Solving the Geothermal Data Puzzle

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Martin Kay
MLKay Technologies, LLC
MLKay Technologies provides innovative information technology & data services to the renewable energy, oil & gas, real estate & infrastructure sectors.

We are one of SMU’s partners in the development of the DOE’s National Geothermal Database.

We specialize in using data, technology and domain experience to identify scientifically relevant/economically viable investment opportunities for private companies, academic institutions, national laboratories, county, state & federal agencies.
GEOTHERMAL DATA CHALLENGES

• Developing geothermal power requires a significant amount of resource, engineering, business and infrastructure knowledge

• Little geothermal specific data exists, so we turn to Oil & Gas data

• Oil & Gas data is vast, disparate and often difficult to work with

• In TX alone, we have collected and organized 100M+ unique records on 1.2M distinct wells from 11 formats & 14 sources

• Knowing what to look for, what to ignore, where to find it & how to access it requires both technological and domain experience (and a lot of patience). The NGDS will help solve much of this requirement
CHANGE YOUR PERSPECTIVE

Oil & Gas Data

Geothermal Data
WHAT DO WE NEED TO KNOW?

✓ Resource Type of Interest
✓ Geographic Information
✓ Engineering/Wellbore Information
✓ Infrastructure Information
✓ Production & Flow Information
✓ Heat Flow Information
✓ Geologic Information
✓ Geophysical Information
✓ Economic & Business Information
DATA SOURCES FOR TEXAS

- Texas Rail Road Commission
- Bureau of Economic Geology
- Oil & Gas Companies
- Well Log Libraries
- Universities
- Geologic Papers & Reports
- Prior DOE Reports (Geopressure)
- Retired Geologists Records
- State Agencies (Water Board, ERCOT, etc)
- GIS Data/Imagery Sources
WHERE TO FIND THE DATA I?

- **Resource Type**
  - Market Driven

- **Geographic**
  - Well Headers
  - Surveys
  - Digital Map Data

- **Engineering/Wellbore**
  - Well Headers
  - Wellbore Data
  - Well Test Data
  - Well Status Data

- **Infrastructure**
  - Topographical GIS Layers
  - Pipeline GIS Layer
  - Water Resource Layer
  - Ambient Conditions
  - ERCOT Grid-Interconnect

- **Production & Flow**
  - Injection & Disposal Data
  - Well Test Data
  - Production Data
Injection & Disposal ALL YEARS, Depth > 10,000 ft, Producing or Temp Abandoned, Display Infrastructure, Display Grid
WHERE TO FIND THE DATA II?

- **Heat Flow**
  - Well Headers
  - Temperature Tests
  - Heatflow Databases

- **Geology**
  - Well Logs
  - Well Test Data
  - Drill Stem Tests
  - **Geochemical Tests**

- **Geophysical**
  - Well Logs
  - Seismic Data
  - **Reservoir Data**

- **Economic & Business**
  - Market Demand-Utilities
  - Ownership/Lease Data
  - Permitting Data
  - Tax Incentives
VISUAL REPRESENTATION II

Wellbore >10,000 ft., Temperature >270°F, Well Type = Gas, Display Infrastructure
ORGANIZING & ACCESSING DATA

NATIONAL GEOTHERMAL DATA SYSTEM
THANK YOU

Martin Kay, Managing Director
MLKay Technologies, LLC
Houston, TX
Main Tel: 888.203.4311
Direct: 713.568.5440
martin@mlkay.com