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

September 17, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-10303007, 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: STARKWEATHER 3H
Farm Name: STARKWEATHER, HEATH & CH/
API Well Number: 47-10303007
Permit Type: Horizontal 6A Well
Date Issued: 09/17/2014

Promoting a healthy environment.

API Number 47 103 03007

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

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@wv.gov within 30

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(9/13)

4710303007

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

5 554

1) Well Operator: Stone Energy Corporation | 494490923 (Operator ID) | Wetzel (County) | Green (District) | Porters Falls (Quadrangle)

2) Operator's Well Number: Starkweather #3H Well Pad Name: Starkweather

3) Farm Name/Surface Owner: Starkweather, Heath & Charmaine Public Road Access: Wetzel County Route 20/1

4) Elevation, current ground: 1,280' Elevation, proposed post-construction: 1,262'

5) Well Type (a) Gas ■ Oil ____ Underground Storage ____
Other ____
(b)If Gas Shallow ■ Deep ____
Horizontal ■

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6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target formation is the Marcellus Shale @ 6,907' TVD (-5,627' SS), 50' thick, w/ anticpated pressure of 3,800 to 4,400 psig

8) Proposed Total Vertical Depth: 6,890' TVD @ TD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 13,700' MD @ TD

11) Proposed Horizontal Leg Length: 6,040' from LP and 7,479' from KOP

12) Approximate Fresh Water Strata Depths: Shallowest @ 85' and Deepest @ 1,057'

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 @ 1,939' and Deepest @ 2,302'

15) Approximate Coal Seam Depths: 572', 917', 1,052'

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	1,250'	1,250'	1,141 - CTS
Intermediate 1	9.625"	New	J55	36.0	2,625'	2,625'	Lead 645 - Tail 436 CTS
Intermediate 2							
Production	5.5"	New	P110	20.0		13,700'	3,219 - TOC @ 1,625'
Tubing	2.375"	New	J55	4.7		6,700'	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.

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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	HalCem	1.24
Intermediate 1	9.625"	12.25"	0.352"	3,520	HalCem	1.24 Lead - 1.21 Tail
Intermediate 2						
Production	5.5"	8.75"	0.361	12,360	VariCem	1.21
Tubing	2.375"	N/A	0.190"	7,700	N/A	N/A
Liners						

PACKERS

Kind:	Tam Cap Inflatable			
Sizes:	9.625"			
Depths Set:	1,200' 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): 11.4

22) Area to be disturbed for well pad only, less access road (acres): 8.0

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 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.

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

-Fresh Water casing will be cemented using "Halcem" cement which is a proprietory blend.
-Intermediate casing will be cemented using "Halcem" cement which is a proprietory blend.
-Production casing will be cemented with VariCem cement which is a proprietory blend.

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.

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*Note: Attach additional sheets as needed.

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STONE ENERGY

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)*, $CaCO_3$ *(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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WV Dept. of Environmental Protection

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STONE ENERGY

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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WV Dept. of Environmental Protection

STONE ENERGY - PROPOSED HORIZONTAL

Revision: 6-May-14

Well: Starkweather #3H
State: West Virginia
County: Wetzel
District: Green
Prospect: Mary
Location: Surface: North = 4,380,620 East = 518,188 (UTM NAD 83)
PBHL: North = 4,382,218 East = 516,935 (UTM NAD 83)
PTD: 13700' MD / 6890' TVD

Permit Number: 47-103-
Permit Issued:
Post Construction Ground Elevation: 1262'
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	98' KB (80' BGL)			**CONDUCTOR PIPE** 20" x 3/8" wall L/S PE @ 98' (set in bedrock & grouted to surface)		Vertical
17-1/2" Hole	Shallowest FW	85' TVD			Air / Mist	
	Pittsburgh Coal	1052' TVD				
	Deepest FW	1057' TVD				
		1250' TVD		**SURFACE CASING** 13-3/8" 54.5# J-55 STC @ 1250' MD/TVD Set through fresh water zones Set through coal zones Cemented to surface		Vertical
12-1/4" Hole	Salt Water	1939' TVD			Stiff Foam If Needed	
	Little Lime	2245' TVD				
	Big Lime	2275' TVD				
	Big Injun Sandstone	2375' TVD				
	Base of Big Injun	2475' TVD				
		2625' TVD		**INTERMEDIATE CASING** 9-5/8" 36.0# J-55 LTC @ 2625' MD/TVD Set through potential salt water zones Set below base of Big Injun Cemented to surface		Vertical
	Berea Sandstone	2852' TVD				
	Gordon Sandstone	3086' TVD				
8-3/4" Hole					Air / Dust	
				KOP @ 6221' TVD		
	Rhinestreet Shale (Base)	6465' TVD			WBM In Curve	
8-3/4" Hole	Middlesex Shale	6653' TVD				
	West River Shale	6734' TVD				
	Geneseo Shale	6794' TVD				
	Tully Limestone	6811' TVD				
	Hamilton Shale	6857' TVD				
8-3/4" Hole in Lateral	Marcellus Shale	6907' TVD			WBM In Lateral	~90.5°
	Onondaga Limestone	6957' TVD				

Landing Point (LP) @ 7660' MD / 6940' TVD
~90.5° angle
~327° azimuth

TD @ 13700' MD / 6890' TVD
PRODUCTION CASING
5-1/2" 20.0# P-110 CDC @ 13700' MD
Top of Cement @ 1625' (~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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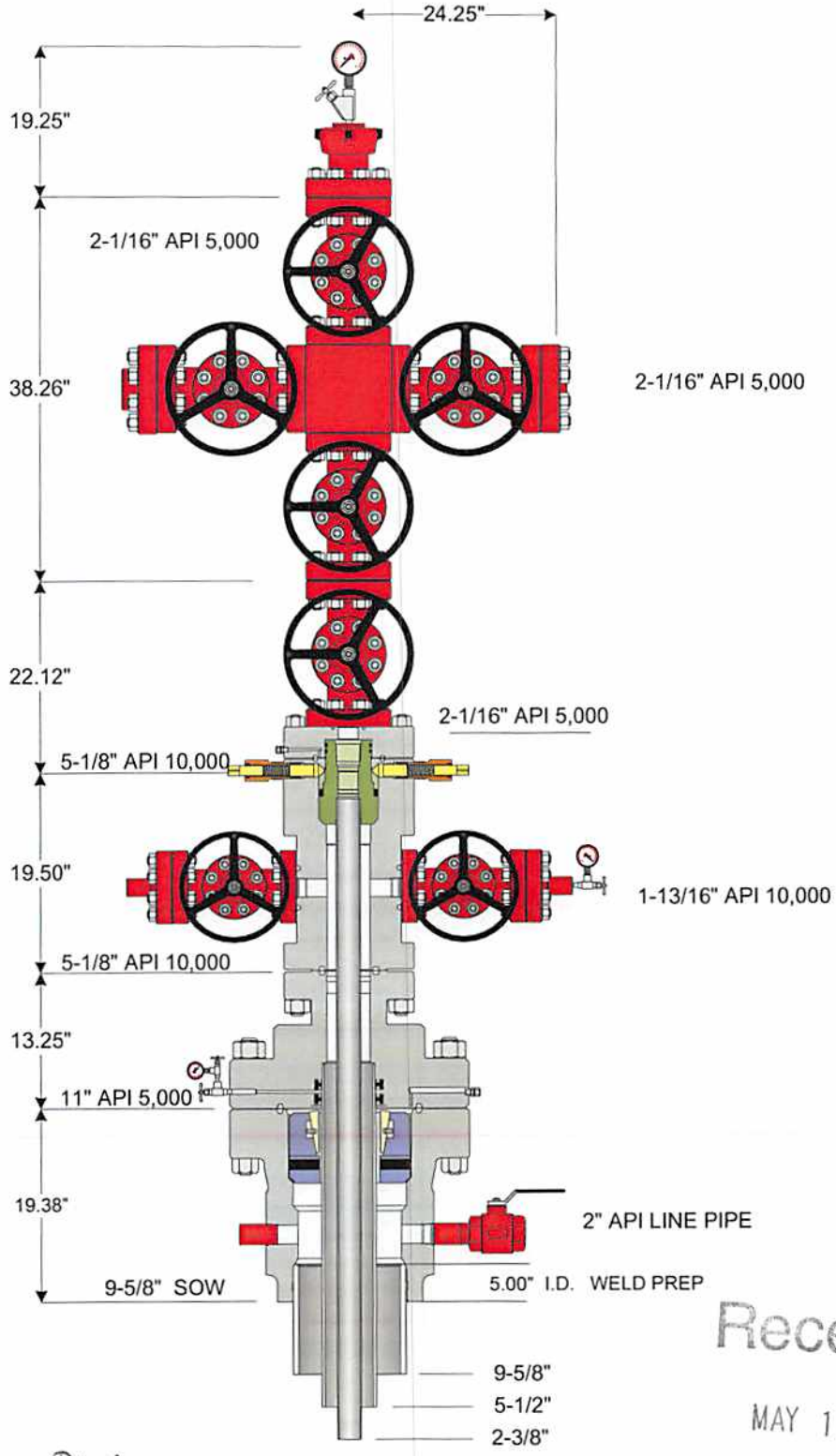
NOTE: THIS DRAWING IS NOT TO SCALE. THE DIMENSIONS REFLECTED ON THE DRAWING ARE ESTIMATED MEASUREMENTS AND FOR REFERENCE ONLY.

4710303007



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Weatherford

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Customer: STONE ENERGY	Project: 46705	Quote: 99565 v 3
Tender, Project or Well: 2011- 2012 CONVENTIONAL MARCELLUS	Date: 07-17-2011	Drawn By: RF

WW-9
(9/13)

API Number 47 - 103 4710303007
Operator's Well No. Starkweather #3H

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): Fishing Creek Quadrangle: Porters Falls

Elevation: 1,262' County: Wetzel District: Green

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, 34-167-29618, 34-167-29577, 34-121-24086)
- ■ 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

Will closed loop system be used? If so, describe: A closed loop system will be used for both top hole and horizontal sections DMH 5-7-14

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 Co. Sanitary Landfill (SWF-1021/WV109185), Brooke Co. LF (SWPU 14-04-16)

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.

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MAY 14 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

Company Official Signature: Roger L. Cutright

Company Official (Typed Name): Roger L. Cutright

Company Official Title: Land Manager/Special Counsel

Subscribed and sworn before me this 12th day of May, 2014

Danielle L. Snoderly
Notary Public

My commission expires 5/18/2021

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
DANIELLE L SNODERLY
RR2 Box 248A, Fairmont, WV 26554
My Commission Expires May 18, 2021

4710303007

Form WW-9

Operator's Well No. Starkweather #3H

Stone Energy Corporation

Proposed Revegetation Treatment: Acres Disturbed 11.4 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: [illegible]

Comments: _____

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Office of Oil and Gas
WV Dept. of Environmental Protection

Title: Oil + Gas Inspector Date: 5-9-14

Field Reviewed? (✓) Yes ( ) No

Well Site Safety Plan

Starkweather 3H

Green District, Wetzel County

DMH
4-8-14

Stone Energy Corporation
6000 Hampton Center
Suite B
Morgantown, West Virginia 26505
(304)225-1600

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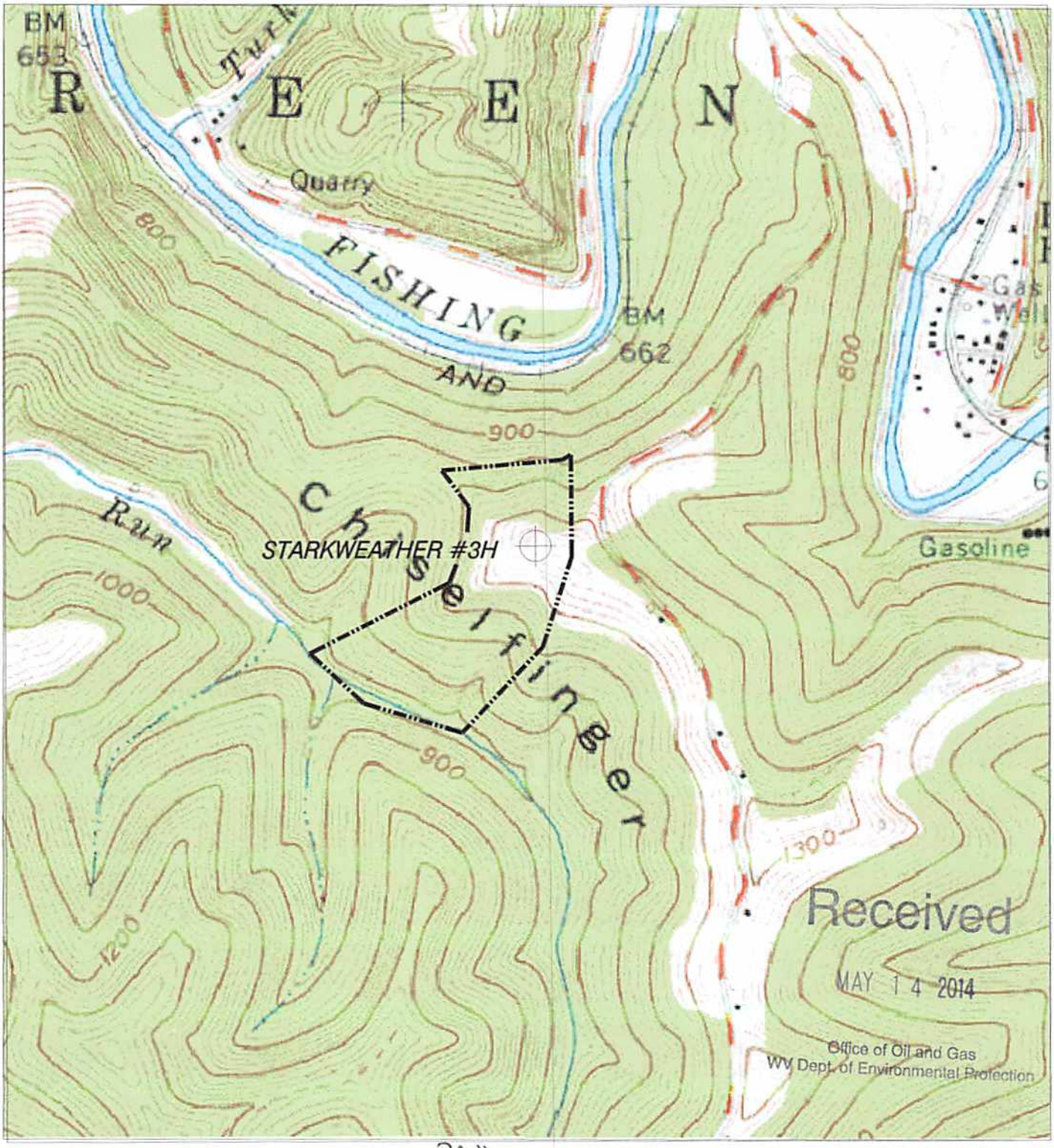
Form W-9

Stone Energy Corporation STARKWEATHER #3H

4710303007



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HUPP Surveying & Mapping P.O. BOX 647 GRANTSVILLE, WV 26147 PH: (304)354-7035 E-MAIL: hupp@frontiernet.net	1" = 1000' Porters Falls 7.5'	Stone Energy Corp. P.O. Box 52807 Lafayette, LA 70508

FORM WW-6

LONG. 80°47'18.3" — 10,870'

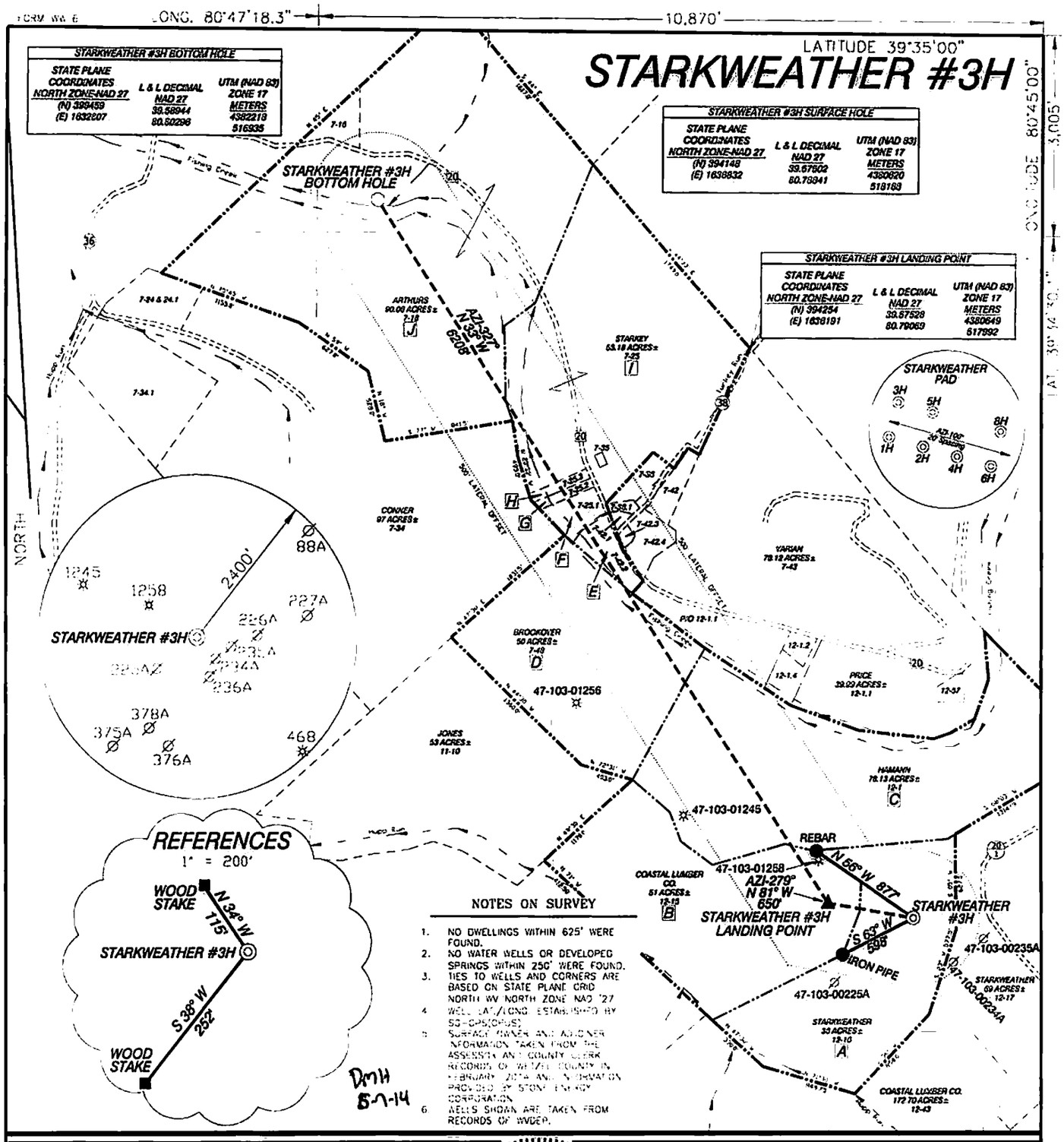
LATITUDE 39°35'00"

STARKWEATHER #3H

STARKWEATHER #3H BOTTOM HOLE		
STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 399459	39.58944	4382218
(E) 1632207	80.80296	516935

STARKWEATHER #3H SURFACE HOLE		
STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 394148	39.67602	4380620
(E) 1638832	80.78841	518183

STARKWEATHER #3H LANDING POINT		
STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 394254	39.67528	4380649
(E) 1639191	80.79069	517992



DMH 5-7-14

NOTES ON SURVEY

1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27
4. WELL LAT./LONG. ESTABLISHED BY SG-GPS(OPUS)
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN FEBRUARY 2014 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION
6. 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.

P.S. 834

HUPP Surveying & Mapping
P.O. Box 647 Grantsville, WV 26147
(304) 354-7035 EMAIL: hupp@frontiernet.net

DOYLE HUPP, JR. LICENSED No. 834 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

DATE MARCH 1, 20 14

OPERATORS WELL NO. STARKWEATHER #3H

API WELL NO. 47 — 103 — 03007
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2173 (BK 59-35)

PROVEN SOURCE OF ELEVATION SG GPS (OPUS) SCALE 1" = 1000'

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

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

LOCATION:
ELEVATION 1,280' WATERSHED FISHING CREEK
DISTRICT GREEN COUNTY WETZEL QUADRANGLE PORTERS FALLS 7.5'

SURFACE OWNER HEATH & CHARMAINE STARKWEATHER ACREAGE 36±
ROYALTY OWNER HEATH & CHARMAINE STARKWEATHER, et al LEASE ACREAGE 365.96±
PROPOSED WORK: LEASE NO. ___
DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X 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 6,890' MD 13,700'

WELL OPERATOR STONE ENERGY CORPORATION DESIGNATED AGENT TIM MCGREGOR
ADDRESS P.O. BOX 52807 LAFAYETTE, LA 70508 ADDRESS 6000 HAMPTON CENTER SUITE B MORGANTOWN, WV 26505

COUNTY NAME

PERMIT