

Pueblo of Jemez Geothermal Feasibility Study

Presented by

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Director

Pueblo of Jemez

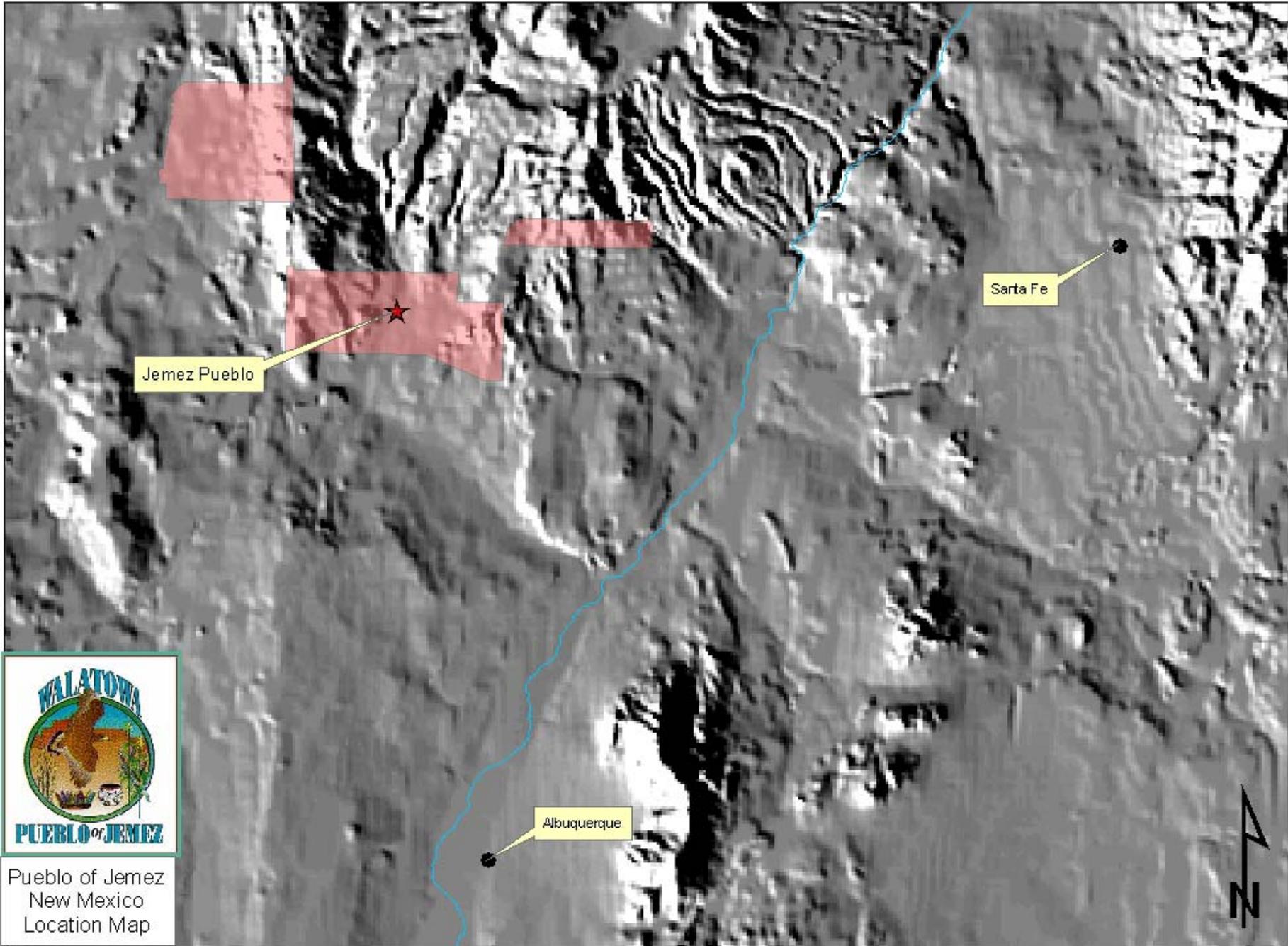
Department of Resource
Protection

Background

- Project funded by DOE under contract DE-FC36-02G012104
- Previous studies in 1988, 1990, 1991, 1992
- Evaluating geothermal potential of Red Rocks area on northern Jemez Reservation (this study)

Study Organization

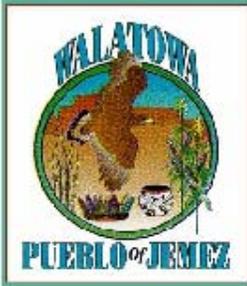
- Phase I– Geothermal Reservoirs and Geothermal Drilling at Jemez Pueblo by Jim Witcher, NMSU/SDTI
- Compilation of four reports (district heating, native herbs greenhouse, tree seedling greenhouse, spa market analysis) by Jack Whittier, McNeil Technologies
- Phase II– Geologic mapping of Red Rocks area by Dr. Shari Kelley
- Geophysical surveys of Red Rocks area by Geophysical Solutions



Jemez Pueblo

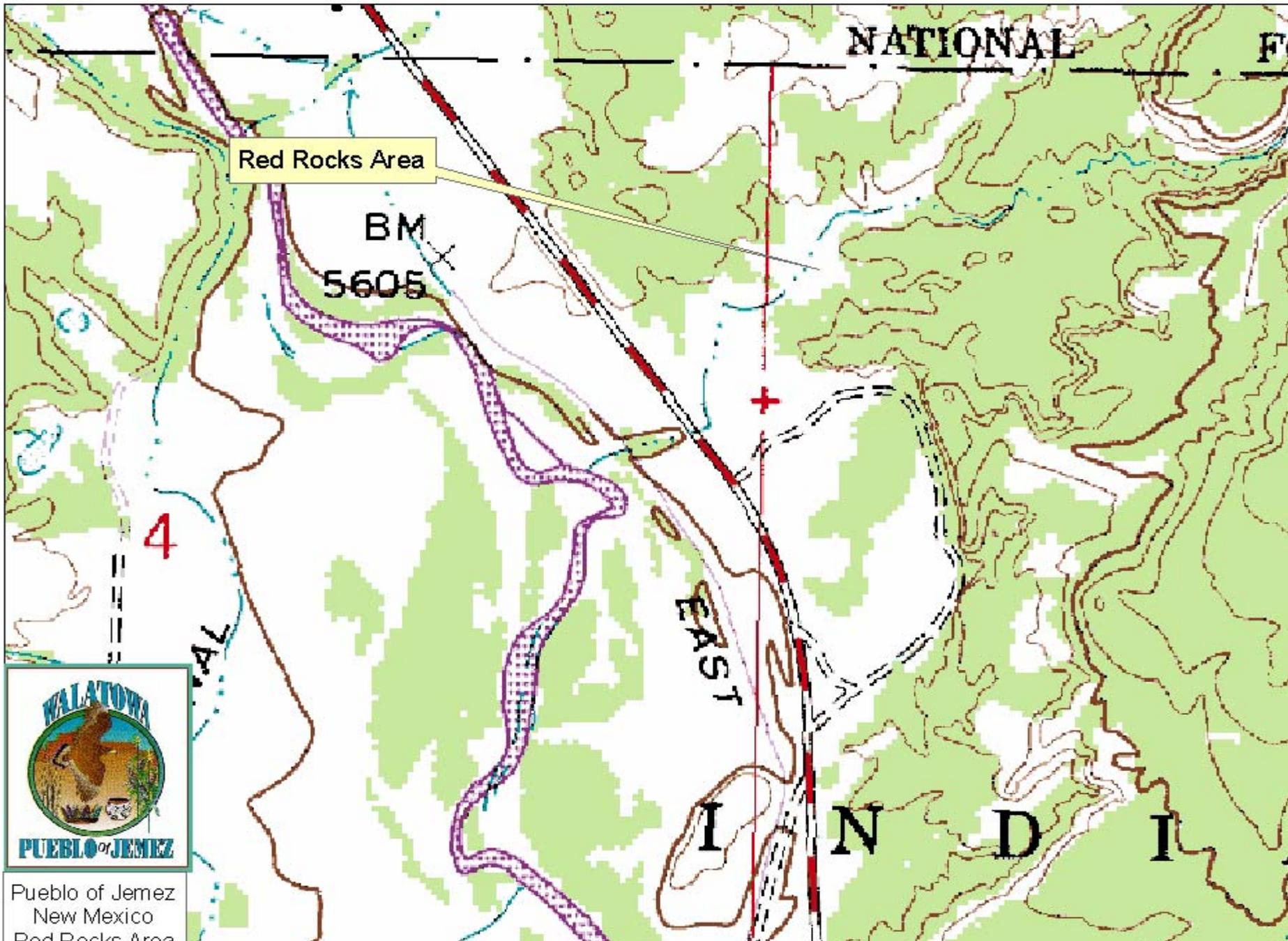
Sarta Fe

Albuquerque



Pueblo of Jemez
New Mexico
Location Map





Red Rocks Area

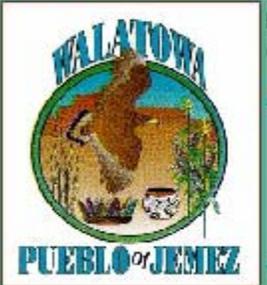
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4

NATIONAL

EAST

INDIAN



Pueblo of Jemez
New Mexico
Red Rocks Area



Geothermal Reservoirs/Drilling

- Valles Caldera outflow plume
- Soda Dam, Jemez Springs, other hot springs in Jemez Valley
- Indian Springs well (JP-1)

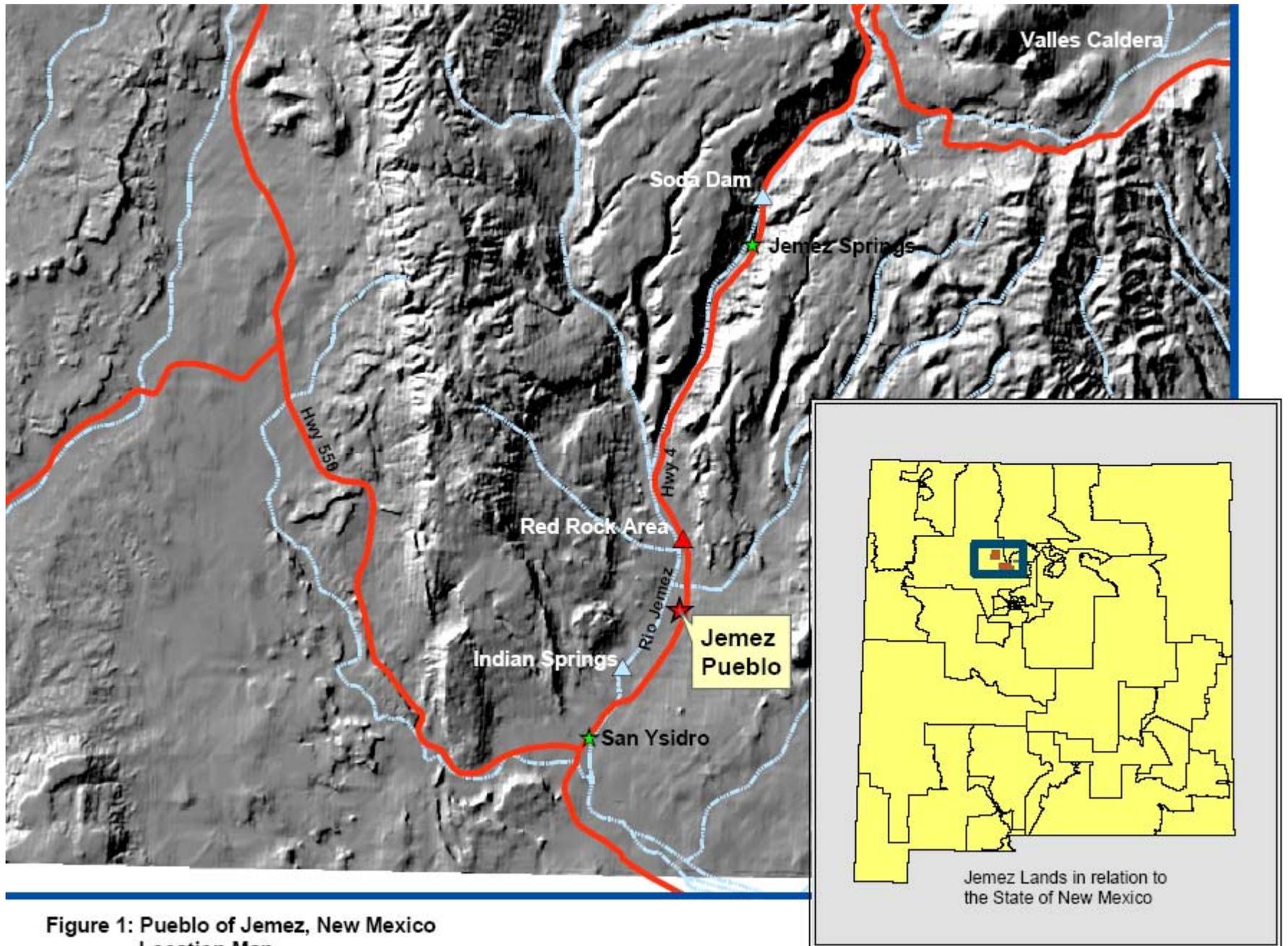


Figure 1: Pueblo of Jemez, New Mexico
Location Map

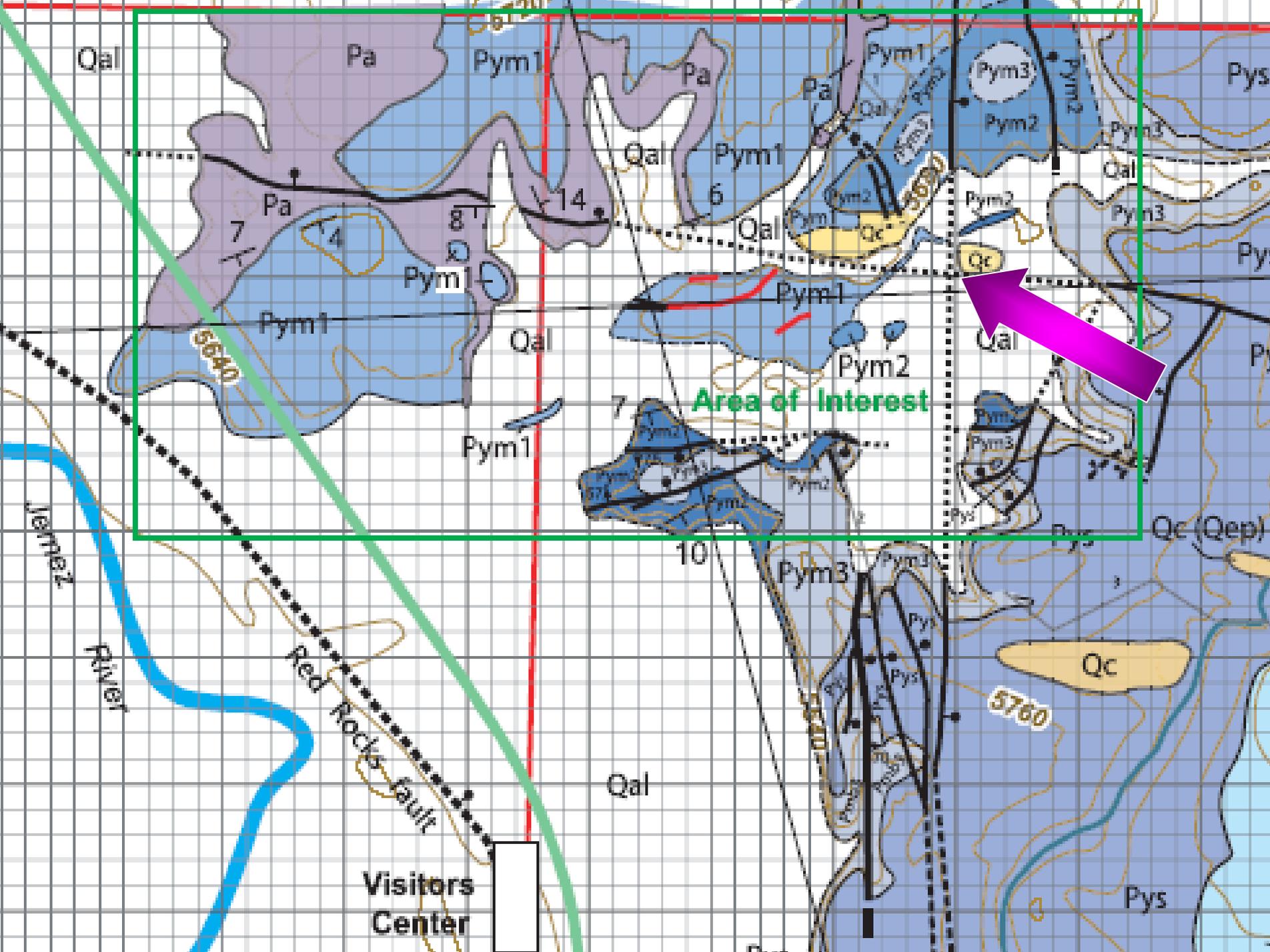


Business feasibility studies

- Native herbs greenhouse
- District heating system
- Tree seedling greenhouse
- Commercial spa

Phase II-- Geologic mapping of Red Rocks area— Dr. Shari Kelley, NM Tech

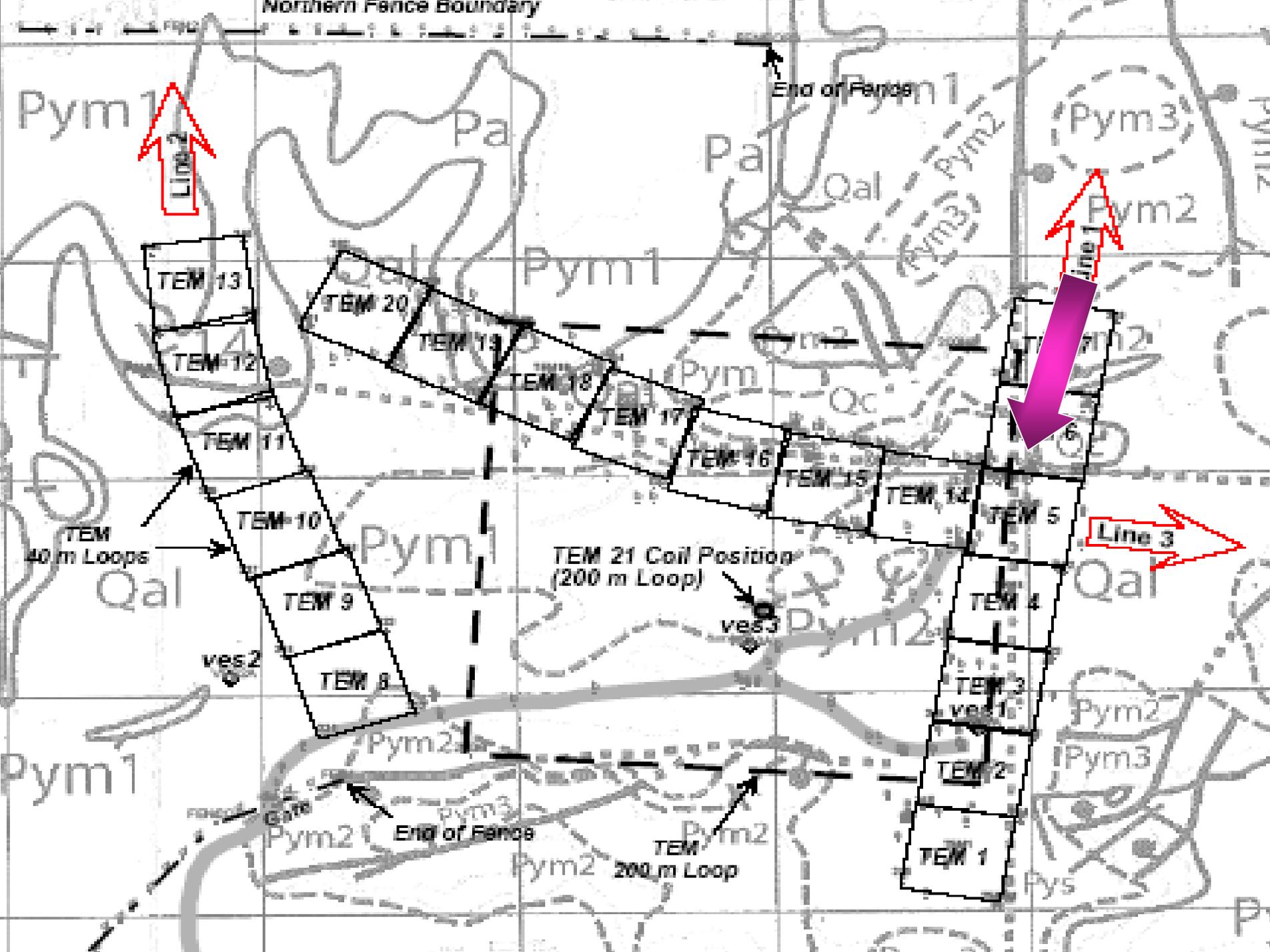
- Map scale= 1: 6000
- Several previously unrecognized faults mapped
- Two fault sets (N-S and E-W) intersect in area of interest
- Calcite veins outcrop along E-W fault





Geophysical surveys

- Time Domain Electromagnetics
 - Self Potential
 - Terrain Conductivity
 - Resistivity Sounding
-
- Conductive zone (confined aquifer in Abo Fm. channel sandstones?) located at 400 ft bgs along E-W fault trace



Conclusions

- Best geothermal drilling location in Red Rocks area is ~0.3 miles east of Hwy 4 along trace of E-W fault and 400 ft bgs.
- Best business opportunities for geothermal development at Jemez are commercial herb greenhouse and spa.
- Some potential for space heating.