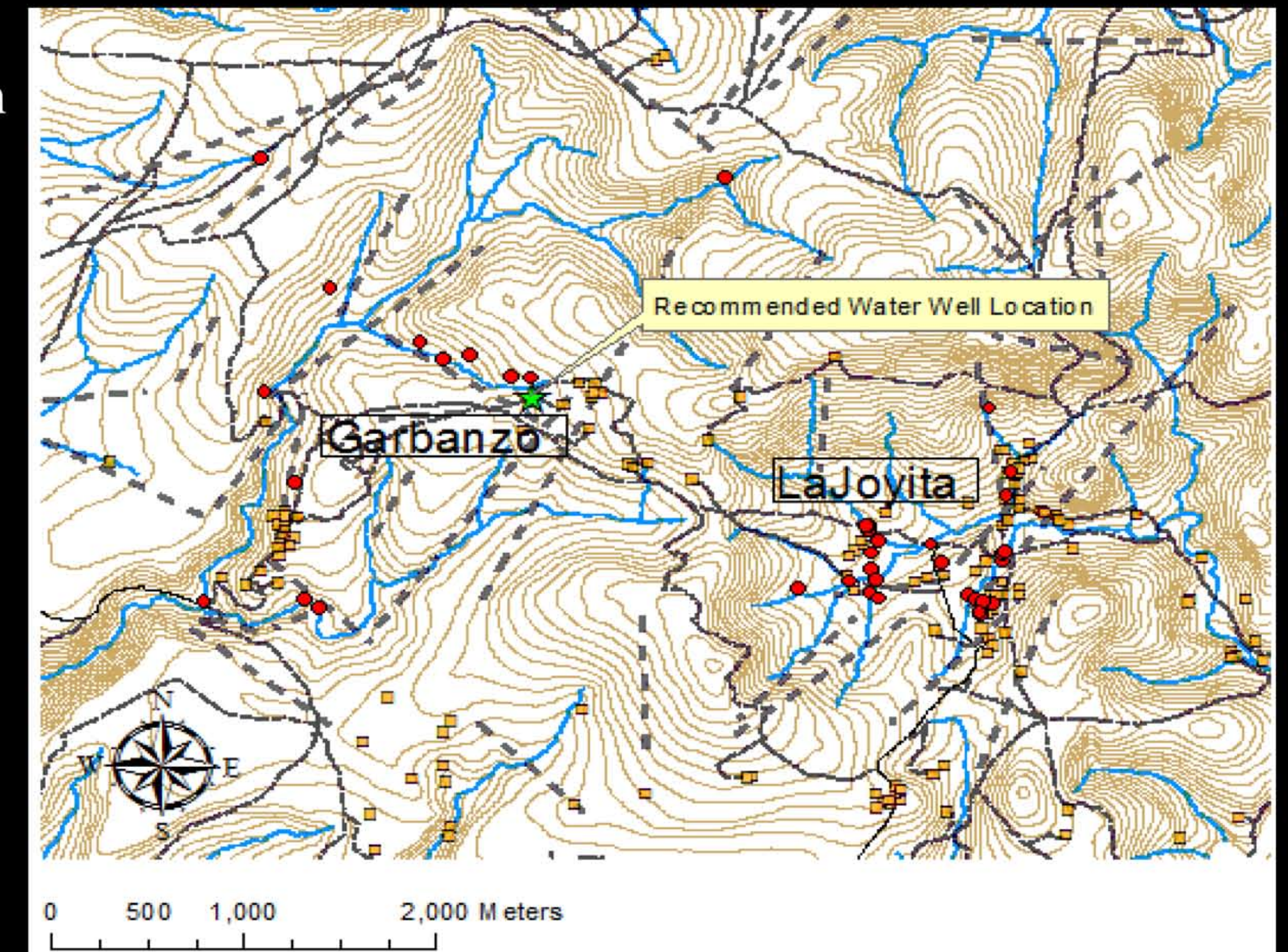
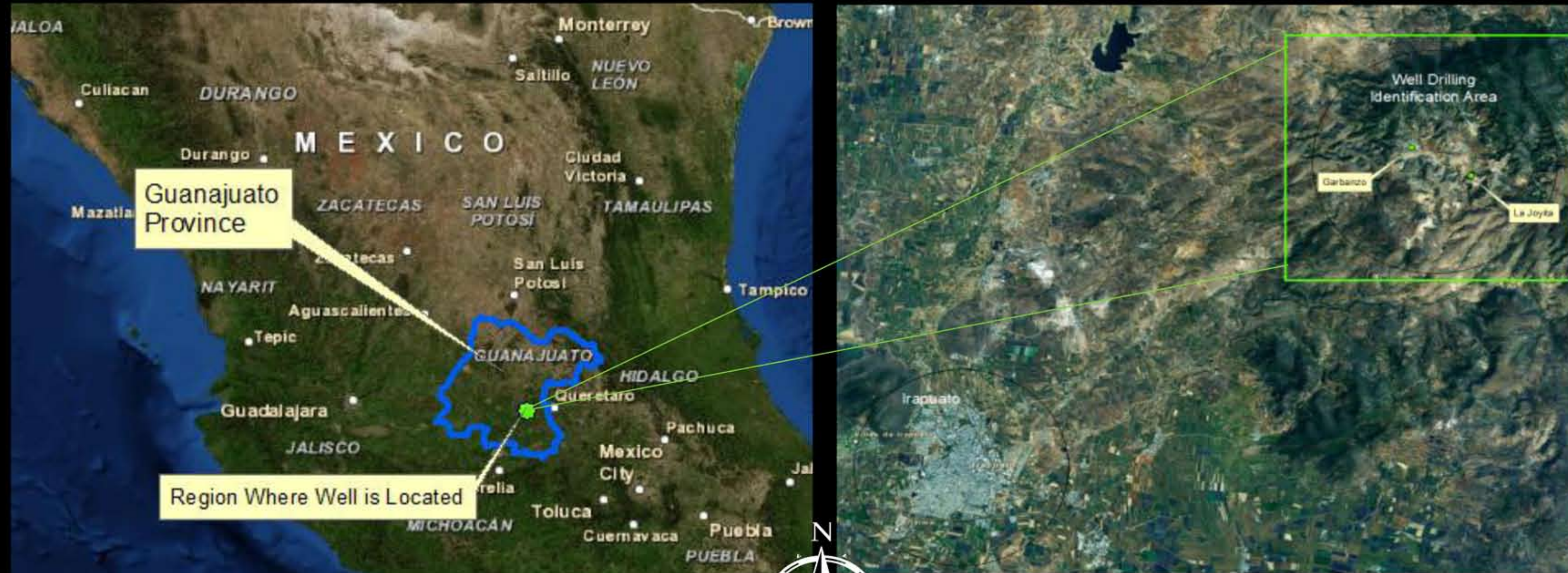


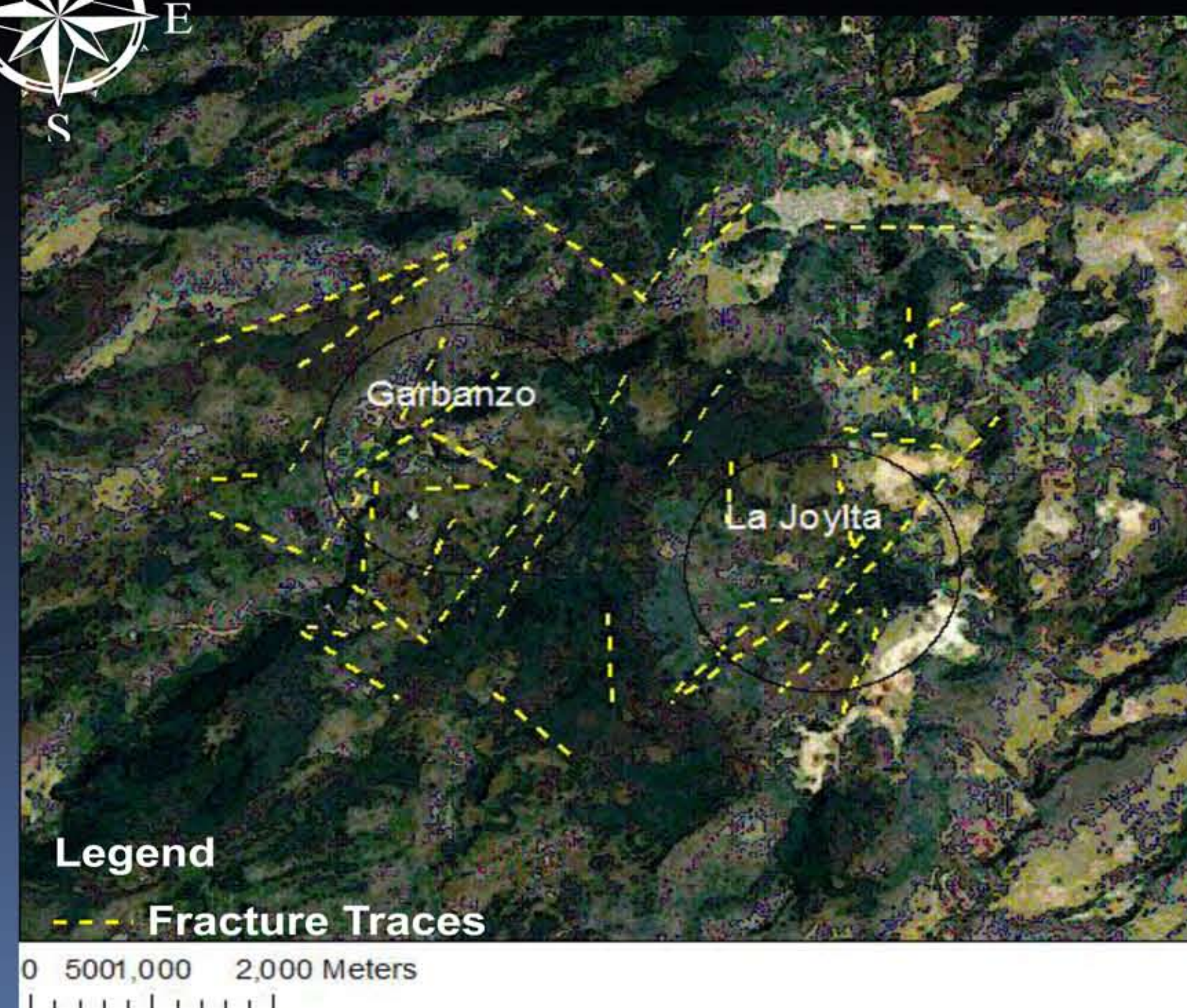
Determining Well Locations in the Trans-Mexican Volcanic Belt, Garbanzo, Mexico Using ArcGIS

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Background: Utah Valley University is currently involved with research in groundwater development in the Trans-Mexican Volcanic Belt in cooperation with Choice Humanitarian. Since 2010, students have conducted environmental and geological studies in the small farming village of Garbanzo, Mexico in order to identify a good location for the drilling of a water well.



Analysis: The type of analysis performed was identifying fracture traces in the volcanic rock using satellite imagery. These were identified using a process of zooming in and out to identify lines in the imagery which could possibly be fractures in the volcanic rock. Each individual yellow line on this map were identified as possible fracture traces.



- Legend
- Springs
 - Building
 - - - Fracture Traces
 - Road
 - Highway
 - Stream
 - Topographic Curve

Results: After adding shapefiles to ArcGIS including: buildings, springs, roads, highways, streams and topographic curves, it became apparent that the best location for the well (identified by the green star) is located along a series of springs close to road and near a stream. This location was also in correspondence with one of the identified fracture traces, making this spot the ideal place for a water well to be drilled.