PROJECT HIGHLIGHT

VISUALIZING A HALF-CENTURY OF HISTORICAL SITE DATA GUIDES FUTURE REMEDIATION EFFORTS

For large, complex, or long-term remediation efforts, the ability to easily visualize decades of data in three- and four-dimensions is an invaluable decision-making tool. Combining historic with current site data allow project stakeholders insight into changes within subsurface conditions over time and into the effectiveness of prior remedial efforts.

PROJECT: 3-Dimensional Data Visualization and Analysis (3DVA) - Landfill Superfund Site

LOCATION: Colorado

TECHNOLOGY: Geographic Information System (GIS); Earth Visualization System (EVS).

SERVICE: Data Management and 3D Conceptual Site Model (CSM)

PROJECT OVERVEW

Cascade provided a comprehensive 3DVA of a Landfill Superfund Site in Colorado. The work consisted of two phases:

Phase one: data acquisition and management. Over 50 years of historic and contemporary data were acquired from dozens of sources, evaluated, and managed in a geodatabase. Sources of data included: historical site reports, Colorado well permit databases, historical aerial photogrammetry, USGS regional groundwater, and LiDAR digital terrain models.

Phase two: preparation of data-driven 3D and 4D geohydrological models using EVS by C Tech Development. Information captured from 160 boring logs revealed the complex interaction of the landfill, overburden, and faulted bedrock geology with 3D groundwater plumes through time.





RESULTS

Cascade's 3DVA became a primary planning and decision-making tool, allowing for adaptive site management and supporting future and ongoing site characterization and remedial efforts.



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