NATURAL RESOURCE SOLUTIONS

MINING • PIPELINES • LAND MANAGEMENT • OIL & GAS • WATER RESOURCES

ARE YOU:

- Struggling where to spend money on core samples?
- Experiencing escalating surveying and mapping costs?
- Unsure of where to dig because of unknown locations of P&A oil and gas wells?
- Experiencing delays due to inadequate justification for change orders?
- Unsure of jobsite material quantities?
- Waiting for survey and mapping deliverables?

Juniper Unmanned's Natural Resource Solutions can save you time and money, increasing profitability. Contact Juniper today to discover how we can support your projects, efficiently and cost effectively.

- **Low AGL (Above Ground Level) Aeromagnetic surveys**
- **3D terrain models**
- **Digital Surface Models (DSM)**
- **Magnetic anomaly surveys**
- **Thermographic and hydrologic surveys**
- **Slope stability surveys**

Juniper Unmanned, Inc., provides premier unmanned system-based information solutions for commercial, federal, state, and military organizations. The company integrates best-in-class aircraft with the most advanced sensors. High-quality data is combined with Juniper's engineered processes, advanced software, and analytics to deliver actionable intelligence to our clients. Juniper's team of professionals has extensive experience in remote sensing, engineering, safety and compliance, data processing and analysis, and surveying and mapping. We start each project by listening to our clients' needs, then identifying the most appropriate sensors and equipment to meet their requirements.
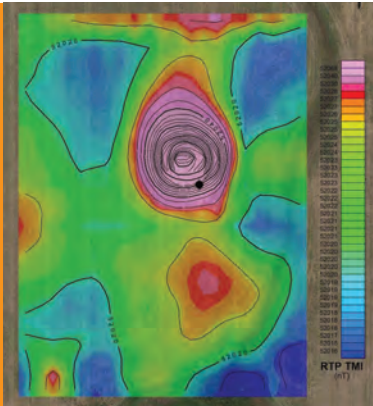
WHAT MAKES JUNIPER UNMANNED UNIQUE?

- Top-rated and continuously trained FAA Part 107 certified pilots
- Safety and compliance experts
- Remote sensing specialists
- In-house data processing and analysis
- Large selection of advanced sensors
- Extensive data acquisition experience in extreme operational environments
- AI-enabled products and services
- Expert mission management
- Projects completed on six continents
- Selected as a "2018 Colorado Company to Watch"
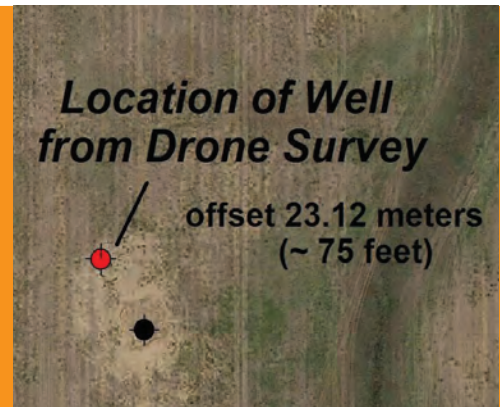
BENEFITS OF UAS FOR NATURAL RESOURCES

- Safety - Operate above hazardous ground conditions
- Rapid and as-needed deployment
- High-resolution 3D models
- Valuable pre-construction data
- Jobsite productivity optimized
- Data acquisition in less time
- Workflows streamlined
- Frequent status updates and quality control
- Variety of sensors
- Increased productivity
- Exploration efficiency gain

"Mapped" location of abandoned well

UAS Magnetometer collected Total Magnetic Intensity (TMI)

UAS surveyed location of abandoned well

PLATFORMS/EQUIPMENT

- Many platforms available: fixed-wing, multi-rotor, and single-rotor UAV from trusted manufacturers
- Onboard GNSS/IMU
- Survey-grade terrestrial GPS/GNSS base
- Agile flight planning for extreme terrain

SENSORS

- Aeromagnetometer
- Multispectral, RGB, NIR
- LiDAR
- HD Video
- Thermal
- Bathymetric LiDAR

DATA PROCESSING/PRODUCT DEVELOPMENT CAPABILITIES

- Preliminary design surveys, planimetric maps, contour maps, calibrated point clouds, orthomosaics, bulk-material quantities and project takeoffs
- Solutions include XML, DTM, TIN data, cross sections, point files, contours
- Data products delivered in most CAD formats: AutoCAD, Civil 3D, MicroStation, GEOPAK, and Oasis Montaj (GeoSoft)

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