

Confidentiality Requested:

Yes No

## Kansas Corporation Commission Oil & Gas Conservation Division

1088735

Form ACO-1 August 2013 Form must be Typed Form must be Signed All blanks must be Filled

# WELL COMPLETION FORM WELL HISTORY - DESCRIPTION OF WELL & LEASE

| OPERATOR: License #  | API No. 15  |
|--|---|
| Name:  | Spot Description:   |
| Address 1:   | SecTwpS. R  |
| Address 2:   | Feet from North / South Line of Section   |
| City:  | Feet from _ East / _ West Line of Section   |
| Contact Person:  | Footages Calculated from Nearest Outside Section Corner:  |
| Phone: ()  | □NE □NW □SE □SW   |
| CONTRACTOR: License #  | GPS Location: Lat:, Long:   |
| Name:  | (e.g. xx.xxxxxx) (e.gxxx.xxxxxx)  |
| Wellsite Geologist:  | Datum: NAD27 NAD83 WGS84  |
| Purchaser:   | County:   |
| Designate Type of Completion:  | Lease Name: Well #:   |
| New Well Re-Entry Workover   | Field Name:   |
| Oil WSW SWD SIOW   | Producing Formation:  |
| Gas D&A ENHR SIGW  | Elevation: Ground: Kelly Bushing:   |
| ☐ OG ☐ GSW ☐ Temp. Abd.  | Total Vertical Depth: Plug Back Total Depth:  |
| CM (Coal Bed Methane)  | Amount of Surface Pipe Set and Cemented at: Feet  |
| Cathodic Other (Core, Expl., etc.):  | Multiple Stage Cementing Collar Used?   |
| If Workover/Re-entry: Old Well Info as follows:                                      | If yes, show depth set: Feet  |
| Operator:  | If Alternate II completion, cement circulated from:   |
| Well Name:   | feet depth to: w/ sx cmt.   |
| Original Comp. Date: Original Total Depth:   |   |
| ☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD                                | Drilling Fluid Management Plan  |
| ☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer                                       | (Data must be collected from the Reserve Pit)   |
| Commingled Permit #:   | Chloride content: ppm Fluid volume: bbls  |
| Dual Completion Permit #:  | Dewatering method used:   |
| SWD Permit #:  | Location of fluid disposal if hauled offsite:   |
| ENHR Permit #:   | ·   |
| GSW Permit #:  | Operator Name:  |
|  | Lease Name: License #:  |
| Spud Date or Date Reached TD Completion Date or Recompletion Date  Recompletion Date | Quarter         Sec.         Twp.         S. R.         East         West           County:         Permit #: |

#### **AFFIDAVIT**

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

**Submitted Electronically** 

| KCC Office Use ONLY             |  |  |  |  |  |
|---------------------------------|--|--|--|--|--|
| Confidentiality Requested       |  |  |  |  |  |
| Date:                           |  |  |  |  |  |
| Confidential Release Date:      |  |  |  |  |  |
| Wireline Log Received           |  |  |  |  |  |
| Geologist Report Received       |  |  |  |  |  |
| UIC Distribution                |  |  |  |  |  |
| ALT I II III Approved by: Date: |  |  |  |  |  |

Page Two



| Operator Name:                                   |  |  | Lease Name: _                                 |                                     |                            | Well #:          |                                  |            |
|--|--|--|---|-------------------------------------|----------------------------|------------------|----------------------------------|------------|
| Sec Twp  | S. R   | East West  | County:                                       |                                     |                            |                  |                                  |            |
| open and closed, flow<br>and flow rates if gas t | ving and shut-in presson<br>to surface test, along w | formations penetrated. I<br>ures, whether shut-in pro<br>vith final chart(s). Attach | essure reached stati<br>n extra sheet if more | c level, hydrosta<br>space is neede | itic pressures, bott<br>d. | tom hole tempe   | erature, fluid r                 | recovery,  |
|  |  | otain Geophysical Data a<br>or newer AND an image                                    |   | egs must be ema                     | ailed to kcc-well-lo       | gs@kcc.ks.gov    | <ol> <li>Digital elec</li> </ol> | tronic log |
| Drill Stem Tests Taken (Attach Additional        | •  | Yes No   |   | _                                   | on (Top), Depth ar         |                  | Samp                             |            |
| Samples Sent to Geo                              | ological Survey                                      | ☐ Yes ☐ No   | Nam   | e                                   |                            | Тор              | Datur                            | m          |
| Cores Taken<br>Electric Log Run                  |  |  |   |                                     |                            |                  |                                  |            |
| List All E. Logs Run:                            |  |  |   |                                     |                            |                  |                                  |            |
|  |  | CASING   | RECORD Ne                                     | ew Used                             |                            |                  |                                  |            |
|  |  | Report all strings set-  | conductor, surface, inte                      | ermediate, product                  | ion, etc.                  |                  |                                  |            |
| Purpose of String                                | Size Hole<br>Drilled                                 | Size Casing<br>Set (In O.D.)   | Weight<br>Lbs. / Ft.                          | Setting<br>Depth                    | Type of<br>Cement          | # Sacks<br>Used  | Type and P<br>Additiv            |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  | ADDITIONAL   | OFMENTING / OOL                               |                                     |                            |                  |                                  |            |
| Purpose:   | Depth  |  | CEMENTING / SQL                               | JEEZE RECORD                        |                            | araant Additiraa |                                  |            |
| Perforate  | Top Bottom   | Type of Cement   | # Sacks Used                                  | d Type and Percent Additives        |                            |                  |                                  |            |
| Protect Casing Plug Back TD                      |  |  |   |                                     |                            |                  |                                  |            |
| Plug Off Zone                                    |  |  |   |                                     |                            |                  |                                  |            |
| Did vou perform a hydra                          | ulic fracturing treatment o                          | on this well?  |   | Yes                                 | No (If No, ski             | p questions 2 ar | nd 3)                            |            |
|  | =  | raulic fracturing treatment ex   | xceed 350,000 gallons                         |                                     | = ' '                      | p question 3)    | ,                                |            |
| Was the hydraulic fractu                         | ring treatment information                           | n submitted to the chemical  | disclosure registry?                          | Yes                                 | No (If No, fill            | out Page Three   | of the ACO-1)                    |            |
| Shots Per Foot                                   |  | ON RECORD - Bridge Plug<br>Footage of Each Interval Per                              |   |                                     | cture, Shot, Cement        |                  |                                  | Depth      |
|  | Сроспу Г   | octago of Laon morvari of  | ioratou                                       | (>1                                 | mount and rand or ma       | teriar Good)     |                                  | Борит      |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
|  |  |  |   |                                     |                            |                  |                                  |            |
| TUBING RECORD:                                   | Size:  | Set At:  | Packer At:                                    | Liner Run:                          | Yes No                     |                  |                                  |            |
| Date of First, Resumed                           | Production, SWD or EN                                |  |   |                                     | 21                         |                  |                                  |            |
| Fotimeted Day 1 2                                | 0" -   | Flowing  |   |                                     | Other (Explain)            | ) O" D "         |                                  |            |
| Estimated Production<br>Per 24 Hours             | Oil E  | Bbls. Gas  | Mcf Wate                                      | er B                                | bls. G                     | Gas-Oil Ratio    | Gr<br>                           | ravity     |
| DISPOSITI  | ON OF GAS:   | 1  | METHOD OF COMPLE                              | ETION:                              |                            | PRODUCTIO        | ON INTERVAL:                     |            |
| Vented Sold                                      |  | Open Hole  | Perf. Dually                                  | Comp. Con                           | mmingled                   |                  |                                  |            |
|  | bmit ACO-18.)  | Other (Specify)  | (Submit )                                     | ACO-5) (Sub                         | omit ACO-4)                |                  |                                  |            |

| Form      | ACO1 - Well Completion                             |
|-----------|--|
| Operator  | Bowman, William F. dba The Bill Bowman Oil Company |
| Well Name | Welch 1  |
| Doc ID    | 1088735  |

# Tops

| Name                | Тор  | Datum |
|---------------------|------|-------|
| Anhydrite           | 2442 | +687  |
| Wabaunsee           | 3453 | -324  |
| Topeka              | 3681 | -552  |
| Heebner             | 3911 | -782  |
| Toronto             | 3937 | -808  |
| Lansing Kansas City | 3968 | -839  |
| Base of Kansas City | 4328 | -1199 |
| Marmaton            | 4374 | -1245 |
| Pawnee              | 4450 | -1321 |
| Ft. Scott           | 4500 | -1371 |
| Cherokee Shale      | 4528 | -1399 |
| Johnson Zone        | 4572 | -1443 |
| Log TD              | 4717 |       |
| RTD                 | 4721 |       |

### **MUD LOG**

# **WellSight Systems**

Scale 1:240 (5"=100') Imperial Measured Depth Log

Well Name: The Bill Bowman Oil Company

Location: NE-SE-SW-NE Sec. 26-15s-35w

Logan County, Kansas

License Number: 33263

00200

Region: Wildcat Drilling Completed: July 3, 2012

Spud Date: June 26, 2012

Surface Coordinates: 3007' from South line of Sec. 26-15s-35w

1338' from East line of Sec. 26-15s-35w

Bottom Hole 3007' from South line of Sec. 26-15s-35w Coordinates: 1338' from East line of Sec. 26-15s-35w

Ground Elevation (ft): 3118'

K.B. Elevation (ft): 3129'

Logged Interval (ft): 3250'

3250' To: 4721'

Total Depth (ft): 4721'

Formation: Wabaunsee, Topeka, LKC, Marmaton

Type of Drilling Fluid: "Andy's" - - Chemical

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

#### **OPERATOR**

Company: The Bill Bowman Oil company

Address: 2640 W. Rd.

Natoma, Kansas 67651

785-885-4830

#### **GEOLOGIST**

Name: Pat Balthazor Company: Geo-Logic Address: PO Box 364

Gorham, Kansas 67640

785-303-0677

#### Cores

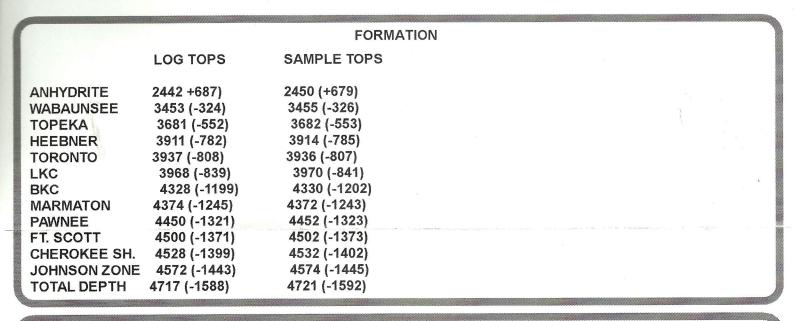
#### **DSTs**

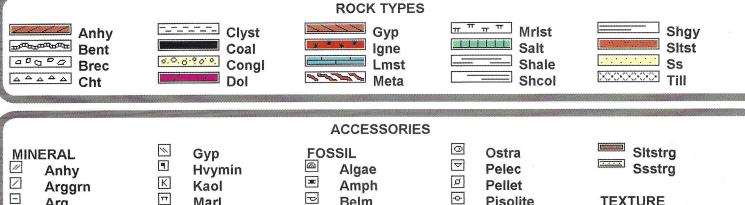
DST #1 4371'- 4414' Marmaton - Misrun - Packer Failure

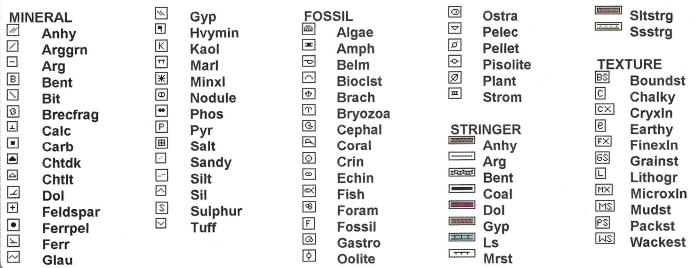
DST #2 4525'-4604' Johnson Zone - 10-10-10-0

Recovered: 5' of mud.

IFP: 61-62, FFP: 66-66, BHP: 522-None taken, BHT: 110 deg.



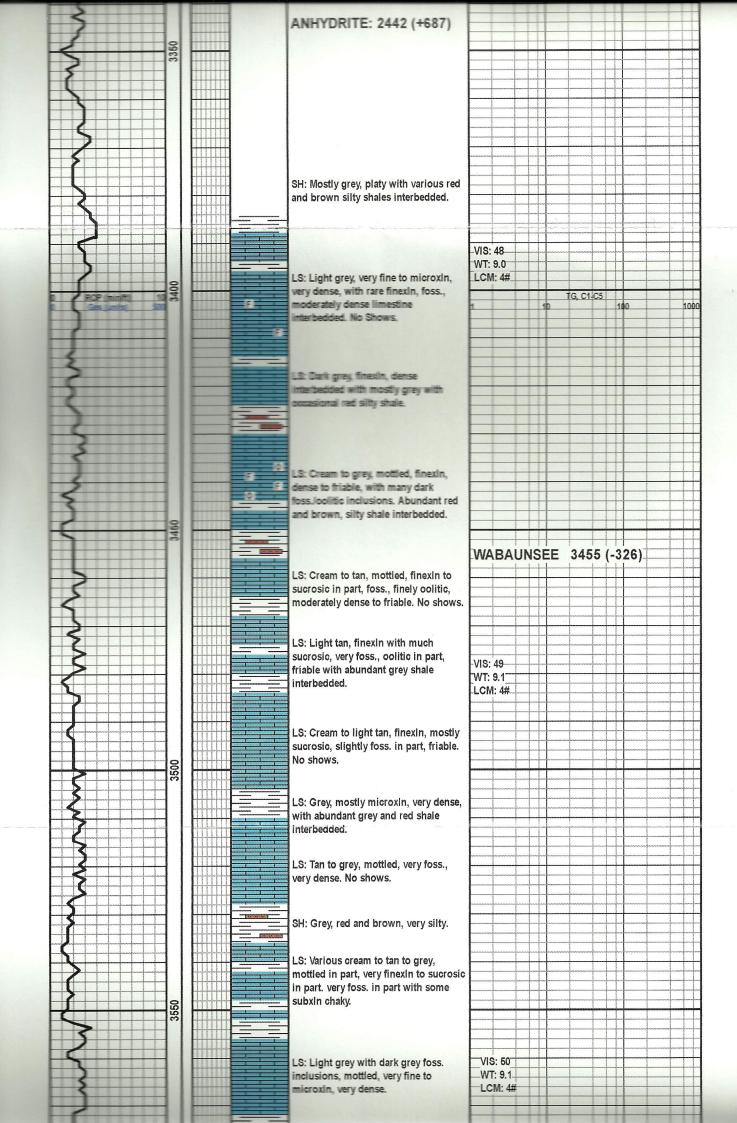




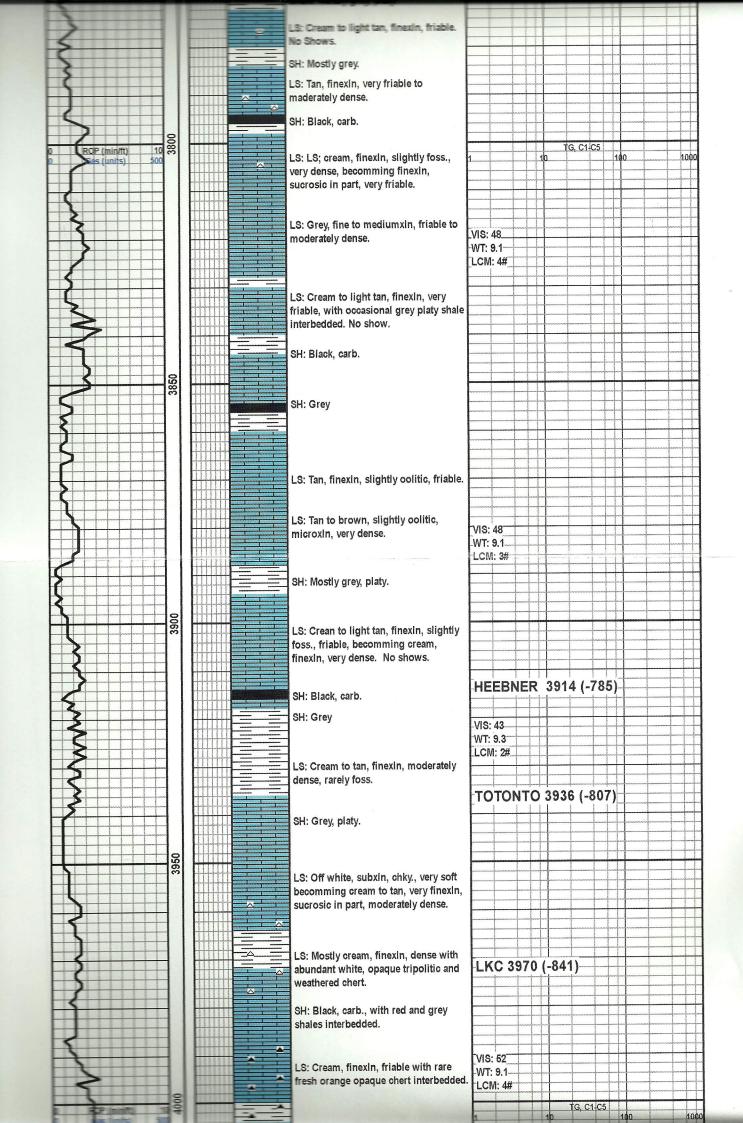
|    |        | OTHER SYMBOLS |          |       |                     |   |  |
|----|--------|---------------|----------|-------|---------------------|---|--|
| PO | ROSITY |               | ROUNDING |       | otted <u>E</u> VENT |   |  |
| E  | Earthy |               | Rounded  | ☐ Que | es 🖺 Rft            |   |  |
| 0  | Fenest | SORTING       | Subrad   | D Dea | d Sidewal           | 1 |  |

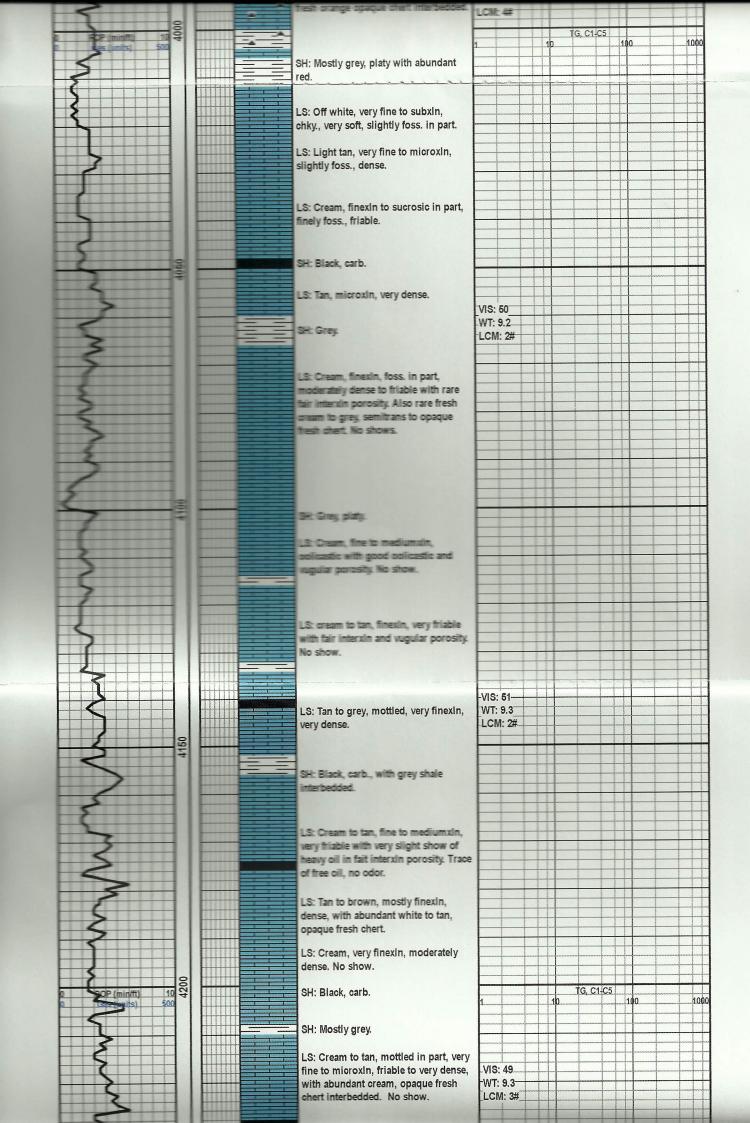
| PCROSITY  E Earthy  Fenest SORTING  Fracture  Moldic  Organic  Pinpoint  Wuggy  Woggy  Woggy  Woggy | ROUNDING ROUNDING Rounded Subrnd Subang Angular OIL SHOW Even | Ques | EVENT  Rft  Sidewall |
|---|---|------|----------------------|
|   | Even  |      |                      |

| Curve Track 1 ROP (min/t) Gas (units) | Depth<br>rundyjm<br>Porosity | Lithology Geological Description | CX (units) |
|---------------------------------------|------------------------------|----------------------------------|------------|
| D ROP feeded 1 for                    | X 2 2 2 2                    |                                  | CE (units) |
|                                       | 3250                         |                                  |            |
| {                                     |                              | ANIDODAM                         |            |
| 4                                     |                              | ANHYDRITE: 2442 (+687)           |            |

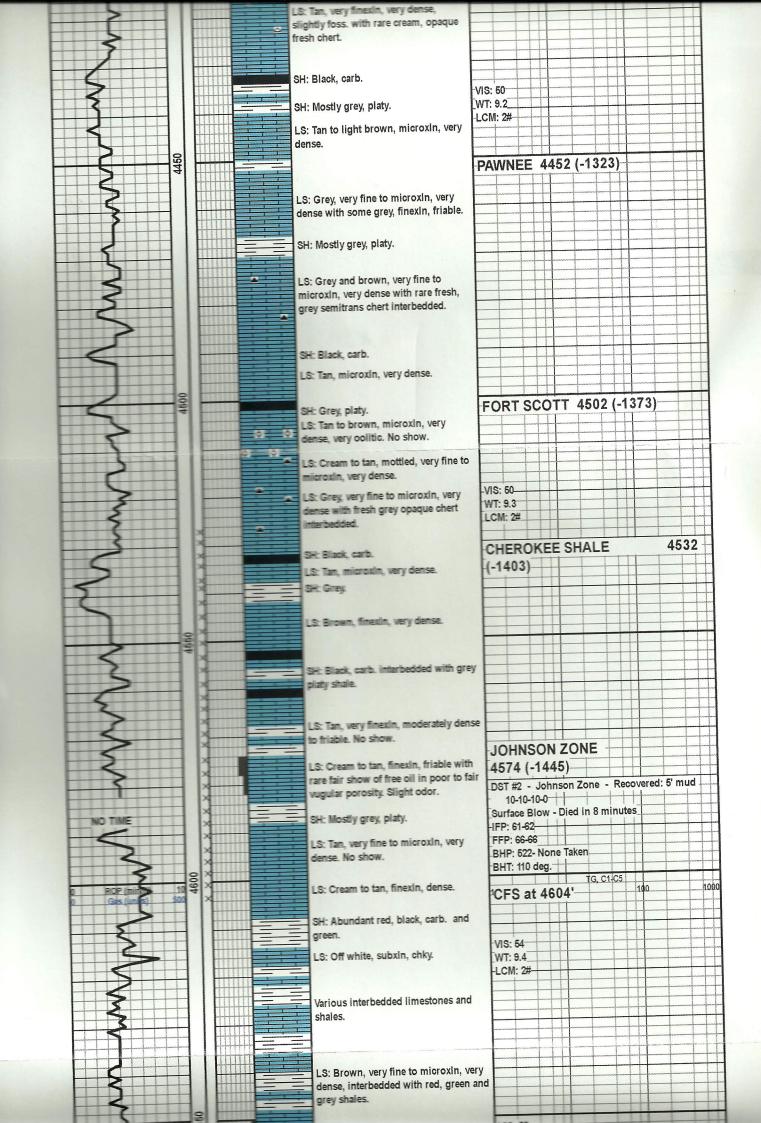


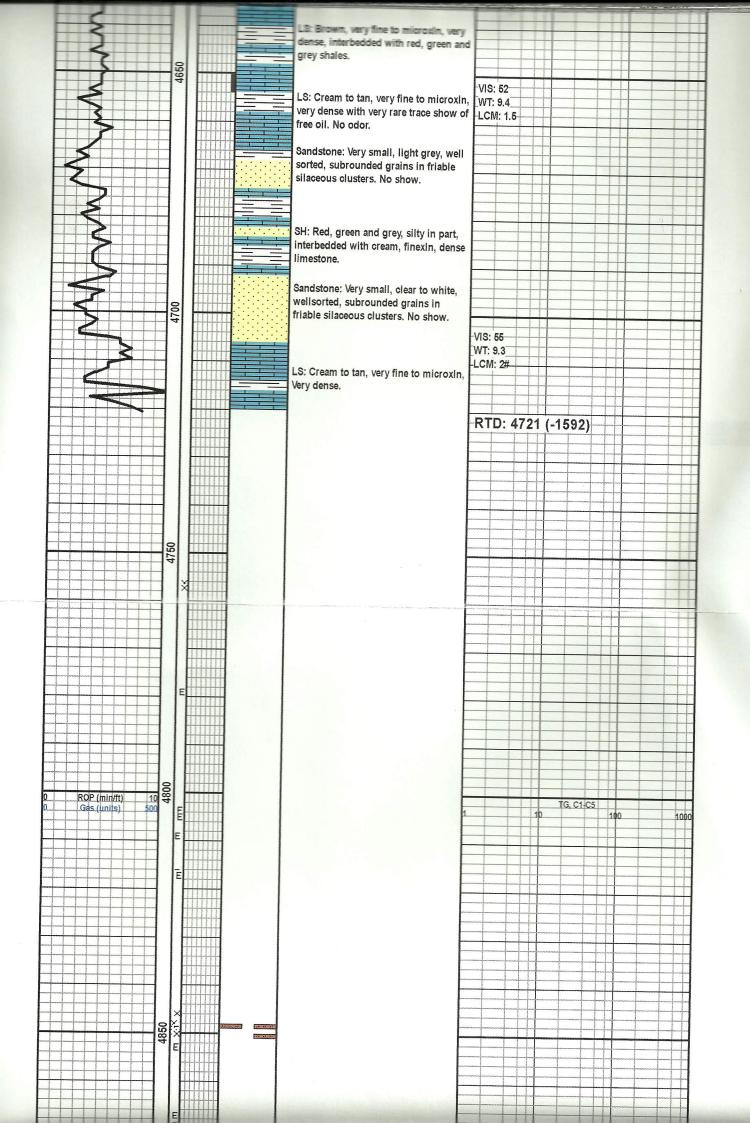
| Lib Light grey with dark grey foss. Inclusions. motives, wey fine to information. The state of the control of t |         |  |  |   |                    | -         |
|--|---------|--|--|---|--------------------|-----------|
| Industrial, resy dense.  Let Note the state of the state  |         |  |  |   |                    | 1         |
| LS. Knostly tare, with fine is microulin, very dense, with abundant grey shale interhededed.  LS. Tan, fine in, dense with abundant grey shale occasional red slightly silly shale.  Set Mostly grey, platy with some red, eligibility silly shale interhededed.  LS. Crean, fine in, sucrosic in part, risiale to moder drafty dense. No shows.  Set Mostly grey pitaly.  Set Mostly grey, platy.  Set Mostly grey, platy.  Set Mostly grey, platy.  Set Mostly grey, platy.  LS. Tan to brown, very fine to microside, slightly boss, very dense.  Set Mostly grey, platy.  Set Mostly grey, platy.  LS. Tan, fine in, sucrosid in part, slightly boss, very finable. No shows.  Set Mostly grey, platy.  LS. Tan, fine in, storosid in part, slightly boss, very finable.  LS. Tan, fine in, storosid in part, slightly fors, very finable.  LS. Tan, fine in, storosid in part, slightly fors, very finable.  LS. Tan, fine in, storosid in part, slightly fors, very finable.  LS. Tan, fine in, slight brown, fine clin, considerally sucroses. slightly fors, very finable.  LS. Tan, fine in, slight brown, fine clin, considerally sucroses. slightly fors, very finable.  LS. Tan, fine in, slight brown, fine clin, considerally sucroses.  Set Mostly grey, platy.  LS. Cream to light tan, finesin, finable.  Set Mostly grey.  Set Mostly grey, platy.  LS. Cream to light tan, finesin, finable.  Set Mostly grey.  S |         |  |  |   |                    |           |
| LS: Mostly tam, ver fine to microbin, very dense with abundant grey shale interbedded.  LS: Tan, finedin, dense with abundant grey shale grey shale, cooksideral red slightly sity shale interbedded.  LS: Tan, finedin, serosic in part, sightly shale interbedded.  LS: Cran, microsin, very dense.  LS: Cran, microsin, very dense.  LS: Cran, finedin, serosic in part, shows a red, shows.  Stit Mostly grey with coessional red.  With the shows.  Stit Mostly grey with coessional red.  With the shows.  Stit Mostly grey pilary.  Stit Mostly grey, pilary.   |         | 3  |  |   |                    | -         |
| rey dense with abundant grey shale interbedded.  1.8. Tran, finestin, sucrosis in part, signity foos, very finable.  1.9. Tran, inestin, sucrosis in part, signity foos, very finable.  1.9. Tran, new finable. No shows.  1.9. Tran, new finable with rare grey, finable.  1.9. Tran, new finable.  1.9. T |         | 3  | 10 10 10 10 10 10 10 10 10 10 10 10 10 1 | microxin, very dense.                     | LCM: 4#            |           |
| rey dense with abundant grey shale interbedded.  1.8. Tran, finestin, sucrosis in part, signity foos, very finable.  1.9. Tran, inestin, sucrosis in part, signity foos, very finable.  1.9. Tran, new finable. No shows.  1.9. Tran, new finable with rare grey, finable.  1.9. Tran, new finable.  1.9. T |         | STORY OF THE STORY |  |   |                    | 4         |
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| rey dense with abundant grey shale interbedded.  1.8. Tran, finestin, sucrosis in part, signity foos, very finable.  1.9. Tran, inestin, sucrosis in part, signity foos, very finable.  1.9. Tran, new finable. No shows.  1.9. Tran, new finable with rare grey, finable.  1.9. Tran, new finable.  1.9. T |         |  |  | I.S. Mostly tam yert fine to microyln     |                    | -         |
| Interbedded.  1.2: Tan, finozin, dense with abundant grey shale, occasional red stightly sity and interbedded.  1.3: Tan, finozin, dense with abundant grey shale, occasional red stightly sity on the interbedded.  1.4: Mostly grey platy with some red, alignity sity shale interbedded.  1.5: Crean, midro olin, very dense.  1.5: Crean, finozin, sucrosis in part, sisile to moded stately dense, No shows.  3.6: Mostly grey with occasional red.  1.6: Tan to brown, very fine to microusin, signity focs, very dense.  1.7: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very dense.  1.6: Tan timesin, sucrosis in part, signity focs, very friable.  1.6: Tan timesin, sucrosis in part, signity focs, very friable, very fine to microsis, signity focs, very friable, very fine to microsis, signity focs, very friable, very fine to microsis, signity focs, very fine to microsis, signity focs, very fine to microsis fine time to the very fine to |         |  |  |   | ┠╼┼╼┼┼             | -         |
| 1.5: Tan, finesin, dense with abundant grow shall, occasional red alightly sity shale interbedded.  36: Mostly grey pilaty with some red, slightly sity shale interbedded.  1.5: Crean, finesin, sucrosic in part, shall be to moderately dense. No shows.  36: Mostly grey with occasional red.  37: Mostly grey pilaty.  38: AS Tran, finesin, sucrosic in part, shiples form, very finesic. As shiples form, very finesic.  38: Mostly grey, pilaty.  38: Mostly grey, pilaty.  38: Mostly grey, pilaty.  38: Mostly grey, pilaty.  38: Tan, finesin, sucrosic in part, slightly form, very finishe.  38: AS Tran, finesin, sucrosic in part, slightly form, very finishe.  38: AS Tran, finesin, sucrosic in part, slightly form, very finishe.  38: AS Tran, finesin, single form, very dense.  |         |  |  |   |                    |           |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         | 3  |  | interpedaea.                              |                    | 1         |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         |  |  |   |                    | -         |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         |  |  |   |                    |           |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         |  |  |   |                    |           |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         |  |  |   |                    | -         |
| sinke.  Set: Mostly grey, pilaty with some red.  Sightly sitty shale interbedded.  Lis: Crean, microsin, very dense.  Lis: Crean, microsin, very dense.  Lis: Tan ho brown, very fine to microsin, sightly of grey, pilaty.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, etable to moded rately dense. No shows.  Set: Mostly grey pilaty.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very dense.  Lis: Tan, finetin, sucrosic in part, sightly foss, very finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, wery finable. No shows.  Set: Mostly grey pilaty.  Lis: Tan, very finable, dense, with interbedded grey and red shale.  Lis: Tan, finetin, sightly foss, modarately dense to friable with rare grey, freen, popque chert interbedded.  Shale: Mostly grey, pilaty.  Lis: Cream to loight tan, finesin, friable.  No Shows.  Set Mostly grey grey.  |         | 8  |  |   |                    | 1         |
| SH: Mostly grey platy with some red, slightly silty shale interbedded.  LS: Crean, microxin, very dense.  LS: Crean, finedin, sucrosic in part, frisble to modefirstely dense. No shows.  SH: Mostly grey with occasional red.  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  TOPEKA 3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, very finable. No shows.  SH: Mostly grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey and red shale.  Interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey red, noqueue cant interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey grey.  SR: Mostly grey platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey.   |         | 0 < ROP (min/ff) 10 %  |  |   |                    | -         |
| SH: Mostly grey, plafy with some red, slightly sitly shale interbedded.  LS. Crean, micro.dn, very dense.  LS. Crean, finexin, sucrosic in part, finishle to modedrately dense, No shows.  SH: Mostly grey with occasional red.  VII: 9.1  LS: Tan to brown, very fine to microsin, slightly foss, very dense.  Sh: Mostly grey, plafy.  LS: Tan, finexin, sucrosic in part, slightly foss, very finishle. No shows.  SH: Mostly grey, plafy.  LS: Tan, finexin, sucrosic in part, slightly foss, very finishle. No shows, slightly foss, very finishle. No shows, sery finishle.  LS: Tan, finexin, slightly foss, were finishle with rare grey, fresh, popular order transreoded.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, moderately dense to finishle with rare grey, fresh, popular over transreoded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  See Midelly grey.  |         | 0 Gas (units) 500  |  |   | <u> </u> 1         | 00        |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  | shale.                                    |                    |           |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  |   |                    | 4         |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  |   |                    |           |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  |   |                    |           |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  | *   |                    | -         |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  |   |                    | -         |
| slightly sitly shale interbedded.  IS. Crean, microxin, very dense.  LS. Crean, finedin, sucrosic in part, friable to moded:rately dense, No shows.  SH: Mostly grey with oceasional red.  WT: 81  LOR: 48  LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  SH: Mostly grey, platy.  SH: Mostly grey, platy.  LS: Tan to light brown, finedin, occasionally sucrosic, slightly foss, very friable.  WT: 81  LOR: 48  WT: 81  LOR: 48  WT: 81  LOR: 48  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LS: Tan, finedin, sucrosic in part, slightly foss, very friable.  WT: 84  WT: 91  LOR: 48  WT: 91  LOR: 48  LS: Tan, finedin, dense, with interbedded grey and red shale.  LOR: 48  WT: 91  LOR: 49   |         |  |  |   |                    |           |
| LS: Crean, finetin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  US: 44  WT: 9.1  LCN: 48  TOPEKA 3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss., very dense. microain, slightly foss., very dense.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, occasionally sucrosic, sl |         |  |  |   | HOWARD 3625 (-496) |           |
| LS: Crean, finedin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  UNS: 44-WT: 9.1 LCM: 49 LS: Tan to brown, very fine to microuin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, with finerindeded grey and red shale.  LS: Tan, finexin, slightly foss.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Sex: Mostly grey.   |         |  |  |   |                    | -         |
| LS: Crean, finedin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  UNS: 44-WT: 9.1 LCM: 49 LS: Tan to brown, very fine to microuin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, with finerindeded grey and red shale.  LS: Tan, finexin, slightly foss.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Sex: Mostly grey.   |         |  |  |   |                    |           |
| LS: Crean, finedin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  UNS: 44-WT: 9.1 LCM: 49 LS: Tan to brown, very fine to microuin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, with finerindeded grey and red shale.  LS: Tan, finexin, slightly foss.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Sex: Mostly grey.   |         |  |  |   |                    |           |
| LS: Crean, finedin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  UNS: 44-WT: 9.1 LCM: 49 LS: Tan to brown, very fine to microuin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, with finerindeded grey and red shale.  LS: Tan, finexin, slightly foss.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Sex: Mostly grey.   | W. 1000 |  |  |   |                    |           |
| LS: Crean, finedin, sucrosic in part, friable to modedrately dense. No shows.  SH: Mostly grey with occasional red.  UNS: 44-WT: 9.1 LCM: 49 LS: Tan to brown, very fine to microuin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  LS: Tan, finexin, slightly foss, very friable.  Shale: Mostly grey, platy.  LS: Tan, finexin, slightly foss, with finerindeded grey and red shale.  LS: Tan, finexin, slightly foss.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Sex: Mostly grey.   |         |  |  | 1 S. Croan microvin very dense            |                    |           |
| LS: Cream, finetin, sucrosic in part, frisible to moded rately dense. No shows.  SH: Mostly grey with occasional red.  LS: Tan to brown, very fine to microsin, slightly foss, very dense.  TOPEKA  3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey  |         |  |  | Lo. Grean, microxin, very dense.          |                    | -         |
| LS: Cream, finetin, sucrosic in part, frisible to moded rately dense. No shows.  SH: Mostly grey with occasional red.  LS: Tan to brown, very fine to microsin, slightly foss, very dense.  TOPEKA  3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey  |         |  |  |   |                    | -         |
| LS: Cream, finetin, sucrosic in part, frisible to moded rately dense. No shows.  SH: Mostly grey with occasional red.  LS: Tan to brown, very fine to microsin, slightly foss, very dense.  TOPEKA  3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey  |         |  |  |   |                    |           |
| LS: Cream, finetin, sucrosic in part, frisible to moded rately dense. No shows.  SH: Mostly grey with occasional red.  LS: Tan to brown, very fine to microsin, slightly foss, very dense.  TOPEKA  3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very finable. No shows.  SH: Mostly grey, platy.  LS: Tan, finetin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SR: Mostly grey  |         | 99   |  |   |                    | 4         |
| SH: Mostly grey with occasional red.  VIS: 444 WT: 9.1 LCM: 489 LS: Tan to brown, very fine to microstin, slightly foss, very dense.  3682 (-553) SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, ery finexin, dense, with interbedded grey and red shale.  LS: Tan, ery finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  She Mostly grey  |         | >  |  |   |                    | 1         |
| Sh: Mostly grey with occasional red.  VIS: 44 WT: 9.1 LCN: 4# TOPEKA 3682 (-553)  Sh: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  Sh: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, tresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  Sket Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | NIIII  |  |   |                    |           |
| SH: Mostly grey with occasional red.  US: 44 WT: 9.1 LCN: 4# LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with linter bedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque cherr interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  Skit: Mostly grey.   |         |  |  | friable to modedrately dense. No          |                    | -         |
| LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 443  VIS: 443  VIS: 443  VIS: 45  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque oriert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SH: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  | shows.                                    |                    | 1         |
| LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 443  VIS: 443  VIS: 443  VIS: 45  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque oriert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SH: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   |                    |           |
| LS: Tan to brown, very fine to microxin, slightly foss, very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 443  VIS: 443  VIS: 443  VIS: 45  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque oriert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SH: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         | 2  |  |   |                    | -         |
| LS: Tan to brown, very fine to microaln, slightly foss., very dense.  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque oherr interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  SH: Mostly grey.  |         |  |  | SH: Mostly grey with occasional red.      |                    | -         |
| LS: Tan to brown, very fine to microxin, slightly foss., very dense.  St: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  St: Mostly grey, platy.  LS: Tan to light brown, finexin, cocasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 43  VIS: 43  VIS: 44  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Set Mostly grey.   |         | 2  |  |   |                    |           |
| LS: Tan to brown, very fine to microxin, slightly foss., very dense.  3682 (-553)  SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Set Mostly grey.   |         |  |  |   |                    | -         |
| SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Set Mostly grey.   |         |  |  |   | LCM: 4#            | -         |
| SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  Set Mostly grey.   |         |  |  | LS: Tan to brown, very fine to            |                    |           |
| SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 48  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | <  |  |   | TOPEKA             | -         |
| SH: Mostly grey, platy.  LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  WT: 9.1  LCM: 44#  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, tresn, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   | <u> </u>           |           |
| LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy. LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.   |         |  |  |   | 3662 (-353)        |           |
| LS: Tan, finexin, sucrosic in part, slightly foss, very friable. No shows.  SH: Mostly grey, platy. LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss, moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.   |         |  |  | SH: Mostly grey, platy.                   |                    | -         |
| LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 43  VIS: 43  VIS: 44  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | 3  |  |   |                    | 1         |
| LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 43  VIS: 43  VIS: 44  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         |  |  |   |                    |           |
| LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 43  VIS: 43  VIS: 44  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | 9  |  |   |                    | -         |
| LS: Tan, finexin, sucrosic in part, slightly foss., very friable. No shows.  SH: Mostly grey, platy.  LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  VIS: 43  VIS: 43  VIS: 43  VIS: 44  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | 3 2  |  |   |                    | 1         |
| SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  |         |  |  |   |                    | 1         |
| SH: Mostly grey, platy.  LS: Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  |         |  |  |   |                    |           |
| SH: Mostly grey, platy.  LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  |         |  |  |   |                    |           |
| LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         |  |  |   |                    | -         |
| LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | 5  |  |   |                    |           |
| LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         |  |  |   |                    |           |
| LS; Tan to light brown, finexin, occasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque ohert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.  |         | 2  |  | CLI. Machinerous many                     | ┠═┼═┼┼┼            | -         |
| cocasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  |         |  |  | on, wostry grey, praty.                   |                    |           |
| cocasionally sucrosic, slightly foss, very friable.  LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.  |         | 3  |  | I S: Tan to light brown finevin           |                    |           |
| LS: Tan, very finexln, dense, with interbedded grey and red shale.  LS: Tan, finexln, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexln, friable. No Shows.  |         |  |  |   |                    |           |
| LS: Tan, very finexin, dense, with interbedded grey and red shale.  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  |         |  |  |   |                    |           |
| LS: Tan, very finexin, dense, with interbedded grey and red shale.  WT: 9.1 LCM: 4#  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.   |         | 2  |  | very maste.                               |                    |           |
| LS: Tan, very finexin, dense, with interbedded grey and red shale.  WT: 9.1 LCM: 4#  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.   |         |  |  |   | ┠══╅══╂╌╂┼╏═╌┼╌┼┼┼ |           |
| LS: Tan, very finexin, dense, with interbedded grey and red shale.  WT: 9.1 LCM: 4#  LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable. No Shows.   |         |  |  |   | VIS. 42            |           |
| LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   |                    |           |
| LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   |                    | ~         |
| LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  | interbedded grey and red shale.           |                    |           |
| LS: Tan, finexin, slightly foss., moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         | 720  |  |   |                    | -         |
| moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         | 3  |  |   |                    |           |
| moderately dense to friable with rare grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  | I S. Tan finavin clickfluface             |                    |           |
| grey, fresh, opaque chert interbedded.  Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   |                    | - Company |
| Shale: Mostly grey, platy.  LS: Cream to light tan, finexin, friable.  No Shows.   |         |  |  |   |                    | T SEARCH  |
| LS: Cream to light tan, finexin, friable. No Shows. SH: Mostly grey.   |         |  |  | grey, rresn, opaque chert interbedded.    |                    |           |
| LS: Cream to light tan, finexin, friable. No Shows. SH: Mostly grey.   |         |  |  |   | ┠═┼═┼┼             |           |
| LS: Cream to light tan, finexin, friable. No Shows. SH: Mostly grey.   |         | 3  |  | Shala: Mastly aray mlaty                  |                    |           |
| No Shows. SH: Mostly grey.   |         |  |  | Share. Mostry grey, platy.                |                    |           |
| No Shows. SH: Mostly grey.   |         |  |  | LO Comments Building to the Addition      |                    |           |
| SH: Mostly grey.   |         |  | 2-2                                      | Lo. Gream to light tan, finexin, friable. |                    |           |
|  |         | >  |  | NO SHOWS.                                 |                    | -         |
|  |         | 1  | ==                                       | SR- Mostly oray                           |                    | 1         |
| LS: Tan, finestin, very friable to   |         | 5  |  |   |                    | 1         |
|  |         | 1  |  | LS: Tan, finesin, very friable to         |                    | 1         |





|  | LS: Cream to tan, mottled in part, very  |   |
|--|--|---|
|  | the same and the same of the s | VIS: 49<br>-WT: 9.3   |
| 5  | mineral and an including the control of the control | LCM: 3#   |
|  |  |   |
|  | LS: Cream, finexin, moderately dense.  |   |
| 7  | Very slight show of heavy oil, no odor.  |   |
|  | tery singlify circuit or nowly on, no execu-   |   |
|  | SH: Black, carb.   |   |
|  | On. Black, Galb.   |   |
|  | SH: Gray.  |   |
| 99   |  |   |
|  | LS: Cream, finexin, friable to very  |   |
|  | dense, pyritic with abundant free  |   |
|  | pyrite.  |   |
|  |  |   |
|  | LS: Cream to tan, very fine to microxin,   |   |
|  | very dense.  | VIS: 50   |
|  |  | WT: 9.3   |
|  | SH: Black, carb., with grey shale.   | LCM: 3#   |
| 2  |  |   |
|  |  |   |
|  |  |   |
| -<   | L3: Cream to tan, very finexin, very   |   |
|  | diense with nare free pyrite.  |   |
|  |  |   |
|  | SH: Red, sith, with grey and green.  |   |
|  |  |   |
|  | THE ROBER  |   |
| <del></del>  |  |   |
| 2  |  |   |
|  |  |   |
|  | In wy fresh, wy firely politic.  |   |
|  | WITH THE RESTOR  |   |
|  |  | THE WANTED OF THE   |
|  |  |   |
| 2  |  | BASE KANSAS CITY  |
| 3  |  | -BASE KANSAS CITY   |
| 3  |  | -BASE KANSAS CITY   |
| 3  | The real oligities only with abundant<br>gray and green.   | -BASE KANSAS CITY-  |
| 3  |  | BASE KANSAS CITY  |
|  | go, and green.   |   |
|  | green and green.  The Rock with green and green  | **CFS at 4350' - 30 min.***   |
|  | go, and green.   |   |
|  | हुन्तु कर्य हुन्छा.<br>वस नेब्द, डोन, शरी हुन्तु कर्य हुन्छा<br>क्रोडीट.   | *CFS at 4350' - 30 min.**   |
|  | green and green.  The Rock with green and green  | *CFS at 4350' - 30 min.** WE 41' WE 93  |
|  | gree and green.  Set Read, sithy with grey and green state.  LS: Tan, microstin, very dense.   | *CFS at 4350' - 30 min.**   |
|  | Dec Reet, sifty, with grey and green state.  LS: Tan, microxin, very dense.  LS: Cream to light tan, very fine to  | *CFS at 4350" - 30 min.**  WS: 41* WT: 93. LCW: 26-   |
|  | The Real sith, with gray and green state.  U.S. Tan, microxin, very dense.  L.S. Cream to light tan, very fine to subsin, dense, chky in part. Rare poor   | *CFS at 4350" - 30 min.*  WE 4" WT 93 LOW 25  |
|  | Dec Reet, sifty, with grey and green state.  LS: Tan, microxin, very dense.  LS: Cream to light tan, very fine to  | *CFS at 4350" - 30 min.*  WE 4" WT 93 LOW 25  |
|  | LS: Tan, microxin, very dense.  LS: Cream to light tan, very fine to subsin, dense, chity in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.   | *CFS at 4350" - 30 min.*  WE 4" WT 93 LOW 25  |
|  | LS: Tan, microxin, very dense.  LS: Cream to light tan, very fine to subsin, dense, chiky in part. Rare poor show of heavy oil in very poor vugular  | *CFS at 4350" - 30 min.*  WE 4" WT 93 LOW 25  |
|  | LS: Cream to light tan, very dense.  LS: Cream to light tan, very fine to subsin, dense, chiky in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.  SH: Red and grey.   | **CFS at 4350" - 30 min.**  *********************************   |
|  | LS: Cream to light tan, very fine to subtin, dense, chity in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.  SH: Red and grey.  LS: Tan, finexin, very oolitic with good  | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'   |
|  | LS: Cream to light tan, very dense.  LS: Cream to light tan, very fine to subsin, dense, chiky in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.  SH: Red and grey.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  |
|  | LS: Cream to light tan, very fine to subtin, dense chity in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.  SH: Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair  | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  |
| 000 X X X X X X X X X X X X X X X X X X                  | LS: Cream to light tan, very fine to subtin, dense, chity in part. Rare poor show of heavy oil in very poor vugular porosity. No odor.  SH: Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair interoolitic porosity. Good saturation,   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371 - 4414 - MISRUN - Packer failure   |
| 0 ROP (min/fft) 10 PO (Gds (units) 500                   | SH; Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair intercolitic porosity. Good saturation, weak odor.  | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  |
| 0 ROP (min/fft) 10 V X X X X X X X X X X X X X X X X X X | show of heavy of in very poor vuguar porosity. No odor.  SH: Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair intercolitic porosity. Good saturation, weak odor.  LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor   | MARMATON 4372 (-1243)  DST #1 - Marmaton 4371' - 4414'  MISRUN - Packer failure  TG. C1-C5  |
| 0 ROP (min/H) 10 W                                       | SH: Red and grey.  LS: Tan, finexin, very colitic with good show of free cil in poor to fair intercolitic porosity. Good saturation, weak odor.  LS: Tan, very finexin, colitic in part,   | MARMATON 4372 (-1243)  DST #1 - Marmaton 4371' - 4414'  MISRUN - Packer failure  TG. C1-C5  |
| 0 R0P (min/ft) 10 PY X X X X X X X X X X X X X X X X X X | show of heavy of in very poor vuguar porosity. No odor.  SH: Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair intercolitic porosity. Good saturation, weak odor.  LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor   | MARMATON 4372 (-1243)  DST #1 - Marmaton 4371' - 4414'  MISRUN - Packer failure  TG. C1-C5  |
| 0  | SH: Red and grey.  LS: Tan, finexin, very oolitic with good show of free oil in poor to fair intercolitic porosity. Good saturation, weak odor.  LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414' - MISRUN - Packer failure  TG, C1-C5 1 10 100 1000                                |
| 0 Gds (units) 500  | LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414' - MISRUN - Packer failure  TG, C1-C5 1 10 100 1000                                |
|  | LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414' - MISRUN - Packer failure  TG, C1-C5 1 10 100 1000                                |
| 0 Gds (units) 500  | LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, overy dense, slightly foss. with rare cream, opaque   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414' - MISRUN - Packer failure  TG, C1-C5 1 10 100 1000                                |
| 0 Gds (units) 500  | LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, very dense, slightly foss. with rare cream, opaque fresh chert.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414' - MISRUN - Packer failure  TG, C1-C5 1 10 100 1000                                |
| 0 Gds (units) 500  | LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, overy oolitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, oolitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, very dense, slightly foss. with rare cream, opaque  | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  - IG, C1-C5 - 1 - 10 - 100 - 1000  - CFS at 4414'     |
| 0 Gds (units) 500  | LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor intercolitic porosity. Weak odor.  LS: Tan, very finexin, very dense, slightly foss. with rare cream, opaque fresh chert.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  - TG, C1425  1 10 100 1000  - CFS at 4414'  - WIS: 50 |
| 0 Gds (units) 500  | LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, colitic in part, dense with fair oil saturation in poor interoolitic porosity. Weak odor.  LS: Tan, very finexin, very dense, slightly foss. with rare cream, opaque fresh chert.   | MARMATON 4372 (-1243)  -DST #1 - Marmaton 4371' - 4414'  - MISRUN - Packer failure  - IG, C1-C5 - 1 - 10 - 100 - 1000  - CFS at 4414'     |







TICKET NUMBER\_ LOCATION Oakley Ks FOREMAN\_

# FIELD TICKET & TREATMENT REPORT

| DATE                         | CUSTOMER#                               |                 | ME & NUME   | BER          | SECTION        | TOWNSHIP        | RANGE  | COUNTY        |
|------------------------------|---|-----------------|-------------|--------------|----------------|-----------------|--|---------------|
| 6-26-12                      | 3395                                    | 1 . 1 . 1       | #1          |              | 26             | 15-3            | 350  | Locan         |
| JSTOMER                      | 3342                                    | Lelch           |             | Pense        | 76             | 177             |  |               |
| Bill                         | Bowman                                  | Oil Co          |             | 5WtoRd       | TRUCK#         | DRIVER          | TRUCK#   | DRIVER        |
| AILING ADDRE                 | SS                                      | ,               |             | 23~ .        | 399            | Damon           | ulle   |               |
|                              |   |                 |             | 4N           | 566            | West Fl         | iun  |               |
| ſY ∤                         |   | STATE ZIF       | CODE        | 1/47         |                |                 | ,  |               |
| 2548.8                       | FELLIN                                  |                 |             | п            |                | 1               |  | //            |
| B TYPE 50                    | Face                                    | HOLE SIZE 12    | 14          | HOLE DEPTH   | 241            | CASING SIZE & V | VEIGHT82/  | <b>%</b> −20# |
| SING DEPTH                   | 240                                     | DRILL PIPE      |             | _TUBING      |                |                 | OTHER  | (, , )        |
| URRY WEIGH                   | T_15.2                                  | SLURRY VOL      |             | WATER gal/s  | k              | CEMENT LEFT in  |  | to 20         |
| SPLACEMENT                   | 14                                      | DISPLACEMENT PS | SI          | MIX PSI      |                | RATE            | 3PM  | •             |
| MARKS:                       | SaFety n                                | losting, x      | rig up      | on Ho        | #2. (          | INC Casi        | ic on but  | tou           |
| Mix                          | 75 SKS (                                | 30m, 3%         | 16-50       | 6 Co 1, I    | raplace        | 14 BBI H        | O, Shut  | iù            |
| 8                            |   | 10              |             | _ ^          | 7              |                 |  |               |
|                              |   | <u> </u>        | emont       | Did          | Circ           |                 |  |               |
|                              |   | 2               |             |              | <u> </u>       |                 |  |               |
|                              |   | ADDIOX          | 58          | BL to F      | <u> </u>       | 1               |  |               |
|                              |   | 1-1             |             | 2            |                |                 |  |               |
| 12.13.0                      |   |                 |             |              |                |                 | 1  |               |
|                              |   |                 |             |              |                | Ihan            | k 700  |               |
| T, F = 4                     |   |                 |             |              |                | Walt-Joe        | + even   |               |
| ACCOUNT                      | QUANITY                                 | or UNITS        | DE          | SCRIPTION of | SERVICES or P  | RODUCT          | UNIT PRICE                                       | TOTAL         |
| 54615                        | ı                                       | PI              | UMP CHARC   | E .          |                | u u             | 1,085-00   | 1,0850        |
| 5406                         | 4.5                                     |                 | ILEAGE      |              |                |                 | 500  | 225-          |
| 11045                        | 175                                     | SKS             | CA 105      | s A Ca       | - <del>-</del> |                 | 1765   | 3,088         |
| - <del></del>                | 119                                     | E #             | - 1         | com Chle     |                |                 | 189  | 111125        |
| 1102                         | 33                                      | O #             | Gel         | (D)M CALC    | 11.162.1       |                 | .25  | 895           |
| 11183                        | 30                                      | 23              |             | 71.          | Delwery        |                 | 167  | 6183          |
| 5407A                        | 01,                                     | 43              | (on pr      | · losse      | Veriory        |                 | 11-  | 000           |
|                              |   |                 |             |              | 2              |                 |  |               |
| Server and the server of the | Approved the english retresponded their |                 |             |              |                |                 |  |               |
|                              |   |                 |             |              |                |                 | <del>                                     </del> |               |
|                              |   |                 |             |              |                |                 | 1 2  |               |
|                              |   |                 |             |              |                |                 |  |               |
| \                            |   |                 |             |              |                |                 |  |               |
|                              |   |                 |             |              |                |                 | -  |               |
|                              |   |                 |             | - A          |                |                 |  |               |
|                              |   |                 |             |              | -              |                 | +  | E PILA        |
|                              |   |                 | <del></del> |              |                |                 |  | 3,340         |
|                              |   |                 |             |              | 055 10%        | Disc            |  | 11 0010       |
|                              |   |                 |             |              |                |                 | E. Buch  | 17 70h -      |
|                              |   |                 |             |              |                |                 | 1,000  | 252 6         |
| vin 3737                     |   |                 |             |              |                | 250801          | SALES TAX ESTIMATED                              | 253.5         |

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form



| TICKET NUMBER  | 36721 |
|----------------|-------|
| LOCATION O AND | ley   |
| FOREMAN FOT-   | 14    |

| Stage & Steam & | - |       | - 0 | color than have | A      | A 1000 P. 1 4000 | the limit has been |     |
|-----------------|---|-------|-----|-----------------|--------|------------------|--------------------|-----|
| On I be I       |   | ICKET | ~   |                 | /\ I N |                  |                    | 101 |
|                 |   |       |     |                 |        |                  |                    |     |

|                                       | or 800-467-8676                           |                                       | The state of       | CEMEN   | . 77            |                 |            | K5   |
|---------------------------------------|---|---------------------------------------|--------------------|---|-----------------|-----------------|------------|--|
| DATE                                  | CUSTOMER#                                 | WELL NAME & NUMBER                    |                    | SECTION   | TOWNSHIP        | RANGE           | COUNTY     |  |
|                                       | 3395                                      | lewel                                 | K #1               |   | 26              | 155             | 350        | LOGAN  |
| CUSTOMER                              |   |                                       |                    | Pance   |                 |                 |            |  |
| Bull Be                               | ESS C                                     | 0.1 (0.                               |                    | 5 w   | TROCK#          | DRIVER          | TRUCK#     | DRIVER                                       |
| MAILING ADDR                          | ESS                                       | * - 4                                 | -                  | 1   | 463             | Jerry Y         |            | N  |
|                                       | **  |                                       |                    | Rd 23.  | 566             | Wes F           |            |  |
| CITY                                  |   | STATE                                 | ZIP CODE           | 4 N.  |                 | ,               | 4          | 8  |
| JOB TYPE                              | ATA                                       | HOLE SIZE                             | 8166               | HOLE DEPTH  | 14721           | CASING SIZE & V | VEIGHT     |  |
|                                       | 4   | DRILL PIPE                            | 41/2               | _TUBING   |                 | 5. 281          | OTHER      | dra x  |
| SLURRY WEIG                           | HT  |                                       |                    | WATER gal/s   | ik .            | CEMENT LEFT in  | CASING     |  |
|                                       |   |                                       | T PSI MIX PSI RATE |   |                 |                 |            |  |
|                                       | ocody we                                  |                                       |                    | AND THE RESERVE AND ADDRESS OF THE PARTY OF |                 | d plus a.       | - and ena  | Q  |
| 2 6 4                                 | are of Wes                                | 6                                     | , ,,,              | 75. 15.   | is a comment    | D P 22 M        | 5 010 0110 |  |
|                                       | @ 235                                     |                                       |                    | -   | 20-4-           | 60140pos        | 400 1      | 1/12010                                      |
| 100945                                |   |                                       |                    |   | - & ~ , _ , _ , | 6014005         | الم حقل    | 14 1650                                      |
| 40 5kg                                | @ 300                                     | 2 / .                                 |                    |   |                 |                 |            |  |
| 10 SFS                                |   | " w/plv.                              | 5                  |   |                 |                 |            |  |
| 30 5 KG                               |   |                                       |                    |   |                 |                 |            |  |
| 155Ke                                 | se m                                      | Н                                     |                    |   |                 |                 |            |  |
|                                       |   |                                       |                    |   |                 |                 |            |  |
| *                                     |   | * * * * * * * * * * * * * * * * * * * |                    |   | 1               | hants Fuz       | ish ferec  | <u>.                                    </u> |
| ACCOUNT                               | QUANITY                                   | or UNITS                              | DE                 | SCRIPTION o   | UNIT PRICE      | TOTAL           |            |  |
| 5405N                                 |   |                                       | PUMP CHARG         | E   | 132500          | 1322            |            |  |
| 5406                                  | 4   |                                       | MILEAGE            |   | 500             | 222 es          |            |  |
| 5407A                                 | 9   | .5 don                                | TONN               | 1. lage   | 167             | 714.15          |            |  |
| 1131                                  | 72  | .0 sks                                | 60(40              | 005   | 1510            | 3322            |            |  |
| 1118 B                                |   | 57 <del>*</del>                       | Bendon             |   | 1,25            | 189 2           |            |  |
| 1107                                  |   | 5 ×4                                  | £10.5              |   |                 |                 | 283        | 15510  |
| 4432                                  | p. W ment on the Mill Dipolitics, getting |                                       |                    |   | ر مالم حرب      |                 | 9600       | 9600   |
| 1130                                  |   | <u> </u>                              | 0 0                | weed c  | A PIOS          |                 | T          |  |
| · · · · · · · · · · · · · · · · · · · |   |                                       | W.                 |   | ,394            | sugdatal        |            | 6026 5                                       |
|                                       |   |                                       |                    |   |                 |                 | 1          |  |

Ravin 3737 AUTHORIZTION Steven

TITLE TOOLPUSHER

ESTIMATED TOTAL DATE 7-4-12

I acknowledge that the payment terms, unless specifically amended in writing on the front of the form or in the customer's account records, at our office, and conditions of service on the back of this form are in effect for services identified on this form

251061

SALES TAX

Conservation Division Finney State Office Building 130 S. Market, Rm. 2078 Wichita, KS 67202-3802



Phone: 316-337-6200 Fax: 316-337-6211 http://kcc.ks.gov/

Mark Sievers, Chairman Thomas E. Wright, Commissioner Sam Brownback, Governor

August 01, 2012

William "Bill" Bowman Bowman, William F. dba The Bill Bowman Oil Company 2640 W RD NATOMA, KS 67651-8816

Re: ACO1

API 15-109-21104-00-00

Welch 1

NE/4 Sec.26-15S-35W Logan County, Kansas

### **Dear Production Department:**

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully, William "Bill" Bowman