

KANSAS CORPORATION COMMISSION  
OIL & GAS CONSERVATION DIVISION  
**WELL COMPLETION FORM**  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

Form ACO-1  
September 1999  
Form Must Be Typed

Operator: License # 33097  
Name: Southern Star Central Pipeline  
Address: 455 Wabash  
City/State/Zip: Lyons, KS 67554  
Purchaser: Tom Johannsen  
Operator Contact Person: Tom Johannsen  
Phone: (620) 257-7815  
Contractor: Name: Rosencrantz-Bemis Ent d/b/a Darling Drilling Co.  
License: 134  
Wellsite Geologist: \_\_\_\_\_  
Designate Type of Completion:  
 New Well \_\_\_\_\_ Re-Entry \_\_\_\_\_ Workover  
\_\_\_\_\_ Oil \_\_\_\_\_ SWD \_\_\_\_\_ SLOW \_\_\_\_\_ Temp. Abd.  
\_\_\_\_\_ Gas \_\_\_\_\_ ENHR \_\_\_\_\_ SIGW  
\_\_\_\_\_ Dry  Other (Core, WSW, Expl., Cathodic, etc)  
If Workover/Re-entry: Old Well Info as follows:  
Operator: \_\_\_\_\_  
Well Name: \_\_\_\_\_  
Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_  
\_\_\_\_\_ Deepening \_\_\_\_\_ Re-perf. \_\_\_\_\_ Conv. to Enhr./SWD  
\_\_\_\_\_ Plug Back \_\_\_\_\_ Plug Back Total Depth  
\_\_\_\_\_ Commingled \_\_\_\_\_ Docket No. \_\_\_\_\_  
\_\_\_\_\_ Dual Completion \_\_\_\_\_ Docket No. \_\_\_\_\_  
\_\_\_\_\_ Other (SWD or Enhr.?) \_\_\_\_\_ Docket No. \_\_\_\_\_  
10-29-05      10-30-05      10-30-05  
Spud Date or      Date Reached TD      Completion Date or  
Recompletion Date                Recompletion Date

API No. 15 - 097-21575-00-00  
County: Kiowa  
NW SW NW Sec. 23 Twp. 27 S. R. 18  East  West  
1300 feet from S /  (circle one) Line of Section  
50 feet from E /  (circle one) Line of Section  
Footages Calculated from Nearest Outside Section Corner:  
(circle one) NE SE NW SW  
Lease Name: GREENSBURG STATION Well #: 1  
Field Name: \_\_\_\_\_  
Producing Formation: \_\_\_\_\_  
Elevation: Ground: 2174 est Kelly Bushing: \_\_\_\_\_  
Total Depth: 250 Plug Back Total Depth: 250  
Amount of Surface Pipe Set and Cemented at 140" 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.  
ACT III WITHM 8-4-06

**Drilling Fluid Management Plan**  
(Data must be collected from the Reserve Pit)  
Chloride content \_\_\_\_\_ ppm Fluid volume 240 bbls  
Dewatering method used \_\_\_\_\_  
Location of fluid disposal if hauled offsite: \_\_\_\_\_  
Operator Name: Greensburg Oilfield Services  
Lease Name: Liess License No.: 5165  
Quarter \_\_\_\_\_ Sec. 13 Twp. 27s S. R. 18  East  West  
County: Kiowa Docket No.: \_\_\_\_\_

**INSTRUCTIONS:** An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

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.

Signature: Rhonda White-Coleman  
Title: Project Assistant Date: 7-6-06  
Subscribed and sworn to before me this 6 day of July,  
2006.  
Notary Public: Aleisha Zigang  
Date Commission Expires: November 28, 2009

**KCC Office Use ONLY**

\_\_\_\_ Letter of Confidentiality Received  
If Denied, Yes  Date: \_\_\_\_\_  
\_\_\_\_ Wireline Log Received  
\_\_\_\_ Geologist Report Received  
\_\_\_\_ UIC Distribution

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Operator Name: Southern Star Central Pipeline Lease Name: Line R 26" Well #: \_\_\_\_\_  
 Sec. 23 Twp. 27 S. R. 18  East  West County: Kiowa

**INSTRUCTIONS:** Show important tops and base 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. Attach copy of all Electric Wireline Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken  Yes  No  
*(Attach Additional Sheets)*

Samples Sent to Geological Survey  Yes  No

Cores Taken  Yes  No

Electric Log Run  Yes  No  
*(Submit Copy)*

List All E. Logs Run:

Log Formation (Top), Depth and Datum  Sample  
 Name Top Datum

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
Cathodic	10"	9 7/8" sched 40 PVC			5000AE	8	

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives
____ Perforate				
____ Protect Casing				
____ Plug Back TD				
____ Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type		Acid, Fracture, Shot, Cement Squeeze Record	
	Specify Footage of Each Interval Perforated		(Amount and Kind of Material Used)	
				Depth

TUBING RECORD		Size	Set At	Packer At	Liner Run
					<input type="checkbox"/> Yes <input type="checkbox"/> No
Date of First, Resumerd Production, SWD or Enhr.			Producing Method		
			<input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain)		
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

Disposition of Gas  Vented  Sold  Used on Lease *(If vented, Submit ACO-18.)*

METHOD OF COMPLETION  Open Hole  Perf.  Dually Comp.  Commingled \_\_\_\_\_

Production Interval  Other (Specify) \_\_\_\_\_

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# INVOICE

## Heft & Sons, LLC

PO Box 326  
Greensburg, KS 67054  
Phone: (620)-723-2495  
Fax: (620)-723-2215

Invoice Number 3760

Invoice Date 10/31/2005

Page 1

SOLD DARLING DRILLING  
TO 1211 W 4TH  
HUTCHINSON, KS 67501

ORDER DATE	10/28/2005	TERMS	DUE THE 10TH
		DUE DATE	11/10/2005
PO NUMBER			
CUSTOMER ID	DARL-D		

ITEM	ORDERED	SHIPPED	DESCRIPTION	PRICE	AMOUNT	TAX
5000	8.0000	8.0000	5000AE CONCRETE DELIVERED TO CITY SERVICE GREENSBURG, KS EXTRA CEMENT ADDED			
MILE	5.0000	5.0000	PER YARD MILES			

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GMD #5 CATHODIC WELL COMPLETION (AS BUILT) PLAN PURSUANT TO K.A.R. 82-3-706

Big Bend Groundwater Management District No. 5

125 South Main St. P.O. Box 7  
Stafford, Kansas 67578

DISTRICT PERMIT NUMBER  
**15-097-21575-00-00**

Well Location: County <b>Kiowa</b>	<b>NW</b>	<b>SW</b>	<b>NW</b>	Section <b>23</b>	Township <b>27S</b>	Range <b>18W</b>
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APPLICANT:

Contact Person: **Southern Star Central Pipeline**  
Name: **Tom Johannsen**  
Address: **455 Wabash**  
City/State/Zip Code: **Lyons, KS 67554**  
Telephone No. **(620) 257-7815**  
Fax No. \_\_\_\_\_

CONTRACTOR/DRILLER:

License No. **134**  
Contact Person: **Greg Dodson**  
Name: **Rosencrantz-Bemis Ent. d/b/a Darling Drilling Co.**  
Address: **1211 West 4th**  
City/State/Zip Code: **Hutchinson, KS 67501**  
Telephone No. **(620) 662-7901**  
Fax No. **(620) 662-1707**

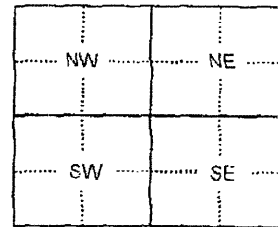
Drill Cuttings Recorded At 5 Feet Intervals? (minimum allowable) YES NO (circle one)

If "NO", What interval? See Attached Drill Log

Drillers Log attached? YES NO (circle one)

Geophysical/Electrical logs completed: YES NO (circle one)

Geophysical/Electrical logs attached: YES NO (circle one)



Bore hole completion: Cased / Uncased

Diameter **16" to 217' 9" to 327'**  
Casing material: **Schedule 40 PVC**  
Outside diameter of surface casing: **9 7/8"**  
Minimum wall thickness **.511**  
SDR **21**  
Casing interval **0' to 217'**  
Centralizer locations: **140', 100', 60', 20'** feet bls  
Grout material **Neat cement**  
Grout intervals **0' to 217'** feet bls  
Anode conductor (backfill) material: **Loresco SC-3**  
Anode conductor interval: **195' to 312'** feet bls  
Anode interval **220 to 310** feet bls

Drilling pit construction: (Mark Yes or No)

- A. Hydraulic conductivity of bottom and side less than  $1 \times 10^{-7}$  cm/sec: \_\_\_\_\_
- B. Above Ground: \_\_\_\_\_
- C. Portable: \_\_\_\_\_

Number of copies of well completion form submitted to GMD #5: \_\_\_\_\_  
Number of copies of geophysical/electrical logs submitted to GMD #5: \_\_\_\_\_  
Number of copies of Completion (as built) plan; form submitted to GMD #5: \_\_\_\_\_

FROM	TO	LITHOLOGIC LOG	FROM	TO	LITHOLOGIC LOG
		See Attached Drill Log			

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Date Submitted: **November 21, 2005** JUL 11 2006  
**KCC WICHITA**

QF 4.10.10 DEEP ANODE DRILLING LOG

REV 1



Job No. 05-155

Date 10/30/2005

Client Southern Star

POWO No. \_\_\_\_\_

Location Kiowa County, Kansas; NW4 Section 23, T-27-S, R-18-W

Depth	Logging Volts: 12.7		Geological Log	Depth	Logging Volts:		Geological Log	No.	Depth	No Coke	With Coke
	Amps	Ohms			Amps	Ohms					
5			0-2 Top Soil	205	3.20	3.97	205-212 Gray Shale, Light	1	310	3.90	6.40
10			2-20 Clay	210	2.70	4.70	212-222 Gray Shale, Light	2	300	3.80	6.40
15				215	2.50	5.08		3	290	3.30	6.40
20			20-38 Sand & Gravel med.	220	3.00	4.23	222-250 Dark Gray Shale,	4	280	3.40	6.40
25				225	3.40	3.74	Iron Pyrite	5	270	2.90	6.40
30				230	3.10	4.10		6	260	3.00	6.40
35			38-53 Sand & Gravel course	235	3.50	3.63		7	250	3.30	6.70
40				240	3.50	3.63		8	240	3.50	6.70
45				245	3.60	3.53		9	230	3.10	6.30
50			53-60 Sand & Gravel	250	3.30	3.85	250-265 Dark Gray Shale,	10	220	3.10	6.70
55			Fine to Medium Brown Clay	255	2.90	4.38	Hard & Flaky	11			
60			60-61 Hard Brown Clay	260	3.00	4.23		12			
65			61-80 Sand & Gravel,	265	2.90	4.38	265-280 Cemented Sand,	13			
70			Fine to Coarse	270	2.90	4.38	Blue Green Shale, Iron	14			
75				275	3.40	3.74	Pyrite, & Gypsum	15			
80			80-85 Tight Fine Sand	280	3.40	3.74	280-288 Dark Gray Shale	16			
85			85-88 Sand & Gravel	285	3.40	3.74	mixed w/Iron Pyrite	17			
90			88-92 Tight Clay, Fine Sand	290	3.30	3.85	288-289 Hard Cemented	18			
95			92-130 Sand & Gravel,	295	3.40	3.74	Sand, Pyrite	19			
100			Fine to Coarse	300	3.80	3.34	289-327 Harder Layer Gray	20			
105				305	3.90	3.26	Shale, Cemented Sand	21			
110				310	3.90	3.26		22			
115				315			Total Depth 312'	23			
120				320				24			
125				325				25			
130			130-205 Tan Silty Clay,	330				26			
135			Hard Yellow Stringer	335				27			
140				340				28			
145				345				29			
150				350				30			
155				355				31			
160				360				32			
165				365				33			
170				370				34			
175				375				35			
180				380				36			
185				385				37			
190				390						Volts	12.70 12.70
195				395						Amps	33.30 64.80
200	0.70	18.14		400						Ohms	0.98 0.98

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Hole Dia.:	10"	Total Depth:	312'	Casing Feet:	212'	Dia.:	10"	Type:	PVC
No. Anodes:	10	Size and Type:	2684 Cl	Anode Lead:	375'	Size:	#8	Type:	Halar
Lbs. Coke:	6000#	Coke Type:	Loresco SC-3	Top of Coke Column:	195'	Vent:	140'		
Lbs. Plug	500#	Plug Type:	PermaPlug	Top of Plug:	175'				

**Darling Drilling Company**  
Telephone (620) 662-7901 1211 W. 4<sup>th</sup>  
Hutchinson, Ks. 67501  
**DRILLER'S TEST LOG**

**Date:** 10-29-05  
**Name:** Southern Star Central Pipeline  
**Address:** Lyons, Kansas 67554  
**County:** Kiowa  
**Quarter:** NW                      **Section:** 23                      **Township:** 27S                      **Range:** 18W

DRILLED FOOTAGE		DESCRIPTION OF STRATA				
From	To					
0	2	Top Soil				
2	20	Clay	X			
20	38	Sand and Gravel Medium				
38	53	Sand and Gravel Coarse				
53	60	Sand & Gravel Fine to Medium Brown Clay				
60	61	Hard Brown Clay, Cemented Sand				
61	80	Sand & Gravel, Fine to Coarse				
80	85	Tight Fine Sand				
85	88	Sand & Gravel				
88	92	Tight Clay, Fine Sand				
92	130	Sand & Gravel, Fine to Coarse (mostly fine)				
130	205	Tan Silty Clay, Hard Yellow Stringer				Static water level: n/a
205	212	Gray Shale, Light				Depth of well: 327'
212	222	Gray Shale, Light				Type & size of casing: PVC
222	250	Dark Gray Shale, Iron Pyrite				PVC: 10" 200# .511W 0 to 217'
250	265	Dark Gray Shale, Hard & Flaky				Gravel pack intervals:n/a
						Grout material: neat cement 0 to 217'
265	280	Cemented Sand, Blue Green Shale, Iron Pyrite, & Gypsum				Contamination: n/a
280	288	Dark Gray Shale mixed w/ Iron Pyrite, Sandstone, Soft & Hard				Direction from well:
288	289	Hard Cemented Sand, Pyrite				Casing above surface:
289	327	Harder Layer Gray Shale, Cemented Sand Layers, Shale Fragments				Bore hole: 16" to 217' - 9" to 327'
						Remarks:

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**BIG BEND GROUNDWATER MANAGEMENT DISTRICT NO. 5**

125 S. Main Stafford, Kansas 67578 (620) 234-5352 Fax (620) 234-5318

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FORM CP-10

APPLICATION FOR PERMIT TO DRILL AND CONSTRUCT  
A CASED CATHODIC PROTECTION BOREHOLE

SEP 28 2006

Referencing Kansas Corporation Commission Regulations  
K.A.R. 82-3-700 through K.A.R. 82-3-710

BIG BEND GMD #5

Permit Application Number CPB-\_\_\_\_\_

To the Big Bend Groundwater Management District No. 5:

Applicant Southern Star Central Pipe, NE whose address is:

<u>455 Wabash</u>	<u>Lyons</u>	<u>KS</u>	<u>67554</u>
(P.O. Box or Street)	(City)	(State)	(Zip Code)
<u>(620)</u>	<u>257-7815</u>		
(Area Code)	(Telephone)		

and makes application to the Big Bend Groundwater Management District No. 5 for a permit to drill and construct a cathodic protection borehole in and through the Big Bend aquifer in the county of Kiowa state of Kansas, to the extent and in accordance with the following:

- The location of the proposed cathodic protection borehole is in the NW quarter of the SW quarter of the NW quarter of Section 23, Township 27 south, Range 18 (west/east) and more particularly described as being near a point 1300 feet north and 50 feet west of the apparent southeast corner of said section.
- The proposed use of the cathodic protection borehole is to provide cathodic protection of the applicant's Greensburg Station facility from electrochemical corrosion.
- The land surface elevation is Est. 2,174' feet above mean sea level and the method of measurement used was (a) surveyed, (b) topographic map or (c) other \_\_\_\_\_.
- The depth to surface or top of bedrock or shale is 120 feet below land surface (bls).
- The depth to the water table of the fresh water aquifer is 234 feet bls.
- Aquifer salinity as indicated by chloride concentration is <100 mg/L and was determined by: (a) published report, (b) test well data, or (c) other \_\_\_\_\_.
- The total depth of the cathodic protection borehole is 250 feet bls.
- A non metallic surface casing equipped with centralizers will be installed in the surface casing borehole when drilling has penetrated 140' feet bls, which is a minimum of 20 feet below bedrock or shale surface as listed in paragraph #4.
- Casing centralizers will be installed on the surface casing beginning at the surface casing's total depth and at 40 feet intervals along the complete length of the surface casing at depths of 140', 100', 60', 20' \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ feet bls.
- The diameter of the surface casing borehole will be a minimum of six inches larger than the outside diameter of the surface casing. The diameter of the borehole containing the surface casing will be 16" inches and the outside diameter of the surface casing will be 9 7/8 inches.

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- 11. The standard dimension ratio (SDR) of the surface casing calculated by dividing the surface casing's outside diameter (OD) of 21 inches by its minimum wall thickness (MWT) of \_\_\_\_\_ inches equals \_\_\_\_\_.
- 12. A pitless surface casing adapter will be installed in the surface casing \_\_\_\_\_ feet bls.
- 13. The annular space between the surface casing and the borehole will be grouted using: (a) cement, (b) neat cement, (c) bentonite clay grout, (d) bentonite cement or (e) other \_\_\_\_\_ from a total surface casing depth of 140 feet bls to \_\_\_\_\_ feet bls.
- 14. The top of the surface casing will be fitted with a watertight cap and will: (a) terminate 3 feet above land surface, (b) terminate in a water resistant and structurally sound vault \_\_\_\_\_ feet bls or (c) be buried \_\_\_\_\_ feet bls.
- 15. The anodes will be installed beginning at a depth of 155 feet bls to a total depth of 245 feet bls.
- 16. Anode conductor (backfill) material will be installed beginning at a depth of 145 feet bls to a total depth of 250 feet bls.
- 17. An anode vent pipe will be installed and completed 3.5 feet above land surface.
- 18. A concrete base or pad (will) (will not) be constructed around the above ground surface casing or vault.
- 19. Will the use of a drilling pit threaten to contaminate fresh and usable groundwater?  
 Yes  No. If Yes complete sections (a) and (b). Circle one: (a) the pit will be: (i) constructed so that the bottom and sides have a hydraulic conductivity no greater than  $1 \times 10^{-7}$  cm/sec., (ii) constructed above ground, or (iii) a portable above ground tank, and (b) the applicant has submitted a surface pond application to the Director, Conservation Division, Kansas Corporation Commission. \_\_\_\_\_ Yes \_\_\_\_\_ No.
- 20. A construction plan is submitted with the application and shows or illustrates the information contained in paragraphs #4 through #18.
- 21. The cathodic protection borehole will be abandoned and plugged if it: (a) is not completed due to unforeseen circumstances, (b) either contaminates or threatens to contaminate a fresh water aquifer, (c) encounters uncontrollable artesian flow, (d) has exhausted its anodes and replacement anodes are not installed within one year, or (e) has not been used for one year and the applicant does not demonstrate intentions to use it.
- 22. The applicant understands and agrees to comply with K.A.R. 82-3-700 through 82-3-710. Further, the applicant may request an exception to these regulations pursuant to K.A.R. 82-3-100(b).

23. Dated at Tulsa, OK, Kansas, this 26<sup>th</sup> day of September 2005

Max Moll, MESA PRODUCTS, INC.  
(Applicant)

By [Signature]  
(Signature)

OPERATIONS MANAGER  
(Title)

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**APPLICANT DO NOT CONTINUE BELOW DOUBLE LINE**

**For Big Bend Groundwater Management District Use**

1) Application received on 9 12 01 05.

2) Application review by Chad Milligan

DISTRICT Geologist  
(Title)

3) The application is hereby denied. The denial was based on the following findings:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4) The application meets or exceeds Cathodic Regulations K.A.R. 82-3-700 through K.A.R. 82-3-710 and is hereby approved by the Big Bend Groundwater Management District No. 5 this 4 day of October, 2005.

Sharon Falk, Mgr

Sharon Falk, Manager  
Big Bend Groundwater Management District No. 5

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