The U. S. Department of Energy (DOE) Office of Legacy Management's (LM) 11th annual community meeting on the Fernald Preserve was held on Tuesday, September 16, 2014, at the Fernald Preserve Visitors Center. The 11 people who attended the meeting received an update on site activities.

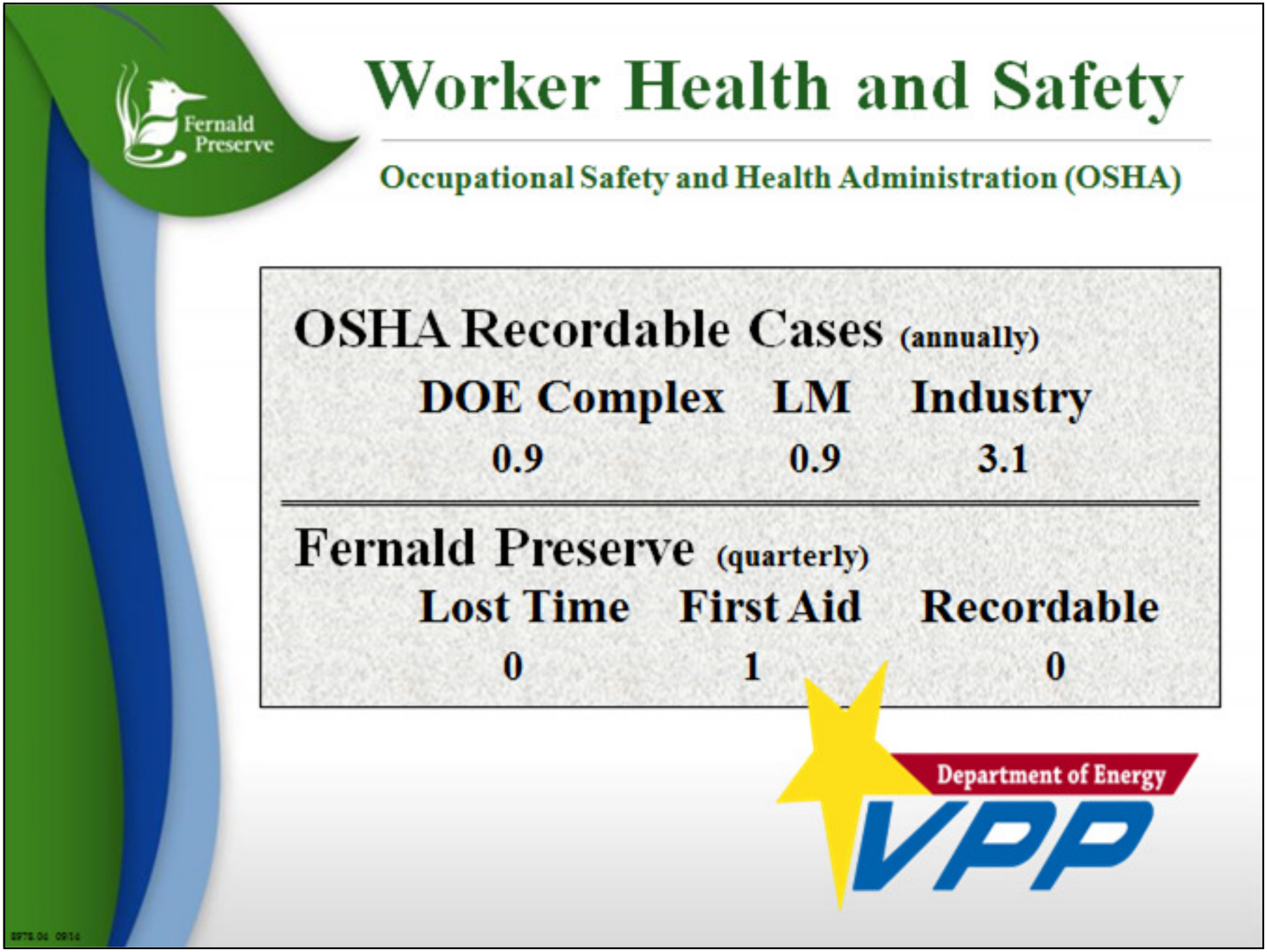
Community meeting agenda.

Fernald Preserve

Legacy Management Mission

Manage the U.S. Department of Energy (DOE) post-closure responsibilities and ensure the protection of human health and the environment.

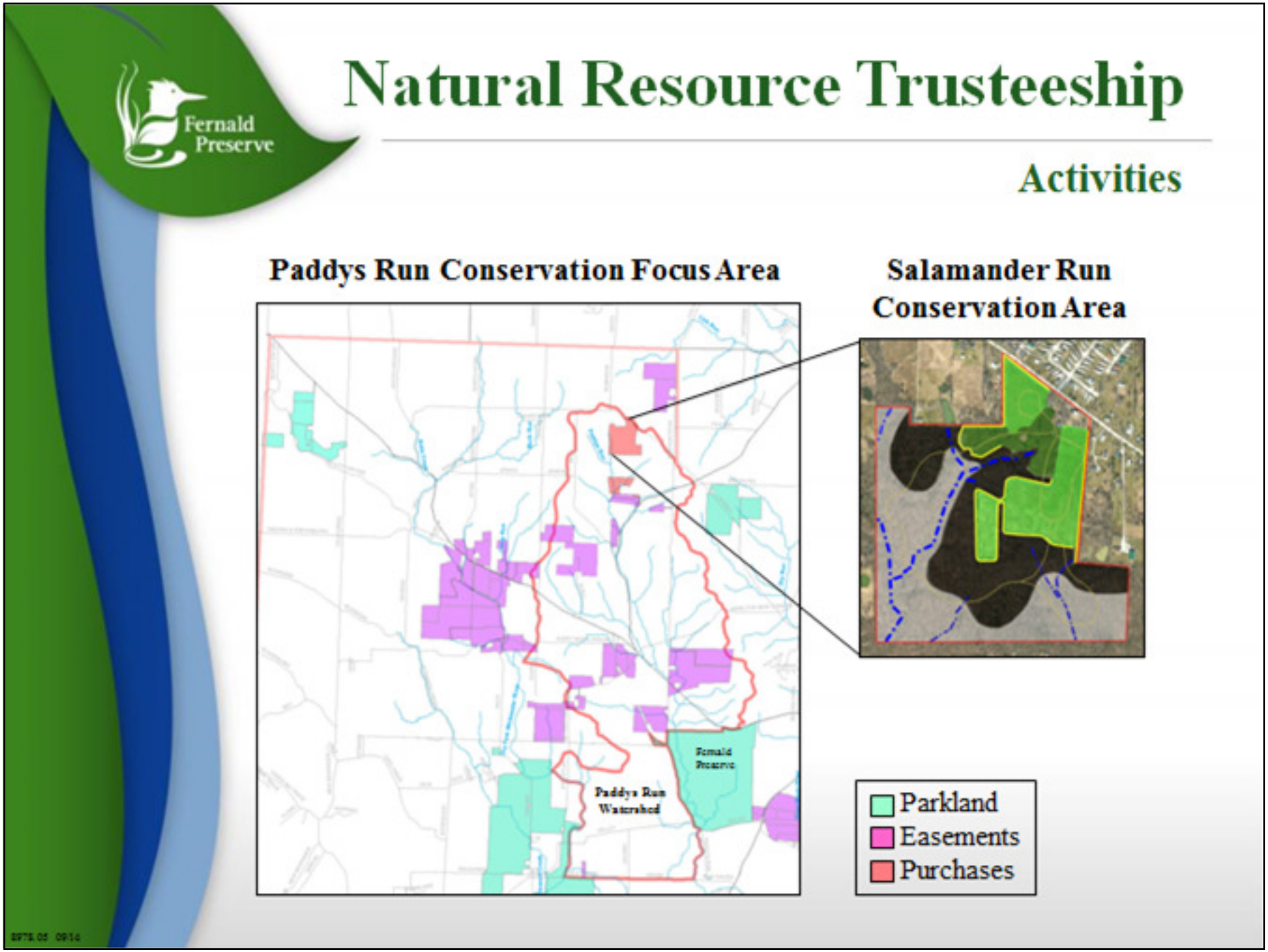
DOE Office of Legacy Management's mission at the Fernald Preserve.



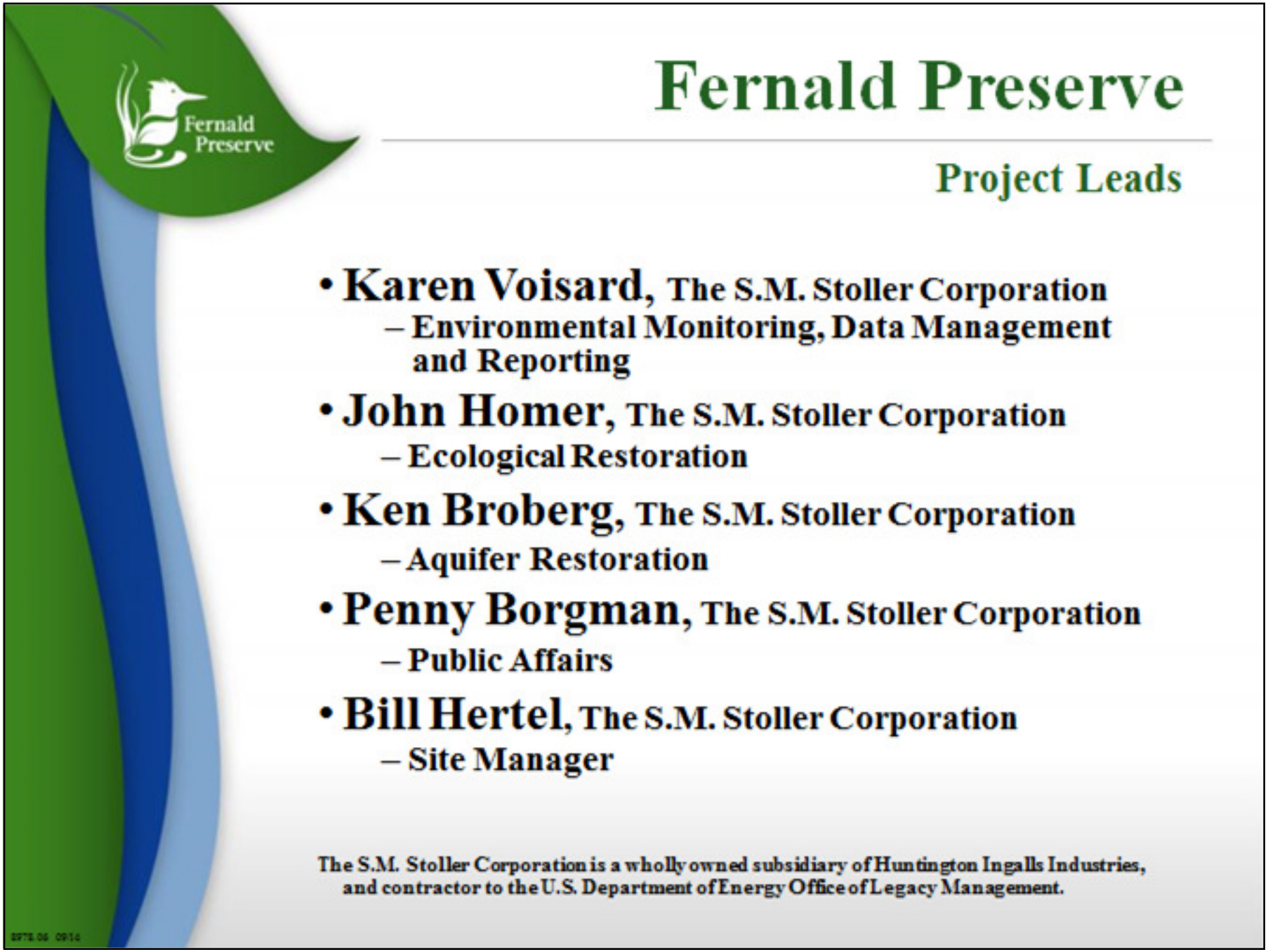
Safety records at the Fernald Preserve and in the nationwide Office of Legacy Management program continue to surpass industry standards.

Natural Resource Trusteeship

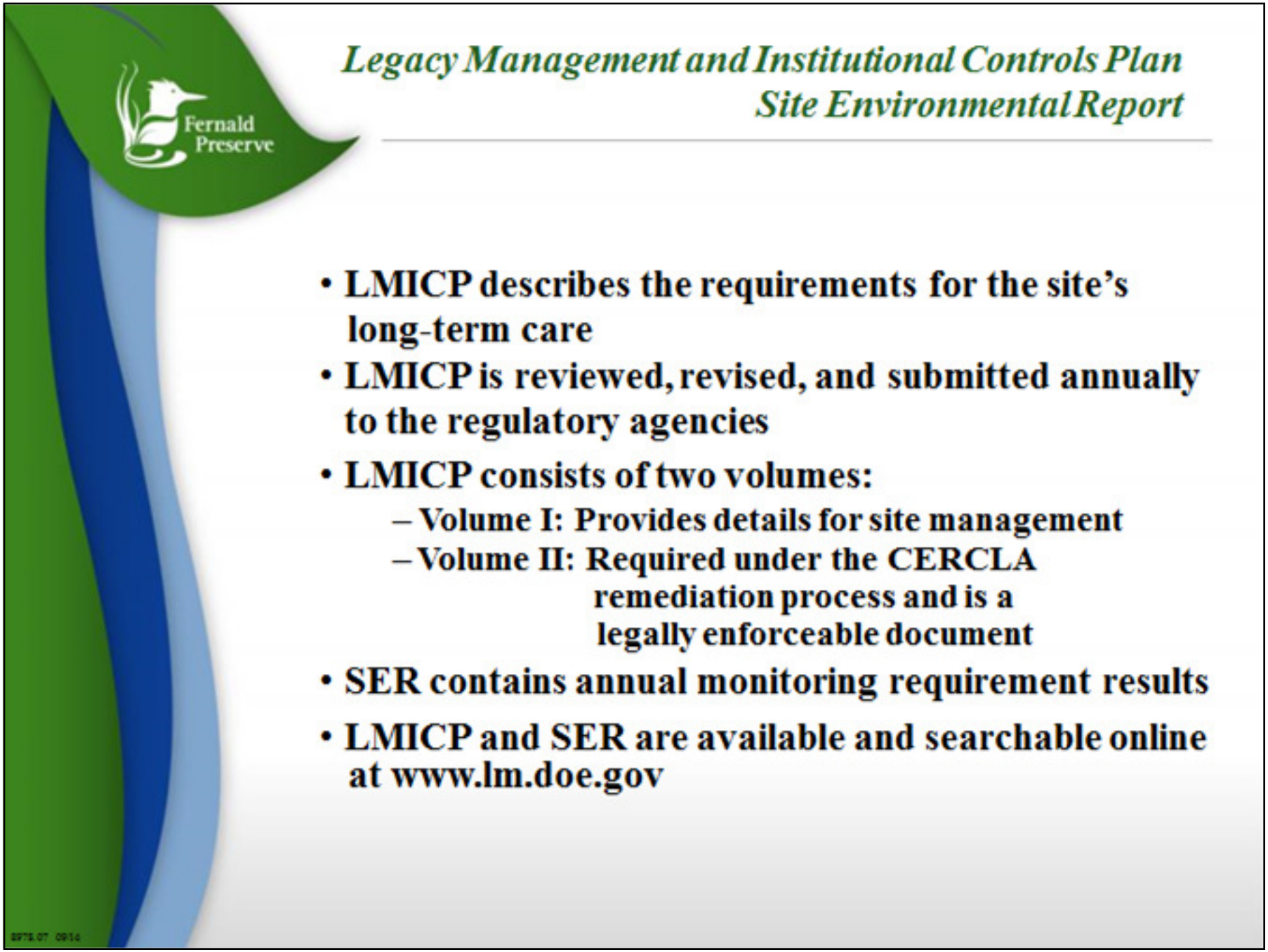
Activities



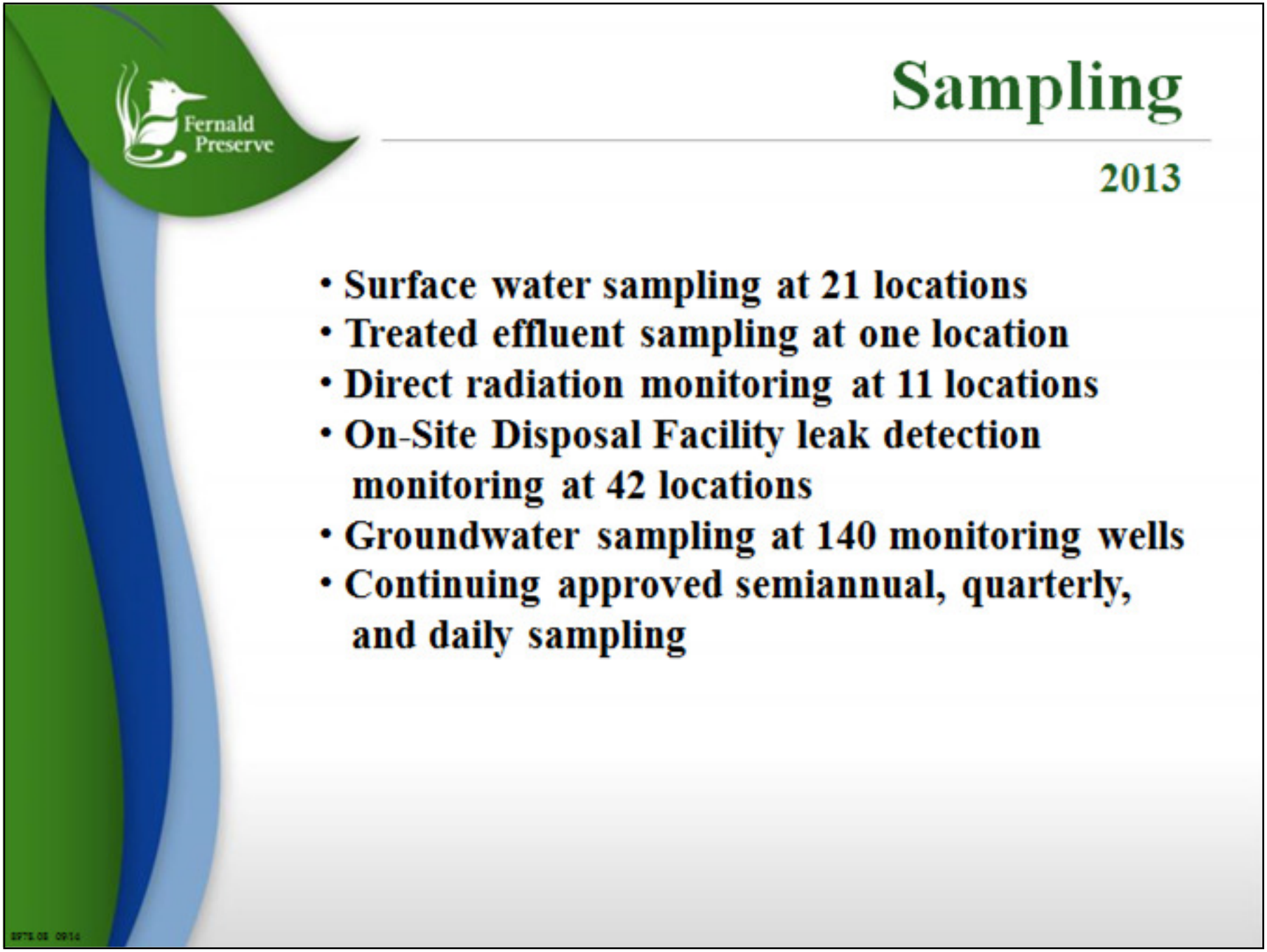
Natural Resource Trusteeship activities continue in the Paddys Run watershed.



The S.M. Stoller Corporation subject matter experts.



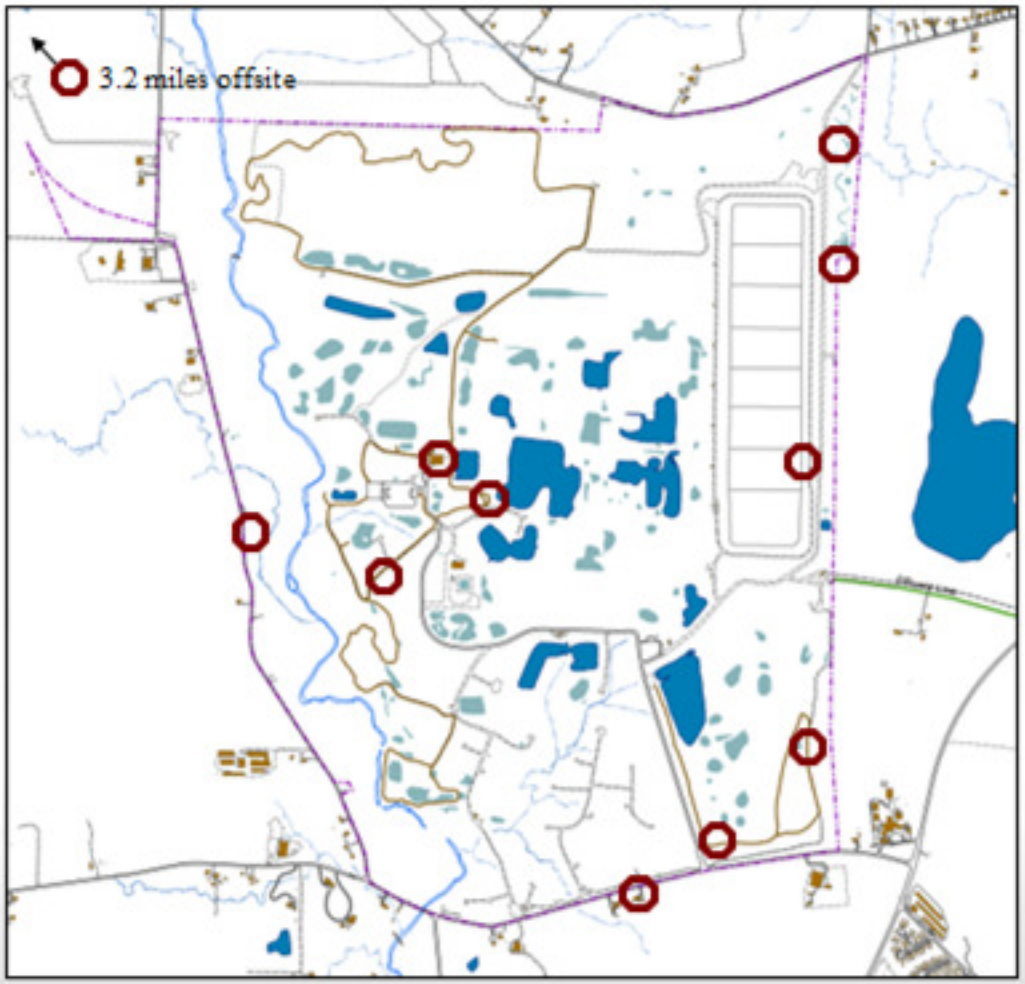
The Comprehensive Legacy Management and Institutional Controls Plan documents the requirements for the Fernald Preserve's long-term care. It is reviewed and updated yearly, and the latest version is available on the Office of Legacy Management website: www.lm.doe.gov.



Routine environmental monitoring is conducted to ensure continued effectiveness of the site's cleanup. The current monitoring regimen includes sampling groundwater, surface water, treated effluent, and direct radiation.

Monitoring

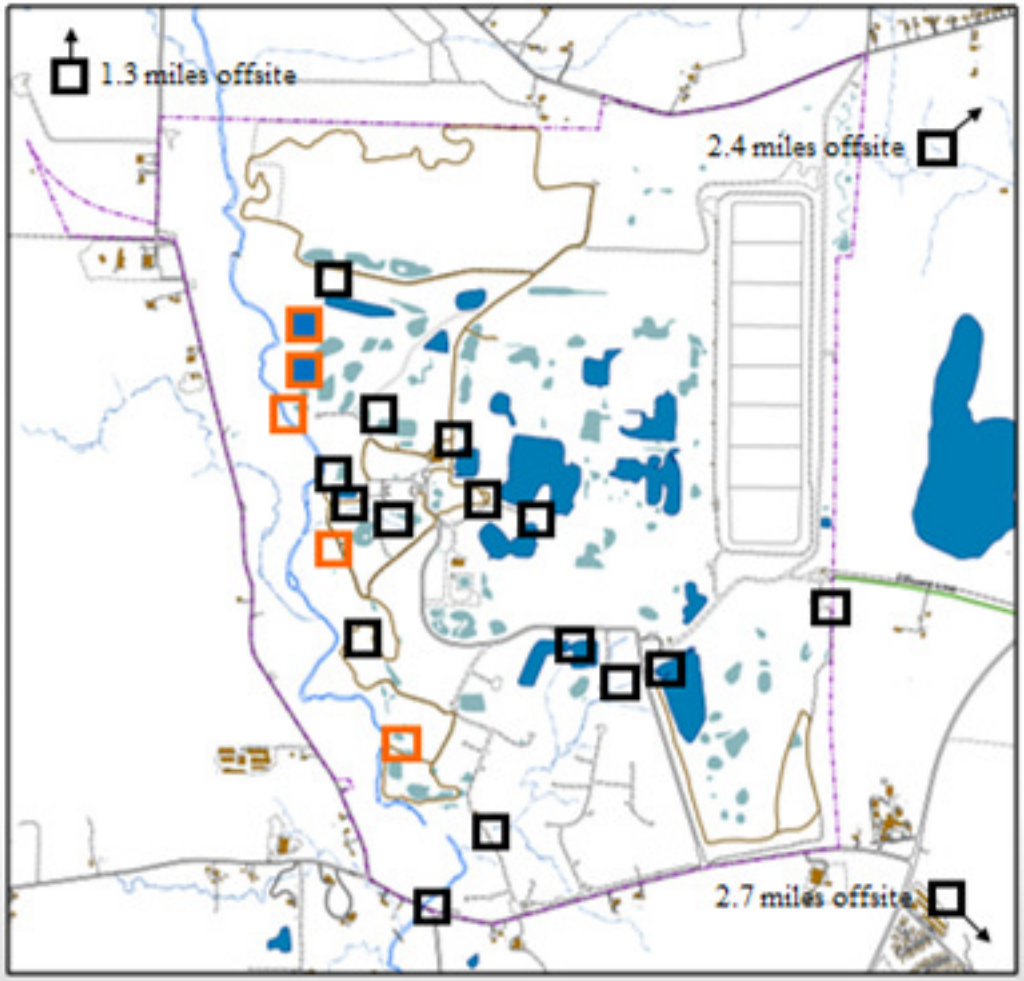
Dosimeter Locations



Direct radiation monitoring locations.

Monitoring

Surface Water and Treated Effluent Locations



Surface water continues to be monitored at numerous locations onsite and offsite.

Restoration

Ecological

- Restoration projects
- Restored area maintenance
- Ecological monitoring
- Site and On-Site Disposal Facility inspections

Ecological restoration work includes maintenance, monitoring, and inspections.

Monitoring

Ecological

- Functional monitoring
- Implementation monitoring
- Site and On-Site Disposal Facility inspections

Monitoring programs help to evaluate the status of ecologically restored areas at the Fernald Preserve.

Inspections

2013

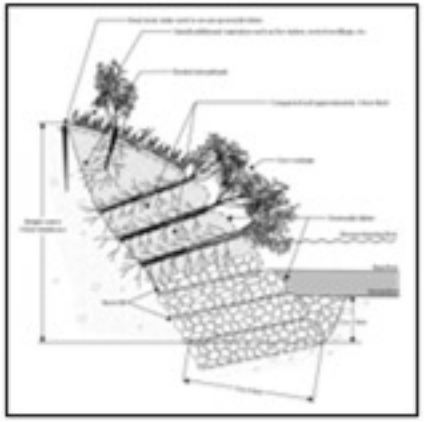
- Site
- On-Site Disposal Facility
- Trail

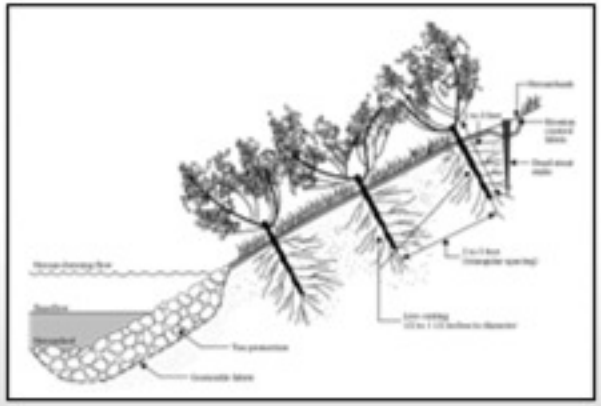
The inspection process continues in compliance with the Fernald Preserve *Comprehensive Legacy Management and Institutional Controls Plan*.

The Paddys Run Streambank Stabilization Project construction began in September 2014.

Streambank Stabilization

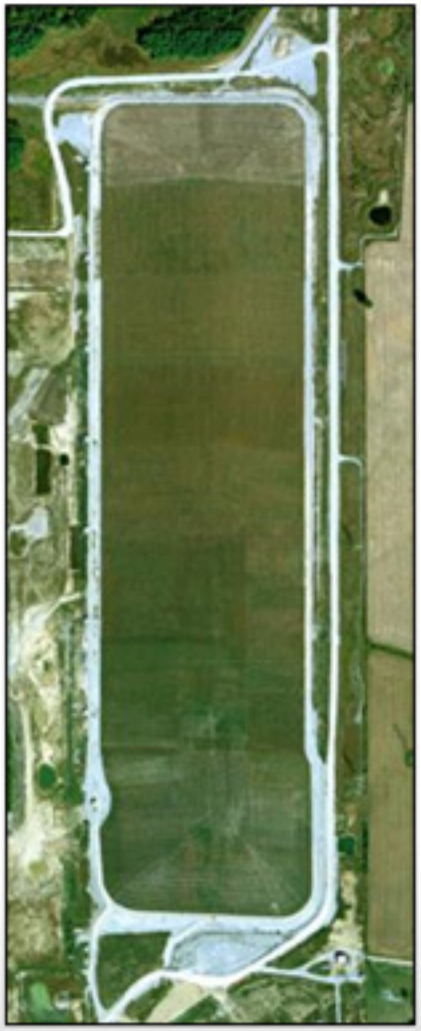
Paddys Run





The Paddys Run Streambank Stabilization Project construction began in September 2014.

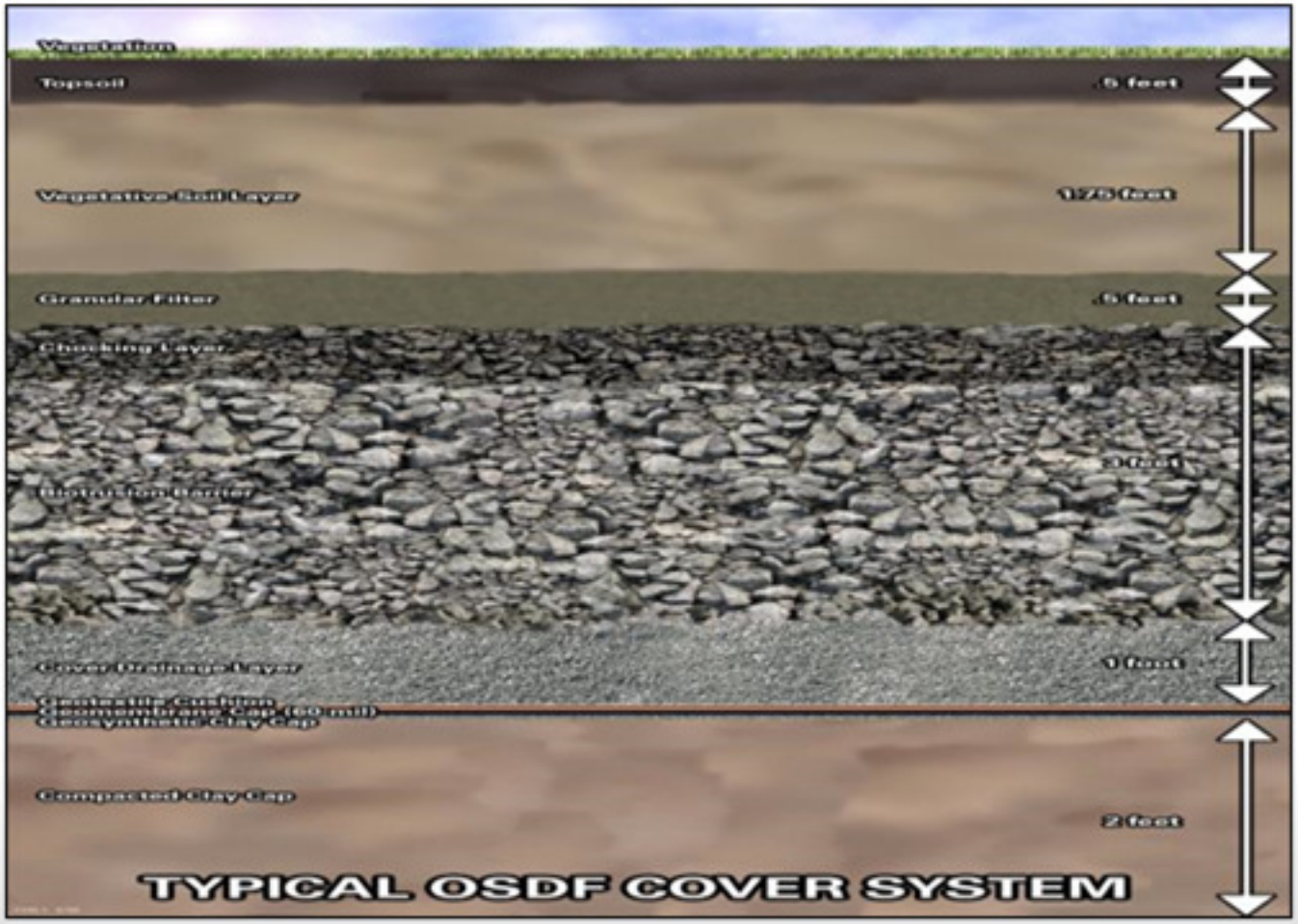
On-Site Disposal Facility



The On-Site Disposal Facility is an engineered waste-storage area that holds 2.95 million cubic yards of waste.

On-Site Disposal Facility

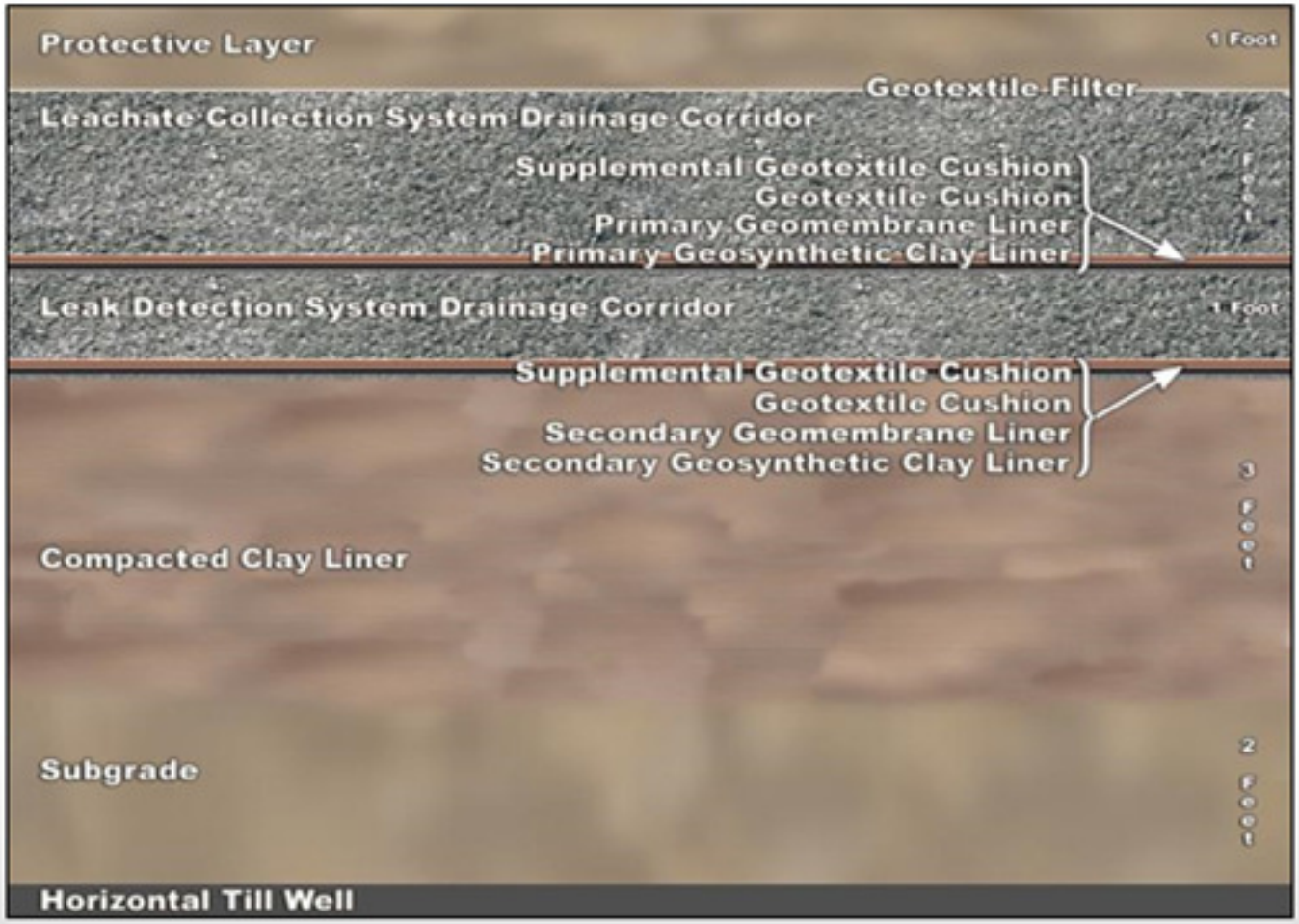
Cover



The On-Site Disposal Facility's engineered cover system.

On-Site Disposal Facility

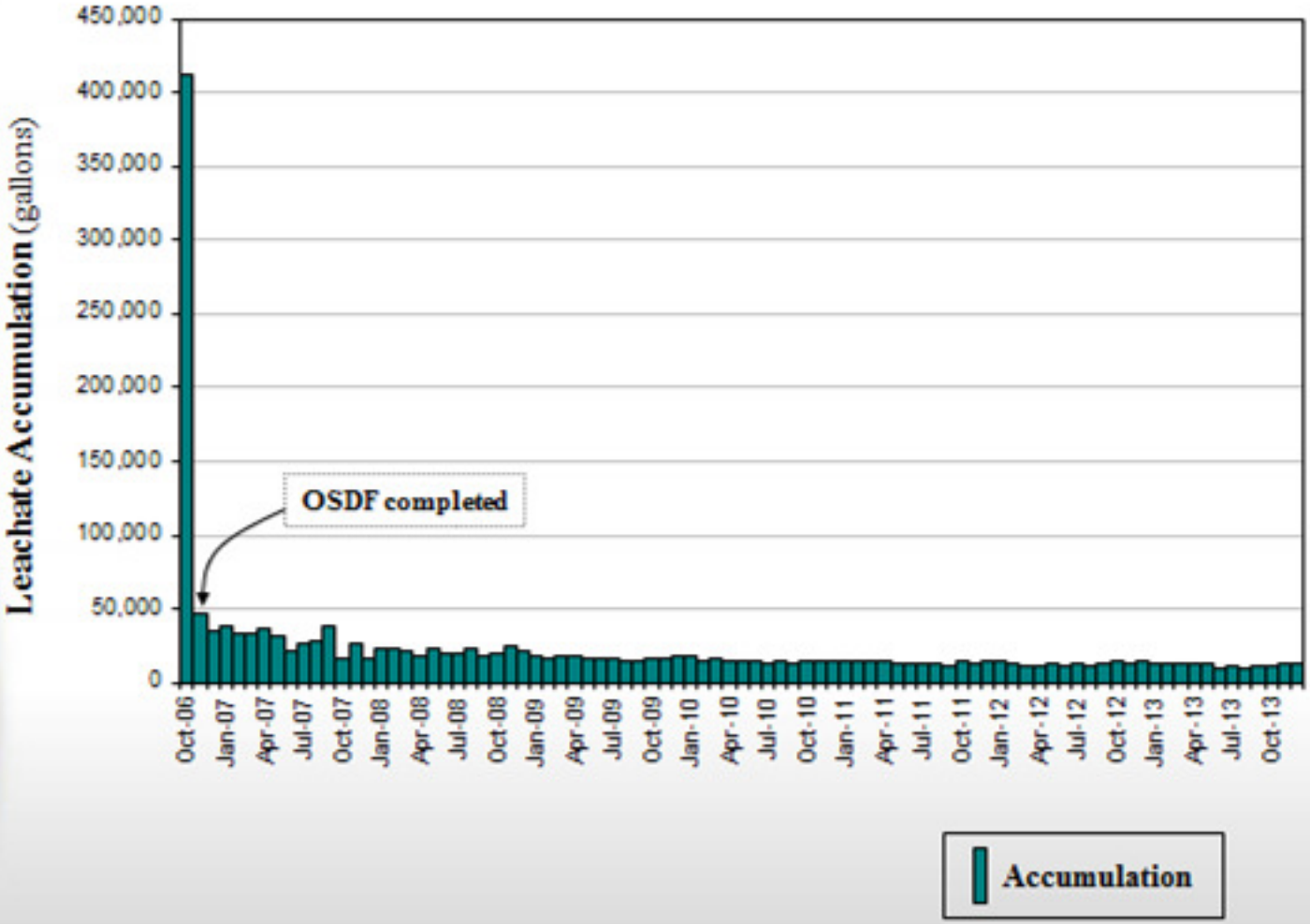
Liner



The On-Site Disposal Facility's engineered liner system.

On-Site Disposal Facility

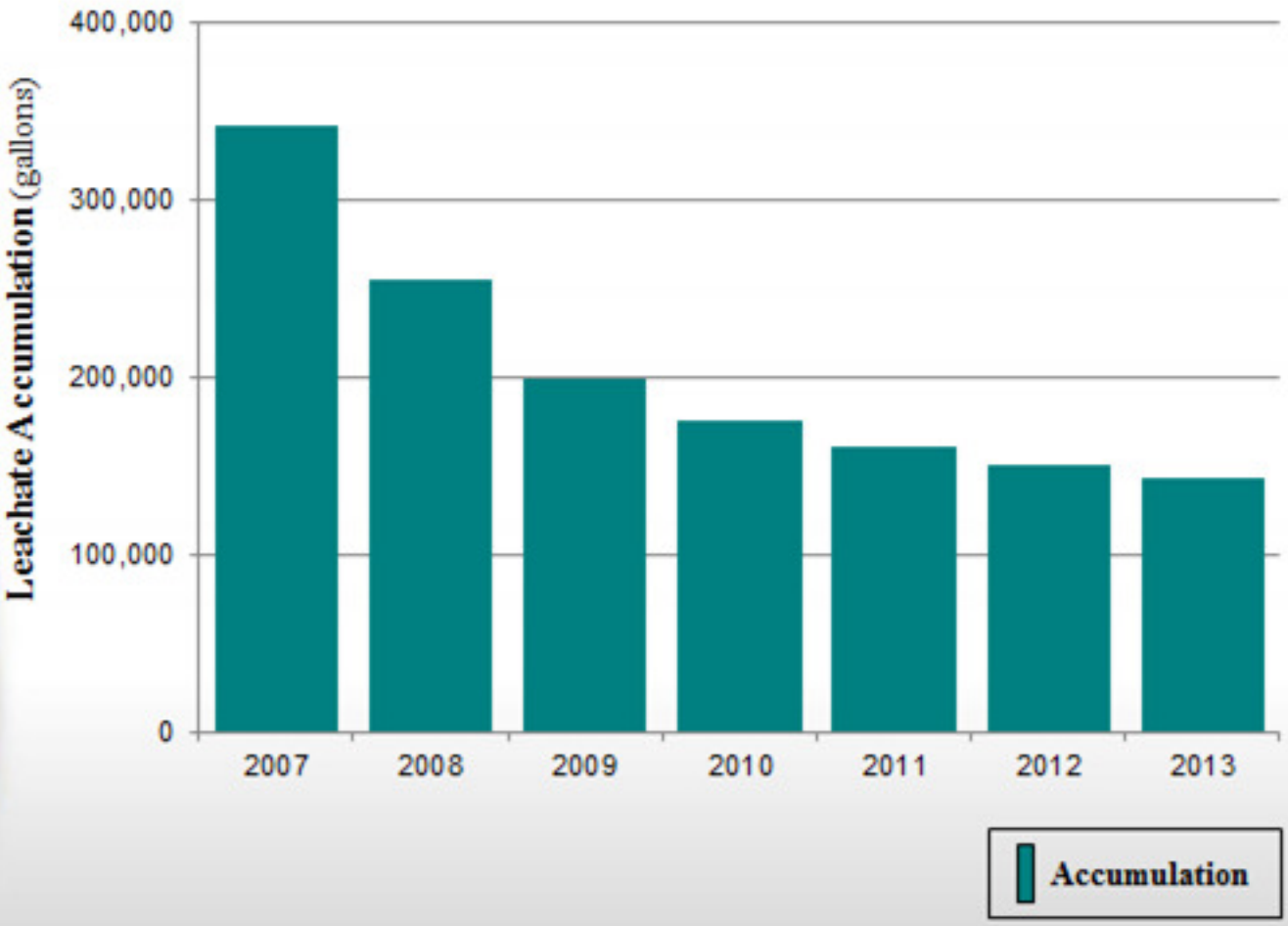
Leachate Collection System



Leachate is the moisture in the waste within the On-Site Disposal Facility. The leachate is collected and transferred to a treatment facility. Before the cover system was completed in October 2006, hundreds of thousands of gallons of leachate flowed each month. By 2013, leachate flows decreased to a monthly average of 11,978 gallons.

On-Site Disposal Facility

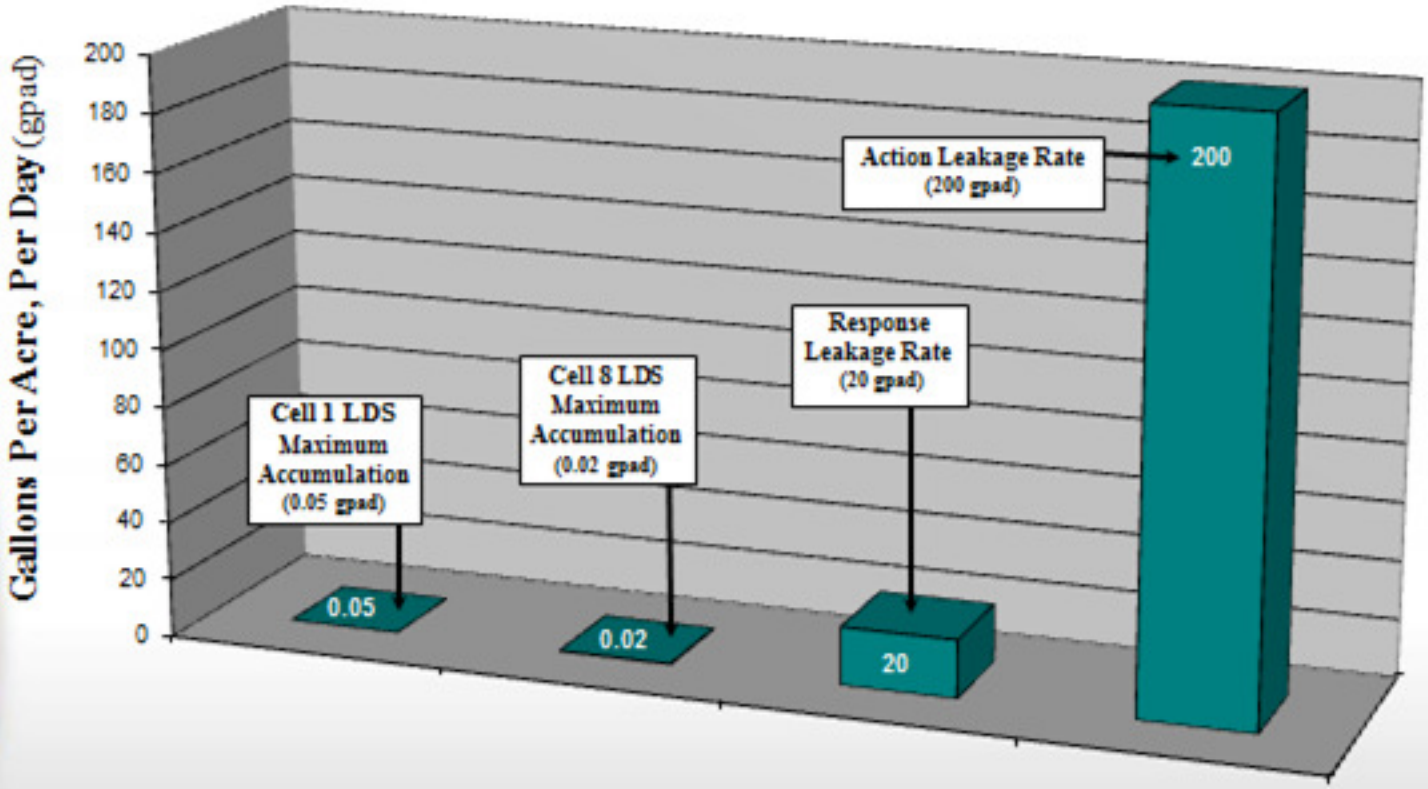
Leachate Collection System



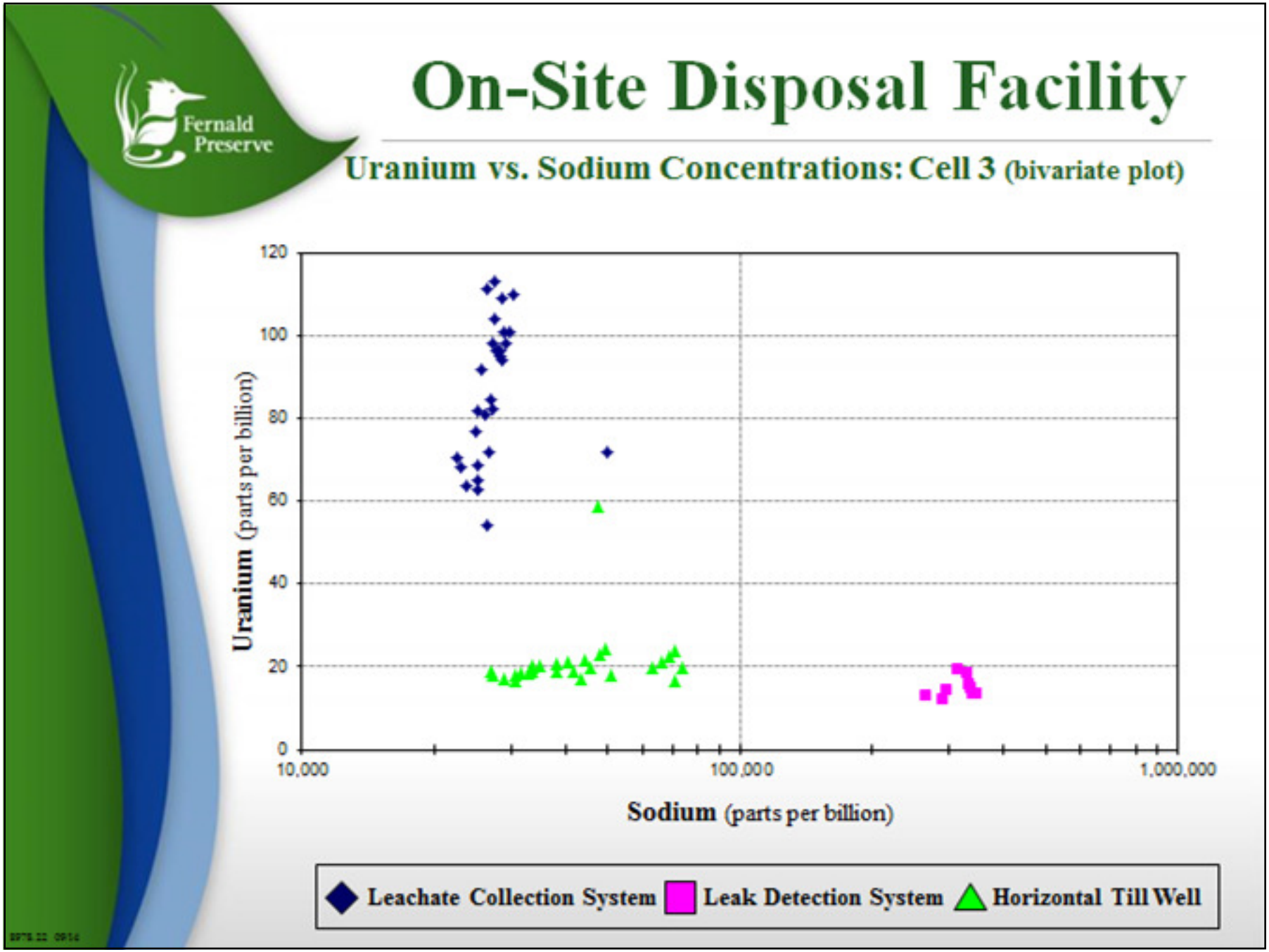
Leachate is the moisture in the waste within the On-Site Disposal Facility. The leachate is collected and transferred to a treatment facility. Annual leachate flow continues to decline.

On-Site Disposal Facility

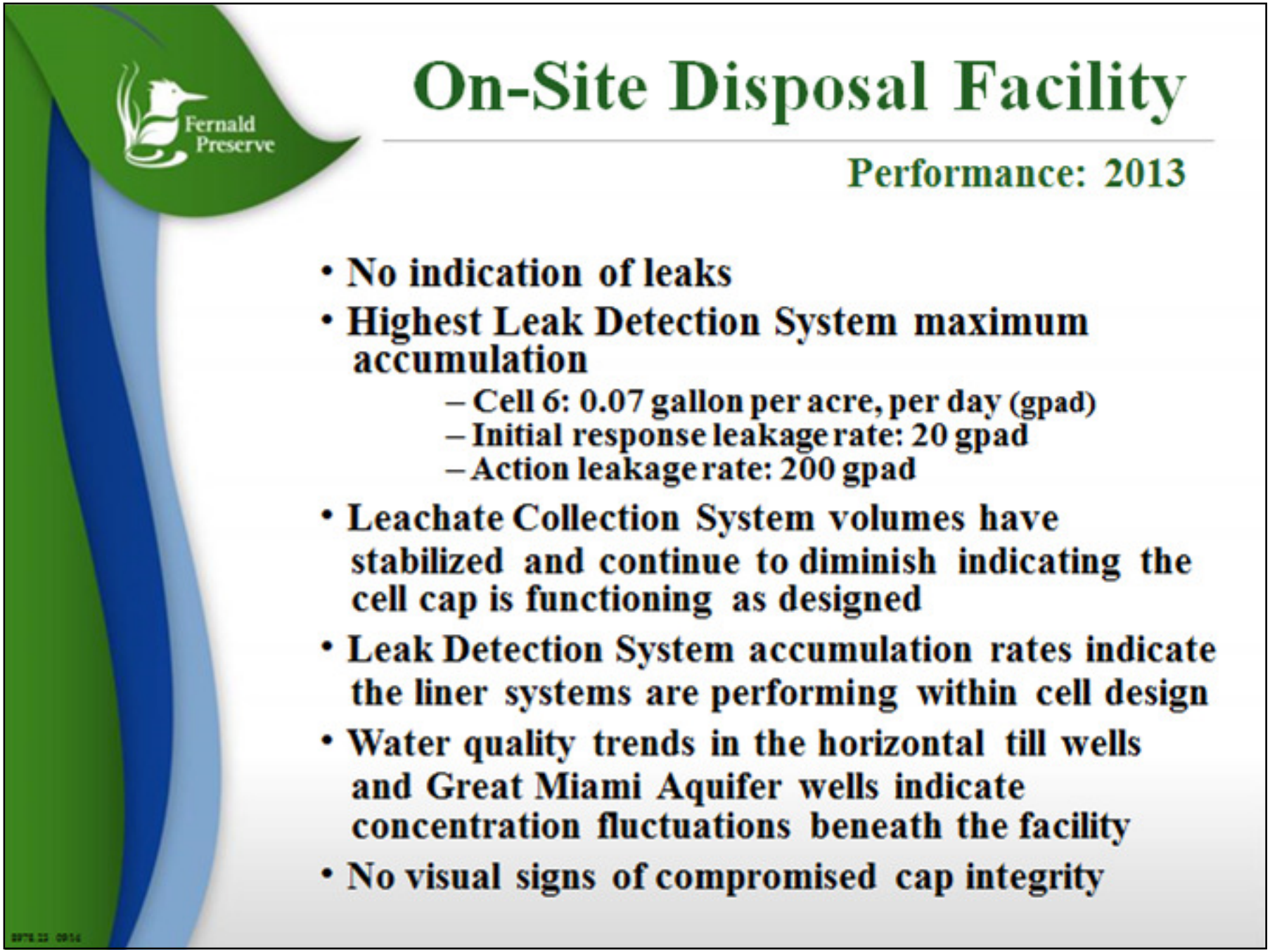
Cells 1 and 8 in 2013: Leak Detection System Accumulation, Response, and Action Leakage Rates



Leak Detection System accumulation rates in Cells 1 and 8 were very small compared to the Response Leakage Rate, which is 20 gallons per acre, per day, while the Action Leakage Rate is 200 gallons per day.

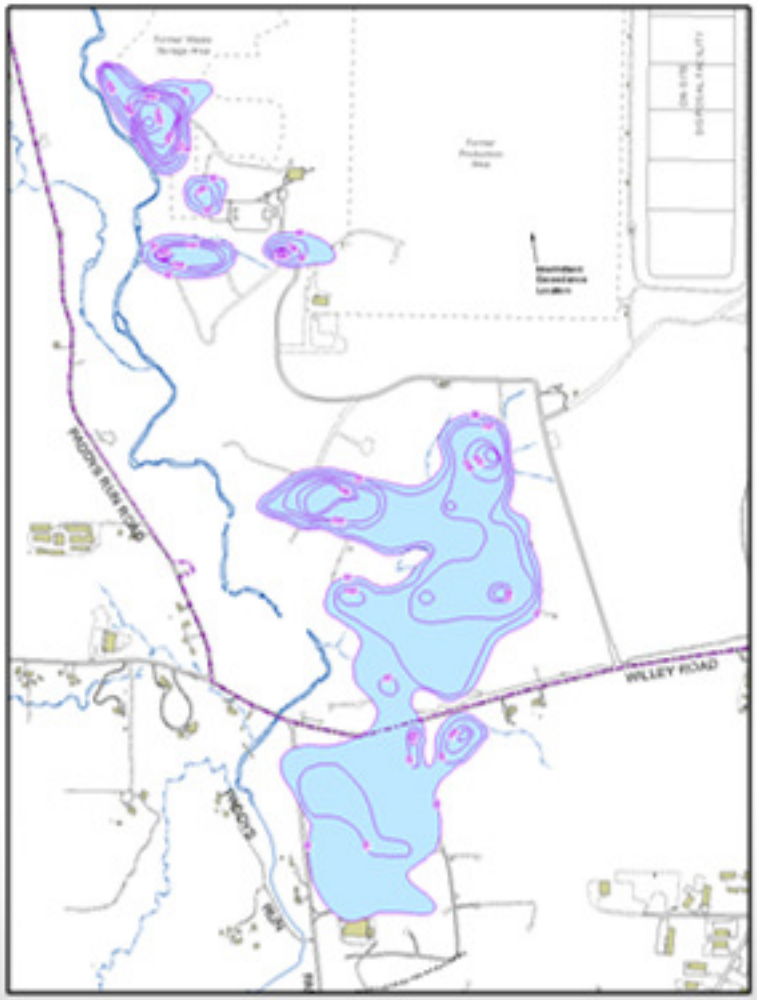


A comparison of uranium concentrations and sodium concentrations in and below Cell 3 of the On-Site Disposal Facility is an example of a method used to demonstrate that the liner system is working as designed.

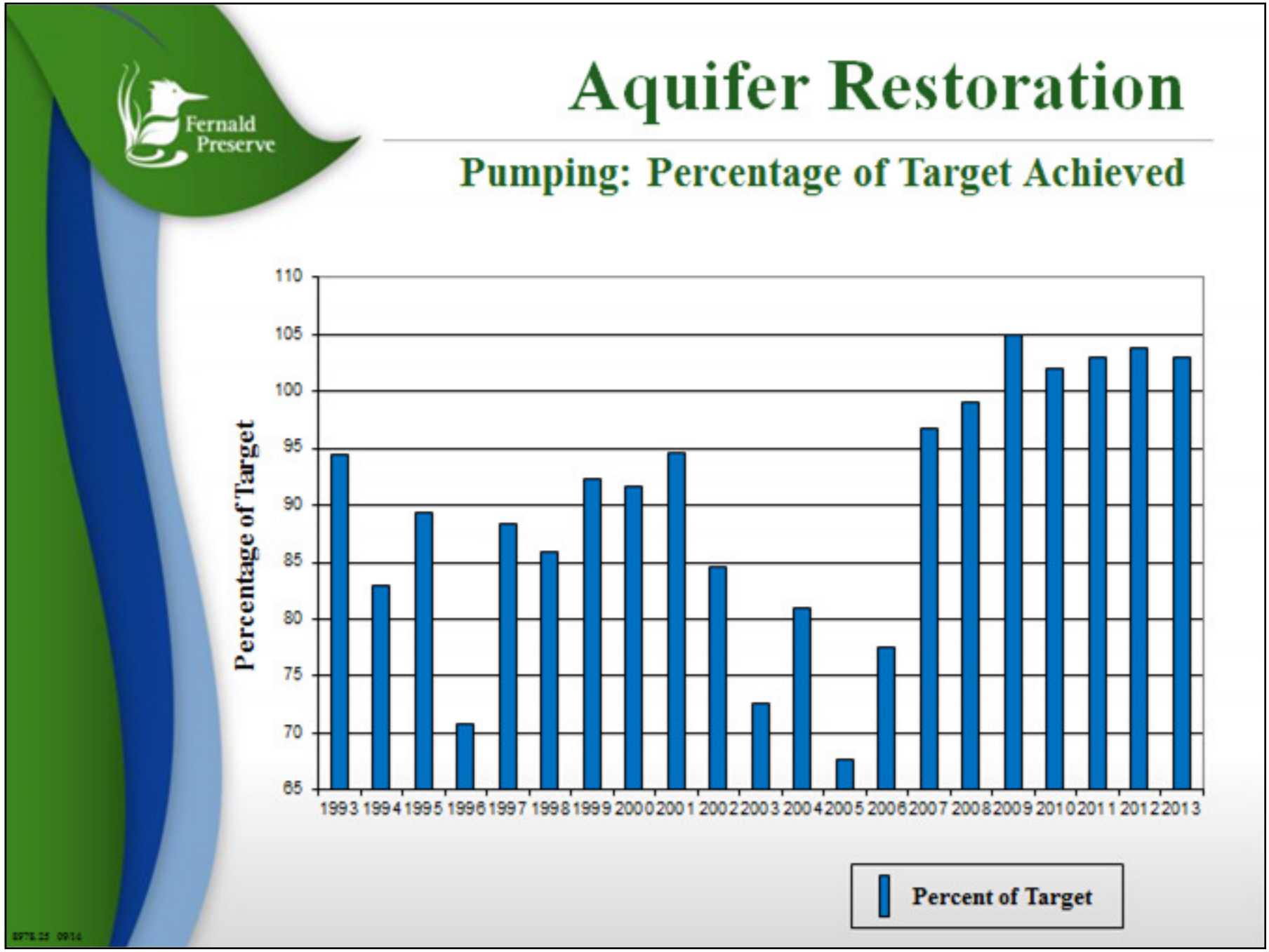


The On-Site Disposal Facility cap and liner systems are performing as designed.

Aquifer Restoration



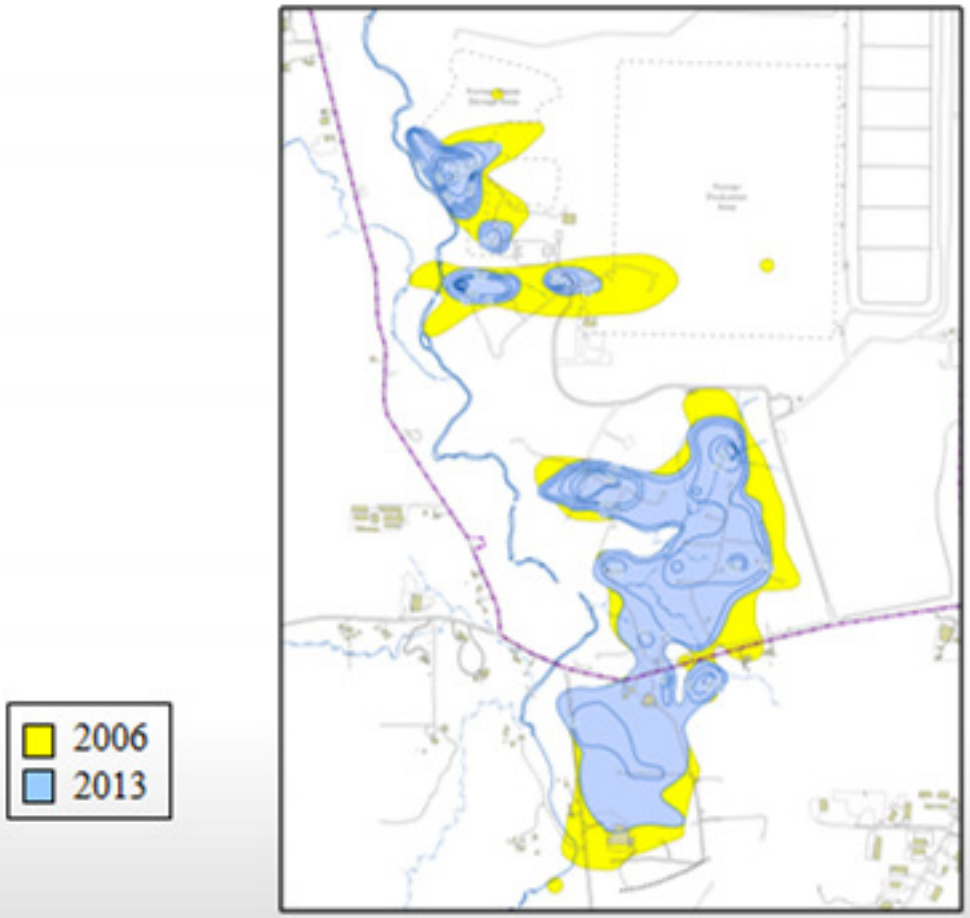
Groundwater cleanup continues at the Fernald Preserve.



Since site closure in 2006, operations have annually achieved at least 97 percent of planned operation targets.

Aquifer Restoration

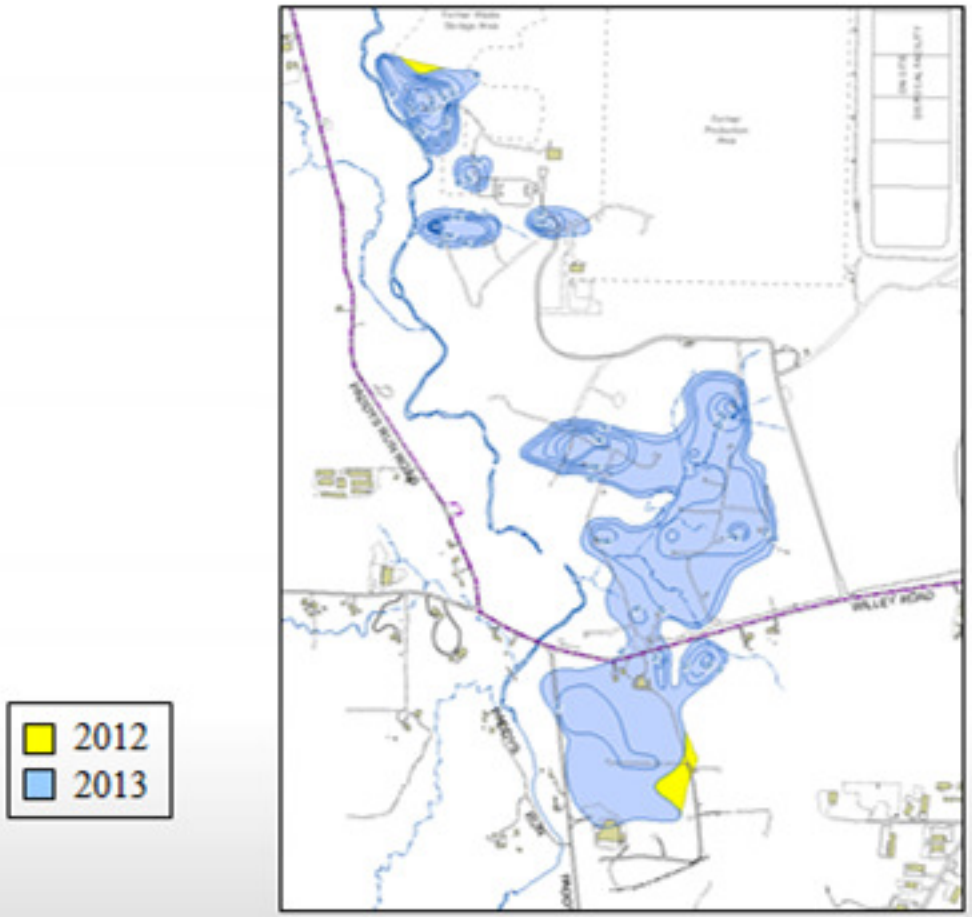
Maximum Plume: 2006 and 2013



Maximum size of uranium plume footprint was 127.3 acres in 2013.

Aquifer Restoration

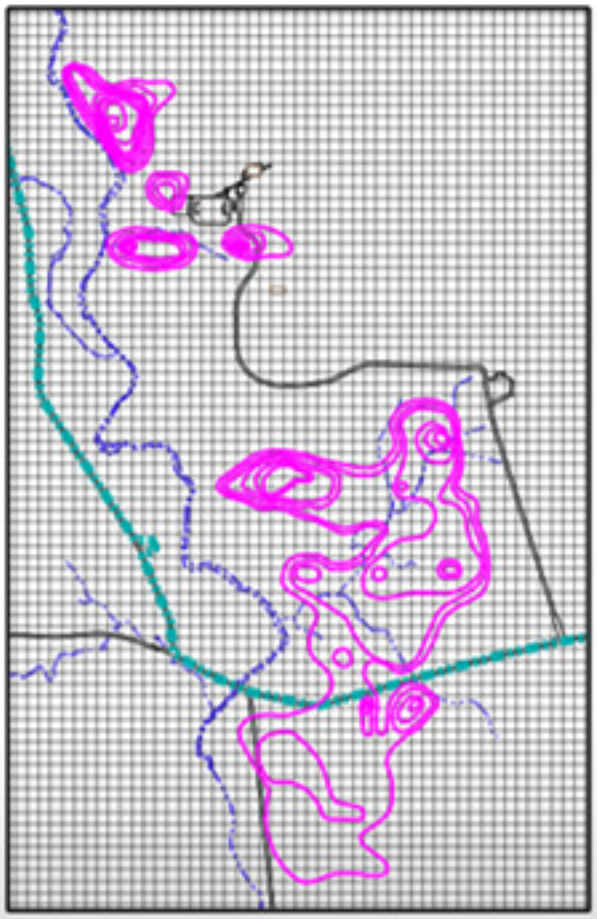
Maximum Plume: 2012 and 2013



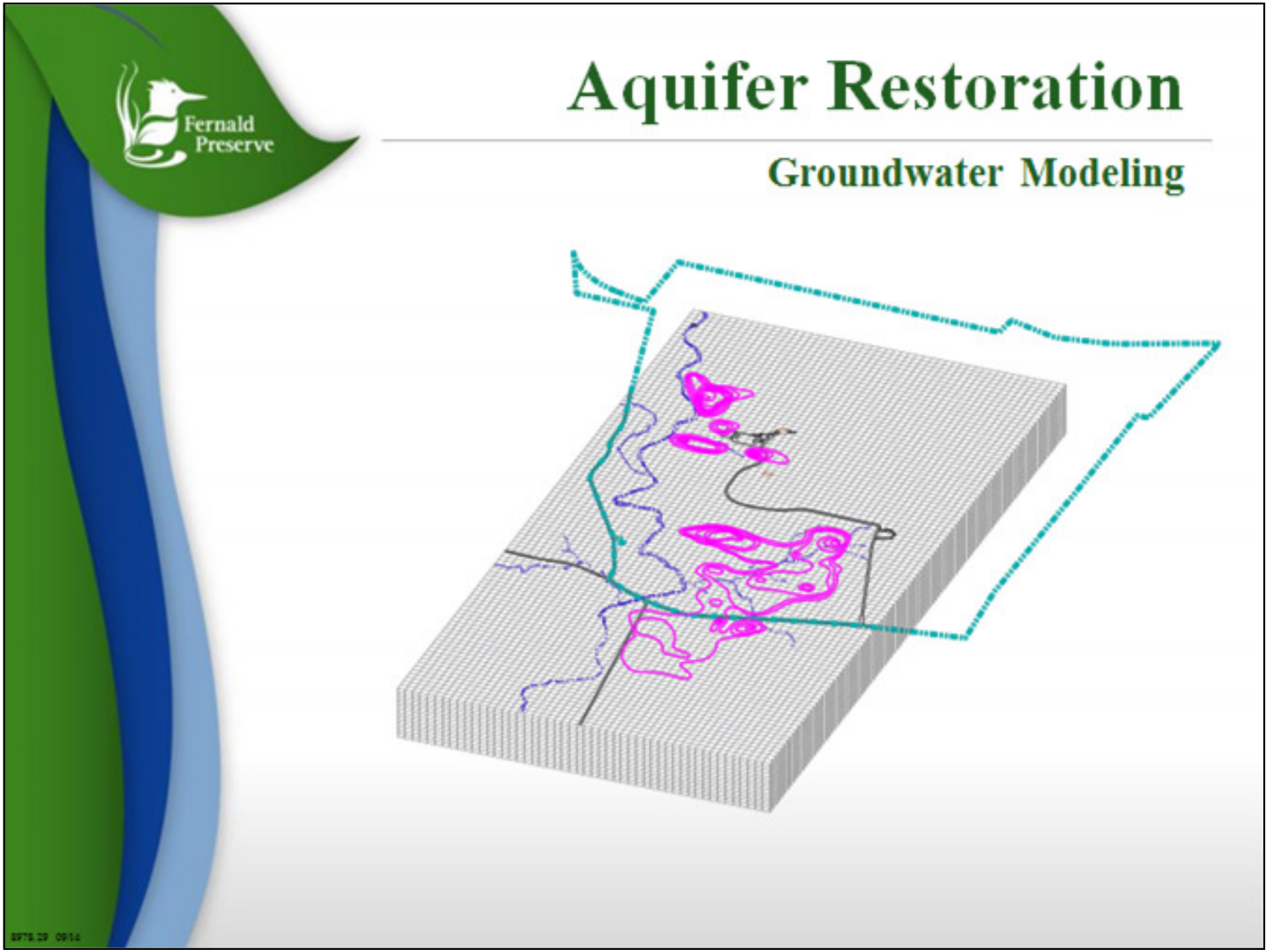
The maximum uranium plume footprint did not decrease significantly from 2012 to 2013. However, the uranium concentration within the plume footprint did decrease, based on data collected in 2013.

Aquifer Restoration

Groundwater Modeling



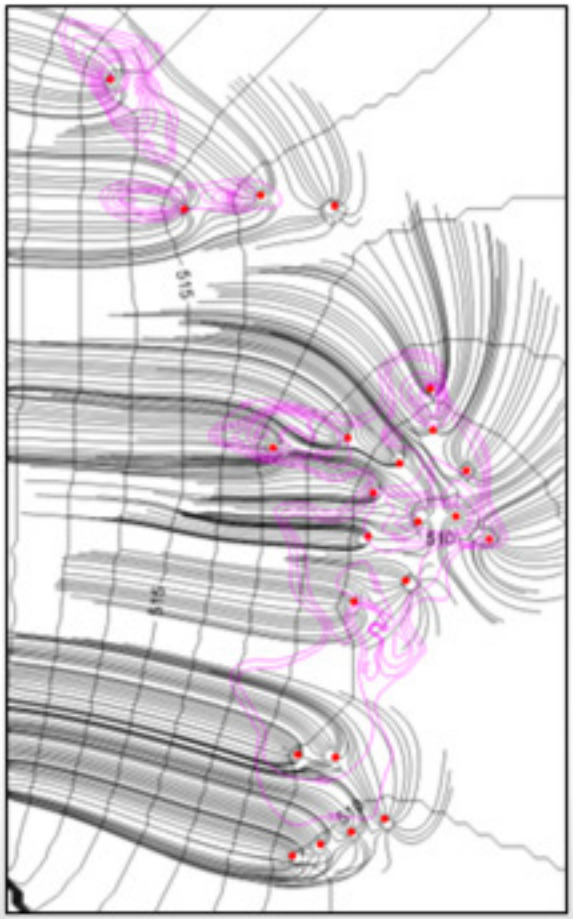
New groundwater modeling predictions indicate that the aquifer cleanup will be extended beyond earlier modeling predictions.



In this block model diagram, each point in the aquifer fits into a unique cell of the groundwater model.

Aquifer Restoration

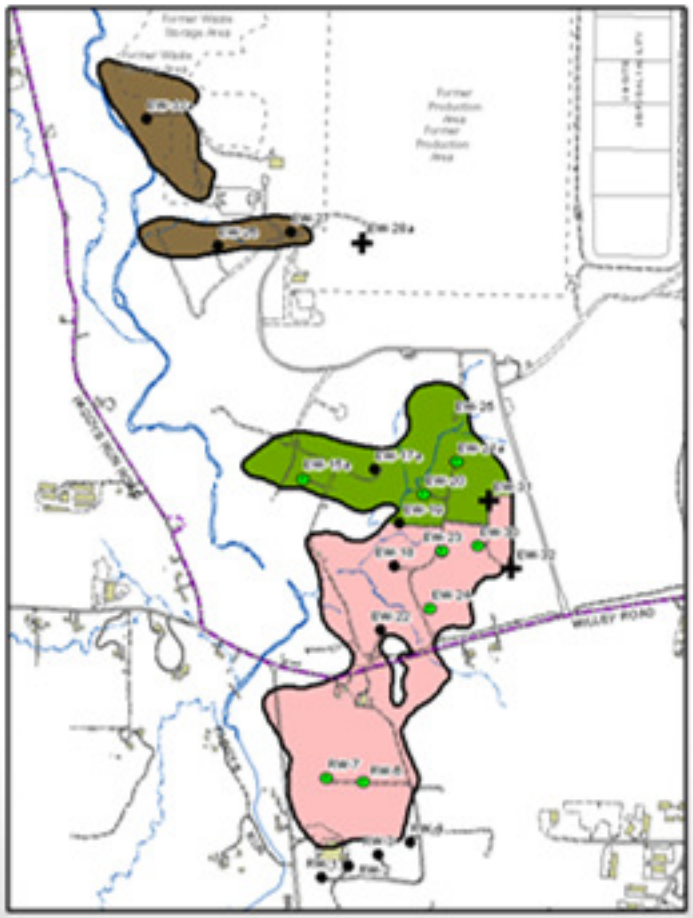
Groundwater Modeling



Particle tracks are used to illustrate how water is predicted to move toward a pumping well.

Aquifer Restoration

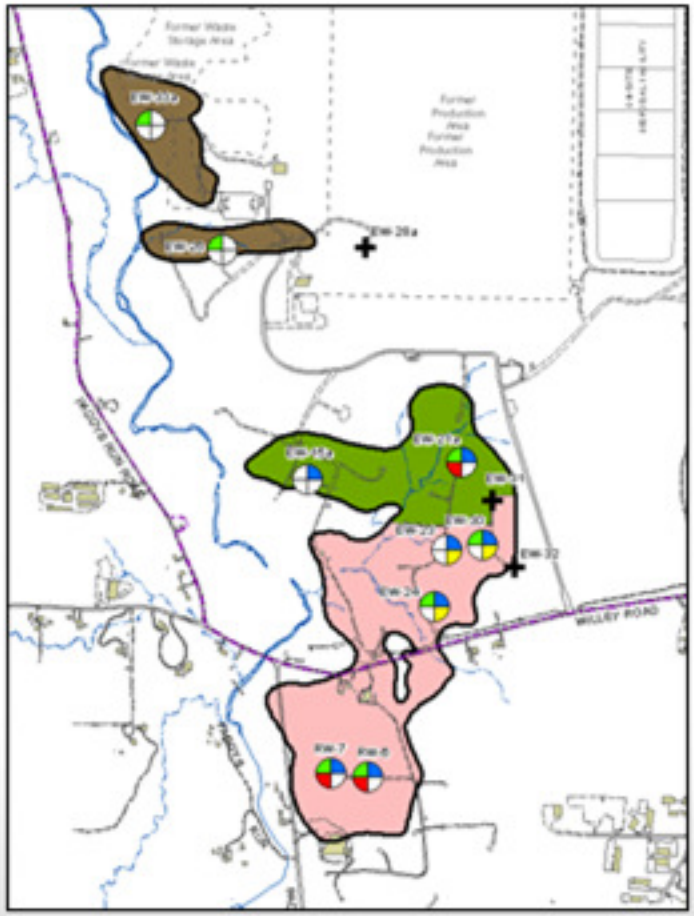
Groundwater Modeling



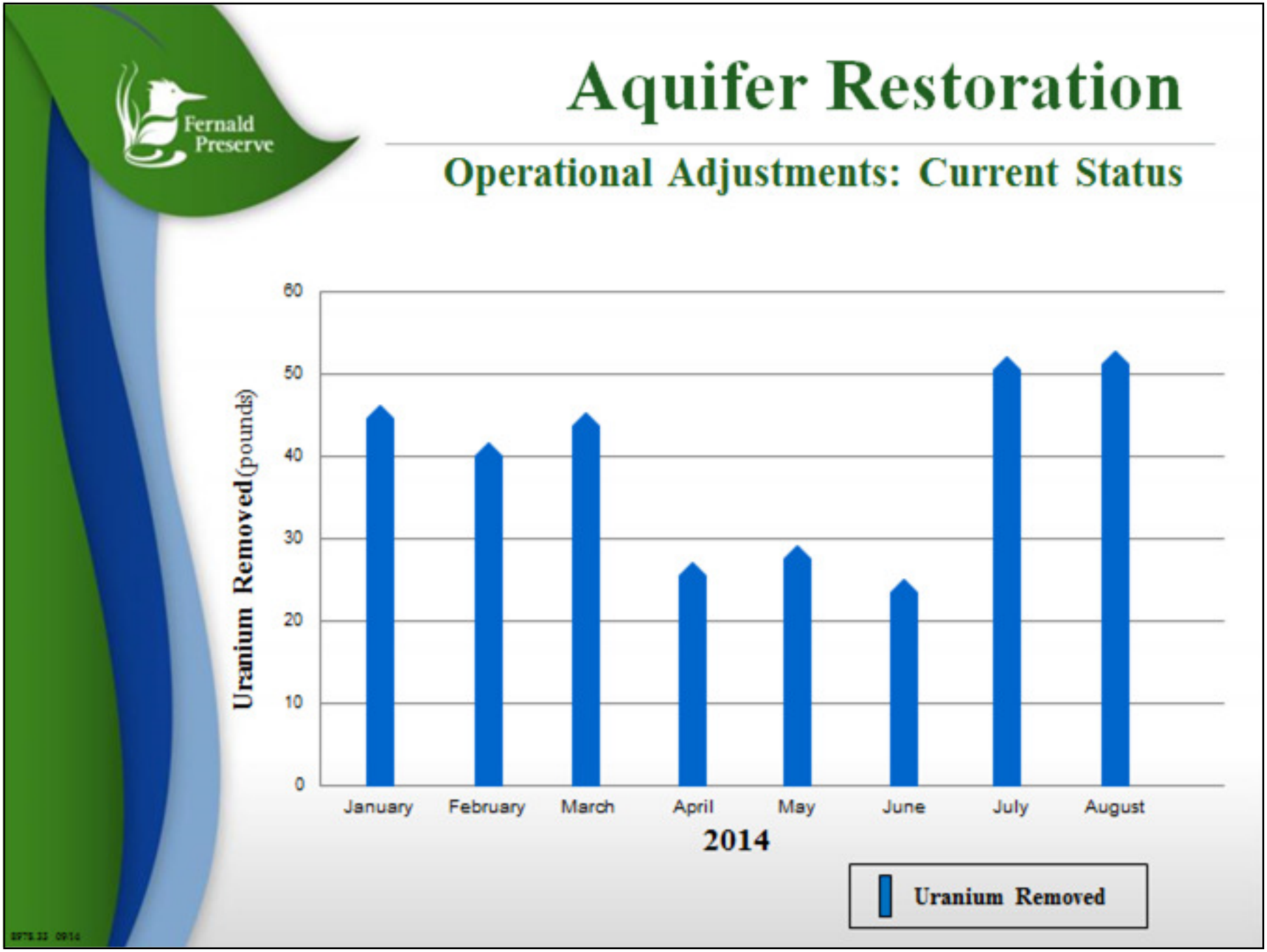
More uranium is being removed from the aquifer as a result of operational adjustments implemented in 2014.

Aquifer Restoration

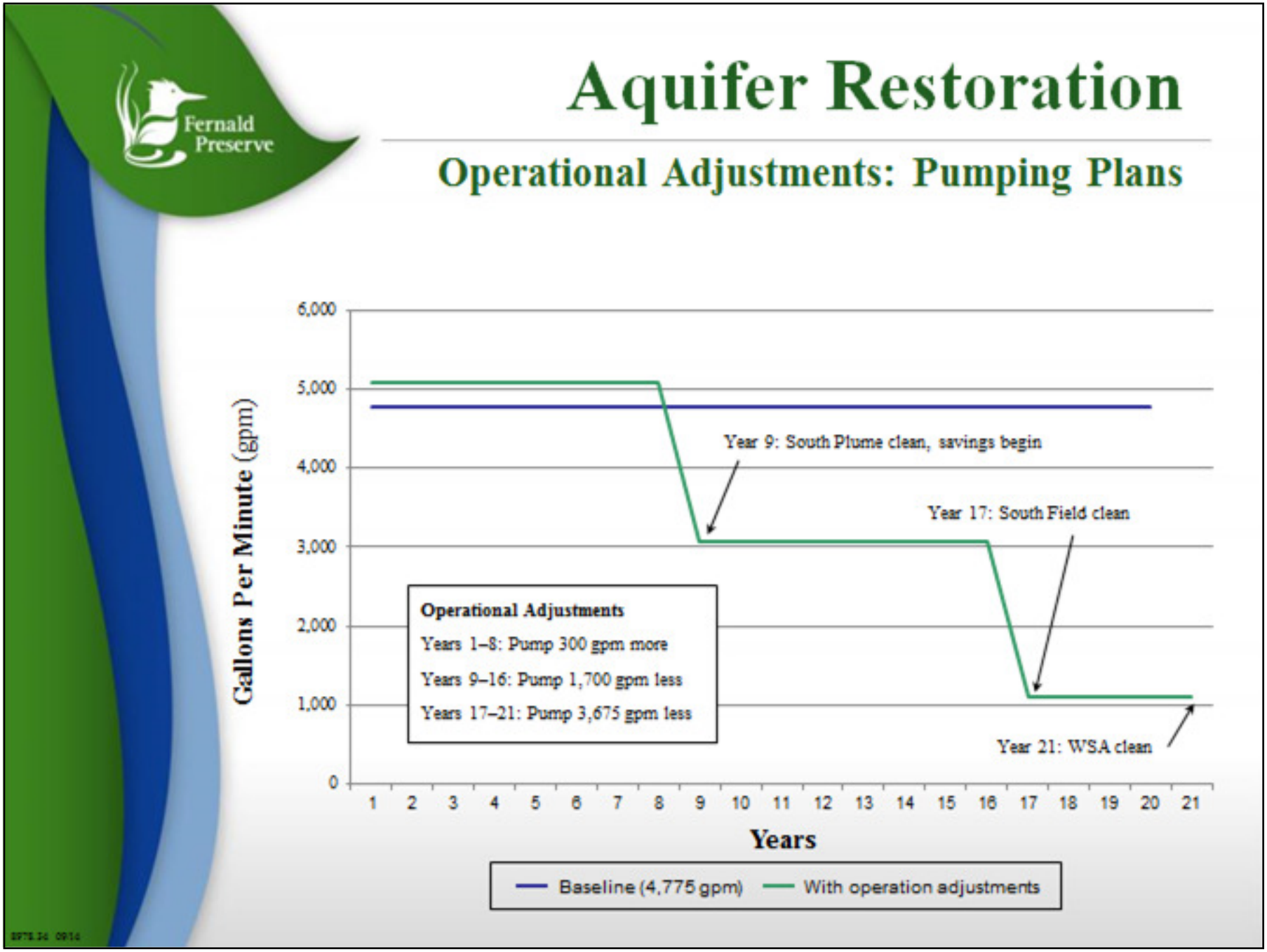
Operational Adjustments: 2014



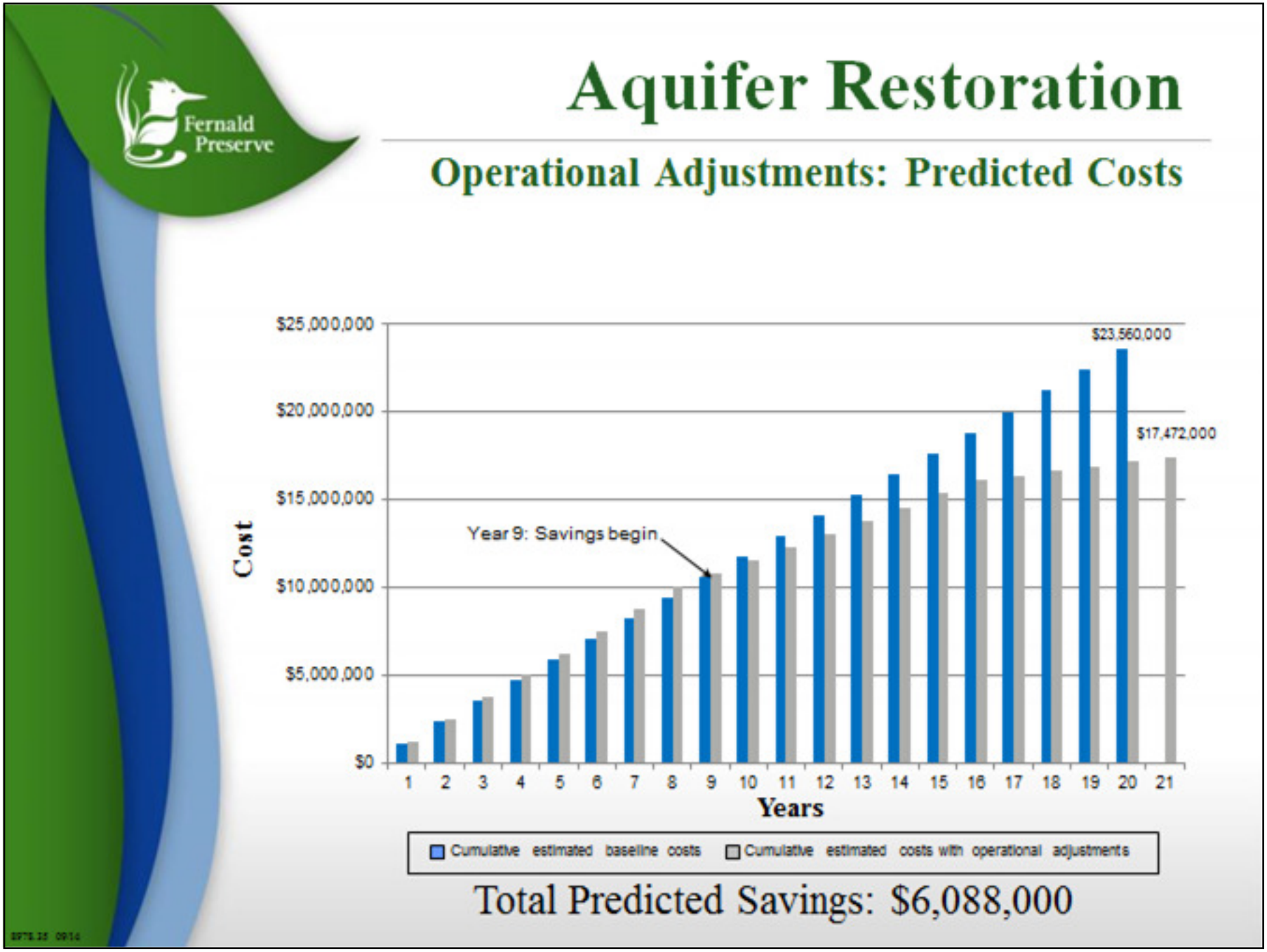
Groundwater operational changes were implemented in 2014.



More uranium is being removed from the aquifer as a result of operational adjustments implemented in 2014.



The model predicts that pumping at slightly higher rates now will allow pumping rates to be reduced in the future.



The model predicts that amplified pumping will reduce future costs.

Fernald Preserve

Nature Nook

Northern Saw-whet Owl

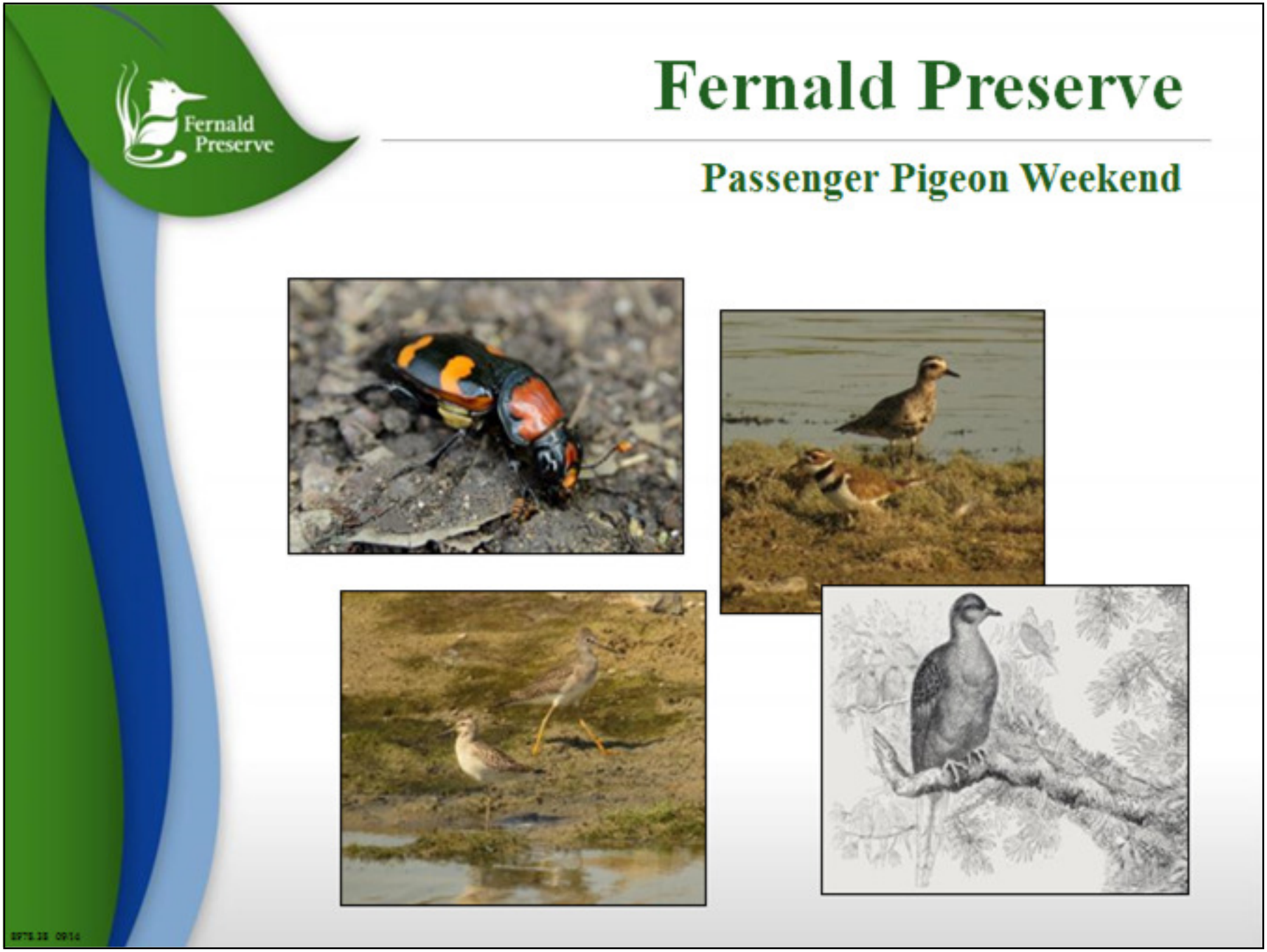
(Aegolius acadicus)

A regular feature of the community meeting is the Nature Nook, which highlights flora and fauna at the Fernald Preserve.

Fernald Preserve

- Site use
- Events

During 2013, a wide variety of groups—including students, birders, Scouts, and seniors—visited and used the Fernald Preserve and its facilities. Since the site opened to the public in 2008, schools, conservation organizations, former workers, hikers, cyclists, and many others have used the site, the Visitors Center, and the Community Meeting Room.



Fernald Preserve staff and visitors recently participated in a nationwide event that recognized wildlife conservation progress made in the last 100 years.

Site Activities

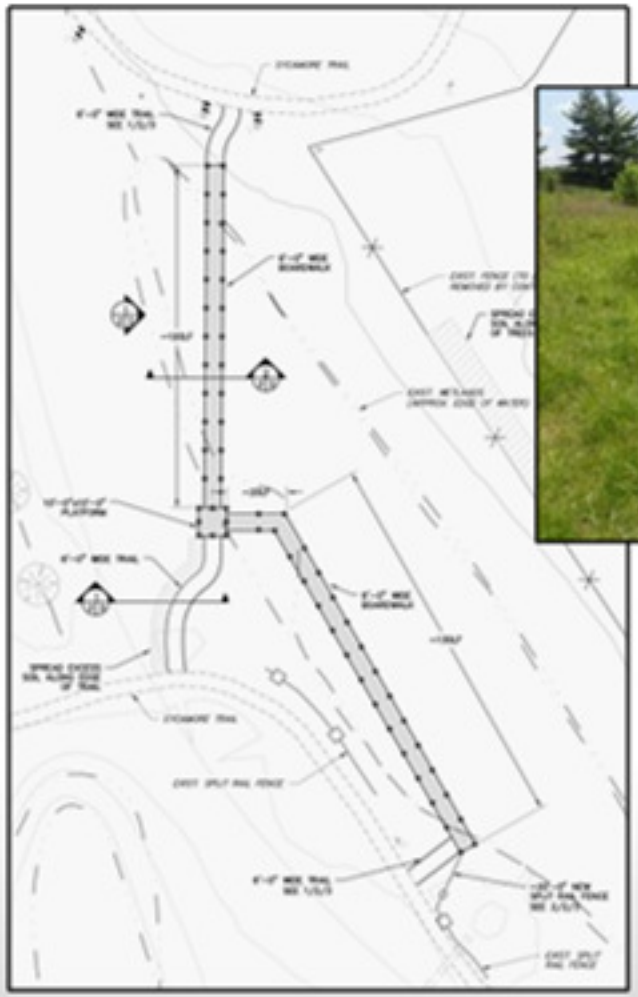
Projects: 2014

- Program Shelter
- Stabilize Paddys Run streambank
- Construct boardwalk
- Upgrade site electrical infrastructure

The completion of the Program Shelter earlier in the year will allow for three additional construction projects to be worked on during the fall and winter seasons.

Site Activities

Sycamore Trail Boardwalk



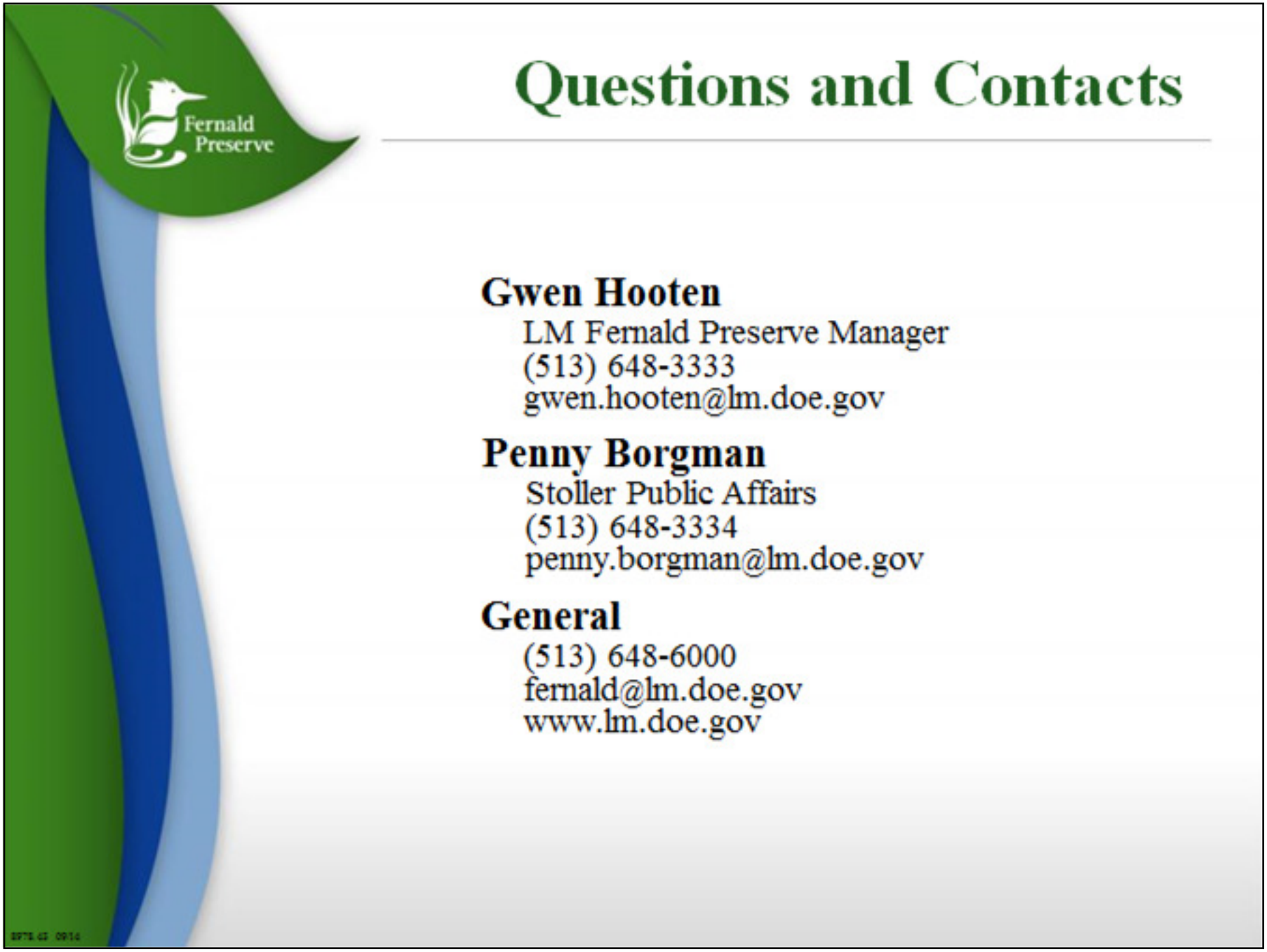
A boardwalk is being constructed over a wetland located on the Sycamore Trail to enhance public outreach programs.

Site Activities

Site Electrical Upgrades

The electrical and communication lines will be installed underground from the On-Site Disposal Facility to the wastewater treatment facility.

The look-ahead explains the work planned for the coming year.



The next annual Fernald Preserve community meeting will be in the fall of 2015.