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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

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

Wednesday, March 7, 2018  
WELL WORK PERMIT  
Vertical / Plugging

NYTIS EXPLORATION COMPANY, LLC  
2480 FORTUNE DRIVE, SUITE 300

LEXINGTON, KY 40509

Re: Permit approval for PALMER 4  
47-047-01551-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

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 permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

Operator's Well Number: PALMER 4  
Farm Name: POCAHONTAS LAND CORP.  
U.S. WELL NUMBER: 47-047-01551-00-00  
Vertical / Plugging  
Date Issued: 3/7/2018

Promoting a healthy environment.

03/09/2018

## 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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B  
, 2017  
Rev. 2/01

1) Date 12/24/17

2) Operator's  
Well No. Palmer #4

3) API Well No. 47-047 01551

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil      / Gas   X   / Liquid injection      / Waste disposal      /  
(If "Gas, Production   x   or Underground storage     ) Deep      / Shallow   x  

5) Location: Elevation 2222 Watershed Dans Branch of Coal Bank Branch  
District Browns Creek County McDowell Quad Keystone 7.5

6) Well Operator NYTIS Exploration Company, LLC., 2480 Fortune Drive, Suite 300, Lexington Ky 40509

7) Designate Agent Sharon Barth  
Address 707 Virginia St. East Charleston, WV 25301

Oil and Gas Inspector to be notified:

Brian Ferguson *BKF*  
708 Manor Dr.  
Beckley WV 25801

9) Plugging Contractor

Name Nytis Exploration Co., LLC.  
2480 Fortune Dr. Suite 300 Lexington KY 40509

Phone 304 550 6265

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

Remove all Equipment used in production

See Attached Sheet:

Run Tubing to +/- TD 4692 *to PSTD ≈ 4390'*

Set cement plug 100' over TD

Gel 4592 to 4360

Set Cement plug +/- 4360 to 4070

Gel 4070 to 3965

Freepoint, cut and pull 4 1/2 csg at +/- 3915

Set cement plug +/- 3965 to 3865 over cutt

Gel 3865 to 2275

Cement 2275 to 2175 over elevation

Gel to 2175 to 1570'

Cement to 1570' to 1470

Gel to 1470 to 1115

Cement '1115' to 1015 across 7" seat

Gel 1015 to ~~325~~ <sup>325</sup> <sup>8'</sup>

Cement ~~325~~ to surface to cover coal and fresh water

Set monument

Reclaim road and well site

*Cement 325 to surface*

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Environmental Protection

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

Work order approved by inspector

*Brian K Ferguson*  
Brian K Ferguson

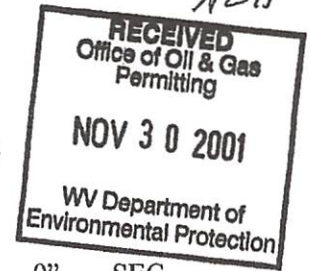
Date

1/30/2018

WR-35

Date: October 18, 2001  
API # 47-047-01551

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas  
Well Operator's Report of Well Work



Farm name: Pocahontas Land Corp. Operator Well No.: G. Palmer #4

LOCATION: Elevation: 2222' Quadrangle: Keystone  
District: Browns Creek County: McDowell  
Latitude: 10,800' feet South of 37° DEG. 25' MIN. 0" SEC.  
Longitude: 8,900' feet West of 81° DEG. 25' MIN. 0" SEC.

Company: Cabot Oil & Gas Corporation  
900 Lee Street East, Suite 500  
Charleston, WV 25301

Agent: John Abshire  
Inspector: Ofie Helmick  
Permit Issued: 8/10/01  
Well Work Commenced: 8/17/01  
Well Work Completed: 9/8/01  
Verbal Plugging  
Permission granted on:  
Rotary X Cable \_\_\_\_\_  
Total Depth (feet) 4792'  
Fresh Water Depths (ft) 350'  
Salt Water Depths (ft) \_\_\_\_\_  
Is coal being mined in area (Y / N)? Yes  
Coal Depths (ft) 50'-51', 175'-177', 260'-261', 335'-337', 373'-374', 470'-471',

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill up Cu. Ft.
12 3/4"		21'	
7"		1062'	225 sks
4 1/2"		4428'	70 sks

CTS

OPEN FLOW DATA

Producing formation WEIR Pay zone depth (ft) 4178' - 4186'  
4290' - 4310'

Gas: Initial open flow TSTM MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 1274 (Commingled) MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 3.75 Hours  
Static rock pressure 750 psig (surface pressure after 8 Hours)

Second producing formation POCONO Pay zone depth (ft) 4106' - 4120'

Gas: Initial open flow TSTM MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 1274 (Commingled) MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests 3.75 Hours  
Static rock pressure \_\_\_\_\_ psig (surface pressure after \_\_\_\_\_ Hours)



NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: CABOT OIL & GAS CORPORATION

By: [Signature] Operations Manager  
Date: 11-30-01

03/09/2018

047 01551

Perforated Weir using 3-1/8" HSC 4 SPF from 4290' KB - 4310' KB (84 total shots). Ran back in hole with swab tools and swabbed to 4350'. Performed 75 Q FF using 40,700# 20/40 sand ramped to 16 ppa, 467,200SCF N2 at 13,355scf/min. BD- 2353#, ATP - 2250# at 6 BPM clean, MTP - 2500# ISIP - 1700#, 5-Min -1419#, 10-Min- 1346#. Total clean fluid - 166 bbls.

Perforated 2nd stage - Weir using 3-1/8" HSC from 4178'-4186' (41 total holes). Set SMFP at 4200'. Performed 75 Q FF using 41,000# 20/40 sand ramped to 11ppa, 637,400SCF N2 at 11,140scf/min. BD 3250#, ATP - 2289# at 7 BPM clean, MTP - 2555#, ISIP 2620#, 5-Min - 2385#, 10-Min - 2270#. Total clean fluid - 243 bbls.

Perforate 3rd stage - Pocono using 3 1/8" HSC from 4106'-4120' (60 shots). Ran in hole and set LMFP at 4140'. Dropped frac ball while pumping 500 gals of 15% HCL acid. Performed 75 Q FF using 79,800# 20/40 sand ramped to 15 ppa, 755,300 SCF N2 at 10,610 scf/min. BD 1730#, ATP 2100# at 22 BPM/Foam, MTP 2353#, ISIP 1100#, 5-Min 833#, 10-Min 705#. Total fluid clean - 380 bbls.

FORMATION	TOP	BOTTOM	REMARKS
SILT/SHALE	0	620	
SHALE	620	1410	
SILT/SHALE	1410	1545	
AVIS	1545	1592	
MAXTON	1592	2500	2/0
SILT/SHALE	2500	2795	
LITTLE LIME	2795	2924	
LIME/SHALE	2924	3158	
BIG LIME	3158	3860	
INJUN	3860	4008	
POCONO	4008	4175	
WEIR	4175	4201	
SHALE	4201	4640	
BEREA	4640	4645	
SHALE	4645	4792 TD	

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03/09/2018



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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name NYTIS Exploration, Co, LLC OP Code 494473563

Watershed Slippery Gut Branch Quadrangle Madison  
Elevation 2222 County Boone District Scott

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

Will a pit be used for drill cuttings? Yes \_\_\_\_\_ No x

ANY WELL EFFLUENT MUST BE CONTAINED  
IN TANKS AND DISPOSED OF PROPERLY, OFF SITE.

If so, please describe anticipated pit waste: \_\_\_\_\_

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

JWM

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 foExpectedr disposal location)
- \_\_\_\_\_ Other (Explain No Return Expected \_\_\_\_\_ )

Will closed loop system be used? na

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. \_\_\_\_\_

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

Additives to be used in drilling medium? \_\_\_\_\_

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. \_\_\_\_\_

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

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

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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 \_\_\_\_\_

Company Official (Typed Name) Darrell Green (sign here) X *Darrell Green*

Company Official Title District Superintendent

Subscribed and sworn before me this 12<sup>th</sup> day of January, 2018

*Kara Bragg*

My commission expires April 15, 2022



03/09/2018

Operator's Well Palmer #4

McDowell 047 047 1551

Form WW-9

Proposed Revegetation Treatment: Acres Disturbed

Prevegetation pH 6.0

1.0

Lime \_\_\_\_\_ Acre or to correct to pH 6,5  
2Ton

Fertilizer (10-20-20 or equivalent) \_\_\_\_\_ lbs/acre (500 lbs minimum)  
500lbs

Mulch \_\_\_\_\_ Tons/acre  
2.0

Seed Mixtures

Seed Type	Area I		Seed Type	Area II	
		lbs/acre			lbs/acre
Fescue 40					
Alsike 5					
Annual Rye 16			Same		

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Brent K. Johnson

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

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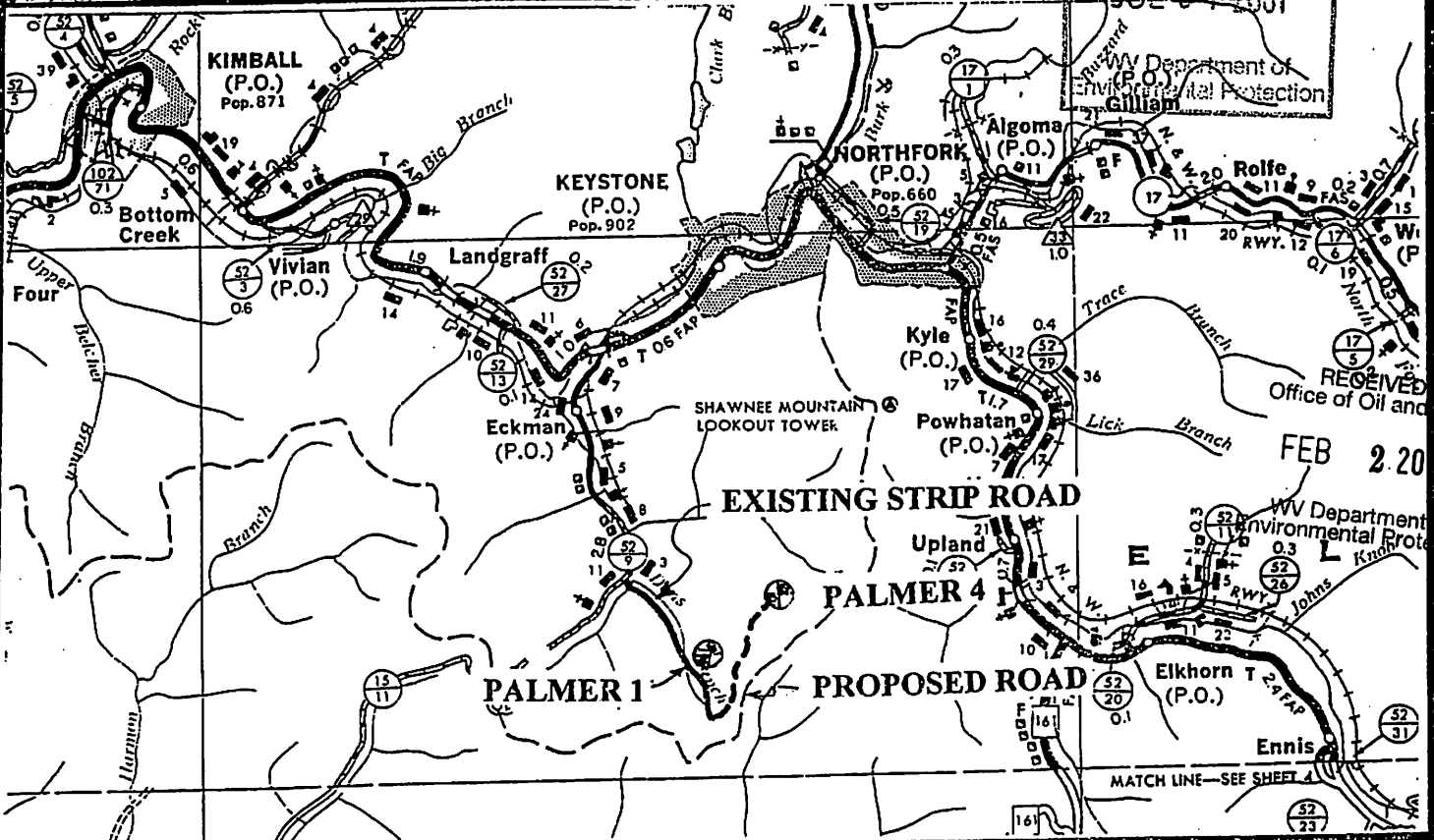
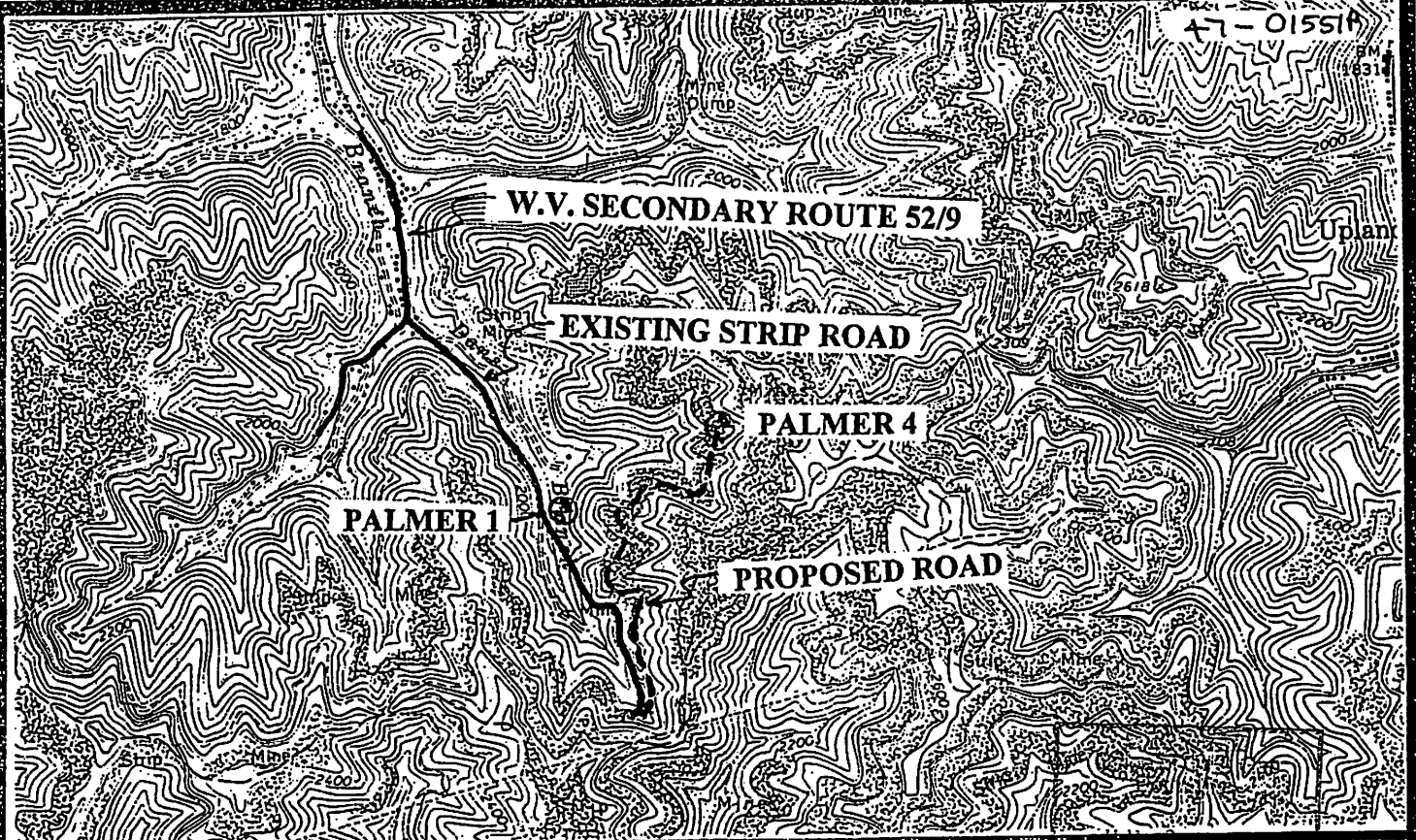
Title: Oil & Gas Inspector

Date: 1/30/2018

Field Reviewed? ( ) Yes ( x ) No



47-01551A

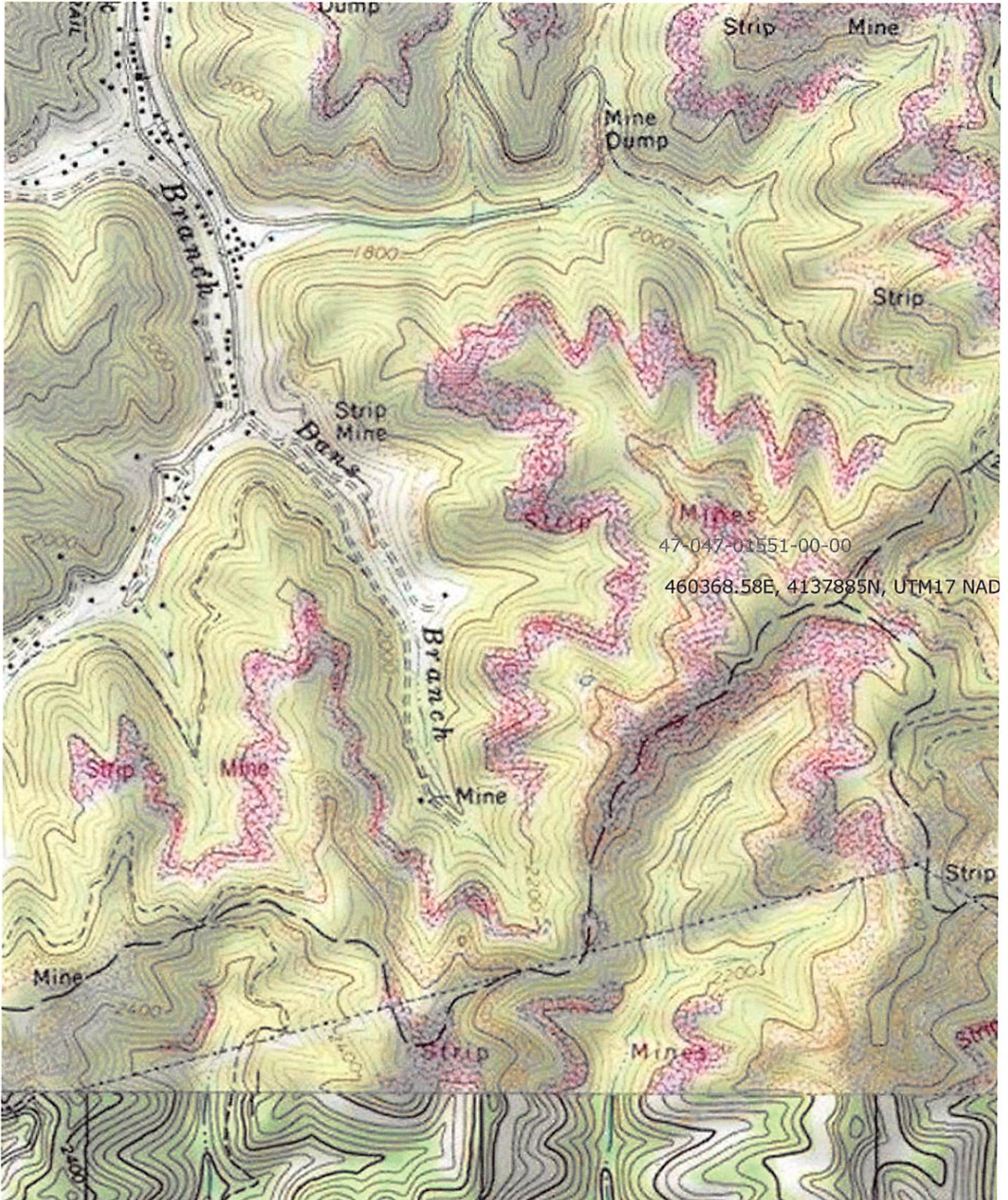


CABOT OIL AND GAS CORPORATION

**PALMER 4**

LOCATION MAP

KEYSTONE QUADRANGLE SCALE: 1" = 2000'  
 McDOWELL COUNTY HIGHWAY MAP SCALE: 1" = 1 MILE



03/09/2018

WW-7  
8-30-06



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

API: 47 047 01551 WELL NO.: #4  
FARM NAME: Adkins Palmer #4  
RESPONSIBLE PARTY NAME: Nyris Exploration Co, LLC  
COUNTY: Mcdowell DISTRICT: Brown's Creek  
QUADRANGLE: Keystone  
SURFACE OWNER: ADCG Land Corp, Garnett Palmer  
ROYALTY OWNER: ADCG Land Corp, Garnett Palmer  
UTM GPS NORTHING: 4137885.0  
UTM GPS EASTING: 460348.58 GPS ELEVATION: 2247

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

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

Survey grade GPS  : Post Processed Differential

Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

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

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

X Garnett Palmer  
Signature

Supervisor  
Title

1-12-18  
Date

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