EAGLE FORD BASIN TEMPERATURE MODEL

Basin formation temperatures are an important consideration in oil and gas exploration and development, and TGS’ basin temperature models (BTM) can be used to identify where favorable gas-to-oil ratios (GOR) exist for shale oil and gas formations. TGS’ BTM utilizes large volumes of properly indexed and qc’d bottom hole temperature (BHT) data for North American onshore basins, trends and plays. It is with this new methodology for basin temperature modeling where the theory that borehole temperatures equilibrate, increasing towards formation temperature with elapsed time since fluid circulation is honored.

The Eagle Ford Basin BTM study is located in Texas and spans over most of the south western counties and reaches up into the eastern side of the state. The Eagle Ford BTM neighbors TGS’ Tuscaloosa Marin Shale BTM. The Eagle Ford BTM cube volume contains indexed well header information minded from TGS’ extensive well logs database. A litho-stratigraphic framework was generated from logs recorded in key wells containing the most complete set of curves responses in the basin needed for basin wide formation tops picking, reaching all major depths within the study.

The following deliverables are provided:

- Indexed Well Header information in excel format included but not limited to:
  - raw bottom hole temperature data query ~9,000+ points; 3,850+ wells
  - qc’d bottom hole temperature data ~7,800+ points; 3,800+ wells
  - mud weight data
  - elevation data
  - Time Since Circulation values (where available)
  - BHT verses Depth charts
- Consistent set of litho-stratigraphic picks ~2,200 wells; 15 tops ASCII format
- Four (4) 3D temperature volumes in SEGY format
  - MaxG
  - MaxBHT
  - MaxBHT (G20+)
  - MaxCombo
- Corresponding depth grids for each formation layer in ASCII format
- Corresponding temperature grids for each formation layer in ASCII format
- 1 Basin Temperature Modeling report
- 1 Formation Tops report
Well log distribution map of the Eagle Ford study is shown below.

Example of cross section from the Eagle Ford study is shown below.
An example of an Inline and Cross line with temperatures contoured on a 3D formation layer for the Eagle Ford study is shown below.

Eagle Ford BTM is a 3D visualization interpretation tool that can be utilized for interrogating a reservoir’s potential production capability. By having layers of information on prospective areas, it will enhance exploration and development of the region.

Expected delivery time of the Eagle Ford BTM product is less than two week’s time.

All 3D volumes can be readily imported into 3D viewing and modeling software packages.

For further details, see www.tgs.com or email gps-sales@tgs.com