



U.S. OFFICE OF SURFACE MINING, RECLAMATION AND ENFORCEMENT

 CASE STUDY



OSMRE streamlines operations with high resolution satellite imagery

While the mining industry has historically conducted onsite field studies to document and analyze pre-mining conditions for later reclamation and bond release, the Office of Surface Mining, Reclamation and Enforcement (OSMRE) now uses Maxar's satellite imagery to observe and analyze site topography, operations and environmental conditions.

High-quality imagery needed

OSMRE's mission is to implement regulations for coal mining operations according to the Surface Mining Control and Reclamation Act (SMCRA). Like most government funded agencies, OSMRE's challenge is to accomplish the mission with limited resources and to initiate efficient and innovative ways to do it.

OSMRE took on the challenge by directly applying remote sensing science and image processing and analysis to support restoration of mined or abandoned lands and waters. Further, the Technology Innovation and Professional Services (TIPS) group of OSMRE primarily uses Maxar's satellite imagery to inspect and regulate ongoing and abandoned mine activity set forth in SMCRA Titles IV and V.

- Water quality
- Wildlife habitat
- Abandoned mine land (AML) features
- Reforestation success
- Post mining land use

COMPANY INFORMATION

While energy development is crucial to all nations, practices must take social responsibility into account. As part of the U.S. Department of Interior, the Office of Surface Mining, Reclamation and Enforcement (OSMRE) implements regulations that balance the need for continued domestic coal production and to protect the environment.



MAXAR

Evaluate mining sites quickly and efficiently

OSMRE initially used satellite imagery to document coal mining sites for point-in-time references and to document existing, pre- or abandoned mine conditions. This has since evolved into extended use of analytics, remote sensing, and GIS layering on the imagery. Today, OSMRE uses imagery data to save time and help perform many more regulatory and enforcement tasks:

- Qualify permit boundaries, investigate violations and determine priority areas for field visits
- Track and verify mining operations for onsite reclamation and bond status
- Evaluate erosion and acid mine drainage trends, wildlife habitats, topsoil redistribution and vegetation
- Classify post-mining vegetation communities
- Monitor overall mine site activities, including post-mining land use
- Monitor re-vegetation of disturbed sites
- Collaborate with other agencies and mining companies so all interests are aligned
- Transfer technology to surface coal mining states and tribes

Maxar provides the satellite imagery that OSMRE now uses extensively throughout mining activities in the Western U.S. With the imagery, they monitor overall mine site activities and quantify topographic changes to ensure terrain is consistent with the approximate original contours of the site.

“Maxar satellite imagery gave us the capabilities we needed to improve natural resources through regular mapping and monitoring, and we were able to complete the project in a cost efficient and timely manner.”

UZMA KHAN, DIRECTOR BIODIVERSITY

Challenge	To use remote sensing of satellite imagery to support restoration of mined or abandoned lands and waters.
Solution	Use Maxar’s satellite imagery for analytics, remote sensing and GIS layering on said imagery.
Results	Satellite imagery and remote sensing technologies streamline previously manual activities performed in support of government regulations.

INDUSTRY

- Civil government
- Mining

USES

- Quality permit boundaries
- Monitor land use
- Validate land reclamation

PRODUCTS USED

- 60 cm OrthoReady standard bundle (panchromatic and multispectral imagery)

