

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1

January 2018

Form must be Typed

Form must be Signed

All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

New Well Re-Entry Workover

Oil WSW SWD

Gas DH EOR

OG GSW

CM (Coal Bed Methane)

Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

Deepening Re-perf. Conv. to EOR Conv. to SWD

Plug Back Liner Conv. to GSW Conv. to Producer

Commingled Permit #: _____

Dual Completion Permit #: _____

SWD Permit #: _____

EOR Permit #: _____

GSW Permit #: _____

Spud Date or Date Reached TD Completion Date or Recompletion Date

API No.: _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

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 Drill Stem Tests Received

Geologist Report / Mud Logs Received

UIC Distribution

ALT I II III Approved by: _____ Date: _____

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No Geologist Report / Mud Logs <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, 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 / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

1. Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection:	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____				
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <i>(Submit ACO-4)</i>	PRODUCTION INTERVAL: Top Bottom
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Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record <i>(Amount and Kind of Material Used)</i>

TUBING RECORD:	Size:	Set At:	Packer At:	
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Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	MCWILLIAMS E 5
Doc ID	1330369

All Electric Logs Run

ANNULAR HOLE VOLUME
ARRAY COMPENSATED TRUE RESISTIVITY LOG
ARRAY COMPENSATED TRUE RESISTIVITY LOG 1 LOG
ARRAY COMPENSATED TRUE RESISTIVITY LOG 2 LOG
ARRAY COMPENSATED TRUE RESISTIVITY TVD LOG
BOREHOLE COMPENSATED SONIC ARRAY LOG
BOREHOLE COMPENSATED SONIC ARRAY TVD LOG
DUAL SPACED NEUTRON SPECTRAL DENSITY LOG
MICROLOG TVD
MICROLOG
QUAD COMBO TVD LOG
QUAD COMBO

Form	ACO1 - Well Completion
Operator	Merit Energy Company, LLC
Well Name	MCWILLIAMS E 5
Doc ID	1330369

Tops

Name	Top	Datum
HEEBNER	3939	.
TORONTO	3958	.
LANSING GROUP	4038	.
IOLA	4179	.
DRUM	4230	.
SWOPE	4360	.
HUSH	4413	.
HERTHA	4416	.
EXLINE	4458	.
MARMATON	4534	.
PAWNEE	4630	.
CHEROKEE	4676	.
ATOKA	4798	.
MORROW	4885	.
CHESTER	4971	.
ST GENEVIEVE	5031	.
ST LOUIS	5106	.

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Doc ID	1330369

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
4	5003-5015 Chester	Frac-448 bbls, 397 bbls total x frac, 40,284 lbs total 16/30 R/C, 903,000 SCF total N2	5003-5015



Cementing Services
Field Ticket

Printed on 10/6/2016 at 7:30 PM

Field Ticket Number: Lib1610061900 Field Ticket Date: Thursday, October 06, 2016

Bill To:
MERIT ENERGY COMPANY
Liberal, KS 67901
P O Box 1293 / 1900 W 2nd St

Job Name: 01 Surface
Well Location: Finney, KS
Well Name: McWilliams
Well Number: E-5
Well Type: New Well
Rig Number: Duke Drilling # 9
Shipping Point: Liberal, KS
Sales Office: Mid Con *Surface casing Set @ 1631'*

PERSONEL		EQUIPMENT	
Hector Esqueda	Carlos Ibarra	531-541	774-1066
Victor Garcia	Cristian Camacho	993-467	

SERVICES - SERVICES - SERVICES							
Description	Qty	Unit	Unit Amt	Gross Amt	Time fact	D. amount	Final Amount
PUMP, CASING CEMENT 1001-2000 FT	1.00	min. 4 hr	2,213.75	2213.75	774.81	65.0%	774.81
CMLP	1.00	per day	275.00	275.00	96.25	65.0%	96.25
PHDL	724.00	per cu. Ft.	2.48	1795.62	0.67	65.0%	628.43
DRYG	1582.00	ton-mile	2.75	4295.50	0.96	65.0%	1,503.43
MILV	50.00	per mile	4.40	220.00	1.54	65.0%	77.00
MIHV	50.00	per mile	7.70	385.00	2.70	65.0%	134.75

FLOAT EQUIPMENT -- FLOAT EQUIPMENT -- FLOAT EQUIPMENT							
GS-8.625	1.00	each	480.00	480.00	207.00	55.0%	207.00
SSFC-8.625	1.00	each	1,214.00	1,214.00	546.30	55.0%	546.30
CEN-8.625	15.00	each	75.00	1,125.00	33.75	55.0%	506.25
TRP - 8.625	1.00	each	131.00	131.00	58.95	55.0%	58.95

MATERIALS - MATERIALS - MATERIALS							
CB-AMDAL	425.00	sack	28.57	11,292.25	9.30	65.0%	3,952.29
CA-100	1189.00	pound	1.10	1,318.90	0.39	65.0%	461.62
CLC-CPF	213.00	pound	2.97	632.61	1.04	65.0%	221.41
CCAC	175.00	sack	17.90	3,132.50	6.27	65.0%	1,096.38
CA-100	329.00	pound	1.10	361.90	0.39	65.0%	126.67
CLC-CPF	88.00	pound	2.97	261.36	1.04	65.0%	91.48

ADDITIONAL ITEMS - ADDITIONAL ITEMS - ADDITIONAL ITEMS							
Additional hours, in excess of set hours		per hour	440.00	0.00	154.00	65.0%	0.00

	Gross	Discount	Final
Services Total	9,184.77	5,970.10	3,214.67
Equipment Total	2,930.00	1,611.50	1,318.50
Materials Total	16,999.52	11,049.69	5,949.83
Additional Items	0.00	0.00	0.00
Final Total	29,114.29	18,631.29	10,483.00

Allied Rep: _____
Customer Agent: _____

This output does NOT include taxes. Applicable sales tax will be billed on the final invoice.
Customer hereby acknowledges receipt of the materials and services described above and on the attached documents.
I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the following page.

[Signature]
Customer Signature

Field Ticket Total (USD): **\$10,483.00**

GENERAL TERMS AND CONDITIONS



DEFINITIONS: In these terms and conditions, "ALLIED" shall mean Allied Oil & Gas Services, LLC, and "CUSTOMER" shall refer to the party identified by that term on the front of this contract. As applicable, "JOB" relates to the services described on the front side of this contract, "MERCHANDISE" refers to the material described on the front of this contract and to any other materials, products, or supplies used, sold, or furnished under the requirements of this contract.

-TERMS: Unless satisfactory credit has been established, CUSTOMER must tender full cash payment to ALLIED before the job is undertaken or merchandise is delivered. If satisfactory credit has been established, the terms of payment for the job and/or merchandise, including bulk cement, are net cash, payable in 30 days from the completion of the job and/or delivery of the merchandise. For all past due invoices, CUSTOMER agrees to pay interest on amounts invoiced at a rate of 18 percent per annum until paid. Notwithstanding the foregoing, in no event shall this Contract provide for interest exceeding the maximum rate of interest that CUSTOMER may agree to pay under applicable law. If any such interest should be provided for, it shall be and hereby is deemed to be a mistake, and this contract shall be automatically reformed to lower the rate of interest to the maximum legal contract rate. Any amounts previously paid as excess interest shall be deducted from the amounts owing from the CUSTOMER or at the option of ALLIED, refunded directly to CUSTOMER. For purposes of this paragraph, ALLIED and CUSTOMER agree that Kansas law shall apply. Any discounts granted with this contract are null and void if the charges are not paid when due.

-ATTORNEY FEES: In any legal action or proceeding between the parties to enforce any of the terms of this Service Contract, or in any way pertaining to the terms of this Contract, the prevailing party shall be entitled to recover all expenses, including, but not limited to, a reasonable sum as and for attorney's fees.

-PRICES AND TAXES: All merchandise listed in ALLIED'S current price schedule are F.O.B. ALLIED'S local station and are subject to change without notice. All prices are exclusive of any federal, state, local, or special taxes for the sale or use of the merchandise or services listed. The amount of taxes required to be paid by ALLIED shall be added to the quoted prices charged to CUSTOMER.

-TOWING CHARGES: ALLIED will make a reasonable attempt to get to and from each job site using its own equipment. Should ALLIED be unable to do so because of poor or inadequate road conditions, and should it become necessary to employ tractor or other pulling equipment to get to or from the job site, the tractor or pulling equipment will be supplied by CUSTOMER or, if furnished by ALLIED, will be charged to and paid by the CUSTOMER.

-PREPARATION CHARGES: If a job and/or merchandise is ordered and CUSTOMER cancels the order after preparation of a chemical solution or other material, CUSTOMER will pay ALLIED for the expenses incurred by ALLIED as a result of the cancellation.

-DEADHAUL CHARGES: Unless otherwise specified on the front of this Contract, a deadhaul charge as set forth in ALLIED'S current price book will be charged each way for each service unit which is ordered by CUSTOMER but not used.

-SERVICE CONDITIONS AND LIABILITIES:

1). ALLIED carries public liability and property damage insurance, but since there are so many uncertain and unknown conditions beyond ALLIED'S control, ALLIED shall not be liable for injuries to property or persons or for loss or damage arising from the performance of the job or delivery of the merchandise. CUSTOMER shall be responsible for and indemnify, defend, and hold harmless ALLIED, its officers, agents and employees, from and against any and all claims or suits for:

A). Damage to property or for bodily injury, sickness, disease, or death, brought by any person, including CUSTOMER and/or the well owner; and

B). Oil spills, pollution, surface or sub-surface damage, injury to the well, reservoir loss, or damage arising from a well blowout arising out of or in connection with ALLIED'S performance of the job or furnishing of merchandise in accordance with this contract, unless such loss or damage is caused by the willful misconduct or gross negligence of ALLIED or its employees.

2). With respect to any of ALLIED'S tools, equipment, or instruments which are lost in the well or damaged when performing or attempting to perform the job or, in the case of marine operations, are lost or damaged at any time after delivery to the landing for CUSTOMER and before return to ALLIED at the landing, CUSTOMER shall either recover the lost item without cost to ALLIED or reimburse ALLIED the current replacement cost of the item unless the loss or damage results from the sole negligence of ALLIED or its employees.

3). ALLIED does not assume any liability or responsibility for damages or conditions resulting from chemical action in cements caused by contamination of water or other fluids.

-WARRANTIES:

1). ALLIED warrants all merchandise manufactured or furnished by it to be free from defects in material and workmanship under normal use and services when installed, and used, and/or serviced in the manner provided and intended. ALLIED'S obligation under this warranty is expressly limited to repair, replacement, or allowance for credit, at its option, for any merchandise which is determined by ALLIED to be defective. THIS IS THE SOLE WARRANTY OF ALLIED AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESS OR OTHERWISE IMPLIED, IN FACT OR IN LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. CUSTOMER'S sole and only remedy with regard to any defective merchandise shall be the repair or replacement thereof or allowance for credit as herein provided, and ALLIED shall not be liable for any consequential, special, incidental, or punitive damages resulting from or caused by defective materials, products or supplies.

2). More specifically:

A). Nothing in this contract shall be construed as a warranty by ALLIED of the success or the effectiveness of the result of any work done or merchandise used, sold, or furnished under this contract.

B). Nothing in this contract shall be construed as a warranty of the accuracy or correctness of any facts, information, or data furnished by ALLIED or any interpretation of tests, meter readings, chart information, analysis of research, or recommendations made by ALLIED, unless the inaccuracy or incorrectness is caused by the willful misconduct or gross

C). Work done by ALLIED shall be under the direct supervision and control of the CUSTOMER or his agent, and ALLIED will accomplish the job as an independent contractor and not as an employee or agent of the CUSTOMER.

Well McWilliams E-5
AFE 45254
GL 83001075
Office Garden City
Date 10-6-16



Cementing Services
Field Ticket

Printed on 10/12/2016 at 12:42 AM

Field Ticket Number: LIB1610112346 Field Ticket Date: Wednesday, October 12, 2016

Bill To:
MERIT ENERGY COMPANY
Liberal, KS 67901
P O Box 1293 / 1900 W 2nd St

Job Name: 02 Production/Long String
Well Location: Finney, KS
Well Name: McWilliams
Well Number: E-5
Well Type: New Well
Rig Number: Duke Drilling # 9
Shipping Point: Liberal, KS
Sales Office: Mid Con
Prod casing Set @ 5198' PB

PERSONEL		EQUIPMENT	
ALDO ESPINOZA	CRISTIAN CAMACHO	984-	956-841
GERARDO BURCIAGA	JAMES PEPPIN	903-501	982-

SERVICES - SERVICES - SERVICES							
Description	Qty	Unit	Price Amt	Comp. Amt	Unit Price	Discount	Net Amount
PUMP, CASING CEMENT 5001-6000 FT	1.00	min. 4 hr	3,099.25	3099.25	1,022.75	67.0%	1,022.75
CMLP	1.00	per day	275.00	275.00	90.75	67.0%	90.75
PHDL	434.00	per cu. Ft.	2.48	1076.32	0.82	67.0%	355.19
DRYG	998.00	ton-mile	2.75	2497.00	0.91	67.0%	824.01
MILV	50.00	per mile	4.40	220.00	1.45	67.0%	72.60
MIHV	50.00	per mile	7.70	385.00	2.54	67.0%	127.05

FLOAT EQUIPMENT -- FLOAT EQUIPMENT -- FLOAT EQUIPMENT							
GS-5.5	1.00	each	281.00	281.00	126.45	55.0%	126.45
SSFC-5.5	1.00	each	725.00	725.00	326.25	55.0%	326.25
CEN-5.5	25.00	each	57.00	1,425.00	25.65	55.0%	641.25
TRP - 5.5	1.00	each	85.00	85.00	38.25	55.0%	38.25

MATERIALS - MATERIALS - MATERIALS							
CW-HVS	12.00	bbl	58.70	704.40	19.37	67.0%	232.45
CB-ASA	315.00	sack	23.50	7,402.50	7.76	67.0%	2,442.83
CFL-210	149.00	pound	18.90	2,816.10	6.24	67.0%	929.31
CLC-KOL	1575.00	pound	0.98	1,543.50	0.32	67.0%	509.36
CLC-CPF	79.00	pound	2.97	234.63	0.98	67.0%	77.43

ADDITIONAL ITEMS - ADDITIONAL ITEMS - ADDITIONAL ITEMS							
Additional hours, in excess of set hours		per hour	440.00	0.00	145.20	67.0%	0.00

	Gross	Discount	Final
Services Total	7,552.57	5,060.22	2,492.35
Equipment Total	2,516.00	1,383.80	1,132.20
Materials Total	12,701.13	8,509.76	4,191.37
Additional Items	0.00	0.00	0.00
Final Total	22,769.70	14,953.78	7,815.92

Allied Rep: ALDO ESPINOZA
Customer Agent: _____

This output does NOT include taxes. Applicable sales tax will be billed on the final invoice.
Customer hereby acknowledges receipt of the materials and services described above and on the attached documents.
I have read and understand the "GENERAL TERMS AND CONDITIONS" listed on the following page.

X *[Signature]*
Customer Signature

Field Ticket Total (USD):

\$7,815.92

GENERAL TERMS AND CONDITIONS



Cementing Services
Field Ticket

Printed on 10/12/2016 at 12:42 AM

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 - A). Damage to property or for bodily injury, sickness, disease, or death, brought by any person, including CUSTOMER and/or the well owner; and
 - B). Oil spills, pollution, surface or sub-surface damage, injury to the well, reservoir loss, or damage arising from a well blowout arising out of or in connection with ALLIED'S performance of the job or furnishing of merchandise in accordance with this contract, unless such loss or damage is caused by the willful misconduct or gross negligence of ALLIED or its employees.
- 2). With respect to any of ALLIED'S tools, equipment, or instruments which are lost in the well or damaged when performing or attempting to perform the job or, in the case of marine operations, are lost or damaged at any time after delivery to the landing for CUSTOMER and before return to ALLIED at the landing, CUSTOMER shall either recover the lost item without cost to ALLIED or reimburse ALLIED the current replacement cost of the item unless the loss or damage results from the sole negligence of ALLIED or its employees.
- 3). ALLIED does not assume any liability or responsibility for damages or conditions resulting from chemical action in cements caused by contamination of water or other fluids.

-WARRANTIES:

- 1). ALLIED warrants all merchandise manufactured or furnished by it to be free from defects in material and workmanship under normal use and services when installed, and used, and/or serviced in the manner provided and intended. ALLIED'S obligation under this warranty is expressly limited to repair, replacement, or allowance for credit, at its option, for any merchandise which is determined by ALLIED to be defective. THIS IS THE SOLE WARRANTY OF ALLIED AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESS OR OTHERWISE IMPLIED, IN FACT OR IN LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. CUSTOMER'S sole and only remedy with regard to any defective merchandise shall be the repair or replacement thereof or allowance for credit as herein provided, and ALLIED shall not be liable for any consequential, special, incidental, or punitive damages resulting from or caused by defective materials, products or supplies.
- 2). More specifically:
 - A). Nothing in this contract shall be construed as a warranty by ALLIED of the success or the effectiveness of the result of any work done or merchandise used, sold, or furnished under this contract.
 - B). Nothing in this contract shall be construed as a warranty of the accuracy or correctness of any facts, information, or data furnished by ALLIED or any interpretation of tests, meter readings, chart information, analysis of research, or recommendations made by ALLIED, unless the inaccuracy or incorrectness is caused by the willful misconduct or gross negligence of ALLIED.
 - C). Work done by ALLIED shall be under the direct supervision and control of the CUSTOMER or his agent, and ALLIED will accomplish the job as an independent contractor and not as an employee or agent of the CUSTOMER.

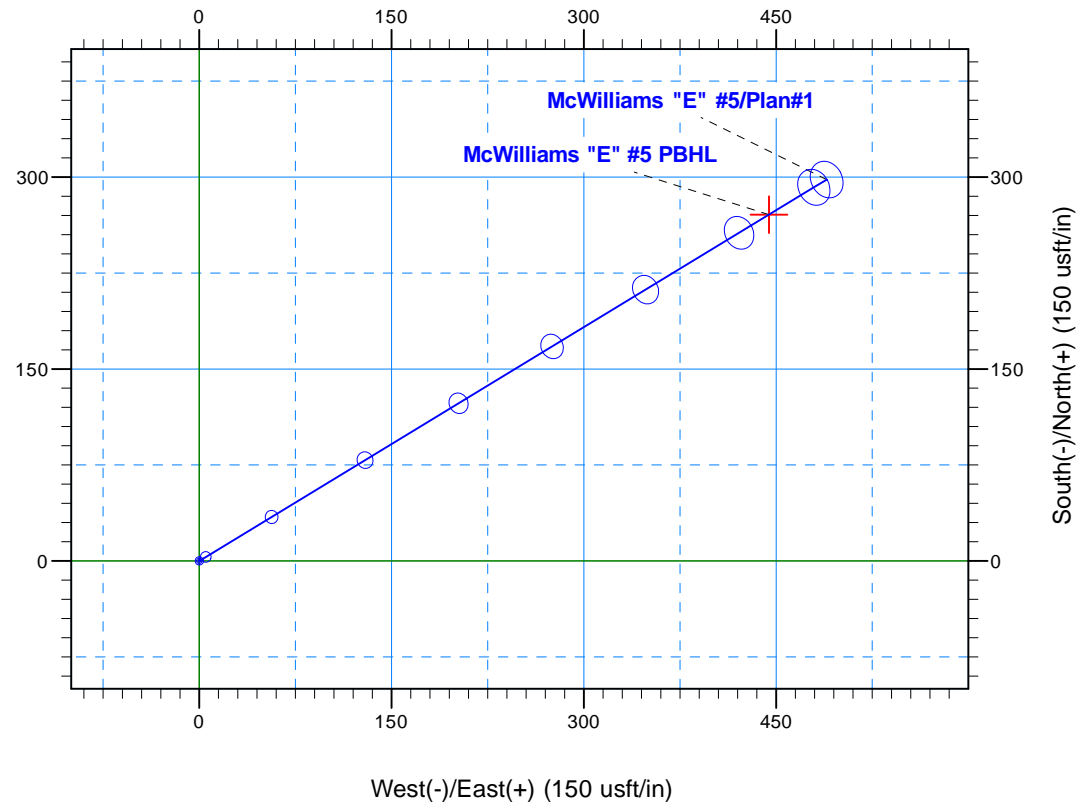
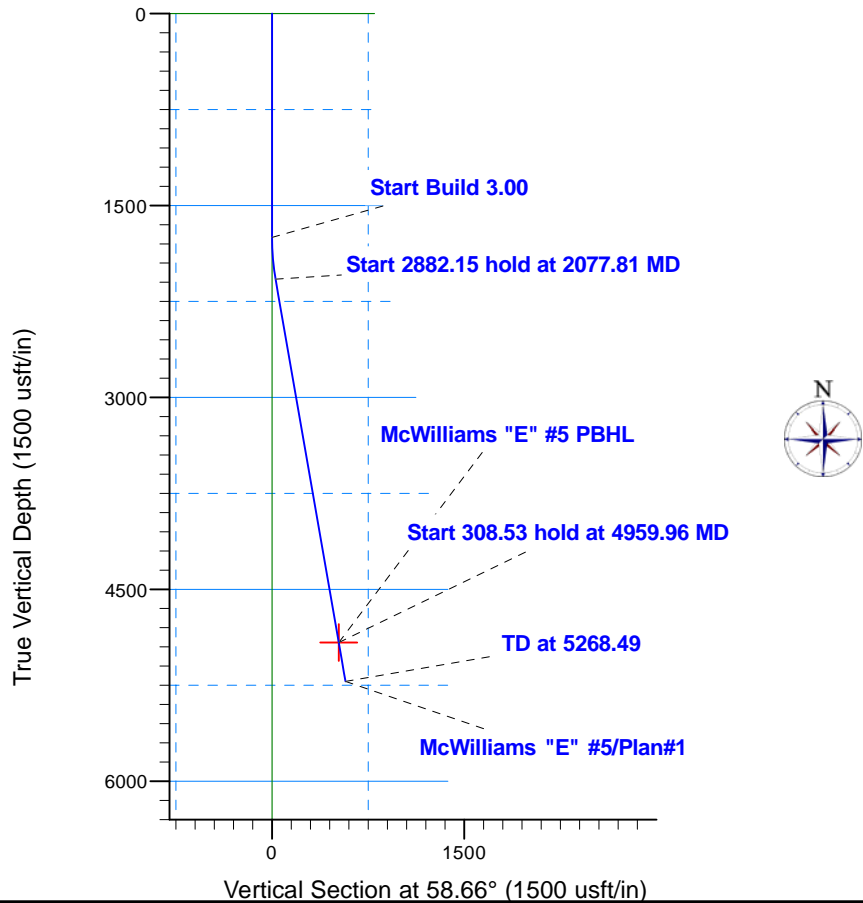
Well Mc Williams E-5
 AFE 45254
 GI 83001075
 Office Garden City
 Date 10-12-16

WELL DETAILS: McWilliams "E" #5

Ground Level:	2895.41
Northing	475130.17
Easting	1295178.23
Latitude	37° 56' 46.244 N
Longitude	100° 56' 40.225 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	
1750.00	0.00	0.00	1750.00	-0.01	0.00	0.00	0.00	0.00	
2077.81	9.83	58.66	2076.20	14.59	23.97	3.00	58.66	28.06	
4959.96	9.83	58.66	4916.00	270.64	444.40	0.00	0.00	520.33	McWilliams "E" #5 PBHL
5268.49	9.83	58.66	5220.00	298.05	489.41	0.00	0.00	573.03	



UNK

Merit Energy

Finney County, KS (NAD 27) Sec 21-T24S-R33W

API#

McWilliams "E" #5

113.48' FSL & 1905.3 FEL

Wellbore #1

Plan: Plan#1

Sperry Drilling Services

Combo Report

19 November, 2015

Well Coordinates: 37° 56' 46.24" N
100° 56' 40.23" W

NAD 1927 (NADCON CONUS)
Kansas South 1502
475,130.17 N
1,295,178.23 E

Ground Level: 2,895.41 usft

Local Coordinate Origin:

Centered on Site Sec 21-T24S-R33W

Viewing Datum:

KB=13' @ 2908.00usft (UNK)

TVDs to System:

N

North Reference:

Grid

Unit System:

Clyde

Version: 5000.1 Build: 73

Report Version: Midcon Combo v1.11

HALLIBURTON



Plan Report for McWilliams "E" #5 - Plan#1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (ft)		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing	Easting	Northing	Easting			
0.00	0.00	0.00	-2,908.00	0.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
100.00	0.00	0.00	-2,808.00	100.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
200.00	0.00	0.00	-2,708.00	200.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
300.00	0.00	0.00	-2,608.00	300.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
400.00	0.00	0.00	-2,508.00	400.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
500.00	0.00	0.00	-2,408.00	500.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
600.00	0.00	0.00	-2,308.00	600.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
700.00	0.00	0.00	-2,208.00	700.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
800.00	0.00	0.00	-2,108.00	800.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
900.00	0.00	0.00	-2,008.00	900.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,000.00	0.00	0.00	-1,908.00	1,000.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,100.00	0.00	0.00	-1,808.00	1,100.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,200.00	0.00	0.00	-1,708.00	1,200.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,300.00	0.00	0.00	-1,608.00	1,300.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,400.00	0.00	0.00	-1,508.00	1,400.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,500.00	0.00	0.00	-1,408.00	1,500.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,600.00	0.00	0.00	-1,308.00	1,600.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,700.00	0.00	0.00	-1,208.00	1,700.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	
1,750.00	0.00	0.00	-1,158.00	1,750.00	0.01 S	0.00 W	475,130.17	1,295,178.23	0.00	0.00	Start Build 3.00
1,800.00	1.50	58.66	-1,108.01	1,799.99	0.34 N	0.56 E	475,130.51	1,295,178.79	3.00	0.65	
1,900.00	4.50	58.66	-1,008.15	1,899.85	3.06 N	5.03 E	475,133.23	1,295,183.26	3.00	5.89	
2,000.00	7.50	58.66	-908.71	1,999.29	8.49 N	13.95 E	475,138.67	1,295,192.19	3.00	16.34	
2,077.81	9.83	58.66	-831.80	2,076.20	14.59 N	23.97 E	475,144.77	1,295,202.20	3.00	28.06	Start 2882.15 hold at 2077.81 MD
2,100.00	9.83	58.66	-809.93	2,098.07	16.56 N	27.21 E	475,146.74	1,295,205.44	0.00	31.85	
2,200.00	9.83	58.66	-711.40	2,196.60	25.45 N	41.79 E	475,155.62	1,295,220.02	0.00	48.93	
2,300.00	9.83	58.66	-612.87	2,295.13	34.33 N	56.38 E	475,164.51	1,295,234.61	0.00	66.01	
2,400.00	9.83	58.66	-514.34	2,393.66	43.22 N	70.97 E	475,173.39	1,295,249.20	0.00	83.09	
2,500.00	9.83	58.66	-415.81	2,492.19	52.10 N	85.56 E	475,182.28	1,295,263.79	0.00	100.17	
2,600.00	9.83	58.66	-317.28	2,590.72	60.98 N	100.14 E	475,191.16	1,295,278.37	0.00	117.25	
2,700.00	9.83	58.66	-218.75	2,689.25	69.87 N	114.73 E	475,200.04	1,295,292.96	0.00	134.33	
2,800.00	9.83	58.66	-120.22	2,787.78	78.75 N	129.32 E	475,208.93	1,295,307.55	0.00	151.41	
2,900.00	9.83	58.66	-21.69	2,886.31	87.64 N	143.91 E	475,217.81	1,295,322.14	0.00	168.49	
3,000.00	9.83	58.66	76.84	2,984.84	96.52 N	158.49 E	475,226.70	1,295,336.72	0.00	185.57	
3,100.00	9.83	58.66	175.37	3,083.37	105.40 N	173.08 E	475,235.58	1,295,351.31	0.00	202.65	
3,200.00	9.83	58.66	273.90	3,181.90	114.29 N	187.67 E	475,244.46	1,295,365.90	0.00	219.73	
3,300.00	9.83	58.66	372.43	3,280.43	123.17 N	202.26 E	475,253.35	1,295,380.49	0.00	236.81	
3,400.00	9.83	58.66	470.96	3,378.96	132.06 N	216.84 E	475,262.23	1,295,395.07	0.00	253.89	
3,500.00	9.83	58.66	569.50	3,477.50	140.94 N	231.43 E	475,271.12	1,295,409.66	0.00	270.97	
3,600.00	9.83	58.66	668.03	3,576.03	149.82 N	246.02 E	475,280.00	1,295,424.25	0.00	288.05	
3,700.00	9.83	58.66	766.56	3,674.56	158.71 N	260.61 E	475,288.89	1,295,438.84	0.00	305.13	
3,800.00	9.83	58.66	865.09	3,773.09	167.59 N	275.19 E	475,297.77	1,295,453.42	0.00	322.21	

Plan Report for McWilliams "E" #5 - Plan#1

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	TVD below System (usft)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (ft)		Dogleg Rate (°/100usft)	Vertical Section (usft)	Comments
					Northing	Easting	Northing	Easting			
3,900.00	9.83	58.66	963.62	3,871.62	176.48 N	289.78 E	475,306.65	1,295,468.01	0.00	339.29	
4,000.00	9.83	58.66	1,062.15	3,970.15	185.36 N	304.37 E	475,315.54	1,295,482.60	0.00	356.37	
4,100.00	9.83	58.66	1,160.68	4,068.68	194.25 N	318.96 E	475,324.42	1,295,497.19	0.00	373.45	
4,200.00	9.83	58.66	1,259.21	4,167.21	203.13 N	333.54 E	475,333.31	1,295,511.77	0.00	390.53	
4,300.00	9.83	58.66	1,357.74	4,265.74	212.01 N	348.13 E	475,342.19	1,295,526.36	0.00	407.61	
4,400.00	9.83	58.66	1,456.27	4,364.27	220.90 N	362.72 E	475,351.07	1,295,540.95	0.00	424.69	
4,500.00	9.83	58.66	1,554.80	4,462.80	229.78 N	377.31 E	475,359.96	1,295,555.54	0.00	441.77	
4,600.00	9.83	58.66	1,653.33	4,561.33	238.67 N	391.89 E	475,368.84	1,295,570.12	0.00	458.85	
4,700.00	9.83	58.66	1,751.86	4,659.86	247.55 N	406.48 E	475,377.73	1,295,584.71	0.00	475.93	
4,800.00	9.83	58.66	1,850.39	4,758.39	256.43 N	421.07 E	475,386.61	1,295,599.30	0.00	493.01	
4,900.00	9.83	58.66	1,948.92	4,856.92	265.32 N	435.66 E	475,395.49	1,295,613.89	0.00	510.09	
4,959.96	9.83	58.66	2,008.00	4,916.00	270.64 N	444.40 E	475,400.82	1,295,622.63	0.00	520.33	Start 308.53 hold at 4959.96 MD
5,000.00	9.83	58.66	2,047.45	4,955.45	274.20 N	450.24 E	475,404.38	1,295,628.47	0.00	527.17	
5,100.00	9.83	58.66	2,145.98	5,053.98	283.09 N	464.83 E	475,413.26	1,295,643.06	0.00	544.25	
5,200.00	9.83	58.66	2,244.52	5,152.52	291.97 N	479.42 E	475,422.15	1,295,657.65	0.00	561.33	
5,268.49	9.83	58.66	2,312.00	5,220.00	298.05 N	489.41 E	475,428.23	1,295,667.64	0.00	573.03	TD at 5268.49

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates (usft)		Comment
		+N-S	+E-W	
1,750.00	1,750.00	-0.01	0.00	Start Build 3.00
2,077.81	2,076.20	14.59	23.97	Start 2882.15 hold at 2077.81 MD
4,959.96	4,916.00	270.64	444.40	Start 308.53 hold at 4959.96 MD
5,268.49	5,220.00	298.05	489.41	TD at 5268.49

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin (usft)		Start TVD (usft)
				+N/_S	+E/-W	
TD	No Target (Freehand)	58.66	Slot	-0.01	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	5,268.49	Plan#1	MWD+SC

Plan Report for McWilliams "E" #5 - Plan#1

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (ft)	Easting (ft)	Latitude	Longitude
McWilliams "E" #5 PBHL () - plan hits target center - Point	0.00	0.00	4,916.00	270.64	444.40	475,400.82	1,295,622.63	37° 56' 49.034 N	100° 56' 34.768 W

Directional Difficulty Index

Average Dogleg over Survey: 0.00 °/100usft Maximum Dogleg over Survey: 0.00 °/100usft at 0.00 usft
 Net Tortousity applicable to Plans: 0.00 °/100usft Directional Difficulty Index: 4.300

Audit Info

SAP= 303833

North Reference Sheet for Sec 21-T24S-R33W - McWilliams "E" #5 - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to KB=13' @ 2908.00usft (UNK). Northing and Easting are relative to Sec 21-T24S-R33W

Coordinate System is US State Plane 1927 (Exact solution), Kansas South 1502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 98° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:37° 16' 0.000 N°

False Easting: 2,000,004.00ft, False Northing: 0.00ft, Scale Reduction: 0.99993605

Grid Coordinates of Well: 475,130.17 ft N, 1,295,178.23 ft E

Geographical Coordinates of Well: 37° 56' 46.24" N, 100° 56' 40.23" W

Grid Convergence at Surface is: -1.50°

Based upon Minimum Curvature type calculations, at a Measured Depth of 5,268.49usft the Bottom Hole Displacement is 573.03usft in the Direction of 58.66° (Grid).

Magnetic Convergence at surface is: -7.56° (19 November 2015, , BGGM2015)

