

P&T Transition to MNA

Air Force Plant 4
Facility-Wide Groundwater
Fort Worth, Texas
Solvent Plume
Transition to be memorialized in
ROD amendment (2023–24)
Federal Superfund Site



Current RAO Action Levels are ACLs for TCE on site and MCLs for TCE, cDCE, tDCE, and VC at the boundaries. The RAOs will be changed to MCLs throughout the facility in the upcoming ROD Amendment.

Risk Scenario—As a Class IIB groundwater resource under USEPA Guidelines and a Class 1 resource under the Texas Risk Reduction Program rule, the terrace alluvium groundwater at Air Force Plant 4 is considered potentially useable as a drinking water supply.

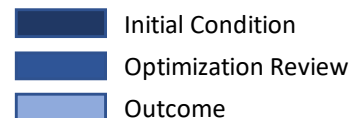
Performance evaluation summary — P&T has been implemented for more than 20 years with very limited success in attaining alternate concentration limits (ACL). The USEPA and the TCEQ approved a shutdown of P&T in 2014 to allow data collection from pilot tests for other technologies. The 2021 Focused FS concluded that areas downgradient of the P&T system have declined slowly toward MCL at a rate consistent with natural attenuation. Engineered remedial actions did not have a measurable impact on the overall rate of attenuation.

Remedial technologies/ strategy to replace P&T: MNA with institutional controls. MNA is expected to reduce COC concentrations below MCL in an acceptable timeframe (i.e., 100 years). If plume mass is found to be stable or increasing, a contingency remedy would be implemented.

Lines of evidence used to support transition:

1. Initially, the P&T system removed groundwater with TCE greater than 10 mg/L.
2. Influent concentrations tailed off asymptotically to below current ROD ACL of 0.4 mg/L by 2013.
3. By the time the system went offline in 2014 to evaluate MNA and bioremediation, influent concentrations were less than 0.3 mg/L. Less than 0.5 pounds of TCE were being removed from 150,000 gallons of captured groundwater per month.
4. VOC in the terrace alluvium declined by two or more orders of magnitude a few hundred feet downgradient from the source area.
5. Biodegradation appears to be supported by production of daughter products and MNA monitoring parameters.

Transition Technology Decision: The updated ARARs and MNA remedy are expected to be memorialized in a ROD amendment scheduled to be finalized by FY2023–24.



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Initial Condition
 Optimization Review
 Outcome



MCLs for TCE and its degradation daughter products

The effectiveness of MNA in both near- and far-term timeframes will be demonstrated through the following: technical analyses of natural attenuation’s ability to reach RAOs, performance monitoring, and contingency remedies where appropriate. Regular groundwater monitoring will be conducted to ensure that it continues to shrink over time. Plume mass calculations and monitoring-well trends will be updated annually. If MNA is determined to be unable to meet the RAOs in a reasonable time frame (i.e., 100 years), EISB or ISCR/ERD will be employed, and any contingency remedy will be addressed as an ESD to the ROD Amendment.



Plumes by year: 2004 2010 2012 2014 2016 2018 2020 (Red line is Terrace Alluvium groundwater divide)
 Plumes based on using the 2020 plume maps from the *Final Biennial Groundwater Remediation Performance Monitoring Report Air Force Plant 4* (LKR, August 2020) as a starting point.

The focused feasibility study has been accepted by the USEPA and the TCEQ. The P&T transition will be effective upon issuance of the ROD amendment.

P&T Transition Conclusion:
 Transition from P&T to MNA reduces annual O&M cost, energy consumption, and GHG emissions and improves long-term resilience, thereby reducing risk.