

GROUNDWATER REMEDIATION OF A LARGE FUEL HYDROCARBON PLUME IN MOUNDVILLE, ALABAMA

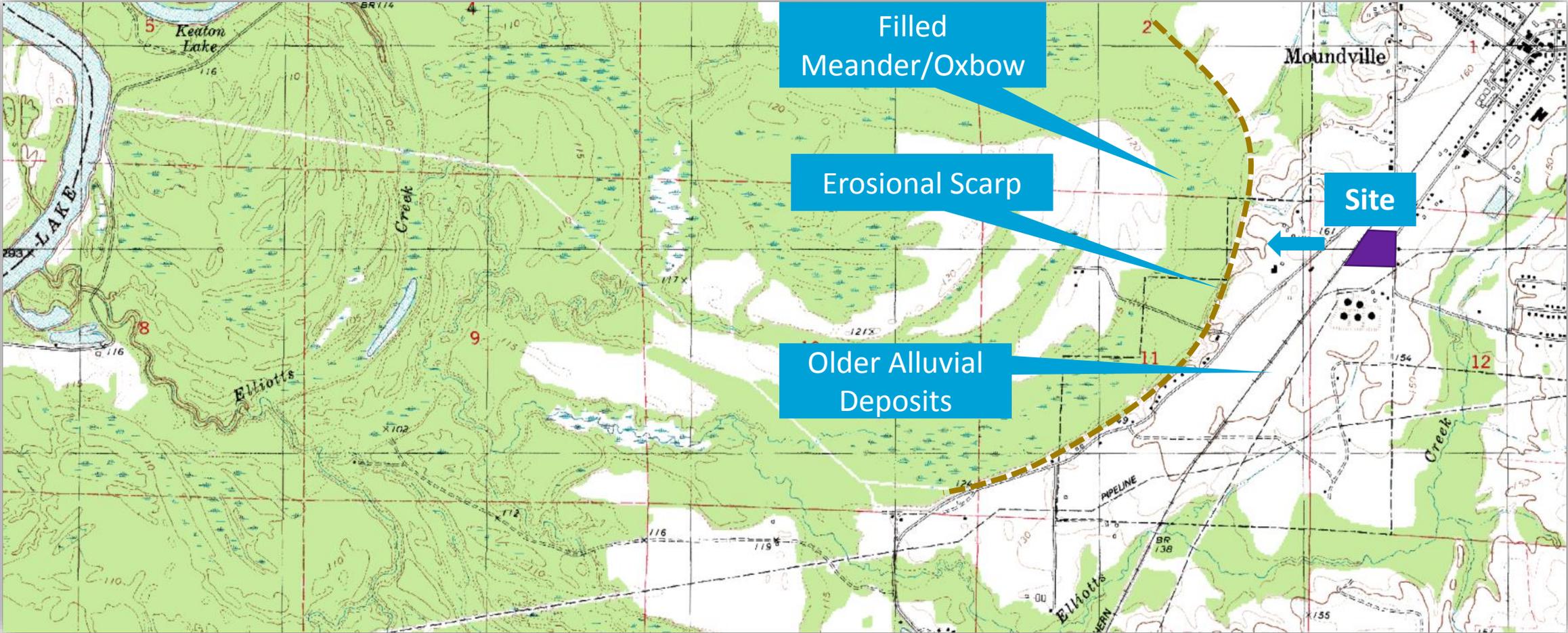
Bob Goodson, AL PG#1303



Moundville

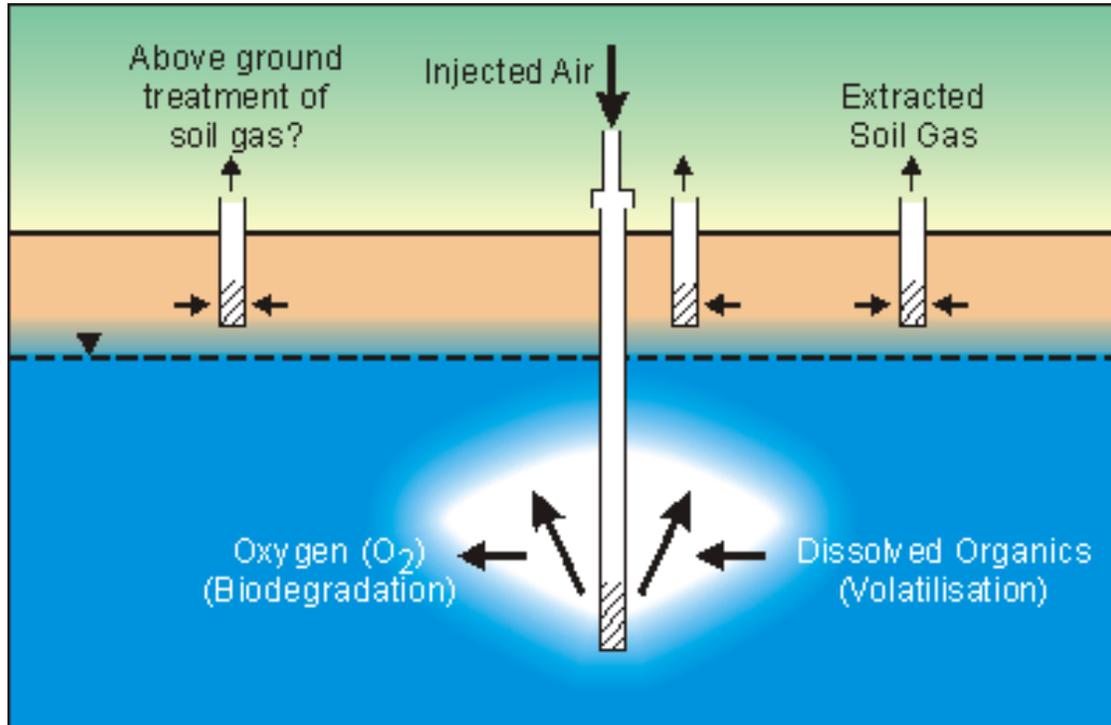


Geomorphology – Key to the Conceptual Site Model

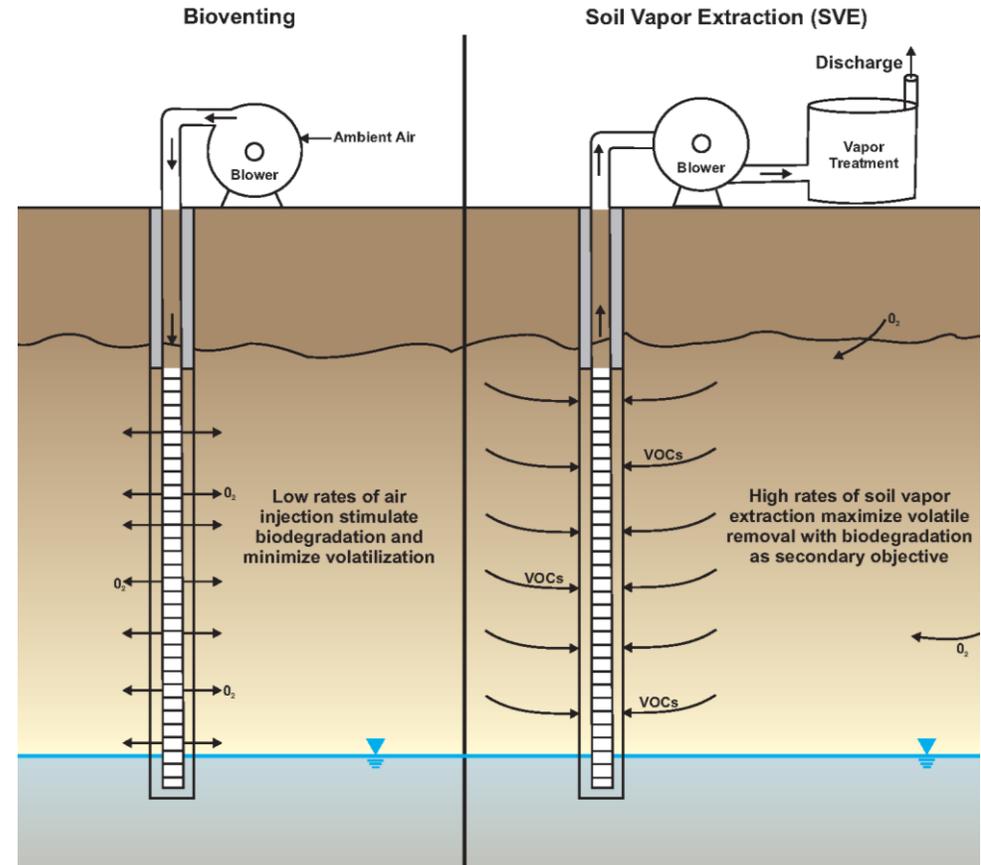


Remediation Technologies

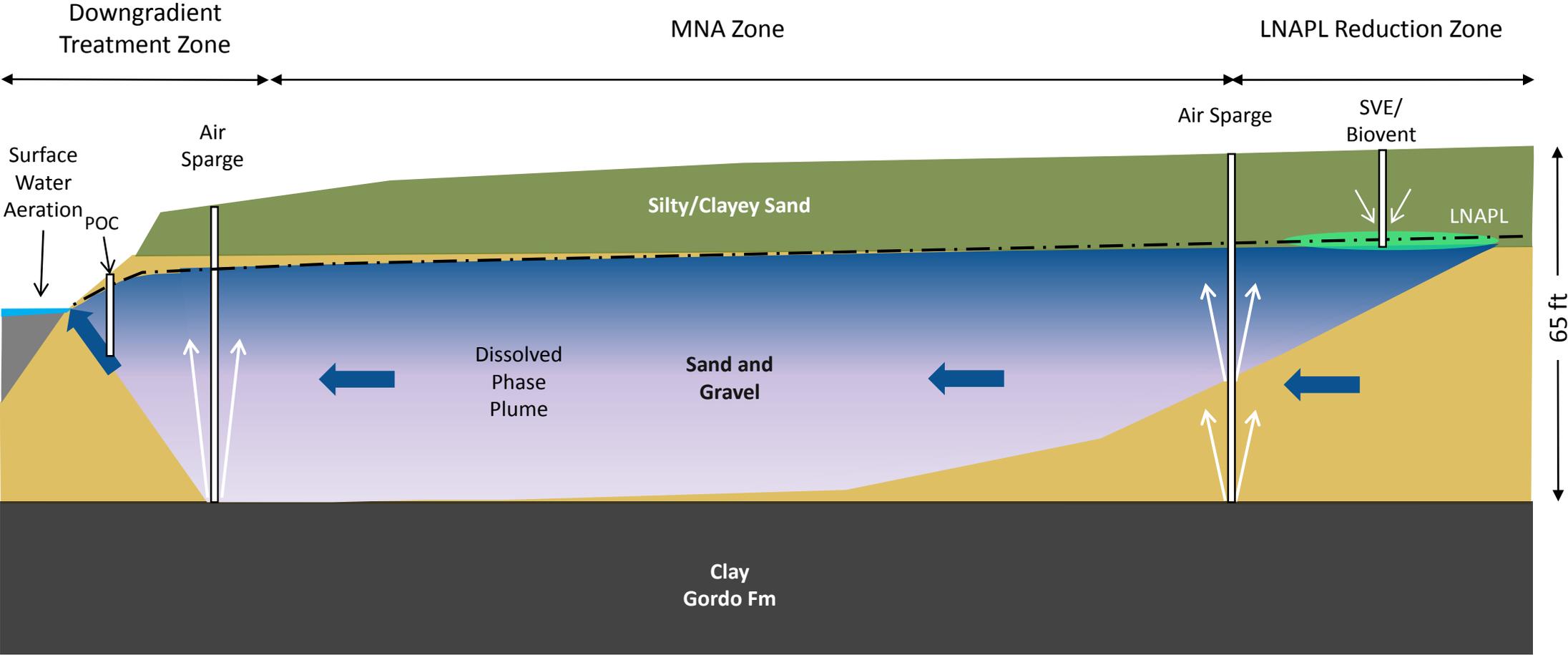
Groundwater: Air Sparging



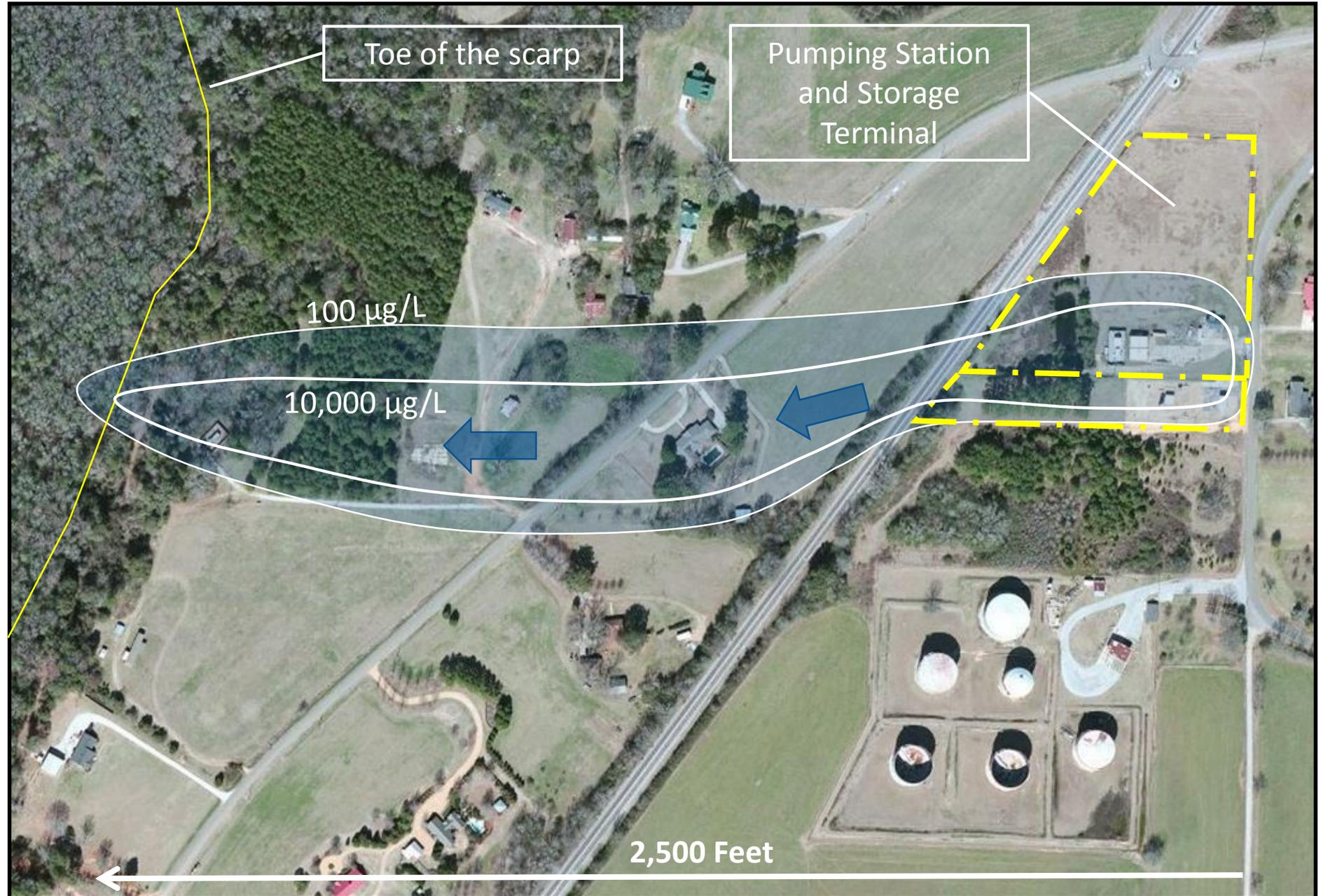
Soil: SVE and Bioventing



Conceptual Site Model – Cross Section View

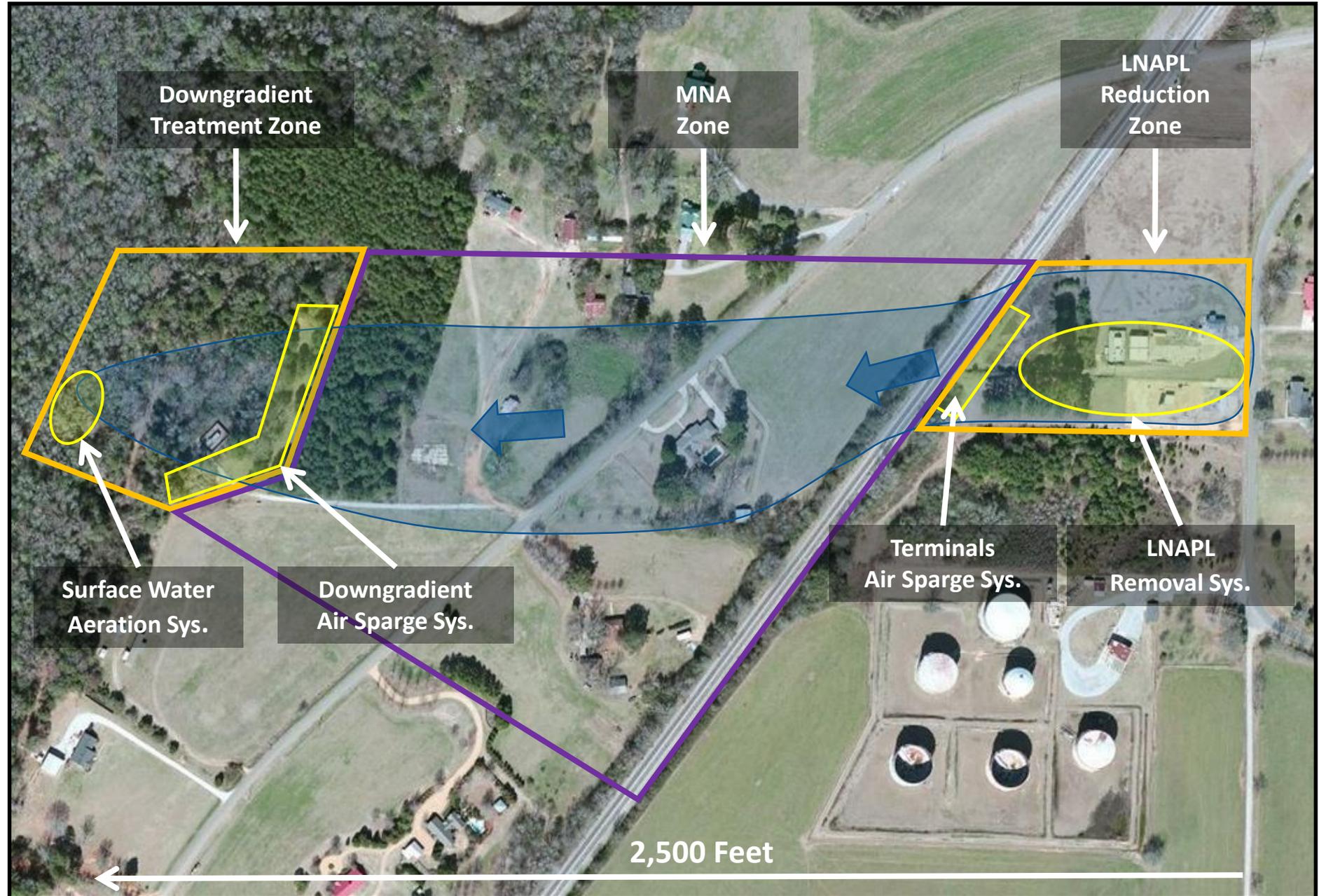


Corrective Action Plan – 1996 Plume Delineation

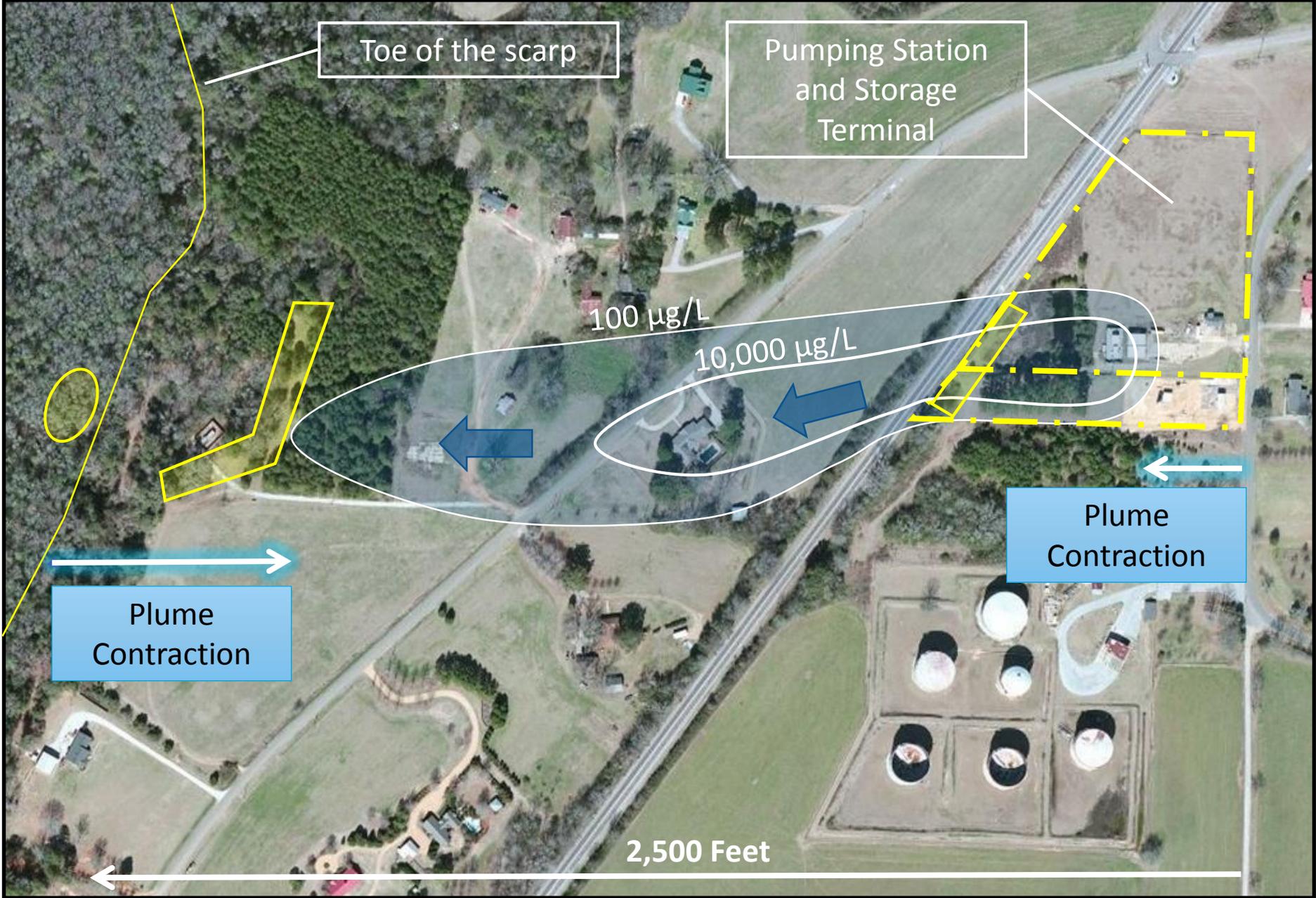


Corrective Action Plan

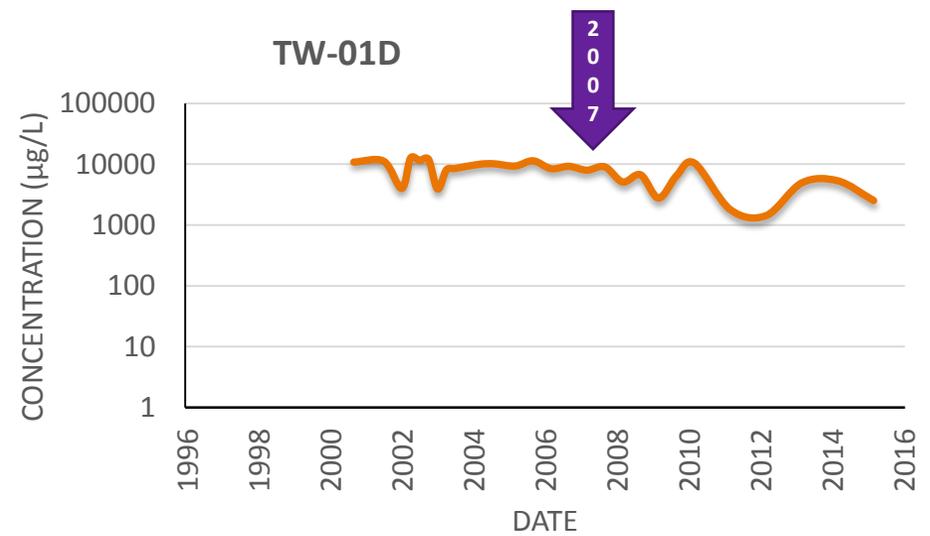
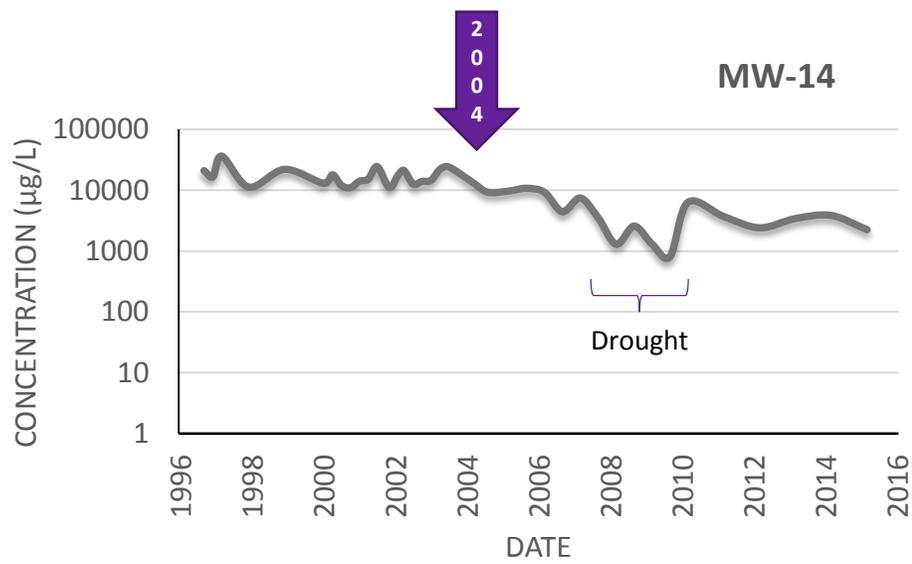
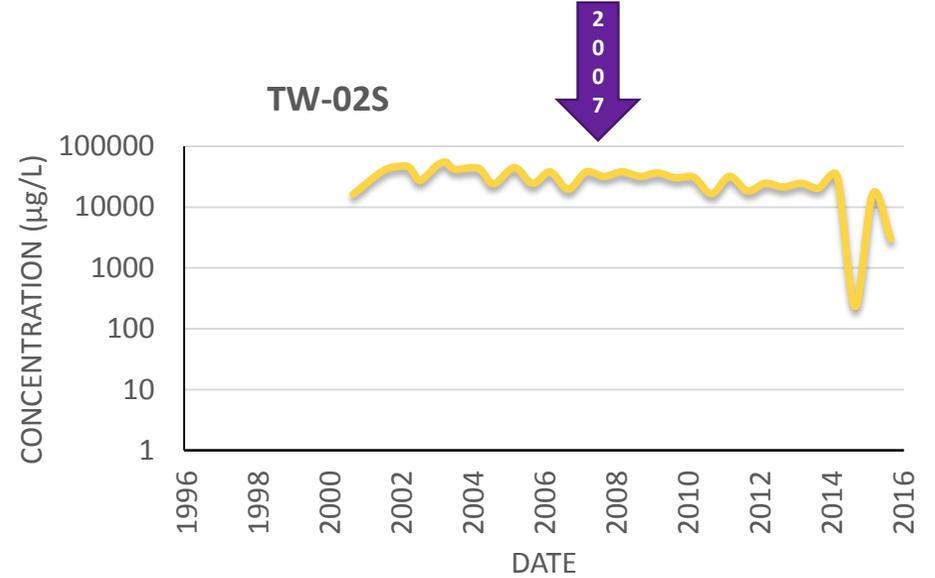
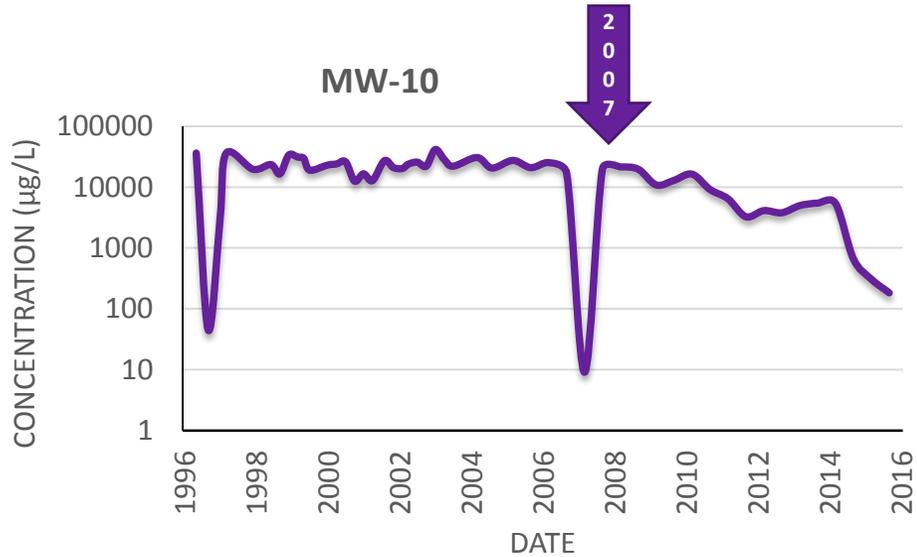
Remediation Zones



2015 Plume Delineation



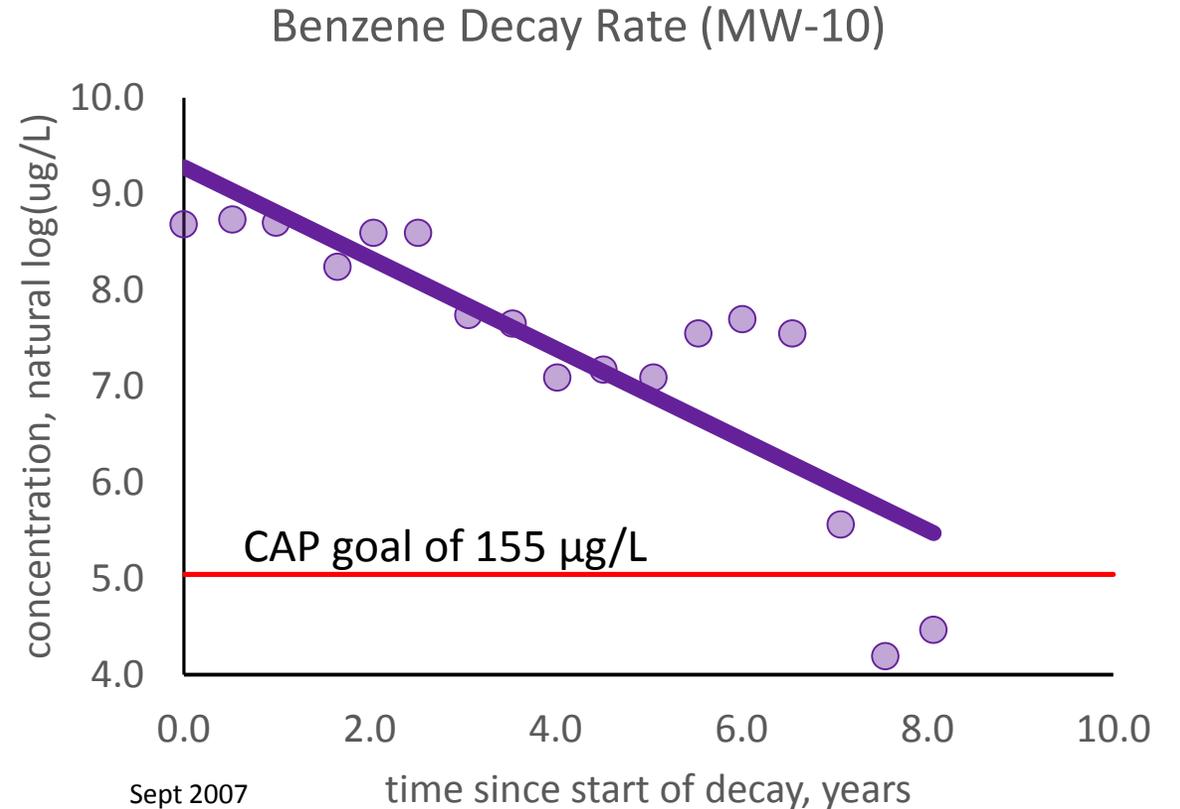
Progress in the MNA Zone (BTEX)



Rates of Attenuation

- First order decay calculation of attenuation
- Regression curve fitting method for an exponential curve
- Terminals air sparging began in 2003

Well	Distance from Terminals	Decay Rate (yr ⁻¹)	Half Life (yrs)	Year Decay Observed
MW-14	420	-0.21	3.3	2004
TW-1D	700	-0.11	6.5	2007
TW-2S	700	-0.42	1.6	2007
MW-10	1300	-0.47	1.5	2007



Summary

- Working under a 1996 CAP
 - Groundwater exposures controlled through Institutional Controls
 - Surface water protection based on numerical standards at the point of discharge
 - Active remediation continuing
- What's next?
 - Prepare a plan for remediation shutdown with rebound monitoring
 - Transition to an MNA remedy
 - Develop a risk-based closure strategy under current guidance

Thank You

Uncertainty is an uncomfortable position. But certainty is absurd.

- Voltaire

ch2m.SM