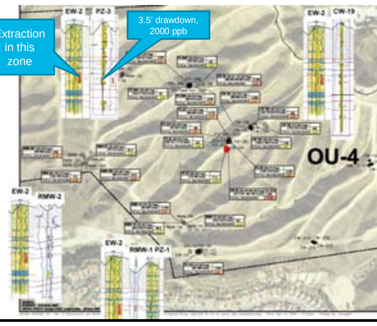
Case Study #2: Plume Containment Strategy

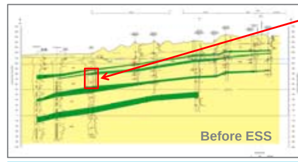
ESS Process: Testing and Validating the CSM – Pathways and Communication

- Aquifer tests were performed sequentially, instead of concurrently, to avoid interference from different pumping wells
- HSU designations, groundwater flow paths verified



Case Study #2: Plume Containment Strategy

ESS Outcome: Overhauled CSM, verified CSM, gained regulatory and stakeholder approval for wholesale modification of containment system design = $55MM savings

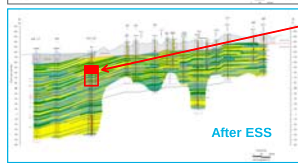


125' extraction interval; includes non-impacted strata

Remediation System Cost (Before ESS)

- 12 extraction wells
- ~200 gpm per well
- 1,261 million gal per year

Capital cost ~ $7 MM
Treatment cost = $2.5MM/yr;
30 yr = $75 MM
Total cost = $82 MM



35' extraction interval; impacted strata only

Remediation System Cost (After ESS)

- 13 extraction wells
- 46 gpm per well
- 314 million gal per year

Capital cost = $2.5MM
Treatment cost = $800K/yr;
30 yr = $24MM
Total cost = $26.5 MM

Takeaways Regarding ESS

Addresses Aquifer Heterogeneity with Existing Data

- *Existing data contain important information and recognizable patterns*
- *Low cost, very high Return on Investment*

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Questions & Answers

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