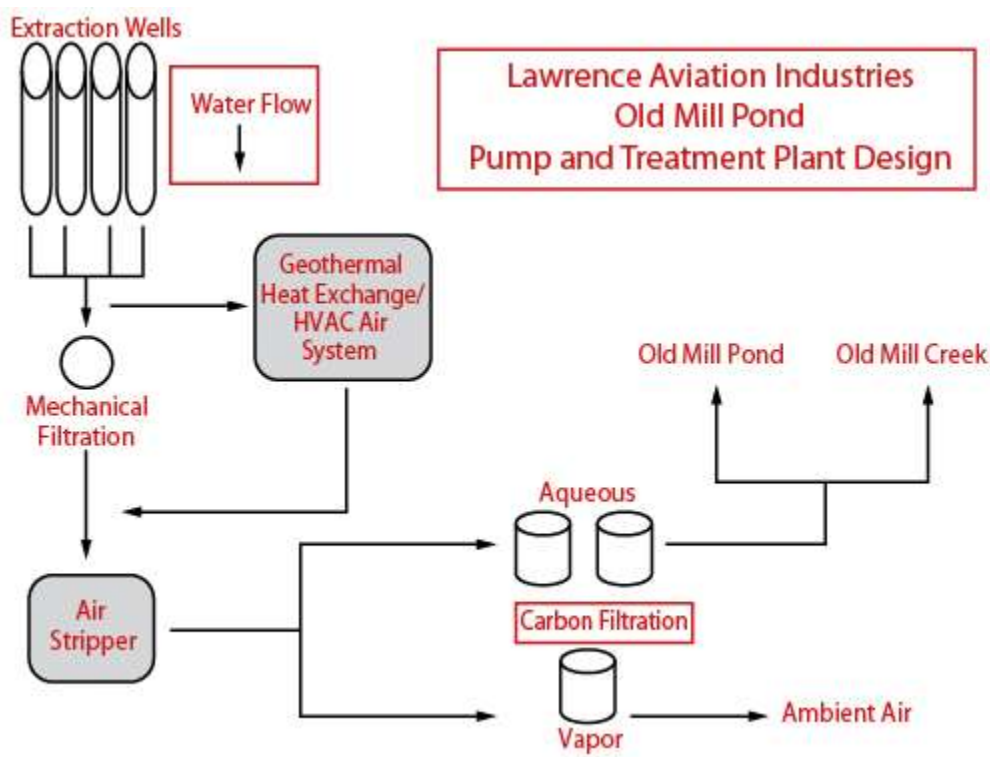


## P&T Optimization

Lawrence Aviation Industry  
Port Jefferson Station, NY  
1959–2003  
State Superfund

P&T Objectives: Reduce  
VOC contamination to  
drinking water standard



- Initial Condition
- Optimization Review
- Outcome

Performance Evaluation Summary: Air stripping was causing aluminum to precipitate out of solution and foul the air stripper. The locations of the recovery wells caused a bifurcation of contamination while letting a narrow strip continue downgradient to the off-site treatment system located approximately 1 mile away. Site was providing hydraulic containment rather than progressing toward groundwater restoration.

Alternative Technology: GAC for the treatment of VOCs and metals.

Recommendation Summary : Replace air strippers with GAC for the treatment of VOCs and metals; relocate extraction wells to ensure complete cutoff of the plume; relocate the injection wells to upgradient of the extraction wells to force water through the high contamination area; use process water through a heat pump to provide efficient heating and cooling of the treatment system; removal of on-site structures to target high contamination areas; reuse of property for rail yard and electrification project for the Long Island Railroad; and install a solar farm to support electrical needs of the surrounding community and Long Island Railroad electrification project.

Lines of evidence used to support the changes:

1. High contamination (approximately 1 ppm) located in two wells on opposite sides of the building, in direct line of groundwater flow, indicating source area under the building.
2. Plume migration from the site indicated in off-site monitoring well impacts.
3. Aluminum precipitation found in the air stripper trays and in filter bags requiring daily operator attention.
4. Successful use of process water for geothermal climate control at other sites.

Modifications of the treatment system were in accordance with the ROD and outlined with the RSO .

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How the changes were accomplished:

1. Added Recovery Well 3 between Recovery Well 1 and Recovery Well 2 to cut off the plume migration from the site.
2. Removed the air stripper and installed GAC vessels.
3. Removed all site structures and remaining machinery.
4. Investigated all pits and trenches for possible source areas.
5. Moved injection wells directly upgradient of the extraction wells for force contamination out of the soil pores.
6. Installed solar farm.
7. Installed rail yard and proceeded with electrification project.



Additional Stakeholder or regulatory involvement: This project was a collaboration between USEPA, NYSDEC, NYSDOH, Suffolk County DOH, Suffolk County Landbank, Village of Port Jefferson Station, LIRR, and solar providers. The local community provided input into the design of the on-site facilities (picture above), including use of permeable pavement, soundproofing materials, and architectural review.

### P&T Actions Conclusion

Replaced air stripper with GAC

Time Span: 5 years

Electricity savings: ~\$20,000/year

Sustainability/resiliency benefits:

heat pump (pictured at top of page) and solar field increased return value on property and helped meet state green energy goals