

# EarthWorks

## Mining

### **“See” where soil moisture is putting lives and operations at risk.**

EarthWorks shows mine operators where moisture is seeping from waste dams and pipelines, collecting under mining roads and heavy equipment sites, and weakening surrounding hillsides.

Mining operations are highly vulnerable to the impacts of soil moisture. Tailings dams are subject to seepage, then erosion, piping, and finally collapse due to loss of shear strength. Soil moisture can cause landslides in mine hillsides and sinkholes in mining roads. Yet current monitoring techniques are unable to “see” subsurface moisture, only changes such as deformation or movement, leaving little time for remediation.

ASTERRA's patented EarthWorks technology is a new tool to provide ongoing, proactive, economically viable monitoring of mining operations. The soil moisture maps that EarthWorks provides can identify moisture from seepage and other causes, sometimes years before warning signs can be seen or detected by sensors. Mine operators can use EarthWorks to optimize maintenance and safety, improve design and operations, locate leaks in production pipelines, and document compliance.

**“Without major changes to law, regulation, and to industry practices, as well as without new technology that substantially reduces risk and increases loss control, our current prediction is for 19 very serious failures between 2018 and 2027.”**

- States World Mine Tailings Forum  
(Mining Technology, March 2019)



## Features:

EarthWorks customers acquire a subscription to EO Discover. Through EO Discover, customers can monitor their infrastructure and access reports and dashboards. The service includes data download options in GIS data format for viewing in Esri or other common platforms.

These insights will complement and enhance current surveillance programs and provide dam engineers and inspectors with additional time to respond to unexpected conditions and devise response plans.



## About ASTERRA

ASTERRA (formerly Utilis) provides underground soil moisture data on pipes, roads, rails, dams, and mines to water utilities, government agencies, and infrastructure managers. Using SAR (synthetic aperture radar) data from satellites and a series of proprietary algorithms, ASTERRA turns the data into actionable intelligence that supports large-scale decisions and Earth's resource resilience. Since 2017, in 64 countries, ASTERRA technology has saved over 210,830 million gallons of water, 527,070 MWH of energy, and 134,930 metric tons of carbon. ASTERRA is headquartered in Israel with offices in the U.S., the U.K., and Japan.