



**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

July 09, 2014

**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-10303000, issued to STONE ENERGY CORPORATION, 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: ERLEWINE 7H  
Farm Name: ERLEWINE, RICHARD  
**API Well Number: 47-10303000**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 07/09/2014

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to [DEPOOGNotify@wy.gov](mailto:DEPOOGNotify@wy.gov) within 30 days of commencement of drilling.

WW-6B  
(9/13)

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WELL WORK PERMIT APPLICATION**

1) Well Operator: Stone Energy Corporation      494490923      Wetzel      Proctor      New Martinsville  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Erlewine #7H      Well Pad Name: Erlewine

3) Farm Name/Surface Owner: Erlewine, Richard et al      Public Road Access: Wetzel County Route 1/2

4) Elevation, current ground: 1,220'      Elevation, proposed post-construction: 1,212'

5) Well Type (a) Gas  Oil  Underground Storage   
 Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_  
 Horizontal

6) Existing Pad: Yes or No No

*DmH  
3-27-14*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target formation is the Marcellus Shale @ 6,765' TVD (-5,535' SS), 50' thick, w/ anticipated pressure of 3,800 to 4,400 psig

8) Proposed Total Vertical Depth: 6,750' TVD @ TD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 12,000' MD @ TD

11) Proposed Horizontal Leg Length: 4,500' from LP and 5,931' from KOP

12) Approximate Fresh Water Strata Depths: Shallowest @ 85' and deepest @ 930'

13) Method to Determine Fresh Water Depths: Depth of bit w/show of fluid at flowline or when drilling soap is injected

14) Approximate Saltwater Depths: Shallowest @ 1,800'

15) Approximate Coal Seam Depths: 925'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine?      Yes       No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_  
 Depth: \_\_\_\_\_  
 Seam: \_\_\_\_\_  
 Owner: \_\_\_\_\_

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18)

**CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20"	New	L/S	94.0	80'	80'	77 - CTS
Fresh Water/Coal	13.375"	New	J55	54.5	1,190'	1,190'	1,092 CTS
Intermediate 1	9.625"	New	J55	36.0	2,400'	2,400'	Lead 647 - Tail 312 CTS
Intermediate 2							
Production	5.5"	New	P110	20.0		12,000'	Lead 1,021 - 2,016 Tail TOC @ 1,400'
Tubing	2.375"	New	J55	4.7		6,200'	N/A
Liners							

Note: The Fresh Water/Coal string will be set just above Sea Level. In no instance will the casing be set below Sea Level. This setting depth is necessary due to a rubble zone below the Pittsburgh coal seam.

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24.0"	0.375"	N/A	Type 1	1.18
Fresh Water/Coal	13.375"	17.5"	0.380"	2,730	Class A	1.19
Intermediate 1	9.625"	12.25"	0.352"	3,520	10% NACI & Class A	1.25 Lead - 1.19 Tail
Intermediate 2						
Production	5.5"	8.75"	0.361	12,360	GasStop & Class A	1.26 Lead - 1.20 Tail
Tubing	2.375"	N/A	0.190"	7,700	N/A	N/A
Liners						

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**PACKERS**

Kind:	Tam Cap Inflatable			
Sizes:	9.625"			
Depths Set:	1,140' TVD			

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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

MIRU conductor rig and set 20" conductor into solid rock cementing back to surface. Typically the setting depth is 80'. RDMO conductor rig and MIRU top-hole rig. Drill and set 13.375" fresh water/coal casing cementing back to surface. Drill and set 9.625" intermediate casing cementing back to surface. Drill 8-3/4" production hole to just above KOP. This section will be drilled using a slant in order to maintain and reduce anti-collision concerns. Run gyro and displace with KCl fluid back to surface. RDMO top-hole rig and MIRU horizontal rig. Displace KCl fluid out of well bore with salt saturated drilling fluid. Drill to KOP and then drill curve to landing point. Continue drilling horizontal section of well bore to TD. Condition well bore at TD, TOOH, and run 5.5" production casing to TD. Cement production casing to 1000' inside of the 9.625" casing string. RDMO horizontal rig after installing night cap on top of well head.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

MIRU coil tubing unit or service rig and clean out well bore to PBTD. Run CBL to approximately 30-60 degrees in curve back to surface. Toe prep horizontal for fracturing. RDMO coil tubing unit or service rig. MIRU stimulation equipment. Begin stimulation on first stage. Anticipated maximum treating pressure is 9000 psi. Anticipated maximum pump rate is between 85 and 90 bmp of slick-water with sand. Frac plugs will be pumped down during night-time operations. The number of stages to be pumped will be determined once the well is drilled and log information is reviewed. All other stages will pumped as described above. Once well is fraced the coil tubing unit or service rig (with snubbing unit) will be moved back on site and the frac plugs will be drilled out and the well bore will be cleaned up. Flow back time for the well will be dependent upon fluid return and gas production. All gas will be flared until the well is capable of production.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 20.6

22) Area to be disturbed for well pad only, less access road (acres): 7.6

23) Describe centralizer placement for each casing string:

- Fresh Water/Coal string will use bow spring centralizers with one above guide shoe and then every second joint to surface.
- Intermediate string will use bow spring centralizers with one being placed above the guide shoe, one above the float collar and one on every third joint to surface. One rigid centralizers be placed as close as possible to the surface.
- Production string will use left/right rigid spiral centralizers one on every 4th joint from TD to KOP and then one on every third joint from KOP to TOC.

24) Describe all cement additives associated with each cement type:

- Fresh Water casing will be cemented using a Class "A" cement with between 1.0% an 3.0% CaCl2 and 0.25 Cello Flake/Sx.
- Intermediate casing will be cemented using a Class "A" cement with a Lead blend of 10.0% NaCl2. Tail cement will Class "A" with 2.0% CaCl2 and 0.25 lb/sx Cello-Flake.
- Production casing will be cemented with HalCem cement.

25) Proposed borehole conditioning procedures:

- Fresh Water/Coal section will be conditioned by circulating air/mist through the drill string at TD for between 30 60 minutes until well bore is clean of cuttings.
- Intermediate section will be conditioned by circulating air/stiff foam through the drill string at TD for between 30 to 120 minutes until well bore is clear of cuttings.
- Production section will be conditioned by circulating drilling fluid through the drill string at TD for between 60 to 720 minutes (minimum of three bottoms up) until shakers are clear of cuttings and the drill string pulls free off of bottom.

\*Note: Attach additional sheets as needed.

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3-27-14

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103-03000

Well: Erlewine #7H  
 State: West Virginia  
 County: Wetzel  
 District: Proctor  
 Prospect: Mary  
 Location: Surface: North = 4,392,661 East = 517,403 (UTM NAD 83)  
 PBHL: North = 4,394,211 East = 517,210 (UTM NAD 83)  
 PTD: 12000' MD / 6750' TVD

# STONE ENERGY - PROPOSED HORIZONTAL

Revision: 30-Sept-13

Permit Number: 47-103-  
 Permit Issued:   
 Post Construction Ground Elevation: 1212'  
 Kelly Bushing: 18'  
 Rig:   
 Spud Date:   
 TD Date:   
 Rig Release Date:

HOLE SIZE	PILOT HOLE FORMATION TOPS	WELLBORE DIAGRAM	CASING & CEMENTING DATA DIRECTIONAL DATA	MW & FLUID TYPE	HOLE DEV.	
24" Hole then Driven	80' KB (62' BGL)		<b>CONDUCTOR PIPE</b> 20" x 3/8" wall L/S PE @ 80' (set in bedrock & grouted to surface)		Vertical	
17-1/2" Hole	Shallowest FW 75' TVD Pittsburgh Coal 925' TVD Deepest FW 930' TVD 1190' TVD		<b>SURFACE CASING</b> 13-3/8" 54.5# J-55 STC @ 1190' MD/TVD Set through fresh water zones Set through coal zones Cemented to surface	Air / Mist	Vertical	
12-1/4" Hole	Salt Water 1800' TVD Little Lime 2022' TVD Big Lime 2052' TVD Big Injun Sandstone 2152' TVD Base of Big Injun 2252' TVD 2400' TVD  Berea Sandstone 2620' TVD  Gordon Sandstone 2865' TVD		<b>INTERMEDIATE CASING</b> 9-5/8" 35.0# J-55 LTC @ 2400' MD/TVD Set through potential salt water zones Set below base of Big Injun Cemented to surface	Stiff Foam	Vertical	
8-3/4" Hole				Air / Dust		
			KOP @ 6069' TVD			
8-3/4" Hole	Rhinestreet Shale (Base) 6186' TVD Middlesex Shale 6280' TVD West River Shale 6310' TVD Genesee Shale 6645' TVD Tully Limestone 6665' TVD Hamilton Shale 6725' TVD				WBM In Curve	
8-3/4" Hole in Lateral	Marcellus Shale 6765' TVD  Onondaga Limestone 6815' TVD				WBM In Lateral	-90.5°
			Landing Point (LP) @ 7500' MD / 6790' TVD -90.5° angle -342° azimuth			
				TD @ 12000' MD / 6750' TVD PRODUCTION CASING 5-1/2" 20.0# P-110 CDC @ 12000' MD Top of Cement @ 1400' (~1000' inside 9-5/8")		

Notes: Formation tops as per vertical pilot hole  
 Curve & lateral tops will vary due to structural changes  
 Directional plan based upon best estimate of structure

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April 2, 2014

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WW-9  
(9/13)

API Number 47 - 103 - 03000  
Operator's Well No. Erlwine #7H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Stone Energy Corporation OP Code 494490923

Watershed (HUC 10) Tributary of Proctor Creek Quadrangle New Martinsville

Elevation 1,212' County Wetzel District Proctor

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: All waste material will be land filled at a permitted facility

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 2D0859721, 34-121-24037, 34-121-28086 )
- Reuse (at API Number  Flow back fluids will be stored and used on additional stimulations )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain )

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*3-27-14*

Will closed loop system be used? If so, describe: A closed loop system will be used for both top hole and horizontal sections

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air, Air/Soap, Brine Water

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

Additives to be used in drilling medium? See attached WW-9 Addendum

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Approved Landfill

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

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021/WV109185)

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, 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 *Timothy P. McGregor*  
Company Official (Typed Name) Timothy P. McGregor  
Company Official Title Land Coordinator

*ROGER L. CUTRIGHT*  
*LANDMGR & SPECIAL COUNSEL*

Subscribed and sworn before me this 125<sup>th</sup> day of March  
*Danielle L Snoderly*  
My commission expires 5/18/2021



07/11/2014

Form WW-9

Operator's Well No. Erlewine #7H

**Stone Energy Corporation**

Proposed Revegetation Treatment: Acres Disturbed 20.6 Prevegetation pH \_\_\_\_\_

Lime 2.0 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 or Equivalent

Fertilizer amount 500 - 750 lbs/acre

Mulch 0.50 to 0.75 TPA + Straw Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre	Seed Type	lbs/acre
Marcellus Mix	100.0	Marcellus Mix	100.0
White or Ladino Clover	10.0	White or Ladino Clover	10.0
Orchard Grass	40.0	Orchard Grass	40.0
Winter Rye	50.0	Winter Rye	50.0

**Attach:**

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: \_\_\_\_\_

Title: Oil & Gas Inspector

Date: 3-27-14

Field Reviewed?  Yes  No

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## WW-9 ADDENDUM

### Drilling Medium Anticipated for This well

- Vertical section of well bore, down to KOP, will be drilled on air and/or a combination of air and drilling soap.
- From KOP through the curve section and horizontal section of well bore will be drilled on a brine-water based mud system.

### Additives to be Used While Drilling

- Common additives when air drilling: KCl (CAS No. 1302-78-9 & 14808-60-7), soda ash (CAS No. 497-19-8), shale stabilizer (CAS No. 67-48-1 & 7732-1835), drilling soap (CAS No. 111-76-2), air hammer/motor lubricant.
- Common water based additives for mud drilling: NaCl (CAS No. 7647-14-5), KCl (CAS No. 7447-40-7), barite (CAS No. 13462-86-7 & 14808-60-7), starch (CAS No. 9005-25-8), PAC (CAS No. 9004-32-4), xanthum gum (CAS No. 11138-66-2), PHPA (CAS No. 64742-47-8), polysaccharide (CAS No. 11138-66-2), sulfonated asphaltic material (CAS No. 269-212-0 & 238-878-4), aluminum silicate (CAS No. 37287-16-4), gilsonite (CAS No. 12002-43-6), graphite (CAS No. 14808-60-7 & 7782-42-5), shale stabilizer (CAS No. 67-48-1 & 7732-18-5), fluid loss control polymers (CAS No. 9004-34-6), viscosity control polymers (CAS No. 11138-66-2 & 107-22-2), soda ash (CAS No. 497-19-8), sodium bicarbonate (CAS No. 144-55-8), NaOH (CAS No. 1310-73-2, 7647-14-5, & 7732-18-5), lime (CAS No. 1305-62-0), gypsum (CAS No. 778-18-9), citric acid (CAS No. 77-92-9), biocide (CAS No. 52-51-7 or 7732-18-5 + 67-56-1 + 141-43-5), CaCO<sub>3</sub> (CAS No. 471-34-1), cellulose fibers (CAS No. 14808-60-7), nut plug (CAS No. 9004-34-6 & 14808-60-7), cross-linking polymers (CAS No. 107-22-2 & 11138-66-2), other LCMs, surfactants (CAS No. 64-17-5), ROP enhancer/lubricant (CAS No. 8002-13-9), beads, corrosion inhibitor (CAS No. 7732-18-5), aluminum stearate (CAS No. 300-92-5), defoamer (CAS No. 246-771-9).

MSDS are available upon request.

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## WW-9 ADDENDUM

### Drill Cuttings Disposal Method

- Closed loop drilling system will be incorporated. No waste pits will be constructed. All drill cuttings are put through a drier system and hauled to and disposed of at approved and permitted landfills.

### Landfills or Offsite Names and Permit Numbers

Wetzel County Sanitary Landfill  
Rt. 1, Box 156A  
New Martinsville, WV 26155  
SWF-1021 / WV01909185

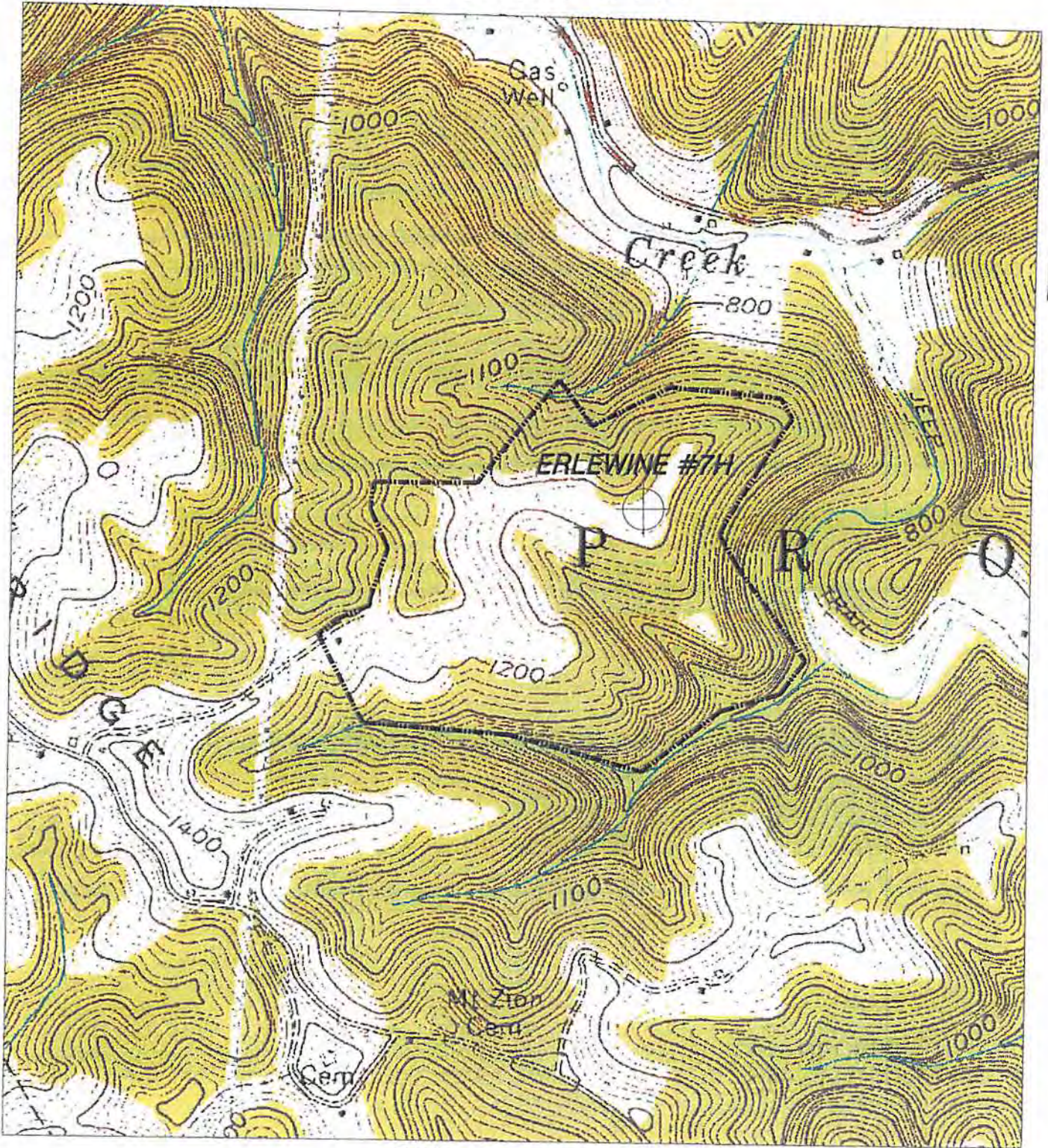
Brooke County Sanitary Landfill  
Colliers, WV 26035  
SWF-1013 / WV0109029

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# Stone Energy Corporation Erlewine #7H



DHH  
3-27-14

### HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147  
PH: (304)354-7035 E-MAIL: hupp@frontiernet.net

1" = 1000'

New Martinsville 7.5'

WV Department of

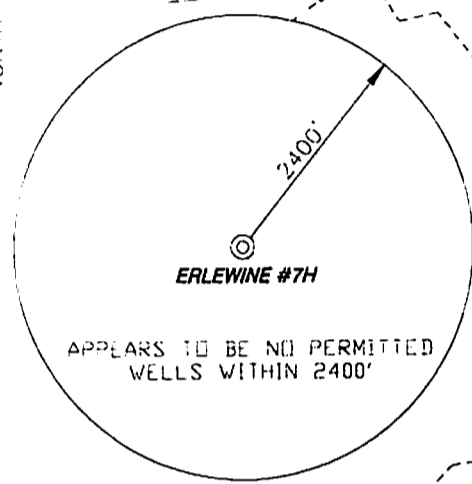
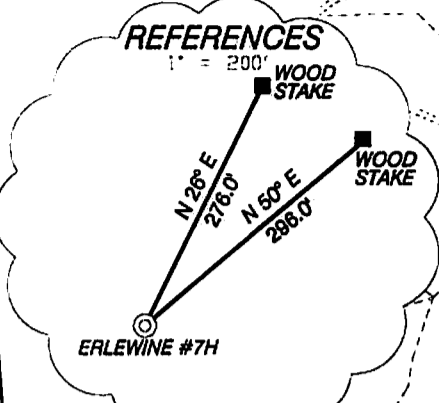
Stone Energy Corp.

P.O. Box 52807  
Lafayette, LA 70508

07/11/2014

# ERLEWINE #7H

ERLEWINE #7H BOTTOM HOLE		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE-NAD 27	NAD 27	ZONE 17
(N) 433801	39.69750	METERS
(E) 1834368	80.78948	4394211
		517210



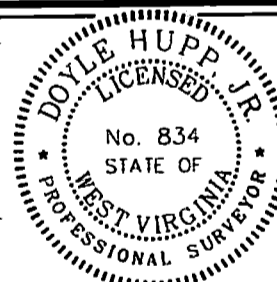
ERLEWINE #7H LANDING POINT		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE-NAD 27	NAD 27	ZONE 17
(N) 434467	39.68593	METERS
(E) 1833737	80.79435	4392898
		517650

ERLEWINE #7H SURFACE HOLE		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE-NAD 27	NAD 27	ZONE 17
(N) 433702	39.68382	METERS
(E) 1834914	80.79724	4392681
		517403

DmH  
3-27-14

- NOTES ON SURVEY**
- NO DWELLINGS WITHIN 625' WERE FOUND.
  - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
  - TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH AND NORTH ZONE NAD 27.
  - WELL LOCATION ESTABLISHED BY SC-GPS(OPUS).
  - SURFACE OWNER AND ADJACENT INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN MARCH, 2013 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION.
  - WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE SEPTEMBER 20, 20 13  
 OPERATORS WELL NO. ERLEWINE #7H  
 API WELL NO. 47-103-03060  
 STATE COUNTY PERMIT HGA

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2192 (BK 65-61)  
 PROVEN SOURCE OF ELEVATION SC-GPS (OPUS) SCALE 1" = 1000'

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

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,220' WATERSHED TRIBUTARY OF PROCTOR CREEK  
 DISTRICT PROCTOR COUNTY WETZEL QUADRANGLE NEW MARTINSVILLE 7.5'

SURFACE OWNER RICHARD ERLEWINE ACREAGE 1.35±  
 ROYALTY OWNER RICHARD ERLEWINE, et al LEASE ACREAGE 315.22±  
 PROPOSED WORK: LEASE NO. 07/11/2014

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
 ESTIMATED DEPTH TVD 6,750' MD 12,000'

WELL OPERATOR STONE ENERGY CORPORATION DESIGNATED AGENT TIM MCGREGOR  
 ADDRESS P.O. BOX 5280 / LAFAYETTE, LA 70508 ADDRESS 6000 HAMPTON CENTER SUITE B MORGANTOWN WV 26505

COUNTY NAME  
 PERMIT