

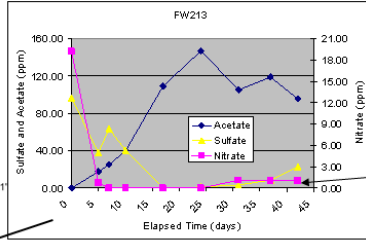
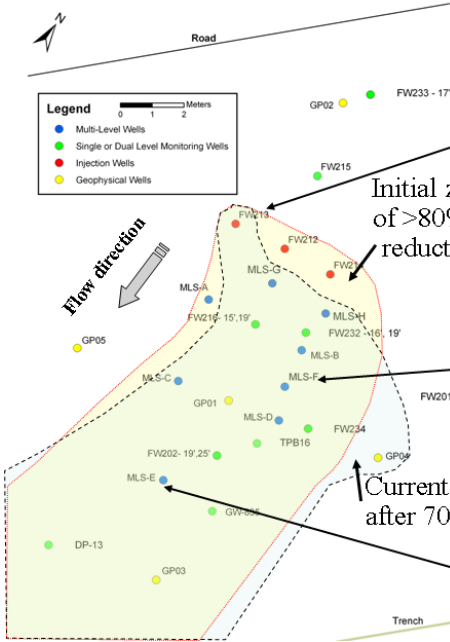
Oak Ridge IFRC is the first to conduct field experiments using Emulsified Vegetable Oil to reduce U concentrations.

- **The emulsified vegetable oil (EVO) injection achieved sequential reduction of nitrate, Fe(III), sulfate and U(VI) in the subsurface. Acetate was generated after about 2 weeks. U(VI) reduction to U(IV) was confirmed by XANES analysis.**
- **Microbial community depends on electron donor source and sulfate concentration but *Desulforegula* seems to play an important role in oil breakdown.**
- **Comparison of bromide to oil breakthrough curves suggests some floating of the SRS occurs.**
- **Reducing conditions have been sustained for over 70 days and has significantly reduced U flux to Bear Creek the primary exit pathway at the site.**
- **Oil droplet size is important consideration for subsurface delivery. Identified effective monitoring techniques that we will use to continue to monitor environmental response to EVO injection**



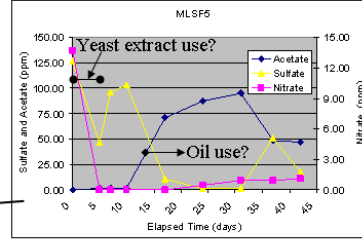
**Sampling >50 GW wells and seeps**

# Acetate produced and nitrate removed



Small rebound in nitrate to 1 ppm

Initial zone of >80% U reduction



Current zone after 70 days

