

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-103-02883 County Wetzel District Grant  
Quad Pine Grove 7.5' Pad Name Long Field/Pool Name Willeyville  
Farm name Francis D & Freeda M Brown (Surface Hole) Well Number 409 S 6H  
Operator (as registered with the OOG) Ascent Resources - Marcellus, LLC  
Address 3501 NW 63rd Street City Oklahoma City State OK Zip 73116

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4381626 Easting 527864  
Landing Point of Curve Northing 4381626 529.6 Easting 528049.2  
Bottom Hole Northing 4380582 Easting 529431

Elevation (ft) 1340' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
Water based salt polymer mud

Date permit issued 5/28/2013 Date drilling commenced 7/1/2013 Date drilling ceased 2/26/2014  
Date completion activities began 6/27/2014 Date completion activities ceased 7/31/2014  
Verbal plugging (Y/N) n/a Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 470' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2000' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 1180' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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Reviewed by:  
JUL 05 2016  
AX 07/21/16

**APPROVED**

NAME: Joakim Thomsen  
DATE: 7/5/16

API 47- 103 - 02883 Farm name Francis D & Freeda M Brown (Surface Hole) Well number 409 S 6H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	20"	20"	60'	New	H40/94	n/a	No cement - drilled in
Surface	17-1/2"	13-3/8"	1311.6'	New	J-55/54.5	n/a	Cement to surface
Coal							
Intermediate 1	12-1/4"	9-5/8"	3435'	New	J-55/40	n/a	Cement to surface
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	13080'	New	P110-20	n/a	Cement to surface
Tubing							
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Drilled in						
Surface	Class A	243 lead/832 tail	14.6/15.6	1.37/1.18	99.5	Surface	12
Coal							
Intermediate 1	Type 1	370 lead/711 tail	15.0	1.29	1396	Surface	12
Intermediate 2							
Intermediate 3							
Production	50/50 POZ/Prem NE-1/ASC	1366 lead/1034 tail	14.3/14.7	1.23/1.5	3277	Surface	12
Tubing							

Drillers TD (ft) 13100' Loggers TD (ft) 13100'  
 Deepest formation penetrated Marcellus Plug back to (ft) n/a  
 Plug back procedure n/a

Kick off depth (ft) 5600'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_  
Surface casing - Ran 20 (1 every 2 joints)  
Intermediate casing - Ran 15 (1 every 5 joints)  
Production casing - Ran 85 (1 every 3 joints)

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	6/27/2014	13045		50	Marcellus
2	6/27/2014	12815	12976	50	Marcellus
3	6/30/2014	12610	12751	50	Marcellus
4	7/1/2014	12405	12546	50	Marcellus
5	7/3/2014	12200	12341	50	Marcellus
6	7/7/2014	11995	12136	50	Marcellus
7	7/8/2014	11790	11931	50	Marcellus
8	7/9/2014	11585	11726	50	Marcellus
9	STAGE	SKIPPED			
10	7/10/2014	11175	11316	50	Marcellus
11	7/14/2014	10970	11111	50	Marcellus
12	7/15/2014	10765	10906	50	Marcellus
13	7/16/2014	10285	10446	50	Marcellus
14	7/17/2014	10055	10216	50	Marcellus
15	7/18/2014	9825	9986	50	Marcellus
	Con't	on	Page	4	

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	6/27/14	79.5	7078	n/a	3793	1721	5559	n/a
2	6/27/14	76.2	7220	6059	4356	2754	6660	n/a
3	6/30/14	75.4	5925	5403	4414	3585	7385	n/a
4	7/1/14	77.1	7127	5800	4344	3585	6782	n/a
5	7/3/14	77.06	7118	5760	5781	3585	8235	n/a
6	7/7/14	77.9	6980	5541	4365	3585	6803	n/a
7	7/8/14	76.4	7232	5675	4581	3585	6813	n/a
8	7/9/14	76.3	6941	5454	4524	3585	6802	n/a
9	STAGE	SKIPPED						n/a
10	7/10/14	75	6807	5476	4033	3585	6933	n/a
11	7/14/14	74.2	7222	5480	4045	3585	6952	n/a
12	7/15/14	78.7	7184	6324	4140	3585	6608	n/a
13	7/16/14	75.2	6712	5943	n/a	3585	6797	n/a
14	7/17/14	75.3	6921	5240	4345	3585	6697	n/a
15	7/18/14	75.2	6673	5216	4429	3585	6661	n/a
	Con't	on	Page	4				

Please insert additional pages as applicable.

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API 47- 103 - 02883 Farm name Francis D & Freeda M Brown (Surface Hole) Well number 409 S-6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
16	7/21/14	9595	9756	50	Marcellus
17	7/22/14	9365	9526	50	Marcellus
18	7/23/14	9135	9396	50	Marcellus
19	7/24/14	8905	9066	50	Marcellus
20	7/25/14	8675	8836	50	Marcellus
21	7/26/14	8445	8606	50	Marcellus
22	7/28/14	8215	8376	50	Marcellus
23	7/29/14	7985	8146	50	Marcellus
24	7/30/14	7755	7916	50	Marcellus

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/other (units)
16	7/21/14	68.6	6501	5934	4830	3585	7279	n/a
17	7/22/14	74	6493	5303	4826	3585	6673	n/a
18	7/23/14	72.4	6378	5392	4375	3585	6708	n/a
19	7/24/14	74.4	6395	5317	4640	3585	6795	n/a
20	7/25/14	72.4	6214	5531	5329	3585	6612	n/a
21	7/26/14	74.4	6500	5601	4702	3585	6959	n/a
22	7/28/14	73.7	6497	5353	4803	3585	6461	n/a
23	7/29/14	72.7	6707	n/a	4812	3585	6602	n/a
24	7/30/14	77.9	6346	5469	4740	3560	6654	n/a

Please insert additional pages as applicable.

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Farm name Francis D & Freeda M Brown (Surface Hole) Well number 409 S 6H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>7354'</u>	<u>TVD</u>	<u>13100'</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 719 mcfpd Oil 0 bpd NGL \_\_\_\_\_ bpd Water 6 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
Sand/Shale	0	2305'	0	2305'	
Big Lime	2305'	2392'	2305'	2392'	
Big Injun	2392'	2590'	2392'	2590'	
Shale	2590'	3160'	2590'	3160'	
Gordon Sand	3160'	3204'	3160'	3204'	
Dev Shale	3204'	7173'	3204'	7266'	
Tully Lime	7173'	7178'	7266'	7276'	
Hamilton Shale	7178'	7275'	7276'	7429'	
Marcellus Shale	7275'		7492'	13100'	

Please insert additional pages as applicable.

Drilling Contractor Dallas-Morris Drilling Inc  
Address 103 South Kendall City Bradford State PA Zip 16701

Logging Company ALS Empirca Surface Logging  
Address 6360 W. Sam Houston Pkwy N Suite 100 City Houston State TX Zip 77401

Cementing Company Baker Hughes  
Address PO Box 301057 City Dallas State TX Zip 75303

Stimulating Company Producers Service Corporation  
Address PO Box 2277 City Zanesville State OH Zip 43702

Please insert additional pages as applicable.

Completed by Arnel Bravo Telephone 405-252-7642  
Signature [Signature] Title Regulatory Analyst Date 2/22/2016

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Long 409 S #6H Frac Summary  
 Date Completed: 7/30/2014

Stage	# of Perfs	Total Acid (gal)	Total Water (bbl)	Total Sand (sks)	Total Slurry (bbl)	Pad Vol (bbl)	100 Mesh (sks)	40/70 White (sks)	40/70 CRCS (sks)	30/50 White (sks)	30/50 CRCS (sks)	20/40 White (sks)	20/40 CRCS (sks)	BDP (psi)	ISIP (psi)	1 Min SIP (psi)	2 Min SIP (psi)	5 Min SIP (psi)	ATP (psi)	Avg Rate (bbl/min)	PUMP DOWN (bbl)	Produced Water (bbl)	
1	50	1500	5559	1721	5970	819	502	1219	0	0	0	0	0	N/A	3793	3596	3470	3308	7078	79.5	0	0	
2	50	1500	6660	2754	7000	827	502	2252	0	0	0	0	0	6059	4356	3813	3637	3406	7220	76.2	351	1020	
3	50	1500	7355	3585	7842	869	502	2668	415	0	0	0	0	5403	4414	4116	3819	3644	5925	75.4	311	1460	
4	50	1500	6782	3585	7230	857	502	2668	415	0	0	0	0	5800	4344	3841	3700	3514	7127	77.1	275	0	
5	50	1500	8235	3585	8714	865	502	2668	415	0	0	0	0	5760	5781	5406	5234	4767	7118	77.06	260	0	
6	50	1500	6803	3585	7163	873	502	2668	415	0	0	0	0	5541	4365	4037	3904	3706	6980	77.9	247	0	
7	50	1500	6813	3585	7273	854	502	2668	415	0	0	0	0	5625	4581	4229	4058	3770	7232	76.4	236	1536	
8	50	1500	6802	3585	7274	858	502	2668	415	0	0	0	0	5454	4524	4057	3854	3561	6941	76.3	238	945	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	50	1500	6933	3585	7449	909	502	2668	415	0	0	0	0	5476	4033	3721	3581	3391	6807	75	234	1110	
11	50	1500	6952	3555	7412	890	291	2879	415	0	0	0	0	5480	4045	3760	3591	3371	7222	74.2	221	1003	
12	50	1500	6608	3585	7102	948	502	2668	415	0	0	0	0	6324	4140	3601	3629	3420	7184	76.7	188	1226	
13	50	1500	6797	3685	7225	937	502	2668	415	0	0	0	0	5943	N/A	N/A	N/A	N/A	6712	75.2	174	1023	
14	50	1500	6697	3585	7139	915	502	2668	415	0	0	0	0	5240	4345	4116	3965	3698	6921	75.3	162	1080	
15	50	1500	6651	3555	7143	909	502	2668	415	0	0	0	0	5216	4429	3897	3714	3446	6673	75.2	132	956	
16	50	1500	7278	3585	7718	917	502	2668	415	0	0	0	0	5954	4630	4322	4055	3684	6501	68.6	137	0	
17	50	1500	6673	3585	7091	922	502	2668	415	0	0	0	0	5303	4826	4426	4195	3859	6493	74	115	0	
18	50	1500	6708	3585	7027	916	502	2668	415	0	0	0	0	5392	4375	3904	3770	3579	6378	72.4	103	0	
19	50	1500	6795	3585	7111	949	502	2668	415	0	0	0	0	5317	4640	4410	4177	3830	6395	74.4	90	0	
20	50	1500	6612	3585	6927	941	502	2668	415	0	0	0	0	5531	5329	4449	4128	3603	6214	72.4	80	0	
21	50	1500	6959	3585	7272	938	502	2668	415	0	0	0	0	5601	4702	4253	4136	3812	6500	74.4	68	0	
22	50	1500	6461	3585	6918	928	502	2668	415	0	0	0	0	5353	4903	4194	3903	3509	6497	73.7	117	890	
23	50	1500	6602	3585	7127	951	502	2668	415	0	0	0	0	N/A	4812	4219	4029	3696	6707	72.7	53	874	
24	50	1500	6654	3560	7152	950	477	2668	415	0	0	0	0	5469	4740	4111	3882	3557	6346	77.9	28	595	
TOTAL / AVG	1150	34500	156430	79735	166279	20745	11310	59710	8715	0	0	0	0	5330.5	4356.8	3946.9	3762.2	3484.2	6465.5	72.1	3820	13728	

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Long 409S 6H Perforating Detail

Stage 1						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
N/A	13045	N/A	N/A	N/A	N/A	RDV
Stage 2						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
13015	12975-76	12935-36	12895-96	12855-56	12815-16	PD
Stage 3						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
12785	12750-51	12715-16	12680-81	12645-46	12610-11	PD
Stage 4						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
12580	12545-46	12510-11	12475-76	12440-41	12405-06	PD
Stage 5						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
12375	12340-41	12305-06	12270-71	12235-36	12200-01	PD
Stage 6						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
12170	12135-36	12100-01	12065-66	12030-31	11995-96	PD
Stage 7						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
11965	11930-31	11895-96	11860-61	11825-26	11790-91	PD
Stage 8						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
11760	11725-26	11690-91	11655-56	11620-21	11585-86	PD
Stage 9						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
STAGE SKIPPED						
Stage 10						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
11350	11315-16	11280-81	11245-46	11210-11	11175-76	PD
Stage 11						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
11145	11110-11	11075-76	11040-41	11005-06	10970-71	PD
Stage 12						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
10940	10905-06	10870-71	10835-36	10800-01	10765-66	PD
Stage 13						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
10485	10445-46	10405-06	10365-66	10325-26	10285-86	PD

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Long 409S 6H

Stage 14						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
10255	10215-16	10175-76	10135-36	10095-96	10055-56	PD
Stage 15						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
10025	9985-86	9945-46	9905-06	9865-66	9825-26	PD
Stage 16						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
9795	9755-56	9715-16	9675-76	9635-36	9595-96	PD
Stage 17						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
9565	9525-26	9485-86	9445-46	9405-06	9365-66	PD
Stage 18						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
9335	9395-96	9255-56	9215-16	9175-76	9135-36	PD
Stage 19						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
9105	9065-66	9025-26	8985-86	8945-46	8905-06	PD
Stage 20						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
8875	8835-36	8795-96	8755-56	8715-16	8675-76	PD
Stage 21						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
8645	8605-06	8565-66	8525-26	8485-86	8445-46	PD
Stage 22						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
8415	8375-76	8335-36	8295-96	8255-56	8215-16	PD
Stage 23						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
8185	8145-46	8105-06	8065-66	8025-26	7985-86	PD
Stage 24						
Plug Setting Depth	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
7955	7915-16	7875-76	7835-36	7795-96	7755-56	PD

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(BOTTOM HOLE: 80°39'27.1")

LON: -80°40'32.6"

2551'

LAT: 39°37'30"

- 1 - Well ties and Latitude and Longitude were measured by GPS (Sub-meter Mapping Grade). Boundaries are referenced to UTM East North (Zone 17 North - NAD 1983)
- 2 - Surface owners and adjacent information obtained from the West Virginia County Assessor's Tax Records.
- 3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to complete title Opinion.

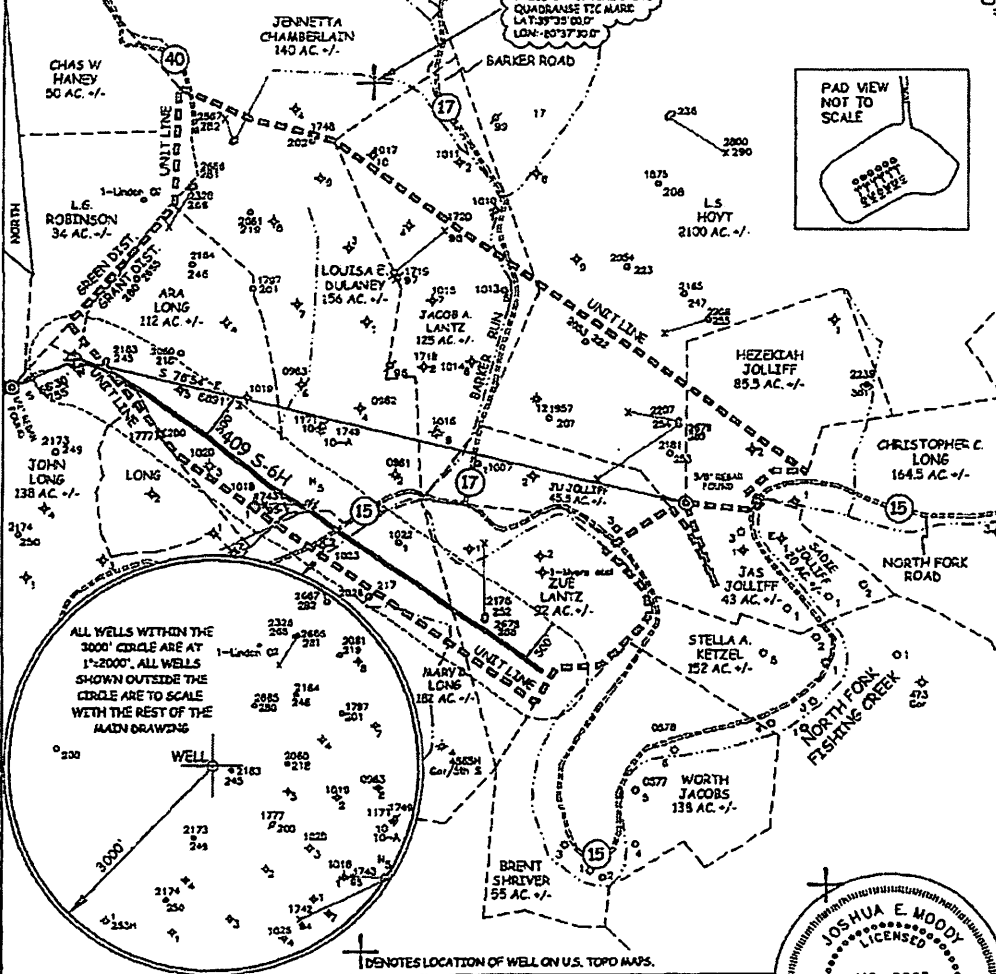
UTM Coordinates  
(Zone 17N-NAD 1983)

Surface N-4,381,626m.  
E-527,884m.

Bottom Hole N-4,380,580m.  
E-529,430m.

LOCATION REFERENCES  
NAD 1983  
N 04°19' W 284' UTILITY POLE  
N 44°33' E 192' SPICE

**MAP OF  
H.G. ENERGY, LLC  
-LONG 409 UNIT-**

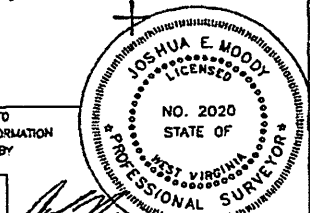


JOB # 12-025  
DRAWING # 12HG409FOLDER  
SCALE 1" = 1500'  
MINIMUM DEGREE OF ACCURACY SUB-METER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
MOODY LAND SURVEYING, LLC  
ST. MARYS, WV 26170



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

JOSHUA E. MOODY, P.S. 2020  
DATE 12/08/14  
OPERATOR'S WELL # 409 S-6H

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1340' WATERSHED NORTH FOR FISHING CREEK API WELL # 47 - 103  
 DISTRICT GRANT COUNTY WETZEL STATE COUNTY PERMIT  
 QUADRANGLE PINE GROVE 7.5'  
 SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-  
 OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 580 ACRES +/-  
 PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR  
 STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION   
 OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED LOCATION  
 PLUG & ABANDON CLEAN OUT & REPLUG   
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD= 7,354.44' MD= 13,100'  
 WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT DIANE WHITE  
 ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD  
 PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

FORM WW-6

LEASE # 31950-50 et al

Received  
Office of Oil & Gas  
JUL 05 2016

(BOTTOM HOLE: 80°39'27.1")

LON: -80°40'32.6"

2551'

- 1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).
- 2 - Surface owners and adjainers information obtained from the Wetzel County Assessor's tax records.
- 3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete title Opinion.

SURVEY NOTES

UTM Coordinates  
(Zone 17N-NAD 1983)

Surface N-4,381,626m.  
E-527,864m.

Bottom Hole N-4,380,580m.  
E-529,430m.

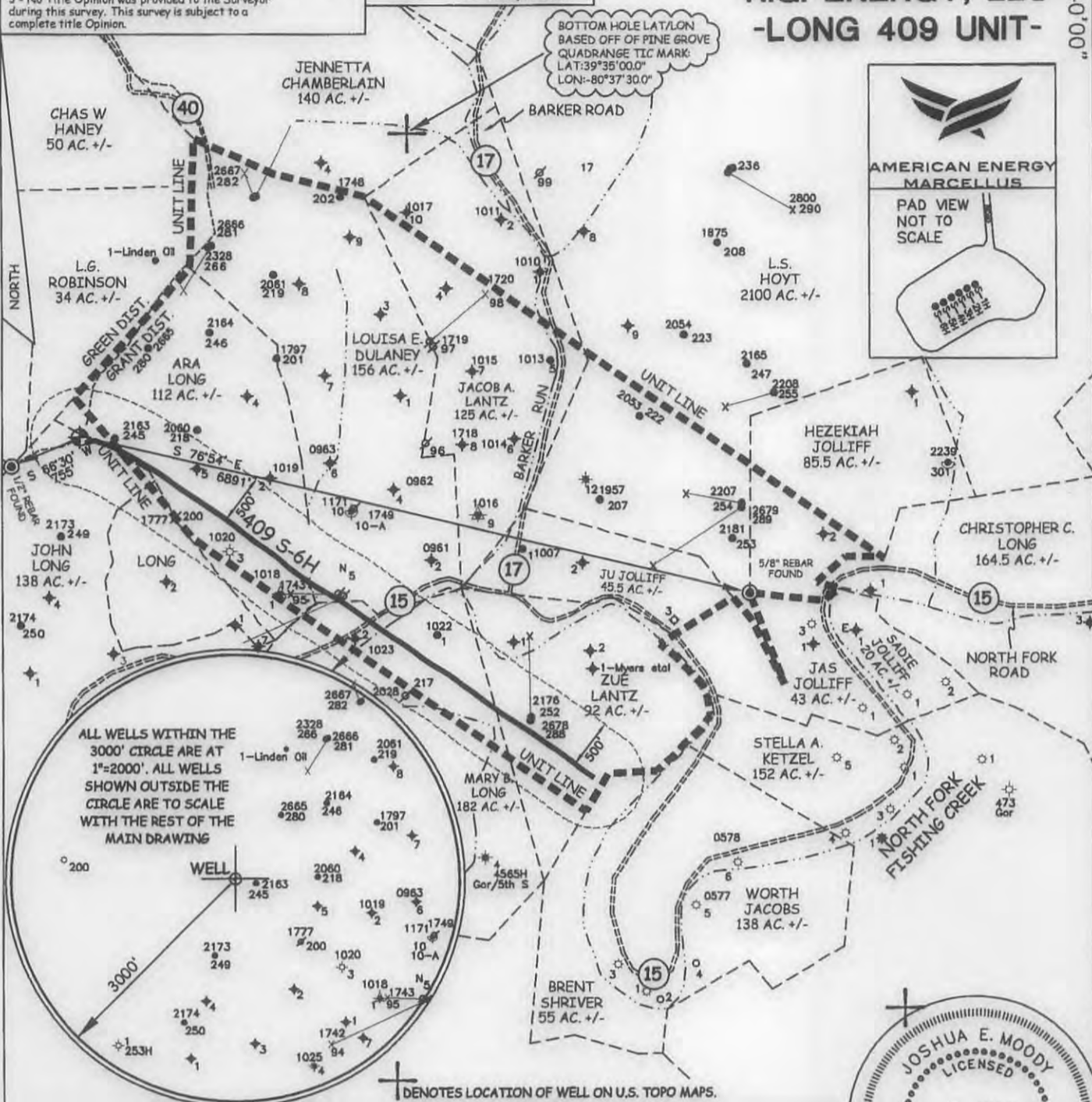
LOCATION REFERENCES

NAD 1983  
N 84°19' W 284' UTILITY POLE  
N 44°33' E 192' SPIKE

LAT: 39°37'30"

# MAP OF H.G. ENERGY, LLC -LONG 409 UNIT-

LON: 80°40'00"



ALL WELLS WITHIN THE 3000' CIRCLE ARE AT 1"=2000'. ALL WELLS SHOWN OUTSIDE THE CIRCLE ARE TO SCALE WITH THE REST OF THE MAIN DRAWING

⊕ DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.



JOB # 12-025  
DRAWING # 12HG409FOLDER  
SCALE 1" = 1500'  
MINIMUM DEGREE OF ACCURACY SUB-METER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
MOODY LAND SURVEYING, LLC  
ST. MARYS, WV 26170

REV.2  
JOSHUA E. MOODY, P.S. 2020  
DATE 12/08/14  
OPERATOR'S WELL # 409 S-6H

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1340' WATERSHED NORTH FOR, FISHING CREEK API WELL # 47-103-  
DISTRICT GRANT COUNTY WETZEL STATE 47 COUNTY 103 PERMIT           
QUADRANGLE PINE GROVE 7.5'

SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-  
OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 580 ACRES +/-  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION   
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED LOCATION  
PLUG & ABANDON  CLEAN OUT & REPLUG   
TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD= 7,354.44' MD= 13,100'  
WELL OPERATOR AMERICAN ENERGY-MARCELLUS DESIGNATED AGENT BRANDON MCKINLEY  
ADDRESS 3501 NW 63rd STREET ADDRESS 3501 NW 63rd STREET  
OKLAHOMA CITY, OK 73116 OKLAHOMA CITY, OK 73116  
LEASE # 31950-50 et al

COUNTY NAME PERMIT

LAT: 39°35'01.7" (BOTTOM HOLE: 39°34'27.6")

(BOTTOM HOLE: 80°39'27.1")

LON: -80°40'32.6"

2551'

LAT: 39°37'30"

LON: 80°40'00"

15,007'

LAT: 39°35'01.7"

(BOTTOM HOLE: 39°34'27.6")

1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

2 - Surface owners and adjoiners information obtained from the Wetzell County Assessor's tax records.

3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete title Opinion.

SURVEY NOTES

UTM Coordinates  
(Zone 17N-NAD 1983)

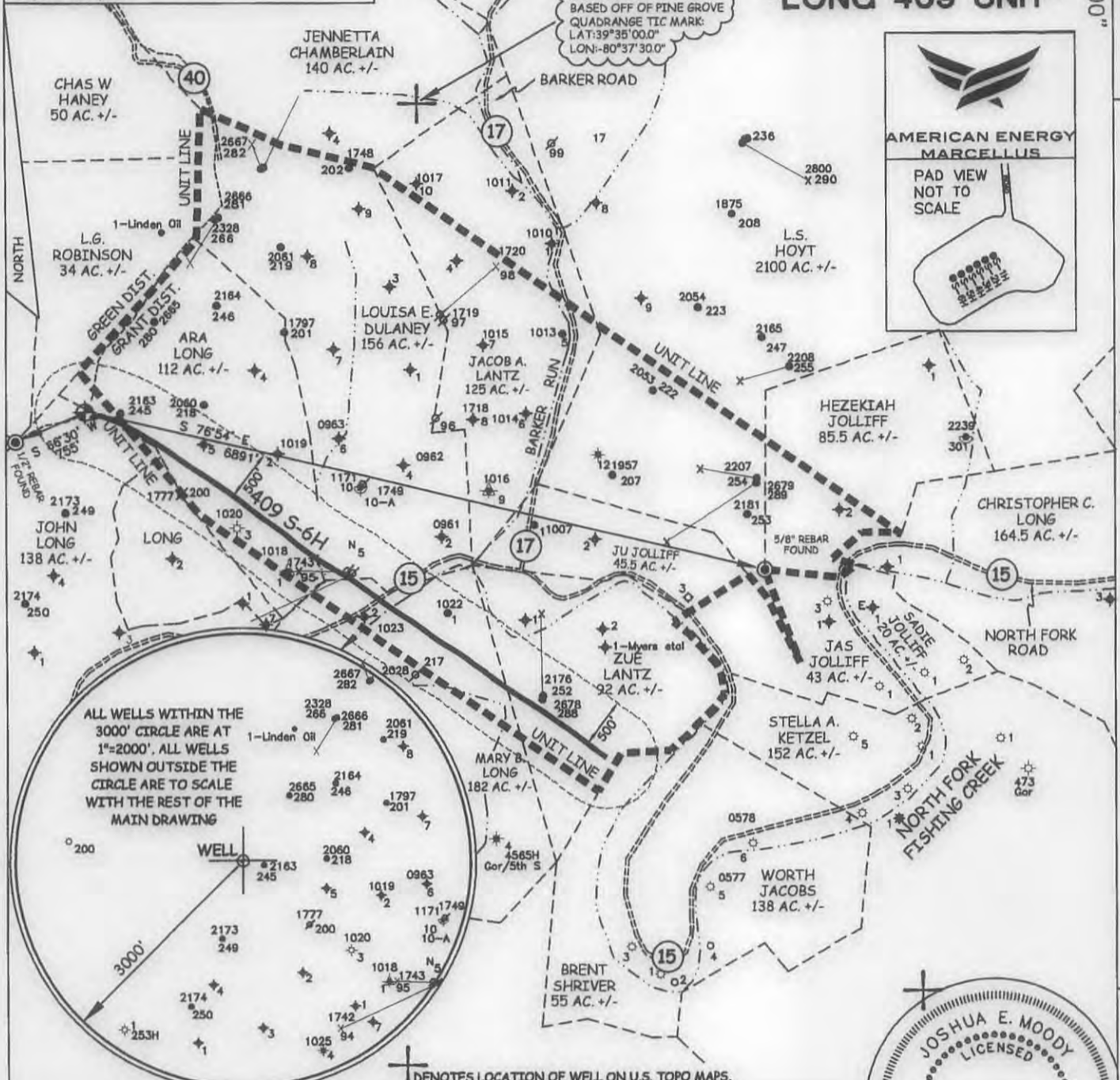
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N 44°33' E 192' SPIKE

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JOB # 12-025  
DRAWING # 12HG409FOLDER  
SCALE 1" = 1500'  
MINIMUM DEGREE OF ACCURACY SUB-METER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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**WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION,  
OFFICE OF OIL AND GAS**

MOODY LAND SURVEYING, LLC  
ST. MARYS, WV 26170

JOSHUA E. MOODY, P.S. 2020  
DATE 12/08/14  
OPERATOR'S WELL # 409 S-6H

WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1340' WATERSHED NORTH FOR, FISHING CREEK API WELL # HGA  
DISTRICT GRANT COUNTY WETZEL 47 - 103 - 02883  
QUADRANGLE PINE GROVE 7.5' STATE COUNTY PERMIT

SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-  
OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 580 ACRES +/-  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR  
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OKLAHOMA CITY, OK 73116 OKLAHOMA CITY, OK 73116

FORM WW-6 LEASE # 31950-50 et al