Changes – StimPlan/E-StimPlan 4.00/4.00A

May, 2000

StimPlan

- Incorporate 3-D numerical reservoir model including multi-layer effects (non-Darcy flow effects to be added soon).
- Automatic parametric studies for economic treatment optimization. This utilizes the numerical fracture geometry in "Design Mode", the 3-D reservoir model, and a new economics package to compare how varying fracture length, in situ lb/ft2, proppant type, pump rate, etc, effect the "value" of a treatment design.
- New database structure for fluid/proppant data. StimPlan has always included "small" database files for storing and recalling fluid/proppant data. This has been expanded to a single (or multiple) unlimited database files for this data. At the same time, the database structure has been made more "visible" and easier to access and use.
- Vastly expanded and improved "Help" system. This utilizes HTML code for a WWW type environment for the "Help".
- Improved graphical output including a "Net Pressure Plot" (combining a Nolte-Smith plot during injection with a 'G' Plot during the decline) and a "movie" type presentation for fracture growth.

E-StimPlan

- Incorporate Finite Element calculations for fracture width. This allows a rigorous solution for the effects of layered modulus formations on overall and local fracture width – an industry first for a routine use fracture model.
- Entirely new finite difference gridding method to improve stability.
- Optional "Fine Mesh" for highly layered cases.

Analysis Module (Version 4.00A only)

- A new "Analysis" feature has been aided specifically for Frac-Pack cases. In many cases involving downhole tools, valid bottomhole pressure data is available from annulus measurements. However, at shut-down a downhole check valve closes which isolates the annulus pressure from the pressure decline. The new feature "Merge Pressure Variables" allows a cut & paste operation to merge the annulus pressure (+ an appropriate hydrostatic head) during pumping with the tubing pressure data (+ an appropriate head) during the decline into a brand new pressure variable.
- All analysis plots have been changed to permanently save/store the plot scales, "Zoom" settings, etc., along with the fitted lines, analysis information, etc.
- Add capabilities for post-frac production analysis including Fetkovitch type curves, Carter type curves, and production history matching using the numerical reservoir model. Future StimPlan releases will include the Agarwal-Gardner type curves for more advanced production decline analysis.