

P&T Transition to ISTT

Peterson/Puritan, Inc.
Lincoln/Cumberland, RI
Landfill

Dates: 1993–2022
Superfund Site/NPL

P&T Objectives: PAHs and
metals to MCL

Risk Scenario—Contaminants detected in
municipal wellfields adjacent to the
Blackstone River; vapor intrusion

A ROD published in 1993 selected
remedies including a groundwater
treatment system (GWTS) and SVE
system. The GWTS and SVE systems were
installed in 1996.

ERD or ISTT were recommended to
address the lingering source zone
contamination at this site.

The optimization team recommended the following:

- A trial shutdown of the downgradient extraction system.
- Based on the suggested SVE confirmation sampling, the system could be optimized by operating most of the vapor extraction wells in pulse mode rather than continuous mode.
- Further characterization and remediation of the source.

Lines of evidence used to support the changes:

1. Monitoring and sampling data showed low recovery of contaminants
2. Data showed most of the remaining mass is below the water table and thus is not effectively treated by the SVE system.
3. Significant rebound observed when blowers were switched off.
4. MAROS software used. MAROS is a statistical and heuristic software program supporting LTMO.
5. For trial shutdown of downstream extraction system: the downgradient plume is dilute, concentration trends for priority constituents are decreasing, there are no potentially complete exposure pathways, and groundwater discharge to the river does not pose excess risk to human or ecological receptors.



Decision codified in the 2015 ROD.

- Initial Condition
- Optimization Review
- Outcome

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Suggested Sequencing for Implementing Recommendations:

- Finalize optimization work plan and schedule, including revised long-term monitoring plan, with USEPA approval in consultation with Rhode Island Department of Environmental Management.
- Sample downgradient wells prior to temporary shutdown of downgradient extraction system.
- Shut down downgradient extraction system for a 5-year trial period (started August 23, 2018); collect groundwater samples semiannually and assess effect of the trial shut down.
- Conduct source area characterization, including comprehensive groundwater sampling of all existing source-area wells.
- Conduct SVE system sampling and determine whether operation in pulse mode would improve remedy efficiency.
- Determine path forward for source area remediation based on sampling results (continued operation of GWTS, modification of SVE system operation, ISB, thermal remediation, or another alternative).
- Perform real-time Hapsite VI investigation if indoor air monitoring data indicate PCE or TCE exceedances or if the GWTS/SVE remedies are changed or shut down.
- Conduct confirmation sampling of downgradient monitoring wells scheduled for plugging and abandonment and conduct plugging and abandonment on wells that meet the criteria.

Site Status:

- Downgradient wells have been shut down for a trial period that will end in 2023, at which point any rebound effects will be assessed and a permanent shut down will be considered.
- Additional source area characterization has been performed, and the settling defendants are currently developing a work plan for ISTT of the source area.

P&T Actions Conclusion

P&T transitioning to ISTT

Time Span: 5 years

Estimated O&M cost savings from optimization study: ~\$380,000/year

Remedy effectiveness improvement: Shift focus to source zone removal

Sustainability benefits: Decommissioning inefficient wells

General Conclusions: Optimized monitoring effort as well

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