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west virginia department of environmental protection

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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](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

July 08, 2013

RAVEN RIDGE ENERGY  
3230 PENNSYLVANIA AVENUE  
CHARLESTON, WV 25302

Re: Permit Modification Approval for API Number 8704731 , Well #: SUMMERFIELD 1A  
**STIMULATE W/ 1 STAGE WATER FRAC**

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith  
Regulatory/Compliance Manager  
Office of Oil and Gas



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**west virginia** department of environmental protection

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March 19, 2013

**WELL WORK PERMIT**

**Vertical Well**

This permit, API Well Number: 47-8704731, issued to RAVEN RIDGE ENERGY, 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 of completion of drilling, 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: SUMMERFIELD 1A  
Farm Name: DONALDSON, JEREMIAH  
**API Well Number: 47-8704731**  
**Permit Type: Vertical Well**  
Date Issued: 03/19/2013

**Promoting a healthy environment.**

**07/12/2013**

# 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.

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## CONDITIONS

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1. 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 § 22-6-20, 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.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum 30 mil thickness synthetic liner.

# PERMIT CONDITIONS

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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. Raven Ridge Energy, LLC. must notify the Office of Oil and Gas no less than 48 hours before beginning the proposed shot.
2. WV DEP should have representatives on site to monitor the well shot.
3. WV DEP may monitor the shot with a Department owned and operated seismograph.
4. The seismograph will be operated by a competent WV DEP staff person and its recorded data will become part of the well record.
5. Any effluent that may emanate from the well must be controlled and managed.
6. All effluent must be contained in the pit or storage tanks.
7. The effort to achieve this end must include, but may not be limited to:
  - a. The use of a diverter to direct any effluent to the pit.
  - b. The use of a frac valve to control and manage any flow from the well.
  - c. The use of one or more pit liners to protect the surface of the location from effluent.
  - d. The use of ditching to direct flow to the pit.

WW - 2B  
(Rev. 8/10)

47-087-04931M

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

1) Well Operator: RAVEN RIDGE ENERGY

494485865	ROANE - 87	SMITHFIELD - 05	LOONEYVILLE - 7.5
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Operator ID      County      District      Quadrangle

2) Operator's Well Number: SUMMERFIELD 1A      3) Elevation: 832'

4) Well Type: (a) Oil  or Gas   
(b) If Gas: Production  / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow

5) Proposed Target Formation(s): BEREA      Proposed Target Depth: 2100'  
6) Proposed Total Depth: 3000' Feet      Formation at Proposed Total Depth: 2100' - 2900'  
7) Approximate fresh water strata depths: 150'  
8) Approximate salt water depths: 1100' - 1600'

9) Approximate coal seam depths: NO COAL LISTED ON TITLE

10) Approximate void depths,(coal, Karst, other): NONE

11) Does land contain coal seams tributary to active mine? NO

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)  
STIMULATE AND ONE STAGE WATER FRAC

*[Handwritten signature]*  
*6/28/13*

13) **CASING AND TUBING PROGRAM**

	TYPE SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8"	J55	48LBS.	30FT.	30FT.	CTS
Fresh Water	9 5/8"	J55	29LBS.	380FT.	380FT.	CTS
Coal						
Intermediate	7"	J55	23LBS.	1760FT.	1760FT	CTS
Production	4 1/2"	N80	11,60LBS	2100FT	2100FT	100 <sup>0</sup> / <sub>ft</sub> <sup>3</sup>
Tubing						
Liners						

Packers: Kind: \_\_\_\_\_  
Sizes: \_\_\_\_\_  
Depths Set \_\_\_\_\_

**Received**  
JUN 28 2013

Office of Oil and Gas  
WV Dept. of Environmental Protection  
6/12/2013

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

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

Operator Name RAVEN RIDGE ENERGY, LLC OP Code 484485885

Watershed SHOWENS RUN Quadrangle LOONEYVILLE 7.5'

Elevation 832' County ROANE District SMITHFIELD

Description of anticipated Pit Waste: WATER AND SOAP

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

Will a synthetic liner be used in the pit? YES . If so, what mil.? 30 mil.

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- \_\_\_\_\_ Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- \_\_\_\_\_ Reuse (at API Number \_\_\_\_\_ )
- \_\_\_\_\_ Off Site Disposal (Supply form WW-9 for disposal location)
- \_\_\_\_\_ Other (Explain \_\_\_\_\_)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. AIR, FRESHWATER

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

Additives to be used? SOAP, KCL AND/OR CLAYS

Will closed loop system be used? NO

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LEAVE IN PIT

-If left in pit and plan to solidify what medium will be used? Cement, lime, sawdust CEMENT OR LIME

-Landfill or offsite name/permit number? \_\_\_\_\_

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 [Signature]

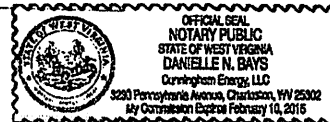
Company Official (Typed Name) RYAN CUNNINGHAM

Company Official Title OFFICER

Subscribed and sworn before me this 15 day of FEBRUARY, 2013

[Signature] Notary Public

My commission expires FEBRUARY 10, 2015



**LEGEND**

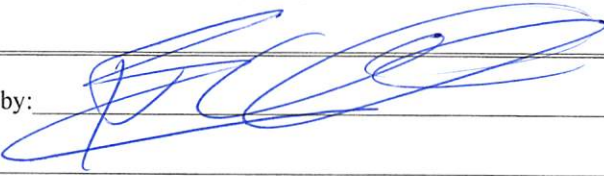
Property Boundary	Diversion
Road	Spring
Existing Fence	Wet Spot
Planned Fence	Drain Pipe with size in inches
Stream	Waterway
Open Ditch	Cross Drain
Rock	Artificial Filter Strip
North	Pit: cut walls
Buildings	Pit: compacted fill walls
Water wells	Area for Land Application of Pit Waste
Drill site	

Proposed Revegetation Treatment: Acres Disturbed 2 Prevegetation pH \_\_\_\_\_  
 Lime 2 Tons/acre or to correct to pH 6.5  
 Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)  
 Mulch HAY - 2 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
KY31		40	ORCHARD GRASS		15
ALSIKE CLOVER		5	ALSIKE CLOVER		5
ANNUAL RYE		15			

Attach:  
 Drawing(s) of road, location, pit and proposed area for land application.  
 Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:   
 Comments: \_\_\_\_\_

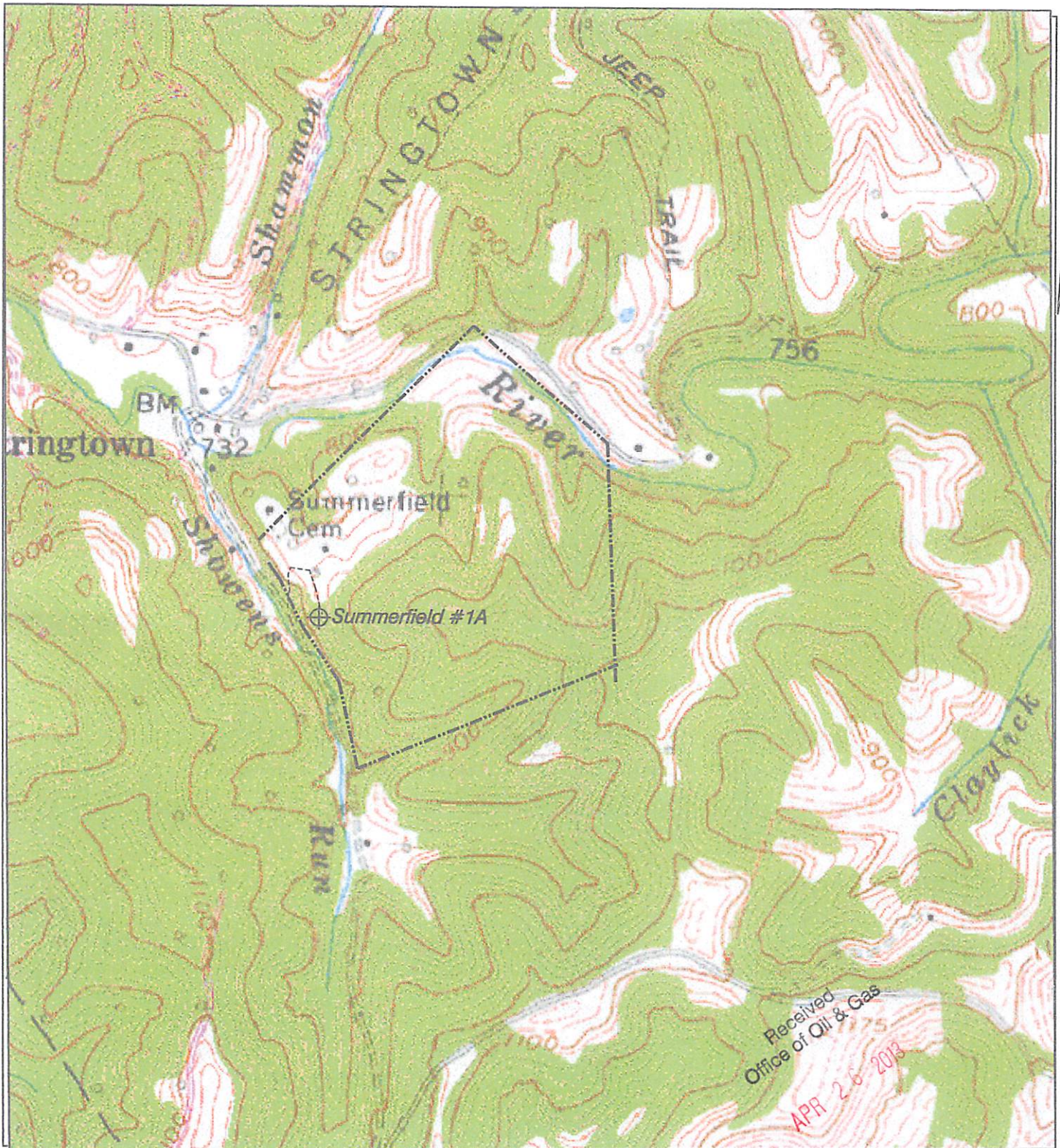
Title: Inspector Date: 2/19/13  
 Field Reviewed? (  ) Yes (  ) No

RECEIVED  
 Office of Oil and Gas  
 FEB 22 2013  
 Environmental Protection Department  
 07/12/2013

# RAVEN RIDGE ENERGY, LLC. SUMMERFIELD #1A (47-087-04731) REVISED

Form W-9

Page 1 of 1



### HUPP Surveying & Mapping

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

1" = 1000'  
Looneyville Quad

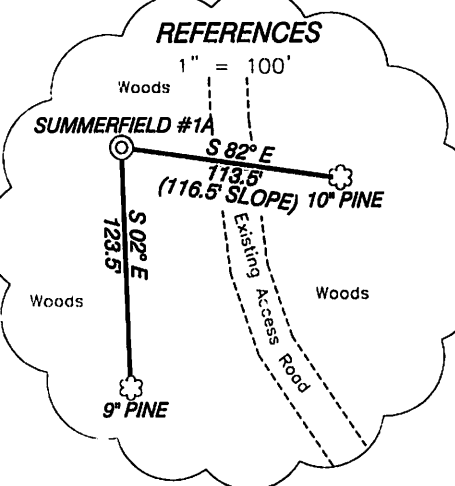
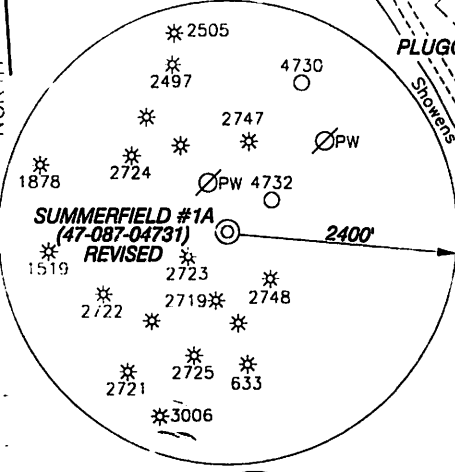
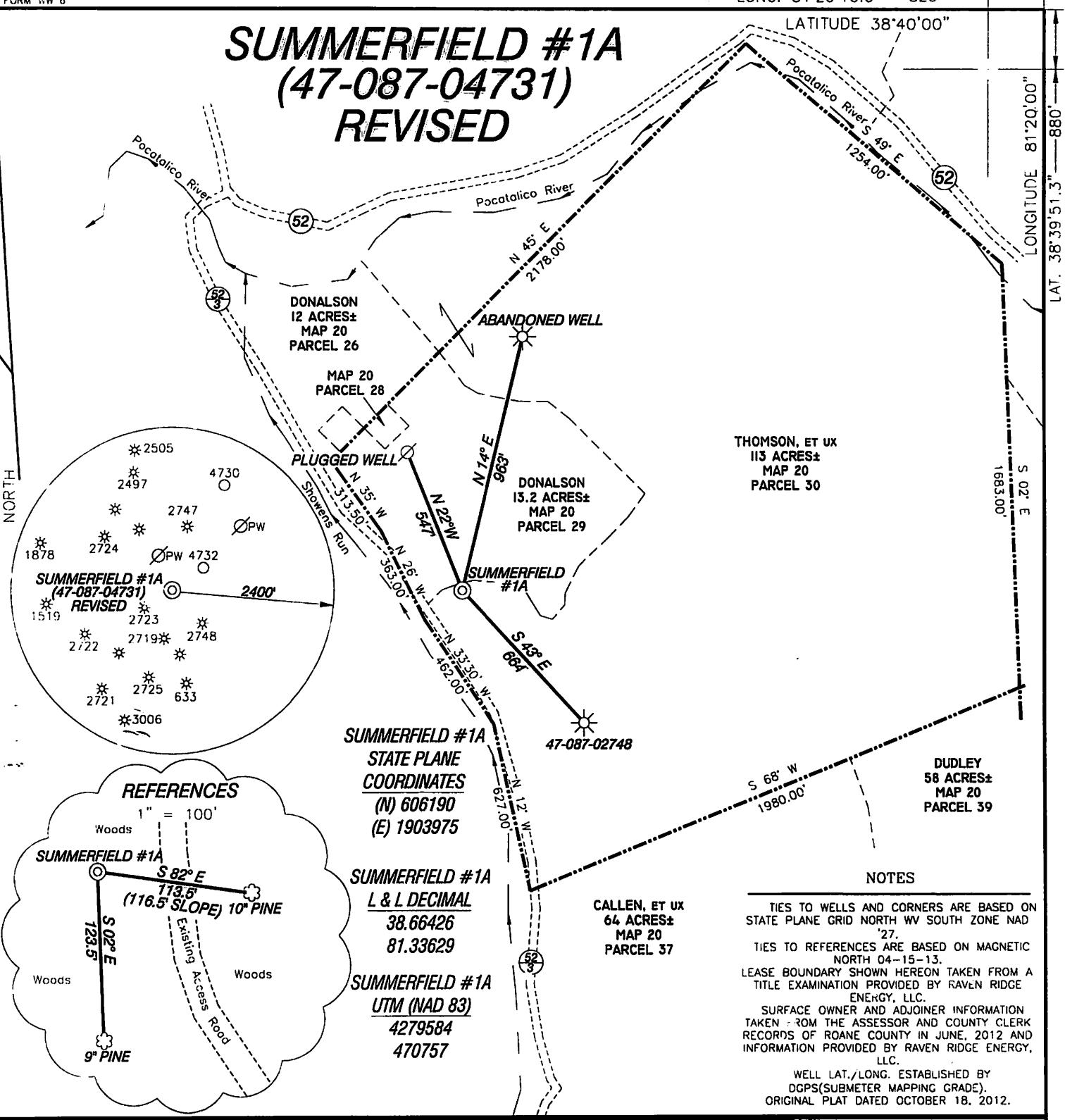
Raven Ridge Energy, LLC.  
3230 Pennsylvania Avenue  
Charleston, WV 25302

07/12/2013



LONG. 81°20'10.6" — 820'  
 LATITUDE 38°40'00"  
 LONGITUDE 81°20'00"  
 LAT. 38°39'51.3" — 880'

# SUMMERFIELD #1A (47-087-04731) REVISED



SUMMERFIELD #1A  
 STATE PLANE  
 COORDINATES  
 (N) 606190  
 (E) 1903975

SUMMERFIELD #1A  
 L & L DECIMAL  
 38.66426  
 81.33629

SUMMERFIELD #1A  
 UTM (NAD 83)  
 4279584  
 470757

THOMSON, ET UX  
 113 ACRES±  
 MAP 20  
 PARCEL 30

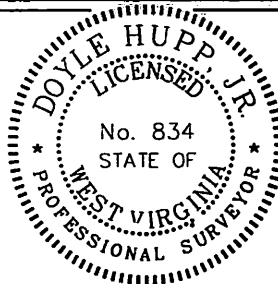
DUDLEY  
 58 ACRES±  
 MAP 20  
 PARCEL 39

CALLEN, ET UX  
 64 ACRES±  
 MAP 20  
 PARCEL 37

**NOTES**

TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.  
 TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 04-15-15.  
 LEASE BOUNDARY SHOWN HEREON TAKEN FROM A TITLE EXAMINATION PROVIDED BY RAVEN RIDGE ENERGY, LLC.  
 SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF ROANE COUNTY IN JUNE, 2012 AND INFORMATION PROVIDED BY RAVEN RIDGE ENERGY, LLC.  
 WELL LAT./LONG. ESTABLISHED BY DGPS (SUBMETER MAPPING GRADE). ORIGINAL PLAT DATED OCTOBER 18, 2012.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.



P.S. 834  
  
 HUPP Surveying & Mapping  
 P.O. Box 647 Grantsville, WV 26147  
 (304) 354-7035 EMAIL: hupp@frontiernet.net

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE APRIL 17, 2013  
 OPERATORS WELL NO. SUMMERFIELD #1A  
 REVISED  
 API WELL NO. 47-087-04731  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. W2062 (BK 63-58)  
 PROVEN SOURCE OF ELEVATION DGPS (SUBMETER GRADE) SCALE 1" = 500'

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 862' WATERSHED SHOWENS RUN  
 DISTRICT SMITHFIELD COUNTY ROANE QUADRANGLE LOONEYVILLE 7.5'  
 SURFACE OWNER WILLIAM THOMPSON, et ux ACREAGE 113±  
 ROYALTY OWNER JOHN B. SUMMERFIELD HEIRS, et al LEASE ACREAGE 126± 07/12/2013  
 PROPOSED WORK: LEASE NO. \_\_\_\_\_  
 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 BERE A  
 ESTIMATED DEPTH 3,000'

WELL OPERATOR RAVEN RIDGE ENERGY, LLC. DESIGNATED AGENT RYAN CUNNINGHAM  
 ADDRESS 3230 PENNSYLVANIA AVE. CHARLESTON, WV 25302 ADDRESS 3230 PENNSYLVANIA AVE. CHARLESTON, WV 25302

COUNTY NAME PERMIT

F  
now

8704731 M

**Nottingham, Justin E**

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**From:** Danielle Boggs <dani.bays@cunninghamenergy.com>  
**Sent:** Friday, June 28, 2013 3:24 PM  
**To:** McLaughlin, Jeffrey W; Nottingham, Justin E  
**Subject:** Summerfield 1A API# 47-087-04731  
**Attachments:** Summerfield - 1A Mod.pdf

Justin -

I would like to request a modification on the Summerfield 1A, API #47-087-04731. This well was originally permitted to be shot however we would like to change this to a single stage frac and run 4 1/2" pipe.

Please see attached a modified WW-2B, signed off on and approved by Inspector Gainer. Please let me know if you need any further information. Thanks!

Thank you,  
Danielle N. Boggs  
Cunningham Energy  
3230 Pennsylvania Ave  
Charleston, WV 25302  
Direct: (304) 344-9291  
Cell: (304) 553-5850  
Fax: (304) 344-9290  
[www.cunninghamenergy.com](http://www.cunninghamenergy.com)



Received  
JUN 28 2013  
Office of Oil and Gas  
WV Dept. of Environmental Protection

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