



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Wednesday, July 30, 2025
WELL WORK PLUGGING PERMIT
Vertical Plugging

EXPAND OPERATING LLC
6100 N WESTERN AVE.

OKLAHOMA CITY, OK 73118

Re: Permit approval for 21705
47-023-00021-00-00

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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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:
Farm Name: BERG, KERMIT & BESSIE
U.S. WELL NUMBER: 47-023-00021-00-00
Vertical Plugging
Date Issued: 7/30/2025

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.

CONDITIONS

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.
4. 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.

1) Date MAY 7, 2025
2) Operator's
Well No. BESSIE BERG ETAL 1
3) API Well No. 47 - 023 00021

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 ____ or Underground storage ____) Deep ____ / Shallow ____

5) Location: Elevation 2,000 Watershed BIG STAR RUN
District UNION County GRANT Quadrangle BACKBIRD KNOB

6) Well Operator EXPAND OPERATING LLC
Address PO BOX 18496
OKLAHOMA CITY, OK 73154-0496

7) Designated Agent Brittany Woody
Address Box Fort Peck Dr. Suite 20
Morgantown WV 26508

8) Oil and Gas Inspector to be notified
Name GAYNE J KNITOWSKI
Address 601 57TH STREET SE
CHARLESTON, WV 25304

9) Plugging Contractor
Name PLANTS AND GOODWIN
Address 360 HIGH STREET
BRADFORD, PA 16701

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

SEE ATTACHED

RECEIVED
Office of Oil and Gas
JUN 23 2025
WV Department of
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 Gayne Knitowski Date 5-30-2025

Digitally signed by
Gayne Knitowski
Date: 2025.05.30
10:24:02 -04'00'

08/01/2025

BESSIE BERG ETAL 1 (PN: 821705)**Plug & Abandon**

County/State: GRANT, WV Township: UNION BLM: NO
 Latitude: 39.0777223594 Longitude: -79.2541497476 (NAD 83)
 Property Number: 821705 API: 4702300021
 AFE: 1013314 WO: 4000795878

Summary

The BESSIE BERG ETAL 1 will be plugged and abandoned. The well is located in GRANT County, WV and was spud on 09-27-1988 by Columbia Natural Resource, targeting the Oriskany as a Vertical well. The last know production date for this well was 01-00-1900 where it produced MCF, BO, and BW.

Pull 7,990' of Production Tubing

Run CBL

Cut and Pull ~7,210' of 5.5" 17# Production Casing

(4) 200' & (1) 100' Cement Plugs. See detail on Page 10

Get detail on Page 11

Guideline

Step	Operation
	To align with the intended barrier design and designation in this procedure, on-site supervision is expected to review the relevant well history and parameters that could impact the efficacy of a barrier, or present mechanical issues with the wellbore. Per the Well Control Standard (OGB-CHK-STD-001): If any of the required minimum barriers fail or otherwise become non-operational, the well shall be immediately secured and operations suspended until a procedure to re-establish the minimum number of barriers is approved. Preferred Well Control Method – Bullhead Method. The goal will be to apply a volume of fluid with sufficient density to exceed reservoir pressure.
1	Hold safety meeting and PJSA prior to each significant operation. Review critical parameters and objectives as well as emergency action plans. Everyone on location has stop work authority. If work is stopped or course needs altered contact COI.
2	Observe condition of location before moving equipment onto location. Notify superintendent of any spills, trash, or tanks/equipment left on location. Clean and dress location.
3	Record and report all casing pressures in Wellview.
4	Negative pressure test all valves. Grease valves if necessary.

Barriers	Flow Path	
	Production Casing X Tubing	Tubing
Primary		
Secondary		
Tertiary		

08/01/2025

Pump KWF at Start of Job

Step	Operation
5	MIRU pump truck to production wing valve off. Prepare to leave rigged up until CIBP with cement is set in production casing.
6	Pump fluid down production casing until a Qualified Hydrostatic Barrier (QHB) is established and maintained, per Section 4.2 of Well Control Standard (OGB-CHK-STD-001).
7	Perform flow check to ensure QHB is established.
a.	Contact supervisor and OKC engineer if higher weight kill fluid is required.
8	Complete Well Control Standard (OGB-CHK-STD-001) Exception to remove casing wing needle valve and install 2" ball valve.

Flow Path		
Barriers	Production Casing X Tubing	Tubing
Primary	Tubing Hanger Seals	QHB
Secondary	Master Valve	Master Valve
Tertiary		

Nipple Up WOR BOPs (Test against Master Valve)

Step	Operation
9	ND master valves and NU 7-1/16" 10K master valve to tubing head and close.

Flow Path		
Barriers	Production Casing X Tubing	Tubing
Primary	QHB	QHB
Secondary	Tubing Hanger Seals	Pump through plug
Tertiary		TWC

10	Pressure test 7-1/16" 10K master valve against TWC to 250 / 4,500 psi.
a.	If unable to install TWC in tubing hanger, NU wireline lubricator, wireline rams, primary pressure control, set test plug with wireline ~100'-200'. Test 7-1/16" 10K flange against test plug to 250 / 4,500 psi.
11	NU 7-1/16" WOR BOPs and 7-1/16" Annular. Function and pressure test each ram. (T to B)
a.	Annular - Test against closed 7-1/16" master valve to 250 / 2,500 psi.
b.	Pipe Ram - Test against closed 7-1/16" master valve to 250 / 4,500 psi.
c.	Blind Ram - Test through kill port against closed 7-1/16" master valve to 250 / 4,500 psi.

Flow Path		
Barriers	Production Casing X Tubing	Tubing
Primary	QHB	QHB
Secondary	Tubing Hanger Seals	Pump Through Plug
Tertiary	Master Valve	TWC / Master Valve

Pull Tubing

Step	Operation
12	If applicable, release packer and let elastomers relax for 20 min.

Flow Path		
Barriers	Production Casing X Tubing	Tubing
Primary	QHB	QHB
Secondary	Annular	Pump Through Plug
Tertiary	Pipe Ram	TIW

13	TOOH laying down tubing	
	a.	Ensure appropriate TIW valve (in open position) w/ operating key is always on the rig floor.
	b.	To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.
	c.	If pulling packer, ensure pulling speeds are low enough to prevent swabbing.
14	Close 7-1/16" Master valve and Blind Ram	

Flow Path		
Barriers	Production Casing	
Primary	QHB	
Secondary	Master Valve	
Tertiary	Blind Ram	

Pump Cement and Spacer

Step	Operation
15	Prep 8,400' of 2-3/8" 4.7# L-80 workstring.
16	Change out pipe rams to handle 2-3/8" 4.7# L-80 workstring.
17	TIH w/ 2-3/8" workstring and tag CIBP.
	a. Ensure appropriate TIW valve with the operating key always on the rig floor. TIW valve must be in open
	b. To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.

Flow Path		
Barriers	Production Casing X Workstring	Workstring
Primary	CIBP	CIBP
Secondary	QHB	QHB
Tertiary	Annular / Pipe Ram	TIW

18	Plug Details - Plug #2 - Cement - Cement Perf Isolation Pump balanced cement plug as directed in Plug Details, displace tubing with specified volume. POOH 1,500' above estimated TOC. Close pipe ram. WOC for at least 8 hours.	
19	Tag top of cement. Record depth.	
20	TIH w/ workstring to bottom of spacer #1 and pump spacer as defined in Spacer Details.	
21	POOH w/ workstring.	

Flow Path		
Barriers	Production X Intermediate Casing	Production Casing
Primary	Casing Packoff	CIBP
Secondary	QHB	Cement
Tertiary		QHB

08/01/2025

Set CIBP	
Step	Operation
Note: For slickline work detailing barrier envelope, barrier testing, surface equipment specs for this operation refer to the "Marcellus Production Wireline, Slickline, Braided Line Barrier Template."	
22	Close master valve, NU wireline lubricator, wireline rams, primary pressure control, and test against upper master valve to 250 psi low / and a high pressure to a minimum of well's SICP pre-job.
23	Round trip 4.70" OD gauge ring to 7,990'.
24	Plug Details - Plug #1 - CIBP - CIBP Perf Isolation Make up and RIH with CIBP and set at depth defined in Plug Details. Using CCL do not place CIBP across collar.
25	Pressure test CIBP to 1,500 psi or 80% of casing burst pressure accounting for hydrostatic to CIBP depth, which ever is less.
26	Run pressurized CBL log from CIBP to surface. Reported estimated TOC at 7,260'.
27	ND wireline lubricator, wireline rams, primary pressure control.

Flow Path	
Barriers	Production Casing
Primary	QHB
Secondary	Master Valve
Tertiary	Blind Ram

Pump Cement and Spacer and Tac Weld Slips	
Step	Operation
1	Prep 8,180' of 2-3/8" 4.7# L-80 workstring.
2	Change out pipe rams to handle 2-3/8" 4.7# L-80 workstring.
3	TIH w/ 2-3/8" workstring and tag TOC/CIBP.
a.	Ensure appropriate TIW valve with the operating key always on the rig floor. TIW valve must be in open
b.	To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.

Flow Path		
Barriers	Production Casing X Workstring	Workstring
Primary	CIBP	CIBP
Secondary	QHB	QHB
Tertiary	Annular / Pipe Ram	TIW

4	Plug Details - Plug #4 - Cement - Cement Perf Isolation Pump balanced cement plug as directed in Plug Details, displace tubing with specified volume. POOH 1,500' above estimated TOC. Close pipe ram. WOC for at least 8 hours.
5	Tag top of cement. Record depth.
6	TIH w/ workstring to bottom of spacer #2 and pump spacer as defined in Spacer Details.
7	POOH w/ workstring.
8	Establish hot work permit. Perform LEL assessment of well head and ensure LEL monitoring remains in place. Make sure well is static. Place fire extinguishers near wellhead and ensure fire watch is designated as outlined by hot work permit. ND Tubing Head, 7-1/16" Master Valve, 7-1/16" WOR BOPs and tac weld 4.5" casing slips to 4.5" casing.

	Flow Path	
Barriers	Production X Intermediate Casing	Production Casing
Primary	Casing Packoff	CIBP
Secondary	QHB	Cement
Tertiary		QHB

Nipple Up WOR BOPs (Test against CIBP)

Step	Operation
9	NU 11" WOR BOPs and annular. Torque all bolts/nuts to spec.

	Flow Path	
Barriers	Production Casing X Tubing	Tubing
Primary	QHB	QHB
Secondary	Tubing Hanger Seals	Pump through plug
Tertiary		TWC

10	NU 11" WOR BOPs and 11" Annular. Function and pressure test each ram. (T to B)	
	a.	Annular - Test against CIBP to 250 low / 1,500 psi or 80% of casing burst pressure accounting for hydrostatic to CIBP depth, which ever is less.
	b.	Pipe Ram - Test against CIBP to 250 low / 1,500 psi or 80% of casing burst pressure accounting for hydrostatic to CIBP depth, which ever is less.
	c.	Blind Ram - Test through kill port against CIBP to 250 low / 1,500 psi or 80% of casing burst pressure accounting for hydrostatic to CIBP depth, which ever is less.

	Flow Path	
Barriers	Production Casing X Tubing	Tubing
Primary	Casing Packoff	CIBP
Secondary	QHB	Cement
Tertiary		QHB

Cut Casing

Step	Operation
Note: For slickline work detailing barrier envelope, barrier testing, surface equipment specs for this operation refer to the "Marcellus Production Wireline, Slickline, Braided Line Barrier Template."	

Barriers	Flow Path
Primary	Production Casing
Secondary	CIBP
Tertiary	QHB
	Master Valve / Blind Ram

11	Using TOC from CBL, Round trip 4.75" gauge ring to desired depth.
12	Make up 4.75" OD jet cutter and RIH to desired depth. Pressure up on 5.5" casing to 500 psi and fire cutter. Record all pressure changes at time of cut.
13	RD wireline. Circulate down 5.5" casing and out 9.625" casing to establish successful cut was made.
a.	Do not exceed a 0.8 psi/ft gradient when establishing circulation against open hole accounting for hydrostatic pressure.

Pull Casing

Step	Operation
14	MU casing spear, spear 5.5" casing. TOOHL laying down 5.5" casing.
a.	Ensure appropriate TIW or swage to TIW valve with the operating key always on the rig floor. TIW valve must be in open position when not in use.
b.	To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.
c.	NU casing jacks if necessary or unable to pull casing.

Barriers	Flow Path	
Primary	Production X Intermediate Casing	Production Casing
Secondary	QHB	QHB
Tertiary	Pipe Ram	TIW
	Annular	

15	Once out of hole with casing shut Blind Ram.
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Barriers	Flow Path
Primary	Intermediate Casing
Secondary	QHB
Tertiary	Master Valve
	Blind Ram

Pump Cement and Spacer	
Step	Operation
1	Prep 7,310' of 2-3/8" 4.7# L-80 workstring.
2	Change out pipe rams to handle 2-3/8" 4.7# L-80 workstring.
3	TIH w/ 2-3/8" workstring and tag TOC/CIBP.
	a. Ensure appropriate TIW valve with the operating key always on the rig floor. TIW valve must be in open
	b. To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.

Flow Path		
Barriers	Production Casing X Workstring	Workstring
Primary	CIBP	CIBP
Secondary	QHB	QHB
Tertiary	Annular / Pipe Ram	TIW

4	Plug Details - Plug #5 - Cement - Prod Csg Stub Plug (Open Hole) Pump balanced cement plug as directed in Plug Details, displace tubing with specified volume. POOH 1,500' above estimated TOC. Close pipe ram. WOC for at least 8 hours.
5	Tag top of cement. Record depth.
6	TIH w/ workstring to bottom of spacer #3 and pump spacer as defined in Spacer Details.
7	POOH w/ workstring.

Pump Cement and Spacer	
Step	Operation
1	Prep 2,628' of 2-3/8" 4.7# L-80 workstring.
2	Change out pipe rams to handle 2-3/8" 4.7# L-80 workstring.
3	TIH w/ 2-3/8" workstring and tag TOC/CIBP.
	a. Ensure appropriate TIW valve with the operating key always on the rig floor. TIW valve must be in open
	b. To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.

Flow Path		
Barriers	Production Casing X Workstring	Workstring
Primary	CIBP	CIBP
Secondary	QHB	QHB
Tertiary	Annular / Pipe Ram	TIW

4	Plug Details - Plug #6 - Cement - Inter Csg Shoe Plug (Inside Csg) Pump balanced cement plug as directed in Plug Details, displace tubing with specified volume. POOH 1,500' above estimated TOC. Close pipe ram. WOC for at least 8 hours.
5	Tag top of cement. Record depth.
6	TIH w/ workstring to bottom of spacer #4 and pump spacer as defined in Spacer Details.
7	POOH w/ workstring.

Pump Surface Cement Plug	
Step	Operation
8	TIH w/ 2-3/8" workstring and tag TOC/CIBP.
	a. Ensure appropriate TIW valve with the operating key always on the rig floor. TIW valve must be in open
	b. To continuously maintain QHB, should utilize trickle fluid method or monitor fluid level.
9	Plug Details - Plug #7 - Cement - Surface Plug Pump balanced cement plug as directed in Plug Details, displace tubing with specified volume. Close pipe ram.
10	ND WOR BOPs. RDMO Workover rig and all associated equipment.

Flow Path	
Barriers	Surface Casing
Primary	Cement
Secondary	Cement
Tertiary	QHB

11	Monitor well for a minimum of 24 hrs or until state allows well to have abandonment cap installed.
12	Establish hot work permit. Perform LEL assessment of well head and ensure LEL monitoring remains in place. Visually check wellbore and cellar for signs of bubbling. Contact supervisor and OKC engineer if LELs or bubbling are present. Place fire extinguishers near wellhead and ensure fire watch is designated as outlined by hot work permit. Cut casing and weld abandonment cap with monument as specified by WVDEP.

Gayne
Knitowski

Digitally signed by
Gayne Knitowski
Date: 2025.07.28
13:07:58 -04'00'

08/01/2025

BESSIE BERG ETAL 1 (PN: 821705)



Well Information

Surface Location	
County/State	GRANT, WV
Township	UNION
Latitude*	39.07772236
Longitude*	-79.25414975

*NAD 83

CHK Contacts		
Title	Name	Mobile
Workover Foreman	Heath Pottmeyer	740-525-3445
Completions Superintendent	Nick Flesher	304-669-3777
Production Superintendent	Donny McHenry	304-884-1624
Production Engineer	Eddie Watson	740-336-4199
Production Manager	Brandon Yaw	713-417-8537
Completions Manager	Matt Briggs	501-428-6630
Regulatory Manager	Eric Haskins	607-242-3839

Driving Directions

Not Available

General Well Data

KB	12	Top Perf	7,991	Perf Interval (ft)	129	PBTD	8,670
KOP	N/A	Btm Perf	8,120	TD	8,670	Elevation	2,000

Casing Details

String	Casing Type	ID	Drift	Top (ftKB)	Bottom (ftKB)	Collapse 70% (PSI)	Burst 70% (PSI)	Yield 70% (klb)	Capacity (bbl/ft)	Tot. Cap. (bbl)	Hole Size
Conductor											
Surface	13.375" 54.5# J-55	12.615	12.459	12	97	791	1,911	360	0.1546	13	17.5
Intermediate	9.625" 40# J-55	8.835	8.679	12	2,528	1,799	2,765	316	0.0758	191	12.25
Production	5.5" 17# N-80	4.892	4.767	12	8,658	4,473	5,418	244	0.0232	201	8.75
Production											
DV Tool											

Tubing Details

Size / Weight	Grade	ID	Drift	Total (ft)	Top (ftKB)	Bottom (ftKB)	Collapse 80% (PSI)	Burst 80% (PSI)	Yield 80% (lb)	Capacity (bbl/ft)	Tot. Cap. (bbl)
2.375" 4.7#	J-55	1.995	1.901	7,990	12	8,002	6,480	6,160	72,000	0.0039	31

Workstring Details

Size / Weight	Grade	ID	Drift	Total (ft)	Top (ftKB)	Bottom (ftKB)	Collapse 80% (PSI)	Burst 80% (PSI)	Yield 80% (lb)	Capacity (bbl/ft)	Tot. Cap. (bbl)
2.375" 4.7#	L-80	1.995	1.901	8,400	12	8,412	9,424	8,960	83,440	0.0039	32

Reference Documents:

Live Locations for Barrier Templates:

[Policies and Controlled Documents Portal](#)[Teams: App Field Operations > Engineering > Barrier Templates](#)

Technical Documents:

[Well Control Standard](#)[Completion and Workover BOP Technical Bulletin](#)[Tubing Pull and Run Barrier Template](#)[Blanket Wellhead Lubricator Exception](#)[Wireline, Slickline, Braided Line Barrier Template](#)

08/01/2025

BESSIE BERG ETAL 1 (PN: 821705)



Plugging Proposal

Plug Details													
#	Type	Description	Set ID	Plug Height (ft)	Bottom of Plug (ftKB)	Top of Plug (ftKB)	Cement Type	Cement Yield	Cement Density (ppg)	Excess Cement (%)	Cement Volume (bbl)	Cement Volume (sacks)	Tubing Displacement Volume (bbls)
1	CIBP	CIBP Perf Isolation	4.892	2	8,402	8,400	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Cement	Cement Perf Isolation	4.892	200	8,400	8,200	Class A	1.28	15.5	50	7.0	30.6	30.5
3	CIBP	CIBP Perf Isolation	4.892	2	7,891	7,889	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	Cement	Cement Perf Isolation	4.892	200	7,889	7,689	Class A	1.28	15.5	50	7.0	30.6	28.5
5	Cement	Prod Csg Stub Plug (Inside Csg)	4.892	100	7,310	7,210	Class A	1.28	15.5	50	3.5	15.3	
5	Cement	Prod Csg Stub Plug (Open Hole)	8.75	100	7,210	7,110	Class A	1.28	15.5	50	11.2	48.9	25.9
6	Cement	Inter Csg Shoe Plug (Open Hole)	8.75	100	2,628	2,528	Class A	1.28	15.5	50	11.2	48.9	0.0
6	Cement	Inter Csg Shoe Plug (Inside Csg)	8.835	100	2,528	2,428	Class A	1.28	15.5	0	7.6	33.3	7.8
7	Cement	Surface Plug	8.835	100	100	0	Class A	1.28	15.5	0	7.6	33.3	0.4

08/01/2025

BESSIE BERG ETAL 1 (PN: 821705)



Spacer Details										
#	Fluid Type	Description	Set ID	Spacer Height	Bottom of Spacer (ftKB)	Top of Spacer (ftKB)	Spacer Density (ppg)	Spacer Viscosity (cp)	Excess Spacer (%)	Spacer Volume (bbls)
1	Gel	Perf Isolation to Perf Isolation Plug	4.892	309	8,200	7,891	9	-	10	7.9
2	Gel	Perf Isolation to Prod Csg Stub Plug	4.892	379	7,689	7,310	9	-	10	9.7
3	Gel	Prod Csg Stub Plug to Inter Csg Shoe Plug	8.75	4,482	7,110	2,628	9	-	40	466.7
4	Gel	Inter Csg Shoe Plug to Surface Plug	8.835	2,328	2,428	100	9	-	5	185.4
5										
6										
7										
8										
9										
10										

Estimated Casing Cuts	
String	Est. Cut Depth (ftKB)
Intermediate	
Production	7,210

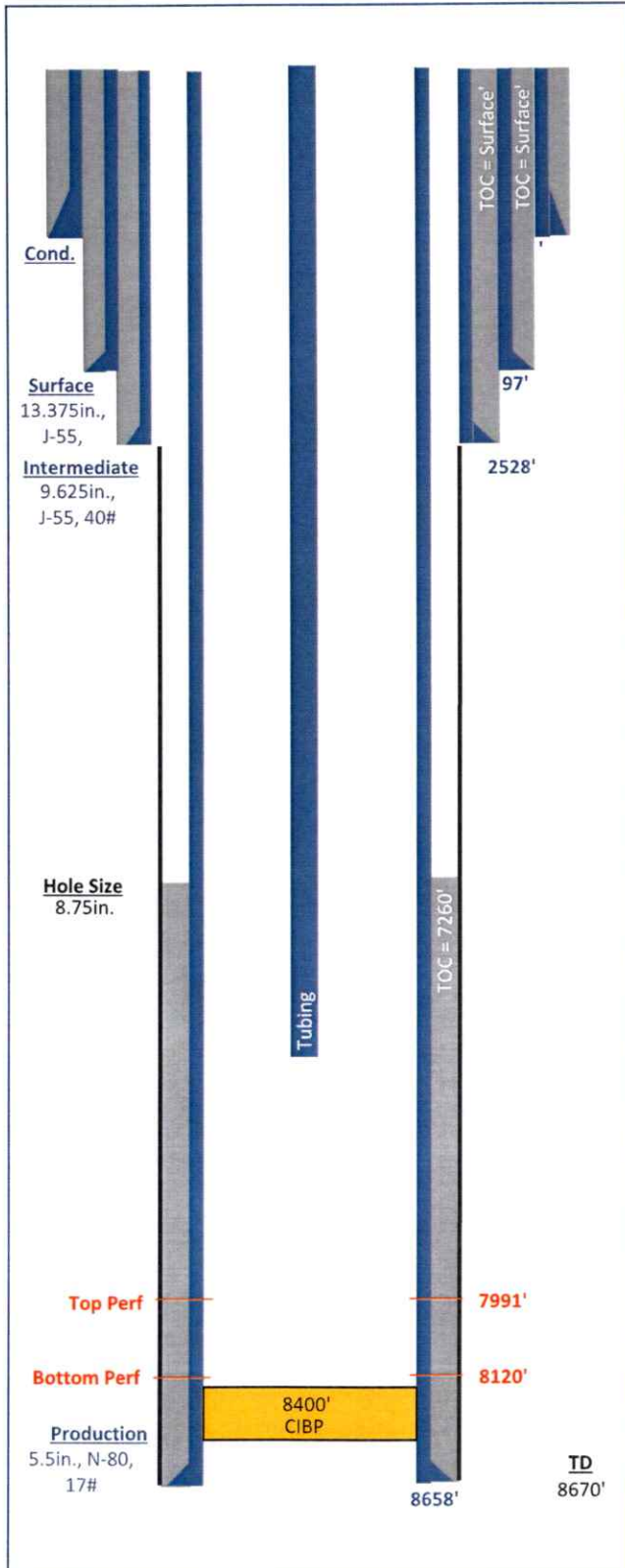
08/01/2025

BESSIE BERG ETAL 1 (PN: 821705)

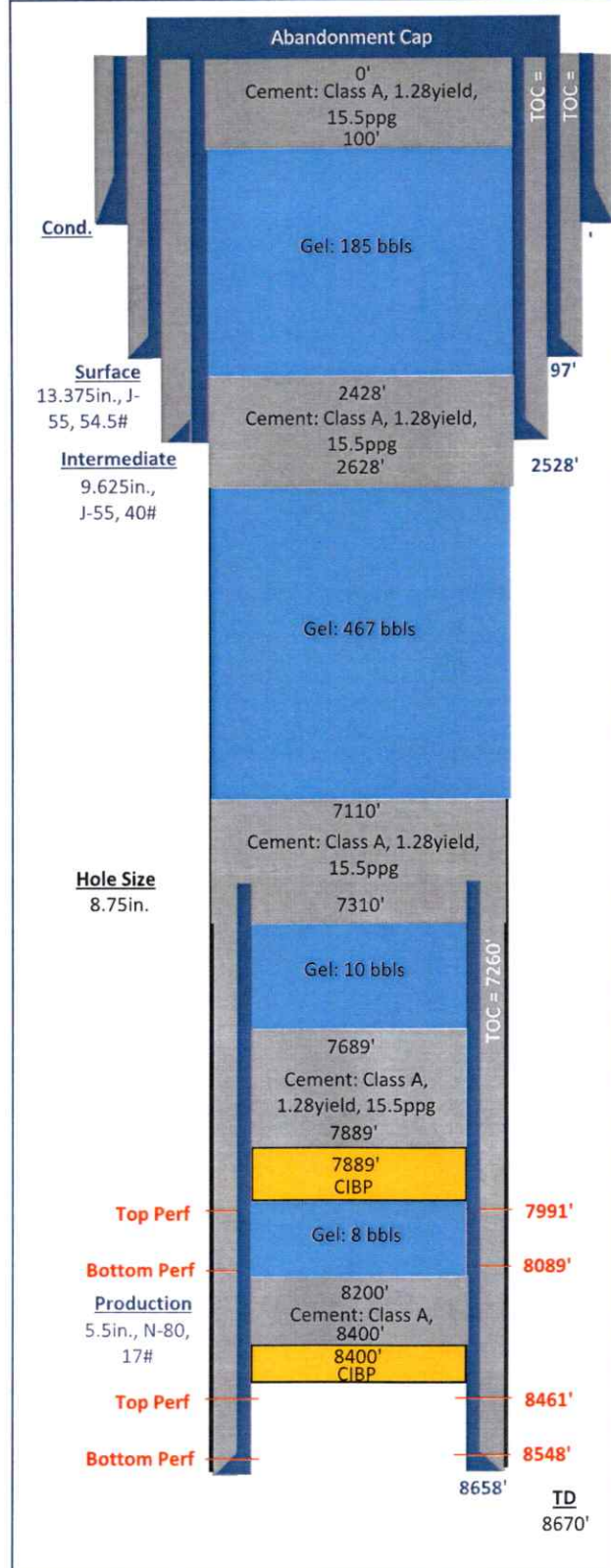
expand

Proposed Wellbore Schematic

Current Wellbore Schematic



Bessie Berg



08/01/2025

State of West Virginia
DEPARTMENT OF ENERGY
Division of Oil and Gas

Well Operator's Report of Well Work

Farm name: BERG, KERMIT & BESSIE Operator Well No.: 21705

LOCATION: Elevation: 2005.00 Quadrangle: BLACKBIRD KNOB

District: UNION County: GRANT
Latitude: 2000 Feet South of 39 Deg. 5 Min. 0 Sec.
Longitude 1250 Feet West of 79 Deg. 15 Min. 0 Sec.

Company: COLUMBIA NATURAL RESOURCE
P. O. BOX 1273
CHARLESTON, WV

Agent: JOSEPH E. CAMPBELL

Inspector: PHILLIP TRACY
Permit Issued: 09/02/88
Well work Commenced: 09-27-88
Well work Completed: 10-26-88
Verbal Plussings
Permission granted on: N/A
Rotary ☒ Cable _____ Rig
Total Depth (feet) 8670'
Fresh water depths (ft) _____
1/4" stream @ 60'; 1/2" stream @ 130'
Salt water depths (ft) _____
Is coal being mined in area (Y/N)? N
Coal Depths (ft): None

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13-3/8"	88'	88'	45
9-5/8"	2528'	2528'	798
5-1/2"	8658'	8658'	365

RECEIVED
JUN 15 1989

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Office of Oil and Gas

OPEN FLOW DATA

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

JUN 23 2025

Producing formation: Oriskany Pay zone depth (ft) 7991-8120
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 3340 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure 2100 Psig (surface pressure) after 80 Hours
Second producing formation: Corriganville Pay zone depth (ft) 8458-8658
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow 62 MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure 1890 Psig (surface pressure) after 60 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: COLUMBIA NATURAL RESOURCES, INC.

By: *Joseph E. Campbell*
Date: June 13, 1989 08/01/2025

GRANT 0021

Well 21705
Kermit & Bessie Berg

Formation

Rock & Clay	0 - 20
Sand	20 - 65
Sand & Shale	65 - 156
Sand	156 - 174
Sand & Shale	174 - 608
Sand	608 - 623
Sand & Shale	623 - 1535
Shale	1535 - 1715
Sand	1715 - 2008
Shale	2008 - 2139
Sand & Shale	2139 - 2410
Shale	2410 - 2688
Sandy Shale	2688 - 2829
Sand	2829 - 2959
Sand & Shale	2959 - 3196
Shale	3196 - 3496
Sand	3496 - 3566
Shale & Sand	3566 - 5949
Sand	5949 - 5964
Sand & Shale	5964 - 7080
Lime	7080 - 7090
Shale	7090 - 7660
Shale & Metabentonite	7660 - 7700
Shale	7700 - 7800
Shale & Chert	7800 - 7830
Shale, Chert & Salt Sd.	7830 - 7840
Sand & Shale, Oriskany	7840 - 8150
Shale	8150 - 8160
Limestone	8160 - 8670
T.D.	8670

1/4" stream of water 60'
1/2" stream of water 130'

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DEPARTMENT OF ENERGY

08/01/2025

7598

Well 21705
Kermit & Bessie Berg

Well perforated 11-16-88 with 20 shots from 7991' to 8089' and
18 shots from 8461' to 8548'.

Corrigansville formation acid treatment w/15% Fe acid & 41.0 bbls.
of 2% KCl water @ 2.9 bpm/5350 psi.
Fractured w/1248 bbls. of 40 ppg X-link gel.
Used 105,000 Scf of CO₂, 6300# 80/100 & 77,500#
20/40 sand OFAF 62 Mcf/6 hrs.

Oriskany treated w/500 gals. of 15% Fe acid & 28 bbls. of 2% KCl
water & 3 bpm; 3300 psi.
Fractured w/1400 bbls. of 40 ppg X-link gel,
305,500 Scf of CO₂, 77,500# 20/40 & 4000# 80/100
sand.

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WW-4A
Revised 6-07

1) Date: 5/7/2025
2) Operator's Well Number
EXPAND OPERATING LLC
3) API Well No.: 47 - 023 - 00021

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>ERMA B MOYERS</u>	Name <u></u>
Address <u>8180 JORDAN RUN ROAD</u>	Address <u></u>
<u>MAYSVILLE, WV 26833</u>	
(b) Name <u></u>	(b) Coal Owner(s) with Declaration
Address <u></u>	Name <u></u>
	Address <u></u>
(c) Name <u></u>	Name <u></u>
Address <u></u>	Address <u></u>
6) Inspector <u>GAYNE J KNITOWSKI</u>	(c) Coal Lessee with Declaration
Address <u>601 57TH STREET SE</u>	Name <u></u>
<u>CHARLESTON WV 25304</u>	Address <u></u>
Telephone <u>304546-8171</u>	

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator EXPAND OPERATING LLC
By: KERI FIENO
Its: REGULATORY SPECIALIST
Address PO BOX 18496
OKLAHOMA CITY, OK 73154-0496
Telephone 405-766-8791

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Office of Oil and Gas

JUN 23 2025

WV Department of
Environmental Protection

Subscribed and sworn before me this 17th day of June 2025

My Commission Expires October 22, 2026

Notary Public
Carla M. Harris, Notary Public
Bradford County
My commission expires October 22, 2026
Commission number 1286242
Pennsylvania Association of Notaries

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number

1ZV3127X0192314514

Service

UPS Next Day Air®

Shipped / Billed On

07/08/2025

Delivered On

07/09/2025 12:33 P.M.

Delivered To

8180 JORDAN RUN RD
MAYSVILLE, WV, 26833, US

Left At

Front Door

Please print for your records as photo and details are only available for a limited time.

Sincerely,

UPS

Tracking results provided by UPS: 07/10/2025 1:42 P.M. EST

08/01/2025

Keri Fieno

From: UPS <pkginfo@ups.com>
Sent: Tuesday, June 17, 2025 3:40 PM
To: Keri Fieno
Subject: [EXTERNAL] UPS Delivery Notification, Tracking Number 1ZV3127X0199571859

Follow Up Flag: Follow up
Flag Status: Flagged

This Message Is From an External Sender
This message came from outside your organization.

Report Suspicious



Hello, your package has been delivered.

Delivery Date: Tuesday, 06/17/2025
Delivery Time: 3:07 PM
Left At: FRONT DOOR

Experience UPS My Choice® Premium Today
Be in total control of how, when and where your packages are delivered.

[Upgrade to Premium Now](#)



Set Delivery Instructions

Manage Preferences

View My Packages

EXPAND ENERGY CORPORATION

BESSIE BERG ETAL 1 P&A LANDOWNER NOTIFICATION

Tracking Number: [1ZV3127X0199571859](#)

Ship To: ERMA B MOYERS
8180 JORDAN RUN ROAD

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JUN 23 2025
WV Department of
Environmental Protection

MAYSVILLE, WV 268338534
US

Number of Packages: 1
UPS Service: UPS Next Day Air®
Package Weight: 0.0 LBS
Reference Number: BESSIE BERG ETAL 1 P&A

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WW-9
(5/16)

API Number 47 - 023 - 00021
Operator's Well No. BESSIE BERG ETAL 1

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EXPAND OPERATING LLC OP Code _____

Watershed (HUC 10) BIG STAR RUN Quadrangle BLACKBIRD KNOB

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: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- ____ Land Application (if selected provide a completed form WW-9-GPP)
____ Underground Injection (UIC Permit Number _____)
____ Reuse (at API Number _____)
____ Off Site Disposal (Supply form WW-9 for disposal location)
____ Other (Explain _____)

Will closed loop system be used? If so, describe: DRILL CUTTINGS WILL BE CIRCULATED BACK INTO AN OPEN TANK

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. FRESH WATER

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

Additives to be used in drilling medium? NONE

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

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) SAWDUST AND CITRIC ACID

-Landfill or offsite name/permit number? KIMBLE SANITARY LANDFILL OR MUD MASTERS

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, 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 Keri Fierno

Company Official (Typed Name) KERI FIENO

Company Official Title REGULATORY SPECIALIST

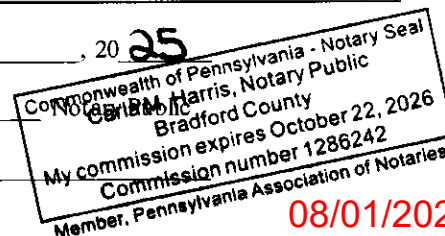
Office of Oil and Gas
JUN 23 2025

WV Department of
Environmental Protection

Subscribed and sworn before me this 17th day of June

Carla M. Harris

My commission expires October 22, 2026



Proposed Revegetation Treatment: Acres Disturbed 10 Prevegetation pH _____Lime 3.90 Tons/acre or to correct to pH 7Fertilizer type 8-16-16Fertilizer amount 968 lbs/acreMulch 3 Tons/acreSeed Mixtures**Temporary****Permanent**

Seed Type lbs/acre

OATS/ANNUAL RYE 40LBS/ACREHAY/STRAW MULCH 3 TONS/ACRE

Seed Type lbs/acre

BIRDSFOOT TREFOIL 8LBS/ACRETALL FESCUE 40LBS/ACRE

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne Knitowski
Digitally signed by
Gayne Knitowski
Date: 2025.05.30
10:24:28 -0400

Comments: _____

Title: InspectorDate: 5-30-2025Field Reviewed? (X) Yes () NoRECEIVED
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RECOMMENDED PERMANENT SEEDING MIXTURE
FOR ALL DISTURBED AREAS

MIXTURE NUMBER	SEASON	SPECIES	SEEDING RATE (lb/ac)
2	COOL	BIRDSFOOT TREFOIL TALL FESCUE	8 / 40

MULCHING

MATERIAL SHALL BE HAY OR STRAW WHICH IS FREE OF WEED AND SEEDS, NOT MOLDY, ROTTEN, AND SHALL BE APPLY TO ALL SLOPES FATTER THAN 3:1 AT A RATE OF 140 LBS/1,000 SF. (APPROXIMATELY TWO BALES PER 1,000 SF OR 3 TON PER AC)

HYDROSEEDING SPECIFICATION

MATERIAL	DESCRIPTION	APPLICATION RATE (PER 1,000 SY)
(1) SEE MIXTURE (% BY WEIGHT)	REDTOP - 10% PENNLAWN FESCUE - 45% KENTUCKY BLUEGRASS - 45%	27 LBS
(2) 8-16-16	COMMERCIAL FERTILIZER	200 LBS
(3) LIME	GROUND COMMERCIAL LIMESTONE	1,650 LBS
(4) MULCH	WOOD CELLULOSE FIBER	750 LBS

APPROXIMATE TACK COAT

PROCEDURE: SURFACE TO BE HYDROSEEDDED SHALL BE CLEANED OF ALL DEBRIS AND OTHER MATTER HARMFUL TO UNIFORM GERMINATION. A WATER-SURRY MIXTURE COMPOSED OF THE ABOVE "MATERIALS". ITEMS (1) THROUGHT (3) INCLUSIVE, SHALL BE SPRAYED UNIFORMLY OVER THE AREAS TO BE HYDROSEEDDED. IMMEDIATELY, THEREAFTER, ITEM (4) "MULCH" SHALL BE BLOWN ON THE SAME AREA AND TACK-COATED. RATES AND TYPE OF MATERIALS SHALL BE SPECIFIED.

MAINTENANCE AND GUARANTEE

THE CONTRACTOR SHALL GUARANTEE A GOOD STAND OF GRASS IN THE SWALES AND ON BANKS. THE MEANS OF GUARANTEE SHALL BE BY WATERING, MOWING, REGRADING, REMULCHING, AND RESEEDING TO THE SATISFACTION OF THE OWNER UNTIL FINAL ACCEPTANCE. ANY AREAS WHICH FAIL TO SHOW A UNIFORM STAND WITHIN ONE YEAR SHALL BE RESEEDDED AND REMULCHED AT THE CONTRACTORS EXPENSE WITH THE SAME MIXTURE ORIGINALLY USED THEREON. ERODED AREAS SHALL BE REPAIRED AND RESTORED TO FINISHED GRADE PRIOR TO RESEEDING AND REMULCHING. ALL SUCH REPAIRING OF EROSION, RESEEDING, AND REMULCHING SHALL BE REPEATED UNTIL ALL EFFECTED AREAS ARE COVERED WITH GRASS.

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

Operator Name: EXPAND OPERATING LLC

Watershed (HUC 10): BIG STAR RUN

Quad: BLACKBIRD KNOB

Farm Name: BESSIE BERG ETAL 1

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

SEE ATTACHED

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

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5. Discuss any existing groundwater quality data for your facility or an adjacent property.

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6. Provide a statement that no waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

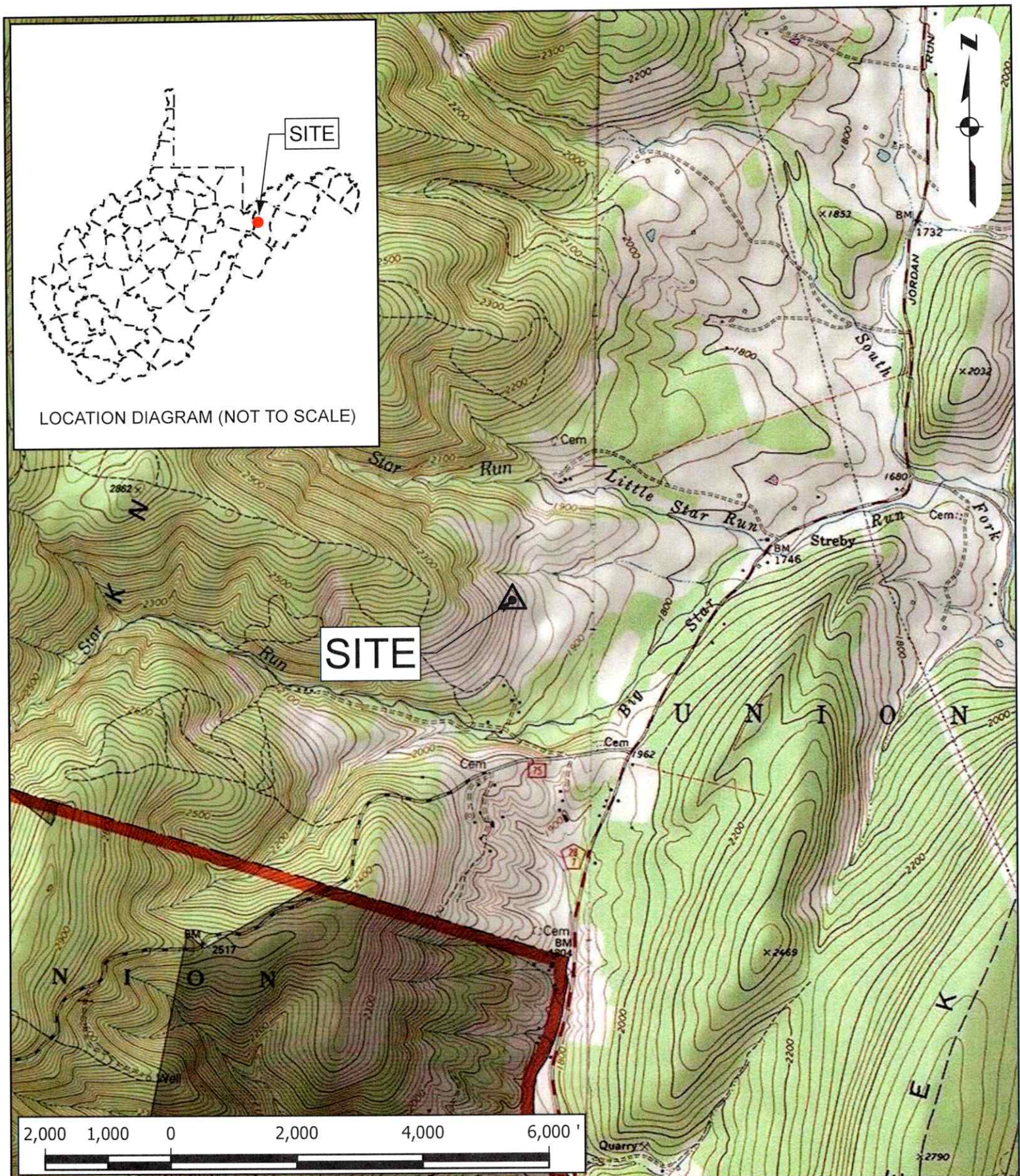
8. Provide provisions and frequency for inspections of all GPP elements and equipment.

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Signature: Kelli Leno

Date: 6/17/25

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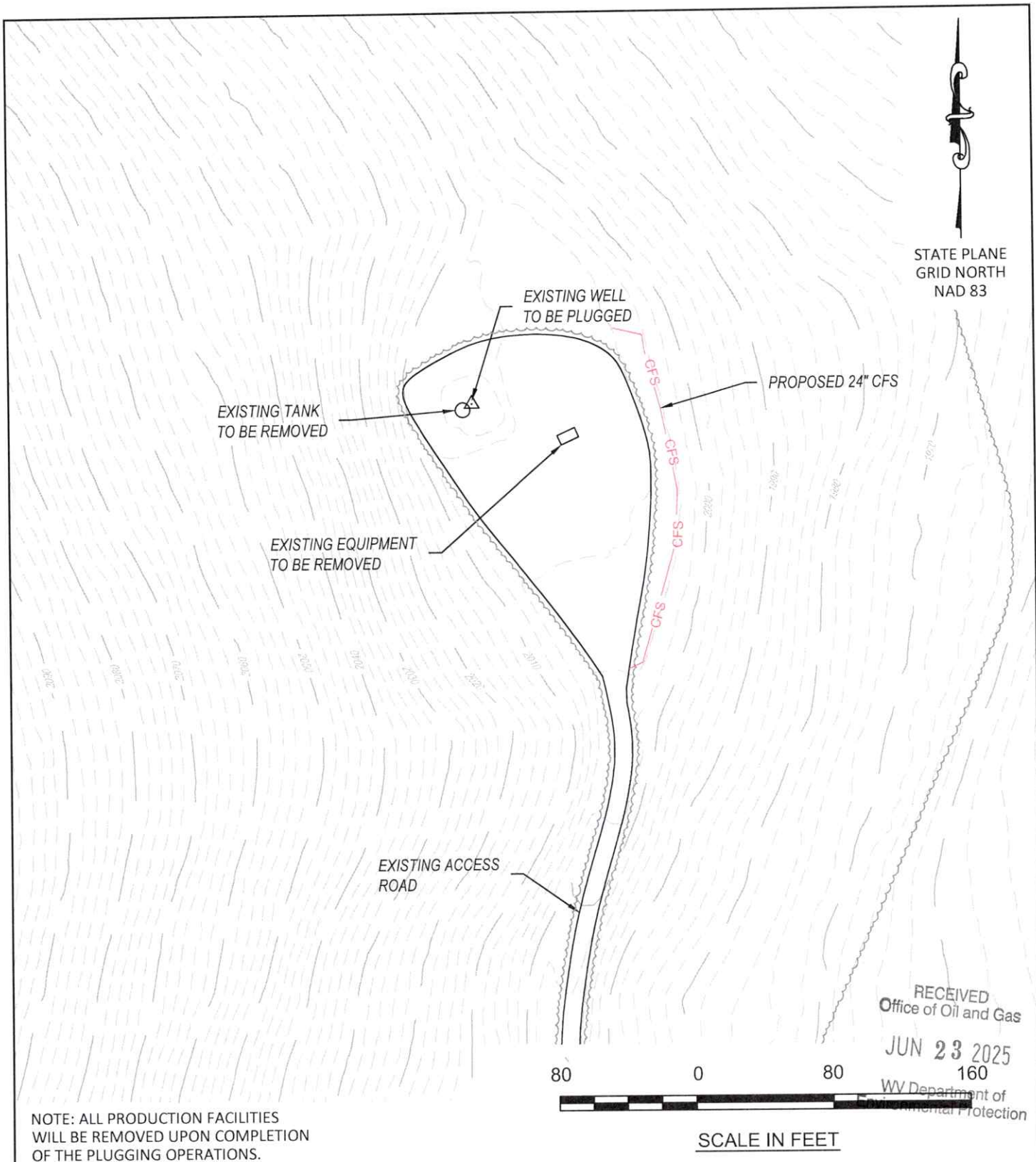
USGS LOCATION MAP
 PREPARED FOR
BESSIE BERG ET AL 1

GRANT COUNTY, WEST VIRGINIA
 BLACKBIRD KNOB USGS QUAD

PROJECT -	BESSIE BERG ET AL 1
DATE -	5/21/2025
SCALE -	1" = 2,000'
DRAWN -	MWS
FILE -	USGS_LOCATION_MAP.mxd



08/01/2025
 (844) 542-1757



BESSIE BERG ETAL 1 SITE RECLAMATION API# 47-023-00021 FOR EXPAND OPERATING, LLC LOCATED IN GRANT COUNTY, WEST VIRGINIA			LEGEND EXISTING CONTOUR EXISTING TREE LINE EXISTING ACCESS ROAD EDGE WELLHEAD COMPOSITE FILTER SOCK	
---	--	--	---	--

08/01/2025



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-023-00021 WELL NO.: 1
FARM NAME: BESSIE BERG ETAL
RESPONSIBLE PARTY NAME: EXPAND OPERATING LLC
COUNTY: GRANT DISTRICT: UNION
QUADRANGLE: BLACKBIRD KNOB
SURFACE OWNER: Erma B Mayers
ROYALTY OWNER: _____
UTM GPS NORTHING: 4,326,852.179
UTM GPS EASTING: 651,015.555 GPS ELEVATION: 2000'

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 X: 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.

Keith Leno
Signature

REGULATORY SPECIALIST
Title

6/17/25
Date

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Kennedy, James P <james.p.kennedy@wv.gov>

plugging permits issued 4702300021

1 message

Kennedy, James P <james.p.kennedy@wv.gov>

Wed, Jul 30, 2025 at 8:45 AM

To: Eric Haskins <eric.haskins@expandenergy.com>, Gayne J Knitowski <gayne.j.knitowski@wv.gov>, Keri Fieno <keri.fieno@expandenergy.com>, jcosner@wvassessor.com

To whom it may concern, a plugging permit has been issued for 4702300021.

--

James Kennedy

Environmental Resource Specialist III / Permitting

WVDEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext. 45025

james.p.kennedy@wv.gov

 **4702300021.pdf**
4194K

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