Surface Movement Monitoring
**Enhanced Oil Recovery (EOR)**

**PROTECT ASSETS**
Protect operational infrastructure, pipelines, and other surface assets, cost effectively using MDA’s monitoring services to track sources of change over large geographical areas.

**COMPREHENSIVE SOLUTIONS**
Ensure monitoring project success in all operational environments by leveraging MDA’s unmatched expertise in overcoming site-specific geographical challenges through advanced processing techniques and simple man-made corner reflectors.

**OPTIMAL MONITORING**
Understanding surface movement means capturing the ground movement with the most efficient monitoring campaign. MDA simulates the expected deformation to provide confidence that the ground motion will be captured correctly.

**PREVENT SURFACE BREACHES**
Monitor caprock stress by identifying anomalous heave and subsidence observed in MDA’s surface deformation maps.

**CALIBRATE GEOMECHANICAL MODELS**
Use InSAR surface movement measurements to calibrate geomechanical models and improve model forecasts.

**PREVENT WELL CASING FAILURES**
Prevent well casing failures due to horizontal pressures created by slip planes by managing subsidence using MDA’s surface movement monitoring services.

**ACURATE MONITORING**
MDA’s products are proven, reliable, and demonstrably accurate. RADA/SAGQT’s flexibility means that multiple independent beam modes can be used to confirm the accuracy of the measurement to within 1% of the ground truth.

**OPTIMIZE PRODUCTION**
Adjust injection and production levels to maintain reservoir pressure and minimize the net voidage measured using MDA’s detailed analysis of surface movement.

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Surface Movement Monitoring

MDA’s proven surface movement monitoring solutions enable Oil and Gas operators to increase operating efficiencies while mitigating operational and environmental risks. Reliable and accurate monitoring of uplift and subsidence enables operators to protect caprock integrity, detect steam distribution, and optimize production.

MDA’s surface movement monitoring products use advanced Interferometric Synthetic Aperture RADAR Interferometry (InSAR) processing techniques to detect and measure minute changes in the Earth’s surface from space. InSAR measurements exploit the change in microwave phase from one observation to the next to derive ground motion to submillimetre accuracy. In practice, our techniques have been proven over EOR fields that are both difficult to access and expensive to monitor using in-situ techniques such as leveling or GPS monuments.

For new fields and clients, MDA can utilize the extensive archive of the Canadian RADARSAT series of satellites to provide a historical analysis for planned and initial EOR field activities. This ensures a baseline of conditions prior to field operations exists from which to monitor against.

About MDA

With more than 40 years of experience in sensing technologies, MDA is one of the largest and most trusted providers of space-based monitoring products in the world. Working globally with oil and gas explorers and producers, MDA has gained the experience necessary to understand the characteristics of your operations from Steam Assisted Gravity Drainage (SAGD) to Cyclic Steam Stimulation (CSS) to Carbon Capture and Sequestration (CCS). Our team has a reputation for providing accurate, timely, and useable results with solutions optimized to suit your needs.

MDA has an unsurpassed record of reliability, timely delivery and repeatability. MDA has production, analysis, and research teams operating across the value chain; from developing and building satellites to deriving and communicating results, MDA is ready to meet your needs. With a successful image acquisition rate of 98.8%, RADARSAT-2 satellite provides high resolution, weather independent, year round coverage of your region of interest. An extensive network of global ground stations and offices enable MDA to offer the most reliable, timely, and operational delivery of SAR monitoring products and services.

MDA’s extensive record in the development and implementation of remote sensing technologies is unmatched around the world. Since 1969, the company’s focused RADAR, communications, and surveillance satellites and projects have been backed by significant internal investments and have garnered international success. MDA has over 4,800 employees worldwide. MDA is a Canadian company providing trusted information solutions globally.

MDA is committed to long term monitoring services that match to the needs of the lifecycle of oil and gas projects.

MDA delivers innovative, cost-effective, advanced geospatial information solutions.

Customer Satisfaction

For more than four decades, MDA has worked with its worldwide customer base to provide information solutions that leverage advanced technologies and improve business efficiency.