Confidentiality Requested: Yes No

KANSAS CORPORATION COMMISSION **OIL & GAS CONSERVATION DIVISION**

1171936

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: | |
| Address 2: | Feet from North / South Line of Section |
| City: State: Zip:+ | Feet from Cast / West Line of Section |
| Contact Person: | Footages Calculated from Nearest Outside Section Corner: |
| Phone: () | |
| CONTRACTOR: License # | GPS Location: Lat:, Long: |
| Name: | (e.g. xx.xxxxx) (e.gxxx.xxxxx) |
| Wellsite Geologist: | Datum: NAD27 NAD83 WGS84 |
| Purchaser: | County: |
| Designate Type of Completion: | Lease Name: Well #: |
| | Field Name: |
| New Well Re-Entry Workover | Producing Formation: |
| | Elevation: Ground: Kelly Bushing: |
| Gas D&A ENHR SIGW | Total Vertical Depth: Plug Back Total Depth: |
| OG GSW Temp. Abd. | Amount of Surface Pipe Set and Cemented at: Feet |
| CM (Coal Bed Methane) | |
| 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 #: | Location of huid disposal if hadred offsite. |
| GSW Permit #: | Operator Name: |
| | Lease Name: License #: |
| Spud Date or Date Reached TD Completion Date or | Quarter Sec TwpS. R East West |
| Recompletion Date Recompletion Date | 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 | 1171936 |
|---|----------------------------|---|
| Operator Name: | Lease Name: | Well #: |
| Sec TwpS. R □ East □ West | County: | |
| INCTRUCTIONS. Charge important tang of formations paratrated Da | tail all carea. Bapart all | final appias of drill stome tests giving interval tested, time test |

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

| Drill Stem Tests Taken (Attach Additional She | acts) | Yes No | L | og Formatio | n (Top), Depth and | d Datum | Sample |
|--|----------------------|------------------------------------|----------------------|------------------|--------------------|------------------|-------------------------------|
| Samples Sent to Geolog | | Yes No | Nam | e | | Тор | Datum |
| Cores Taken Electric Log Run | | Yes No | | | | | |
| List All E. Logs Run: | | | | | | | |
| | | | | | | | |
| | | CASING Report all strings set-c | RECORD Ne | | on, etc. | | |
| Purpose of String | Size Hole Drilled | Size Casing Set (In O.D.) | Weight Lbs. / Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | ADDITIONAL | CEMENTING / SQL | JEEZE RECORD | | | |
| Purpose: Perforate | Depth Top Bottom | Type of Cement | # Sacks Used | | Type and Pe | ercent Additives | |
| Protect Casing | | | | | | | |
| Plug Off Zone | | | | | | | |
| Did you perform a hydraulic | fracturing treatment | on this well? | | Yes | No (If No, skip | o questions 2 an | d 3) |
| | , | raulic fracturing treatment ex | , 0 | | | question 3) | |
| Was the hydraulic fracturing | treatment informatio | n submitted to the chemical c | lisclosure registry? | Yes | No (If No, fill o | out Page Three o | of the ACO-1) |

| | | | | | e | F | | | Depth |
|-------------|----------------|---|--|---|---|---|---|--|--|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| Siz | e: | Set At | : | Packe | r At: | Liner R | | No | |
| d Productio | on, SWD or ENH | ۶. | Producing Meth | | ping | Gas Lift | Other (Explain) | | |
| | Oil Bb | ls. | Gas | Mcf | Wate | er | Bbls. | Gas-Oil Ratio | Gravity |
| ION OF G | AS: | | Ň | IETHOD (| OF COMPLE | TION: | | PRODUCTION IN | TERVAL: |
| | | | Open Hole | Perf. | | CO-5) | Commingled (Submit ACO-4) | | |
| 1 | ION OF G | Size: Size: Droduction, SWD or ENHF Oil Bb | Specify Footage of Size: Set At Size: Set At Oil Bbls. ION OF GAS: d Used on Lease | Specify Footage of Each Interval Periods Size: Set At: Size: Set At: OProduction, SWD or ENHR. Producing Meth Flowing Oil Bbls. Gas ION OF GAS: OPen Hole Open Hole | Specify Footage of Each Interval Perforated Size: Set At: Packer Size: Set At: Packer Oroduction, SWD or ENHR. Producing Method: Flowing Pump Oil Bbls. Gas Mcf ION OF GAS: METHOD of d Used on Lease | Size: Set At: Packer At: d Production, SWD or ENHR. Producing Method: Image: Display training in the set of | Specify Footage of Each Interval Perforated Specify Footage of Each Interval Perforated Size: Size: Set At: Production, SWD or ENHR. Production, SWD or ENHR. Production SWD or ENHR. Oil Bbls. Gas METHOD OF COMPLETION: d Used on Lease Open Hole Perf. Dually Comp. (Submit ACO-5) | Specify Footage of Each Interval Perforated (Amount and Kind (Amount and Kind (Amount and Kind Size: Set At: Size: Set At: Packer At: Liner Run: Yes [] d Production, SWD or ENHR. Producing Method: Flowing Pumping Gas Mcf Water Bbls. ION OF GAS: METHOD OF COMPLETION: d Used on Lease Open Hole Perf. Dually Comp. Commingled (Submit ACO-5) | Specify Footage of Each Interval Perforated (Amount and Kind of Material Used) (Amount and Kind of Material Used) Size: Set At: Size: Set At: Packer At: Liner Run: Yes No I Production, SWD or ENHR. Producing Method: Flowing Pumping Gas Mcf Water Bbls. Gas Mcf Vater Bbls. Gas: METHOD OF COMPLETION: Used on Lease Open Hole Open Hole Perf. Dually Comp. Commingled (Submit ACO-5) Commingled Commingled |

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

| Form | ACO1 - Well Completion |
|-----------|--------------------------|
| Operator | H & C Oil Operating Inc. |
| Well Name | Shaw 9-1 |
| Doc ID | 1171936 |

All Electric Logs Run

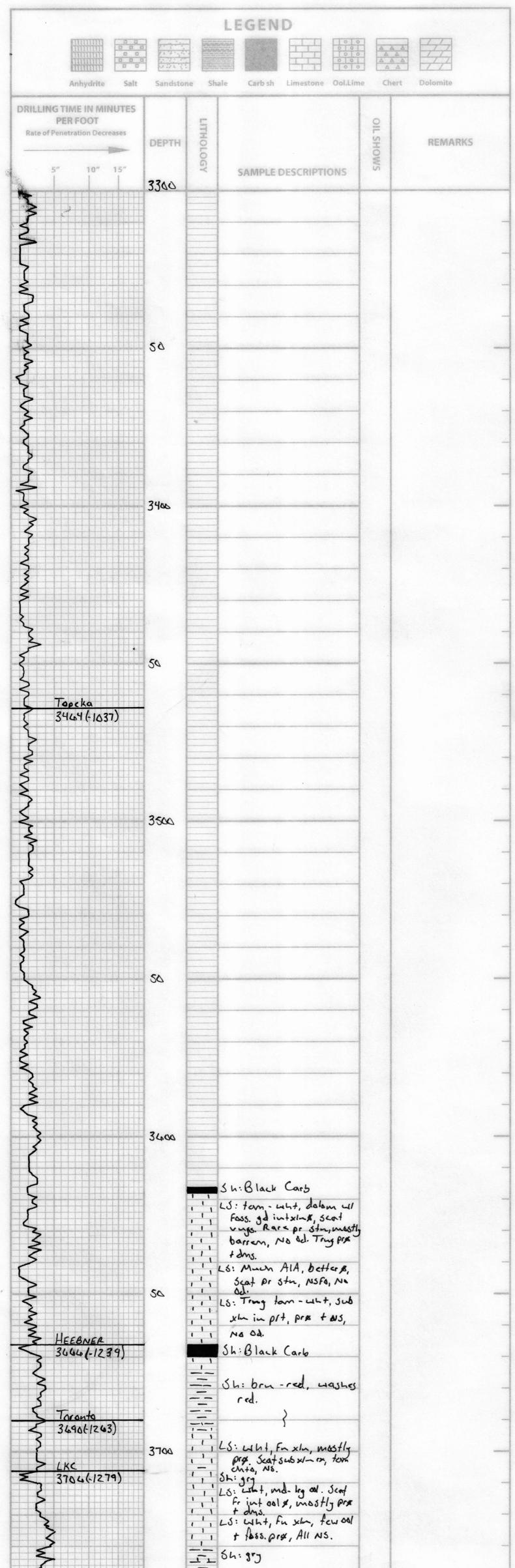
| Dual Induction |
|---------------------------|
| Dual Compensated Porosity |
| Microresistivity |
| Sonic Cement Bond |

| Form | ACO1 - Well Completion |
|-----------|--------------------------|
| Operator | H & C Oil Operating Inc. |
| Well Name | Shaw 9-1 |
| Doc ID | 1171936 |

Casing

| Purpose Of String | Size Hole Drilled | Size Casing Set | Weight | Setting Depth | Type Of Cement | Number of Sacks Used | Type and Percent Additives |
|----------------------|----------------------|-----------------------|--------|------------------|-------------------|----------------------------|----------------------------------|
| surface | 12.25 | 8.625 | 23 | 262 | common | 160 | 3%cc, 2%gel |
| Production | 7.875 | 5.50 | 14 | 3944 | Q Pro C | 170 | 10% SALT, 5% Gilsonite |
| | | | | | | | |
| | | | | | | | |

| | Consulting Petroleum Geologist | GEOLOGIC | | | DRILL | L STEM TES | ESTS | |
|---|---|----------|---------------|------------------|----------------|--------------------|------------|----------------|
| Marc Downing 1411 Was Hays Phone: 620-428-1 | 1411 Washington Circle Hays, Ks 67601 Phone: 620-428-1356 (cell) 785-621-2286 | REPORT | No. Interval | val IFP/Time | ISIP/Time FFP/ | FFP/Time FSIP/Time | e HP-FHP | RECOVERY |
| COMPANY Ht+C Dil Operating, Inc. | 1 | 23 | | | | · · · · · · | | |
| Well Shaw # 9-1 FIELD Wildcat | | | | | | | | |
| ATION 1320' FSL & 330' F | PRODUCTION LKC | 2427 | | | , | | | |
| COUNTY Graham | D | 2422 | | | | | | |
| 7 | Drilling Measured From: KB | 8 | | | | | | |
| | Samples Saved From 3400 Brillian Time From 3300 | | | | | | | |
| OPERATOR HAC Oil Operating, Inc. | rom: 34 | To: | | | | | | |
| RECORD | 0 1 | 5. | | | | | | |
| 544 @ 242 | DIC DIC | 4 | | | | - | - | |
| TOTAL DEPTH LOG: 3951" | MEL MAY | | REMARKSAND RE | | n, if has | decided | to set | 5/2 production |
| FORMATION TOPS AND ST | RUCTURAL POSITION | ION | casing | g for completion | letian. | | | |
| Top Anhydrife 2115 | ELECTRIC LOG SUB-SEA TOP DATUM | -SI | <u> </u> | Perforate: | | | | |
| J | | ÷ i | | | 3840-45 | | | - |
| HEEBNER Joronto 3640 LAC 3704 | 3666 -1239 3692 -1239 3708 -1281 | | | ~ | 3883- | | (Betore At | Abauclanment) |
| REFERENCE WELL FOR STRUCTURE Much | | | | | | | | |
| Bront # 1-9 NW-SE-SE | n Urilling See, 9-75-23m | 75-234 | | | | | | |
| | | | | | | | | |



1 LS: Lint, Irg Foss + oal. Fr int 1 al LS: Lint, Irg Foss + oal. Fr int 1 al xin + vings will pr stin + hing 1 al SFO. About org + tom outs, No ad 50 AN MAN - Sh: brn • • 1 LS: whith For xh. Sub xh in prt, mostly pre, NS. Fromt tom. org cute. Shidrk grg 1 CFS O 1 1 1 LS: whit, Faxla, sittly dolan. 1 1 gd intxing, chiky in prt. 1 1 rare pr stm, NSFO, NO Od. 1 1 mostly barren. whit chits. 1 LS: whit, Fn xln, prost 1 1 1 1 dms. Scat whit ents, Vis: 58 Lit: 9.1 3800 1 1 D5T#1 1 NS. 1 3813 - 3875 ł 1 LS: what, Fu- md xh hug Stut SFO in pr &, NO Od. 2-3 rx. 1 45 - 45 - 45 - 45 1 1 I.F. - 33/4" blow 1 Sh: Black Carb F.F. - 33/4" bland 1_1 0 IFP: 19-42 - Shigry will brn - LS: what, and xh, Fass. pr-5 FFP: 43-42 T SIP: 408-399 · · · Fr vinge, Fr blik stin, hug · · SFO, No od. Tring pre · · · + dins. He : 1957 - 1854 Rec: 1 1 3' FO # -- Shi gry 50 75' MO 40%0 1 1 .1 - Sh: brn - LS: unt- It forn, oal. Fr-gd in x1m K, gd It brn sat stm, fr-gd Sfo, Fr 6d. BHT : 107 : 11 1 CFS O - Sh: ben ulgry, scat - LS: what, md x/n. Many sub 1 x/a-ch/ky or. 34 or with hug - str., rare hug solid SFO Node 1 LS: what, Fn-md x/n, sub xh 1 in prt, All NS. 1 1 3900 BKC T 3902(-1475) CFS 0 =- Sh: br - red, scat Ş gra =_ Sh: bru- red 1 LS: tom - wht, md xlm, 1 1 SIHIJ mtb, dms - Sh: gry ---helaching 1 1 LS: AIA 50 3950 (-1523) RTD : 3951(-1524) LTD:



DRILL STEM TEST REPORT

Prepared For: H&C Oil Operating, Inc.

PO Box 86 Plainville, KS 67663

ATTN: Marc Downing

Shaw #9-1

9 7s 23w Graham KS

Start Date: 2013.11.26 @ 18:53:00 End Date: 2013.11.27 @ 03:14:00 Job Ticket #: 53599 DST #: 1

Trilobite Testing, Inc PO Box 362 Hays, KS 67601 ph: 785-625-4778 fax: 785-625-5620

| Direct of the product of the produ | 10x- | | DRILL STEM TE | S | T REPO | ORT | | | | |
|---|-----------------------------|--|--|----------|--------|----------------------|---------------|-------------|-----------------------------|------------------|
| Pairwille, KS 67663 ATN: Marc Downing Job Ticke: 53599 DST#: 1 ATN: Marc Downing Test Start: 2013.11.26 (@ 18:53:00) GENERAL INFORMATION: Formation: LKC H-J Deviate ite: No. Witpstock: ft (KB) Time Tool Openet: 312:53 Test Type: Conventional Bottom Hole (Initial) Time Test Ended: 03:14:00 Test Type: Conventional Bottom Hole (Initial) Time Test Ended: 3313:00 ft (KB) To 3875.00 ft (KB) (TVD) Total Depti: 3375.00 ft (KB) (TVD) Hole Diameter: 7.88 inchesHole Condition: Good KB to GR/OF: 5.00 ft Start Date: 2013.11.26 End Time: 2013.11.27 Last Cable: 2013.11.27 Start Date: 2013.11.26 End Time: 03:14:00 Time Or Bim: 2013.11.27 (B 00:42:00) TEST COMMENT: F: Weak blow, Built to 3 34" over 45 mins. FF: Weak blow, Built to 3 34" over 45 mins. Time (Min.) Time Or Bim: 2013.11.27 (B 00:42:00) Test Not blow back over 45 mins. FF: Weak blow, Built to 3 34" over 45 mins. FF: Weak blow, Built to 3 34" over 45 mins. Time (Min.) Time (Min.) Time (Min.) Annotation 113 407.65 | | LEODITE | H&C Oil Operating, Inc. | | | 9 7 | 's 23w G | rahar | n KS | |
| Job Inc.et: 33399 Job Inc.et: 33399 GENERAL INFORMATION: Formation: LKC H-J Deviated: No Whipstock: ft (KB) Time Test Ended: 03:14:00 Time Test Ended: 03:14:00 Tester: Chuck Kreutzer Jr. Unit No: 61 Tester: Chuck Kreutzer Jr. Unit No: 61 Tester: Chuck Kreutzer Jr. Unit No: 61 Serial #: 8673 Inside 2013.11.26 Pess@Rundpeth: 2242.00 ft (KB) Yess@Rundpeth: 2242.pt (@) Start Date: 2013.11.27 Start Time: 18:53:01 EST COMMENT: F: Weak blow, Built to 3:34" over 45 mins. St: No blow back over 45 mins. St: No blow back over 45 mins. F: Weak blow, Built to 3:34" over 45 mins. F: Neak blow, Built to 3:34" over 45 mins. F: No blow back over 45 mins.< | | ESTING , INC. | | | | | | | | |
| GENERAL INFORMATION: Generation: LKC H.J Deviated: No Whipstock: ft (KB) Time Tool Opened: 21:25:30 Time Tool Opened: 21:25:30 Time Test Effect: 03:14:00 Test Type: Conventional Bottom Hole (Initial) Tester:: Chuck Kreutzer Jr. Time Test Effect: 03:14:00 Interval: 3813.00 ft (KB) To 3875.00 ft (KB) (TVD) Total Depth: 3875.00 ft (KB) (TVD) Capacity: 2427.00 ft (KB) 2422.00 ft (KB) 2422.00 ft (KB) Serial #: 8673 Inside Press@RunDepth: 62:42.psig @ 3816.00 ft (KB) Start Date: 2013.11.26 End Date: 2013.11.27 Time OFI Btm: 2013.11.27 @ 00:42:00 Start Date: 2013.11.26 End Date: 2013.11.27 Time OFI Btm: 2013.11.27 @ 00:42:00 Start Date: 2013.11.27 @ 00:42:00 | | | | | | | | | _ | |
| Formation: LKC HJ Deviated: No Whipstock: ft (KB) Test Trype: Conventional Bottom Hole (Initial) Time Tool Opened: 21:25:30 Time Test End tool: 0.314.00 Tester:: Onuck Kreutzer Jr. Interval: 3813.00 ft (KB) To 3875.00 ft (KB) (TVD) Tester:: Onuck Kreutzer Jr. Total Depth: 3875.00 ft (KB) (TVD) 2422.00 ft (KB) 2422.00 ft (KB) Piese@PanDepth: 62.42 psig @ 3816.00 ft (KB) Capacity:: 8000.00 psig Start Date: 2013.11.26 End Date: 2013.11.27 00.42.00 TEST COMMENT: F: Weak blow, Built to 3 3/4" over 45 mins. BI: No blow back over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. BI: No blow back over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 1/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FF: Weak bl | alimite. | | ATTN: Marc Dow ning | | | Tes | t Start: 20 |)13.11.2 | 26 @ 18:53:00 |) |
| Deviated: No Whipstock: ft (KB) Test Type: Conventional Bottom Hole (Initial) Time Tool Opened: 21:25:30 Test Type: Conventional Bottom Hole (Initial) Time Tool Opened: 21:25:30 Unit No: 61 Interval: 3813.00 ft (KB) To 3875.00 ft (KB) (TVD) 2422.00 ft (KB) Total Depin: 3875.00 ft (KB) (TVD) 2422.00 ft (KB) Serial #: 8673 Inside Reference Bevatons: 2427.00 ft (KB) Press@RunDepth: 62.42 psig 3816.00 ft (KB) Capacity:: 8000.00 psig Start Date: 2013.11.27 Last Calib :: 2013.11.27 2013.11.27 Start Time: 18:53.01 End Time: 03:14.00 Time On Btrn: 2013.11.27 @ 00.42:00 TEST COMMENT: F: Weak blow, Built to 3 3/4" over 45 mins. ESt No blow back over 45 mins. ESt No blow back over 45 mins. St No blow back over 45 mins. FSt No blow back over 45 mins. FSt No blow back over 45 mins. Time Of Btrn: 2010.17 Open To Flow (1) 116 42.23 104.76 60 Shut-hr(1) 113 40.45 Shut-hr(2) 116 67.75 | - | | | | | | | | | |
| Total Depth: 3875.00 ft (KB) (TVD) 2422.00 ft (CF) Hole Diameter: 7.88 inchesHole Condition: Good KB to GRUCF: 5.00 ft Serial #: 8673 Inside Rese@hunDepth: 62.42 psig @ 3816.00 ft (KB) Capacity:: 8000.00 psig Start Date: 2013.11.26 End Date: 2013.11.27 Time On Bitm: 2013.11.27 <t< td=""><td>Deviated: Time Tool Open</td><td>No Whipstock: ed: 21:25:30</td><td>ft (KB)</td><td></td><td></td><td>Tes</td><td>ter:</td><td>Chuck ł</td><td></td><td>Hole (Initial)</td></t<> | Deviated: Time Tool Open | No Whipstock: ed: 21:25:30 | ft (KB) | | | Tes | ter: | Chuck ł | | Hole (Initial) |
| Press@RunDepth: 62.42 psig @ 3816.00 ft (KB) Capacity: 8000.00 psig Start Date: 2013.11.26 End Date: 2013.11.27 Last Calib.: 2013.11.26 @ 21:04:30 Start Time: 18:53:01 End Time: 03:14:00 Time On Btm 2013.11.27 @ 00:42:00 TEST COMMENT: F: Weak blow, Built to 3 3/4" over 45 mins. St. No blow back over 45 mins. F: Weak blow, Built to 3 3/4" over 45 mins. F: Weak blow, Built to 3 3/4" over 45 mins. FS: No blow back over 45 mins. FS: Weak blow, built to 3 3/4" over 45 mins. Time Off Btm 2013.11.27 @ 00:42:00 PRESSURE SUMMARY Overset vs. Time Pressure (fig) Time Off Btm 2013.11.27 @ 00:42:00 PRESSURE SUMMARY Overset vs. Time Time Off Btm: 2013.11.27 @ 00:42:00 | Total Depth: | 3875.00 ft (KB) (T | /D) | | | Ref | | | 2422.0 | 00 ft (CF) |
| Si: No blow back over 45 mins. FF: Weak blow, Built to 3 3/4" over 45 mins. FSI: No blow back over 45 mins. PRESSURE SUMMARY Time Pressure (Min.) 0 1957.42 100.17 Open To Flow (1) 5 nut-In(1) End Shut-In(1) Final Hydro-static 116 42.93 104.56 Open To Flow (2) 5 nut-In(2) Final Hydro-static 116 42.93 104.56 Shut-In(2) Final Hydro-static 116 42.93 104.56 Shut-In(2) Final Hydro-static 117 Open To Flow (2) 5 nut-In(2) Final Hydro-static 107.98 Final Hydro-static | Press@RunDep Start Date: | oth: 62.42 psig 2013.11.26 | End Date: | 2 | | Last Cali Time On | b.: Btm: 2 | | 2013.11.2 1.26 @ 21:04:3 | 27 30 |
| Image: Note of the second se | TEST COMM | ISI: No blow bacl FF: Weak blow , I | < over 45 mins. Built to 3 3/4" over 45 mins. | | | | | | | |
| Imme Pressure Temp Annotation Imme (Min.) (ligg F) initial Hydro-static 00 1957.42 97.82 100.17 Open To Flow (1) 113 407.85 104.76 End Shut-In(1) 116 42.93 104.56 Open To Flow (2) Shut-In(2) End Shut-In(2) End Shut-In(2) End Shut-In(2) End Shut-In(2) Final Hydro-static 118 1856.00 107.98 Final Hydro-static Gas Rates Chee (inches) Presure (psig) Gas Rate (Mcd/d) 75.00 Hmco-60%o40%m 0.78 | | | | | | | | | | |
| Image: constraint of the second se | 2000 - | | | | | | | Ann | otation | |
| Image: constraint of the second se | 1750 | | | | | 1957.42 | 97.82 | | • | |
| Image: constraint of the second se | 1500 | | 90 | | | | | | | |
| Image: Second control of the second | | | | | - | | | | . , | |
| 70 70 <td< td=""><td></td><td></td><td></td><td>mpere</td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | | | | mpere | | | | | | |
| Image: Second | | | | ure (de) | | | | | | |
| Length (ft) Description Volume (bbl) 75.00 Hmco-60%o40%m 0.78 | | STM THE (Has) | | IP) | | | | | | |
| 75.00 Hmco-60%o40%m 0.78 | | Recovery | | _ | | | Ga | l s Rate | es | |
| | Length (ft) | Description | Volume (bbl) | | | | Choke (i | nches) | Pressure (psig) | Gas Rate (Mcf/d) |
| 3.00 free oil-100%o 0.04 | | | | | | | | | | |
| | 3.00 | free oil-100%o | 0.04 | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | DRILL STEM TES | T REPO | ORT | | | |
|--|---|------------------------|--|-------------------------------|---------------------|-----------------------------------|
| | H&C Oil Operating, Inc. | | 9 7s 23w | Graham | KS | |
| ESTING , INC | PO Box 86 Plainville, KS 67663 | | Shaw #9 | | DOT | ц. д |
| | ATTN: Marc Dow ning | | Job Ticket: Test Start: | 2013.11.26 | DST# @ 18:53:00 | |
| GENERAL INFORMATION: | | | | | | |
| Formation:LKC H-JDeviated:NoWhipstock:Time Tool Opened:21:25:30Time Test Ended:03:14:00 | ft (KB) | | Test Type: Tester: Unit No: | Conventior Chuck Kre 61 | | Hole (Initial) |
| Interval:3813.00 ft (KB) To38Total Depth:3875.00 ft (KB) (TVHole Diameter:7.88 inches Hole | | | Reference KI | Elevations: B to GR/CF: | 2422.0 | 00 ft (KB) 00 ft (CF) 00 ft |
| Serial #:8651OutsidePress@RunDepth:psigStart Date:2013.11.26Start Time:18:53:01 | 3816.00 ft (KB) End Date: End Time: | 2013.11.27 03:14:30 | Capacity: Last Calib.: Time On Btm: Time Off Btm: | | 8000.0 2013.11.2 | 00 psig 27 |
| FSI: No blow bac | x over 45 mins. Built to 3 3/4" over 45 mins. k over 45 mins. inne | 1 | PRESSI | JRE SUMI | MARY | |
| BOSI Pressee BOSI Pressee BOSI Pressee COULD IN THE INFORMATION OF INTERNATION | 27 Wed 3W | Time (Min.) | Pressure Temp (psig) (deg F | Annota | | |
| Recovery | | | G | Sas Rates | | |
| Length (ft) Description | Volume (bbl) | | Chok | æ (inches) Pres | sure (psig) | Gas Rate (Mcf/d) |
| 75.00 Hmco-60%o40%m 3.00 free oil-100%o | 0.78 0.04 | | | | | |
| | | | | | | |

| $\Delta \widehat{O} \wedge \mathbf{T}$ | RILOE | DITE | DRIL | L STEM TEST | REPOR | т | TOOL DIAGRAM |
|--|----------|------------|-------------|---------------------|-----------|--------------------------|--------------|
| (1444) L | _ | | | Operating, Inc. | | 9 7s 23w Graham K | S |
| | ES1 | TING , INC | PO Box 8 | 6 | | Shaw #9-1 | |
| | | | Plainville, | KS 67663 | | Job Ticket: 53599 | DST#:1 |
| NON . | | | ATTN: N | larc Dow ning | | Test Start: 2013.11.26 @ | 0 18:53:00 |
| Tool Information | ı | | Į | | | | |
| Drill Pipe: | Length: | 3778.00 ft | Diameter: | 3.80 inches Volume: | 53.00 bbl | Tool Weight: | 2000.00 lb |
| Heavy Wt. Pipe: | Length: | 0.00 ft | Diameter: | 0.00 inches Volume: | 0.00 bbl | Weight set on Packer: | 20000.00 lb |
| Drill Collar: | Length: | 30.00 ft | Diameter: | 2.25 inches Volume: | 0.15 bbl | Weight to Pull Loose: | 45000.00 lb |
| | _ | | | Total Volume: | 53.15 bbl | Tool Chased | 2.00 ft |
| Drill Pipe Above KE | | 15.00 ft | | | | String Weight: Initial | 40000.00 lb |
| Depth to Top Pack | | 3813.00 ft | | | | Final | 40000.00 lb |
| Depth to Bottom Pa | acker: | ft | | | | | |
| Interval between F | Packers: | 62.00 ft | | | | | |
| Tool Length: | | 82.00 ft | | | | | |
| Number of Packers | s: | 2 | Diameter: | 6.75 inches | | | |
| Tool Comments: | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Tool Description | Length (ft) | Serial No. | Position | Depth (ft) | Accum. Lengths | |
|------------------|-------------|------------|----------|------------|----------------|-------------------------|
| Shut In Tool | 5.00 | | | 3798.00 | | |
| Hydraulic tool | 5.00 | | | 3803.00 | | |
| Packer | 5.00 | | | 3808.00 | 20.00 | Bottom Of Top Packer |
| Packer | 5.00 | | | 3813.00 | | |
| Stubb | 1.00 | | | 3814.00 | | |
| Perforations | 2.00 | | | 3816.00 | | |
| Recorder | 0.00 | 8673 | Inside | 3816.00 | | |
| Recorder | 0.00 | 8651 | Outside | 3816.00 | | |
| Blank Spacing | 31.00 | | | 3847.00 | | |
| Perforations | 25.00 | | | 3872.00 | | |
| Bullnose | 3.00 | | | 3875.00 | 62.00 | Bottom Packers & Anchor |

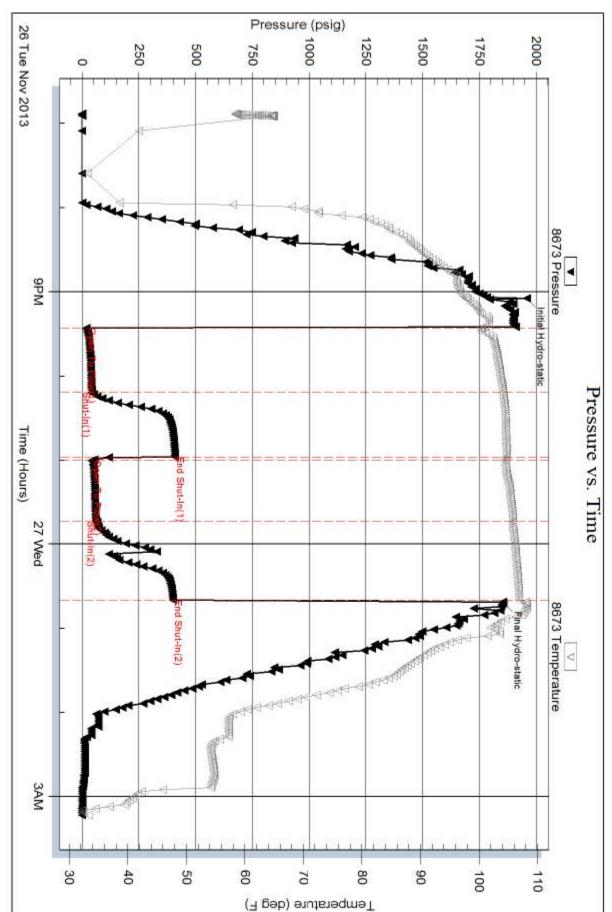
Total Tool Length: 82.00

| 10h | | DRI | LL S | STEM TEST I | REPORT | - | | FLUID S | UMMARY |
|---|-------------------|---------------------|---------------------------|---|-----------|---------------------------|---------------------------|---------|----------------|
| | RILOBITE | H&C O | il Opera | iting, Inc. | | 9 7s 23w (| Graham KS | 6 | |
| | ESTING , INC. | PO Box Plainvill | | 67663 | | Shaw #9- Job Ticket: 5 | | DST#:1 | |
| 1 | | ATTN: | Marc | Dow ning | | | 2013.11.26 @ | | |
| Mud and Cu | shion Information | | | | | | | | |
| Mud Type: Ge Mud Weight: Viscosity: Water Loss: Resistivity: Salinity: Filter Cake: | | | | Cushion Type: Cushion Length: Cushion Volume: Gas Cushion Type: Gas Cushion Pressur | e: | ft bbl psig | Oil API: Water Salinit | y: | deg API ppm |
| Recovery In | formation | | | | | | | | |
| | Leng | th | | Recovery Table Description | | Volume bbl |] | | |
| | | 75.00 | | -60%o40%m | | 0.779 | - | | |
| | Total Length: | 3.00 | <u> free o</u> .00 ft | il-100%o Total Volume: | 0.821 bbl | 0.042 | 2 | | |
| | Recovery Com | nents: | | | | | | | |
| | | | | | | | | | |

Printed: 2013.11.29 @ 11:50:46

Ref. No: 53599

Trilobite Testing, Inc



Shaw 持9-1

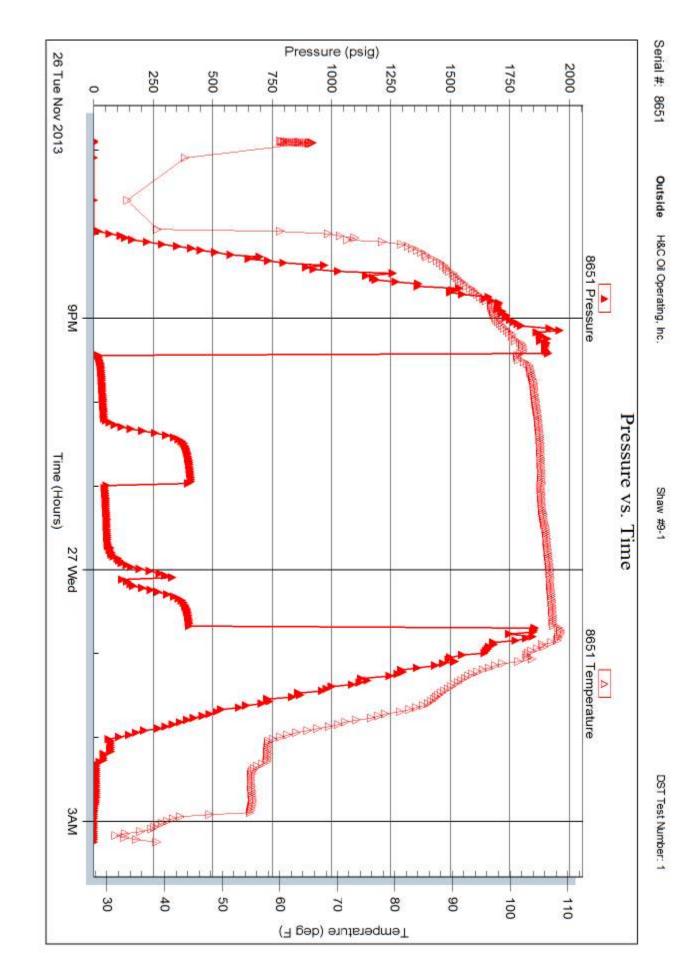
DST Test Number: 1

Serial #: 8673 Inside H&C Oil Operating, Inc.

Printed: 2013.11.29 @ 11:50:47

Ref. No: 53599







RILOBITE ESTING INC.

1515 Commerce Parkway · Hays, Kansas 67601

Test Ticket

NO. 53599

| Well Name & No. 5ho | W #9-1 | | Test No. | | Date 11-26 | 2017 |
|-------------------------|------------------|----------------|--------------------|------------|-----------------|---------------|
| Company HAC Oil | | | Elevation 2 | | 01100 | |
| Address P.O. BOX | | 67663 | | | | |
| Co. Rep / Geo. Marc D | | | Rig Americ | an Eagle 1 | # 3 | |
| Location: Sec | | Rge | Co. Graha | m | State | 5 |
| Interval Tested 3813 | 387. | Zone Tested | LKC - HJJ | | | |
| Anchor Length | 1 | | 3778 | M | ud Wt. 9.1 | |
| Top Packer Depth | 38 | | Run <u>30</u> | Vi | s 58 | |
| Bottom Packer Depth | 20 | | - 0- | w | 6.0 | |
| Total Depth | 38 | 75 Chlorides | 1,400 ppm | System LC | CM 2# | |
| Blow Description JF: M | Heak blow, Built | +0 334:0.01 | ver 45 mins. | | | |
| ISI: No blow b | | | | | | |
| FF: Work blow, | Built to 33/4 in | over 45 mins. | | | | |
| FST: No blow bud | K | | | | | |
| Rec 75 Feet | | | %gas | 60 %oil | %water | 40 %mu |
| Rec Feet | of Free oil | | %gas | %oil | %water | %mu |
| Rec Feet | of | | %gas | %oil | %water | %mu |
| Rec Feet | of | | %gas | %oil | %water | %mu |
| Rec Feet | of | | %gas | %oil | %water | %mu |
| Rec Total 78 | внт 106 | _ Gravity | API RW@ | ₯°F C | Chlorides | ppr |
| (A) Initial Hydrostatic | 1957 | Test115 | 50 | T-On Loca | ation | 17:10 |
| (B) First Initial Flow | 19 | Jars | | T-Started | 18 | 3.534 |
| (C) First Final Flow | | Safety Joint _ | | T-Open | | 21:25 |
| (D) Initial Shut-In | 408 | Circ Sub | | T-Pulled _ | | |
| (E) Second Initial Flow | 43 | Hourly Stand | by | | | 3:14 |
| (F) Second Final Flow | 62 | Mileage 60 | 12=120×1.55=18 | | s wooded | |
| (G) Final Shut-In | 399 | Sampler 186 | X 2 Lordal To HS 3 | 72 | 13 at 20:1 | spa |
| (H) Final Hydrostatic | 1856 | | ~ | | d Cholo Doolaat | |
| | | | | | d Shale Packer_ | |
| Initial Open | 45 | | | | d Packer | |
| Initial Shut-In | 45 | | er | | Copies0 | |
| Final Flow | 1 | | | | | |
| Final Shut-In | 110 | | | | Disc't | |
| | | Cub Tatal 450 | 20 | | | and the |
| Approved By | | | Our Representative | hurk | TPM | |

Trilobite Testing Inc. shall not be liable for damaged of any kind of the property or personnel of the one for whom a test is made, or for any loss suffered or sustained, directly or indirectly, through the use of its equipment, or its statements or opinion concerning the results of any test, tools lost or damaged in the hole shall be paid for at cost by the party for whom the test is made.

| QUALIT | Y OLWEL | LWELL CEMENTING, INC. |
|----------------------|--|---|
| Phone 785-483-2025 | Home Office P.O. Box 32 | Box 32 Russell, KS 67665 No. 7495 |
| Cell 785-324-1041 | | |
| Sec. | Twp. Range | County State On Location Finish |
| | | Prov 61 Run 200 /41 Winto |
| Shaw | Well No. 9 - 1 | |
| Contractor Struppert | | To Quality Oilwell Cementing, Inc. |
| What C | | cementer and helper to assist owner or contractor to do work as listed. |
| SKC | T.D. | Charge Ny C |
| Csg. 51/2 | Depth | Street |
| Tbg. Size 3 3/8 | Depth | City State |
| | Depth 2/32 | of ov |
| | Shoe Joint | Cement Amount Ordered 350 Dm2/ HHH |
| Meas Line | Displace 736 | 1145 N 12054 |
| EQU | IPMENT | Common 170 Qualc |
| Ŷκ | S.W | Poz. Mix |
| No. Driver b | V++ | Gel. |
| 19 ^{NG} | | Calcium |
| | Å REMARKS | Hulls |
| Remarks; | | Salt |
| Rat Hole | | Flowseal 87 # |
| Mouse Hole | | Kol-Seal |
| Centralizers | | Mud CLR 48 |
| Baskets | | CFL-117 or CD110 CAF 38 |
| D/V or Port Coliar | and the second | Sand |
| 000 1 | FS+ TO PUER | Handling 350 |
| | CINH C WINTER | and the state of the |
| Re - H muld | trind | FLOAT EQUIPMENT |
| 2) Nede is the | Mel. Chen The 9 | Guide Shoe |
| 15h Predation | with Millissi | Centralizer |
| 1703Ky Chre | 1 Constantes. | |
| San 782 1 | 252 Tool & Tost to | AFU Inserts |
| * Hell Rin 5 | Cours y wash flan. | Float Shoe |
| | 8 | Latch Down |
| | | |
| | | |
| | | Pumptrk Charge Do VT COVIOU |
| | | |
| | | Discount |
| X NU V No. | | Total Charge |
| | | |

| QUALITY OILWELL Federal Tax I.D.# Phone 785-483-2025 Home Office P.O. Box 32 | CEMENTING, IN 20-2886107 Russell, KS 67665 No. |
|--|---|
| | |
| Sec. Twp. Range | County State On Location Finish |
| | 11 At low Dw Hall Wir |
| Lease $< \lambda_{d \ U}$ (Well No. 7-1 | Owner |
| dor Amen Lan Buffet | To Quality Oilwell Cementing, Inc. |
| Sirlere | cementer and helper to assist owner or contractor to do work as listed. |
| 12:4 | Charge H/ C |
| csg. \$ 5/8 Depth 263 | Street |
| Tbg. Size | City State |
| Tool | faction and supervision of owner agent or cont |
| ient Left in Csg. LS | Cement Amount Ordered |
| | 100 × |
| EQUIPM | Common 160 |
| Pumotrk No. Cementer Cravia | Poz. Mix |
| 1 | Gel 7 |
| Bulktrik Q No. Driver 1. 1. V | Calcium S |
| JOB SERV | Hulls |
| Bamarks. | Salt |
| | Flowseal |
| har noie Morise Hole | Kol-Seal |
| Cantralizars | Mud CLR 48 |
| Dominantoro | CFL-117 or CD110 CAF 38 |
| DN or Dort Collar | Sand |
| & S/K on hettom PSK / Ke Nation | Handling 16 8 |
| esien ? | and a company of a constant |
| | FLOA |
| Compt 132 por Cardate | Guide Shoe |
| | Centralizer |
| 1. 230' | Baskets Syl Sunge |
| USED FOSIC N | AFUInsets |
| Comme Churlatte. | Float Shoe |
| | |
| | |
| | Pumptrk Charge Surface |
| | |
| | Discount |
| Signature Ash 2 | Total Charge |
| the set is the second | |

| | ELL CEMENTING, INC. |
|--|--|
| Phone 785-483-2025 Home Office P.O. Box 32 Cell 785-324-1041 | ox 32 Russell, KS 67665 No. 7021 |
| Sec. Twp. Range | On Location Finish |
| · | 21° × KS 11.15 P |
| Location | DN H ": C., 6 N 22 22 4 V |
| Lease Share | Owner |
| ctor Amer . con Earl. # 3 | To Quality Oilwell Cementing, Inc. |
| | cementer and helper to assist owner or contractor to do work as listed. |
| 5 | Charge 1/2 C |
| (T) | Street |
| Size | City State |
| Depth | The above was done to satisfaction and supervision of owner agent or contractor. |
| Cement Left in Csg. 16.55 Shoe Joint 15.55 | Cement Amount Ordered $2 C C$ $C + P$ $C + D^2 C C + D$ |
| 45 | 5 m (01501.00 14. FOWSE |
| Mdl | Common |
| Pumptrk (No. Cementer C | Poz. Mix |
| Bulktrk / No. Driver <u>Doc. 5</u> | Gel. |
| . Bulktrk PU No. Driver ら (P3) | Calcium |
| JOB SERVICES & REMARKS | Hulls |
| Remarks: | Salt |
| Rat Hole 2 3 3 | Flowseal |
| Mouse Hole | Kol-Seal |
| Centralizers | Mud CLR 48 ~ 5(16 321 10 10 10 10 10 10 |
| Baskets | CFL-117 or CD110 CAF 38 |
| D/V or Port Collar | Sand |
| | Handling |
| | Mileage |
| Mrs. 560 Gu. A. A. L. S. | 5 FLOAT EQUIPMENT |
| PL 7. M. K. 121 | Guide Shoe |
| MD IN at C F. C | Centralizer 10 |
| D. 26 41 45 20 401 | Baskets |
| Lill Resure Va in | AFUinserts |
| 1. and 1. 3. 1. Sec. 14. | Float Shoe |
| Property and the second s | Latch Down |
| and the second | Racher Pass and |
| | |
| | Pumptrk Charge |
| | Mileage |
| | Tax |
| | Discount |
| Signature | Total Charge |