

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 30, 2013

WELL WORK PERMIT Horizontal 6A Well

This permit, API Well Number: 47-10302924, 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 feet free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: MARTIN 5H

Farm Name: MARTIN, CHARLES & GWENDO

API Well Number: 47-10302924

Permit Type: Horizontal 6A Well

Date Issued: 09/30/2013

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 (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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 fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. 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.

WW - 6B (3/13)

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

| | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | TO THE E | | 103 | 5 | 554 |
|---|---|---------------------|-----------------------------|------------------------|-----------------------------------|----------------------------|
| 1) Well Operator: | STONE ENERGY CORP | PORATION | 494490923 | Wetzel | Green | Porters Falls |
| ev to ter e trentines | | | Operator ID | County | District | Quadrangle |
| 2) Operator's Well 1 | Number: | Martin #5 | H v | Vell Pad Name | e:Mar | tin |
| 3 Elevation, current | ground: 920 |)' Elev | vation, proposed | post-construct | ion: | 906' |
| 4) Well Type: (a) C | ias 🔳 C | oil | Underground | d Storage | | |
| | Other | | | | | |
| (b) It | Gas: Shallow | | Deep | | | |
| | Horizontal | | | | Dank | 4 |
| 5) Existing Pad? Ye | s or No: No | | | | (1-7 | t 6-17 |
| | Formation(s), Depth(s) rmation is the Marcellus | | | | Pressure(s): | |
| rock pressure will r 7) Proposed Total V | range between 3,800 and ertical Depth: 6,6 | | anding Point and 6 | ,590' TVD at TI | O (Up-Dip We | ell) |
| 8) Formation at Tota | al Vertical Depth: | Marcellus Sh | ale | | | |
| 9) Proposed Total M | leasured Depth: | 12,500' | | | | |
| 10) Approximate Fr | esh Water Strata Depth | s: <u>50'</u> | Shallowest and 72 | 25' Deepest | | |
| 11) Method to Deter | mine Fresh Water Dep | th: Depth | of bit when water sho | ows in the flowlin | e or when drill | ing soap is injected |
| 12) Approximate Sa | ltwater Depths: 1 | 556' | | | | |
| 13) Approximate Co | oal Seam Depths: | 720' | | | | |
| 14) Approximate De | epth to Possible Void (c | coal mine, k | arst, other): | None An | ticipated | |
| | well location contain contive mine? If so, indica | | | No No | | |
| 16) Describe propos | ed well work: | | MIRU conductor rig an | d set conductor in | to solid rock ce | ementing to surface. |
| RDMO conductor rig | and MIRU top-hole rig and d | rill to KOP whil | e setting surface and | intermediate cas | ing string and | cementing them to |
| surface. RDMO top-r | ig and MIRU horizontal rig. [| Orill curve and | lateral on WBM, set p | roduction casing | and cement in | place. RDMO. |
| | ing/stimulating method ont. Clean out well bore and run CB | | ely 30 degrees in the curve | e to surface. Perforat | e 21 individual sta | ges in the lateral section |
| of the well bore and stimula | ate each individual set of perforation | ns using slick wate | r and sand. MIRU service | rig and flow well back | k. Clean out well t | pore and run production |
| tubing. Test well flow. \$ | See the attached frac chemical ac | ldendum for addi | tives used during the stir | nulation. | | mana |
| 12.202 | and the real of the second | | | | 1111 60 | 2010 |
| 18) Total area to be | disturbed, including roa | ads, stockpi | le area, pits, etc, (| acres): | - | 13.57 |
| 19) Area to be distur | bed for well pad only, | less access | road (acres): | WV Der | Office of 9:49 t. of Environme | Hall Protection |

WW - 6B (3/13)

20)

CASING AND TUBING PROGRAM

| ТҮРЕ | Size | New or Used | <u>Grade</u> | Weight per ft. | FOOTAGE: For Drilling | INTERVALS: Left in Well | CEMENT: Fill -up (Cu. Ft.) |
|--------------|---------|-------------------|--------------|----------------|--------------------------|----------------------------|---|
| Conductor | 20" | New | LS | 94.0 | 40' | 40' | 20 - GTS |
| Fresh Water | 13.375" | New | J55 | 54.5 | 900' | 900' | 881 - CTS |
| Coal | 13.375" | New | J55 | 54.5 | 900' | 900' | 881 - CTS |
| Intermediate | 9.625" | New | J55 | 36.0 | 2,245' | 2,245' | 554 Lead - 393 Tail CTS |
| Production | 5.5" | New | P110 | 20.0 | | 12,500' | 1,025 Lead - 2,116 Tail TOC @ 1,245' |
| Tubing | 2.375" | New | J55 | 4.7 | | 6,100' | N/A |
| Liners | | | | | | | |

Surface/Coal String will be set above Sea Level which is 906'

DA4 6-24-13

| TYPE | Size | Wellbore Diameter | Wall Thickness | Burst Pressure | Cement Type | Cement Yield |
|--------------|---------|----------------------|-------------------|-------------------|----------------|-----------------------|
| Conductor | 20" | 24" | 0.375" | N/A | Type 1 | 1.18 |
| Fresh Water | 13.375" | 17.5" | 0.380" | 2,730 psi | Class A | 1.19 |
| Coal | 13.375" | 17.5" | 0.380" | 2,730 psi | Class A | 1.19 |
| Intermediate | 9.625" | 12.25" | 0.352" | 3,520 psi | Class A | 1.26 Lead - 1.19 Tail |
| Production | 5.5" | 8.75" | 0.361" | 12,360 psi | Class A | 1.25 Lead - 1.23 Tail |
| Tubing | 2.375" | N/A | 0.190" | 7,700 psi | N/A | N/A |
| Liners | N/A | | | | | |

PACKERS

| Kind: | N/A | Descinad |
|-------------|-----|----------|
| Sizes: | | Received |
| Depths Set: | | 2.8.203 |

Office of Oil and Gas
WV Dept. of Environmental Protection
Page 2 of 3

*Note: Attach additional sheets as needed.

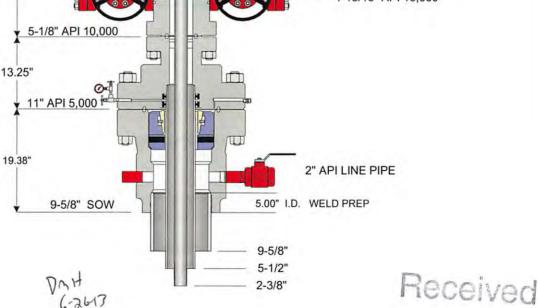
| 21 |) Describe centralizer placement for each casing string. |
|----|--|
| | spring centralizers with one (1) being placed above the guide shoe and one (1) every second joint to surface, 12 total |
| | -Intermediate string will incorporate bow spring centralizers with one (1) above the guide shoe, one (1) above float |
| | collar, and one (1) every third joint to surface for a total of 20 centralizers. One straight vane rigid centralizer will be |
| | placed as close to the surface as practical. |
| | -Production string will incorporate alternating left and right hand spiral centralizers with one (1) every fourth joint to |
| | 500' above KOP and every third joint from KOP to top of slant for a total 66 left/right rigid spiral centralizers. From |
| | top of slant to TOC bow spring centralizers will be used on every third joint for a total of 10. |
| 22 | Describe all cement additives associated with each cement type. |
| | -Fresh Water/Coal string uses a slurry of Class A cement with 0.125 pps Cello Flake, 1.0% CaCl2, and 0.2% Anti-Foam |
| | -Intermediate string uses a Lead/Tail slurry. Lead is Class A cement with 0.2 gps Accelerator, 0.08 gps Dispersant, 0.1 gps Anti |
| | Foam, 4.0% Expanding Agent, and 0.5% Gas Migration Agent. Tail is Class A cement with 1.0% CaCl2, 0.125 pps Cello Flake, |
| | and 0.2% Anti-Foam. |
| | - Production string uses a Lead/Tail slurry. the Lead is Class A cement with 4.0% Expanding Agent, 0.5% Gas Migration Agent, |
| | 0.25 gps Dispersant, 0.1 gps Anti-foam, and 0.06 gps Retarder. The Tail is Class A cement with 0.2% Dispersant, 0.4% Fluid Loss |
| | 0.2% Anti-Foam, 0.15% retarder, and 0.2% Anti-Settling Agent. |
| 23 | Proposed borehole conditioning procedures. |
| | -Fresh Water/Coal section will be conditioned by circulating air down the down the drill string at TD for 30 to 90 |
| | minutes or until the well bore clears of cuttings. |
| | - Intermediate section will conditioned by circulating air and/or stiff foam through the drill string at TD for 30 to 120 |
| | minutes until well bore clears of cuttings. |
| | -Production section will be conditioned by circulating drilling fluid through the drill string at TD for 120 to 720 minutes |
| | until cuttings shakers clear of cuttings. |
| | |

Dm4 6-26-13

Received

2 8 2013

103-02924 NOTE: THIS DRAWING IS NOT TO SCALE. THE DIMENSIONS REFLECTED ON THE DRAWING ARE ESTIMATED MEASUREMENTS AND FOR 24.25" 19.25" 2-1/16" API 5,000 2-1/16" API 5,000 38.26" 22.12" 2-1/16" API 5,000 5-1/8" API 10,000_-19.50" 1-13/16" API 10,000 5-1/8" API 10,000 13.25"





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W 2 8 2013

| Customer: STONE ENERGY | Project: 46705 | Quote: 99565 V3 |
|---|------------------|-----------------|
| Tender, Project or Well: 2011-2012 CONVENTIONAL MARCELLUS | Date: 07-17-2011 | Draw 0804 2013 |

STONE ENERGY - PROPOSED HORIZONTAL

Revision: 24-June-13

Permit Number: 47-103Permit Issued:
Post Construction Ground Elevation:
Kelly Bushing: 18'

Rig:

Spud Date: TD Date: Rig Release Date:

Prospect: Mary
Location: Surface: North = 4,384,806 East = 520,087 (UTM NAD 83)

PBHL: North = 4,386,270 East = 519,080 (UTM NAD 83)

PTD: 12500' MD / 6600' TVD

Well: Martin #5H

County: Wetzel

District: Green

State: West Virginia

| HOLE SIZE | PILOT HOL FORMATION 1 | | WELLBORE DIAGRAM | CASING & CEMENTING DATA DIRECTIONAL DATA MW & FLUID TYPE | HOLI |
|---------------------------|---|---|---------------------|---|--------|
| 24" Hole then Driven | 40' K | B (22' BGL) | JIII IIIL | CONDUCTOR PIPE | Vertic |
| 17-1/2" Hole | Shallowest FW Pittsburgh Coal Deepest FW | 50' TVD 720' TVD 725' TVD 900' TVD | | 20" x 3/8" wall L/S PE @ 40' (set in bedrock & grouted to surface) Air / Mist SURFACE CASING | Vertic |
| 12-1/4" Hole | Salt Water Little Lime Big Lime Big Injun Sandstone Base of Big Injun | 1556' TVD 1883' TVD 1913' TVD 2013' TVD 2113' TVD | | 13-3/8" 54.5# J-55 STC @ 900' MD/TVD Set through fresh water zones Set through coal zones Cemented to surface Stiff Foam | |
| | Berea Sandstone Gordon Sandstone | 2477' TVD 2699' TVD | 1 | 9-5/8" 36.0# J-55 LTC @ 2245' MD/TVD Set through potential salt water zones Set below base of Big Injun Cemented to surface | Verti |
| 8-3/4" Hole | | | | Air / Dust | |
| | Rhinestreet Shale (Base) | 6148' TVD | — ((кс | DP @ 5924' TVD | |
| -3/4" Hole | Middlesex Shale West River Shale Geneseo Shale Tully Limestone Hamilton Shale | 6376' TVD 6419' TVD 6515' TVD 6535' TVD 6566' TVD | | Dn 17 L-26-13 | |
| 8-3/4" Hole in Lateral | Marcellus Shale | 6620' TVD | | WBM in Lateral | ~90. |
| Notes | Onondaga Limestone Formation tops as per ve Curve & lateral tops will v Directional plan based u | vary due to stru | | TD @ 12500' MD / 6600' TVD Landing Point (LP) @ 7205' MD / 6650' TVD ~90.5' angle ~327' azimuth TD @ 12500' MD / 6600' TVD PRODUCTION CASING 5-1/2" 20,0# P-110 CDC @ 12500' MD Top of Cement @ 1245' (~1000' inside 9-5/8") | |

| | P | age | of , | |
|-----------------|---------|-----|------------|--|
| API Number 47 - | 103 | - 0 | 2924 | |
| Operator's V | Well No | | Martin #5H | |

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

| Operator Name | STONE ENERGY | Y CORPOR | ATION | OP Code | 494490923 |
|---|---|--|---|--|---|
| Watershed (HUC 10) | Little Fishing | Creek | Quadrangle | P | orters Falls |
| Elevation | 906' Coun | ty | Wetzel | District | Green |
| Do you anticipate using | more than 5,000 bbls of v | water to comple | ete the proposed | well work? Yes | s ✓ No |
| | ill cuttings? Yes | / | | | |
| If so, please de | scribe anticipated pit was | te: | | N/A | |
| Will a synthetic | c liner be used in the pit? | Yes | No 🗸 I | f so, what ml.? | N/A |
| | osal Method For Treated I | | | | Dr. |
| | Land Application | | | | L |
| 10 | | (UIC Permit | Number Hunte | er Disposal 2D0859721 | , 34-121-24037, 34-121-24086 |
| | | | | | ations, wells not permitted yet) |
| \- <u></u> | Off Site Disposal (Sup Other (Explain | oply form WW- | -9 for disposal lo | ocation) | |
|)- | - · · · · · · · · · · · · · · · · · · · | | | | |
| Will closed loop system | be used? Both the Top- | Hole Rig and H | orizontal Rig will | I incorporate the u | ise of a closed loop system |
| Drilling medium anticip | ated for this well? Air, fr | eshwater, oil b | ased, etc. Top-Ho | le on air and/or drilli | ng soap, Horizontal on Salt Brine |
| -If oil based, w | hat type? Synthetic, petro | oleum, etc | | N/A | |
| Additives to be used in a | drilling medium? | | See WV | W-9 Addendum | |
| | | | | | sed of in an approved landfill |
| | d plan to solidify what me | | | | 9.000 |
| | | | | | |
| -Landfill or off | site name/permit number | ?vve | tzei County San | itary Landilli (SVVI | 1021/000109165) |
| on August 1, 2005, by the provisions of the permit law or regulation can lead of the permit law or regulation form and a sobtaining the information | are enforceable by law. In act are enforceable by law. In act to enforcement action. In penalty of law that I ha Il attachments thereto an In action, I believe that the infection false information, including | of the West Virginial Violations of ave personally and that, based formation is true | ginia Departmen any term or con examined and a on my inquiry ue, accurate, an | at of Environment adition of the gen am familiar with of those individ d complete. I a | ER POLLUTION PERMIT is: al Protection. I understand that eral permit and/or other applic the information submitted on duals immediately responsible m aware that there are signifi |
| Company Official (Typ | | cGregor | | | 7 8 104 |
| Company Official Title | Land Coordina | | | | |
| | | 201 | | | |
| Company Official Tric_ | | | | | Office of Oil and Ga |
| | 2.14 | 1 | | | Office of Oil and Ga |
| | efore me this 345 | day of | <u>the</u> | 20 | MA Debt of Fusion 19 |
| | efore me this 243 | day of | Uat | 20 Natary 1 | WV Dept. of Environment |
| | f Snoduly | day of | <u>Uu</u> | . 20 Nato | MA Debt of Fusion 19 |

| Form WW-9 | | | Operator's Well | No. Martin #5H |
|------------------------------|--|---------------|--------------------|----------------|
| | STONE ENER | GY CORPOR | • | |
| Proposed Revegetation Treatm | nent: Acres Disturbed Tons/acre or to correct to | 6.5 | Prevegetation pH _ | |
| | or equivalent) 500-750 | | | |
| | 0.75 + Strow | ons/acre | imum <i>)</i> | |
| | | Seed Mixtures | | |
| Area | | | Area I | |
| Seed Type | lbs/acre | | Seed Type | lbs/acre |
| Marcellus Mix | 100.0 | Ma | rcellus Mix | 100.0 |
| White or Ladino Clover | 10.0 | White o | r Ladino Clover | 10.0 |
| Orchard Grass | 40.0 | Ord | hard Grass | 40.0 |
| Winter Rye | 50.0 | | /inter Rye | 50.0 |
| Plan Approved by: | | | | |
| Comments: | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 0.11 | | 1 | . Pec | aived |
| Title: Oil + Car | Inspector | Date: 6- | 2617" " | al y CIU |
| Field Reviewed? (|) Yes |) No | | <u> </u> |

Office of Oil and Gas
WV Dept. of Environmental Protectic



STONE ENERGY CORPORTATION

Addendum for

Planned Additives to be Used in Fracturing or Stimulations

Listed below are the chemicals used in addition to water and sand (CAS-No 14808-60-7) and their respective quantities for slick water fracturing;

- 0.5 gal/thousand gallons of water Friction Reducer (CAS-No 7783-20-2)
- 0.25 gal/thousand gallons of water Bacteria Control (CAS-No 11-30-8)
- 0.25 gal/thousand gallons of water Clay Stabilizer (CAS- No 75-57-0)
- 0.75 gal/thousand gallons of water Surfactant (CAS-No Proprietary)
- 0.25 gal/thousand gallons of water Scale Inhibitor (CAS-No 7601-54-9 & 107-21-1)
- 2000 gal of 15% HCl (CAS-No 7647-01-0) per stage with/ 2 gal/thousand gallons of acid Corrosion Inhibitor (CAS-No 67-56-1, 107-19-7, & Propretary) and 6 pints/thousand gallons of acid – Iron Stabilizer (CAS-No 6381-77-7)
- A 15 lb. Linear Gel and breaker is sometimes used during a stage but the exact amount is not known until the stimulation is in progress (CAS-No Proprietary & 7727-54-0)

DAH 6-26-17



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Office of Oil po WV Dept. of Environ



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), CaCO₃ (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 & 1138-66-2), 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.

DMH 6-26-13

Received

7 8 3019



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

DMH 6-26-13



2 8 2013

Office of Oil and Gas



west virginia department of environmental protection





Water Management Plan: Primary Water Sources



WMP-01360

API/ID Number:

047-103-02924

Operator:

Stone Energy Corporation

Martin #5H

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- •Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- •Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- •Minimum flows required by the Army Corps of Engineers; and
- · Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

CAPPROVED AUG 2 8 2013

Source Summary

WMP-01360

API Number:

047-103-02924

Operator:

Stone Energy Corporation

Martin #5H

Stream/River

Source

Ohio River @ The Spielers Club

Wetzel

Owner:

The Spielers Club

Start Date

End Date

Total Volume (gal)

Max. daily purchase (gal)

Intake Latitude: Intake Longitude:

7/1/2014

7/1/2015

6,100,000

39.709677

-80.826384

✓ Regulated Stream?

Ohio River Min. Flow Ref. Gauge ID:

9999999

Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm):

833

Min. Gauge Reading (cfs):

6,468.00

Min. Passby (cfs)

DEP Comments:

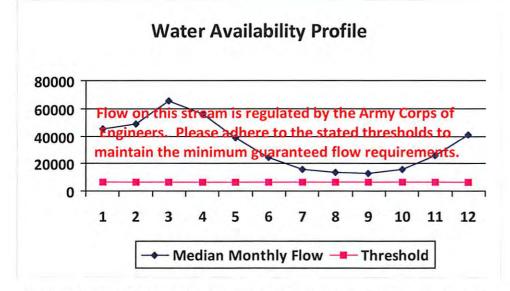
Refer to the specified station on the National Weather Service's Ohio River forecast

website: http://www.erh.noaa.gov/ohrfc//flows.shtml

Source Detail



| Month | Median monthly flow (cfs) | Threshold (+ pump | Estimated Available water (cfs) |
|-------|---------------------------------|----------------------|---------------------------------|
| 1 | 45,700.00 | | |
| 2 | 49,200.00 | | |
| 3 | 65,700.00 | - | |
| 4 | 56,100.00 | | |
| 5 | 38,700.00 | | |
| 6 | 24,300.00 | 121 | 1.5 |
| 7 | 16,000.00 | - | |
| 8 | 13,400.00 | | - |
| 9 | 12,800.00 | | - |
| 10 | 15,500.00 | - | - |
| 11 | 26,300.00 | - | |
| 12 | 41,300.00 | - | |



| Base Threshold (cfs): | |
|-------------------------------|------|
| Upstream Demand (cfs): | 0.00 |
| Downstream Demand (cfs): | 0.00 |
| Pump rate (cfs): | 1.86 |
| Headwater Safety (cfs): | 0.00 |
| Ungauged Stream Safety (cfs): | 0.00 |
| Min. Gauge Reading (cfs): | |
| Passby at Location (cfs): | |

Water Availability Assessment of Location

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

west virginia department of environmental protection



Water Management Plan: Secondary Water Sources



WMP-01360

API/ID Number

047-103-02924

Operator:

Stone Energy Corporation

Martin #5H

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- •For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- •For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID: 20606 Source Name

Pribble Freshwater Impoundment

Source start date:

7/1/2014

Source end date:

7/1/2015

Source Lat:

39.685144

Source Long:

-80.820002

County

Wetzel

Max. Daily Purchase (gal)

Total Volume from Source (gal):

6,100,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-277

WMP-01360 API/ID Number 047-103-02924 Operator: Stone Energy Corporation

Martin #5H

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- •For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- •For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

| Source ID: | 20607 | Source Name | Tuttle Fresh Water Impoundment | | | Source start date | |
|------------|-------|---------------|--------------------------------|--------------|---------------------------------|-------------------|-----------|
| | | Source Lat: | 39.586528 | Source Long: | -80.779889 | County | Wetzel |
| | | Max. Daily Pu | rchase (gal) | | Total Volume from Source (gal): | | 3,050,000 |
| | DED C | ammonte: | renase (gar) | Total Vola | 2,000,000 | | |

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-588

| Source ID: | 20608 | Source Name | Conley Fresh Water Impoundment | | | Source start date: | 7/1/2014 |
|------------|---------------------------|-------------|--------------------------------|--------------|---------------------------------|--------------------|-----------|
| | | | | | | Source end date: | 7/1/2015 |
| | | Source Lat: | 39.608922 | Source Long: | -80.79156 | County | Wetzel |
| | Max. Daily Purchase (gal) | | | | Total Volume from Source (gal): | | 3,050,000 |
| | DEP Co | omments: | | | | | |

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-589

WMP-01360 API/ID Number 047-103-02924 Operator: Stone Energy Corporation

Martin #5H

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- •For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- •For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 20609 Source Name Maury Pad; Weekley Pad Source start date: 7/1/2014
Source end date: 7/1/2015

Source Lat: Source Long: County

Max. Daily Purchase (gal) Total Volume from Source (gal): 200,000

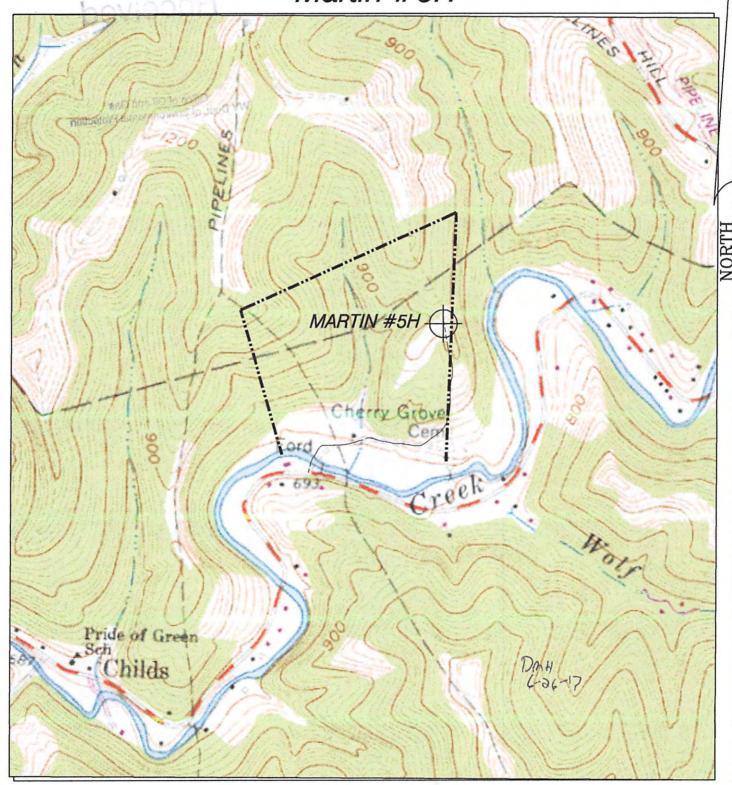
DEP Comments:

Form W-9

Stone Energy Corporation Martin #5H

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103-02924



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

