

Company Kansas Oil Corporation Lease & Well No. Harbaugh #1  
Elevation 1552 Kelly Bushing Mississippi Effective Pay ----- Ft. Ticket No. 6687  
Date 7/13/80 Formation 1 33S 11W County Barber State Kansas  
Sec. 1 Twp. 33S Range 11W County Barber State Kansas  
Test Approved by Robert L. Lewellyn Western Representative Dave Sloan

Formation Test No. 1 Interval Tested from 4466 ft. to 4509 ft. Total Depth 4509 ft.  
Packer Depth 4461 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
Packer Depth 4466 ft. Size 6 3/4 in. Packer Depth - ft. Size - in.  
Depth of Selective Zone Set -

Top Recorder Depth (Inside) 4474 ft. Recorder Number 2604 Cap. 4150  
Bottom Recorder Depth (Outside) 4474 ft. Recorder Number 6246 Cap. 5200  
Below Straddle Recorder Depth - ft. Recorder Number - Cap. -  
Drilling Contractor Abercrombie Drilling Rig #11 Drill Collar Length 60 I. D. 2.2 in.  
Mud Type drisac Viscosity 50 Weight Pipe Length 610 I. D. 3.2 in.  
Weight 9.2 Water Loss 12.8 cc. Drill Pipe Length 3776 I. D. 3.8 in.  
Chlorides 16,000 P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 OD in.  
Jars: Make -- Serial Number - Anchor Length 43 ft. Size 5 1/2 OD in.  
Did Well Flow? NO Reversed Out NO Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.  
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: Strong throughout both flow periods.

Recovered 90 ft. of gas cut drilling mud

Recovered        ft. of       

Recovered        ft. of       

Recovered        ft. of       

Recovered        ft. of       

Remarks: Pikced up tool too high on initial closed period trying to pull slips.

Time Set Packer(s) 2:20 A.M. Time Started Off Bottom 4:50 P.M. Maximum Temperature 119°  
Initial Hydrostatic Pressure ..... (A) 2208 P.S.I.  
Initial Flow Period ..... Minutes 30 (B) 62 P.S.I. to (C) 57 P.S.I.  
Initial Closed In Period ..... Minutes 30 (D) 699 P.S.I.  
Final Flow Period ..... Minutes 30 (E) 81 P.S.I. to (F) 75 P.S.I.  
Final Closed In Period ..... Minutes 60 (G) 417 P.S.I.  
Final Hydrostatic Pressure ..... (H) 2194 P.S.I.

# WESTERN TESTING CO., INC.

## Pressure Data

Date 7-13-80 Test Ticket No. 6687  
 Recorder No. 2604 Capacity 4150 Location 4474 Ft.  
 Clock No. -- Elevation 1552 Kelly Bushing Well Temperature 119 °F

| Point                          | Pressure |        | Time Given | Time Computed |
|--------------------------------|----------|--------|------------|---------------|
| A Initial Hydrostatic Mud      | 2208     | P.S.I. | 2:20 P.M.  |               |
| B First Initial Flow Pressure  | 62       | P.S.I. | 30         | Mins. 30      |
| C First Final Flow Pressure    | 57       | P.S.I. | 30         | Mins. 30      |
| D Initial Closed-in Pressure   | 699      | P.S.I. | 30         | Mins. 30      |
| E Second Initial Flow Pressure | 81       | P.S.I. | 60         | Mins. 60      |
| F Second Final Flow Pressure   | 75       | P.S.I. |            |               |
| G Final Closed-in Pressure     | 417      | P.S.I. |            |               |
| H Final Hydrostatic Mud        | 2194     | P.S.I. |            |               |

### PRESSURE BREAKDOWN

| First Flow Pressure         |           | Initial Shut-In             |            | Second Flow Pressure        |           | Final Shut-In               |            |
|-----------------------------|-----------|-----------------------------|------------|-----------------------------|-----------|-----------------------------|------------|
| Breakdown: <u>6</u> Inc.    |           | Breakdown: <u>10</u> Inc.   |            | Breakdown: <u>6</u> Inc.    |           | Breakdown: <u>20</u> Inc.   |            |
| of <u>5</u> mins. and a     |           | of <u>3</u> mins. and a     |            | of <u>5</u> mins. and a     |           | of <u>3</u> mins. and a     |            |
| final inc. of <u>0</u> Min. |           | final inc. of <u>0</u> Min. |            | final inc. of <u>0</u> Min. |           | final inc. of <u>0</u> Min. |            |
| Point Mins.                 | Press.    | Point Minutes               | Press.     | Point Minutes               | Press.    | Point Minutes               | Press.     |
| P 1 <u>0</u>                | <u>62</u> | <u>0</u>                    | <u>57</u>  | <u>0</u>                    | <u>81</u> | <u>0</u>                    | <u>75</u>  |
| P 2 <u>5</u>                | <u>58</u> | <u>3</u>                    | <u>NO</u>  | <u>5</u>                    | <u>79</u> | <u>3</u>                    | <u>92</u>  |
| P 3 <u>10</u>               | <u>54</u> | <u>6</u>                    | <u>-</u>   | <u>10</u>                   | <u>75</u> | <u>6</u>                    | <u>109</u> |
| P 4 <u>15</u>               | <u>54</u> | <u>9</u>                    | <u>-</u>   | <u>15</u>                   | <u>75</u> | <u>9</u>                    | <u>147</u> |
| P 5 <u>20</u>               | <u>55</u> | <u>12</u>                   | <u>-</u>   | <u>20</u>                   | <u>75</u> | <u>12</u>                   | <u>198</u> |
| P 6 <u>25</u>               | <u>56</u> | <u>15</u>                   | <u>-</u>   | <u>25</u>                   | <u>75</u> | <u>15</u>                   | <u>209</u> |
| P 7 <u>30</u>               | <u>57</u> | <u>18</u>                   | <u>-</u>   | <u>30</u>                   | <u>75</u> | <u>18</u>                   | <u>230</u> |
| P 8                         |           | <u>21</u>                   | <u>-</u>   |                             |           | <u>21</u>                   | <u>256</u> |
| P 9                         |           | <u>24</u>                   | <u>-</u>   |                             |           | <u>24</u>                   | <u>277</u> |
| P10                         |           | <u>27</u>                   | <u>-</u>   |                             |           | <u>27</u>                   | <u>292</u> |
| P11                         |           | <u>30</u>                   | <u>699</u> |                             |           | <u>30</u>                   | <u>310</u> |
| P12                         |           |                             |            |                             |           | <u>33</u>                   | <u>325</u> |
| P13                         |           |                             |            |                             |           | <u>36</u>                   | <u>340</u> |
| P14                         |           |                             |            |                             |           | <u>39</u>                   | <u>352</u> |
| P15                         |           |                             |            |                             |           | <u>42</u>                   | <u>363</u> |
| P16                         |           |                             |            |                             |           | <u>45</u>                   | <u>376</u> |
| P17                         |           |                             |            |                             |           | <u>48</u>                   | <u>387</u> |
| P18                         |           |                             |            |                             |           | <u>51</u>                   | <u>394</u> |
| P19                         |           |                             |            |                             |           | <u>54</u>                   | <u>403</u> |
| P20                         |           |                             |            |                             |           | <u>57</u>                   | <u>408</u> |
|                             |           |                             |            |                             |           | <u>60</u>                   | <u>417</u> |

2604

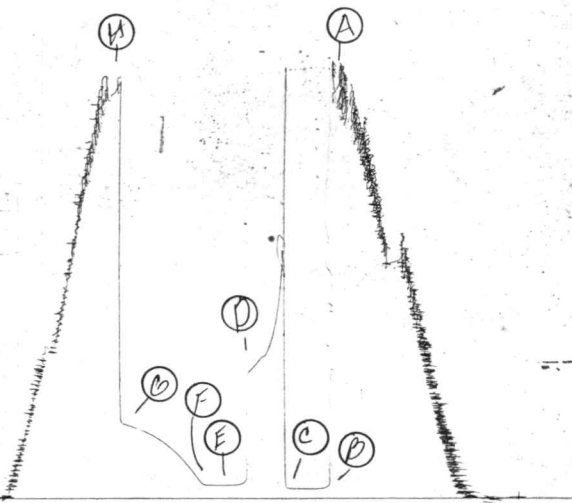
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41 HARBROUGH

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Company Kansas Oil Corporation Lease & Well No. Harbaugh #1  
Elevation 1552 Kelly Bushing Mississippi Formation ----- Effective Pay ----- Ft. Ticket No. 6688  
Date 7/14/80 Sec. 1 Twp. 33S Range 11W County Barber State Kansas  
Test Approved by Robert L. Layman Western Representative Dave Sloan

Formation Test No. 2 Interval Tested from 4509 ft. to 4548 ft. Total Depth 4548 ft.  
Packer Depth 4504 ft. Size 6 3/4 in. Packer Depth ----- ft. Size ----- in.  
Packer Depth 4509 ft. Size 6 3/4 in. Packer Depth ----- ft. Size ----- in.  
Depth of Selective Zone Set -----

|                                 |                  |                 |              |      |              |
|---------------------------------|------------------|-----------------|--------------|------|--------------|
| Top Recorder Depth (Inside)     | <u>4517</u> ft.  | Recorder Number | <u>2604</u>  | Cap. | <u>4150</u>  |
| Bottom Recorder Depth (Outside) | <u>4520</u> ft.  | Recorder Number | <u>6246</u>  | Cap. | <u>5200</u>  |
| Below Straddle Recorder Depth   | <u>-----</u> ft. | Recorder Number | <u>-----</u> | Cap. | <u>-----</u> |

Drilling Contractor Abercrombie Drilling Rig #11 Drill Collar Length 60 I. D. 2.2 in.  
Mud Type drispac Viscosity 52 Weight Pipe Length 610 I. D. 3.2 in.  
Weight 9.3 Water Loss 12.8 cc. Drill Pipe Length 3819 I. D. 3.8 in.  
Chlorides 16,500 P.P.M. Test Tool Length 20 ft. Tool Size 5 1/2 OD in.  
Jars: Make --- Serial Number --- Anchor Length 39 ft. Size 5 1/2 OD in.  
Did Well Flow? No Reversed Out --- Surface Choke Size 3/4 in. Bottom Choke Size 3/4 in.  
Main Hole Size 7 7/8 in. Tool Joint Size 4 1/2 XH in.

Blow: Strong through initial flow period, decreasing to moderate last of final flow period.

Recovered 150 ft. of gas in pipe  
Recovered 30 ft. of gas cut drilling mud  
Recovered 60 ft. of gas and watery cut drilling mud Chlorides 30,000 ppm  
Recovered ----- ft. of -----  
Recovered ----- ft. of -----  
Remarks: -----

|                              |             |                            |                         |              |                            |                     |             |
|------------------------------|-------------|----------------------------|-------------------------|--------------|----------------------------|---------------------|-------------|
| Time Set Packer(s)           | <u>9:20</u> | <u>A.M.</u><br><u>P.M.</u> | Time Started Off Bottom | <u>12:20</u> | <u>A.M.</u><br><u>P.M.</u> | Maximum Temperature | <u>120°</u> |
| Initial Hydrostatic Pressure |             |                            | (A)                     | <u>2253</u>  | P.S.I.                     |                     |             |
| Initial Flow Period          | Minutes     | <u>30</u>                  | (B)                     | <u>43</u>    | P.S.I. to (C)              | <u>40</u>           | P.S.I.      |
| Initial Closed In Period     | Minutes     | <u>60</u>                  | (D)                     | <u>453</u>   | P.S.I.                     |                     |             |
| Final Flow Period            | Minutes     | <u>30</u>                  | (E)                     | <u>66</u>    | P.S.I. to (F)              | <u>62</u>           | P.S.I.      |
| Final Closed In Period       | Minutes     | <u>63</u>                  | (G)                     | <u>419</u>   | P.S.I.                     |                     |             |
| Final Hydrostatic Pressure   |             |                            | (H)                     | <u>2211</u>  | P.S.I.                     |                     |             |

# WESTERN TESTING CO., INC.

## Pressure Data

Date 7-14-80 Test Ticket No. 6688  
 Recorder No. 2604 Capacity 4150 Location 4517 Ft.  
 Clock No. -- Elevation 1552 Kelly Bushing Well Temperature 120 °F

| Point                          | Pressure |        | Time Given | Time Computed |
|--------------------------------|----------|--------|------------|---------------|
| A Initial Hydrostatic Mud      | 2253     | P.S.I. | 9:20 A. M. |               |
| B First Initial Flow Pressure  | 43       | P.S.I. | 30 Mins.   | 30 Mins.      |
| C First Final Flow Pressure    | 40       | P.S.I. | 60 Mins.   | 60 Mins.      |
| D Initial Closed-in Pressure   | 453      | P.S.I. | 30 Mins.   | 30 Mins.      |
| E Second Initial Flow Pressure | 66       | P.S.I. | 60 Mins.   | 63 Mins.      |
| F Second Final Flow Pressure   | 62       | P.S.I. |            |               |
| G Final Closed-in Pressure     | 419      | P.S.I. |            |               |
| H Final Hydrostatic Mud        | 2211     | P.S.I. |            |               |

## PRESSURE BREAKDOWN

| First Flow Pressure         |           | Initial Shut-In             |            | Second Flow Pressure        |           | Final Shut-In               |            |
|-----------------------------|-----------|-----------------------------|------------|-----------------------------|-----------|-----------------------------|------------|
| Breakdown: <u>6</u> Inc.    |           | Breakdown: <u>20</u> Inc.   |            | Breakdown: <u>6</u> Inc.    |           | Breakdown: <u>21</u> Inc.   |            |
| of <u>5</u> mins. and a     |           | of <u>3</u> mins. and a     |            | of <u>5</u> mins. and a     |           | of <u>3</u> mins. and a     |            |
| final inc. of <u>0</u> Min. |           | final inc. of <u>0</u> Min. |            | final inc. of <u>0</u> Min. |           | final inc. of <u>0</u> Min. |            |
| Point Mins.                 | Press.    | Point Minutes               | Press.     | Point Minutes               | Press.    | Point Minutes               | Press.     |
| P 1 <u>0</u>                | <u>43</u> | <u>0</u>                    | <u>40</u>  | <u>0</u>                    | <u>66</u> | <u>0</u>                    | <u>62</u>  |
| P 2 <u>5</u>                | <u>38</u> | <u>3</u>                    | <u>58</u>  | <u>5</u>                    | <u>62</u> | <u>3</u>                    | <u>83</u>  |
| P 3 <u>10</u>               | <u>34</u> | <u>6</u>                    | <u>104</u> | <u>10</u>                   | <u>58</u> | <u>6</u>                    | <u>128</u> |
| P 4 <u>15</u>               | <u>34</u> | <u>9</u>                    | <u>147</u> | <u>15</u>                   | <u>58</u> | <u>9</u>                    | <u>168</u> |
| P 5 <u>20</u>               | <u>36</u> | <u>12</u>                   | <u>192</u> | <u>20</u>                   | <u>58</u> | <u>12</u>                   | <u>207</u> |
| P 6 <u>25</u>               | <u>39</u> | <u>15</u>                   | <u>228</u> | <u>25</u>                   | <u>58</u> | <u>15</u>                   | <u>235</u> |
| P 7 <u>30</u>               | <u>40</u> | <u>18</u>                   | <u>260</u> | <u>30</u>                   | <u>62</u> | <u>18</u>                   | <u>262</u> |
| P 8                         |           | <u>21</u>                   | <u>288</u> |                             |           | <u>21</u>                   | <u>284</u> |
| P 9                         |           | <u>24</u>                   | <u>314</u> |                             |           | <u>24</u>                   | <u>301</u> |
| P10                         |           | <u>27</u>                   | <u>335</u> |                             |           | <u>27</u>                   | <u>320</u> |
| P11                         |           | <u>30</u>                   | <u>352</u> |                             |           | <u>30</u>                   | <u>333</u> |
| P12                         |           | <u>33</u>                   | <u>367</u> |                             |           | <u>33</u>                   | <u>348</u> |
| P13                         |           | <u>36</u>                   | <u>384</u> |                             |           | <u>36</u>                   | <u>359</u> |
| P14                         |           | <u>39</u>                   | <u>397</u> |                             |           | <u>39</u>                   | <u>367</u> |
| P15                         |           | <u>42</u>                   | <u>406</u> |                             |           | <u>42</u>                   | <u>378</u> |
| P16                         |           | <u>45</u>                   | <u>417</u> |                             |           | <u>45</u>                   | <u>384</u> |
| P17                         |           | <u>48</u>                   | <u>425</u> |                             |           | <u>48</u>                   | <u>393</u> |
| P18                         |           | <u>51</u>                   | <u>434</u> |                             |           | <u>51</u>                   | <u>399</u> |
| P19                         |           | <u>54</u>                   | <u>440</u> |                             |           | <u>54</u>                   | <u>406</u> |
| P20                         |           | <u>57</u>                   | <u>447</u> |                             |           | <u>57</u>                   | <u>410</u> |
|                             |           | <u>60</u>                   | <u>453</u> |                             |           | <u>60</u>                   | <u>414</u> |
|                             |           |                             |            |                             |           | <u>63</u>                   | <u>419</u> |

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