CASE STUDY

EQuIS EDGE AND LIVE IMPLEMENTATION

BACKGROUND

An EarthSoft client operating a large environmental remediation site faced challenges with complex sampling and data collection requirements. The site is a former mining operation that has associated soil and groundwater contamination concerns.

THE CHALLENGE

The former mine site is complex, having several data collection programs. Environmental consultants conduct quarterly sampling and inspection activities from an extensive network of groundwater monitoring wells. The existing workflow included the recording of water levels, purge data, and field measurements on paper forms, and the subsequent transcription of that information into a database.

A site weather station records meteorological parameters every 15 minutes. Under the existing workflow, data were manually downloaded and processed, leading to a significant lag in when the data were available to users.

Finally, 70 transducers are deployed in monitoring wells across the site, recording water depth and other parameters every two hours. Several of the transducers are unvented, which requires raw data values to be corrected using contemporaneous barometric pressure values. Under the existing workflow, if a transducer was found to be out of calibration (based on review of data), a repeat visit to the site was necessary to redeploy the transducer. Because the site is remote and large, repeat field visits are time-consuming.

THE SOLUTION

The client's EQuIS implementation consultant, ddms, Inc. (an EarthSoft Business Partner), is working with the client to digitally transform its workflows. Environmental monitoring data for the site are stored in an EQuIS database, accessible to the entire project team, including client employees and multiple consultants. This has been transformative to how consultant and client teams work and collaborate. Complex sampling programs will be managed more efficiently using EarthSoft's Sample Planning Module (SPM), a tool that enhances the ability to plan and manage repeat field data collection events.

Field data collection is being transitioned to digital collection using EarthSoft's EQuIS Data Gathering Engine (EDGE). EDGE is a comprehensive and integrated environmental field tool enabling accurate and complete data collection using modern software and mobile computing technologies. Use of EDGE enables field technicians to:

- Collect field measurements and perform field checks on configurable forms (Figure 1);
- Perform and document groundwater stabilization measurements;
- Log samples with minimal data entry;
- Refer to reference photos of each sampling location;
- Print chains of custody and generate electronic chains of custody (eCOCs);
- Submit field data instantaneously from the field to the EQuIS database using EDGE's Sign and Submit feature; and
- Generate, attach, and view image, voice, and other common file formats.

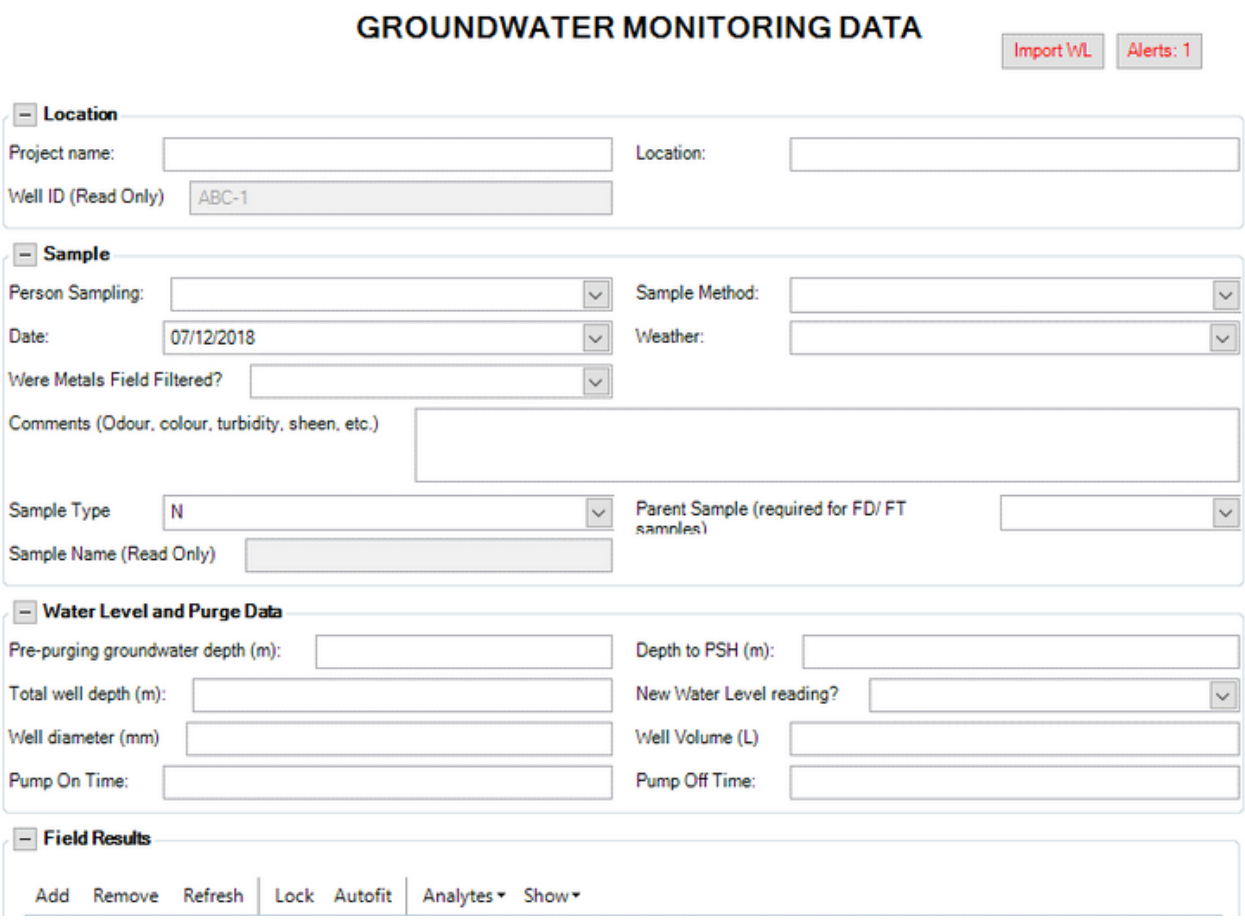

Figure 1. EQuIS EDGE Groundwater monitoring form

For the transducer data and weather station data, the team implemented EQuIS Live, a module that can upload digital data sources (including data loggers and live streams) into EQuIS where the data can be monitored on web dashboards using EQuIS Enterprise (Figure 2). Meteorological data can then be viewed by the teams in real time. Project field and scientific staff have already identified new uses for the weather data, including monitoring the instrument performance (see Early Success Story below). Previously there was a delay of several months before data were available.

Working with ddms and the client, EarthSoft enhanced EDGE to streamline the transducer workflow, allowing field technicians to check transducer calibration in the field. The EDGE form connects in real-time to the weather station. The current barometric pressure is used to correct the transducer reading so it can be compared to the manually-measured water level.

If the two readings are not in agreement, the EDGE form alerts the user that a redeployment is necessary. This vastly reduces the need to revisit the wells for transducer maintenance. In EQuIS, Live Agents automatically correct the transducer water levels with the corresponding barometric pressure readings. Transducer values are viewable by users in the web-based EQuIS Enterprise, where users can annotate the transducer data with qualifiers and remarks if needed.

Figure 2: EQuIS Enterprise dashboard display of local meteorological data for the site

EarthSoft, ddms, and the field teams have continued to work together to further refine the EDGE/Live workflows to meet the project's data gathering challenges. When fully implemented, the solution will significantly reduce the cycle time for data collection, transfer, and review.

EARLY SUCCESS STORY

The availability of the latest meteorological data via EQuIS Live and the Enterprise dashboards is paying dividends. The project lead at ddms shared the following success story with EarthSoft and the client, showing days of work saved in a few moments:

Earlier this year, we hooked up the (local) weather station to stream data live into EQuIS. The field team monitors the data in Enterprise (Figure 3). The team recently noticed something amiss with one of the sensors, had someone investigate, and discovered a rodent had chewed through some cords. We fixed the problem right away and got the instrument back on line. Prior to having EQuIS Live setup, this problem would have gone undetected for weeks leading to lost data, and likely an extra trip to the site. Using EQuIS Live and Enterprise, we were able to identify the problem immediately and get it fixed when someone was already onsite.

Figure 3: Relative humidity display showing the data gap attributed to a faulty sensor

EarthSoft

EQuIS is the world's most widely used environmental data management workflow and efficiently manages the environmental sample data for thousands of organizations.

EarthSoft is the recognized leader in providing environmental data management systems and support worldwide. We provide more than two decades of focused experience on automated workflow solutions for public and private entities in the areas of chemistry, biology, geology, limnology, water, air quality, soil, sediment, waste, and associated compliance monitoring data.

EarthSoft is dedicated to enriching the capabilities of our EQuIS product line and our clients' experience. EarthSoft's commitment to innovation has cultivated a large and diverse client base of laboratories, consultants, industry, and government agencies. For more than 20 years, EarthSoft has provided minor quarterly and major annual releases of EQuIS.

ddms, Inc.

ddms' mission is to empower and amaze through enriched data experiences. ddms has been providing environmental data management, GIS, visualization and associated web-based project hosting and analysis services to the environmental industry for over a decade. ddms currently provides environmental data management services on over 100 single and multi-party environmentally impacted sites nationally and internationally. ddms has EQuIS specialists on staff who have executed advanced EQuIS system implementation, data migration, training, and needs assessments for many private companies and consultants both domestically and internationally.

ddms has forged a key Business Partner relationship with EarthSoft. ddms currently implements, operates, and manages EQuIS on behalf of several industrial and private corporations and is well versed in every aspect of EarthSoft's EQuIS product line.