



## **TerraFrame™ Designs & Implements Custom Solution For International Oil Company To Locate Well Bottom Hole On Disputed Boundary For Operating Lease:**

A major oil & gas company faced an interesting asset management challenge. It had spent millions of dollars completing a horizontal drilling project but needed to confirm the bottom hole of the well was located inside the lease boundaries. Confusion arose when the operator realized it had conducted multiple surveys on the lease and none agreed as to where the lease boundaries were located.

The operator has a geospatial data validation group comprised of geographical information system (GIS) professionals to answer questions like this. But such queries occur frequently, and the group is constantly overwhelmed locating and validating the volumes of data generated from drilling projects.

**The operator invited several firms specializing in GIS and asset management to propose viable and affordable solutions. Ultimately, a custom solution built on the TerraFrame GeoPrism™ platform was selected for the project.**

In directional drilling activities often associated with fracking, well drilling starts vertically and then gradually curves to pass through the hydrocarbon reservoir horizontally so that more of the wellbore contacts the producing formation. This usually increases production from the well. Sophisticated sensors on the drill bit let the operators know precisely where the end of the well, or bottom hole, is located when drilling is completed.

With the bottom hole finished, the operator only had to map its underground location within the accurate latitude-longitude boundaries defining the lease. The problem for the operator wasn't the absence of a lease survey. In fact, it had lots of surveys. Over the course of the drilling project, the company had sent survey crews to the site numerous times to survey the project perimeter, planned well pad site, proposed pipeline route, actual well pad, actual pipeline and other facilities.

More than one of these surveys included a lease boundary line. Unfortunately, the operator had three different spatial data standards and procedures in effect for its survey crews. Even worse, the surveys were archived in multiple databases across the enterprise. Finding the survey documents was one challenge; figuring out which to consider the most accurate and authoritative was the other.

This oil & gas operator had an asset management problem similar to many organizations – Information pertaining to its assets and attributes were spread across many data silos. Making the situation more complicated, the various silos had no common structure, rule base or even nomenclature. For this reason, the operator couldn't confidently answer a simple question regarding the location of one asset – the bottom hole – relative to another – the lease boundaries.

TerraFrame assisted the operator by streamlining the process of storing, managing, and distributing survey data to the operator's various internal systems using GeoPrism. The operator had several different survey standards in use with no standardization of data structure or nomenclature. TerraFrame used GeoPrism to intelligently reconcile the different survey standards into a common structure format and nomenclature. Survey data residing in ESRI file geodatabases could then be uploaded and distributed to the various internal data systems using a simple drag and drop interface.

**This saved the data validation group countless hours managing their survey data. For the upcoming second phase of the engagement, TerraFrame will customize GeoPrism™ to automate many of the operator's data validation standards so that questions such as those regarding lease boundaries can be answered quickly.**