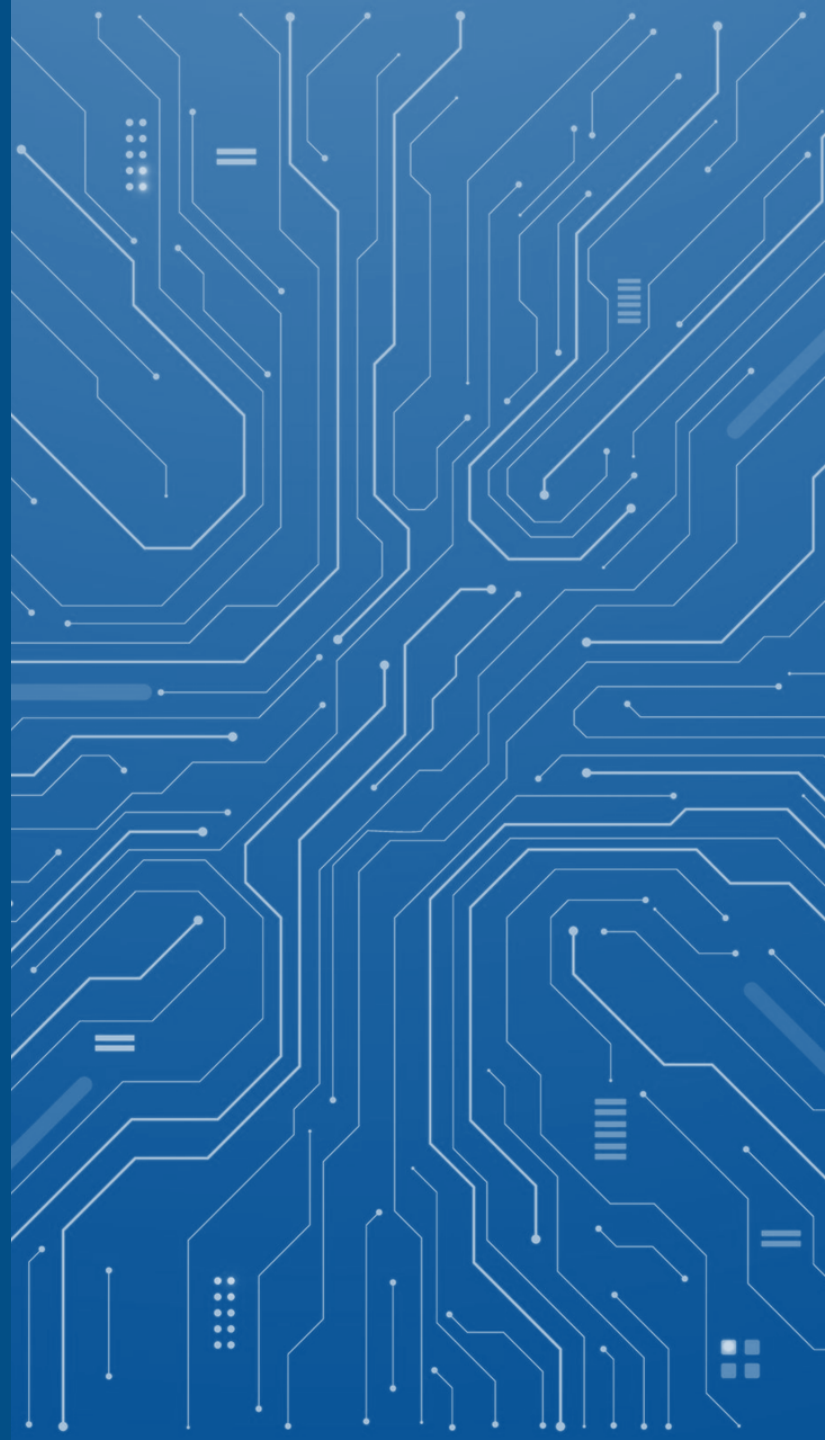
From Data to Decisions: AI-Driven Innovation in Environmental Remediation with EQuIS®

Dan Alexander
COO at EarthSoft



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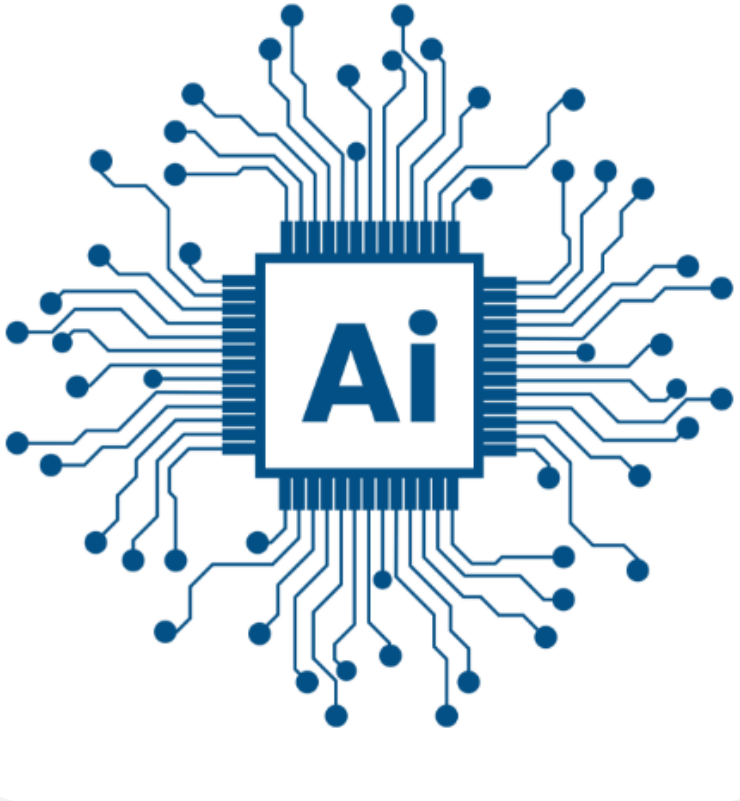
Challenge/Solution



Artificial intelligence is reshaping how environmental professionals manage, interpret, and act on complex datasets.

EarthSoft's EQuIS platform combines:

- Centralized data architecture
- Federated access
- Automated workflows
- Strong data management
- AI-powered knowledge management portal

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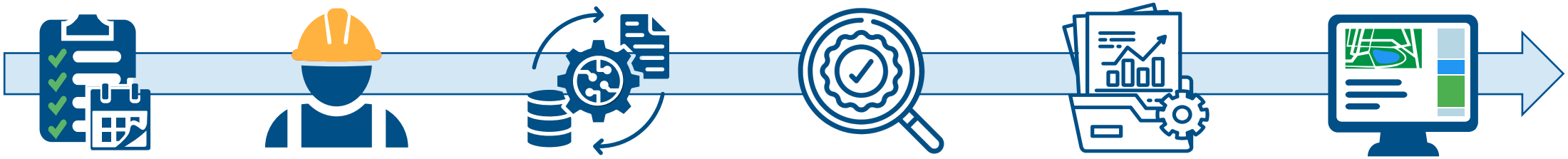
Structured Data Workflow



Project Planning

Data Collection

Extract, Translate, Load (ETL)

Data Quality & Qualification

Manage & Analyze

Visualize & Report

Air

Radiological

Chemical

Geology

Geotechnical

Spatial

Waste

Noise

Water: Ground, Surface, Storm

Limnology

Biology, Ecology Taxonomy

Inspection

Compliance

Soil & Sediment

Weather

GHG

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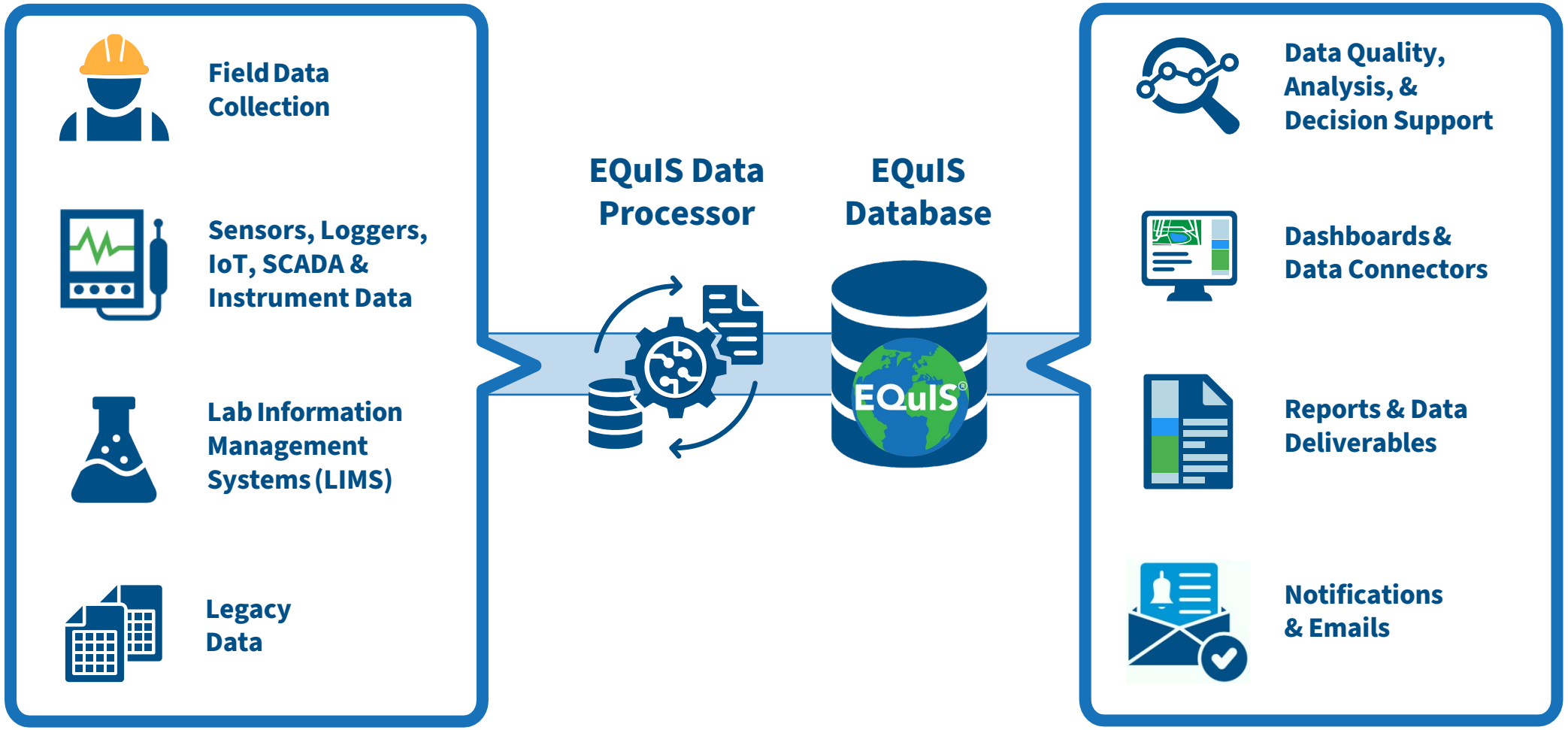
EQuIS Data Workflow



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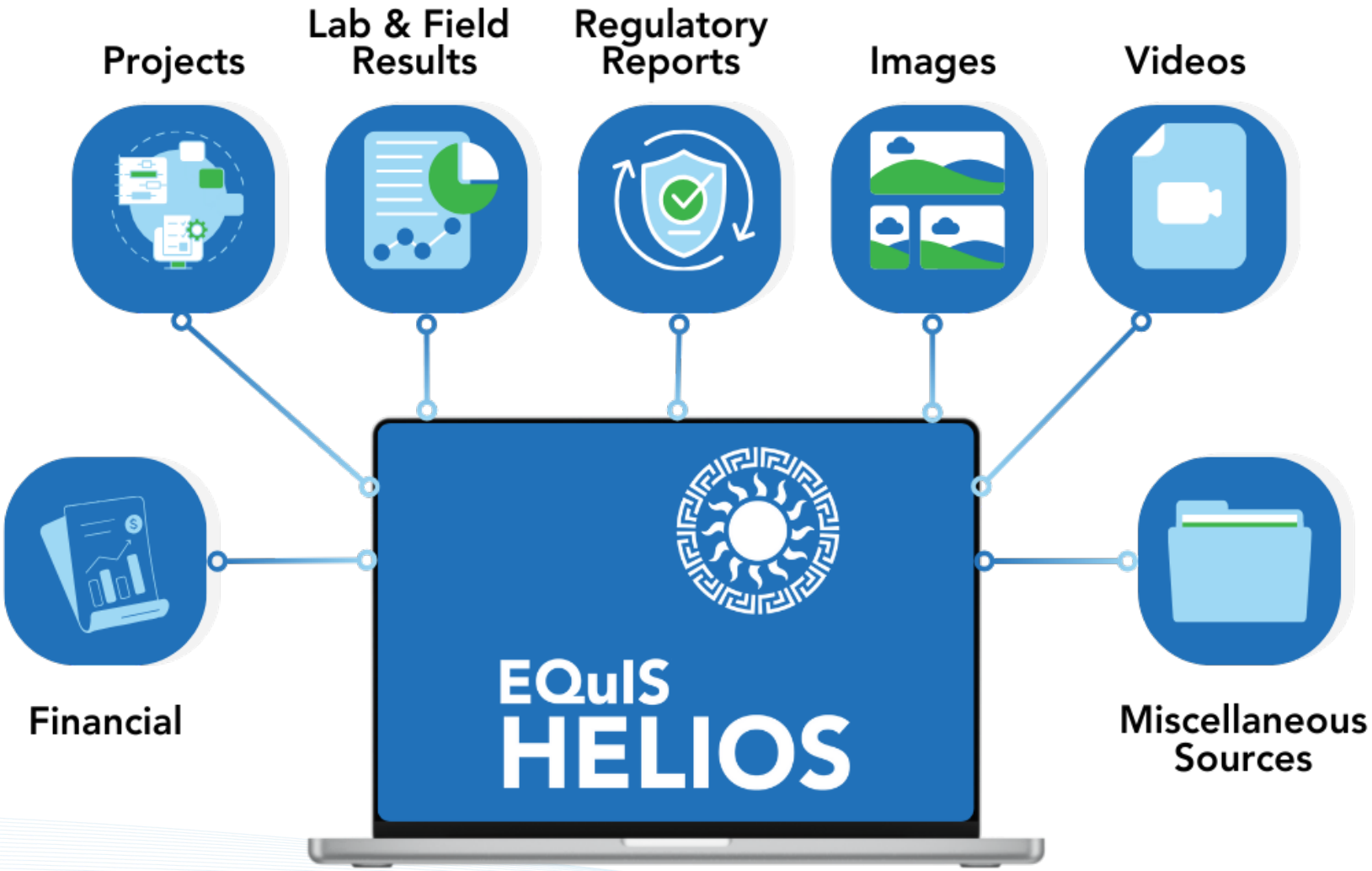
AI Integration for Unstructured Data



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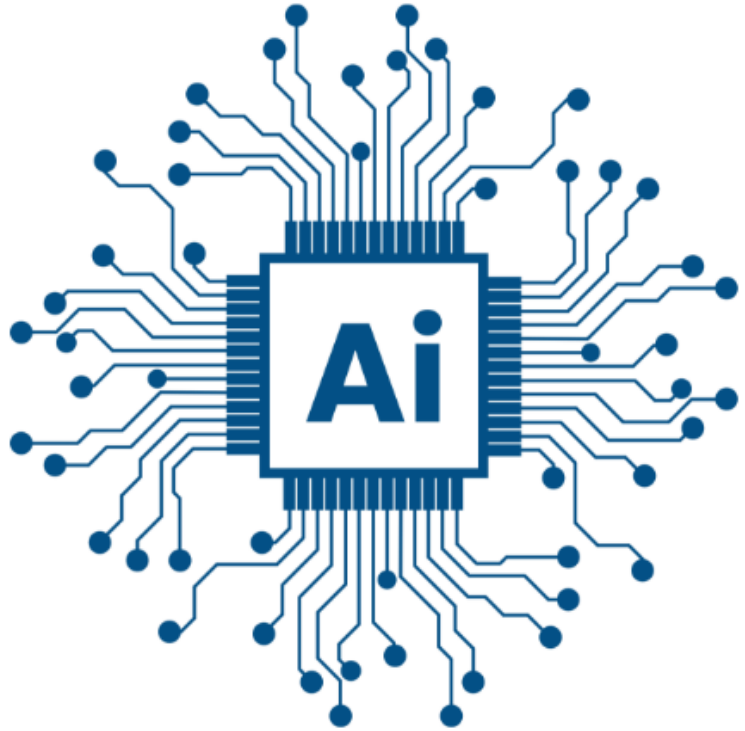
EQuIS HELIOS

- AI-Powered Knowledge Management Portal (uses Microsoft Azure AI services)
- Improves unstructured data management
- Versatile choice for streamlining information management and access
  - Auto generate Content Summaries
  - Auto extract Key Words and metadata



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Key Features

EQuIS® HELIOS

- Easy Loading of Data Files
- Identification of PII/Profanity
- Automated File Processing
- Central Storage and Microsoft Azure AI Search Capability
- Document Summarization
- Advanced Security Features

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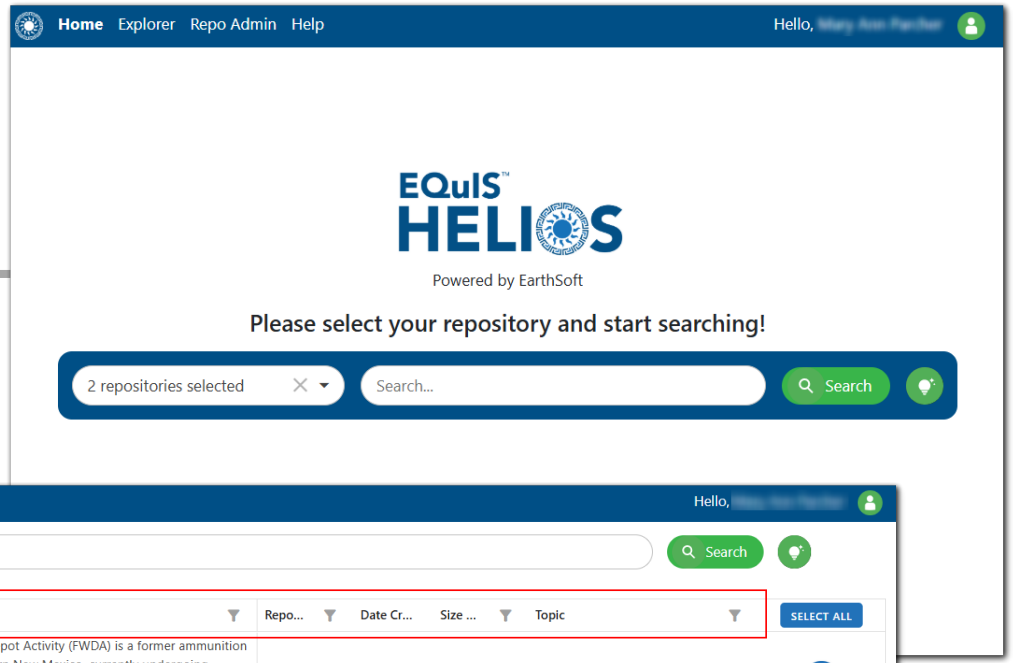
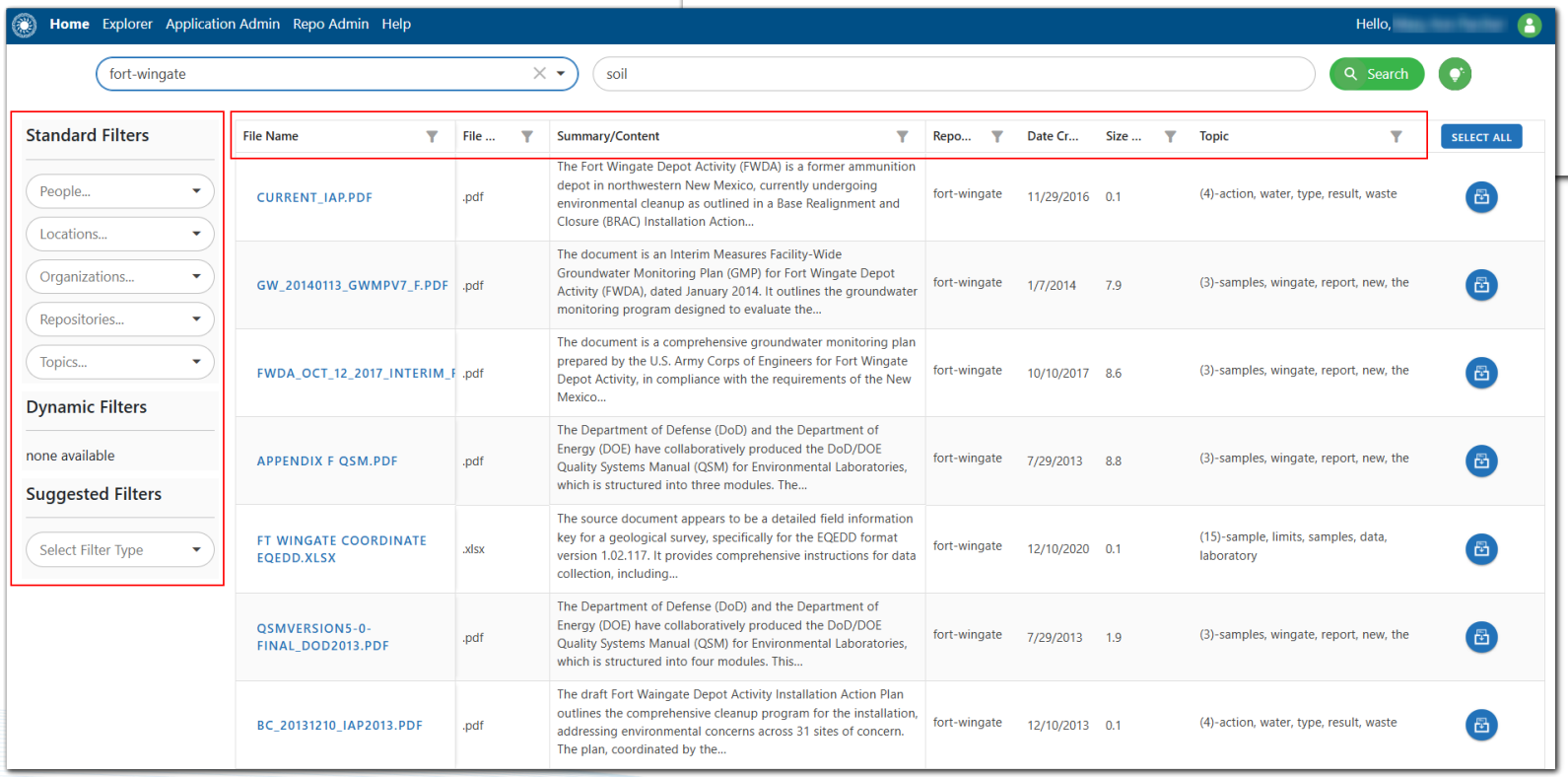
EQuIS HELIOS

- Easily search for documents
- Dynamic filters





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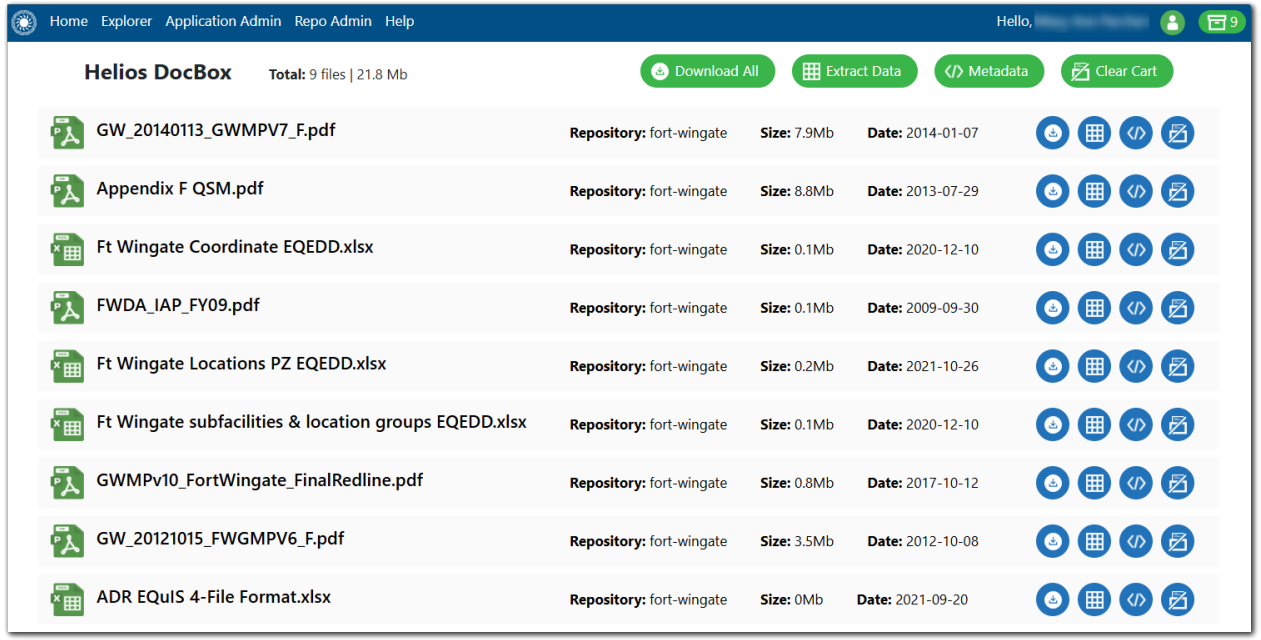
Data Extraction

- Uses Microsoft Azure AI services and optical character recognition (OCR)
- Convert unstructured content into structured formats for integration into EQuIS workflows



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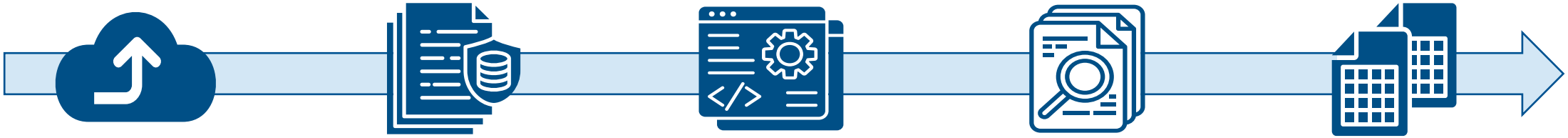
Unstructured Data Workflow



Load Files and Data to HELIOS

Files/Data Summarized & Indexed

Data Cleanup & Enforce Role-based Security for Access

Files/Data Available for Search/Access

Migrate Data to EQuIS Schemas Using EQuIS Link (as needed)

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EQuIS Helios
Use Cases

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HELIOS Use Case

Challenge – Data Consolidation

Decades of consultant reports field notes

Helios indexes, summarizes and secures this information for centralized access

Government

Industry

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HELIOS Use Case

EQuIS®

Challenge – Project Transition & Data Migration

Previous consultant did not use a data management system

Helios summarizes and prepares these datasets for review and potential migration

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HELIOS Use Case

Challenge – Document Management

Manage historical records cost effectively

Helios makes these records searchable by location, metadata, and content

Cost-effective, secure storage with advanced search functionality

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HELIOS Use Case

Challenge – Data Extraction

Extract data from handwritten notes and scanned forms

Helios structures this data for validation and integration into broader workflows

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HELIOS Use Case – Example

EQuIS®

BP Remediation Management

- Currently has around 4 million files
- All are searchable through Helios and controlled by user role access
- Accessibility can be limited by user administration
- All BP RM suppliers have secure access for their projects

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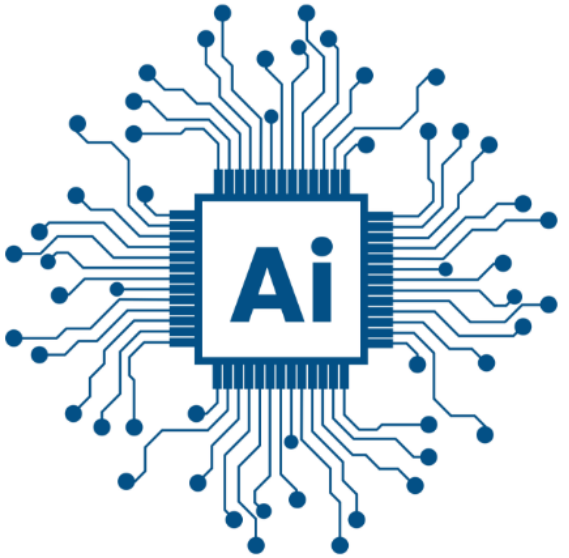
Conclusions



The EQuIS platform:

- Meets evolving demands of environmental data professionals
- Integrates centralized database architecture with AI-powered tools and Federated access
- Provides efficient data processing, unstructured data integration, and automated data governance
- Supports improved communication and informed decision-making

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Thank you!

EQuIS®

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Own the Workflow,
Make Better Decisions

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