



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, September 23, 2019
WELL WORK PLUGGING PERMIT
Vertical Plugging

ENERVEST OPERATING, L.L.C., A LIMITED LIABILITY COMPANY
1001 FANNIN STREET
SUITE 800
HOUSTON, TX 77002

Re: Permit approval for E. SOUTHERN 1 S-228
47-033-01131-00-00

This well work permit 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 any additional specific 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. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: E. SOUTHERN 1 S-228
Farm Name: SOUTHERN, E.
U.S. WELL NUMBER: 47-033-01131-00-00
Vertical Plugging
Date Issued: 9/23/2019

Promoting a healthy environment.

I

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.
4. This well is under a consent order and must be plugged under the terms of that agreement.

- 1) Date August 1, 2019
- 2) Operator's
Well No. E. Southern 1 S-228
- 3) API Well No. 47-033 - 01131

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil ___ / Gas X / Liquid injection ___ / Waste disposal ___ /
(If "Gas, Production X or Underground storage ___) Deep ___ / Shallow X
- 5) Location: Elevation 1440' Watershed Gregorys Run / Johnson Fork
District Sardis County Harrison Quadrangle Clarksburg/Wolf Summit
- 6) Well Operator EnerVest Operating, L.L.C. 7) Designated Agent Barry K. Lay
Address 300 Capitol Street, Suite 200 Address Same
Charleston, WV 25301
- 8) Oil and Gas Inspector to be notified Name Sam Ward
Address P.O. Box 2327
Buckhannon, WV 26201
- 9) Plugging Contractor Name TBD
Address _____

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attached Plugging Procedure

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Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Sam Ward Date 8/8/19

E. Southern #1 S-228 (Southern B-1142)
 API# 47-033-01131
 Elevation: 1440' KB - ?' KB
 Latitude: 39.313885
 Longitude: -80.408227

E. Southern #1 S-228 Well Data

Casing: 8-5/8" 20 ppf Surface Csg @ 1374' KB - Grouted w/ 5bbl after primary job
 4-1/2" 9.5 ppf Production Csg @ 4856' KB - Est. TOC Estimate 2443'
 2-3/8" tubing in well - 4738'
 Packer @ 3521' - Set @ 34K lbs, 11K lbs overpull
 Tubing Anchor - ????'
 TD: 4915'
 Latch Down: 4824'
 Perforations: 3538'-3564' KB, 4608'-4612' KB, 4758'-4768' KB
 Coal: 280'-287', 700'-706', and 1060'-1062'
 Fresh Water: 60', 770', 1240', and 1335'
 Salt Water: None known

E. Southern #1 S-228 Procedure:

1. Notify State Inspector, Sam Ward - (304)-389-7583 - Samuel.D.Ward@wv.gov, 24 hours prior to commencing operations.
2. Prep E. Southern #1 S-228 location.
3. MIRU service rig, steel pits, work string of 5000' 2-3/8" EUE tbg, and other ancillary equipment.
4. Release packer and tbg anchor.
5. Allow to sit for 1/2 hour to let packer "relax".
6. TOOH w/ 2-3/8" tubing and LD.
7. Perform csg Freepoint test on 4-1/2". Compare to estimated TOC.
8. RIH w/ 2-3/8" work string to bottom, approx. 4824'.
9. PU 10' off bottom.
10. Use rig tank and pump or MIRU cement crew and circulate hole with 6% gel.
11. TOOH to 4748' and set 150' cement plug F/ 4748' T/ 4598' (perfs @ 4758'-4768'). *WOC, ADD CEMENT IF NEEDED*
12. TOOH to 4566' and circulate hole with 6% gel.
13. TOOH to 4592' and set 150' cement plug F/ 4592' T/ 4442' (perfs @ 4608'-4612'). *WOC, ADD CEMENT IF NEEDED.*
14. TOOH to 4410' and circulate hole with 6% gel.
15. TOOH to 3544' and set 150' cement plug F/ 3544' T/ 3394' (perfs @ 3538'-3564'). *WOC, ADD CEMENT IF NEEDED.*
16. TOOH to 3362' and circulate hole with 6% gel.
17. TOOH w/ 2-3/8" tbg.
18. RIH with 4-1/2" csg ripper and rip csg at Freepoint.
19. Once ripped, PU 3', break circulation and thru 4-1/2" csg set 150' cement plug 75' in/out of cut. *WOC*
20. TOOH w/ 4-1/2" csg 30' about previous cement plug and circulate hole with 6% gel.
21. TOOH w/ 4-1/2" csg.
22. MIRU perforaters and perforate all Oil, Coal, FW, and Gas shows below 8-5/8" csg. NONE KNOWN TO EXIST.

8/8/19

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23. TIH w/ 2-3/8" work string to 1490' (50' below Elevation @ 1440') and set 191' cement plug F/ 1490' T/ 1299'. (75' inside 8-5/8" shoe). *WOC.*
24. TOOH to 1267' and circulate hole with 6% gel.
25. TOOH w/ 2-3/8" work string to 200' and set 200' cement plug F/ 200' T/ Surface (Surface Plug).
26. Erect a monument to WV DEP specifications (CSR 35-4-5.5 – sub "b").
27. Reclaim location and roads to WV DEP Specifications.

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ENERVEST

ENERVEST OPERATING, LLC

WELLBORE SCHEMATIC

Well Information:

Well Name:	E. Southern #1 S-288	Partnership:	Harvest WV
County/State:	Harrison/WV	API Number:	47-033-01131
Township:		AFE Number:	
Target:		Cost Center:	472146001
Lat:	39.313885	Pool Code:	101
Long:	-80.408227	Logger's TD:	4915'

Surveys	Hole Size	Formations	Depths (KB)	SPUD DATE: TD DATE:	Casings	Cement	Shows
				10/10/1977 10/15/1977			
				Elevation: 1440'			8-5/8" 23 ppf surf. csg @ 1374' KB (TOC= surface) Primary: Lead - 190 sks Lite Poz w/ 3% CaCl2 Tail - 145 sks Neat w/ 3% CaCl2
		Big Lime 1670' Big Injun 1710'					
		Fifth 2630'					Grouted 8-5/8" with 5 bbl cement after pumping primary cement job. Does not say if that got cement to surface.
		Speechley 3200'					
		Balltown 3530' (4 Perfs: 3538'-3542') (4 Perfs: 3552'-3556') (3 Perfs: 3562'-3564') Lower Riley 4590' (14 Perfs: 4608'-4612')					
		Benson 4750' (18 Perfs: 4758'-4768')					Primary: 300 sks RF Cement 4-1/2" J-55 9.5 ppf prod. csg @ 4856' KB (Est. TOC = 2443')
	7 7/8" hole		4915'				

Completion Information		Target:	Devonian	Completion Date:	10/27/1977
Top Perforation (ft):	3538'	Frac Type/Fluid:	Air	Breakdown:	psi
Bottom Perforation (ft):	4768'	Foam Quality:		Pre-ISIP:	psi
No. of Shots:	43	BD Acid Volume:	gal.	MTP:	psi
Charge (gram):		Treatment Volume:	gal.	ATP:	psi
Perf Diameter:	0.39 in.	Sand mesh size	mesh	ISIP:	psi
Penetration:		Sand Volume	sacks	5-min SIP	psi
Phasing:		Ave. Treatment Rate:	bpm	10-min SIP	psi

Remarks: Perfs: Balltown (3538'-3564'), Lower Riley (4608'-4612'), and Benson (4758'-4768'). Coal @ 280'-287', 700'-706', and 1060'-1062'. FW @ 60', 770', 1240', and 1335'. Salt water @ none.

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STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD

Rotary Oil _____
Cable _____ Gas
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Quadrangle WOLF SUMMIT 7 1/2"
Permit No. HAR-1131

Company <u>Scott Enterprises, Inc.</u>	Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Address <u>P.O. Box 112, Salem, WV 26426</u>	Size			
Farm <u>E. Southern</u> Acres <u>226</u>	20-16			
Location (waters) <u>Gregory Run</u>	Cond.			
Well No. <u>1 B-1142 (S-228)</u> Elev. <u>1440'</u>	2 1/2 <u>3 1/4"</u>	<u>31</u>	<u>31</u>	<u>Sand in</u>
District <u>gardis</u> County <u>Harrison</u>	<u>9 5/8</u>			
The surface of tract is owned in fee by <u>Albert Southern</u>	<u>8 5/8</u>	<u>1374</u>	<u>1374</u>	<u>350 sks.</u>
Address <u>Rt. 1, Wilsonburg, WV 26301</u>	<u>7</u>			
Mineral rights are owned by <u>E. Southern</u>	<u>5 1/2</u>			<u>300 sks.</u>
Address <u>Clarksburg, WV 26301</u>	<u>4 1/2</u>	<u>4856</u>	<u>4856</u>	
Drilling Commenced <u>10-10-77</u>	<u>3</u>			
Drilling Completed <u>10-15-77</u>	<u>2</u>			
Initial open flow <u>Show gas</u> cu. ft. _____ bbls.	Liners Used			
Final production <u>1,644M</u> cu. ft. per day _____ bbls.				
Well open <u>4</u> hrs. before test <u>960</u> RP.				

Well treatment details:

Attach copy of cementing record.

BENSON FRAC: Perf. 4758-68- 18 holes; 800 bbls. water; 60,000# 20-40 sand; 500 gal. 15% acid; 20 gal. soap; 200C HHP.

LOWER RILEY: Perf. 4608-12- 14 holes; 500 bbls. water; 30,000# 20-40 sand; 500 gal. 15% acid; 20 gal. soap; 2000 HHP.

BALLTOWN FRAC: Perf. 3538-42- 4 holes, 3552-56- 4 holes, 3562-64- 3 holes; 600 bbls. water; 40,000# 20-40 sand; 500 gal. 15% acid; 20 gal. soap; 2000 HH

Coal was encountered at 280-87, 700-06, - xxx 1060-62. Inches _____

Fresh water 60, 770, 1240, 1335 Feet _____ Salt Water None Feet _____

Producing Sand Benson, Lower Riley, Balltown Depth 4758-68; 4608-42; 3538-64.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			0	50		
Sand			50	65		1/2" stream water at 60'
Red shale			65	95		
Sand			95	135		
Sandy shale			135	280		
COAL			280	287		Pittsburgh Seam
Sandy shale			287	700		
COAL			700	706		
Sandy shale			706	770		
Sand			770	850		2" stream water
Sandy shale			850	1060		
COAL			1060	1062		
Sand & shale			1062	1200		
Sand			1200	1215		
Sandy shale			1215	1245		Increase in water at 1240'
Sand			1245	1300		
Sandy shale			1300	1335		
Sand			1335	1350		Increase in water at 1335'
Sandy shale			1350	1610		
* LITTLE LIME			1610	1670		
* BIG LIME			1670	1710		
* BIG INJUN			1710	1780		
Siltstone			1780	2205		

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(over)

* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
* FIFTY FOOT SAND			2205	2270		
Shale			2270	2300		
* THIRTY FOOT SAND			2300	2315		
Sandy shale			2315	2630		
* FIFTH SAND			2630	2645		
Gray siltstone			2645	3200		
* SPEECHLEY SAND			3200	3335		
Shale			3335	3530		
* BALLTOWN			3530	3570		
Shale			3570	4000		
Brown shale			4000	4590		
* LOWER RILEY			4590	4615		
Shale			4615	4750		
* BENSON SAND			4750	4770		
Shale			4770	4915		
* TOTAL DEPTH				4915		

Small show of gas at 2850'

Increase in gas in Benson

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Date _____ 19__

APPROVED _____ Owner

By _____ (11/1)

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4703301131	Original Lbc	unidentified coal	Well Record	280	Reasonable	7	Reasonable	1440	Ground Level
4703301131	Original Lbc	unidentified coal	Well Record	700	Reasonable	6	Reasonable	1440	Ground Level
4703301131	Original Lbc	Allegheny coal (udf)	CBM: Drillers Pick	1080	Reasonable	2	Reasonable	1440	Ground Level
4703301131	Original Lbc	Little Lime	Well Record	1610	Reasonable	60	Reasonable	1440	Ground Level
4703301131	Original Lbc	Greenbrier Group	Well Record	1670	Reasonable	110	Reasonable	1440	Ground Level
4703301131	Original Lbc	Big Lime	Well Record	1670	Reasonable	40	Reasonable	1440	Ground Level
4703301131	Original Lbc	Big Injun (undiff)	Well Record	1710	Reasonable	70	Reasonable	1440	Ground Level
4703301131	Original Lbc	Fifty-foot	Well Record	2205	Reasonable	65	Reasonable	1440	Ground Level
4703301131	Original Lbc	Thirty-foot	Well Record	2300	Reasonable	15	Reasonable	1440	Ground Level
4703301131	Original Lbc	Fifth	Well Record	2630	Reasonable	15	Reasonable	1440	Ground Level
4703301131	Original Lbc	Speachley	Well Record	3200	Reasonable	133	Reasonable	1440	Ground Level
4703301131	Original Lbc	Balltown	Well Record	3530	Reasonable	35	Reasonable	1440	Ground Level

There is no Wireline (E-Log) data for this well

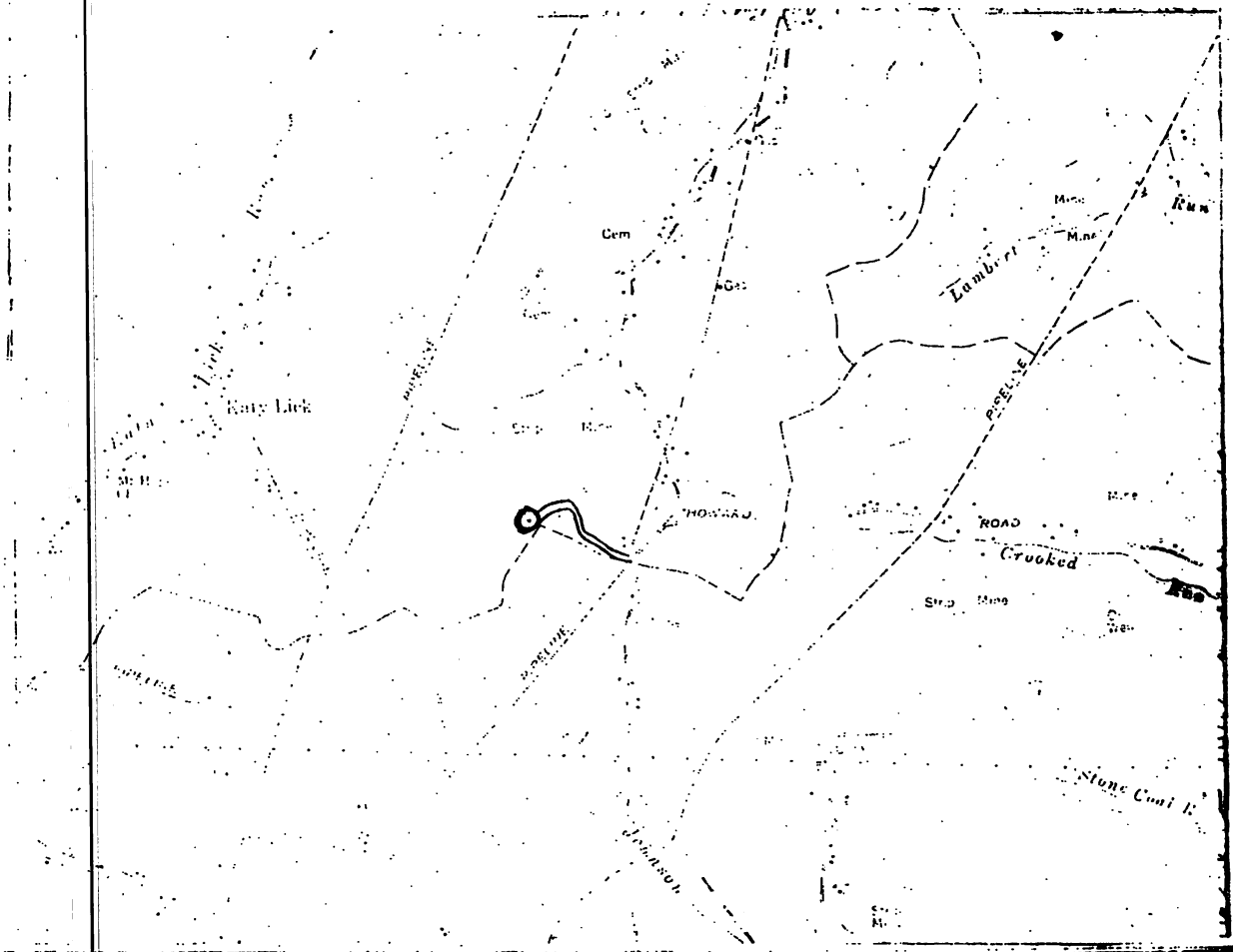
There is no Plugging data for this well

There is no Sample data for this well

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UNDRAINED WOLF SUMMIT 7 1/2" SCALES 1" = 2000'

① ROAD ② CROSS ROAD ③ WELL SITE ④ DRILLING PIT



~~SCOTT ENTERPRISES, INC.~~
FARM E. SOUTHERN DISTRICT SARDIS COUNTY HARRISON

STATEMENT OF RECLAMATION PLAN:

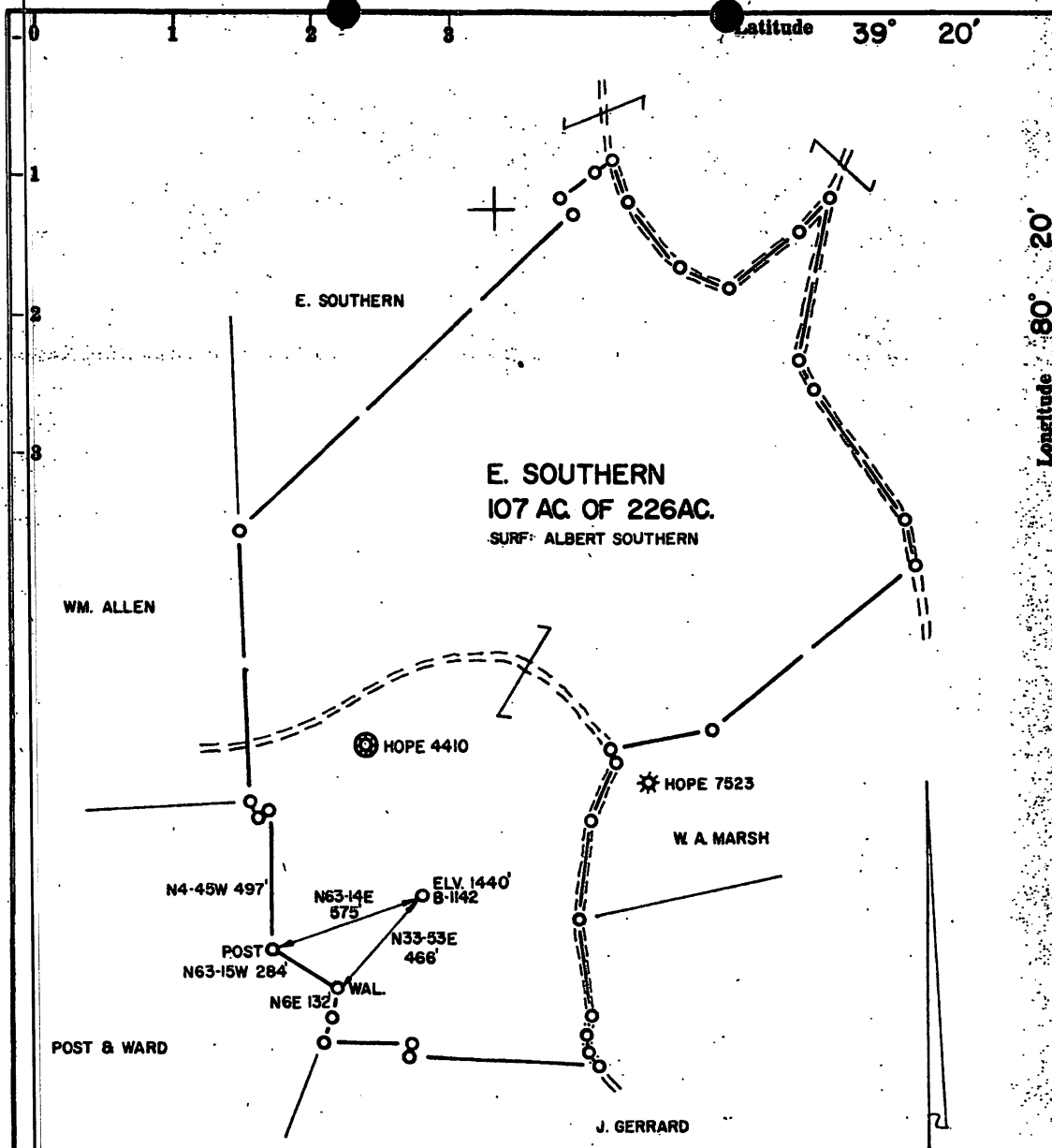
The access road will leave Harrison Co. W. Va. Route 9 as shown (Gregory Run Road). The road is a pre-existing rock base road part way as access to Hays natural gas well NO. 7523 -- diversion ditches will be placed as needed during construction to allow non-sedimentation of run-off. A new road will be made turning up hill and west to proposed loc. The new road will be rocked and culvert pipe placed near top of hill to insure good surface drainage and lower outlet rocked to prevent erosion. The location is near top of knoll on west side in open meadow of no commercial value -- no stock in field. The pit will be cut west of location in clay fill; location will have ditching to divert surface waters into pit. The nearest dwelling place is more than 1000 from the location. Upon completion the drilling site and pit will be graded to contour and seeded in suitable grasses to contain rain and prevent run off. access road will be rocked and maintained to allow well tending.

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This plan was observed and agreed upon between the well owner, Donald D. Kaus and the District Oil and Gas Inspector, P.W. Garrett

I certify that all the requirements of Chapter 20, Article 4, Section 12.4, of the W.Va. Code of 1940, as amended will be carried out by Donald D. Kaus
Scott E. + Co. 9



- Fracture...
- Redrill...
- New Location.
- Drill Deeper...
- Abandonment...

Source of Elevation HOPE WELL 7523 ELV. 1333'

I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia.

Minimum accuracy, one part in 200

Company	SCOTT ENTERPRISES, INC.	
Address	SALEM, WVA. 26426	
Farm	E. SOUTHERN	
Tract	Acres 226	Lease No. 2279
Well (Farm) No.	Serial No. B-1142	
Elevation (Spirit Level)	1440	
Quadrangle	CLARKSBURG SW 24	
County	HARRISON	District SARDIS
Engineer	<i>P. J. McMillan</i>	
Engineer's Registration No.	L.L.S. NO. 105	
File No.	230-B/144	Drawing No.
Date	9/10/77	Scale 1"=500'

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP

FILE NO. _____

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

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WW-4A
Revised 6-07

1) Date: August 1, 2019
2) Operator's Well Number
E. Southern 1 S-228
3) API Well No.: 47 - 033 - 01131

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

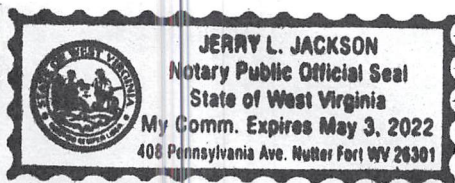
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Michael L. Southern & Edward Allen Southern</u>	Name _____
Address <u>99 Southern Road</u>	Address _____
<u>Clarksburg, WV 263016765</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Sam Ward</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 2327</u>	Name _____
<u>Buckhannon, WV 26201</u>	Address _____
Telephone <u>304-389-7583</u>	_____

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 EnerVest Operating, L.L.C.
 By: Barry K. Lay
 Its: Senior Vice President and General Manager
 Address 300 Capitol Street, Suite 200
Charleston, WV 25301
 Telephone 304-343-5505

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Office of Oil and Gas

Subscribed and sworn before me this 6th day of August 2019
[Signature] Notary Public
My Commission Expires May 3, 2022

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Oil and Gas Privacy Notice

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.

WW-9
(5/16)

API Number 47 - 033 - 01131
Operator's Well No. _____

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EnerVest Operating, L.L.C. OP Code 30-9999
Watershed (HUC 10) Gregorys Run / Johnson Fork Quadrangle Clarksburg/Wolf Summit

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: No Pit To Be Built (Portable Containment Equipment)

Will a synthetic liner be used in the pit? Yes No If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain No Pit To Be Built. Any well effluent will be contained in tanks and properly disposed of offsite.)

8/8/19

Will closed loop system be used? If so, describe: _____

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. _____

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. At discretion of Contractor.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Barry K Lay
Company Official (Typed Name) Barry K. Lay
Company Official Title Senior Vice President and General Manager

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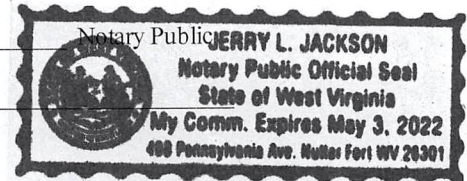
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Subscribed and sworn before me this 6th day of August, 20 19

[Signature]

My commission expires May 3, 2022



Operator's Well No. _____

Proposed Revegetation Treatment: Acres Disturbed 2.00 Prevegetation pH 6.5

Lime according to ph test Tons/acre or to correct to pH 7.0

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	25	Orchard Grass	25
Birdsfoot Trefoil	15	Birdsfoot Trefoil	15
Ladino Clover	10	Ladino Clover	10

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

SJD Wundt

Comments:

Title: Land Manager

OOG Inspector

[Signature]

Date:

8/8/19
8/1/2019

Field Reviewed?

() Yes (X) No

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N/A

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

Operator Name: EnerVest Operating, L.L.C.

Watershed (HUC 10): Gregorys Run / Johnson Fork Quad: Clarksburg/Wolf Summit

Farm Name: _____

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Plugging of shallow well. All residual fluids will be captured in portable flowback tanks for proper disposal.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

Plugging of shallow well. All residual fluids will be captured in portable flowback tanks for proper disposal.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Closest Water Body: Gregorys Run 1,591' + ; Johnson Fork 1,300' +

4. Summarize all activities at your facility that are already regulated for groundwater protection.

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5. Discuss any existing groundwater quality data for your facility or an adjacent property.

[Empty rectangular box for text entry]

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

[Empty rectangular box for text entry]

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

[Empty rectangular box for text entry]

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

[Empty rectangular box for text entry]

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Signature: [Handwritten Signature]

Date: 5/8/2017

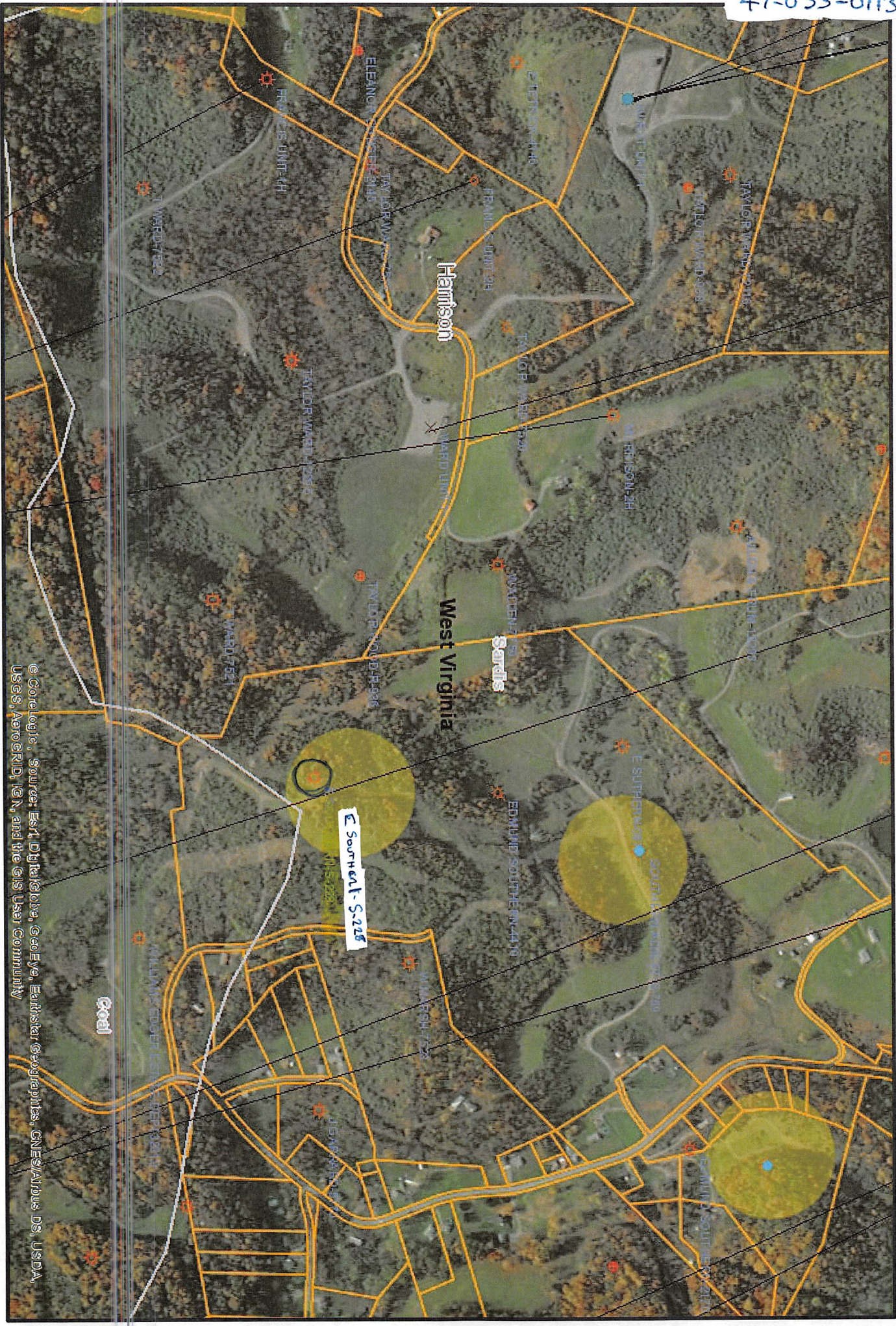
47-033-01131P



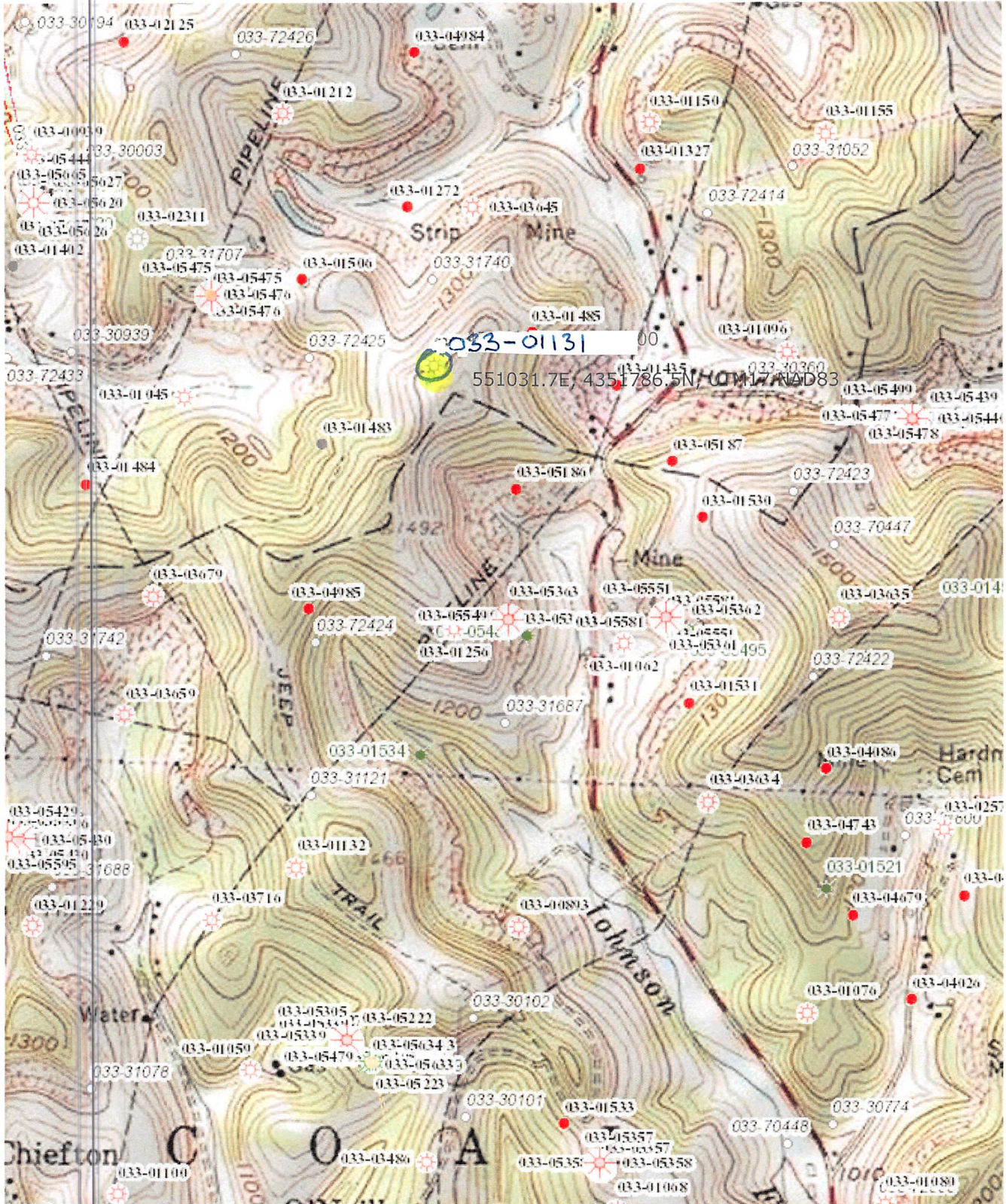
E. SOUTHERN #1 S-228

77

Date Printed: 2019-01-23



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47-033-01131P

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-033-01131 WELL NO.: E. Southern 1 S-228

FARM NAME: E. Southern

RESPONSIBLE PARTY NAME: Jerry L. Jackson

COUNTY: Harrison DISTRICT: Sardis

QUADRANGLE: Clarksburg/Wolf Summit

SURFACE OWNER: Michael L. Southern & Edward Allen Southern

ROYALTY OWNER: E. Southern

UTM GPS NORTHING: 4351786.5

UTM GPS EASTING: 551031.7 GPS ELEVATION: 1440'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS ____: Post Processed Differential ____
Real-Time Differential ____

Mapping Grade GPS ____: Post Processed Differential ____
Real-Time Differential ____

4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature

Land Manager
Title

8/1/2019
Date

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