Implementing Oil Field Temperature Data for Formation Specific Heat Content for Electric Power Generation – First Approximations

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Previous funded geothermal investigations of the deep Delaware and Val Verde Basins of the West Texas region were conducted during the latter half of 2005 and into 2006. Support for this study was provided by the Department of Energy and the Texas State Energy Conservation Office. This work expanded upon previous database generation, enlarging an existing database to around 5,000 wells and over 8,000 temperature-depth (t-d) points. Further work at that time was curtailed due to a lack of continued funding into the next phase of the project. However, investigations have continued, though at a slower pace, to use this data for determining the heat content within potential target formations for electrical power generation.

Reeves County, in the northern part of the Delaware Basin in Texas, was chosen to initiate this next phase of geothermal investigation. Latitude and longitude information for some of the wells was previously collected using industry proprietary sources. Additional data was obtained from the Texas Railroad Commission using the GIS public website for cross correlation of well name and survey, block, and section location information to acquire the lat-long information listed on the website. Not all of the wells in the geothermal database had sufficient information to determine lat-long values, resulting in some wells being discarded from this present study. Many other wells within the county, some deep, were not part of the original database. No attempt to