



PROTECTING PUBLIC LANDS

with High Frequency Satellite Imagery

A CASE STUDY WITH NEW MEXICO STATE LAND OFFICE

The New Mexico State Land Office (NMSLO) utilized Planet's global, daily imagery to achieve greater compliance, protect natural resources, and generate revenue for the vital public institutions that they support.

ABOUT NEW MEXICO STATE LAND OFFICE

NMSLO is constitutionally mandated to preserve the health of its public lands, while also promoting economic development across the state. The office manages 9 million acres of surface land and 13 million acres of subsurface minerals, which are leased to private companies and individuals to generate revenue for New Mexico public schools, hospitals, colleges, and other public institutions.

Within NMSLO, the Oil, Gas, and Minerals Division is responsible for administering all oil and gas leases, including lease sales, assignments, and compliance with lease terms. The Division also administers leases for minerals (coal, salt, caliche, sand, gravel, potash, geothermal, etc), and ensures any mined sites are properly reclaimed.



Areas of the Permian Basin administered by the New Mexico State Land Office saw substantial oil and gas development in 2019 and early 2020. These images show dozens of well pads built near Eunice, New Mexico, between April 14, 2019, and April 23, 2020. Planet's data helped the Office ensure all construction on the land they own was legally permitted.

STEWARDING A BROAD, DIVERSE ENVIRONMENT

New Mexico is the fifth largest state of the United States. The vast, diverse, rugged, and remote lands NMSLO is required to manage can be challenging, particularly when it requires sending staff out into the field to check and verify activities such as compliance with lease terms.

In the past, NMSLO acquired imagery from several different sources, including the National Agriculture Imagery Program (NAIP), Google Earth, and aerial imagery from private companies to supplement their efforts.

While beneficial, these sources were often too outdated by the time it was used, or too expensive to acquire. As a result, most of the imagery was used as a backdrop for mapping, but not analysis of leased lands. Meanwhile, trespassing mining sites and other violations were occurring, and the Office needed to act quickly to resolve before damage became irreparable.



In the wake of a drilling mud spill near Malaga, New Mexico officials used high-resolution SkySat data to assess the impact of the spill on the Black River. This image was collected on March 10, 2020.



The New Mexico State Land Office oversees over 9 million far-flung acres of surface land. The office used Planet data to monitor compliance in New Mexico's portion of the rapidly developing Permian Basin.

Satellite Monitoring of Active and Inactive Sites

To address these challenges, the Oil, Gas, and Minerals Division leveraged PlanetScope Monitoring to observe leased and to-be leased lands in the Permian Basin, located in the southeast region of the state. The high frequency and broad-area coverage provided by PlanetScope helped the Division achieve greater compliance of leased land and proactively identify activities that fell outside of the lease terms, which generated revenue for the state.

Mineral analysts were better able to identify trespassing violations, illegal removal of material from mining sites, and/or improper waste disposal that otherwise might have gone unseen because there were not enough boots on the ground, or other imagery sources were outdated.

“In total we manage over 13 million acres of land, which has required the New Mexico State Land Office to use imagery captured from several sources. While beneficial, it was expensive and the imagery was often out of date by months if not years by the time it was available. Planet’s data provides up-to-date information when we need it and empowers us to take action.”

STEPHANIE GARCIA RICHARD

Commissioner of Public Lands





June 1, 2019



June 3, 2019



June 8, 2019



June 9, 2019



July 17, 2019



July 18, 2019



July 19, 2019



July 20, 2019



October 27, 2019



October 31, 2019



November 2, 2019



November 4, 2019

300 m

(Image, top) New Mexico State Land Office identified several spills related to oil and gas development with the help of Planet's frequent, high-resolution data. These images show three such spills that occurred in the latter half of 2019.

Within a year of utilizing PlanetScope Monitoring, the NMSLO:



Identified **53 trespasses**



Generated **\$2.7M** in back payments to be dispersed to New Mexico public schools, hospitals, colleges, and other important institutions.



Currently evaluating **expanding their coverage** beyond the Permian Basin to the rest of the state.



Of the 53 trespasses identified:

- **22** have converted into new leases
- An additional **\$800,000** (and growing) in net new revenue
- **New leases** will be reclaimed at end date

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