



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **1/18/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|------------|-------------------------|-----------------------|-------------------------|-----------------------|------------|------------|--------------|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** |
| | 0 | | | | DENSE | YELLOW BRN | F/C SAND | SW | DAMP | | | | 0 |
| | | | | | | | TR TO SOME GRAVEL | GM | SUB ROUND GRAVEL | | | | |
| | 10 | | | | | | SAME | | | | | | |
| | 20 | | | | | | SAME | | | | | | |
| | 30 | | | | | | SAME | | MOIST | | | | 0 |
| | 40 | | | | | | SAME | | | | | | 0 |
| | 50 | | | | | | | | SET 8" CAS TO ~ 56' BGS | | | | |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: SET 8" CAS W/ CAS. HAMMER - THEN 8" MUD ROT TO BOTM

Drilling Area Background (ppm): 0

Converted to Well: Yes No ✓ Well I.D. #: VPB-132



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: 1/24/12
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|------------------------|-----------------------|------------|------------|--------------|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** |
| | 50 | | | | DENSE | BRN | SAND (F/M) TR GRAVEL | SP SM | WET | | | | 0 |
| | 60 | | | | | | SAME | | TOOK | | | | |
| 5-1 e 1015 | 61 | | | | | | | | [BP-VPB132-] GW-061 | | | | |
| | 70 | | | | | | SAME | | | | | | 0 |
| | 80 | | | | | | SAME | | | | | | 0 |
| | 90 | | | | | | SAME | | | | | | 0 |
| | 100 | | | | | | | | | | | | |

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Drilling Area
 Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: **VPB-132**



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BORING No.: VPB-132
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| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|-------------------------|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 100 | | | | DENSE | BRN | SAND (F/M) TR F. GRAVEL | SP | WET | | | | | 0 |
| | 110 | | | | | | SAME | | | | | | | |
| S-2 1330 | 120 121 | | | | | | SAME | | TOOK | | | | | 0 |
| | | | | | | | | | [BP-VPB132- GW-121] | | | | | |
| | 130 | | | | | | SAME - MORE GRAVEL | | BASED ON DRILL CUTTINGS | | | | | |
| | 140 | | | | | | SAME | | | | | | | 0 |
| | 150 | | | | | | | | | | | | | |

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Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes No Well I.D. #: VPB-132



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 PROJECT NUMBER: 112G00622-PHASE II
 DRILLING COMPANY: DELTA WELL & PUMP
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-132
 DATE: 1/25/12
 GEOLOGIST: Conti
 DRILLER: C. Twigg

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|----------------------------|-----------------------|--|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 150 | | | | DENSE BRN | | SAND F/M - TR F. GRAVEL | | WET | | | | | 0 |
| | 160 | | | | | | SAME | | FEW CLAY STRINGERS (CUTTINGS) 160 → 170 ? | | | | | |
| | 170 | | | | | | SAME | | | | | | | 0 |
| S-3 1030 | 180 181 | | | | | | SAME | | TOOK [BP-VPB132- GW-181] | | | | | |
| | 190 | | | | | | SAME | | | | | | | 0 |
| | 200 | | | | | | | | | | | | | |

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Drilling Area Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: VPB-132



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 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|--------------------------|-----------------------|--|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 200 | | | | DENSE | BRN | SAND F/M -TR F GRAVEL | SM SP | WET | | | | | 0 |
| | 210 | | | | | | SAME | | | | | | | |
| S4 1350 | 220 221 | | | | | | SAME | | TOOK [BP-VPB132-] GW-221 | | | | | 0 |
| | 230 | | | | | | SAME | | | | | | | |
| S5 1600 | 240 241 | | | | | | SAME -TR CLAY | | TOOK [BP-VPB132-] GW-241 | | | | | 0 |
| | 250 | | | | | | | | CLAY ON SCREEN OF HP- DARK GRAY | | | | | |

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Remarks: _____

Drilling Area
 Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: **VPB-132**



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: 11/26/12
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-----------------------------|-----------------------|---------|------------------------|------------|------------|--------------|--|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | |
| | 250 | | | | | | | | | | | | | | | | | |
| | | | | | DENSE | GRAY | SAND F/M TR GRAVEL AND CLAY | SM SP | WET | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | |
| | 260 | | | | | | | | | | | | | | | | | |
| 11/25 | 56 | | | | | | | | | | | | | | | | | |
| 11/26 | 110 | | | | | | SAME | | | TOOK | | | | | | | | |
| | | | | | | | | | | [BP-VPB132-] GW-261 | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | 270 | | | | | | SAME. | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | 280 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | 290 | | | | | | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | 300 | | | | | | | | | | | | | | | | | |

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Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: **VPB-132**



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: 1/27/12 - 1/30/12
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|------------------------|-----------------------|------------|------------|--------------|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | |
| 58 | 300 | | | | | | | | | | | | | | | | |
| 1/30 | 1300 | | | | DENSE | GRAY | SAND (F/M) | SM SP | WET TOOK | | | | | | | | 0 |
| | 301 | | | | | | | | [BP-VPB132- GW-301] | | | | | | | | |
| | 310 | | | | | | SAME | | | | | | | | | | |
| 59 | 320 | | | | | | SAME | | TOOK | | | | | | | | |
| 1500 | 321 | | | | | | | | [BP-VPB132- GW-321] | | | | | | | | 0 |
| | 330 | | | | | | SAME | | | | | | | | | | |
| 510 | 340 | | | | | | SAME | | TOOK | | | | | | | | |
| 1/31 | 1050 | | | | | | | | [BP-VPB132- GW-341] | | | | | | | | 0 |
| | 350 | | | | | | | | | | | | | | | | |

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Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes No Well I.D. #: **VPB-132**



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **11/31/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|------------------------|-----------------------|------------|------------|--------------|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** |
| | 350 | | | | DENSE | GRAY | SAND F/M | SY SP | WET | | | | 0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| S11 @ 1315 | 360 361 | | | | | | | | TOOK | | | | |
| | | | | | | | | | [BP-VPB132- GW-361] | | | | |
| | | | | | | | | | | | | | |
| | 370 | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| S12 @ 1510 | 380 381 | | | | | | | | TOOK | | | | |
| | | | | | | | | | [BP-VPB132- GW-381] | | | | |
| | | | | | | | | | | | | | |
| | 390 | | | | | | | | | | | | 0 |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | 400 | | | | | | | | | | | | |

1/31

2/11

* When rock coring, enter rock brokenness.

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Remarks: _____

Drilling Area Background (ppm):

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PROJECT NAME: BETHPAGE OU-2 OFFSITE GW
 PROJECT NUMBER: 112G00622-PHASE II
 DRILLING COMPANY: DELTA WELL & PUMP
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-132
 DATE: 2/1/12
 GEOLOGIST: Conti
 DRILLER: C. Twigg

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|-------------|-----------------------|------------|------------|--------------|--|--|--|--|---|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | | |
| S13 C 1000 | 400 401 | | | | DENSE GRAY | | SAND (F/M) | SM SP | WET TOOK | | | | | | | | | 0 | |
| | 410 | | | | | | SAME | | | | | | | | | | | | |
| S14 E 1230 | 420 421 | | | | | | SAME | | TOOK | | | | | | | | | | 0 |
| | 430 | | | | | | SAME | | | | | | | | | | | | |
| S15 C 1415 | 440 441 | | | | | | SAME | | TOOK | | | | | | | | | | 0 |
| | 450 | | | | | | | | | | | | | | | | | | |

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Remarks: _____

Drilling Area
 Background (ppm): 0

Converted to Well: Yes No Well I.D. #: VPB-132



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/1/12 → 2/2/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | |
|----------------------------|--------------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|---------------------------------------|-----------------------|------------|------------|--------------|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** |
| | 450 | | | | DENSE | GRAY | SAND (F/M) | SM SP | WET | | | | 0 |
| | | | | | | | SAME | | TOOK | | | | |
| | 2/1 2/2 S16 e OP40 | 460 461 | | | | | TRACE CLAY | | [BP-VPB132-] [GW-461] | | | | |
| | | | | | | | | | MORE CLAY PER DRILLER 461 → 465 | | | | |
| | 470 | | | | | | SAME | | | | | | 0 |
| | | | | | | | | | | | | | |
| | S17 e 1205 | 480 481 | | | | | SAME | | TOOK [BP-VPB132-] [GW-481] | | | | |
| | | | | | | | | | | | | | |
| | 490 | | | | | | SAME | | | | | | 0 |
| | | | | | | | | | | | | | |
| | 500 | | | | | | | | | | | | |

* When rock coring, enter rock brokenness.

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Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: **VPB-132**



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/2/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|--------------------------------|-----------------------|------------|------------|--------------|--|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | |
| | 500 | | | | | | | | | | | | | | | | | |
| 518 e | 501 | | | | DENSE | GRAY | SAND - (F/M) | SM | WET | | | | | | | | | 0 |
| 1435 | 502 | | SS-1 | | | | SILTY F SAND (SM) | SP | TOOK [EP-VPB132- GW-501] | | | | | | | | | |
| | 510 | | | | | | SAME - TR CLAY | | PER DRILLER 510-520 | | | | | | | | | |
| 519 c | 520 | | | | | | SAME | | TOOK [EP-VPB132- GW-521] | | | | | | | | | 0 |
| | 530 | | | | | | | | | | | | | | | | | |
| 213 216 e | 520 541 | | | | | | SAME | | TOOK [EP-VPB132- GW-541] | | | | | | | | | 0 |
| | 550 | | | | | | | | | | | | | | | | | |

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 PROJECT NUMBER: 112G00622-PHASE II
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 DRILLING RIG: MUD ROTARY

BORING No.: VPB-132
 DATE: 2/6/12 → 2/7/12
 GEOLOGIST: Conti
 DRILLER: C. Twigg

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|--|-----------------------|---|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 550 | | | | DENSE | GRAY | SAND F/M | SM SP | WET | | | | | 0 |
| | 521 | 360 | | | | | SAME. | | TOOK | | | | | |
| | 1400 | 561 | | | | | - TR SANDY ~ 3' FEET → CLAY 561 → 564 | | [BP-VPB132-] GW-561 ONLY 1 VIAL, SOME SANDY CLAY ON EXPOSED H.P. SCREEN. | | | | | |
| | 570 | | | | | | MORE CLAY ~ 571 | | | | | | | 0 |
| 2/6 | 522 | 580 | | | | | | | TOOK | | | | | |
| 2/7 | 1000 | 581 | | | | | SAME. | | [BP-VPB132-] GW-581 | | | | | |
| | 590 | | | | | | SAME. | | | | | | | 0 |
| | (60) | | | | | | | | | | | | | |

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|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|---------------------------------------|-----------------------|--|-----------------------|------------|------------|--------------|--|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | |
| S23 | 600 | | | | | | | | | | | | | | | | | |
| 1215 e | 601 | | | | DENSE | GRAY | SAND (F/M) | SM | WET-TOOK | | | | | | | | | 0 |
| SS2 e | 602 | | | | | | TR CLAY (PYRITE?) | SP | [BP-VPB132-] [GW-601] | | | | | | | | | |
| 1230 | | | | | | | SILTY FINE SAND - TR CLAY, LIGNITE | SM | WET | | | | | | | | | |
| | 610 | | | | | | V-THIN LAMINATIONS | | MICACEOUS GOT GOOD HP SAMPLE AT 600 → 601 | | | | | | | | | |
| S24 | 620 | | | | | | SAME | | X NO GW SAMPLE | | | | | | | | | 0 |
| 1500 e | 621 | | | | | | | | | | | | | | | | | |
| | 630 | | | | | | SAME | | | | | | | | | | | |
| 217 | | | | | | | | | | | | | | | | | | |
| S25 | 640 | | | | | | SAME | | TOOK | | | | | | | | | |
| 218 e | 641 | | | | | | | | [BP-VPB132-] [GW-641] | | | | | | | | | 0 |
| | 650 | | | | | | | | | | | | | | | | | |

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Remarks: _____

Drilling Area Background (ppm): 0

Converted to Well: Yes _____ No Well I.D. #: VPB-132



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 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/8/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|--------------------------------------|-----------------------|--|-----------------------|------------|------------|-------------|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ* |
| | 650 | | | | DENSE | GRAY | SILTY F/M SAND TR CLAY | SM / SP | WET | | | | 0 |
| S26 @ 125 | 660 661 | | | X | | | | | NO GW SAMPLE SCREEN EXPOSED ONLY 4" W/ CLAYEY SAND ON BOTTOM PORTION | | | | |
| | 670 | | | | | | | | SAME. | | | | 0 |
| S27 @ 1435 | 680 681 | | | o | | | SILTY FM SAND TR CLAY | | TOOK [BP-VPB132- GW-681] | | | | |
| | 690 | | | | | | DRILLER NOTES MORE CLAY 681 -> 683 ± | | 1 VIAL ONLY | | | | |
| | 700 | | | | | | | | SAME | | | | 0 |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: **VPB-132**



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/9/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|---|-----------------------|--|-----------------------|------------|------------|--------------|--|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | |
| 2/9 528 | 700 | | | | | | | | | | | | | | | | | |
| 1010 | 701 | | | • | DENSE | GRAY | F/M SAND - | SM | WET | | | | | | | | | 0 |
| 563 | 702 | | | 702' | | | SILTY TR CLAY | SP | [BP-VPB132] | | | | | | | | | |
| 1040 | | | | | | | F SAND-TR LIGNITE TR- ORANGE BRN LENS SL. TRACE OF CLAY | SM | WET MICACEOUS. | | | | | | | | | 0 |
| | 710 | | | | | | SAME - TR TO SOME F/C GRAVEL | SP | WET EASY DRILLING 700-720 GRAVEL NOTED IN CUTTINGS | | | | | | | | | |
| | | | | | | | SOME LOSS OF DRILL FLUIDS 710-720 | | | | | | | | | | | |
| 529 | 720 | | | | | | SUB ROUND 1/2" | | TOOK | | | | | | | | | |
| 1310 | 721 | | | • | | | SAME. (see Gravel Baggie) | | [BP-VPB132- GW-721] | | | | | | | | | 0 |
| | | | | | | | | | S29 WAS TURBID GRAY | | | | | | | | | |
| | 730 | | | | | | FINE SAND - SOME GRAVEL | | STILL IN GRAVEL ZONE TO 740 | | | | | | | | | |
| | | | | | | | FROM 702' | | | | | | | | | | | |
| 530 | 740 | | | | | | | | TOOK | | | | | | | | | |
| 1515 | 741 | | | • | | | SAME 740-760 GRAVEL MIX MORE MUD | | [BP-VPB132- GW-741] | | | | | | | | | 0 |
| | | | | | | | SOME LOSS OF WATER. | | 1 VIAL | | | | | | | | | |
| | 750 | | | | | | | | | | | | | | | | | |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm): 0

Converted to Well: Yes No Well I.D. #: VPB-132



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/13/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|-------------------------|-----------------------|--|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 750 | | | | DENSE | GRAY | SAND - SOME GRAVEL | SM SP | WET HAD TO THICKEN MUD MIX 750-760 GRAVELLY | | | | | 0 |
| 2/10 2/13 | 531 1215 | 760 761 | | | | | SAME | | TOOK [BP-VPB132- GW-761] | | | | | |
| | 770 | | | | | | SAME - LESS GRAVEL | | | | | | | 0 |
| | 532 1450 | 780 781 | | | | | SAME - LESS GRAVEL | | TOOK [BP-VPB132- GW-781] | | | | | |
| | 790 | | | | | | SAME | | | | | | | 0 |
| | 800 | | | | | | | | | | | | | |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm): 0

Converted to Well: Yes No Well I.D. #: **VPB-132**



BORING LOG

PROJECT NAME: BETHPAGE OU-2 OFFSITE GW
 PROJECT NUMBER: 112G00622-PHASE II
 DRILLING COMPANY: DELTA WELL & PUMP
 DRILLING RIG: MUD ROTARY

BORING No.: VPB-132
 DATE: 2/14/12
 GEOLOGIST: Conti
 DRILLER: C. Twigg

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|---------|-------------------------|-----------------------|--|-----------------------|------------|------------|--------------|--|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | | |
| S33 | 800 | | | | | | | | | | | | | | | | | |
| 1015 | 801 | | | X | DENSE | GRAY | SAND | | WET | | | | | | | | | 0 |
| SS4 | 802 | | | | V DENSE | LT GRAY | SILTY F SAND | | TOOK BP-VPB132- GW-801 NO SAMPLE RECOVERED | | | | | | | | | |
| | | | | | | | (MOIST → WET) | | | | | | | | | | | |
| | 810 | | | | | | | | | | | | | | | | | |
| | | | | | | | SAME | | | | | | | | | | | |
| S34 | 820 | | | | | | | | TOOK | | | | | | | | | |
| 130 | 821 | | | | | | SAME | | BP-VPB132- GW-821 | | | | | | | | | 0 |
| | | | | | | | | | | | | | | | | | | |
| | 830 | | | | | | | | | | | | | | | | | |
| | | | | | | | SAME | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| S35 | 840 | | | | | | | | TOOK | | | | | | | | | |
| 1530 | 841 | | | | | | | | BP-VPB132- GW-841 | | | | | | | | | 0 |
| SS5 | 842 | | | | | DENSE | GRAY | SILTY F/M SAND | | | | | | | | | | |
| | 0910 | | | | | | | TR F. GRAVEL → | SUBROUND | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | 850 | | | | | | | | | | | | | | | | | |

2/14
2/15

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes _____ No Well I.D. #: VPB-132



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/15/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|--|-----------------------|---|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| | 850 | | | | DENSE | | SILTY F/M SAND TR F GRAVEL TR CLAY | SM SP | WET | | | | | 0 |
| 536 C 1215 SS6 | 860 861 862 | | | | DENSE | GRAY | CLAYEY SAND (POOR REC) | | TOOK BP-VPB132-GW - 861 V. TURBID MICACEOUS | | | | | |
| | 870 | | | | | | | | | | | | | 0 |
| SS 7 1530 | 880 881 | | 1/1 | | VERY STIFF TO M DENSE | GRAY | TOP 6" - SILTY CLAY TR SAND LENS. TO BOT 6" CLAYEY SAND (WET) | | MOIST NO HP HERE DUE TO CLAY CONTENT | | | | | |
| SS 8 1000 | 890 891 | | 1/1 | | M DENSE | GRAY | SILTY F/M SAND TR LIGNITE AT TOP OF SAMPLE | SM | WET MICACEOUS (TOC HERE) | | | | | 0 |
| | 900 | | | | | | | | | | | | | |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area Background (ppm):

Converted to Well: Yes No Well I.D. #: **VPB-132**



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/16/12 → 2/21/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------|--|-----------------------|--|-----------------------|------------|------------|--------------|--|--|--|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | | | | |
| SS9 | 900 | | | | | | | | | | | | | | | | |
| 1200 | 901 | | 1/1 | | DENSE | GRAY | SILTY F SAND TR MED SAND | SM | - MICACEOUS WET | | | | | | | | 0 |
| SS10 | 910 | | | | | | | | | | | | | | | | |
| 1330 | 911 | | 1/1 | | DENSE | GRAY | SILTY VF SAND TR CLAY CLAYEY SAND | SM | MOIST PROBABLY WILL NOT PRODUCE H2O FOR H. PUNCH | | | | | | | | |
| SS11 | 920 | | | ~920 | STIFF | GRAY | SANDY CLAY | SC | MOIST | | | | | | | | |
| 1320 | 921 | | 1/1 | ? | | | V. THIN LAMINATIONS W/ DARK MINERALS | | | | | | | | | | 0 |
| | | | | CLAY W/ SAND | | | FIRST SAMPLE OF REALLY GOOD CLAY MATERIAL | | VERY DIFFICULT TO PULL SPOON W/ RIG - INDICATING GOOD CLAY MATERIAL WOULD NOT HAVE PRODUCED WATER | | | | | | | | |
| SS12 | 930 | | | | STIFF | GRAY | SANDY CLAY | | DRILLER DID NOT | | | | | | | | |
| 1245 | 931 | | 3/4 | 931 | | | MICACEOUS W/SAND LENSES - LAMINATED LIGNITE PRESENT | | NOTICE EVIDENCE OF CLAY DURING DRILLING - OTHER THAN TR. OF CLAY IN CUTTINGS 915 → 920 | | | | | | | | |
| SS13 | 940 | | | | DENSE | GRAY | SILTY F/M SAND - TR C. SAND | (SP) SM | WET | | | | | | | | |
| 0940 | 941 | | 3/8 | | | | | | TOOK BP-VPB132- GW-942 | | | | | | | | 0 |
| S37 | 942 | | | | | | | | IVIAL | | | | | | | | |
| | 950 | | | | | | | | | | | | | | | | |

* When rock coring, enter rock brokenness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks: _____

Drilling Area
 Background (ppm):

Converted to Well: Yes No Well I.D. #: **VPB-132**



BORING LOG

PROJECT NAME: **BETHPAGE OU-2 OFFSITE GW**
 PROJECT NUMBER: **112G00622-PHASE II**
 DRILLING COMPANY: **DELTA WELL & PUMP**
 DRILLING RIG: **MUD ROTARY**

BORING No.: **VPB-132**
 DATE: **2/21/12 → 2/22/12**
 GEOLOGIST: **Conti**
 DRILLER: **C. Twigg**

| Sample No. and Type or RQD | Depth (Ft.) or Run No. | Blows / 6" or RQD (%) | Sample Recovery / Sample Length | Lithology Change (Depth/Ft.) or Screened Interval | MATERIAL DESCRIPTION | | | U S C S * | Remarks | PID/FID Reading (ppm) | | | | |
|----------------------------|------------------------|-----------------------|---------------------------------|---|--|-------------|---|-----------------------|--|-----------------------|------------|------------|--------------|---|
| | | | | | Soil Density/ Consistency or Rock Hardness | Color | Material Classification | | | Sample | Sampler BZ | Borehole** | Driller BZ** | |
| SS14 C 1300 | 950 951 | | 0.8/1 | | DENSE | GRAY | SILTY F. SAND - TR LIGNITE - TR CLAY | SM | WET MICACEOUS GOOD SAMPLE MOSTLY SAND BUT FINER THAN SS13. | | | | | 0 |
| SS15 C 1525 | 960 961 | | 0.3/5 | 960 | V DENSE | GRAY | SILTY F. SAND - TR LIGNITE | SM | MOIST-MICACEOUS SOME PCS CEMENTED AND V HARD NOTICED THAT MICA APPEARED LARGER HERE AND MORE NOTICEABLE | | | | | |
| SS16 C 1140 | 970 971 | | 0.7/8 | 970 | V STIFF | GRAY | SANDY CLAY - LAMINATED TR SILTY CLAY (CL) | SC | MOIST DID NOT NOTICE ANY LIGNITE | | | | | 0 |
| SS17 C 0900 | 980 981 | | 0.7/1 | 974 976 | HARD | | CEMENTED SAND? THEN CLAY ↓ | | HARD DRILLING | | | | | |
| SS18 C 1130 | 990 991 | | 0.4/5 | 970-976 R A R I T A N ? | V. STIFF | GRAY | SILTY CLAY | CL | MOIST DAMP (DRY) IN SHOE OF SPOON. GOOD REC. AND VERY GOOD PC. OF CLAY SAMPLE | | | | | 0 |
| SS19 C 1000 | 1000 | | 0.3/5 | | V STIFF | RED GRAY | SILTY CLAY | CL | MOIST → DRY DRY BOTTOM OF SHOE. | | | | | 0 |

* When rock coring, enter rock brokenness.

BOTTOM OF SHOE DRY CLAY

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area

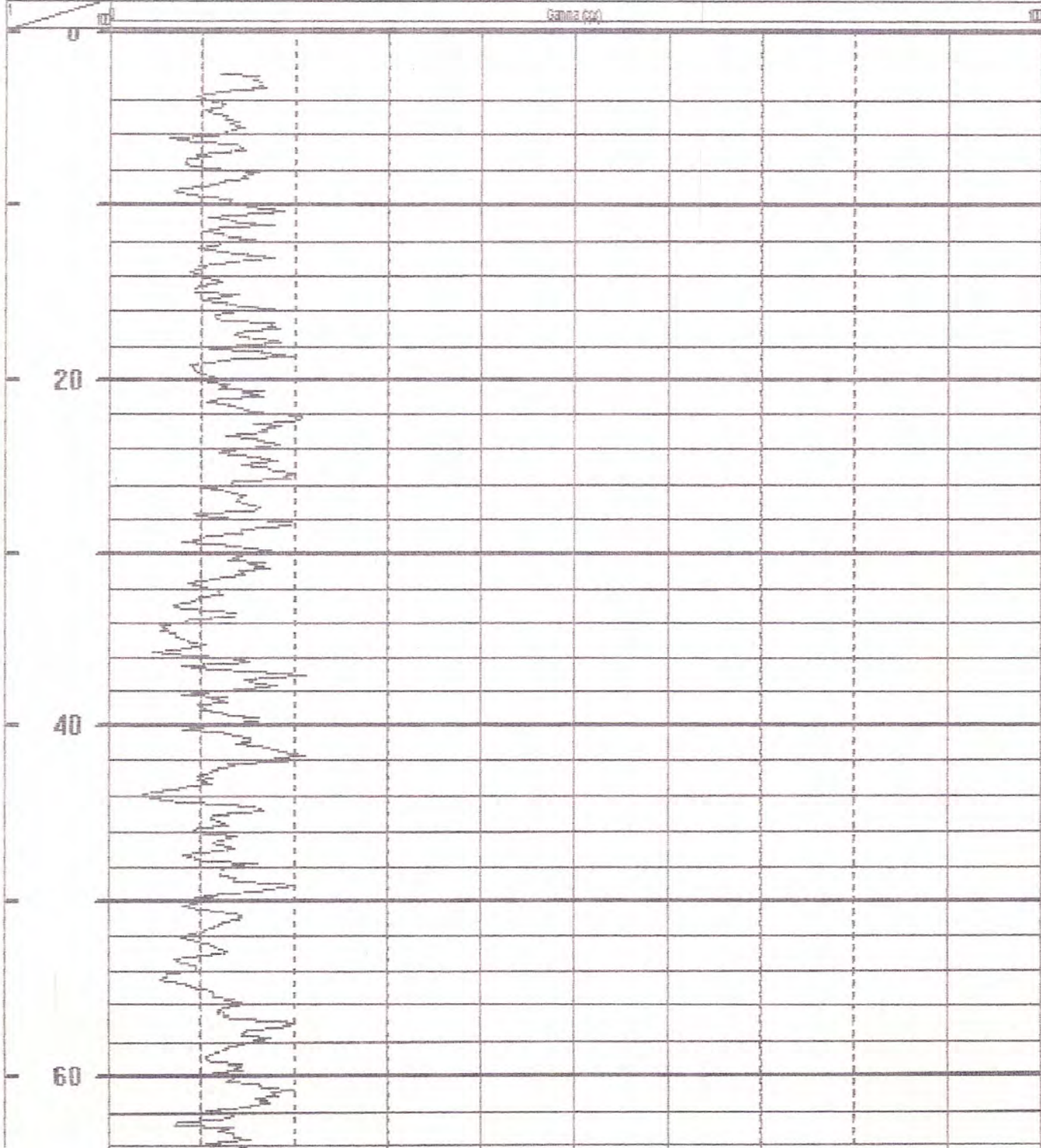
Remarks: **⊗ RARITAN POSSIBLE START @ 964 -**
CHECK GAMMA LOG WHEN COMPLETE
ALSO VSGS WILL LOG ON 2/22/12.

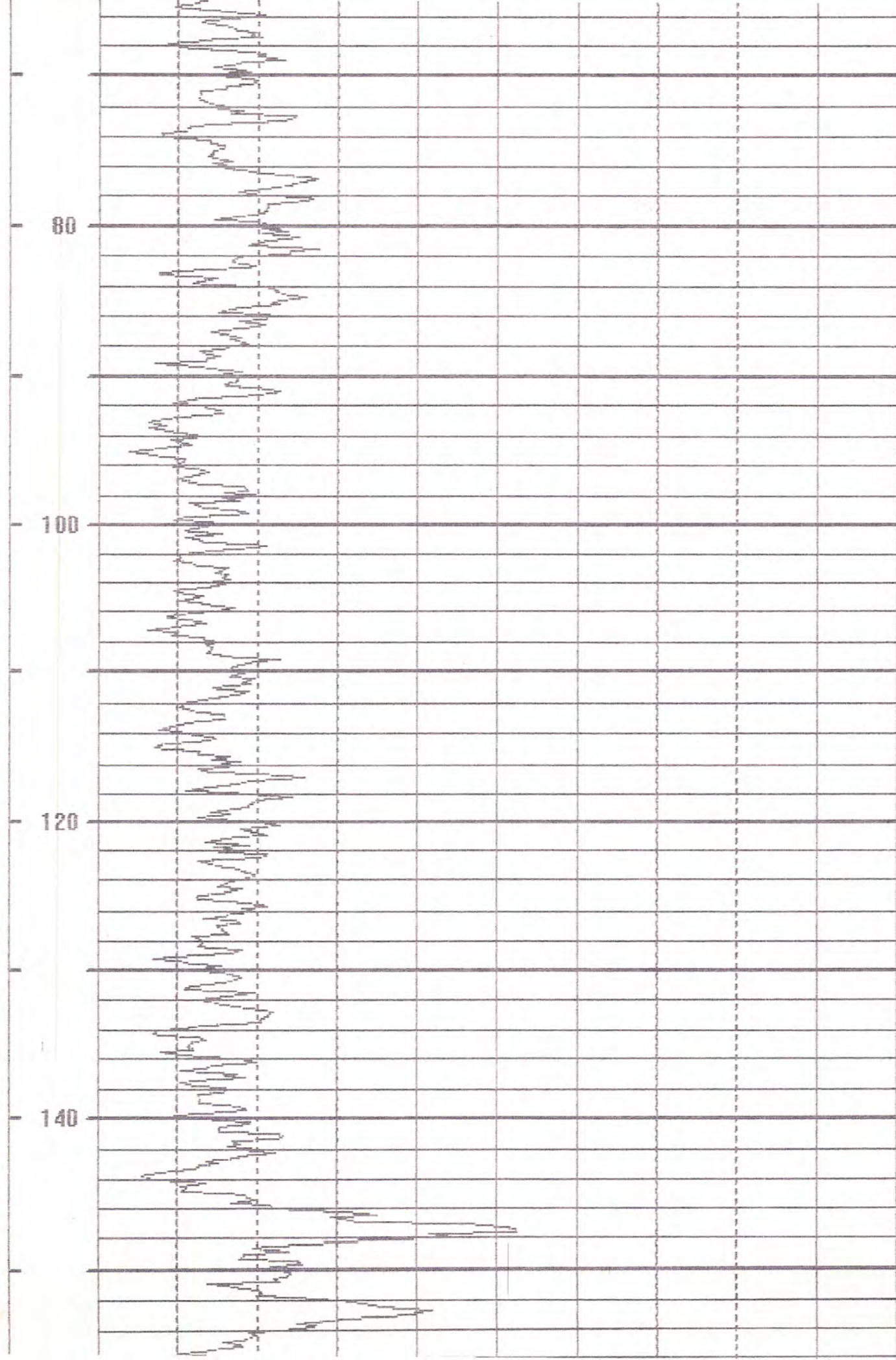
Background (ppm):

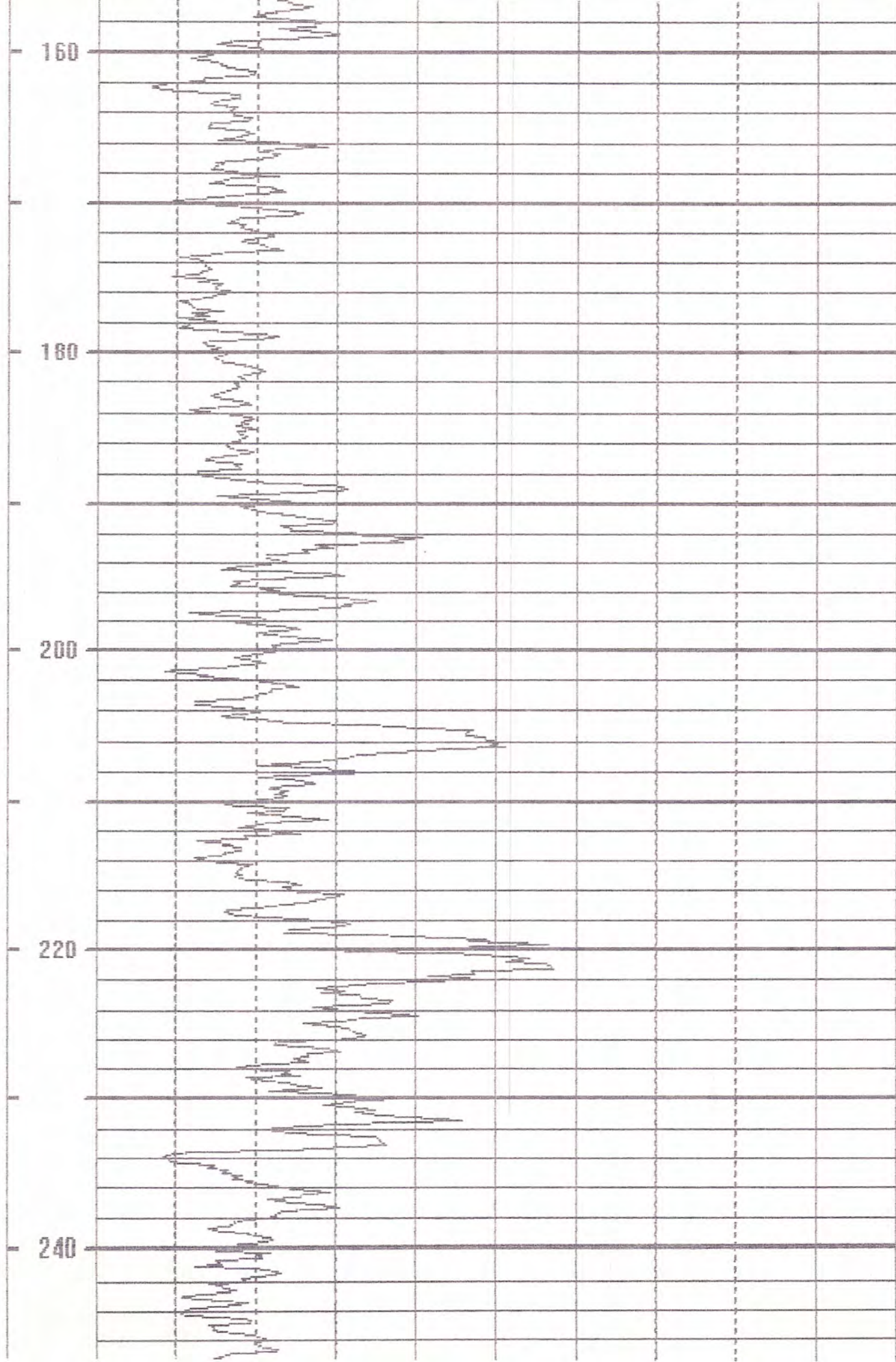
Converted to Well: Yes No

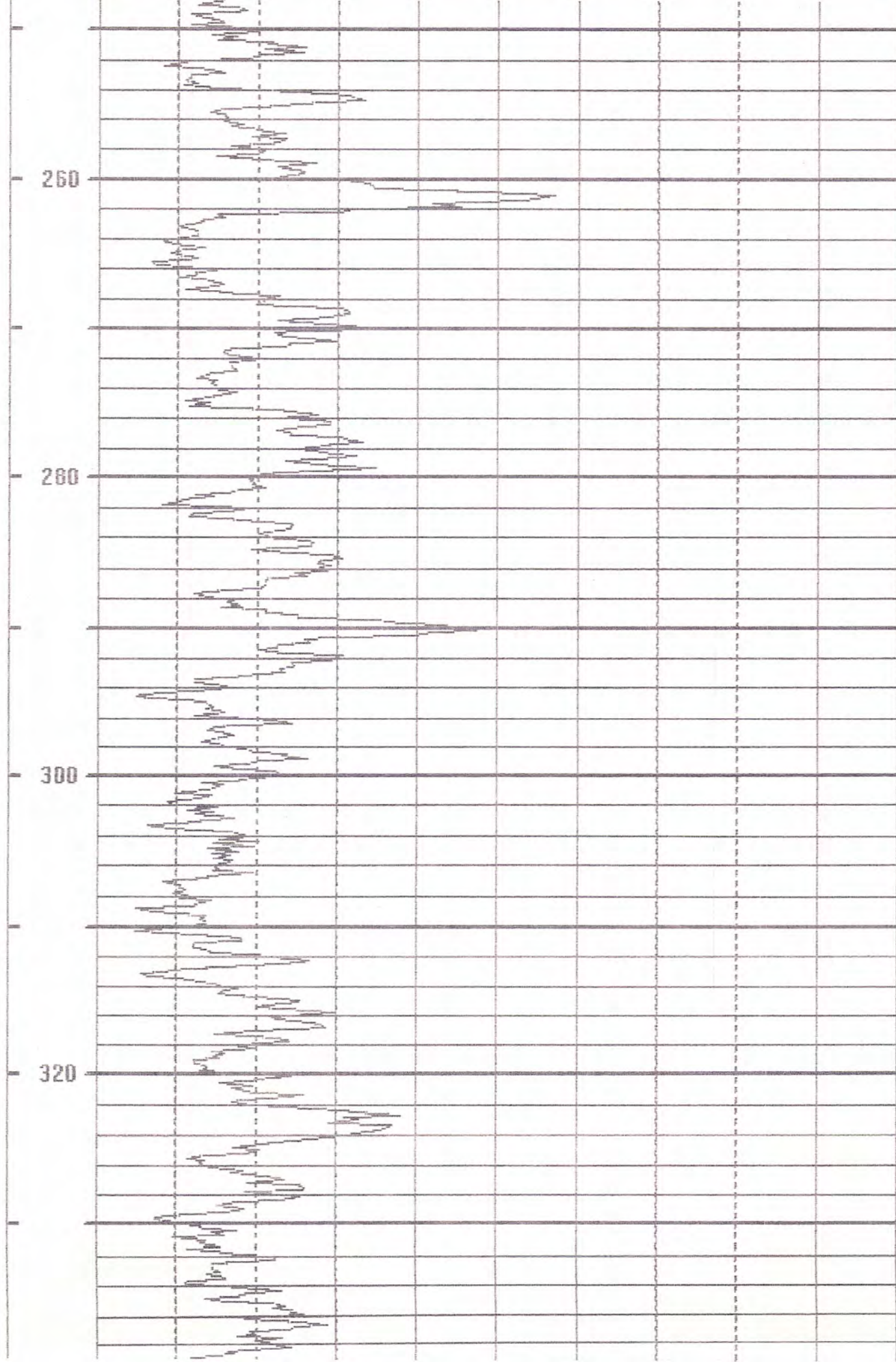
Well I.D. #: **VPB-132**

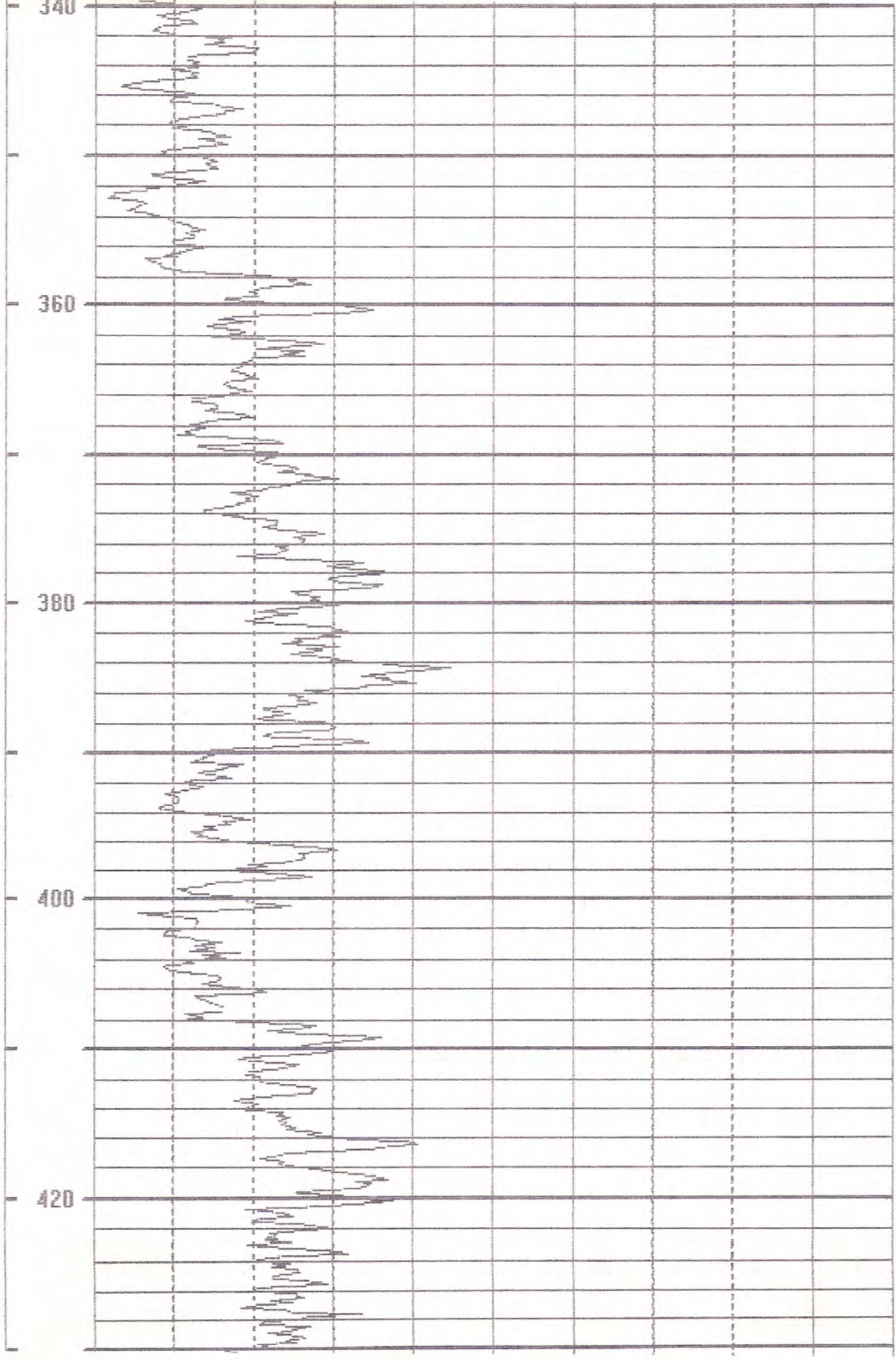
| | | |
|--------------------------------------|----------|---------------|
| COMPANY: DELTA WELL & PUMP CO., INC. | | Casing |
| Location: NWRP KILDARE CRESCENT | | |
| Well | VP-132 | Depth Driller |
| | | Depth Logger |
| Date | 02/23/12 | BH Fluid |
| | | VPB-132 |
| | | Logged by: |
| | | CMC |
| File Name | 717 | Witness: |
| | DOWN | STAN |

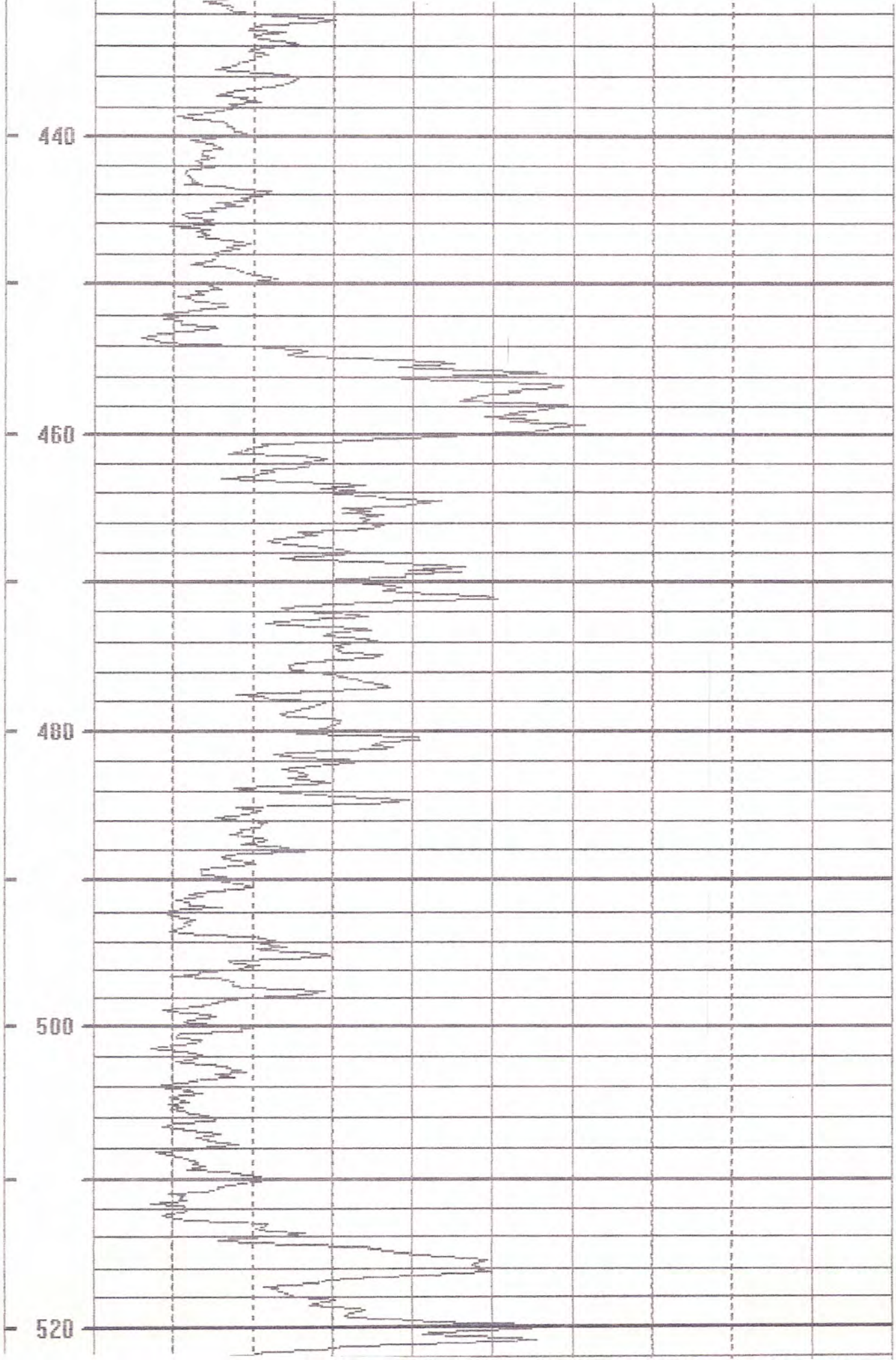


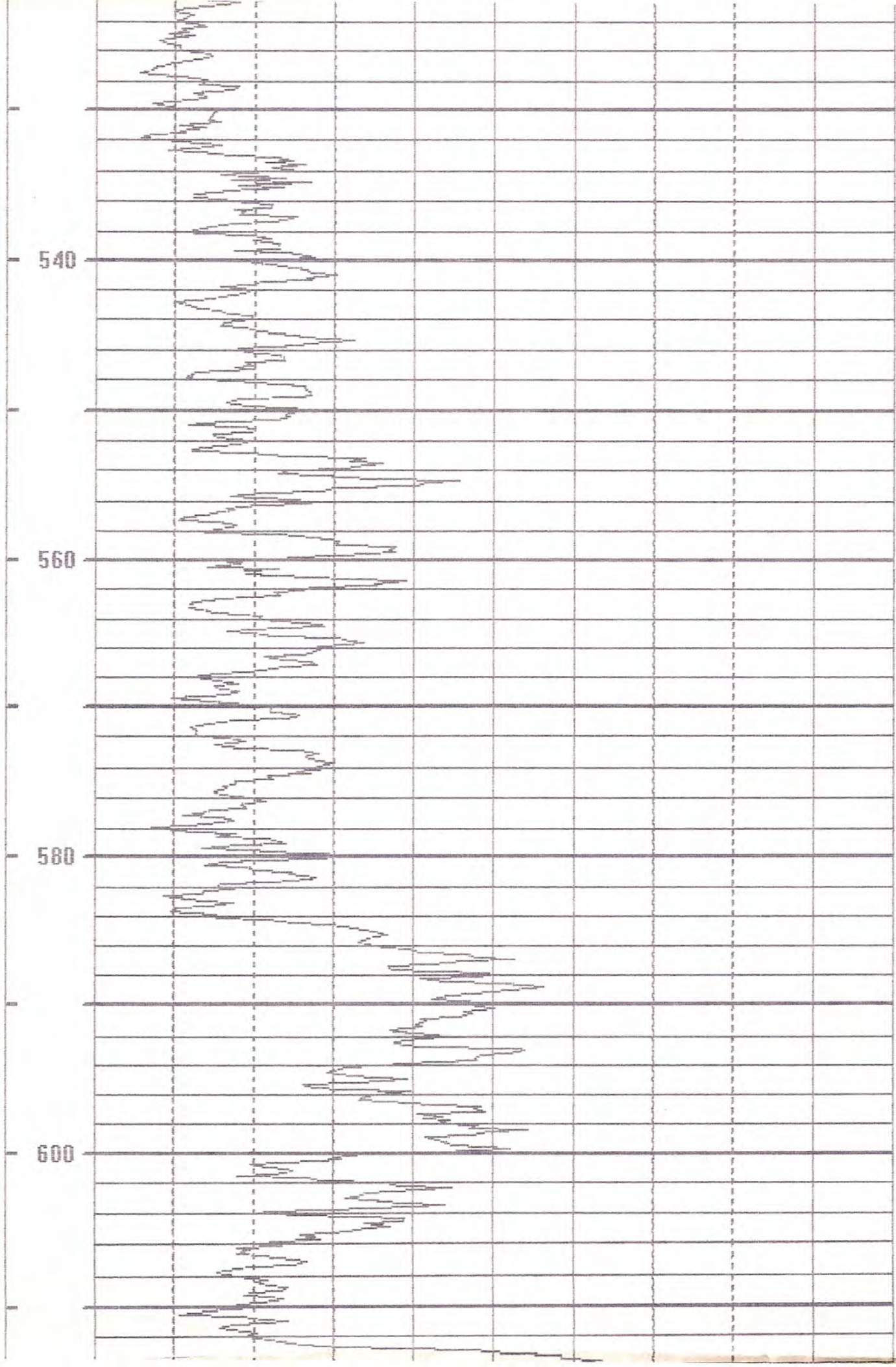


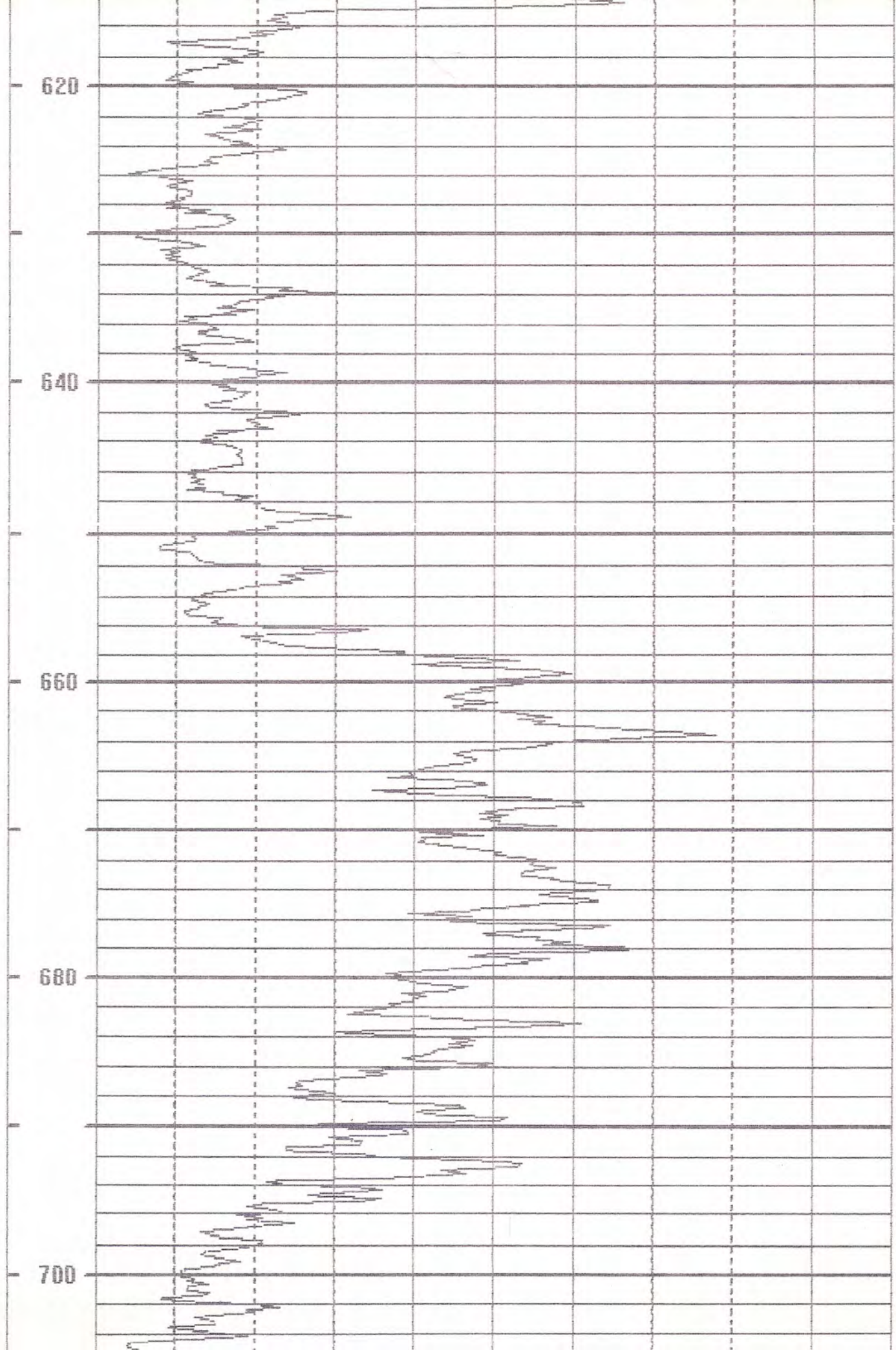


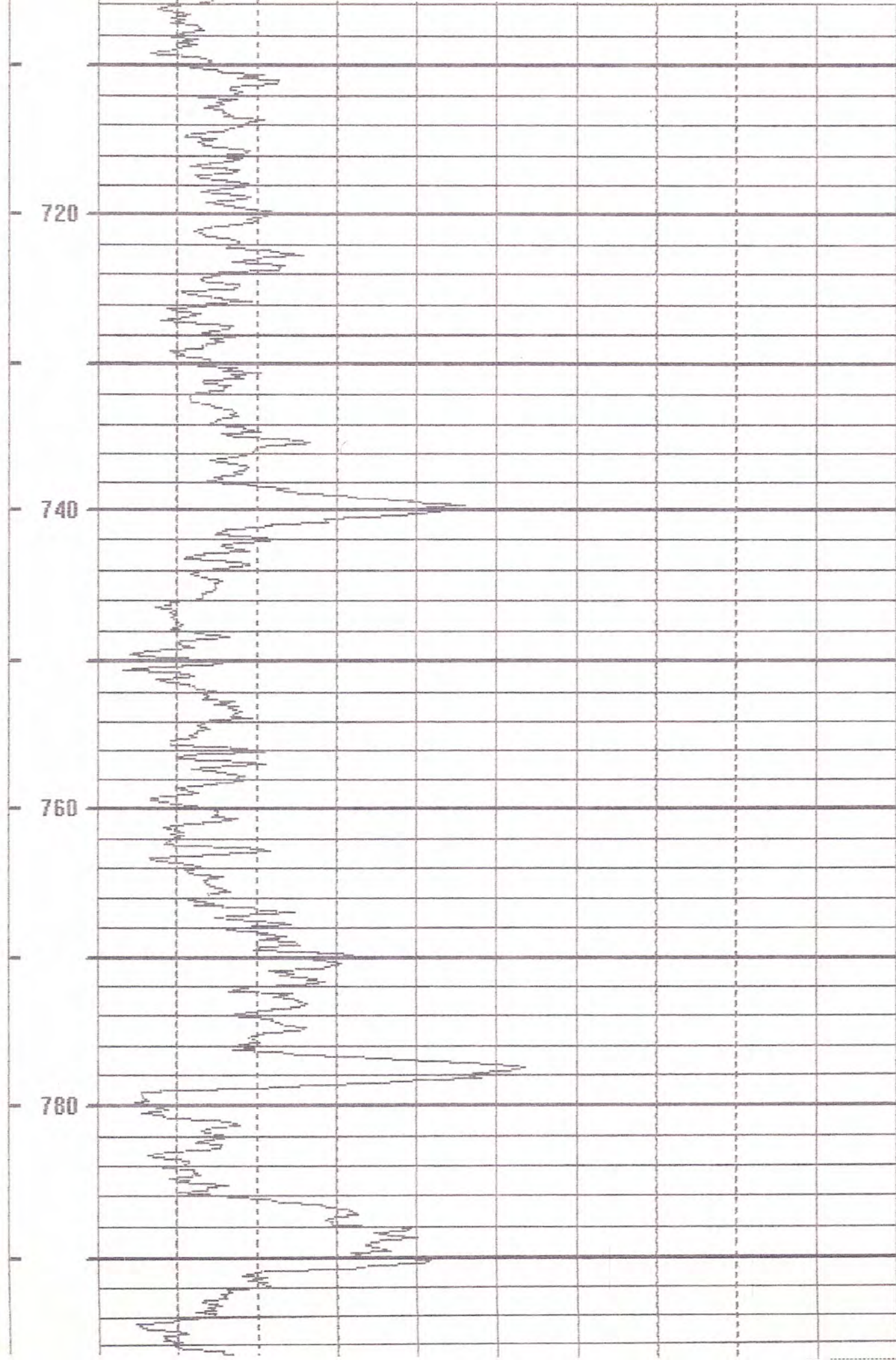


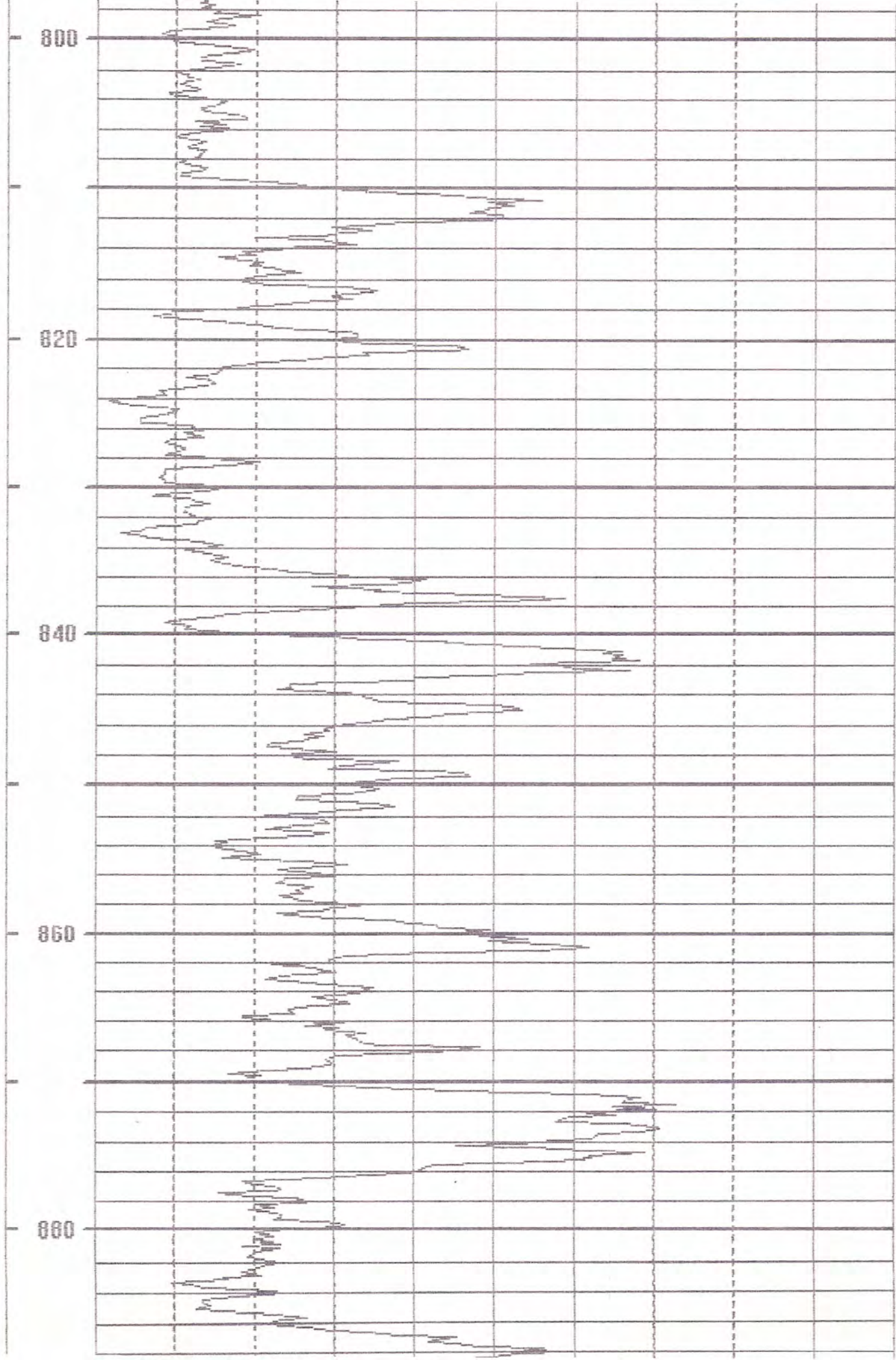


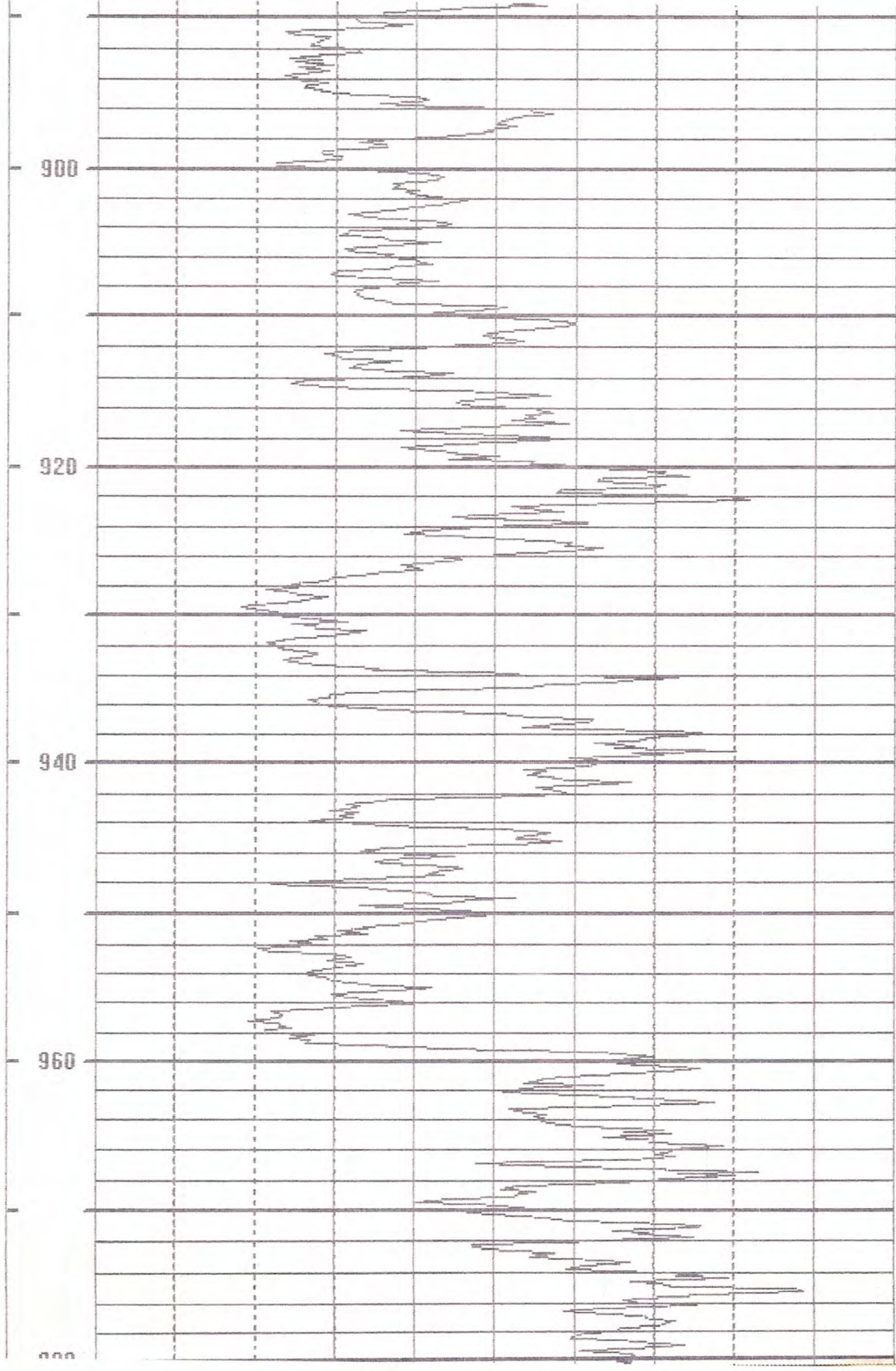












| | | | |
|-----------|----------|---------------|----------------|
| Well | VPB-132 | Depth Logger | : |
| Date | 02/23/12 | BH Fluid | Logged by: CMO |
| File Name | 7:7 | VPB-132 UP | Witness: STAN |

