



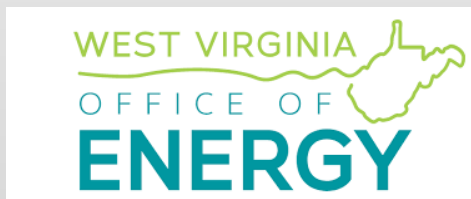
Mine Land Property Evaluation for Solar Farm Development

Kay Ford James Property
Dorothy and Ameagle Area
Kanawha and Raleigh County, WV
June 2021

Prepared for:

WV Office Of Energy

A Division of the West Virginia
Development Office



Report financially assisted through a grant
administered by the U.S. Department of Energy

Prepared by:

Marshall University

Center for Environmental, Geotechnical
and Applied Sciences and
Marshall University's
WV Brownfields Assistance Center



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Introduction / Report Background

Marshall University's Center for Environmental, Geotechnical and Applied Sciences (CEGAS) and its West Virginia Brownfields Assistance Center were retained by the West Virginia Office of Energy, a division of the West Virginia Development Office to complete limited property evaluation studies on select mine land properties for potential large-scale solar farm use. This specific evaluation is for the former Empire and Princess Beverly surface mines and includes information obtained from multiple sources regarding site-specific information and conditions, local area demographics, available electric utilities, and interaction with property owners. The purpose of this evaluation is to provide sufficient information on the subject property for potential redevelopment and/or reuse considerations by interested parties for solar farm use. CEGAS believes, to the best of its knowledge, that the information contained in the report is accurate at the time of compilation, however, no guarantees are warranted. It is ultimately the responsibility of interested parties to perform their own due diligence in fully evaluating the subject property for potential new development.

Site Name and Location

The former Empire and Princess Beverly surface mine sites are located in the southern part of West Virginia (WV) in Kanawha County and Raleigh County near the unincorporated communities of Dorothy and Ameagle. The property is located approximately 40 miles south of Charleston, WV. The property can be accessed directly from Charleston via Interstate 64 (WV Turnpike) and Cabin Creek Road. Private roads formerly used for surface mine operations transects the property. A site location map is provided as an attachment.

The entire property is comprised of approximately 5,600 acres. Two primary tracts associated with this report are listed on the West Virginia Property Viewer (mapwv.gov/parcel) as follows:

District: 2 (Clear Fork)	Map: 0001	Parcel: 0003	Book: 5066	Page: 7027
District: 3 (Cabin Creek)	Map: 0089	Parcel: 0001	Book: 2988	Page: 0669

Current Property Owner

The property is owned by the Kay Ford James Owners Group. The property is managed by DB Mining Services LLC, with offices located at 139 Lamplighter Drive, Morgantown, WV 26508. Property management assistance is provided by Howard Engineering, Inc. The contacts for this property are:

Richard B. Bolen
DB Mining Services LLC
304/288-3424
dbmining@comcast.net

Charles G. Howard
Howard Engineering, Inc.
304/877-6665
miningengineer@gmail.com

Site History and Current Status

The property has been utilized for underground and surface coal extraction for multiple decades, beginning in the early 1900s. Coal production ceased in 2019. Currently, the property has no coal extraction operations occurring. Surface mined areas are in the process of completing reclamation activities.

Two general locations are included in this evaluation. The Empire site is located entirely in Kanawha County. The Princess Beverly site is located in Kanawha County and Raleigh County. Site maps and aerial photos of each location are included as attachments. (Note - property boundaries indicated on each site map are based on information obtained from the WV Map Viewer and may or may not be completely accurate. For more accurate data, a field survey based on actual property deeds should be conducted). Aerial videos of each location, collected in April of 2021, can be viewed using the following web link:

Empire and Princess Beverly Site Videos:
<https://www.youtube.com/playlist?list=PLO4Yig1CAOAmtUDjHvWToydbelLtYu3W8S>

As seen on the aerial photos and videos, both sites have post-mine land scrubby growth, including small trees, bushes, fields and some overgrown brushy areas throughout. No additional reclamation activities are anticipated on either site.

Local Area Summary

Kanawha County and Raleigh County are located in southern WV. Kanawha County has a population of 178,124 and includes the City of Charleston, the largest city in WV. Raleigh County has a population of 73,361. The local area associated with this property is within a primarily rural setting. No residences are located within the immediate vicinity of either site.

The region is deeply steeped in bituminous coal extraction. By the 1950s, southern WV was a top coal producing region in WV. From the 1980s through the early 2000s, southern WV included some of the top producing coal counties in the eastern U.S. From ~2009 to 2015, coal production in WV declined by ~80% (ARC Study “Overview of Coal Economy in Appalachia, January 2018). Both Kanawha County and Raleigh County experienced similar coal production declines during this period.

Electric Utility Summary

Electric service is provided by Appalachian Power Company, a unit of American Electric Power Company, Inc. Three-phase power is available in the vicinity of the properties. Two substations are located north to northwest of the sites, within ~3 miles of the Empire site and ~4 miles of the Princess Beverly site. Electric lines in the area include 115-138 KV electric lines, located generally north, west and south of both sites. A map depicting electric power lines in the vicinity of both areas is provided as an attachment. Additional power lines of unknown capacity exist generally east of both sites.

Potential Solar Farm Use

Each site has been evaluated using best available topographic information, including elevation Light Detection and Ranging (LIDAR) data collected in 2010 by the West Virginia Division of Environmental Protection (WVDEP). Since 2010, minimal topographic changes have occurred in either area evaluated. Both areas were evaluated using 10% and 15% maximum slope factors to determine available land potentially suitable for solar farm development. Using ESRI's ArcMap geographic information system software, slope analysis was calculated from LIDAR referenced data. Maps of both areas depicting slope characteristics are provided as attachments. A summary of each area is provided on the following table:

Location	Total Acreage	10% Slope Acreage (2010)	15% Slope Acreage (2010)
Empire	~330	~105	~150
Princess Beverly	~290	~145	~180

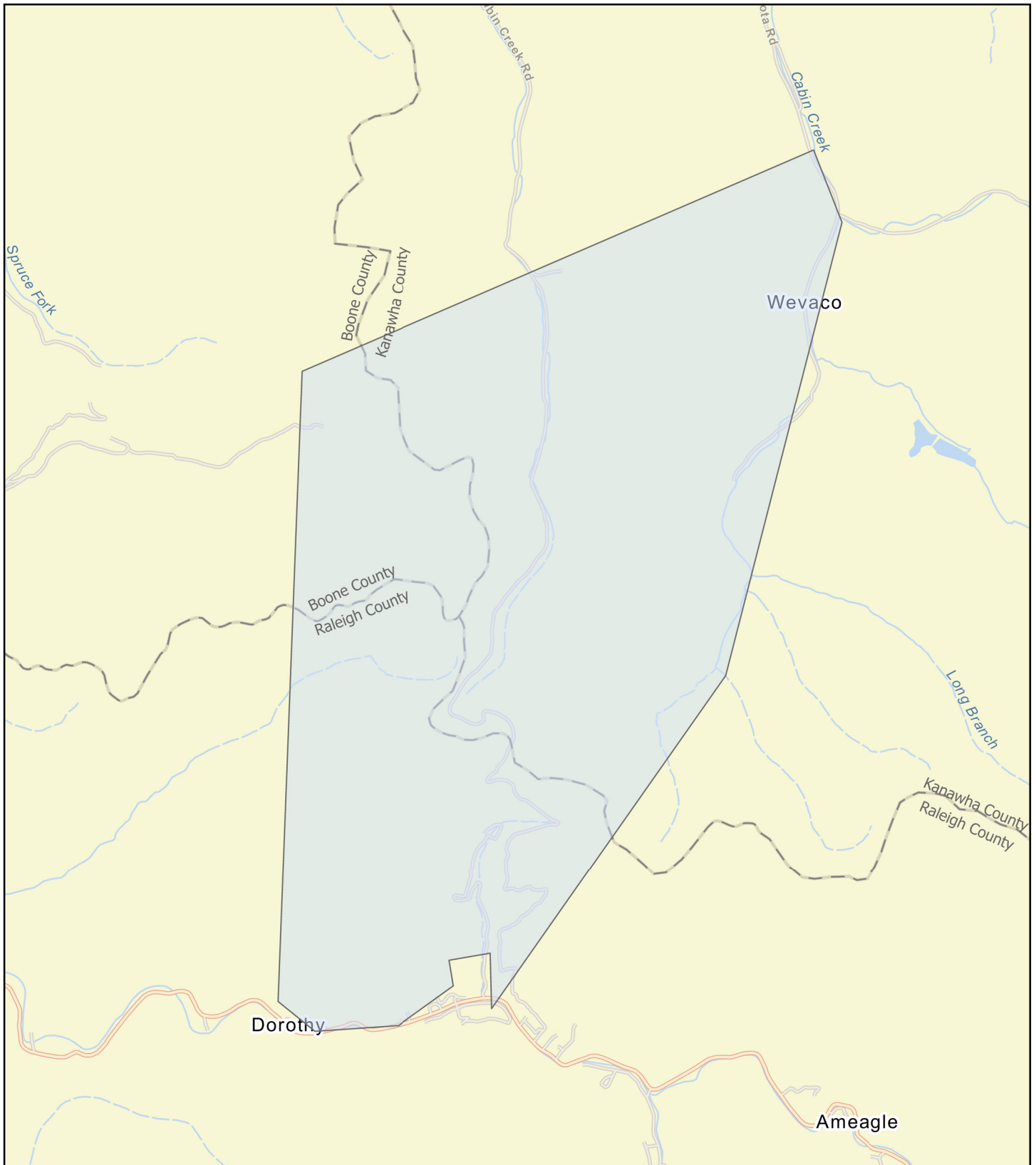
Property Availability

The Kay Ford James Owners Group is interested in long-term (25 year plus) lease agreements for solar farm use on suitable property on both sites. Terms for lease rates are negotiable, dependent on multiple factors including amount of property utilized and length of lease.

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Attachments

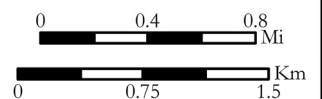
Maps

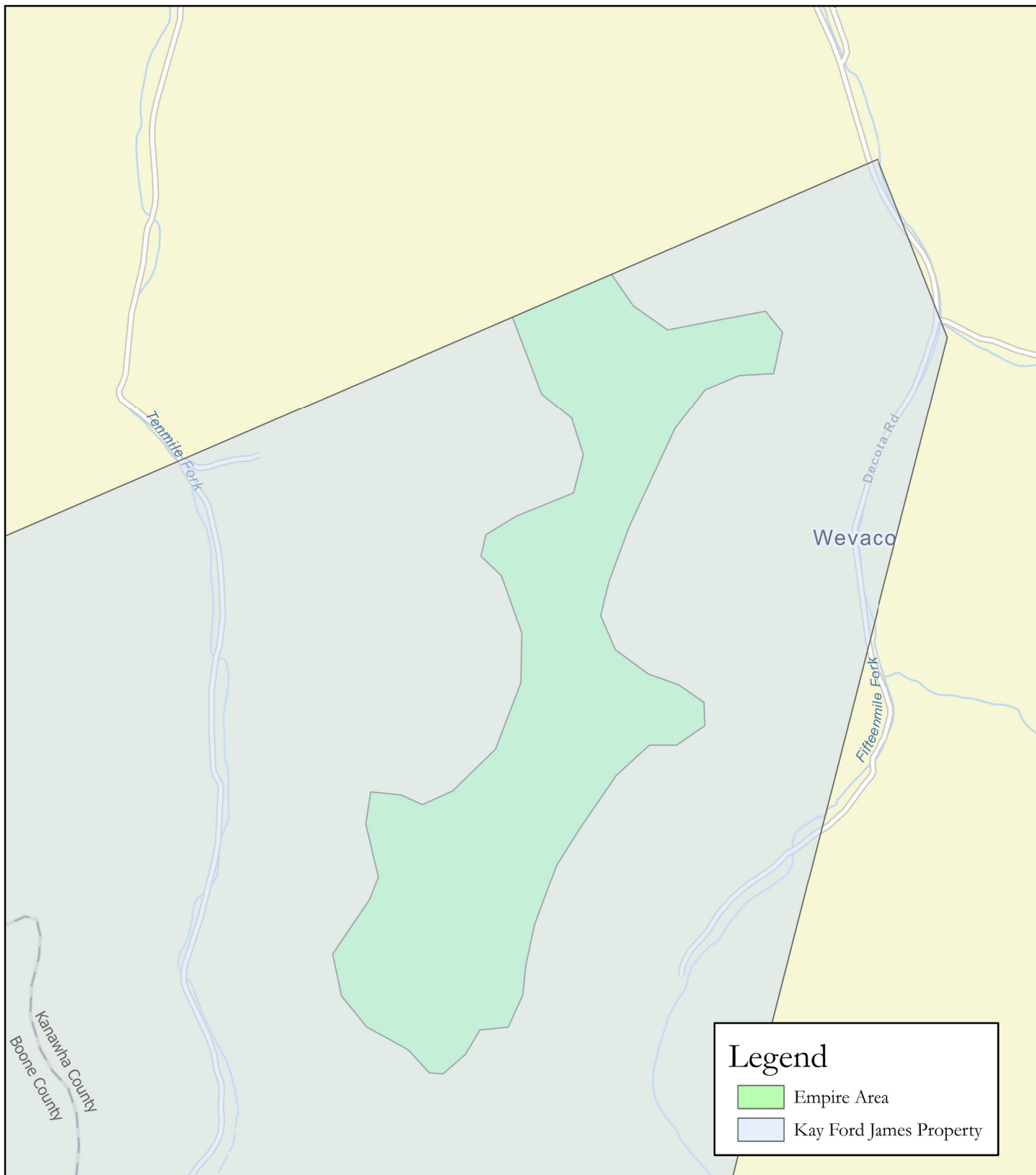


Kay Ford James Property

Date: 6/10/2021

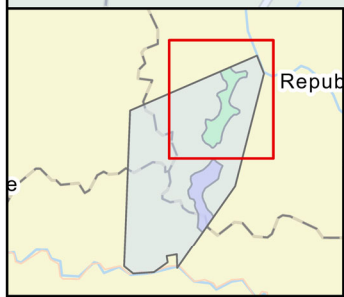
ACKNOWLEDGMENT: The development of this map was financially assisted through a grant administered by the U.S. Department of Energy. This map was prepared through a cooperative effort by the WEST VIRGINIA OFFICE OF ENERGY and Marshall University Research Corporation (MURC).





Legend

- Empire Area
- Kay Ford James Property



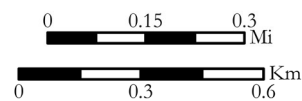
Empire Area

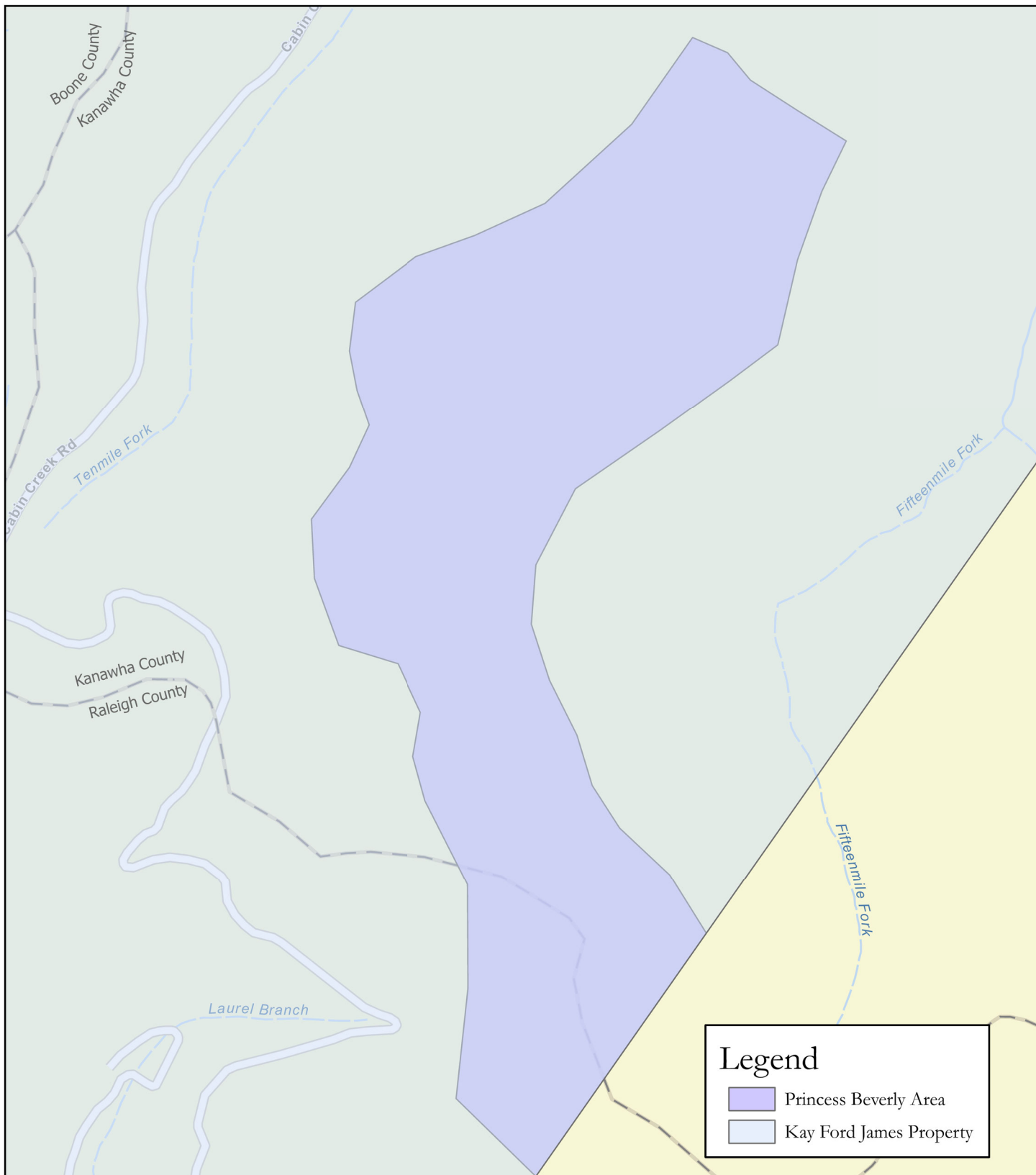
Kay Ford James Property

(Approximately 330 Acres)

Date: 6/10/2021

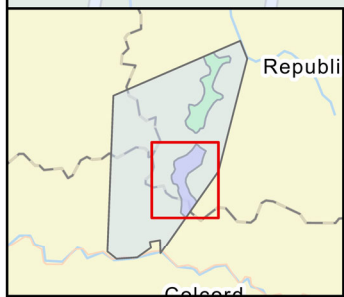
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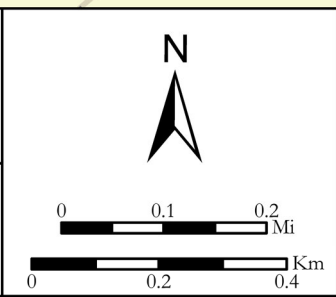
- Princess Beverly Area
- Kay Ford James Property

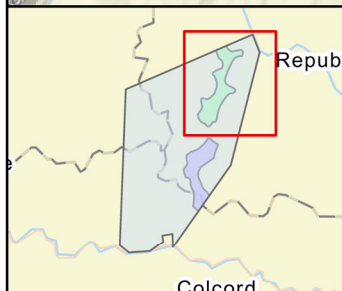
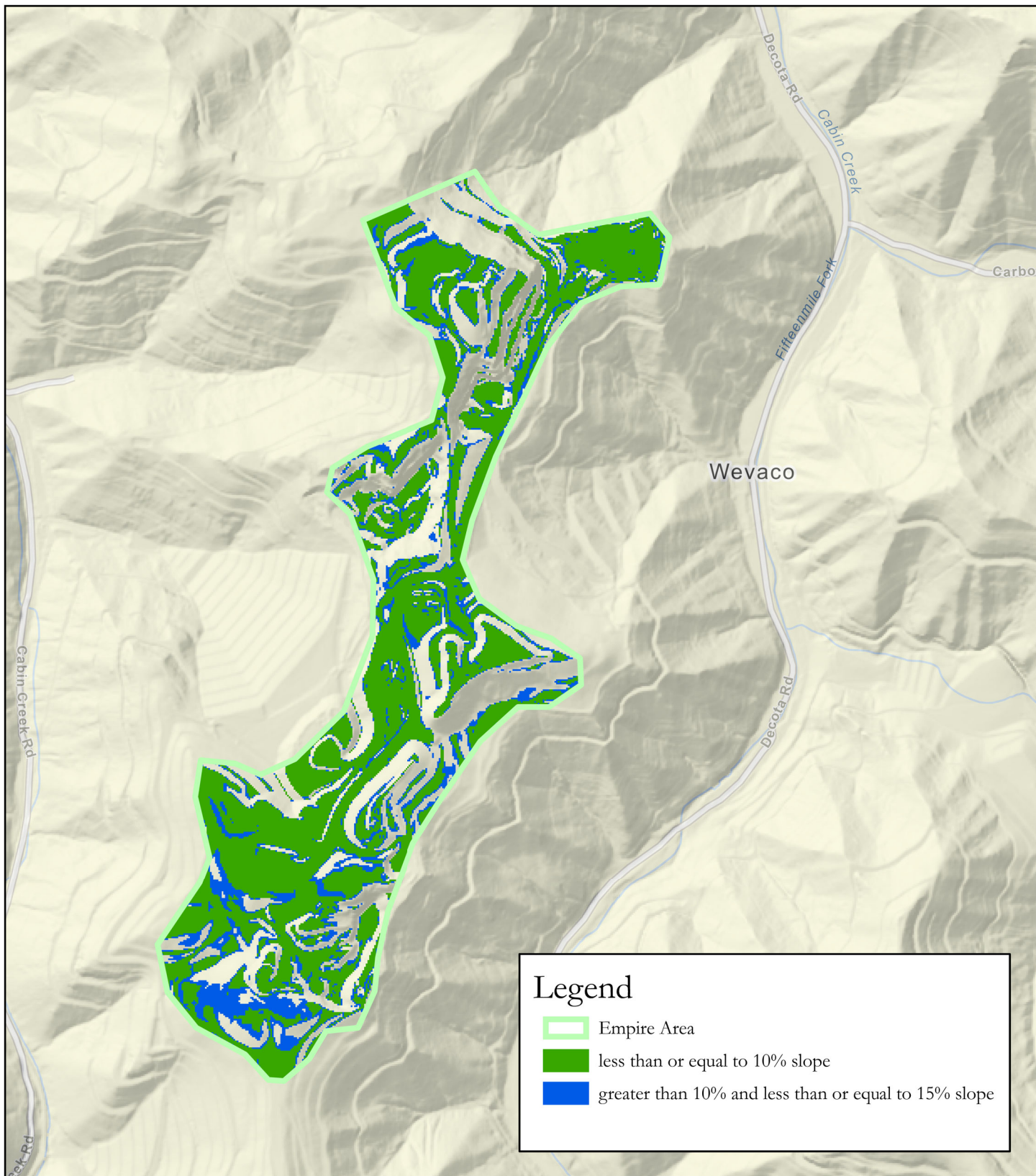


Princess Beverly Area
Kay Ford James Property
 (Approximately 290 Acres)

Date: 6/10/2021

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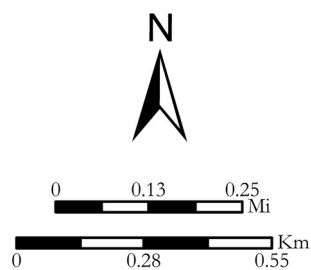


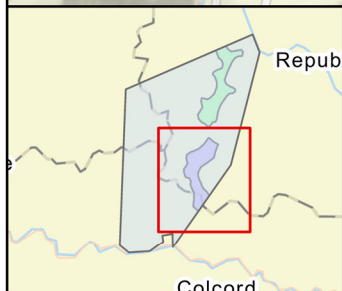
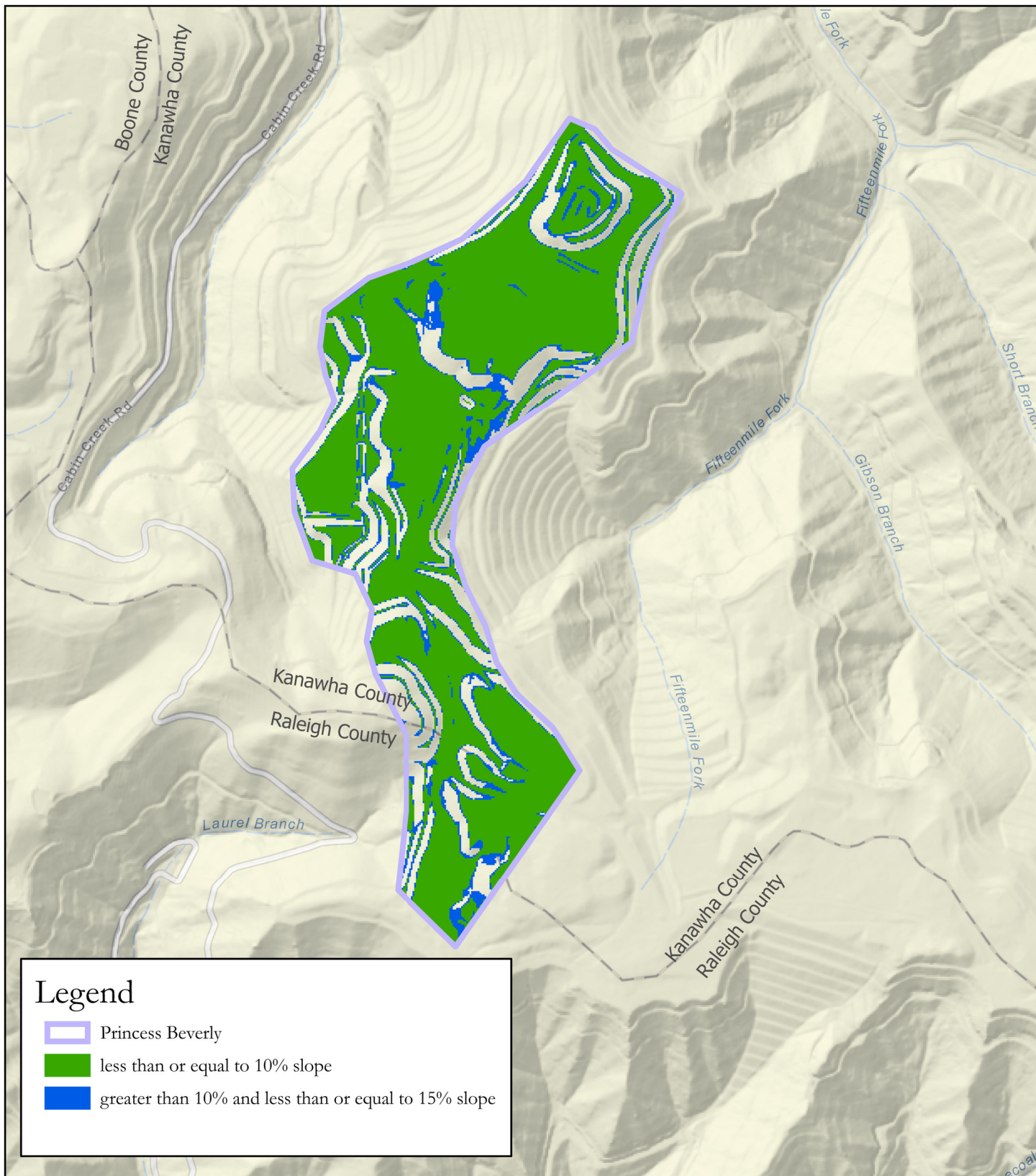


Percent Slope Empire Area

Date: 6/10/2021

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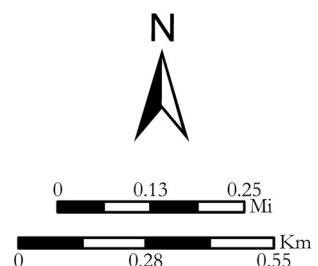




Percent Slope Princess Beverly Area

Date: 6/10/2021

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Empire Surface Mine Site Photos



Northeast Facing



Northeast Facing

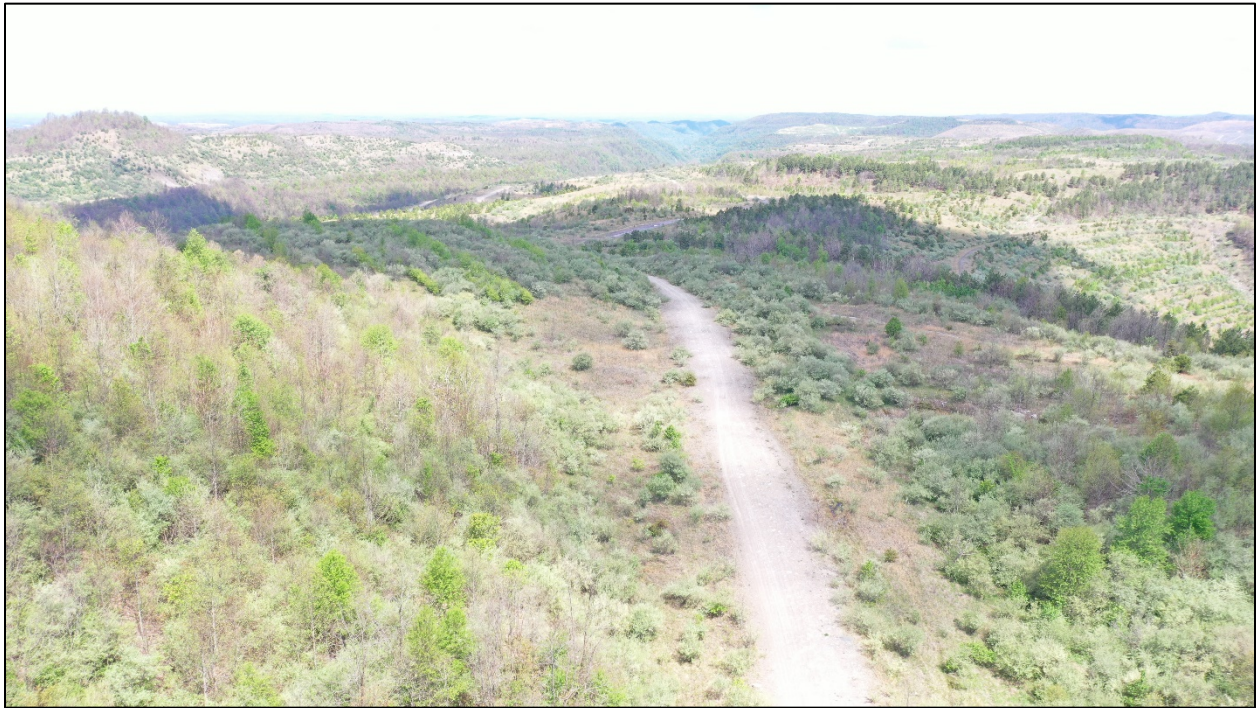


West Facing



South Facing

Princess Beverly Surface Mine Site Photos



North Facing