Well Cost Software

OVERVIEW
Accurate cost estimates are critical for budgeting and scoping, as well as for the more detailed Authorizations for Expenditure (AFEs). Underestimating project costs will cause budget shortfalls, often resulting in delays or incremental requests for expenditures. Well Cost software generates a comprehensive cost estimate, using either deterministic or probabilistic methods — regardless of whether users have a detailed historical knowledge of their drilling programs or just a simple high-level list of tasks and costs.

Well Cost software, designed specifically for drilling and completions, provides powerful tools to produce accurate project estimates quickly and easily. Built on the Engineer’s Data Model™ (EDM™) platform and integrated with Landmark well design and planning tools, it enables engineers to access historical data and to streamline cost estimation and reporting workflows. In addition, reports and plots are automatically generated, facilitating the analysis of results and present findings to key stakeholders.

Figure 1: Estimates over time and depth

BENEFITS
The Right Tool for the Job
Well Cost software was designed by drillers for well construction projects, and provides specific capabilities that generic spreadsheets cannot match. Instead of a single number, the software considers estimate uncertainty, and generates a range of expected times and costs (P10, P50, and P90). Typically, spreadsheet solutions oversimplify the estimation of risk by collecting the list of tasks, the associated cost estimates, and the contingency factors by which all items are multiplied to account for the unknown.

Consistent Practice for Budgeting and AFE
Since users have different projects, along with engineers that are using different techniques and assumptions to budget their projects, it is difficult to compile,
compare, and analyze results across the organization. Well Cost software provides a systematic, consistent methodology and tool that organizations can standardize for saving time, improving team collaboration, and simplifying training.

More Accurate Estimates
The best estimates rely on knowing how projects have performed in the past. Well Cost software has access to all the historical well data available in the EDM database, making it easy to base new estimates on the performance of previous projects. Integration with Landmark drilling applications enables engineering data entered in applications like COMPASS™, StressCheck™, CasingSeat™, WellPlan® and WELLCAT™ to be immediately available for use in the costing analysis.

FEATURES

Probabilistic Time & Cost Estimation
Well Cost software includes a Monte Carlo-based simulation tool that gathers input on the activities, costs, and uncertainties associated with the candidate wells, and then predicts the AFE cost and drilling time. Well data can be modeled from available historical data, and the analysis can factor in unplanned events such as non-productive time (NPT).

Estimate Multiple Well Campaigns
In addition to producing estimates for single wells, Well Cost software allows users to estimate multiple wells together as a campaign. The resulting single estimate can take into account expected cost efficiencies that result in wells constructed later in the campaign costing less than those constructed earlier.

Compare Plan Versus Actual
As the project progresses, it can be helpful to understand how the actual cost and time data compare to the estimate. Well Cost software can interface with operational reporting systems to retrieve this actual data and plot it against the estimate. The AFE can then be regenerated for the remaining phases and activities, allowing users to understand the time and cost required to complete the project. After completing the project, the actual data can be used to find the p-value at which the project was executed, thus enabling users to make more accurate estimates in the future.

Customizable
Each estimate requires the use of event, phase, activity, and cost codes that are likely unique to a company. Well Cost software comes with a predefined list of codes that can easily be tailored to match those in a company’s financial accounting system.

Time-Saving Templates
Most companies have a set approach to drilling, so there is no need to begin with a blank activity list when starting a new estimate. Well Cost software can be used to define a drilling program and then save it as a template. Such templates can then be used in the future to expedite the costing process, as engineers only have to modify the data to fit the requirements of the new well.

Automatic Plots & Reports
Well Cost software produces a set of plots and reports as part of the simulation, automatically giving users the tools needed to analyze the output. Plots include a variety of X-Y charts, bar charts, and histograms. The reports are available in standard formats (PDF, XML, XLS) and can be saved, printed, or emailed directly from the application.

Estimation Wizard
An estimation wizard guides users through the workflow, making it easy to understand the process of creating the estimate. Familiar editors and simple input forms are used to collect data, thus reducing the time required to be productive and streamlining training for new users.

Integrated with Landmark Drilling Applications
Once the estimate is complete, Well Cost software can publish cost and activity information to the EDM database for the OpenWells® cost estimate and AFE report, as well as for the OpenWells well planning report. The software also uses the same framework elements (Well Explorer, Associated Data Viewer, Reference Datum, and the Wallplot) as the other Landmark drilling applications for consistent navigation and ease of use.