

FACTORY  
 HES DRILLING COMPANY  
 122 NORTH MAIN  
 WELLSVILLE, KANSAS 66092

4-27-90--5-4-90

OPERATOR  
**13-15-21E**

LOG **COPY**

Bill Burgoon  
 Wellsville, Ks.

BURGOON  
 WELL NO. 4  
 Sec. 13, Twp. 15S, Rng, 21E  
 Franklin Co., Kansas

API # 15-059-24,500

5112' FSL  
 2230' FEL

| STRATA THICKNESS | FORMATION DRILLED              | T.D. | STRATA THICKNESS | FORMATION DRILLED   | T.D.   |
|------------------|--------------------------------|------|------------------|---|--------|
| 2                | Soil                           | 2    | 5                | Sand  | 442    |
| 17               | Clay                           | 19   |                  | ("KNOBTOWN")<br>(No gas odor)                                 |        |
| 26               | -- Shale                       | 45   | 116              | Shale   | 558    |
| 26               | = Lime<br>(Br. Sdy. 49-54)     | 71   | 5                | Sand("PERU")<br>(Slightly lamin<br>w/shale.)<br>(No oil show) | 563    |
| 7                | Shale (Drk.)                   | 78   |                  |   |        |
| 11               | Lime                           | 89   | 59               | Shale   | 622    |
| 3                | Sand (Gray)                    | 92   | 3                | Lime  | 625    |
| 2                | Shale                          | 94   | 4                | Shale   | 629    |
| 17               | Lime                           | 111  | 3                | Lime  | 632    |
| 23               | Shale<br>(Bkn. w/lime 114-116) | 134  | 17               | Shale   | 649    |
|                  | Sand (Gray)                    | 138  | 4                | Lime  | 653    |
| 11               | Shale(Sdy. 138-141)            | 149  | 9                | Shale<br>(Slate 655-656)                                      | 662    |
| 23               | Lime                           | 172  | 12               | Lime  | 674    |
| 77               | Shale                          | 249  | 31               | Shale<br>(Slate 691-692)                                      | 705    |
| 30               | Lime                           | 279  | 4.5              | White Shale<br>(Limebreak 687-688)                            | 709.5  |
| 5                | Shale<br>(Br. 279-283)         | 284  | 32.5             | Sand<br>(#1 Squirrel)<br>(Bleeding oil)                       | 742    |
| 7                | Lime                           | 291  | 33               | Shale<br>(Sdy. 742-751)                                       | 775T.D |
| 23               | Shale                          | 314  |                  |   |        |
| 3                | Lime(Broken)                   | 317  |                  |   |        |
| 18               | Shale(Bkn. 317-320)            | 335  |                  |   |        |
| 2                | Lime                           | 337  |                  |   |        |
| 15               | Shale                          | 352  |                  |   |        |
| 26               | Lime 30'                       | 378  |                  |   |        |
| 8                | Shale<br>(Slate 380-381)       | 386  |                  |   |        |
| 21               | Lime 20'                       | 407  |                  |   |        |
| 5                | Shale<br>(Slate 411-412)       | 412  |                  |   |        |
| 4                | Lime                           | 416  |                  |   |        |
| 3                | Shale                          | 419  |                  |   |        |
| 7                | Lime "HERTHA"                  | 426  |                  |   |        |
| 11               | Shale                          | 437  |                  |   |        |

Drilled 775' of 5" hole.  
 Set 22.10 ft. of used 6 1/4" surface pipe  
 Cemented in with 5 sacs cement.  
 Cored #1 Squirrel 710'-730'.  
 Set 771' of 2 7/8" 8 rd. upset pipe.  
 Seating nipple at 706'.  
 Used 3 centralizers.  
 Bolt on bottom.

RECEIVED  
 DIVISION  
**DEC 16 1991**

# HUGHES DRILLING CO.

Wellsville, Kansas 66092

Roger 913-883-2235  
Darrel 913-883-4077

CORE TIME

913-883  
Clay 913-883-203

LEASE Buckley 2007  
FORMATION SMITHFIELD  
DATE: 5-2-70

(RPM \_\_\_\_\_)

| FROM  | FEET TO | TIME                              | MINUTES            | REMARKS  |
|-------|---------|-----------------------------------|--------------------|--|
| 709.5 | 710     | Chip Sample                       | Very Lamin w/shale |  |
| 710   | 711     | 3:20:00 - 3:20:30                 | :30                | Very Lamin w/shale some bleeding               |
| 711   | 712     | 3:20:30 - 3:22:15                 | 1:45               | 711-714.5 Slightly Lamin Sand w/shale          |
| 712   | 713     | 3:22:15 - 3:23:15                 | 1:00               |  |
| 713   | 714     | 3:23:15 - 3:23:30                 | :15                | Good Bleeding oil                              |
| 714   | 715     | 3:23:30 - 3:24:45                 | 1:15               |  |
| 715   | 716     | 3:24:45 - 3:26:45                 | 2:00               | 714.5 - 715.5 Sdly Shale NO oil show           |
| 716   | 717     | 3:26:45 - 3:27:15                 | :30                | 715.5  |
| 717   | 718     | 3:27:15 - 3:27:45                 | :30                |  |
| 718   | 719     | Change Joint<br>3:35:30 - 3:36:00 | :30                | Slightly Lamin Sand w/shale                    |
| 719   | 720     | 3:36:00 - 3:36:45                 | :45                | Good Bleeding oil                              |
| 720   | 721     | 3:36:45 - 3:37:15                 | :30                | Lamin Sand w/shale Bleeding oil                |
| 721   | 722     | 3:37:15 - 3:38:00                 | :45                | Very Lamin w/shale some bleeding oil           |
| 722   | 723     | 3:38:00 - 3:38:30                 | :30                |  |
| 723   | 724     | 3:38:30 - 3:39:00                 | :30                | Lamin Sand w/shale                             |
| 724   | 725     | 3:39:00 - 3:39:45                 | :45                |  |
| 725   | 726     | 3:39:45 - 3:40:15                 | :30                | Bleeding oil                                   |
| 726   | 727     | 3:40:15 - 3:40:45                 | :30                |  |
| 727   | 728     | 3:40:45 - 3:41:30                 | :45                | Slightly Lamin Sand w/shale                    |
| 728   | 729     | 3:41:30 - 3:42:00                 | :30                |  |
| 729   | 730     | 3:42:00 - 3:42:30                 | :30                | Good Bleeding oil                              |
| 730   | 731     |                                   | :30                | - Lime Sdly                                    |
| 731   | 732     |                                   |                    | Lamin Sand w/shale Bleeding                    |
| 732   | 733     |                                   |                    | Lamin Sand w/shale Bleeding                    |
| 733   | 734     |                                   |                    | Very Lamin w/shale Bleeding oil - Lit oil show |

Best Part Zone (711-714.5) - (716-729) RPT