west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL
Vertical / Plugging - 3

GASTAR EXPLORATION INC.
1331 LAMAR STREET, SUITE 650

HOUSTON, TX 77010

Re: Permit Modification Approval for SMITH A-1
47-093-00095-00-00

NEW PLUGGING METHOD TO ALLOW FOR NEWLY DISCOVERED STRING OF 4 1/2 " CASING.

GASTAR EXPLORATION INC.

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: SMITH A-1
Farm Name: SMITH, FRED & GLORIA
U.S. WELL NUMBER: 47-093-00095-00-00
Vertical / Plugging - 3
Date Issued: August 9, 2016

9300095P M

Smith A1/A2 Plugging Procedure

1. MIRU on well.
2. Load hole with brine to kill well.
3. Pull all 2 3/8" Tubing (XXXX' ?)
4. MIRU wireline. Verify TD of 4 ½" Casing and TOC with CBL. Verify TOC is above A2 leg.
5. TIH with tubing and set 4 ½" mechanically set cement retainer at TOC.
6. Pump cement plug from XXXX' (TD) to XXXX' (retainer depth).
7. Trip out of hole.
8. Cut 4 ½" casing at xxxx' (approximately 100' above retainer).
9. Pull all casing.
10. Trip in hole.
11. Spot cement plug from XXXX' (approximately 200' above retainer) to 5680'.
12. 6% gel spacer from 5680' to 5570'.
13. Cut 7" casing at 5570'.
14. Pull all casing.
15. Trip in hole.
16. Spot cement plug from ~~5470'~~ 5590' to ~~5590'~~ 5470'.
17. 6% gel spacer from 5470' to 4000'.
18. Free point and cut 9 5/8" casing at 4000'.
19. Pull all casing.
20. Set cement plug at 4626' to 4500'.
21. 6% gel spacer from 4500' to 4020'.
22. Set cement plug from 4020' to 3900'.
23. 6% gel spacer from 3900' to 2400'.
24. Set cement plug from 2400' to 2300'.
25. 6% gel spacer from 2300' to 1282'.
26. Set cement plug from 1282' to 1182'.
27. 6% gel spacer from 1182' to 163'.
28. Set cement plug from 163' to surface.
29. Install 7" X 4' monument with API number 47-093-00095.

OK

GNM

8/9/16

9300095P Mon

McLaughlin, Jeffrey W

From: Mike McCown <mike.mccown@outlook.com>
Sent: Sunday, August 07, 2016 5:54 PM
To: McLaughlin, Jeffrey W
Subject: Smith P&A
Attachments: New Smith A1 Plugging procedures.docx; ATT00001.htm

Jeff
Friday we started pulling tubing on this well.
Discovered there is a string on 4 1/2" at the surface not identified in well recorded.
Please see our proposed modified plugging prognosis for your approval. Tom Rowan has also provided to the local inspector.
Thanks Jeff,
Mike

Sent from my iPhone

Begin forwarded message:

> **From:** Tom Rowan <tomrowan13@gmail.com>
> **Date:** August 6, 2016 at 2:55:05 PM EDT
> **To:** Mike McCown <mike.mccown@outlook.com>
> **Cc:** Bill Blagrave <bblagrave@gastar.com>, Rick Johnson <RJohnson@gastar.com>, "John O'Dowd" <jodowd@gastar.com>
> **Subject: Re: Copy of CBL in Well File**
>
> Here's a new plugging procedure for the Smith well. See if I missed anything.
>
> On Sat, Aug 6, 2016 at 1:59 PM, Mike McCown <mike.mccown@outlook.com> wrote:
> Problem is we don't know anything about 4 1/2" cement.
>
> Sent from my iPad
>
> > On Aug 6, 2016, at 12:27 PM, Bill Blagrave <bblagrave@gastar.com> wrote:
> >
> > Mike and Tom:
> >
> > Attached is a copy of the Cement Bond Log: Date 8/12/03 of 7" Csg's Cement Job.
> >
> > William H. Blagrave
> > Gastar Exploration, Inc.
> > Production Engineer
> > 3030 NW Expressway, Suite 500
> > Oklahoma City, OK 73112
> > Office: 405-772-1500
> > Fax: 405-945-9664
> > Dir: 405-772-1514
> > Cell: 620-482-0886

9300095P MOD

> Email bblagrave@gastar.com
>
> -----Original Message-----
> From: Bill Blagrave [mailto:bblagrave@gastar.com]
> Sent: Saturday, August 06, 2016 10:34 AM
> To: Bill Blagrave <bblagrave@gastar.com>
> Subject: Message from "RNP002673611B88"
>
> This E-mail was sent from "RNP002673611B88" (MP C6502).
>
> Scan Date: 08.06.2016 11:33:36 (-0400)
> Queries to: OKC_Scan@gastar.com
>
> <20160806113336113.pdf>

WR-35
Rev (5-01)

9500095P Mon

DATE: S[illegible]mber 27, 2005
Ar[illegible]#: 47-093-00095

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Leslie N. & Gloria J. Smith Operator Well No.: Smith A-1/A-2

LOCATION: Elevation: 2404' Quadrangle: Leadmine 7.5'

District: Saint George County: Tucker
Latitude: 13400 Feet South of 39 Deg. 15 Min. 0 Sec.
Longitude 1600 Feet West of -79 Deg. 35 Min. 0 Sec.

Company: MegaEnergy Operating, Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 9085 E. Mineral Cir, Ste 270	26" csg	22'	22'	10 sxs
Englewood, CO 80112	20" H40 csg	163'	163'	80 sxs
Agent: Paul Smith	13-3/8" J55	1232'	1232'	935 sxs
Inspector: Craig Duckworth	9-5/8 J55 &	5794'	5794'	405 sxs
Date Permit Issued: 5-31-2005	N80			
Date Well Work Commenced: 5-18-2005	7" P-110	7550'	7550'	290 sxs
Date Well Work Completed: 6-9-2005	4-1/2" L80	Liner	1823'	105 sxs
Verbal Plugging: N/A	(A-2 lat)			
Date Permission granted on: N/A	2-3/8" L80	Tubing	7304'	
Rig: Key Energy service unit				
Total Depth (feet): A-1: 7550 / A-2: 7750				
Fresh Water Depth (ft.): 277				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.):				

OPEN FLOW DATA

Producing formation Tuscarora Pay zone depth (ft) 7325-7352' (A-1)
Gas: Initial open flow 3,000 MCF/d Oil: Initial open flow ____ Bbl/d
Final open flow no flow MCF/d Final open flow ____ Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure 100 psig (surface pressure) after N/A Hours

Second producing formation Tuscarora Pay zone depth (ft) 7684-7750' (A-2)
Gas: Initial open flow 10,000 MCF/d Oil: Initial open flow ____ Bbl/d
Final open flow 1,300 MCF/d Final open flow ____ Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure 2,250 psig (surface pressure) after ____ Hours

Received
JUN 16 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [signature]
By: J. Scott Hornafius
Date: September 27, 2005

93 00095 P Moo

Smith A-1 & A-2: 47-093-0095

Location:
Township: Saint George
County: Tucker
Quadrangle: Leadmine

Elevation GL: 2404'
KB: 2419'

Spud date: 7-9-2003
Drilling complete: 8-25-2003

A-1 Straight Hole Formation Tops:

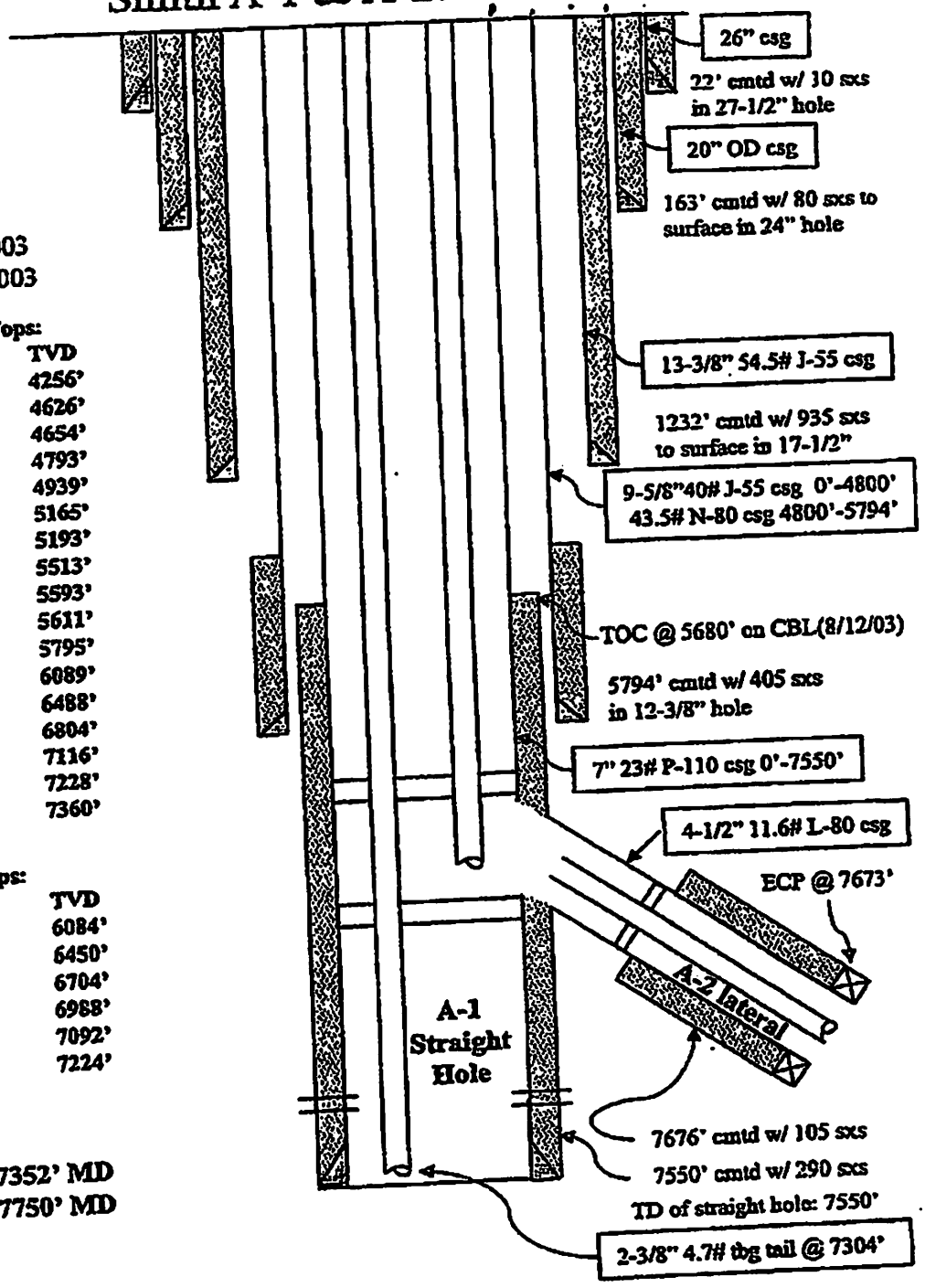
	MD	TVD
T/Tully:	4266'	4256'
T/Onondaga:	4636'	4626'
T/Huntersville:	4664'	4654'
T/Oriskany:	4804'	4793'
T/Helderberg:	4950'	4939'
T/Mandata:	5176'	5165'
T/Corriganville:	5204'	5193'
T/Tonoloway:	5524'	5513'
T/Salt:	5604'	5593'
B/Salt:	5622'	5611'
T/Wills Creek:	5806'	5795'
T/Lockport:	6100'	6089'
T/Williamsport:	6500'	6488'
T/Rose Hill:	6816'	6804'
T/Clinton:	7128'	7116'
T/Medinia:	7240'	7228'
T/Tuscarora:	7372'	7360'

A-2 Sidetrack Formation Tops:

	MD	TVD
T/Lockport:	6100'	6084'
T/Williamsport:	6582'	6450'
T/Rose Hill	6944'	6704'
T/Clinton:	7350'	6988'
T/Medinia:	7500'	7092'
T/Tuscarora:	7680'	7224'

Completions

A-1: Perforated 7325-7352' MD
A-2: Open-Hole 7684-7750' MD



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Environmental Protection