



**LEGEND**

- Permit Area Boundary
- Coal Lease Boundary (Federal Lease C-1362 Excludes 24.8 Acres Under Minnesota Reservoir a.k.a. Independent Reservoir or Monument Dam)
- Approximate limit of the maximum predicted 19° E-seam angle of draw.<sup>1</sup>
- Maximum Projected Areal Extent of Potential Mineable E-seam.<sup>2</sup>
- Projected E Seam mining

- MINED AREAS
- PROJECTED POTENTIAL MINING AREA 2022-2025
- AREA OF IN-MINE EXPLORATION

**NOTES:**

• Gateroad entries for longwall panels LWE1 through LWE8 were generally developed from west to east and then longwall mined from east to west. These longwall panels were mined in order from north to south within the coal lease areas shown.

• The proposed western longwall panels LWE9 through LWE12 will likely be the last E Seam panels mined due to the locations along the main entries.

• The projected panel layout and timing were based on the best available exploration data, professional judgement, and markets at the time this map was prepared. Pillar and panel dimensions may be adjusted within the Projected Potential Mining Area and permit boundary if warranted by actual mining conditions, including coal thickness, coal quality, and geotechnical conditions to fulfill federal coal lease maximum economic recovery requirements.

1. See Exhibit 60E. The actual E-seam angle-of-draw has been conservatively calculated as 16.3°. (See Appendix B of the Spring 2010 Subsidence Report.) The angle of draw is measured using the greatest vertical distance between the top of the E seam at the nearest edge of each longwall panel and the ground surface elevation equal to the point of no discernable subsidence.

2. Also referred to as the "Projected Potential Mining Area." Although not anticipated (based on available data, as above), should mining be extended in this area and beyond the projected E-seam mining shown, the associated projected impacts of subsidence have been evaluated in Exhibits 55B & 60E.

THIS DRAWING WAS PREPARED UNDER MY SUPERVISION AND REPRESENTS THE BEST OF MY KNOWLEDGE.

ANGELICA A. WILSON  
39802  
PROFESSIONAL ENGINEER

**ARCH**  
WEST ELK

5174 Highway 133  
Someraset, CO 81434  
Operated by Mountain Coal Company, L.L.C.  
A subsidiary of Arch Resources, Inc.

**MAP 51**  
**E-SEAM PROJECTED OPERATIONS**

DATE	BY
12/01/17	TR-143 JAW
REVIS	
DATE	BY
1-10-18	TR-144 GAB
2-19-18	PR-10 GAB
6-09-18	PR-10 DEL
2-1-21	TR-149 GAB
12-31-21	TR-150 JAW

COORDINATE SYSTEM

NAD 27

SCALE

0 2000 Feet

FILE NO.

CDRMS PERMIT MAP 51.DWG

FILED

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