Geothermal Re-Entry Screening Checklist

A Subsurface-First Framework for Repurposing Legacy Oil & Gas Wells

By RockWise, LLC

Before committing capital to geothermal re-entry, evaluate each candidate well against the following critical subsurface and infrastructure criteria.

🔍 1. Thermal Viability

☐ Measured bottom-hole temperature available
☐ Corrected thermal gradient calculated
☐ Burial history modeled
☐ Temperature extrapolated to target depth
☐ Heat sustainability assessed
☐ Analog fields identified

Red Flags: sparse temperature data, shallow depth, rapid cooling in offset wells.

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2. Reservoir Quality & Deliverability

☐ Porosity from logs/core
☐ Permeability estimates or analogs
☐ Net reservoir thickness
☐ Natural fractures or stress-enhanced permeability
☐ Pressure support identified
☐ Long-term drawdown forecast

Red Flags: tight lithologies, compartmentalization, low transmissivity.

⚙️ 3. Wellbore & Mechanical Integrity

☐ Casing sizes and metallurgy verified
☐ Cement bond logs available
☐ Corrosion risk assessed
☐ Plug and abandonment status known
☐ Tubular access for re-entry
☐ Temperature tolerance reviewed

Red Flags: unknown cement quality, severe corrosion, collapsed casing.

🧭 4. Geomechanics & Containment

☐ Stress field estimated
☐ Dipole sonic available or proxy modeled
☐ Fracture gradient calculated
☐ Caprock thickness & competency
☐ Fault proximity evaluated
☐ Induced seismicity risk screened

Red Flags: thin seals, critically stressed faults, low containment margin.

🌡️ 5. Injection & Production Strategy

☐ Single-well vs doublet concept
☐ Injection interval defined
☐ Flow rates modeled
☐ Thermal breakthrough timing estimated
☐ Scaling / chemistry risks reviewed

Red Flags: early cooling, scaling risk, injectivity uncertainty.

⚡ 6. Power-Scale Economics

☐ Expected MW per well pair
☐ Binary-cycle compatibility
☐ Surface plant footprint
☐ CAPEX order-of-magnitude
☐ Grid interconnection distance
☐ Offtake or pricing assumptions

Red Flags: low flow + low temperature, remote grid access.

🗺️ 7. Infrastructure & Permitting

☐ Road access
☐ Power lines nearby
☐ Water handling options
☐ Land status clear
☐ State permitting pathway known
☐ Environmental constraints screened

Red Flags: remote sites, complex land ownership, greenfield permitting.

📊 8. Data Availability

☐ LAS logs
☐ Sonic data
☐ Temperature surveys
☐ Pressure tests
☐ Completion history
☐ Offset wells
☐ Seismic coverage

Red Flags: sparse logs, no sonic, poor documentation.

🎯 Decision Outcomes

After screening, each well should fall into one category:

✅ **Advance** – candidate for detailed diligence
⚠️ **Acquire Data** – logging or testing required
❌ **Reject** – high subsurface risk

📩 Next Step

RockWise specializes in:

• geothermal re-entry screening
• sedimentary basin fairway mapping
• geomechanics & containment analysis
• legacy well diligence
• MW-scale project modeling

Considering geothermal re-use?
Contact RockWise for a technical evaluation of your portfolio.