

west virginia department of environmental protection

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary www.dep.wv.gov

February 18, 2014

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-8101328, issued to GEOMET OPERATING COMPANY INC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalities being imposed upon the operator.

This permit will expire in two (2) years from date of issue 1f there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: SOUTHERN DICKINSON #4 (SD-4

Farm Name: SOUTHERN LAND COMPANY

API Well Number: 47-8101328

Permit Type: Plugging
Date Issued: 02/18/2014

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

- 1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
- 2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
- 3. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B Rev. 2/01

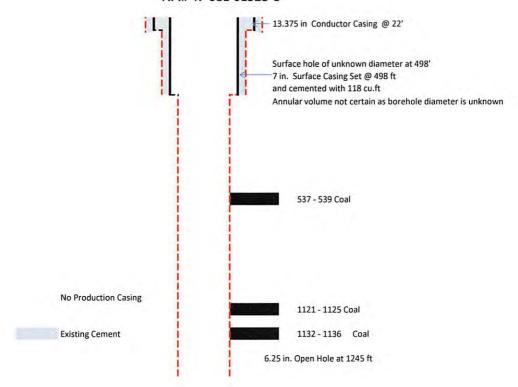
1) Date November 15th	, 2013
2) Operator's	
Well No. SD-4	
3) API Well No. 47-0	081 - 1328C

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

5) Location: E	levation 2303.69	Watershed Harper Branch SandLick Creek
	istrict Clear Fork \mathcal{D}^{\setminus}	County Raleigh & Quadrangle Eccles 331
	r GeoMet, Birmingham	Fric Vance
) Well Operato Addres		7) Designated Agent Eric Vance Address 149 Fire Trail Drive
Addles	Birmingham, AL 35244	Daniels, WV 25832
) Oil and Gas	Inspector to be notified	9) Plugging Contractor Name Universal Well Services
Address Bo		Address 5252 RT 1428
And the state of t	mitz WV, 25978	Allen, KY 41601
Once the hole is cleaned. This cement plug will be a	ed to bottom, a Class A cement plug with 3% or	ner of plugging this well is as follows: 245' or lowest achievable point below the bottom coal zone. r less CaCl will be set from TD to 921'(200' above the second coal seam). n be tagged to make sure that it is at least 1021' (100' above the second coal sea 21'.
Once the hole is cleaned. This cement plug will be a lift it is not, another plus another plus plug will be tag. Once the lower sec.	ed to bottom, a Class A cement plug with 3% or allowed to set for a minimum of 4 hours and will the ug will be spotted from the tag depth to 92 ged after at least 4 hours and the procestion is cemented, a cement plug will be	245' or lowest achievable point below the bottom coal zone. r less CaCl will be set from TD to 921'(200' above the second coal seam). n be tagged to make sure that it is at least 1021' (100' above the second coal sea
Once the hole is cleaned. This cement plug will be a lift it is not, another plus another plus plug will be tag. Once the lower sec.	ed to bottom, a Class A cement plug with 3% or allowed to set for a minimum of 4 hours and will the ug will be spotted from the tag depth to 92 ged after at least 4 hours and the procestion is cemented, a cement plug will be	245' or lowest achievable point below the bottom coal zone. r less CaCl will be set from TD to 921'(200' above the second coal seam). n be tagged to make sure that it is at least 1021' (100' above the second coal sea 21'. ss continued until a cement plug is in place to at least 1021' pe set from the top of the lower plug to the surface.
Once the hole is cleaned. This cement plug will be a lift it is not, another plud will be tage. Once the lower section of the section of the lower section.	and to bottom, a Class A cement plug with 3% of allowed to set for a minimum of 4 hours and will the aug will be spotted from the tag depth to 92 ged after at least 4 hours and the procestion is cemented, a cement plug will be a used, consisting of 50/50 Class A PozMix with 10% Some place of the process o	245' or lowest achievable point below the bottom coal zone. r less CaCl will be set from TD to 921'(200' above the second coal seam). In be tagged to make sure that it is at least 1021' (100' above the second coal sea 21'. It is secontinued until a cement plug is in place to at least 1021' The set from the top of the lower plug to the surface. Alt & 2% Bentonite gel. A permanent marker will be installed and the site reclaimed

SD-4 Plug and Abandon Schematic

API# 47-081-01328-C





JAN 03 2311 WV Department of Environmental Protection4 02/21/2014

Beckly

8101328P Beckly

GEOMET WELL PROFILE

Well Number		D-4	Date of Job	1-2	6-12	
Reason for Job		_Completion _Work Over		_Check Pit _Preventati		
Conditions Found (sand,	coal fines, s	scale, etc.)	Propo	stack	together	
Rig number and operator	Lacso	R.5 # 2	Jase	(Oci	ton	
PRODUCTION CASING			Set @			
PLUG DETAIL @	_	TUBING DETAIL	_Subs	Size	23/ ₈ Threa	d Ernel
@ @ @ @ @ @ @	-	-42	_ Joints Barrel	1182.	40	
@	- -		Seat Nipple	. 95		
@	-		Tail Joint	11000		
<u>@</u>	-	43	Total EOT	1183.3	<u> </u>	
<u>@</u>	-	1183.35	_601			
<u>@</u>	-	PUMP DESCRIPT	TON (OUT)			
@	-	1/	1 1/2"		Insert	Other
	-		1 25/32"		Split Ring	PAP
PERFORATION DETAIL			_		-	
@	SPF	PUMP DESCRIPT			•	••
	SPF		_ 1 1/2"		Insert	Other
@	SPF		1 25/32"		Split Ring	PAP
	SPF	Commonto	p 4	0	411-051	•
	SPF	Comments	11 062	<u> </u>	10 000	
@	SPF	RODS	Size 5/8	# Rods	Sys Ponies	26 1/4 VI4'on
	SPF	RODS	Size Size	#Rods	Ponies	
@	SPF		0120	_#11003		·
@	SPF	REMARKS ~	had M	All-	er on took	14.66
<u> </u>	SPF	2277 of	Thele	O() (ic)	700/	77 507.
<u> </u>	SPF	Atur on	let mel	an.		
	SPF	a compa	<u> </u>			
	SPF	TD	حرّ		SCALE DETAIL	
@	SPF	PBTD	1204	-	# Joints	
@	SPF	Bottom Perf		_	Thickness	
<u> </u>	SPF			-	# Rods	
@	SPF			7		
@	SPF	LAST SERVICE D	ATE	•		
@	SPF				E	RECEIVE
@	SPF	SERVICE FREQU	ENCY		Office.	RECEIVED
@	SPF		ME	171	. Omco	of Oil and Gas
@	SPF	Signature	4110	110		11.0.0.

WR-35 Rev (5-01)		r	OATE: March 1	1, 2005
Stat Department a Off	o of West Virg of Bavirormsont ice of Oil and C	inia al Protection ins	API#:	47-081-01328C
	or's Report of	Vell Work		MAR 1 & 2003
Farm name: Southern Land Company		eretor Well No.:	SD-4	ביין ירופי (דין דואה ביין אירופי (דין דואה ביין אירופי (דין דואה ביין אירופין אירופין אירופין אירופין אירופין
LOCATION: Elevation: 2303.63	Qu	adrangle:Ec	zles	
District: Clear Fork Latitude: 0 Feet South o[_37 Longitude0 Feet West of81	Cour Deg48 Deg17	ty: <u>Raleigh</u> _Min58.63 _Min05.14	Sec.	
Company: AMVEST Oil and Gas. luc.	Casing &	Used In	Left to well	Cement mi
Address Oca Baarla War I S.	Tubing	drilling]	up Cu. Ft.
Address: One Boar's Read Points Charlottesville, Virginia 22905	13 3/8"	22'	22'	NA
Agent: Authory A. Wilhelt	T	498'	498'	118
Impactors Richard Compbell	ļ	ļ		
Date Permit Imaged: June 10, 2004		 		
Date Well Work Commenced 9/21/2004	 	ļ		
Date Well Work Completed: 9/23/2004				
Verbal Planaina:				
Date Permission granted out				
Rotary x Cable Rig Union 219		 		
Total Depth (fest): 1245		 		
Fresh Water Depth (ft.): N/A				
Salt Water Depth (fl.): N/A				
Is coal being mined in area (N/Y)? N				
Cool Depths (IL):_ 523-524, 537-539, 1121-1125 1132-1136 OPEN FLOW DATA				
Producing formation Pocaleonias #2 and #6 Gas: Initial open flow N/A MCP/d Oil: Final open flow 60 MCF/d Fina Time of open flow between initial and fin Static rock Pressure 220 pelg (surf	l open flow	_N/YBPN IOMN/Y_BP	A A	
Second producing formation Gas: Initial open flow MCF/d Oil: In Final open flow MCF/d Fina Time of open flow between initial and fin Static rock Pressure psig (surface p	Pay zone itial open flow il open flow al tests pressure) after	depth (ft) W Bbl/ Hours Hours	//d //d	
NOTE: ON BACK OF THIS FORM PUT THE FOI INTERVALS, FRACTURING OR STIMULATING, LOG WHICH IS A SYSTEMATIC DETAILED OR INCLUDING COAL ENCOUNTERED BY THE WE Signed: By: JALLAN Date: 3/14/05	LLOWING: I). PITYSICAL (DETAILS OF	PERFORATRO	ns,

Excles 6

All REGEIVE/1/13
Office of Oil and Gas

U.3 CO MAL

Well: SD-4 0/3200 Permit Number: 47-081-649250 District: Clear Fork

County: Raleigh

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL

CHANGE, ETC.

Date: 9/23/2004

Well encounterd a show of gas in the Pocahonias #2 and #3 seams and has been completed open hole without stimulation.

ftem

Planned

Actual

Treatment Remarks

Formation	Top	Bottom	Remarks
Clay	7	18	
Sand	18	163	
Sand and Shale	163	217	
Sand	217	335	
Sand and Shale	335	404	
Sand	404	475	
Shale	475	523	
Coal	523	524	
Shale	524	537	
Coal	537	639	
Shale	539	680	
Sand and Shale	580	622	
Salt Sand	622	720	
Shale	720	725	
Sand and Shale	725	985	
Shale	985	1038	
Salt Sand	1038	1076	
Shale	1078	1121	
Coal	1121	1125	show gas
Shale	1125	1132	
Coal	1132	1136	show gas
Sand and Shale	1136	1193	
Red Shale	1193		

, LESS THAN 20"

RECEIVED Office of Oil and Gas

JAN 03131

WW-4A Revised 6-07

1) Date: 11/15/13		
2) Operator's Well Num SD-4	oer	Ī
3) API Well No · 47 -	081 - 1328C	

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface C	wner(s) to be served:	, 5) (a)	Coal Operator		/
(a) Name	Southern Land Company LP	V	Name	Black King Mine Development	V
Address	300 Capitol Street Suite 1401		Address	PO Box 271 300 Running Right Way	
	Charleston, WV 25301	1		Julian WV 25529	
(b) Name	Daniel McMIllion	1	(b) Coal Ow	ner(s) with Declaration	T.
Address	300 Arlington Road		Name	Southern Land Company LP	/
	PO Box 214 Harper WV 2585102	214	Address	300 Capitol Street Suite 1401	
				Charleston, WV 25301	
(c) Name			Name		
Address			Address		
6) Inspector	Gary Kennedy	V	(c) Coal Les	see with Declaration	/
Address	PO Box 268 Nimitz Wv 25978		Name	Black King Mine Development	V
			Address	Po Box 271 300 Running Right Way	
Telephone	304-382-8402			Julian WV 25529	

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

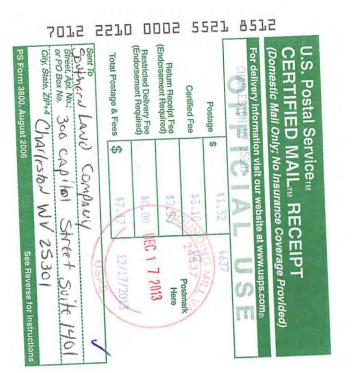
The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

	Well Operator	GeoMet Operating Company	
	By:	Jeff Cooper	
	Its:	Production Manager	111111111111111111111111111111111111111
	Address	GeoMet Operating Co. Inc	CKAZIIIM
		5336 Stadium Trace Pkwy, 206 Birmingham, AL 35244	NOTARY
	Telephone		PUBLIC '
	10.10	***************************************	: REG. #7188636
		^	: MY COMMISSION
	inte	ay of December	2 EXPIRES
ubsarihad and sworn hafara ma t	hie / / de		
Subscribed and sworn before me the	his da		- 4/30/2016
ubscribed and sworn before me the Rocky At O. A. M. M. Y. M. Y. M. Y. M. W.	his _/ da	Notary Public	- 4/30/2016 NWEALTH OF

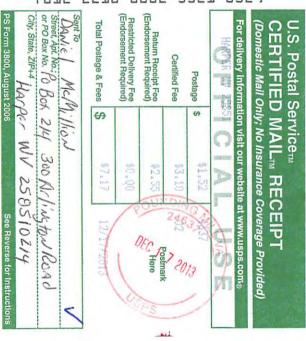
The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

02/21/2014









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WV Department of Environmental Protection 02/21/2014 WW-9 Rev. 5/08

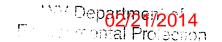
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API Number 47	. 081	- /4	01328-C	
Operator's Well N	O. SD-4			-

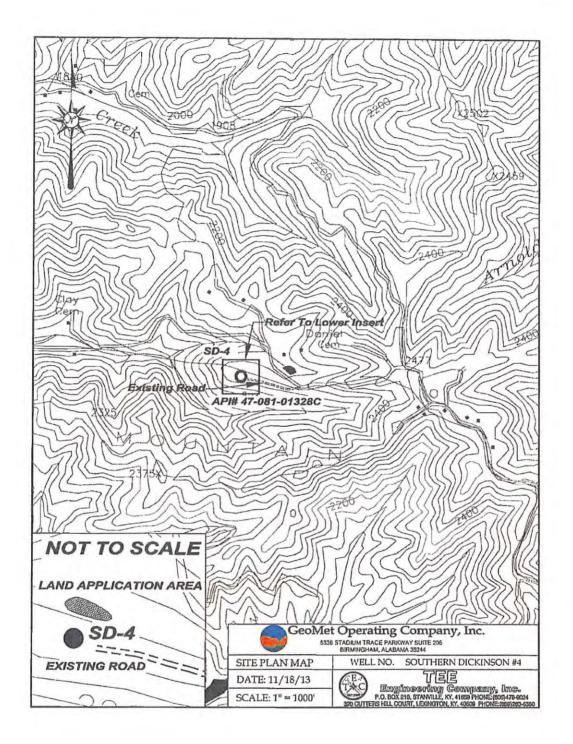
STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name GeoMet Ope	rating Company, Inc.	OP Code	
Watershed Harper Branch Sa	ndlick Creek Q	uadrangle Eccles	
Elevation 2303.63	County Raleigh	District Clear Fork	
Description of anticipated Pit Wa	aste: Fresh Water, Produce	d Water, Bentonite, Cement	
Will a synthetic liner be used in t	the pit? Open Top Tank		
Proposed Disposal Method For T			
	Application	ber	Λ.
	(at API Number		1
Off Si	te Dispposal (Supply form WW-9 f	or disposal location)	
Proposed Work For Which Pit W			
Drillin	/	Swabbing	
Work		Plugging	
Other	(Explain		
application form and all attach obtaining the information, I bel	of law that I have personally examents thereto and that, based on lieve that the information is true, a formation, including the possibility of	nined and am familiar with the information inquiry of those individuals immediaccurate, and complete. I am aware that fine or imprisonment.	liately responsible t there are significa
	duction Manager		
Subscribed and sworn before me	this 17th day of Dece	mber , 20_13_	Parick X STK
Kocky Atil	well	Notory Public Offi	NOTARY PUBLIC REG. #7188
My commission expires	1/30/2016	- 0/	MY COMMISS EXPIRES 4/30/2016
	1 1	E. v. ()	02/21

·	LEGEND
Property Boundary	Diversion (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
Road = = = = = = = = = = = = = = = = = = =	Spring
Existing Fence — X — X — X —	Wet Spot
Planned Fence / / /	Drain Pipe with size in inches (3
Stream	Waterway \longleftrightarrow
Open Ditch	Cross Drain
Rock 6556	Artificial Filter Strip
North N	Pit: cut walls
Buildings	Pit: compacted fill walls
Water wells	Area for Land Application of Pit Waste
Drill site	
Proposed Revegetation Treatment: Acres Disturbed 0.5	Prevegetation pH 5-6.5
Lime 2 Tons/acre or to correct to pH	<u>6</u>
Fertilizer (10-20-20 or equivalent) 500 lbs/	/acre (500 lbs minimum)
Hay/Straw	·
MulchTons/a	cre
Seed	d Mixtures
Area I	Area II
Area I Seed Type lbs/acre	Area II Seed Type lbs/acre
Seed Type lbs/acre	
Seed Type Ibs/acre Tall Fescue or Orchard grass 40	
Seed Type Ibs/acre Tall Fescue or Orchard grass 40	
Seed Type Ibs/acre Tall Fescue or Orchard grass 40	
Seed Type Ibs/acre Tall Fescue or Orchard grass 40 Annual Ryegrass 5 Attach:	Seed Type Ibs/acre
Seed Type Ibs/acre Tall Fescue or Orchard grass 40 Annual Ryegrass 5 Attach: Drawing(s) of road, location,pit and proposed area for land app	Seed Type Ibs/acre
Seed Type Ibs/acre Tall Fescue or Orchard grass 40 Annual Ryegrass 5 Attach:	Seed Type Ibs/acre
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Seed Type Ibs/acre Tall Fescue or Orchard grass 40 Annual Ryegrass 5 Attach: Drawing(s) of road, location,pit and proposed area for land app Photocopied section of involved 7.5' topographic sheet. Plan Approved by: ###################################	Seed Type Ibs/acre
Seed Type Ibs/acre Tall Fescue or Orchard grass 40 Annual Ryegrass 5 Attach: Drawing(s) of road, location,pit and proposed area for land app Photocopied section of involved 7.5' topographic sheet.	Seed Type Ibs/acre
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Office of Oil and Gas

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WV Depa 02/21/2014 Environmental Protection

