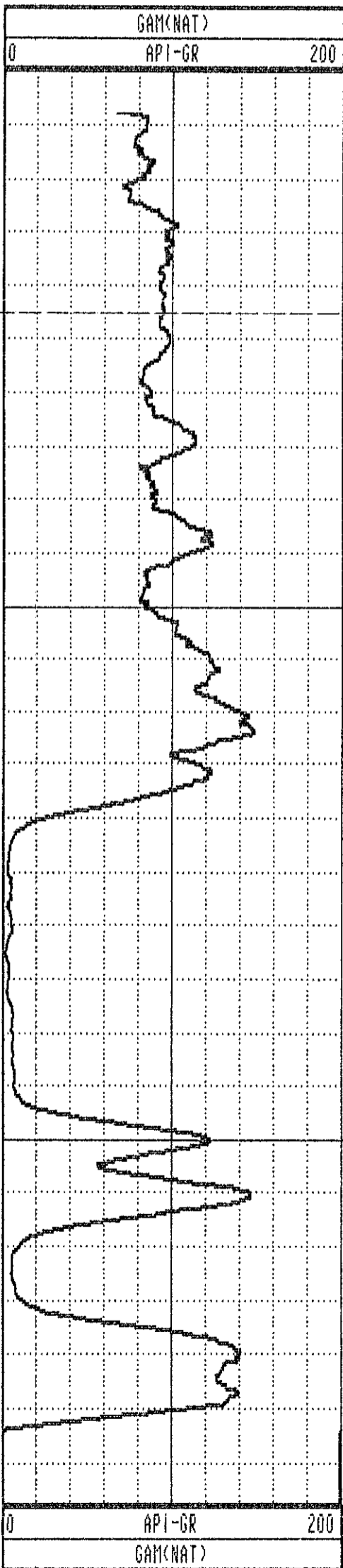
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

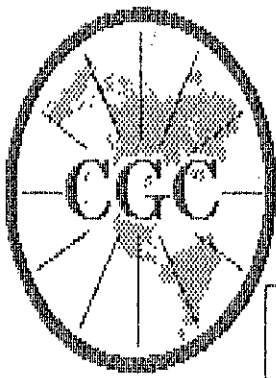
BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 5
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96191
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/02/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 29.93
 LOG TOP : 0.86

PERMANENT DATUM : ELEVATIONS
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

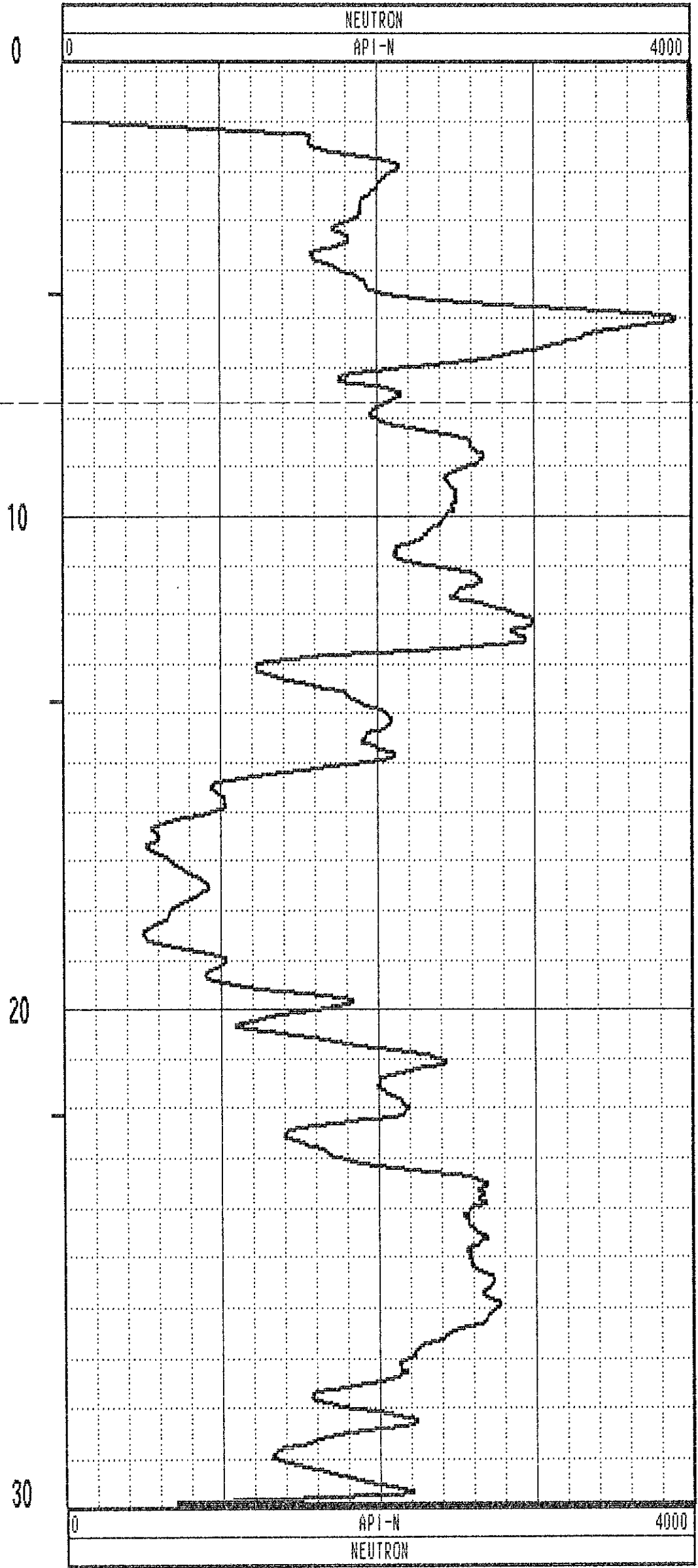
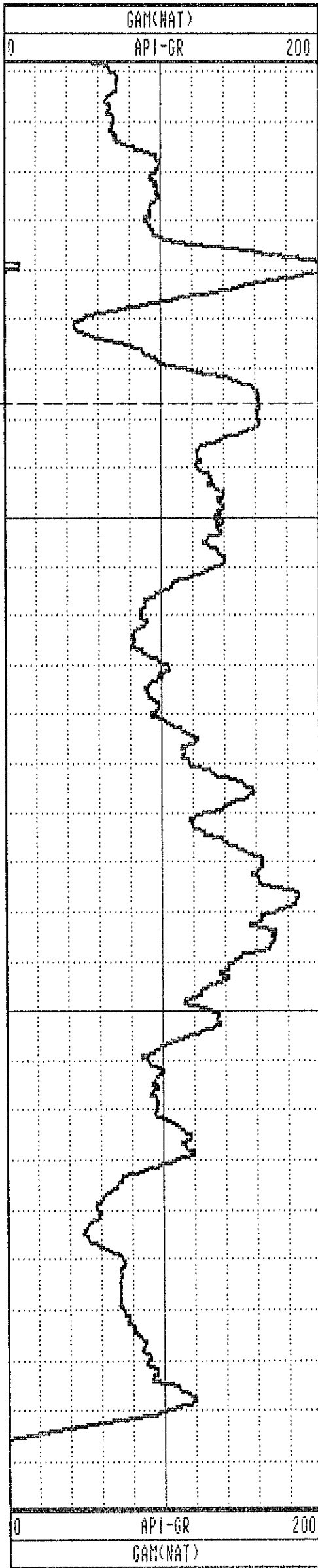
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65

BOREHOLE FLUID : WATER FILE : ORIGINAL
 RM : TYPE : 9055A
 RM TEMPERATURE : LOG : 8
 MATRIX DELTA T : PLOT : PINE 4
 FLUID DELTA T : THRESH: 10000

REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

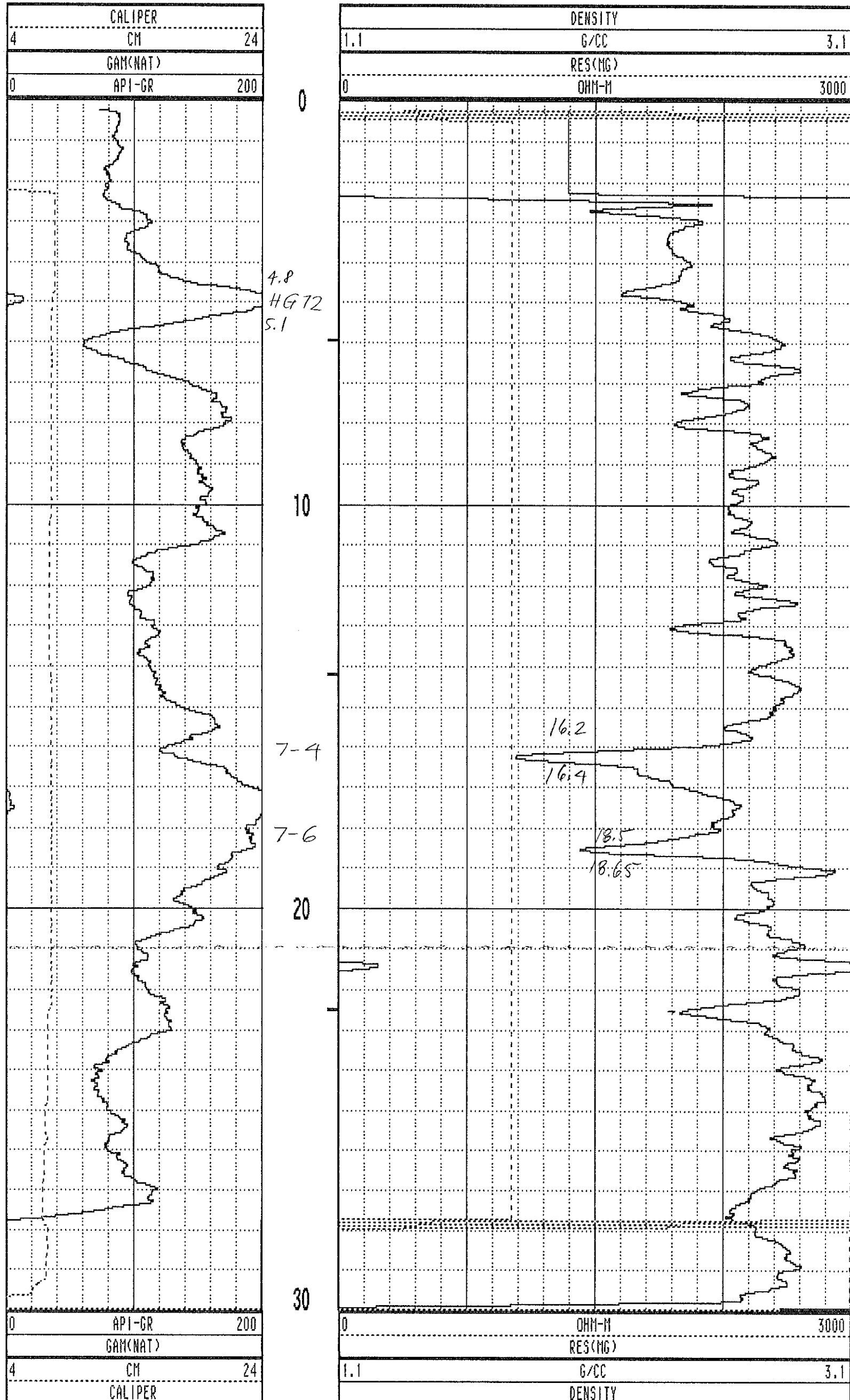


GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL OTHER SERVICES:
WELL : WRH-96191
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :
DATE : 09/19/96 **PERMANENT DATUM** : ELEVATIONS
DEPTH DRILLER : 29 **ELEV. PERM. DATUM:** KB :
LOG BOTTOM : 29.99 **LOG MEASURED FROM:** G.L. DF :
LOG TOP : 0.26 **DRL MEASURED FROM:** GL :
CASING DRILLER : 3 **LOGGING UNIT** : 9612
CASING TYPE : STEEL **FIELD OFFICE** : CALGARY, AB.
CASING THICKNESS: .25 **RECORDED BY** : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER **FILE** : ORIGINAL
MAGNETIC DECL. : 23.00 **RM** : **TYPE** : 9033AA
MATRIX DENSITY : **RM TEMPERATURE** : **LOG** : 1
FLUID DENSITY : 1.1 **MATRIX DELTA T** : **PLOT** : PINE 5
NEUTRON MATRIX : 2.65 **FLUID DELTA T** : **THRESH:** 10000
REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96191 09/19/96 958

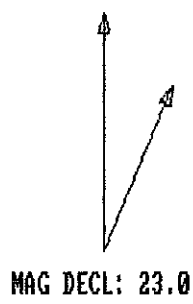
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

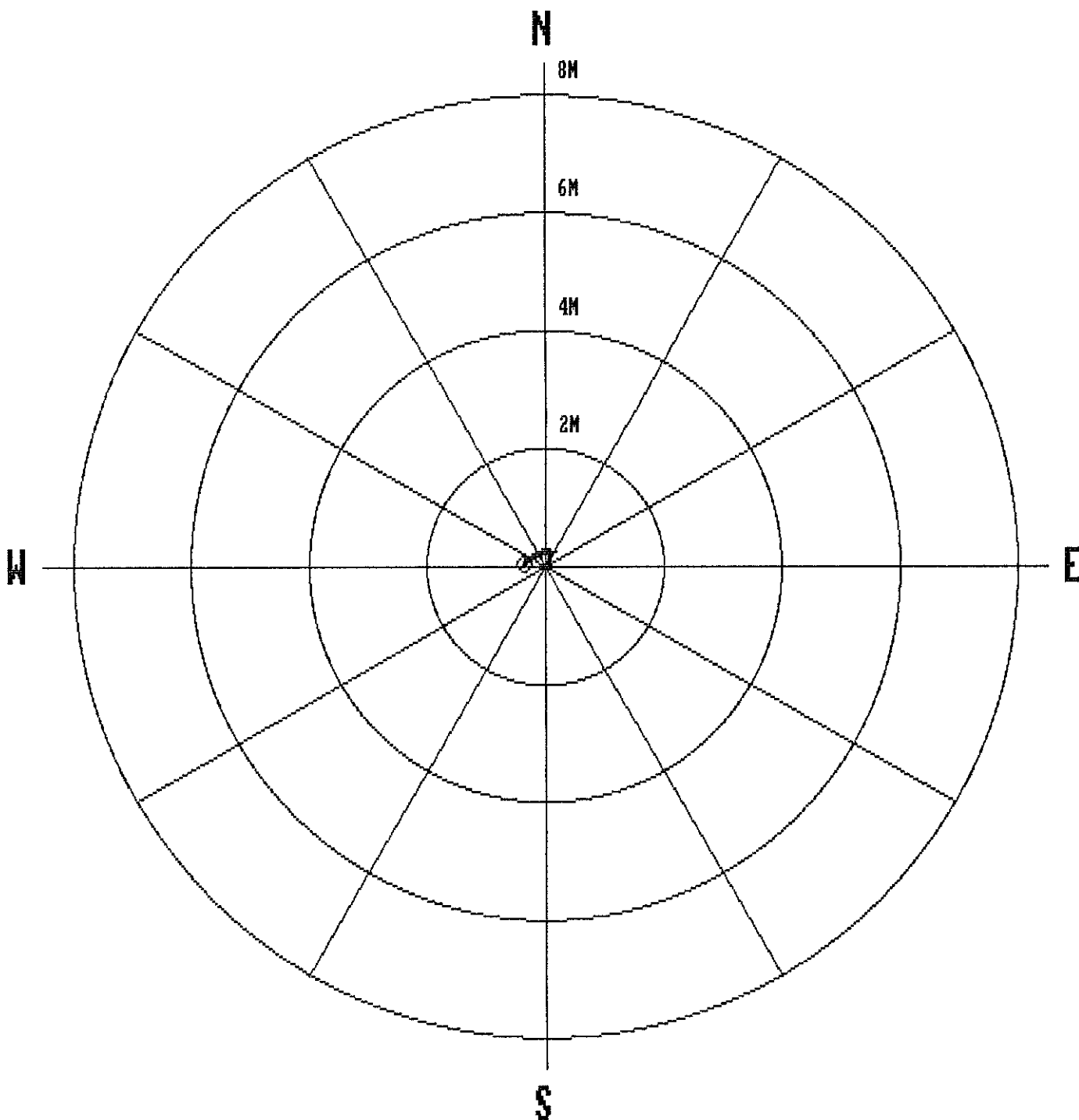
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | 0.00 | 0.0 | 111.1 | 0.4 | 149.7 |
| 4.0 | 4.00 | -0.01 | 0.00 | 0.0 | 143.7 | 0.7 | 141.7 |
| 5.0 | 5.00 | 0.00 | 0.01 | 0.0 | 83.0 | 0.5 | 58.6 |
| 6.0 | 6.00 | 0.02 | 0.03 | 0.0 | 54.8 | 1.3 | 40.3 |
| 7.0 | 7.00 | 0.04 | 0.04 | 0.1 | 42.1 | 1.9 | 10.2 |
| 8.0 | 8.00 | 0.07 | 0.05 | 0.1 | 34.8 | 2.0 | 22.4 |
| 9.0 | 9.00 | 0.10 | 0.06 | 0.1 | 32.0 | 1.7 | 24.4 |
| 10.0 | 10.00 | 0.13 | 0.07 | 0.1 | 29.6 | 2.2 | 24.7 |
| 11.0 | 11.00 | 0.15 | 0.08 | 0.2 | 27.8 | 1.7 | 17.4 |
| 12.0 | 12.00 | 0.18 | 0.09 | 0.2 | 26.6 | 1.2 | 19.2 |
| 13.0 | 13.00 | 0.19 | 0.09 | 0.2 | 25.4 | 1.2 | 15.8 |
| 14.0 | 14.00 | 0.21 | 0.09 | 0.2 | 23.8 | 0.8 | 354.6 |
| 15.0 | 15.00 | 0.23 | 0.09 | 0.2 | 22.2 | 1.5 | 13.2 |
| 16.0 | 16.00 | 0.24 | 0.09 | 0.3 | 20.4 | 0.6 | 305.0 |
| 17.0 | 17.00 | 0.24 | 0.08 | 0.3 | 17.4 | 1.0 | 277.0 |
| 18.0 | 18.00 | 0.25 | 0.06 | 0.3 | 13.4 | 1.2 | 268.9 |
| 19.0 | 19.00 | 0.25 | 0.03 | 0.3 | 7.8 | 1.7 | 267.4 |
| 20.0 | 20.00 | 0.24 | 0.00 | 0.2 | 0.9 | 2.0 | 271.6 |
| 21.0 | 20.99 | 0.24 | -0.03 | 0.2 | 352.8 | 2.2 | 272.9 |
| 22.0 | 21.99 | 0.23 | -0.06 | 0.2 | 344.4 | 1.9 | 267.9 |
| 23.0 | 22.99 | 0.22 | -0.10 | 0.2 | 335.1 | 2.7 | 257.7 |
| 24.0 | 23.99 | 0.20 | -0.14 | 0.2 | 325.6 | 2.7 | 256.7 |
| 25.0 | 24.99 | 0.18 | -0.18 | 0.3 | 314.4 | 3.2 | 228.9 |
| 26.0 | 25.99 | 0.15 | -0.23 | 0.3 | 302.7 | 3.5 | 215.7 |
| 27.0 | 26.99 | 0.12 | -0.28 | 0.3 | 292.2 | 3.1 | 245.0 |
| 28.0 | 27.99 | 0.08 | -0.33 | 0.3 | 284.0 | 3.6 | 236.1 |
| 28.5 | 28.46 | 0.06 | -0.36 | 0.4 | 280.0 | 3.9 | 236.0 |

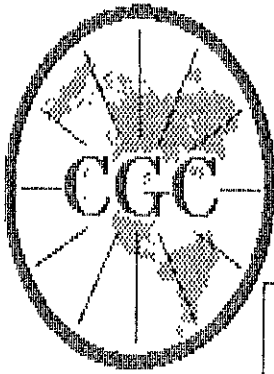
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96192
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 28.46 M
 AZIMUTH: 280.0
 DISTANCE: 0.4 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



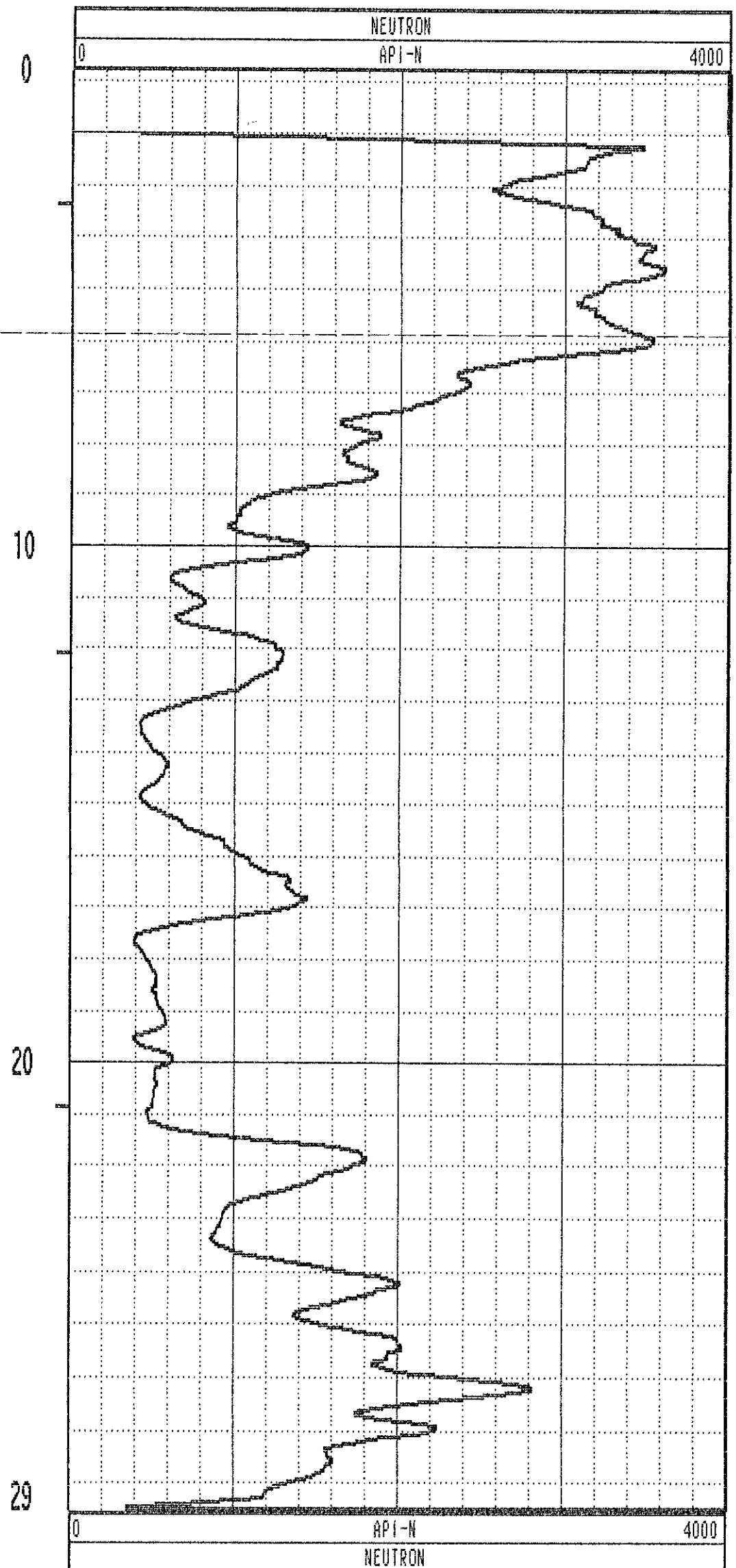
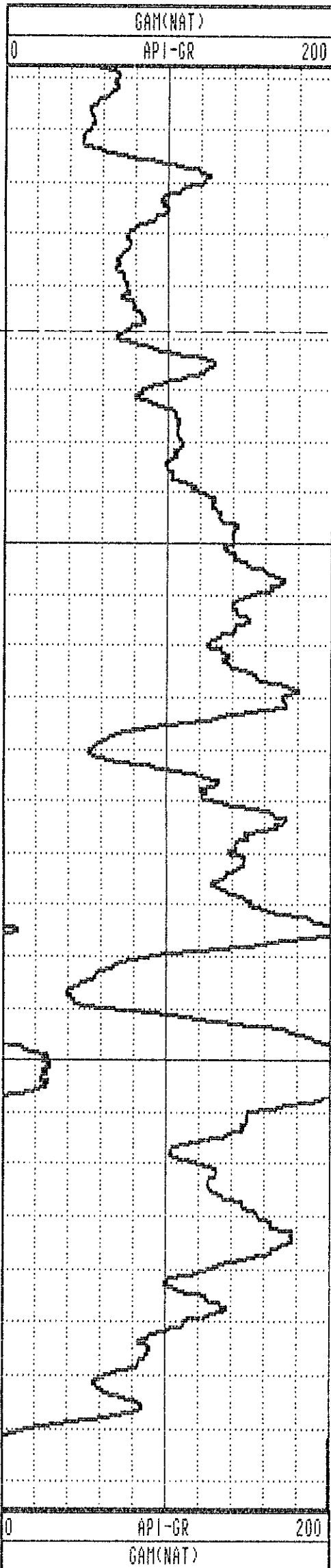


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96192 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 10/02/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 28.54 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.84 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 4 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96192
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

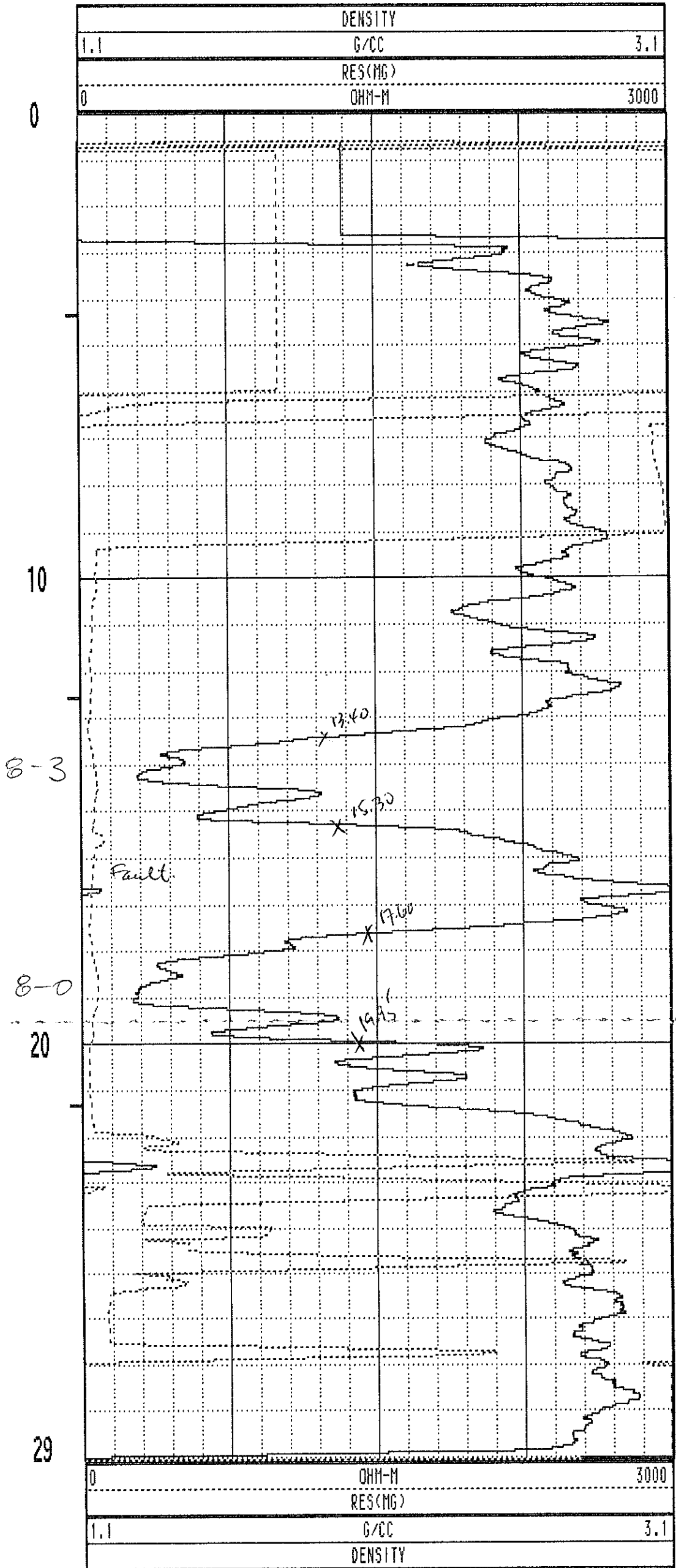
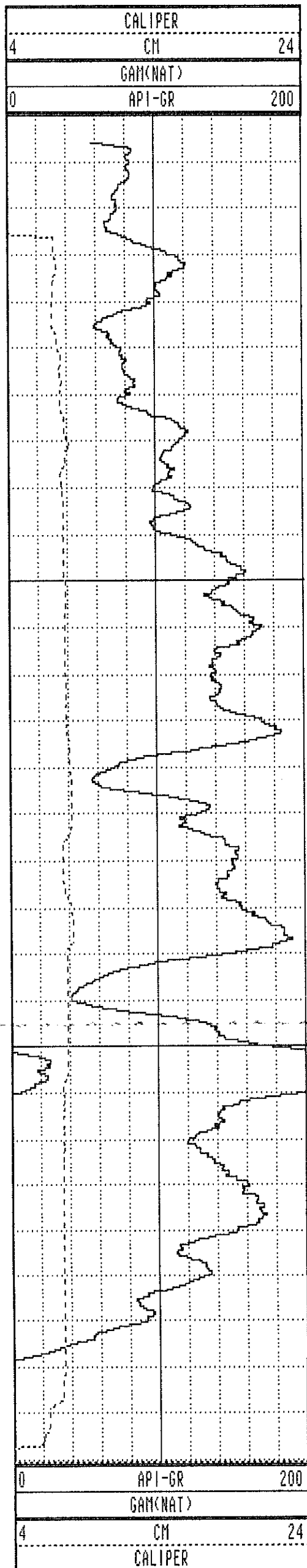
OTHER SERVICES:

DATE : 09/19/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 28 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.07 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.60 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R.THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96192 09/19/96 958

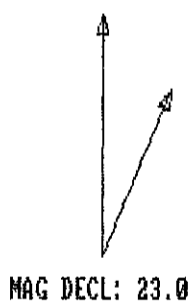
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

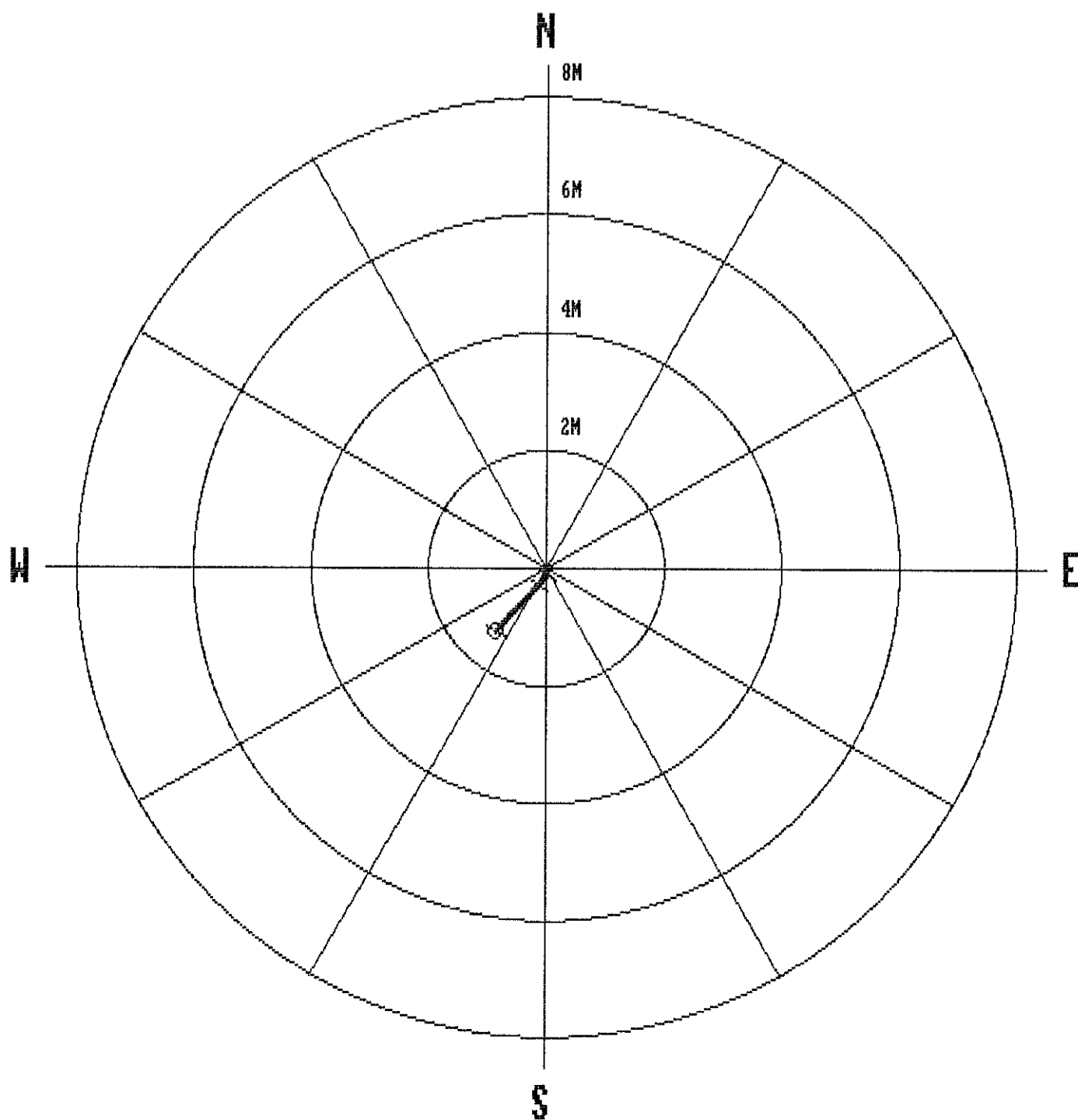
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 75.7 | 1.2 | 80.4 |
| 3.0 | 3.00 | -0.00 | -0.02 | 0.0 | 255.4 | 1.0 | 250.4 |
| 4.0 | 4.00 | -0.00 | -0.04 | 0.0 | 262.8 | 1.0 | 271.5 |
| 5.0 | 5.00 | -0.01 | -0.05 | 0.1 | 254.5 | 1.6 | 85.1 |
| 6.0 | 6.00 | -0.03 | -0.04 | 0.1 | 230.5 | 1.3 | 141.3 |
| 7.0 | 7.00 | -0.05 | -0.03 | 0.1 | 206.2 | 1.5 | 139.7 |
| 8.0 | 8.00 | -0.07 | -0.01 | 0.1 | 188.2 | 1.7 | 133.4 |
| 9.0 | 9.00 | -0.09 | 0.00 | 0.1 | 178.1 | 1.2 | 152.4 |
| 10.0 | 10.00 | -0.11 | 0.02 | 0.1 | 171.5 | 0.8 | 137.6 |
| 11.0 | 11.00 | -0.12 | 0.03 | 0.1 | 167.2 | 0.9 | 131.3 |
| 12.0 | 12.00 | -0.13 | 0.03 | 0.1 | 164.9 | 0.5 | 78.1 |
| 13.0 | 13.00 | -0.13 | 0.04 | 0.1 | 163.8 | 0.5 | 15.6 |
| 14.0 | 14.00 | -0.14 | 0.03 | 0.1 | 165.7 | 0.7 | 235.5 |
| 15.0 | 15.00 | -0.14 | 0.02 | 0.1 | 170.4 | 1.3 | 235.6 |
| 16.0 | 16.00 | -0.16 | 0.01 | 0.2 | 176.9 | 2.2 | 236.1 |
| 17.0 | 17.00 | -0.18 | -0.01 | 0.2 | 184.0 | 2.0 | 220.4 |
| 18.0 | 18.00 | -0.21 | -0.04 | 0.2 | 191.8 | 3.1 | 231.5 |
| 19.0 | 18.99 | -0.24 | -0.08 | 0.3 | 198.5 | 3.1 | 225.4 |
| 20.0 | 19.99 | -0.28 | -0.12 | 0.3 | 203.5 | 3.9 | 224.4 |
| 21.0 | 20.99 | -0.33 | -0.17 | 0.4 | 207.0 | 4.2 | 219.9 |
| 22.0 | 21.99 | -0.39 | -0.22 | 0.5 | 209.8 | 4.8 | 222.4 |
| 23.0 | 22.98 | -0.46 | -0.28 | 0.5 | 211.9 | 5.4 | 228.8 |
| 24.0 | 23.98 | -0.52 | -0.35 | 0.6 | 214.0 | 5.2 | 232.6 |
| 25.0 | 24.97 | -0.59 | -0.42 | 0.7 | 215.3 | 5.9 | 222.2 |
| 26.0 | 25.97 | -0.67 | -0.49 | 0.8 | 216.6 | 6.1 | 236.5 |
| 27.0 | 26.96 | -0.75 | -0.57 | 0.9 | 217.2 | 6.3 | 226.1 |
| 28.0 | 27.95 | -0.84 | -0.65 | 1.1 | 217.6 | 7.6 | 217.8 |
| 29.0 | 28.95 | -0.94 | -0.74 | 1.2 | 218.0 | 6.8 | 225.5 |
| 30.0 | 29.94 | -1.04 | -0.83 | 1.3 | 218.5 | 8.2 | 226.1 |
| 30.3 | 30.19 | -1.07 | -0.85 | 1.4 | 218.6 | 8.4 | 221.9 |

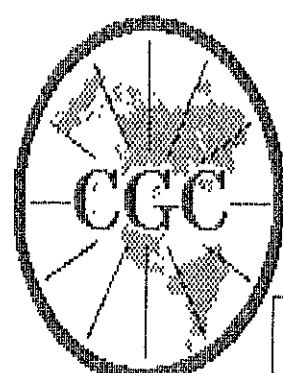
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96194
 DATE OF LOG: 09/26/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 30.19 M
 AZIMUTH: 218.6
 DISTANCE: 1.4 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96194
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/26/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.31
 LOG TOP : 0.62

PERMANENT DATUM :
 ELEU. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

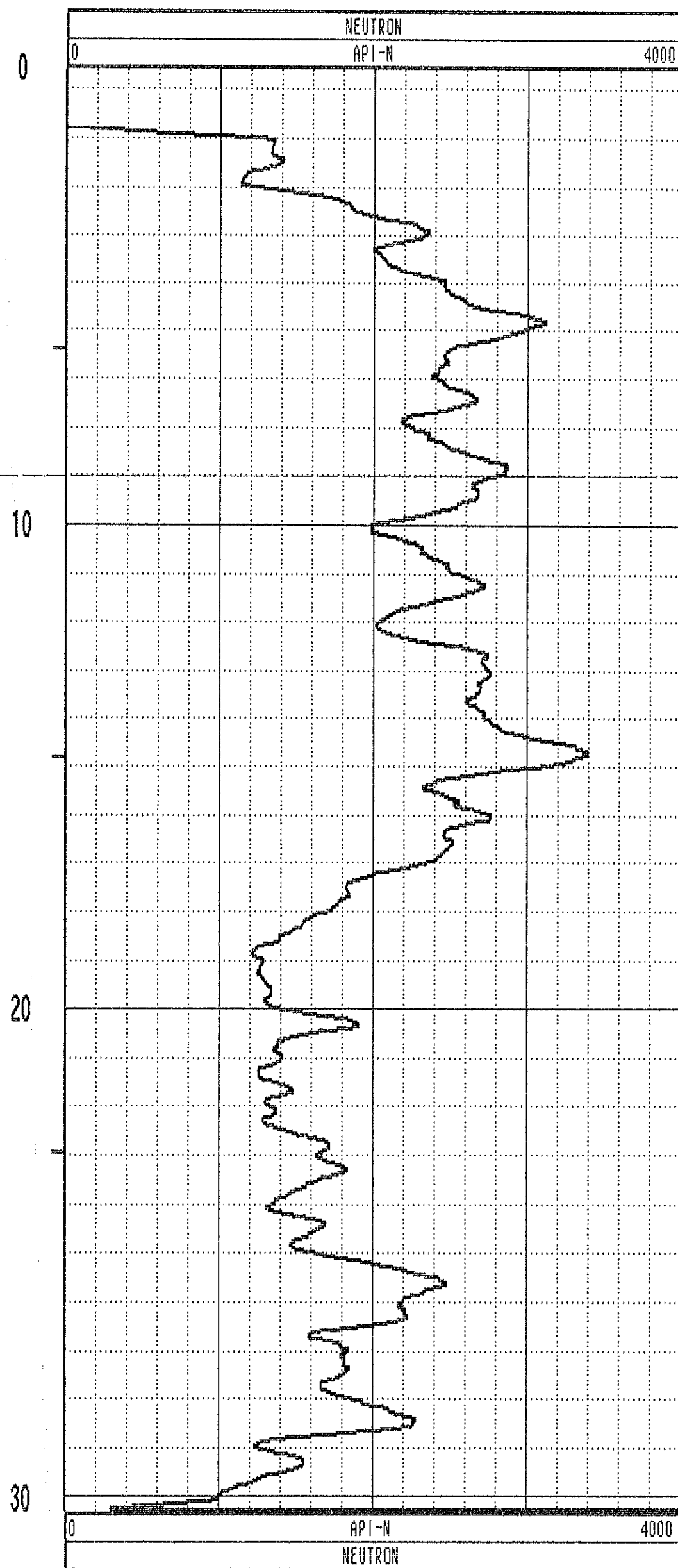
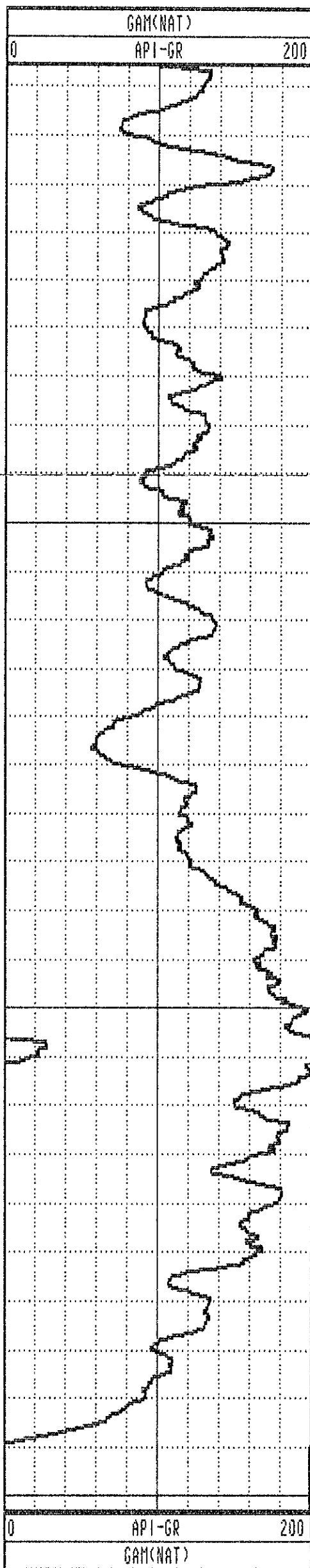
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

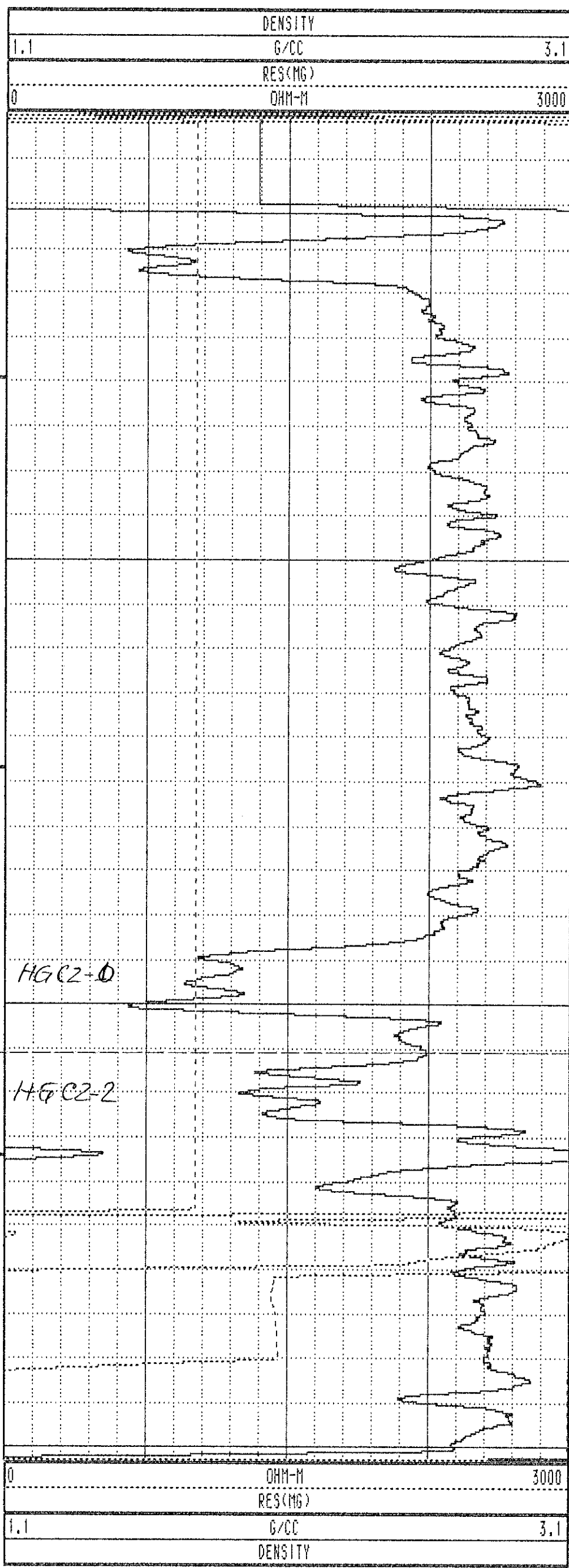
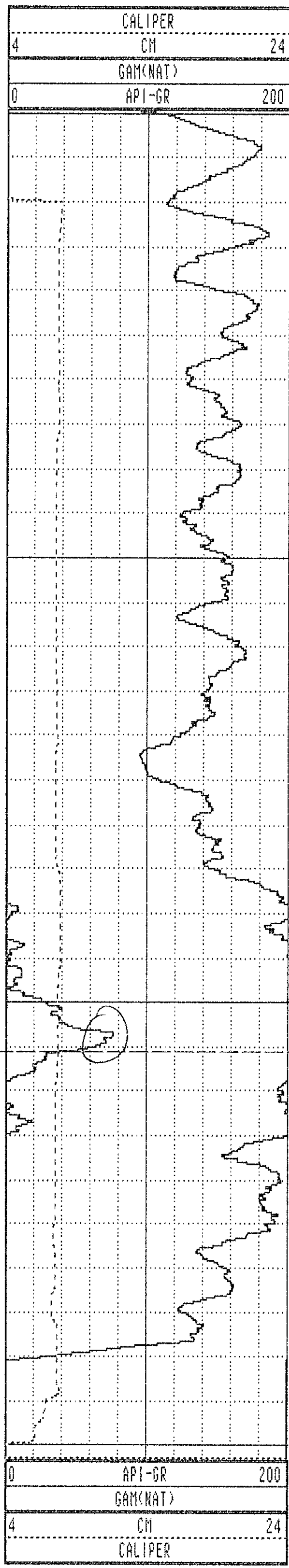
COMPANY : PINE VALLEY COAL
 WELL : NRH-96194
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/25/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.31 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.02 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



NRH-96194 09/25/96 958

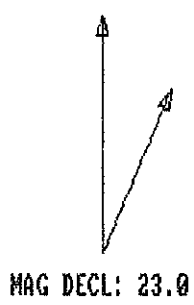
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

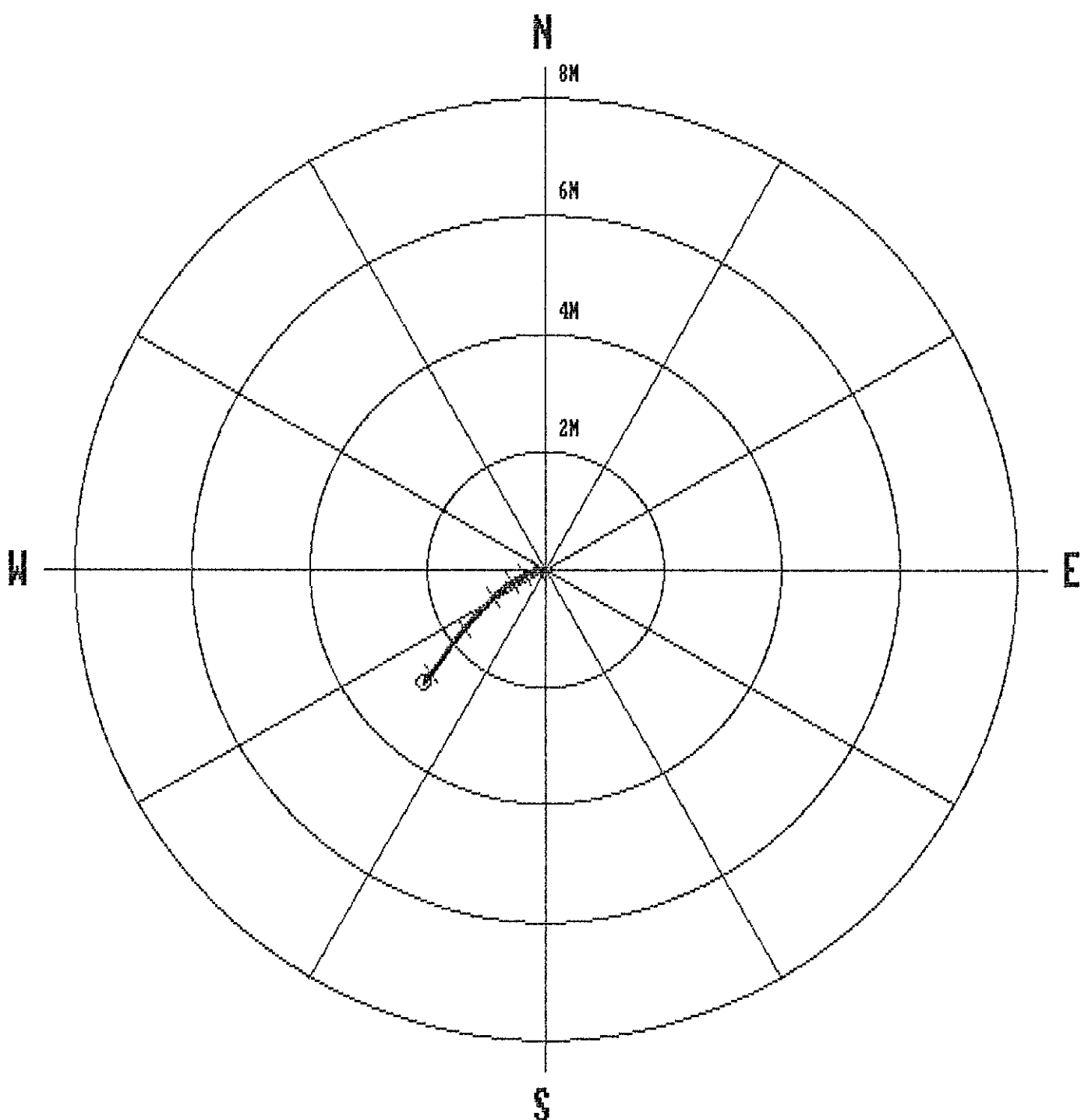
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.03 | 0.0 | 250.3 | 3.0 | 252.7 |
| 4.0 | 4.00 | -0.01 | -0.08 | 0.1 | 262.4 | 2.6 | 295.0 |
| 5.0 | 5.00 | -0.00 | -0.11 | 0.1 | 269.2 | 3.4 | 236.2 |
| 6.0 | 5.99 | -0.01 | -0.17 | 0.2 | 265.7 | 2.8 | 269.1 |
| 7.0 | 6.99 | -0.03 | -0.21 | 0.2 | 262.8 | 3.0 | 244.6 |
| 8.0 | 7.99 | -0.05 | -0.26 | 0.3 | 259.9 | 2.8 | 245.1 |
| 9.0 | 8.99 | -0.07 | -0.30 | 0.3 | 257.7 | 2.9 | 230.6 |
| 10.0 | 9.99 | -0.09 | -0.35 | 0.4 | 254.8 | 3.2 | 236.0 |
| 11.0 | 10.99 | -0.12 | -0.39 | 0.4 | 252.8 | 3.1 | 241.8 |
| 12.0 | 11.99 | -0.15 | -0.43 | 0.5 | 251.2 | 2.3 | 222.2 |
| 13.0 | 12.99 | -0.17 | -0.47 | 0.5 | 250.1 | 3.0 | 247.0 |
| 14.0 | 13.98 | -0.19 | -0.52 | 0.6 | 249.5 | 2.9 | 241.0 |
| 15.0 | 14.98 | -0.22 | -0.57 | 0.6 | 248.9 | 3.3 | 239.8 |
| 16.0 | 15.98 | -0.25 | -0.62 | 0.7 | 248.2 | 3.4 | 245.2 |
| 17.0 | 16.98 | -0.28 | -0.67 | 0.7 | 247.0 | 3.8 | 232.0 |
| 18.0 | 17.98 | -0.34 | -0.73 | 0.8 | 245.4 | 5.3 | 227.7 |
| 19.0 | 18.97 | -0.40 | -0.80 | 0.9 | 243.6 | 5.6 | 231.9 |
| 20.0 | 19.97 | -0.47 | -0.88 | 1.0 | 241.9 | 6.5 | 223.0 |
| 21.0 | 20.96 | -0.56 | -0.96 | 1.1 | 239.8 | 7.3 | 222.0 |
| 22.0 | 21.95 | -0.65 | -1.05 | 1.2 | 238.2 | 8.1 | 225.7 |
| 23.0 | 22.94 | -0.75 | -1.15 | 1.4 | 236.8 | 8.4 | 225.9 |
| 24.0 | 23.93 | -0.86 | -1.24 | 1.5 | 235.3 | 9.2 | 209.5 |
| 25.0 | 24.92 | -0.98 | -1.35 | 1.7 | 234.0 | 9.2 | 214.6 |
| 26.0 | 25.90 | -1.11 | -1.46 | 1.8 | 232.6 | 10.3 | 224.9 |
| 27.0 | 26.88 | -1.26 | -1.57 | 2.0 | 231.4 | 10.8 | 212.5 |
| 28.0 | 27.87 | -1.41 | -1.68 | 2.2 | 229.9 | 11.1 | 208.7 |
| 29.0 | 28.85 | -1.57 | -1.78 | 2.4 | 228.6 | 11.5 | 216.5 |
| 30.0 | 29.83 | -1.73 | -1.91 | 2.6 | 227.7 | 12.1 | 226.3 |
| 31.0 | 30.80 | -1.90 | -2.04 | 2.8 | 227.1 | 13.2 | 210.1 |
| 31.1 | 30.94 | -1.92 | -2.06 | 2.8 | 226.9 | 12.9 | 212.8 |

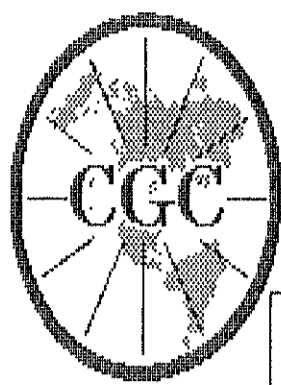
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96195
 DATE OF LOG: 09/26/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 30.94 M
 AZIMUTH: 226.9
 DISTANCE: 2.8 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96195
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

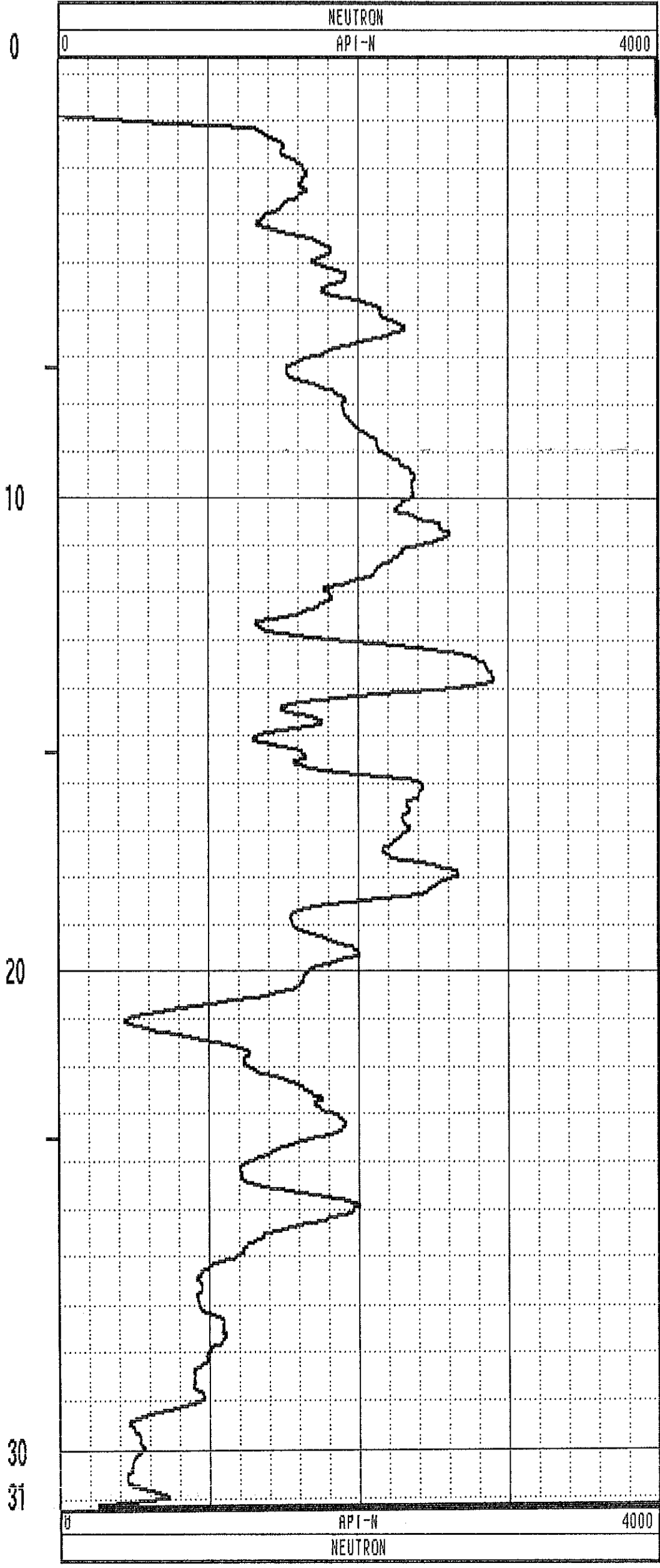
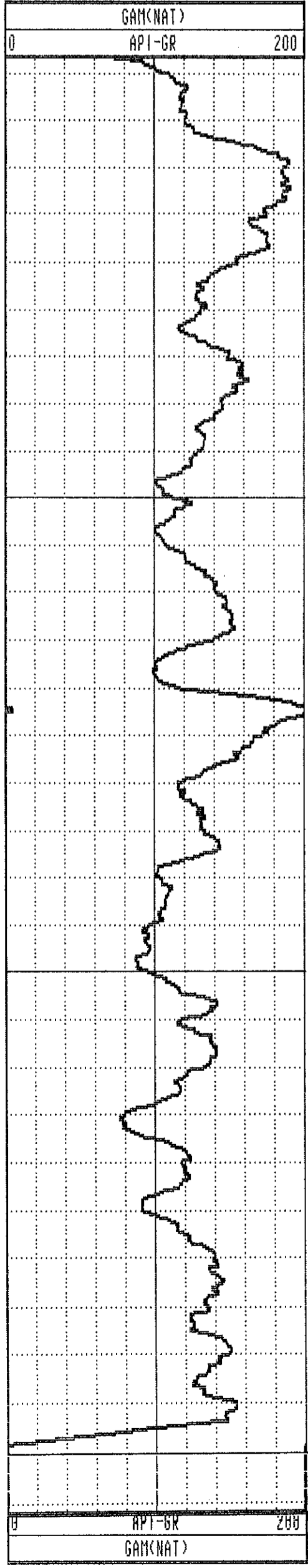
OTHER SERVICES:

DATE : 09/26/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 31.20 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.78 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

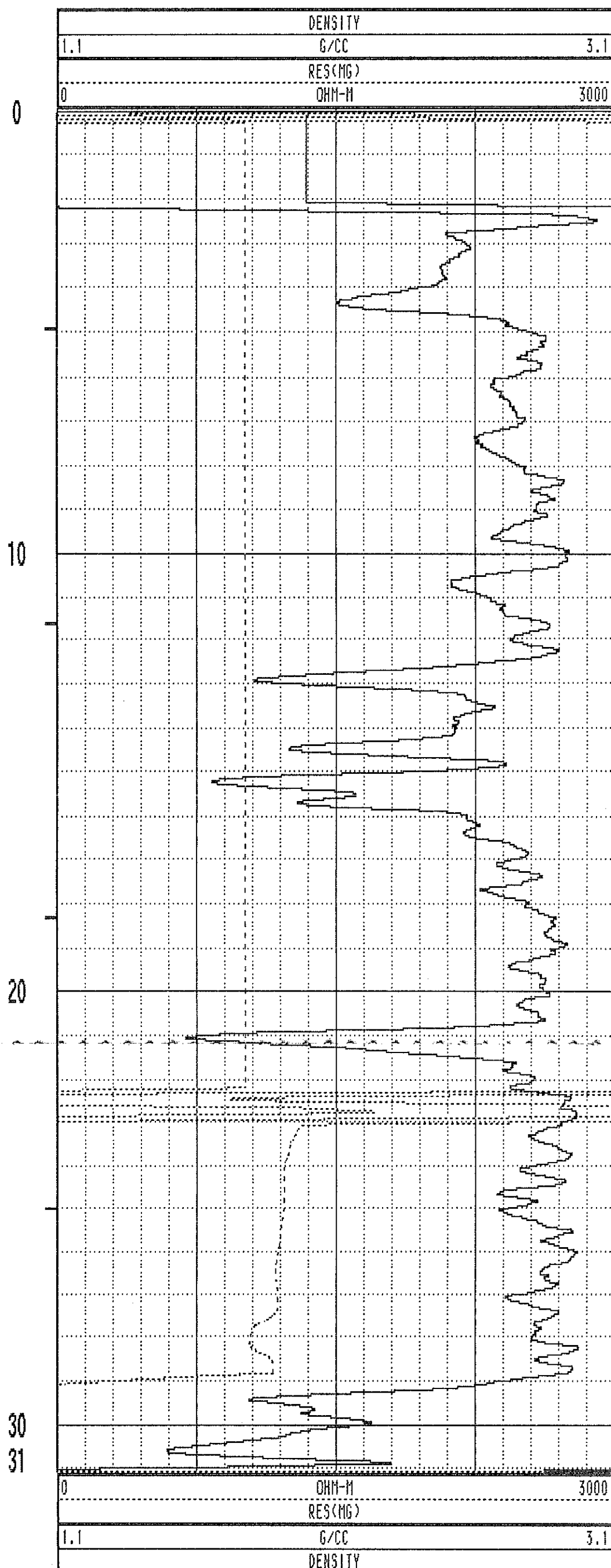
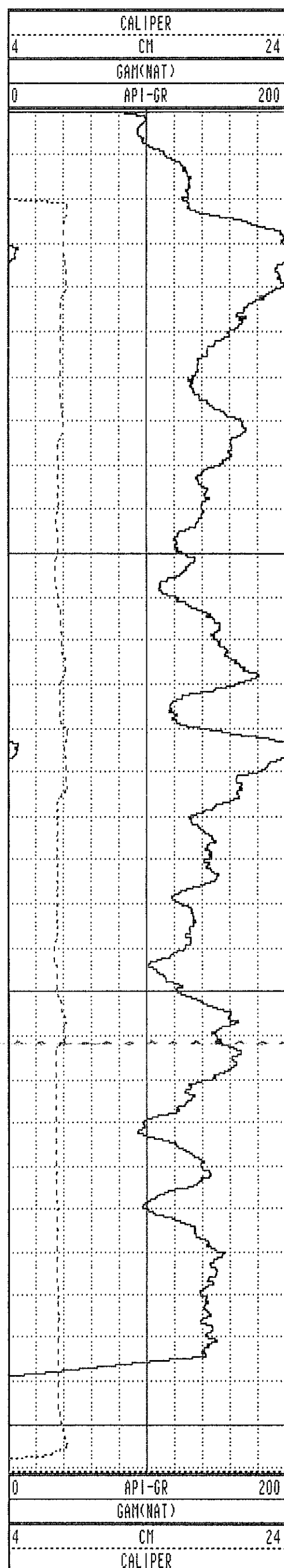
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96195 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/25/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 31.12 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 6 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96195 09/25/96 958

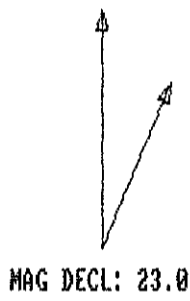
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

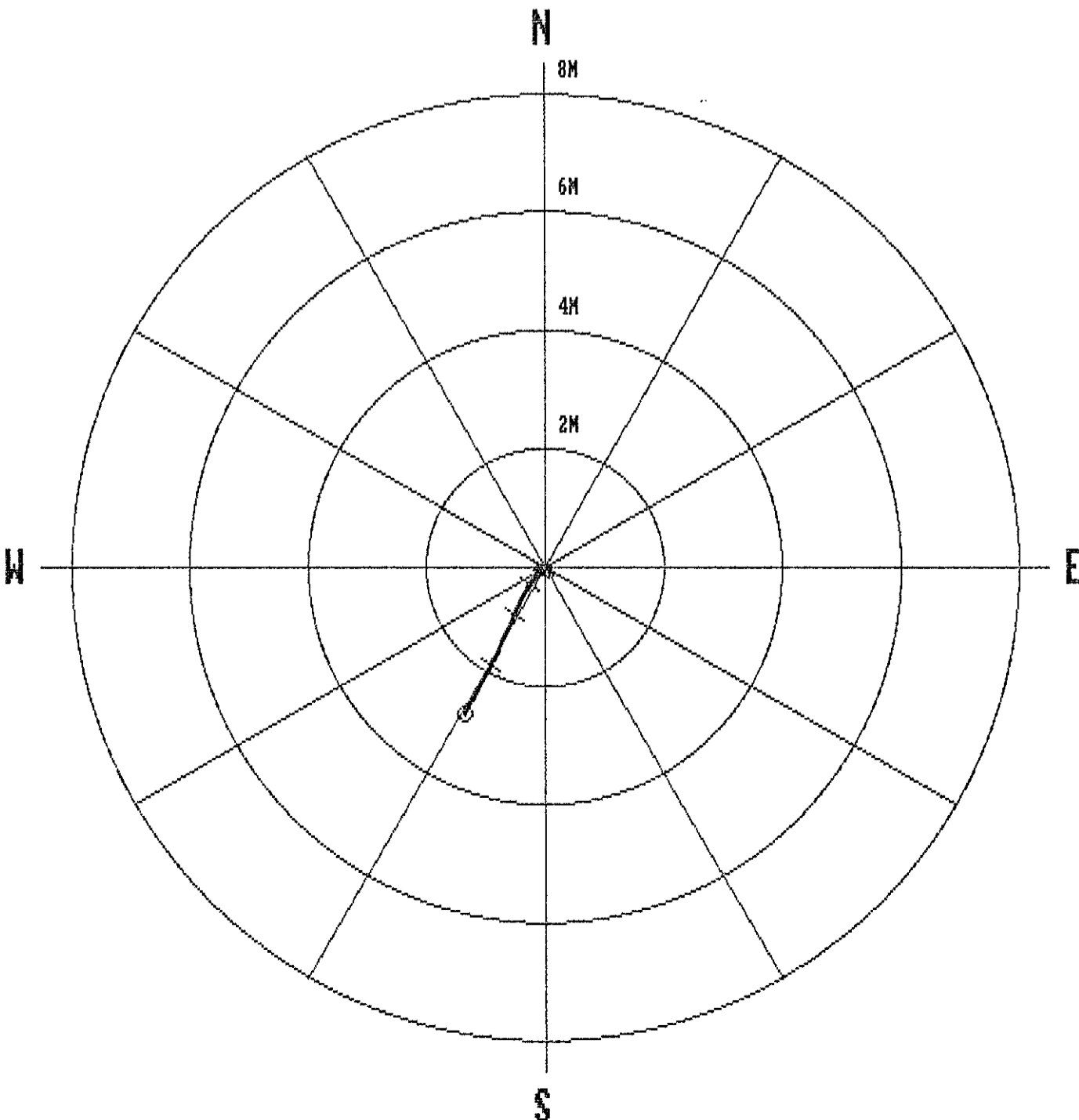
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 267.1 | 1.0 | 267.1 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 266.8 | 0.7 | 79.9 |
| 4.0 | 4.00 | -0.01 | -0.00 | 0.0 | 200.5 | 1.2 | 224.6 |
| 5.0 | 5.00 | -0.01 | -0.01 | 0.0 | 224.0 | 0.7 | 237.8 |
| 6.0 | 6.00 | -0.03 | -0.02 | 0.0 | 219.4 | 0.9 | 222.3 |
| 7.0 | 7.00 | -0.04 | -0.03 | 0.0 | 219.7 | 1.1 | 237.5 |
| 8.0 | 8.00 | -0.05 | -0.05 | 0.1 | 224.1 | 1.4 | 232.5 |
| 9.0 | 9.00 | -0.06 | -0.07 | 0.1 | 225.6 | 1.6 | 230.4 |
| 10.0 | 10.00 | -0.08 | -0.09 | 0.1 | 225.7 | 1.8 | 227.7 |
| 11.0 | 11.00 | -0.11 | -0.11 | 0.2 | 226.3 | 2.2 | 220.5 |
| 12.0 | 12.00 | -0.13 | -0.14 | 0.2 | 225.3 | 2.6 | 224.2 |
| 13.0 | 13.00 | -0.17 | -0.17 | 0.2 | 224.1 | 3.2 | 213.3 |
| 14.0 | 13.99 | -0.22 | -0.20 | 0.3 | 222.8 | 3.8 | 216.8 |
| 15.0 | 14.99 | -0.28 | -0.25 | 0.4 | 221.7 | 4.1 | 213.5 |
| 16.0 | 15.99 | -0.35 | -0.29 | 0.5 | 220.1 | 5.2 | 213.1 |
| 17.0 | 16.98 | -0.43 | -0.34 | 0.6 | 218.5 | 5.9 | 207.4 |
| 18.0 | 17.98 | -0.54 | -0.39 | 0.7 | 216.2 | 7.4 | 202.8 |
| 19.0 | 18.97 | -0.65 | -0.45 | 0.8 | 214.7 | 8.2 | 205.4 |
| 20.0 | 19.96 | -0.79 | -0.51 | 0.9 | 213.0 | 9.0 | 204.9 |
| 21.0 | 20.94 | -0.93 | -0.58 | 1.1 | 212.0 | 9.3 | 209.0 |
| 22.0 | 21.93 | -1.09 | -0.65 | 1.3 | 210.6 | 10.8 | 199.1 |
| 23.0 | 22.91 | -1.26 | -0.73 | 1.5 | 210.0 | 10.7 | 211.2 |
| 24.0 | 23.89 | -1.44 | -0.81 | 1.7 | 209.4 | 11.0 | 201.9 |
| 25.0 | 24.87 | -1.61 | -0.90 | 1.8 | 209.2 | 11.7 | 210.3 |
| 26.0 | 25.85 | -1.79 | -0.99 | 2.0 | 209.0 | 12.1 | 215.4 |
| 27.0 | 26.83 | -1.97 | -1.09 | 2.3 | 208.9 | 12.0 | 213.4 |
| 28.0 | 27.81 | -2.16 | -1.19 | 2.5 | 209.0 | 11.9 | 211.5 |
| 29.0 | 28.78 | -2.35 | -1.29 | 2.7 | 208.8 | 13.1 | 214.6 |
| 29.4 | 29.21 | -2.44 | -1.35 | 2.8 | 208.9 | 13.3 | 210.8 |

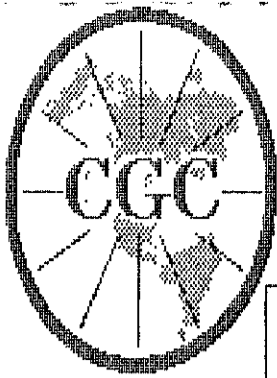
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96196
DATE OF LOG: 09/26/96
PROBE: 9055A 71



SCALE: 1 M/CM
TRUE DEPTH: 29.21 M
AZIMUTH: 208.9
DISTANCE: 2.8 M
+ = 5 M INCR
○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96196
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

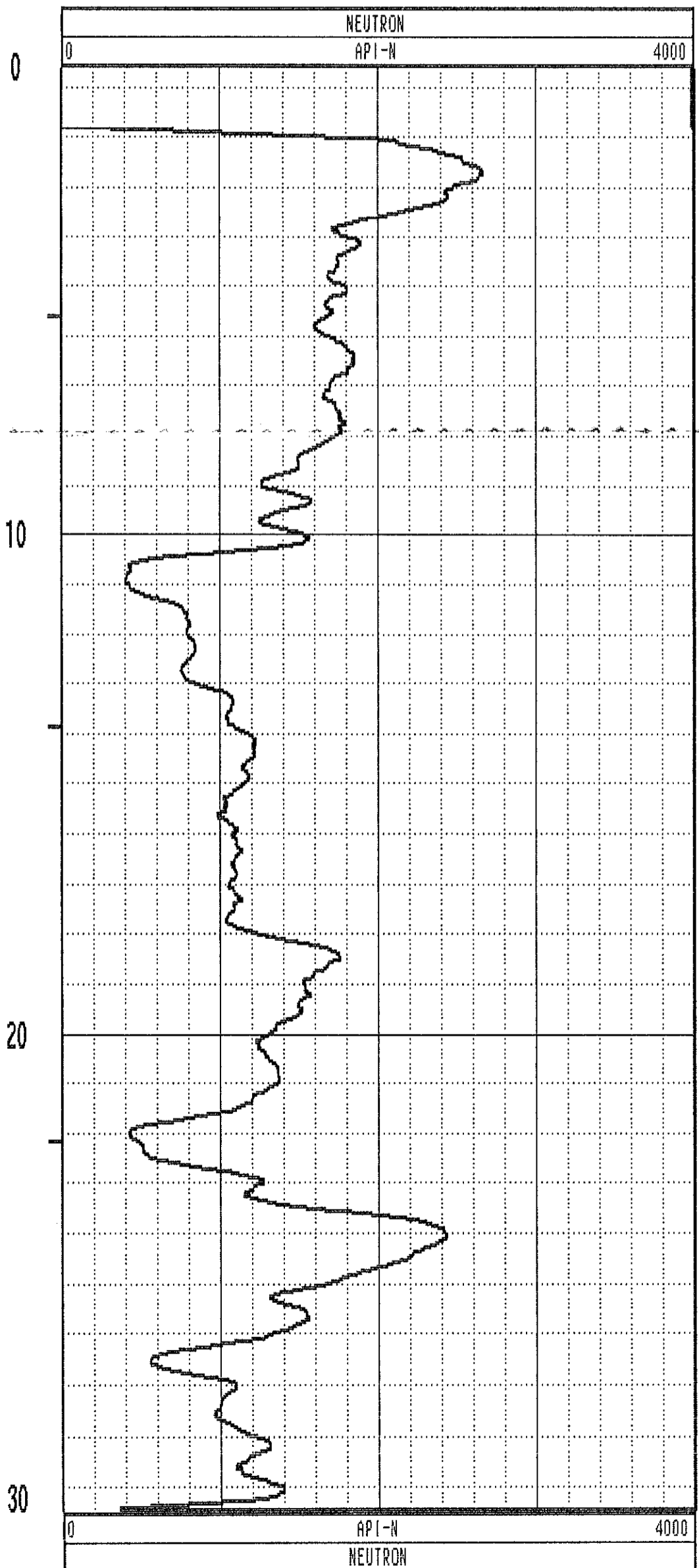
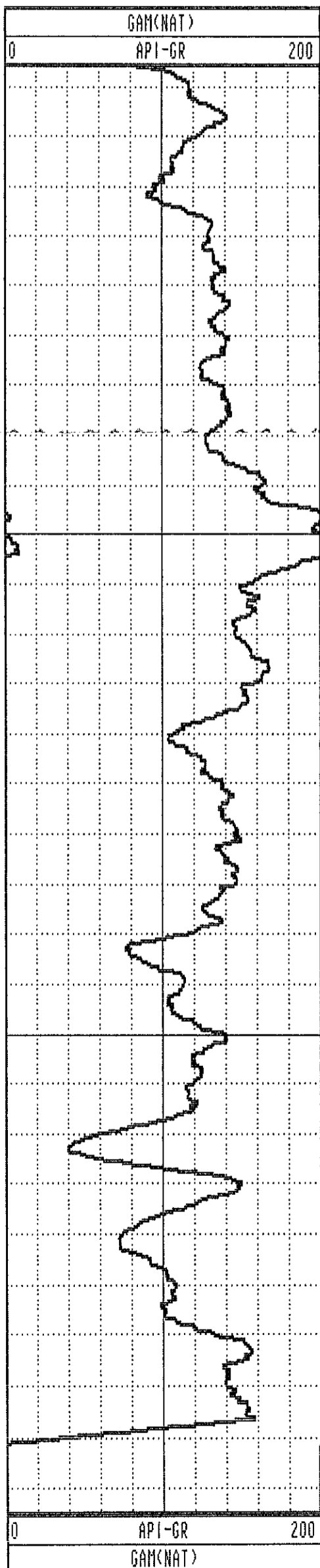
OTHER SERVICES:

DATE : 09/26/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.49 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.64 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



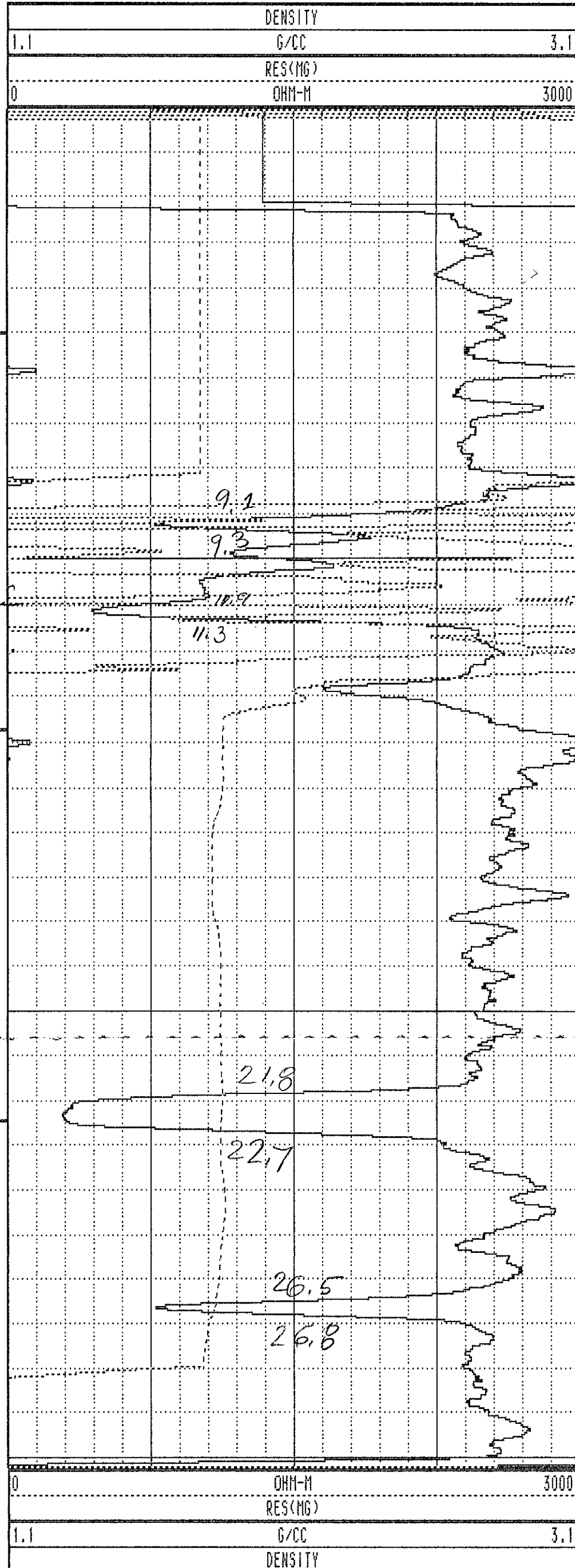
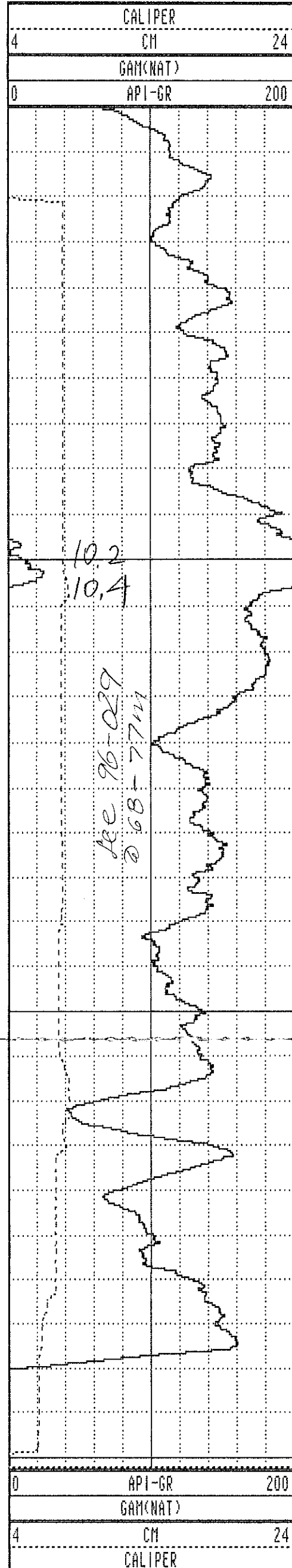
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96196
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 09/25/96 PERMANENT DATUM :
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.25 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.08 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

OTHER SERVICES:

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96196 09/25/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

2

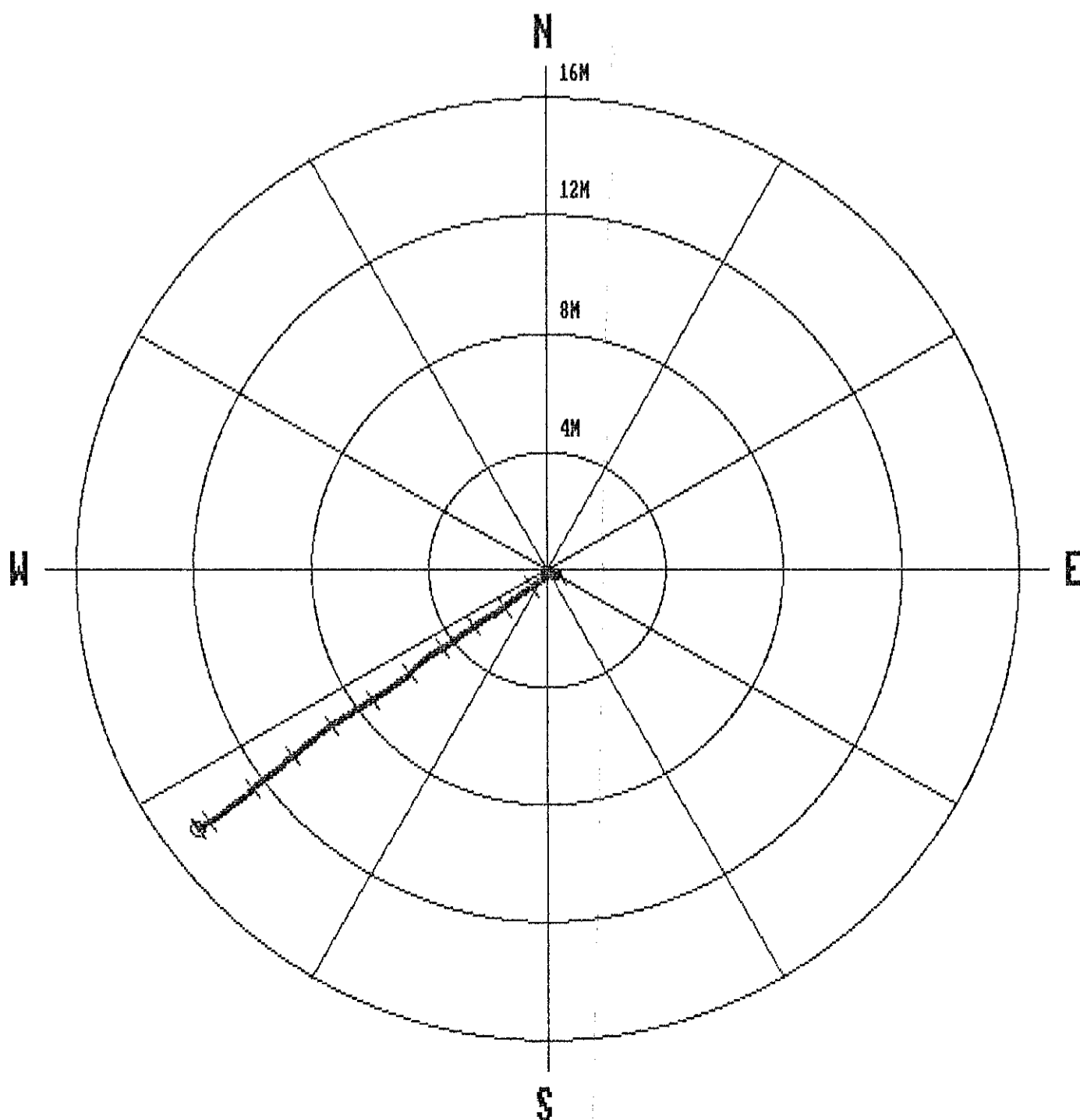
| | | | | | | | |
|------|-------|-------|--------|------|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.87 | -0.21 | -0.13 | 0.2 | 212.4 | 28.4 | 117.0 |
| 4.0 | 3.75 | -0.23 | 0.32 | 0.4 | 126.0 | 29.5 | 91.3 |
| 5.0 | 4.62 | -0.18 | 0.17 | 0.2 | 136.1 | 29.5 | 246.9 |
| 6.0 | 5.48 | -0.41 | -0.26 | 0.5 | 212.2 | 31.0 | 226.7 |
| 7.0 | 6.34 | -0.70 | -0.67 | 1.0 | 223.9 | 29.8 | 242.7 |
| 8.0 | 7.20 | -0.99 | -1.08 | 1.5 | 227.4 | 31.0 | 224.6 |
| 9.0 | 8.05 | -1.29 | -1.47 | 1.9 | 228.8 | 31.7 | 233.0 |
| 10.0 | 8.90 | -1.56 | -1.90 | 2.5 | 230.5 | 31.8 | 257.0 |
| 11.0 | 9.75 | -1.84 | -2.34 | 3.0 | 231.9 | 33.4 | 252.0 |
| 12.0 | 10.59 | -2.14 | -2.77 | 3.5 | 232.3 | 33.2 | 239.3 |
| 13.0 | 11.42 | -2.45 | -3.22 | 4.0 | 232.7 | 33.9 | 240.2 |
| 14.0 | 12.25 | -2.74 | -3.69 | 4.6 | 233.5 | 34.9 | 240.9 |
| 15.0 | 13.06 | -3.06 | -4.16 | 5.2 | 233.7 | 35.3 | 214.1 |
| 16.0 | 13.86 | -3.44 | -4.60 | 5.7 | 233.2 | 38.6 | 255.5 |
| 17.0 | 14.66 | -3.81 | -5.04 | 6.3 | 232.9 | 36.4 | 239.0 |
| 18.0 | 15.45 | -4.17 | -5.54 | 6.9 | 233.0 | 39.1 | 228.6 |
| 19.0 | 16.22 | -4.52 | -6.05 | 7.6 | 233.3 | 39.3 | 251.6 |
| 20.0 | 17.00 | -4.83 | -6.59 | 8.2 | 233.7 | 40.1 | 223.2 |
| 21.0 | 17.76 | -5.18 | -7.13 | 8.8 | 234.0 | 40.5 | 249.2 |
| 22.0 | 18.51 | -5.52 | -7.65 | 9.4 | 234.2 | 41.0 | 248.2 |
| 23.0 | 19.26 | -5.93 | -8.14 | 10.1 | 234.0 | 41.3 | 236.2 |
| 24.0 | 20.00 | -6.33 | -8.65 | 10.7 | 233.8 | 41.8 | 239.6 |
| 25.0 | 20.74 | -6.74 | -9.12 | 11.3 | 233.5 | 42.9 | 227.7 |
| 26.0 | 21.47 | -7.13 | -9.66 | 12.0 | 233.6 | 43.1 | 212.4 |
| 27.0 | 22.19 | -7.55 | -10.11 | 12.6 | 233.2 | 43.3 | 227.0 |
| 28.0 | 22.91 | -7.95 | -10.63 | 13.3 | 233.2 | 43.8 | 248.5 |
| 29.0 | 23.62 | -8.36 | -11.16 | 13.9 | 233.2 | 46.2 | 258.9 |
| 30.0 | 24.33 | -8.73 | -11.73 | 14.6 | 233.3 | 46.6 | 219.3 |
| 30.2 | 24.47 | -8.82 | -11.84 | 14.8 | 233.3 | 46.0 | 235.6 |

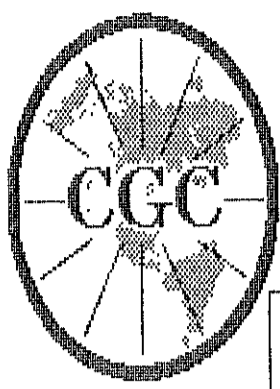
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96197
 DATE OF LOG: 09/26/96
 PROBE: 9055A 71



SCALE: 2 M/CM
 TRUE DEPTH: 24.47 M
 AZIMUTH: 233.3
 DISTANCE: 14.8 M
 + = 2 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96197
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/26/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.25
 LOG TOP : 0.66

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

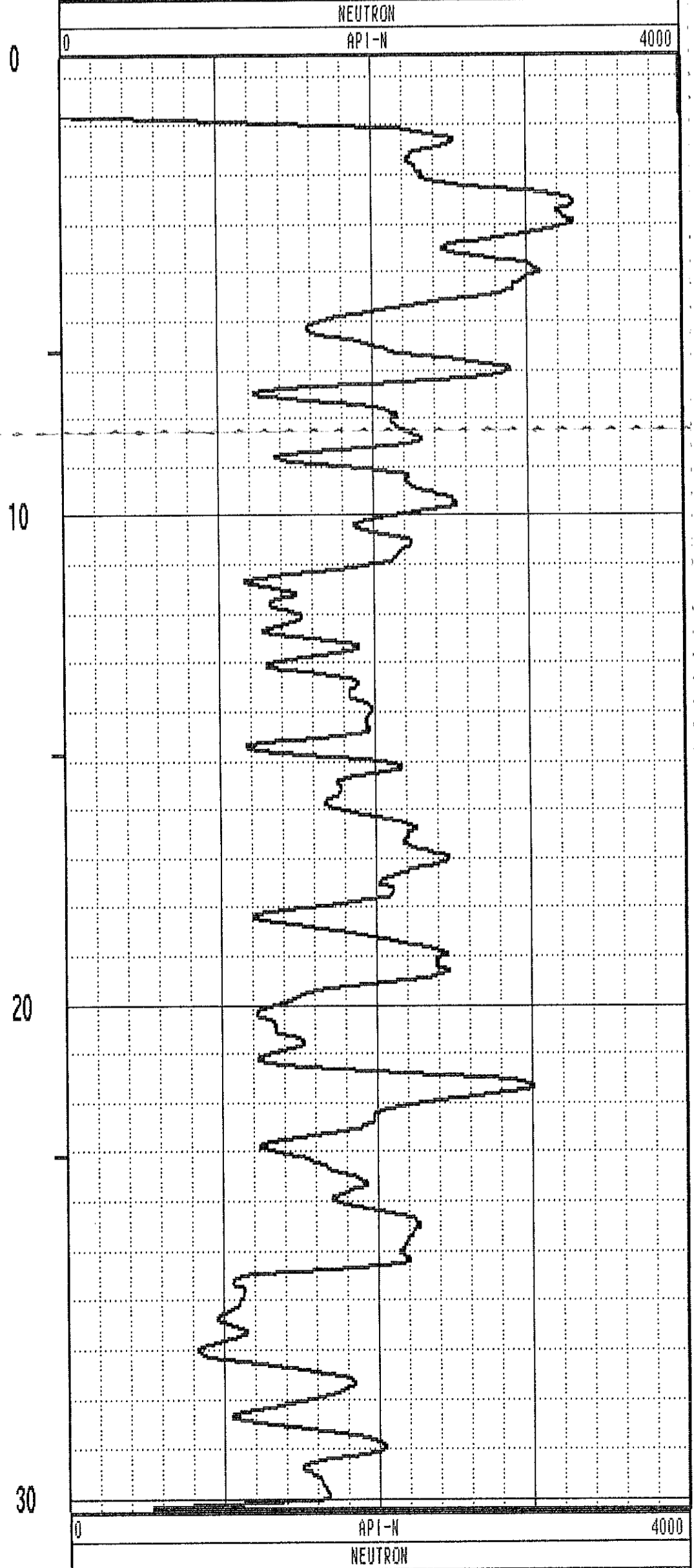
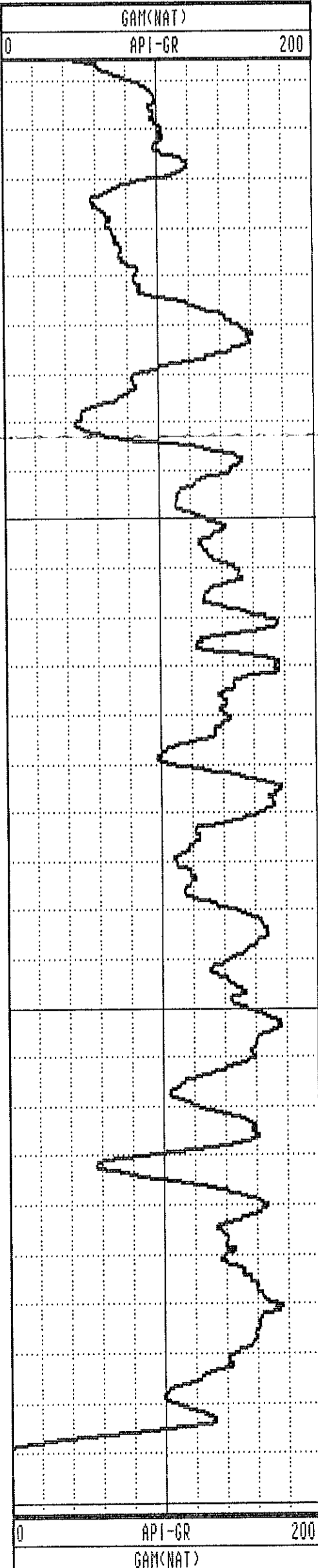
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 6
 PLOT : PINE 4
 THRESH: 10000

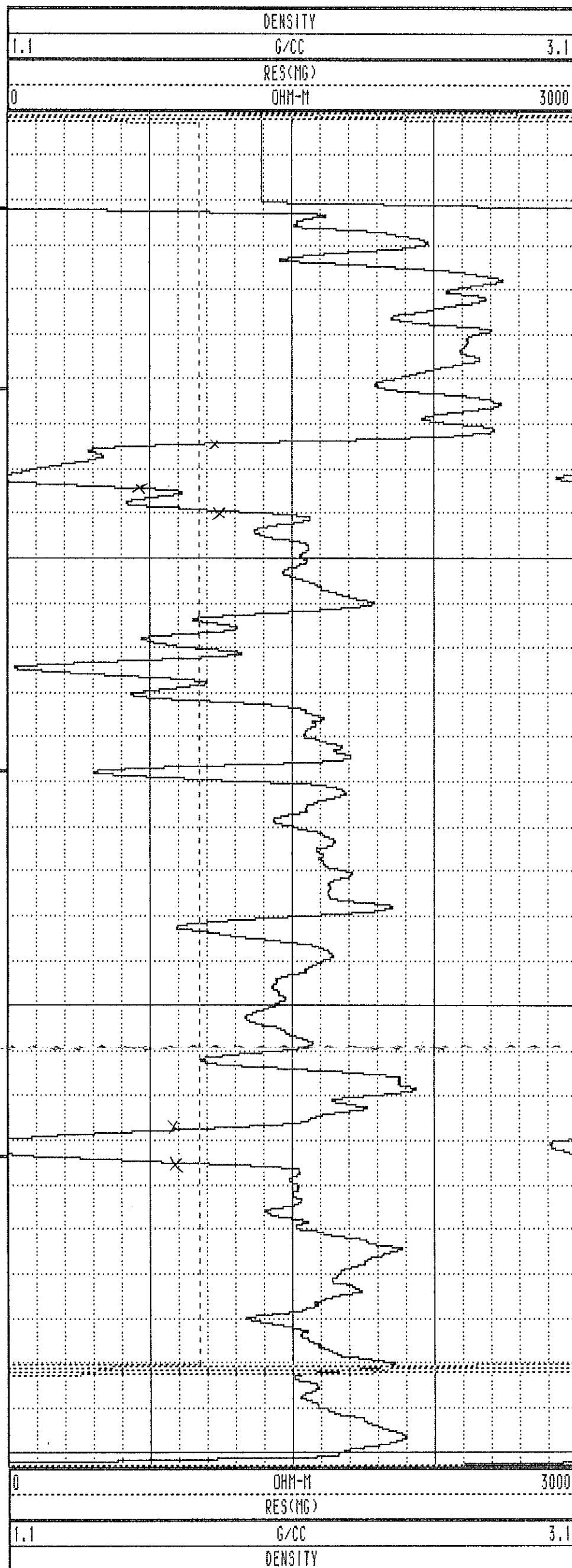
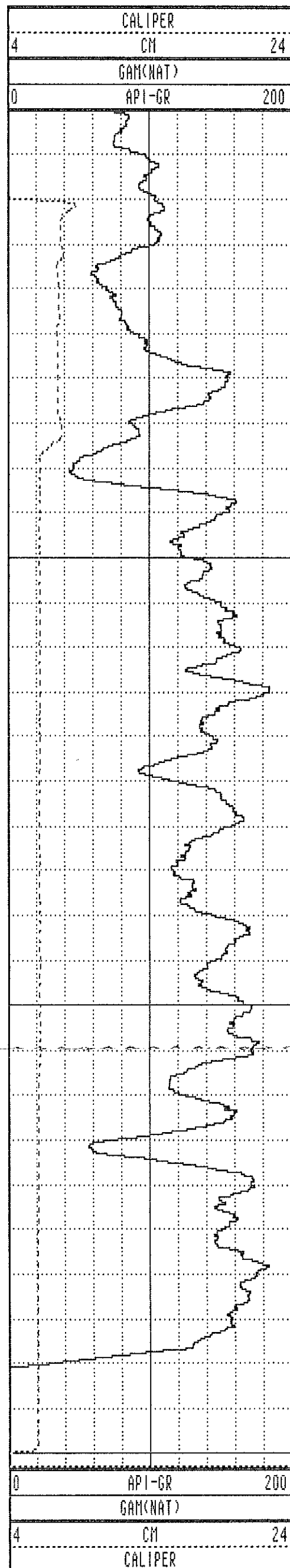
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96197 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/25/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB : LOG BOTTOM : 30.33 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.06 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96197 09/25/96 958

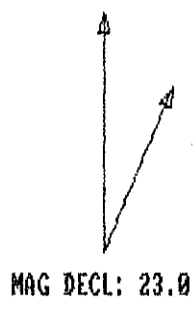
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

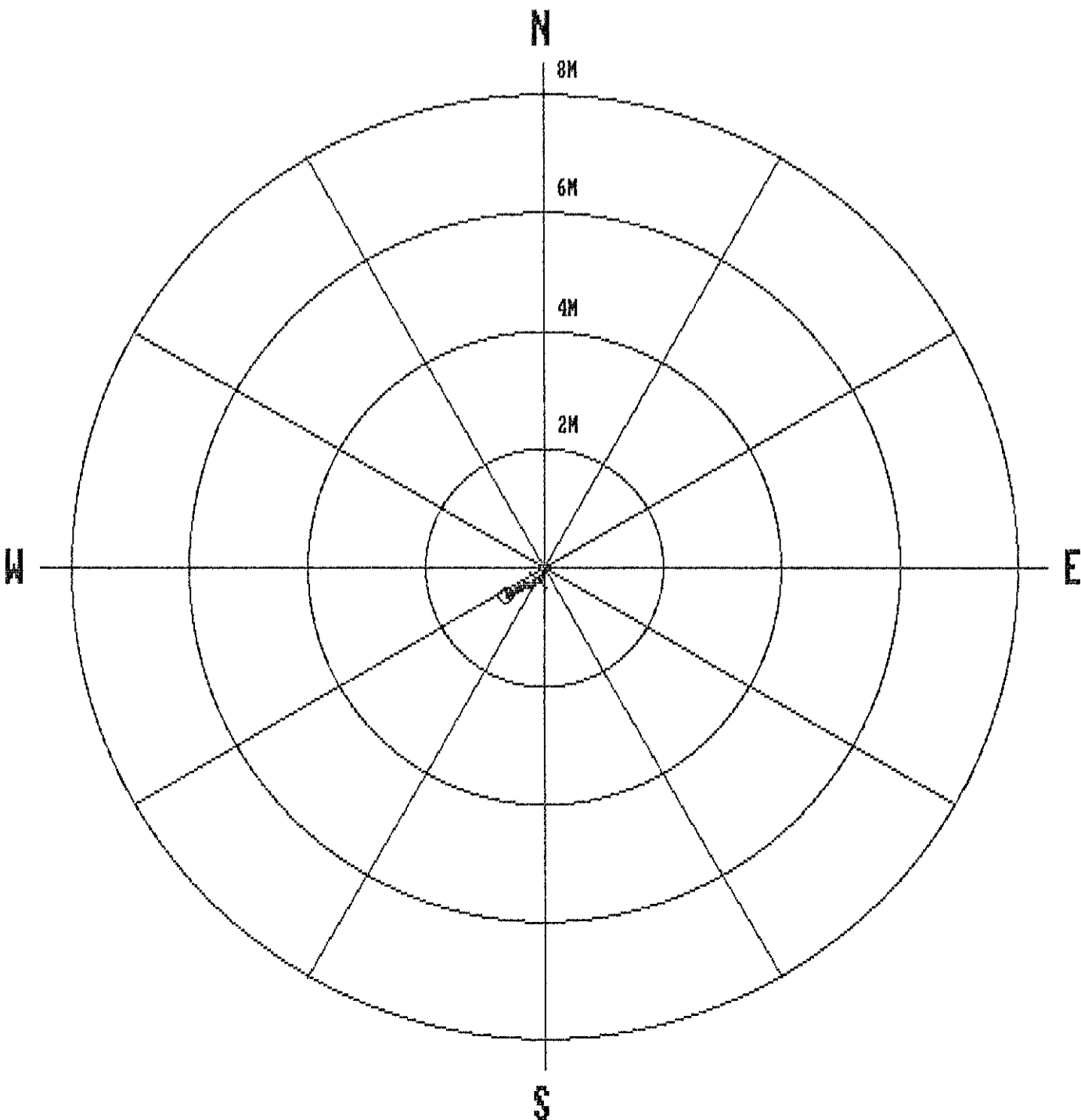
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 1.0 | 0.7 | 9.2 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 262.3 | 0.3 | 189.5 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 248.6 | 0.3 | 42.8 |
| 5.0 | 5.00 | 0.01 | 0.00 | 0.0 | 2.1 | 1.1 | 44.7 |
| 6.0 | 6.00 | 0.01 | 0.01 | 0.0 | 36.3 | 0.3 | 97.5 |
| 7.0 | 7.00 | 0.00 | 0.01 | 0.0 | 79.8 | 0.2 | 138.1 |
| 8.0 | 8.00 | -0.00 | 0.02 | 0.0 | 96.9 | 0.4 | 120.7 |
| 9.0 | 9.00 | -0.01 | 0.02 | 0.0 | 120.2 | 0.7 | 200.8 |
| 10.0 | 10.00 | -0.02 | 0.02 | 0.0 | 139.7 | 0.6 | 211.5 |
| 11.0 | 11.00 | -0.03 | 0.02 | 0.0 | 150.6 | 1.1 | 148.8 |
| 12.0 | 12.00 | -0.05 | 0.02 | 0.1 | 154.6 | 0.9 | 161.4 |
| 13.0 | 13.00 | -0.06 | 0.02 | 0.1 | 159.5 | 0.5 | 197.0 |
| 14.0 | 14.00 | -0.07 | 0.02 | 0.1 | 165.5 | 1.2 | 215.2 |
| 15.0 | 15.00 | -0.09 | 0.01 | 0.1 | 173.0 | 1.2 | 230.7 |
| 16.0 | 16.00 | -0.11 | -0.00 | 0.1 | 180.3 | 1.3 | 202.1 |
| 17.0 | 17.00 | -0.13 | -0.01 | 0.1 | 186.4 | 1.4 | 227.7 |
| 18.0 | 18.00 | -0.16 | -0.03 | 0.2 | 192.5 | 2.2 | 215.9 |
| 19.0 | 19.00 | -0.18 | -0.06 | 0.2 | 197.9 | 2.3 | 228.4 |
| 20.0 | 20.00 | -0.21 | -0.10 | 0.2 | 204.7 | 3.0 | 246.3 |
| 21.0 | 20.99 | -0.24 | -0.14 | 0.3 | 211.0 | 3.4 | 235.8 |
| 22.0 | 21.99 | -0.27 | -0.19 | 0.3 | 215.1 | 2.8 | 240.3 |
| 23.0 | 22.99 | -0.28 | -0.23 | 0.4 | 218.9 | 2.5 | 248.8 |
| 24.0 | 23.99 | -0.30 | -0.27 | 0.4 | 222.8 | 2.8 | 262.2 |
| 25.0 | 24.99 | -0.31 | -0.33 | 0.5 | 226.2 | 3.3 | 262.0 |
| 26.0 | 25.99 | -0.34 | -0.38 | 0.5 | 228.6 | 3.7 | 247.1 |
| 27.0 | 26.99 | -0.36 | -0.44 | 0.6 | 230.1 | 3.8 | 241.9 |
| 28.0 | 27.98 | -0.40 | -0.49 | 0.6 | 231.2 | 4.2 | 239.7 |
| 29.0 | 28.98 | -0.43 | -0.56 | 0.7 | 232.1 | 4.2 | 243.1 |
| 30.0 | 29.98 | -0.46 | -0.62 | 0.8 | 233.2 | 4.3 | 262.0 |
| 30.3 | 30.28 | -0.47 | -0.64 | 0.8 | 233.6 | 4.4 | 246.2 |

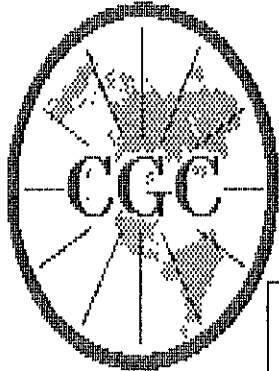
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96198
 DATE OF LOG: 09/26/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 30.28 M
 AZIMUTH: 233.6
 DISTANCE: 0.8 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

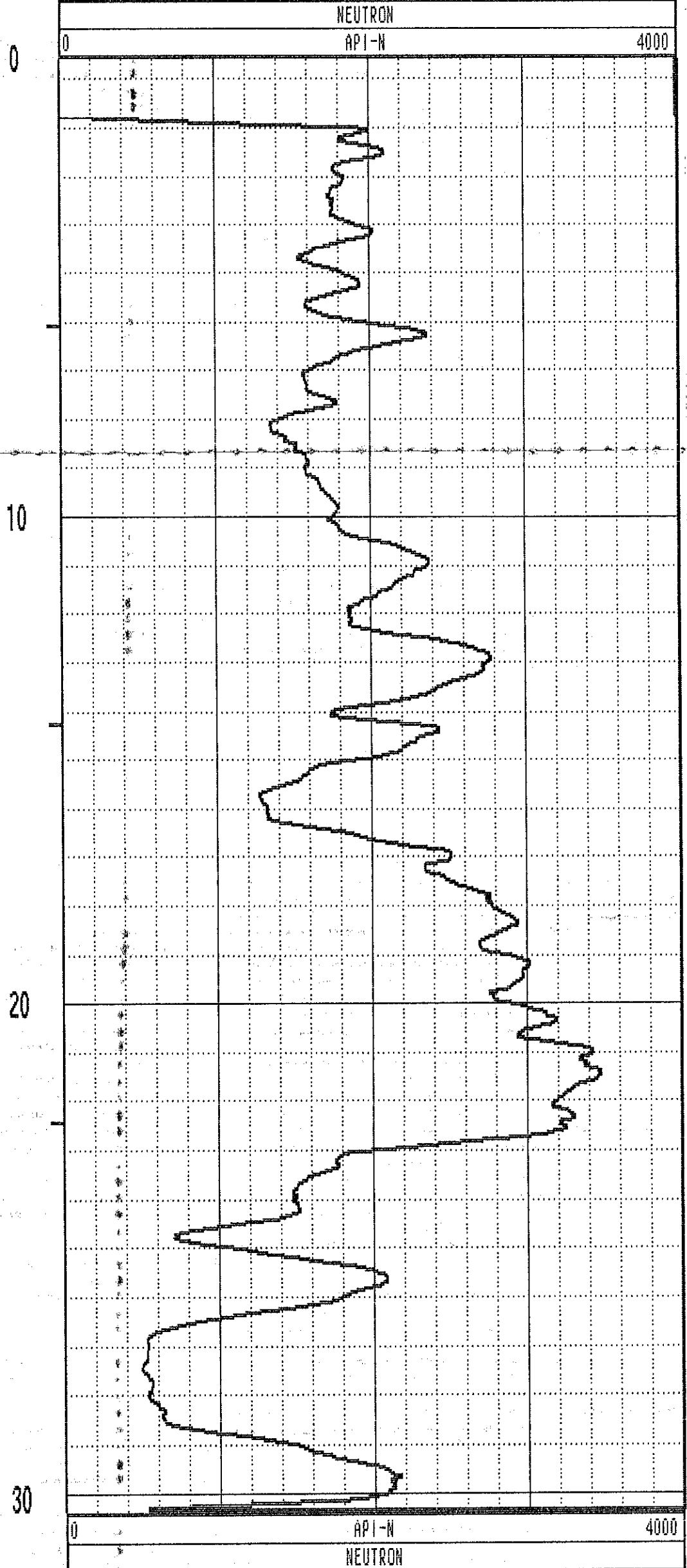
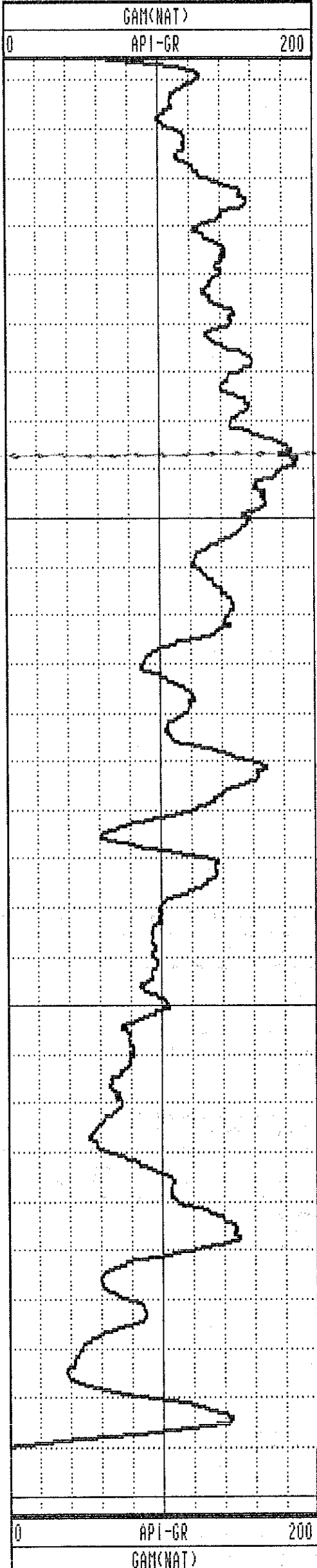
COMPANY : PINE VALLEY COAL
 WELL : WRH-96198
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/26/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.35 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.62 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

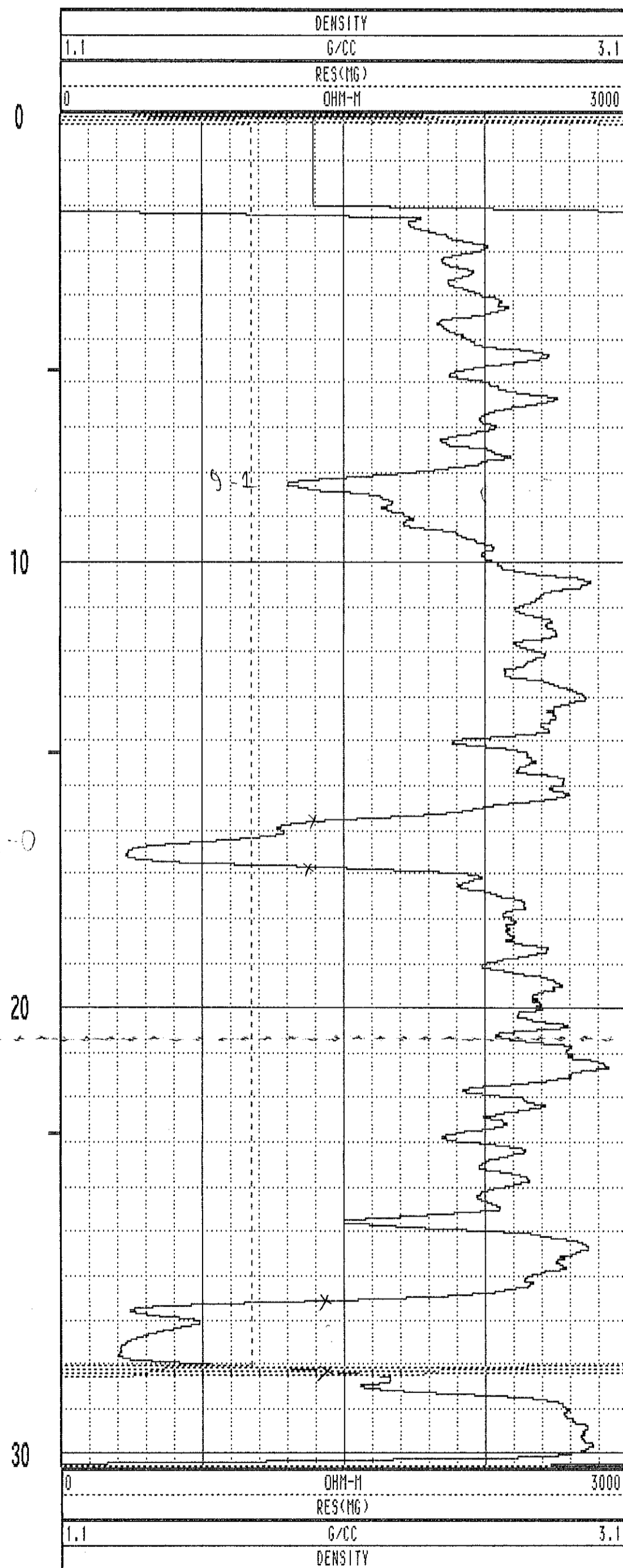
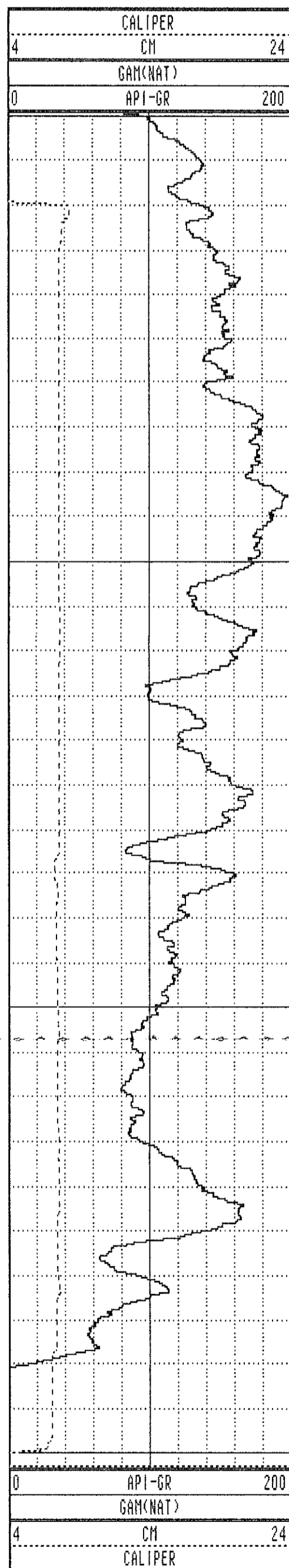
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96198 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/25/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB : LOG BOTTOM : 30.33 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96198 09/25/96 958

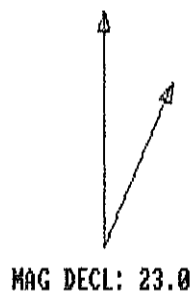
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

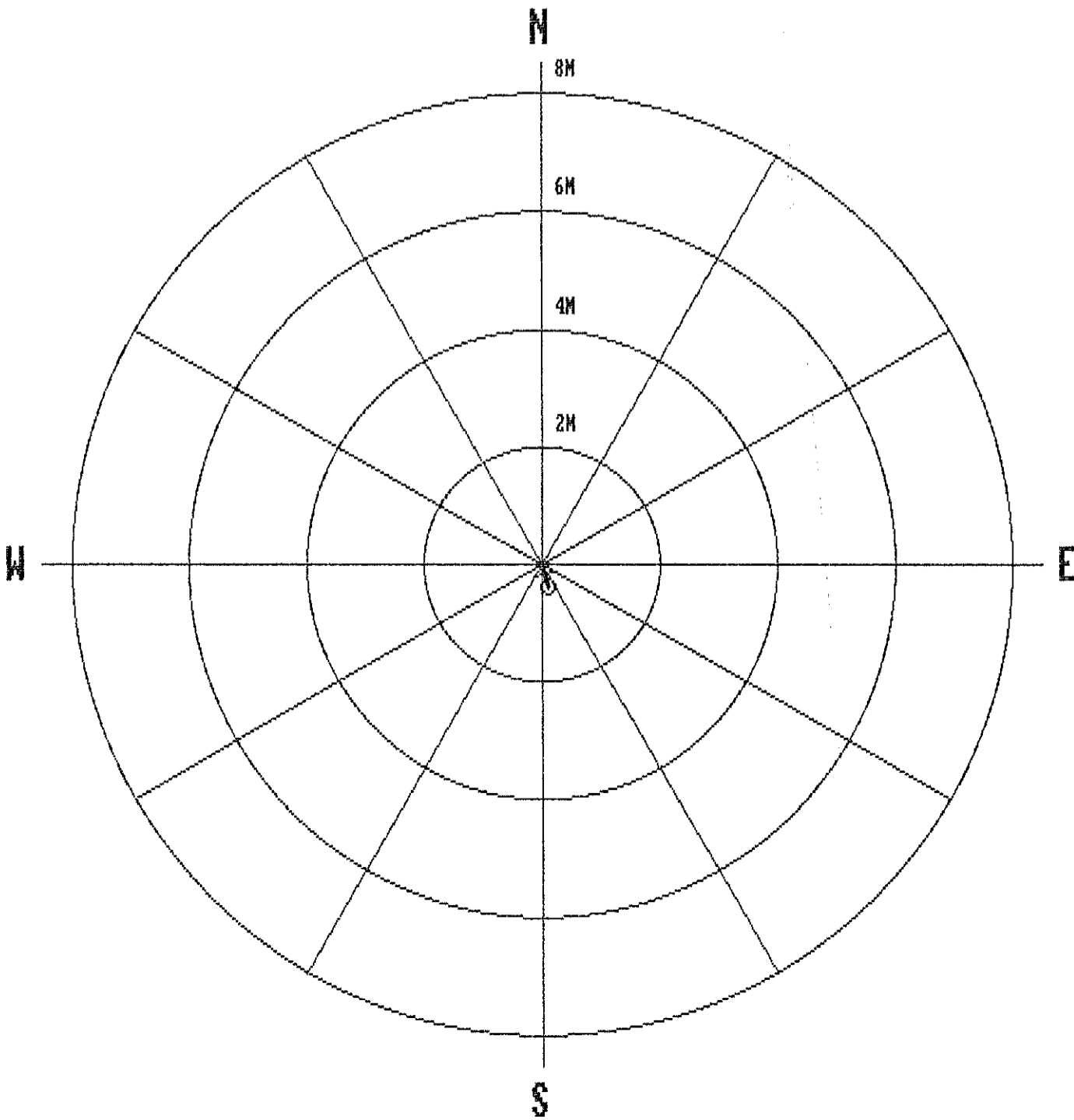
| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 104.8 | 0.1 | 54.5 |
| 3.0 | 3.00 | -0.01 | 0.00 | 0.0 | 167.1 | 1.0 | 167.5 |
| 4.0 | 4.00 | -0.03 | 0.00 | 0.0 | 173.9 | 1.3 | 172.8 |
| 5.0 | 5.00 | -0.04 | 0.00 | 0.0 | 177.9 | 1.4 | 175.7 |
| 6.0 | 6.00 | -0.06 | 0.00 | 0.1 | 175.6 | 1.5 | 175.9 |
| 7.0 | 7.00 | -0.08 | 0.01 | 0.1 | 172.5 | 1.3 | 154.8 |
| 8.0 | 8.00 | -0.11 | 0.02 | 0.1 | 168.4 | 1.4 | 157.3 |
| 9.0 | 9.00 | -0.13 | 0.03 | 0.1 | 166.9 | 1.7 | 145.5 |
| 10.0 | 10.00 | -0.16 | 0.04 | 0.2 | 164.8 | 1.8 | 156.5 |
| 11.0 | 11.00 | -0.19 | 0.06 | 0.2 | 163.5 | 1.6 | 151.5 |
| 12.0 | 12.00 | -0.22 | 0.07 | 0.2 | 163.2 | 1.6 | 167.1 |
| 13.0 | 13.00 | -0.24 | 0.07 | 0.3 | 163.3 | 1.6 | 166.3 |
| 14.0 | 14.00 | -0.28 | 0.08 | 0.3 | 163.1 | 1.7 | 170.9 |
| 15.0 | 14.99 | -0.32 | 0.10 | 0.3 | 163.3 | 2.7 | 159.4 |
| 16.0 | 15.99 | -0.36 | 0.11 | 0.4 | 163.5 | 2.9 | 174.1 |
| 16.2 | 16.15 | -0.37 | 0.11 | 0.4 | 163.5 | 2.8 | 166.6 |

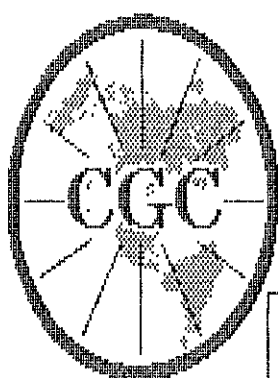
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96200C
 DATE OF LOG: 09/27/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 16.15 M
 AZIMUTH: 163.5
 DISTANCE: 0.4 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

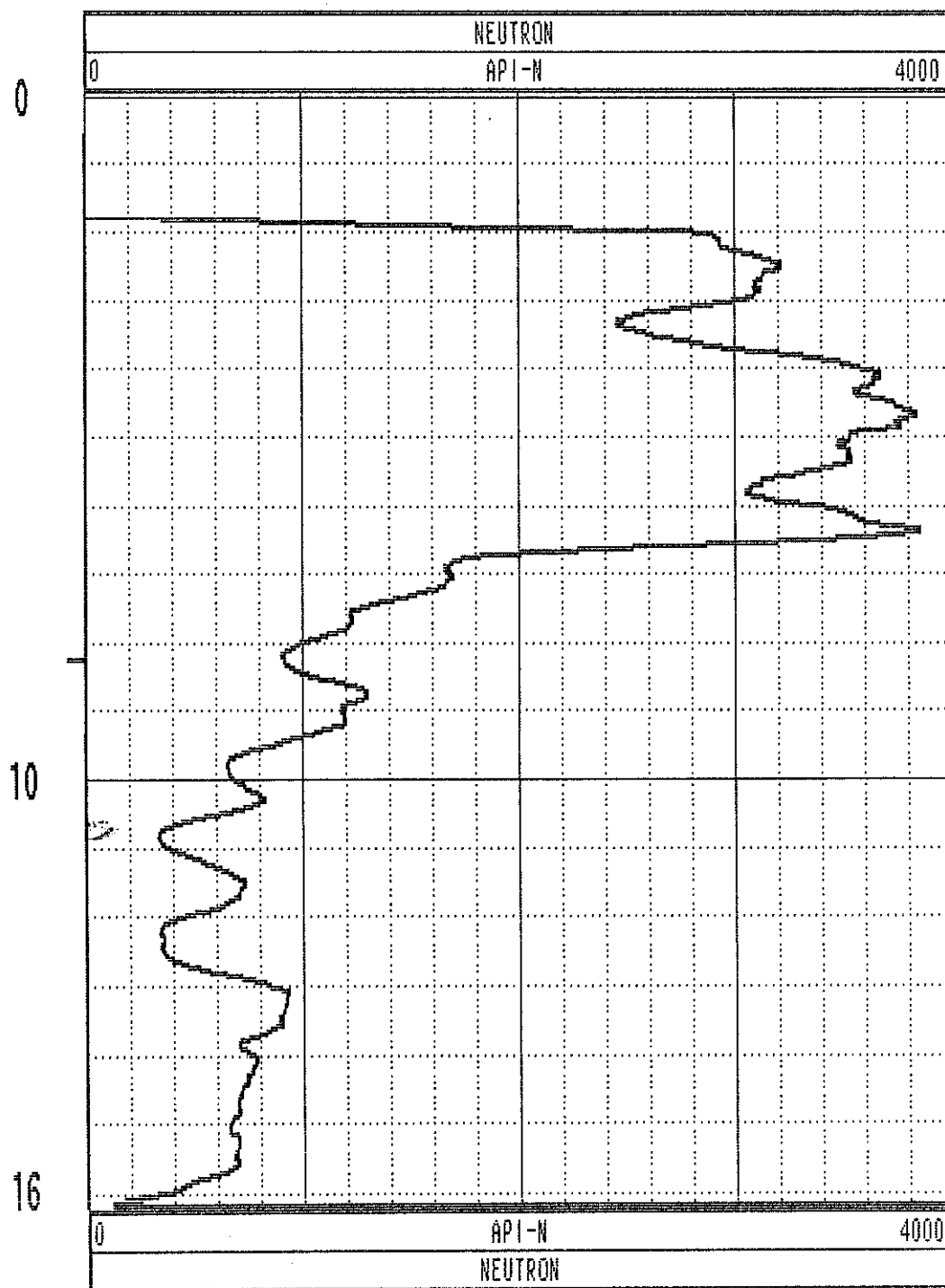
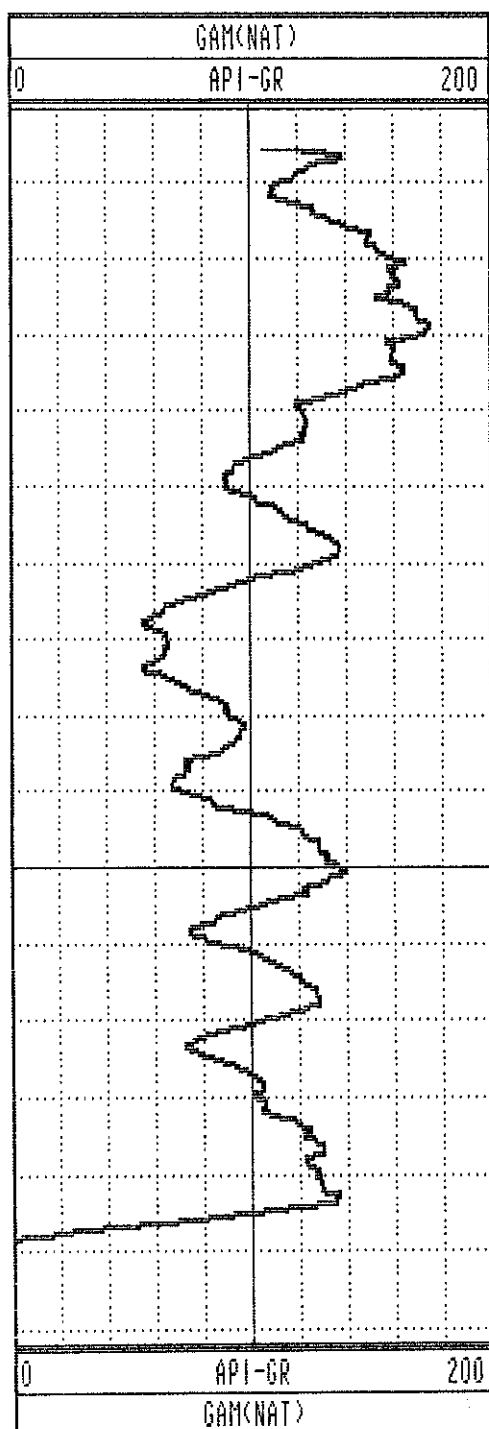
COMPANY : PINE VALLEY COAL
 WELL : WRH-96200C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 16.22 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.56 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

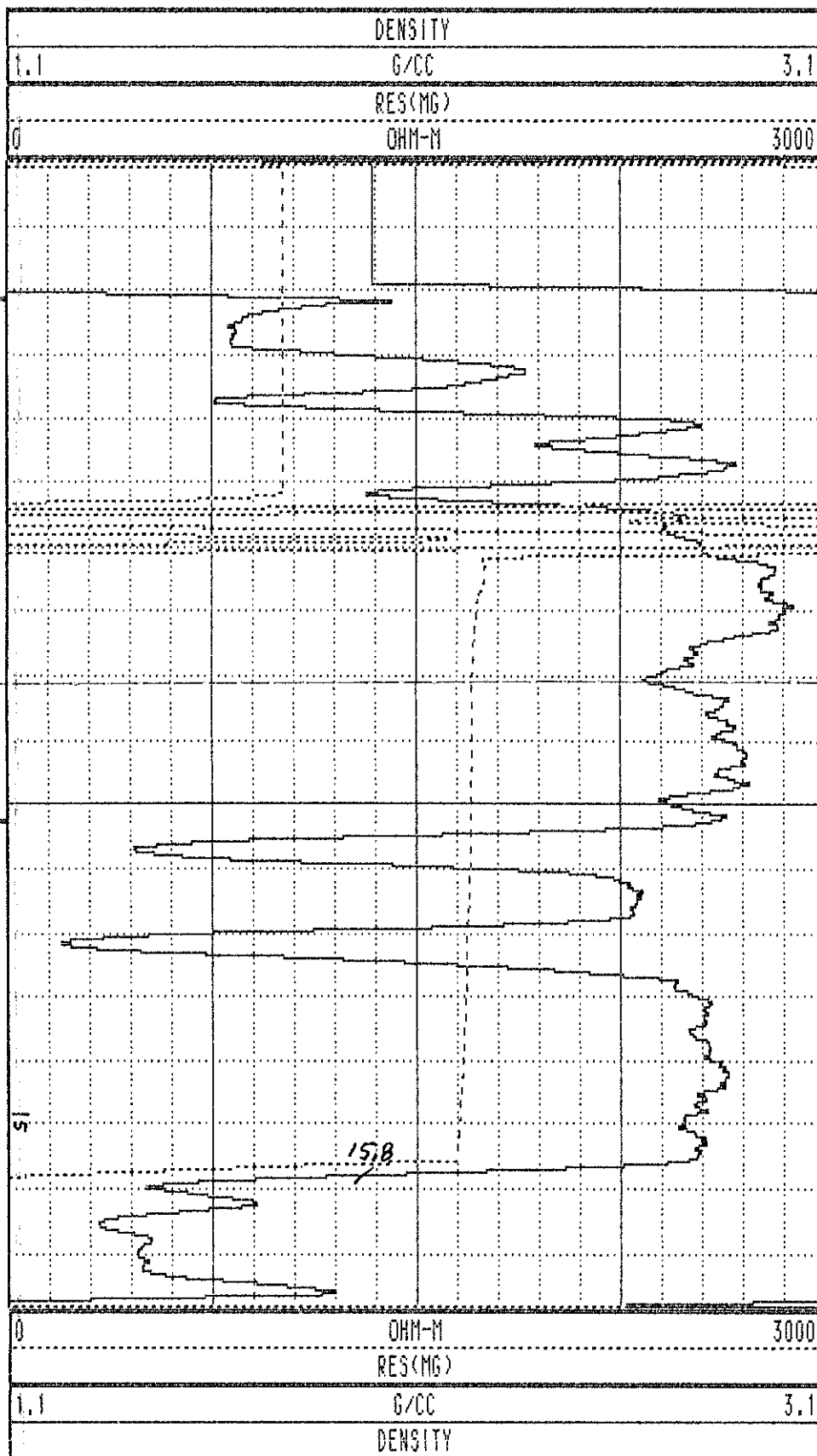
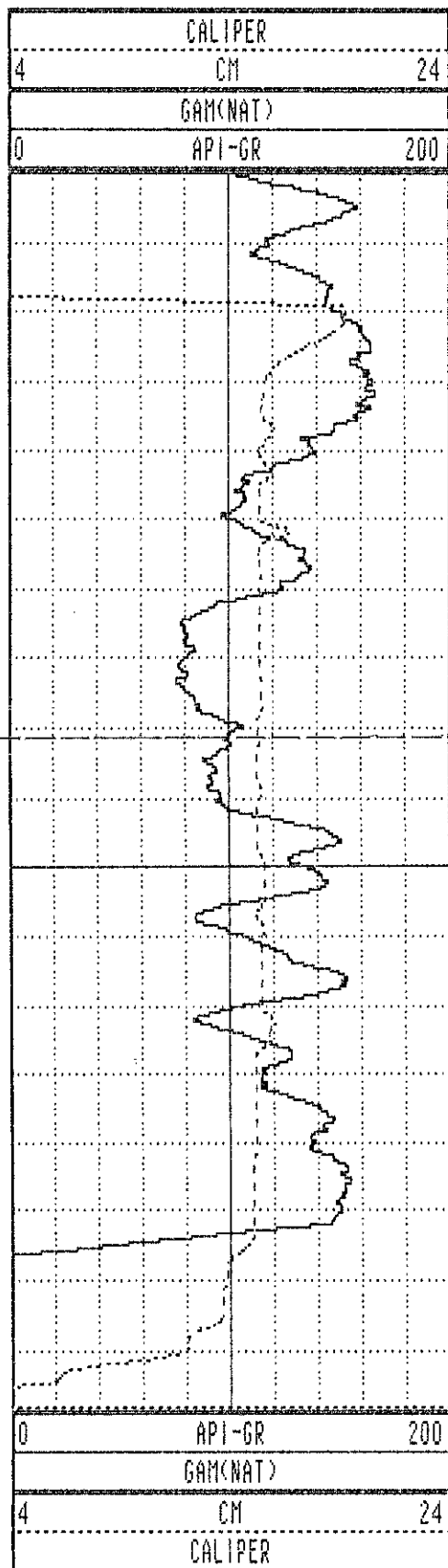
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96200C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/13/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.85 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.18 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 0 | LOGGING UNIT | : 9612 |
| CASING TYPE | : NONE | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9033AA |
| | | LOG | : 3 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96200C 09/13/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

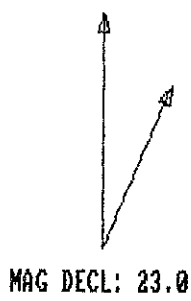
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

351

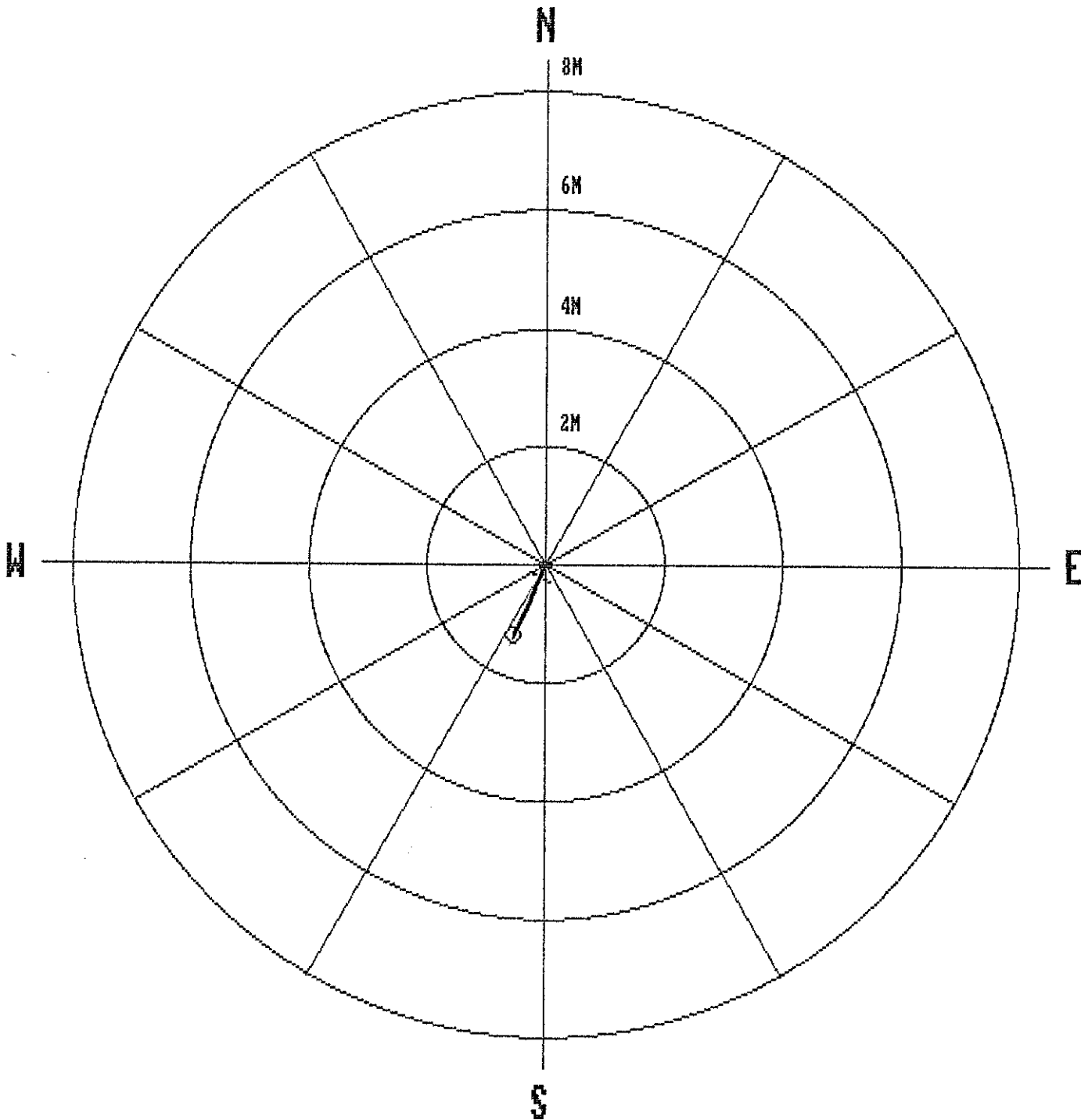
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | 0.00 | 0.0 | 128.0 | 0.1 | 281.5 |
| 4.0 | 4.00 | -0.00 | 0.00 | 0.0 | 124.4 | 0.4 | 116.8 |
| 5.0 | 5.00 | 0.00 | 0.01 | 0.0 | 79.0 | 0.6 | 48.0 |
| 6.0 | 6.00 | -0.00 | 0.00 | 0.0 | 94.4 | 0.4 | 249.5 |
| 7.0 | 7.00 | -0.00 | 0.00 | 0.0 | 123.7 | 0.2 | 237.3 |
| 8.0 | 8.00 | -0.00 | -0.00 | 0.0 | 192.7 | 0.5 | 194.9 |
| 9.0 | 9.00 | -0.01 | -0.00 | 0.0 | 206.8 | 0.3 | 279.3 |
| 10.0 | 10.00 | -0.02 | -0.01 | 0.0 | 211.8 | 0.5 | 204.6 |
| 11.0 | 11.00 | -0.03 | -0.01 | 0.0 | 208.8 | 1.0 | 216.3 |
| 12.0 | 12.00 | -0.04 | -0.02 | 0.0 | 207.0 | 0.6 | 185.5 |
| 13.0 | 13.00 | -0.05 | -0.02 | 0.1 | 205.2 | 0.9 | 211.1 |
| 14.0 | 14.00 | -0.07 | -0.03 | 0.1 | 203.9 | 1.2 | 206.5 |
| 15.0 | 15.00 | -0.08 | -0.04 | 0.1 | 203.2 | 1.1 | 200.2 |
| 16.0 | 16.00 | -0.11 | -0.04 | 0.1 | 202.8 | 1.2 | 200.9 |
| 17.0 | 17.00 | -0.13 | -0.05 | 0.1 | 202.2 | 1.2 | 195.2 |
| 18.0 | 18.00 | -0.15 | -0.06 | 0.2 | 201.3 | 2.4 | 202.1 |
| 19.0 | 19.00 | -0.18 | -0.07 | 0.2 | 201.1 | 2.1 | 197.4 |
| 20.0 | 20.00 | -0.21 | -0.08 | 0.2 | 200.8 | 2.5 | 195.3 |
| 21.0 | 21.00 | -0.25 | -0.10 | 0.3 | 201.3 | 2.4 | 191.5 |
| 22.0 | 22.00 | -0.29 | -0.12 | 0.3 | 202.1 | 2.6 | 213.4 |
| 23.0 | 22.99 | -0.33 | -0.13 | 0.4 | 202.1 | 2.7 | 221.6 |
| 24.0 | 23.99 | -0.37 | -0.15 | 0.4 | 202.3 | 2.8 | 197.1 |
| 25.0 | 24.99 | -0.42 | -0.18 | 0.5 | 202.6 | 3.2 | 200.5 |
| 26.0 | 25.99 | -0.48 | -0.20 | 0.5 | 202.7 | 3.5 | 199.3 |
| 27.0 | 26.99 | -0.54 | -0.22 | 0.6 | 202.5 | 4.0 | 188.9 |
| 28.0 | 27.99 | -0.60 | -0.25 | 0.7 | 202.3 | 4.3 | 198.0 |
| 29.0 | 28.98 | -0.67 | -0.28 | 0.7 | 202.7 | 4.9 | 218.4 |
| 30.0 | 29.98 | -0.74 | -0.31 | 0.8 | 202.9 | 4.4 | 202.1 |
| 31.0 | 30.98 | -0.82 | -0.34 | 0.9 | 202.8 | 4.9 | 206.8 |
| 32.0 | 31.97 | -0.89 | -0.38 | 1.0 | 203.1 | 5.2 | 202.8 |
| 33.0 | 32.97 | -0.97 | -0.42 | 1.1 | 203.4 | 4.8 | 197.6 |
| 34.0 | 33.96 | -1.04 | -0.45 | 1.1 | 203.4 | 4.8 | 192.0 |
| 35.0 | 34.96 | -1.12 | -0.49 | 1.2 | 203.7 | 4.7 | 193.1 |
| 36.0 | 35.96 | -1.20 | -0.53 | 1.3 | 203.8 | 5.0 | 201.7 |
| 36.0 | 36.00 | -1.20 | -0.53 | 1.3 | 203.8 | 5.0 | 204.3 |

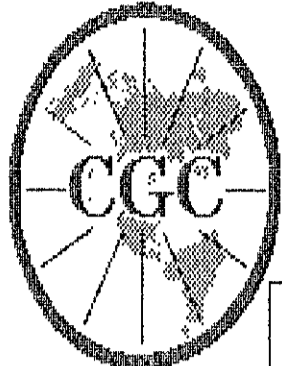
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96201C
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 36.00 M
 AZIMUTH: 203.8
 DISTANCE: 1.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96201C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 10/03/96
 DEPTH DRILLER : 35
 LOG BOTTOM : 36.10
 LOG TOP : 0.70

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

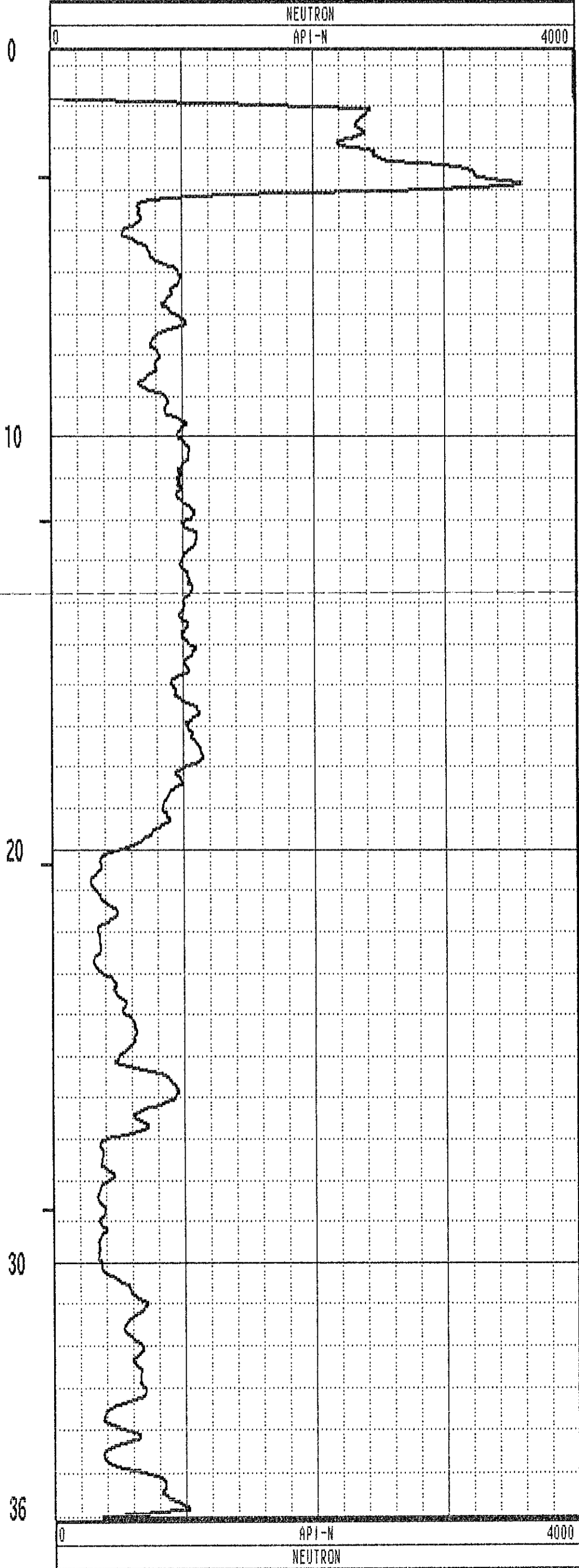
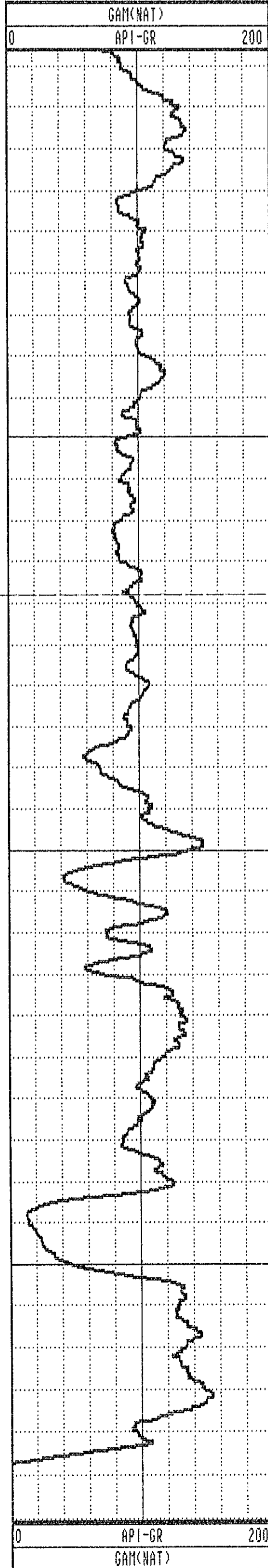
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

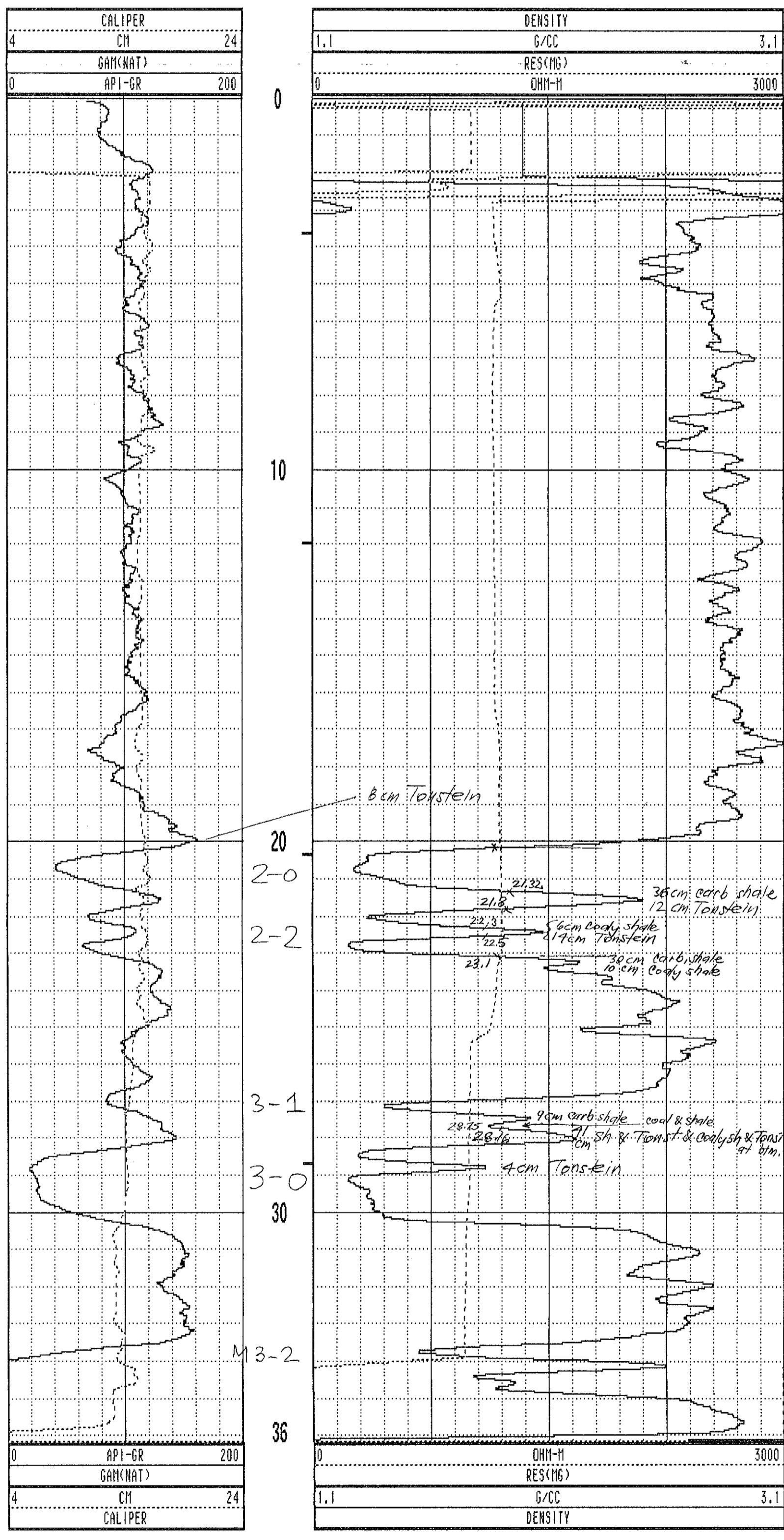


Picks

GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96201C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 35 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 36.20 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.12 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| | | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



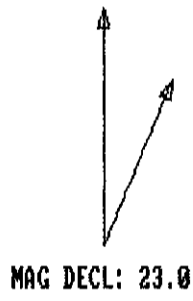
WRH-96201C 09/14/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|--------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.400 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

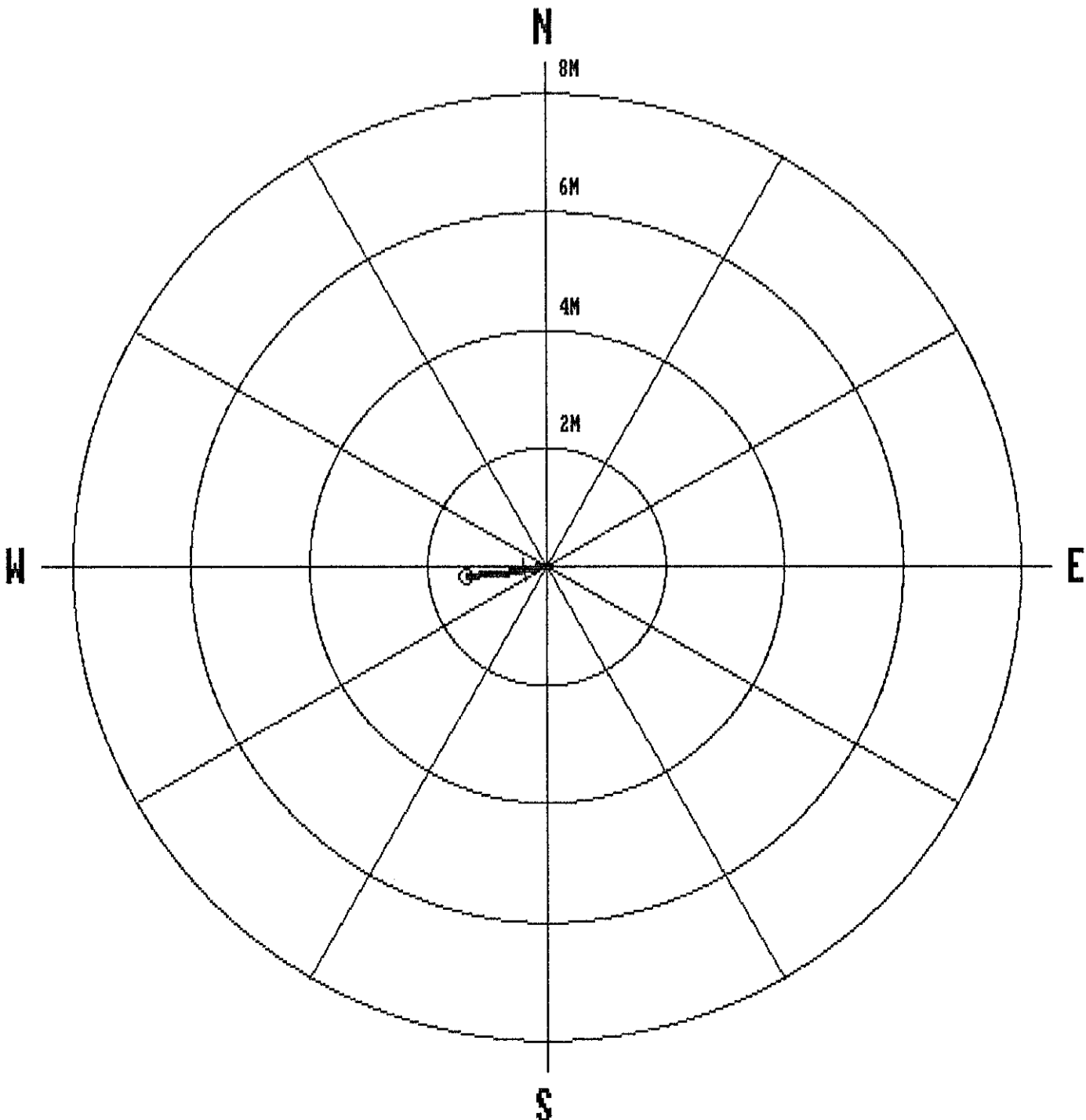
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 302.9 | 0.9 | 258.6 |
| 4.0 | 4.00 | 0.00 | -0.01 | 0.0 | 286.9 | 0.5 | 300.6 |
| 5.0 | 5.00 | 0.01 | -0.01 | 0.0 | 306.6 | 0.6 | 348.2 |
| 6.0 | 6.00 | 0.01 | -0.02 | 0.0 | 300.8 | 0.6 | 254.4 |
| 7.0 | 7.00 | 0.01 | -0.02 | 0.0 | 290.7 | 0.8 | 22.9 |
| 8.0 | 8.00 | 0.00 | -0.01 | 0.0 | 286.6 | 1.0 | 285.9 |
| 9.0 | 9.00 | -0.00 | -0.03 | 0.0 | 266.4 | 1.5 | 259.1 |
| 10.0 | 10.00 | -0.01 | -0.05 | 0.1 | 264.2 | 1.4 | 256.1 |
| 11.0 | 11.00 | -0.01 | -0.08 | 0.1 | 263.3 | 1.3 | 265.7 |
| 12.0 | 12.00 | -0.01 | -0.10 | 0.1 | 263.5 | 0.9 | 264.1 |
| 13.0 | 13.00 | -0.02 | -0.13 | 0.1 | 263.1 | 2.0 | 264.2 |
| 14.0 | 14.00 | -0.02 | -0.16 | 0.2 | 263.1 | 1.8 | 260.1 |
| 15.0 | 15.00 | -0.02 | -0.19 | 0.2 | 262.9 | 1.8 | 260.3 |
| 16.0 | 16.00 | -0.03 | -0.22 | 0.2 | 262.3 | 1.9 | 261.4 |
| 17.0 | 17.00 | -0.04 | -0.26 | 0.3 | 261.7 | 2.2 | 259.0 |
| 18.0 | 18.00 | -0.04 | -0.29 | 0.3 | 261.3 | 2.2 | 255.9 |
| 19.0 | 18.99 | -0.05 | -0.33 | 0.3 | 261.1 | 2.2 | 256.3 |
| 20.0 | 19.99 | -0.06 | -0.37 | 0.4 | 261.1 | 2.4 | 246.3 |
| 21.0 | 20.99 | -0.06 | -0.41 | 0.4 | 261.1 | 2.4 | 259.0 |
| 22.0 | 21.99 | -0.07 | -0.45 | 0.5 | 261.0 | 2.3 | 258.4 |
| 23.0 | 22.99 | -0.08 | -0.49 | 0.5 | 260.8 | 2.5 | 265.9 |
| 24.0 | 23.99 | -0.09 | -0.53 | 0.5 | 260.8 | 2.3 | 244.8 |
| 25.0 | 24.99 | -0.10 | -0.58 | 0.6 | 260.6 | 2.4 | 245.1 |
| 26.0 | 25.99 | -0.11 | -0.62 | 0.6 | 260.3 | 2.7 | 264.4 |
| 27.0 | 26.99 | -0.11 | -0.67 | 0.7 | 260.5 | 3.2 | 269.5 |
| 28.0 | 27.99 | -0.12 | -0.72 | 0.7 | 260.9 | 3.1 | 273.8 |
| 29.0 | 28.98 | -0.12 | -0.78 | 0.8 | 261.4 | 3.7 | 269.2 |
| 30.0 | 29.98 | -0.12 | -0.84 | 0.8 | 261.7 | 4.0 | 277.3 |
| 31.0 | 30.98 | -0.12 | -0.90 | 0.9 | 262.2 | 3.3 | 265.5 |
| 32.0 | 31.98 | -0.13 | -0.96 | 1.0 | 262.4 | 3.7 | 267.3 |
| 33.0 | 32.98 | -0.13 | -1.02 | 1.0 | 262.6 | 3.1 | 251.2 |
| 34.0 | 33.97 | -0.14 | -1.08 | 1.1 | 262.6 | 3.7 | 257.9 |
| 35.0 | 34.97 | -0.15 | -1.14 | 1.1 | 262.4 | 4.0 | 248.9 |
| 36.0 | 35.97 | -0.15 | -1.21 | 1.2 | 262.7 | 4.8 | 254.5 |
| 37.0 | 36.97 | -0.15 | -1.29 | 1.3 | 263.2 | 4.0 | 273.6 |
| 37.8 | 37.76 | -0.16 | -1.35 | 1.4 | 263.4 | 4.3 | 269.5 |

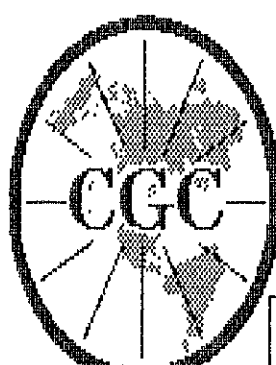
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96202
 DATE OF LOG: 09/30/96
 PROBE: 9855A 71



SCALE: 1 M/CM
 TRUE DEPTH: 37.76 M
 AZIMUTH: 263.4
 DISTANCE: 1.4 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96202
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

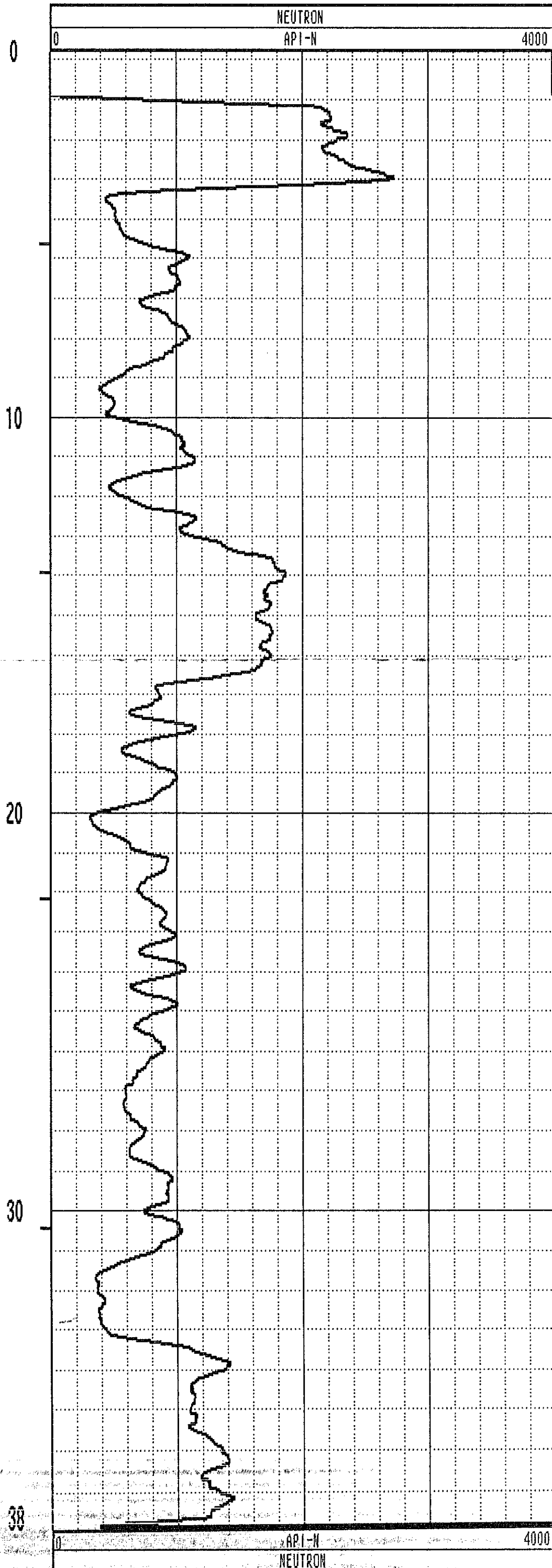
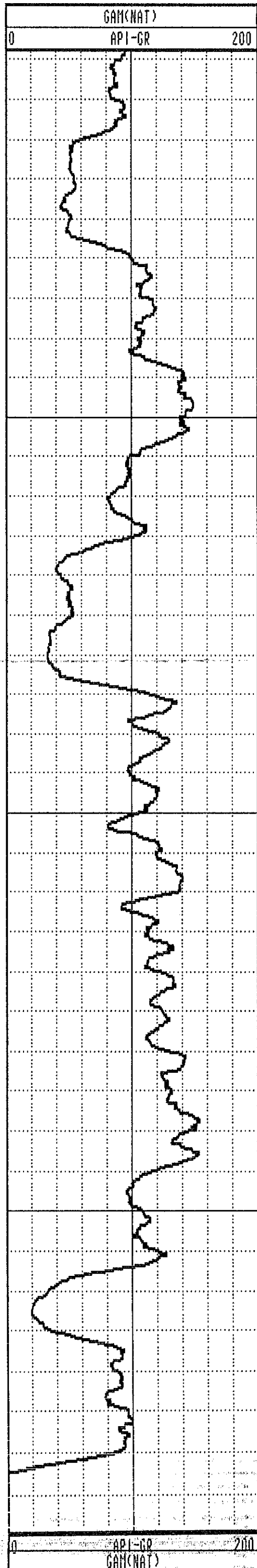
DATE : 09/30/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 37 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 37.87 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.84 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000

REMARKS :
NONE

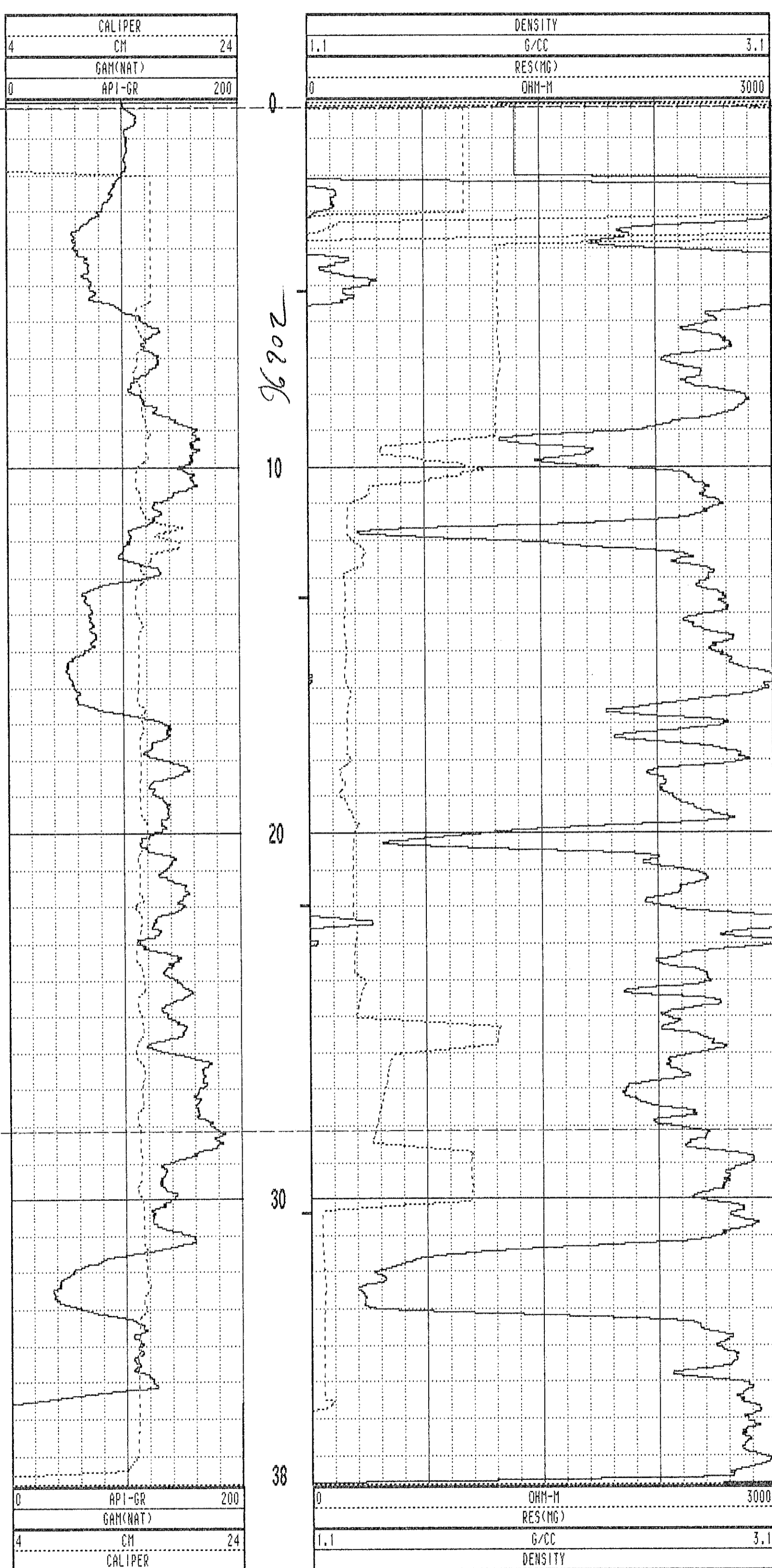
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-----------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96202 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE : |
| DATE | : 09/14/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 37 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 37.81 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.02 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER |
| MAGNETIC DECL. | : 23.000 | RM : |
| MATRIX DENSITY | : | RM TEMPERATURE : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : |
| REMARKS | : | FILE : ORIGINAL |
| | | TYPE : 9033AA |
| | | LOG : 4 |
| | | PLOT : PINE 5 |
| | | THRESH: 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96202 09/14/96 958

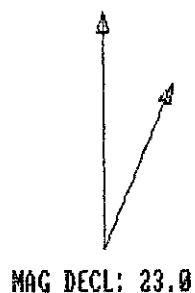
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

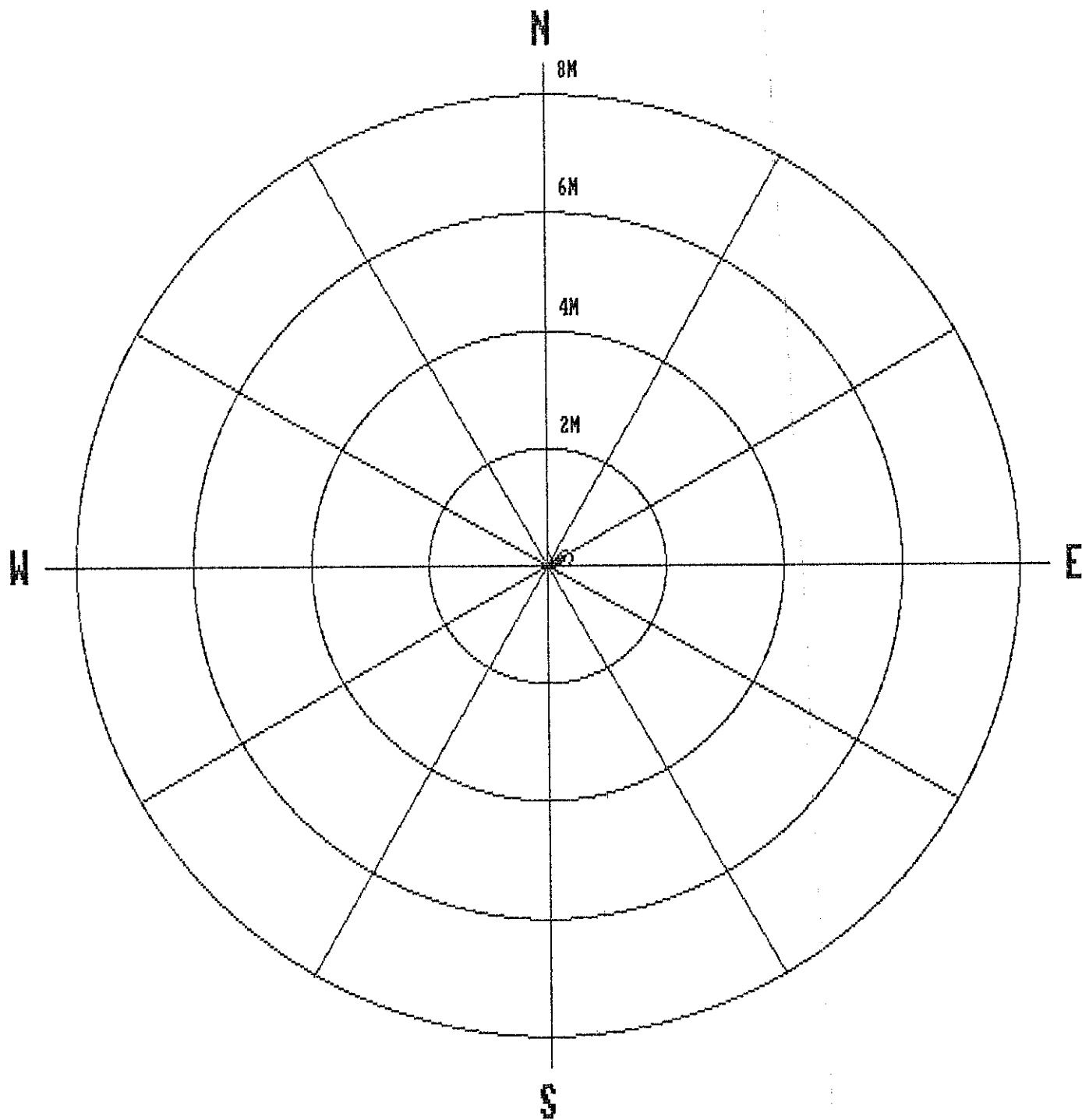
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | -0.00 | 0.0 | 222.1 | 1.2 | 167.8 |
| 4.0 | 4.00 | -0.00 | -0.00 | 0.0 | 190.9 | 0.9 | 106.8 |
| 5.0 | 5.00 | -0.01 | -0.00 | 0.0 | 191.0 | 0.5 | 290.7 |
| 6.0 | 6.00 | -0.01 | 0.00 | 0.0 | 155.3 | 0.2 | 172.6 |
| 7.0 | 7.00 | -0.01 | 0.00 | 0.0 | 136.3 | 0.2 | 124.2 |
| 8.0 | 8.00 | -0.00 | 0.01 | 0.0 | 113.6 | 0.3 | 29.2 |
| 9.0 | 9.00 | -0.00 | 0.01 | 0.0 | 100.3 | 0.2 | 95.5 |
| 10.0 | 10.00 | -0.00 | 0.02 | 0.0 | 92.7 | 0.4 | 78.1 |
| 11.0 | 11.00 | 0.00 | 0.02 | 0.0 | 83.7 | 0.5 | 50.3 |
| 12.0 | 12.00 | 0.01 | 0.03 | 0.0 | 78.5 | 0.5 | 52.8 |
| 13.0 | 13.00 | 0.01 | 0.04 | 0.0 | 74.6 | 0.5 | 71.3 |
| 14.0 | 14.00 | 0.02 | 0.05 | 0.0 | 71.7 | 0.5 | 61.8 |
| 15.0 | 15.00 | 0.02 | 0.05 | 0.1 | 69.5 | 0.4 | 37.8 |
| 16.0 | 16.00 | 0.02 | 0.06 | 0.1 | 68.1 | 0.4 | 55.0 |
| 17.0 | 17.00 | 0.03 | 0.07 | 0.1 | 66.9 | 1.1 | 56.2 |
| 18.0 | 18.00 | 0.03 | 0.08 | 0.1 | 67.3 | 1.2 | 70.3 |
| 19.0 | 19.00 | 0.04 | 0.10 | 0.1 | 67.0 | 1.1 | 55.2 |
| 20.0 | 20.00 | 0.05 | 0.11 | 0.1 | 67.1 | 1.4 | 54.2 |
| 21.0 | 21.00 | 0.06 | 0.13 | 0.1 | 66.6 | 1.1 | 62.0 |
| 22.0 | 22.00 | 0.07 | 0.15 | 0.2 | 66.1 | 0.9 | 50.6 |
| 23.0 | 23.00 | 0.07 | 0.16 | 0.2 | 65.7 | 1.1 | 60.3 |
| 24.0 | 24.00 | 0.08 | 0.18 | 0.2 | 65.6 | 1.1 | 71.9 |
| 25.0 | 25.00 | 0.09 | 0.20 | 0.2 | 66.1 | 1.3 | 74.7 |
| 26.0 | 26.00 | 0.09 | 0.21 | 0.2 | 66.1 | 0.9 | 64.7 |
| 27.0 | 27.00 | 0.10 | 0.23 | 0.2 | 66.2 | 1.0 | 61.2 |
| 28.0 | 28.00 | 0.11 | 0.25 | 0.3 | 66.2 | 1.2 | 62.2 |
| 29.0 | 29.00 | 0.12 | 0.27 | 0.3 | 66.4 | 1.2 | 59.3 |
| 30.0 | 30.00 | 0.12 | 0.29 | 0.3 | 66.6 | 1.2 | 73.9 |
| 30.8 | 30.80 | 0.13 | 0.31 | 0.3 | 66.8 | 1.4 | 68.7 |

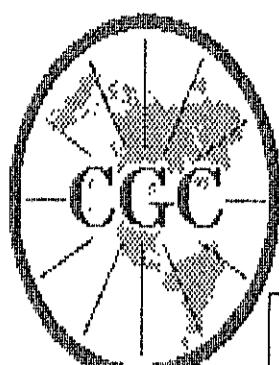
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96203
 DATE OF LOG: 09/30/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 30.80 M
 AZIMUTH: 66.8
 DISTANCE: 0.3 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
WELL : WRH-96203
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

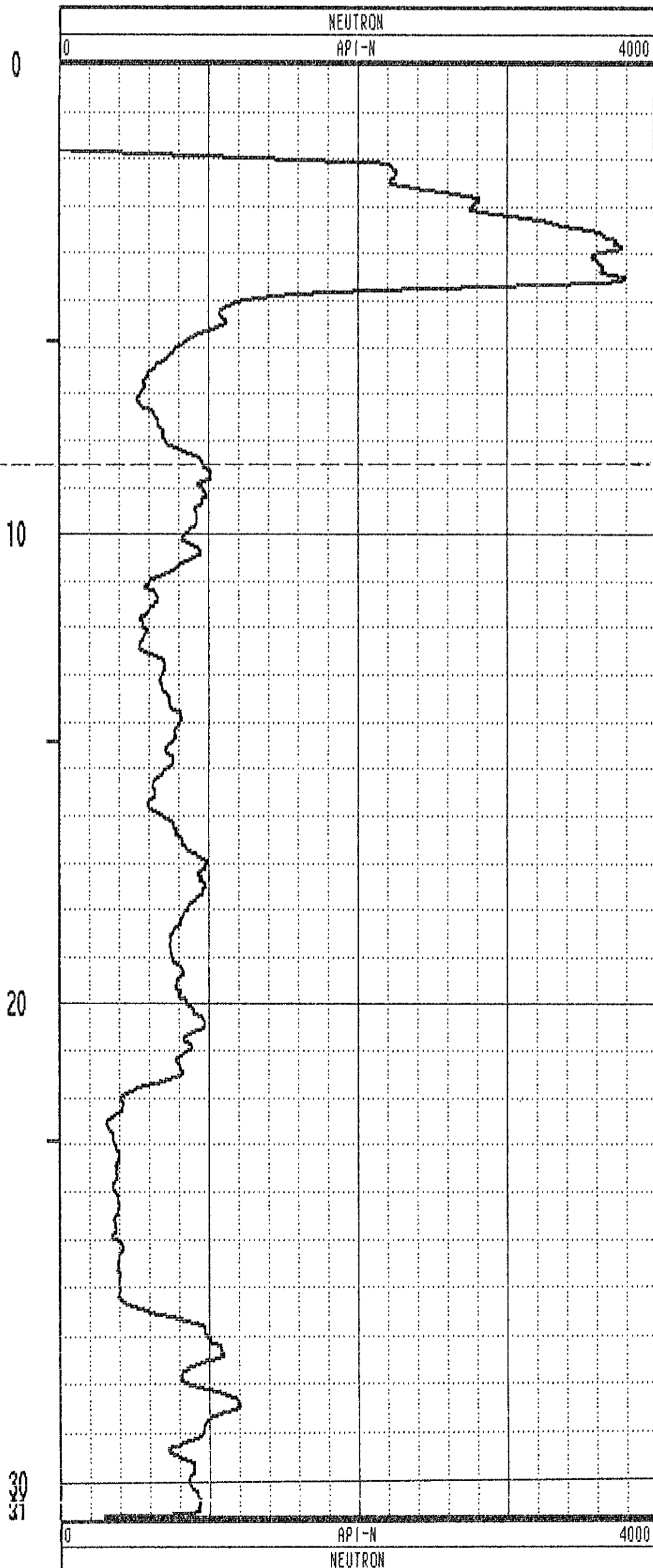
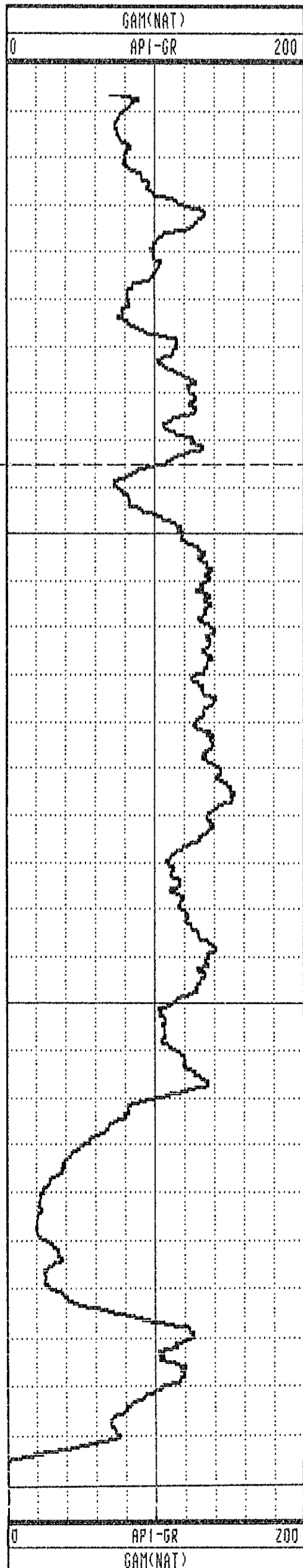
DATE : 09/30/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 30.86 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.70 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 2
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000

REMARKS :
NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96203
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/14/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.77
 LOG TOP : 0.88

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

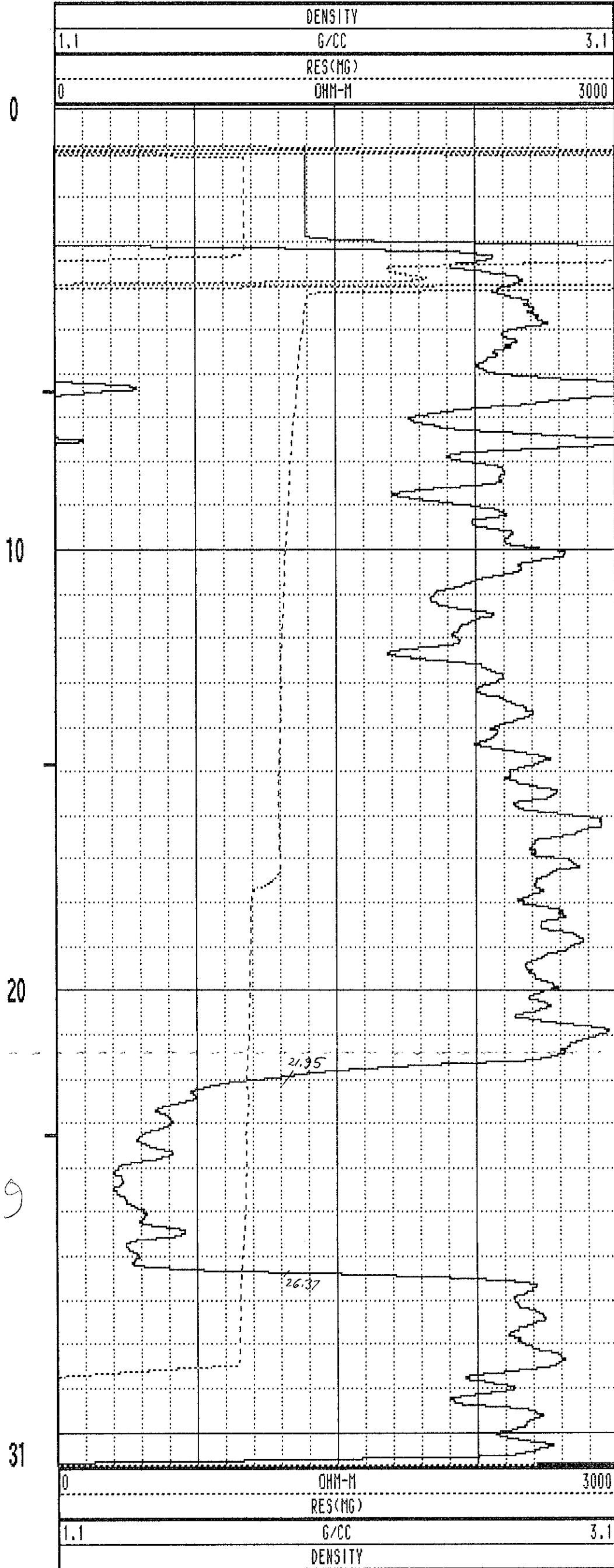
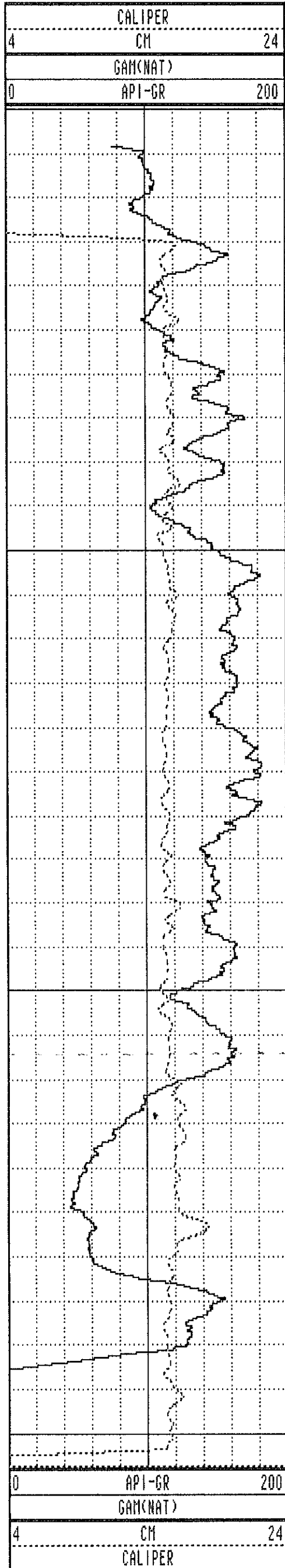
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9033AA
 LOG : 6
 PLOT : PINE 5
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96203 09/14/96 958

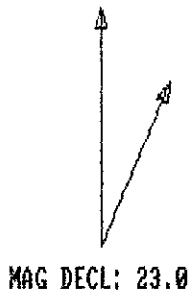
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|-----------|----------|-------------|--------------|--------------|
| 0 | NOV 10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV 10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL 19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL 19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL 20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL 20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL 18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL 18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV 13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV 10.95 | 15:11:22 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV 10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV 10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV 15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV 15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

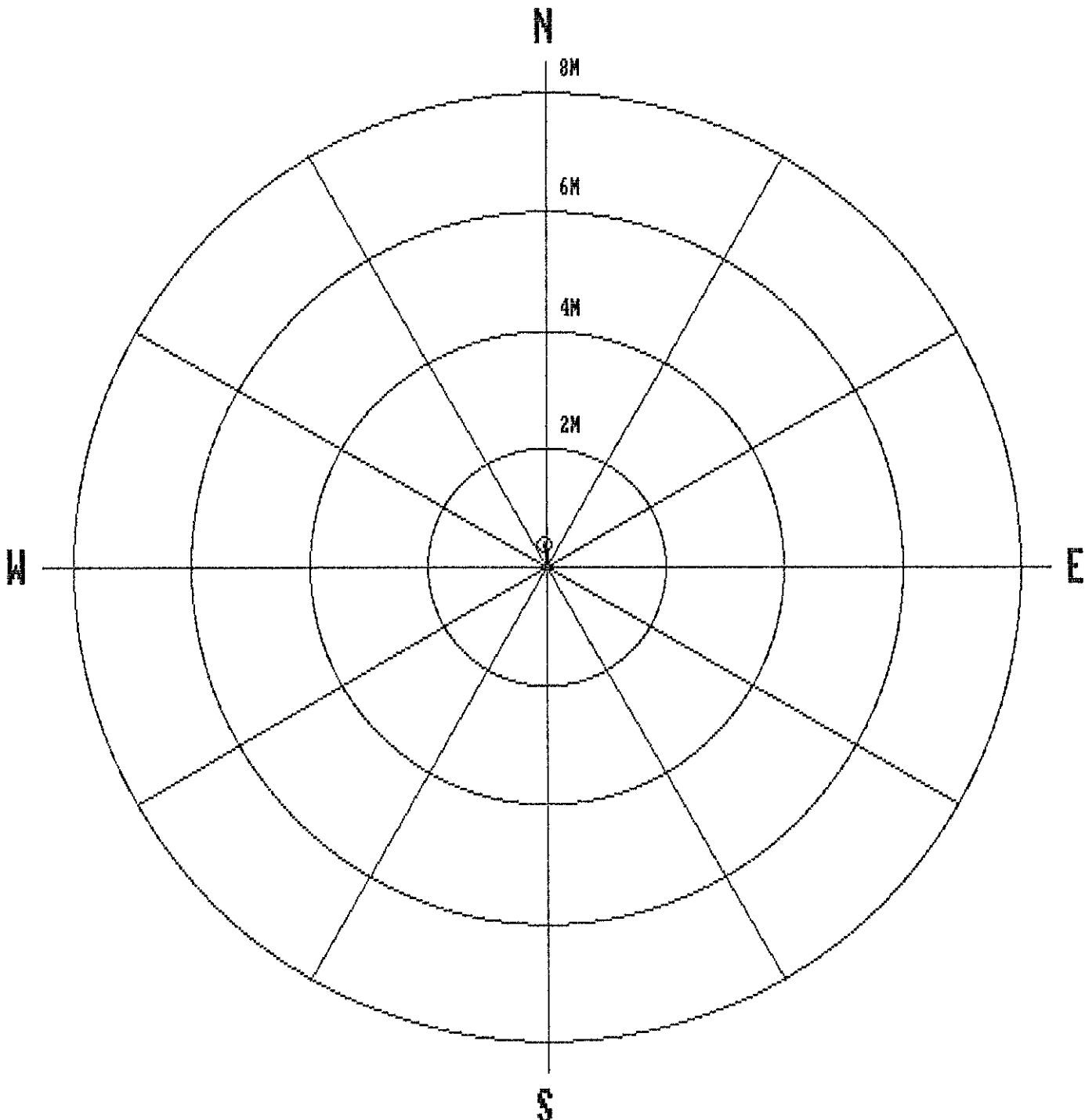
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 192.2 | 1.3 | 195.3 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 41.7 | 1.0 | 49.0 |
| 4.0 | 4.00 | 0.02 | 0.02 | 0.0 | 45.2 | 1.1 | 78.4 |
| 5.0 | 5.00 | 0.02 | 0.01 | 0.0 | 26.6 | 0.9 | 353.6 |
| 6.0 | 6.00 | 0.04 | 0.01 | 0.0 | 15.9 | 1.0 | 354.0 |
| 7.0 | 7.00 | 0.06 | 0.01 | 0.1 | 11.8 | 1.0 | 9.1 |
| 8.0 | 8.00 | 0.07 | 0.01 | 0.1 | 9.7 | 1.0 | 15.0 |
| 9.0 | 9.00 | 0.09 | 0.01 | 0.1 | 8.0 | 1.1 | 2.3 |
| 10.0 | 10.00 | 0.12 | 0.01 | 0.1 | 7.1 | 1.2 | 18.6 |
| 11.0 | 11.00 | 0.14 | 0.02 | 0.1 | 7.0 | 2.0 | 353.9 |
| 12.0 | 12.00 | 0.17 | 0.02 | 0.2 | 5.3 | 1.7 | 355.0 |
| 13.0 | 13.00 | 0.20 | 0.02 | 0.2 | 4.4 | 1.4 | 355.5 |
| 14.0 | 14.00 | 0.22 | 0.01 | 0.2 | 3.7 | 1.3 | 355.3 |
| 15.0 | 15.00 | 0.24 | 0.01 | 0.2 | 2.0 | 1.8 | 324.7 |
| 16.0 | 16.00 | 0.27 | 0.00 | 0.3 | 0.4 | 1.6 | 351.5 |
| 17.0 | 17.00 | 0.30 | -0.01 | 0.3 | 358.9 | 1.8 | 339.3 |
| 18.0 | 18.00 | 0.33 | -0.02 | 0.3 | 356.9 | 2.1 | 332.0 |
| 19.0 | 18.99 | 0.36 | -0.03 | 0.4 | 355.6 | 2.0 | 338.7 |
| 19.2 | 19.23 | 0.37 | -0.03 | 0.4 | 355.2 | 1.9 | 341.0 |

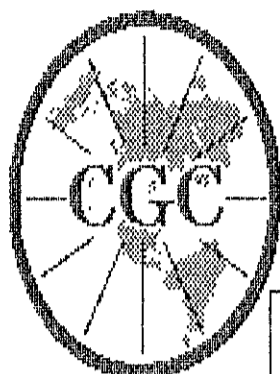
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96204
 DATE OF LOG: 09/30/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 19.23 M
 AZIMUTH: 355.2
 DISTANCE: 0.4 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96204
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

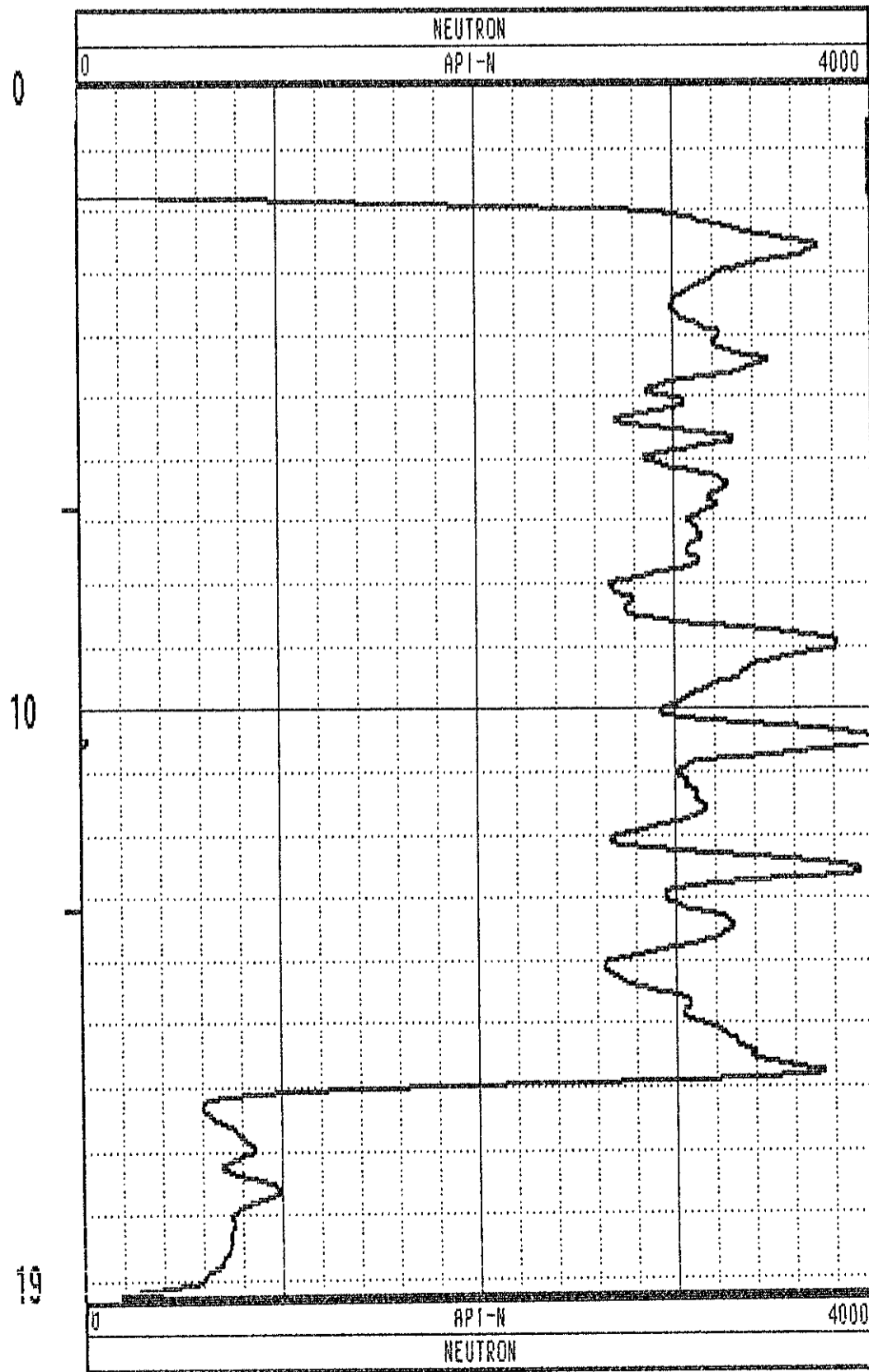
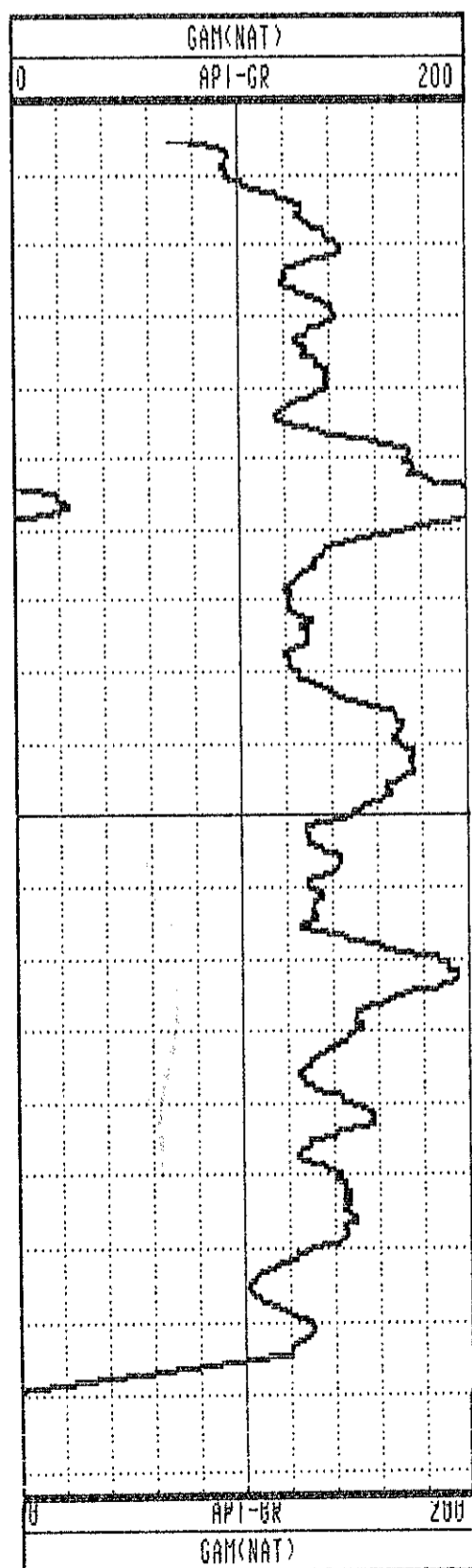
DATE : 09/30/96
 DEPTH DRILLER : 19
 LOG BOTTOM : 19.30
 LOG TOP : 0.56

PERMANENT DATUM : ELEVATIONS
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

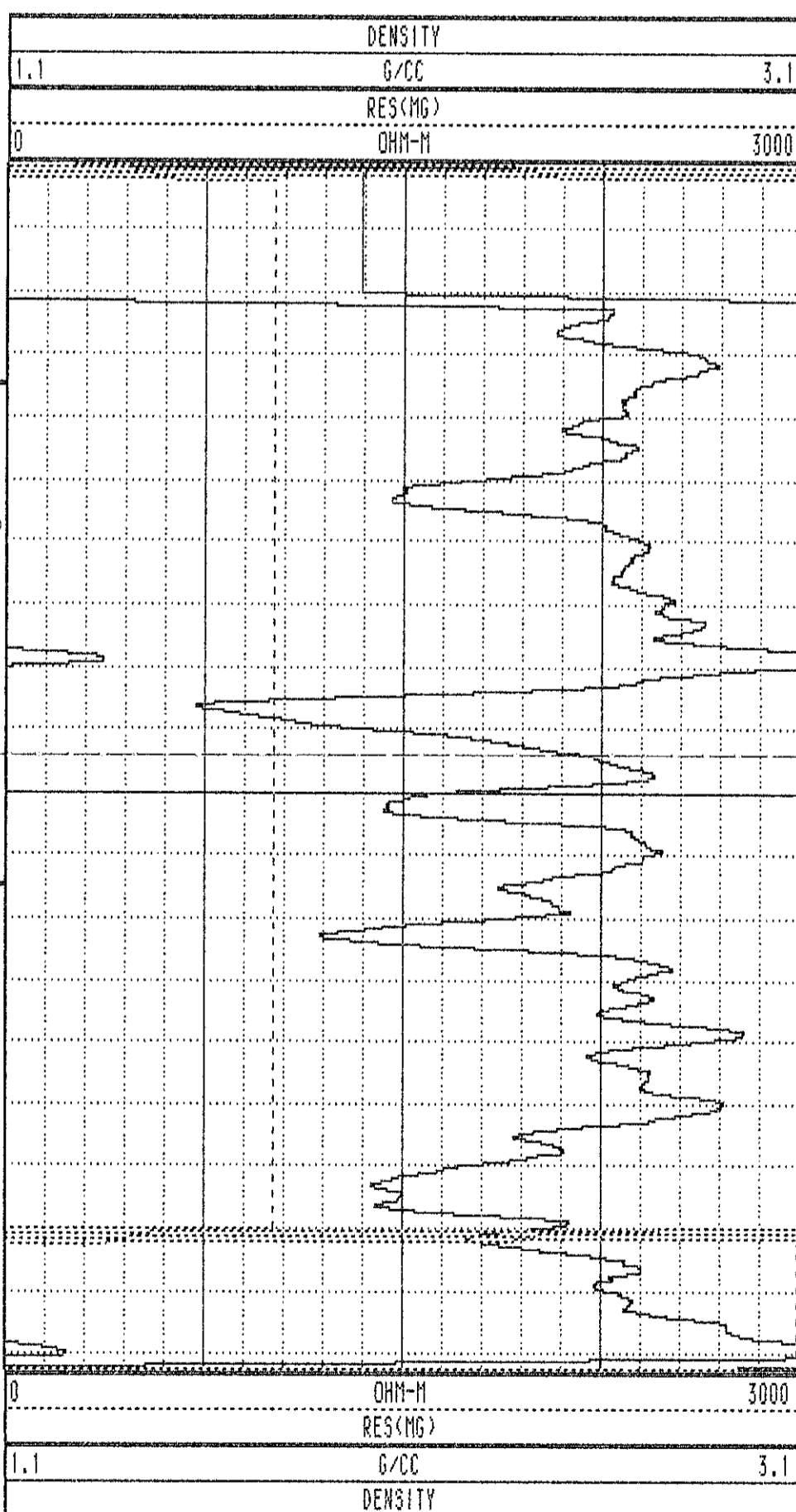
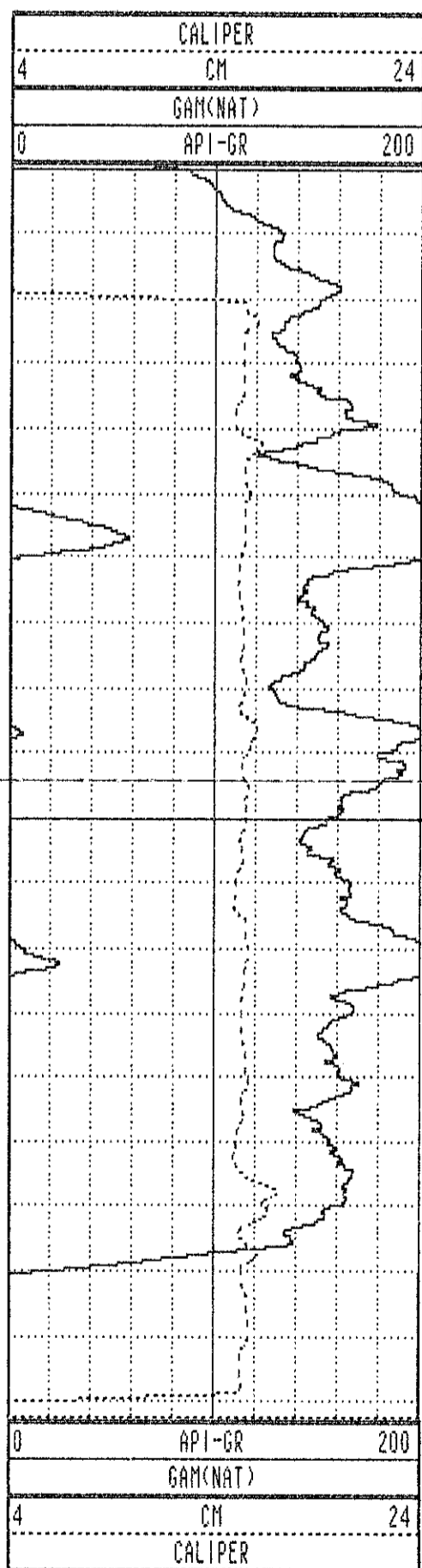
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96204 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/14/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 18 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 19.28 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 8 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96204 09/14/96 958

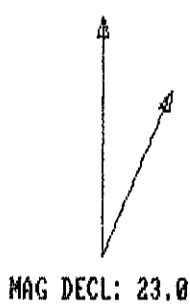
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 17:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

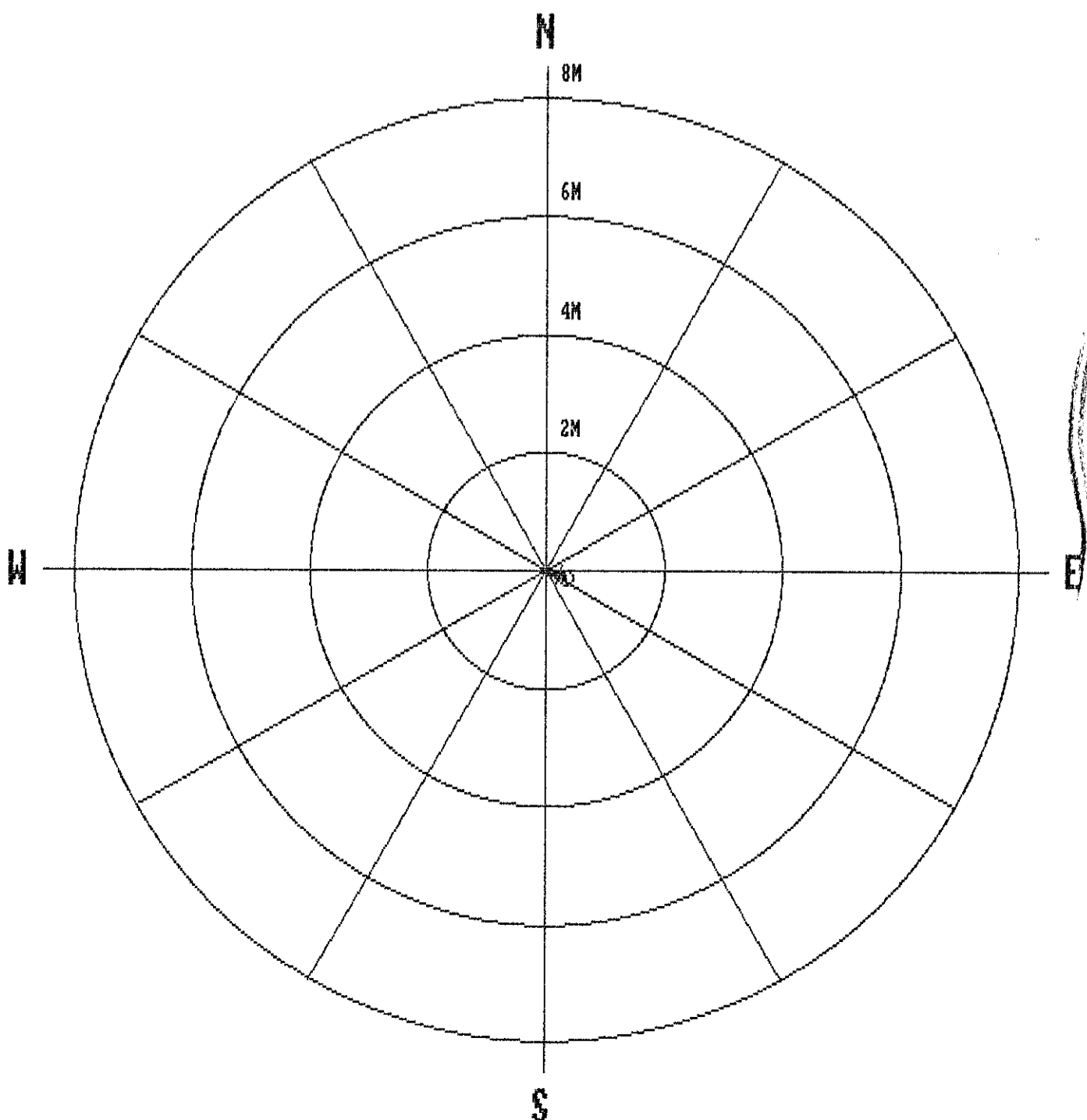
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 320.9 | 0.2 | 244.9 |
| 4.0 | 4.00 | -0.01 | -0.00 | 0.0 | 200.2 | 0.7 | 168.3 |
| 5.0 | 5.00 | -0.02 | 0.00 | 0.0 | 173.1 | 0.4 | 164.0 |
| 6.0 | 6.00 | -0.03 | 0.01 | 0.0 | 156.9 | 0.9 | 93.5 |
| 7.0 | 7.00 | -0.03 | 0.03 | 0.0 | 139.9 | 1.0 | 275.7 |
| 8.0 | 8.00 | -0.02 | 0.02 | 0.0 | 129.7 | 0.9 | 48.8 |
| 9.0 | 9.00 | -0.03 | 0.03 | 0.0 | 126.9 | 0.9 | 112.3 |
| 10.0 | 10.00 | -0.03 | 0.05 | 0.1 | 123.8 | 1.0 | 92.6 |
| 11.0 | 11.00 | -0.04 | 0.06 | 0.1 | 119.9 | 1.0 | 99.7 |
| 12.0 | 12.00 | -0.04 | 0.08 | 0.1 | 116.7 | 1.0 | 101.4 |
| 13.0 | 13.00 | -0.05 | 0.10 | 0.1 | 115.2 | 0.9 | 100.7 |
| 14.0 | 14.00 | -0.05 | 0.11 | 0.1 | 114.2 | 1.2 | 103.7 |
| 15.0 | 15.00 | -0.06 | 0.13 | 0.1 | 113.5 | 1.1 | 108.4 |
| 16.0 | 16.00 | -0.06 | 0.15 | 0.2 | 112.5 | 1.0 | 103.9 |
| 17.0 | 17.00 | -0.07 | 0.17 | 0.2 | 111.7 | 1.3 | 107.2 |
| 18.0 | 18.00 | -0.07 | 0.19 | 0.2 | 111.2 | 1.1 | 88.2 |
| 19.0 | 19.00 | -0.07 | 0.20 | 0.2 | 110.0 | 0.8 | 84.6 |
| 20.0 | 20.00 | -0.08 | 0.22 | 0.2 | 109.4 | 0.8 | 99.6 |
| 21.0 | 21.00 | -0.08 | 0.24 | 0.2 | 108.6 | 1.0 | 98.1 |
| 22.0 | 22.00 | -0.08 | 0.25 | 0.3 | 107.9 | 0.9 | 102.3 |
| 23.0 | 23.00 | -0.08 | 0.27 | 0.3 | 107.5 | 0.6 | 108.5 |
| 24.0 | 24.00 | -0.09 | 0.28 | 0.3 | 107.2 | 0.9 | 102.2 |
| 25.0 | 25.00 | -0.09 | 0.29 | 0.3 | 106.9 | 0.7 | 97.8 |
| 26.0 | 26.00 | -0.09 | 0.30 | 0.3 | 106.9 | 0.9 | 120.1 |
| 27.0 | 27.00 | -0.09 | 0.31 | 0.3 | 106.8 | 0.6 | 57.6 |
| 28.0 | 28.00 | -0.10 | 0.32 | 0.3 | 107.2 | 0.5 | 95.6 |
| 29.0 | 29.00 | -0.10 | 0.33 | 0.3 | 107.4 | 0.2 | 99.9 |
| 30.0 | 30.00 | -0.10 | 0.33 | 0.3 | 107.4 | 1.0 | 165.7 |
| 31.0 | 31.00 | -0.11 | 0.34 | 0.4 | 108.0 | 0.2 | 112.7 |
| 32.0 | 32.00 | -0.11 | 0.34 | 0.4 | 108.3 | 0.5 | 91.7 |
| 33.0 | 33.00 | -0.12 | 0.34 | 0.4 | 108.7 | 0.3 | 73.5 |
| 34.0 | 34.00 | -0.12 | 0.35 | 0.4 | 109.0 | 0.3 | 76.0 |
| 35.0 | 35.00 | -0.12 | 0.35 | 0.4 | 109.3 | 0.2 | 97.3 |
| 36.0 | 36.00 | -0.13 | 0.35 | 0.4 | 109.6 | 0.3 | 191.7 |
| 37.0 | 37.00 | -0.13 | 0.36 | 0.4 | 109.7 | 0.8 | 205.2 |
| 37.8 | 37.76 | -0.13 | 0.36 | 0.4 | 109.9 | 0.1 | 108.8 |

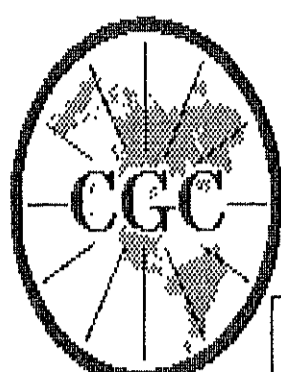
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96205
 DATE OF LOG: 09/30/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 37.76 M
 AZIMUTH: 109.9
 DISTANCE: 0.4 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



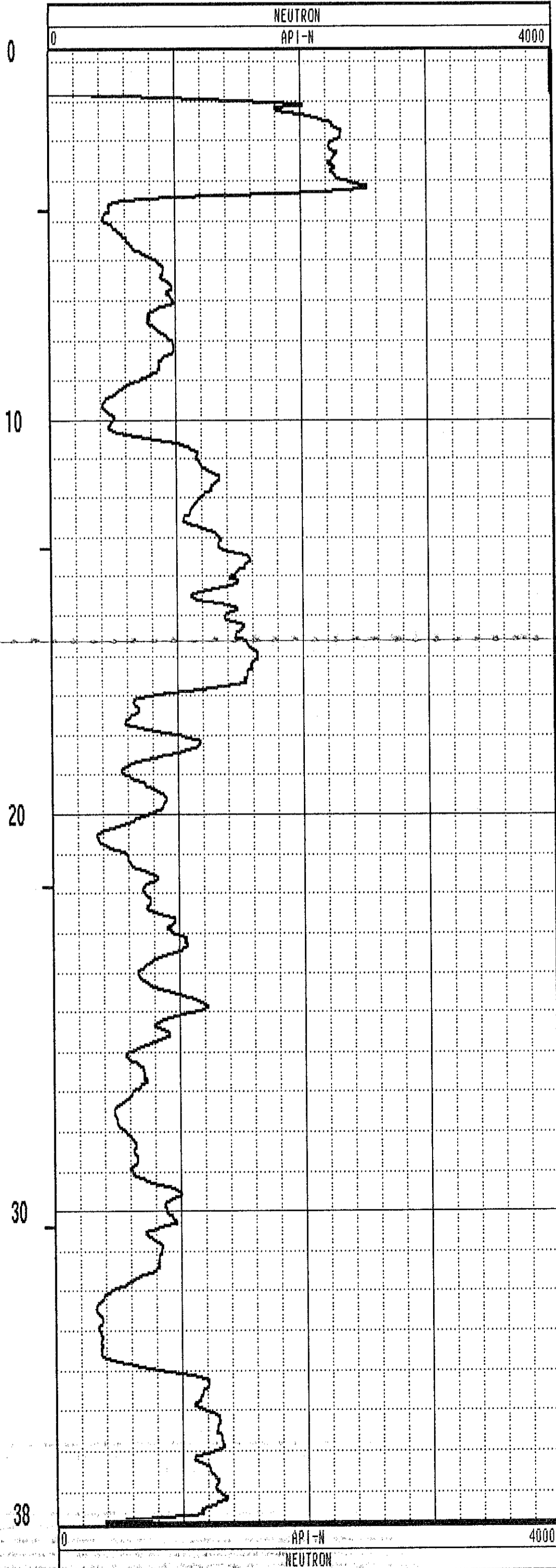
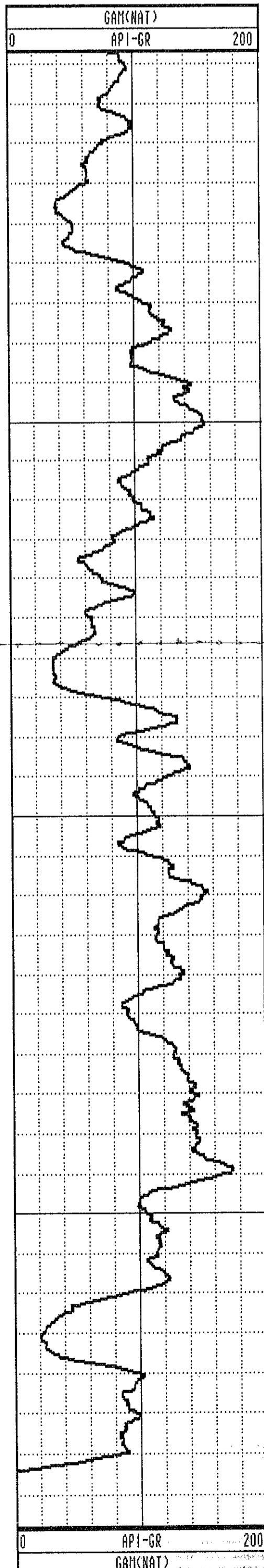


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96205 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 09/30/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 37 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 37.83 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.74 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 4 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

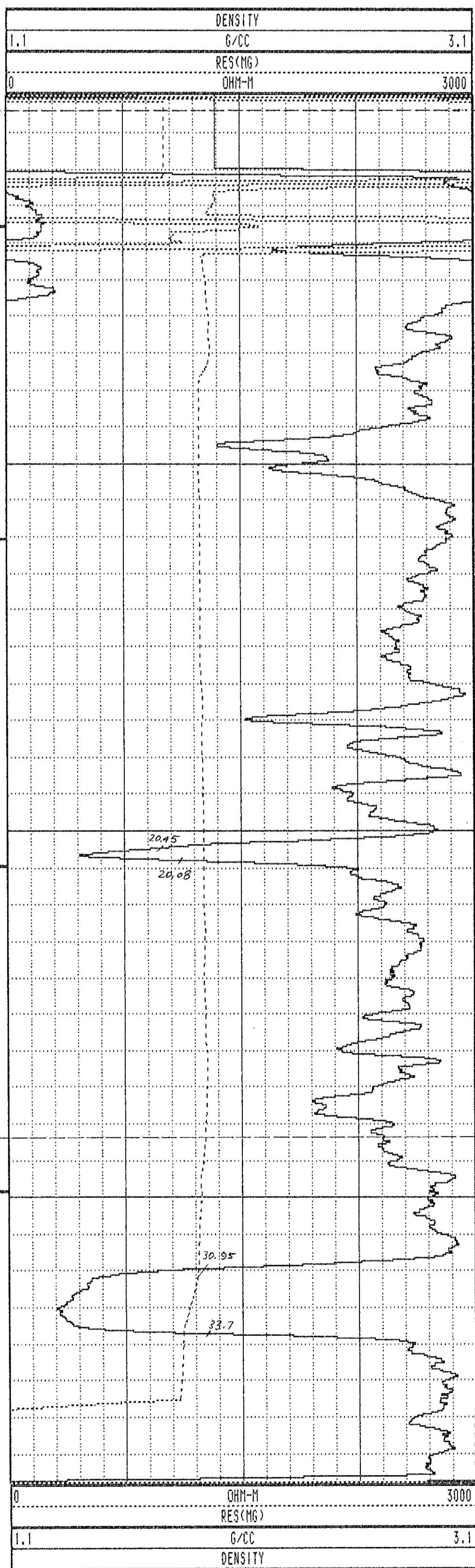
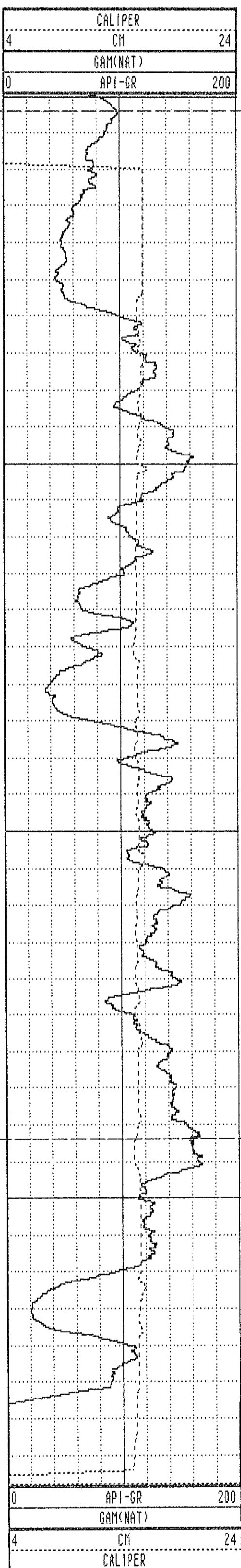
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|-------------------------------|
| <p> COMPANY : PINE VALLEY COAL WELL : WRH-96205 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE : </p> <p> DATE : 09/15/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 37 ELEV. PERM. DATUM: KB : LOG BOTTOM : 37.83 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.00 DRL MEASURED FROM: GL : </p> <p> CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS </p> <p> BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 0 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : </p> | <p>OTHER SERVICES:</p> |
|---|-------------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



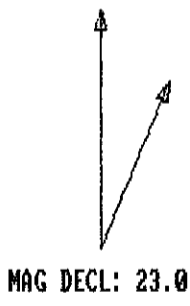
WRH-96205 09/15/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

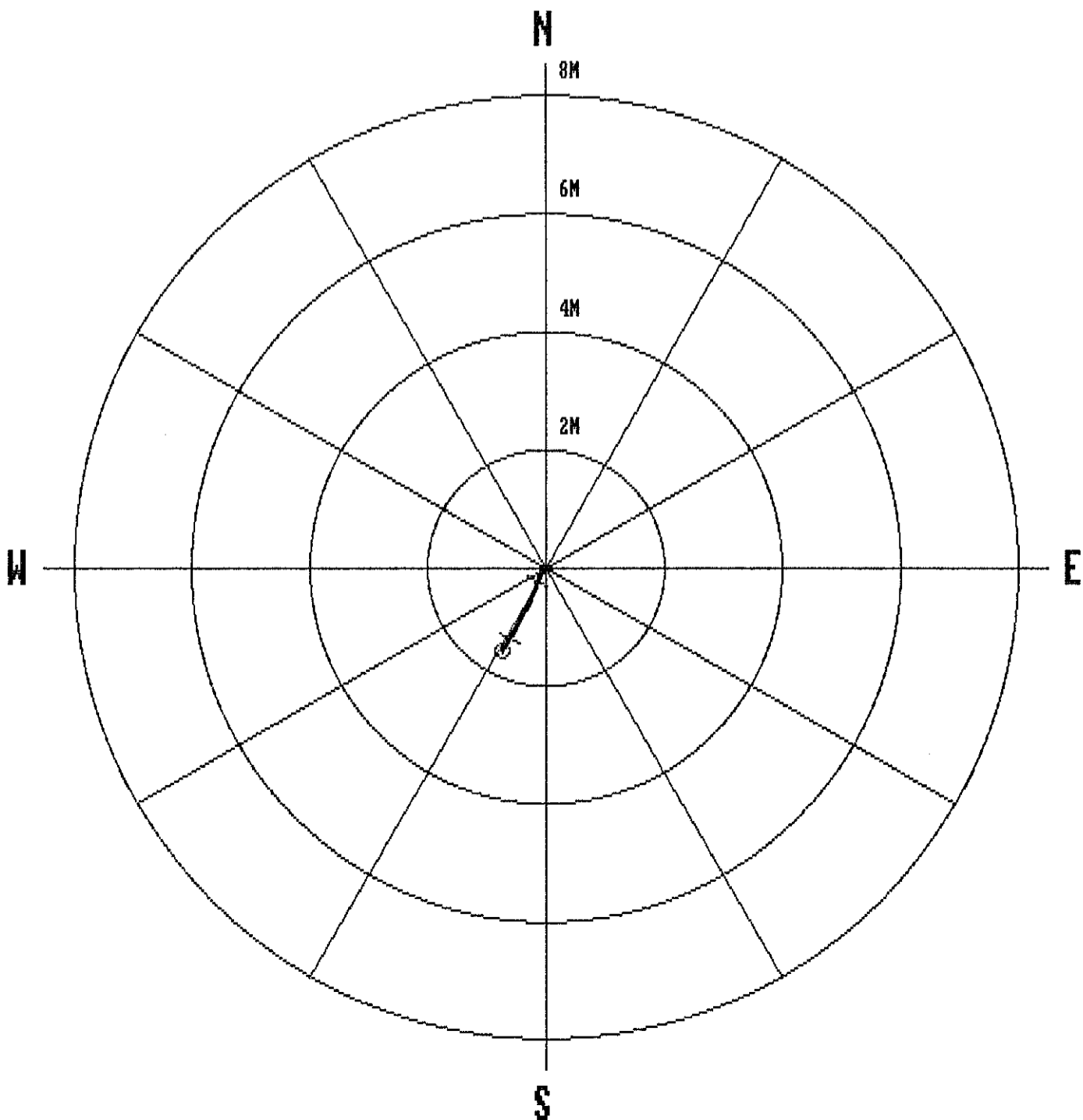
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 168.6 | 0.6 | 177.5 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 63.8 | 0.2 | 2.5 |
| 4.0 | 4.00 | 0.00 | 0.00 | 0.0 | 53.2 | 0.2 | 339.0 |
| 5.0 | 5.00 | 0.00 | 0.00 | 0.0 | 0.9 | 0.5 | 173.4 |
| 6.0 | 6.00 | 0.00 | -0.00 | 0.0 | 274.9 | 0.3 | 223.5 |
| 7.0 | 7.00 | -0.01 | -0.01 | 0.0 | 222.4 | 0.7 | 199.7 |
| 8.0 | 8.00 | -0.01 | -0.01 | 0.0 | 221.8 | 0.7 | 215.3 |
| 9.0 | 9.00 | -0.02 | -0.02 | 0.0 | 220.8 | 0.7 | 217.6 |
| 10.0 | 10.00 | -0.03 | -0.03 | 0.0 | 221.5 | 1.1 | 228.0 |
| 11.0 | 11.00 | -0.05 | -0.04 | 0.1 | 220.7 | 0.9 | 190.8 |
| 12.0 | 12.00 | -0.06 | -0.05 | 0.1 | 219.6 | 0.8 | 219.5 |
| 13.0 | 13.00 | -0.07 | -0.06 | 0.1 | 220.3 | 1.3 | 214.6 |
| 14.0 | 14.00 | -0.08 | -0.07 | 0.1 | 220.9 | 1.9 | 212.0 |
| 15.0 | 15.00 | -0.10 | -0.08 | 0.1 | 218.8 | 1.2 | 222.3 |
| 16.0 | 16.00 | -0.12 | -0.09 | 0.2 | 216.8 | 1.0 | 210.8 |
| 17.0 | 17.00 | -0.14 | -0.10 | 0.2 | 216.7 | 1.7 | 207.1 |
| 18.0 | 18.00 | -0.16 | -0.12 | 0.2 | 215.5 | 1.0 | 183.0 |
| 19.0 | 19.00 | -0.19 | -0.13 | 0.2 | 213.3 | 1.4 | 185.8 |
| 20.0 | 20.00 | -0.22 | -0.14 | 0.3 | 211.6 | 1.3 | 213.4 |
| 21.0 | 21.00 | -0.25 | -0.15 | 0.3 | 210.2 | 1.6 | 211.8 |
| 22.0 | 22.00 | -0.29 | -0.15 | 0.3 | 208.1 | 2.4 | 199.8 |
| 23.0 | 22.99 | -0.32 | -0.17 | 0.4 | 207.6 | 1.7 | 217.6 |
| 24.0 | 23.99 | -0.36 | -0.18 | 0.4 | 206.9 | 2.3 | 207.6 |
| 25.0 | 24.99 | -0.40 | -0.20 | 0.4 | 206.8 | 2.6 | 187.5 |
| 26.0 | 25.99 | -0.44 | -0.22 | 0.5 | 206.1 | 2.9 | 201.4 |
| 27.0 | 26.99 | -0.49 | -0.24 | 0.5 | 205.9 | 2.6 | 215.9 |
| 28.0 | 27.99 | -0.54 | -0.26 | 0.6 | 205.5 | 3.1 | 185.4 |
| 29.0 | 28.99 | -0.59 | -0.28 | 0.7 | 205.4 | 3.8 | 217.5 |
| 30.0 | 29.98 | -0.65 | -0.31 | 0.7 | 205.7 | 3.8 | 205.4 |
| 31.0 | 30.98 | -0.70 | -0.34 | 0.8 | 205.9 | 3.4 | 204.9 |
| 32.0 | 31.98 | -0.76 | -0.37 | 0.8 | 206.0 | 3.6 | 210.8 |
| 33.0 | 32.98 | -0.81 | -0.40 | 0.9 | 206.0 | 3.5 | 205.0 |
| 34.0 | 33.98 | -0.86 | -0.42 | 1.0 | 206.2 | 3.1 | 218.3 |
| 35.0 | 34.98 | -0.91 | -0.45 | 1.0 | 206.1 | 2.9 | 220.8 |
| 36.0 | 35.97 | -0.96 | -0.48 | 1.1 | 206.4 | 4.3 | 202.7 |
| 37.0 | 36.97 | -1.02 | -0.51 | 1.1 | 206.5 | 3.7 | 194.5 |
| 38.0 | 37.97 | -1.07 | -0.55 | 1.2 | 206.9 | 3.8 | 221.0 |
| 39.0 | 38.97 | -1.12 | -0.58 | 1.3 | 207.2 | 3.6 | 236.4 |
| 40.0 | 39.97 | -1.18 | -0.61 | 1.3 | 207.2 | 4.1 | 211.8 |
| 41.0 | 40.96 | -1.24 | -0.64 | 1.4 | 207.3 | 3.9 | 221.3 |
| 42.0 | 41.96 | -1.30 | -0.68 | 1.5 | 207.4 | 4.0 | 217.4 |
| 43.0 | 42.96 | -1.37 | -0.71 | 1.5 | 207.6 | 4.2 | 214.4 |
| 43.5 | 43.50 | -1.40 | -0.74 | 1.6 | 207.8 | 4.5 | 212.0 |

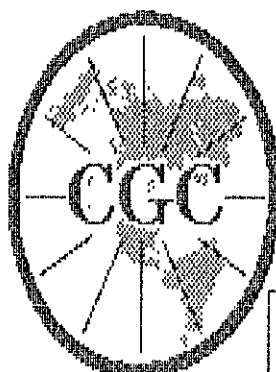
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96206C
 DATE OF LOG: 10/01/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 43.50 M
 AZIMUTH: 207.8
 DISTANCE: 1.6 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



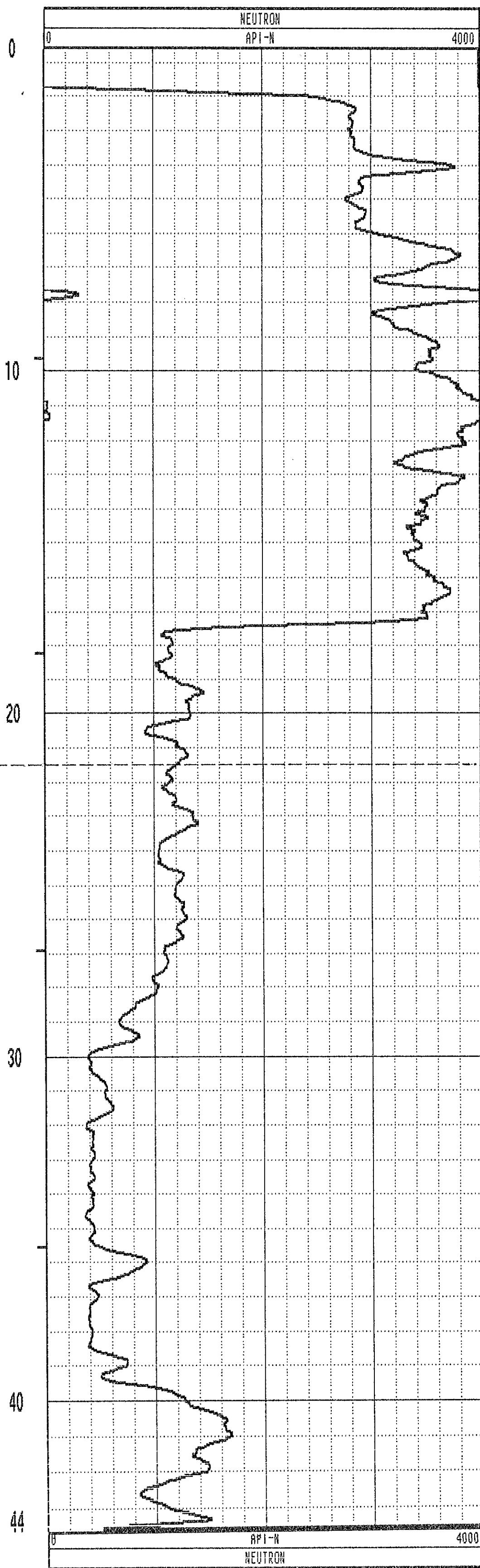
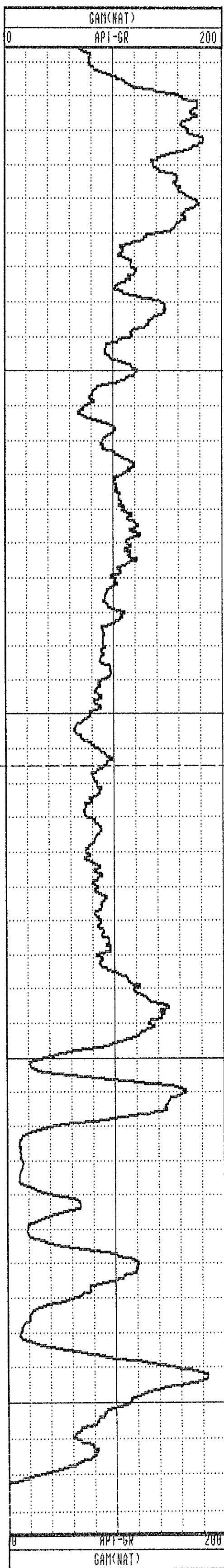


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96206C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 10/01/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 27 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 43.60 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.66 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

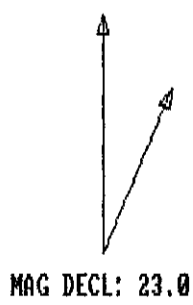
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



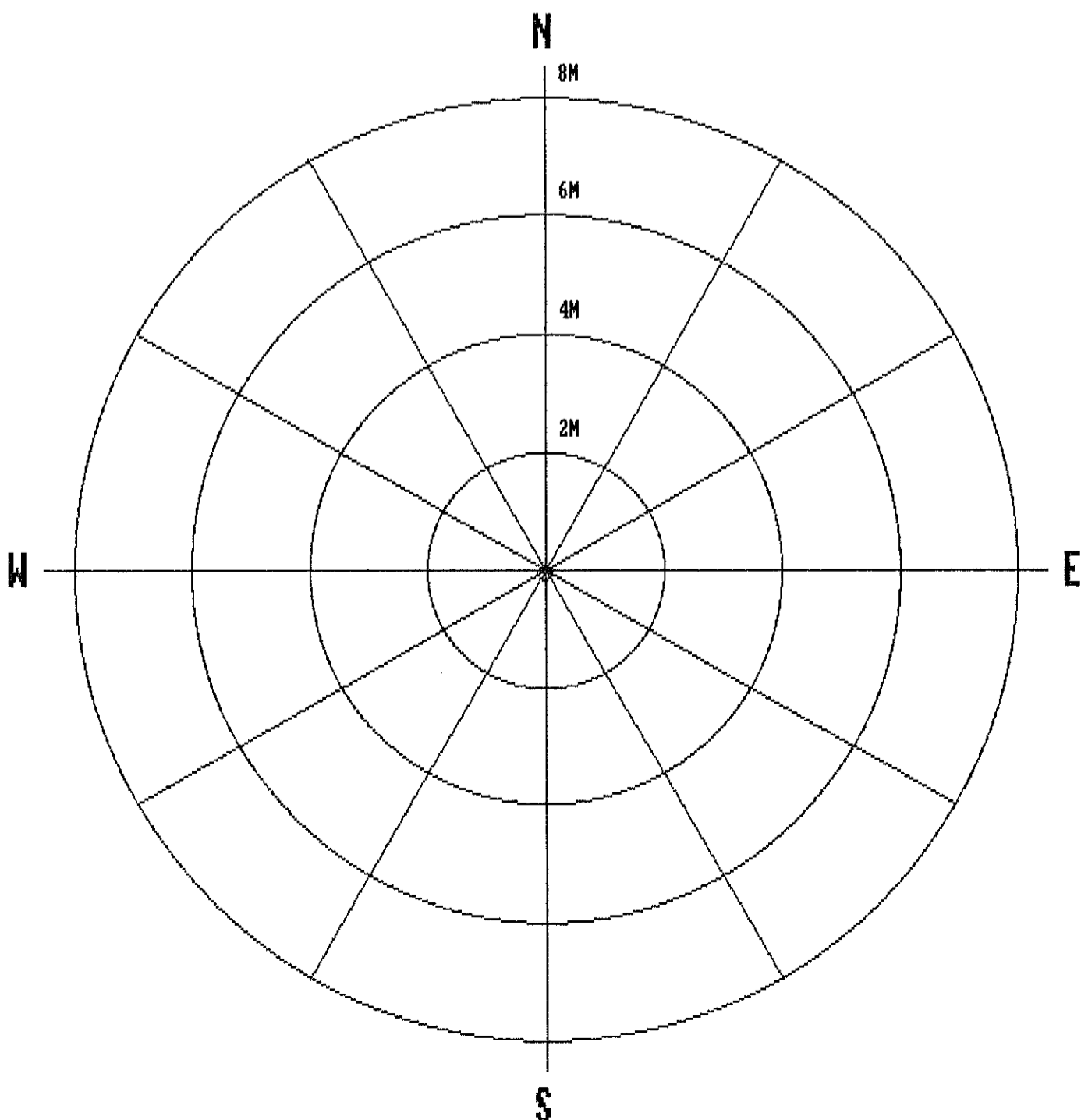
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 135.0 | 0.5 | 256.3 |
| 3.0 | 3.00 | -0.00 | 0.00 | 0.0 | 107.5 | 0.3 | 89.3 |
| 4.0 | 4.00 | -0.00 | 0.00 | 0.0 | 143.6 | 0.6 | 165.3 |
| 5.0 | 5.00 | -0.00 | 0.01 | 0.0 | 124.7 | 0.2 | 124.9 |
| 6.0 | 6.00 | -0.01 | 0.00 | 0.0 | 143.5 | 0.1 | 79.3 |
| 7.0 | 7.00 | -0.01 | 0.00 | 0.0 | 150.9 | 0.2 | 310.8 |
| 8.0 | 8.00 | -0.01 | 0.00 | 0.0 | 153.3 | 0.1 | 239.5 |
| 9.0 | 9.00 | -0.00 | 0.00 | 0.0 | 152.3 | 0.1 | 74.1 |
| 10.0 | 10.00 | -0.00 | 0.00 | 0.0 | 162.8 | 0.2 | 308.0 |
| 11.0 | 11.00 | -0.00 | 0.00 | 0.0 | 174.0 | 0.1 | 295.1 |
| 12.0 | 12.00 | -0.00 | -0.00 | 0.0 | 269.0 | 0.1 | 132.9 |
| 13.0 | 13.00 | 0.00 | -0.00 | 0.0 | 318.3 | 0.1 | 298.9 |
| 14.0 | 14.00 | 0.00 | -0.00 | 0.0 | 328.1 | 0.1 | 264.5 |
| 15.0 | 15.00 | 0.00 | -0.00 | 0.0 | 278.9 | 0.1 | 236.1 |
| 16.0 | 16.00 | -0.00 | -0.00 | 0.0 | 220.4 | 0.4 | 213.2 |
| 17.0 | 17.00 | -0.01 | -0.01 | 0.0 | 205.2 | 0.5 | 196.1 |
| 18.0 | 18.00 | -0.02 | -0.01 | 0.0 | 202.1 | 0.7 | 190.9 |
| 18.6 | 18.56 | -0.03 | -0.01 | 0.0 | 201.2 | 0.9 | 202.7 |

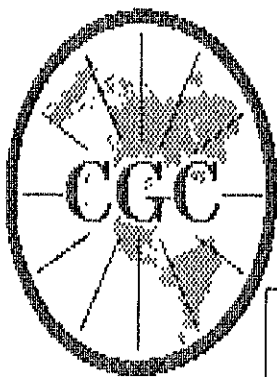
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96207C
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 18.56 M
 AZIMUTH: 201.2
 DISTANCE: 0.0 M
 + = 200 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96207C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/03/96
 DEPTH DRILLER : 18
 LOG BOTTOM : 18.61
 LOG TOP : 0.54

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

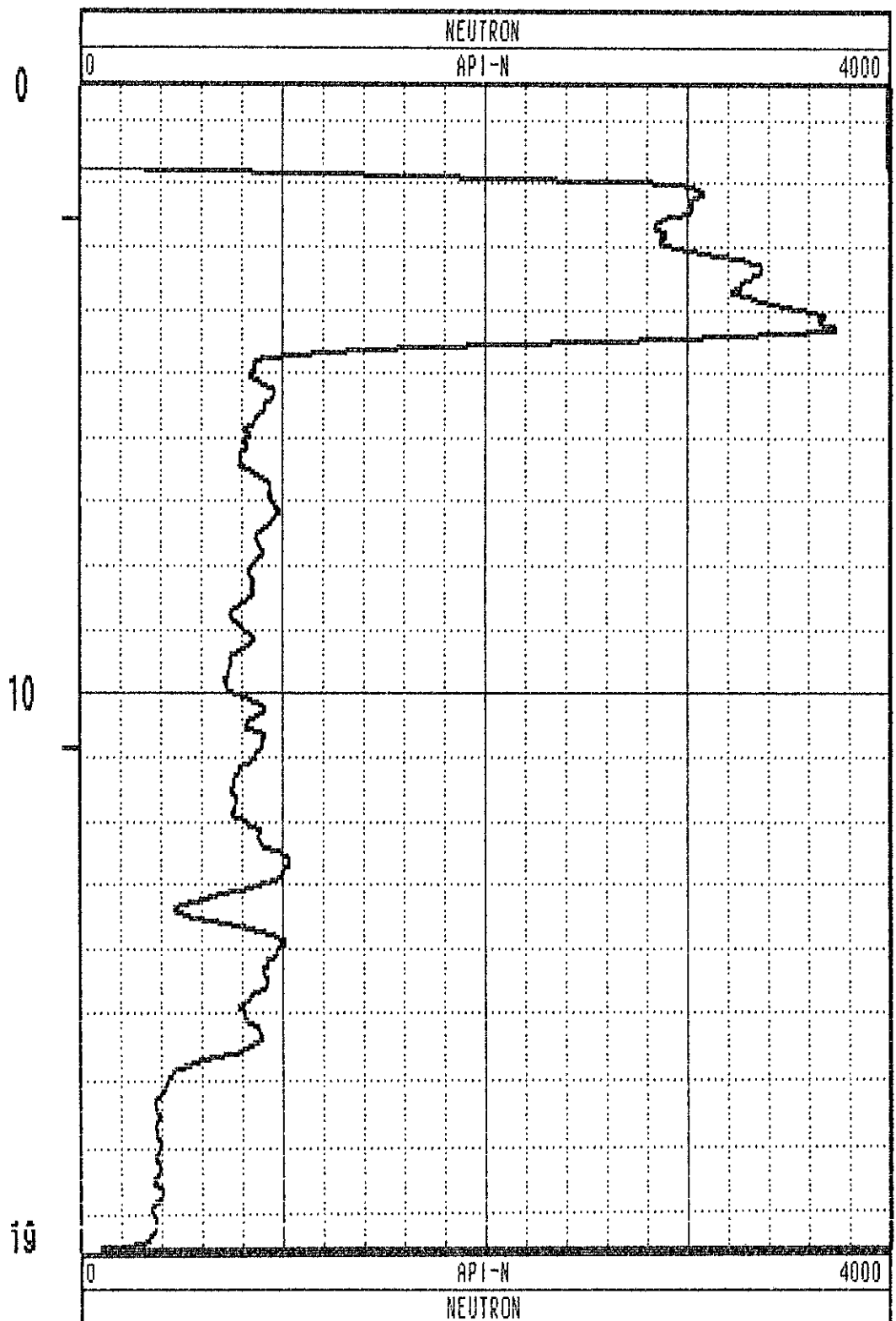
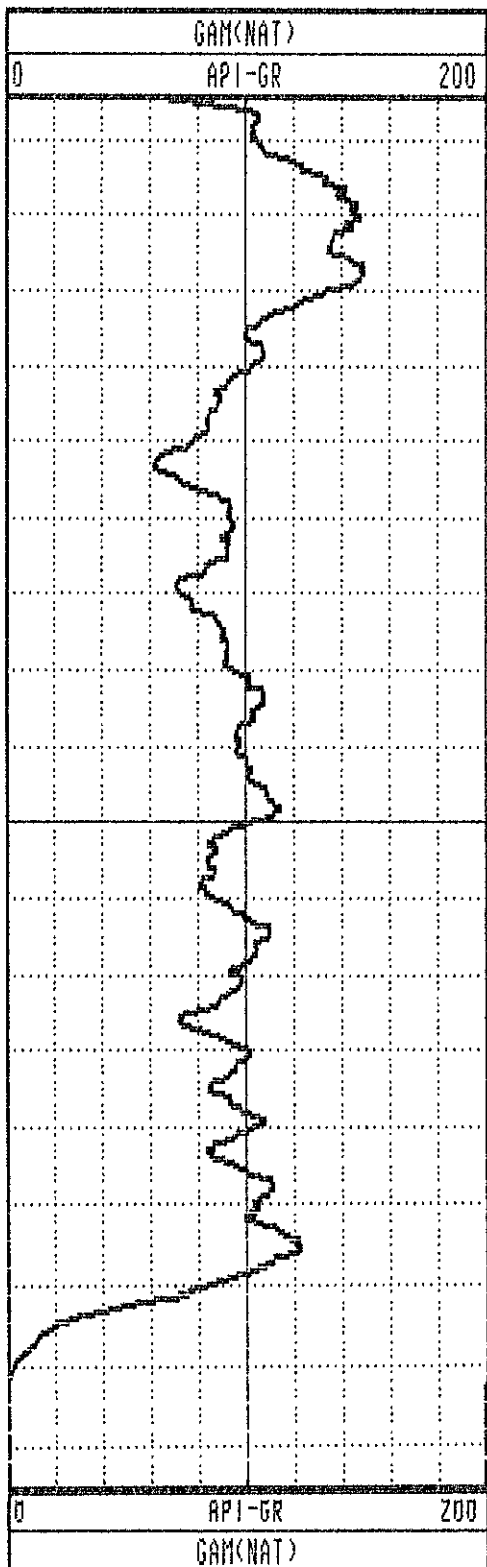
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 2
 PLOT : PINE 4
 THRESH: 10000

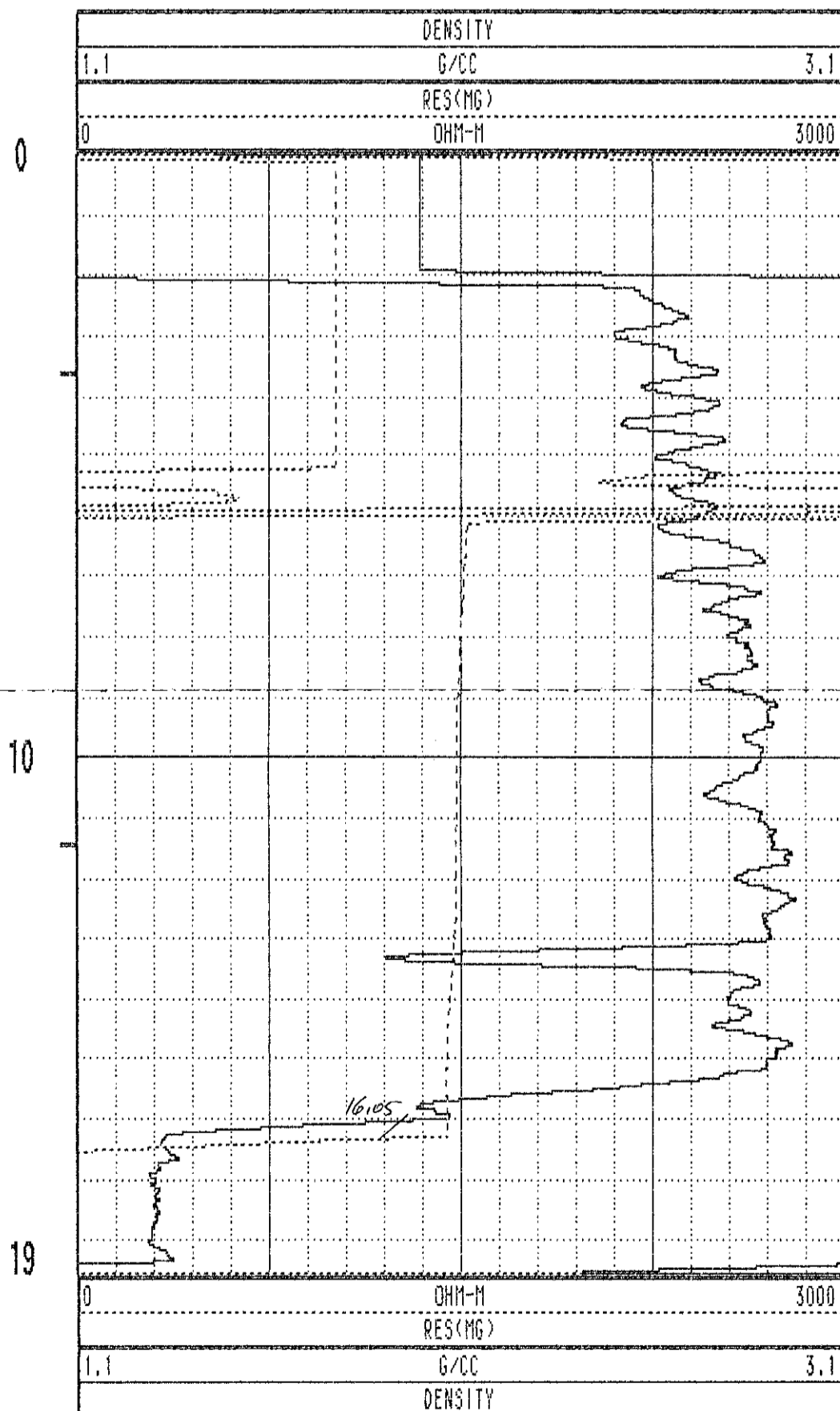
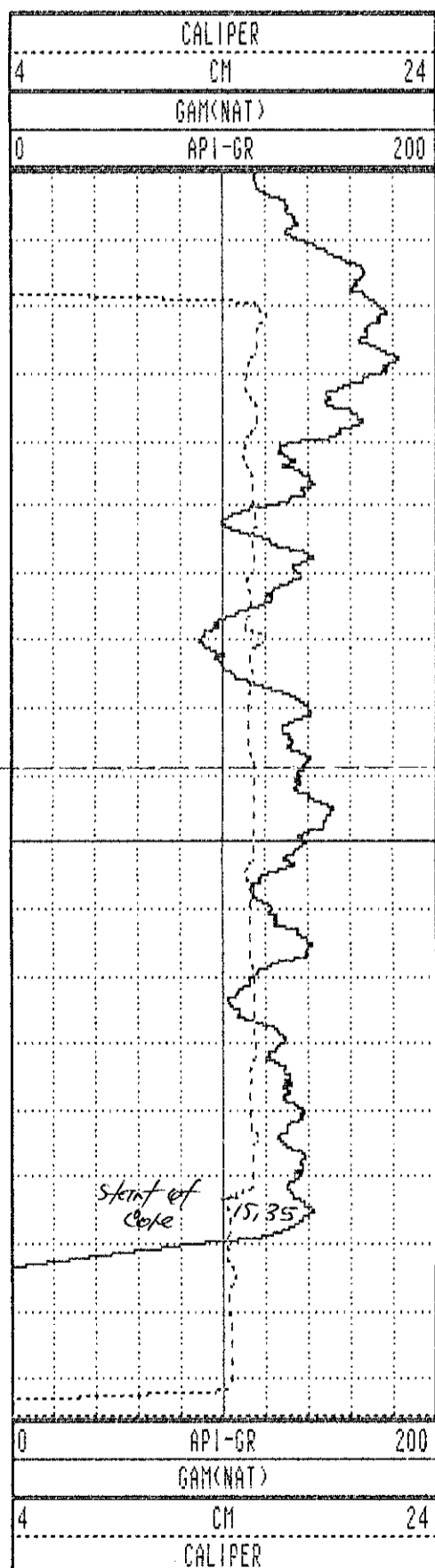
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96207C | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/16/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 18 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.57 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.16 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96207C 09/16/96 958

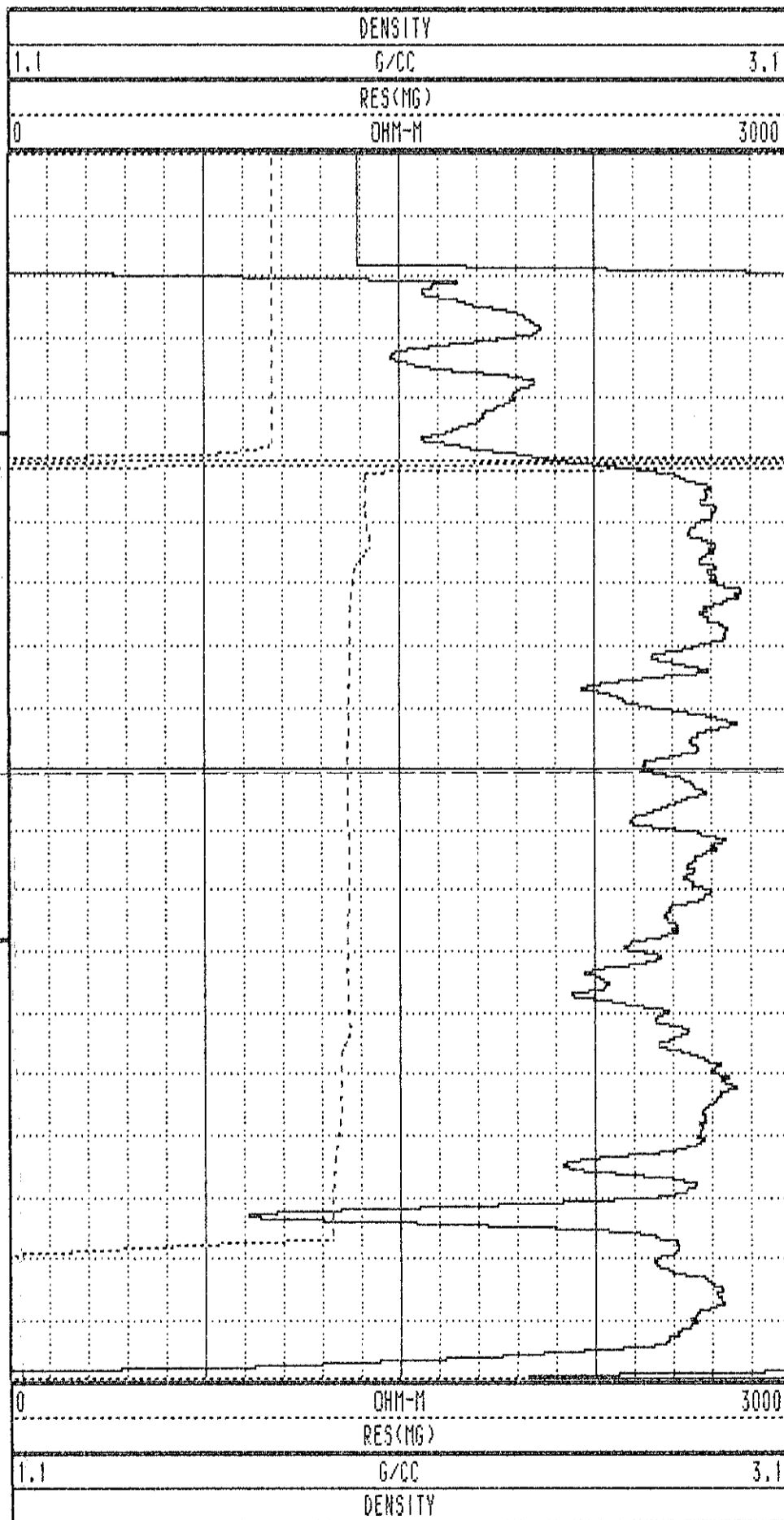
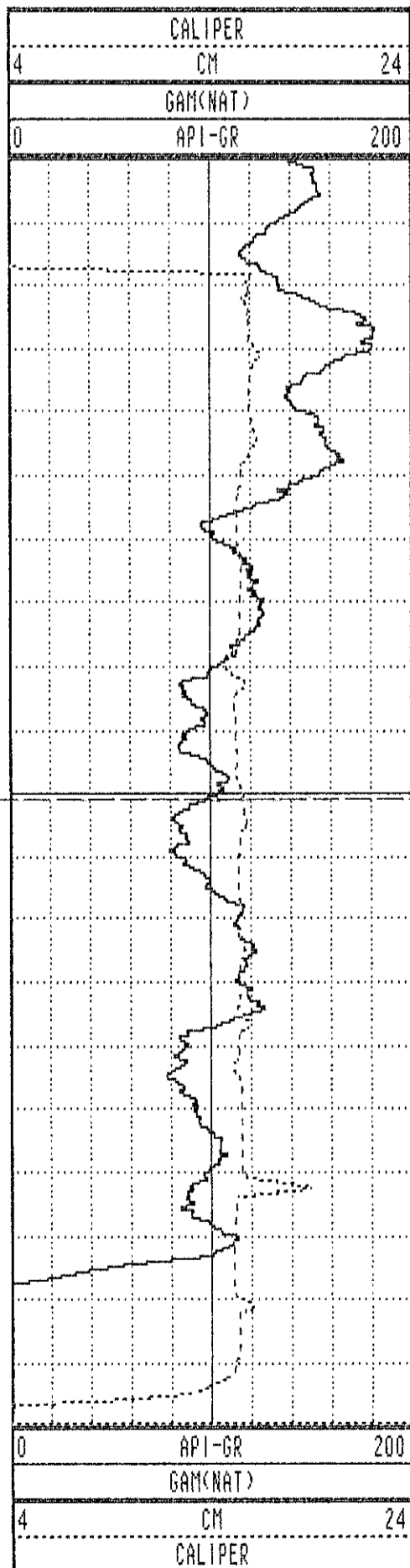
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|--|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96208C | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : | TOWNSHIP : RANGE : |
| DATE | : 09/16/96 | PERMANENT DATUM : ELEVATIONS |
| DEPTH DRILLER | : 19 | ELEV. PERM. DATUM: KB : |
| LOG BOTTOM | : 19.98 | LOG MEASURED FROM: G.L. DF : |
| LOG TOP | : -0.24 | DRL MEASURED FROM: GL : |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE : LOG : 2 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : THRESH: 10000 |
| REMARKS | : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96208C 09/16/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

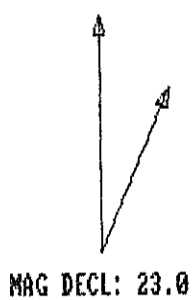
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96209C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 10/03/96
 DATA FROM : PROBE : 9055A , 71
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 1

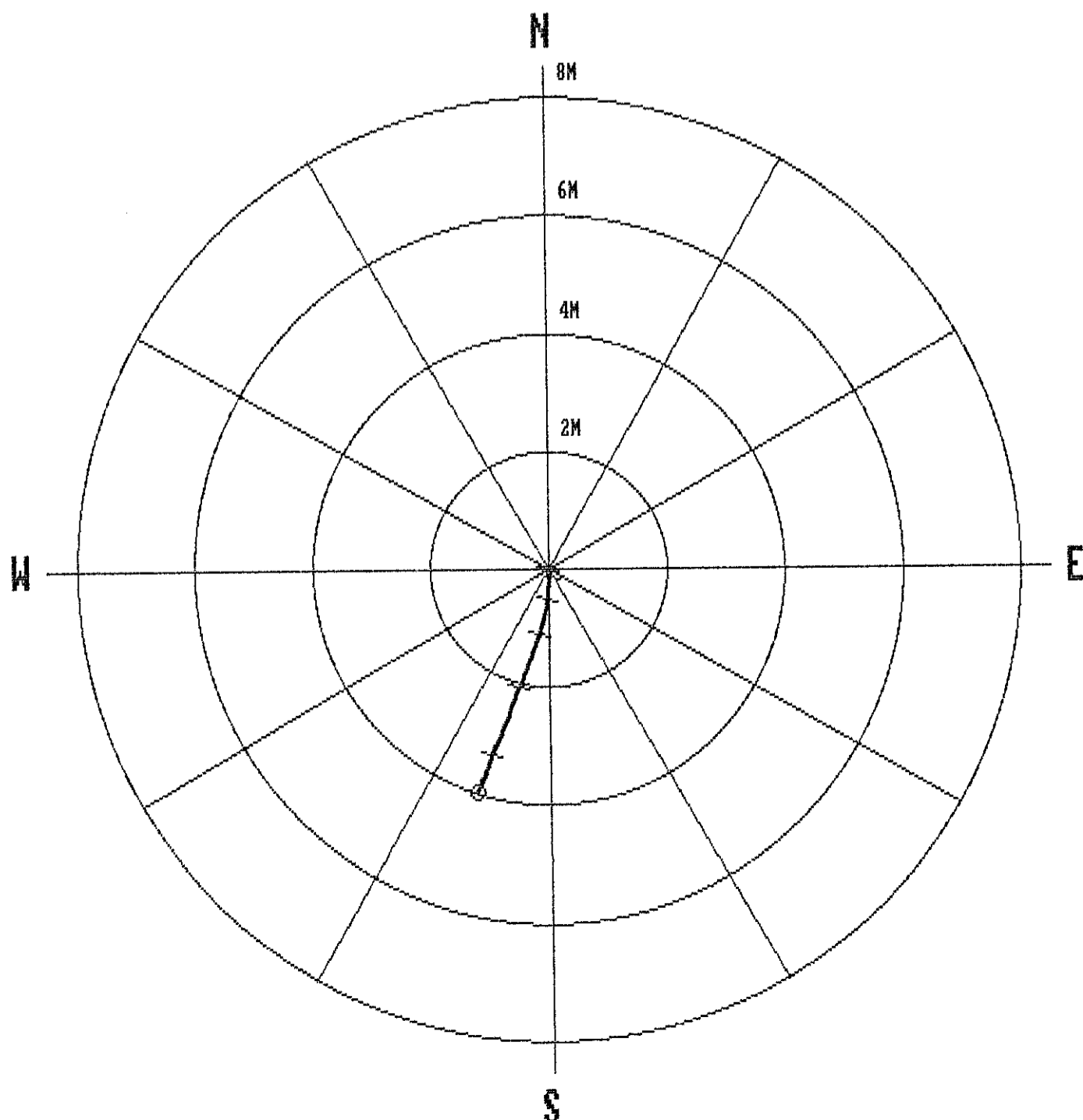
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 1.9 | 1.94 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 229.4 | 1.2 | 226.5 |
| 4.0 | 4.00 | -0.00 | -0.00 | 0.0 | 256.8 | 0.3 | 110.3 |
| 6.0 | 6.00 | 0.00 | -0.01 | 0.0 | 275.6 | 0.2 | 302.2 |
| 8.0 | 8.00 | 0.01 | -0.01 | 0.0 | 319.1 | 0.2 | 190.4 |
| 10.0 | 10.00 | 0.01 | -0.01 | 0.0 | 311.7 | 0.0 | 22.7 |
| 12.0 | 12.00 | 0.00 | -0.01 | 0.0 | 274.4 | 0.2 | 177.1 |
| 14.0 | 14.00 | -0.02 | -0.01 | 0.0 | 201.1 | 0.3 | 178.6 |
| 16.0 | 16.00 | -0.04 | -0.00 | 0.0 | 184.0 | 0.9 | 176.1 |
| 18.0 | 18.00 | -0.08 | 0.00 | 0.1 | 177.9 | 1.3 | 170.6 |
| 20.0 | 20.00 | -0.12 | 0.01 | 0.1 | 176.8 | 1.7 | 188.2 |
| 22.0 | 22.00 | -0.18 | 0.01 | 0.2 | 177.5 | 1.7 | 143.4 |
| 24.0 | 24.00 | -0.25 | 0.00 | 0.3 | 179.3 | 2.3 | 186.0 |
| 26.0 | 25.99 | -0.33 | -0.00 | 0.3 | 180.3 | 2.2 | 180.9 |
| 28.0 | 27.99 | -0.41 | -0.01 | 0.4 | 181.3 | 2.4 | 186.2 |
| 30.0 | 29.99 | -0.50 | -0.02 | 0.5 | 182.2 | 2.3 | 173.8 |
| 32.0 | 31.99 | -0.59 | -0.03 | 0.6 | 183.0 | 3.1 | 192.4 |
| 34.0 | 33.99 | -0.70 | -0.05 | 0.7 | 184.0 | 3.6 | 198.1 |
| 36.0 | 35.98 | -0.81 | -0.08 | 0.8 | 185.4 | 3.7 | 203.4 |
| 38.0 | 37.98 | -0.94 | -0.11 | 0.9 | 186.6 | 4.5 | 202.4 |
| 40.0 | 39.97 | -1.08 | -0.15 | 1.1 | 188.1 | 4.2 | 205.2 |
| 42.0 | 41.96 | -1.24 | -0.21 | 1.3 | 189.6 | 4.9 | 193.3 |
| 44.0 | 43.96 | -1.41 | -0.27 | 1.4 | 191.0 | 5.4 | 211.7 |
| 46.0 | 45.95 | -1.58 | -0.34 | 1.6 | 192.2 | 5.8 | 201.2 |
| 48.0 | 47.94 | -1.77 | -0.42 | 1.8 | 193.2 | 6.4 | 203.1 |
| 50.0 | 49.92 | -1.98 | -0.51 | 2.0 | 194.5 | 6.8 | 199.6 |
| 52.0 | 51.91 | -2.20 | -0.59 | 2.3 | 195.1 | 7.2 | 188.6 |
| 54.0 | 53.89 | -2.42 | -0.68 | 2.5 | 195.7 | 7.1 | 194.8 |
| 56.0 | 55.88 | -2.66 | -0.77 | 2.8 | 196.1 | 7.4 | 208.4 |
| 58.0 | 57.86 | -2.89 | -0.87 | 3.0 | 196.7 | 7.4 | 175.7 |
| 60.0 | 59.84 | -3.12 | -0.98 | 3.3 | 197.5 | 7.4 | 205.7 |
| 62.0 | 61.82 | -3.37 | -1.07 | 3.5 | 197.6 | 7.5 | 200.3 |
| 64.0 | 63.80 | -3.62 | -1.18 | 3.8 | 198.1 | 7.9 | 186.2 |
| 65.1 | 64.93 | -3.78 | -1.24 | 4.0 | 198.2 | 9.0 | 205.6 |

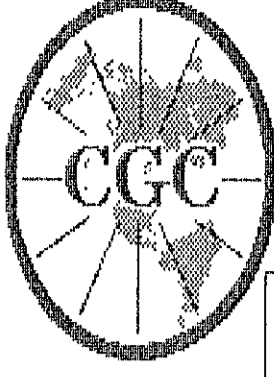
PLAN VIEW
 COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96209C
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 64.93 M
 AZIMUTH: 198.2
 DISTANCE: 4.0 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96209C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/03/96
 DEPTH DRILLER : 65
 LOG BOTTOM : 65.19
 LOG TOP : 0.78

PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

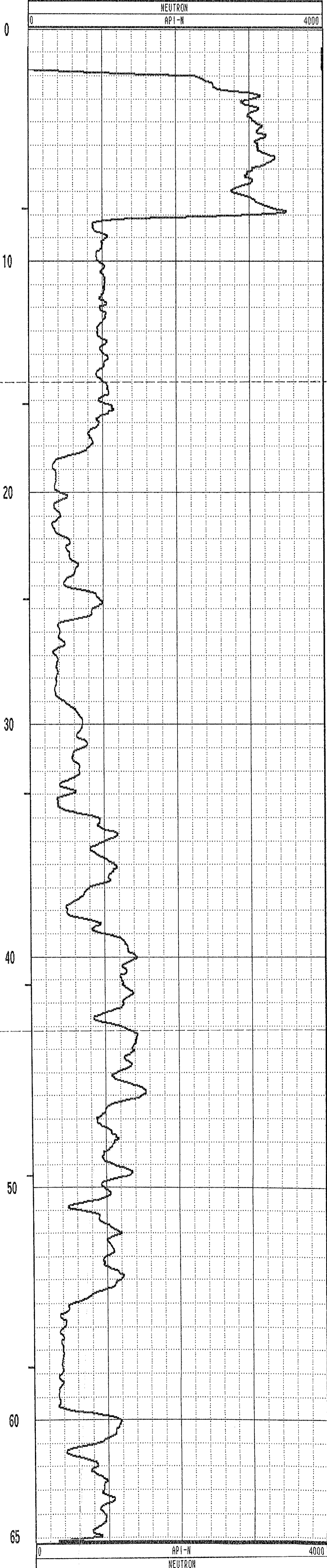
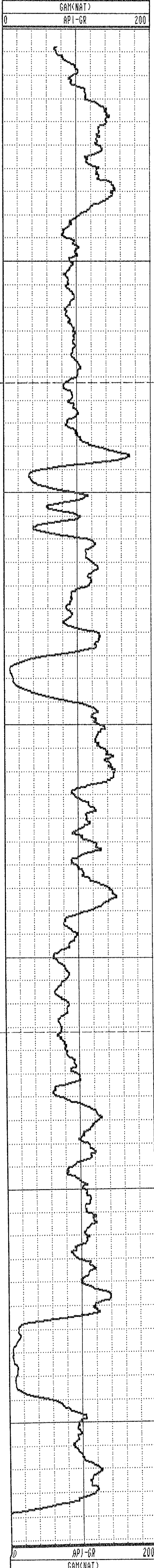
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 0
 PLOT : PINE 4
 THRESH: 10000

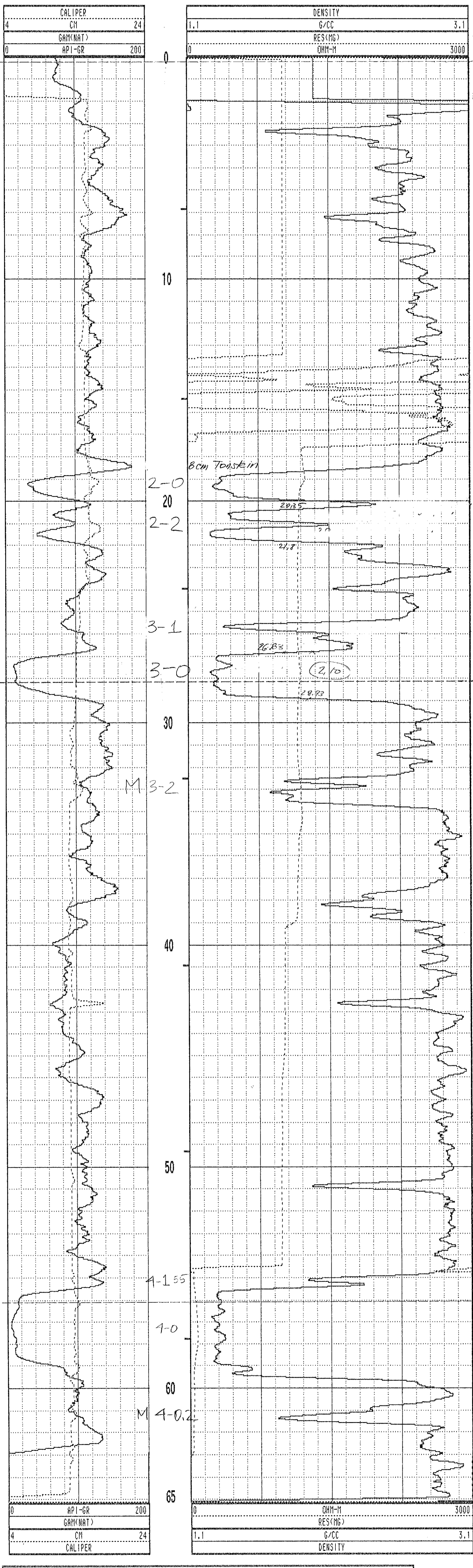
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96209C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/16/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 64 ELEV. PERM. DATUM: KB : LOG BOTTOM : 65.15 LOG MEASURED FROM: G.L. DF : LOG TOP : 0.04 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 3 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS :</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96209C 09/16/96 958

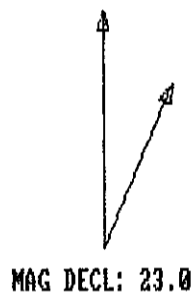
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

202

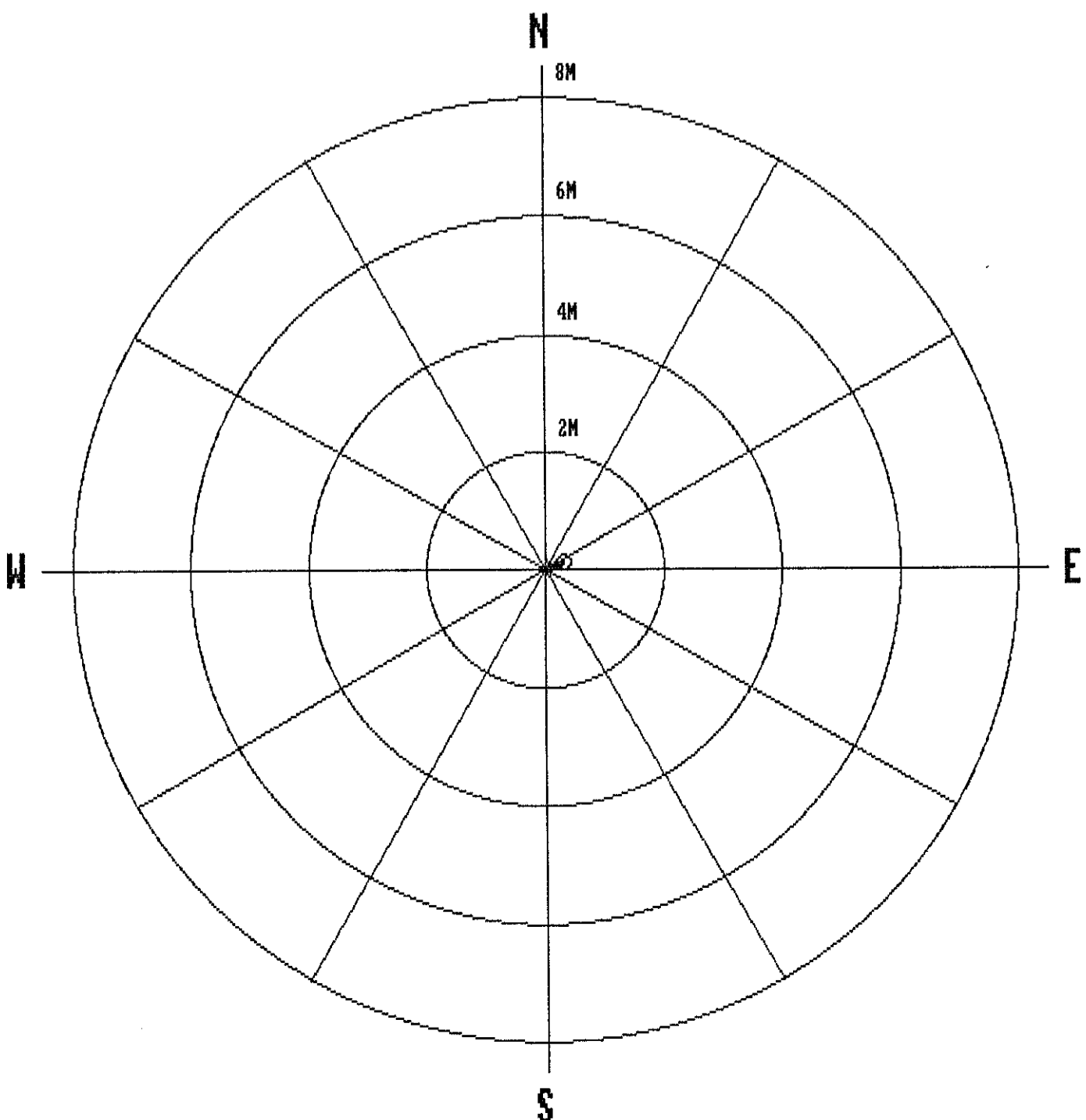
| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 28.9 | 0.8 | 36.2 |
| 3.0 | 3.00 | 0.00 | 0.00 | 0.0 | 71.5 | 0.1 | 199.1 |
| 4.0 | 4.00 | -0.00 | 0.01 | 0.0 | 107.6 | 0.3 | 41.7 |
| 5.0 | 5.00 | -0.00 | 0.01 | 0.0 | 109.9 | 0.6 | 171.9 |
| 6.0 | 6.00 | -0.00 | 0.01 | 0.0 | 97.2 | 0.5 | 59.5 |
| 7.0 | 7.00 | -0.00 | 0.02 | 0.0 | 94.4 | 0.5 | 158.3 |
| 8.0 | 8.00 | -0.00 | 0.02 | 0.0 | 100.7 | 0.4 | 138.3 |
| 9.0 | 9.00 | -0.01 | 0.02 | 0.0 | 108.0 | 0.6 | 227.8 |
| 10.0 | 10.00 | -0.02 | 0.02 | 0.0 | 126.0 | 0.5 | 148.5 |
| 11.0 | 11.00 | -0.02 | 0.02 | 0.0 | 138.4 | 0.5 | 221.8 |
| 12.0 | 12.00 | -0.03 | 0.02 | 0.0 | 138.6 | 0.5 | 159.9 |
| 13.0 | 13.00 | -0.03 | 0.03 | 0.0 | 142.5 | 0.6 | 187.3 |
| 14.0 | 14.00 | -0.04 | 0.03 | 0.0 | 142.3 | 0.5 | 138.2 |
| 15.0 | 15.00 | -0.04 | 0.03 | 0.0 | 139.0 | 0.6 | 31.8 |
| 16.0 | 16.00 | -0.03 | 0.04 | 0.0 | 127.3 | 0.6 | 26.6 |
| 17.0 | 17.00 | -0.02 | 0.04 | 0.0 | 115.3 | 0.4 | 14.2 |
| 18.0 | 18.00 | -0.01 | 0.05 | 0.0 | 102.2 | 0.9 | 37.5 |
| 19.0 | 19.00 | -0.00 | 0.06 | 0.1 | 90.9 | 0.9 | 48.2 |
| 20.0 | 20.00 | 0.01 | 0.07 | 0.1 | 81.5 | 0.9 | 56.5 |
| 21.0 | 21.00 | 0.02 | 0.08 | 0.1 | 75.5 | 0.9 | 54.1 |
| 22.0 | 22.00 | 0.03 | 0.09 | 0.1 | 72.0 | 0.9 | 45.9 |
| 23.0 | 23.00 | 0.04 | 0.10 | 0.1 | 69.7 | 0.9 | 50.5 |
| 24.0 | 24.00 | 0.05 | 0.12 | 0.1 | 68.3 | 1.0 | 65.0 |
| 25.0 | 25.00 | 0.05 | 0.13 | 0.1 | 67.8 | 1.1 | 57.8 |
| 26.0 | 26.00 | 0.06 | 0.15 | 0.2 | 67.3 | 1.1 | 59.6 |
| 27.0 | 27.00 | 0.07 | 0.16 | 0.2 | 67.3 | 0.7 | 77.7 |
| 28.0 | 28.00 | 0.07 | 0.18 | 0.2 | 67.4 | 0.8 | 67.5 |
| 29.0 | 29.00 | 0.08 | 0.19 | 0.2 | 67.8 | 1.3 | 73.9 |
| 30.0 | 30.00 | 0.09 | 0.21 | 0.2 | 67.9 | 0.9 | 81.4 |
| 31.0 | 31.00 | 0.09 | 0.23 | 0.2 | 68.1 | 0.8 | 72.8 |
| 32.0 | 32.00 | 0.09 | 0.24 | 0.3 | 68.6 | 0.7 | 75.5 |
| 33.0 | 33.00 | 0.10 | 0.26 | 0.3 | 68.7 | 1.1 | 63.5 |
| 34.0 | 34.00 | 0.10 | 0.27 | 0.3 | 69.0 | 1.0 | 76.4 |
| 35.0 | 35.00 | 0.11 | 0.29 | 0.3 | 68.8 | 1.2 | 68.9 |
| 36.0 | 36.00 | 0.12 | 0.30 | 0.3 | 68.6 | 0.8 | 78.1 |
| 37.0 | 37.00 | 0.13 | 0.32 | 0.3 | 68.5 | 0.8 | 84.4 |
| 37.3 | 37.26 | 0.13 | 0.32 | 0.3 | 68.4 | 0.5 | 23.0 |

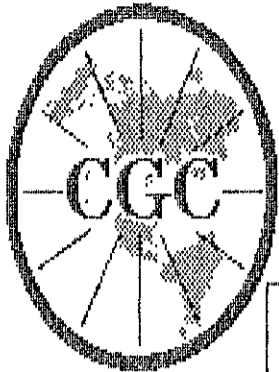
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96210-1
 DATE OF LOG: 09/30/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 37.26 M
 AZIMUTH: 68.4
 DISTANCE: 0.3 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



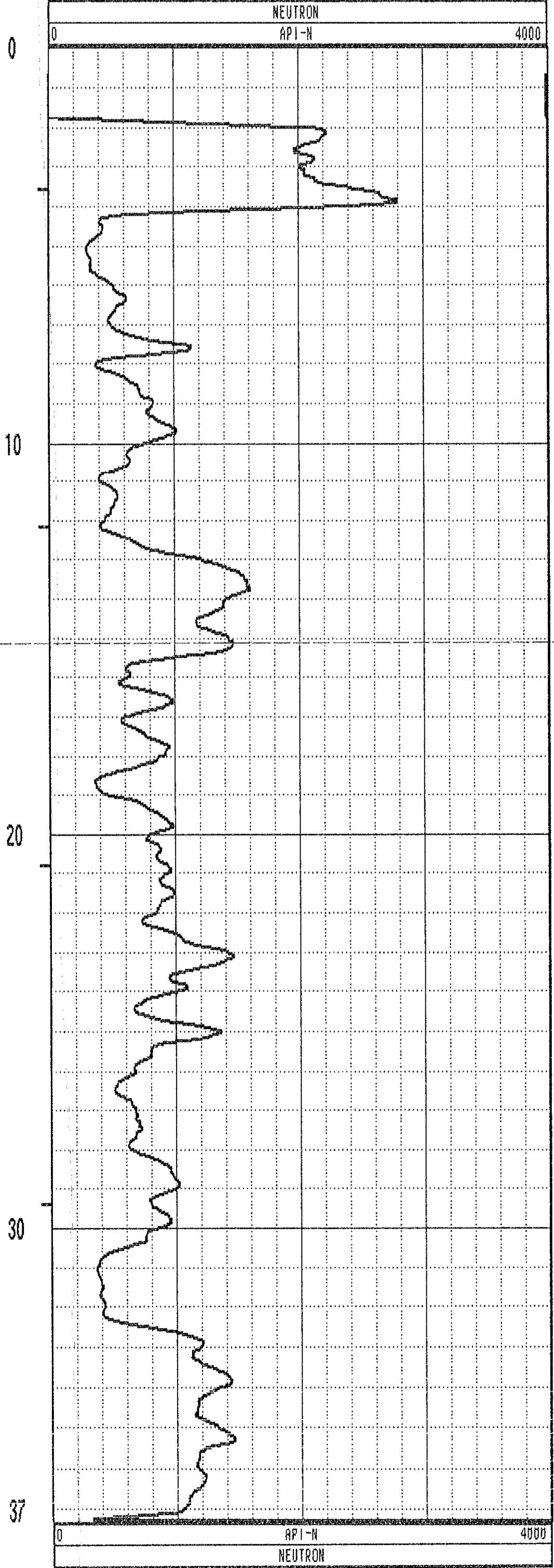
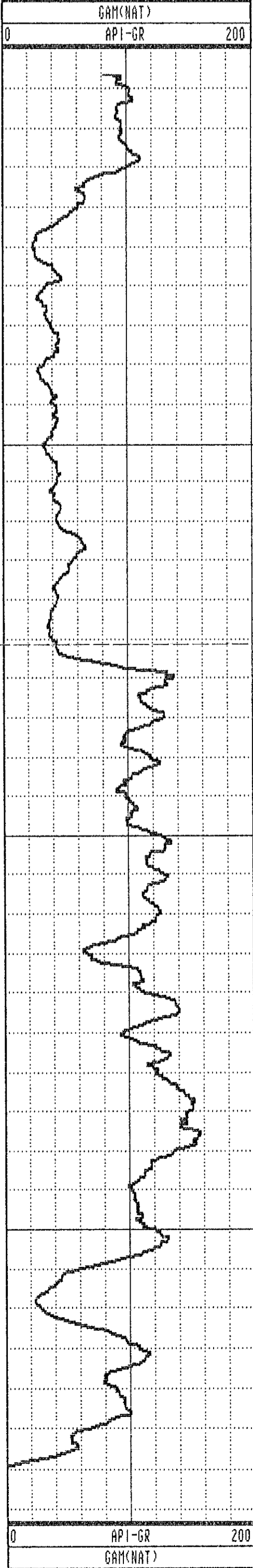


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96210-1 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP : | RANGE | : |
| DATE | : 09/30/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 37 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 37.31 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.66 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 6 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

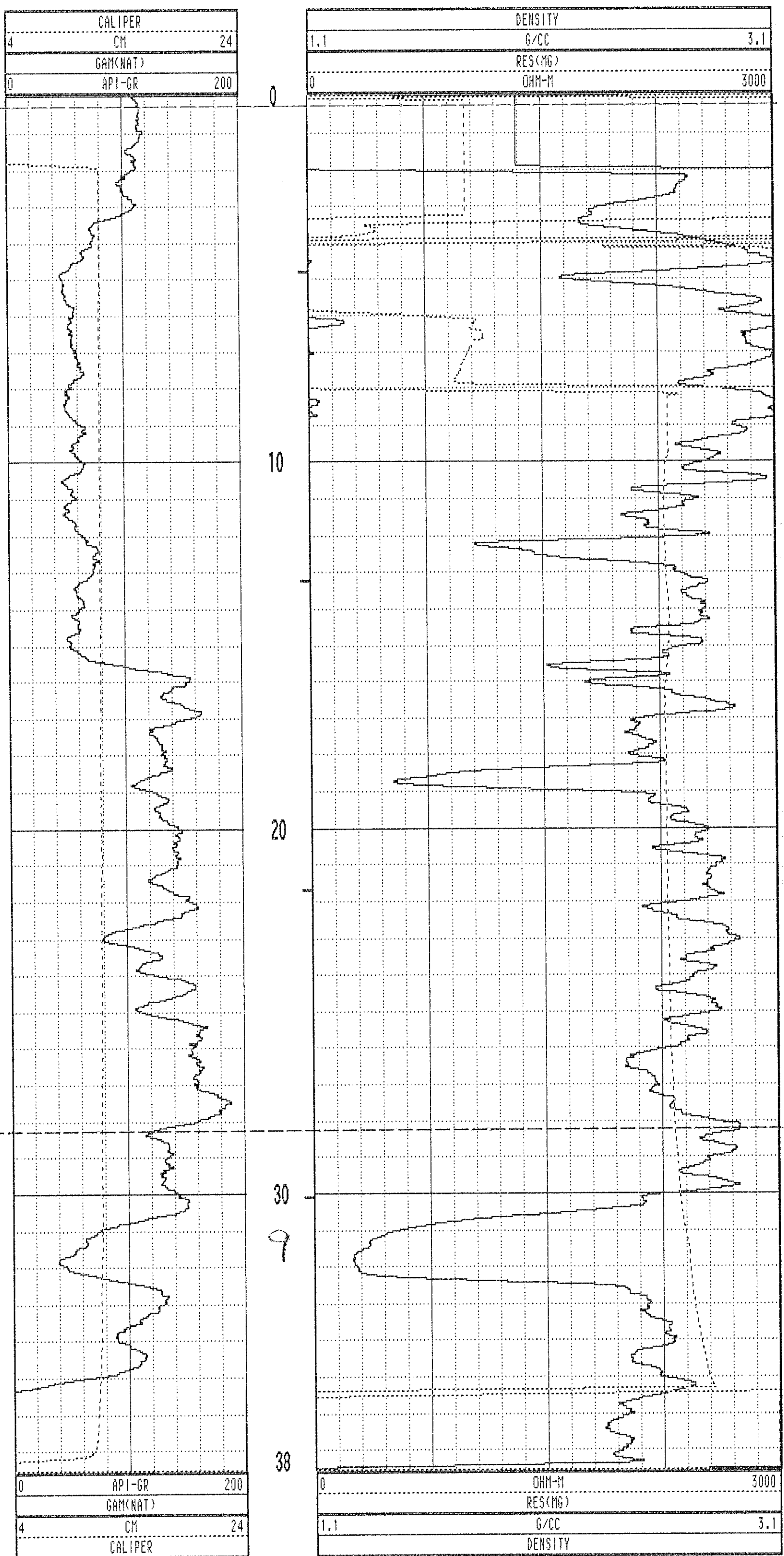
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : MRH-96210-1 LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/19/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 37 ELEV. PERM. DATUM: KB : LOG BOTTOM : 37.57 LOG MEASURED FROM: G.L. DF : LOG TOP : -0.08 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 7 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|---|------------------------|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



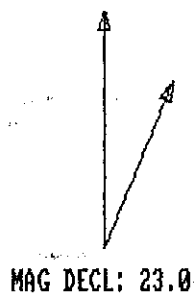
MRH-96210-1 09/19/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

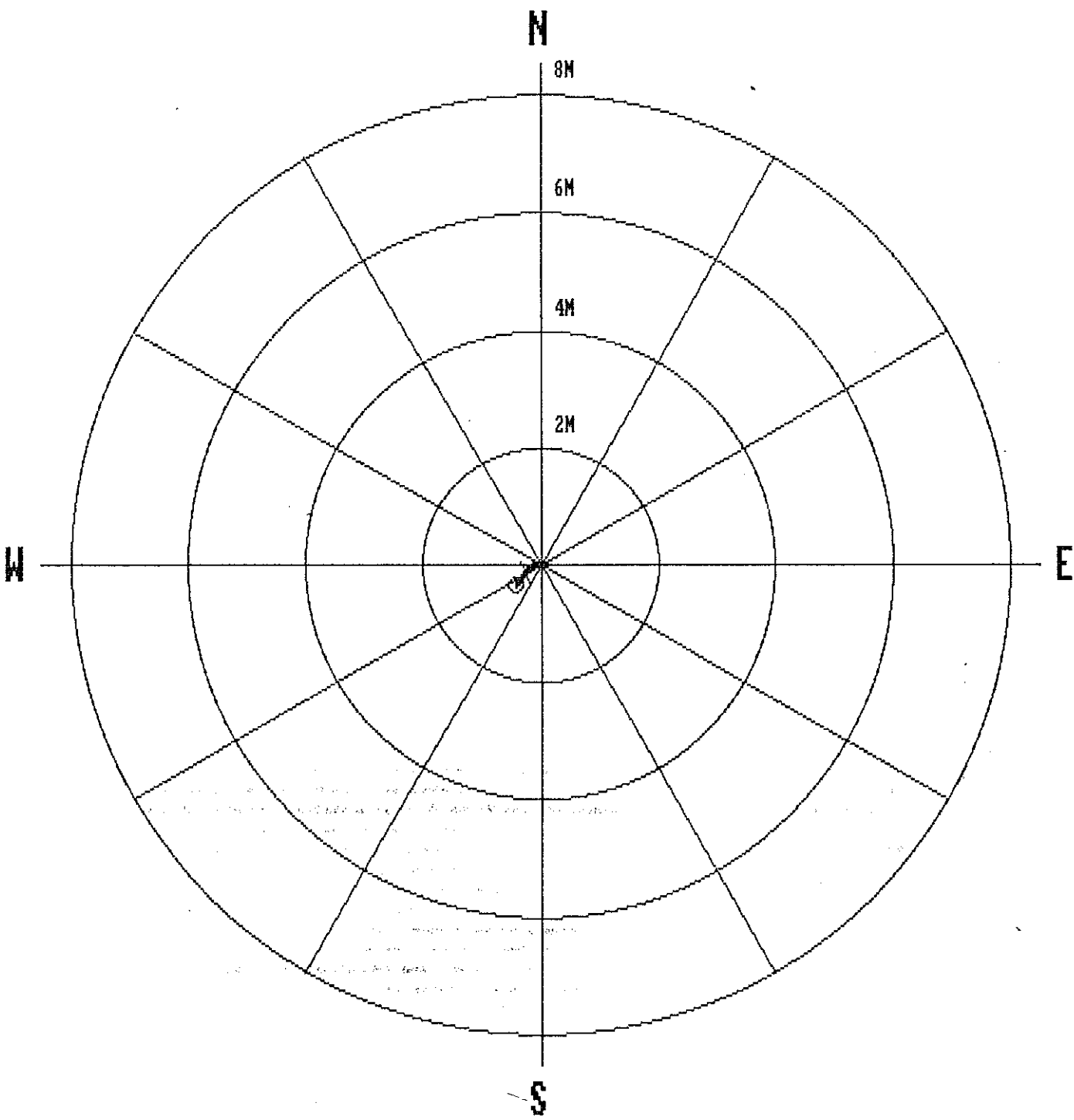
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96211
 DATE OF LOG: 10/01/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 25.37 M
 AZIMUTH: 231.2
 DISTANCE: 0.5 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE

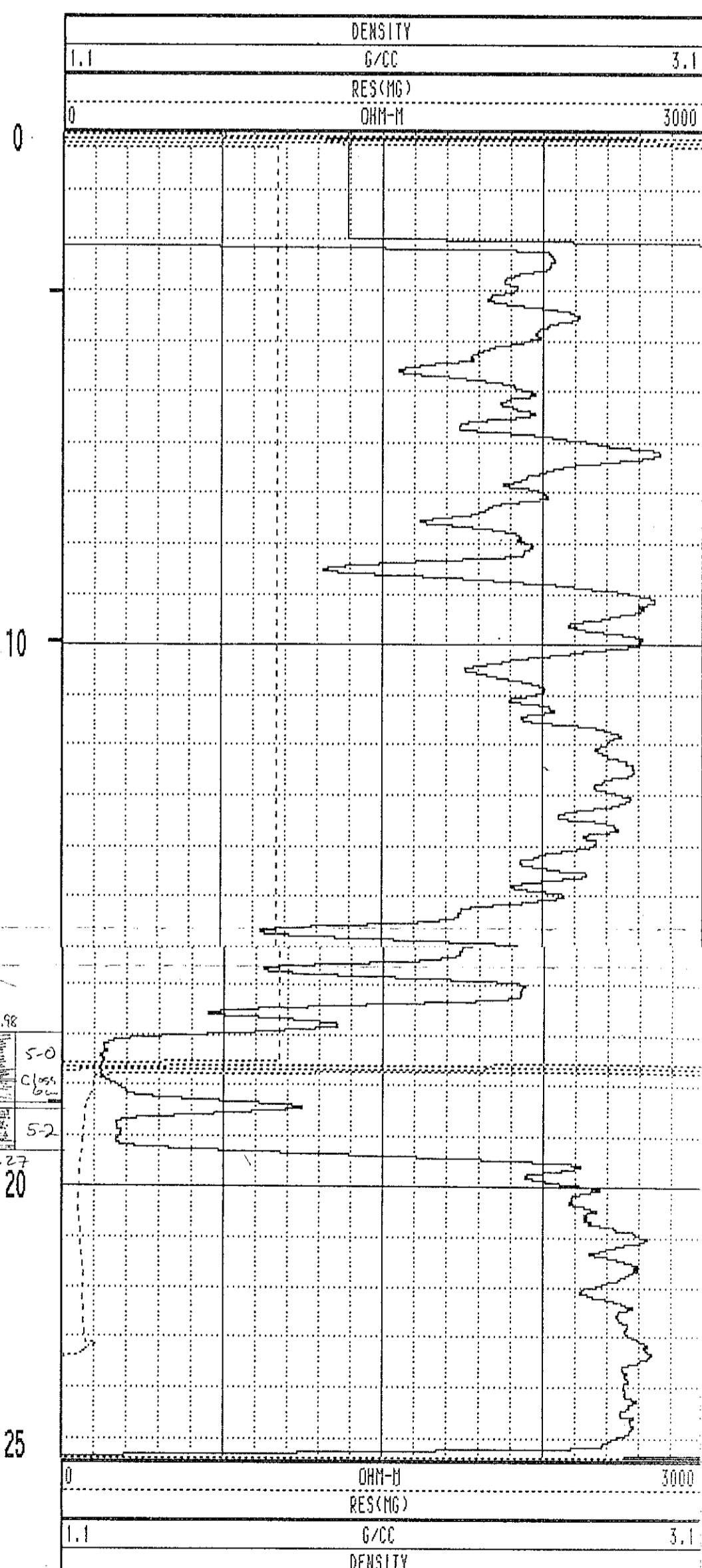
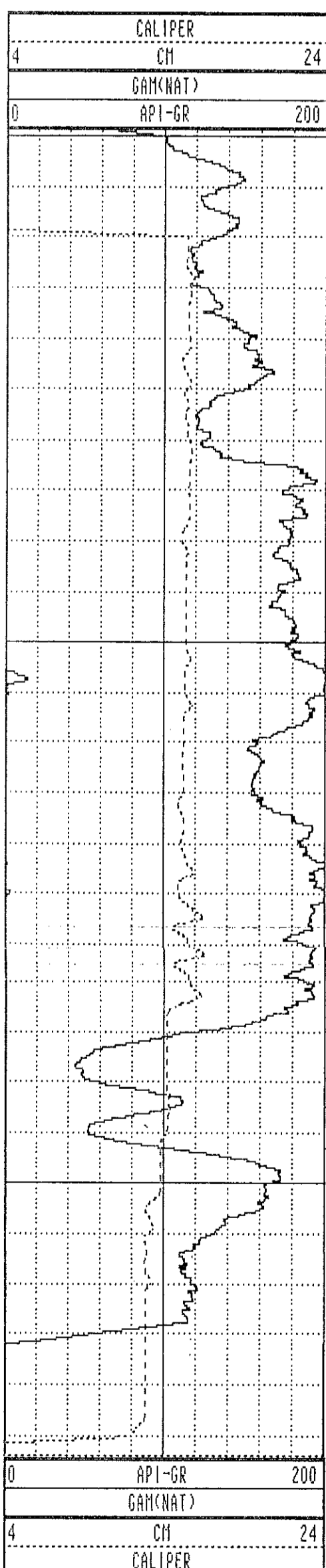


| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 74.0 | 0.2 | 95.8 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 358.8 | 0.8 | 48.5 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 5.2 | 0.4 | 356.9 |
| 5.0 | 5.00 | 0.01 | -0.00 | 0.0 | 351.8 | 0.1 | 328.3 |
| 6.0 | 6.00 | 0.01 | -0.01 | 0.0 | 335.9 | 0.4 | 284.5 |
| 7.0 | 7.00 | 0.02 | -0.01 | 0.0 | 321.6 | 0.6 | 291.9 |
| 8.0 | 8.00 | 0.02 | -0.02 | 0.0 | 304.6 | 0.7 | 252.3 |
| 9.0 | 9.00 | 0.02 | -0.03 | 0.0 | 296.4 | 0.6 | 284.8 |
| 10.0 | 10.00 | 0.01 | -0.05 | 0.0 | 286.4 | 0.7 | 258.6 |
| 11.0 | 11.00 | 0.01 | -0.06 | 0.1 | 278.3 | 1.3 | 245.7 |
| 12.0 | 12.00 | 0.00 | -0.08 | 0.1 | 271.8 | 1.3 | 239.9 |
| 13.0 | 13.00 | -0.01 | -0.10 | 0.1 | 266.7 | 1.3 | 239.4 |
| 14.0 | 14.00 | -0.02 | -0.12 | 0.1 | 262.9 | 1.7 | 258.7 |
| 15.0 | 15.00 | -0.03 | -0.14 | 0.1 | 258.8 | 1.0 | 262.5 |
| 16.0 | 16.00 | -0.04 | -0.17 | 0.2 | 254.9 | 1.8 | 212.7 |
| 17.0 | 17.00 | -0.06 | -0.19 | 0.2 | 251.6 | 2.5 | 245.3 |
| 18.0 | 18.00 | -0.08 | -0.22 | 0.2 | 249.0 | 2.2 | 237.7 |
| 19.0 | 19.00 | -0.11 | -0.25 | 0.3 | 246.5 | 1.9 | 218.5 |
| 20.0 | 20.00 | -0.14 | -0.27 | 0.3 | 243.1 | 2.3 | 232.4 |
| 21.0 | 20.99 | -0.17 | -0.30 | 0.3 | 239.7 | 2.6 | 213.9 |
| 22.0 | 21.99 | -0.21 | -0.32 | 0.4 | 236.8 | 2.8 | 204.0 |
| 23.0 | 22.99 | -0.25 | -0.35 | 0.4 | 235.0 | 2.7 | 224.4 |
| 24.0 | 23.99 | -0.29 | -0.38 | 0.5 | 232.9 | 2.9 | 225.5 |
| 25.0 | 24.99 | -0.33 | -0.41 | 0.5 | 231.8 | 3.4 | 209.2 |
| 25.4 | 25.37 | -0.34 | -0.43 | 0.5 | 231.2 | 3.4 | 218.7 |

GAMMA-RES-DENSITY

| | |
|--|------------------------|
| <p>COMPANY : PINE VALLEY COAL WELL : WRH-96211C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE :</p> <p>DATE : 09/20/96 PERMANENT DATUM : ELEVATIONS DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB : LOG BOTTOM : 25.43 LOG MEASURED FROM: G.L. DF : LOG TOP : -0.06 DRL MEASURED FROM: GL :</p> <p>CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R. THOMAS</p> <p>BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA MATRIX DENSITY : RM TEMPERATURE : LOG : 5 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000 REMARKS : NONE</p> | <p>OTHER SERVICES:</p> |
|--|------------------------|

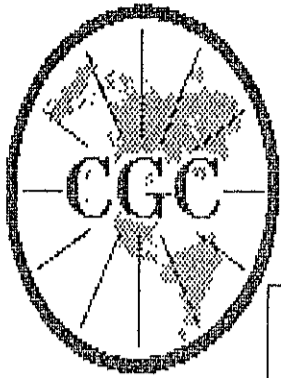
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96211 09/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96211
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 10/01/96
 DEPTH DRILLER : 25
 LOG BOTTOM : 25.43
 LOG TOP : 0.60

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

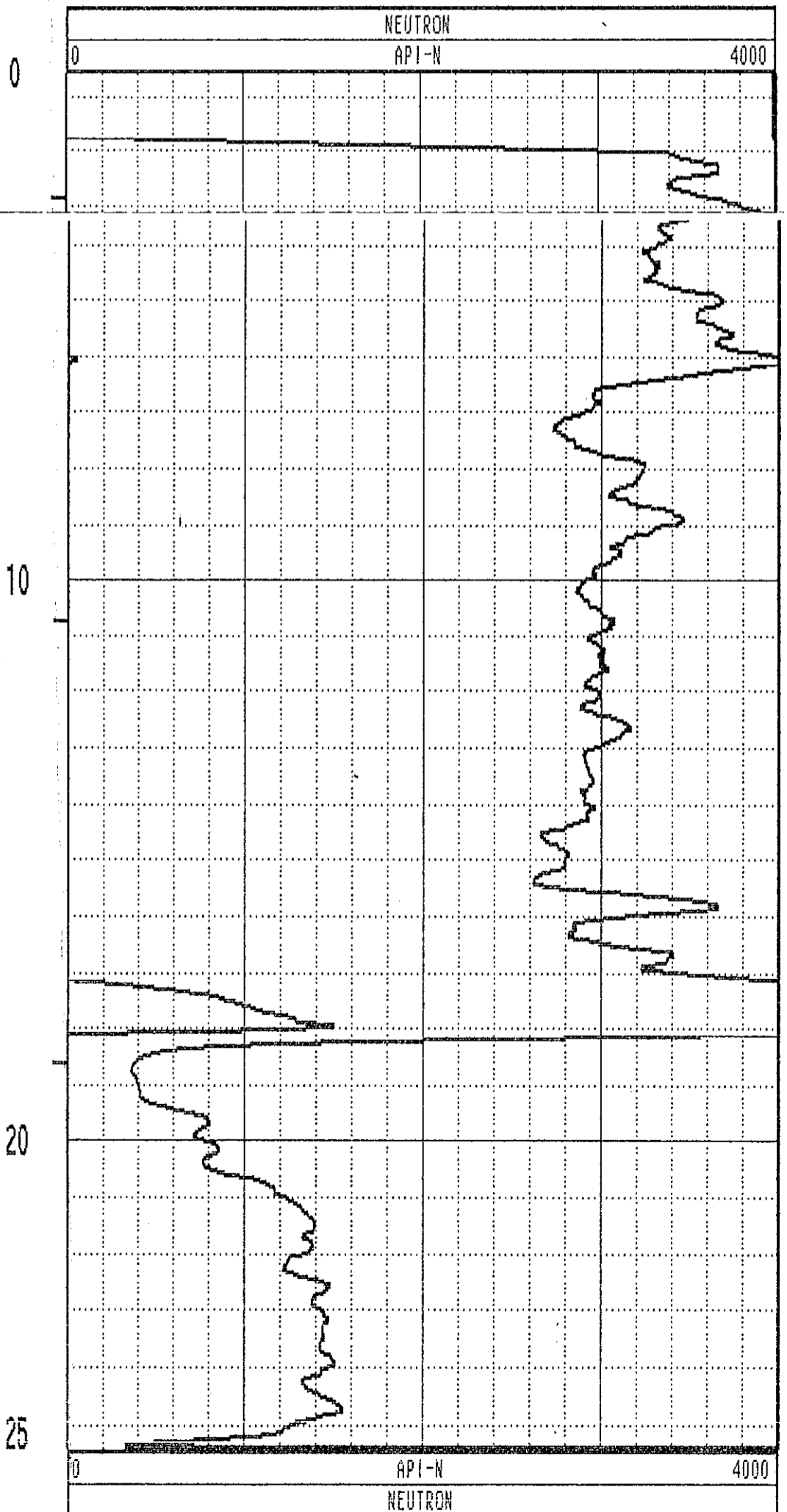
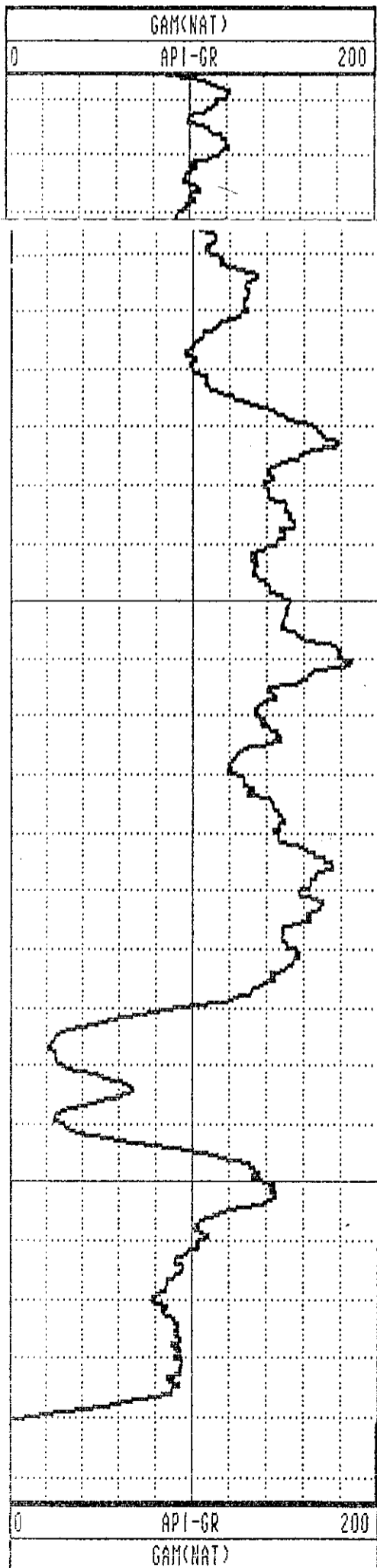
BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

REMARKS :
NONE

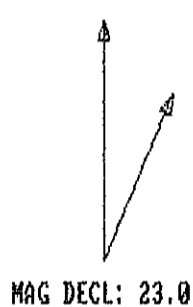
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



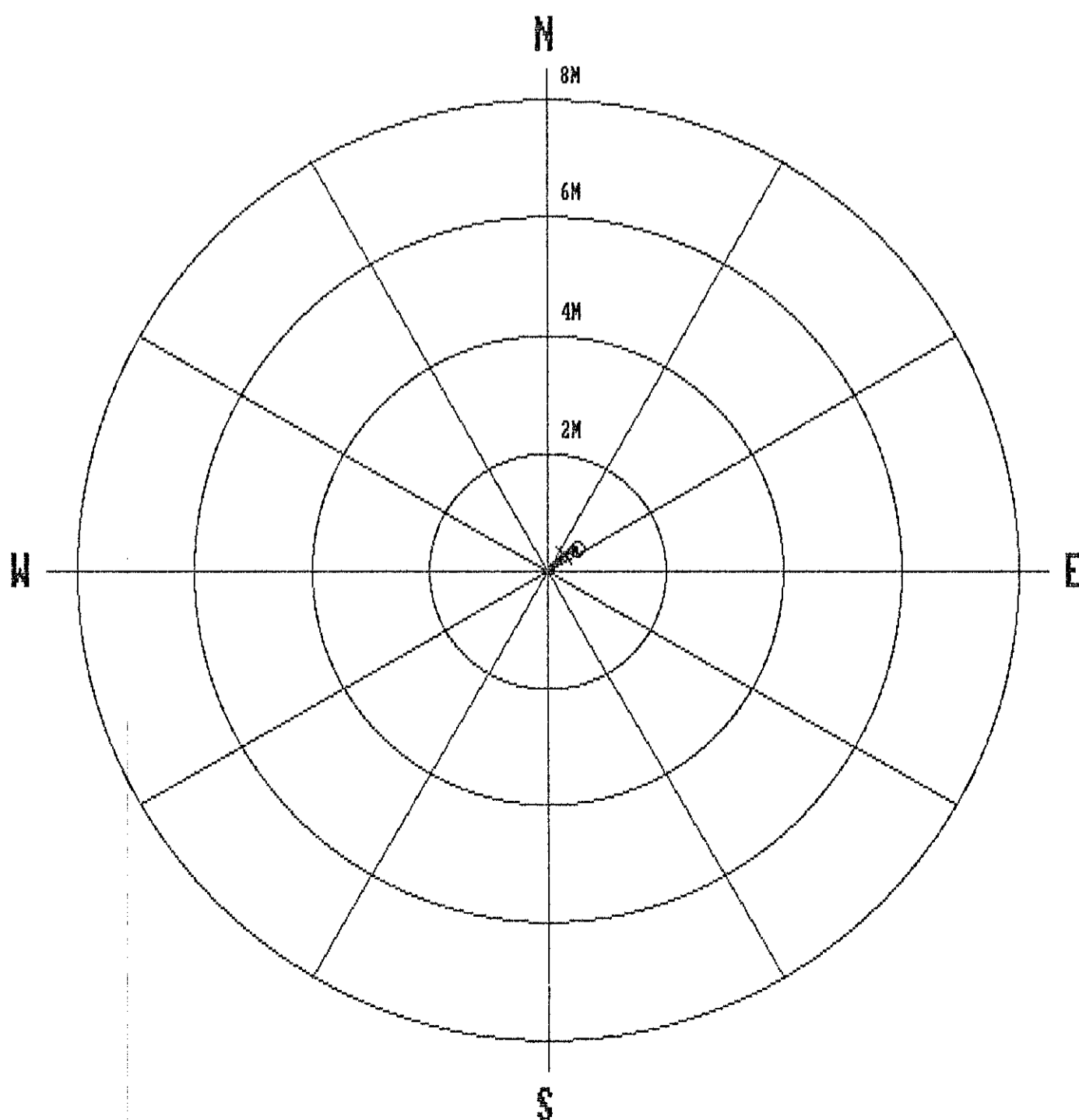
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 158.7 | 0.1 | 310.4 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 313.4 | 0.7 | 319.3 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 5.3 | 0.9 | 43.0 |
| 5.0 | 5.00 | 0.03 | 0.02 | 0.0 | 30.0 | 1.2 | 41.5 |
| 6.0 | 6.00 | 0.04 | 0.03 | 0.1 | 35.9 | 1.6 | 41.6 |
| 7.0 | 7.00 | 0.06 | 0.05 | 0.1 | 39.3 | 1.5 | 61.5 |
| 8.0 | 8.00 | 0.08 | 0.07 | 0.1 | 41.3 | 0.9 | 26.5 |
| 9.0 | 9.00 | 0.10 | 0.09 | 0.1 | 42.5 | 1.3 | 44.0 |
| 10.0 | 10.00 | 0.11 | 0.10 | 0.2 | 42.8 | 1.3 | 51.3 |
| 11.0 | 11.00 | 0.13 | 0.13 | 0.2 | 43.6 | 1.6 | 53.7 |
| 12.0 | 12.00 | 0.15 | 0.15 | 0.2 | 44.5 | 1.6 | 54.9 |
| 13.0 | 13.00 | 0.17 | 0.17 | 0.2 | 45.2 | 1.4 | 60.3 |
| 14.0 | 14.00 | 0.18 | 0.19 | 0.3 | 45.6 | 1.4 | 47.4 |
| 15.0 | 15.00 | 0.20 | 0.20 | 0.3 | 45.7 | 1.2 | 37.6 |
| 16.0 | 16.00 | 0.21 | 0.22 | 0.3 | 46.1 | 0.8 | 38.2 |
| 17.0 | 17.00 | 0.22 | 0.23 | 0.3 | 46.4 | 0.9 | 67.8 |
| 18.0 | 18.00 | 0.24 | 0.25 | 0.3 | 46.5 | 1.1 | 76.7 |
| 19.0 | 19.00 | 0.25 | 0.27 | 0.4 | 46.8 | 1.5 | 49.9 |
| 20.0 | 19.99 | 0.27 | 0.29 | 0.4 | 47.0 | 1.4 | 54.2 |
| 21.0 | 20.99 | 0.29 | 0.31 | 0.4 | 47.1 | 1.3 | 56.4 |
| 22.0 | 21.99 | 0.30 | 0.33 | 0.4 | 47.3 | 1.1 | 64.6 |
| 23.0 | 22.99 | 0.32 | 0.34 | 0.5 | 47.4 | 1.5 | 47.3 |
| 24.0 | 23.99 | 0.33 | 0.36 | 0.5 | 47.5 | 0.9 | 53.1 |
| 25.0 | 24.99 | 0.34 | 0.37 | 0.5 | 47.4 | 1.0 | 43.9 |
| 26.0 | 25.99 | 0.35 | 0.39 | 0.5 | 47.6 | 0.9 | 62.2 |
| 27.0 | 26.99 | 0.36 | 0.40 | 0.5 | 48.3 | 0.8 | 57.5 |
| 28.0 | 27.99 | 0.37 | 0.42 | 0.6 | 48.5 | 1.1 | 51.6 |
| 29.0 | 28.99 | 0.37 | 0.43 | 0.6 | 48.9 | 0.7 | 64.9 |
| 30.0 | 29.99 | 0.38 | 0.44 | 0.6 | 49.3 | 1.3 | 60.7 |
| 31.0 | 30.99 | 0.39 | 0.46 | 0.6 | 49.8 | 0.7 | 72.8 |
| 32.0 | 31.99 | 0.39 | 0.47 | 0.6 | 50.4 | 0.7 | 62.9 |
| 33.0 | 32.99 | 0.39 | 0.48 | 0.6 | 51.0 | 0.8 | 79.9 |
| 34.0 | 33.99 | 0.39 | 0.49 | 0.6 | 51.6 | 0.3 | 114.7 |
| 35.0 | 34.99 | 0.39 | 0.50 | 0.6 | 52.0 | 0.3 | 88.0 |
| 36.0 | 35.99 | 0.39 | 0.51 | 0.6 | 52.2 | 0.3 | 91.7 |
| 36.6 | 36.63 | 0.39 | 0.51 | 0.6 | 52.5 | 0.4 | 100.7 |

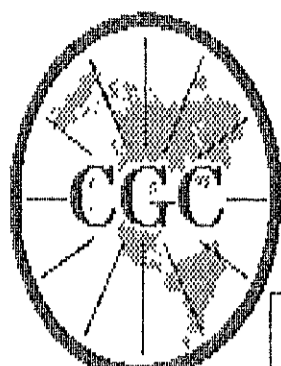
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96212C
 DATE OF LOG: 09/30/96
 PROBE: 9955A 71



SCALE: 1 M/CM
 TRUE DEPTH: 36.63 M
 AZIMUTH: 52.5
 DISTANCE: 0.6 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

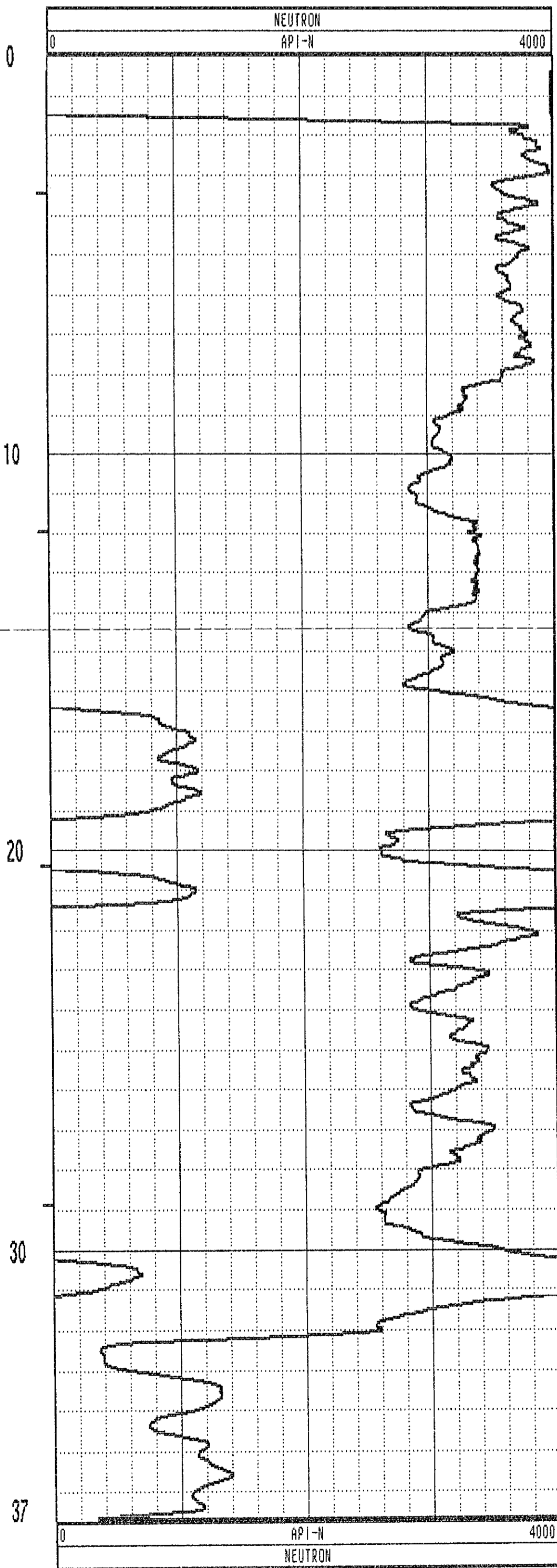
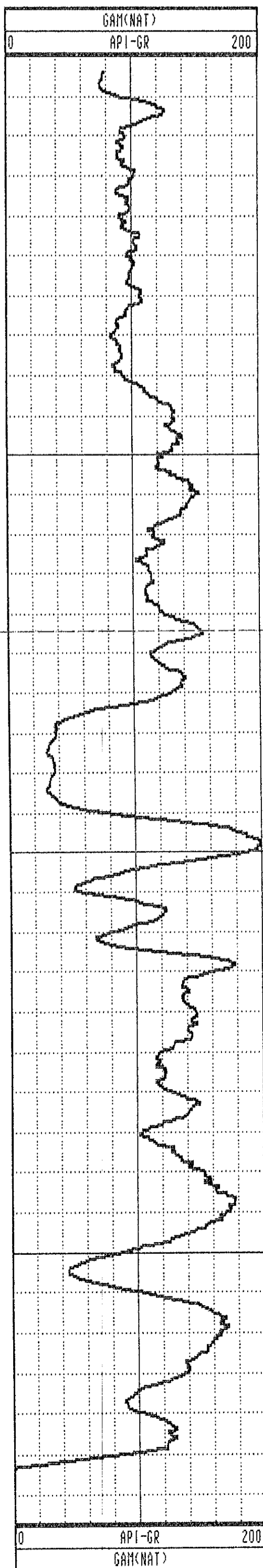
COMPANY : PINE VALLEY COAL
 WELL : WRH-96212C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/30/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 36 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 36.70 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.38 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96212C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/19/96
 DEPTH DRILLER : 36
 LOG BOTTOM : 37.27
 LOG TOP : 0.04

PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

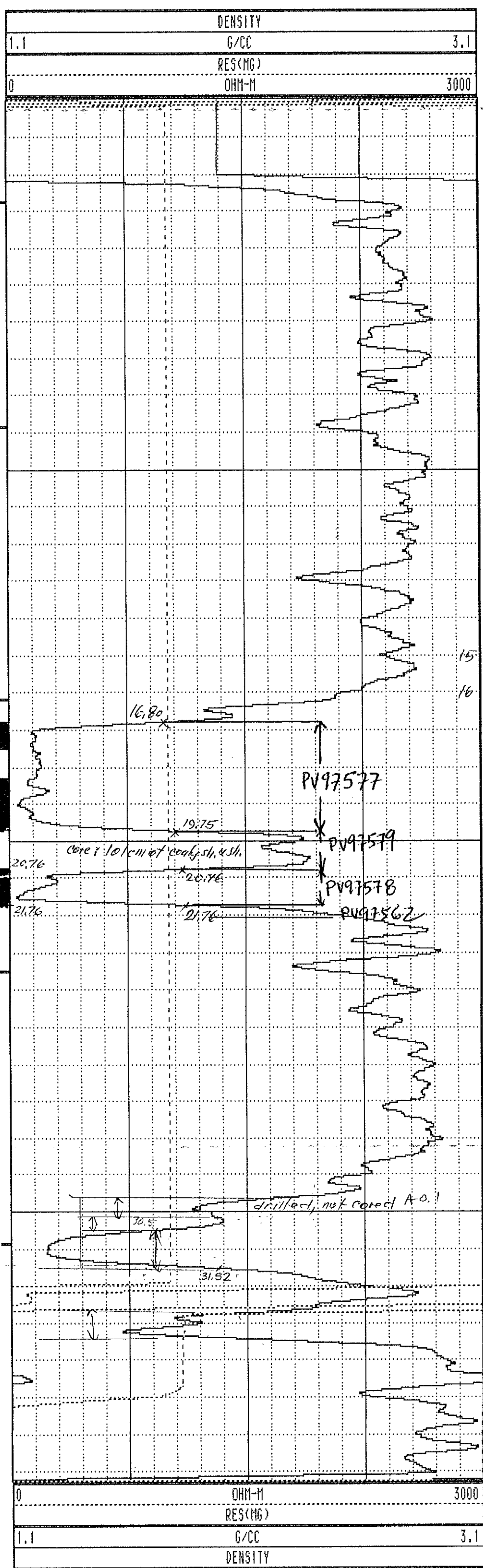
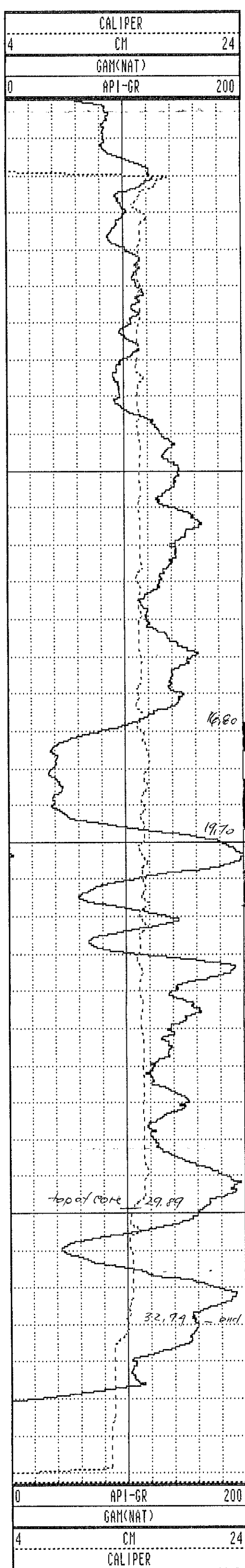
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9033AA
 LOG : 1
 PLOT : PINE 5
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96212C 09/19/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 DHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 DHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

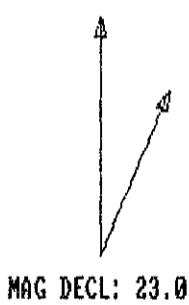
***** COMPU-LOG - VERTICAL DEVIATION *****

CLIENT : PINE VALLEY COAL HOLE ID. : WRH-96213C
 FIELD OFFICE : CALGARY, AB. DATE OF LOG : 09/30/96
 DATA FROM : PROBE : 9055A , 71
 MAG. DECL. : 23.000 DEPTH UNITS : METERS LOG 5

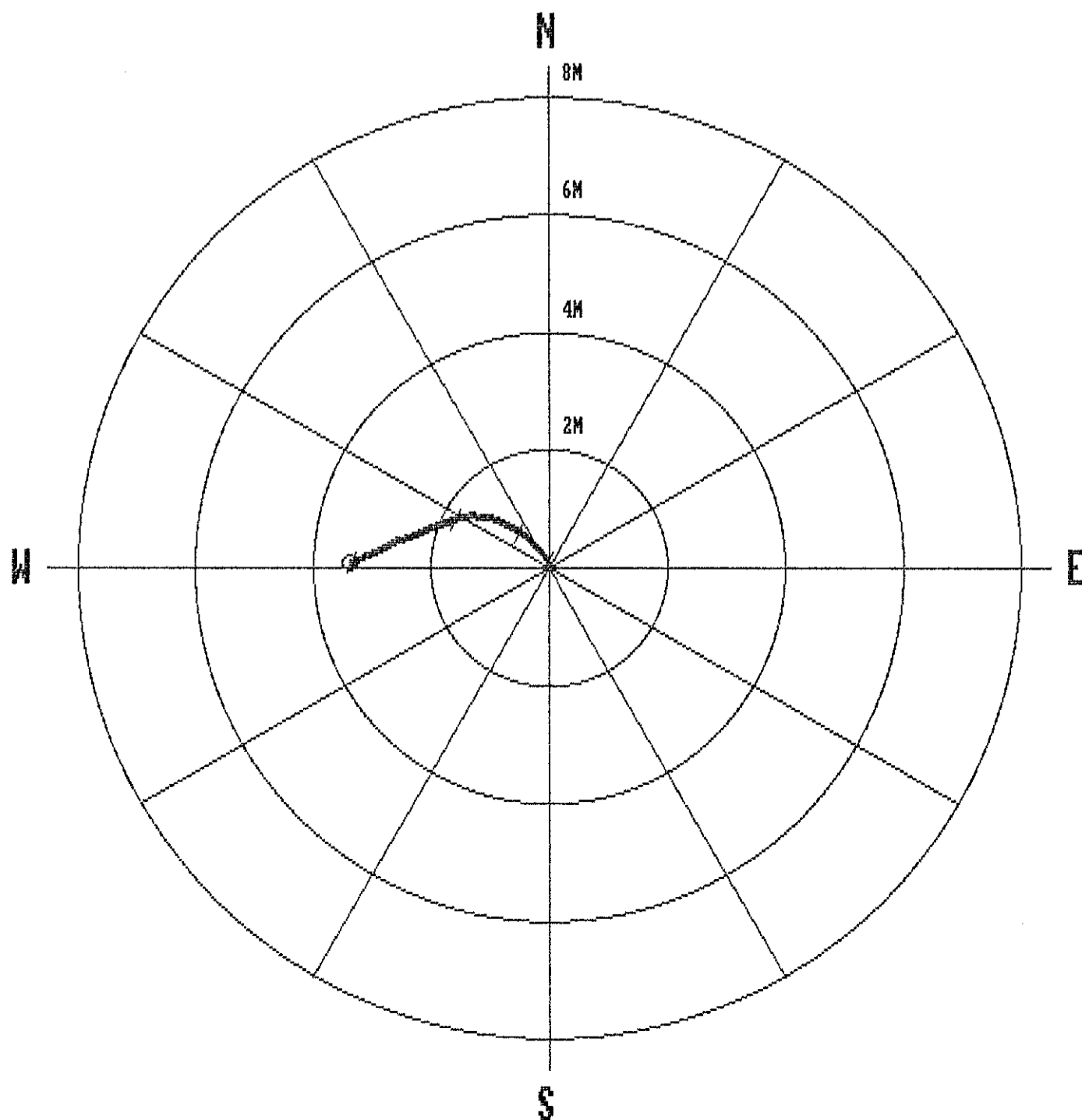
| CABLE DEPTH | TRUE DEPTH | NORTH DEV. | EAST DEV. | DISTANCE | AZIMUTH | SANG | SANGB |
|-------------|------------|------------|-----------|----------|---------|------|-------|
| 2.0 | 1.96 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 30.9 | 1.2 | 36.7 |
| 4.0 | 4.00 | 0.00 | 0.00 | 0.0 | 34.9 | 0.6 | 172.7 |
| 6.0 | 6.00 | 0.00 | 0.01 | 0.0 | 57.8 | 0.5 | 38.9 |
| 8.0 | 8.00 | 0.01 | 0.02 | 0.0 | 48.1 | 0.5 | 33.3 |
| 10.0 | 10.00 | 0.03 | 0.02 | 0.0 | 35.2 | 0.4 | 1.3 |
| 12.0 | 12.00 | 0.04 | 0.01 | 0.0 | 16.6 | 0.5 | 59.9 |
| 14.0 | 14.00 | 0.04 | 0.02 | 0.0 | 25.4 | 0.9 | 346.1 |
| 16.0 | 16.00 | 0.05 | -0.00 | 0.0 | 354.5 | 1.0 | 315.8 |
| 18.0 | 18.00 | 0.07 | 0.01 | 0.1 | 4.8 | 1.5 | 336.0 |
| 20.0 | 20.00 | 0.10 | -0.01 | 0.1 | 355.6 | 1.3 | 332.9 |
| 22.0 | 22.00 | 0.15 | -0.04 | 0.2 | 344.7 | 1.8 | 325.4 |
| 24.0 | 24.00 | 0.20 | -0.08 | 0.2 | 339.3 | 1.8 | 324.1 |
| 26.0 | 25.99 | 0.25 | -0.12 | 0.3 | 334.9 | 2.0 | 320.4 |
| 28.0 | 27.99 | 0.31 | -0.17 | 0.3 | 331.8 | 1.9 | 315.5 |
| 30.0 | 29.99 | 0.36 | -0.21 | 0.4 | 329.1 | 2.0 | 315.0 |
| 32.0 | 31.99 | 0.40 | -0.27 | 0.5 | 326.6 | 2.2 | 328.8 |
| 34.0 | 33.99 | 0.46 | -0.32 | 0.6 | 324.6 | 2.3 | 314.5 |
| 36.0 | 35.99 | 0.51 | -0.38 | 0.6 | 323.2 | 2.2 | 317.3 |
| 38.0 | 37.99 | 0.56 | -0.45 | 0.7 | 321.4 | 2.3 | 284.3 |
| 40.0 | 39.98 | 0.61 | -0.51 | 0.8 | 319.9 | 2.4 | 315.7 |
| 42.0 | 41.98 | 0.65 | -0.58 | 0.9 | 318.6 | 2.3 | 296.6 |
| 44.0 | 43.98 | 0.69 | -0.66 | 1.0 | 316.5 | 2.7 | 297.9 |
| 46.0 | 45.98 | 0.74 | -0.74 | 1.0 | 314.8 | 3.0 | 297.4 |
| 48.0 | 47.98 | 0.78 | -0.84 | 1.2 | 312.8 | 3.0 | 298.0 |
| 50.0 | 49.97 | 0.83 | -0.95 | 1.3 | 311.1 | 2.9 | 301.7 |
| 52.0 | 51.97 | 0.85 | -1.06 | 1.4 | 308.9 | 3.4 | 279.3 |
| 54.0 | 53.97 | 0.86 | -1.18 | 1.5 | 306.2 | 3.3 | 271.8 |
| 56.0 | 55.96 | 0.87 | -1.30 | 1.6 | 303.8 | 3.2 | 275.8 |
| 58.0 | 57.96 | 0.85 | -1.44 | 1.7 | 300.7 | 4.1 | 258.5 |
| 60.0 | 59.95 | 0.81 | -1.58 | 1.8 | 297.3 | 5.0 | 248.6 |
| 62.0 | 61.94 | 0.76 | -1.73 | 1.9 | 293.7 | 5.1 | 257.5 |
| 64.0 | 63.94 | 0.71 | -1.90 | 2.0 | 290.4 | 5.4 | 268.0 |
| 66.0 | 65.93 | 0.64 | -2.06 | 2.2 | 287.4 | 4.9 | 254.9 |
| 68.0 | 67.92 | 0.57 | -2.21 | 2.3 | 284.4 | 6.1 | 232.9 |
| 70.0 | 69.91 | 0.51 | -2.39 | 2.4 | 282.0 | 5.7 | 273.1 |
| 72.0 | 71.90 | 0.45 | -2.57 | 2.6 | 280.0 | 5.7 | 276.4 |
| 74.0 | 73.89 | 0.36 | -2.74 | 2.8 | 277.5 | 6.1 | 252.5 |
| 76.0 | 75.88 | 0.26 | -2.93 | 2.9 | 275.1 | 7.3 | 247.6 |
| 78.0 | 77.87 | 0.18 | -3.13 | 3.1 | 273.4 | 6.3 | 245.8 |
| 80.0 | 79.85 | 0.08 | -3.33 | 3.3 | 271.4 | 6.0 | 233.6 |
| 80.3 | 80.17 | 0.07 | -3.36 | 3.4 | 271.1 | 6.9 | 243.7 |

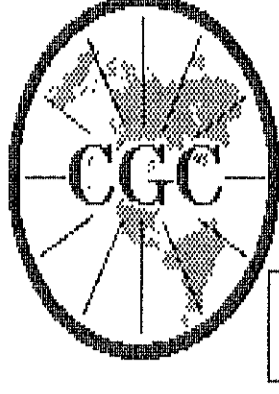
PLAN VIEW
 COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96213C
 DATE OF LOG: 09/30/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 80.17 M
 AZIMUTH: 271.1
 DISTANCE: 3.4 M
 + = 20 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96213C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA

OTHER SERVICES:

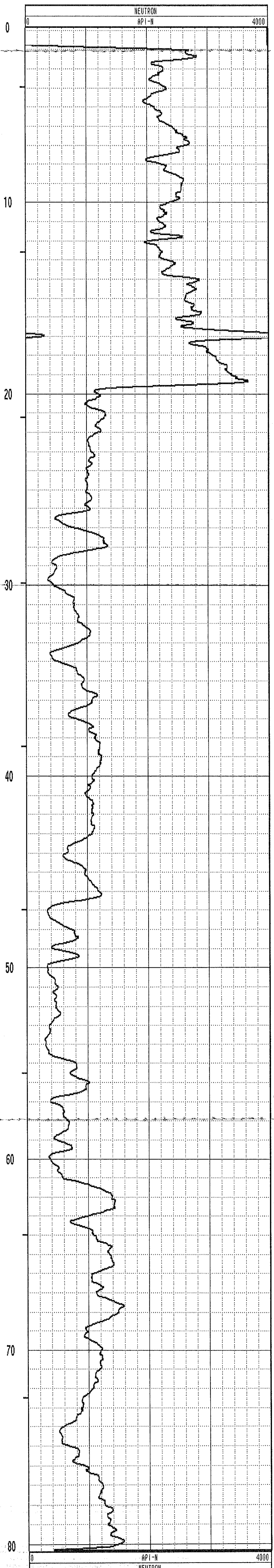
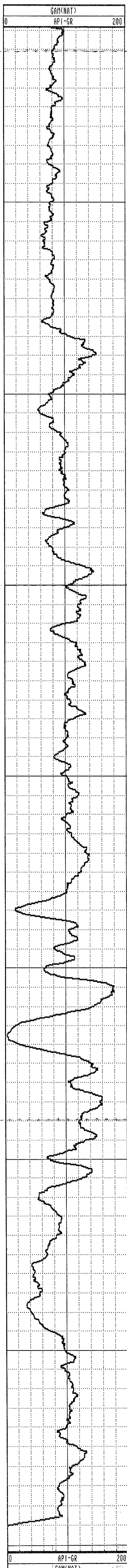
SECTION : TOWNSHIP : RANGE :

DATE : 09/30/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 80 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 80.38 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.88 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM TEMPERATURE : LOG : 4
 MATRIX DENSITY : MATRIX DELTA T : PLOT : PINE 4
 FLUID DENSITY : 1.1 FLUID DELTA T : THRESH: 10000
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

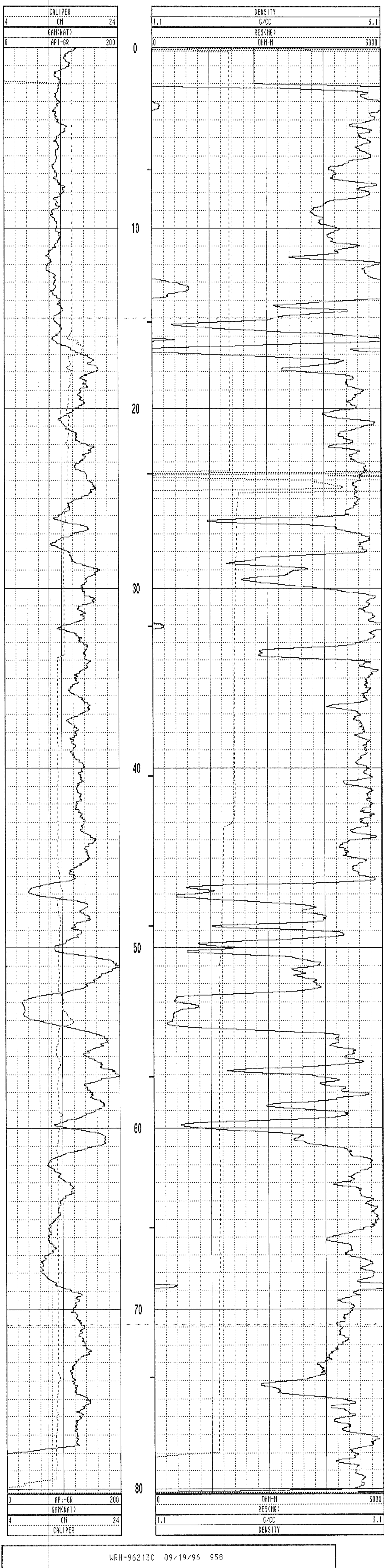
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | |
|---|---|
| <p> COMPANY : PINE VALLEY COAL WELL : WRH-96213C LOCATION/FIELD : WILLOW CREEK COUNTY : STATE : BRITISH COLUMBIA SECTION : TOWNSHIP : RANGE : </p> <p> DATE : 09/19/96 PERMANENT DATUM : DEPTH DRILLER : 88 ELEV. PERM. DATUM: LOG BOTTOM : 80.26 LOG MEASURED FROM: G.L. LOG TOP : 0.24 DRL MEASURED FROM: CASING DRILLER : 3 LOGGING UNIT : 9612 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB. CASING THICKNESS: .25 RECORDED BY : R.THOMAS </p> <p> BIT SIZE : MAGNETIC DECL. : 23.00 MATRIX DENSITY : FLUID DENSITY : 1.1 NEUTRON MATRIX : 2.65 REMARKS : NONE </p> | <p>OTHER SERVICES:</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p> ELEVATIONS KB : DF : GL : </p> <p> FILE : ORIGINAL TYPE : 9033AA LOG : 7 PLOT : PINE 5 THRESH: 10000 </p> |
|---|---|

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96213C 09/19/96 958

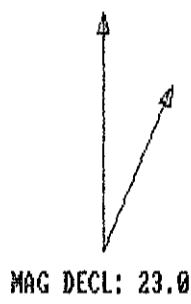
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 351.2 | 0.7 | 264.6 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 257.9 | 1.1 | 0.4 |
| 5.0 | 5.00 | -0.01 | -0.04 | 0.0 | 260.0 | 1.9 | 272.1 |
| 6.0 | 6.00 | -0.01 | -0.06 | 0.1 | 264.2 | 1.4 | 277.4 |
| 7.0 | 7.00 | -0.02 | -0.09 | 0.1 | 259.6 | 1.8 | 249.9 |
| 8.0 | 8.00 | -0.03 | -0.13 | 0.1 | 255.8 | 2.8 | 246.2 |
| 9.0 | 9.00 | -0.05 | -0.16 | 0.2 | 252.3 | 2.3 | 232.8 |
| 10.0 | 10.00 | -0.08 | -0.20 | 0.2 | 249.5 | 2.8 | 240.9 |
| 11.0 | 10.99 | -0.10 | -0.24 | 0.3 | 247.4 | 3.3 | 234.2 |
| 12.0 | 11.99 | -0.12 | -0.28 | 0.3 | 246.6 | 1.7 | 247.1 |
| 13.0 | 12.99 | -0.15 | -0.34 | 0.4 | 245.6 | 4.1 | 250.8 |
| 14.0 | 13.99 | -0.18 | -0.38 | 0.4 | 244.9 | 3.2 | 230.1 |
| 15.0 | 14.99 | -0.21 | -0.43 | 0.5 | 243.7 | 3.4 | 237.4 |
| 16.0 | 15.99 | -0.25 | -0.48 | 0.5 | 242.7 | 3.3 | 219.2 |
| 17.0 | 16.98 | -0.28 | -0.52 | 0.6 | 241.9 | 3.4 | 244.5 |
| 18.0 | 17.98 | -0.31 | -0.57 | 0.6 | 241.5 | 3.4 | 243.4 |
| 19.0 | 18.98 | -0.34 | -0.62 | 0.7 | 241.0 | 3.6 | 241.9 |
| 20.0 | 19.98 | -0.38 | -0.67 | 0.8 | 240.6 | 3.2 | 229.2 |
| 21.0 | 20.98 | -0.41 | -0.72 | 0.8 | 240.2 | 3.4 | 219.2 |
| 22.0 | 21.97 | -0.45 | -0.78 | 0.9 | 239.8 | 3.8 | 236.6 |
| 23.0 | 22.97 | -0.50 | -0.84 | 1.0 | 239.5 | 4.8 | 238.1 |
| 24.0 | 23.97 | -0.55 | -0.90 | 1.1 | 238.8 | 4.4 | 206.7 |
| 25.0 | 24.97 | -0.60 | -0.96 | 1.1 | 238.2 | 4.7 | 234.5 |
| 26.0 | 25.96 | -0.65 | -1.03 | 1.2 | 237.8 | 4.3 | 230.5 |
| 27.0 | 26.96 | -0.70 | -1.09 | 1.3 | 237.5 | 4.8 | 224.5 |
| 28.0 | 27.95 | -0.75 | -1.16 | 1.4 | 237.1 | 5.3 | 243.1 |
| 29.0 | 28.95 | -0.80 | -1.22 | 1.5 | 236.7 | 5.0 | 225.1 |
| 30.0 | 29.95 | -0.87 | -1.29 | 1.6 | 235.9 | 5.5 | 208.6 |
| 31.0 | 30.94 | -0.94 | -1.35 | 1.6 | 235.2 | 5.3 | 215.4 |
| 32.0 | 31.94 | -1.00 | -1.43 | 1.7 | 235.0 | 6.1 | 241.7 |
| 33.0 | 32.93 | -1.06 | -1.49 | 1.8 | 234.5 | 5.6 | 204.7 |
| 34.0 | 33.93 | -1.13 | -1.56 | 1.9 | 234.1 | 5.4 | 210.9 |
| 35.0 | 34.92 | -1.21 | -1.62 | 2.0 | 233.2 | 5.9 | 217.6 |
| 36.0 | 35.92 | -1.28 | -1.69 | 2.1 | 232.9 | 5.9 | 238.9 |
| 37.0 | 36.91 | -1.36 | -1.76 | 2.2 | 232.3 | 6.4 | 232.7 |
| 37.6 | 37.53 | -1.41 | -1.81 | 2.3 | 232.1 | 6.3 | 225.3 |

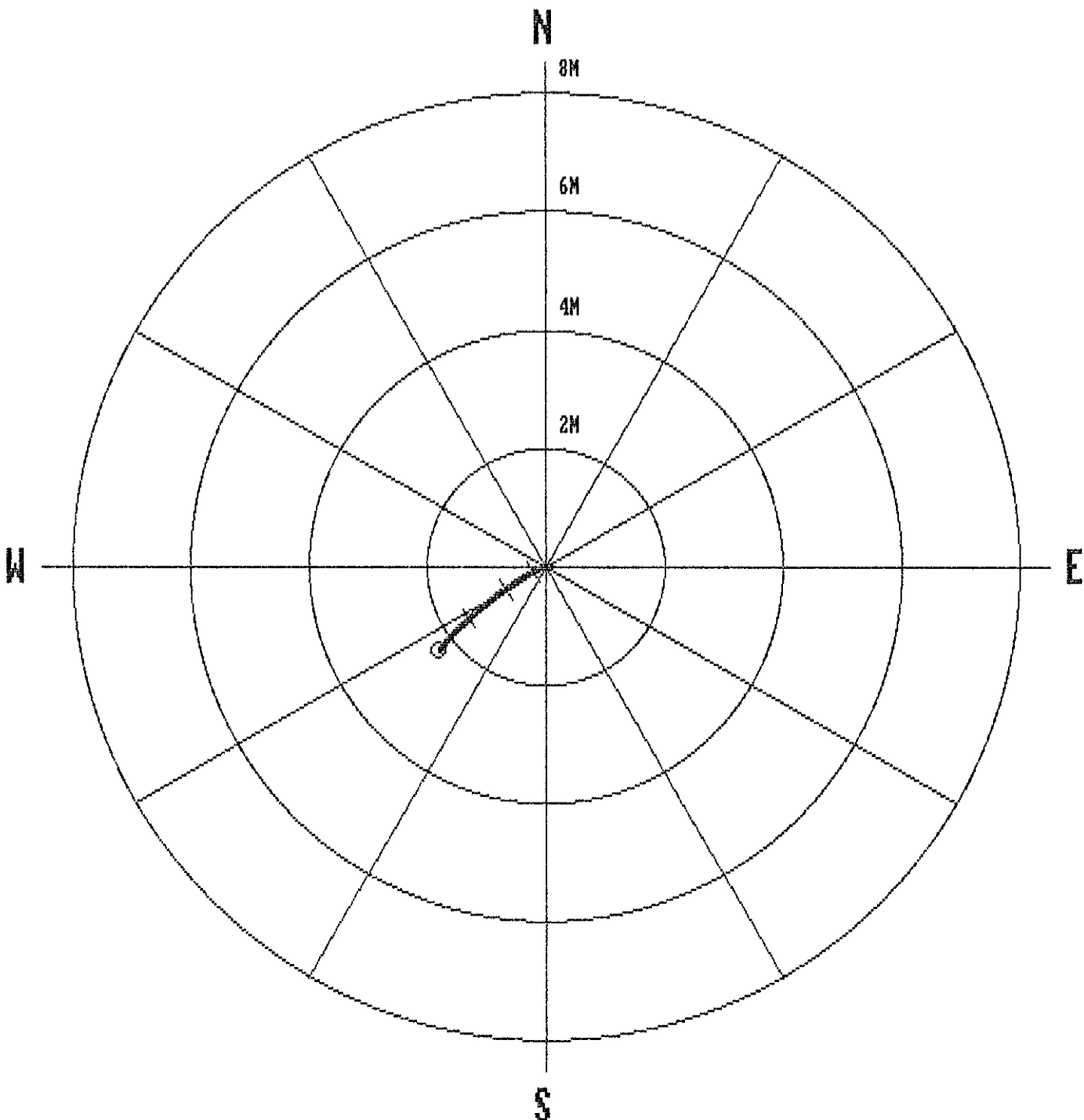
PLAN VIEW
COMPU-LOG DEVIATION

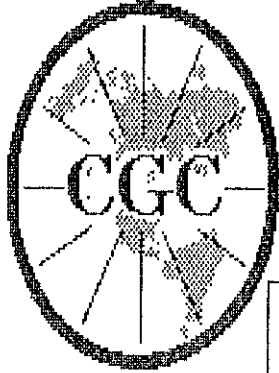
215C

CLIENT: PINE VALLEY COAL
LOCATION: HILLOW CREEK
HOLE ID: WRH-96215C
DATE OF LOG: 09/30/96
PROBE: 9055A 71



SCALE: 1 M/CM
TRUE DEPTH: 37.53 M
AZIMUTH: 232.1
DISTANCE: 2.3 M
+ = 10 M INCR
O = BOTTOM OF HOLE



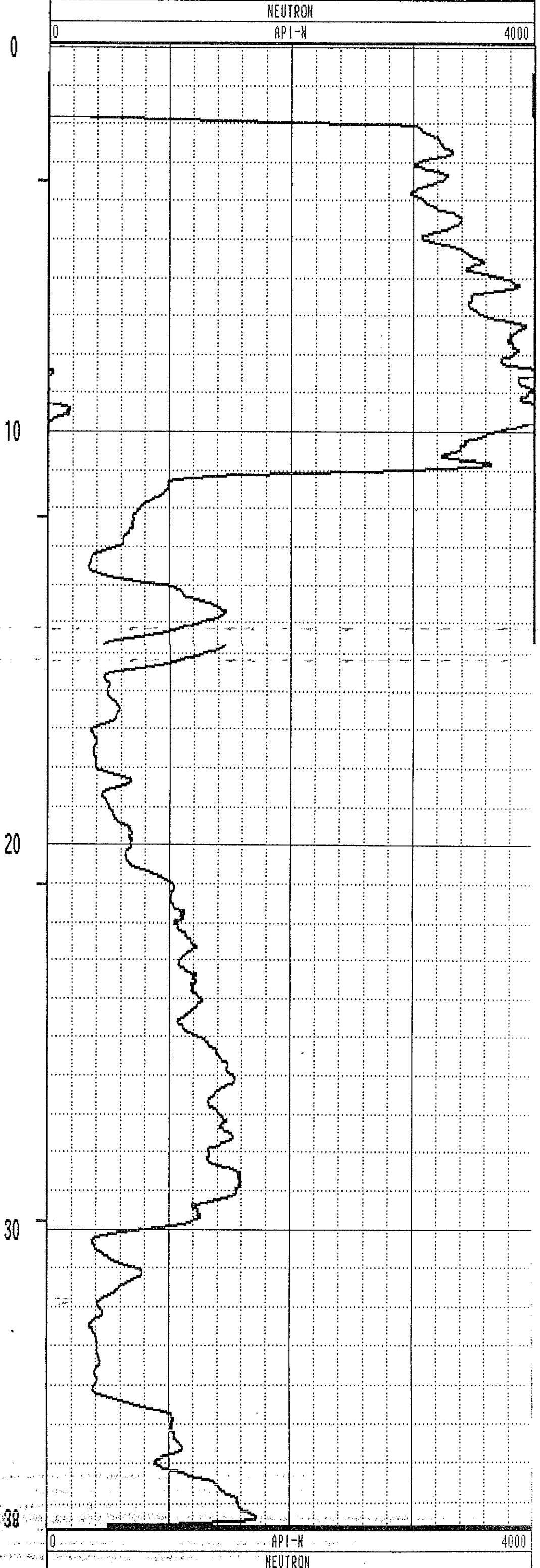
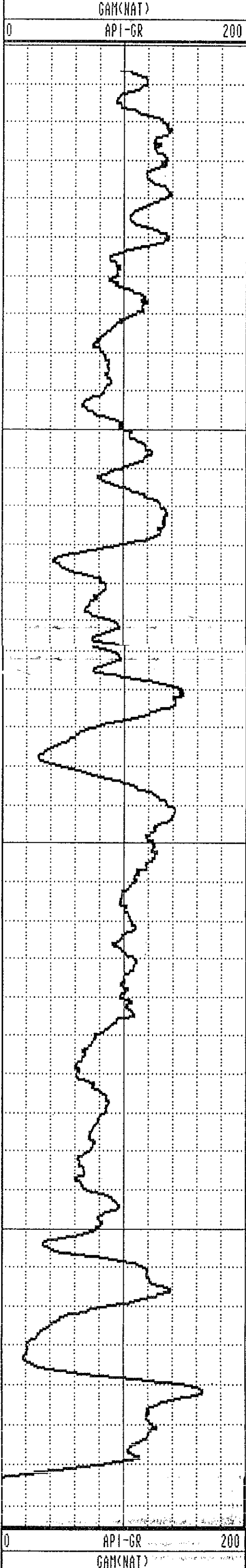


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | | | |
|-------------------|--------------------|--------------------|----------------|---------|------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | | | |
| WELL | : WRH-96215C | | | | |
| LOCATION/FIELD | : WILLOW CREEK | | | | |
| COUNTY | : | | | | |
| STATE | : BRITISH COLUMBIA | | | | |
| SECTION | : | TOWNSHIP | : | | |
| | | RANGE | : | | |
| DATE | : 09/30/96 | PERMANENT DATUM | : | | |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB | : | |
| LOG BOTTOM | : 37.67 | LOG MEASURED FROM: | G.L. | DF | : |
| LOG TOP | : 0.70 | DRL MEASURED FROM: | | GL | : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 | | |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. | | |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS | | |
| BIT SIZE | : | BOREHOLE FLUID | : WATER | FILE | : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : | TYPE | : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG | : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT | : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH: | 10000 |
| REMARKS | : | | | | |
| NONE | : | | | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



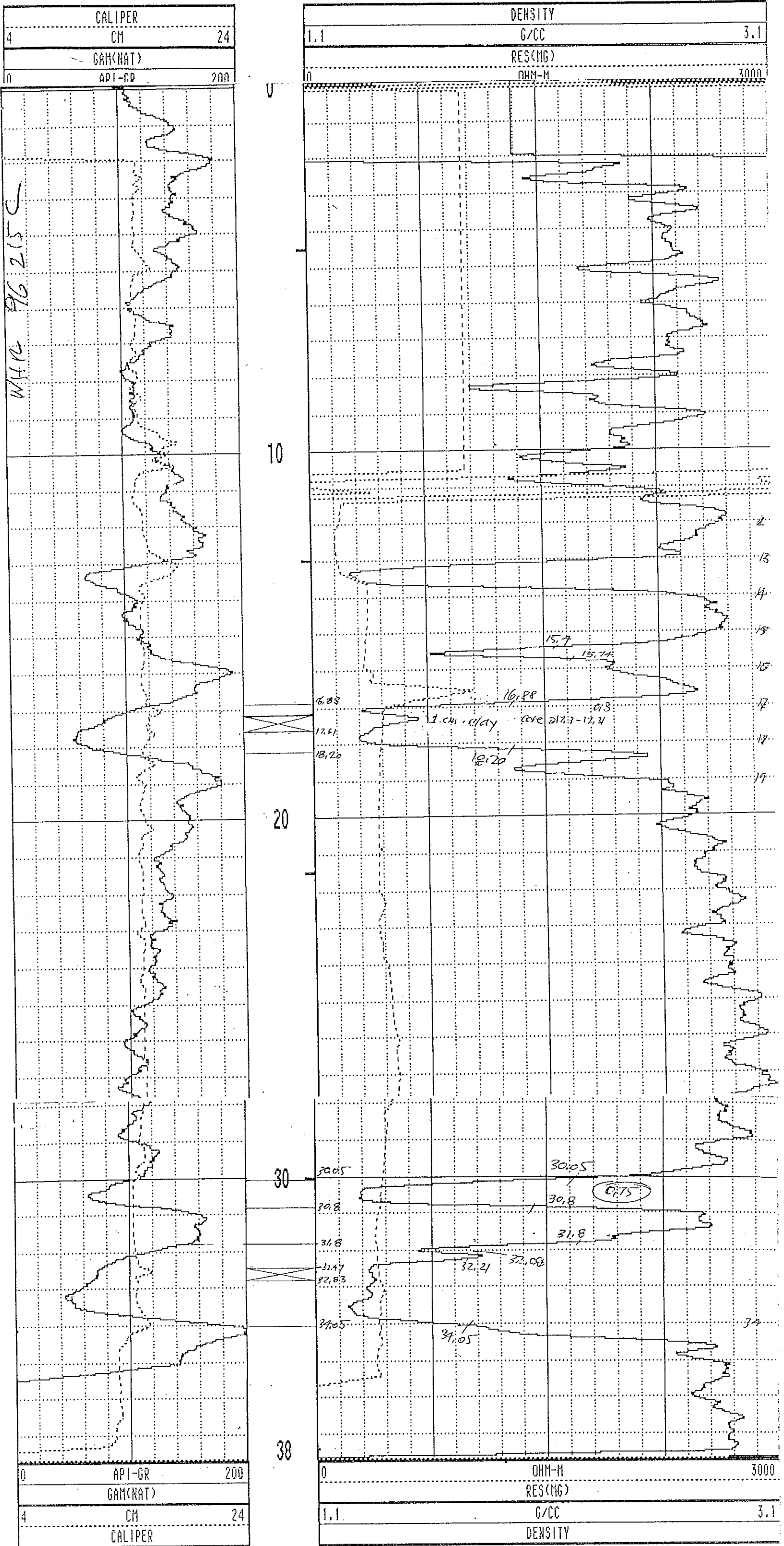
GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96215C
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

DATE : 09/20/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 37 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 37.71 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.02 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96215C 09/20/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

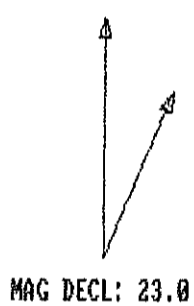
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

S

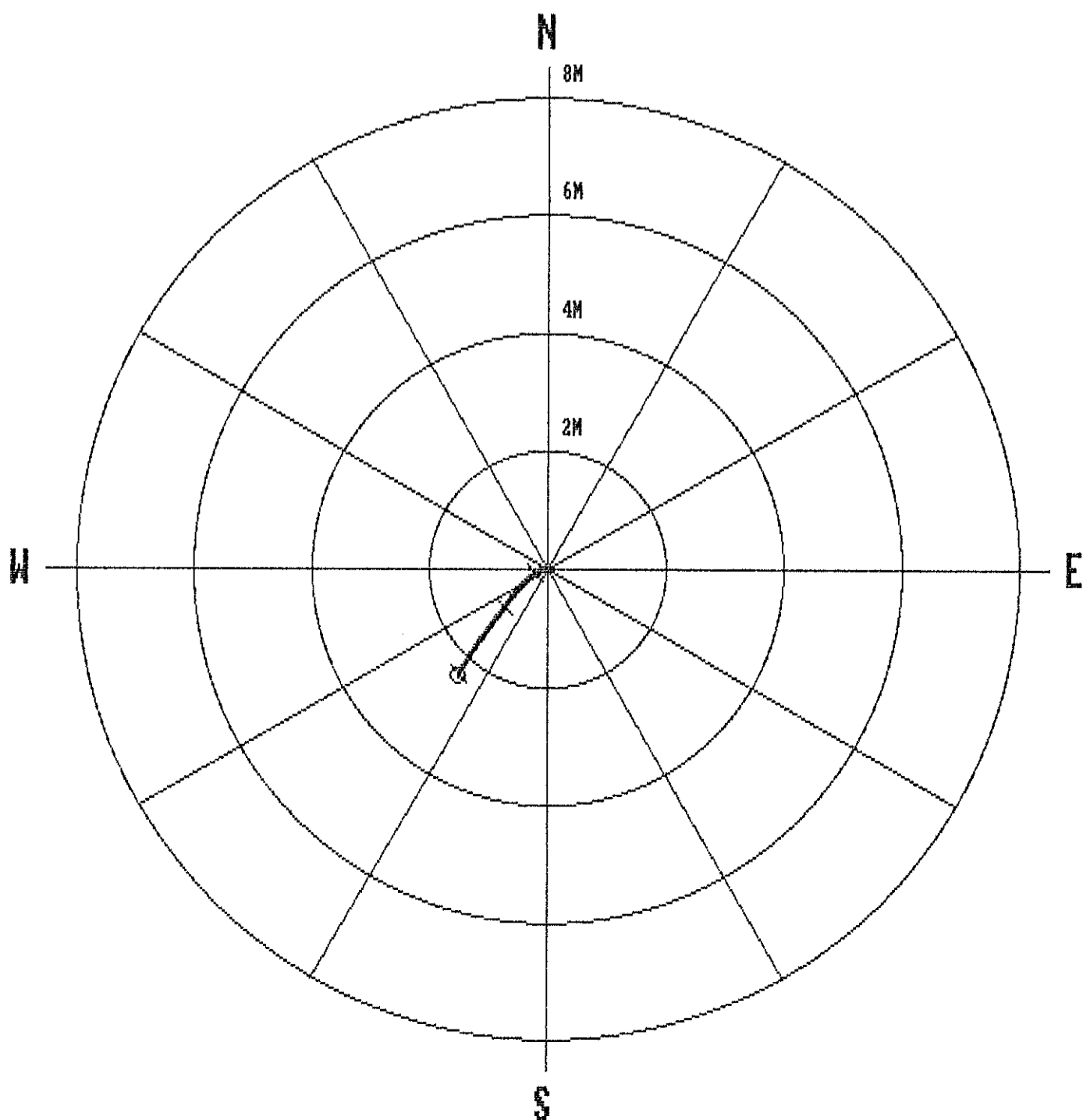
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 267.9 | 1.9 | 267.9 |
| 3.0 | 3.00 | 0.01 | 0.01 | 0.0 | 43.9 | 1.6 | 63.8 |
| 4.0 | 4.00 | 0.01 | 0.00 | 0.0 | 0.8 | 3.6 | 175.8 |
| 5.0 | 5.00 | 0.01 | -0.02 | 0.0 | 289.9 | 1.7 | 256.6 |
| 6.0 | 6.00 | 0.00 | -0.06 | 0.1 | 273.7 | 2.1 | 259.3 |
| 7.0 | 7.00 | -0.00 | -0.09 | 0.1 | 267.2 | 1.9 | 236.4 |
| 8.0 | 8.00 | -0.02 | -0.13 | 0.1 | 260.4 | 2.5 | 242.7 |
| 9.0 | 9.00 | -0.04 | -0.17 | 0.2 | 255.4 | 2.3 | 229.5 |
| 10.0 | 9.99 | -0.07 | -0.20 | 0.2 | 250.7 | 2.4 | 215.3 |
| 11.0 | 10.99 | -0.10 | -0.24 | 0.3 | 247.7 | 2.8 | 234.0 |
| 12.0 | 11.99 | -0.14 | -0.28 | 0.3 | 244.5 | 3.6 | 227.3 |
| 13.0 | 12.99 | -0.18 | -0.33 | 0.4 | 241.7 | 3.6 | 227.4 |
| 14.0 | 13.99 | -0.23 | -0.38 | 0.4 | 239.1 | 4.3 | 224.2 |
| 15.0 | 14.98 | -0.28 | -0.44 | 0.5 | 237.3 | 4.2 | 225.6 |
| 16.0 | 15.98 | -0.34 | -0.49 | 0.6 | 235.4 | 4.5 | 217.5 |
| 17.0 | 16.98 | -0.40 | -0.54 | 0.7 | 233.4 | 5.3 | 216.6 |
| 18.0 | 17.97 | -0.47 | -0.60 | 0.8 | 231.9 | 5.1 | 222.4 |
| 19.0 | 18.97 | -0.55 | -0.66 | 0.9 | 230.1 | 5.4 | 209.0 |
| 20.0 | 19.96 | -0.63 | -0.72 | 1.0 | 228.7 | 5.2 | 200.7 |
| 21.0 | 20.96 | -0.71 | -0.78 | 1.1 | 227.6 | 6.0 | 214.7 |
| 22.0 | 21.95 | -0.79 | -0.84 | 1.2 | 226.8 | 6.1 | 222.6 |
| 23.0 | 22.95 | -0.88 | -0.91 | 1.3 | 226.0 | 5.7 | 186.8 |
| 24.0 | 23.94 | -0.97 | -0.98 | 1.4 | 225.3 | 7.3 | 236.1 |
| 25.0 | 24.93 | -1.08 | -1.04 | 1.5 | 224.0 | 7.1 | 207.1 |
| 26.0 | 25.92 | -1.18 | -1.12 | 1.6 | 223.6 | 8.4 | 218.1 |
| 27.0 | 26.91 | -1.30 | -1.21 | 1.8 | 222.8 | 8.9 | 212.1 |
| 28.0 | 27.90 | -1.44 | -1.30 | 1.9 | 222.1 | 9.8 | 217.6 |
| 29.0 | 28.88 | -1.59 | -1.39 | 2.1 | 221.2 | 10.4 | 212.3 |
| 30.0 | 29.87 | -1.74 | -1.48 | 2.3 | 220.4 | 10.4 | 211.8 |
| 30.2 | 30.10 | -1.77 | -1.50 | 2.3 | 220.3 | 10.3 | 213.2 |

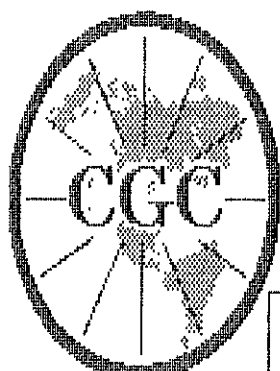
PLAN VIEW
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
LOCATION: WILLOW CREEK
HOLE ID: WRH-96217
DATE OF LOG: 09/27/96
PROBE: 9055A 71



SCALE: 1 M/CM
TRUE DEPTH: 30.10 M
AZIMUTH: 220.3
DISTANCE: 2.3 M
+ = 10 M INCR
O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96217
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

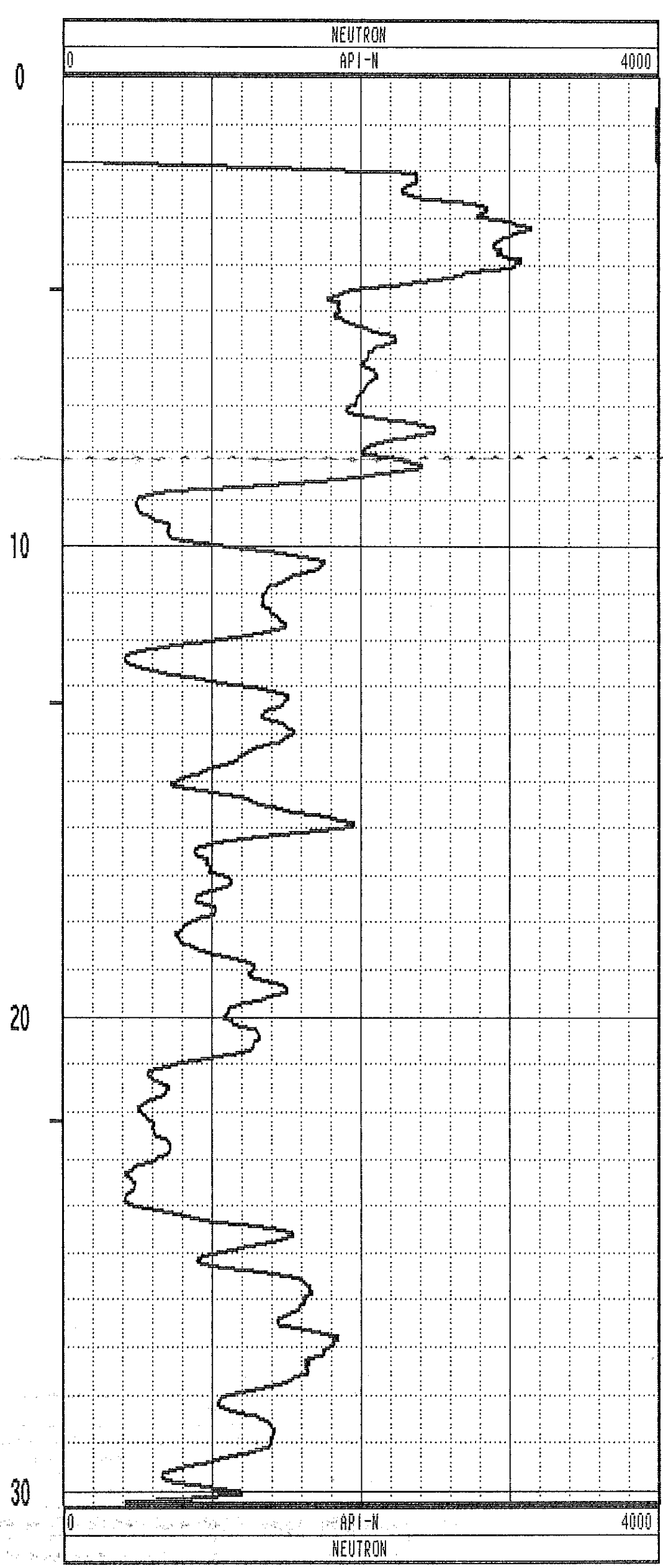
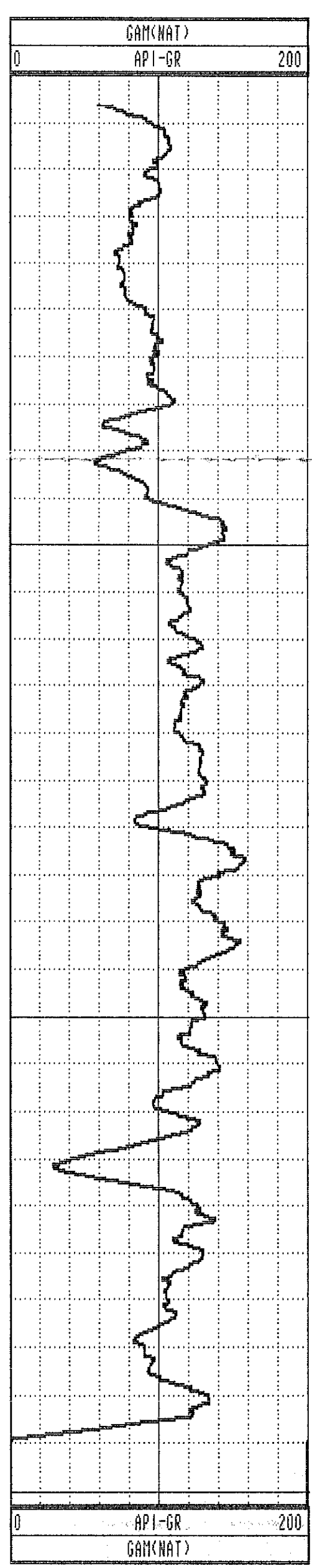
OTHER SERVICES:

DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.29 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.64 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96217
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

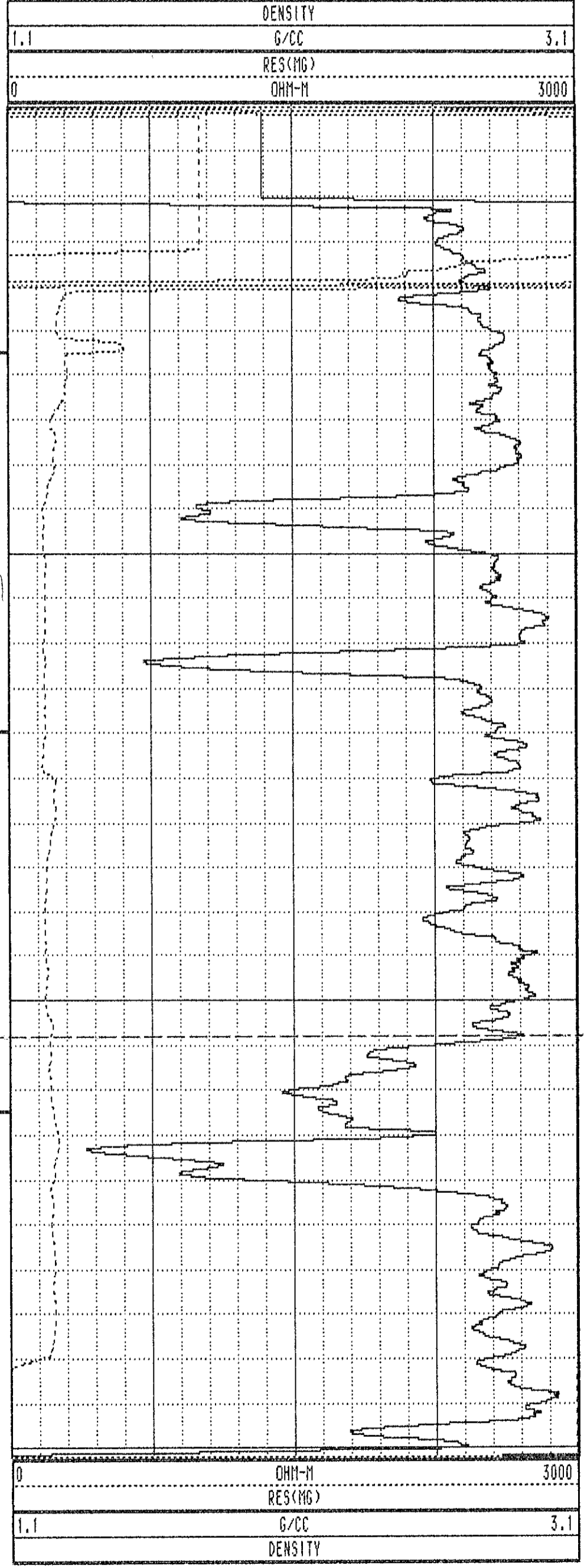
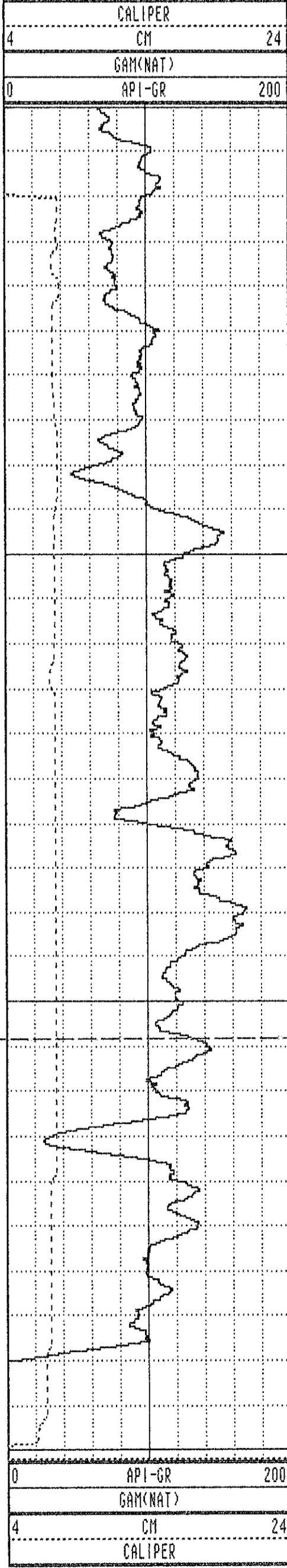
OTHER SERVICES:

DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.23 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.02 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R.THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96217 09/27/96 958

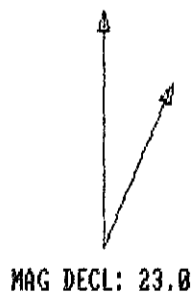
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

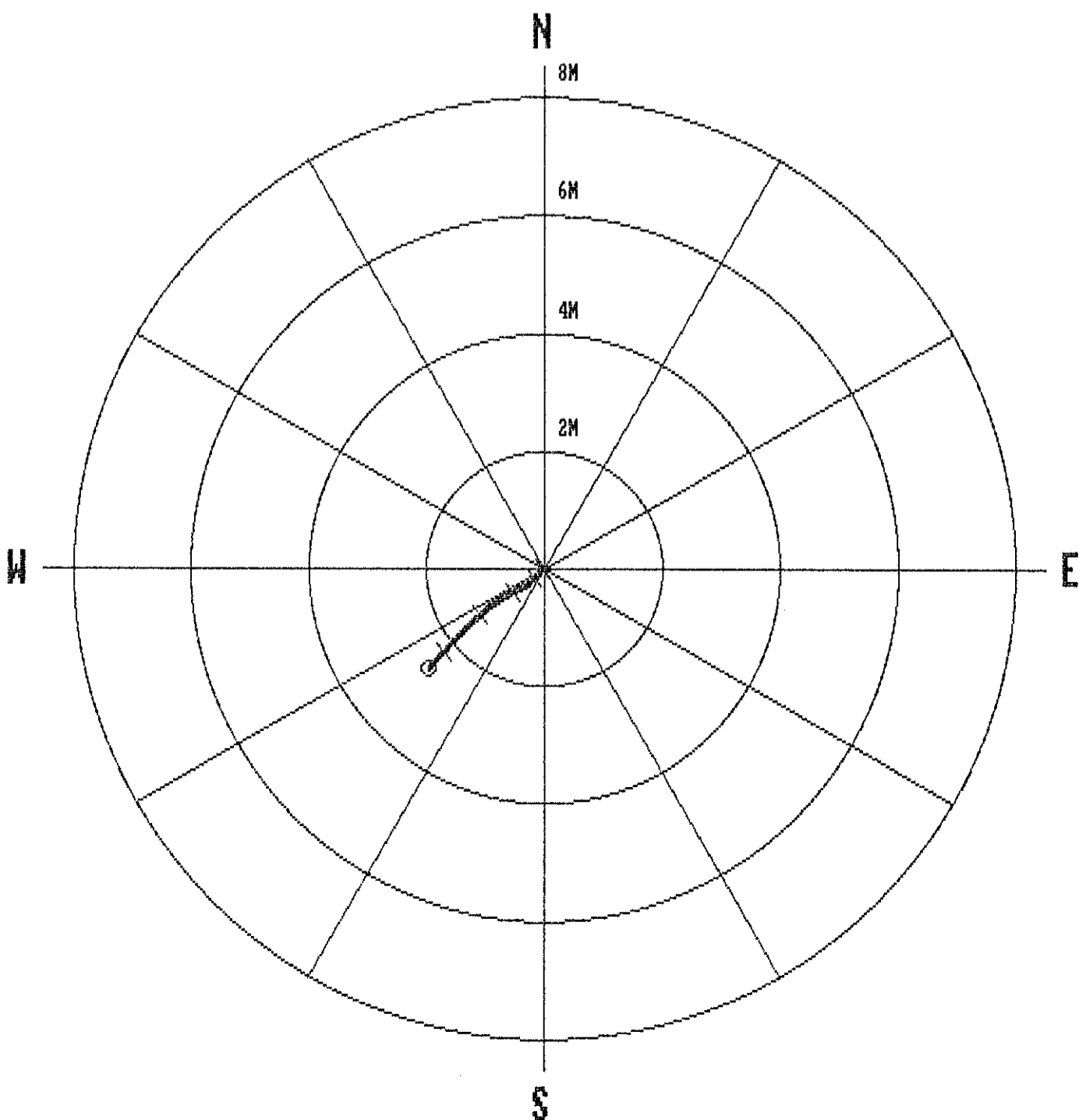
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 249.4 | 1.3 | 252.0 |
| 3.0 | 3.00 | -0.01 | -0.00 | 0.0 | 188.9 | 1.7 | 82.4 |
| 4.0 | 4.00 | 0.01 | -0.00 | 0.0 | 357.4 | 2.1 | 287.5 |
| 5.0 | 5.00 | -0.00 | -0.02 | 0.0 | 268.2 | 2.8 | 231.3 |
| 6.0 | 6.00 | 0.00 | -0.04 | 0.0 | 274.3 | 2.8 | 55.8 |
| 7.0 | 7.00 | -0.02 | -0.06 | 0.1 | 251.7 | 2.7 | 200.4 |
| 8.0 | 7.99 | -0.06 | -0.09 | 0.1 | 232.9 | 2.9 | 218.2 |
| 9.0 | 8.99 | -0.11 | -0.12 | 0.2 | 227.4 | 3.4 | 217.2 |
| 10.0 | 9.99 | -0.16 | -0.16 | 0.2 | 225.6 | 4.1 | 226.4 |
| 11.0 | 10.99 | -0.22 | -0.21 | 0.3 | 224.3 | 4.4 | 215.6 |
| 12.0 | 11.98 | -0.27 | -0.27 | 0.4 | 225.7 | 4.6 | 232.7 |
| 13.0 | 12.98 | -0.31 | -0.35 | 0.5 | 228.8 | 5.5 | 239.7 |
| 14.0 | 13.98 | -0.35 | -0.44 | 0.6 | 231.4 | 6.2 | 247.0 |
| 15.0 | 14.97 | -0.40 | -0.53 | 0.7 | 232.9 | 6.3 | 239.3 |
| 16.0 | 15.96 | -0.46 | -0.64 | 0.8 | 234.1 | 6.7 | 234.7 |
| 17.0 | 16.96 | -0.52 | -0.74 | 0.9 | 234.8 | 7.6 | 233.7 |
| 18.0 | 17.95 | -0.60 | -0.85 | 1.0 | 234.9 | 7.5 | 234.2 |
| 19.0 | 18.94 | -0.68 | -0.96 | 1.2 | 234.9 | 8.2 | 228.3 |
| 20.0 | 19.93 | -0.77 | -1.07 | 1.3 | 234.1 | 8.6 | 218.6 |
| 21.0 | 20.92 | -0.88 | -1.18 | 1.5 | 233.2 | 8.3 | 225.5 |
| 22.0 | 21.90 | -0.99 | -1.30 | 1.6 | 232.6 | 10.3 | 220.7 |
| 23.0 | 22.89 | -1.12 | -1.42 | 1.8 | 231.8 | 10.7 | 204.3 |
| 24.0 | 23.87 | -1.24 | -1.54 | 2.0 | 231.1 | 10.9 | 234.6 |
| 25.0 | 24.85 | -1.39 | -1.67 | 2.2 | 230.3 | 11.6 | 228.9 |
| 26.0 | 25.83 | -1.54 | -1.81 | 2.4 | 229.7 | 12.5 | 222.0 |
| 27.0 | 26.81 | -1.68 | -1.95 | 2.6 | 229.2 | 0.0 | 0.0 |
| 27.0 | 26.77 | -1.68 | -1.95 | 2.6 | 229.2 | 12.8 | 228.8 |

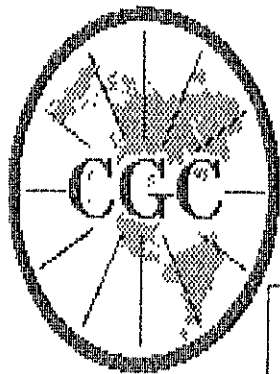
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96218
 DATE OF LOG: 09/26/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 26.77 M
 AZIMUTH: 229.2
 DISTANCE: 2.6 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96218
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/26/96
 DEPTH DRILLER : 27
 LOG BOTTOM : 27.02
 LOG TOP : 0.60

PERMANENT DATUM :
 ELEV. PERM. DATUM :
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

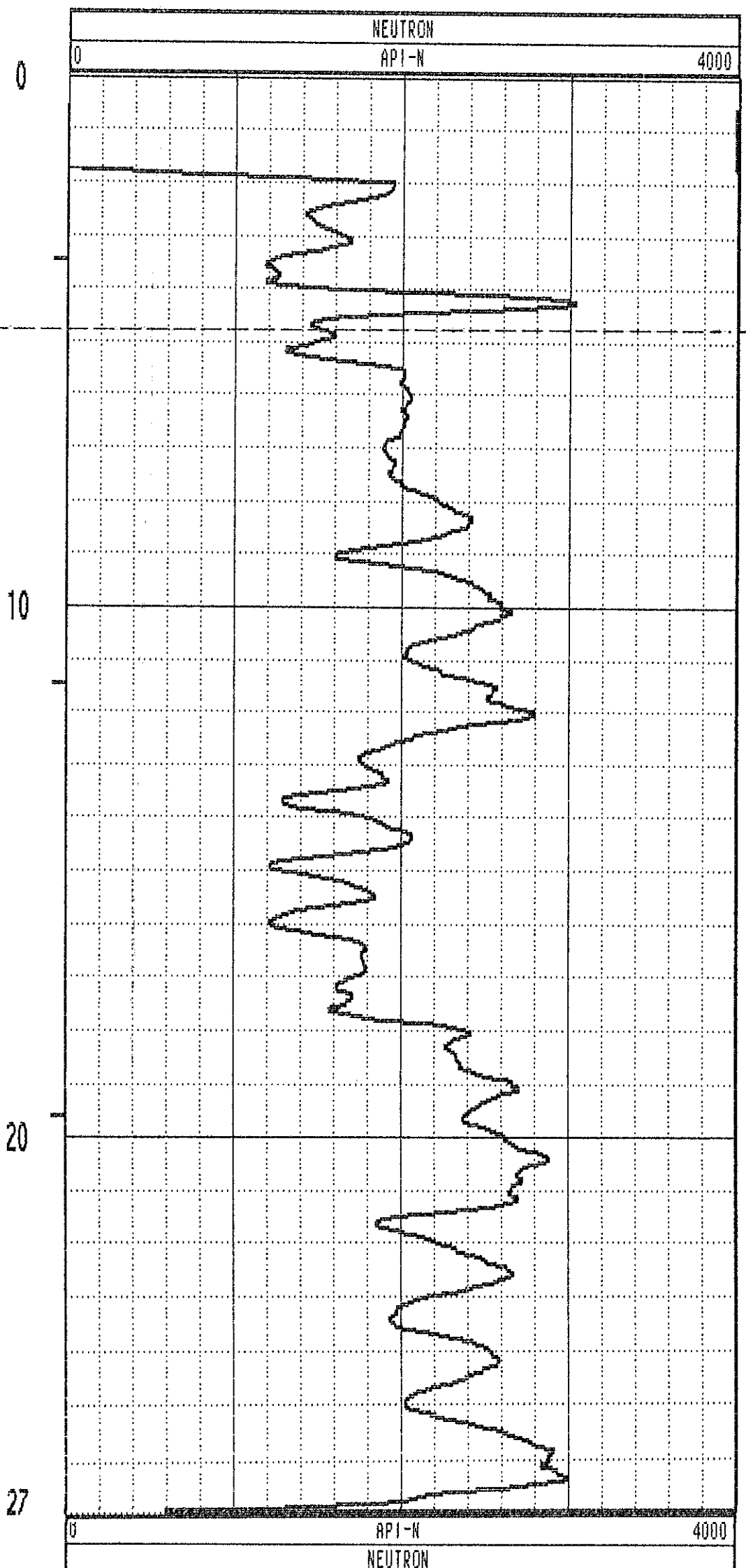
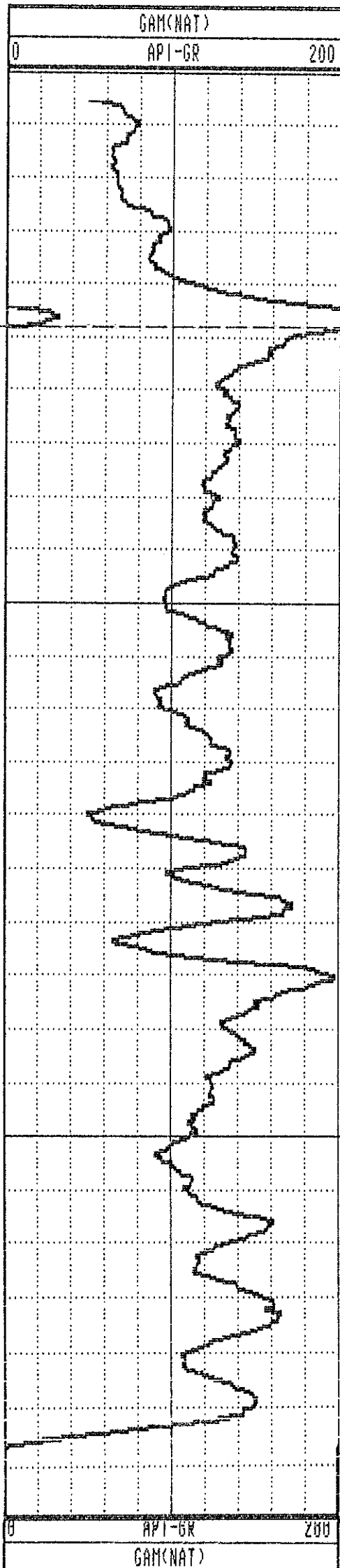
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 4
 PLOT : PINE 4
 THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96218
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

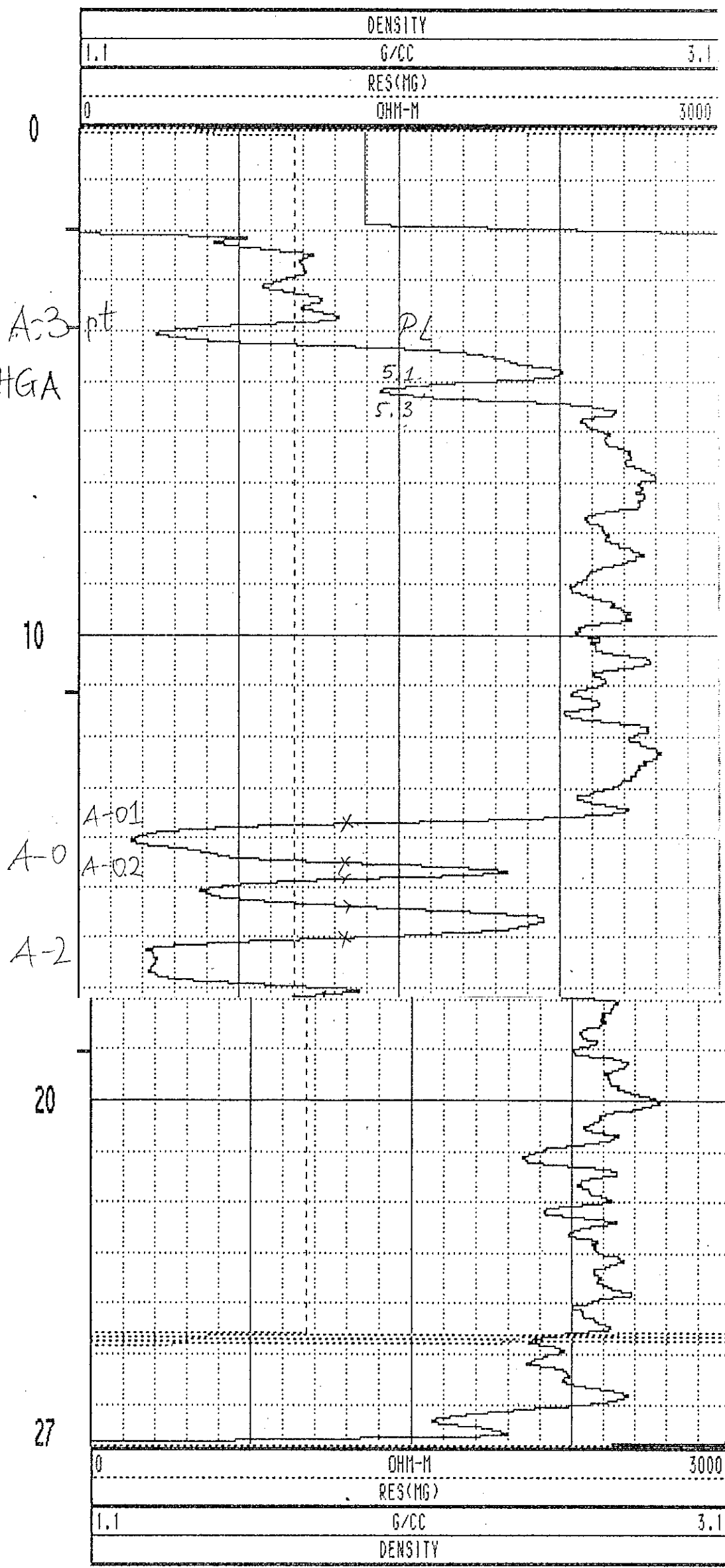
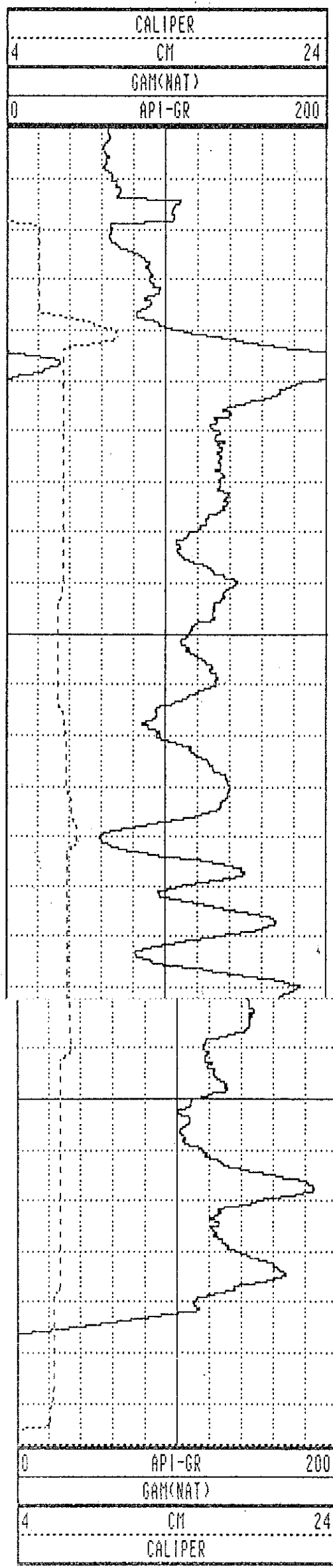
OTHER SERVICES:

DATE : 09/26/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 26.85 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.14 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 5
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

WAH 96218



13500

WRH-96218 09/26/96 958

213

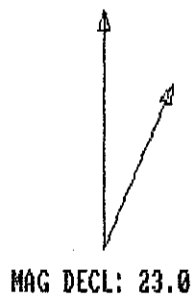
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 0 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

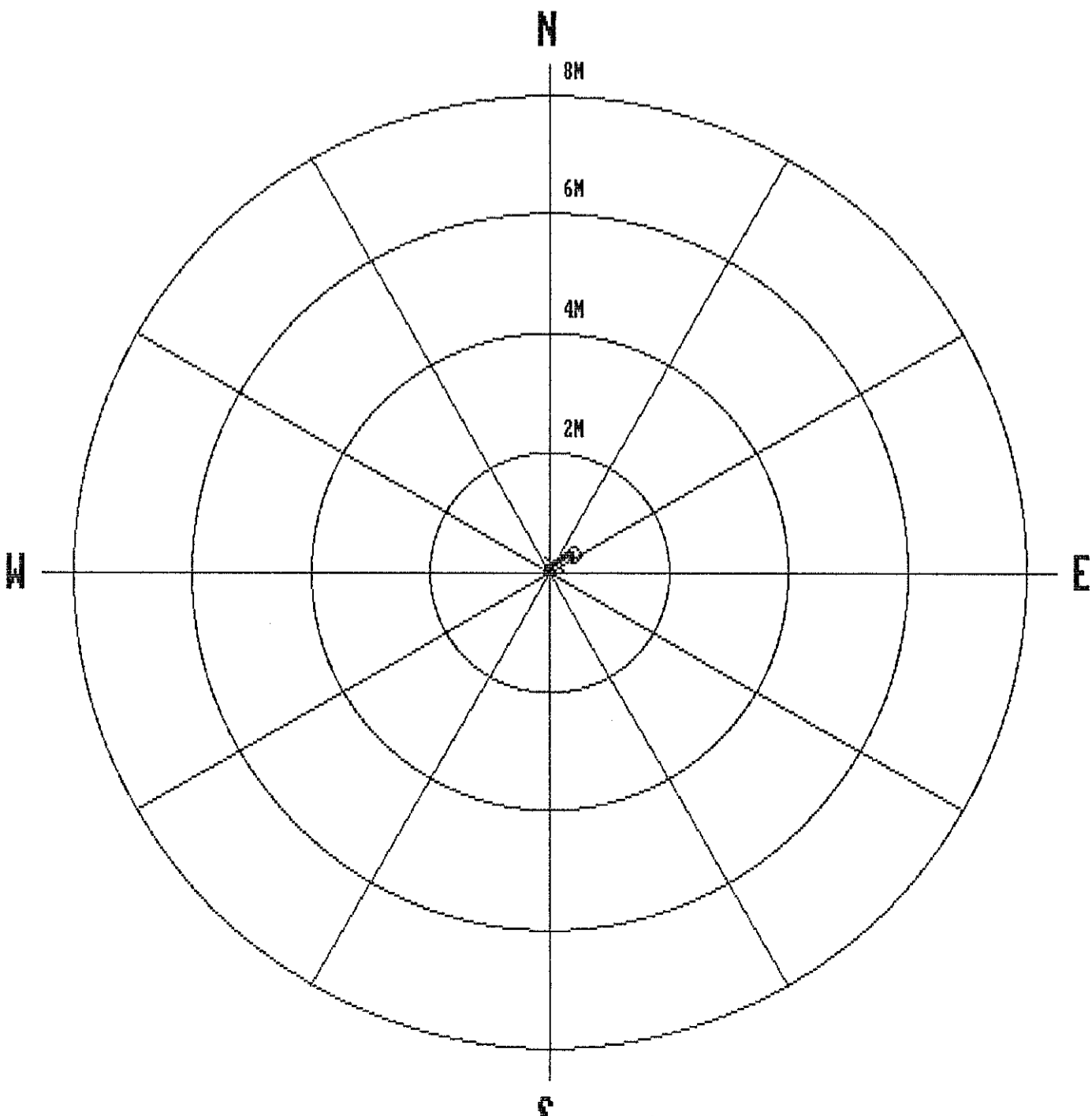
| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | -0.03 | 0.0 | 280.1 | 1.6 | 293.4 |
| 4.0 | 4.00 | 0.02 | -0.05 | 0.1 | 287.0 | 1.9 | 308.6 |
| 5.0 | 5.00 | 0.03 | -0.07 | 0.1 | 291.5 | 1.4 | 321.9 |
| 6.0 | 6.00 | 0.05 | -0.05 | 0.1 | 314.5 | 1.7 | 57.5 |
| 7.0 | 7.00 | 0.08 | -0.03 | 0.1 | 341.3 | 1.7 | 76.3 |
| 8.0 | 8.00 | 0.10 | 0.01 | 0.1 | 3.4 | 2.4 | 52.1 |
| 9.0 | 9.00 | 0.12 | 0.04 | 0.1 | 18.0 | 2.5 | 53.4 |
| 10.0 | 9.99 | 0.15 | 0.08 | 0.2 | 27.5 | 2.5 | 60.5 |
| 11.0 | 10.99 | 0.18 | 0.11 | 0.2 | 32.9 | 2.5 | 53.0 |
| 12.0 | 11.99 | 0.20 | 0.15 | 0.3 | 36.9 | 2.8 | 55.8 |
| 13.0 | 12.99 | 0.22 | 0.19 | 0.3 | 40.3 | 2.8 | 56.5 |
| 14.0 | 13.99 | 0.25 | 0.23 | 0.3 | 42.6 | 2.7 | 56.5 |
| 15.0 | 14.99 | 0.27 | 0.27 | 0.4 | 44.5 | 2.3 | 49.1 |
| 16.0 | 15.99 | 0.29 | 0.30 | 0.4 | 46.2 | 2.2 | 61.2 |
| 17.0 | 16.99 | 0.30 | 0.35 | 0.5 | 49.0 | 2.7 | 86.2 |
| 18.0 | 17.99 | 0.31 | 0.40 | 0.5 | 52.3 | 3.6 | 78.0 |
| 18.0 | 18.03 | 0.31 | 0.41 | 0.5 | 52.4 | 3.6 | 78.7 |

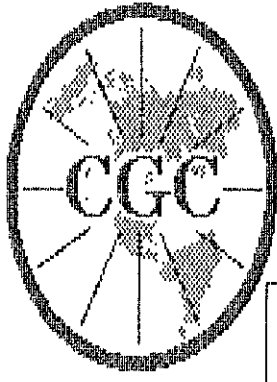
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96219
 DATE OF LOG: 09/27/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 18.03 M
 AZIMUTH: 52.4
 DISTANCE: 0.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

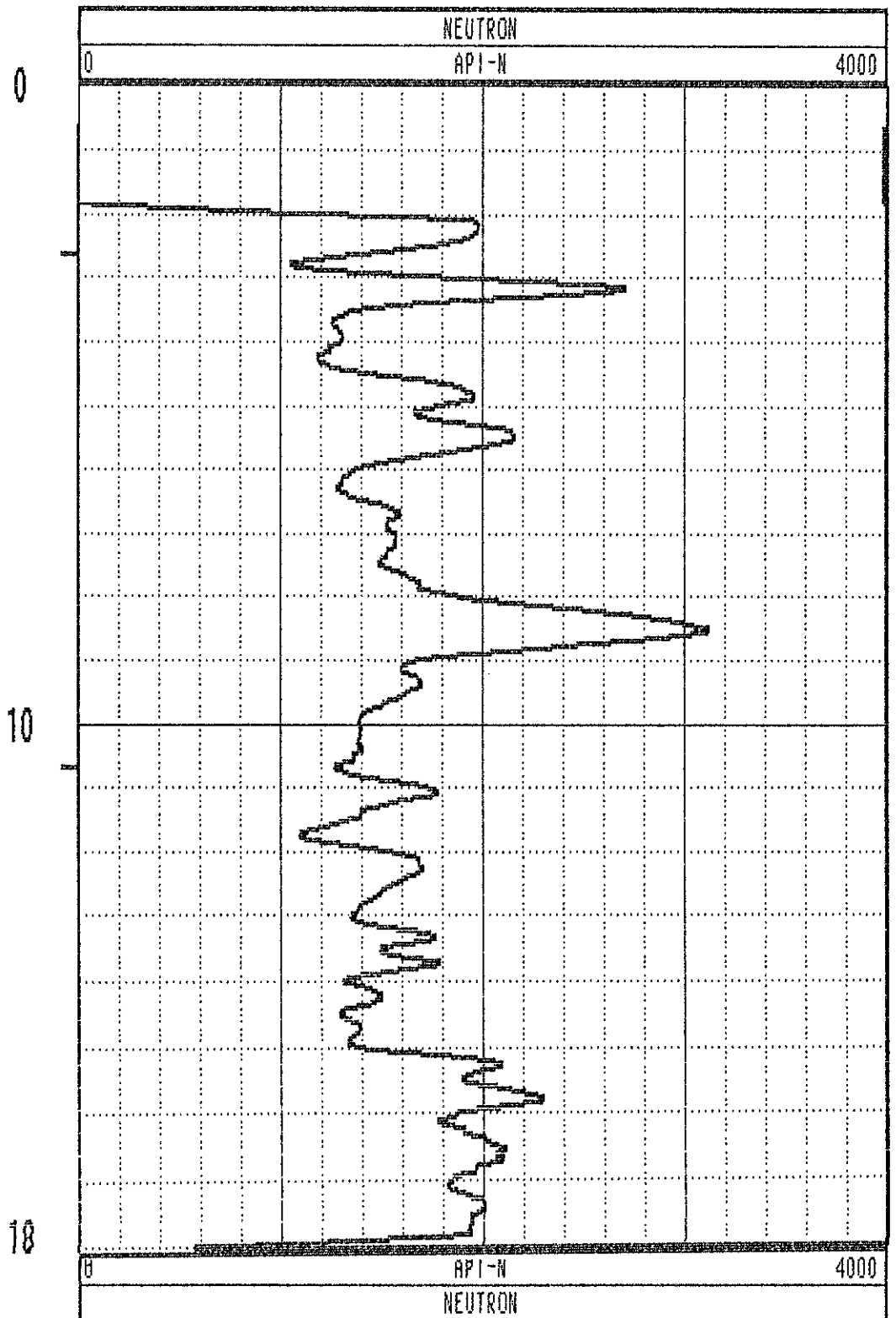
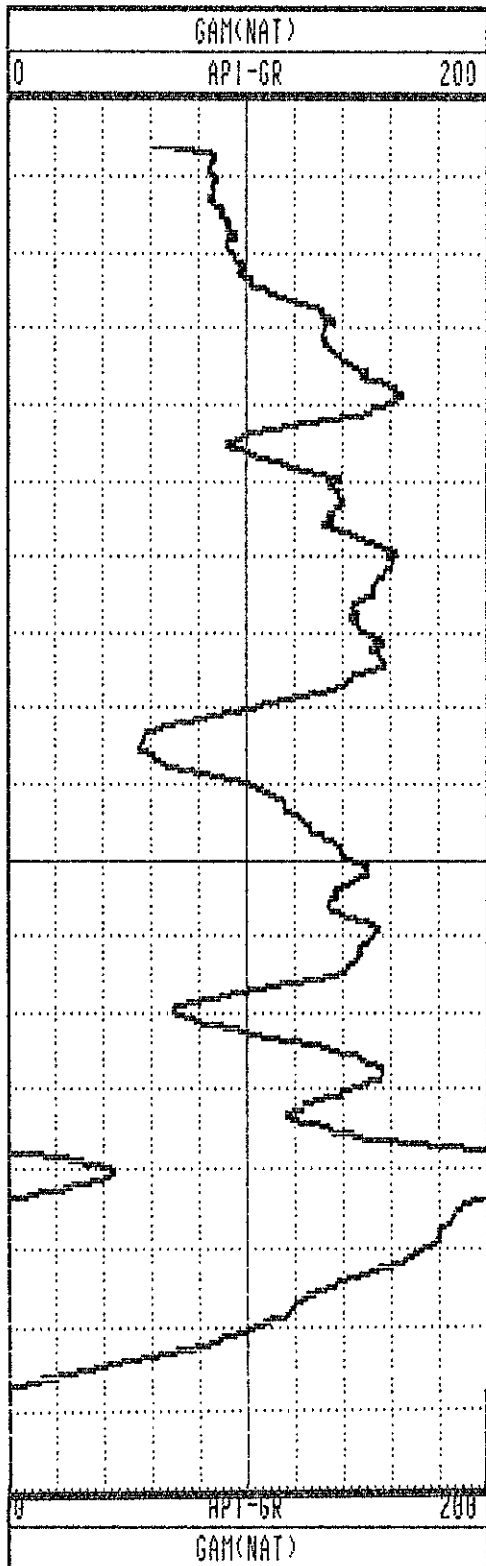
COMPANY : PINE VALLEY COAL
 WELL : WRH-96219
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 17 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 18.09 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.64 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 0
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

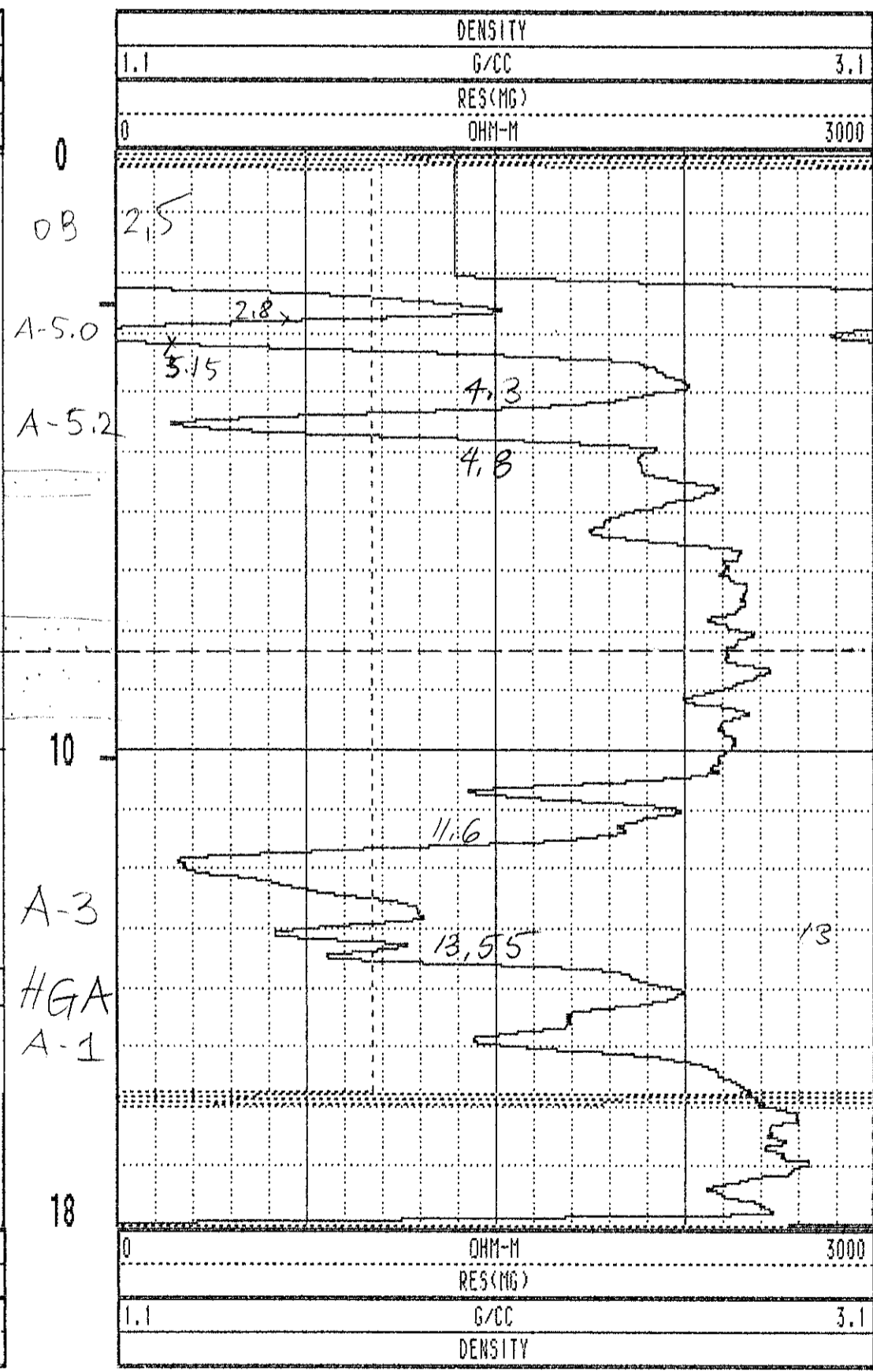
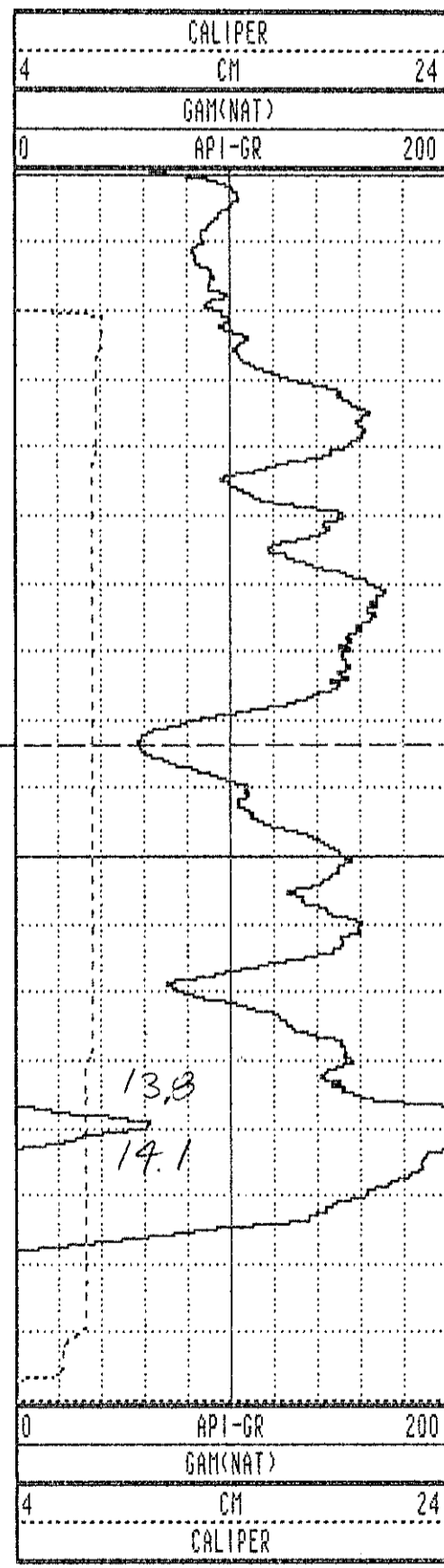
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96219 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/27/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.03 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.02 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



13500

WRH-96219 09/27/96 958

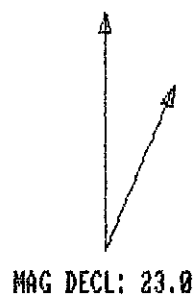
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

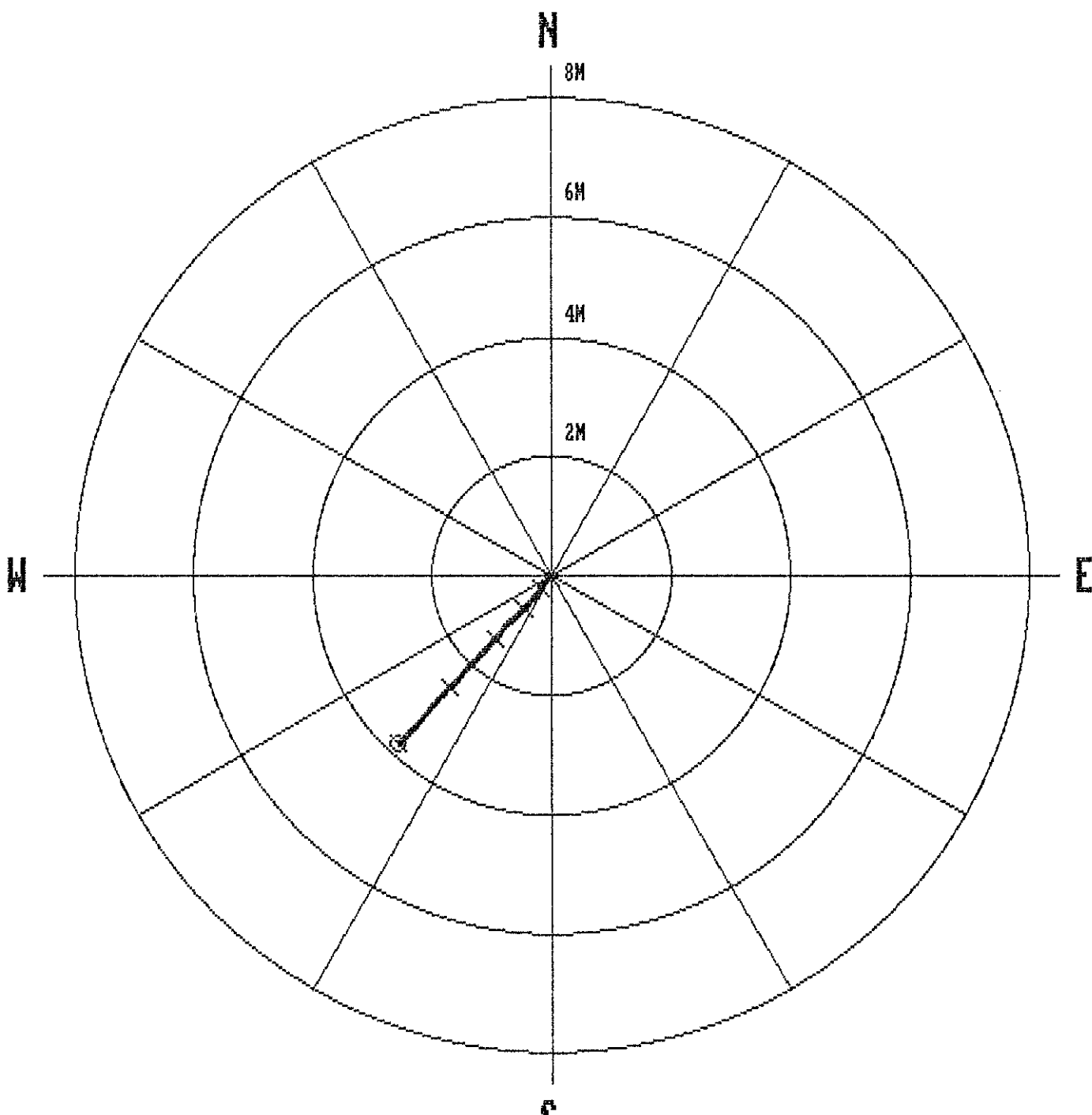
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 195.0 | 1.3 | 154.8 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 69.2 | 1.4 | 149.2 |
| 4.0 | 4.00 | -0.01 | 0.02 | 0.0 | 118.4 | 1.7 | 233.5 |
| 5.0 | 5.00 | -0.03 | -0.01 | 0.0 | 192.2 | 2.0 | 242.6 |
| 6.0 | 6.00 | -0.05 | -0.03 | 0.1 | 214.3 | 2.2 | 235.5 |
| 7.0 | 7.00 | -0.08 | -0.06 | 0.1 | 218.8 | 2.4 | 228.1 |
| 8.0 | 8.00 | -0.12 | -0.10 | 0.2 | 219.8 | 3.2 | 217.8 |
| 9.0 | 8.99 | -0.16 | -0.13 | 0.2 | 219.2 | 3.6 | 217.4 |
| 10.0 | 9.99 | -0.21 | -0.17 | 0.3 | 218.4 | 3.8 | 215.7 |
| 11.0 | 10.99 | -0.27 | -0.21 | 0.3 | 218.1 | 4.3 | 215.8 |
| 12.0 | 11.99 | -0.34 | -0.26 | 0.4 | 218.2 | 4.9 | 211.4 |
| 13.0 | 12.98 | -0.40 | -0.32 | 0.5 | 218.5 | 5.3 | 217.0 |
| 14.0 | 13.98 | -0.47 | -0.38 | 0.6 | 218.7 | 5.3 | 224.7 |
| 15.0 | 14.97 | -0.54 | -0.45 | 0.7 | 219.6 | 6.3 | 218.5 |
| 16.0 | 15.97 | -0.62 | -0.52 | 0.8 | 220.1 | 6.0 | 227.3 |
| 17.0 | 16.96 | -0.70 | -0.61 | 0.9 | 221.2 | 7.5 | 225.1 |
| 18.0 | 17.95 | -0.79 | -0.71 | 1.1 | 221.9 | 7.8 | 230.8 |
| 19.0 | 18.94 | -0.90 | -0.81 | 1.2 | 221.8 | 9.2 | 213.4 |
| 20.0 | 19.92 | -1.03 | -0.92 | 1.4 | 221.6 | 10.8 | 216.4 |
| 21.0 | 20.90 | -1.18 | -1.05 | 1.6 | 221.6 | 12.0 | 217.1 |
| 22.0 | 21.88 | -1.34 | -1.20 | 1.8 | 221.9 | 12.4 | 223.8 |
| 23.0 | 22.86 | -1.49 | -1.35 | 2.0 | 222.2 | 13.2 | 215.8 |
| 24.0 | 23.83 | -1.67 | -1.50 | 2.2 | 222.0 | 13.1 | 209.6 |
| 25.0 | 24.80 | -1.83 | -1.66 | 2.5 | 222.1 | 13.5 | 224.9 |
| 26.0 | 25.77 | -2.00 | -1.83 | 2.7 | 222.4 | 13.6 | 239.9 |
| 27.0 | 26.74 | -2.19 | -2.00 | 3.0 | 222.4 | 15.8 | 211.1 |
| 28.0 | 27.70 | -2.39 | -2.17 | 3.2 | 222.2 | 15.6 | 218.4 |
| 29.0 | 28.67 | -2.59 | -2.34 | 3.5 | 222.1 | 15.8 | 228.3 |
| 30.0 | 29.63 | -2.78 | -2.54 | 3.8 | 222.5 | 16.1 | 226.2 |
| 30.1 | 29.72 | -2.80 | -2.56 | 3.8 | 222.5 | 16.3 | 226.0 |

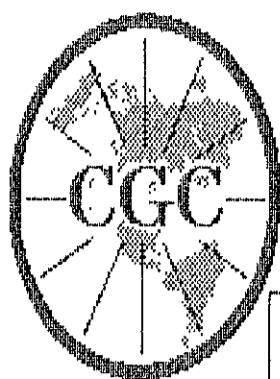
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96220
 DATE OF LOG: 09/27/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.72 M
 AZIMUTH: 222.5
 DISTANCE: 3.8 M
 + = 5 M INCR
 O = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96220
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 09/27/96
 DEPTH DRILLER : 30
 LOG BOTTOM : 30.15
 LOG TOP : 0.60

PERMANENT DATUM :
 ELEV. PERM. DATUM: KB :
 LOG MEASURED FROM: G.L. DF :
 DRL MEASURED FROM: GL :

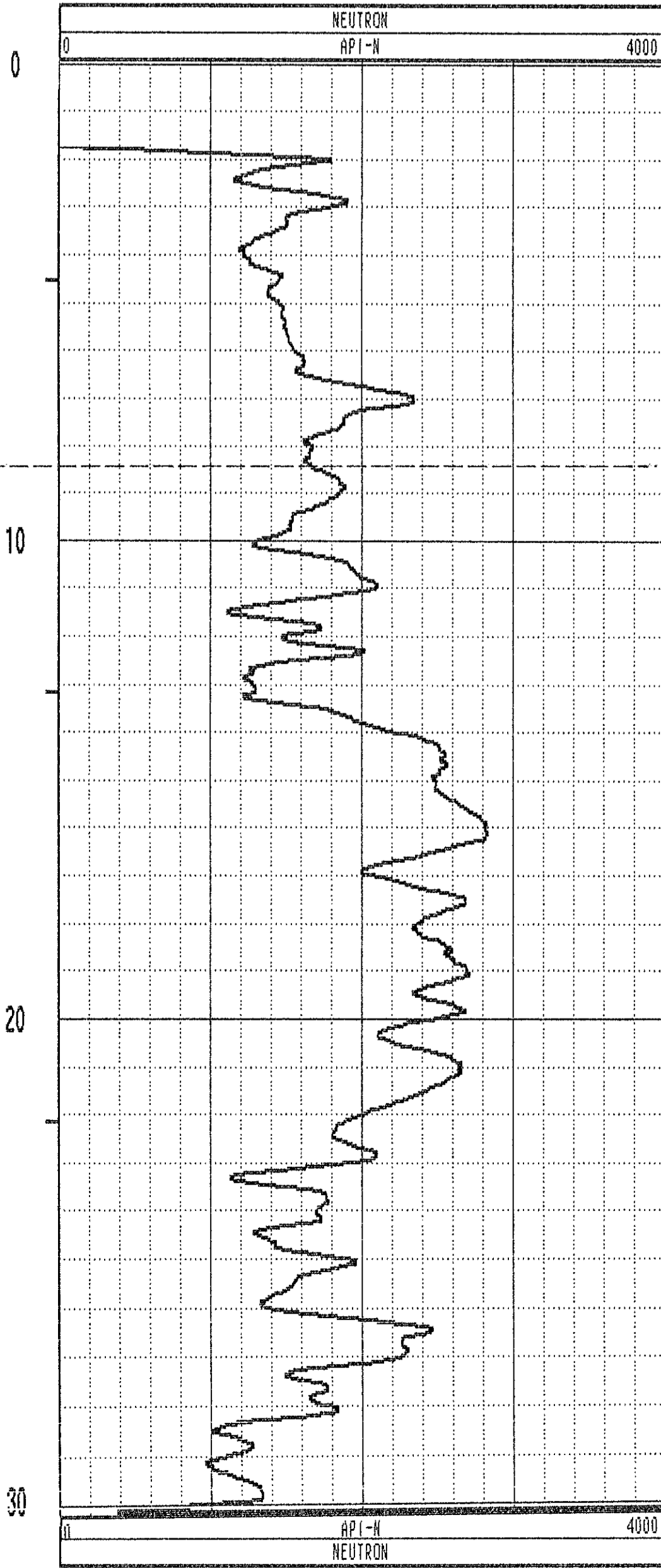
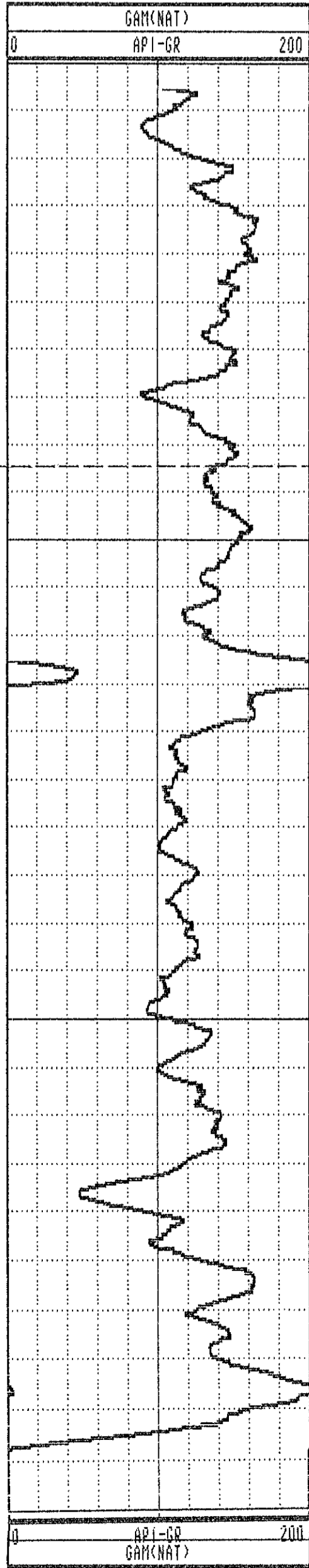
CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER FILE : ORIGINAL
 RM : TYPE : 9055A
 RM TEMPERATURE : LOG : 1
 MATRIX DELTA T : PLOT : PINE 4
 FLUID DELTA T : THRESH: 10000

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

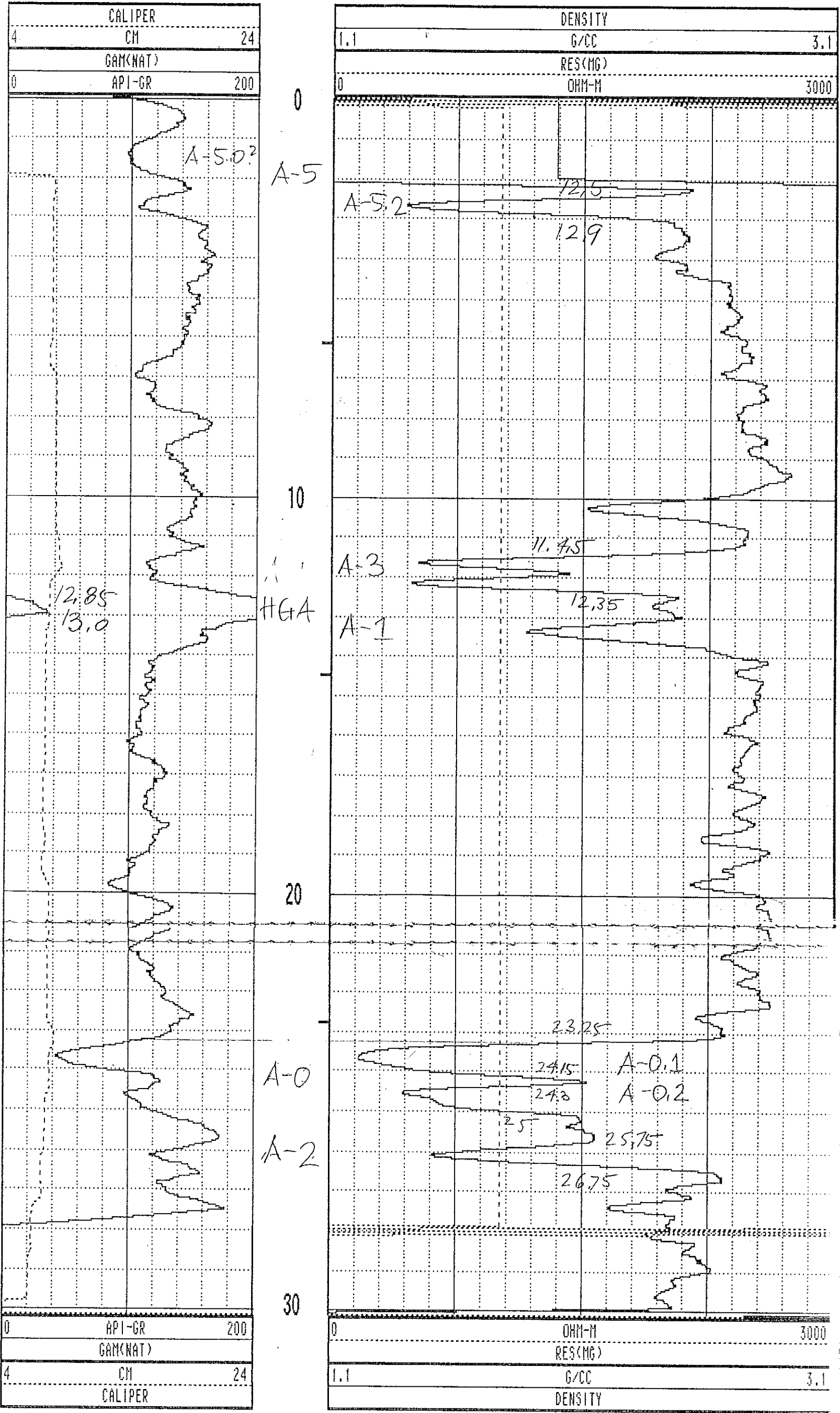


96-220

GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96220
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :
 DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 30 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.15 LOG MEASURED FROM: G.L. DF :
 LOG TOP : -0.04 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R.THOMAS
 BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 2
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



13500 WRH-96220 09/27/96 958

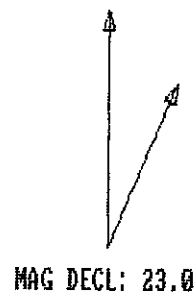
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | -1.106 OHM-M |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 7 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.800 CM |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 9 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

96-220

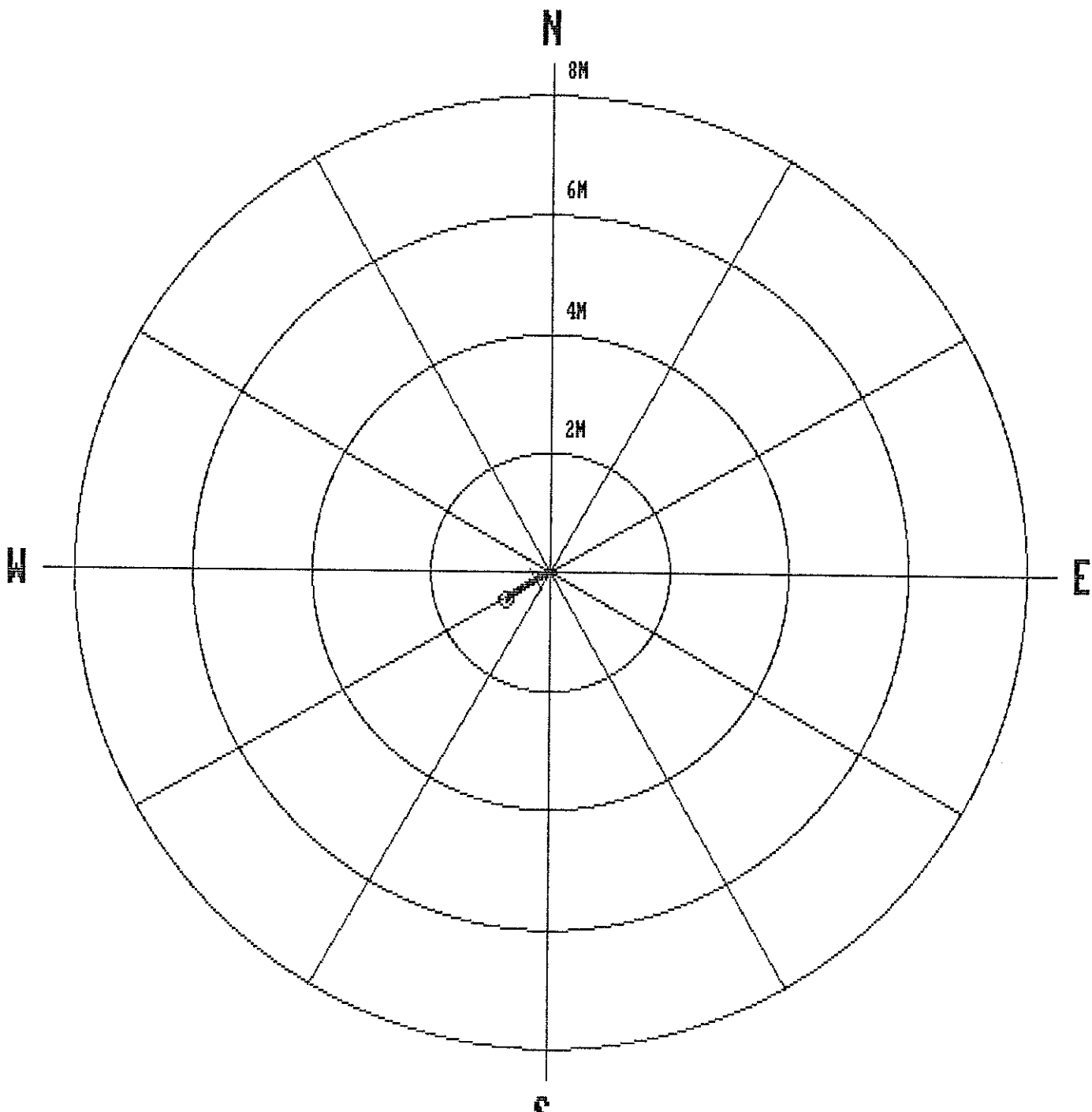
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.01 | 0.02 | 0.0 | 72.7 | 1.2 | 30.2 |
| 4.0 | 4.00 | 0.01 | 0.04 | 0.0 | 77.0 | 1.8 | 122.6 |
| 5.0 | 5.00 | -0.00 | 0.01 | 0.0 | 110.4 | 2.3 | 264.9 |
| 6.0 | 6.00 | -0.02 | -0.02 | 0.0 | 230.1 | 2.1 | 252.5 |
| 7.0 | 7.00 | -0.04 | -0.06 | 0.1 | 238.7 | 2.6 | 232.6 |
| 8.0 | 8.00 | -0.06 | -0.11 | 0.1 | 240.5 | 3.3 | 249.6 |
| 9.0 | 8.99 | -0.09 | -0.16 | 0.2 | 240.9 | 3.5 | 240.0 |
| 10.0 | 9.99 | -0.13 | -0.23 | 0.3 | 241.1 | 4.8 | 229.8 |
| 11.0 | 10.99 | -0.17 | -0.30 | 0.3 | 240.7 | 5.6 | 245.7 |
| 12.0 | 11.98 | -0.23 | -0.39 | 0.5 | 240.1 | 6.0 | 240.5 |
| 13.0 | 12.97 | -0.28 | -0.49 | 0.6 | 240.0 | 7.4 | 232.8 |
| 14.0 | 13.97 | -0.35 | -0.59 | 0.7 | 239.3 | 7.6 | 240.2 |
| 15.0 | 14.96 | -0.44 | -0.71 | 0.8 | 238.3 | 8.5 | 219.8 |
| 15.1 | 15.09 | -0.45 | -0.72 | 0.9 | 238.0 | 8.7 | 229.8 |

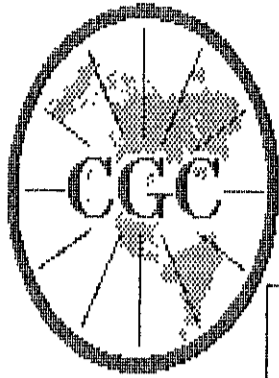
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: MRH-96221
 DATE OF LOG: 09/27/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 15.09 M
 AZIMUTH: 238.0
 DISTANCE: 0.9 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96221
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

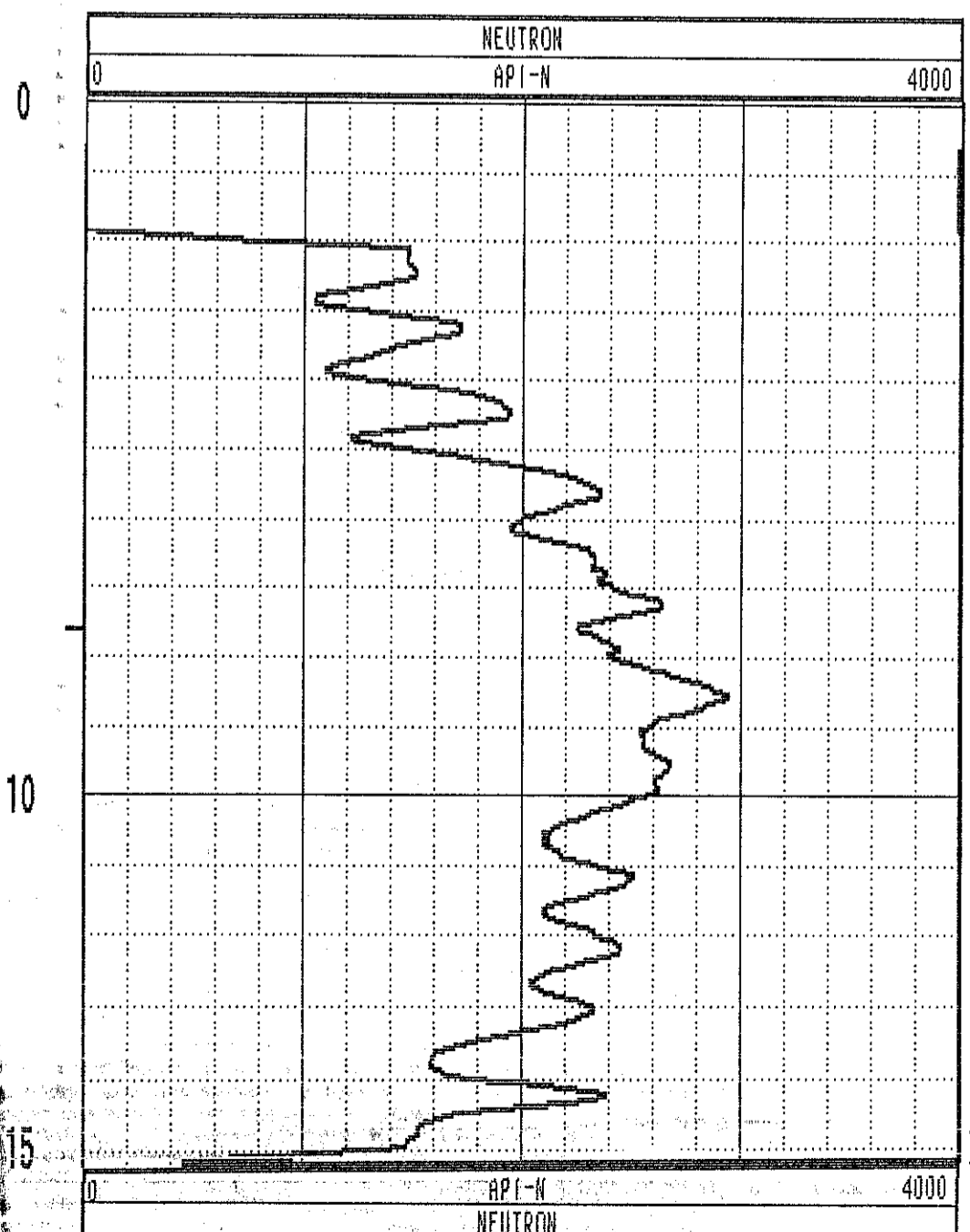
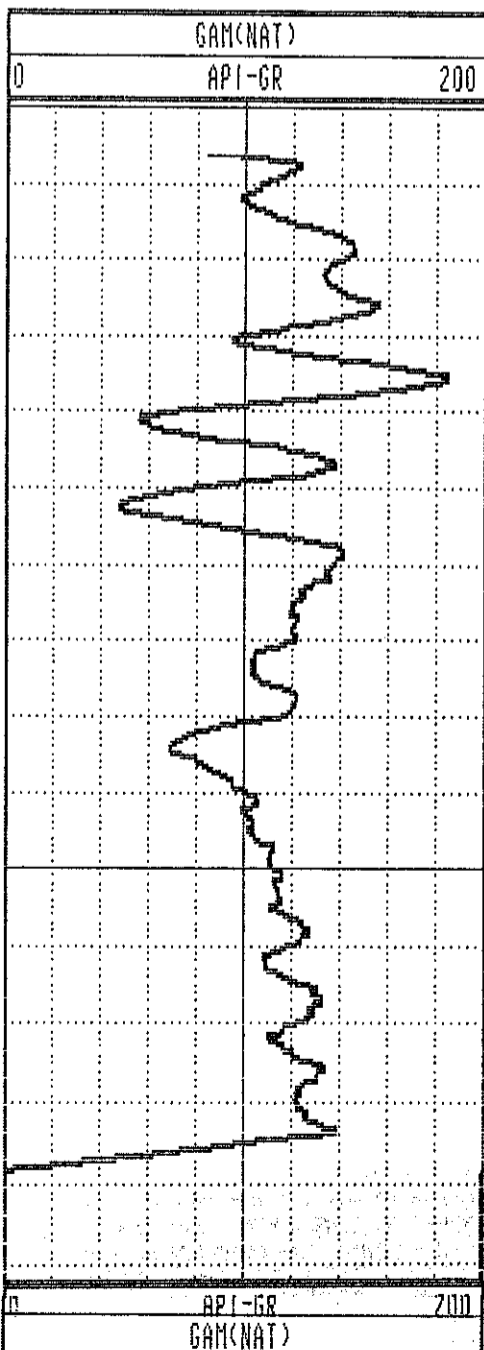
DATE : 09/27/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 15 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 15.20 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.66 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.00 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000

REMARKS :
 NONE

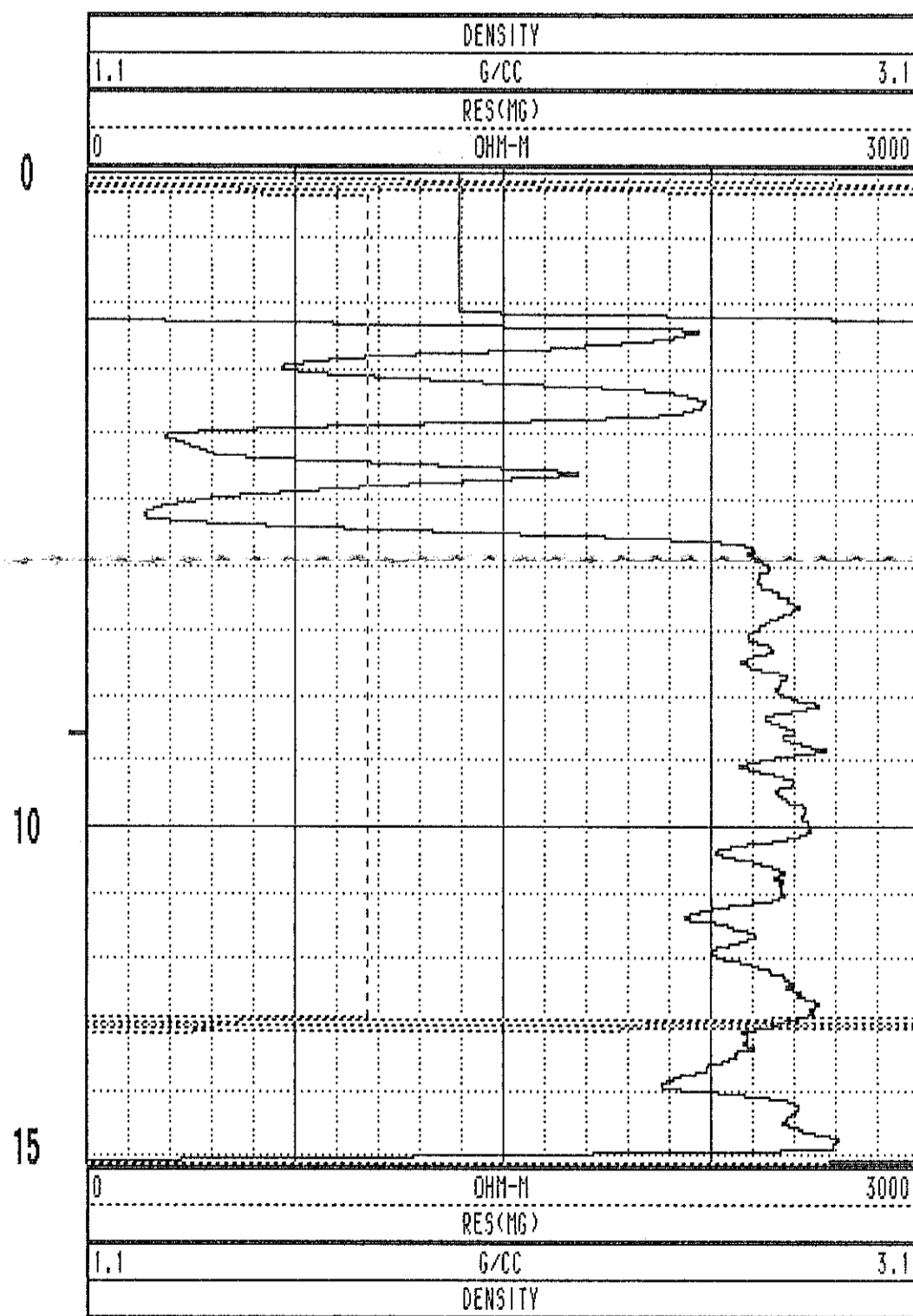
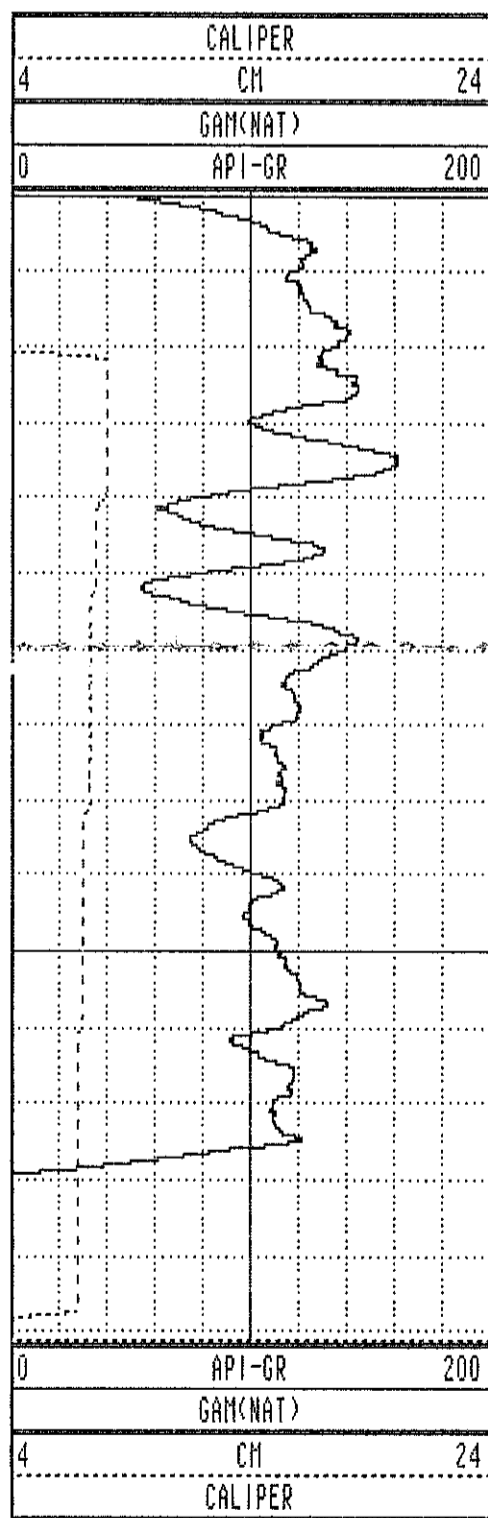
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96221 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/27/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 15 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 15.16 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.06 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.00 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 3 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96221 09/27/96 958

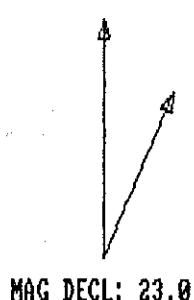
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

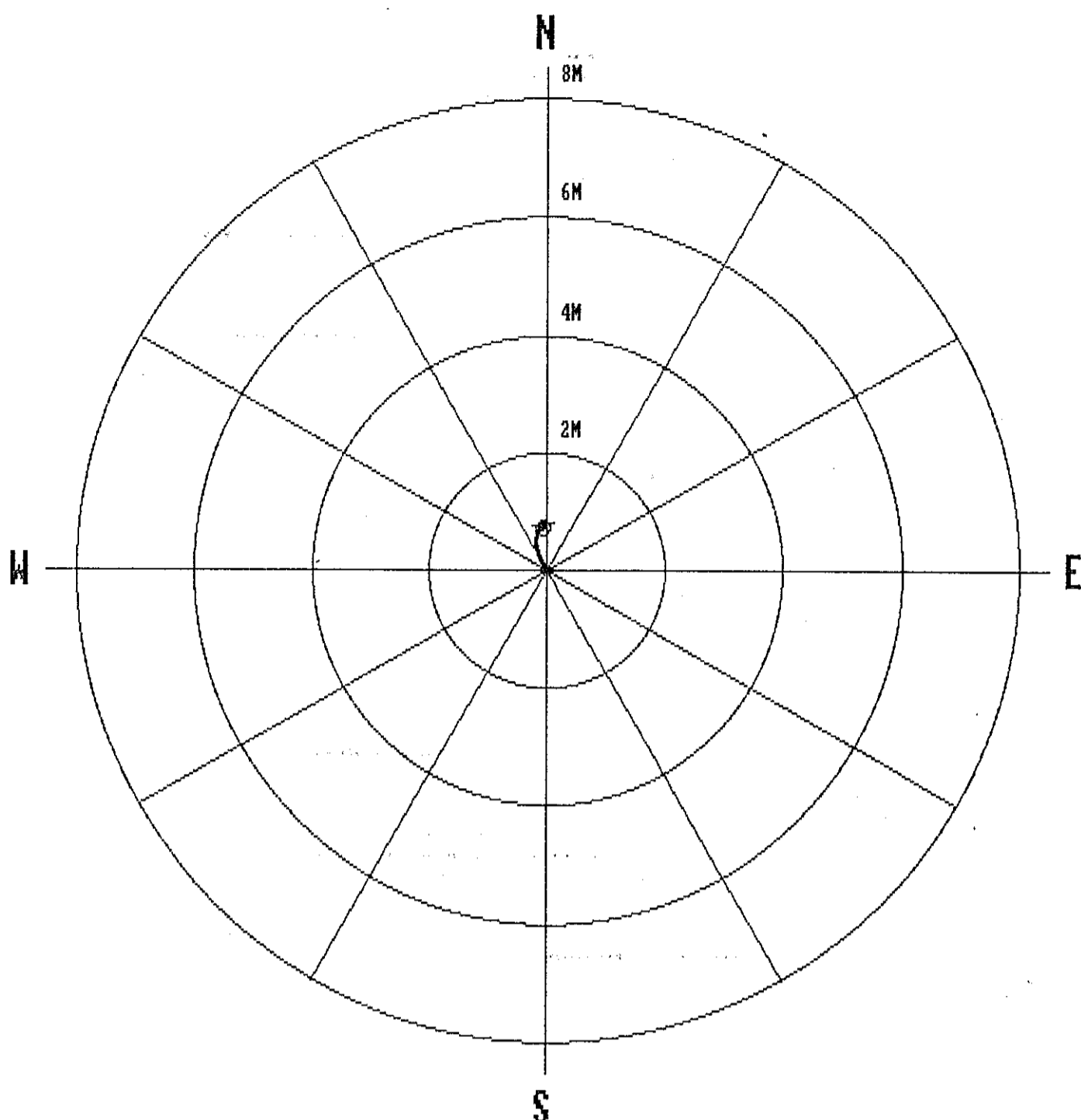
PLAN VIEW

COMPU-LOG DEVIATION

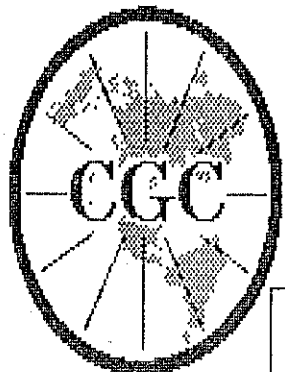
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96221B
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.38 M
 AZIMUTH: 355.0
 DISTANCE: 0.7 M
 + = 20 M INCR
 O = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.05 | -0.02 | 0.1 | 336.9 | 3.5 | 339.5 |
| 4.0 | 4.00 | 0.11 | -0.05 | 0.1 | 334.6 | 3.6 | 329.3 |
| 5.0 | 4.99 | 0.17 | -0.09 | 0.2 | 332.7 | 3.9 | 329.7 |
| 6.0 | 5.99 | 0.23 | -0.12 | 0.3 | 332.5 | 4.1 | 340.3 |
| 7.0 | 6.99 | 0.30 | -0.14 | 0.3 | 334.4 | 4.0 | 350.4 |
| 8.0 | 7.99 | 0.36 | -0.16 | 0.4 | 336.7 | 3.8 | 349.5 |
| 9.0 | 8.98 | 0.42 | -0.17 | 0.5 | 338.3 | 3.1 | 347.4 |
| 10.0 | 9.98 | 0.47 | -0.17 | 0.5 | 339.8 | 2.6 | 358.4 |
| 11.0 | 10.98 | 0.52 | -0.17 | 0.5 | 341.7 | 3.0 | 4.6 |
| 12.0 | 11.98 | 0.57 | -0.17 | 0.6 | 343.7 | 2.7 | 13.6 |
| 13.0 | 12.98 | 0.61 | -0.15 | 0.6 | 345.8 | 2.6 | 18.4 |
| 14.0 | 13.98 | 0.65 | -0.14 | 0.7 | 347.8 | 2.2 | 23.8 |
| 15.0 | 14.98 | 0.69 | -0.13 | 0.7 | 349.7 | 2.3 | 21.8 |
| 16.0 | 15.98 | 0.72 | -0.11 | 0.7 | 351.4 | 2.3 | 22.4 |
| 17.0 | 16.98 | 0.76 | -0.09 | 0.8 | 353.2 | 1.5 | 40.0 |
| 18.0 | 17.98 | 0.77 | -0.08 | 0.8 | 354.4 | 0.9 | 61.6 |
| 19.0 | 18.98 | 0.78 | -0.06 | 0.8 | 355.4 | 0.7 | 80.3 |
| 20.0 | 19.98 | 0.78 | -0.05 | 0.8 | 356.3 | 0.6 | 87.3 |
| 21.0 | 20.98 | 0.77 | -0.04 | 0.8 | 357.3 | 0.8 | 98.9 |
| 22.0 | 21.98 | 0.77 | -0.02 | 0.8 | 358.2 | 0.7 | 109.9 |
| 23.0 | 22.98 | 0.77 | -0.01 | 0.8 | 358.9 | 0.4 | 125.3 |
| 24.0 | 23.98 | 0.76 | -0.01 | 0.8 | 359.0 | 0.5 | 219.0 |
| 25.0 | 24.98 | 0.75 | -0.02 | 0.8 | 358.2 | 0.8 | 239.1 |
| 26.0 | 25.98 | 0.74 | -0.04 | 0.7 | 357.1 | 0.9 | 233.9 |
| 27.0 | 26.98 | 0.74 | -0.05 | 0.7 | 356.1 | 0.6 | 224.2 |
| 28.0 | 27.98 | 0.73 | -0.06 | 0.7 | 355.6 | 0.4 | 235.5 |
| 29.0 | 28.98 | 0.72 | -0.06 | 0.7 | 355.1 | 0.7 | 197.4 |
| 29.4 | 29.38 | 0.72 | -0.06 | 0.7 | 355.0 | 0.8 | 211.7 |



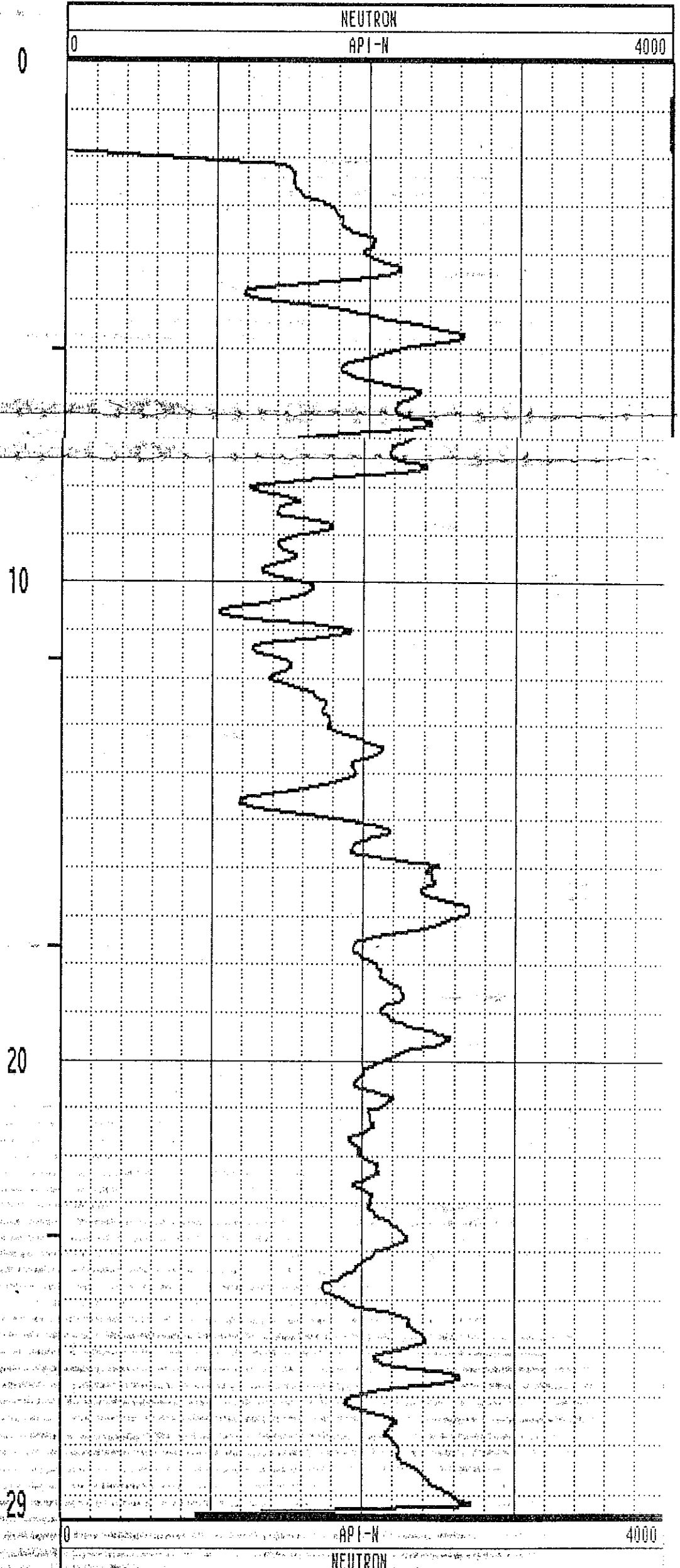
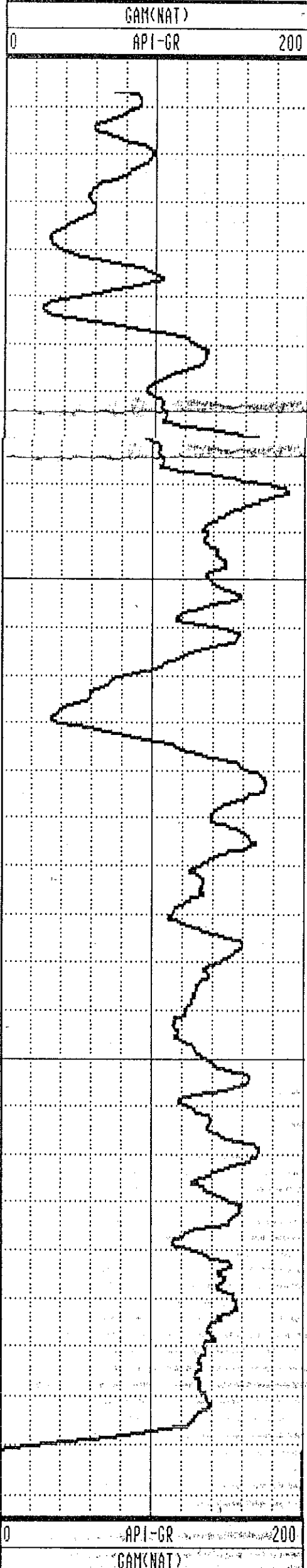
Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | | |
|-------------------|--------------------|-------------------------|----------------|-----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | | |
| WELL | : WRH-96221 B | | | |
| LOCATION/FIELD | : WILLOW CREEK | | | |
| COUNTY | : | | | |
| STATE | : BRITISH COLUMBIA | | | |
| SECTION | : TOWNSHIP : | RANGE : | | |
| DATE | : 10/05/96 | PERMANENT DATUM : | ELEVATIONS | |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : | |
| LOG BOTTOM | : 29.45 | LOG MEASURED FROM: G.L. | DF : | |
| LOG TOP | : 0.72 | DRL MEASURED FROM: | GL : | |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 | |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. | |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS | |
| BIT SIZE | : | BOREHOLE FLUID | : WATER | FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : | TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : | LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : | PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : | THRESH: 10000 |
| REMARKS | : | | | |
| NONE | : | | | |

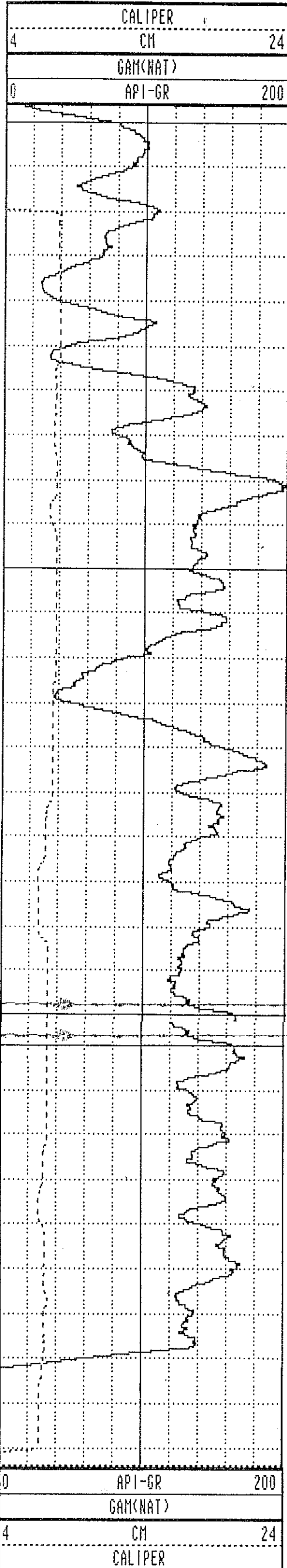
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



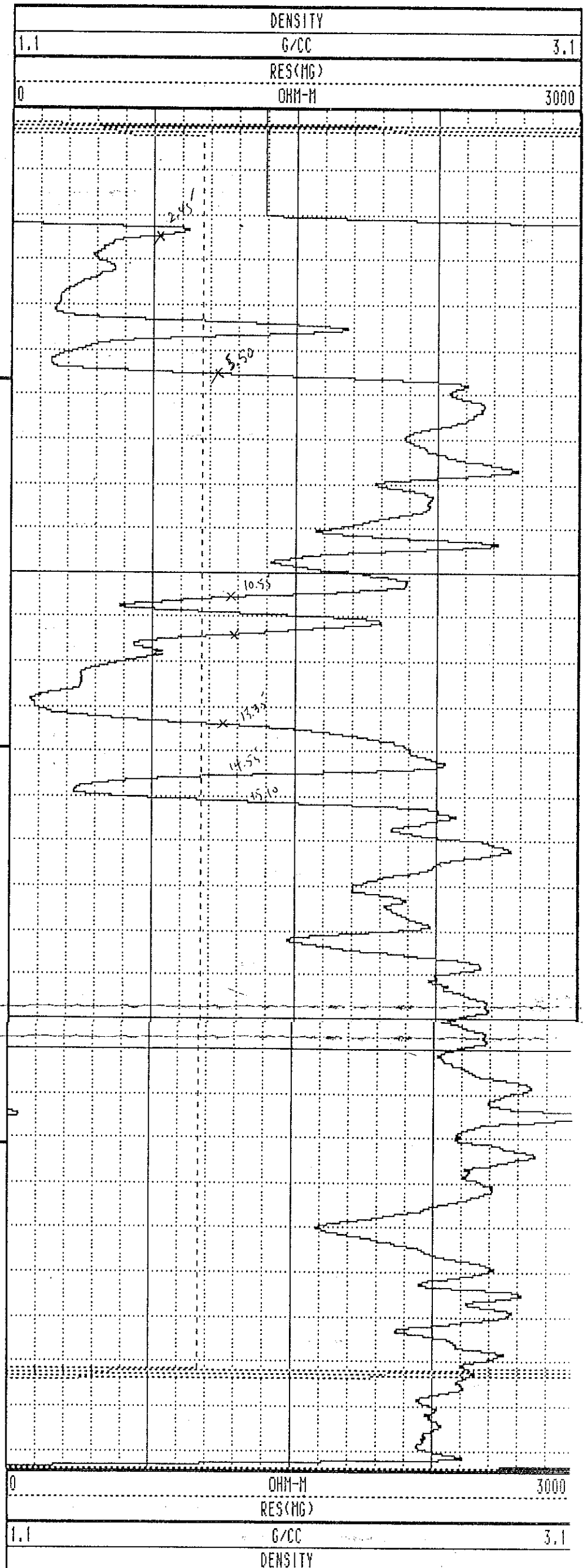
GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-----------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96221B | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 29.43 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.00 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID : WATER |
| MAGNETIC DECL. | : 23.000 | RM : |
| MATRIX DENSITY | : | RM TEMPERATURE : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T : |
| REMARKS | : | FILE : ORIGINAL |
| NONE | : | TYPE : 9033AA |
| | | LOG : 0 |
| | | PLOT : PINE 5 |
| | | THRESH: 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



0
10
20
29



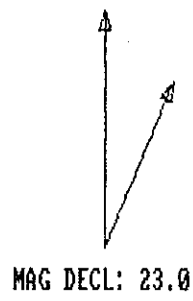
WRH-96221B 10/05/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

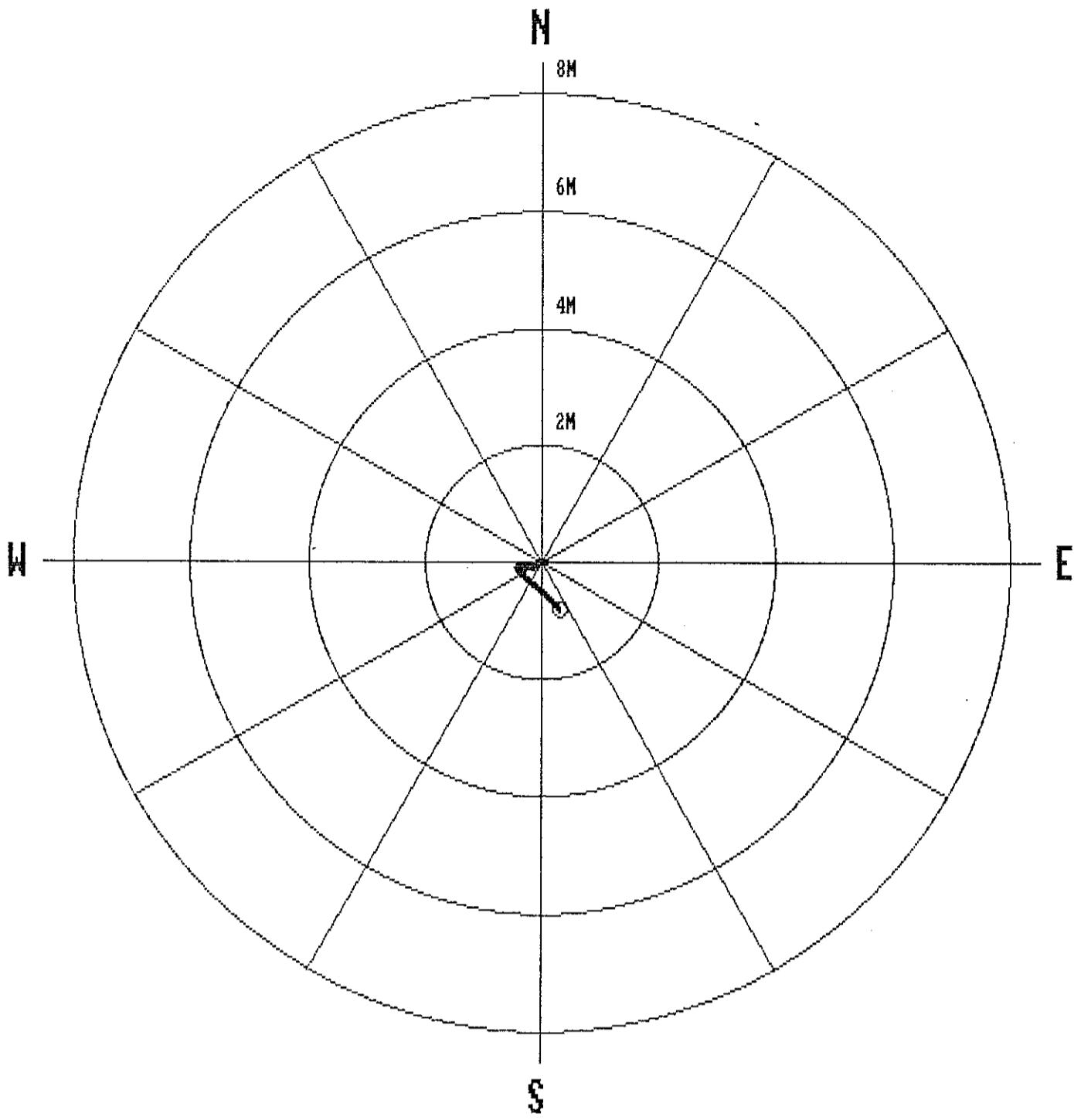
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-H |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

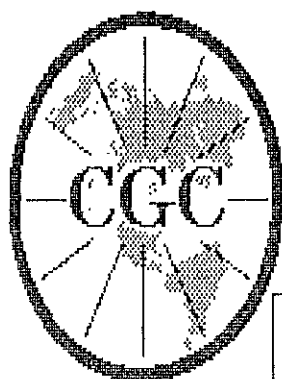
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96222
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.86 M
 AZIMUTH: 157.4
 DISTANCE: 0.9 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.02 | -0.03 | 0.0 | 235.5 | 2.4 | 250.8 |
| 4.0 | 4.00 | -0.04 | -0.07 | 0.1 | 239.1 | 2.5 | 237.3 |
| 5.0 | 5.00 | -0.06 | -0.11 | 0.1 | 242.4 | 2.7 | 252.2 |
| 6.0 | 6.00 | -0.07 | -0.15 | 0.2 | 244.6 | 2.7 | 260.4 |
| 7.0 | 7.00 | -0.08 | -0.20 | 0.2 | 248.3 | 3.2 | 272.2 |
| 8.0 | 7.99 | -0.08 | -0.25 | 0.3 | 252.0 | 2.8 | 271.8 |
| 9.0 | 8.99 | -0.08 | -0.29 | 0.3 | 254.9 | 2.5 | 276.7 |
| 10.0 | 9.99 | -0.08 | -0.33 | 0.3 | 257.0 | 1.6 | 273.6 |
| 11.0 | 10.99 | -0.07 | -0.36 | 0.4 | 258.1 | 1.4 | 264.1 |
| 12.0 | 11.99 | -0.08 | -0.38 | 0.4 | 258.2 | 1.3 | 276.1 |
| 13.0 | 12.99 | -0.08 | -0.40 | 0.4 | 258.7 | 1.1 | 260.6 |
| 14.0 | 13.99 | -0.08 | -0.42 | 0.4 | 258.8 | 0.7 | 239.6 |
| 15.0 | 14.99 | -0.09 | -0.43 | 0.4 | 258.1 | 0.8 | 228.8 |
| 16.0 | 15.99 | -0.10 | -0.44 | 0.5 | 256.7 | 1.2 | 181.9 |
| 17.0 | 16.99 | -0.12 | -0.43 | 0.4 | 254.2 | 1.3 | 136.2 |
| 18.0 | 17.99 | -0.14 | -0.41 | 0.4 | 250.7 | 2.1 | 130.5 |
| 19.0 | 18.99 | -0.17 | -0.38 | 0.4 | 245.9 | 2.6 | 132.0 |
| 20.0 | 19.99 | -0.20 | -0.35 | 0.4 | 239.7 | 3.0 | 121.2 |
| 21.0 | 20.99 | -0.24 | -0.30 | 0.4 | 232.2 | 3.0 | 131.7 |
| 22.0 | 21.98 | -0.27 | -0.26 | 0.4 | 223.1 | 3.7 | 126.9 |
| 23.0 | 22.98 | -0.32 | -0.21 | 0.4 | 213.0 | 4.0 | 135.3 |
| 24.0 | 23.98 | -0.37 | -0.15 | 0.4 | 201.8 | 4.9 | 131.7 |
| 25.0 | 24.98 | -0.42 | -0.08 | 0.4 | 190.2 | 5.0 | 128.6 |
| 26.0 | 25.97 | -0.49 | -0.00 | 0.5 | 180.3 | 6.3 | 129.7 |
| 27.0 | 26.96 | -0.56 | 0.08 | 0.6 | 172.2 | 6.2 | 135.3 |
| 28.0 | 27.96 | -0.64 | 0.16 | 0.7 | 165.6 | 6.9 | 129.8 |
| 29.0 | 28.95 | -0.73 | 0.25 | 0.8 | 160.9 | 7.2 | 142.9 |
| 29.9 | 29.86 | -0.81 | 0.34 | 0.9 | 157.4 | 7.7 | 135.6 |

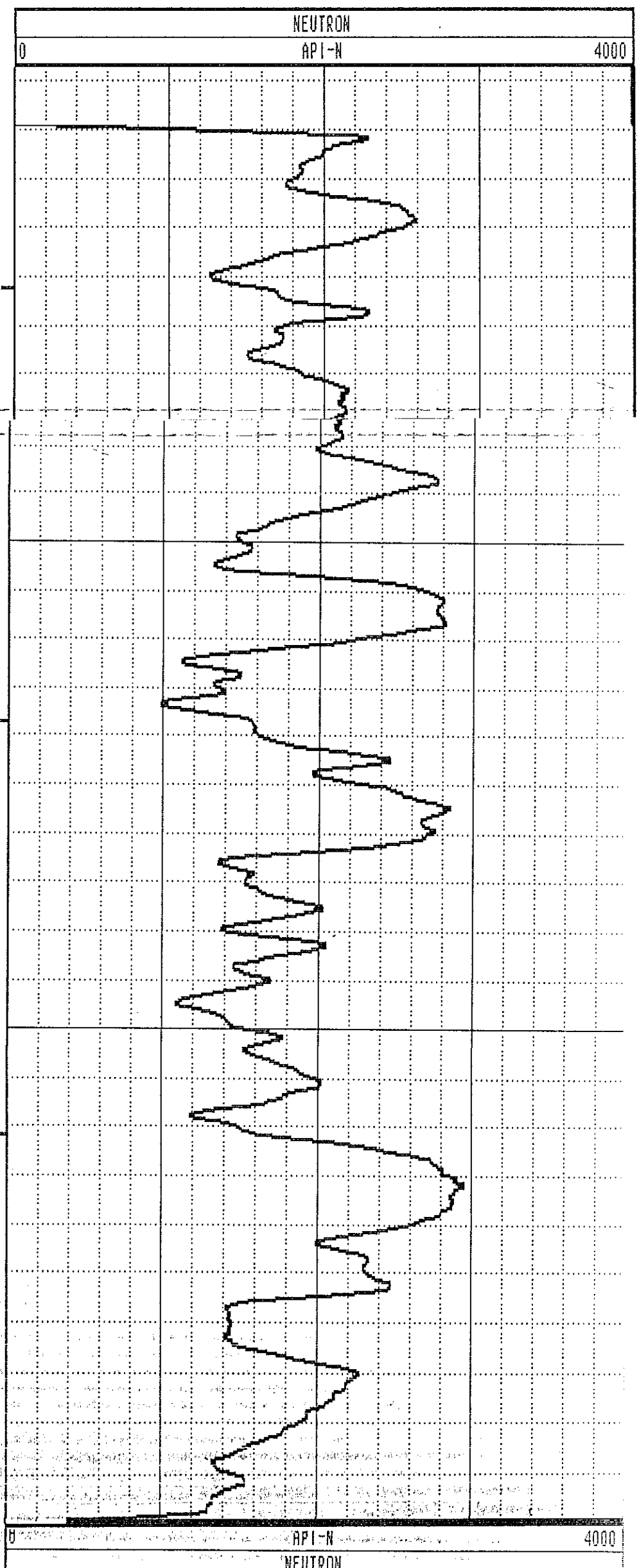
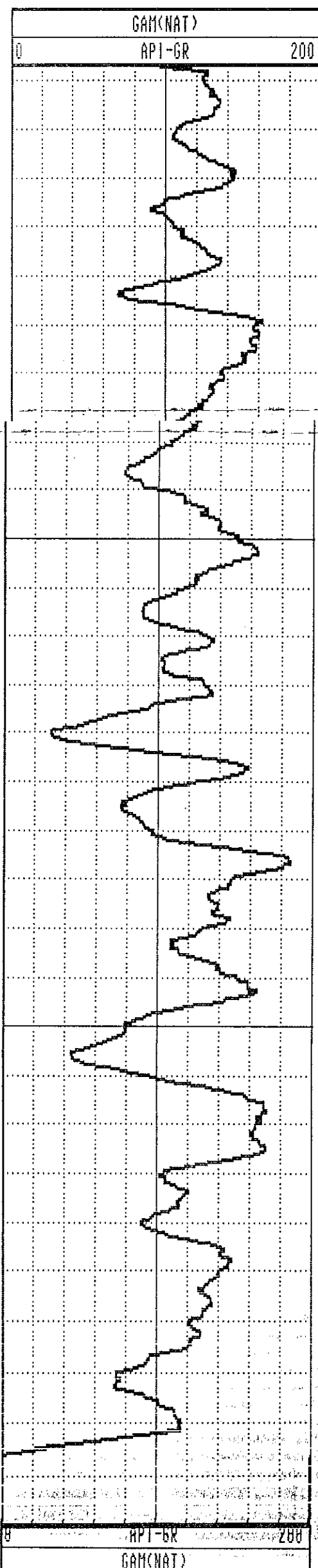


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96222 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.97 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.74 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 2 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

COMPANY : PINE VALLEY COAL
 WELL : WRH-96222
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

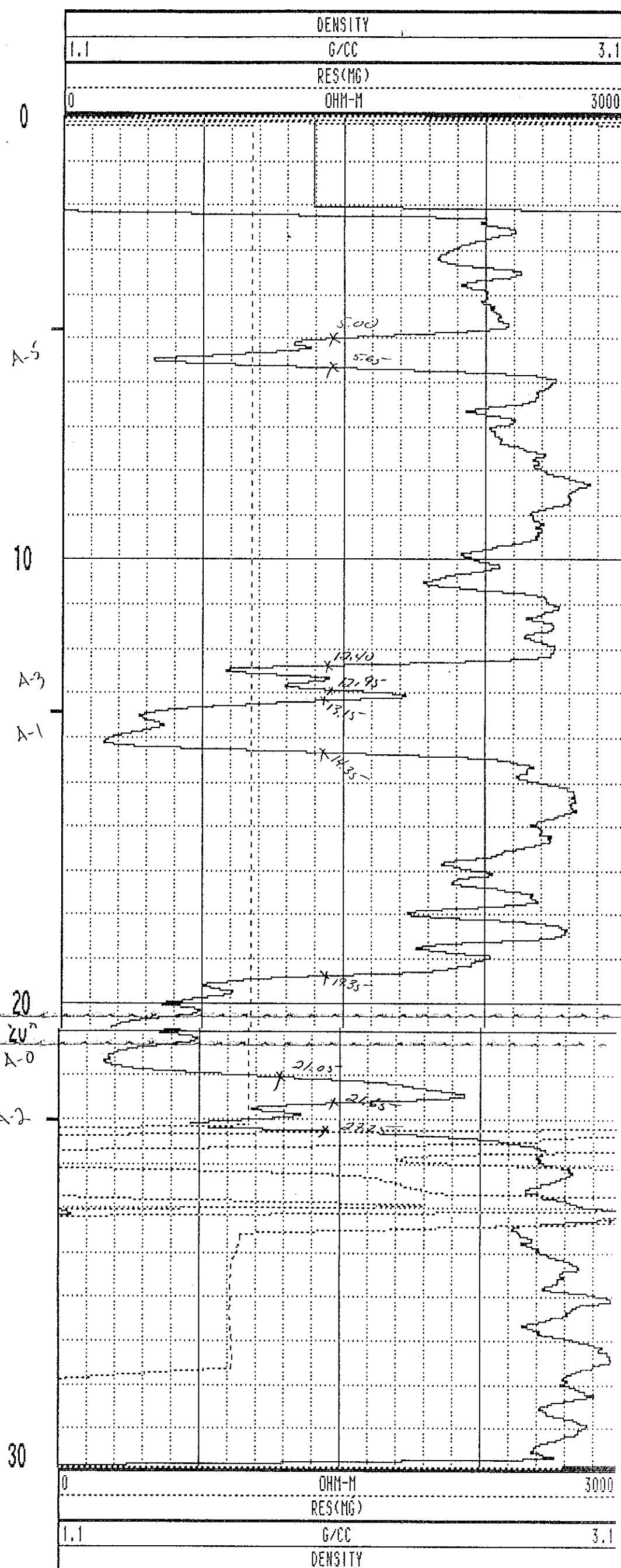
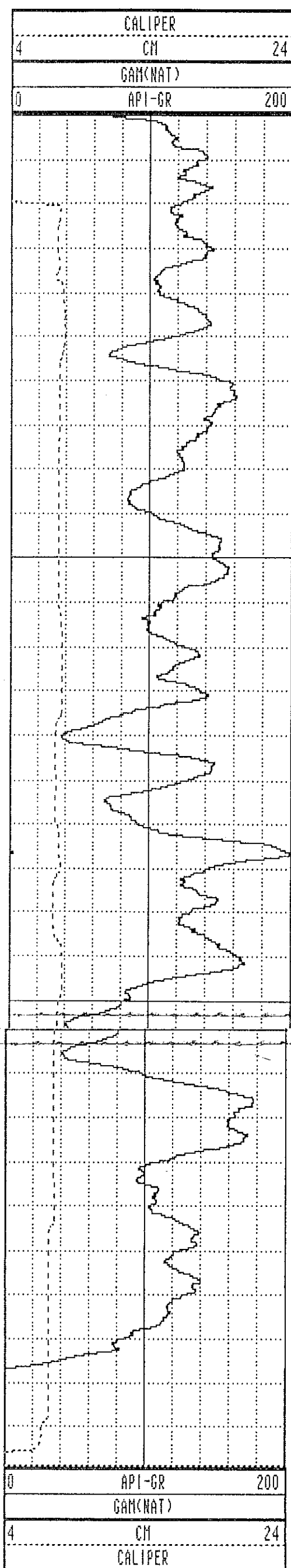
OTHER SERVICES:

DATE : 10/05/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 28 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.91 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.00 DRL MEASURED FROM: GL :

CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9033AA
 MATRIX DENSITY : RM TEMPERATURE : LOG : 3
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 5
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96222 10/05/96 958

TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

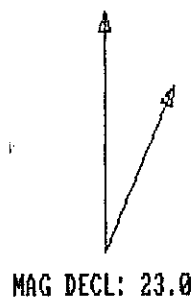
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | -0.06 | 0.1 | 258.6 | 4.1 | 266.5 |
| 4.0 | 4.00 | -0.03 | -0.13 | 0.1 | 257.0 | 4.4 | 253.3 |
| 5.0 | 4.99 | -0.05 | -0.20 | 0.2 | 255.7 | 4.5 | 250.4 |
| 6.0 | 5.99 | -0.06 | -0.28 | 0.3 | 257.5 | 4.3 | 264.8 |
| 7.0 | 6.99 | -0.06 | -0.35 | 0.4 | 260.1 | 4.0 | 273.1 |
| 8.0 | 7.98 | -0.06 | -0.43 | 0.4 | 262.4 | 5.0 | 282.1 |
| 9.0 | 8.98 | -0.05 | -0.51 | 0.5 | 264.8 | 4.9 | 280.6 |
| 10.0 | 9.98 | -0.03 | -0.59 | 0.6 | 266.7 | 4.9 | 271.6 |
| 11.0 | 10.97 | -0.03 | -0.68 | 0.7 | 267.7 | 4.9 | 266.0 |
| 12.0 | 11.97 | -0.02 | -0.77 | 0.8 | 268.5 | 5.1 | 273.5 |
| 13.0 | 12.96 | -0.02 | -0.86 | 0.9 | 268.4 | 5.2 | 275.5 |
| 14.0 | 13.96 | -0.03 | -0.94 | 0.9 | 268.1 | 4.9 | 264.2 |
| 15.0 | 14.96 | -0.04 | -1.03 | 1.0 | 268.0 | 4.9 | 268.9 |
| 16.0 | 15.95 | -0.04 | -1.11 | 1.1 | 267.7 | 4.5 | 268.6 |
| 17.0 | 16.95 | -0.07 | -1.19 | 1.2 | 266.6 | 5.3 | 242.7 |
| 18.0 | 17.95 | -0.11 | -1.27 | 1.3 | 265.3 | 5.1 | 233.7 |
| 19.0 | 18.94 | -0.15 | -1.35 | 1.4 | 263.7 | 5.3 | 235.9 |
| 20.0 | 19.94 | -0.19 | -1.43 | 1.4 | 262.4 | 4.9 | 237.7 |
| 21.0 | 20.93 | -0.24 | -1.51 | 1.5 | 261.1 | 4.8 | 237.7 |
| 22.0 | 21.93 | -0.28 | -1.58 | 1.6 | 259.9 | 4.6 | 231.0 |
| 23.0 | 22.93 | -0.32 | -1.66 | 1.7 | 259.2 | 4.5 | 241.9 |
| 24.0 | 23.92 | -0.36 | -1.72 | 1.8 | 258.1 | 4.4 | 241.7 |
| 25.0 | 24.92 | -0.41 | -1.76 | 1.8 | 256.8 | 3.5 | 210.4 |
| 26.0 | 25.92 | -0.47 | -1.78 | 1.8 | 255.4 | 3.0 | 191.3 |
| 27.0 | 26.92 | -0.52 | -1.78 | 1.9 | 253.8 | 3.2 | 169.9 |
| 28.0 | 27.92 | -0.58 | -1.77 | 1.9 | 251.9 | 4.0 | 162.3 |
| 29.0 | 28.91 | -0.65 | -1.75 | 1.9 | 249.7 | 4.6 | 147.9 |
| 30.0 | 29.91 | -0.72 | -1.71 | 1.9 | 247.3 | 0.0 | 0.0 |
| 30.0 | 29.89 | -0.72 | -1.71 | 1.9 | 247.3 | 4.9 | 151.2 |

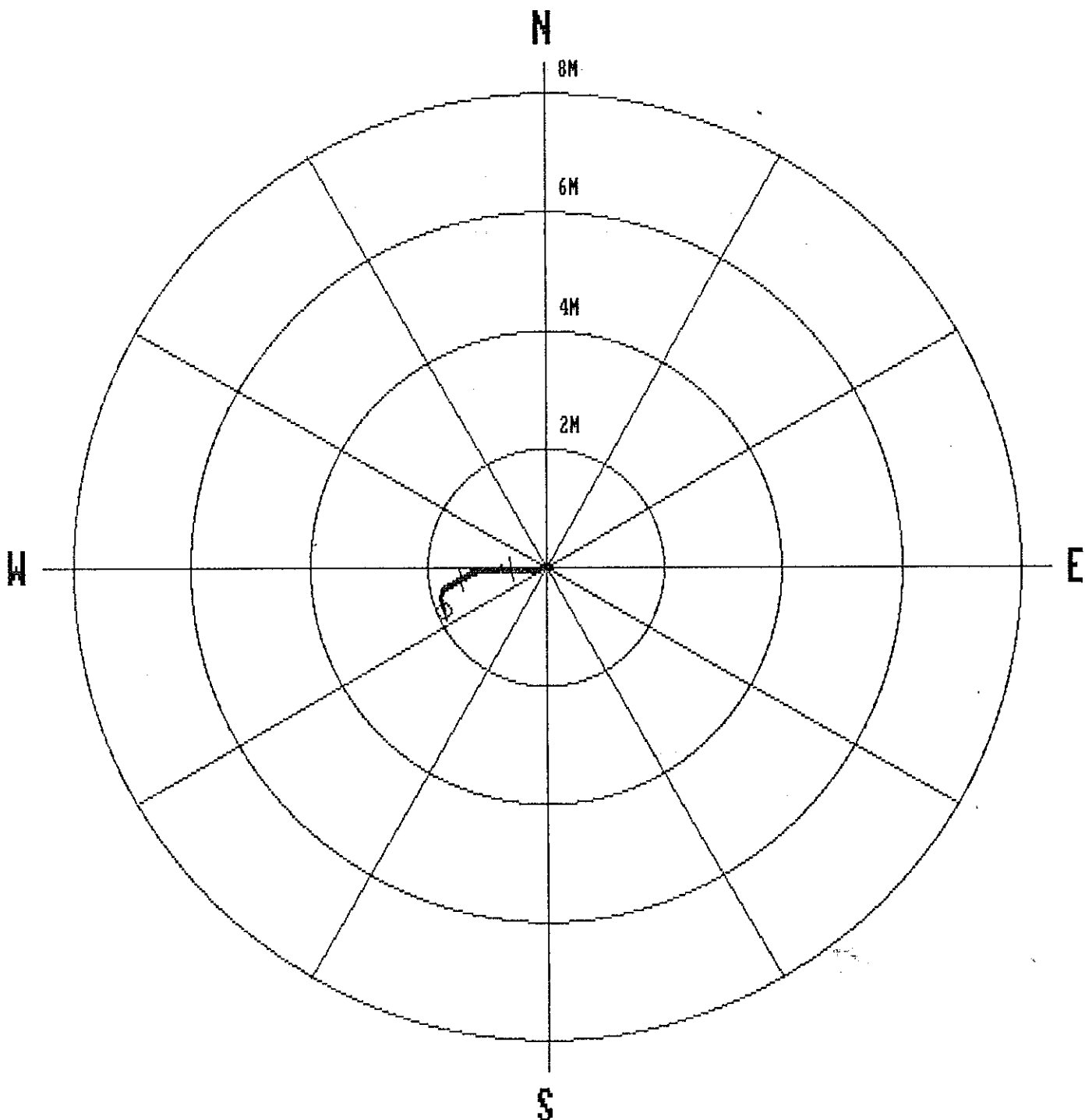
PLAN VIEW

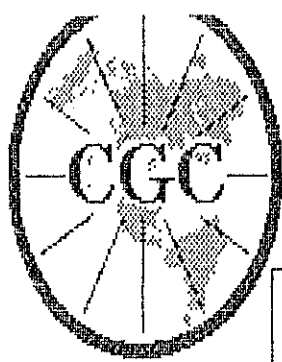
COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96223
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.89 M
 AZIMUTH: 247.3
 DISTANCE: 1.9 M
 + = 10 M INCR
 O = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

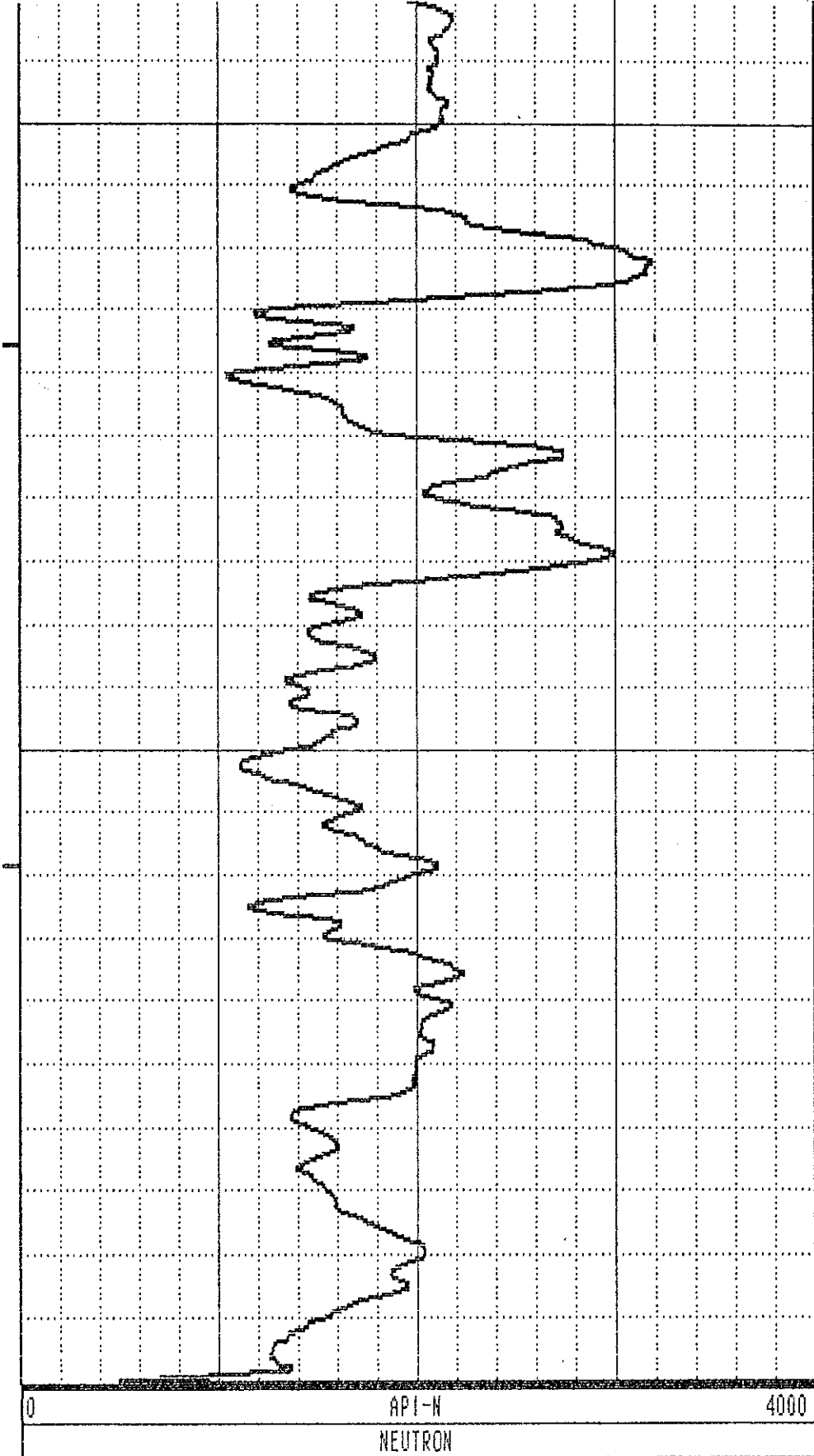
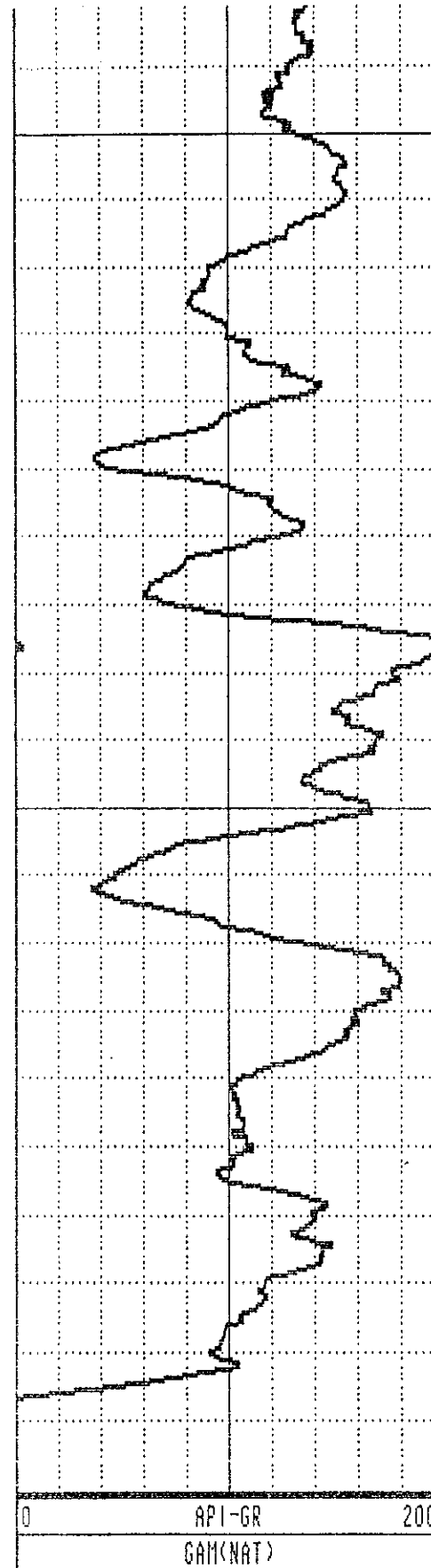
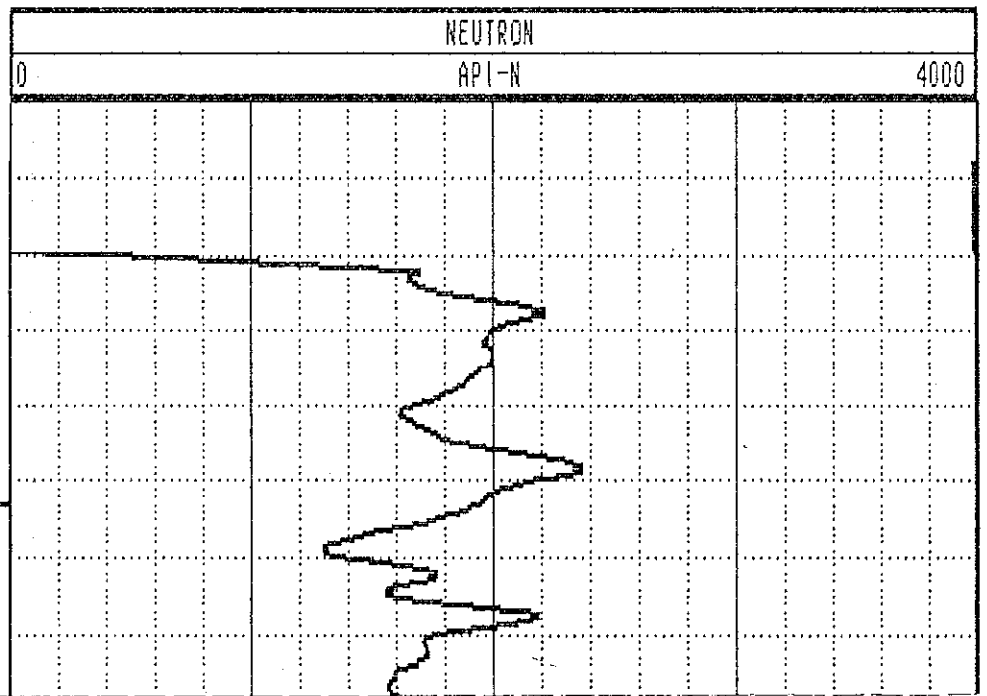
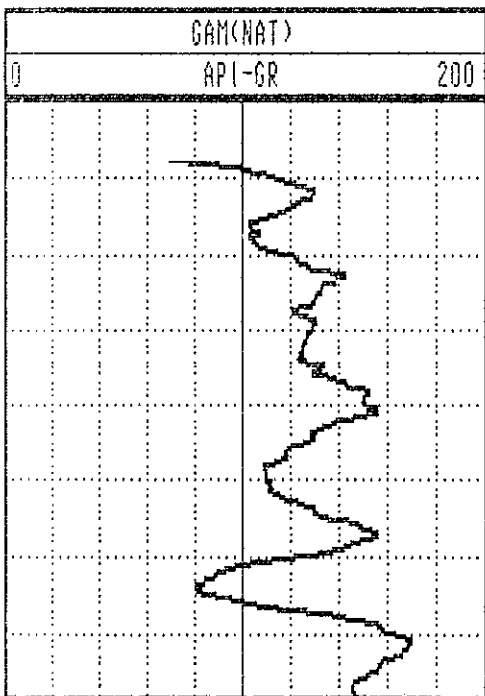
COMPANY : PINE VALLEY COAL
 WELL : WRH-96223
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/05/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 28 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 30.03 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.82 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 9
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

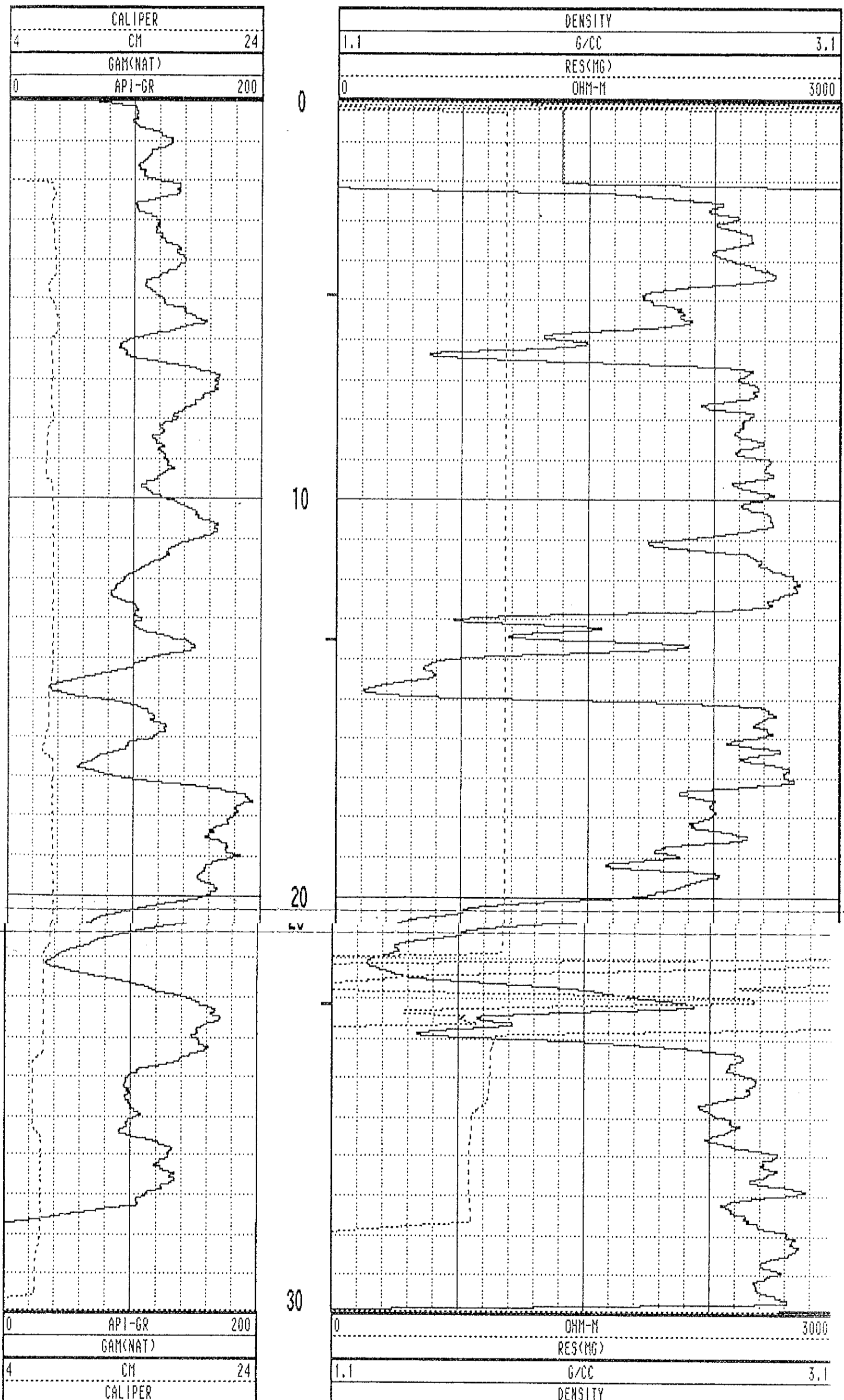
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96223 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.95 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.02 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 8 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

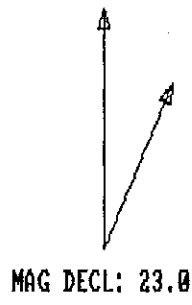


WRH-96223 10/05/96 958

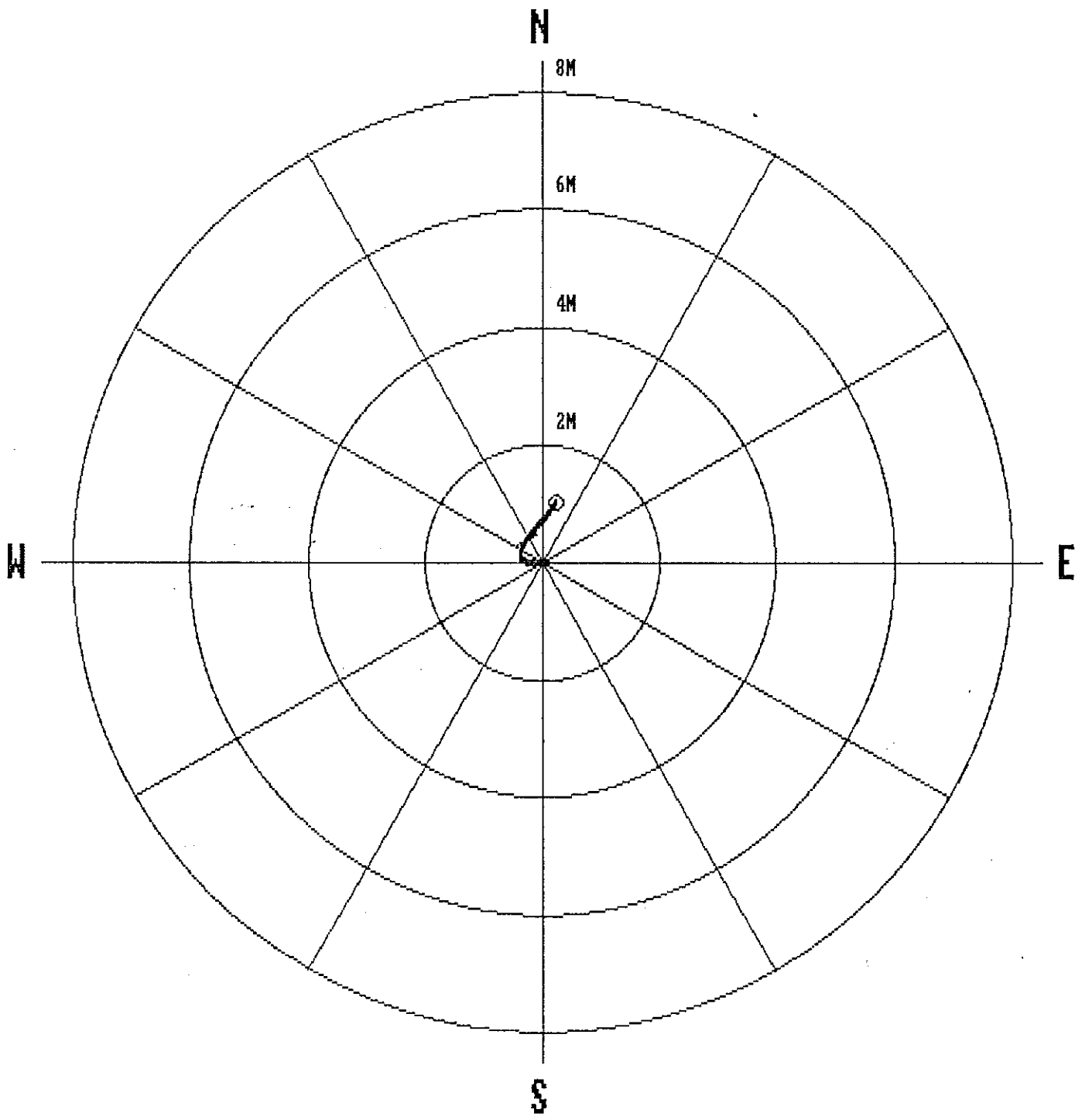
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

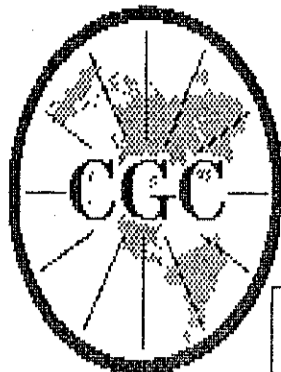
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96224
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.71 M
 AZIMUTH: 13.2
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.03 | 0.0 | 278.3 | 1.8 | 301.7 |
| 4.0 | 4.00 | -0.00 | -0.06 | 0.1 | 268.9 | 1.8 | 265.5 |
| 5.0 | 5.00 | -0.01 | -0.10 | 0.1 | 266.4 | 2.3 | 253.9 |
| 6.0 | 6.00 | -0.01 | -0.14 | 0.1 | 265.7 | 2.4 | 284.6 |
| 7.0 | 7.00 | -0.01 | -0.18 | 0.2 | 267.8 | 2.1 | 278.0 |
| 8.0 | 8.00 | -0.00 | -0.22 | 0.2 | 269.5 | 2.8 | 288.0 |
| 9.0 | 8.99 | 0.01 | -0.26 | 0.3 | 271.9 | 1.7 | 271.6 |
| 10.0 | 9.99 | 0.02 | -0.29 | 0.3 | 273.9 | 2.2 | 291.5 |
| 11.0 | 10.99 | 0.03 | -0.32 | 0.3 | 275.9 | 2.2 | 290.5 |
| 12.0 | 11.99 | 0.05 | -0.35 | 0.4 | 278.5 | 2.1 | 326.8 |
| 13.0 | 12.99 | 0.08 | -0.37 | 0.4 | 282.0 | 1.8 | 339.3 |
| 14.0 | 13.99 | 0.11 | -0.37 | 0.4 | 286.4 | 2.3 | 351.5 |
| 15.0 | 14.99 | 0.14 | -0.38 | 0.4 | 290.7 | 2.2 | 357.8 |
| 16.0 | 15.99 | 0.18 | -0.37 | 0.4 | 295.9 | 2.2 | 5.2 |
| 17.0 | 16.99 | 0.22 | -0.36 | 0.4 | 302.0 | 2.9 | 9.3 |
| 18.0 | 17.99 | 0.28 | -0.34 | 0.4 | 309.3 | 3.5 | 20.2 |
| 19.0 | 18.99 | 0.33 | -0.31 | 0.5 | 317.2 | 3.7 | 33.1 |
| 20.0 | 19.98 | 0.39 | -0.26 | 0.5 | 325.9 | 4.5 | 32.9 |
| 21.0 | 20.98 | 0.45 | -0.22 | 0.5 | 334.2 | 4.8 | 37.4 |
| 22.0 | 21.98 | 0.52 | -0.17 | 0.5 | 342.1 | 5.0 | 34.0 |
| 23.0 | 22.97 | 0.58 | -0.11 | 0.6 | 349.1 | 4.9 | 45.8 |
| 24.0 | 23.97 | 0.64 | -0.06 | 0.6 | 354.8 | 4.5 | 44.6 |
| 25.0 | 24.97 | 0.70 | -0.01 | 0.7 | 359.5 | 4.6 | 44.0 |
| 26.0 | 25.96 | 0.77 | 0.05 | 0.8 | 3.8 | 5.4 | 32.2 |
| 27.0 | 26.96 | 0.84 | 0.11 | 0.8 | 7.2 | 5.0 | 39.8 |
| 28.0 | 27.96 | 0.90 | 0.16 | 0.9 | 9.8 | 4.6 | 34.8 |
| 29.0 | 28.95 | 0.96 | 0.20 | 1.0 | 11.8 | 3.9 | 45.5 |
| 29.8 | 29.71 | 1.01 | 0.24 | 1.0 | 13.2 | 4.6 | 35.4 |



Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

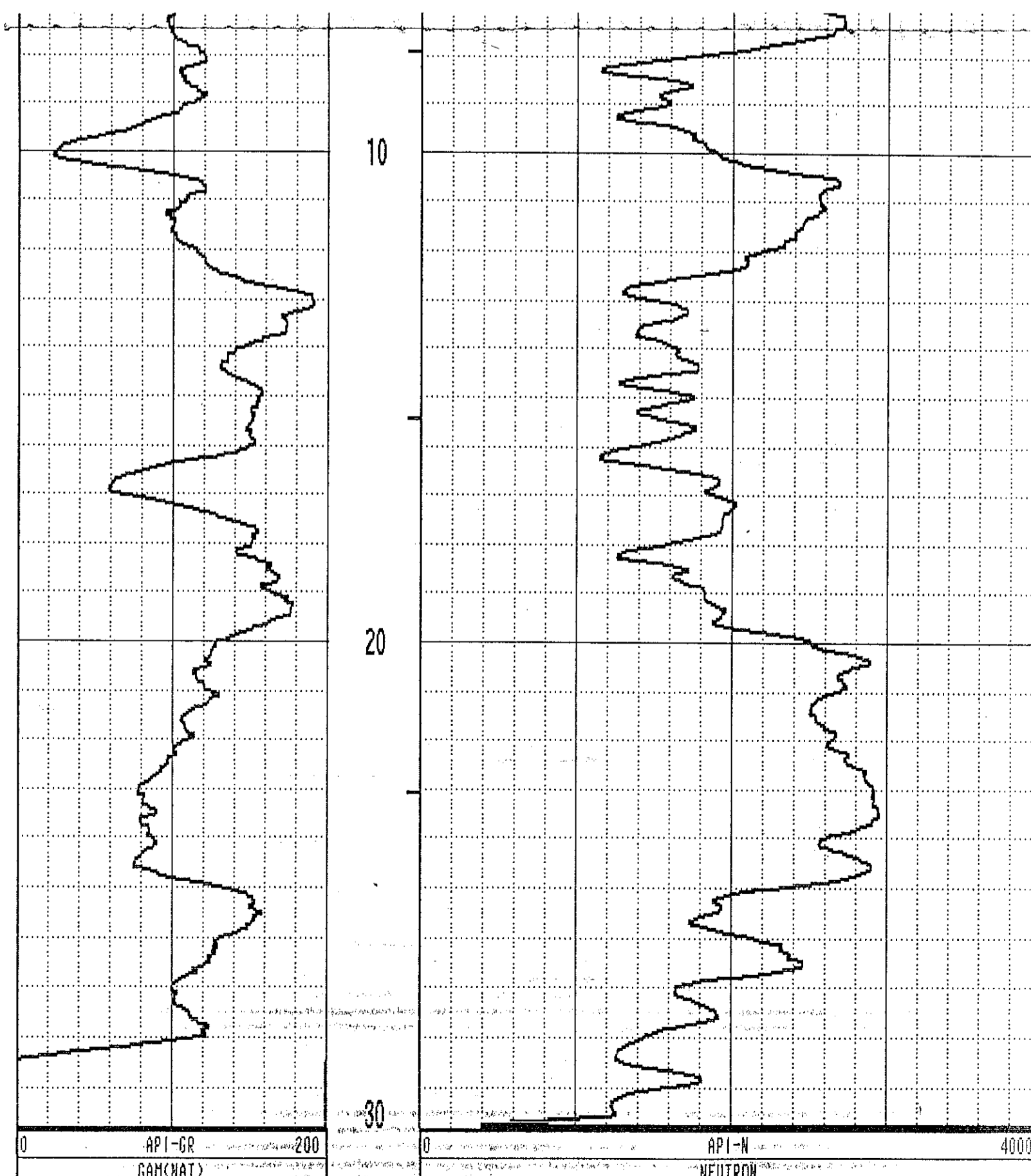
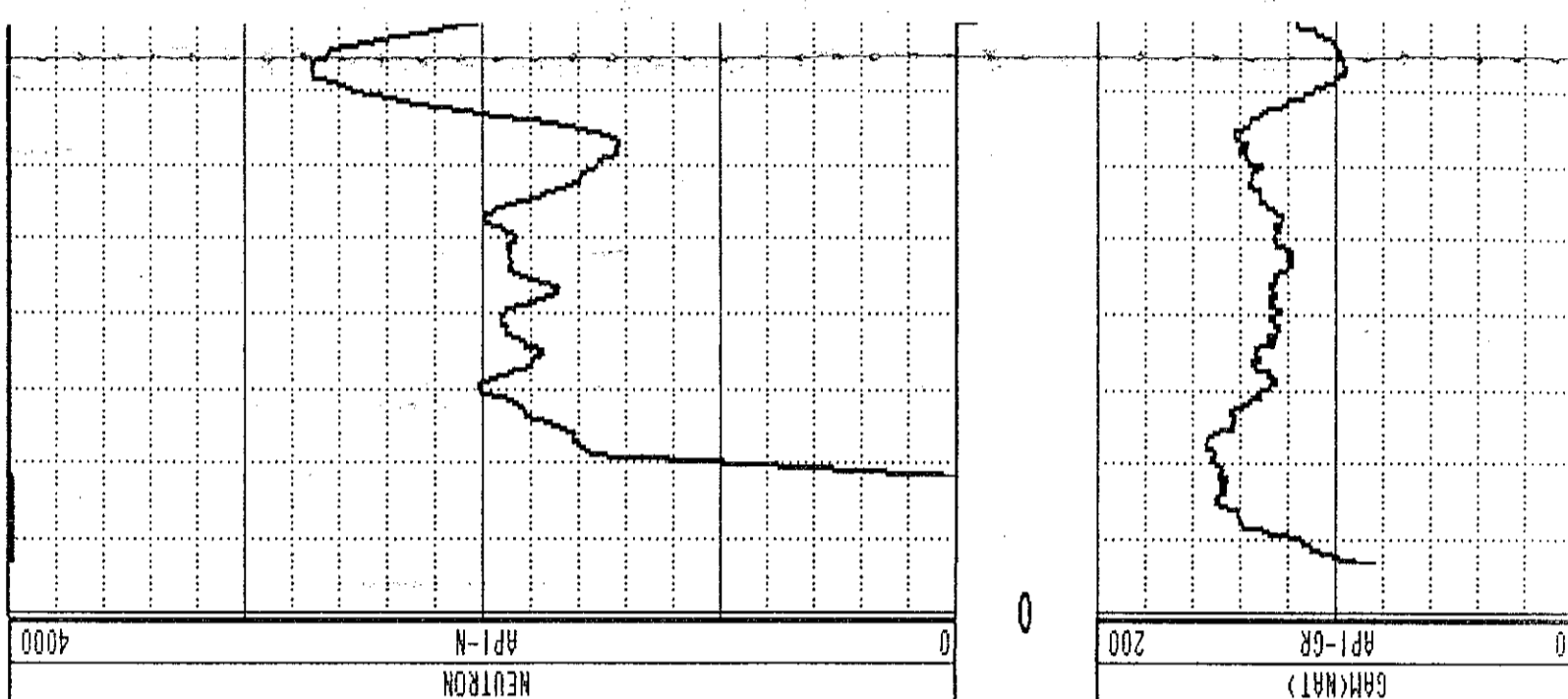
COMPANY : PINE VALLEY COAL
 WELL : WRH-96224
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/05/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 28 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 29.81 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.70 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 4
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

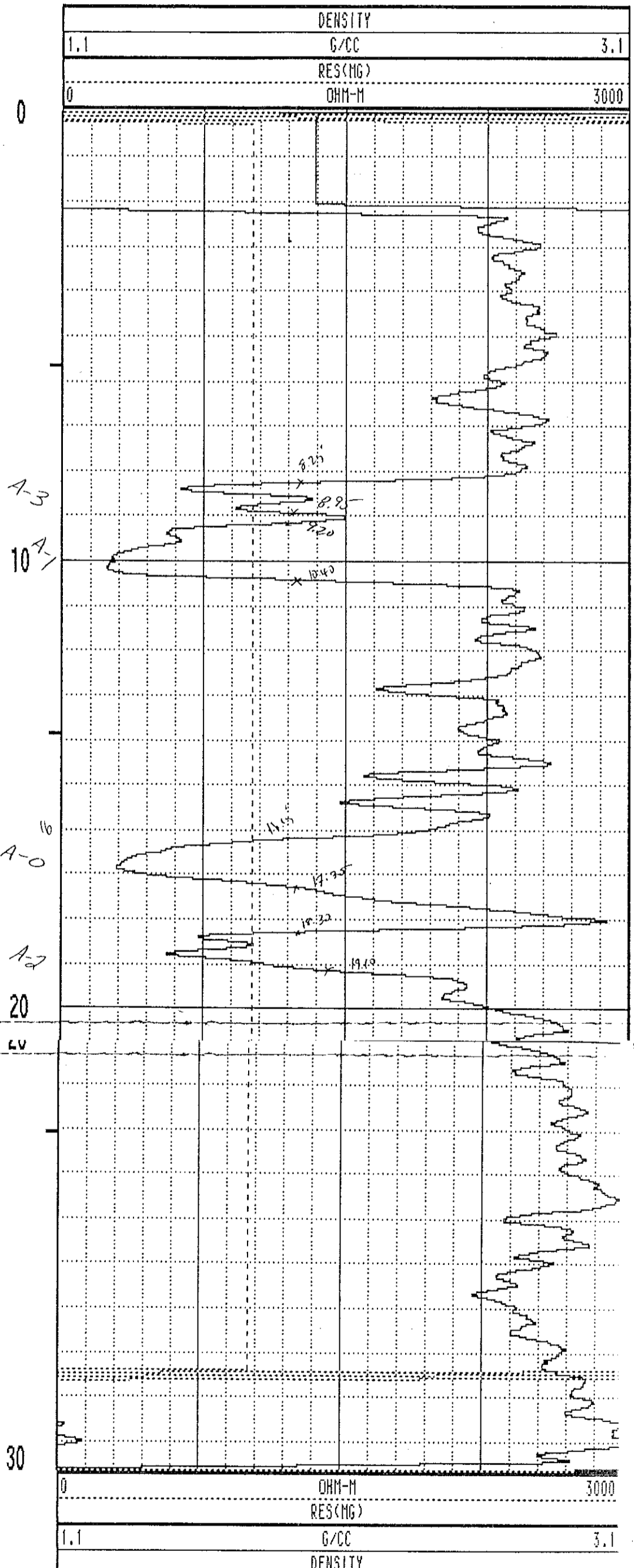
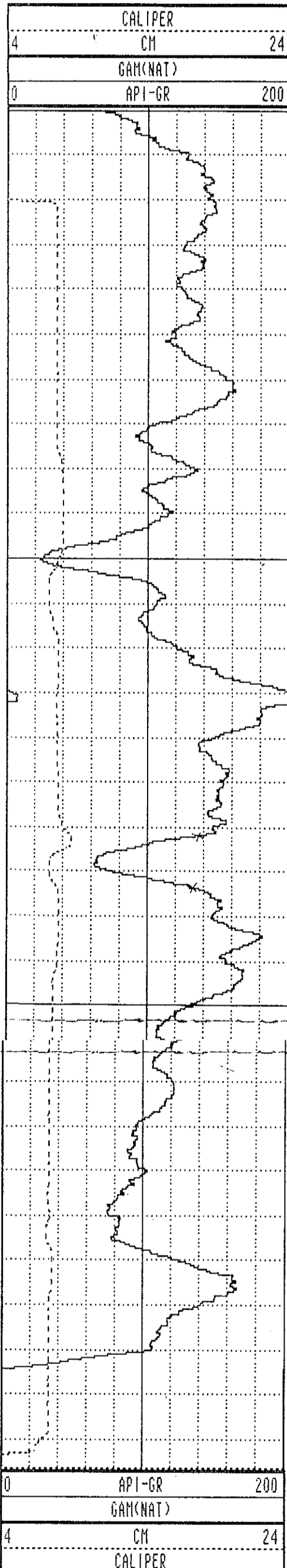
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96224 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.67 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96224 10/05/96 958

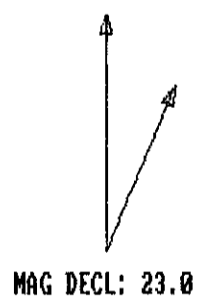
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

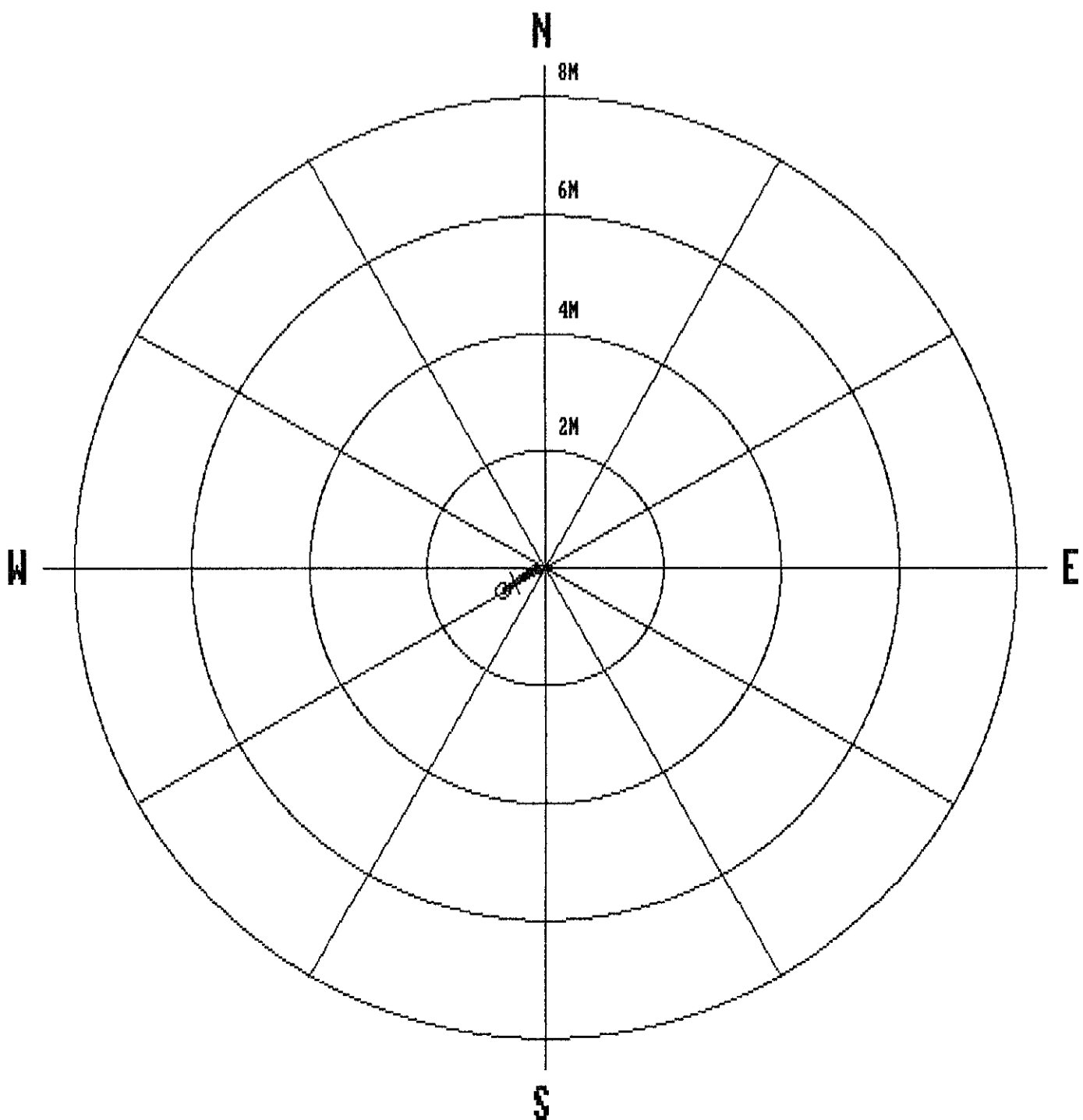
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.00 | -0.02 | 0.0 | 257.6 | 1.5 | 287.7 |
| 4.0 | 4.00 | -0.01 | -0.03 | 0.0 | 259.1 | 1.0 | 273.3 |
| 5.0 | 5.00 | -0.02 | -0.04 | 0.0 | 245.8 | 1.2 | 224.0 |
| 6.0 | 6.00 | -0.02 | -0.06 | 0.1 | 250.5 | 1.2 | 270.8 |
| 7.0 | 7.00 | -0.02 | -0.08 | 0.1 | 254.5 | 1.4 | 281.5 |
| 8.0 | 8.00 | -0.02 | -0.10 | 0.1 | 258.5 | 1.3 | 273.5 |
| 9.0 | 9.00 | -0.02 | -0.13 | 0.1 | 263.1 | 2.3 | 290.1 |
| 10.0 | 10.00 | -0.01 | -0.16 | 0.2 | 265.3 | 2.0 | 277.6 |
| 11.0 | 11.00 | -0.02 | -0.20 | 0.2 | 263.9 | 1.5 | 246.2 |
| 12.0 | 12.00 | -0.04 | -0.22 | 0.2 | 260.2 | 1.5 | 211.8 |
| 13.0 | 13.00 | -0.06 | -0.25 | 0.3 | 256.8 | 2.0 | 232.6 |
| 14.0 | 14.00 | -0.08 | -0.28 | 0.3 | 253.9 | 2.5 | 239.5 |
| 15.0 | 14.99 | -0.10 | -0.31 | 0.3 | 251.7 | 2.5 | 255.3 |
| 16.0 | 15.99 | -0.13 | -0.35 | 0.4 | 249.5 | 2.5 | 237.1 |
| 17.0 | 16.99 | -0.15 | -0.38 | 0.4 | 248.0 | 2.6 | 228.8 |
| 18.0 | 17.99 | -0.18 | -0.42 | 0.5 | 246.3 | 3.6 | 234.5 |
| 19.0 | 18.99 | -0.22 | -0.46 | 0.5 | 244.9 | 3.1 | 227.1 |
| 20.0 | 19.99 | -0.25 | -0.50 | 0.6 | 243.6 | 3.0 | 223.6 |
| 21.0 | 20.99 | -0.28 | -0.54 | 0.6 | 243.0 | 3.2 | 242.7 |
| 22.0 | 21.99 | -0.31 | -0.59 | 0.7 | 242.4 | 3.3 | 241.6 |
| 23.0 | 22.98 | -0.34 | -0.64 | 0.7 | 241.8 | 3.7 | 234.9 |
| 24.0 | 23.98 | -0.38 | -0.69 | 0.8 | 241.4 | 4.0 | 238.0 |
| 24.2 | 24.22 | -0.39 | -0.71 | 0.8 | 241.4 | 4.0 | 241.3 |

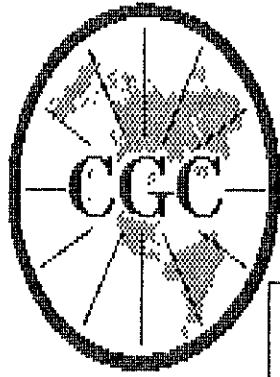
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96225
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 24.22 M
 AZIMUTH: 241.4
 DISTANCE: 0.8 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96225
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 09/29/96
 DEPTH DRILLER : 24
 LOG BOTTOM : 24.30
 LOG TOP : 0.72

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

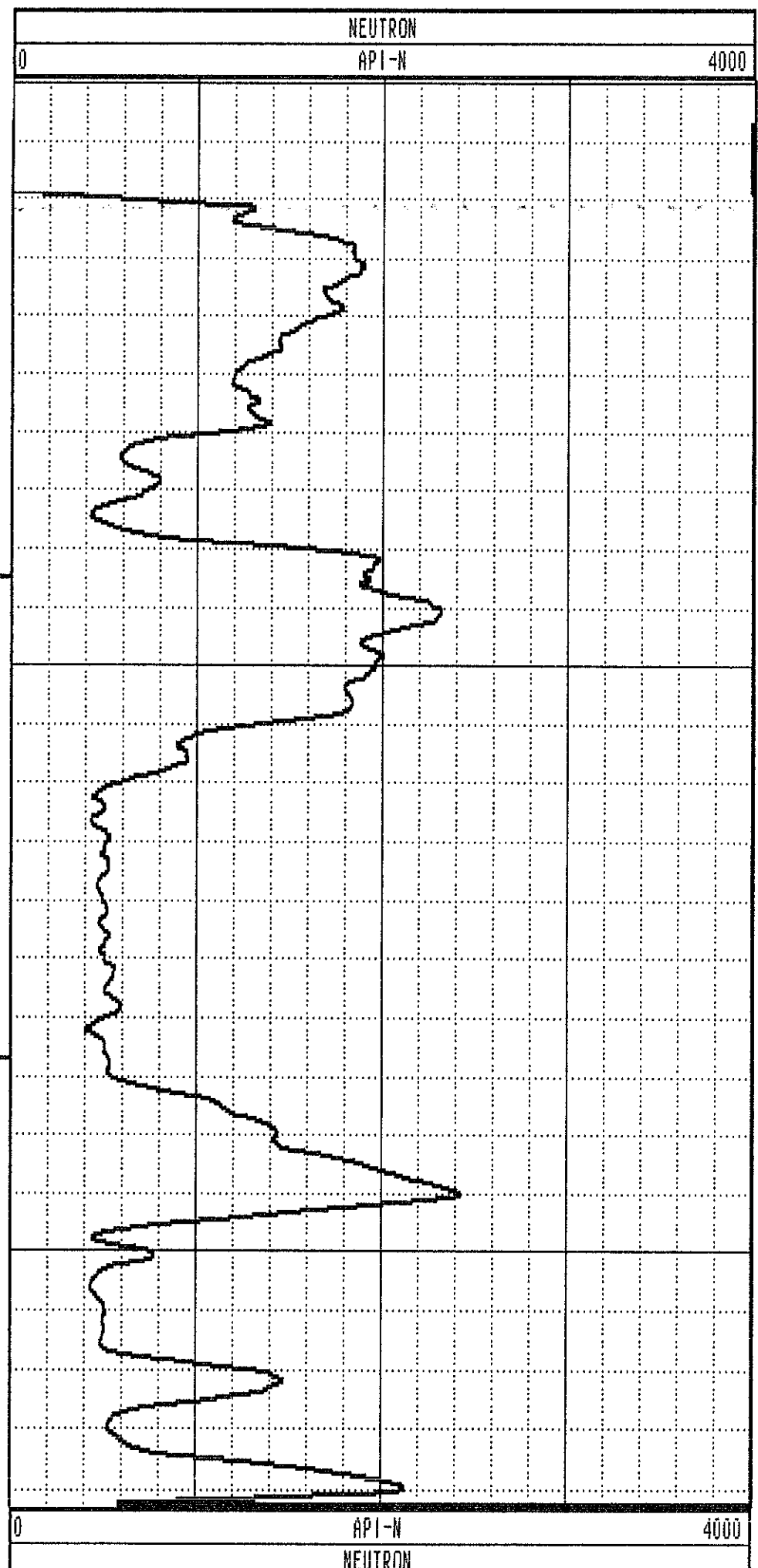
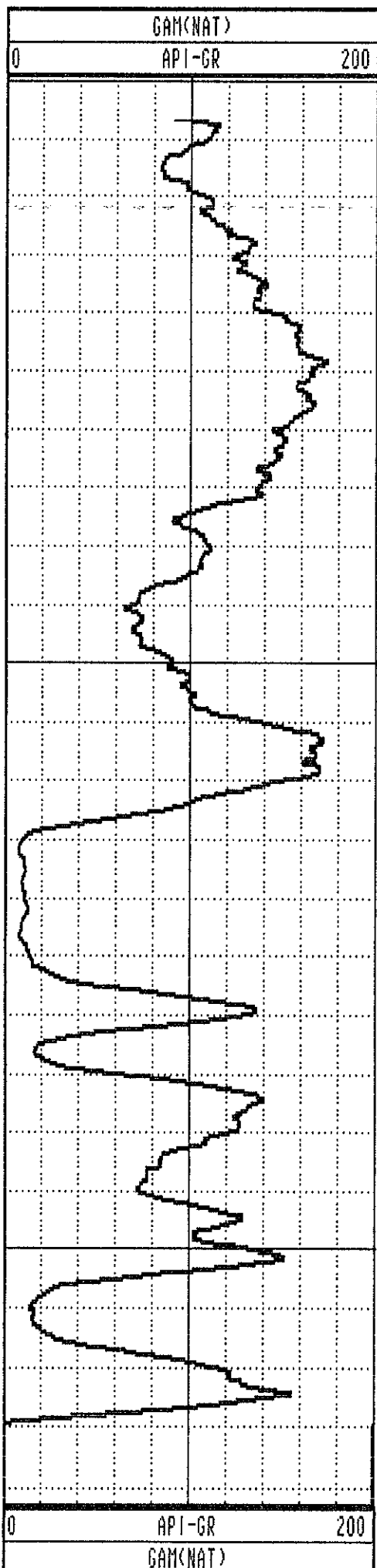
BIT SIZE :
 MAGNETIC DECL. : 23.00
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 1
 PLOT : PINE 4
 THRESH: 10000

REMARKS :
 NONE

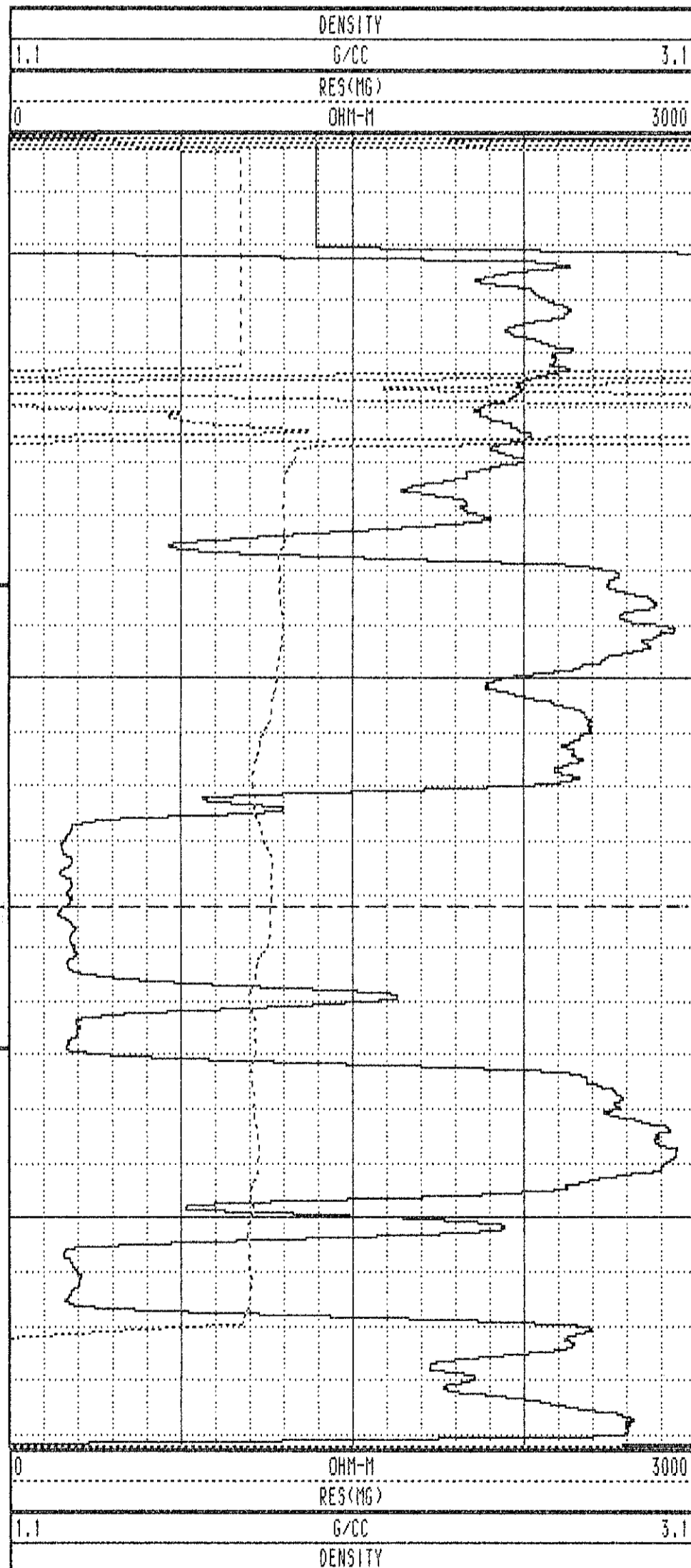
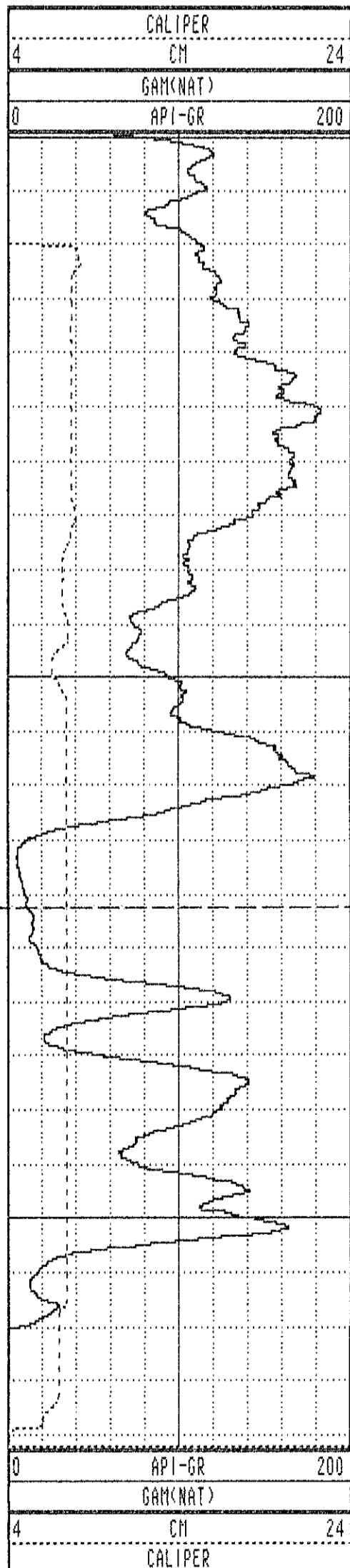
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96225 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 24 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 24.26 | LOG MEASURED FROM: | DF |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 0 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



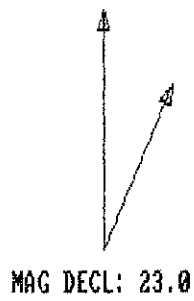
WRH-96225 09/29/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

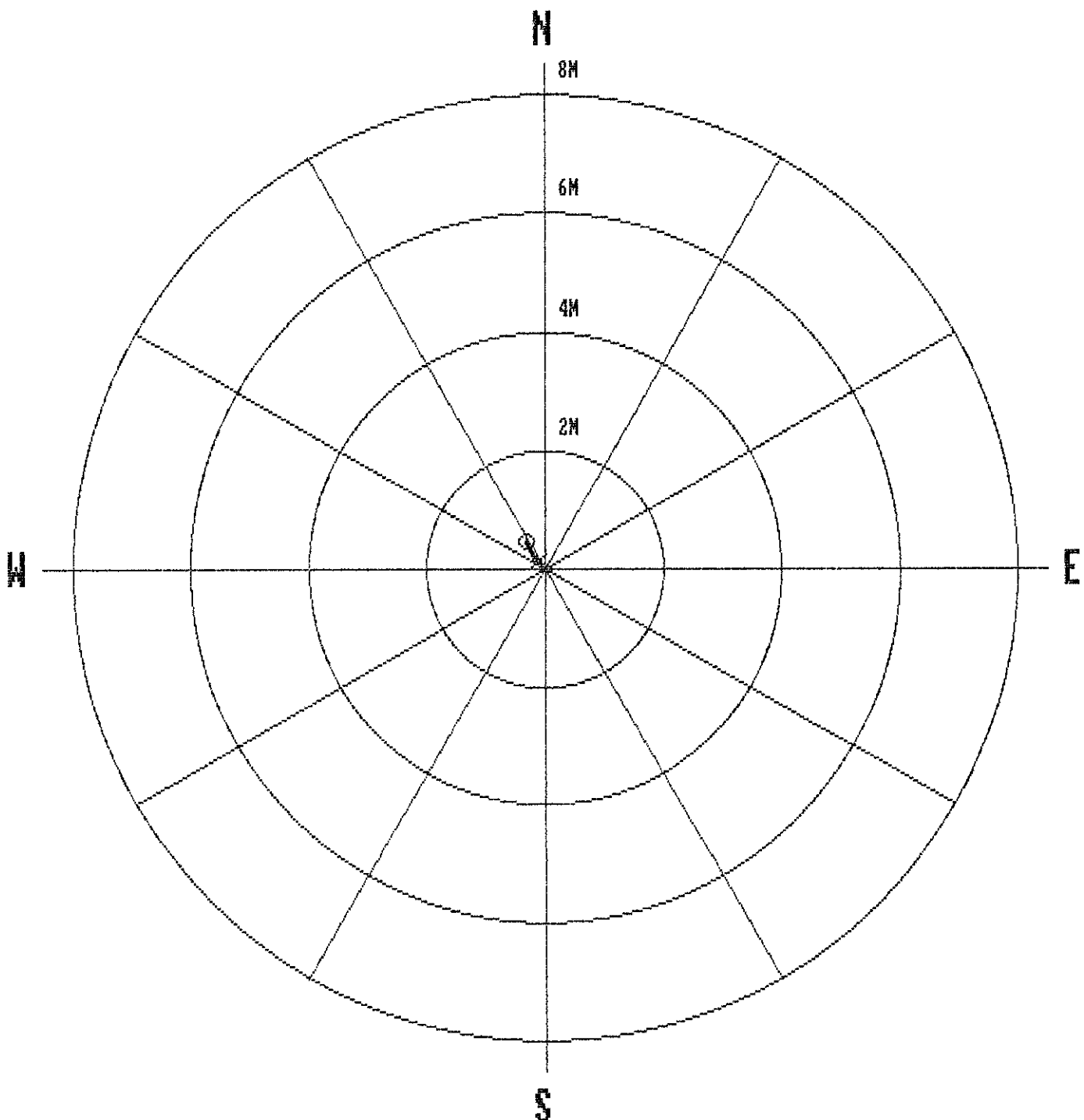
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.01 | 0.0 | 288.0 | 1.2 | 310.5 |
| 4.0 | 4.00 | -0.00 | -0.01 | 0.0 | 267.9 | 1.5 | 356.9 |
| 5.0 | 5.00 | 0.01 | -0.01 | 0.0 | 318.5 | 1.3 | 241.7 |
| 6.0 | 6.00 | 0.02 | -0.02 | 0.0 | 316.1 | 1.7 | 307.0 |
| 7.0 | 7.00 | 0.04 | -0.03 | 0.1 | 317.6 | 1.6 | 294.5 |
| 8.0 | 8.00 | 0.06 | -0.05 | 0.1 | 319.5 | 1.8 | 321.3 |
| 9.0 | 9.00 | 0.09 | -0.08 | 0.1 | 318.9 | 2.5 | 319.2 |
| 10.0 | 10.00 | 0.12 | -0.11 | 0.2 | 318.2 | 2.5 | 330.3 |
| 11.0 | 11.00 | 0.15 | -0.13 | 0.2 | 318.4 | 2.7 | 317.7 |
| 12.0 | 11.99 | 0.19 | -0.17 | 0.2 | 318.3 | 2.4 | 320.7 |
| 13.0 | 12.99 | 0.23 | -0.20 | 0.3 | 318.9 | 3.3 | 323.3 |
| 14.0 | 13.99 | 0.28 | -0.23 | 0.4 | 320.2 | 3.3 | 329.6 |
| 15.0 | 14.99 | 0.32 | -0.26 | 0.4 | 321.4 | 3.4 | 333.7 |
| 16.0 | 15.99 | 0.38 | -0.28 | 0.5 | 323.3 | 3.8 | 339.8 |
| 17.0 | 16.99 | 0.44 | -0.31 | 0.5 | 324.8 | 4.4 | 329.9 |
| 17.1 | 17.07 | 0.45 | -0.31 | 0.5 | 324.9 | 4.6 | 331.6 |

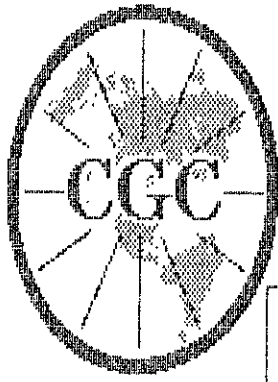
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96226
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 17.07 M
 AZIMUTH: 324.9
 DISTANCE: 0.5 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



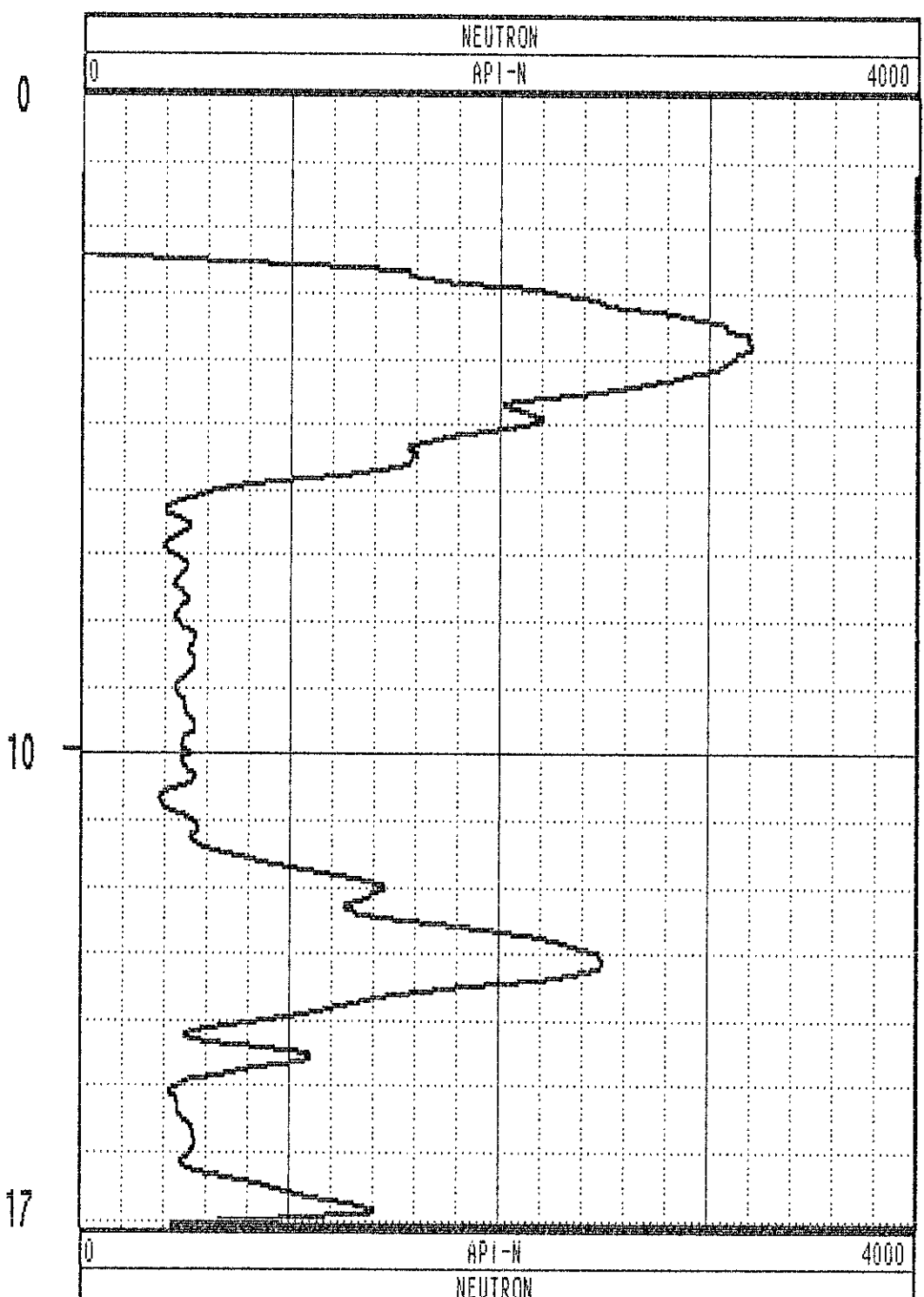
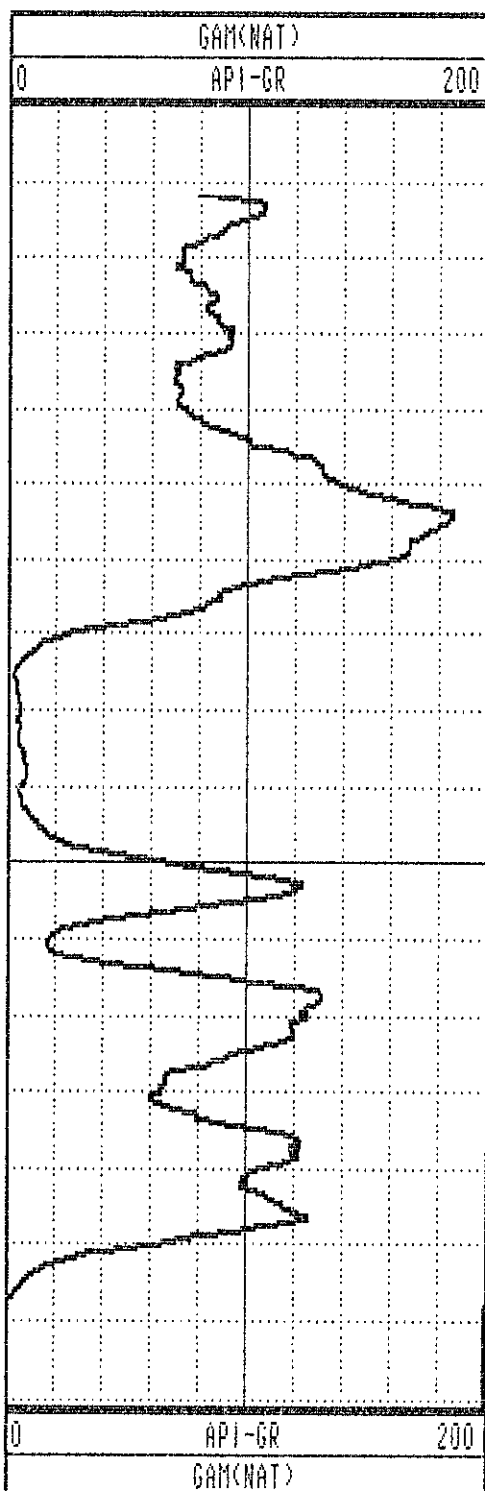


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96226 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.15 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 1.21 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 4 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

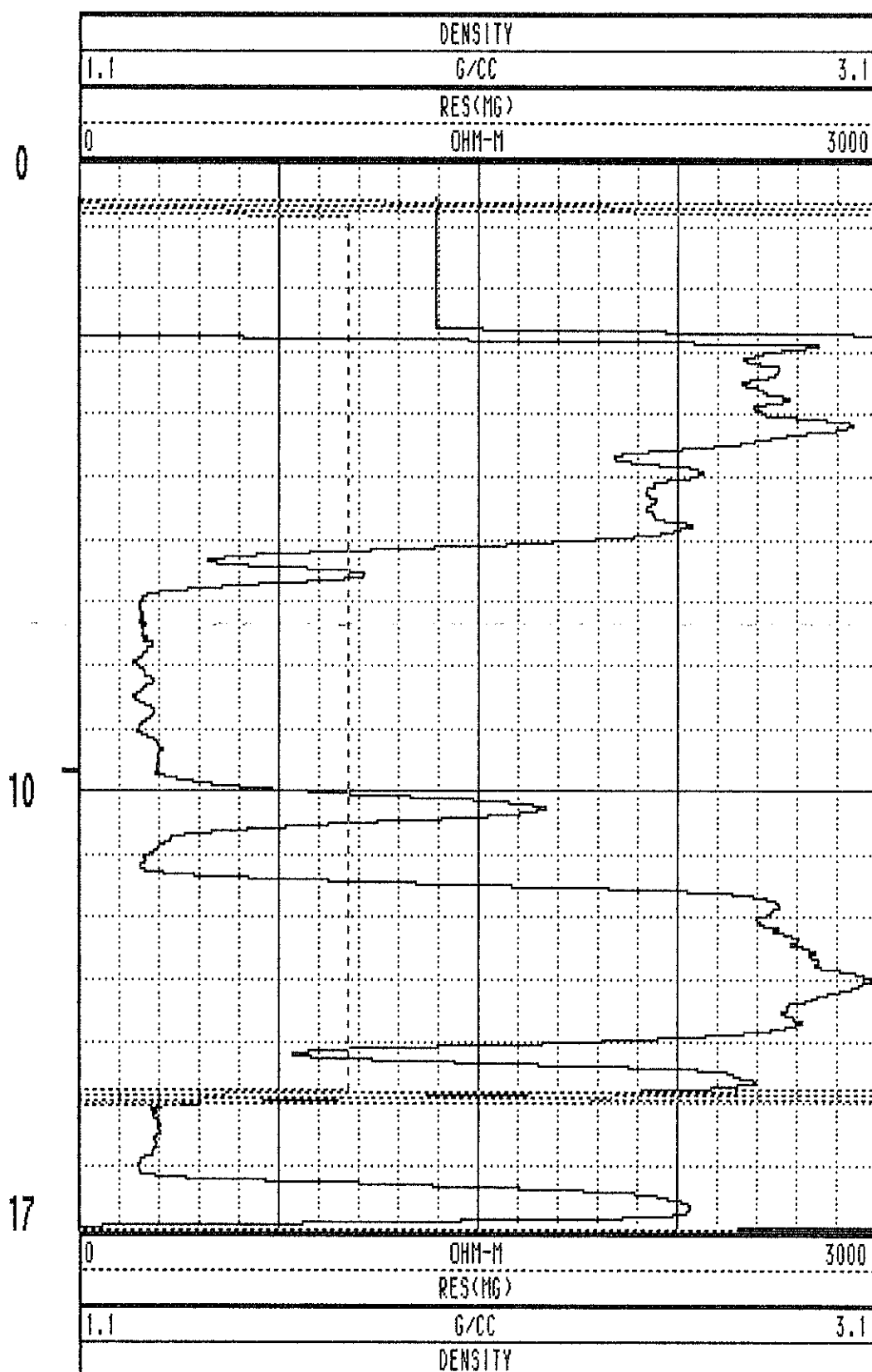
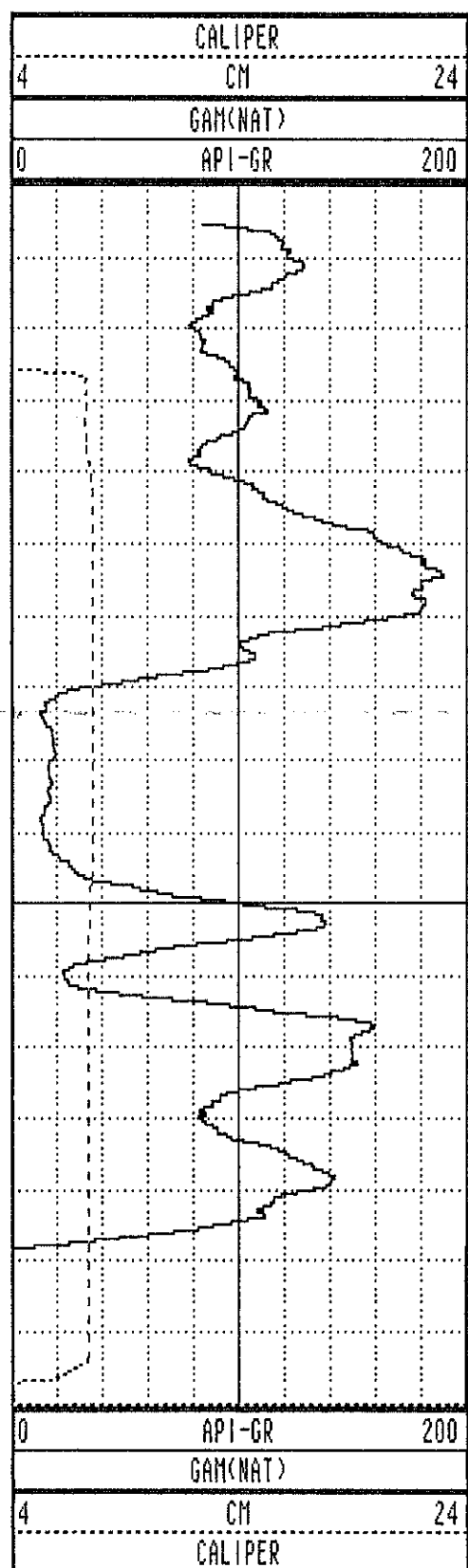
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96226 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.05 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.56 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 5 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



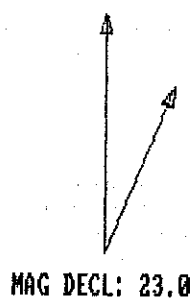
WRH-96226 09/29/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-H |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-H |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

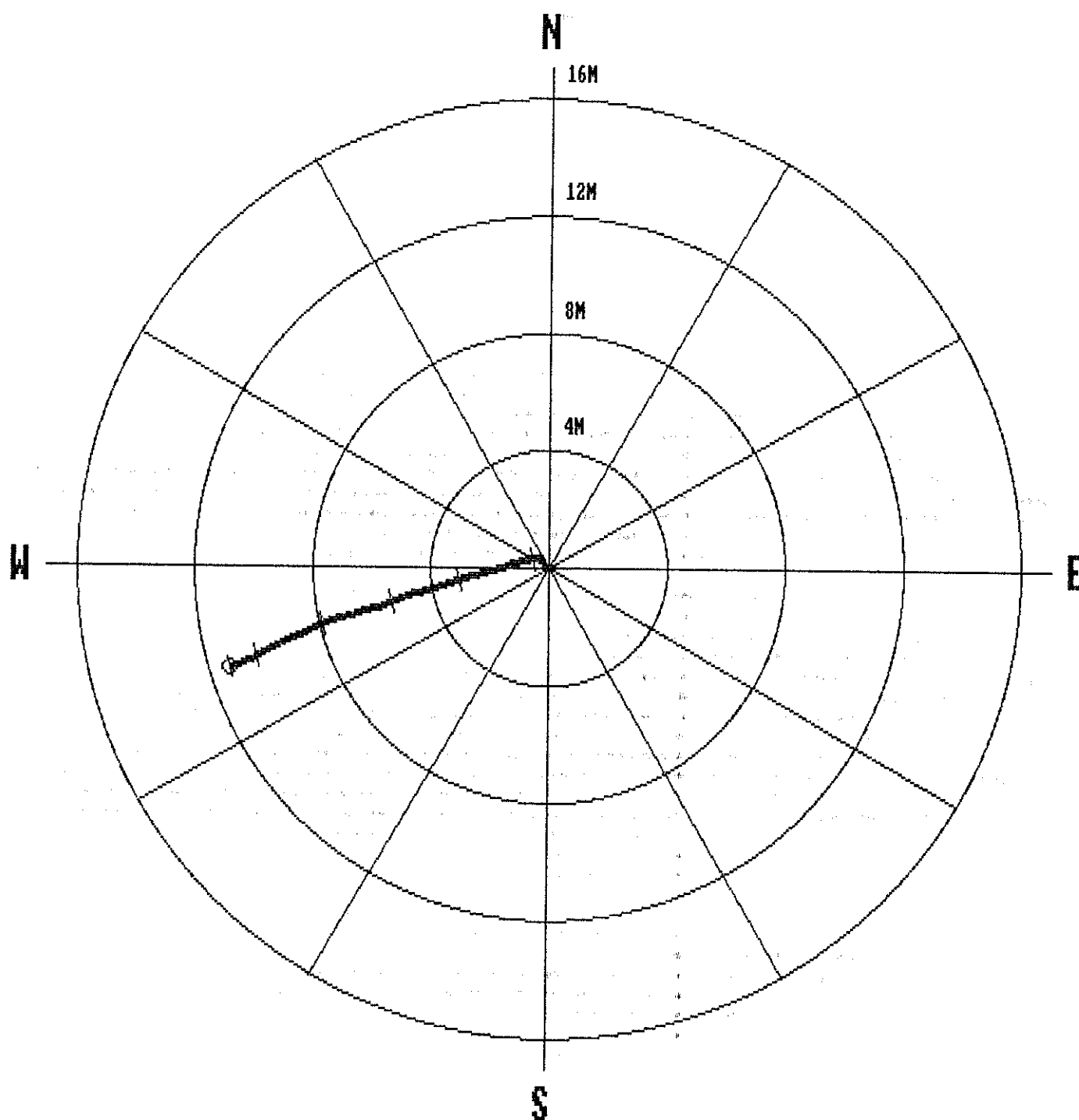
| | | | | | | | |
|------|-------|-------|--------|------|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.96 | -0.11 | -0.09 | 0.1 | 218.3 | 26.2 | 236.0 |
| 4.0 | 3.86 | 0.23 | -0.16 | 0.3 | 325.7 | 27.8 | 339.7 |
| 5.0 | 4.75 | 0.31 | -0.40 | 0.5 | 307.3 | 27.7 | 269.5 |
| 6.0 | 5.63 | 0.23 | -0.86 | 0.9 | 285.1 | 27.2 | 255.9 |
| 7.0 | 6.52 | 0.11 | -1.29 | 1.3 | 274.7 | 27.5 | 221.7 |
| 8.0 | 7.40 | -0.03 | -1.73 | 1.7 | 268.9 | 27.8 | 255.0 |
| 9.0 | 8.28 | -0.15 | -2.18 | 2.2 | 266.0 | 26.9 | 250.2 |
| 10.0 | 9.17 | -0.29 | -2.61 | 2.6 | 263.7 | 27.9 | 266.9 |
| 11.0 | 10.05 | -0.42 | -3.05 | 3.1 | 262.2 | 27.0 | 252.2 |
| 12.0 | 10.95 | -0.56 | -3.48 | 3.5 | 260.9 | 27.5 | 249.6 |
| 13.0 | 11.84 | -0.69 | -3.90 | 4.0 | 260.0 | 25.4 | 254.9 |
| 14.0 | 12.74 | -0.82 | -4.29 | 4.4 | 259.2 | 26.4 | 271.0 |
| 15.0 | 13.64 | -0.92 | -4.71 | 4.8 | 259.0 | 26.6 | 252.5 |
| 16.0 | 14.53 | -1.09 | -5.12 | 5.2 | 258.0 | 26.2 | 240.8 |
| 17.0 | 15.43 | -1.24 | -5.52 | 5.7 | 257.3 | 26.8 | 267.1 |
| 18.0 | 16.33 | -1.38 | -5.91 | 6.1 | 256.9 | 26.5 | 233.2 |
| 19.0 | 17.23 | -1.48 | -6.34 | 6.5 | 256.8 | 27.1 | 241.3 |
| 20.0 | 18.12 | -1.62 | -6.75 | 6.9 | 256.5 | 26.7 | 240.9 |
| 21.0 | 19.01 | -1.73 | -7.17 | 7.4 | 256.5 | 28.4 | 266.5 |
| 22.0 | 19.89 | -1.89 | -7.58 | 7.8 | 256.0 | 27.7 | 243.5 |
| 23.0 | 20.78 | -2.08 | -8.00 | 8.3 | 255.4 | 26.8 | 244.3 |
| 24.0 | 21.67 | -2.29 | -8.41 | 8.7 | 254.8 | 26.8 | 247.4 |
| 25.0 | 22.55 | -2.46 | -8.83 | 9.2 | 254.4 | 26.8 | 256.4 |
| 26.0 | 23.44 | -2.67 | -9.23 | 9.6 | 253.9 | 27.4 | 252.8 |
| 27.0 | 24.34 | -2.87 | -9.63 | 10.0 | 253.4 | 26.9 | 248.9 |
| 28.0 | 25.23 | -3.08 | -9.94 | 10.4 | 252.8 | 26.7 | 245.6 |
| 29.0 | 26.13 | -3.22 | -10.32 | 10.8 | 252.7 | 25.4 | 252.3 |
| 30.0 | 27.03 | -3.37 | -10.71 | 11.2 | 252.5 | 26.6 | 264.1 |
| 30.1 | 27.14 | -3.39 | -10.76 | 11.3 | 252.5 | 26.2 | 250.0 |

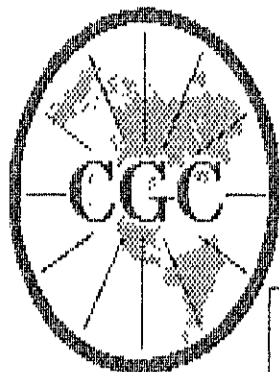
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96227
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



SCALE: 2 M/CM
 TRUE DEPTH: 27.14 M
 AZIMUTH: 252.5
 DISTANCE: 11.3 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



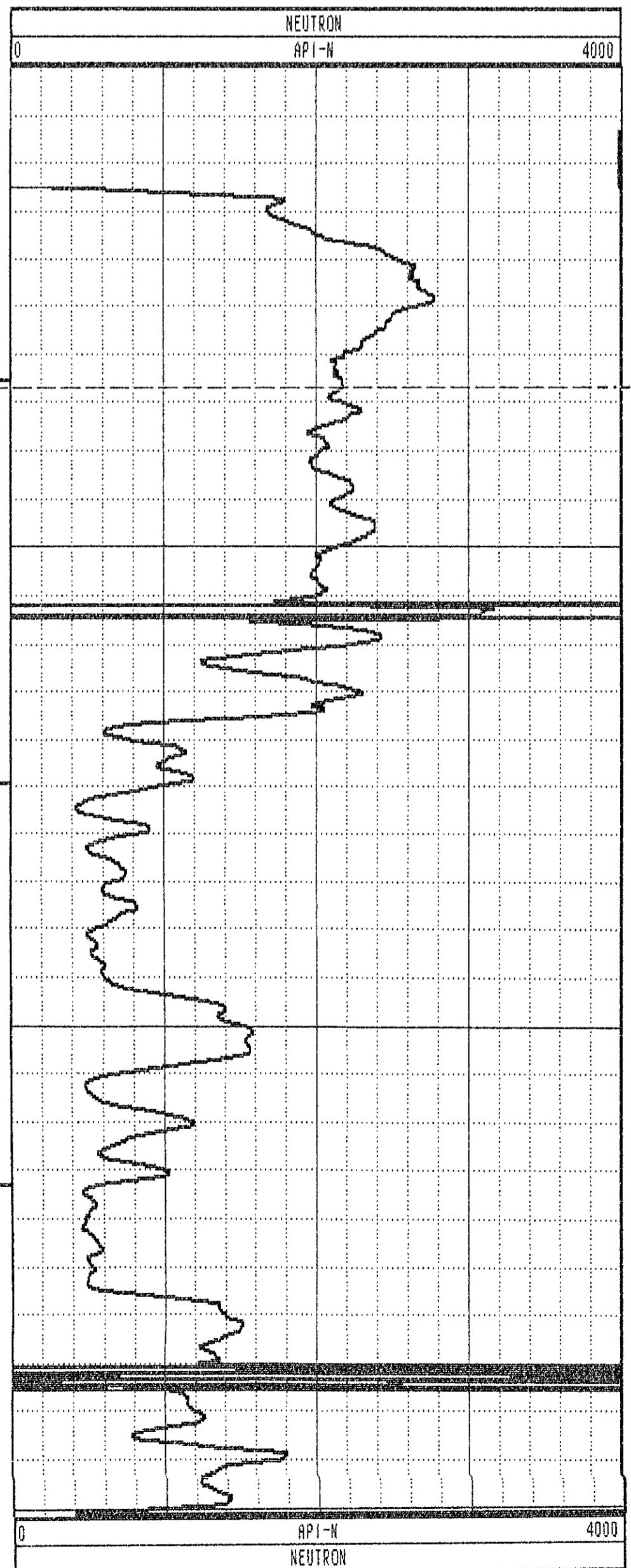
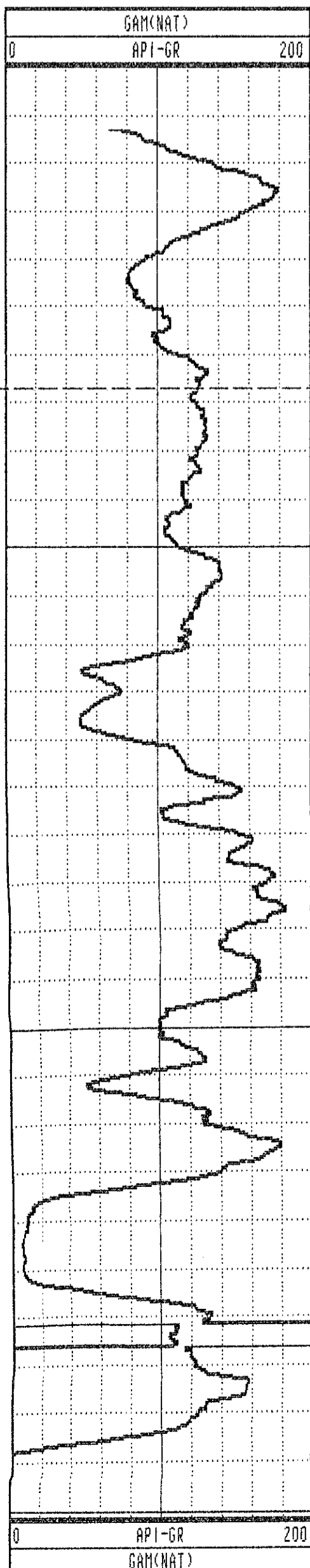


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96227 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 09/29/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB |
| LOG BOTTOM | : 30.17 | LOG MEASURED FROM: | G.L. |
| LOG TOP | : 1.31 | DRL MEASURED FROM: | GL |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

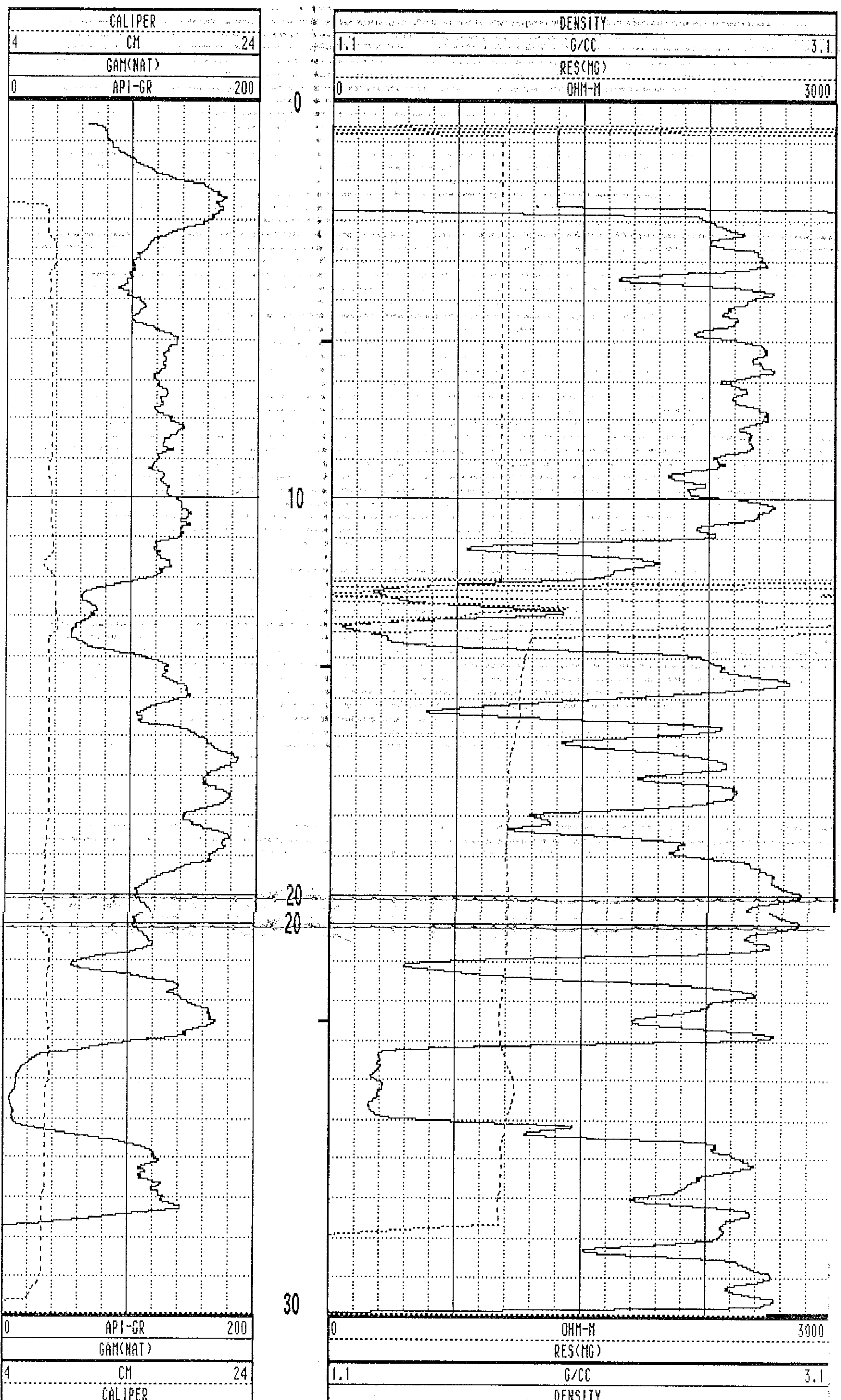
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96227 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.95 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.60 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 1 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



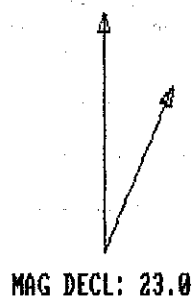
WRH-96227 09/29/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

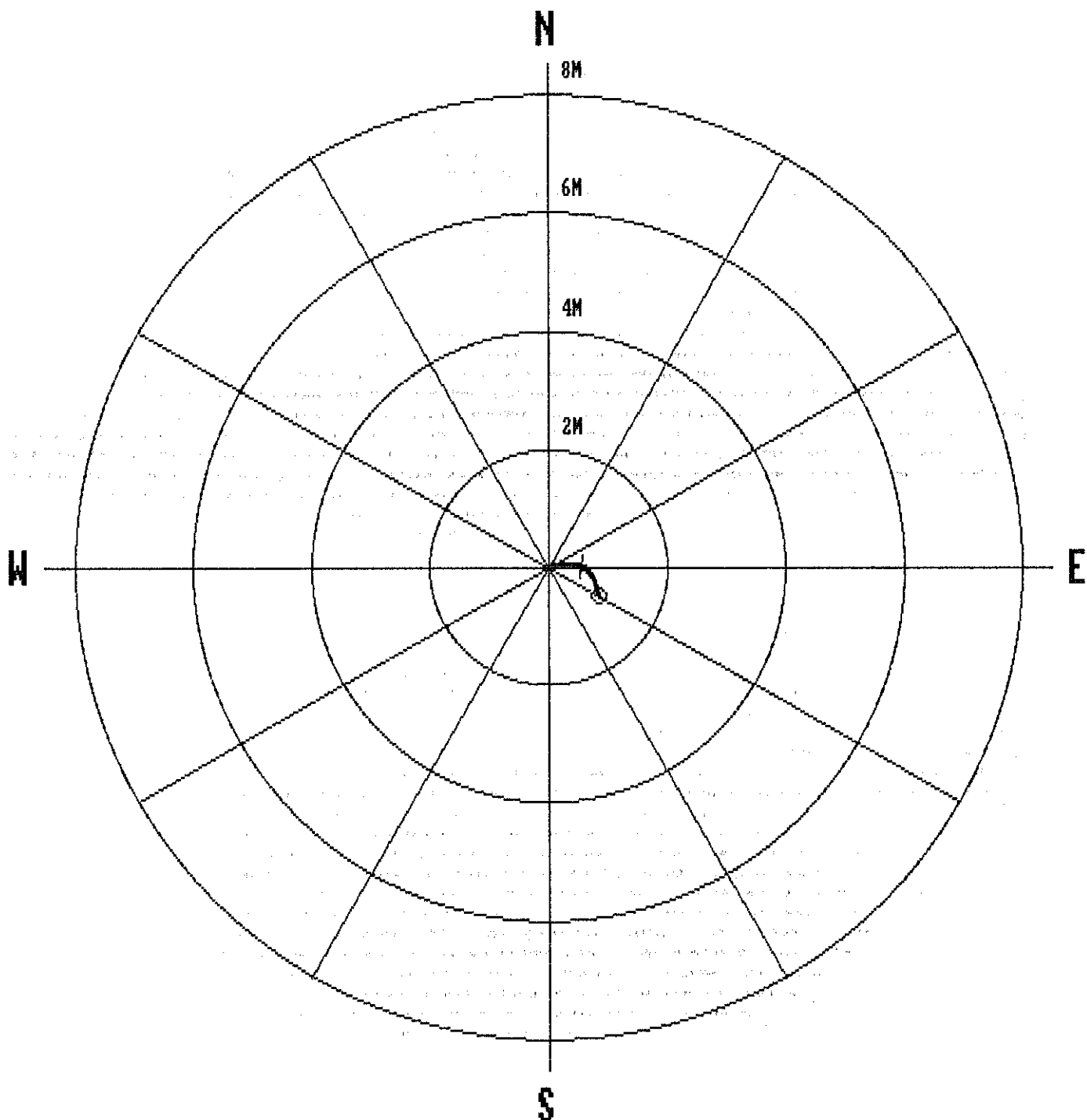
| | | | | | | | |
|------|-------|-------|------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 55.7 | 1.5 | 53.2 |
| 3.0 | 3.00 | 0.00 | 0.01 | 0.0 | 74.4 | 1.1 | 124.4 |
| 4.0 | 4.00 | 0.01 | 0.02 | 0.0 | 69.4 | 1.3 | 291.1 |
| 5.0 | 5.00 | 0.01 | 0.00 | 0.0 | 22.5 | 1.8 | 84.2 |
| 6.0 | 6.00 | 0.02 | 0.03 | 0.0 | 63.3 | 1.8 | 79.1 |
| 7.0 | 7.00 | 0.03 | 0.06 | 0.1 | 66.3 | 2.3 | 75.5 |
| 8.0 | 8.00 | 0.04 | 0.09 | 0.1 | 67.5 | 2.0 | 61.2 |
| 9.0 | 9.00 | 0.05 | 0.13 | 0.1 | 68.4 | 2.2 | 72.3 |
| 10.0 | 10.00 | 0.06 | 0.16 | 0.2 | 70.7 | 1.8 | 96.3 |
| 11.0 | 11.00 | 0.06 | 0.19 | 0.2 | 72.7 | 1.5 | 83.8 |
| 12.0 | 12.00 | 0.06 | 0.22 | 0.2 | 75.4 | 1.5 | 97.0 |
| 13.0 | 12.99 | 0.05 | 0.25 | 0.3 | 77.8 | 2.0 | 101.3 |
| 14.0 | 13.99 | 0.05 | 0.28 | 0.3 | 80.4 | 2.1 | 91.3 |
| 15.0 | 14.99 | 0.05 | 0.32 | 0.3 | 81.8 | 2.1 | 88.5 |
| 16.0 | 15.99 | 0.04 | 0.36 | 0.4 | 83.1 | 2.5 | 98.8 |
| 17.0 | 16.99 | 0.04 | 0.41 | 0.4 | 84.9 | 3.1 | 96.4 |
| 18.0 | 17.99 | 0.03 | 0.46 | 0.5 | 85.9 | 2.7 | 92.4 |
| 19.0 | 18.99 | 0.03 | 0.51 | 0.5 | 87.1 | 2.8 | 103.2 |
| 20.0 | 19.99 | 0.01 | 0.56 | 0.6 | 88.5 | 2.3 | 106.0 |
| 21.0 | 20.99 | -0.00 | 0.60 | 0.6 | 90.3 | 2.5 | 109.4 |
| 22.0 | 21.99 | -0.02 | 0.64 | 0.6 | 91.9 | 2.5 | 127.7 |
| 23.0 | 22.99 | -0.05 | 0.67 | 0.7 | 94.2 | 2.4 | 134.7 |
| 24.0 | 23.98 | -0.09 | 0.69 | 0.7 | 97.1 | 2.8 | 139.7 |
| 25.0 | 24.98 | -0.13 | 0.73 | 0.7 | 100.3 | 4.0 | 134.0 |
| 26.0 | 25.98 | -0.18 | 0.77 | 0.8 | 103.2 | 4.2 | 123.4 |
| 27.0 | 26.98 | -0.24 | 0.80 | 0.8 | 106.8 | 3.7 | 174.3 |
| 28.0 | 27.98 | -0.31 | 0.81 | 0.9 | 110.8 | 3.7 | 166.5 |
| 29.0 | 28.97 | -0.38 | 0.83 | 0.9 | 114.4 | 3.8 | 171.6 |
| 30.0 | 29.97 | -0.44 | 0.85 | 1.0 | 117.6 | 0.0 | 0.0 |
| 30.0 | 29.93 | -0.44 | 0.85 | 1.0 | 117.6 | 4.4 | 166.2 |

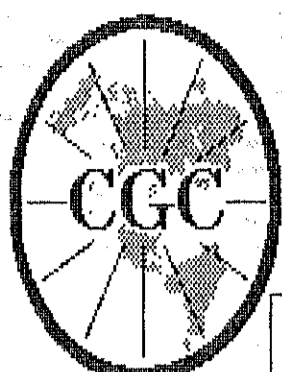
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96228
 DATE OF LOG: 09/29/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.93 M
 AZIMUTH: 117.6
 DISTANCE: 1.0 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





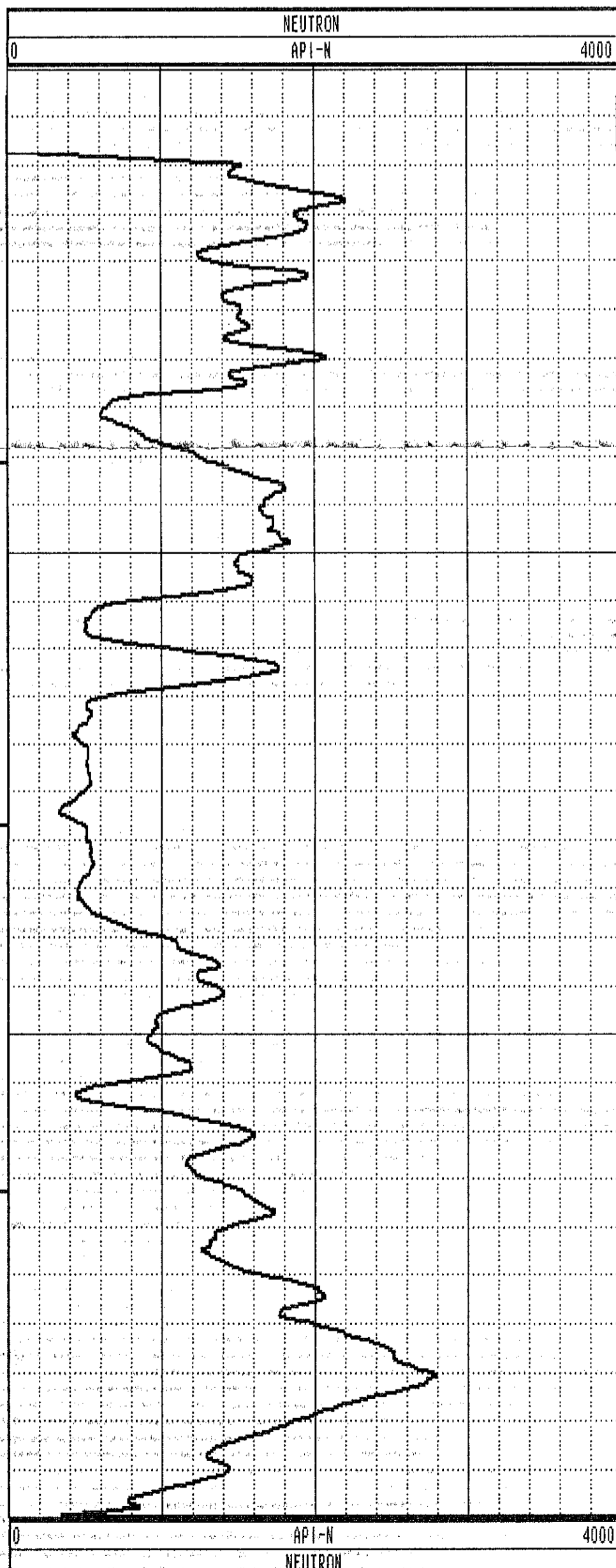
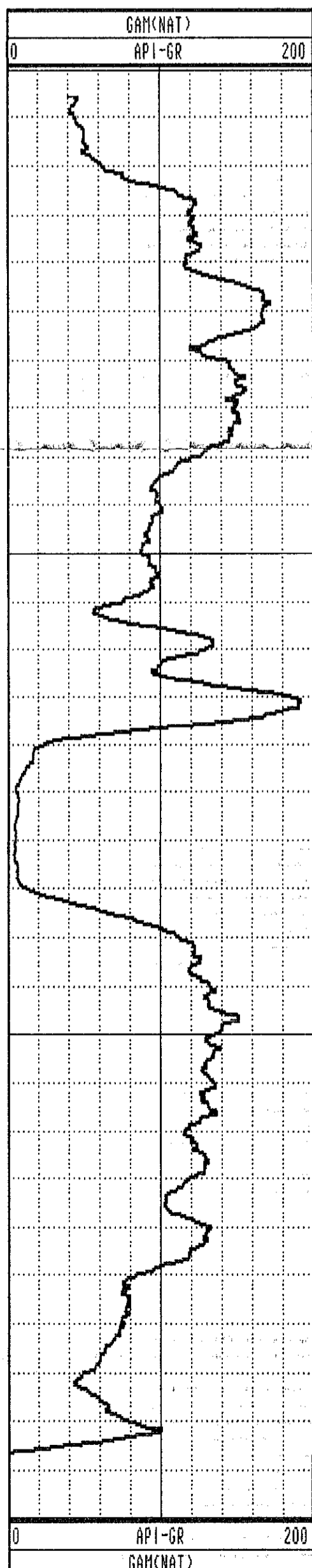
Century

GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|-------------------------|-----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96228 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 09/29/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 30.01 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.58 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.00 | RM | FILE : ORIGINAL |
| MATRIX DENSITY | : | RM TEMPERATURE | TYPE : 9055A |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | LOG : 1 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | PLOT : PINE 4 |
| REMARKS | : | | THRESH: 10000 |
| NONE | : | | |

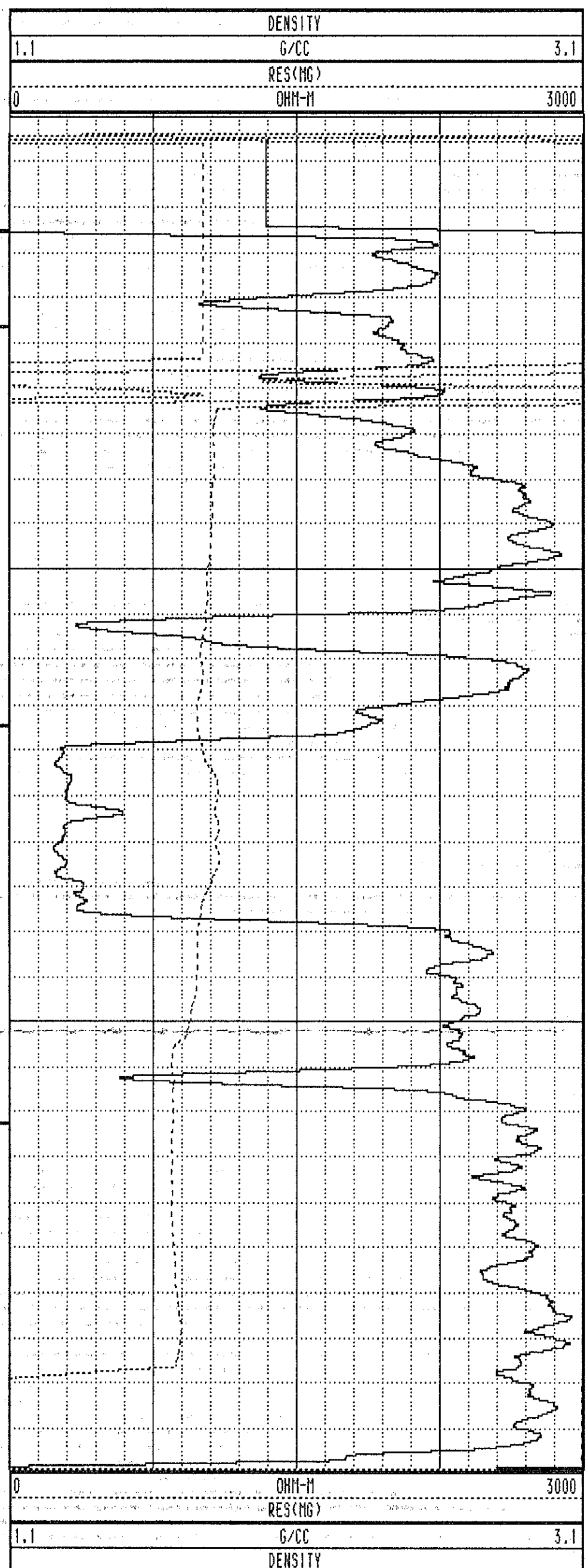
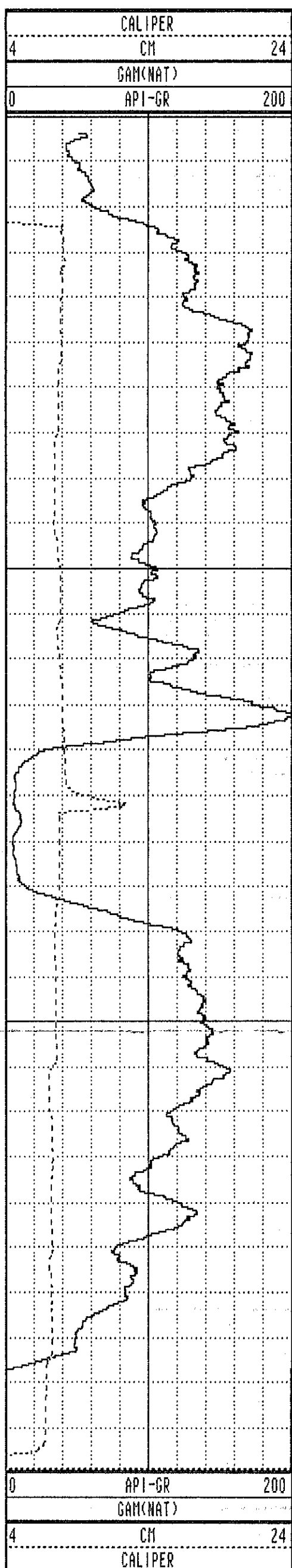
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96228 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE |
| DATE | : 09/29/96 | PERMANENT DATUM |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 29.93 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.40 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| | | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23.00 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | |
| NONE | : | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96228 09/29/96 958

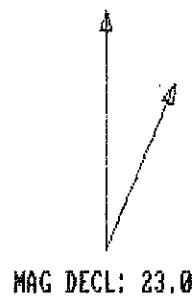
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALTPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

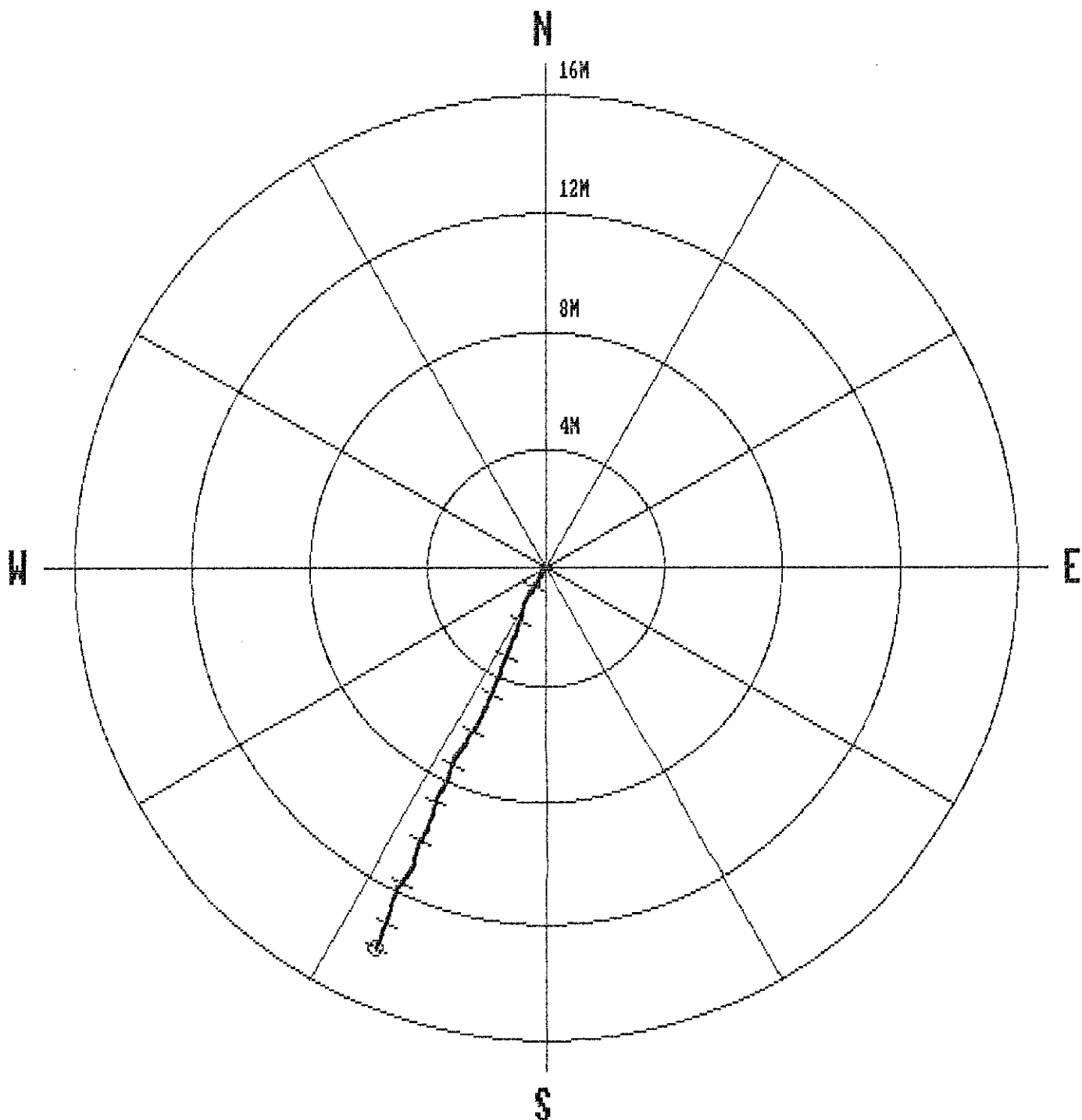
| | | | | | | | |
|------|-------|--------|-------|------|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.85 | -0.22 | -0.12 | 0.2 | 208.5 | 32.7 | 204.0 |
| 4.0 | 3.69 | -0.55 | -0.24 | 0.6 | 203.8 | 39.8 | 139.9 |
| 5.0 | 4.54 | -0.91 | -0.56 | 1.1 | 211.9 | 32.3 | 213.8 |
| 6.0 | 5.38 | -1.37 | -0.74 | 1.6 | 208.6 | 32.8 | 171.3 |
| 7.0 | 6.22 | -1.87 | -0.90 | 2.1 | 205.6 | 33.4 | 205.1 |
| 8.0 | 7.05 | -2.38 | -1.08 | 2.6 | 204.4 | 33.4 | 213.7 |
| 9.0 | 7.88 | -2.89 | -1.31 | 3.2 | 204.3 | 34.3 | 215.0 |
| 10.0 | 8.70 | -3.40 | -1.49 | 3.7 | 203.7 | 35.0 | 229.0 |
| 11.0 | 9.51 | -3.91 | -1.70 | 4.3 | 203.5 | 36.1 | 185.1 |
| 12.0 | 10.32 | -4.44 | -1.91 | 4.8 | 203.3 | 35.9 | 202.1 |
| 13.0 | 11.13 | -4.95 | -2.14 | 5.4 | 203.4 | 36.1 | 222.6 |
| 14.0 | 11.93 | -5.45 | -2.42 | 6.0 | 204.0 | 36.9 | 205.5 |
| 15.0 | 12.73 | -5.93 | -2.67 | 6.5 | 204.2 | 39.4 | 241.8 |
| 16.0 | 13.52 | -6.41 | -3.03 | 7.1 | 205.3 | 36.7 | 219.8 |
| 17.0 | 14.33 | -6.88 | -3.25 | 7.6 | 205.3 | 32.8 | 188.7 |
| 18.0 | 15.14 | -7.39 | -3.44 | 8.2 | 204.9 | 36.9 | 205.9 |
| 19.0 | 15.94 | -7.90 | -3.70 | 8.7 | 205.1 | 38.3 | 180.7 |
| 20.0 | 16.73 | -8.42 | -3.84 | 9.3 | 204.5 | 37.0 | 226.2 |
| 21.0 | 17.52 | -8.96 | -4.03 | 9.8 | 204.2 | 37.7 | 196.3 |
| 22.0 | 18.31 | -9.48 | -4.32 | 10.4 | 204.5 | 39.2 | 194.1 |
| 23.0 | 19.09 | -10.05 | -4.53 | 11.0 | 204.3 | 38.7 | 215.8 |
| 24.0 | 19.88 | -10.51 | -4.84 | 11.6 | 204.7 | 38.7 | 216.5 |
| 25.0 | 20.66 | -10.95 | -5.10 | 12.1 | 205.0 | 38.4 | 174.9 |
| 26.0 | 21.44 | -11.50 | -5.30 | 12.7 | 204.7 | 38.9 | 217.5 |
| 27.0 | 22.21 | -12.04 | -5.48 | 13.2 | 204.5 | 39.9 | 218.6 |
| 28.0 | 22.98 | -12.61 | -5.70 | 13.8 | 204.3 | 40.3 | 240.1 |
| 28.3 | 23.21 | -12.78 | -5.76 | 14.0 | 204.2 | 40.5 | 202.4 |

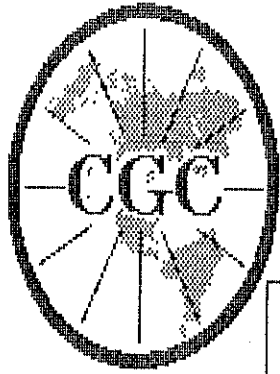
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96229
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 2 M/CM
 TRUE DEPTH: 23.21 M
 AZIMUTH: 204.2
 DISTANCE: 14.0 M
 + = 2 M INCR
 ○ = BOTTOM OF HOLE





Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

COMPANY : PINE VALLEY COAL
 WELL : WRH-96229
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION :

OTHER SERVICES:

DATE : 10/03/96
 DEPTH DRILLER : 28
 LOG BOTTOM : 28.36
 LOG TOP : 0.66

PERMANENT DATUM :
 ELEV. PERM. DATUM:
 LOG MEASURED FROM: G.L.
 DRL MEASURED FROM:

ELEVATIONS
 KB :
 DF :
 GL :

CASING DRILLER : 3
 CASING TYPE : STEEL
 CASING THICKNESS: .25

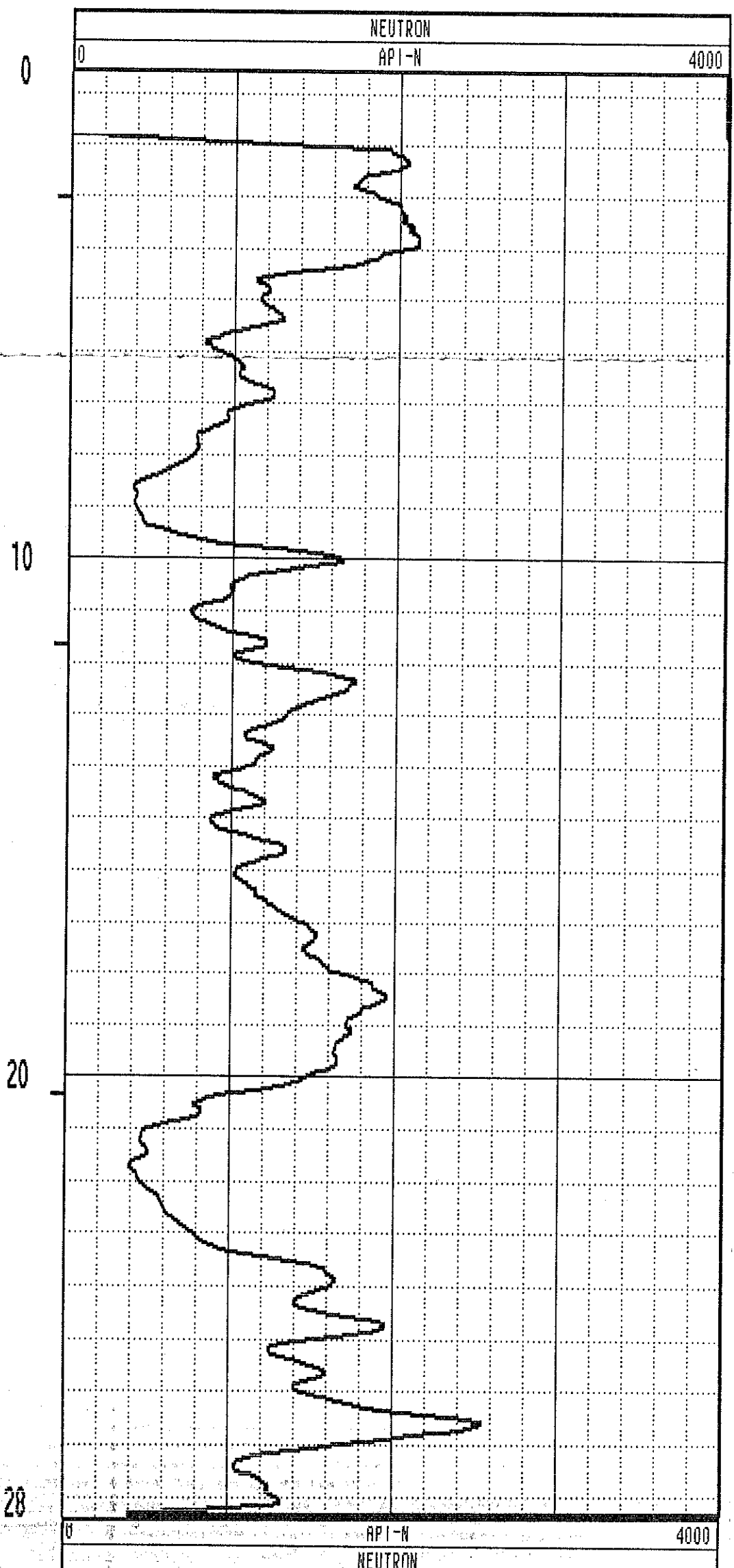
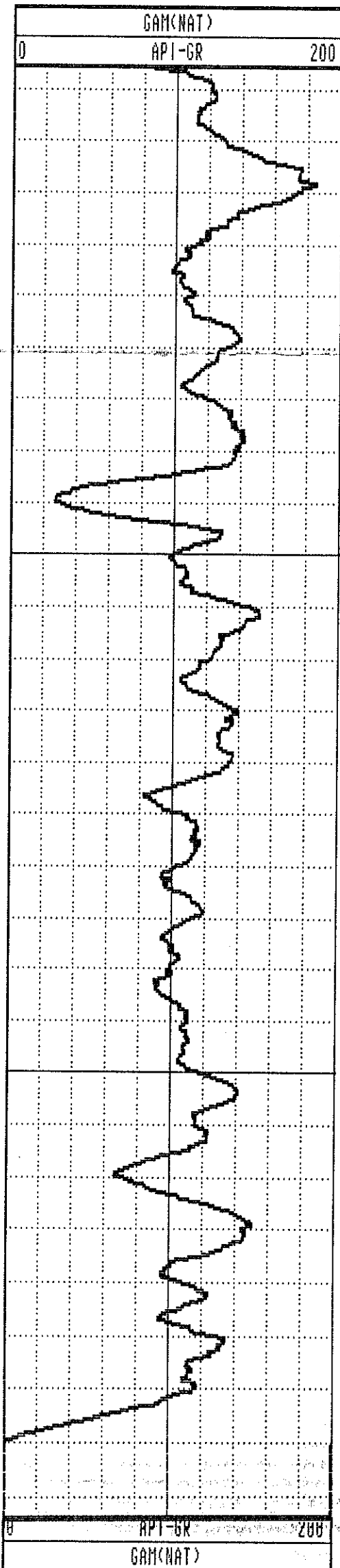
LOGGING UNIT : 9612
 FIELD OFFICE : CALGARY, AB.
 RECORDED BY : R. THOMAS

BIT SIZE :
 MAGNETIC DECL. : 23.000
 MATRIX DENSITY :
 FLUID DENSITY : 1.1
 NEUTRON MATRIX : 2.65
 REMARKS :
 NONE

BOREHOLE FLUID : WATER
 RM :
 RM TEMPERATURE :
 MATRIX DELTA T :
 FLUID DELTA T :

FILE : ORIGINAL
 TYPE : 9055A
 LOG : 7
 PLOT : PINE 4
 THRESH: 10000

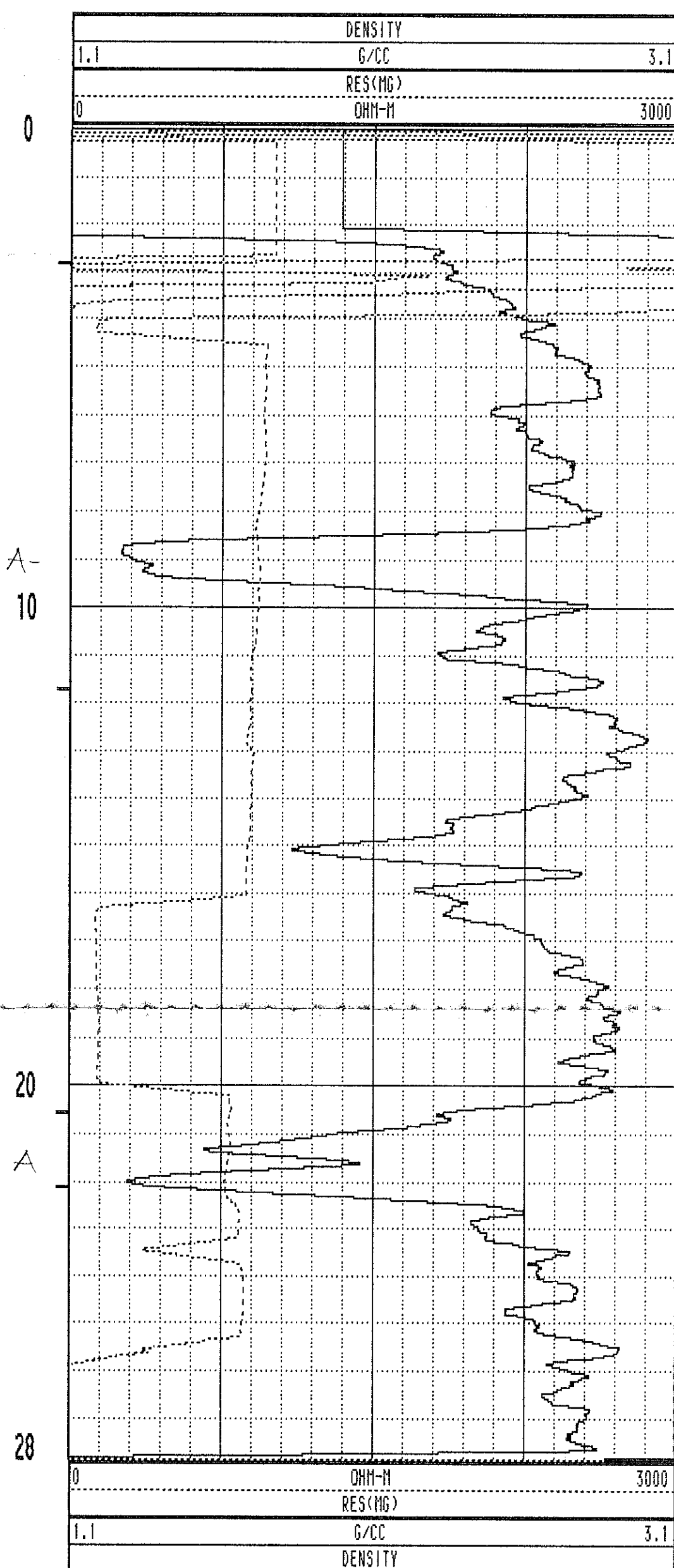
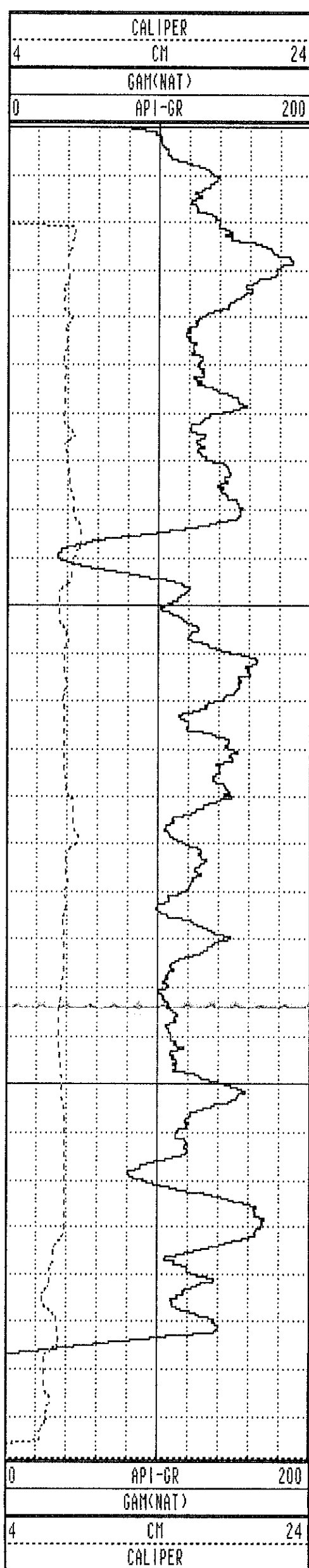
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|-------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96229 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | : RANGE |
| DATE | : 10/03/96 | PERMANENT DATUM |
| DEPTH DRILLER | : 23 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 27.90 | LOG MEASURED FROM: G.L. |
| LOG TOP | : 0.06 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS: | .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23.000 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | |
| | NONE | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96229 10/03/96 958

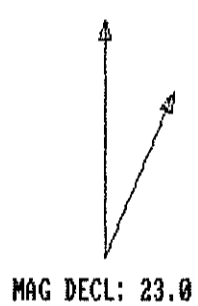
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD | |
|----------|----------|----------|--------|----------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 | CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 | GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 | DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 1.106 DHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 | RES(MG) | 0.000 CPS | 0.000 DHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 | CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 | CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 | DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 | CALIPERL | 2366.000 CPS | 33.000 CM |

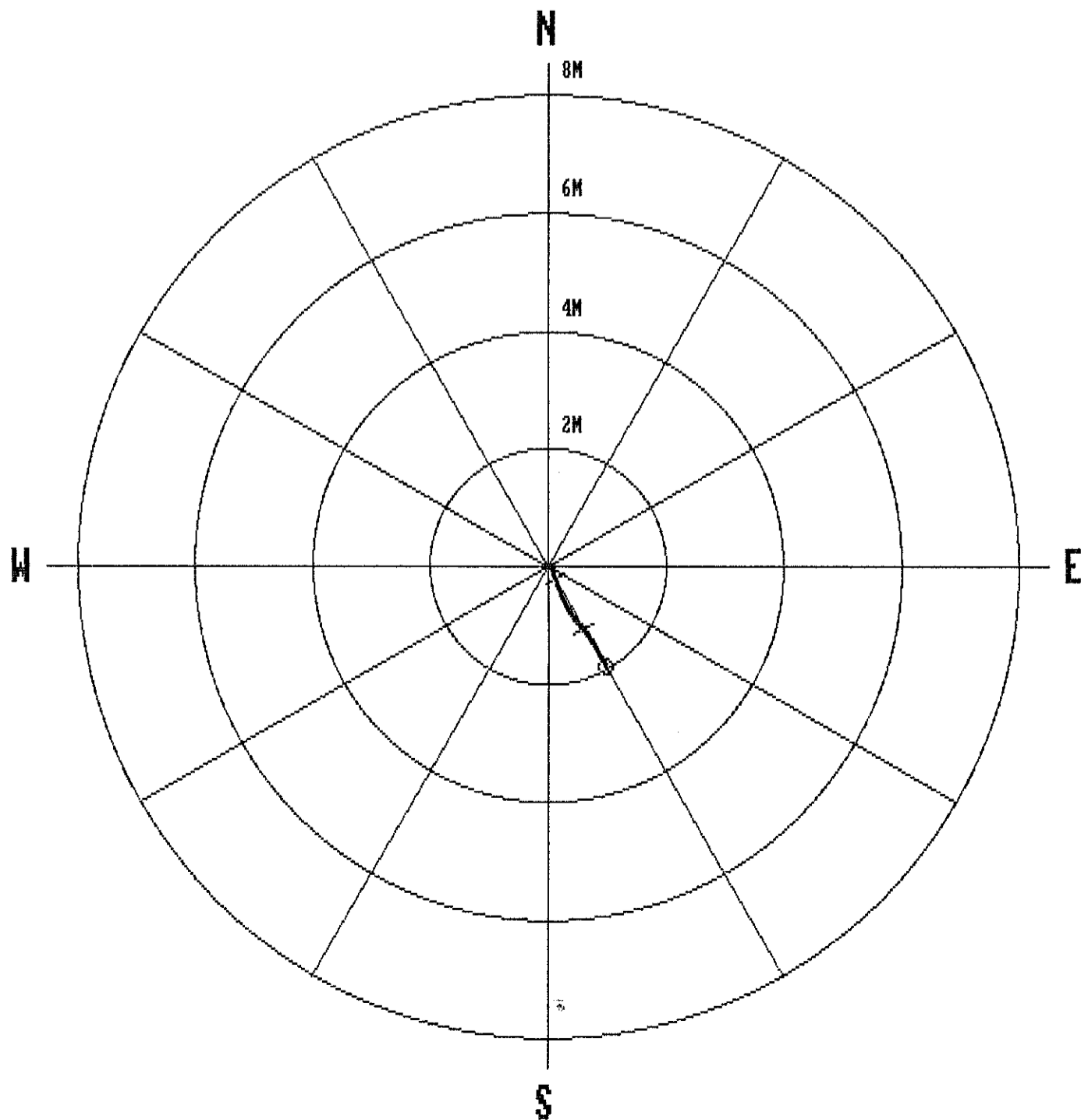
| | | | | | | | |
|------|-------|-------|------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | -0.01 | 0.02 | 0.0 | 131.1 | 1.5 | 102.3 |
| 4.0 | 4.00 | -0.01 | 0.04 | 0.0 | 109.9 | 1.6 | 87.4 |
| 5.0 | 5.00 | -0.04 | 0.06 | 0.1 | 119.9 | 2.1 | 113.7 |
| 6.0 | 6.00 | -0.06 | 0.08 | 0.1 | 127.6 | 2.0 | 152.4 |
| 7.0 | 7.00 | -0.09 | 0.09 | 0.1 | 133.1 | 2.4 | 161.6 |
| 8.0 | 8.00 | -0.12 | 0.10 | 0.2 | 140.9 | 2.5 | 162.8 |
| 9.0 | 9.00 | -0.16 | 0.11 | 0.2 | 145.5 | 2.4 | 157.7 |
| 10.0 | 9.99 | -0.21 | 0.13 | 0.2 | 149.1 | 3.1 | 172.6 |
| 11.0 | 10.99 | -0.26 | 0.15 | 0.3 | 150.3 | 3.8 | 150.6 |
| 12.0 | 11.99 | -0.33 | 0.17 | 0.4 | 153.3 | 3.7 | 177.9 |
| 13.0 | 12.99 | -0.40 | 0.20 | 0.4 | 153.9 | 5.2 | 156.0 |
| 14.0 | 13.98 | -0.48 | 0.22 | 0.5 | 155.1 | 5.1 | 160.1 |
| 15.0 | 14.98 | -0.56 | 0.26 | 0.6 | 155.5 | 5.5 | 139.9 |
| 16.0 | 15.98 | -0.65 | 0.30 | 0.7 | 155.4 | 6.1 | 151.2 |
| 17.0 | 16.97 | -0.74 | 0.35 | 0.8 | 154.7 | 6.7 | 141.9 |
| 18.0 | 17.96 | -0.84 | 0.42 | 0.9 | 153.3 | 7.0 | 147.7 |
| 19.0 | 18.95 | -0.94 | 0.51 | 1.1 | 151.6 | 8.0 | 142.7 |
| 20.0 | 19.94 | -1.06 | 0.60 | 1.2 | 150.5 | 9.5 | 133.1 |
| 21.0 | 20.93 | -1.19 | 0.71 | 1.4 | 149.2 | 9.9 | 171.5 |
| 22.0 | 21.91 | -1.35 | 0.80 | 1.6 | 149.4 | 11.3 | 146.4 |
| 23.0 | 22.89 | -1.53 | 0.90 | 1.8 | 149.6 | 11.1 | 164.1 |
| 23.8 | 23.69 | -1.68 | 0.99 | 1.9 | 149.5 | 12.4 | 149.3 |

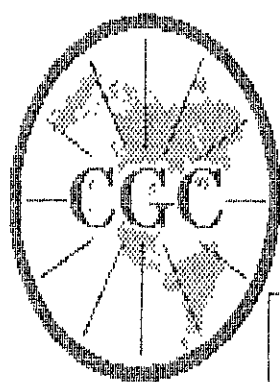
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96230
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 23.69 M
 AZIMUTH: 149.5
 DISTANCE: 1.9 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

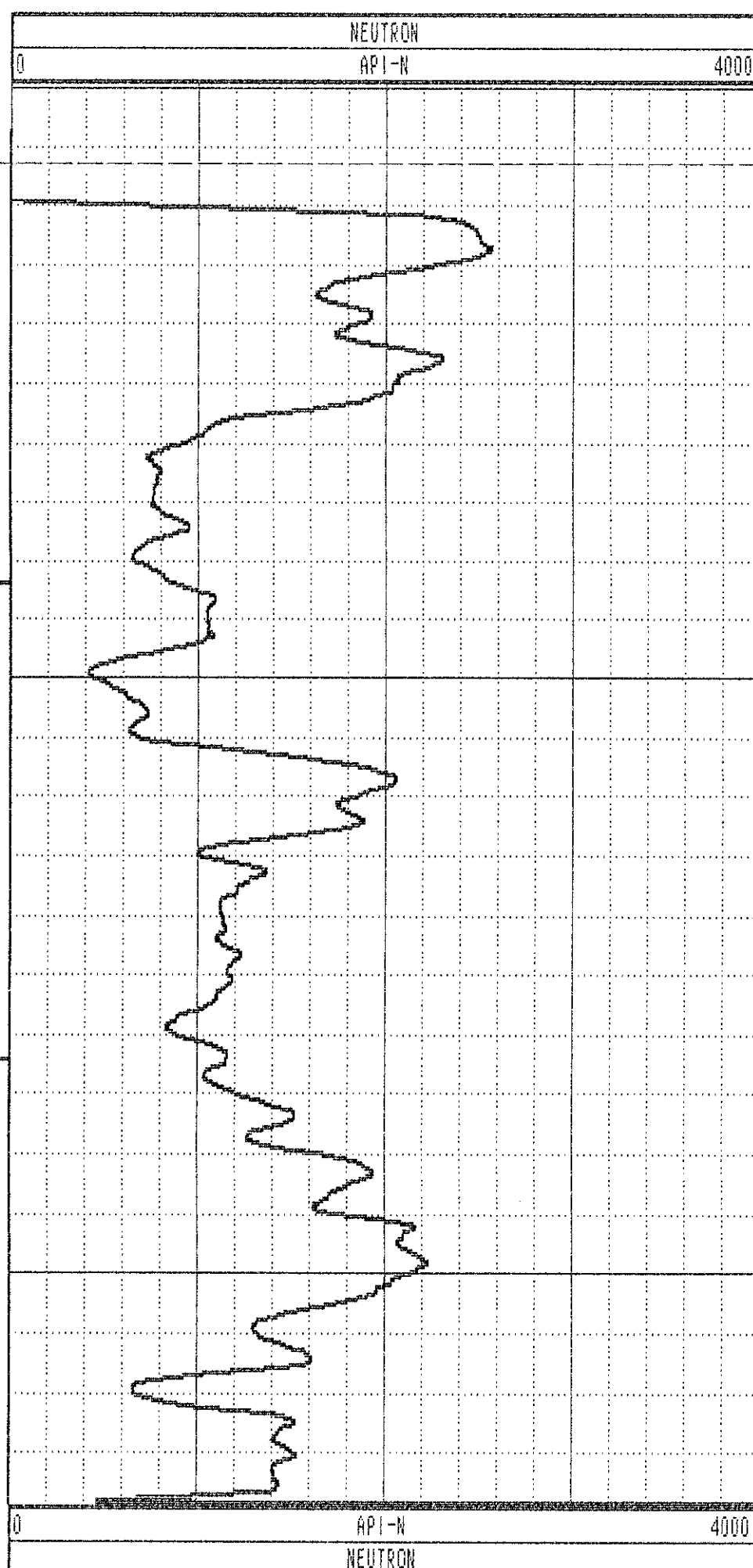
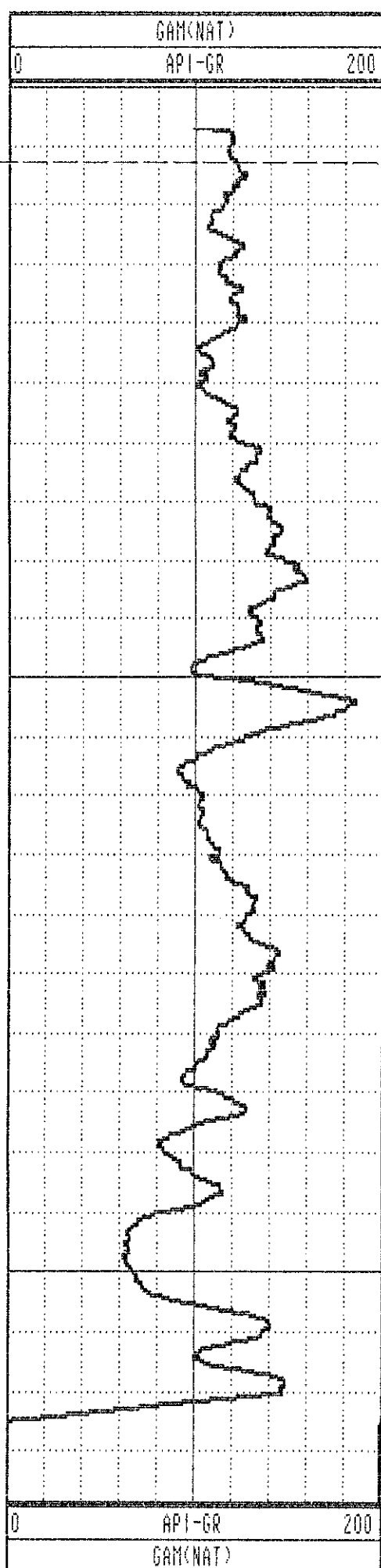
COMPANY : PINE VALLEY COAL
WELL : WRH-96230
LOCATION/FIELD : WILLOW CREEK
COUNTY :
STATE : BRITISH COLUMBIA
SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/03/96 PERMANENT DATUM : ELEVATIONS
DEPTH DRILLER : 27 ELEV. PERM. DATUM: KB :
LOG BOTTOM : 23.88 LOG MEASURED FROM: G.L. DF :
LOG TOP : 0.74 DRL MEASURED FROM: GL :
CASING DRILLER : 3 LOGGING UNIT : 9612
CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
MATRIX DENSITY : RM TEMPERATURE : LOG : 0
FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
REMARKS :
NONE

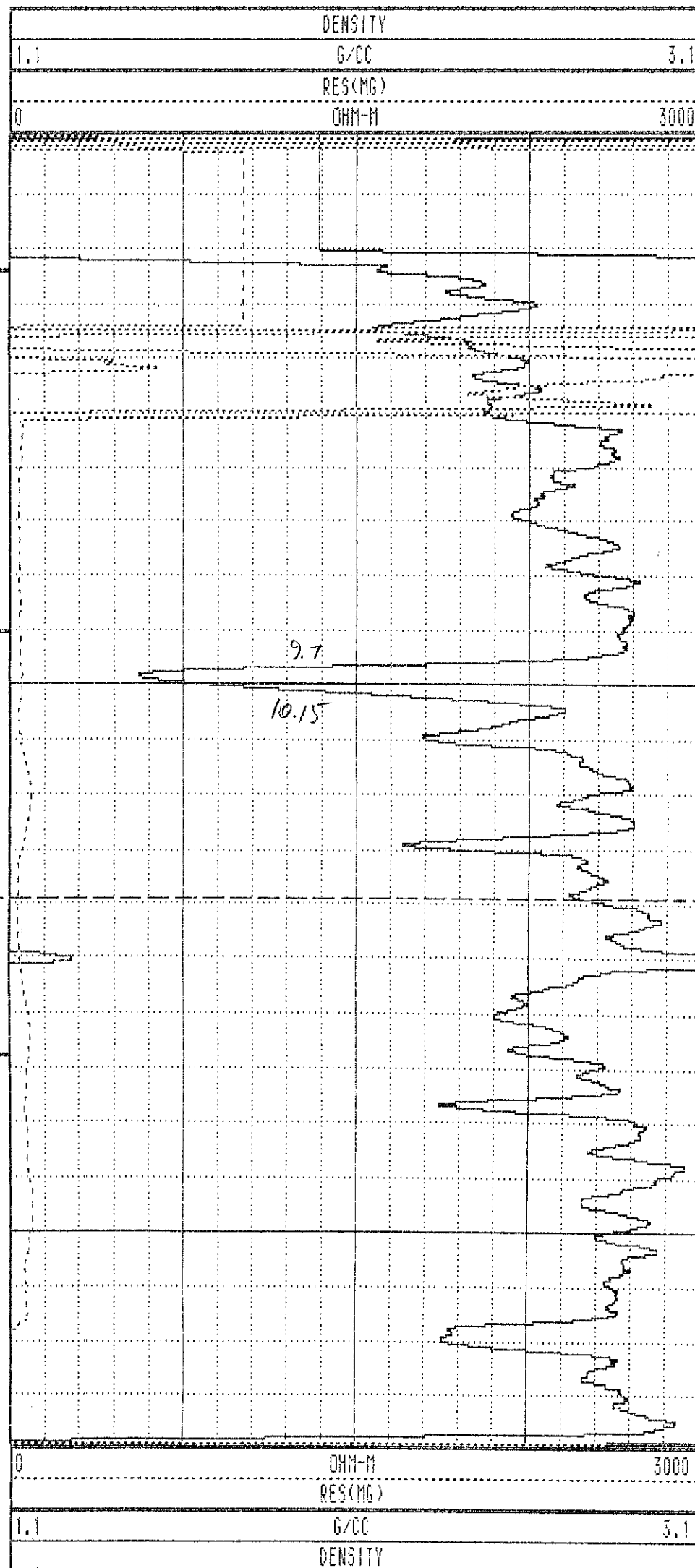
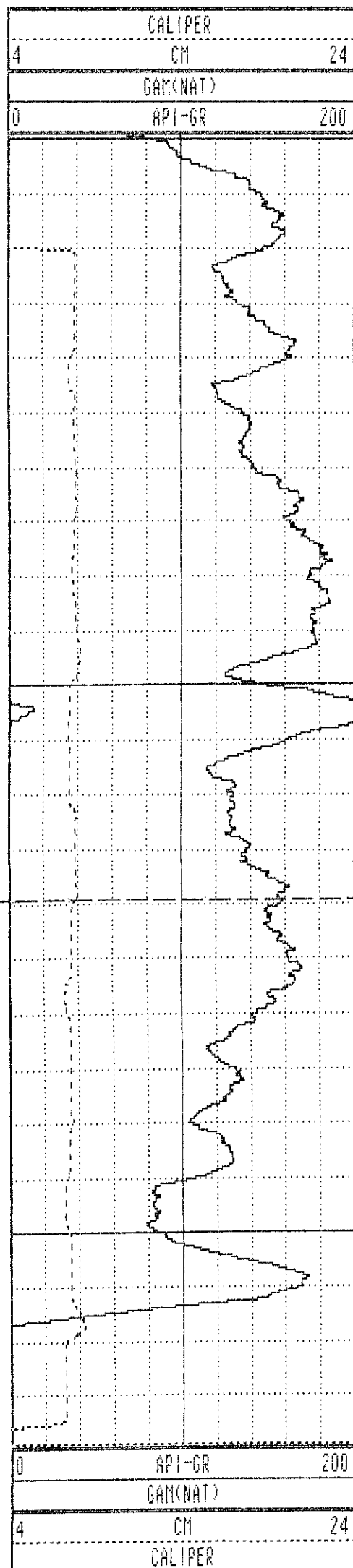
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | | OTHER SERVICES: |
| WELL | : WRH-96230 | | |
| LOCATION/FIELD | : HILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 23 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 23.92 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.00 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96230 10/03/96 958

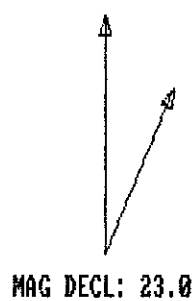
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

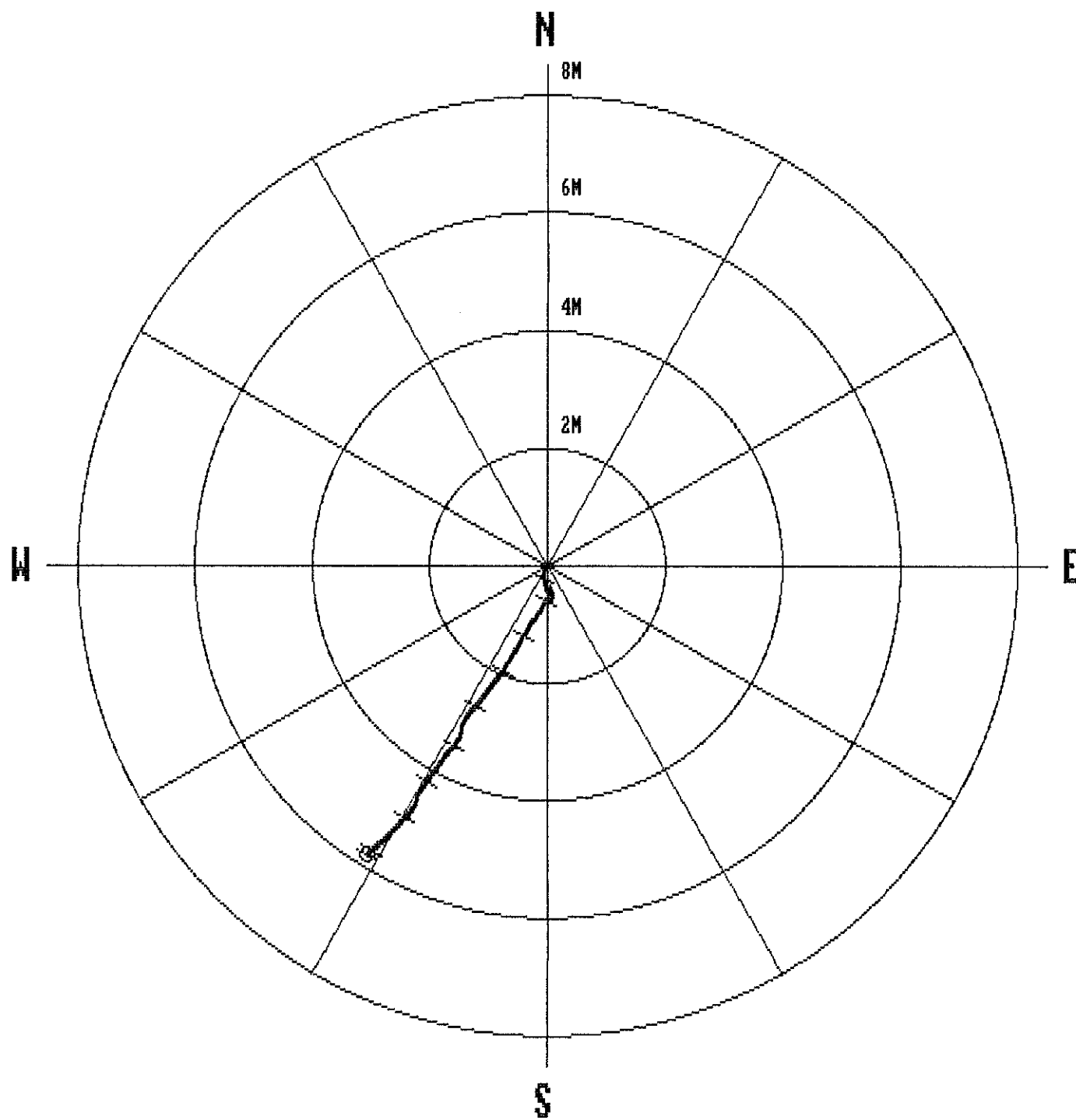
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 0.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 2.95 | -0.16 | -0.06 | 0.2 | 200.8 | 33.6 | 180.7 |
| 4.0 | 3.78 | -0.53 | 0.11 | 0.5 | 168.5 | 36.2 | 122.9 |
| 5.0 | 4.60 | -0.94 | -0.24 | 1.0 | 194.4 | 35.9 | 239.5 |
| 6.0 | 5.41 | -1.43 | -0.53 | 1.5 | 200.5 | 35.5 | 213.1 |
| 7.0 | 6.22 | -1.92 | -0.85 | 2.1 | 203.9 | 37.7 | 229.2 |
| 8.0 | 7.01 | -2.39 | -1.22 | 2.7 | 207.0 | 37.3 | 220.6 |
| 9.0 | 7.80 | -2.92 | -1.49 | 3.3 | 207.1 | 40.0 | 234.7 |
| 10.0 | 8.58 | -3.41 | -1.85 | 3.9 | 208.5 | 38.9 | 217.6 |
| 11.0 | 9.36 | -3.91 | -2.20 | 4.5 | 209.4 | 41.2 | 212.7 |
| 12.0 | 10.15 | -4.38 | -2.50 | 5.0 | 209.7 | 39.2 | 217.8 |
| 13.0 | 10.92 | -4.82 | -2.94 | 5.6 | 211.4 | 38.2 | 231.3 |
| 13.3 | 11.13 | -4.92 | -3.06 | 5.8 | 211.9 | 38.8 | 225.0 |

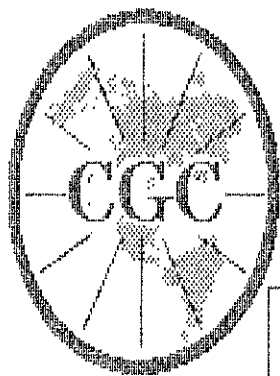
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96231
 DATE OF LOG: 10/02/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 11.13 M
 AZIMUTH: 211.9
 DISTANCE: 5.8 M
 + = 1 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

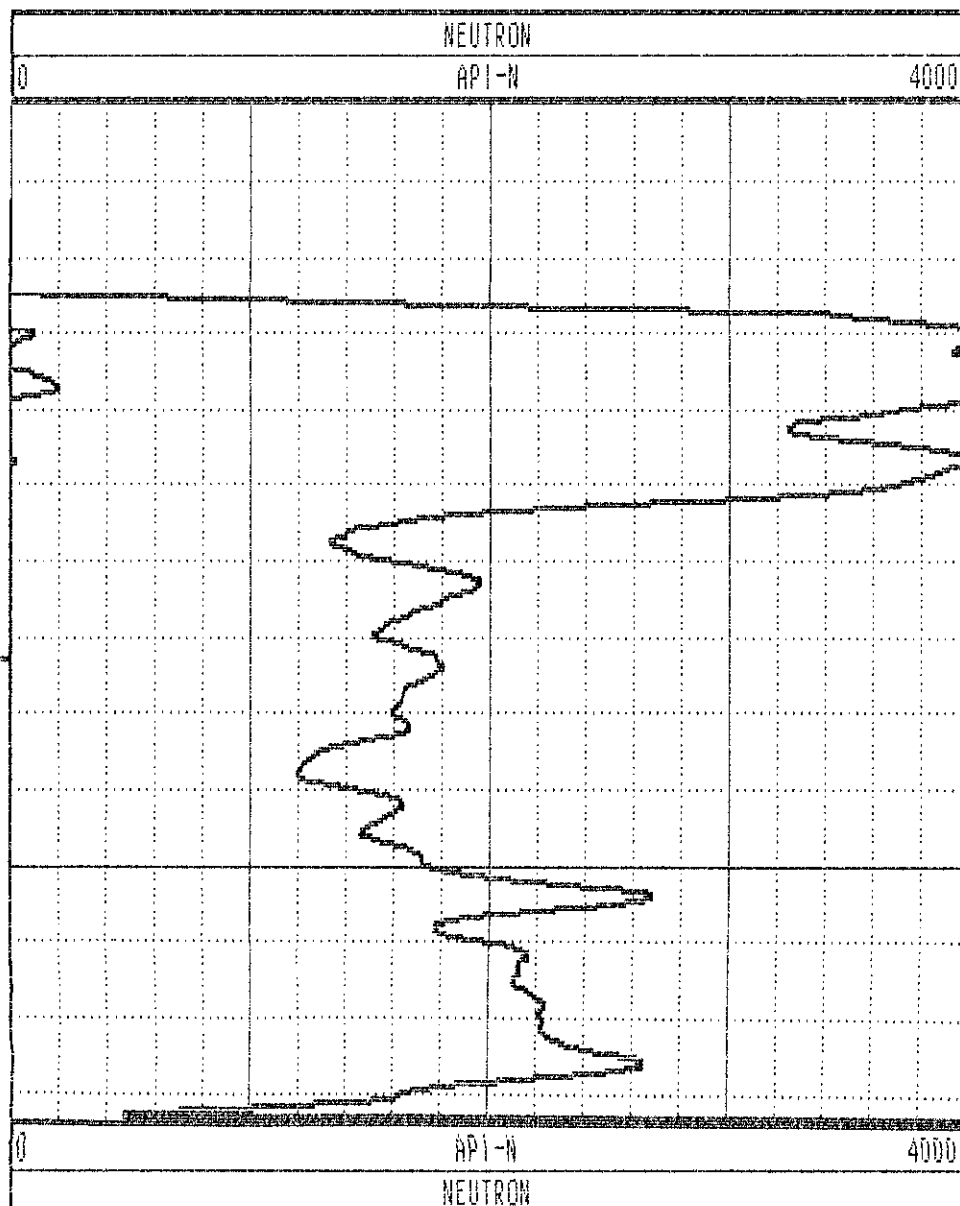
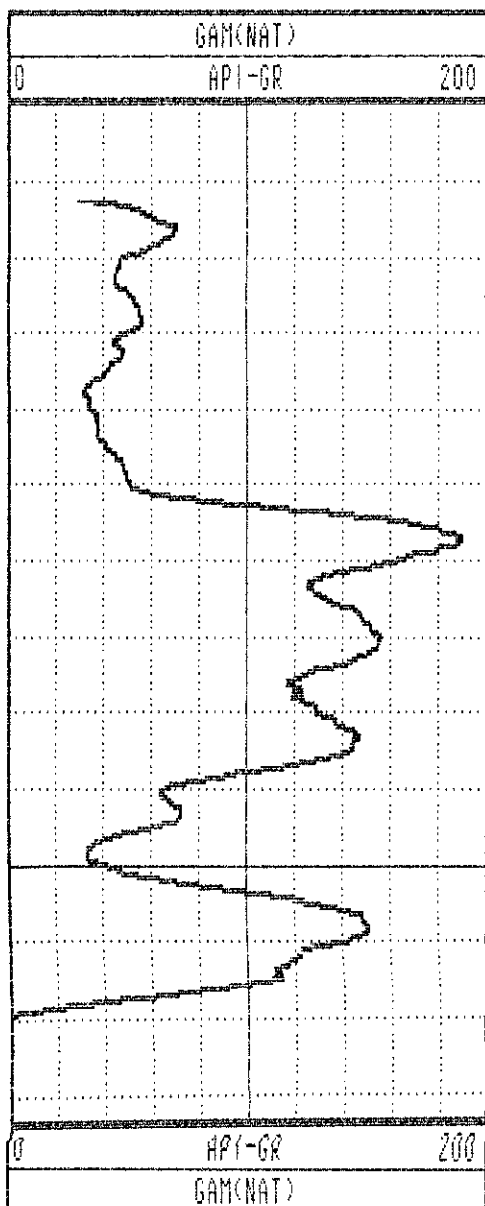
COMPANY : PINE VALLEY COAL
 WELL : WRH-96231
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/02/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 25 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 13.31 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 1.25 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 8
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

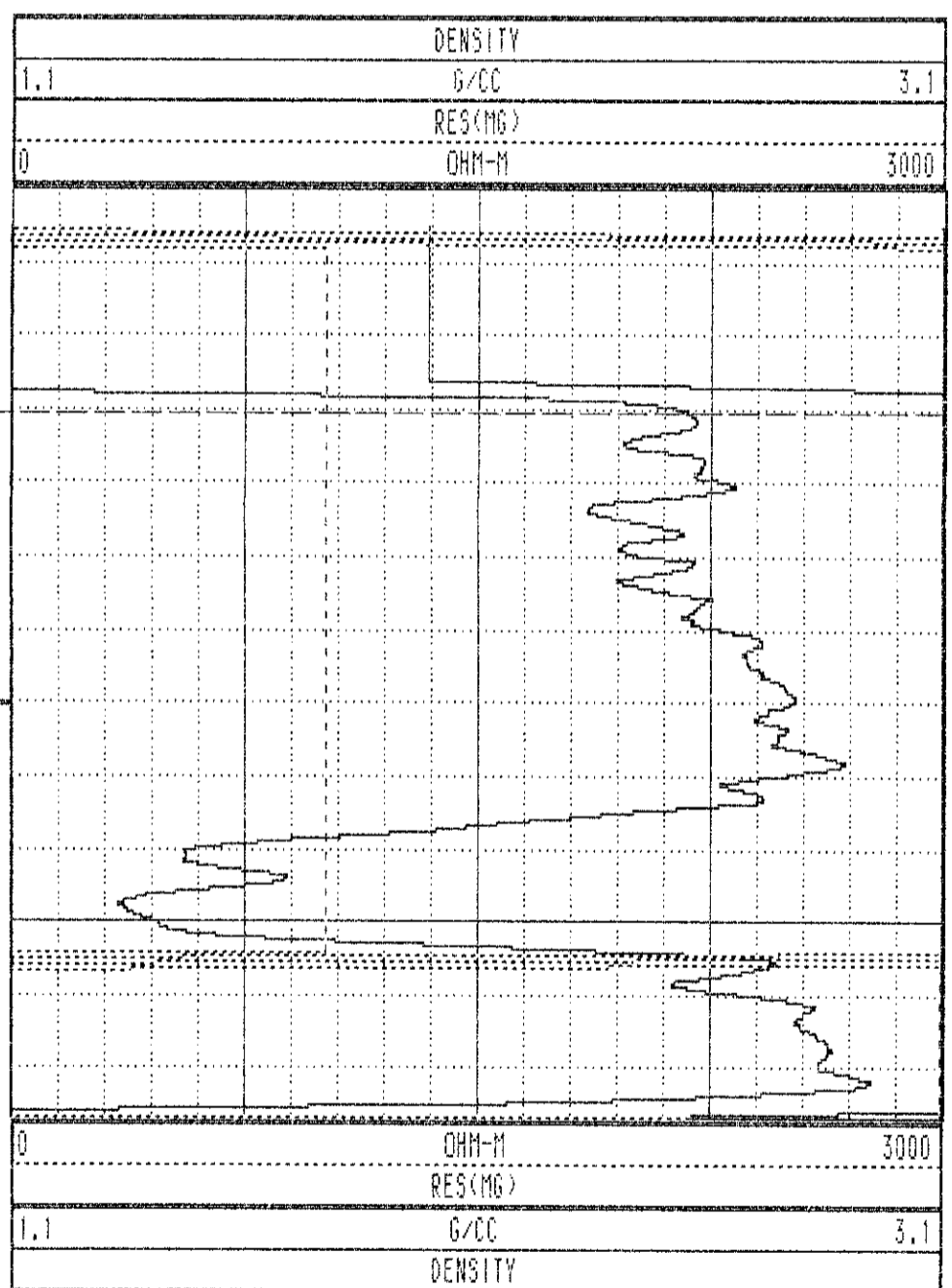
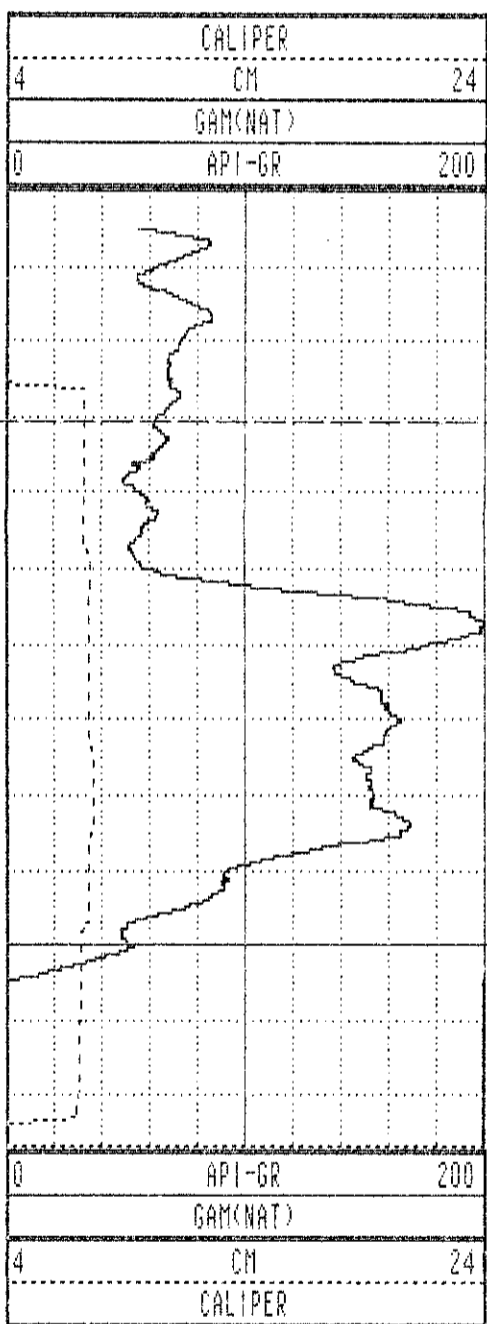
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96231 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/02/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 25 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 12.70 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.52 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 9 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



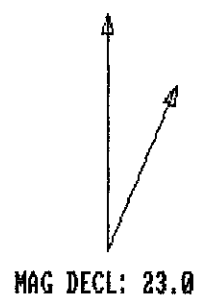
WRH-96231 10/02/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

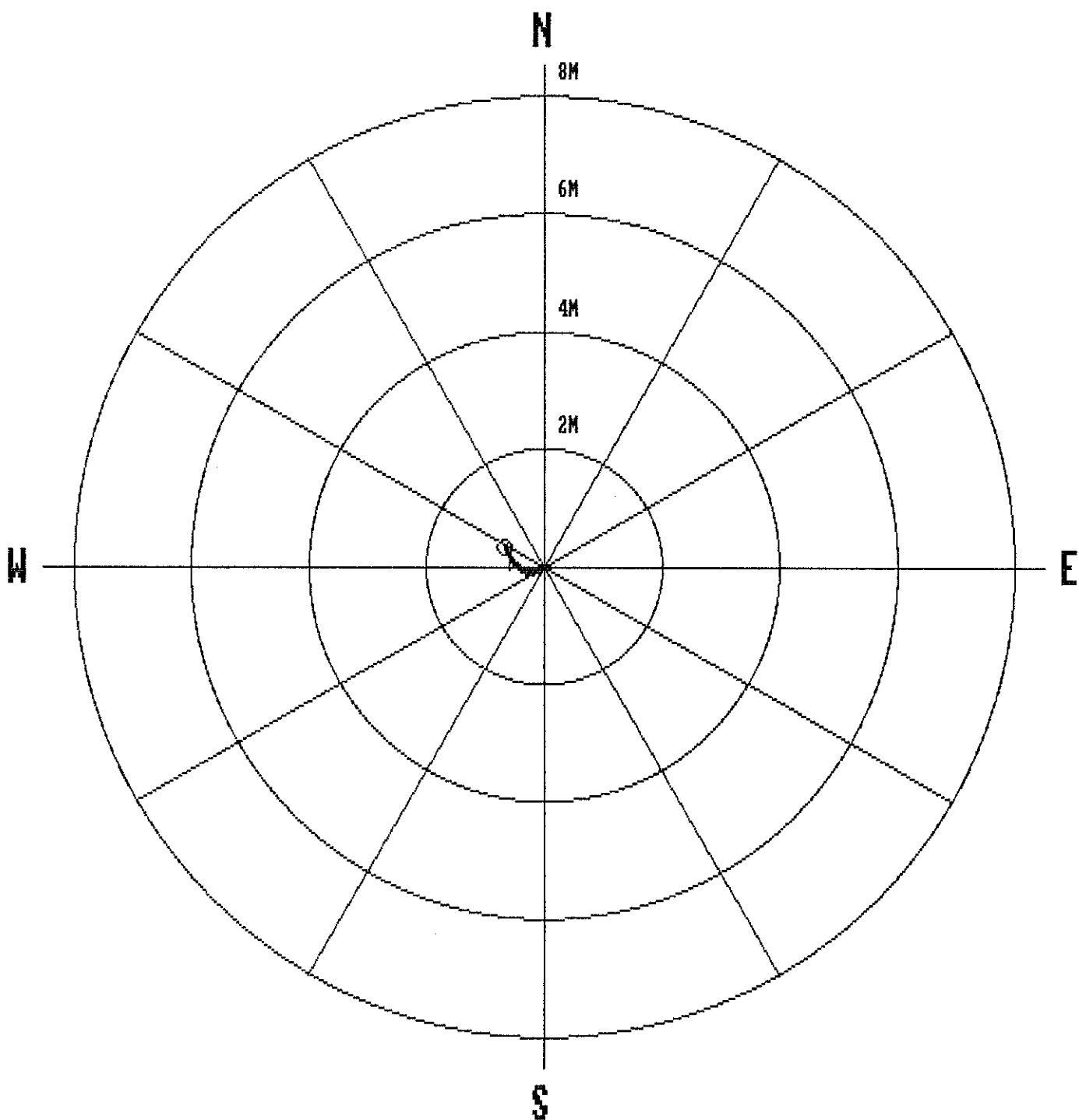
| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 251.4 | 2.1 | 252.4 |
| 3.0 | 3.00 | -0.01 | -0.03 | 0.0 | 246.3 | 2.1 | 247.6 |
| 4.0 | 4.00 | -0.02 | -0.06 | 0.1 | 248.2 | 1.9 | 269.8 |
| 5.0 | 5.00 | -0.04 | -0.09 | 0.1 | 246.4 | 2.2 | 238.9 |
| 6.0 | 6.00 | -0.05 | -0.11 | 0.1 | 247.2 | 1.6 | 250.5 |
| 7.0 | 7.00 | -0.06 | -0.14 | 0.1 | 246.9 | 1.5 | 236.9 |
| 8.0 | 8.00 | -0.07 | -0.17 | 0.2 | 247.2 | 2.5 | 260.3 |
| 9.0 | 9.00 | -0.08 | -0.20 | 0.2 | 248.9 | 2.0 | 256.3 |
| 10.0 | 10.00 | -0.08 | -0.24 | 0.2 | 251.3 | 1.8 | 270.8 |
| 11.0 | 11.00 | -0.08 | -0.27 | 0.3 | 254.4 | 2.4 | 285.5 |
| 12.0 | 11.99 | -0.07 | -0.30 | 0.3 | 257.6 | 1.9 | 291.4 |
| 13.0 | 12.99 | -0.06 | -0.34 | 0.3 | 260.6 | 2.1 | 290.7 |
| 14.0 | 13.99 | -0.04 | -0.38 | 0.4 | 263.8 | 2.4 | 301.9 |
| 15.0 | 14.99 | -0.02 | -0.40 | 0.4 | 267.7 | 2.3 | 309.3 |
| 16.0 | 15.99 | 0.01 | -0.43 | 0.4 | 271.5 | 2.5 | 314.5 |
| 17.0 | 16.99 | 0.04 | -0.47 | 0.5 | 275.1 | 2.7 | 307.1 |
| 18.0 | 17.99 | 0.08 | -0.50 | 0.5 | 278.8 | 3.2 | 320.8 |
| 19.0 | 18.99 | 0.12 | -0.54 | 0.6 | 283.0 | 3.1 | 313.7 |
| 20.0 | 19.99 | 0.17 | -0.58 | 0.6 | 286.2 | 3.4 | 322.8 |
| 21.0 | 20.98 | 0.22 | -0.61 | 0.6 | 290.2 | 4.9 | 338.2 |
| 22.0 | 21.98 | 0.29 | -0.64 | 0.7 | 294.2 | 4.1 | 328.2 |
| 22.5 | 22.48 | 0.32 | -0.66 | 0.7 | 296.0 | 4.4 | 335.0 |

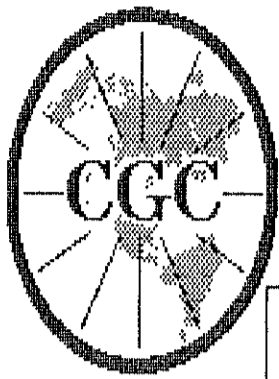
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96232
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 22.48 M
 AZIMUTH: 296.0
 DISTANCE: 0.7 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE





Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

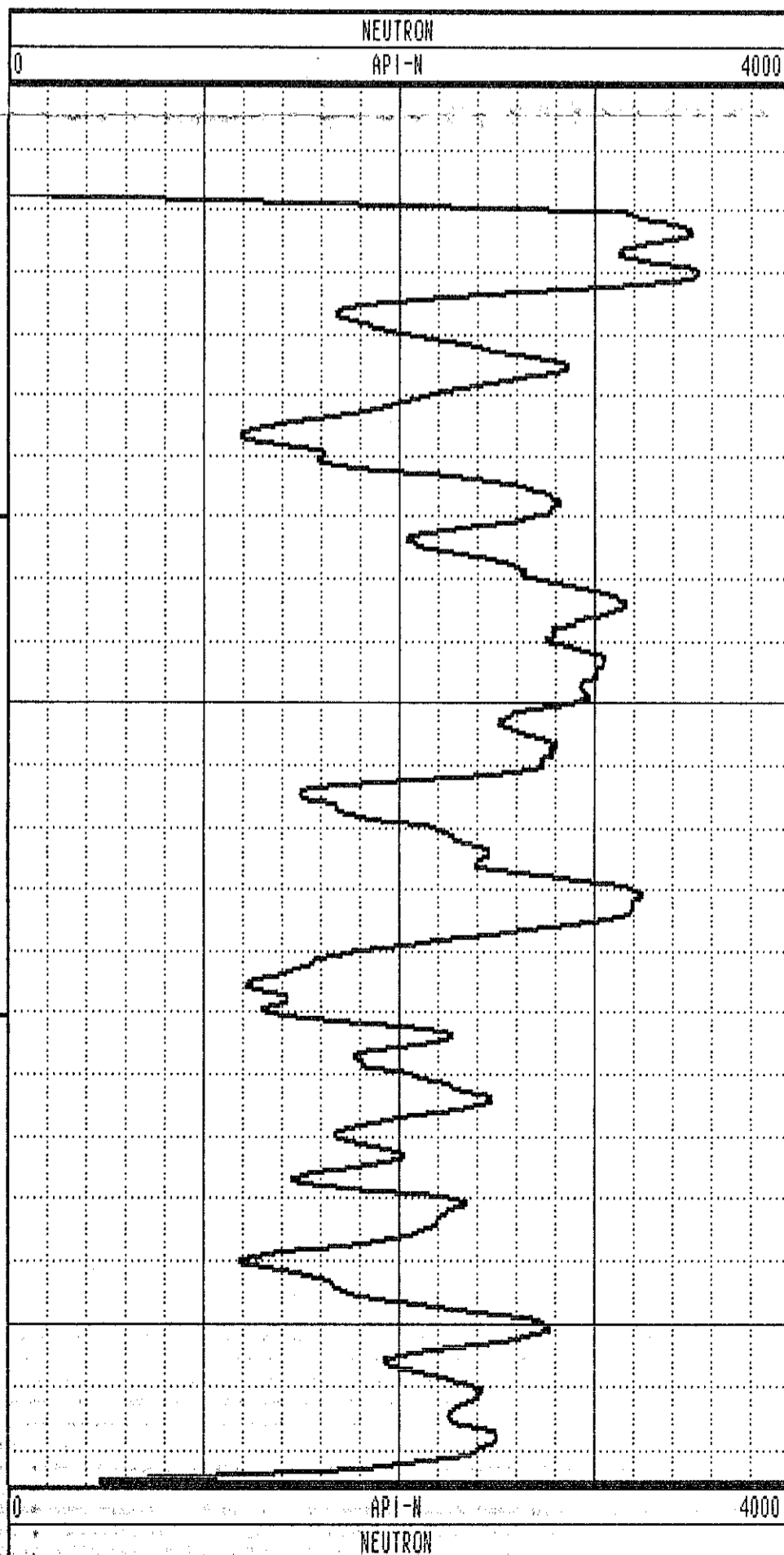
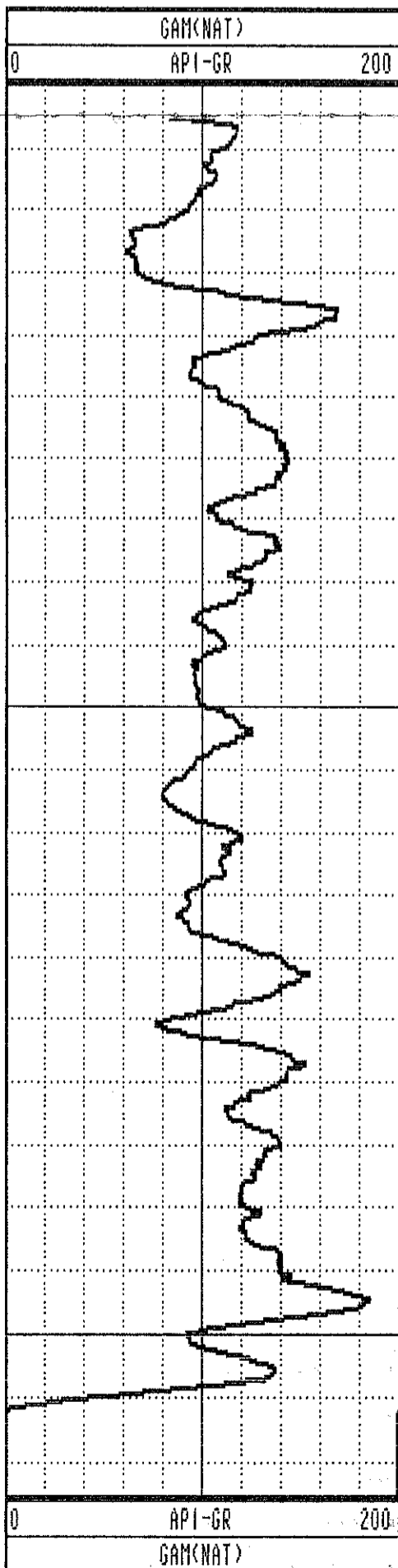
COMPANY : PINE VALLEY COAL
 WELL : WRH-96232
 LOCATION/FIELD : WILLOW CREEK
 COUNTY :
 STATE : BRITISH COLUMBIA
 SECTION : TOWNSHIP : RANGE :

OTHER SERVICES:

DATE : 10/03/96 PERMANENT DATUM : ELEVATIONS
 DEPTH DRILLER : 22 ELEV. PERM. DATUM: KB :
 LOG BOTTOM : 22.55 LOG MEASURED FROM: G.L. DF :
 LOG TOP : 0.58 DRL MEASURED FROM: GL :
 CASING DRILLER : 3 LOGGING UNIT : 9612
 CASING TYPE : STEEL FIELD OFFICE : CALGARY, AB.
 CASING THICKNESS: .25 RECORDED BY : R. THOMAS

BIT SIZE : BOREHOLE FLUID : WATER FILE : ORIGINAL
 MAGNETIC DECL. : 23.000 RM : TYPE : 9055A
 MATRIX DENSITY : RM TEMPERATURE : LOG : 6
 FLUID DENSITY : 1.1 MATRIX DELTA T : PLOT : PINE 4
 NEUTRON MATRIX : 2.65 FLUID DELTA T : THRESH: 10000
 REMARKS :
 NONE

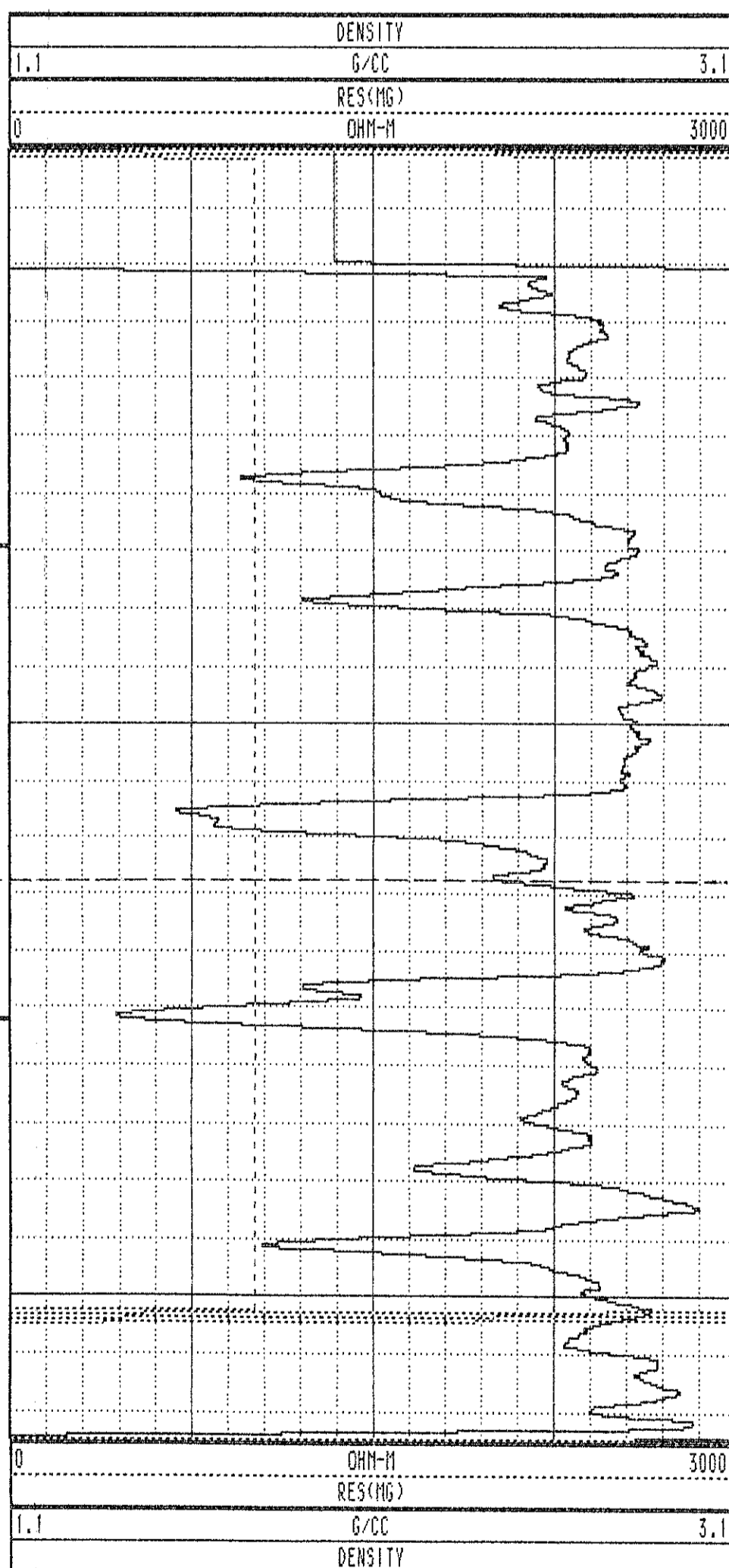
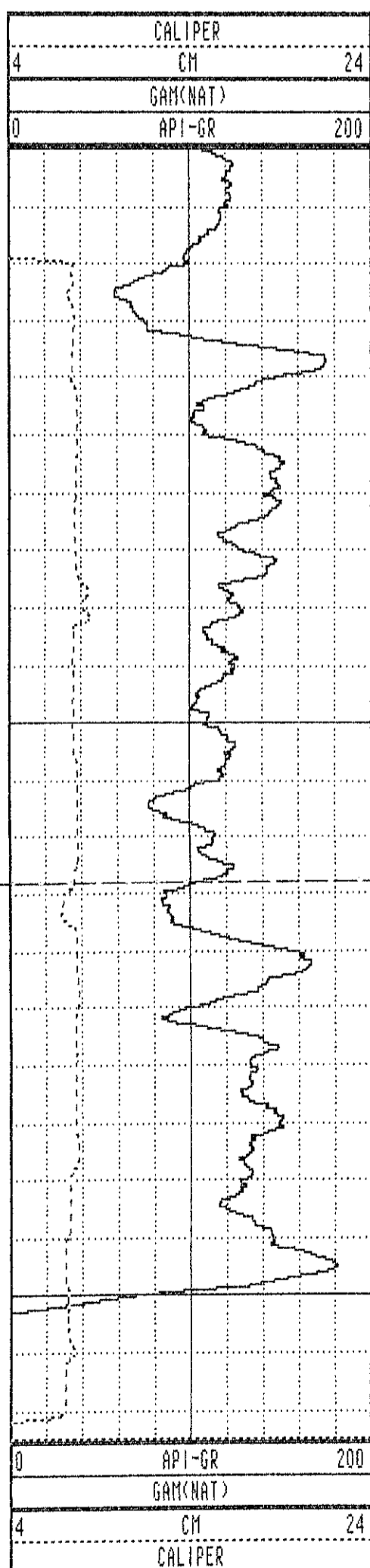
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96232 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 22 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 22.51 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : -0.10 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9033AA |
| | | LOG | : 7 |
| | | PLOT | : PINE 5 |
| | | THRESH | : 10000 |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96232 10/03/96 958

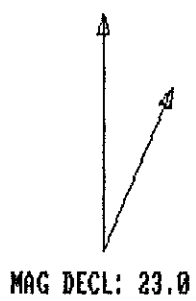
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

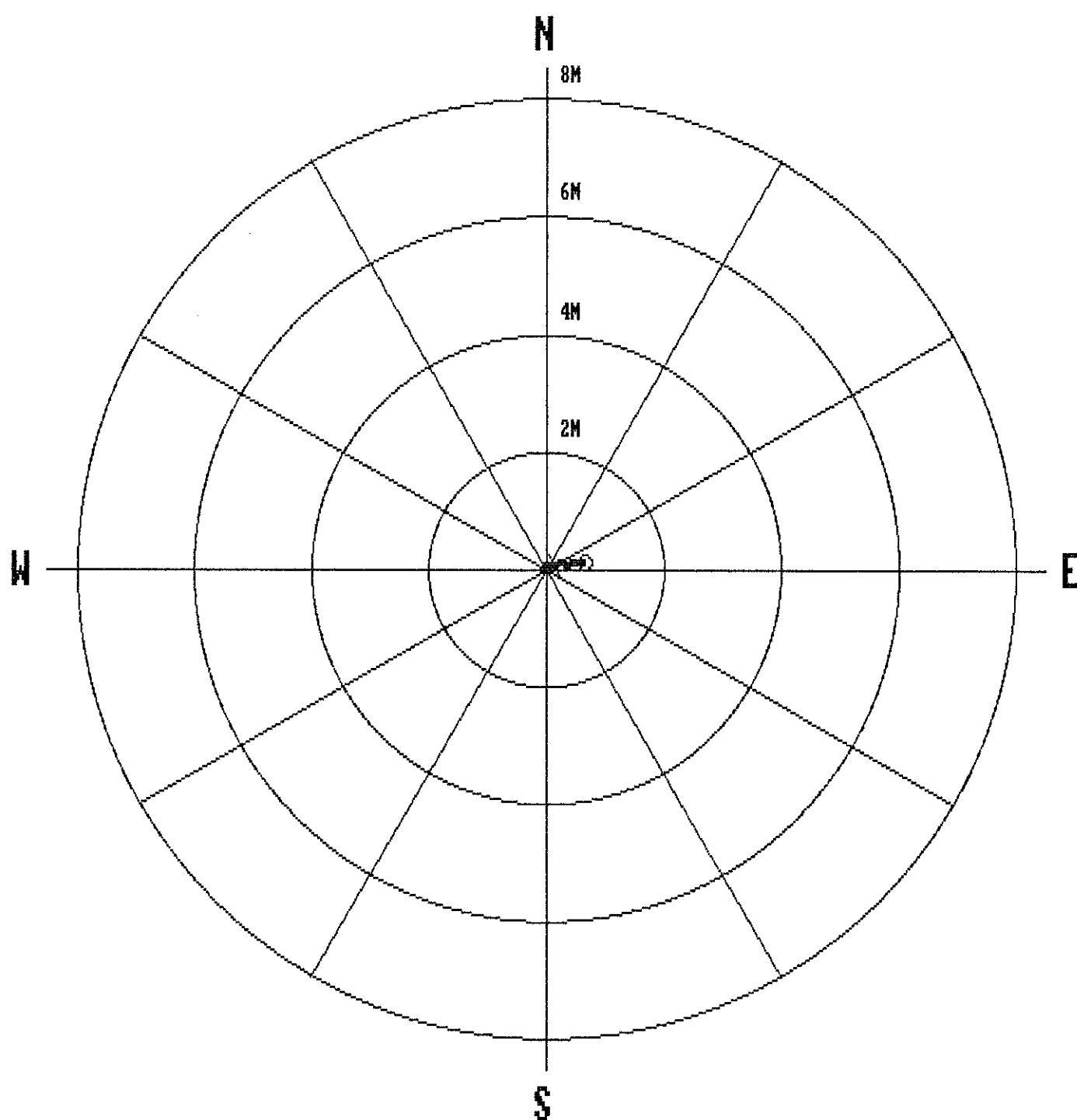
| | | | | | | | |
|------|-------|------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.02 | -0.00 | 0.0 | 350.9 | 1.8 | 273.4 |
| 4.0 | 4.00 | 0.04 | -0.01 | 0.0 | 346.4 | 1.4 | 338.1 |
| 5.0 | 5.00 | 0.07 | -0.03 | 0.1 | 338.8 | 1.6 | 288.3 |
| 6.0 | 6.00 | 0.09 | -0.04 | 0.1 | 334.9 | 1.7 | 75.0 |
| 7.0 | 7.00 | 0.09 | -0.00 | 0.1 | 357.0 | 2.6 | 86.4 |
| 8.0 | 8.00 | 0.09 | 0.04 | 0.1 | 24.3 | 2.9 | 88.2 |
| 9.0 | 9.00 | 0.09 | 0.09 | 0.1 | 43.8 | 2.9 | 86.3 |
| 10.0 | 9.99 | 0.10 | 0.14 | 0.2 | 55.2 | 2.6 | 83.4 |
| 11.0 | 10.99 | 0.11 | 0.19 | 0.2 | 61.4 | 2.6 | 85.2 |
| 12.0 | 11.99 | 0.11 | 0.25 | 0.3 | 66.3 | 3.0 | 80.1 |
| 13.0 | 12.99 | 0.11 | 0.31 | 0.3 | 70.9 | 3.8 | 91.5 |
| 14.0 | 13.99 | 0.10 | 0.37 | 0.4 | 75.0 | 3.6 | 81.6 |
| 15.0 | 14.98 | 0.11 | 0.43 | 0.4 | 75.7 | 4.5 | 73.9 |
| 16.0 | 15.98 | 0.12 | 0.51 | 0.5 | 76.6 | 4.4 | 88.6 |
| 17.0 | 16.98 | 0.13 | 0.58 | 0.6 | 77.5 | 5.1 | 82.7 |
| 17.9 | 17.88 | 0.14 | 0.66 | 0.7 | 77.9 | 4.3 | 73.3 |

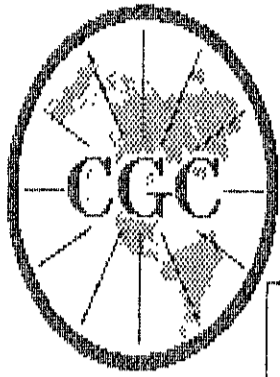
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96233
 DATE OF LOG: 10/03/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 17.88 M
 AZIMUTH: 77.9
 DISTANCE: 0.7 M
 + = 10 M INCR
 O = BOTTOM OF HOLE



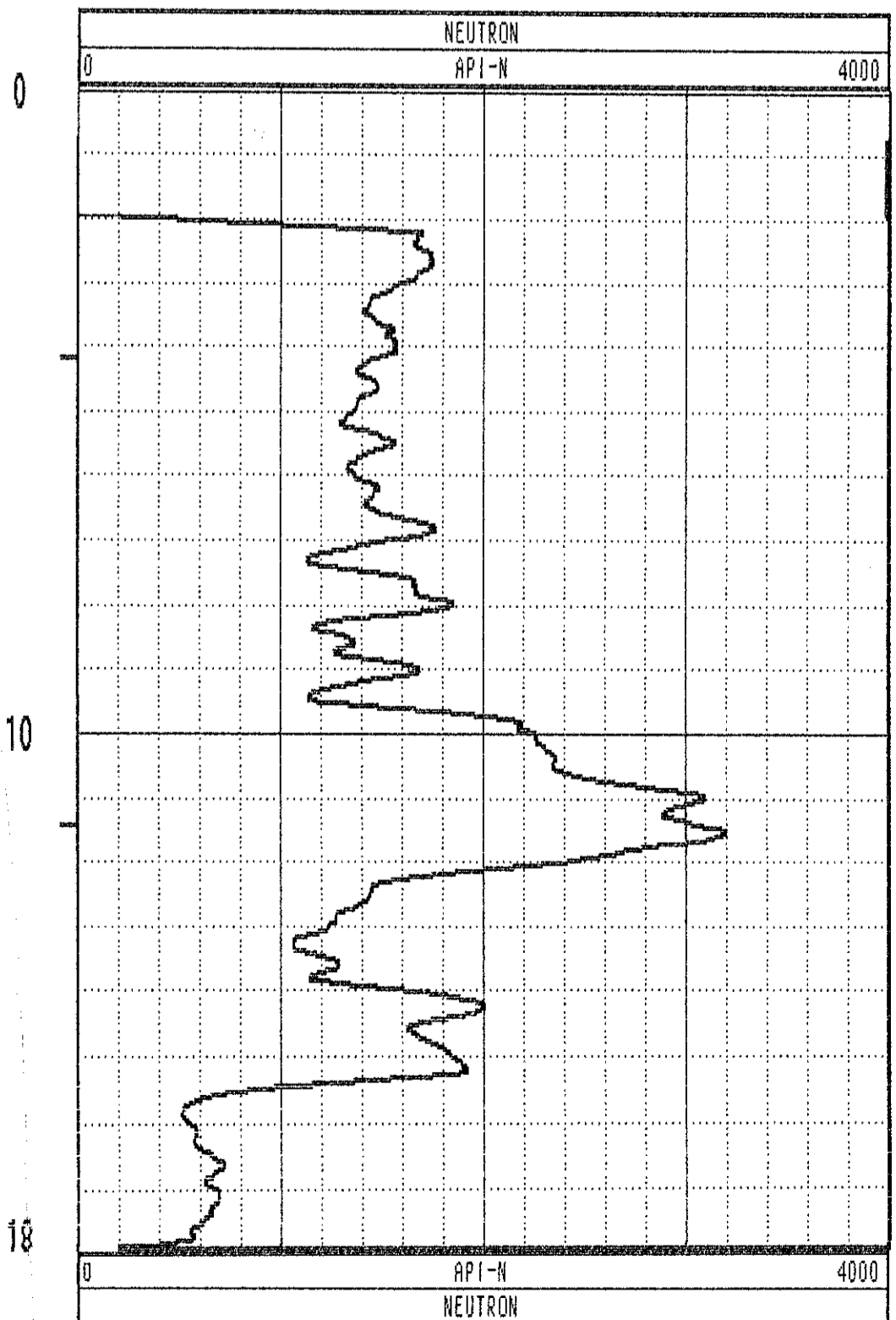
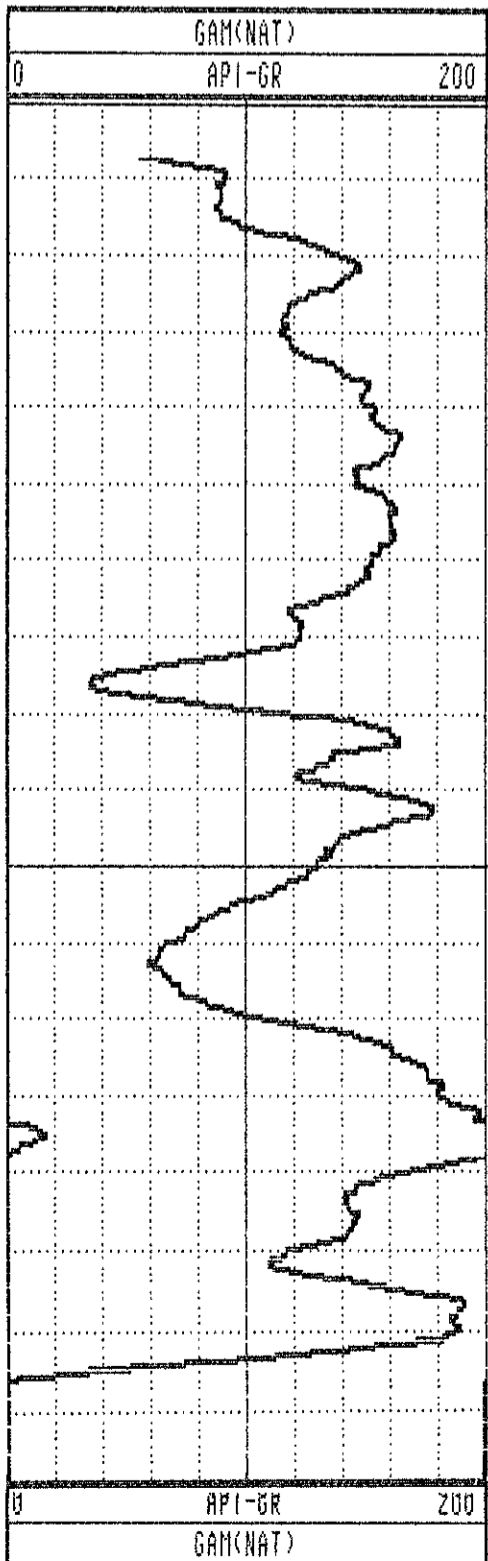


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96233 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.97 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.76 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 3 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

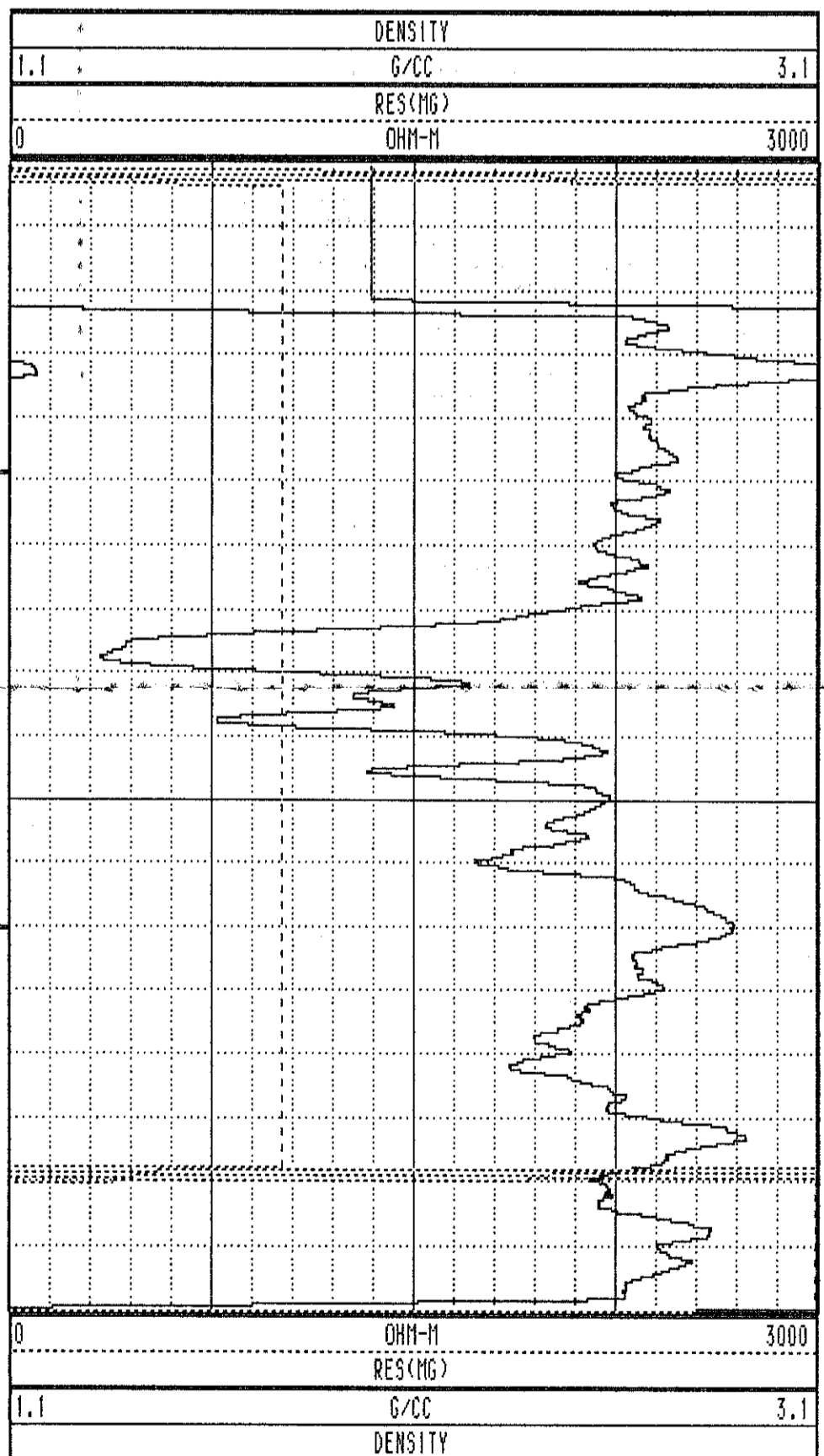
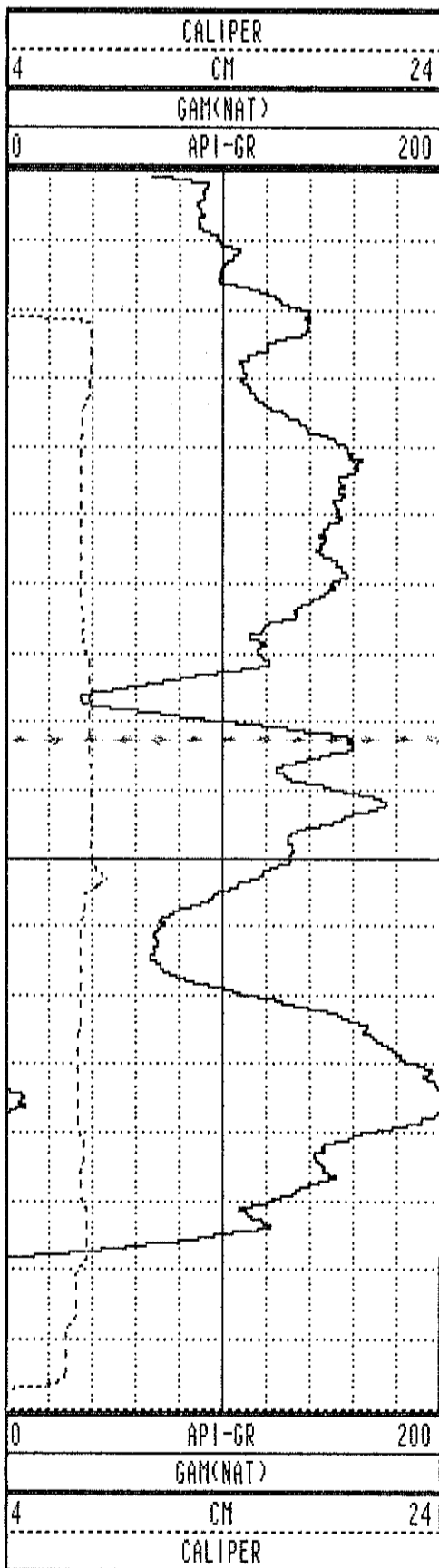
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96233 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/03/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.05 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.08 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |
| | NONE | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



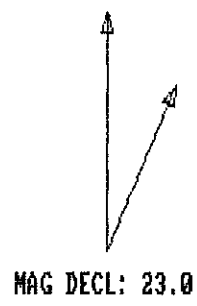
WRH-96233 10/03/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

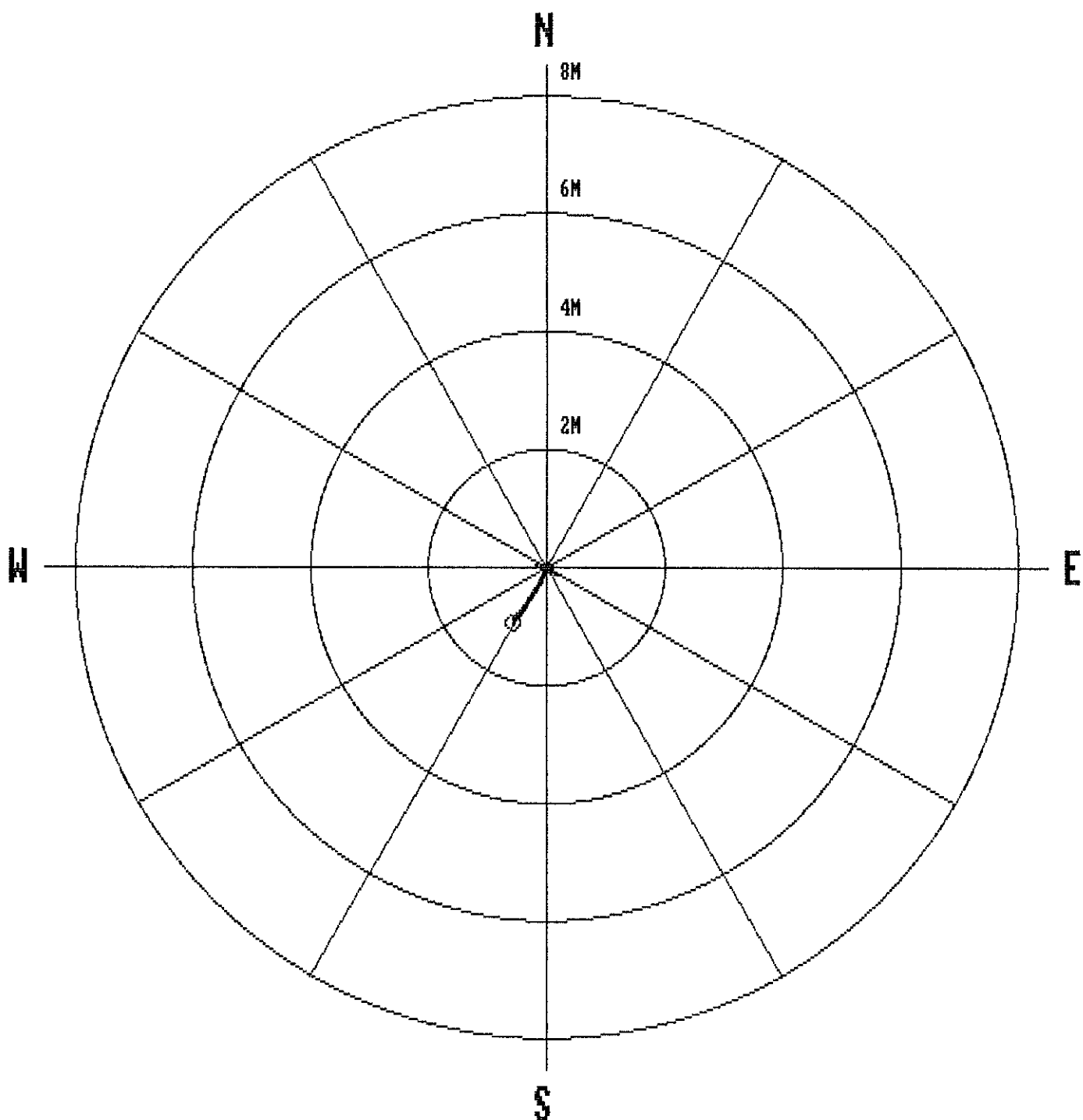
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | -0.00 | 0.0 | 199.9 | 2.1 | 196.6 |
| 3.0 | 3.00 | -0.02 | 0.00 | 0.0 | 179.0 | 0.8 | 169.6 |
| 4.0 | 4.00 | -0.04 | 0.00 | 0.0 | 174.5 | 0.5 | 158.4 |
| 5.0 | 5.00 | -0.04 | 0.00 | 0.0 | 174.4 | 0.2 | 185.7 |
| 6.0 | 6.00 | -0.04 | 0.01 | 0.0 | 173.1 | 0.2 | 132.1 |
| 7.0 | 7.00 | -0.04 | 0.01 | 0.0 | 171.6 | 0.3 | 135.6 |
| 8.0 | 8.00 | -0.04 | 0.01 | 0.0 | 167.5 | 0.4 | 18.3 |
| 9.0 | 9.00 | -0.03 | 0.02 | 0.0 | 154.9 | 0.9 | 32.8 |
| 10.0 | 10.00 | -0.02 | 0.03 | 0.0 | 126.3 | 0.9 | 25.6 |
| 11.0 | 11.00 | 0.00 | 0.03 | 0.0 | 88.1 | 1.4 | 21.2 |
| 12.0 | 12.00 | 0.02 | 0.04 | 0.0 | 65.2 | 1.0 | 28.5 |
| 13.0 | 13.00 | 0.03 | 0.05 | 0.1 | 56.0 | 0.4 | 41.0 |
| 14.0 | 14.00 | 0.04 | 0.05 | 0.1 | 52.3 | 0.4 | 358.1 |
| 15.0 | 15.00 | 0.04 | 0.05 | 0.1 | 50.0 | 0.1 | 153.5 |
| 16.0 | 16.00 | 0.04 | 0.05 | 0.1 | 50.4 | 0.5 | 269.6 |
| 17.0 | 17.00 | 0.04 | 0.04 | 0.1 | 48.8 | 0.5 | 214.7 |
| 18.0 | 18.00 | 0.03 | 0.03 | 0.0 | 53.1 | 1.1 | 209.8 |
| 19.0 | 19.00 | -0.00 | 0.02 | 0.0 | 90.2 | 2.3 | 205.5 |
| 20.0 | 20.00 | -0.04 | 0.00 | 0.0 | 175.0 | 2.7 | 225.9 |
| 21.0 | 21.00 | -0.10 | -0.02 | 0.1 | 192.3 | 3.6 | 192.4 |
| 22.0 | 21.99 | -0.16 | -0.05 | 0.2 | 197.2 | 3.8 | 209.9 |
| 23.0 | 22.99 | -0.23 | -0.08 | 0.2 | 199.7 | 5.4 | 206.7 |
| 24.0 | 23.99 | -0.31 | -0.13 | 0.3 | 202.6 | 5.5 | 205.1 |
| 25.0 | 24.98 | -0.40 | -0.19 | 0.4 | 205.7 | 6.6 | 213.3 |
| 26.0 | 25.97 | -0.51 | -0.26 | 0.6 | 207.1 | 7.7 | 218.5 |
| 27.0 | 26.96 | -0.63 | -0.34 | 0.7 | 208.3 | 10.0 | 204.6 |
| 28.0 | 27.94 | -0.77 | -0.45 | 0.9 | 210.1 | 10.3 | 221.4 |
| 29.0 | 28.93 | -0.93 | -0.55 | 1.1 | 210.7 | 11.7 | 197.9 |
| 29.1 | 28.98 | -0.94 | -0.55 | 1.1 | 210.6 | 11.6 | 203.6 |

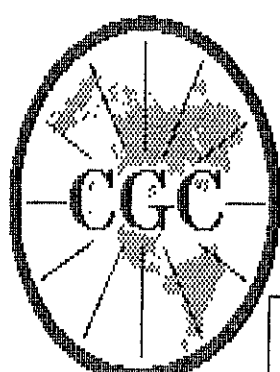
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96234
 DATE OF LOG: 10/04/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 28.98 M
 AZIMUTH: 210.6
 DISTANCE: 1.1 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



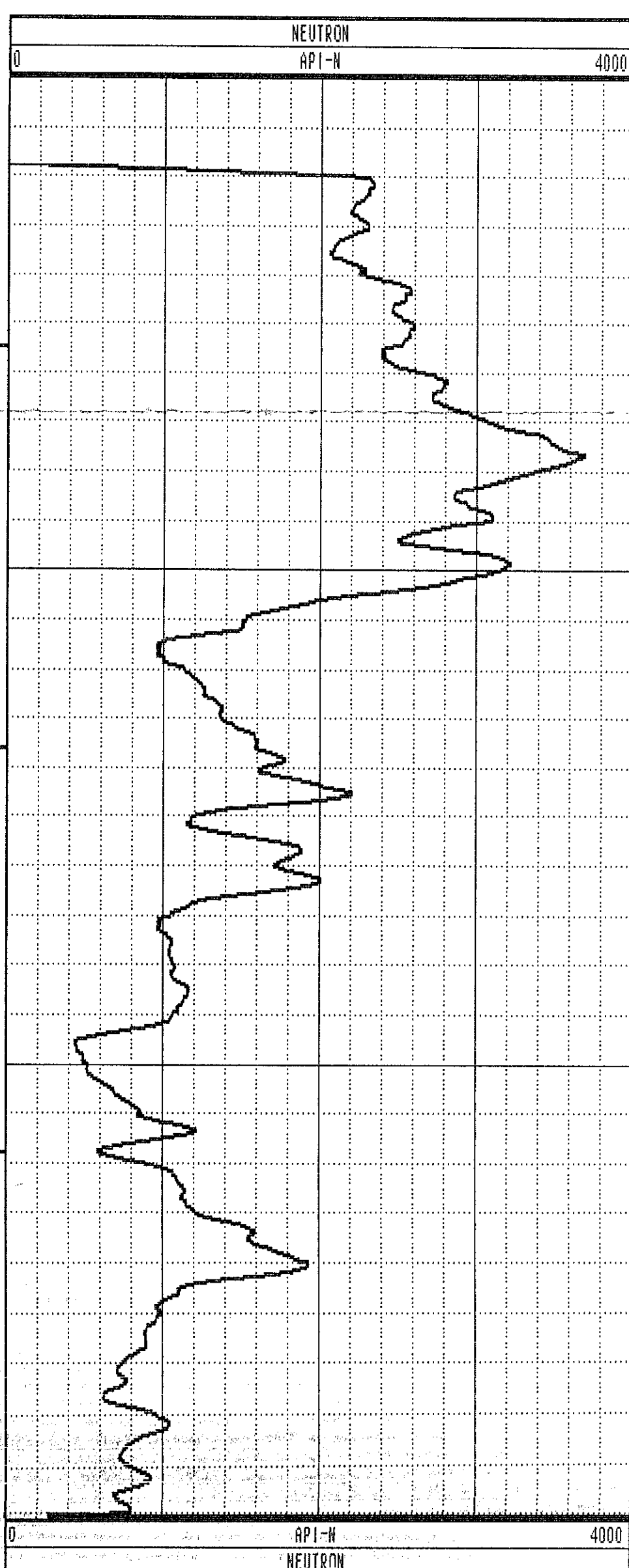
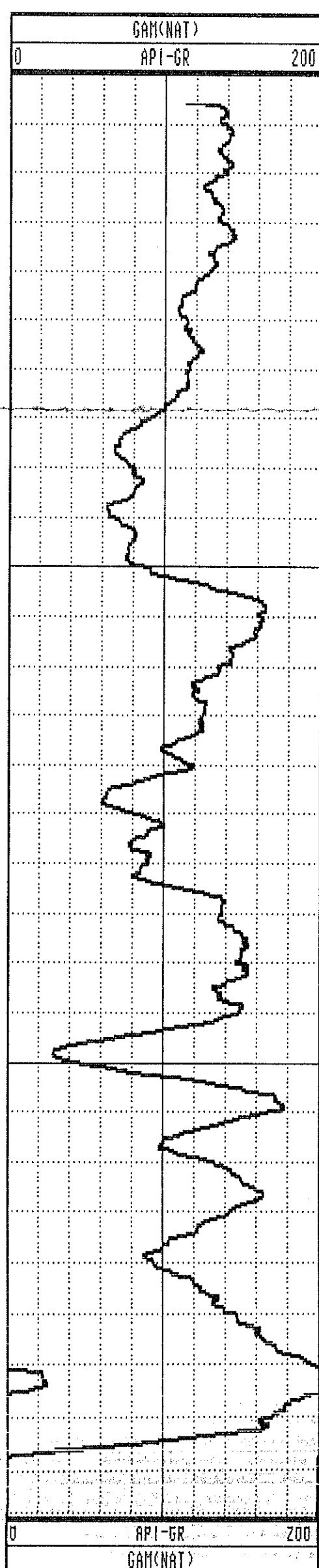


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96234 | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | TOWNSHIP | : |
| SECTION | : | RANGE | : |
| DATE | : 10/04/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.11 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.60 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 7 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

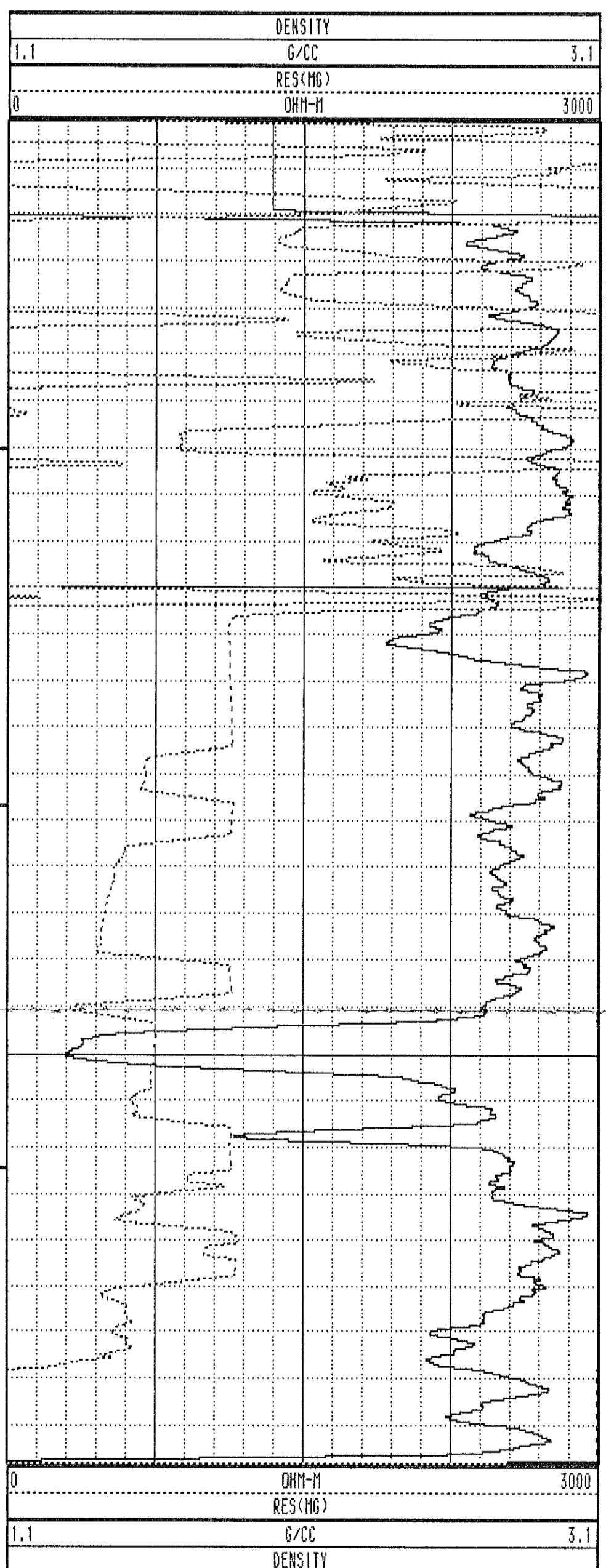
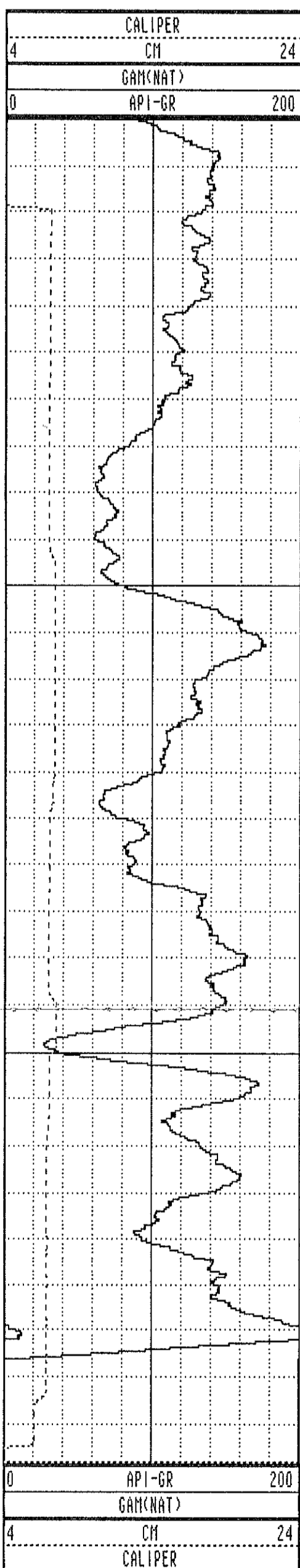
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96234 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 28.86 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.10 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |
| | NONE | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96234 10/04/96 958

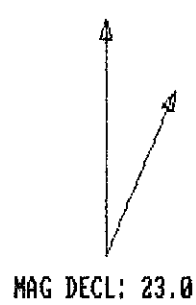
TOOL CALIBRATION TOOL = 9033AA SERIAL NUMBER = 958

| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
|----------|----------|----------|-------------|--------------|--------------|
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

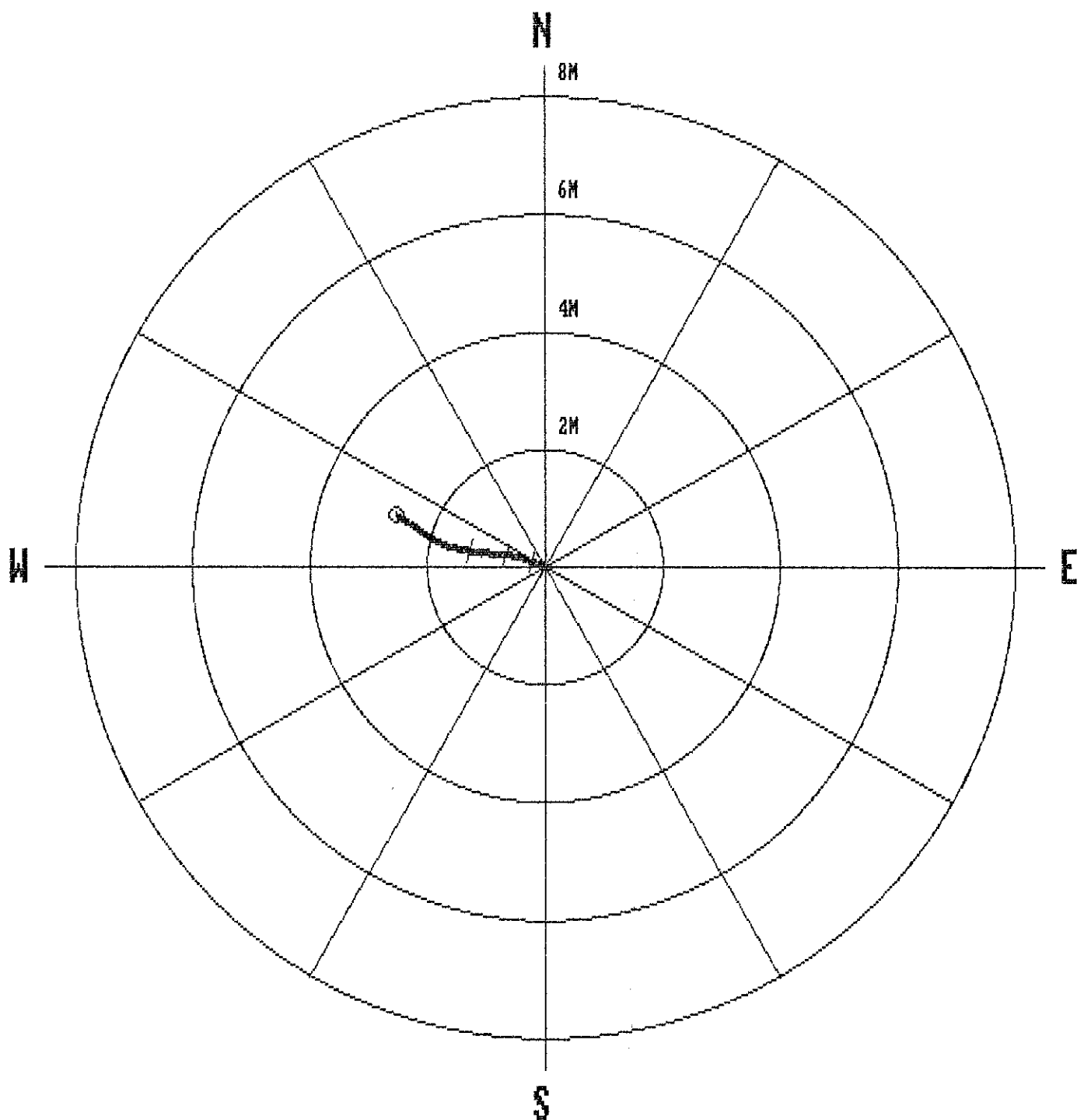
| | | | | | | | |
|------|-------|------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.00 | -0.00 | 0.0 | 270.6 | 0.3 | 311.1 |
| 4.0 | 4.00 | 0.00 | -0.01 | 0.0 | 290.1 | 0.7 | 302.7 |
| 5.0 | 5.00 | 0.01 | -0.03 | 0.0 | 293.4 | 1.1 | 289.8 |
| 6.0 | 6.00 | 0.02 | -0.04 | 0.0 | 292.4 | 1.1 | 291.1 |
| 7.0 | 7.00 | 0.03 | -0.07 | 0.1 | 295.3 | 2.1 | 293.1 |
| 8.0 | 8.00 | 0.05 | -0.11 | 0.1 | 294.0 | 2.8 | 292.5 |
| 9.0 | 9.00 | 0.07 | -0.16 | 0.2 | 293.6 | 3.8 | 296.7 |
| 10.0 | 9.99 | 0.09 | -0.22 | 0.2 | 292.2 | 3.2 | 289.8 |
| 11.0 | 10.99 | 0.12 | -0.29 | 0.3 | 291.9 | 4.6 | 285.1 |
| 12.0 | 11.99 | 0.15 | -0.37 | 0.4 | 291.5 | 5.0 | 287.6 |
| 13.0 | 12.98 | 0.16 | -0.46 | 0.5 | 289.8 | 5.6 | 278.7 |
| 14.0 | 13.98 | 0.19 | -0.55 | 0.6 | 288.9 | 5.5 | 282.8 |
| 15.0 | 14.97 | 0.21 | -0.65 | 0.7 | 288.0 | 6.3 | 284.9 |
| 16.0 | 15.97 | 0.22 | -0.76 | 0.8 | 286.2 | 6.8 | 273.3 |
| 17.0 | 16.96 | 0.23 | -0.88 | 0.9 | 284.5 | 7.4 | 266.6 |
| 18.0 | 17.95 | 0.23 | -1.01 | 1.0 | 283.1 | 7.0 | 272.8 |
| 19.0 | 18.94 | 0.23 | -1.13 | 1.2 | 281.7 | 7.3 | 286.5 |
| 20.0 | 19.94 | 0.26 | -1.26 | 1.3 | 281.8 | 7.9 | 279.4 |
| 21.0 | 20.93 | 0.29 | -1.39 | 1.4 | 282.0 | 7.9 | 281.7 |
| 22.0 | 21.92 | 0.32 | -1.52 | 1.6 | 282.0 | 8.4 | 293.2 |
| 23.0 | 22.91 | 0.36 | -1.66 | 1.7 | 282.3 | 8.2 | 294.2 |
| 24.0 | 23.90 | 0.41 | -1.79 | 1.8 | 282.9 | 8.6 | 297.1 |
| 25.0 | 24.89 | 0.48 | -1.92 | 2.0 | 284.0 | 8.5 | 302.1 |
| 26.0 | 25.87 | 0.57 | -2.05 | 2.1 | 285.4 | 9.2 | 303.6 |
| 27.0 | 26.86 | 0.65 | -2.17 | 2.3 | 286.7 | 10.2 | 312.9 |
| 28.0 | 27.85 | 0.74 | -2.30 | 2.4 | 287.8 | 8.7 | 292.2 |
| 29.0 | 28.84 | 0.82 | -2.43 | 2.6 | 288.7 | 9.2 | 311.4 |
| 29.7 | 29.53 | 0.88 | -2.53 | 2.7 | 289.1 | 9.2 | 299.2 |

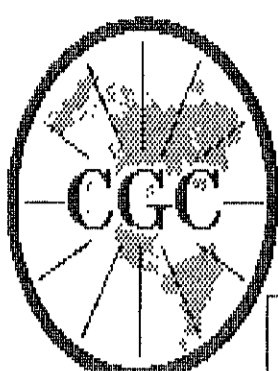
PLAN VIEW COMPU-LOG DEVIATION

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96235
 DATE OF LOG: 10/04/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 29.53 M
 AZIMUTH: 289.1
 DISTANCE: 2.7 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



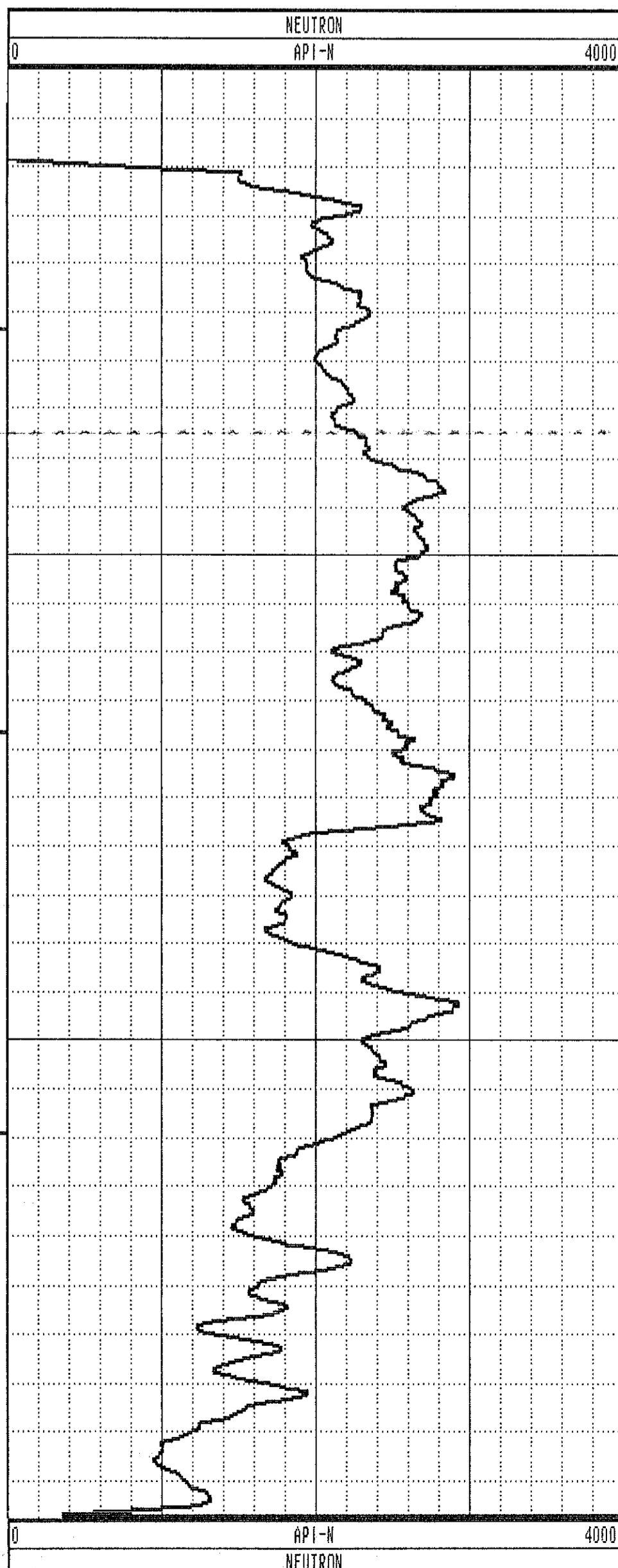
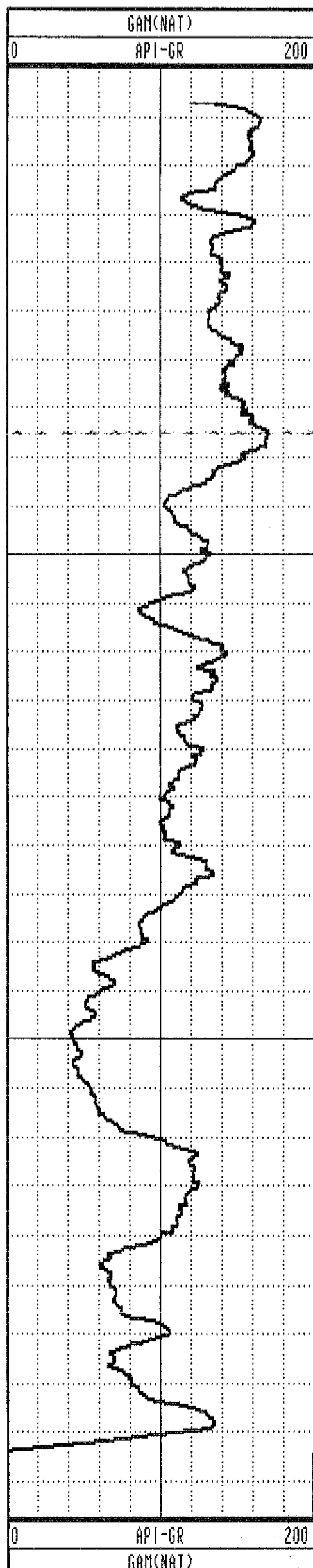


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96235 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : TOWNSHIP | RANGE | : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.75 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.72 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 2 |
| | | PLOT | : PINE 4 |
| | | THRESH | : 10000 |

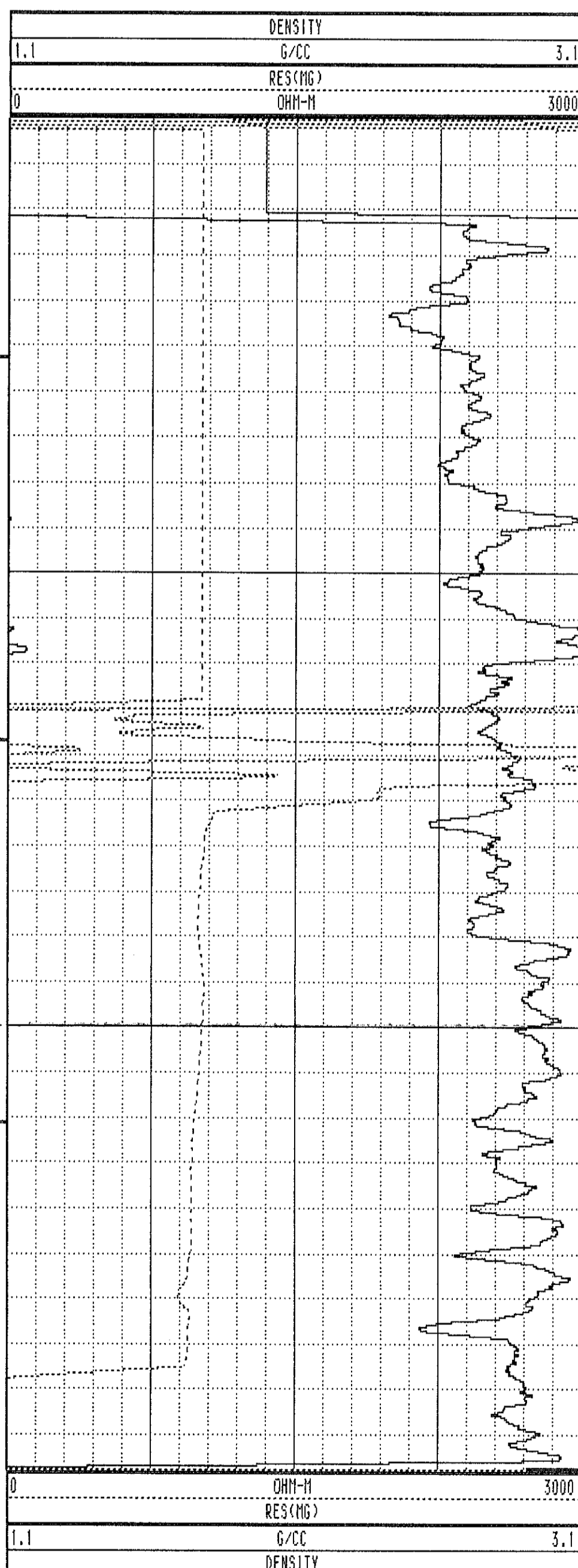
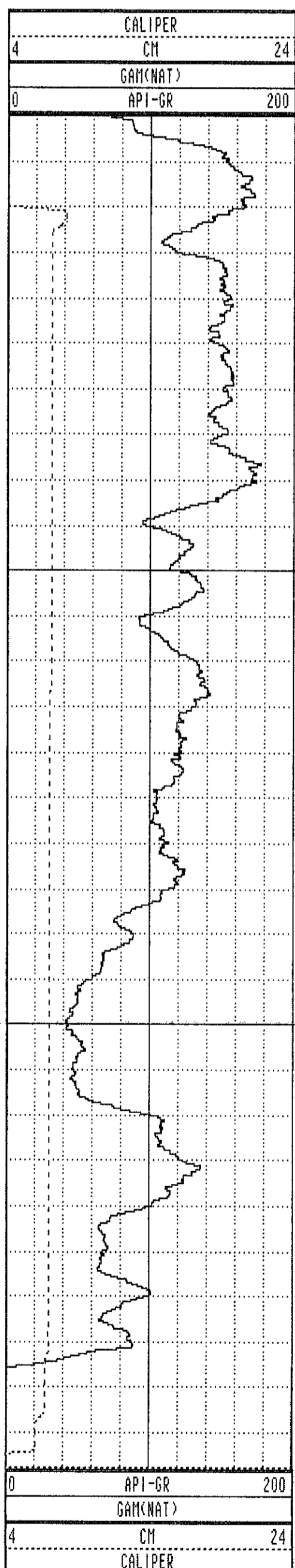
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|-------------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96235 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 29.79 | LOG MEASURED FROM: G.L. | DF : |
| LOG TOP | : 0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | | |
| NONE | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

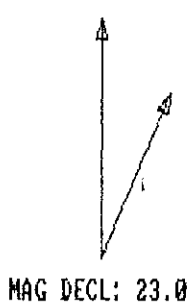


WRH-96235 10/04/96 958

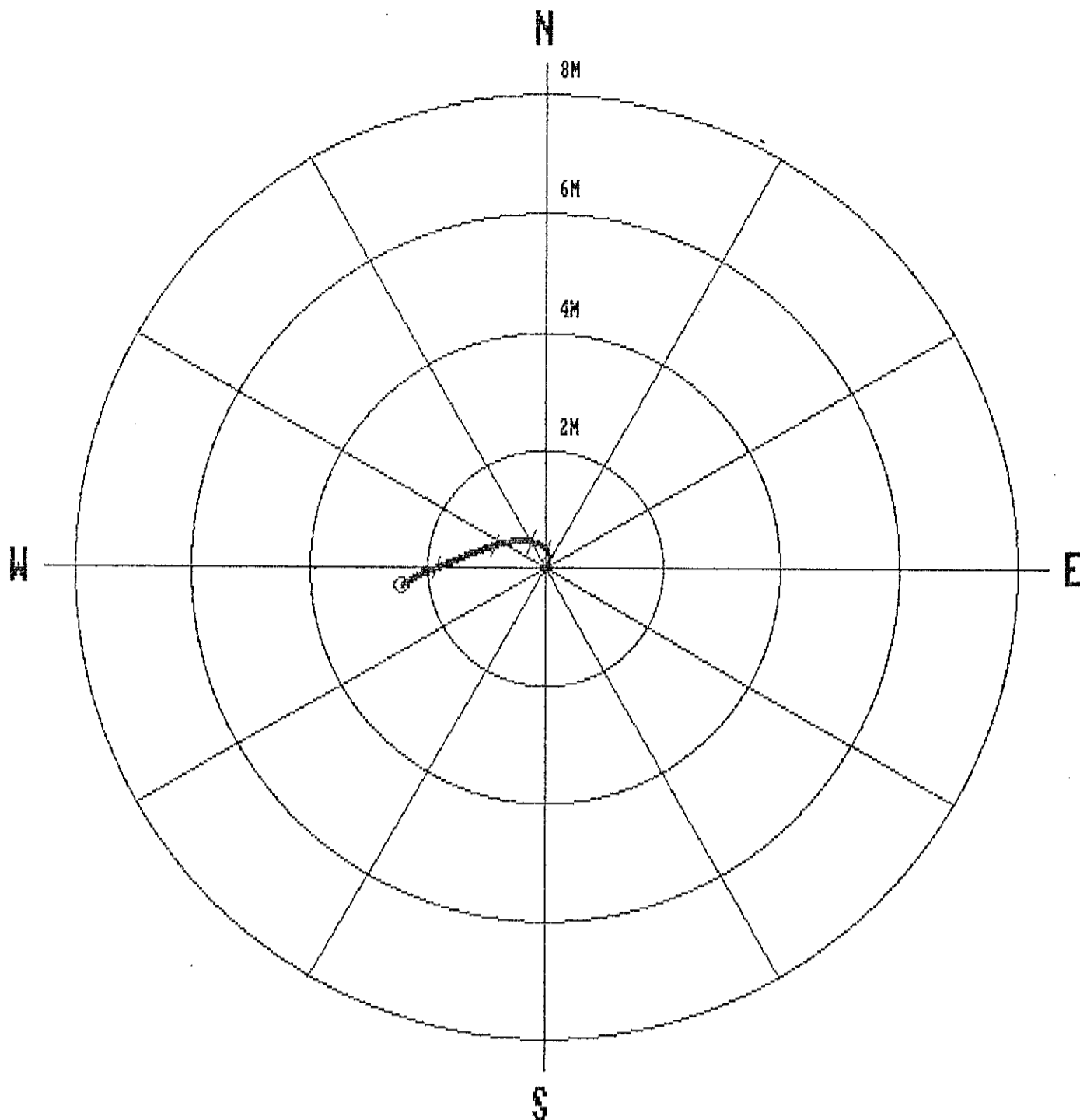
| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

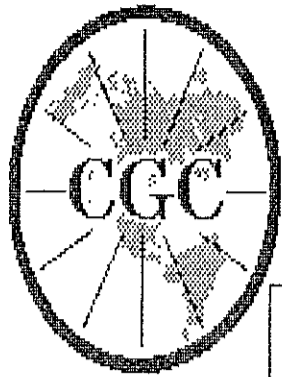
CLIENT: PINE VALLEY COAL
 LOCATION: HILLOW CREEK
 HOLE ID: WRH-96236
 DATE OF LOG: 10/04/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 27.56 M
 AZIMUTH: 263.1
 DISTANCE: 2.5 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3.0 | 3.00 | 0.02 | 0.03 | 0.0 | 49.7 | 2.4 | 34.8 |
| 4.0 | 4.00 | 0.06 | 0.05 | 0.1 | 40.0 | 2.2 | 22.1 |
| 5.0 | 5.00 | 0.09 | 0.06 | 0.1 | 35.3 | 2.3 | 27.3 |
| 6.0 | 6.00 | 0.13 | 0.07 | 0.1 | 28.9 | 2.7 | 2.0 |
| 7.0 | 7.00 | 0.17 | 0.07 | 0.2 | 22.9 | 2.6 | 354.5 |
| 8.0 | 8.00 | 0.22 | 0.06 | 0.2 | 16.8 | 2.7 | 347.3 |
| 9.0 | 8.99 | 0.26 | 0.05 | 0.3 | 11.3 | 2.5 | 340.7 |
| 10.0 | 9.99 | 0.30 | 0.03 | 0.3 | 5.7 | 3.0 | 335.5 |
| 11.0 | 10.99 | 0.34 | -0.00 | 0.3 | 359.7 | 3.1 | 315.2 |
| 12.0 | 11.99 | 0.38 | -0.05 | 0.4 | 352.7 | 3.6 | 303.2 |
| 13.0 | 12.99 | 0.40 | -0.10 | 0.4 | 345.7 | 3.9 | 293.7 |
| 14.0 | 13.99 | 0.43 | -0.16 | 0.5 | 339.0 | 4.2 | 291.6 |
| 15.0 | 14.98 | 0.45 | -0.24 | 0.5 | 332.0 | 5.2 | 289.8 |
| 16.0 | 15.98 | 0.46 | -0.33 | 0.6 | 324.9 | 5.7 | 275.6 |
| 17.0 | 16.97 | 0.46 | -0.43 | 0.6 | 317.0 | 6.9 | 271.9 |
| 18.0 | 17.97 | 0.45 | -0.55 | 0.7 | 309.0 | 7.5 | 263.9 |
| 19.0 | 18.96 | 0.42 | -0.69 | 0.8 | 301.2 | 8.7 | 267.5 |
| 20.0 | 19.94 | 0.38 | -0.85 | 0.9 | 294.3 | 10.1 | 252.4 |
| 21.0 | 20.93 | 0.33 | -1.02 | 1.1 | 287.9 | 10.4 | 252.9 |
| 22.0 | 21.90 | 0.26 | -1.21 | 1.2 | 282.1 | 11.4 | 257.8 |
| 23.0 | 22.88 | 0.17 | -1.40 | 1.4 | 277.1 | 13.7 | 249.3 |
| 24.0 | 23.86 | 0.09 | -1.61 | 1.6 | 273.2 | 13.6 | 250.6 |
| 25.0 | 24.83 | 0.00 | -1.82 | 1.8 | 270.1 | 13.2 | 249.0 |
| 26.0 | 25.80 | -0.09 | -2.04 | 2.0 | 267.5 | 14.0 | 250.3 |
| 27.0 | 26.77 | -0.20 | -2.25 | 2.3 | 265.0 | 14.7 | 234.3 |
| 27.8 | 27.56 | -0.30 | -2.43 | 2.5 | 263.1 | 15.4 | 239.8 |

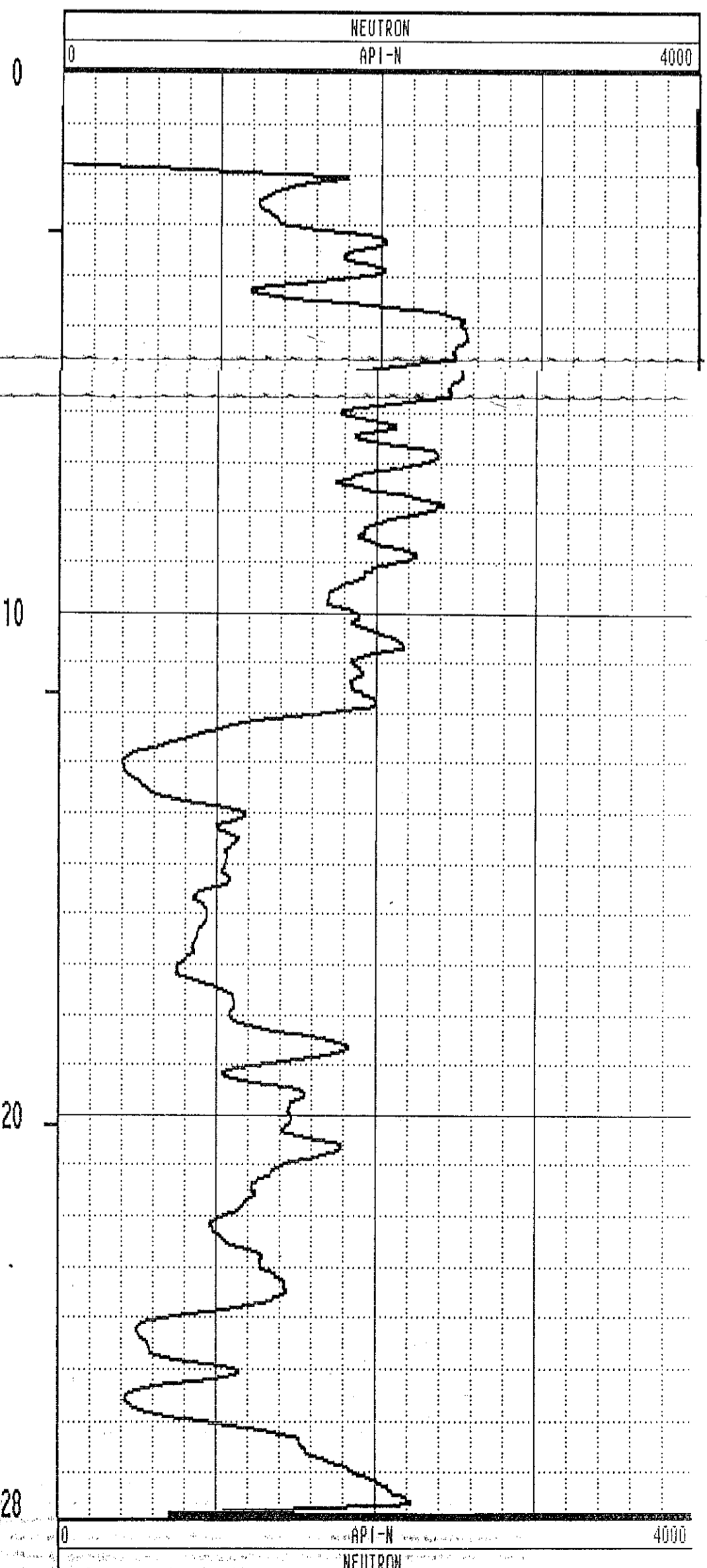
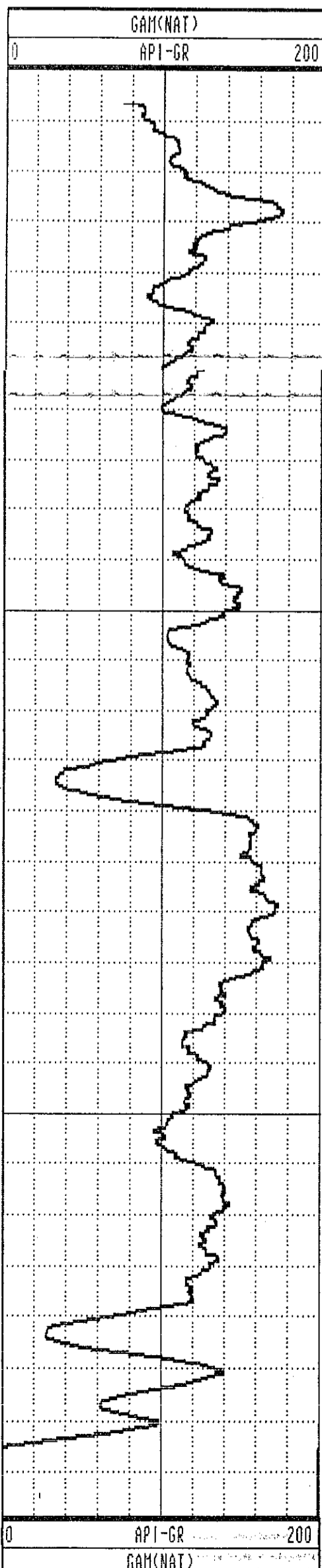


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96236 | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.88 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.66 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 9 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

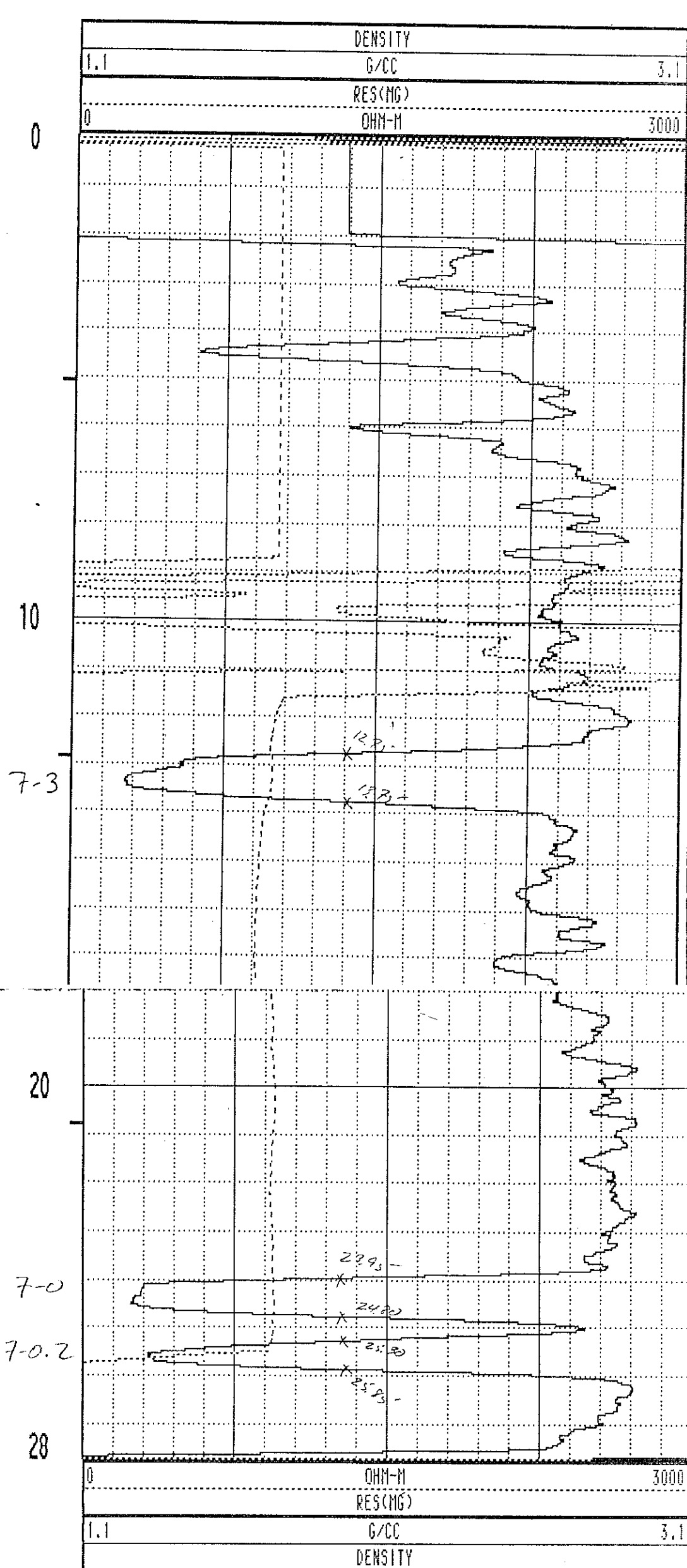
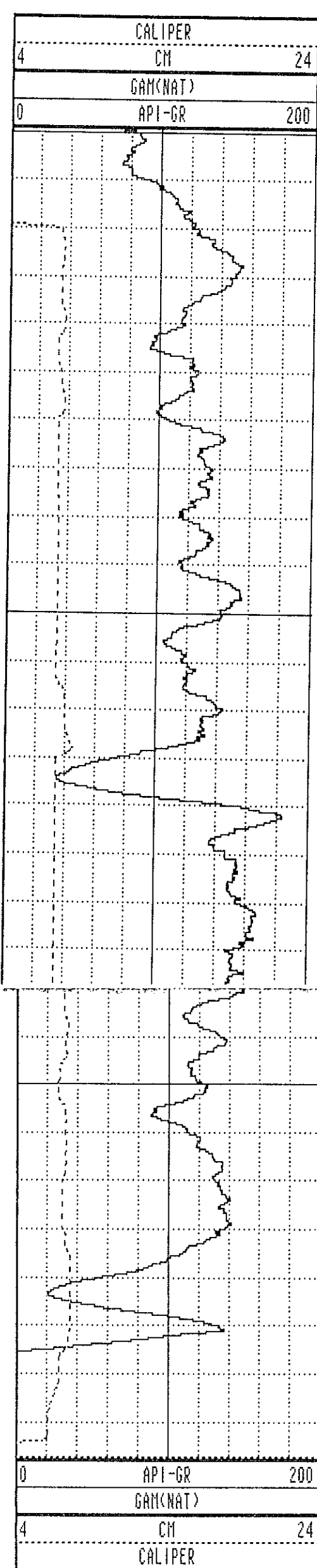
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96236 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 30 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.78 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS | : .25 | RECORDED BY | : R.THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 8 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| | : NONE | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

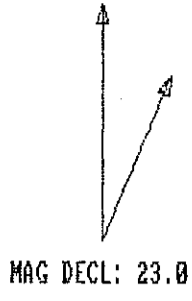


WRH-96236 10/04/96 958

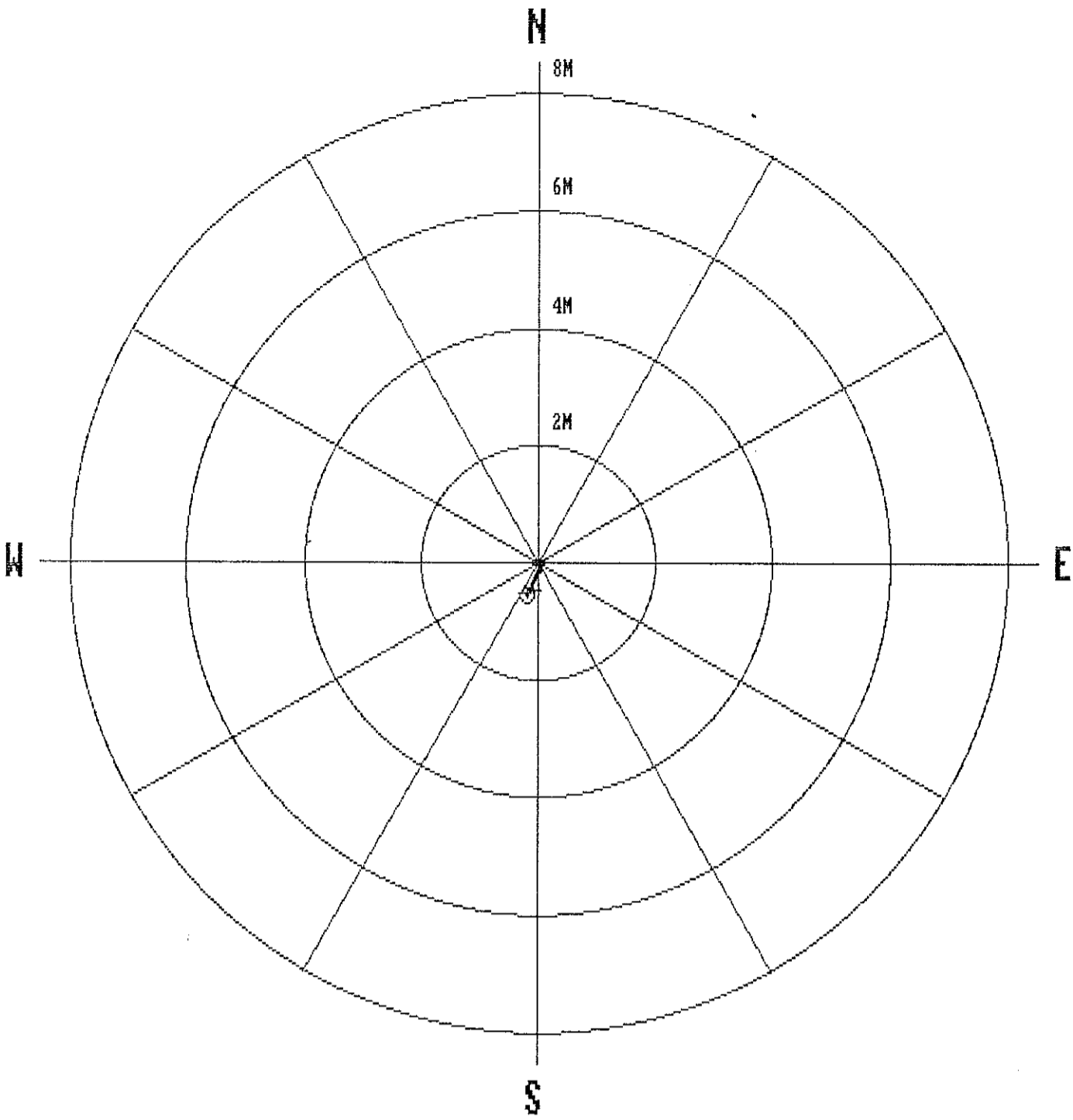
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(NG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

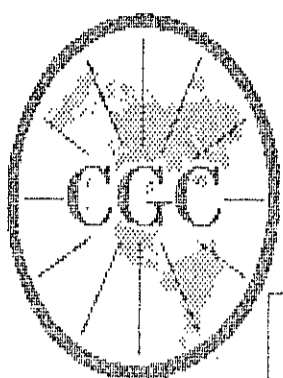
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96237
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 20.58 M
 AZIMUTH: 198.6
 DISTANCE: 0.6 M
 + = 20 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|----------------|-----------------|------------------|-----------------|----------------|------------------|----------------|------------------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | -0.00 | 0.00 | 0.0 | 153.4 | 1.7 | 149.7 |
| 3.0 | 3.00 | -0.02 | 0.02 | 0.0 | 145.1 | 1.0 | 130.7 |
| 4.0 | 4.00 | -0.04 | 0.03 | 0.0 | 143.8 | 1.5 | 145.2 |
| 5.0 | 5.00 | -0.06 | 0.04 | 0.1 | 146.2 | 0.7 | 162.5 |
| 6.0 | 6.00 | -0.07 | 0.04 | 0.1 | 146.5 | 0.6 | 141.3 |
| 7.0 | 7.00 | -0.07 | 0.05 | 0.1 | 145.8 | 0.4 | 131.1 |
| 8.0 | 8.00 | -0.08 | 0.05 | 0.1 | 146.3 | 0.6 | 137.6 |
| 9.0 | 9.00 | -0.08 | 0.05 | 0.1 | 146.4 | 0.3 | 206.2 |
| 10.0 | 10.00 | -0.09 | 0.06 | 0.1 | 147.9 | 0.4 | 238.8 |
| 11.0 | 11.00 | -0.10 | 0.05 | 0.1 | 152.6 | 0.4 | 222.3 |
| 12.0 | 12.00 | -0.11 | 0.04 | 0.1 | 158.9 | 0.9 | 231.7 |
| 13.0 | 13.00 | -0.12 | 0.03 | 0.1 | 165.9 | 1.1 | 216.9 |
| 14.0 | 14.00 | -0.14 | 0.02 | 0.1 | 173.3 | 1.9 | 220.2 |
| 15.0 | 15.00 | -0.18 | 0.00 | 0.2 | 179.4 | 2.3 | 202.2 |
| 16.0 | 16.00 | -0.21 | -0.02 | 0.2 | 185.2 | 2.6 | 199.0 |
| 17.0 | 17.00 | -0.26 | -0.04 | 0.3 | 189.3 | 3.3 | 202.1 |
| 18.0 | 17.99 | -0.31 | -0.07 | 0.3 | 192.5 | 3.7 | 205.3 |
| 19.0 | 18.99 | -0.39 | -0.09 | 0.4 | 193.4 | 5.4 | 204.5 |
| 20.0 | 19.98 | -0.48 | -0.15 | 0.5 | 196.7 | 6.5 | 215.8 |
| 20.6 | 20.58 | -0.54 | -0.18 | 0.6 | 198.6 | 7.4 | 213.7 |

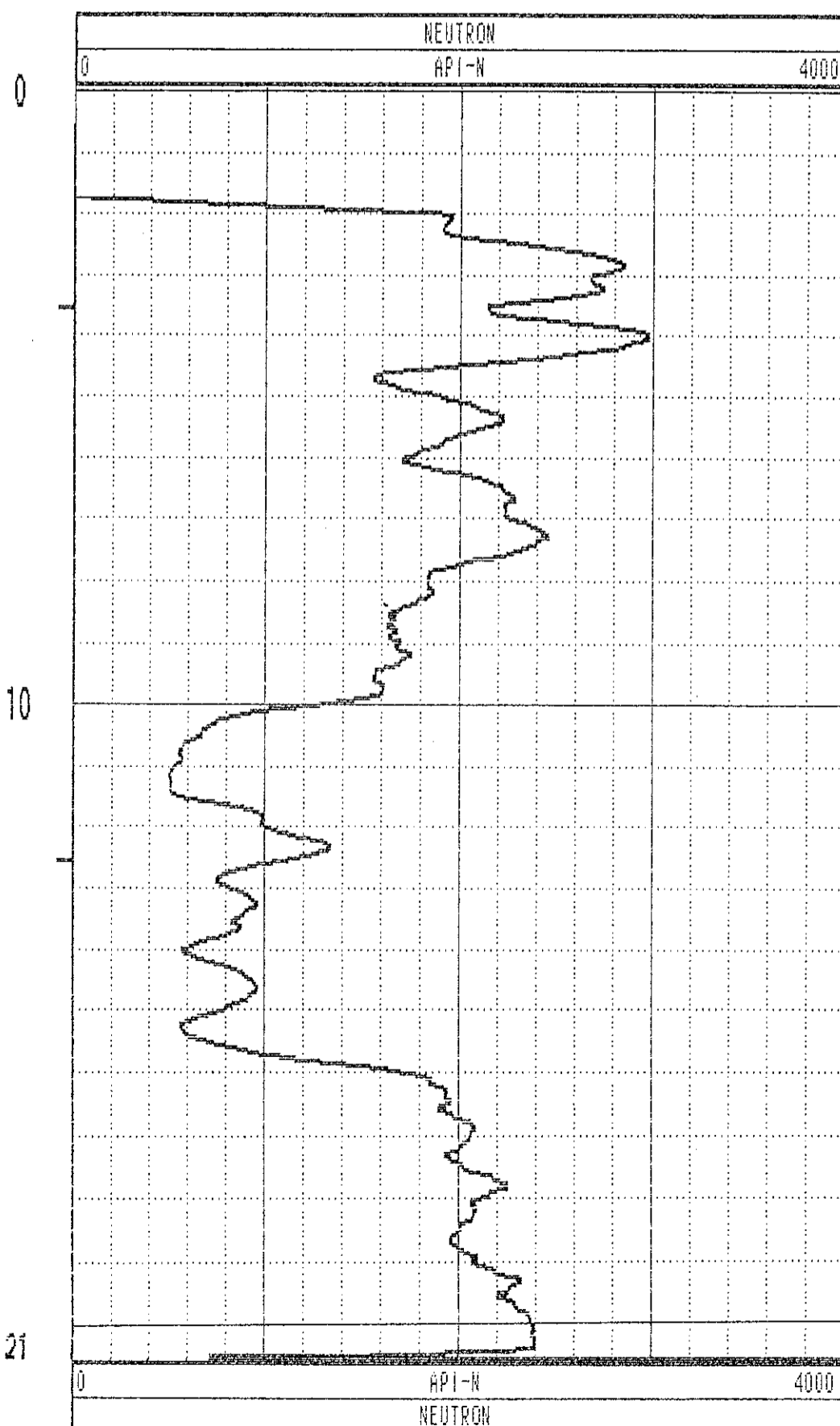
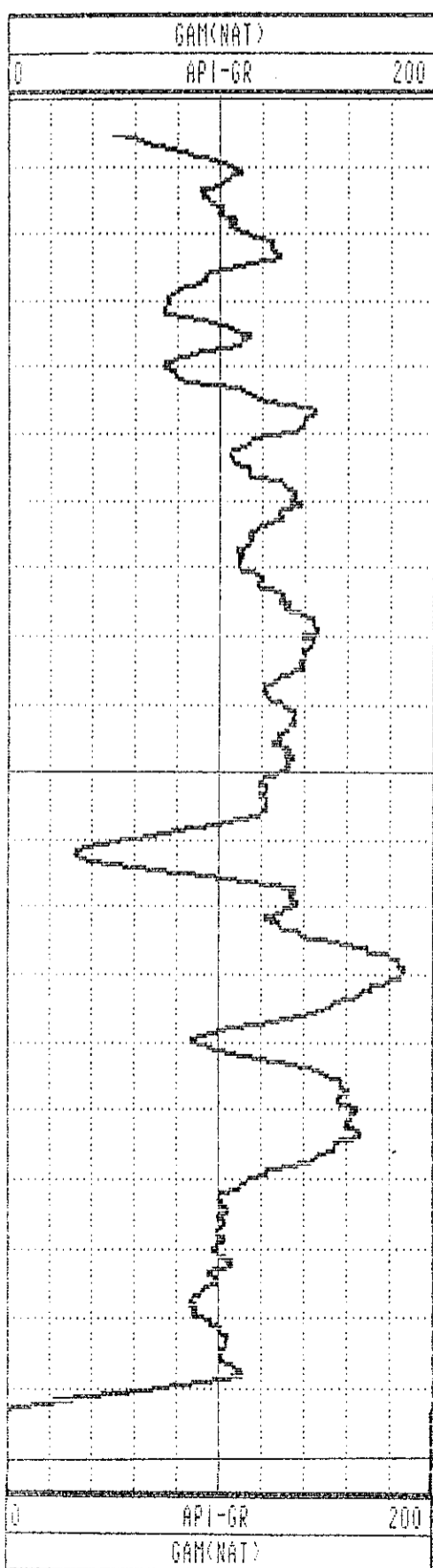


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96237 | [] | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 20.66 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.56 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9055A |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 0 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 4 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

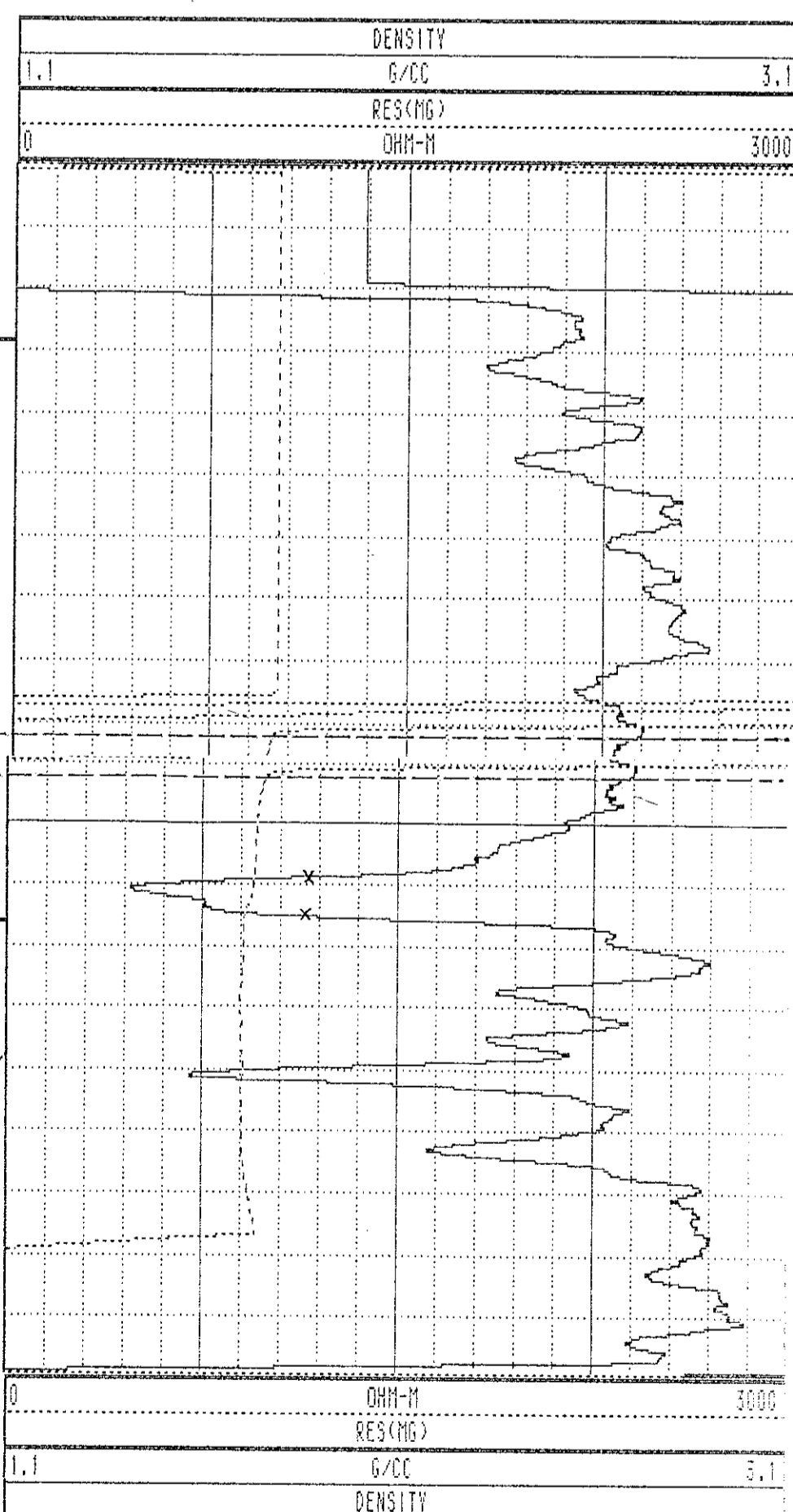
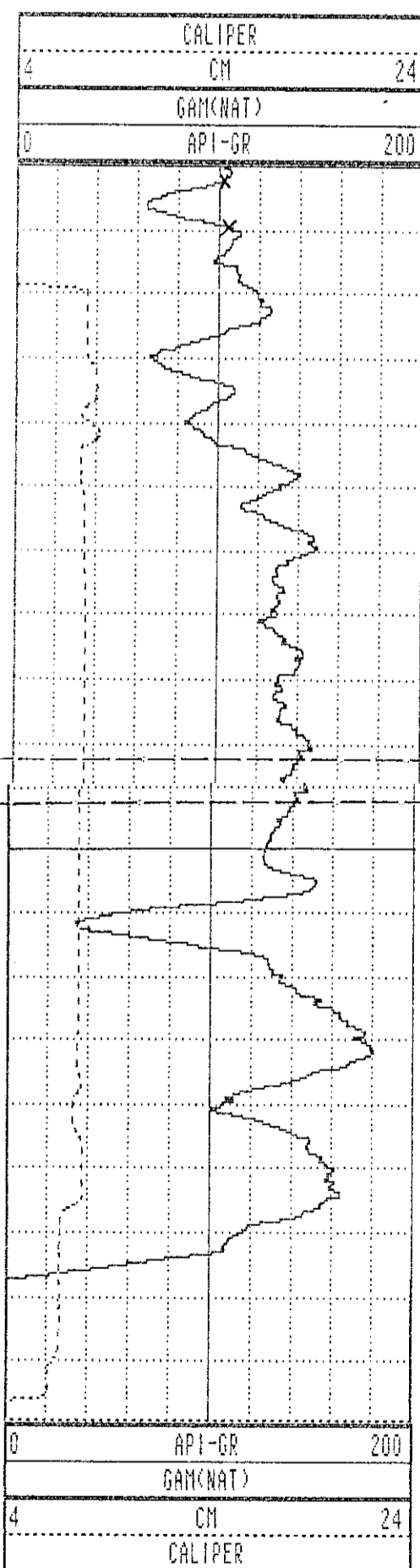
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96237 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 21 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 18.96 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.14 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | : | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS

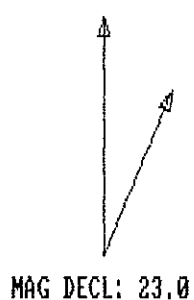


WRH-96237 10/05/96 958

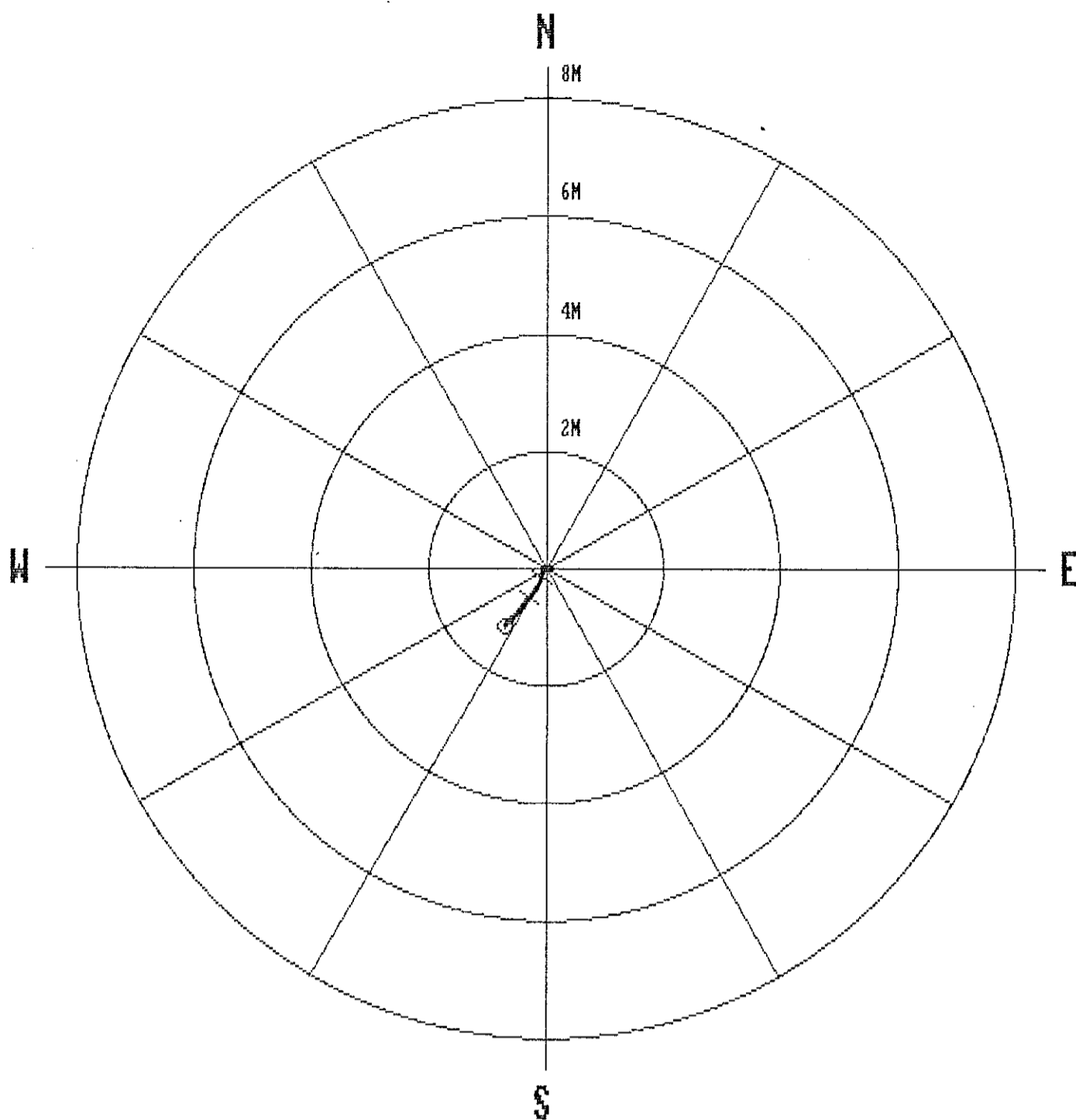
| TOOL CALIBRATION | | TOOL = 9033AA | | SERIAL NUMBER = 958 | |
|------------------|----------|---------------|-------------|---------------------|--------------|
| CAL-DATE | CAL-TIME | SRC | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |

PLAN VIEW COMPU-LOG DEVIATION

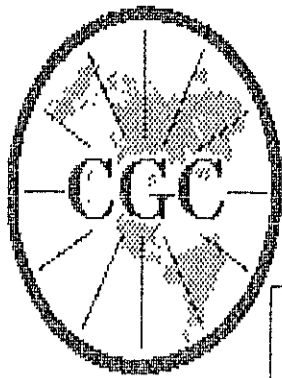
CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96238
 DATE OF LOG: 10/05/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 27.76 M
 AZIMUTH: 216.4
 DISTANCE: 1.2 M
 + = 10 M INCR
 ○ = BOTTOM OF HOLE



| | | | | | | | |
|------|-------|-------|-------|-----|-------|-----|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | -0.00 | 0.0 | 293.1 | 1.2 | 291.2 |
| 3.0 | 3.00 | 0.00 | -0.02 | 0.0 | 275.3 | 1.0 | 235.9 |
| 4.0 | 4.00 | -0.01 | -0.03 | 0.0 | 252.0 | 1.6 | 235.6 |
| 5.0 | 5.00 | -0.03 | -0.05 | 0.1 | 239.4 | 1.3 | 210.6 |
| 6.0 | 6.00 | -0.05 | -0.06 | 0.1 | 228.7 | 1.4 | 212.1 |
| 7.0 | 7.00 | -0.07 | -0.06 | 0.1 | 222.6 | 0.9 | 185.7 |
| 8.0 | 8.00 | -0.09 | -0.07 | 0.1 | 218.6 | 1.3 | 187.9 |
| 9.0 | 9.00 | -0.11 | -0.07 | 0.1 | 212.1 | 1.4 | 205.4 |
| 10.0 | 10.00 | -0.14 | -0.07 | 0.2 | 208.8 | 1.5 | 188.5 |
| 11.0 | 11.00 | -0.16 | -0.08 | 0.2 | 206.8 | 1.5 | 191.8 |
| 12.0 | 12.00 | -0.19 | -0.09 | 0.2 | 205.6 | 2.0 | 193.1 |
| 13.0 | 13.00 | -0.22 | -0.10 | 0.2 | 205.0 | 1.7 | 197.1 |
| 14.0 | 14.00 | -0.25 | -0.12 | 0.3 | 204.9 | 2.3 | 216.6 |
| 15.0 | 15.00 | -0.28 | -0.14 | 0.3 | 205.7 | 2.4 | 204.1 |
| 16.0 | 15.99 | -0.32 | -0.16 | 0.4 | 206.9 | 2.7 | 213.2 |
| 17.0 | 16.99 | -0.36 | -0.19 | 0.4 | 208.3 | 2.3 | 210.8 |
| 18.0 | 17.99 | -0.40 | -0.22 | 0.5 | 208.7 | 2.9 | 219.0 |
| 19.0 | 18.99 | -0.45 | -0.25 | 0.5 | 209.1 | 3.4 | 223.3 |
| 20.0 | 19.99 | -0.49 | -0.29 | 0.6 | 210.6 | 3.3 | 217.9 |
| 21.0 | 20.99 | -0.53 | -0.32 | 0.6 | 211.6 | 2.8 | 232.1 |
| 22.0 | 21.99 | -0.57 | -0.36 | 0.7 | 212.3 | 3.0 | 229.0 |
| 23.0 | 22.98 | -0.62 | -0.40 | 0.7 | 212.7 | 4.7 | 219.6 |
| 24.0 | 23.98 | -0.69 | -0.46 | 0.8 | 213.4 | 5.1 | 220.5 |
| 25.0 | 24.97 | -0.77 | -0.51 | 0.9 | 213.8 | 5.5 | 222.5 |
| 26.0 | 25.97 | -0.83 | -0.58 | 1.0 | 214.7 | 5.9 | 231.3 |
| 27.0 | 26.96 | -0.90 | -0.65 | 1.1 | 215.8 | 5.9 | 219.9 |
| 27.8 | 27.76 | -0.96 | -0.71 | 1.2 | 216.4 | 6.3 | 225.2 |

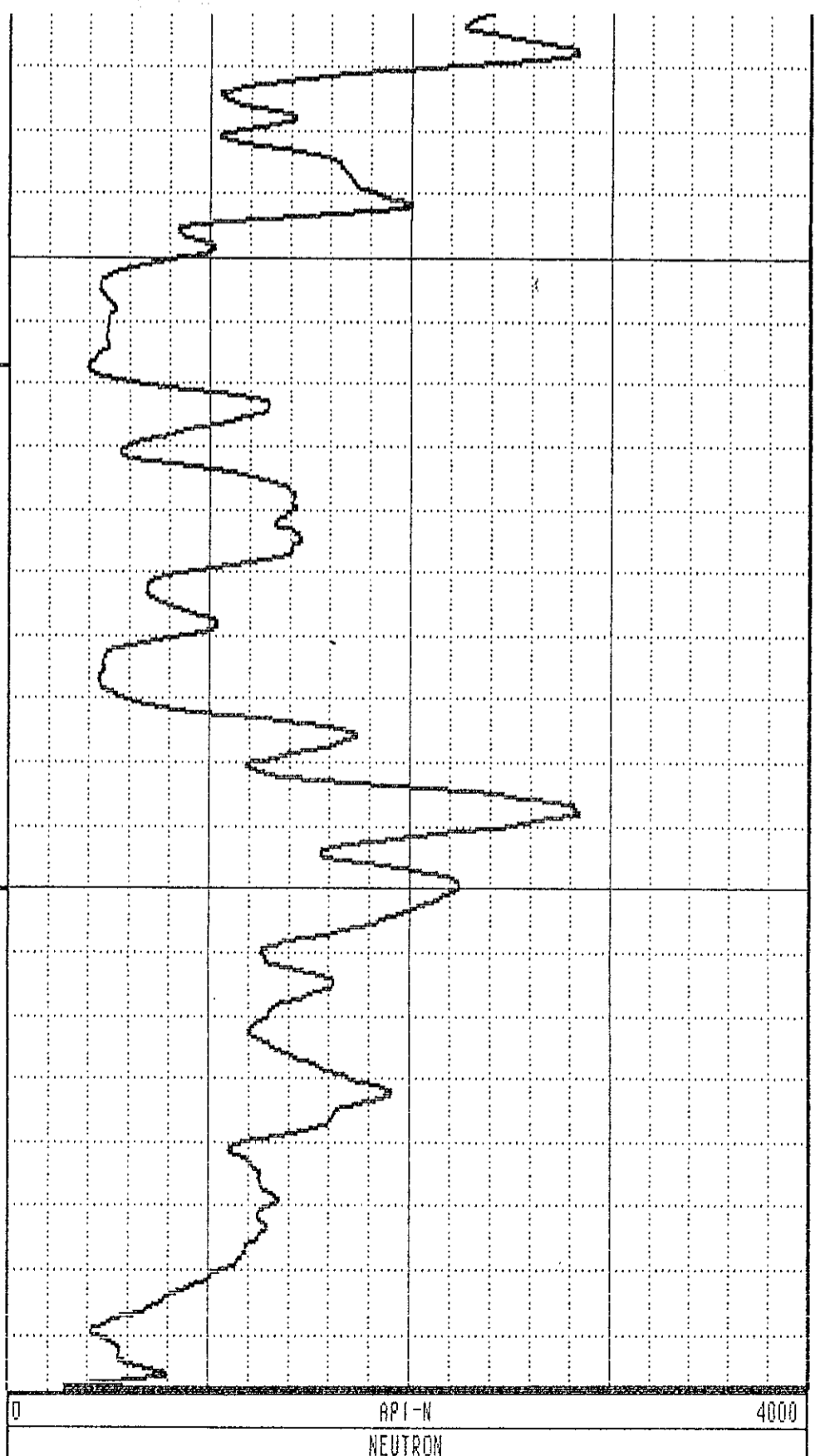
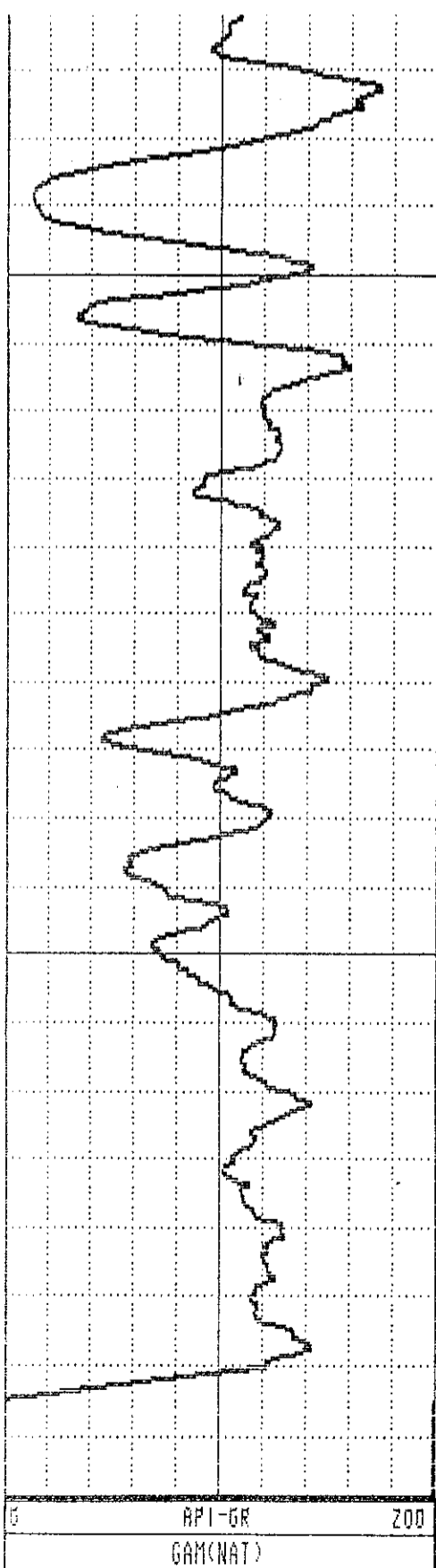
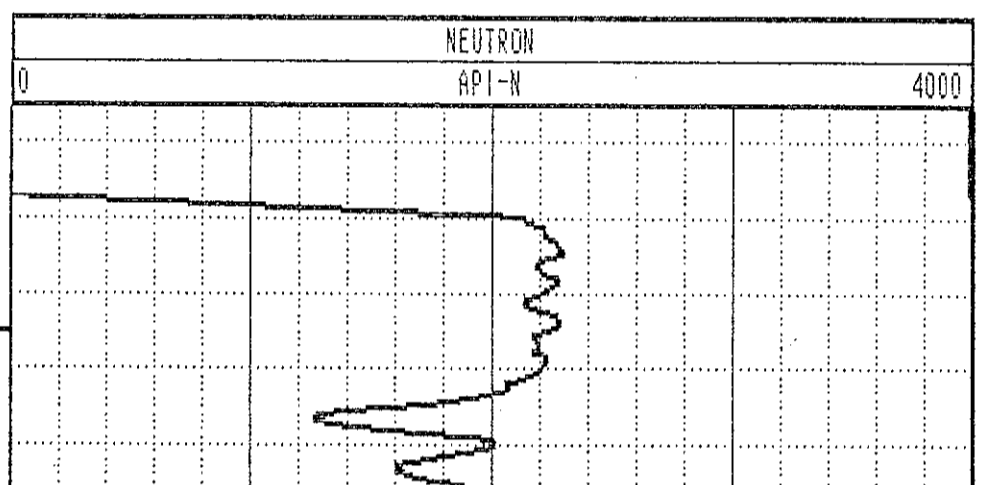
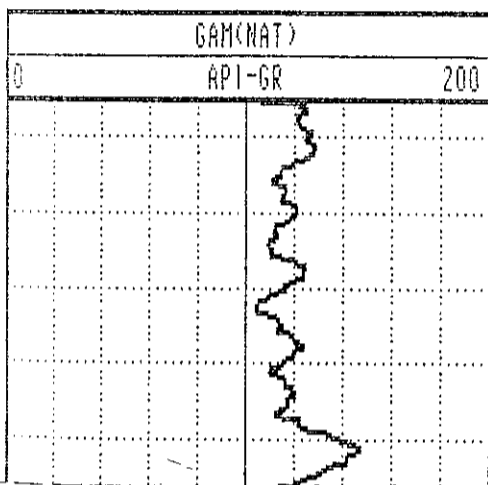


Century GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96238 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 10/05/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 27.86 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.56 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 7 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

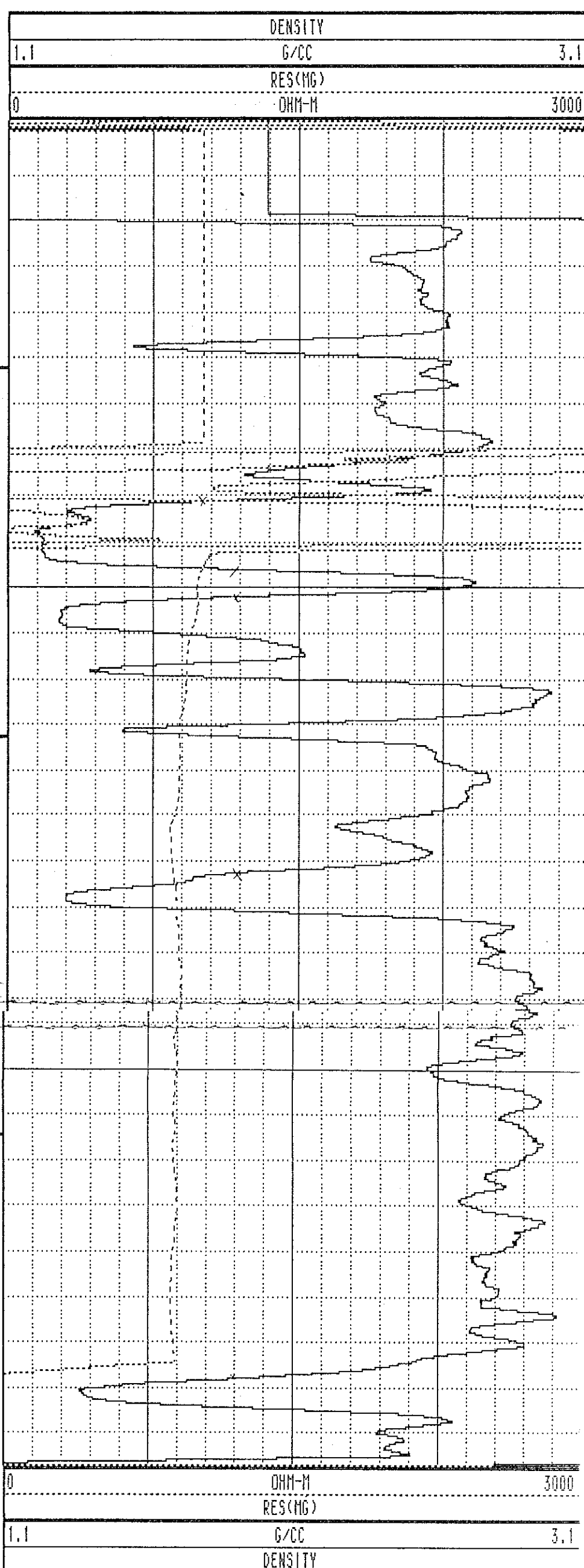
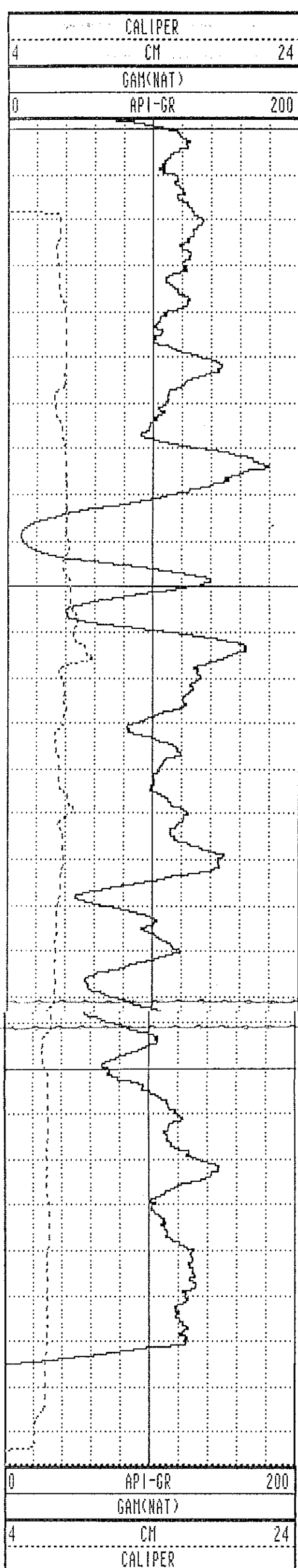
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | |
|------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: |
| WELL | : WRH-96238 | |
| LOCATION/FIELD | : WILLOW CREEK | |
| COUNTY | : | |
| STATE | : BRITISH COLUMBIA | |
| SECTION | : TOWNSHIP | RANGE : |
| DATE | : 10/05/96 | PERMANENT DATUM : |
| DEPTH DRILLER | : 28 | ELEV. PERM. DATUM: |
| LOG BOTTOM | : 28.74 | LOG MEASURED FROM: G.L. |
| LOG TOP | : -0.16 | DRL MEASURED FROM: |
| CASING DRILLER | : 3 | LOGGING UNIT |
| CASING TYPE | : STEEL | FIELD OFFICE |
| CASING THICKNESS | : .25 | RECORDED BY |
| BIT SIZE | : | BOREHOLE FLUID |
| MAGNETIC DECL. | : 23.000 | RM |
| MATRIX DENSITY | : | RM TEMPERATURE |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T |
| REMARKS | : | FILE |
| NONE | : | TYPE |
| | | LOG |
| | | PLOT |
| | | THRESH |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



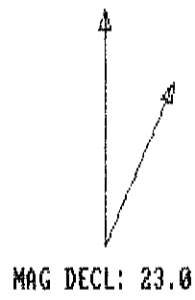
WRH-96238 10/05/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CH |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CH |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CH |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CH |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CH |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CH |

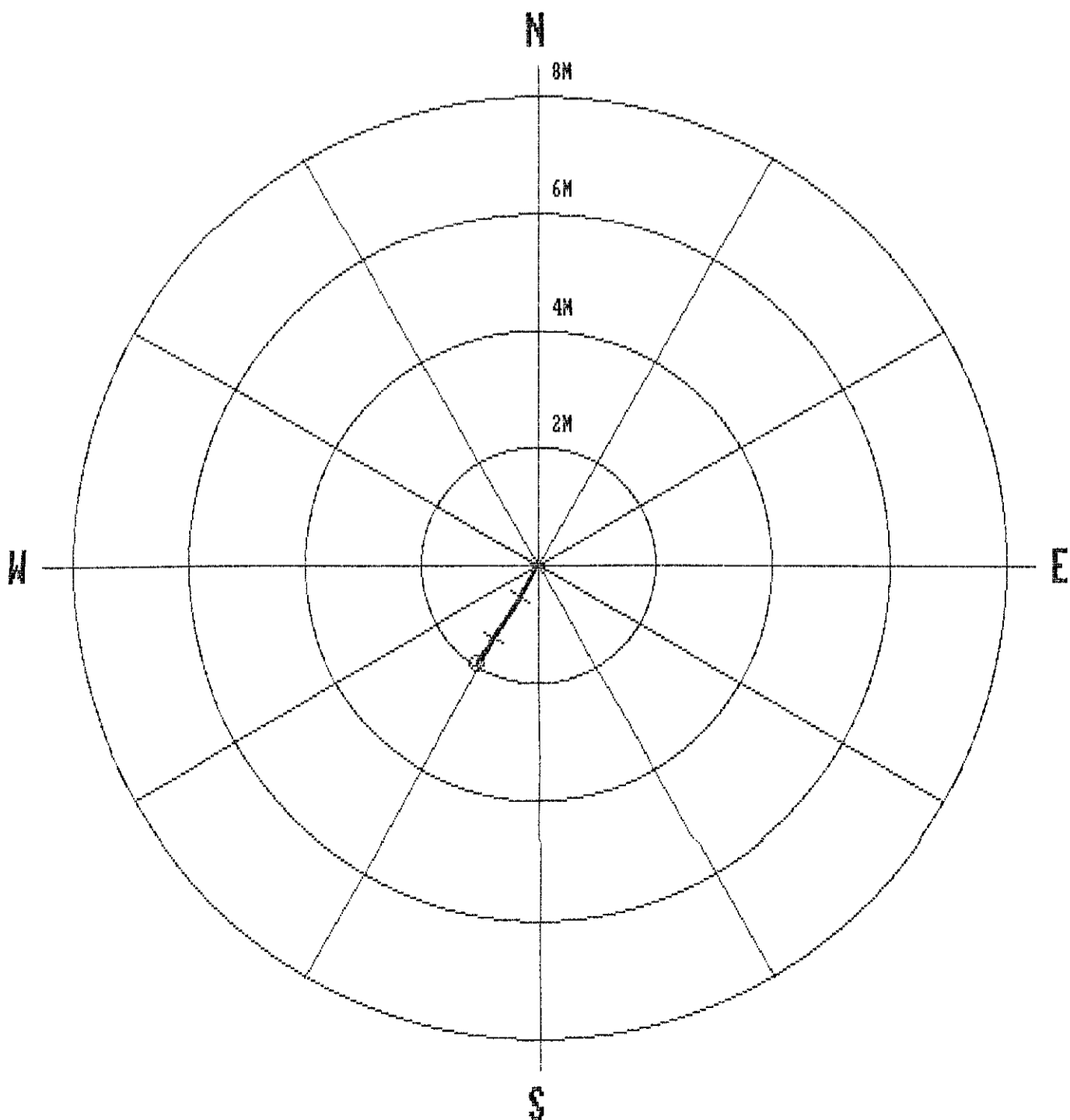
| | | | | | | | |
|------|-------|-------|-------|-----|-------|------|-------|
| 1.0 | 1.00 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2.0 | 2.00 | 0.00 | 0.00 | 0.0 | 83.7 | 1.7 | 55.6 |
| 3.0 | 3.00 | -0.01 | -0.02 | 0.0 | 247.4 | 3.4 | 48.1 |
| 4.0 | 4.00 | 0.04 | -0.03 | 0.1 | 323.9 | 3.8 | 26.8 |
| 5.0 | 4.99 | -0.00 | -0.03 | 0.0 | 264.9 | 5.0 | 222.1 |
| 6.0 | 5.99 | -0.08 | -0.07 | 0.1 | 219.8 | 6.2 | 195.9 |
| 7.0 | 6.98 | -0.18 | -0.11 | 0.2 | 211.4 | 6.5 | 203.0 |
| 8.0 | 7.98 | -0.29 | -0.16 | 0.3 | 209.1 | 7.2 | 209.7 |
| 9.0 | 8.97 | -0.39 | -0.23 | 0.5 | 209.8 | 7.8 | 210.4 |
| 10.0 | 9.96 | -0.51 | -0.29 | 0.6 | 209.5 | 8.0 | 204.6 |
| 11.0 | 10.95 | -0.65 | -0.36 | 0.7 | 209.0 | 8.4 | 217.8 |
| 12.0 | 11.93 | -0.77 | -0.45 | 0.9 | 210.2 | 9.4 | 198.6 |
| 13.0 | 12.92 | -0.91 | -0.54 | 1.1 | 210.8 | 9.3 | 179.4 |
| 14.0 | 13.90 | -1.05 | -0.63 | 1.2 | 211.0 | 10.0 | 216.8 |
| 15.0 | 14.89 | -1.21 | -0.73 | 1.4 | 211.2 | 11.0 | 205.5 |
| 16.0 | 15.87 | -1.37 | -0.82 | 1.6 | 210.9 | 11.0 | 212.6 |
| 17.0 | 16.85 | -1.53 | -0.92 | 1.8 | 211.1 | 12.1 | 213.1 |
| 17.9 | 17.71 | -1.67 | -1.03 | 2.0 | 211.8 | 12.0 | 199.8 |

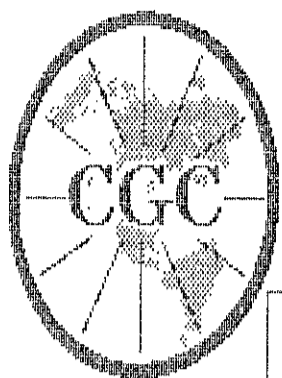
**PLAN VIEW
COMPU-LOG DEVIATION**

CLIENT: PINE VALLEY COAL
 LOCATION: WILLOW CREEK
 HOLE ID: WRH-96243
 DATE OF LOG: 10/04/96
 PROBE: 9055A 71



SCALE: 1 M/CM
 TRUE DEPTH: 17.71 M
 AZIMUTH: 211.8
 DISTANCE: 2.0 M
 + = 5 M INCR
 ○ = BOTTOM OF HOLE



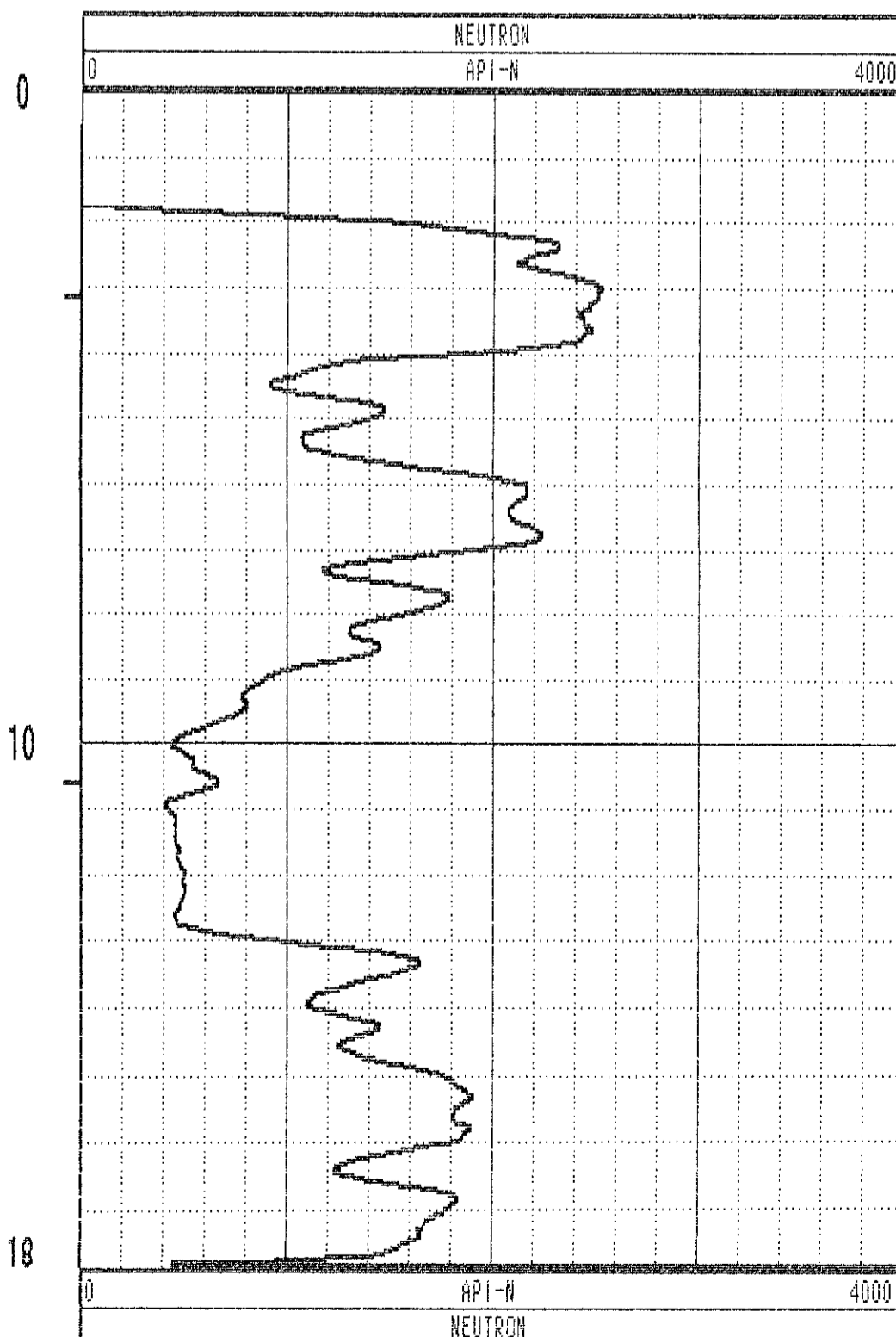
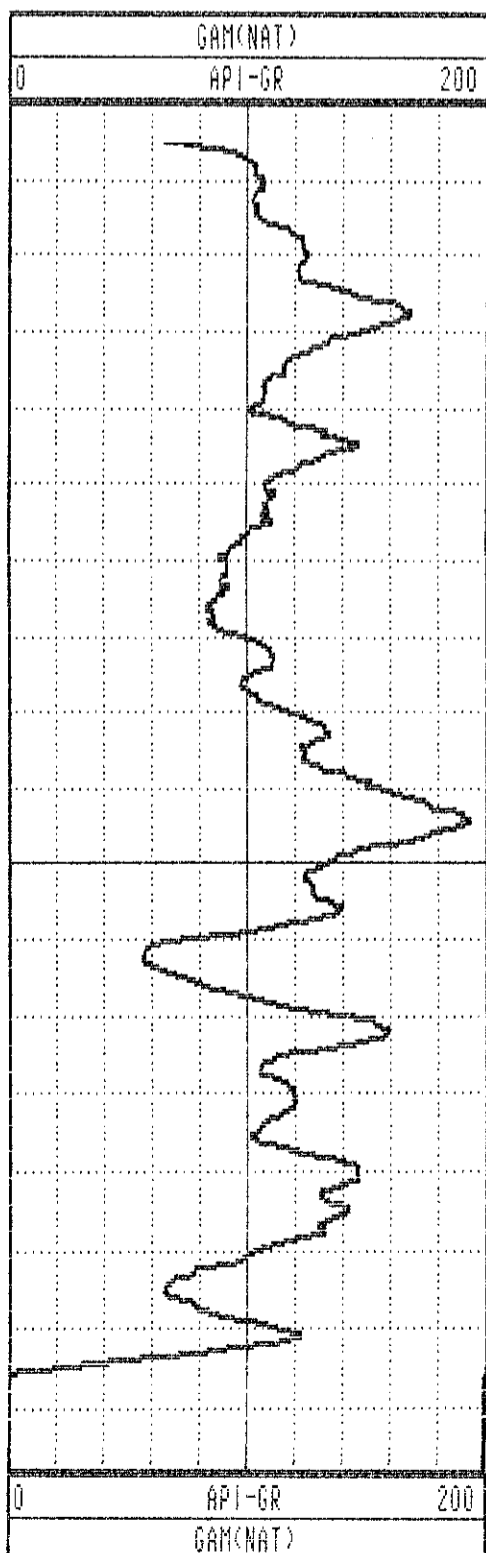


Century
GEOPHYSICAL CORP.

GAMMA-NEUTRON

| | | | |
|-------------------|--------------------|--------------------|----------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96243 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : |
| | | RANGE | : |
| DATE | : 10/04/96 | PERMANENT DATUM | : |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.93 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : 0.54 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER |
| MAGNETIC DECL. | : 23.000 | RM | : |
| MATRIX DENSITY | : | RM TEMPERATURE | : |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : |
| REMARKS | : | FILE | : ORIGINAL |
| NONE | : | TYPE | : 9055A |
| | | LOG | : 0 |
| | | PLOT | : PINE 4 |
| | | THRESH: | 10000 |

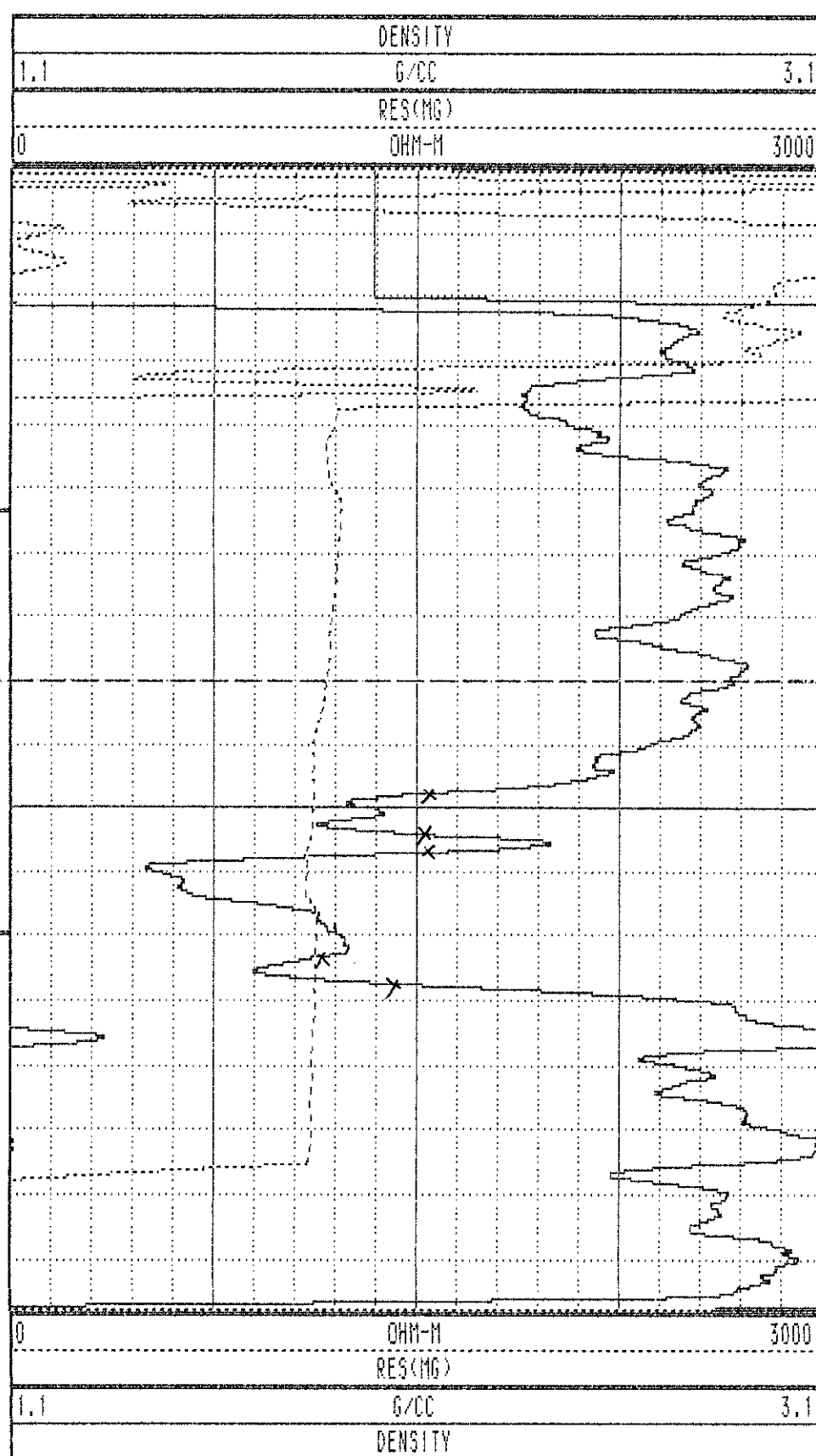
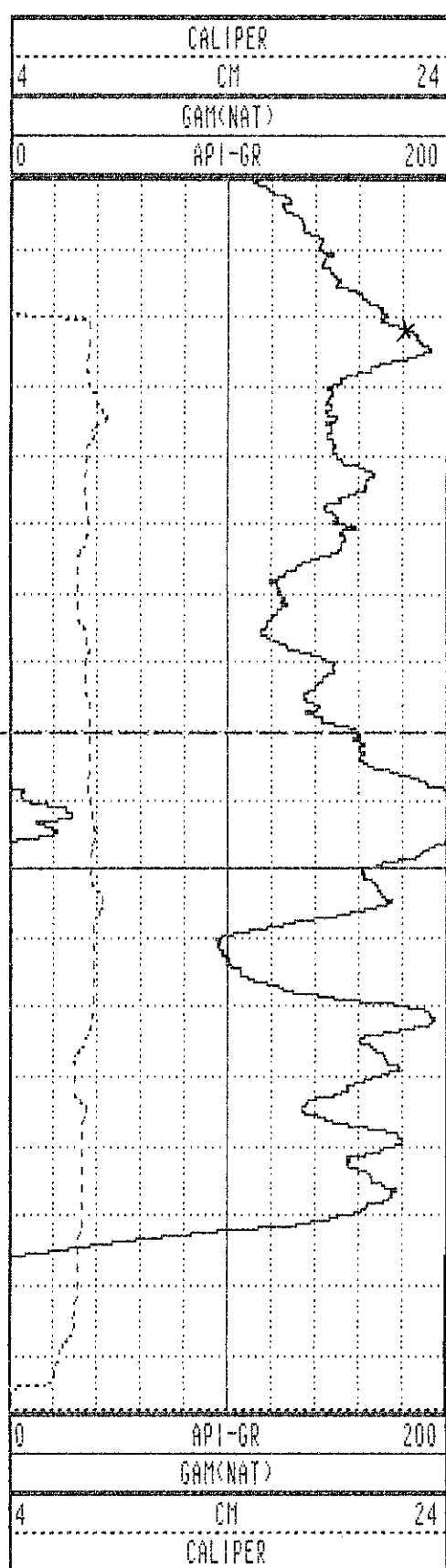
ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



GAMMA-RES-DENSITY

| | | | |
|-------------------|--------------------|--------------------|-------------------------|
| COMPANY | : PINE VALLEY COAL | OTHER SERVICES: | |
| WELL | : WRH-96243 | | |
| LOCATION/FIELD | : WILLOW CREEK | | |
| COUNTY | : | | |
| STATE | : BRITISH COLUMBIA | | |
| SECTION | : | TOWNSHIP | : RANGE : |
| DATE | : 10/04/96 | PERMANENT DATUM | : ELEVATIONS |
| DEPTH DRILLER | : 17 | ELEV. PERM. DATUM: | KB : |
| LOG BOTTOM | : 17.83 | LOG MEASURED FROM: | G.L. DF : |
| LOG TOP | : -0.04 | DRL MEASURED FROM: | GL : |
| CASING DRILLER | : 3 | LOGGING UNIT | : 9612 |
| CASING TYPE | : STEEL | FIELD OFFICE | : CALGARY, AB. |
| CASING THICKNESS: | .25 | RECORDED BY | : R. THOMAS |
| BIT SIZE | : | BOREHOLE FLUID | : WATER FILE : ORIGINAL |
| MAGNETIC DECL. | : 23.000 | RM | : TYPE : 9033AA |
| MATRIX DENSITY | : | RM TEMPERATURE | : LOG : 1 |
| FLUID DENSITY | : 1.1 | MATRIX DELTA T | : PLOT : PINE 5 |
| NEUTRON MATRIX | : 2.65 | FLUID DELTA T | : THRESH: 10000 |
| REMARKS | : | | |
| NONE | | | |

ALL SERVICES PROVIDED SUBJECT TO STANDARD TERMS AND CONDITIONS



WRH-96243 10/04/96 958

| TOOL CALIBRATION | | TOOL = 9033AA | SERIAL NUMBER = 958 | | |
|------------------|----------|---------------|---------------------|--------------|--------------|
| CAL-DATE | CAL-TIME | SRCE | SENSOR | RESPONSE | STANDARD |
| 0 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 1 | NOV10.95 | 15:11:22 | 0 CALIPERL | 0.000 CPS | 0.000 CM |
| 2 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 5310.000 CPS | 1.106 API-GR |
| 3 | JUL19.96 | 19:42:28 | -6 GAM(NAT) | 2191.000 CPS | 2.199 API-GR |
| 4 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 5 | JUL20.96 | 14:31:55 | 0 DENSITY | 0.000 CPS | 0.000 G/CC |
| 6 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 1.106 OHM-M |
| 7 | JUL18.96 | 17:53:34 | 0 RES(MG) | 0.000 CPS | 0.000 OHM-M |
| 8 | NOV13.95 | 13:41:31 | 0 CALIPER | 271.000 CPS | 7.600 CM |
| 9 | NOV13.95 | 13:41:31 | 0 CALIPER | 1880.000 CPS | 17.800 CM |
| 10 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 11 | NOV10.95 | 15:11:22 | 0 DENSITYH | 0.000 CPS | 0.000 G/CC |
| 12 | NOV15.95 | 10:21:21 | 0 CALIPERL | 0.000 CPS | 5.100 CM |
| 13 | NOV15.95 | 10:21:21 | 0 CALIPERL | 2366.000 CPS | 33.000 CM |